The human disease network

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Edited by H. Eugene Stanley, Boston University, Boston, MA, and approved April 3, 2007 (received for review February 14, 2007)

A network of disorders and disease genes linked by known disorder–gene associations offers a platform to explore in a single graph-theoretic framework all known phenotype and disease gene associations, indicating the common genetic origin of many diseases. Genes associated with similar disorders show both higher likelihood of physical interactions between their products and higher expression profiling similarity for their transcripts, supporting the existence of distinct disease-specific functional modules. We find that essential human genes are likely to encode hub proteins and are expressed widely in most tissues. This suggests that disease genes also would play a central role in the human interactome. In contrast, we find that the vast majority of disease genes are nonessential and show no tendency to encode hub proteins, and their expression pattern indicates that they are localized in the functional periphery of the network. A selection-based model explains the observed difference between essential and disease genes and also suggests that diseases caused by somatic mutations should not be peripheral, a prediction we confirm for cancer genes.

biological networks | complex networks | human genetics | systems biology | diseasome

Decades-long efforts to map human disease loci, at first genetically and later physically (1), followed by recent positional cloning of many disease genes (2) and genome-wide association studies (3), have generated an impressive list of disorder–gene association pairs (4, 5). In addition, recent efforts to map the protein–protein interactions in humans (6, 7), together with efforts to curate an extensive map of human metabolism (8) and regulatory networks offer increasingly detailed maps of the relationships between different disease genes. Most of the successful studies building on these new approaches have focused, however, on a single disease, using network-based tools to gain a better understanding of the relationship between the genes implicated in a selected disorder (9).

Here we take a conceptually different approach, exploring whether human genetic disorders and the corresponding disease genes might be related to each other at a higher level of cellular and organismal organization. Support for the validity of this approach is provided by examples of genetic disorders that arise from mutations in more than a single gene (locus heterogeneity). For example, Zellweger syndrome is caused by mutations in any of at least 11 genes, all associated with peroxisome biogenesis (10). Similarly, there are many examples of different mutations in the same gene (allelic heterogeneity) giving rise to phenotypes currently classified as different disorders. For example, mutations in *TP53* have been linked to 11 clinically distinguishable cancer-related disorders (11). Given the highly interlinked internal organization of the cell (12–17), it should be possible to improve the single gene–single disorder approach by developing a conceptual framework to link systematically all genetic disorders (the human "disease phenome") with the complete list of disease genes (the "disease genome"), resulting in a global view of the "diseasome," the combined set of all known disorder/disease gene associations.

Results

Construction of the Diseasome. We constructed a bipartite graph consisting of two disjoint sets of nodes. One set corresponds to all known genetic disorders, whereas the other set corresponds to all known disease genes in the human genome (Fig. 1). A disorder and a gene are then connected by a link if mutations in that gene are implicated in that disorder. The list of disorders, disease genes, and associations between them was obtained from the Online Mendelian Inheritance in Man (OMIM; ref. 18), a compendium of human disease genes and phenotypes. As of December 2005, this list contained 1,284 disorders and 1,777 disease genes. OMIM initially focused on monogenic disorders but in recent years has expanded to include complex traits and the associated genetic mutations that confer susceptibility to these common disorders (18). Although this history introduces some biases, and the disease gene record is far from complete, OMIM represents the most complete and up-to-date repository of all known disease genes and the disorders they confer. We manually classified each disorder into one of 22 disorder classes based on the physiological system affected [see supporting information (SI) *Text*, SI Fig. 5, and SI Table 1 for details].

Starting from the diseasome bipartite graph we generated two biologically relevant network projections (Fig. 1). In the "human disease network" (HDN) nodes represent disorders, and two disorders are connected to each other if they share at least one gene in which mutations are associated with both disorders (Figs. 1 and 2*a*). In the "disease gene network" (DGN) nodes represent disease genes, and two genes are connected if they are associated with the same disorder (Figs. 1 and 2*b*). Next, we discuss the potential of these networks to help us understand and represent in a single framework all known disease gene and phenotype associations.

Properties of the HDN. If each human disorder tends to have a distinct and unique genetic origin, then the HDN would be disconnected into many single nodes corresponding to specific disorders or grouped into small clusters of a few closely related disorders. In contrast, the obtained HDN displays many connections between both individual disorders and disorder classes (Fig. 2*a*). Of 1,284 disorders, 867 have at least one link to other disorders, and 516 disorders form a giant component, suggesting that the genetic origins of most diseases, to some extent, are shared with other diseases. The number of genes associated with a disorder, s, has a broad distribution (see SI Fig. 6*a*), indicating that most disorders relate to a few disease genes, whereas a handful of phenotypes, such as deafness ($s = 41$), leukemia ($s = 37$), and colon cancer ($s = 34$), relate to dozens of genes (Fig. 2*a*). The degree (k) distribution of HDN (SI Fig. 6*b*) indicates that most disorders are linked to only

Author contributions: D.V., B.C., M.V., and A.-L.B. designed research; K.-I.G. and M.E.C. performed research; K.-I.G. and M.E.C. analyzed data; and K.-I.G., M.E.C., D.V., M.V., and A.-L.B. wrote the paper.

The authors declare no conflict of interest.

This article is a PNAS Direct Submission.

Abbreviations: DGN, disease gene network; HDN, human disease network; GO, Gene Ontology; OMIM, Online Mendelian Inheritance in Man; PCC, Pearson correlation coefficient.

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This article contains supporting information online at www.pnas.org/cgi/content/full/0701361104/DC1.

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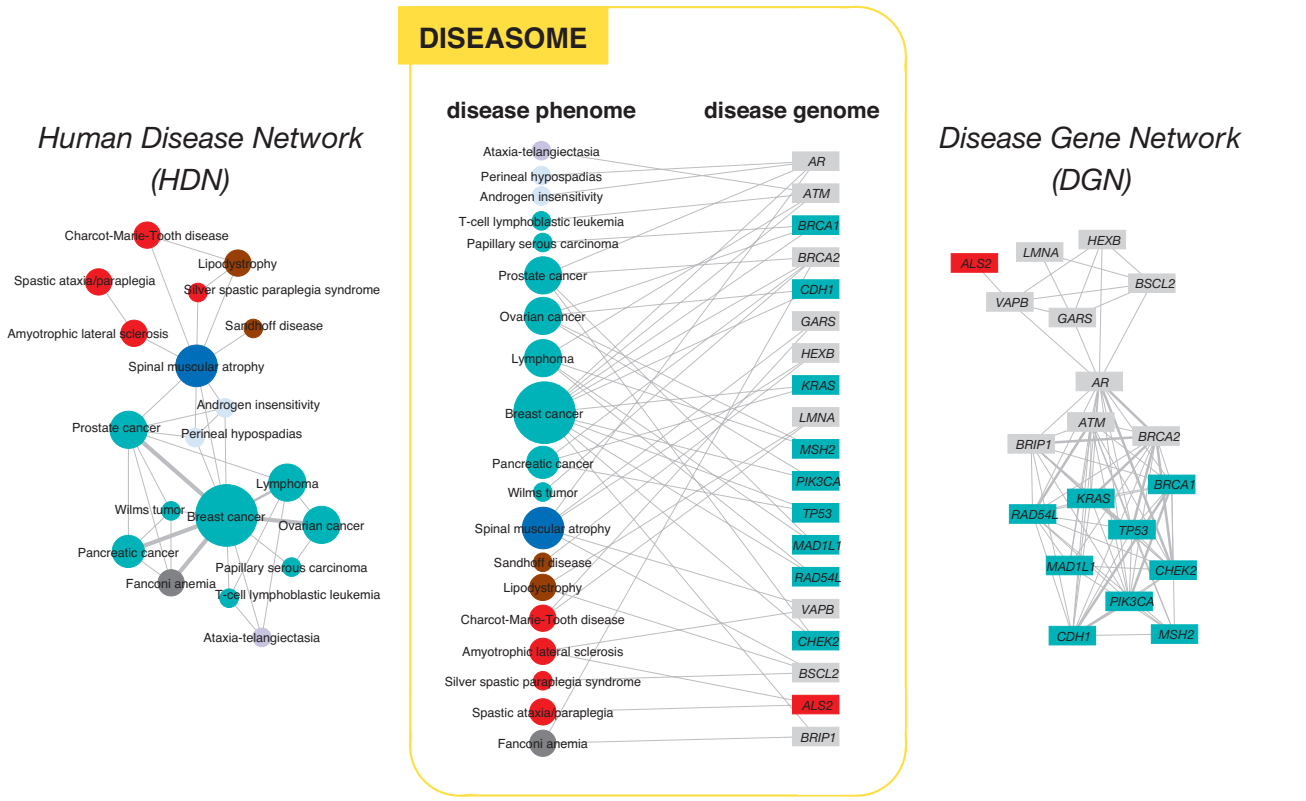

Fig. 1. Construction of the diseasome bipartite network. (*Center*) A small subset of OMIM-based disorder–disease gene associations (18), where circles and rectangles correspond to disorders and disease genes, respectively. A link is placed between a disorder and a disease gene if mutations in that gene lead to the specific disorder. The size of a circle is proportional to the number of genes participating in the corresponding disorder, and the color corresponds to the disorder class to which the disease belongs. (*Left*) The HDN projection of the diseasome bipartite graph, in which two disorders are connected if there is a gene that is implicated in both. The width of a link is proportional to the number of genes that are implicated in both diseases. For example, three genes are implicated in both breast cancer and prostate cancer, resulting in a link of weight three between them. (*Right*) The DGN projection where two genes are connected if they are involved in the same disorder. The width of a link is proportional to the number of diseases with which the two genes are commonly associated. A full diseasome bipartite map is provided as SI Fig. 13.

a few other disorders, whereas a few phenotypes such as colon cancer (linked to $k = 50$ other disorders) or breast cancer ($k = 30$) represent hubs that are connected to a large number of distinct disorders. The prominence of cancer among the most connected disorders arises in part from the many clinically distinct cancer subtypes tightly connected with each other through common tumor repressor genes such as *TP53* and *PTEN*.

Although the HDN layout was generated independently of any knowledge on disorder classes, the resulting network is naturally and visibly clustered according to major disorder classes. Yet, there are visible differences between different classes of disorders. Whereas the large cancer cluster is tightly interconnected due to the many genes associated with multiple types of cancer (*TP53*, *KRAS*, *ERBB2*, *NF1*, etc.) and includes several diseases with strong predisposition to cancer, such as Fanconi anemia and ataxia telangiectasia, metabolic disorders do not appear to form a single distinct cluster but are underrepresented in the giant component and overrepresented in the small connected components (Fig. 2*a*). To quantify this difference, we measured the locus heterogeneity of each disorder class and the fraction of disorders that are connected to each other in the HDN (see *SI Text*). We find that cancer and neurological disorders show high locus heterogeneity and also represent the most connected disease classes, in contrast with metabolic, skeletal, and multiple disorders that have low genetic heterogeneity and are the least connected (SI Fig. 7).

Properties of the DGN. In the DGN, two disease genes are connected if they are associated with the same disorder, providing a complementary, gene-centered view of the diseasome. Given that the links signify related phenotypic association between two genes, they represent a measure of their phenotypic relatedness, which could be used in future studies, in conjunction with protein–protein interactions (6, 7, 19), transcription factor-promoter interactions (20), and metabolic reactions (8), to discover novel genetic interactions. In the DGN, 1,377 of 1,777 disease genes are connected to other disease genes, and 903 genes belong to a giant component (Fig. 2*b*). Whereas the number of genes involved in multiple diseases decreases rapidly (SI Fig. 6*d*; light gray nodes in Fig. 2*b*), several disease genes (e.g., *TP53*, *PAX6*) are involved in as many as 10 disorders, representing major hubs in the network.

Functional Clustering of HDN and DGN. To probe how the topology of the HDN and GDN deviates from random, we randomly shuffled the associations between disorders and genes, while keeping the number of links per each disorder and disease gene in the bipartite network unchanged. Interestingly, the average size of the giant component of 10^4 randomized disease networks is 643 ± 16, significantly larger than 516 ($P < 10^{-4}$; for details of statistical analyses of the results reported hereafter, see *SI Text*), the actual size of the HDN (SI Fig. 6*c*). Similarly, the average size of the giant component from randomized gene networks is $1{,}087 \pm 20$ genes, significantly larger than 903 ($P < 10^{-4}$), the actual size of the DGN (SI Fig. 6*e*). These differences suggest important pathophysiological clustering of disorders and disease genes. Indeed, in the actual networks disorders (genes) are more likely linked to disorders (genes) of the same disorder class. For example, in the HDN there

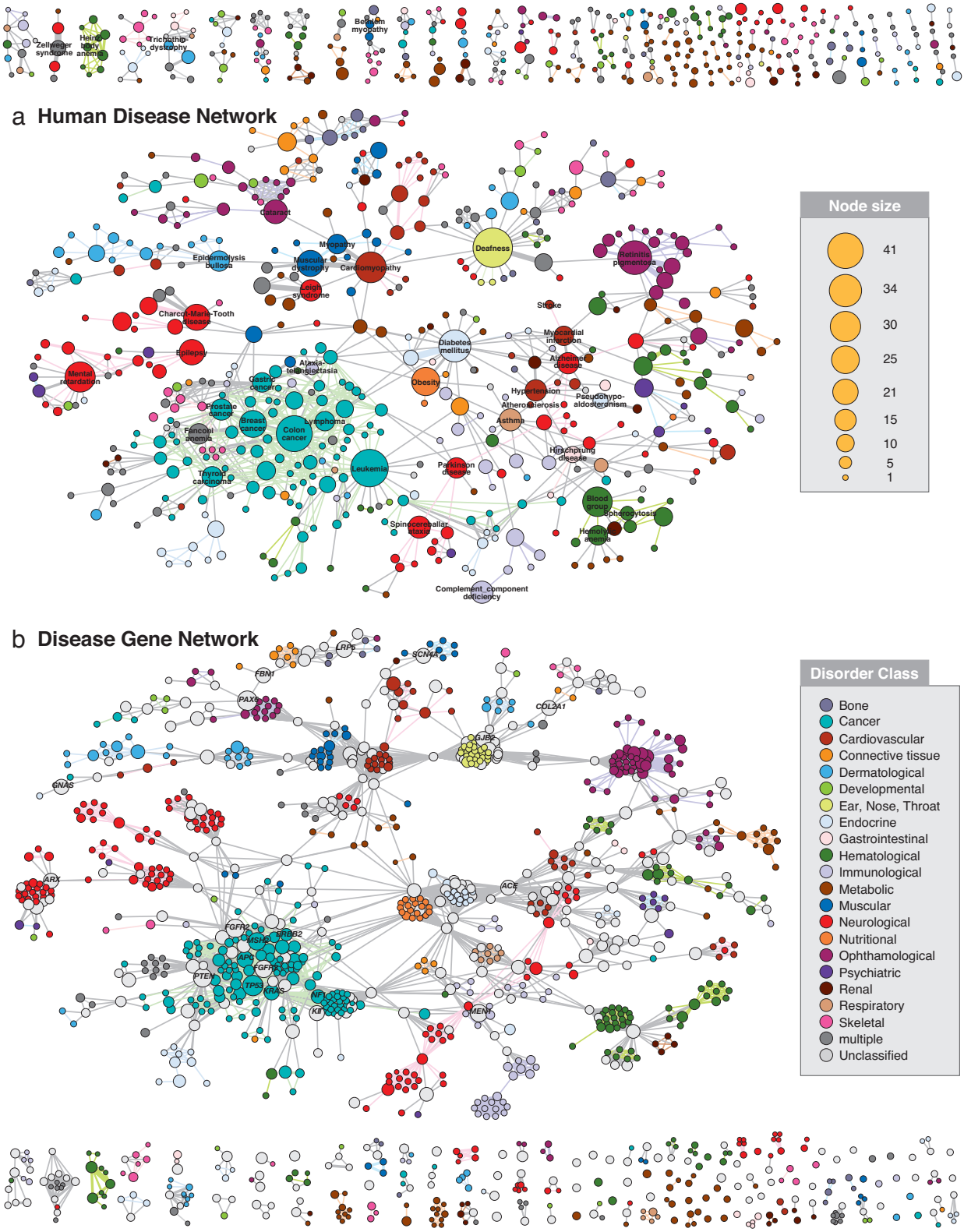

Fig. 2. The HDN and the DGN. (*a*) In the HDN, each node corresponds to a distinct disorder, colored based on the disorder class to which it belongs, the name of the 22 disorder classes being shown on the right. A link between disorders in the same disorder class is colored with the corresponding dimmer color and links connecting different disorder classes are gray. The size of each node is proportional to the number of genes participating in the corresponding disorder (see key), and the link thickness is proportional to the number of genes shared by the disorders it connects. We indicate the name of disorders with >10 associated genes, as well as those mentioned in the text. For a complete set of names, see SI Fig. 13. (*b*) In the DGN, each node is a gene, with two genes being connected if they are implicated in the same disorder. The size of each node is proportional to the number of disorders in which the gene is implicated (see key). Nodes are light gray if the corresponding genes are associated with more than one disorder class. Genes associated with more than five disorders, and those mentioned in the text, are indicated with the gene symbol. Only nodes with at least one link are shown.

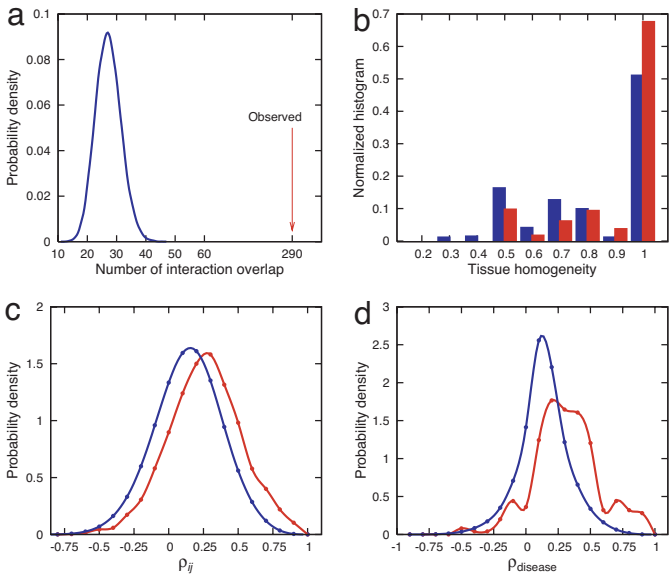

Fig. 3. Characterizing the disease modules. (*a*) Number of observed physical interactions between the products of genes within the same disorder (red arrow) and the distribution of the expected number of interactions for the random control (blue) ($P < 10^{-6}$). (*b*) Distribution of the tissue-homogeneity of a disorder (red). Random control (blue) with the same number of genes chosen randomly is shown for comparison. (*c*) The distribution of PCC ρ_{ij} values of the expression profiles of each disease gene pair that belongs to the same disorder (red) and the control (blue), representing the PCC distribution between all gene pairs ($P < 10^{-6}$). (*d*) Distribution of the average PCC between expression profiles of all genes associated with the same disorder (red) is also shifted toward higher values than the random control (blue) with the same number of genes chosen randomly ($P < 10^{-6}$).

are 812 links between disorders of the same class, an 8-fold enrichment with respect to 107 ± 10 links obtained between the same set of nodes in the randomized networks. This local functional clustering accounts for the small size of the giant components observed in the actual networks.

Disease-Associated Genes Identify Distinct Functional Modules. For several disorders known to arise from mutations in any one of a few distinct genes, the corresponding protein products have been shown to participate in the same cellular pathway, molecular complex, or functional module (21, 22). For example, Fanconi anemia arises from mutations in a set of genes encoding proteins involved in DNA repair, many of them forming a single heteromeric complex (23). Yet, the extent to which most disorders and disorder classes correspond to distinct functional modules in the cellular network has remained largely unclear. If genes linked by disorder associations encode proteins that interact in functionally distinguishable modules, then the proteins within such disease modules should more likely interact with one another than with other proteins. To test this hypothesis, we overlaid the DGN on a network of physical protein–protein interactions derived from high-quality systematic interactome mapping (6, 7) and literature curation (6). We found that 290 interactions overlap between the two networks, a 10-fold increase relative to random expectation ($P < 10^{-6}$; Fig. 3*a*).

Genes associated with the same disorder share common cellular and functional characteristics, as annotated in the Gene Ontology (GO) (24). If the HDN shows modular organization, then a group of genes associated with the same common disorder should share similar cellular and functional characteristics, as annotated in GO. To investigate the validity of this hypothesis, we measured the GO homogeneity of each disorder (see *SI Text*) separately for each branch of GO, biological process, molecular function, and cellular component, finding significant elevation of GO homogeneity with respect to random controls in all three branches (SI Fig. 8).

Disease genes encoding proteins that interact within common functional modules should tend to be expressed in the same tissue. To measure this, we introduced the tissue-homogeneity coefficient of a disorder, defined as the maximum fraction of genes among those belonging to a common disorder that are expressed in a specific tissue in a microarray data set obtained for 10,594 genes across 36 healthy tissues (25). We found that 68% of disorders exhibited almost perfect tissue-homogeneity (Fig. 3*b*), compared with 51% expected by chance ($P < 10^{-5}$).

Finally, disease genes that participate in a common functional module should also show high expression profiling correlation (26). The distribution of Pearson correlation coefficients (PCCs) for the coexpression profiles of pairs of genes associated with the same disorder was shifted toward higher values compared with that of a random control (Fig. 3*c*; $P < 10^{-6}$, χ^2 test). Similarly, the average PCC over all pairs of genes within a given disorder shows a significant shift from the random reference (Fig. 3*d*), with a small but clearly distinguishable peak in the distribution around PCC ≈ 0.75. This peak corresponds to ≈33 disorders with average PCC > 0.6 for which all genes are highly coexpressed in most tissues, including Heinz body anemia (PCC = 0.935), Bethlem myopathy (PCC = 0.835), and spherocytosis (PCC = 0.656).

In summary, genes that contribute to a common disorder (*i*) show an increased tendency for their products to interact with each other through protein–protein interactions, (*ii*) have a tendency to be expressed together in specific tissues, (*iii*) tend to display high coexpression levels, (*iv*) exhibit synchronized expression as a group, and (*v*) tend to share GO terms. Together, these findings support the hypothesis of a global functional relatedness for disease genes and their products and offer a network-based model for the diseasome. Cellular networks are modular, consisting of groups of highly interconnected proteins responsible for specific cellular functions (21, 22). A disorder then represents the perturbation or breakdown of a specific functional module caused by variation in one or more of the components producing recognizable developmental and/or physiological abnormalities.

This model offers a network-based explanation for the emergence of complex or polygenic disorders: a phenotype often correlates with the inability of a particular functional module to carry out its basic functions. For extended modules, many different combinations of perturbed genes could incapacitate the module, as a result of which mutations in different genes will appear to lead to the same phenotype. This correlation between disease and functional modules can also inform our understanding of cellular networks by helping us to identify which genes are involved in the same cellular function or network module (21, 22).

Centrality and Peripherality. An early indication of the connection between the structure of a cellular network and its functional properties was the finding that in *Saccharomyces cerevisiae* highly connected proteins or "hubs" are more likely encoded by essential genes (15, 16). This prompted a number of recent studies (27, 28) to formulate the hypothesis that human disease genes should also have a tendency to encode hubs. Yet, previous measurements found only a weak correlation between disease genes and hubs (29), resulting in an important mystery: what is the role, if any, of the cellular network in human diseases? Are disease genes more likely to encode hubs in the cellular network?

Our initial analysis appears to support the hypothesis that disease genes, given their impact on the organism, display a tendency to encode hubs in the interactome (27, 28), finding that disease related proteins have a 32% larger number of interactions (6, 7) with other proteins (average degree) than the nondisease proteins (see SI Fig 9) and that high-degree proteins are more likely to be encoded by genes associated with diseases than proteins with few interactions ($P = 1.6 \times 10^{-17}$; Fig. 4*a*). Next, we show, however, that despite this

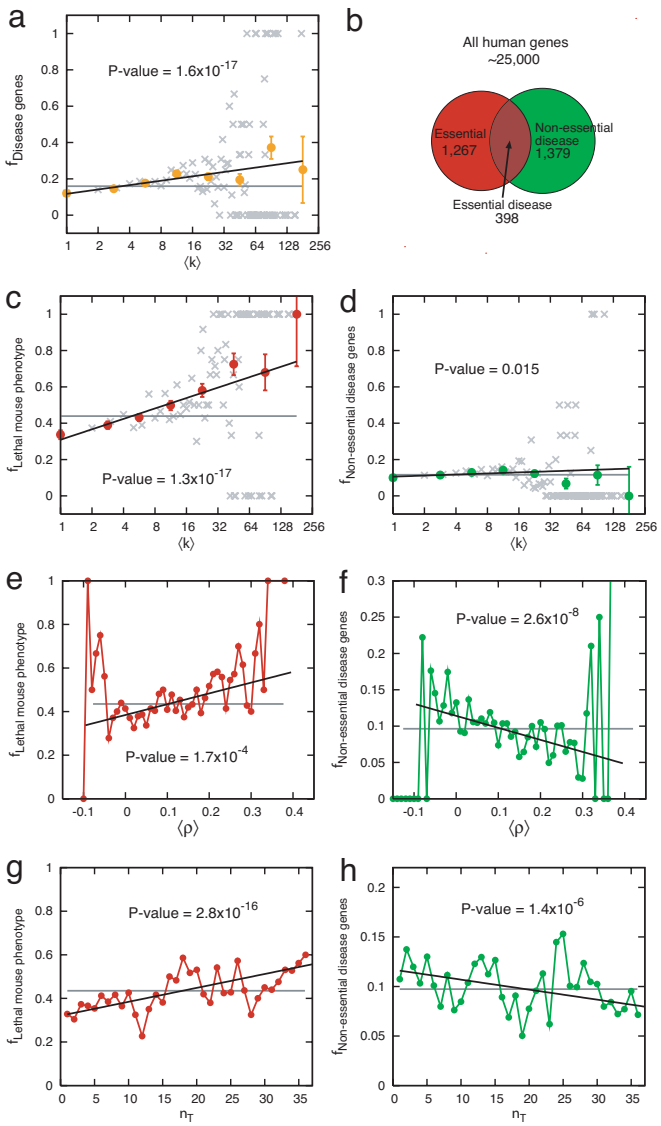

Fig. 4. Functional characteristics of disease and essential genes. (*a*) The fraction of disease genes among those whose protein products that interact with *k* other proteins. (*b*) Venn diagram showing the relationship between the human genes studied in this work. (*c*) The fraction of genes with lethal mouse phenotypes (essential genes) among those with mouse phenotypes that interact with *k* other proteins. (*d*) The same as in *a*, but only for nonessential disease genes, i.e., excluding 398 proteins with lethal mouse phenotypes. (*e* and *f*) The fraction of essential genes (*e*) and nonessential disease genes (*f*) among those whose average PCC with other genes is $\langle\rho\rangle$. (*g* and *h*) The fraction of essential genes (*g*) and nonessential disease genes (*h*) among those whose transcript is expressed in n_T tissues. Gray horizontal lines in *a* and *c–h* indicate the global average. Error bars represent standard errors. Note that for some data points the error bars are smaller than the symbol size, and thus are not visible. In *a*, *c*, and *d* gray symbols are the linearly binned data points, whereas color corresponds to the statistically more uniform log-binned data. For details of the significance analysis, see *SI Text*.

apparent correlation, the relationship between diseases and hubs hides deep differences between various disease genes.

When exploring whether disease genes encode hubs, we, and authors of other earlier studies (27–29), ignored the fact that some human genes are essential in early development and functional changes in these contribute to the high rate of first-trimester spontaneous abortions, which might be as much as 20% of recognized pregnancies. One strategy to explore the impact of this *in utero* essential segment of human disease is to consider human orthologs of mouse genes that result in embryonic or postnatal lethality when disrupted by homologous recombination (Mouse Genome Informatics; www.informatics.jax.org). All together, we find 1,267 such mouse lethal orthologs of human genes, of which 398 are associated with human diseases, representing 22% of all known human disease genes. This allows us to distinguish between two classes of human genes: 1,267 "essential genes" and 1,379 "nonessential disease genes," the latter obtained by removing from the full list of 1,777 OMIM disease genes the 398 that are also essential (Fig. 4*b*). Next, we show that these two classes of genes play quite different roles in the human interactome.

First, we find that essential proteins show a tendency to be associated with hubs ($P = 1.3 \times 10^{-17}$; Fig. 4*c*), displaying a much stronger trend than the one observed for all disease proteins (Fig. 4*a*). This raises an important question: Could the observed correlation between disease genes and hubs (Fig. 4*a*) be the sole consequence of the fact that a small fraction (22%) of disease genes is also essential? To address this question we measured the degree dependence of the nonessential disease proteins (Fig. 4*d*). Surprisingly, the correlation between hubs and disease proteins entirely disappears. Thus, the vast majority of disease genes (78%), those that are nonessential, do not show a tendency to encode hubs, indicating that the observed weak correlations between hubs and disease genes (Fig. 4*a*) was entirely due to the few essential genes within the disease gene class.

To carry on its basic functions, the cell needs to maintain the coordinated activity of important functional modules, driving in a relatively synchronized manner the expression patterns of the most important genes. Therefore, one expects that the expression pattern of both essential and disease genes will be synchronized with a significant number of other genes. To test this, we determined the average gene coexpression coefficient $\langle\rho\rangle_i = \Sigma_j \mathrm{PCC}_{ij}$ between an essential (or nonessential disease) gene *i* and all other genes in the cell, calculating the PCC_{ij} values from healthy human tissue microarray measurements (25). Confirming our expectation, for essential genes we find that genes that display high average coexpression $\langle\rho\rangle$ with all other genes are more likely to be essential than those that show small or negative $\langle\rho\rangle$ ($P = 1.7 \times 10^{-4}$; Fig. 4*e*). Surprisingly, however, nonessential disease genes show the opposite effect, being associated with genes whose expression pattern is anticorrelated or not-correlated with other genes, and underrepresented among the genes that are highly synchronized ($\langle\rho\rangle > 0.2$) ($P = 2.6 \times 10^{-8}$; Fig. 4*f*). Thus, the expression pattern of nonessential disease genes appears to be decoupled from the overall expression pattern of all other genes, whereas essential genes have a tendency to be coupled to the rest of the cell.

Finally, we asked whether housekeeping genes, expressed in all tissues, have a tendency to encode disease genes. We find that the more tissues in which a gene is expressed, the higher the likelihood that it will be essential ($P = 2.8 \times 10^{-16}$; Fig. 4*g*). The opposite is true for nonessential disease genes: they have a tendency to be expressed in a few tissues ($P = 1.4 \times 10^{-6}$; Fig. 4*h*). Similarly, we found that only 9.9% of housekeeping genes correspond to disease genes, compared with 13.5% of nonhousekeeping genes, a significant 36% difference ($P = 3.6 \times 10^{-6}$). In contrast, 59.8% of housekeeping genes annotated with mouse phenotype were essential, compared with 40.5% for nonhousekeeping genes ($P < 10^{-4}$).

These results support the somewhat unexpected conclusion that nonessential disease genes are not associated with hubs (27, 28), show smaller correlation in their expression pattern with the rest of the genes in the cell than expected from random, and have a tendency to be expressed in only a few tissues. Therefore, contrary to earlier hypotheses and our expectations, the vast majority of nonessential disease genes occupy functionally peripheral and topologically neutral positions in the cellular network. In stark contrast, essential genes are likely to encode hubs, show highly synchronized expression with the rest of the genes, and are expressed in most tissues, being overrepresented among housekeep-

ing genes. Thus, essential genes are topologically and functionally central.

This unexpected peripherality of most disease genes can be best explained by using an evolutionary argument. Mutations in topologically central, widely expressed genes are more likely to result in severe impairment of normal developmental and/or physiological function, leading to lethality *in utero* or early extrauterine life and to eventual deletion from the population. Only mutations compatible with survival into the reproductive years are likely to be maintained in a population. Therefore, disease-related mutations in the functionally and topologically peripheral regions of the cell give a higher chance of viability.

Disease genes whose mutations are somatic should not be subject to the selective pressure discussed above. Instead, somatic mutations that lead to severe disease phenotypes should more likely affect the functional center. To test the predictive power of this selection-based argument, we studied separately the properties of somatic cancer genes (Cancer Genome Census; www.sanger.ac.uk/genetics/CGP/Census) and found that they (*i*) are more likely to encode hubs, (*ii*) show higher coexpression with the rest of the genes in the cell, and (*iii*) are more represented among housekeeping genes (SI Fig. 10). The observed functional and topological centrality of somatic cancer genes fits well with our current understanding that many cancer genes play critical roles in cellular development and growth (11).

Discussion

Throughout history, clinicians and medical researchers have focused on a few disorder(s) sharing commonalities in etiology or pathology. Recent progress in genetics and genomics has led to an appreciation of the effects of gene mutations in virtually all disorders and provides the opportunity to study human diseases all at once rather than one at a time (4, 30). This unique approach offers the possibility of discerning general patterns and principles of human disease not readily apparent from the study of individual disorders.

An important tool in this quest is the HDN that represents a genome-wide roadmap for future studies on disease associations. The accompanying detailed diseasome map (SI Fig. 13), showing all disorders and the genes associated with different disorders, offers a rapid visual reference of the genetic links between disorders and disease genes, a valuable global perspective for physicians, genetic counselors, and biomedical researchers alike.

To test whether the conclusions obtained in this work are robust to the incompleteness of the OMIM coverage, we expanded our study to include not only genes with identified mutations linked to the specific disease phenotype, but also those that satisfy the less stringent criterion that the phenotype has not been mapped to a specific locus (18). This expansion increased the number of disease-associated genes from 1,777 to 2,765, but also introduced noise in the data, because the link between many of the newly added genes and diseases is less stringent. Yet, the overall organization of the expanded diseasome map remains largely unaltered (SI Fig. 11), and none of the trends uncovered in Fig. 4 are affected by this extension (SI Fig. 12), supporting the robustness of our findings to further expansion of the OMIM database. Thus, although the maps shown in Fig. 2 and SI Fig. 13 will inevitably undergo local changes with the discovery of new disease genes, this will not change the overall organization and layout of the HDN significantly, because the HDN reflects the underlying cellular network-based relationship between genes and functional modules.

We thank Victor McKusick, Ada Hamosh, Joanna Amberger, and the rest of the OMIM team for their hard work and dedication and Tom Deisboeck, Zoltán Oltvai, Joanna Amberger, Todd Golub, Gerardo Jimenez-Sanchez and the members of the M.V. laboratory and the Center for Cancer Systems Biology, especially David E. Hill, for useful discussions. K.-I.G. and A.-L.B. were supported by National Institutes of Health (NIH) Grants IH U01 A1070499-01 and U56 CA113004 and National Science Foundation Grant ITR DMR-0926737 IIS-0513650. This work was supported by the Dana–Farber Cancer Institute (DFCI) Strategic Initiative (M.V.) and grants from the W. M. Keck Foundation (to M.V.) and the NIH/National Human Genome Research Institute and NIH/National Institute of General Medical Sciences (to M.V.).

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Supporting Information Table 1. **Curated Morbid Map file with disease ID and class assignment (December 21, 2005 version).**

Disease ID	Disorder name	Gene symbols	OMIM ID	Chromosome	Class
1	17,20-lyase deficiency, isolated, 202110 (3)	CYP17A1, CYP17, P450C17	609300	10q24.3	Endocrine
1	17-alpha-hydroxylase/17,20-lyase deficiency, 202110 (3)	CYP17A1, CYP17, P450C17	609300	10q24.3	Endocrine
3	2-methyl-3-hydroxybutyryl-CoA dehydrogenase deficiency, 300438 (3)	HADH2, ERAB	300256	Xp11.2	Metabolic
4	2-methylbutyrylglycinuria (3)	ACADSB	600301	10q25-q26	Metabolic
5	3-beta-hydroxysteroid dehydrogenase, type II, deficiency (3)	HSD3B2	201810	1p13.1	Metabolic
6	3-hydroxyacyl-CoA dehydrogenase deficiency, 609609 (3)	HADHSC, SCHAD	601609	4q22-q26	Metabolic
7	3-Methylcrotonyl-CoA carboxylase 1 deficiency, 210200 (3)	MCCC1, MCCA	609010	3q25-q27	Metabolic
7	3-Methylcrotonyl-CoA carboxylase 2 deficiency, 210210 (3)	MCCC2, MCCB	609014	5q12-q13	Metabolic
8	3-methylglutaconic aciduria, type I, 250950 (3)	AUH	600529	Chr.9	Metabolic
9	3-methylglutaconicaciduria, type III, 258501 (3)	OPA3, MGA3	606580	19q13.2-q13.3	Metabolic
10	3-M syndrome, 273750 (3)	CUL7	609577	6p21.1	multiple
12	6-mercaptopurine sensitivity (3)	TPMT	187680	6p22.3	Metabolic
13	Aarskog-Scott syndrome (3)	FGD1, FGDY, AAS	305400	Xp11.21	multiple
14	Abacavir hypersensitivity, susceptibility to (3)	HLA-B	142830	6p21.3	Immunological
15	ABCD syndrome, 600501 (3)	EDNRB, HSCR2, ABCDS	131244	13q22	multiple
17	Abetalipoproteinemia, 200100 (3)	MTP	157147	4q22-q24	Metabolic
17	Abetalipoproteinemia (3)	APOB, FLDB	107730	2p24	Metabolic
18	Acampomelic campolelic dysplasia, 114290 (3)	SOX9, CMD1, SRA1	608160	17q24.3-q25.1	Skeletal
21	Acatalasemia (3)	CAT	115500	11p13	Hematological
22	Accelerated tumor formation, susceptibility to (3)	MDM2	164785	12q14.3-q15	Cancer
24	Achalasia-addisonianism-alacrimia syndrome, 231550 (3)	AAAS, AAA	605378	12q13	multiple
25	Acheiropody, 200500 (3)	C7orf2, ACHP, LMBR1	605522	7q36	Skeletal
26	Achondrogenesis-hypochondrogenesis, type II, 200610 (3)	COL2A1	120140	12q13.11-q13.2	Bone
27	Achondrogenesis Ib, 600972 (3)	SLC26A2, DTD, DTDST, D5S1708, EDM4	606718	5q32-q33.1	Bone
28	Achondroplasia, 100800 (3)	FGFR3, ACH	134934	4p16.3	Skeletal
29	Achromatopsia-2, 216900 (3)	CNGA3, CNG3, ACHM2	600053	2q11	Ophthamological
29	Achromatopsia-3, 262300 (3)	CNGB3, ACHM3	605080	8q21-q22	Ophthamological
29	Achromatopsia-4 (3)	GNAT2, ACHM4	139340	1p13	Ophthamological
30	Acid-labile subunit, deficiency of (3)	IGFALS, ALS	601489	16p13.3	Endocrine
31	Acquired long QT syndrome, susceptibility to (3)	KCNH2, LQT2, HERG	152427	7q35-q36	Cardiovascular
32	Acrocallosal syndrome, 200990 (3)	GLI3, PAPA, PAPB, ACLS	165240	7p13	multiple
33	Acrocapitofemoral dysplasia, 607778 (3)	IHH, BDA1	600726	2q33-q35	Skeletal
34	Acrodermatitis enteropathica, 201100 (3)	SLC39A4, ZIP4	607059	8q24.3	Dermatological
36	Acrokeratosis verruciformis, 101900 (3)	ATP2A2, ATP2B, DAR	108740	12q23-q24.1	Dermatological
38	Acromegaly, 102200 (3)	GNAS, GNAS1, GPSA, POH, PHP1B, PHP1A, AHO	139320	20q13.2	Endocrine
38	Acromegaly, 102200 (3)	SSTR5	182455	16p13.3	Endocrine
39	Acromesomelic dysplasia, Hunter-Thompson type, 201250 (3)	GDF5, CDMP1	601146	20q11.2	Skeletal
39	Acromesomelic dysplasia, Maroteaux type, 602875 (3)	NPR2, ANPRB, AMDM	108961	9p21-p12	Skeletal
44	Acyl-CoA dehydrogenase, long chain, deficiency of (3)	ACADL, LCAD	201460	2q34-q35	Metabolic
44	Acyl-CoA dehydrogenase, medium chain, deficiency of, 201450 (3)	ACADM, MCAD	607008	1p31	Metabolic
44	Acyl-CoA dehydrogenase, short-chain, deficiency of, 201470 (3)	ACADS, SCAD	606885	12q22-qter	Metabolic
45	Adenocarcinoma of lung, response to tyrosine kinase inhibitor in, 211980 (3)	EGFR	131550	7p12.3-p12.1	Cancer
45	Adenocarcinoma of lung, somatic, 211980 (3)	BRAF	164757	7q34	Cancer
45	Adenocarcinoma of lung, somatic, 211980 (3)	ERBB2, NGL, NEU, HER2	164870	17q21.1	Cancer
45	Adenocarcinoma of lung, somatic, 211980 (3)	PRKN, PARK2, PDJ	602544	6q25.2-q27	Cancer
45	Adenocarcinoma, ovarian, somatic (3)	PRKN, PARK2, PDJ	602544	6q25.2-q27	Cancer

46	Adenoma, periampullary (3)	APC, GS, FPC	175100	5q21-q22	Cancer
47	Adenomas, multiple colorectal, 608456 (3)	MUTYH	604933	1p34.3-p32.1	Cancer
47	Adenomas, salivary gland pleomorphic, 181030 (3)	PLAG1, SGPA, PSA	603026	8q12	Cancer
47	Adenomatous polyposis coli (3)	APC, GS, FPC	175100	5q21-q22	Cancer
47	Adenomatous polyposis coli, attenuated (3)	APC, GS, FPC	175100	5q21-q22	Cancer
49	Adenosine deaminase deficiency, partial, 102700 (3)	ADA	608958	20q13.11	Immunological
50	Adenylosuccinase deficiency, 103050 (3)	ADSL	608222	22q13.1	Metabolic
52	Adiponectin deficiency (3)	APM1, GBP28	605441	3q27	Endocrine
2053	Adrenal adenoma, sporadic (3)	MEN1	131100	11q13	Cancer
2054	Adrenal cortical carcinoma, 202300 (3)	TP53, P53, LFS1	191170	17p13.1	Cancer
53	Adrenal hyperplasia, congenital, due to 11-beta-hydroxylase deficiency (3)	CYP11B1, P450C11, FHI	202010	8q21	Endocrine
53	Adrenal hyperplasia, congenital, due to 21-hydroxylase deficiency (3)	CYP21A2, CYP21, CA21H	201910	6p21.3	Endocrine
53	Adrenal hyperplasia, congenital, due to combined P450C17 and P450C21 deficiency, 201750 (3)	POR	124015	7q11.2	Endocrine
53	Adrenal hypoplasia, congenital, with hypogonadotropic hypogonadism, 300200 (3)	DAX1, AHC, AHX, NROB1	300473	Xp21.3-p21.2	Endocrine
2055	Adrenocortical insufficiency without ovarian defect (3)	FTZF1, FTZ1, SF1	184757	9q33	Endocrine
54	Adrenocortical tumor, somatic (3)	PRKAR1A, TSE1, CNC1, CAR	188830	17q23-q24	Cancer
55	Adrenocorticotropic hormone deficiency, 201400 (3)	TBS19	604614	1q23-q24	Endocrine
56	Adrenoleukodystrophy, 300100 (3)	ABCD1, ALD, AMN	300371	Xq28	Neurological
56	Adrenoleukodystrophy, neonatal, 202370 (3)	PEX10, NALD	602859	Chr.1	Neurological
56	Adrenoleukodystrophy, neonatal, 202370 (3)	PEX13, ZWS, NALD	601789	2p15	Neurological
56	Adrenoleukodystrophy, neonatal, 202370 (3)	PEX1, ZWS1	602136	7q21-q22	Neurological
56	Adrenoleukodystrophy, neonatal, 202370 (3)	PEX26	608666	22q11.21	Neurological
56	Adrenoleukodystrophy, neonatal, 202370 (3)	PXR1, PEX5, PTS1R	600414	12p13.3	Neurological
57	Adrenomyeloneuropathy, 300100 (3)	ABCD1, ALD, AMN	300371	Xq28	Metabolic
58	Adult i phenotype with congenital cataract, 110800 (3)	GCNT2	600429	6p24-p23	Hematological
58	Adult i phenotype without cataract, 110800 (3)	GCNT2	600429	6p24-p23	Hematological
59	ADULT syndrome, 103285 (3)	TP73L, TP63, KET, EEC3, SHFM4, LMS, RHS	603273	3q27	multiple
60	Advanced sleep phase syndrome, familial, 604348 (3)	PER2, FASPS, KIAA0347	603426	2q37.3	Neurological
61	Afibrinogenemia, 202400 (3)	FGA	134820	4q28	Hematological
61	Afibrinogenemia, congenital, 202400 (3)	FGB	134830	4q28	Hematological
63	Agammaglobulinemia, 601495 (3)	IGHM, MU	147020	14q32.33	Hematological
63	Agammaglobulinemia, autosomal recessive (3)	IGLL1, IGO, IGL5, VPREB2	146770	22q11.21	Hematological
63	Agammaglobulinemia, non-Bruton type, 601495 (3)	LRRC8, KIAA1437	608360	9q34.13	Hematological
63	Agammaglobulinemia, type 1, X-linked (3)	BTK, AGMX1, IMD1, XLA, AT	300300	Xq21.3-q22	Hematological
64	AGAT deficiency (3)	GATM, AGAT	602360	15q15.3	Metabolic
65	Agenesis of the corpus callosum with peripheral neuropathy, 218000 (3)	SLC12A6, KCC3A, KCC3B, KCC3, ACCPN	604878	15q13-q14	Neurological
69	AICA-ribosiduria due to ATIC deficiency, 608688 (3)	ATIC, PURH, AICAR	601731	2q35	Metabolic
70	AIDS, delayed/rapid progression to (3)	KIR3DL1, NKAT3, NKB1, AMB11, KIR3DS1	604946	19q13.4	Immunological
70	AIDS, rapid progression to, 609423 (3)	IFNG	147570	12q14	Immunological
70	AIDS, resistance to (3)	CXCL12, SDF1	600835	10q11.1	Immunological
71	Alagille syndrome, 118450 (3)	JAG1, AGS, AHD	601920	20p12	multiple
72	Albinism, brown oculocutaneous, (3)	OCA2, P, PED, D15S12, BOCA	203200	15q11.2-q12	Dermatological
72	Albinism, ocular, autosomal recessive (3)	OCA2, P, PED, D15S12, BOCA	203200	15q11.2-q12	Dermatological
72	Albinism, oculocutaneous, type IA, 203100 (3)	TYR	606933	11q14-q21	Dermatological
72	Albinism, oculocutaneous, type IB, 606952 (3)	TYR	606933	11q14-q21	Dermatological

72	Albinism, oculocutaneous, type II (3)	OCA2, P, PED, D15S12, BOCA	203200	15q11.2-q12	Dermatological
72	Albinism, rufous, 278400 (3)	TYRP1, CAS2, GP75	115501	9p23	Dermatological
74	Alcohol dependence, susceptibility to, 103780 (3)	HTR2A	182135	13q14-q21	Unclassified
2074	Alcohol intolerance, acute (3)	ALDH2	100650	12q24.2	Metabolic
75	Alcoholism, susceptibility to, 103780 (3)	GABRA2	137140	4p13-p12	Unclassified
76	Aldolase A deficiency (3)	ALDOA	103850	16q22-q24	Metabolic
77	Aldosterone to renin ratio raised (3)	CYP11B2	124080	8q21	Endocrine
78	Aldosteronism, glucocorticoid-remediable, 103900 (3)	CYP11B1, P450C11, FHI	202010	8q21	Endocrine
79	Alexander disease, 203450 (3)	GFAP	137780	17q21	multiple
79	Alexander disease, 203450 (3)	NDUFV1, UQOR1	161015	11q13	multiple
80	Alkaptonuria, 203500 (3)	HGD, AKU	607474	3q21-q23	Metabolic
82	Allan-Herndon-Dudley syndrome, 300523 (3)	SLC16A2, DXS128, XPCT	300095	Xq13.2	Neurological
83	Allergic rhinitis, susceptibility to, 607154 (3)	IL13, ALRH	147683	5q31	Immunological
85	Alopecia universalis, 203655 (3)	HR, AU	602302	8p21.2	Dermatological
86	Alpers syndrome, 203700 (3)	POLG, POLG1, POLGA, PEO	174763	15q25	Neurological
87	Alpha-1-antichymotrypsin deficiency (3)	SERPINA3, AACT, ACT	107280	14q32.1	Respiratory
88	Alpha-actinin-3 deficiency (3)	ACTN3	102574	11q13-q14	Muscular
90	Alpha-methylacetoacetic aciduria, 203750 (3)	ACAT1	607809	11q22.3-q23.1	Metabolic
91	Alpha-methylacyl-CoA racemase deficiency (3)	AMACR	604489	5p13.2-q11.1	Metabolic
92	Alpha-thalassemia/mental retardation syndrome, 301040 (3)	ATRX, XH2, XNP, MRXS3, SHS	300032	Xq13	Hematological
92	Alpha-thalassemia myelodysplasia syndrome, somatic, 300448 (3)	ATRX, XH2, XNP, MRXS3, SHS	300032	Xq13	Hematological
94	Alport syndrome, 301050 (3)	COL4A5, ATS, ASLN	303630	Xq22.3	Renal
94	Alport syndrome, autosomal recessive, 203780 (3)	COL4A3	120070	2q36-q37	Renal
94	Alport syndrome, autosomal recessive, 203780 (3)	COL4A4	120131	2q36-q37	Renal
95	Alstrom syndrome, 203800 (3)	ALMS1, ALSS, KIAA0328	606844	2p13	Neurological
96	Alternating hemiplegia of childhood, 104290 (3)	ATP1A2, FHM2, MHP2	182340	1q21-q23	Neurological
97	Alveolar soft-part sarcoma, 606243 (3)	ASPCR1, RCC17, ASPL, ASPS	606236	17q25	Cancer
98	Alzheimer disease-1, APP-related (3)	APP, AAA, CVAP, AD1	104760	21q21	Neurological
98	Alzheimer disease-2, 104310 (3)	APOE, AD2	107741	19q13.2	Neurological
98	Alzheimer disease-4, 606889 (3)	PSEN2, AD4, STM2	600759	1q31-q42	Neurological
98	Alzheimer disease, late-onset, 104300 (3)	APBB2, FE65L1	602710	4p14	Neurological
98	Alzheimer disease, late-onset, susceptibility to, 104300 (3)	NOS3	163729	7q36	Neurological
98	Alzheimer disease, late-onset, susceptibility to, 104300 (3)	PLAU, URK	191840	10q24	Neurological
98	Alzheimer disease, susceptibility to, 104300 (3)	ACE, DCP1, ACE1	106180	17q23	Neurological
98	Alzheimer disease, susceptibility to, 104300 (3)	MPO	606989	17q23.1	Neurological
98	Alzheimer disease, susceptibility to, 104300 (3)	PACIP1, PAXIP1L, PTIP	608254	7q36	Neurological
98	Alzheimer disease, susceptibility to (3)	A2M	103950	12p13.3-p12.3	Neurological
98	Alzheimer disease, susceptibility to (3)	BLMH, BMH	602403	17q11.2	Neurological
98	Alzheimer disease, type 3, 607822 (3)	PSEN1, AD3	104311	14q24.3	Neurological
98	Alzheimer disease, type 3, with spastic paraparesis and apraxia, 607822 (3)	PSEN1, AD3	104311	14q24.3	Neurological
98	Alzheimer disease, type 3, with spastic paraparesis and unusual plaques, 607822 (3)	PSEN1, AD3	104311	14q24.3	Neurological
99	Amelogenesis imperfecta 2, hypoplastic local, 104500 (3)	ENAM	606585	4q21	Bone
99	Amelogenesis imperfecta, 301200 (3)	AMELX, AMG, AIH1, AMGX	300391	Xp22.3-p22.1	Bone
99	Amelogenesis imperfecta, hypomaturation-hypoplastic type, with taurodontism, 104510 (3)	DLX3, TDO	600525	17q21.3-q22	Bone
99	Amelogenesis imperfecta, hypoplastic, and openbite malocclusion, 608563 (3)	ENAM	606585	4q21	Bone
99	Amelogenesis imperfecta, pigmented hypomaturation type, 204700 (3)	KLK4, EMSP1, PRSS17	603767	19q13.3-q13.4	Bone
100	Amish infantile epilepsy syndrome, 609056 (3)	SIAT9, ST3GALV	604402	2p11.2	Neurological
101	AMP deaminase deficiency, erythrocytic (3)	AMPD3	102772	11pter-p13	Hematological

102	Amyloid neuropathy, familial, several allelic types (3)	TTR, PALB	176300	18q11.2-q12.1	Neurological
103	Amyloidosis, 3 or more types (3)	APOA1	107680	11q23	Neurological
103	Amyloidosis, cerebroarterial, Dutch type (3)	APP, AAA, CVAP, AD1	104760	21q21	Neurological
103	Amyloidosis, Finnish type, 105120 (3)	GSN	137350	9q34	Neurological
103	Amyloidosis, hereditary renal, 105200 (3)	FGA	134820	4q28	Neurological
103	Amyloidosis, renal, 105200 (3)	LYZ	153450	Chr.12	Neurological
103	Amyloidosis, senile systemic (3)	TTR, PALB	176300	18q11.2-q12.1	Neurological
104	Amyotrophic lateral sclerosis 8, 608627 (3)	VAPB, VAPC, ALS8	605704	20q13.3	Neurological
104	Amyotrophic lateral sclerosis, due to SOD1 deficiency, 105400 (3)	SOD1, ALS1	147450	21q22.1	Neurological
104	Amyotrophic lateral sclerosis, juvenile, 205100 (3)	ALS2, ALSJ, PLSJ, IAHSP	606352	2q33	Neurological
104	Amyotrophic lateral sclerosis, susceptibility to, 105400 (3)	DCTN1	601143	2p13	Neurological
104	Amyotrophic lateral sclerosis, susceptibility to, 105400 (3)	NEFH	162230	22q12.2	Neurological
104	Amyotrophic lateral sclerosis, susceptibility to, 105400 (3)	PRPH	170710	12q12-q13	Neurological
105	Analbuminemia (3)	ALB	103600	4q11-q13	Hematological
107	Analgesia from kappa-opioid receptor agonist, female-specific (3)	MC1R	155555	16q24.3	Unclassified
108	Anderson disease, 607689 (3)	SARA2, SAR1B, CMRD	607690	5q31.1	Gastrointestinal
109	Androgen insensitivity, 300068 (3)	AR, DHTR, TFM, SBMA, KD, SMAX1	313700	Xq11-q12	Endocrine
110	Anemia, congenital dyserythropoietic, type I, 224120 (3)	CDAN1, CDA1	607465	15q15	Hematological
110	Anemia, Diamond-Blackfan, 105650 (3)	RPS19, DBA	603474	19q13.2	Hematological
110	Anemia, hemolytic, due to PK deficiency (3)	PKLR, PK1	266200	1q21	Hematological
110	Anemia, hemolytic, due to UMPH1 deficiency, 266120 (3)	NT5C3, UMPH1, PSN1	606224	7p15-p14	Hematological
110	Anemia, hemolytic, Rh-null, regulator type, 268150 (3)	RHAG, RH50A	180297	6p21.1-p11	Hematological
110	Anemia, hypochromic microcytic, 206100 (3)	NRAMP2	600523	12q13	Hematological
110	Anemia, neonatal hemolytic, fatal and near-fatal (3)	SPTB	182870	14q22-q23.2	Hematological
110	Anemia, sideroblastic/hypochromic (3)	ALAS2, ANH1, ASB	301300	Xp11.21	Hematological
110	Anemia, sideroblastic, with ataxia, 301310 (3)	ABCB7, ABC7, ASAT	300135	Xq13.1-q13.3	Hematological
2112	Aneurysm, familial arterial (3)	COL3A1	120180	2q31	Unclassified
113	Angelman syndrome, 105830 (3)	MECP2, RTT, PPMX, MRX16, MRX79	300005	Xq28	Developmental
113	Angelman syndrome, 105830 (3)	UBE3A, ANCR	601623	15q11-q13	Developmental
114	Angioedema, hereditary, 106100 (3)	C1NH, HAE1, HAE2, SERPING1	606860	11q11-q13.1	Immunological
114	Angioedema induced by ACE inhibitors, susceptibility to (3)	XPNPEP2	300145	Xq25	Immunological
115	Angiofibroma, sporadic (3)	MEN1	131100	11q13	Endocrine
117	Angiotensin I-converting enzyme, benign serum increase (3)	ACE, DCP1, ACE1	106180	17q23	Endocrine
118	Anhaptoglobinemia (3)	HP	140100	16q22.1	Hematological
119	Aniridia, type II, 106210 (3)	PAX6, AN2, MGDA	607108	11p13	Ophthamological
121	Ankylosing spoldylitis, susceptibility to, 106300 (3)	HLA-B	142830	6p21.3	Connective tissue
122	Anophthalmia 3, 206900 (3)	SOX2, ANOP3	184429	3q26.3-q27	Ophthamological
124	Anorexia nervosa, susceptibility to, 606788 (3)	HTR2A	182135	13q14-q21	Nutritional
126	Anterior segment anomalies and cataract (3)	EYA1, BOR	601653	8q13.3	Ophthamological
126	Anterior segment mesenchymal dysgenesis, 107250 (3)	FOXE3, FKHL12, ASMD	601094	1p32	Ophthamological
126	Anterior segment mesenchymal dysgenesis (3)	FOXC1, FKHL7, FREAC3	601090	6p25	Ophthamological
126	Anterior segment mesenchymal dysgenesis and cataract, 107250 (3)	PITX3	602669	10q25	Ophthamological
127	Antithrombin III deficiency (3)	AT3	107300	1q23-q25	Hematological
128	Antley-Bixler syndrome, 207410 (3)	POR	124015	7q11.2	Unclassified
129	Anxiety-related personality traits (3)	SLC6A4, HTT, OCD1	182138	17q11.1-q12	Psychiatric
130	Aortic aneurysm, ascending, and dissection (3)	FBN1, MFS1, WMS	134797	15q21.1	Cardiovascular
131	Apert syndrome, 101200 (3)	FGFR2, BEK, CFD1, JWS	176943	10q26	Connective tissue
132	Aplasia of lacrimal and salivary glands, 180920 (3)	FGF10	602115	5p13-p12	Gastrointestinal
133	Aplastic anemia, 609135 (3)	IFNG	147570	12q14	Hematological
133	Aplastic anemia, 609135 (3)	TERC, TRC3, TR	602322	3q21-q28	Hematological

133	Aplastic anemia, susceptibility to, 609135 (3)	TERT, TCS1, EST2	187270	5p15.33	Hematological
134	Apnea, postanesthetic (3)	BCHE, CHE1	177400	3q26.1-q26.2	Unclassified
136	ApoA-I and apoC-III deficiency, combined (3)	APOA1	107680	11q23	Metabolic
136	Apolipoprotein A-II deficiency (3)	APOA2	107670	1q21-q23	Metabolic
136	Apolipoprotein C3 deficiency (3)	APOC3	107720	11q23	Metabolic
136	Apolipoprotein H deficiency (3)	APOH	138700	17q23-qter	Metabolic
137	Apparent mineralocorticoid excess, hypertension due to (3)	HSD11B2, HSD11K	218030	16q22	Bone
138	Aquaporin-1 deficiency (3)	AQP1, CHIP28, CO	107776	7p14	Unclassified
139	ARC syndrome, 208085 (3)	VPS33B	608552	15q26.1	Gastrointestinal
140	Argininemia, 207800 (3)	ARG1	608313	6q23	Metabolic
140	Argininosuccinic aciduria, 207900 (3)	ASL	608310	7cen-q11.2	Metabolic
142	Aromatase deficiency (3)	CYP19A1, CYP19, ARO	107910	15q21.1	Metabolic
143	Aromatic L-amino acid decarboxylase deficiency, 608643 (3)	DDC	107930	7p11	Metabolic
144	Arrhythmogenic right ventricular dysplasia 2, 600996 (3)	RYR2, VTSIP	180902	1q42.1-q43	Cardiovascular
144	Arrhythmogenic right ventricular dysplasia 8, 607450 (3)	DSP, KPPS2, PPKS2	125647	6p24	Cardiovascular
144	Arrhythmogenic right ventricular dysplasia, familial, 9, 609040 (3)	PKP2, ARVD9	602861	12p11	Cardiovascular
146	Arthrogryposis multiplex congenita, distal, type 1, 108120 (3)	TPM2, TMSB, AMCD1, DA1	190990	9p13.2-p13.1	Developmental
146	Arthrogryposis multiplex congenita, distal, type 2B, 601680 (3)	TNNI2, AMCD2B, DA2B, FSSV	191043	11p15.5	Developmental
147	Arthropathy, progressive pseudorheumatoid, of childhood, 208230 (3)	WISP3, PPAC, PPD	603400	6q22-q23	Bone
146	Arthyrgryposis multiplex congenita, distal, type 2B, 601680 (3)	TNNT3, AMCD2B, DA2B, FSSV	600692	11p15.5	Developmental
150	Aspartylglucosaminuria (3)	AGA	208400	4q32-q33	Metabolic
151	Asperger syndrome, 300494 (3)	NLGN3	300336	Xq13	Psychiatric
151	Asperger syndrome, 300497 (3)	NLGN4, KIAA1260, AUTSX2	300427	Xp22.33	Psychiatric
153	Asthma, 600807 (3)	PHF11, NYREN34	607796	13q14.1	Respiratory
153	Asthma, atopic, susceptibility to (3)	MS4A2, FCER1B	147138	11q13	Respiratory
153	Asthma, dimished response to antileukotriene treatment in, 600807 (3)	ALOX5	152390	10q11.2	Respiratory
153	Asthma, nocturnal, susceptibility to (3)	ADRB2	109690	5q32-q34	Respiratory
153	Asthma, susceptibility to, 1, 607277 (3)	PTGDR, AS1	604687	14q22.1	Respiratory
153	Asthma, susceptibility to, 2, 608584 (3)	GPR154, GPRA, VRR1, PGR14	608595	7p15-p14	Respiratory
153	Asthma, susceptibility to (3)	HNMT	605238	1p32	Respiratory
153	Asthma, susceptibility to, 600807 (3)	IL12B, NKSF2	161561	5q31.1-q33.1	Respiratory
153	Asthma, susceptibility to, 600807 (3)	IL13, ALRH	147683	5q31	Respiratory
153	Asthma, susceptibility to, 600807 (3)	PLA2G7, PAFAH	601690	6p21.2-p12	Respiratory
153	Asthma, susceptibility to, 600807 (3)	SCGB3A2, UGRP1	606531	5q31-q34	Respiratory
153	Asthma, susceptibility to, 600807 (3)	TNF, TNFA	191160	6p21.3	Respiratory
153	Asthma, susceptibility to, 600807 (3)	UGB, CC10, CCSP, SCGB1A1	192020	11q12.3-q13.1	Respiratory
154	Ataxia, cerebellar, Cayman type, 601238 (3)	ATCAY, CLAC, KIAA1872	608179	19p13.3	Neurological
154	Ataxia, early-onset, with oculomotor apraxia and hypoalbuminemia, 208920 (3)	APTX, AOA, AOA1	606350	9p13.3	Neurological
154	Ataxia, episodic (3)	CACNB4, EJM	601949	2q22-q23	Neurological
154	Ataxia-ocular apraxia-2, 606002 (3)	SETX, SCAR1, AOA2	608465	9q34	Neurological
157	Ataxia-telangiectasia, 208900 (3)	ATM, ATA, AT1	607585	11q22.3	Immunological
157	Ataxia-telangiectasia-like disorder, 604391 (3)	MRE11A, MRE11, ATLD	600814	11q21	Immunological
154	Ataxia with isolated vitamin E deficiency, 277460 (3)	TTPA, TTP1, AVED	600415	8q13.1-q13.3	Neurological
160	Atelosteogenesis II, 256050 (3)	SLC26A2, DTD, DTDST, D5S1708, EDM4	606718	5q32-q33.1	Connective tissue
160	Atelostogenesis, type I, 108720 (3)	FLNB, SCT, AOI	603381	3p14.3	Connective tissue
162	Athabaskan brainstem dysgenesis syndrome, 601536 (3)	HOXA1, HOX1F, BSAS	142955	7p15.3	Neurological
163	Atherosclerosis, susceptibility to (3)	ALOX5	152390	10q11.2	Cardiovascular
164	Atopy, 147050 (3)	SPINK5, LEKTI	605010	5q32	Immunological
164	Atopy, resistance to, 147050 (3)	HAVCR1, HAVCR	606518	5q33.2	Immunological

164	Atopy, susceptibility to, 147050 (3)	PLA2G7, PAFAH	601690	6p21.2-p12	Immunological
164	Atopy, susceptibility to, 147050 (3)	SELP, GRMP	173610	1q23-q25	Immunological
164	Atopy, susceptibility to (3)	IL4R, IL4RA	147781	16p12.1-p11.2	Immunological
165	Atransferrinemia, 209300 (3)	TF	190000	3q21	Hematological
166	Atrial fibrillation, familial, 607554 (3)	KCNE2, MIRP1, LQT6	603796	21q22.1	Cardiovascular
166	Atrial fibrillation, familial, 607554 (3)	KCNQ1, KCNA9, LQT1, KVLQT1, ATFB1	607542	11p15.5	Cardiovascular
166	Atrial septal defect-2, 607941 (3)	GATA4	600576	8p23.1-p22	Cardiovascular
166	Atrial septal defect 3 (3)	MYH6, ASD3, MYHCA	160710	14q12	Cardiovascular
166	Atrial septal defect with atrioventricular conduction defects, 108900 (3)	NKX2E, CSX	600584	5q34	Cardiovascular
167	Atrichia with papular lesions, 209500 (3)	HR, AU	602302	8p21.2	Dermatological
168	Atrioventricular block, idiopathic second-degree (3)	NKX2E, CSX	600584	5q34	Cardiovascular
168	Atrioventricular septal defect, 600309 (3)	GJA1, CX43, ODDD, SDTY3, ODOD	121014	6q21-q23.2	Cardiovascular
168	Atrioventricular septal defect, partial, with heterotaxy syndrome, 606217 (3)	CRELD1, AVSD2	607170	3p25.3	Cardiovascular
168	Atrioventricular septal defect, susceptibility to, 2, 606217 (3)	CRELD1, AVSD2	607170	3p25.3	Cardiovascular
171	Attention deficit-hyperactivity disorder, susceptibility to, 143465 (3)	DRD5, DRD1B, DRD1L2	126453	4p16.1-p15.3	Psychiatric
173	Autism, susceptibility to, 209850 (3)	GLO1	138750	6p21.3-p21.2	Psychiatric
173	Autism, X-linked, 300425 (3)	MECP2, RTT, PPMX, MRX16, MRX79	300005	Xq28	Psychiatric
173	Autism, X-linked, 300425 (3)	NLGN3	300336	Xq13	Psychiatric
173	Autism, X-linked, 300495 (3)	NLGN4, KIAA1260, AUTSX2	300427	Xp22.33	Psychiatric
174	Autoimmune lymphoproliferative syndrome, 601859 (3)	TNFRSF6, APT1, FAS, CD95, ALPS1A	134637	10q24.1	Immunological
174	Autoimmune lymphoproliferative syndrome, type IA, 601859 (3)	TNFRSF6, APT1, FAS, CD95, ALPS1A	134637	10q24.1	Immunological
174	Autoimmune lymphoproliferative syndrome, type II, 603909 (3)	CASP10, MCH4, ALPS2	601762	2q33-q34	Immunological
174	Autoimmune lymphoproliferative syndrome, type IIB, 607271 (3)	CASP8, MCH5	601763	2q33-q34	Immunological
174	Autoimmune polyglandular disease, type I, 240300 (3)	AIRE, APECED	607358	21q22.3	Immunological
2174	Autoimmune thyroid disease, susceptibility to 3, 608175 (3)	TG, AITD3	188450	8q24.2-q24.3	Endocrine
175	Autonomic nervous system dysfunction (3)	DRD4	126452	11p15.5	Psychiatric
177	Axenfeld anomaly (3)	FOXC1, FKHL7, FREAC3	601090	6p25	Ophthamological
178	Azoospermia (3)	USP9Y, DFFRY	400005	Yq11.2	Endocrine
178	Azoospermia due to perturbations of meiosis, 270960 (3)	SYCP3, SCP3, COR1	604759	12q23	Endocrine
180	Bamforth-Lazarus syndrome, 241850 (3)	FOXE1, FKHL15, TITF2, TTF2	602617	9q22	Endocrine
182	Bannayan-Riley-Ruvalcaba syndrome, 153480 (3)	PTEN, MMAC1	601728	10q23.31	Unclassified
182	Bannayan-Zonana syndrome, 153480 (3)	PTEN, MMAC1	601728	10q23.31	Unclassified
183	Bardet-Biedl syndrome 1, 209900 (3)	BBS1	209901	11q13	multiple
183	Bardet-Biedl syndrome 1, modifier of, 209900 (3)	ARL6, BBS3	608845	3p12-q13	multiple
183	Bardet-Biedl syndrome, 209900 (3)	BBS7	607590	4q27	multiple
183	Bardet-Biedl syndrome 2, 209900 (3)	BBS2	606151	16q21	multiple
183	Bardet-Biedl syndrome 3, 600151 (3)	ARL6, BBS3	608845	3p12-q13	multiple
183	Bardet-Biedl syndrome 4, 209900 (3)	BBS4	600374	15q22.3-q23	multiple
183	Bardet-Biedl syndrome 5, 209900 (3)	BBS5	603650	2q31	multiple
183	Bardet-Biedl syndrome 6, 209900 (3)	MKKS, HMCS, KMS, MKS, BBS6	604896	20p12	multiple
183	Bardet-Biedl syndrome 8, 209900 (3)	TTC8, BBS8	608132	14q32.1	multiple
184	Bare lymphocyte syndrome, type I, 604571 (3)	TAPBP, TPSN	601962	6p21.3	Immunological
184	Bare lymphocyte syndrome, type I, due to TAP2 deficiency, 604571 (3)	TAP2, ABCB3, PSF2, RING11	170261	6p21.3	Immunological
184	Bare lymphocyte syndrome, type II, complementation group A, 209920 (3)	MHC2TA, C2TA	600005	16p13	Immunological
184	Bare lymphocyte syndrome, type II, complementation group C, 209920 (3)	RFX5	601863	1q21.1-q21.3	Immunological
184	Bare lymphocyte syndrome, type II, complementation group D, 209920 (3)	RFXAP	601861	13q14	Immunological
184	Bare lymphocyte syndrome, type II, complementation group E, 209920 (3)	RFX5	601863	1q21.1-q21.3	Immunological
185	Barth syndrome, 302060 (3)	TAZ, EFE2, BTHS, CMD3A, LVNCX	300394	Xq28	multiple

186	Bart-Pumphrey syndrome, 149200 (3)	GJB2, CX26, DFNB1, PPK, DFNA3, KID, HID	121011	13q11-q12	multiple
187	Bartter syndrome, type 1, 601678 (3)	SLC12A1, NKCC2	600839	15q15-q21.1	multiple
187	Bartter syndrome, type 2, 241200 (3)	KCNJ1, ROMK1	600359	11q24	multiple
187	Bartter syndrome, type 3, 607364 (3)	CLCNKB	602023	1p36	multiple
187	Bartter syndrome, type 4, 602522 (3)	BSND	606412	1p31	multiple
187	Bartter syndrome, type 4, digenic, 602522 (3)	CLCNKA	602024	1p36	multiple
187	Bartter syndrome, type 4, digenic, 602522 (3)	CLCNKB	602023	1p36	multiple
188	Basal cell carcinoma (3)	RASA1, GAP, CMAVM, PKWS	139150	5q13.3	Cancer
188	Basal cell carcinoma, somatic, 605462 (3)	PTCH2	603673	1p32	Cancer
188	Basal cell carcinoma, somatic, 605462 (3)	PTCH, NBCCS, BCNS, HPE7	601309	9q22.3	Cancer
188	Basal cell carcinoma, sporadic (3)	SMOH, SMO	601500	7q31-q32	Cancer
2188	Basal cell nevus syndrome, 109400 (3)	PTCH, NBCCS, BCNS, HPE7	601309	9q22.3	multiple
4188	Basal ganglia disease, adult-onset, 606159 (3)	FTL	134790	19q13.3-q13.4	Neurological
4188	Basal ganglia disease, biotin-responsive, 607483 (3)	SLC19A3	606152	2q36.3	Neurological
190	B-cell non-Hodgkin lymphoma, high-grade (3)	BCL7A, BCL7	601406	12q24.1	Cancer
191	BCG infection, generalized familial (3)	IFNGR1	107470	6q23-q24	Immunological
192	Beare-Stevenson cutis gyrata syndrome, 123790 (3)	FGFR2, BEK, CFD1, JWS	176943	10q26	multiple
193	Becker muscular dystrophy, 300376 (3)	DMD, BMD	300377	Xp21.2	Muscular
193	Becker muscular dystrophy modifier, 310200 (3)	MYF6	159991	12q21	Muscular
194	Beckwith-Wiedemann syndrome, 130650 (3)	CDKN1C, KIP2, BWS	600856	11p15.5	multiple
194	Beckwith-Wiedemann syndrome, 130650 (3)	H19, D11S813E, ASM1, BWS	103280	11p15.5	multiple
194	Beckwith-Wiedemann syndrome, 130650 (3)	KCNQ10T1, LIT1	604115	11p15.5	multiple
194	Beckwith-Wiedemann syndrome, 130650 (3)	NSD1, ARA267, STO	606681	5q35	multiple
195	Benzene toxicity, susceptibility to (3)	NQO1, DIA4, NMOR1	125860	16q22.1	Unclassified
196	Bernard-Soulier syndrome, 231200 (3)	GP1BA	606672	17pter-p12	Hematological
196	Bernard-Soulier syndrome, type B, 231200 (3)	GP1BB	138720	22q11.2	Hematological
196	Bernard-Soulier syndrome, type C (3)	GP9	173515	Chr.3	Hematological
197	Beryllium disease, chronic, susceptibility to (3)	HLA-DPB1	142858	6p21.3	Unclassified
198	Beta-2-adrenoreceptor agonist, reduced response to (3)	ADRB2	109690	5q32-q34	Unclassified
199	Beta-ureidopropionase deficiency (3)	UPB1, BUP1	606673	22q11.2	Metabolic
200	Bethlem myopathy, 158810 (3)	COL6A1, OPLL	120220	21q22.3	Muscular
200	Bethlem myopathy, 158810 (3)	COL6A2	120240	21q22.3	Muscular
200	Bethlem myopathy, 158810 (3)	COL6A3	120250	2q37	Muscular
201	Bietti crystalline corneoretinal dystrophy, 210370 (3)	CYP4V2, BCD	608614	4q35.1	Ophthamological
202	Bile acid malabsorption, primary (3)	SLC10A2, NTCP2	601295	13q33	Gastrointestinal
203	Biotinidase deficiency, 253260 (3)	BTD	609019	3p25	Metabolic
204	Bipolar disorder, susceptibility to, 125480 (3)	XBP1, XBP2	194355	22q12	Psychiatric
205	Birt-Hogg-Dube syndrome, 135150 (3)	FLCN, BHD	607273	17p11.2	Dermatological
207	Bladder cancer, 109800 (3)	FGFR3, ACH	134934	4p16.3	Cancer
207	Bladder cancer, 109800 (3)	KRAS2, RASK2	190070	12p12.1	Cancer
207	Bladder cancer, 109800 (3)	RB1	180200	13q14.1-q14.2	Cancer
207	Bladder cancer, somatic, 109800 (3)	HRAS	190020	11p15.5	Cancer
208	Blau syndrome, 186580 (3)	CARD15, NOD2, IBD1, CD, ACUG, PSORAS1	605956	16q12	multiple
209	Bleeding disorder due to defective thromboxane A2 receptor (3)	TBXA2R	188070	19p13.3	Hematological
209	Bleeding due to platelet ADP receptor defect, 600515 (3)	P2RX1, P2X1	600845	17p13.3	Hematological
210	Blepharophimosis, epicanthus inversus, and ptosis, type 1, 110100 (3)	FOXL2, BPES, BPES1, PFRK, POF3	605597	3q23	multiple
210	Blepharophimosis, epicanthus inversus, and ptosis, type 2, 110100 (3)	FOXL2, BPES, BPES1, PFRK, POF3	605597	3q23	multiple
211	Blepharospasm, primary benign, 606798 (3)	DRD5, DRD1B, DRD1L2	126453	4p16.1-p15.3	Ophthamological

212	Blood group, ABO system (3)	ABO	110300	9q34	Hematological
212	Blood group, Auberger system (3)	LU, AU, BCAM	111200	19q13.2	Hematological
212	Blood group, Colton, 110450 (3)	AQP1, CHIP28, CO	107776	7p14	Hematological
212	Blood group Cromer (3)	DAF	125240	1q32	Hematological
212	Blood group, Diego, 110500 (3)	SLC4A1, AE1, EPB3	109270	17q21-q22	Hematological
212	Blood group, Dombrock (3)	ART4, DO	110600	12p13-p12	Hematological
212	Blood group, Gerbich (3)	GYPC, GE, GPC	110750	2q14-q21	Hematological
212	Blood group GIL, 607457 (3)	AQP3	600170	9p13	Hematological
212	Blood group, Ii, 110800 (3)	GCNT2	600429	6p24-p23	Hematological
212	Blood group, Indian system (3)	CD44, MDU2, MDU3, MIC4	107269	11pter-p13	Hematological
212	Blood group, Kell (3)	KEL	110900	7q33	Hematological
212	Blood group, Kidd (3)	SLC14A1, JK, UTE, UT1	111000	18q11-q12	Hematological
212	Blood group, Knops system, 607486 (3)	CR1, C3BR	120620	1q32	Hematological
212	Blood group, Landsteiner-Wiener (3)	LW	111250	19p13.3	Hematological
212	Blood group, Lewis (3)	FUT3, LE	111100	19p13.3	Hematological
212	Blood group, Lutheran system (3)	LU, AU, BCAM	111200	19q13.2	Hematological
212	Blood group, MN (3)	GYPA, MN, GPA	111300	4q28.2-q31.1	Hematological
212	Blood group, OK, 111380 (3)	BSG	109480	19p13.3	Hematological
212	Blood group, P system, 111400 (3)	A4GALT, PK	607922	22q13.2	Hematological
212	Blood group, P system, 111400 (3)	B3GALT3, GLCT3, P	603094	3q25	Hematological
212	Blood group, Rhesus (3)	RHCE	111700	1p36.2-p34	Hematological
212	Blood group, Ss (3)	GYPB, SS, MNS	111740	4q28-q31	Hematological
212	Blood group, Waldner, 112010 (3)	SLC4A1, AE1, EPB3	109270	17q21-q22	Hematological
212	Blood group, Wright, 112050 (3)	SLC4A1, AE1, EPB3	109270	17q21-q22	Hematological
212	Blood group, XG system (3)	XG	314700	Xpter-p22.32	Hematological
212	Blood group, Yt system, 112100 (3)	ACHE, YT	100740	7q22	Hematological
213	Bloom syndrome, 210900 (3)	RECQL3, RECQ2, BLM, BS	604610	15q26.1	Cancer
214	Blue-cone monochromacy, 303700 (3)	OPN1LW, RCP, CBP, CBBM	303900	Xq28	Ophthamological
214	Blue-cone monochromacy, 303700 (3)	OPN1MW, GCP, CBD, CBBM	303800	Xq28	Ophthamological
216	Bombay phenotype (3)	FUT1, H, HH	211100	19q13.3	Hematological
216	Bombay phenotype (3)	FUT2, SE	182100	19q13.3	Hematological
217	Bone mineral density variability 1, 601884 (3)	LRP5, BMND1, LRP7, LR3, OPPG, VBCH2	603506	11q13.4	Bone
218	Borjeson-Forssman-Lehmann syndrome, 301900 (3)	PHF6, BFLS	300414	Xq26.3	multiple
220	Bosley-Salih-Alorainy syndrome, 601536 (3)	HOXA1, HOX1F, BSAS	142955	7p15.3	Neurological
221	Bothnia retinal dystrophy, 607475 (3)	RLBP1	180090	15q26	Ophthamological
224	Brachydactyly, type A1, 112500 (3)	IHH, BDA1	600726	2q33-q35	Skeletal
224	Brachydactyly, type A2, 112600 (3)	BMPR1B, ALK6	603248	4q23-q24	Skeletal
224	Brachydactyly, type B1, 113000 (3)	ROR2, BDB1, BDB, NTRKR2	602337	9q22	Skeletal
224	Brachydactyly, type C, 113100 (3)	GDF5, CDMP1	601146	20q11.2	Skeletal
224	Brachydactyly, type D, 113200 (3)	HOXD13, HOX4I, SPD	142989	2q31-q32	Skeletal
224	Brachydactyly, type E, 113300 (3)	HOXD13, HOX4I, SPD	142989	2q31-q32	Skeletal
225	Bradyopsia, 608415 (3)	R9AP, RGS9, PERRS	607814	19q13.11	Ophthamological
225	Bradyopsia, 608415 (3)	RGS9, PERRS	604067	17q23-q24	Ophthamological
226	Branchiootic syndrome (3)	EYA1, BOR	601653	8q13.3	Neurological
226	Branchiootorenal syndrome, 113650 (3)	EYA1, BOR	601653	8q13.3	Neurological
226	Branchiootorenal syndrome with cataract, 113650 (3)	EYA1, BOR	601653	8q13.3	Neurological
228	Breast and colorectal cancer, susceptibility to (3)	CHEK2, RAD53, CHK2, CDS1, LFS2	604373	22q12.1	Cancer
228	Breast cancer, 114480 (3)	PIK3CA	171834	3q26.3	Cancer
228	Breast cancer, 114480 (3)	PPM1D, WIP1	605100	17q22-q23	Cancer

228	Breast cancer, 114480 (3)	SLC22A1L, BWSCR1A, IMPT1	602631	11p15.5	Cancer
228	Breast cancer, 114480 (3)	TP53, P53, LFS1	191170	17p13.1	Cancer
228	Breast cancer-1 (3)	BRCA1, PSCP	113705	17q21	Cancer
228	Breast cancer 2, early onset (3)	BRCA2, FANCD1	600185	13q12.3	Cancer
228	Breast cancer (3)	TSG101	601387	11p15.2-p15.1	Cancer
228	Breast cancer, early-onset, 114480 (3)	BRIP1, BACH1, FANCJ	605882	17q22	Cancer
228	Breast cancer, invasive intraductal (3)	RAD54L, HR54, HRAD54	603615	1p32	Cancer
228	Breast cancer, lobular (3)	CDH1, UVO	192090	16q22.1	Cancer
228	Breast cancer, male, susceptibility to, 114480 (3)	BRCA2, FANCD1	600185	13q12.3	Cancer
228	Breast cancer, male, with Reifenstein syndrome (3)	AR, DHTR, TFM, SBMA, KD, SMAX1	313700	Xq11-q12	Cancer
228	Breast cancer, somatic, 114480 (3)	KRAS2, RASK2	190070	12p12.1	Cancer
228	Breast cancer, somatic, 114480 (3)	RB1CC1, CC1, KIAA0203	606837	8q11	Cancer
228	Breast cancer, sporadic (3)	PHB	176705	17q21	Cancer
228	Breast cancer, susceptibility to, 114480 (3)	ATM, ATA, AT1	607585	11q22.3	Cancer
228	Breast cancer, susceptibility to, 114480 (3)	BARD1	601593	2q34-q35	Cancer
228	Breast cancer, susceptibility to, 114480 (3)	CHEK2, RAD53, CHK2, CDS1, LFS2	604373	22q12.1	Cancer
228	Breast cancer, susceptibility to, 114480 (3)	RAD51A, RECA	179617	15q15.1	Cancer
228	Breast cancer, susceptibility to (3)	XRCC3	600675	14q32.3	Cancer
228	Breast-ovarian cancer (3)	BRCA1, PSCP	113705	17q21	Cancer
231	Brody myopathy, 601003 (3)	ATP2A1, SERCA1	108730	16p12	Muscular
233	Bruck syndrome 2, 609220 (3)	PLOD2	601865	3q23-q24	Unclassified
234	Brugada syndrome, 601144 (3)	SCN5A, LQT3, IVF, HB1, SSS1	600163	3p21	Cardiovascular
235	Brunner syndrome (3)	MAOA	309850	Xp11.23	Unclassified
237	Burkitt lymphoma, 113970 (3)	MYC	190080	8q24.12-q24.13	Cancer
238	Buschke-Ollendorff syndrome, 166700 (3)	LEMD3, MAN1	607844	12q14	multiple
239	Butterfly dystrophy, retinal, 169150 (3)	RDS, RP7, PRPH2, PRPH, AVMD, AOFMD	179605	6p21.1-cen	Ophthamological
240	C1q deficiency, type A (3)	C1QA	120550	1p36.3-p34.1	Immunological
240	C1q deficiency, type B (3)	C1QB	120570	1p36.3-p34.1	Immunological
240	C1q deficiency, type C (3)	C1QG	120575	1p36.3-p34.1	Immunological
240	C1s deficiency, isolated (3)	C1S	120580	12p13	Immunological
240	C2 deficiency (3)	C2	217000	6p21.3	Immunological
240	C3b inactivator deficiency (3)	IF	217030	4q25	Immunological
240	C3 deficiency (3)	C3	120700	19p13.3-p13.2	Immunological
240	C4 deficiency (3)	C4A, C4S	120810	6p21.3	Immunological
240	C4 deficiency (3)	C4B, C4F	120820	6p21.3	Immunological
240	C6 deficiency (3)	C6	217050	5p13	Immunological
240	C7 deficiency (3)	C7	217070	5p13	Immunological
240	C8 deficiency, type II (3)	C8B	120960	1p32	Immunological
240	C9 deficiency (3)	C9	120940	5p13	Immunological
240	C9 deficiency with dermatomyositis (3)	C9	120940	5p13	Immunological
252	Cafe-au-lait spots, multiple, with leukemia, 114030 (3)	MSH2, COCA1, FCC1, HNPCC1	609309	2p22-p21	Cancer
252	Cafe-au-lait spots with glioma or leukemia, 114030 (3)	MLH1, COCA2, HNPCC2	120436	3p21.3	Cancer
253	Caffey disease, 114000 (3)	COL1A1	120150	17q21.31-q22	Connective tissue
254	Calcinosis, tumoral, 211900 (3)	FGF23, ADHR, HPDR2, PHPTC	605380	12p13.3	Bone
254	Calcinosis, tumoral, 211900 (3)	GALNT3	601756	2q24-q31	Bone
255	Campomelic dysplasia, 114290 (3)	SOX9, CMD1, SRA1	608160	17q24.3-q25.1	Skeletal
255	Campomelic dysplasia with autosomal sex reversal, 114290 (3)	SOX9, CMD1, SRA1	608160	17q24.3-q25.1	Skeletal
256	Camptodactyly-arthropathy-coxa vara-pericarditis syndrome, 208250 (3)	PRG4, CACP, MSF, SZP, HAPO	604283	1q24-q25	Skeletal
257	Camurati-Engelmann disease, 131300 (3)	TGFB1, DPD1, CED	190180	19q13.1	Skeletal

258	Canavan disease, 271900 (3)	ASPA	608034	17pter-p13	Metabolic
259	Cancer progression/metastasis (3)	FGFR4	134935	5q35.1-qter	Cancer
259	Cancer susceptibility (3)	MSH6, GTBP, HNPCC5	600678	2p16	Cancer
261	Capillary malformation-arteriovenous malformation, 608354 (3)	RASA1, GAP, CMAVM, PKWS	139150	5q13.3	Cardiovascular
262	Carbamoylphosphate synthetase I deficiency, 237300 (3)	CPS1	608307	2q35	Metabolic
263	Carbohydrate-deficient glycoprotein syndrome, type I, 212065 (3)	PMM2, CDG1	601785	16p13.3-p13.2	Metabolic
263	Carbohydrate-deficient glycoprotein syndrome, type Ib, 602579 (3)	MPI, PMI1	154550	15q22-qter	Metabolic
263	Carbohydrate-deficient glycoprotein syndrome, type II, 212066 (3)	MGAT2, CDGS2	602616	14q21	Metabolic
264	Carboxypeptidase N deficiency, 212070 (3)	CPN1, SCPN, CPN	603103	10q24.2	Hematological
2265	Carcinoid tumor of lung (3)	MEN1	131100	11q13	Cancer
265	Carcinoid tumors, intestinal, 114900 (3)	SDHD, PGL1	602690	11q23	Cancer
267	Cardioencephalomyopathy, fatal infantile, due to cytochrome c oxidase deficiency, 604377 (3)	SCO2	604272	22q13	Cardiovascular
268	Cardiomyopathy, Familial hypertrophic, 8, 608751 (3)	MYL3, CMH8	160790	3p	Cardiovascular
268	Cardiomyopathy, dilated, 115200 (3)	ACTC	102540	15q14	Cardiovascular
268	Cardiomyopathy, dilated, 115200 (3)	MYH7, CMH1, MPD1	160760	14q12	Cardiovascular
268	Cardiomyopathy, dilated, 1A, 115200 (3)	LMNA, LMN1, EMD2, FPLD, CMD1A, HGPS, LGMD1B	150330	1q21.2	Cardiovascular
268	Cardiomyopathy, dilated, 1D, 601494 (3)	TNNT2, CMH2, CMD1D	191045	1q32	Cardiovascular
268	Cardiomyopathy, dilated, 1G, 604145 (3), Tibial muscular dystrophy, tardive, 600334 (3)	TTN, CMD1G, TMD, LGMD2J	188840	2q24.3	Cardiovascular
268	Cardiomyopathy, dilated, 1I, 604765 (3)	DES, CMD1I	125660	2q35	Cardiovascular
268	Cardiomyopathy, dilated, 1J, 605362 (3)	EYA4, DFNA10, CMD1J	603550	6q23	Cardiovascular
268	Cardiomyopathy, dilated, 1L, 606685 (3)	SGCD, SGD, LGMD2F, CMD1L	601411	5q33	Cardiovascular
268	Cardiomyopathy, dilated, 1M, 607482 (3)	CSRP3, CRP3, CLP, CMD1M	600824	11p15.1	Cardiovascular
268	Cardiomyopathy, dilated, 1N, 607487 (3)	TCAP, LGMD2G, CMD1N	604488	17q12	Cardiovascular
268	Cardiomyopathy, dilated, with ventricular tachycardia, 608569 (3)	ABCC9, SUR2	601439	12p12.1	Cardiovascular
268	Cardiomyopathy, dilated, X-linked, 302045 (3)	DMD, BMD	300377	Xp21.2	Cardiovascular
268	Cardiomyopathy, familial hypertrophic, 10, 608758 (3)	MYL2, CMH10	160781	12q23-q24.3	Cardiovascular
268	Cardiomyopathy, familial hypertrophic, 1, 192600 (3)	MYH7, CMH1, MPD1	160760	14q12	Cardiovascular
268	Cardiomyopathy, familial hypertrophic, 192600 (3)	ACTC	102540	15q14	Cardiovascular
268	Cardiomyopathy, familial hypertrophic, 192600 (3)	CAV3, LGMD1C	601253	3p25	Cardiovascular
268	Cardiomyopathy, familial hypertrophic, 192600 (3)	MYH6, ASD3, MYHCA	160710	14q12	Cardiovascular
268	Cardiomyopathy, familial hypertrophic, 192600 (3) ()	TNNC1	191040	3p21.3-p14.3	Cardiovascular
268	Cardiomyopathy, familial hypertrophic, 2, 115195 (3)	TNNT2, CMH2, CMD1D	191045	1q32	Cardiovascular
268	Cardiomyopathy, familial hypertrophic, 3, 115196 (3)	TPM1, CMH3	191010	15q22.1	Cardiovascular
268	Cardiomyopathy, familial hypertrophic (3)	TNNI3	191044	19q13.4	Cardiovascular
268	Cardiomyopathy, familial hypertrophic, 4, 115197 (3)	MYBPC3, CMH4	600958	11p11.2	Cardiovascular
268	Cardiomyopathy, familial hypertrophic, 9 (3)	TTN, CMD1G, TMD, LGMD2J	188840	2q24.3	Cardiovascular
268	Cardiomyopathy, familial restrictive, 115210 (3)	TNNI3	191044	19q13.4	Cardiovascular
268	Cardiomyopathy, hypertrophic, early-onset fatal (3)	COX15	603646	10q24	Cardiovascular
268	Cardiomyopathy, hypertrophic, mid-left ventricular chamber type, 608758 (3)	MYL2, CMH10	160781	12q23-q24.3	Cardiovascular
268	Cardiomyopathy, hypertrophic, midventricular, digenic, 192600 (3)	MYLK2, MLCK	606566	20q13.3	Cardiovascular
268	Cardiomyopathy, hypertrophic, with WPW, 600858 (3)	PRKAG2, WPWS	602743	7q36	Cardiovascular
268	Cardiomyopathy, idiopathic dilated, 115200 (3)	PLN, PLB	172405	6q22.1	Cardiovascular
268	Cardiomyopathy, X-linked dilated, 300069 (3)	TAZ, EFE2, BTHS, CMD3A, LVNCX	300394	Xq28	Cardiovascular
269	Carney complex, type 1, 160980 (3)	PRKAR1A, TSE1, CNC1, CAR	188830	17q23-q24	multiple
269	Carney complex variant, 608837 (3)	MYH8	160741	17p13.1	multiple
271	Carnitine-acylcarnitine translocase deficiency (3)	SLC25A20, CACT, CAC	212138	3p21.31	Metabolic
272	Carnitine deficiency, systemic primary, 212140 (3)	SLC22A5, OCTN2, CDSP, SCD	603377	5q31.1	Metabolic

275	Carpal tunnel syndrome, familial (3)	TTR, PALB	176300	18q11.2-q12.1	Unclassified
276	Cartilage-hair hypoplasia, 250250 (3)	RMRP, RMRPR, CHH	157660	9p21-p12	Skeletal
277	Cataract, autosomal dominant nuclear (3)	CRYAA, CRYA1	123580	21q22.3	Ophthamological
277	Cataract, cerulean, type 2, 601547 (3)	CRYBB2, CRYB2	123620	22q11.2-q12.2	Ophthamological
277	Cataract, congenital (3)	PITX3	602669	10q25	Ophthamological
277	Cataract, congenital, 604219 (3)	BFSP2, CP49, CP47	603212	3q21-q25	Ophthamological
277	Cataract, congenital progressive, autosomal recessive (3)	CRYAA, CRYA1	123580	21q22.3	Ophthamological
277	Cataract, congenital, with late-onset corneal dystrophy (3)	PAX6, AN2, MGDA	607108	11p13	Ophthamological
277	Cataract, congenital zonular, with sutural opacities, 600881 (3)	CRYBA1, CRYB1	123610	17q11.1-q12	Ophthamological
277	Cataract, Coppock-like, 604307 (3)	CRYGC, CRYG3, CCL	123680	2q33-q35	Ophthamological
277	Cataract, cortical pulverulent, late-onset (3)	LIM2, MP19	154045	19q13.4	Ophthamological
277	Cataract, crystalline aculeiform, 115700 (3)	CRYGD, CRYG4	123690	2q33-q35	Ophthamological
277	Cataract, juvenile-onset, 604219 (3)	BFSP2, CP49, CP47	603212	3q21-q25	Ophthamological
277	Cataract, lamellar, 116800 (3)	HSF4, CTM	602438	16q21-q22.1	Ophthamological
277	Cataract, Marner type, 116800 (3)	HSF4, CTM	602438	16q21-q22.1	Ophthamological
277	Cataract, polymorphic and lamellar, 604219 (3)	MIP, AQP0	154050	12q13	Ophthamological
277	Cataract, posterior polar 2 (3)	CRYAB, CRYA2, CTPP2	123590	11q22.3-q23.1	Ophthamological
277	Cataract, pulverulent (3)	CRYBB1	600929	22q11.2-q12.1	Ophthamological
277	Cataracts, punctate, progressive juvenile-onset (3)	CRYGD, CRYG4	123690	2q33-q35	Ophthamological
277	Cataract, sutural, with punctate and cerulean opacities, 607133 (3)	CRYBB2, CRYB2	123620	22q11.2-q12.2	Ophthamological
277	Cataract, variable zonular pulverulent (3)	CRYGC, CRYG3, CCL	123680	2q33-q35	Ophthamological
277	Cataract, zonular central nuclear, autosomal dominant (3)	CRYAA, CRYA1	123580	21q22.3	Ophthamological
277	Cataract, zonular pulverulent-1, 116200 (3)	GJA8, CX50, CAE1	600897	1q21.1	Ophthamological
277	Cataract, zonular pulverulent-3, 601885 (3)	GJA3, CX46, CZP3, CAE3	121015	13q11	Ophthamological
279	Cavernous malformations of CNS and retina, 116860 (3)	CCM1, CAM, KRIT1	604214	7q11.2-q21	Cardiovascular
283	CD59 deficiency (3)	CD59, MIC11	107271	11p13	Immunological
284	CD8 deficiency, familial, 608957 (3)	CD8A	186910	2p12	Immunological
2287	Central core disease, 117000 (3)	RYR1, MHS, CCO	180901	19q13.1	Muscular
2287	Central core disease, one form (3) ()	MYH7, CMH1, MPD1	160760	14q12	Muscular
287	Central hypoventilation syndrome, 209880 (3)	GDNF	600837	5p13.1-p12	Respiratory
287	Central hypoventilation syndrome, congenital, 209880 (3)	BDNF	113505	11p13	Respiratory
287	Central hypoventilation syndrome, congenital, 209880 (3)	EDN3	131242	20q13.2-q13.3	Respiratory
287	Central hypoventilation syndrome, congenital, 209880 (3)	PMX2B, NBPHOX, PHOX2B	603851	4p12	Respiratory
287	Central hypoventilation syndrome, congenital, 209880 (3)	RET, MEN2A	164761	10q11.2	Respiratory
289	Cerebellar ataxia, 604290 (3)	CP	117700	3q23-q24	Neurological
289	Cerebellar ataxia, pure (3)	CACNA1A, CACNL1A4, SCA6	601011	19p13	Neurological
4289	Cerebellar hypoplasia, VLDLR-associated, 224050 (3)	VLDLR, VLDLRCH	192977	9p24	Neurological
291	Cerebral amyloid angiopathy, 105150 (3)	ABCA1, ABC1, HDLDT1, TGD	600046	9q22-q31	Neurological
291	Cerebral amyloid angiopathy, 105150 (3)	CST3	604312	20p11.2	Neurological
2291	Cerebral arteriopathy with subcortical infarcts and leukoencephalopathy, 125310 (3)	NOTCH3, CADASIL, CASIL	600276	19p13.2-p13.1	Cardiovascular
4291	Cerebral cavernous malformations-1, 116860 (3)	CCM1, CAM, KRIT1	604214	7q11.2-q21	Neurological
4291	Cerebral cavernous malformations-2, 603284 (3)	C7orf22, CCM2, MGC4067	607929	7p13	Neurological
4291	Cerebral cavernous malformations 3, 603285 (3)	PDCD10, TFAR15, CCM3	609118	3q26.1	Neurological
6291	Cerebral dysgenesis, neuropathy, ichthyosis, and palmoplantar keratoderma syndrome, 609528 (3)	SNAP29, CEDNIK	604202	22q11.2	Neurological
292	Cerebrooculofacioskeletal syndrome, 214150 (3)	ERCC2, EM9	126340	19q13.2-q13.3	multiple
292	Cerebrooculofacioskeletal syndrome, 214150 (3)	ERCC5, XPG	133530	13q33	multiple
292	Cerebrooculofacioskeletal syndrome 214150 (3)	ERCC6, CKN2, COFS, CSB	609413	10q11	multiple
293	Cerebrotendinous xanthomatosis, 213700 (3)	CYP27A1, CYP27, CTX	606530	2q33-qter	Metabolic

294	Cerebrovascular disease, occlusive (3)	SERPINA3, AACT, ACT	107280	14q32.1	Unclassified
295	Ceroid lipofuscinosis, neuronal-1, infantile, 256730 (3)	PPT1, CLN1	600722	1p32	Neurological
296	Ceroid-lipofuscinosis, neuronal 2, classic late infantile, 204500 (3)	CLN2	607998	11p15.5	Neurological
296	Ceroid-lipofuscinosis, neuronal-3, juvenile, 204200 (3)	CLN3, BTS	607042	16p12.1	Neurological
296	Ceroid-lipofuscinosis, neuronal-5, variant late infantile, 256731 (3)	CLN5	608102	13q21.1-q32	Neurological
296	Ceroid-lipofuscinosis, neuronal-6, variant late infantile, 601780 (3)	CLN6	606725	15q21-q23	Neurological
296	Ceroid lipofuscinosis, neuronal 8, 600143 (3)	CLN8, EPMR	607837	8pter-p22	Neurological
296	Ceroid lipofuscinosis, neuronal, variant juvenile type, with granular osmiophilic deposits (3)	PPT1, CLN1	600722	1p32	Neurological
298	Cervical cancer, somatic, 603956 (3)	FGFR3, ACH	134934	4p16.3	Cancer
299	CETP deficiency, 607322 (3)	CETP	118470	16q21	Metabolic
300	Chanarin-Dorfman syndrome, 275630 (3)	ABHD5, CGI58, IECN2, NCIE2	604780	3p21	Metabolic
301	Charcot-Marie-Tooth disease, axonal, type 2F, 606595 (3)	HSPB1, HSP27, CMT2F	602195	7q11.23	Neurological
301	Charcot-Marie-Tooth disease, dominant intermediate 3, 607791 (3)	MPZ, CMT1B, CMTDI3, CHM, DSS	159440	1q22	Neurological
301	Charcot-Marie-Tooth disease, dominant intermediate B, 606482 (3)	DNM2	602378	19p13.2	Neurological
301	Charcot-Marie-Tooth disease, foot deformity of (3)	HOXD10, HOX4D	142984	2q31-q32	Neurological
301	Charcot-Marie-Tooth disease, mixed axonal and demyelinating type, 214400 (3)	GDAP1, CMT4A, CMT2K, CMT2G	606598	8q13-q21.1	Neurological
301	Charcot-Marie-Tooth disease, type 1A, 118220 (3)	PMP22, CMT1A, CMT1E, DSS	601097	17p11.2	Neurological
301	Charcot-Marie-Tooth disease, type 1B, 118200 (3)	MPZ, CMT1B, CMTDI3, CHM, DSS	159440	1q22	Neurological
301	Charcot-Marie-Tooth disease, type 1C, 601098 (3)	LITAF, CMT1C	603795	16p13.3-p12	Neurological
301	Charcot-Marie-Tooth disease, type 1D, 607678 (3)	EGR2, KROX20	129010	10q21.1-q22.1	Neurological
301	Charcot-Marie-Tooth disease, type 1E, 118300 (3)	PMP22, CMT1A, CMT1E, DSS	601097	17p11.2	Neurological
301	Charcot-Marie-Tooth disease, type 1F, 607734 (3)	NEFL, CMT2E, CMT1F	162280	8p21	Neurological
301	Charcot-Marie-Tooth disease, type 2A1, 118210 (3)	KIF1B, CMT2A, CMT2A1	605995	1p36.2	Neurological
301	Charcot-Marie-Tooth disease, type 2A2, 609260 (3)	MFN2, KIAA0214, CMT2A2	608507	1p36.2	Neurological
301	Charcot-Marie-Tooth disease, type 2B, 600882 (3)	RAB7, CMT2B, PSN	602298	3q21	Neurological
301	Charcot-Marie-Tooth disease, type 2D, 601472 (3)	GARS, SMAD1, CMT2D	600287	7p15	Neurological
301	Charcot-Marie-Tooth disease, type 2E, 607684 (3)	NEFL, CMT2E, CMT1F	162280	8p21	Neurological
301	Charcot-Marie-Tooth disease, type 2G, 607706 (3)	GDAP1, CMT4A, CMT2K, CMT2G	606598	8q13-q21.1	Neurological
301	Charcot-Marie-Tooth disease, type 2I, 607677 (3)	MPZ, CMT1B, CMTDI3, CHM, DSS	159440	1q22	Neurological
301	Charcot-Marie-Tooth disease, type 2J, 607736 (3)	MPZ, CMT1B, CMTDI3, CHM, DSS	159440	1q22	Neurological
301	Charcot-Marie-Tooth disease, type 2K, 607831 (3)	GDAP1, CMT4A, CMT2K, CMT2G	606598	8q13-q21.1	Neurological
301	Charcot-Marie-Tooth disease, type 4A, 214400 (3)	GDAP1, CMT4A, CMT2K, CMT2G	606598	8q13-q21.1	Neurological
301	Charcot-Marie-Tooth disease, type 4B1, 601382 (3)	MTMR2, CMT4B1	603557	11q22	Neurological
301	Charcot-Marie-Tooth disease, type 4B2, 604563 (3)	SBF2, MTMR13, CMT4B2	607697	11p15	Neurological
301	Charcot-Marie-Tooth disease, type 4B2, with early-onset glaucoma, 607739 (3)	SBF2, MTMR13, CMT4B2	607697	11p15	Neurological
301	Charcot-Marie-Tooth disease, type 4C, 601596 (3)	KIAA1985	608206	5q32	Neurological
301	Charcot-Marie-Tooth disease, type 4D, 601455 (3)	NDRG1, HMSNL, CMT4D	605262	8q24.3	Neurological
301	Charcot-Marie-Tooth neuropathy, X-linked dominant, 1, 302800 (3)	GJB1, CX32, CMTX1	304040	Xq13.1	Neurological
302	CHARGE syndrome, 214800 (3)	CHD7	608892	8q12.1	multiple
303	Char syndrome, 169100 (3)	TFAP2B, CHAR	601601	6p12	multiple
304	Chediak-Higashi syndrome, 214500 (3)	CHS1, LYST	606897	1q42.1-q42.2	multiple
305	Cherubism, 118400 (3)	SH3BP2, CRPM	602104	4p16.3	Unclassified
306	CHILD syndrome, 308050 (3)	NSDHL	300275	Xq28	Developmental
307	Chitotriosidase deficiency (3)	CHIT	600031	1q31-q32	Metabolic
308	Chloride diarrhea, congenital, Finnish type, 214700 (3)	SLC26A3, DRA, CLD	126650	7q22-q31.1	Gastrointestinal
309	Cholelithiasis, 600803 (3)	ABCB4, PGY3, MDR3	171060	7q21.1	Gastrointestinal
310	Cholestasis, benign recurrent intrahepatic, 243300 (3)	ATP8B1, FIC1, BRIC, PFIC1	602397	18q21	Gastrointestinal

310	Cholestasis, familial intrahepatic, of pregnancy, 147480 (3)	ABCB4, PGY3, MDR3	171060	7q21.1	Gastrointestinal
310	Cholestasis, progressive familial intrahepatic 1, 211600 (3)	ATP8B1, FIC1, BRIC, PFIC1	602397	18q21	Gastrointestinal
310	Cholestasis, progressive familial intrahepatic 2, 601847 (3)	ABCB11, BSEP, SPGP, PFIC2	603201	2q24	Gastrointestinal
310	Cholestasis, progressive familial intrahepatic 3, 602347 (3)	ABCB4, PGY3, MDR3	171060	7q21.1	Gastrointestinal
310	Cholestasis, progressive familial intrahepatic 4, 607765 (3)	HSD3B7, PFIC4	607764	16p12-p11.2	Gastrointestinal
313	Cholesteryl ester storage disease (3)	LIPA	278000	10q24-q25	Metabolic
314	Chondrocalcinosis 2, 118600 (3)	ANKH, HANK, ANK, CMDJ, CCAL2, CPPDD	605145	5p15.2-p14.1	Connective tissue disorder
2315	Chondrodysplasia, Grebe type, 200700 (3)	GDF5, CDMP1	601146	20q11.2	Skeletal
315	Chondrodysplasia punctata, rhizomelic, type 2, 222765 (3)	GNPAT, DHAPAT	602744	1q42	Connective tissue
315	Chondrodysplasia punctata, X-linked dominant, 302960 (3)	EBP, CDPX2, CPXD, CPX	300205	Xp11.23-p11.22	Connective tissue
315	Chondrodysplasia punctata, X-linked recessive, 302950 (3)	ARSE, CDPX1, CDPXR	300180	Xp22.3	Connective tissue
316	Chondrosarcoma, 215300 (3)	EXT1	608177	8q24.11-q24.13	Cancer
316	Chondrosarcoma, extraskeletal myxoid (3)	CSMF	600542	9q22	Cancer
316	Chondrosarcoma, extraskeletal myxoid (3)	EWSR1, EWS	133450	22q12	Cancer
318	Chorea, hereditary benign, 118700 (3)	TITF1, NKX2A, TTF1	600635	14q13	Neurological
319	Choreoacanthocytosis, 200150 (3)	VPS13A, CHAC	605978	9q21	Neurological
320	Choreoathetosis, hypothyroidism, and respiratory distress (3)	TITF1, NKX2A, TTF1	600635	14q13	multiple
323	Choroideremia, 303100 (3)	CHM, TCD	300390	Xq21.2	Ophthamological
326	Chromosome 22q13.3 deletion syndrome, 606232 (3)	PSAP2, PROSAP2, KIAA1650	606230	22q13.3	multiple
327	Chronic granulomatous disease, autosomal, due to deficiency of CYBA, 233690 (3)	CYBA	608508	16q24	Immunological
327	Chronic granulomatous disease due to deficiency of NCF-1, 233700 (3)	NCF1	608512	7q11.23	Immunological
327	Chronic granulomatous disease due to deficiency of NCF-2, 233710 (3)	NCF2	608515	1q25	Immunological
327	Chronic granulomatous disease, X-linked, 306400 (3)	CYBB, CGD	300481	Xp21.1	Immunological
2327	Chronic infections, due to opsonin defect (3)	MBL2, MBL, MBP1	154545	10q11.2-q21	Immunological
328	Chudley-Lowry syndrome, 309490 (3)	ATRX, XH2, XNP, MRXS3, SHS	300032	Xq13	multiple
329	Chylomicronemia syndrome, familial (3)	LPL, LIPD	238600	8p22	Metabolic
330	Chylomicron retention disease, 246700 (3)	SARA2, SAR1B, CMRD	607690	5q31.1	Gastrointestinal
330	Chylomicron retention disease with Marinesco-Sjogren syndrome, 607692 (3)	SARA2, SAR1B, CMRD	607690	5q31.1	Gastrointestinal
331	Ciliary dyskinesia, primary, 1, 242650 (3)	DNAI1, CILD1, ICS, PCD	604366	9p21-p13	Respiratory
331	Ciliary dyskinesia, primary, 3 608644 (3)	DNAH5, HL1, PCD, CILD3	603335	5p15-p14	Respiratory
332	CINCA syndrome, 607115 (3)	CIAS1, C1orf7, FCU, FCAS	606416	1q44	multiple
334	Cirrhosis, cryptogenic (3)	KRT18	148070	12q13	Gastrointestinal
334	Cirrhosis, cryptogenic (3)	KRT8	148060	12q13	Gastrointestinal
334	Cirrhosis, noncryptogenic, susceptibility to, 215600 (3)	KRT18	148070	12q13	Gastrointestinal
334	Cirrhosis, noncryptogenic, susceptibility to, 215600 (3)	KRT8	148060	12q13	Gastrointestinal
334	Cirrhosis, North American Indian childhood type, 604901 (3)	CIRH1A, NAIC, TEX292, KIAA1988	607456	16q22	Gastrointestinal
335	Citrullinemia, 215700 (3)	ASS	603470	9q34	Metabolic
335	Citrullinemia, adult-onset type II, 603471 (3)	SLC25A13, CTLN2	603859	7q21.3	Metabolic
335	Citrullinemia, type II, neonatal-onset, 605814 (3)	SLC25A13, CTLN2	603859	7q21.3	Metabolic
336	Cleft lip/palate ectodermal dysplasia syndrome, 225000 (3)	HVEC, PVRL1, PVRR1, PRR1	600644	11q23-q24	Developmental
336	Cleft lip/palate, nonsyndromic, 608874 (3)	MSX1, HOX7, HYD1, OFC5	142983	4p16.1	Developmental
336	Cleft palate with ankyloglossia, 303400 (3)	TBX22, CPX	300307	Xq12-q21	Developmental
337	Cleidocranial dysplasia, 119600 (3)	RUNX2, CBFA1, PEBP2A1, AML3	600211	6p21	Skeletal
338	Coats disease, 300216 (3)	NDP, ND	310600	Xp11.4	Ophthamological
339	Cockayne syndrome, type A, 216400 (3)	ERCC8, CKN1, CSA	609412	5q12	multiple
339	Cockayne syndrome, type B, 133540 (3)	ERCC6, CKN2, COFS, CSB	609413	10q11	multiple
340	Codeine sensitivity (3)	CYP2D@, CYP2D, P450C2D	124030	22q13.1	Metabolic
341	Coffin-Lowry syndrome, 303600 (3)	RPS6KA3, RSK2, MRX19	300075	Xp22.2-p22.1	multiple

342	Cohen syndrome, 216550 (3)	COH1	607817	8q22-q23	multiple
343	Colchicine resistance (3)	ABCB1, PGY1, MDR1	171050	7q21.1	Unclassified
344	Cold-induced autoinflammatory syndrome, familial, 120100 (3)	CIAS1, C1orf7, FCU, FCAS	606416	1q44	Immunological
2344	Cold-induced sweating syndrome, 272430 (3)	CRLF1, CISS	604237	19p12	multiple
345	Coloboma, ocular, 120200 (3)	PAX6, AN2, MGDA	607108	11p13	Ophthamological
345	Coloboma, ocular, 120200 (3)	SHH, HPE3, HLP3, SMMCI	600725	7q36	Ophthamological
346	Colon adenocarcinoma (3)	RAD54B	604289	8q21.3-q22	Cancer
346	Colon adenocarcinoma (3)	RAD54L, HR54, HRAD54	603615	1p32	Cancer
346	Colon cancer (3)	BCL10	603517	1p22	Cancer
346	Colon cancer (3)	PTPN12, PTPG1	600079	7q11.23	Cancer
346	Colon cancer (3)	TGFBR2, HNPCC6	190182	3p22	Cancer
346	Colon cancer, advanced (3)	SRC, ASV, SRC1	190090	20q12-q13	Cancer
346	Colon cancer, hereditary nonpolypopsis, type 7 (3)	MLH3, HNPCC7	604395	14q24.3	Cancer
346	Colon cancer, somatic, 114500 (3)	PTPRJ, DEP1	600925	11p11.2	Cancer
346	Colonic adenoma recurrence, reduced risk of, 114500 (3)	ODC1	165640	2p25	Cancer
347	Colonic aganglionosis, total, with small bowel involvement (3)	RET, MEN2A	164761	10q11.2	Gastrointestinal
348	Colorblindness, deutan (3)	OPN1MW, GCP, CBD, CBBM	303800	Xq28	Ophthamological
348	Colorblindness, protan (3)	OPN1LW, RCP, CBP, CBBM	303900	Xq28	Ophthamological
348	Colorblindness, tritan (3)	OPN1SW, BCP, CBT	190900	7q31.3-q32	Ophthamological
346	Colorectal adenomatous polyposis, autosomal recessive, with pilomatricomas, 132600 (3)	MUTYH	604933	1p34.3-p32.1	Cancer
346	Colorectal cancer, 114500 (3)	AXIN2	604025	17q24	Cancer
346	Colorectal cancer, 114500 (3)	BUB1B, BUBR1	602860	15q15	Cancer
346	Colorectal cancer, 114500 (3)	EP300	602700	22q13	Cancer
346	Colorectal cancer, 114500 (3)	PDGFRL, PDGRL, PRLTS	604584	8p22-p21.3	Cancer
346	Colorectal cancer, 114500 (3)	PIK3CA	171834	3q26.3	Cancer
346	Colorectal cancer, 114500 (3)	TP53, P53, LFS1	191170	17p13.1	Cancer
346	Colorectal cancer (3)	APC, GS, FPC	175100	5q21-q22	Cancer
346	Colorectal cancer (3)	BAX	600040	19q13.3-q13.4	Cancer
346	Colorectal cancer (3)	CTNNB1	116806	3p22-p21.3	Cancer
346	Colorectal cancer (3)	DCC	120470	18q21.3	Cancer
346	Colorectal cancer (3)	MCC	159350	5q21	Cancer
346	Colorectal cancer (3)	NRAS	164790	1p13.2	Cancer
346	Colorectal cancer, hereditary nonpolyposis, type 1, 120435 (3)	MSH2, COCA1, FCC1, HNPCC1	609309	2p22-p21	Cancer
346	Colorectal cancer, hereditary nonpolyposis, type 2, 609310 (3)	MLH1, COCA2, HNPCC2	120436	3p21.3	Cancer
346	Colorectal cancer, hereditary nonpolyposis, type 3 (3)	PMS1, PMSL1, HNPCC3	600258	2q31-q33	Cancer
346	Colorectal cancer, hereditary nonpolyposis, type 4 (3)	PMS2, PMSL2, HNPCC4	600259	7p22	Cancer
346	Colorectal cancer, hereditary nonpolyposis, type 5 (3)	MSH6, GTBP, HNPCC5	600678	2p16	Cancer
346	Colorectal cancer, hereditary nonpolyposis, type 6 (3)	TGFBR2, HNPCC6	190182	3p22	Cancer
346	Colorectal cancer, somatic, 109800 (3)	FGFR3, ACH	134934	4p16.3	Cancer
346	Colorectal cancer, somatic, 114500 (3)	FLCN, BHD	607273	17p11.2	Cancer
346	Colorectal cancer, somatic, 114500 (3)	MLH3, HNPCC7	604395	14q24.3	Cancer
346	Colorectal cancer, somatic (3)	BRAF	164757	7q34	Cancer
346	Colorectal cancer, somatic (3)	DLC1	604258	8p22-p21.3	Cancer
346	Colorectal cancer, sporadic, 114500 (3)	PLA2G2A, PLA2B, PLA2L, MOM1	172411	1p35	Cancer
346	Colorectal cancer, susceptibility to (3)	CCND1, PRAD1, BCL1	168461	11q13	Cancer
346	Colorectal cancer with chromosomal instability (3)	BUB1	602452	2q14	Cancer
4350	Combined C6/C7 deficiency (3)	C6	217050	5p13	Immunological
350	Combined factor V and VIII deficiency, 227300 (3)	LMAN1, ERGIC53, F5F8D, MCFD1	601567	18q21.3-q22	Hematological
2350	Combined hyperlipemia, familial (3)	LPL, LIPD	238600	8p22	Metabolic

4350	Combined immunodeficiency, X-linked, moderate, 312863 (3)	IL2RG, SCIDX1, SCIDX, IMD4	308380	Xq13	Immunological
6350	Combined oxidative phosphorylation deficiency, 609060 (3)	GFM1, EFG1, GFM	606639	3q25.1-q26.2	multiple
8350	Combined SAP deficiency (3)	PSAP, SAP1	176801	10q22.1	Metabolic
351	Complex I, mitochondrial respiratory chain, deficiency of, 252010 (3)	NDUFS6	603848	5pter-p15.33	multiple
351	Complex V, mitochondrial respiratory chain, deficiency of, 604273 (3)	ATPAF2, ATP12	608918	17p11.2	multiple
352	Cone dystrophy-1, 304020 (3)	RPGR, RP3, CRD, RP15, COD1	312610	Xp21.1	Ophthamological
352	Cone dystrophy-3, 602093 (3)	GUCA1A, GCAP	600364	6p21.1	Ophthamological
352	Cone-rod dystrophy, 300029 (3)	RPGR, RP3, CRD, RP15, COD1	312610	Xp21.1	Ophthamological
352	Cone-rod dystrophy 3 (3)	ABCA4, ABCR, STGD1, FFM, RP19	601691	1p21-p13	Ophthamological
352	Cone-rod dystrophy (3)	AIPL1, LCA4	604392	17p13.1	Ophthamological
352	Cone-rod dystrophy 6, 601777(3)	GUCY2D, GUC2D, LCA1, CORD6	600179	17p13.1	Ophthamological
352	Cone-rod dystrophy 9, 608194 (3)	RPGRIP1, LCA6, CORD9	605446	14q11	Ophthamological
352	Cone-rod retinal dystrophy-2, 120970 (3)	CRX, CORD2, CRD	602225	19q13.3	Ophthamological
2354	Congenital bilateral absence of vas deferens, 277180 (3)	CFTR, ABCC7, CF, MRP7	602421	7q31.2	Unclassified
4354	Congenital cataracts, facial dysmorphism, and neuropathy, 604168 (3)	CTDP1, FCP1, CCFDN	604927	18q23	Ophthamological
354	Congenital disorder of glycosylation, type Ic, 603147 (3)	ALG6	604566	1p22.3	Metabolic
354	Congenital disorder of glycosylation, type Id, 601110 (3)	ALG3, NOT56L, CDGS4	608750	3q27	Metabolic
354	Congenital disorder of glycosylation, type Ie, 608799 (3)	DPM1, MPDS, CDGIE	603503	20q13.13	Metabolic
354	Congenital disorder of glycosylation, type If, 609180 (3)	MPDU1, SL15, CDGIF	604041	17p13.1-p12	Metabolic
354	Congenital disorder of glycosylation, type Ig, 607143 (3)	ALG12	607144	Chr.22	Metabolic
354	Congenital disorder of glycosylation, type Ih, 608104 (3)	ALG8	608103	11pter-p15.5	Metabolic
354	Congenital disorder of glycosylation, type Ii, 607906 (3)	ALG2, CDGII	607905	9q22	Metabolic
354	Congenital disorder of glycosylation, type Il, 608776 (3)	DIBD1, ALG9	606941	11q23	Metabolic
354	Congenital disorder of glycosylation, type IIc, 266265 (3)	SLC35C1, FUCT1	605881	11p11.2	Metabolic
354	Congenital disorder of glycosylation, type IId, 607091 (3)	B4GALT1, GGTB2, GT1, GTB	137060	9p13	Metabolic
354	Congenital disorder of glycosylation, type IIe, 608779 (3)	COG7, CDG2E	606978	16p	Metabolic
354	Congenital disorder of glycosylation, type Ij, 608093 (3)	DPAGT2, DGPT	191350	11q23.3	Metabolic
354	Congenital disorder of glycosylation, type Ik, 608540 (3)	ALG1, HMAT1, HMT1	605907	16p13.3	Metabolic
355	Congestive heart failure, susceptibility to (3)	ADRA2C, ADRA2L2	104250	4p16.1	Cardiovascular
355	Congestive heart failure, susceptibility to (3)	ADRB1, ADRB1R, RHR	109630	10q24-q26	Cardiovascular
356	Conjunctivitis, ligneous, 217090 (3)	PLG	173350	6q26	Ophthamological
357	Conotruncal anomaly face syndrome, 217095 (3)	TBX1, DGS, CTHM, CAFS, TGA, DORV, VCFS, DGCR	602054	22q11.2	Cardiovascular
358	Contractural arachnodactyly, congenital (3)	FBN2, CCA	121050	5q23-q31	Connective tissue
359	Convulsions, familial febrile, 4, 604352 (3)	MASS1, VLGR1, KIAA0686, FEB4, USH2C	602851	5q14	Neurological
360	COPD, rate of decline of lung function in, 606963 (3)	MMP1, CLG	120353	11q22-q23	Respiratory
361	Coproporphyria (3)	CPO	121300	3q12	Metabolic
362	Corneal clouding, autosomal recessive (3)	APOA1	107680	11q23	Ophthamological
362	Corneal dystrophy, Avellino type, 607541 (3)	TGFBI, CSD2, CDGG1, CSD, BIGH3, CDG2	601692	5q31	Ophthamological
362	Corneal dystrophy, gelatinous drop-like, 204870 (3)	TACSTD2, TROP2, M1S1	137290	1p32	Ophthamological
362	Corneal dystrophy, Groenouw type I, 121900 (3)	TGFBI, CSD2, CDGG1, CSD, BIGH3, CDG2	601692	5q31	Ophthamological
362	Corneal dystrophy, hereditary polymorphous posterior, 122000 (3)	VSX1, RINX, PPCD, PPD, KTCN	605020	20p11.2	Ophthamological
362	Corneal dystrophy, hereditary polymorphous posterior, 2, 122000 (3)	COL8A2, FECD, PPCD2	120252	1p34.3-p32.3	Ophthamological
362	Corneal dystrophy, lattice type I, 122200 (3)	TGFBI, CSD2, CDGG1, CSD, BIGH3, CDG2	601692	5q31	Ophthamological
362	Corneal dystrophy, lattice type IIIA, 608471 (3)	TGFBI, CSD2, CDGG1, CSD, BIGH3, CDG2	601692	5q31	Ophthamological

362	Corneal dystrophy, Reis-Bucklers type, 608470 (3)	TGFBI, CSD2, CDGG1, CSD, BIGH3, CDG2	601692	5q31	Ophthamological
362	Corneal dystrophy, Thiel-Behnke type, 602082 (3)	TGFBI, CSD2, CDGG1, CSD, BIGH3, CDG2	601692	5q31	Ophthamological
362	Corneal fleck dystrophy, 121850 (3)	PIP5K3, CFD	609414	2q35	Ophthamological
362	Cornea plana congenita, recessive, 217300 (3)	KERA, CNA2	603288	12q22	Ophthamological
364	Cornelia de Lange syndrome, 122470 (3)	NIPBL, CDLS	608667	5p13.1	Developmental
365	Coronary artery disease, autosomal dominant, 1, 608320 (3)	MEF2A, ADCAD1	600660	15q26	Cardiovascular
365	Coronary artery disease in familial hypercholesterolemia, protection against, 143890 (3)	ABCA1, ABC1, HDLDT1, TGD	600046	9q22-q31	Cardiovascular
365	Coronary artery disease, susceptibility to (3)	KL	604824	13q12	Cardiovascular
365	Coronary artery disease, susceptibility to (3)	PON1, PON, ESA	168820	7q21.3	Cardiovascular
365	Coronary artery disease, susceptibility to (3)	PON2	602447	7q21.3	Cardiovascular
365	Coronary artery spasm, susceptibility to (3)	PON1, PON, ESA	168820	7q21.3	Cardiovascular
365	Coronary heart disease, susceptibility to (3)	MMP3, STMY1	185250	11q23	Cardiovascular
2365	Coronary spasms, susceptibility to (3)	NOS3	163729	7q36	Cardiovascular
366	Corpus callosum, agenesis of, with mental retardation, ocular coloboma and micrognathia, 300472 (3)	IGBP1	300139	Xq13.1-q13.3	Neurological
367	Cortisol resistance (3)	NR3C1, GCR, GRL	138040	5q31	Endocrine
368	Cortisone reductase deficiency, 604931 (3)	GDH	138090	1pter-p36.13	Metabolic
368	Cortisone reductase deficiency, 604931 (3)	HSD11B1, HSD11, HSD11L	600713	1q32-q41	Metabolic
369	Costello syndrome, 218040 (3)	HRAS	190020	11p15.5	multiple
370	Coumarin resistance, 122700 (3)	CYP2A6, CYP2A3, CYP2A, P450C2A	122720	19q13.2	Hematological
372	Cowden disease, 158350 (3)	PTEN, MMAC1	601728	10q23.31	Cancer
372	Cowden-like syndrome, 158350 (3)	BMPR1A, ACVRLK3, ALK3	601299	10q22.3	Cancer
374	CPT deficiency, hepatic, type IA, 255120 (3)	CPT1A	600528	11q13	Metabolic
374	CPT deficiency, hepatic, type II, 600649 (3)	CPT2	600650	1p32	Metabolic
374	CPT II deficiency, lethal neonatal, 608836 (3)	CPT2	600650	1p32	Metabolic
376	Cramps, familial, potassium-aggravated (3)	SCN4A, HYPP, NAC1A	603967	17q23.1-q25.3	Muscular
377	Craniofacial anomalies, empty sella turcica, corneal endothelial changes, and abnormal retinal and auditory bipolar cells (3)	VSX1, RINX, PPCD, PPD, KTCN	605020	20p11.2	multiple
378	Craniofacial-deafness-hand syndrome, 122880 (3)	PAX3, WS1, HUP2, CDHS	606597	2q35	multiple
379	Craniofacial-skeletal-dermatologic dysplasia (3)	FGFR2, BEK, CFD1, JWS	176943	10q26	multiple
380	Craniofrontonasal dysplasia, 304110 (3)	EFNB1, EPLG2, CFNS, CFND	300035	Xq12	Skeletal
382	Craniometaphyseal dysplasia, 123000 (3)	ANKH, HANK, ANK, CMDJ, CCAL2, CPPDD	605145	5p15.2-p14.1	Bone
383	Craniosynostosis, nonspecific (3)	FGFR2, BEK, CFD1, JWS	176943	10q26	Skeletal
383	Craniosynostosis, type 2, 604757 (3)	MSX2, CRS2, HOX8	123101	5q34-q35	Skeletal
384	CRASH syndrome, 303350 (3)	L1CAM, CAML1, HSAS1	308840	Xq28	multiple
2385	Creatine deficiency syndrome, X-linked, 300352 (3)	SLC6A8, CRTR	300036	Xq28	Neurological
385	Creatine phosphokinase, elevated serum, 123320 (3)	CAV3, LGMD1C	601253	3p25	Metabolic
385	Creatine phosphokinase, elevated serum, 123320 (3)	CAV3, LGMD1C	601253	3p25	Metabolic
388	Creutzfeldt-Jakob disease, 123400 (3)	PRNP, PRIP	176640	20pter-p12	Neurological
388	Creutzfeldt-Jakob disease, variant, resistance to, 123400 (3)	HLA-DQB1	604305	6p21.3	Neurological
389	Crigler-Najjar syndrome, type I, 218800 (3)	UGT1A1, UGT1, GNT1	191740	2q37	multiple
389	Crigler-Najjar syndrome, type II, 606785 (3)	UGT1A1, UGT1, GNT1	191740	2q37	multiple
390	Crohn disease, susceptibility to, 266600 (3)	CARD15, NOD2, IBD1, CD, ACUG, PSORAS1	605956	16q12	Gastrointestinal
390	Crohn disease, susceptibility to, 266600 (3)	DLG5, PDLG, KIAA0583	604090	10q23	Gastrointestinal
391	Crouzon syndrome, 123500 (3)	FGFR2, BEK, CFD1, JWS	176943	10q26	Skeletal

391	Crouzon syndrome with acanthosis nigricans (3)	FGFR3, ACH	134934	4p16.3	Skeletal
392	Cryptorchidism, bilateral, 219050 (3)	LGR8, GREAT	606655	13q13.1	Renal
392	Cryptorchidism, idiopathic, 219050 (3)	INSL3	146738	19p13.2	Renal
394	Currarino syndrome, 176450 (3)	HLXB9, HOXHB9, SCRA1	142994	7q36	Skeletal
395	Cutis laxa, AD, 123700 (3)	ELN	130160	7q11.2	Connective tissue
395	Cutis laxa, autosomal dominant, 123700 (3)	FBLN5, ARMD3	604580	14q32.1	Connective tissue
395	Cutis laxa, autosomal recessive, 219100 (3)	FBLN5, ARMD3	604580	14q32.1	Connective tissue
395	Cutis laxa, neonatal (3)	ATP7A, MNK, MK, OHS	300011	Xq12-q13	Connective tissue
396	Cyclic ichthyosis with epidermolytic hyperkeratosis, 607602 (3)	KRT1	139350	12q13	Dermatological
397	Cylindromatosis, familial, 132700 (3)	CYLD1, CDMT, EAC	605018	16q12-q13	Dermatological
398	Cystathioninuria, 219500 (3)	CTH	607657	1p31.1	Metabolic
399	Cystic fibrosis, 219700 (3)	CFTR, ABCC7, CF, MRP7	602421	7q31.2	Respiratory
400	Cystinosis, atypical nephropathic (3)	CTNS	606272	17p13	Renal
400	Cystinosis, late-onset juvenile or adolescent nephropathic, 219900 (3)	CTNS	606272	17p13	Renal
400	Cystinosis, nephropathic, 219800 (3)	CTNS	606272	17p13	Renal
400	Cystinosis, ocular nonnephropathic, 219750 (3)	CTNS	606272	17p13	Renal
401	Cystinuria, 220100 (3)	SLC3A1, ATR1, D2H, NBAT	104614	2p16.3	Renal
401	Cystinuria, type II (3)	SLC7A9, CSNU3	604144	19q13.1	Renal
401	Cystinuria, type III (3)	SLC7A9, CSNU3	604144	19q13.1	Renal
402	D-2-hydroxyglutaric aciduria, 600721 (3)	D2HGD	609186	2p25.3	Metabolic
404	Darier disease, 124200 (3)	ATP2A2, ATP2B, DAR	108740	12q23-q24.1	Dermatological
405	D-bifunctional protein deficiency, 261515 (3)	HSD17B4	601860	5q2	Metabolic
406	Deafness, autosomal dominant 10, 601316 (3)	EYA4, DFNA10, CMD1J	603550	6q23	Ear,Nose,Throat
406	Deafness, autosomal dominant 1, 124900 (3)	DIAPH1, DFNA1, LFHL1	602121	5q31	Ear,Nose,Throat
406	Deafness, autosomal dominant 11, neurosensory, 601317 (3)	MYO7A, USH1B, DFNB2, DFNA11	276903	11q13.5	Ear,Nose,Throat
406	Deafness, autosomal dominant 12, 601842 (3)	TECTA, DFNA8, DFNA12, DFNB21	602574	11q22-q24	Ear,Nose,Throat
406	Deafness, autosomal dominant 13, 601868 (3)	COL11A2, STL3, DFNA13	120290	6p21.3	Ear,Nose,Throat
406	Deafness, autosomal dominant 15, 602459 (3)	POU4F3, BRN3C	602460	5q31	Ear,Nose,Throat
406	Deafness, autosomal dominant 17, 603622 (3)	MYH9, MHA, FTNS, DFNA17	160775	22q11.2	Ear,Nose,Throat
406	Deafness, autosomal dominant 20/26, 604717 (3)	ACTG1, DFNA20, DFNA26	102560	17q25.3	Ear,Nose,Throat
406	Deafness, autosomal dominant 22, 606346 (3)	MYO6, DFNA22, DFNB37	600970	6q13	Ear,Nose,Throat
406	Deafness, autosomal dominant 2, 600101 (3)	GJB3, CX31, DFNA2	603324	1p35.1	Ear,Nose,Throat
406	Deafness, autosomal dominant 2, 600101 (3)	KCNQ4, DFNA2	603537	1p34	Ear,Nose,Throat
406	Deafness, autosomal dominant 28, 608641 (3)	TFCP2L3, DFNA28	608576	8q22	Ear,Nose,Throat
406	Deafness, autosomal dominant 3, 601544 (3)	GJB2, CX26, DFNB1, PPK, DFNA3, KID, HID	121011	13q11-q12	Ear,Nose,Throat
406	Deafness, autosomal dominant 3, 601544 (3)	GJB6, CX30, DFNA3, HED, ED2	604418	13q12	Ear,Nose,Throat
406	Deafness, autosomal dominant 36, 606705 (3)	TMC1, DFNB7, DFNB11, DFNA36	606706	9q13-q21	Ear,Nose,Throat
406	Deafness, autosomal dominant 36, with dentinogenesis, 605594 (3)	DSPP, DPP, DGI1, DFNA39, DTDP2	125485	4q21.3	Ear,Nose,Throat
406	Deafness, autosomal dominant 40 (3)	CRYM, DFNA40	123740	16p13.11-p12.3	Ear,Nose,Throat
406	Deafness, autosomal dominant 4, 600652 (3)	MYH14, KIAA2034, DFNA4	608568	19q13.33	Ear,Nose,Throat
406	Deafness, autosomal dominant 5 (3)	DFNA5	600994	7p15	Ear,Nose,Throat
406	Deafness, autosomal dominant 8, 601543 (3)	TECTA, DFNA8, DFNA12, DFNB21	602574	11q22-q24	Ear,Nose,Throat
406	Deafness, autosomal dominant 9, 601369 (3)	COCH, DFNA9	603196	14q12-q13	Ear,Nose,Throat
406	Deafness, autosomal dominant nonsyndromic sensorineural, 607841 (3)	MYO1A	601478	12q13-q15	Ear,Nose,Throat
406	Deafness, autosomal dominant, with peripheral neuropathy (3)	GJB3, CX31, DFNA2	603324	1p35.1	Ear,Nose,Throat
406	Deafness, autosomal recessive 10, congenital, 605316 (3)	TMPRSS3, ECHOS1, DFNB8, DFNB10	605511	21q22.3	Ear,Nose,Throat
406	Deafness, autosomal recessive 1, 220290 (3)	GJB2, CX26, DFNB1, PPK, DFNA3, KID, HID	121011	13q11-q12	Ear,Nose,Throat
406	Deafness, autosomal recessive 12, 601386 (3)	CDH23, USH1D	605516	10q21-q22	Ear,Nose,Throat

406	Deafness, autosomal recessive 12, modifier of, 601386 (3)	ATP2B2, PMCA2	108733	3p26-p25	Ear,Nose,Throat
406	Deafness, autosomal recessive 16, 603720 (3)	STRC, DFNB16	606440	15q15	Ear,Nose,Throat
406	Deafness, autosomal recessive 18, 602092 (3)	USH1C, DFNB18	605242	11p15.1	Ear,Nose,Throat
406	Deafness, autosomal recessive 21, 603629 (3)	TECTA, DFNA8, DFNA12, DFNB21	602574	11q22-q24	Ear,Nose,Throat
406	Deafness, autosomal recessive 22, 607039 (3)	OTOA, DFNB22	607038	16p12.2	Ear,Nose,Throat
406	Deafness, autosomal recessive 23, 609533 (3)	PCDH15, DFNB23	605514	10q21-q22	Ear,Nose,Throat
406	Deafness, autosomal recessive 29 (3)	CLDN14, DFNB29	605608	21q22.3	Ear,Nose,Throat
406	Deafness, autosomal recessive 2, neurosensory, 600060 (3)	MYO7A, USH1B, DFNB2, DFNA11	276903	11q13.5	Ear,Nose,Throat
406	Deafness, autosomal recessive 30, 607101 (3)	MYO3A, DFNB30	606808	10p11.1	Ear,Nose,Throat
406	Deafness, autosomal recessive 31, 607084 (3)	WHRN, CIP98, KIAA1526, DFNB31	607928	9q32-q34	Ear,Nose,Throat
406	Deafness, autosomal recessive 3, 600316 (3)	MYO15A, DFNB3	602666	17p11.2	Ear,Nose,Throat
406	Deafness, autosomal recessive 36, 609006 (3)	ESPN	606351	1p36.3-p36.1	Ear,Nose,Throat
406	Deafness, autosomal recessive 37, 607821 (3)	MYO6, DFNA22, DFNB37	600970	6q13	Ear,Nose,Throat
406	Deafness, autosomal recessive (3)	GJB3, CX31, DFNA2	603324	1p35.1	Ear,Nose,Throat
406	Deafness, autosomal recessive 4, 600791 (3)	SLC26A4, PDS, DFNB4	605646	7q31	Ear,Nose,Throat
406	Deafness, autosomal recessive 61 (3)	PRES, DFNB61, SLC26A5	604943	7q22.1	Ear,Nose,Throat
406	Deafness, autosomal recessive 6, 600971 (3)	TMIE, DFNB6	607237	3p21	Ear,Nose,Throat
406	Deafness, autosomal recessive 7, 600974 (3)	TMC1, DFNB7, DFNB11, DFNA36	606706	9q13-q21	Ear,Nose,Throat
406	Deafness, autosomal recessive 8, childhood onset, 601072 (3)	TMPRSS3, ECHOS1, DFNB8, DFNB10	605511	21q22.3	Ear,Nose,Throat
406	Deafness, autosomal recessive 9, 601071 (3)	OTOF, DFNB9, NSRD9	603681	2p23-p22	Ear,Nose,Throat
406	Deafness, congenital heart defects, and posterior embryotoxon (3)	JAG1, AGS, AHD	601920	20p12	Ear,Nose,Throat
406	Deafness, nonsyndromic (3) ()	KIAA1199	608366	15q24	Ear,Nose,Throat
406	Deafness, nonsyndromic neurosensory, digenic (3)	GJB6, CX30, DFNA3, HED, ED2	604418	13q12	Ear,Nose,Throat
406	Deafness, sensorineural, with hypertrophic cardiomyopathy, 606346 (3)	MYO6, DFNA22, DFNB37	600970	6q13	Ear,Nose,Throat
406	Deafness, X-linked 1, progressive (3)	TIMM8A, DFN1, DDP, MTS, DDP1	300356	Xq22	Ear,Nose,Throat
406	Deafness, X-linked 3, conductive, with stapes fixation, 304400 (3)	POU3F4, DFN3	300039	Xq21.1	Ear,Nose,Throat
407	Debrisoquine sensitivity (3)	CYP2D@, CYP2D, P450C2D	124030	22q13.1	Metabolic
410	Dejerine-Sottas disease, 145900 (3)	PMP22, CMT1A, CMT1E, DSS	601097	17p11.2	multiple
410	Dejerine-Sottas neuropathy, 145900 (3)	EGR2, KROX20	129010	10q21.1-q22.1	multiple
410	Dejerine-Sottas neuropathy, autosomal recessive, 145900 (3)	PRX, CMT4F	605725	19q13.1-q13.2	multiple
410	Dejerine-Sottas syndrome, 145900 (3)	MPZ, CMT1B, CMTDI3, CHM, DSS	159440	1q22	multiple
411	Delayed sleep phase syndrome, susceptibility to (3)	AANAT, SNAT	600950	17q25	Psychiatric
412	Dementia, familial British, 176500 (3)	ITM2B, BRI, ABRI, FBD	603904	13q14	Neurological
412	Dementia, familial Danish, 117300 (3)	ITM2B, BRI, ABRI, FBD	603904	13q14	Neurological
412	Dementia, frontotemporal, 600274 (3)	PSEN1, AD3	104311	14q24.3	Neurological
412	Dementia, frontotemporal, with parkinsonism, 600274 (3)	MAPT, MTBT1, DDPAC, MSTD	157140	17q21.1	Neurological
412	Dementia, Lewy body, 127750 (3)	SNCA, NACP, PARK1, PARK4	163890	4q21	Neurological
412	Dementia, Lewy body, 127750 (3)	SNCB	602569	5q35	Neurological
412	Dementia, Pick disease-like, 172700 (3)	MAPT, MTBT1, DDPAC, MSTD	157140	17q21.1	Neurological
412	Dementia, vascular, susceptibility to (3)	TNF, TNFA	191160	6p21.3	Neurological
413	Dengue fever, protection against (3)	CD209, CDSIGN	604672	19p13.3	Immunological
414	Dental anomalies, isolated (3)	RUNX2, CBFA1, PEBP2A1, AML3	600211	6p21	Skeletal
415	Dentatorubro-pallidoluysian atrophy, 125370 (3)	DRPLA	607462	12p13.31	Neurological
416	Dent disease, 300009 (3)	CLCN5, CLCK2, NPHL2, DENTS	300008	Xp11.22	Renal
417	Dentin dysplasia, type II, 125420 (3)	DSPP, DPP, DGI1, DFNA39, DTDP2	125485	4q21.3	Bone
418	Dentinogenesis imperfecta, Shields type II, 125490 (3)	DSPP, DPP, DGI1, DFNA39, DTDP2	125485	4q21.3	Bone
418	Dentinogenesis imperfecta, Shields type III, 125500 (3)	DSPP, DPP, DGI1, DFNA39, DTDP2	125485	4q21.3	Bone
416	Dent syndrome, 300009 (3)	OCRL, LOCR, OCRL1, NPHL2	300535	Xq26.1	Renal
420	Denys-Drash syndrome, 194080 (3)	WT1	607102	11p13	Renal
422	Dermatofibrosarcoma protuberans (3)	PDGFB, SIS	190040	22q12.3-q13.1	Cancer

424	De Sanctis-Cacchione syndrome, 278800 (3)	ERCC6, CKN2, COFS, CSB	609413	10q11	multiple
425	Desmoid disease, hereditary, 135290 (3)	APC, GS, FPC	175100	5q21-q22	Cancer
426	Desmosterolosis, 602398 (3)	DHCR24, KIAA0018	606418	1p33-p31.1	Metabolic
2427	Diabetes insipidus, nephrogenic, 304800 (3)	AVPR2, DIR, DI1, ADHR	300538	Xq28	Endocrine
2427	Diabetes insipidus, nephrogenic, autosomal dominant, 125800 (3)	AQP2	107777	12q13	Endocrine
2427	Diabetes insipidus, nephrogenic, autosomal recessive, 222000 (3)	AQP2	107777	12q13	Endocrine
2427	Diabetes insipidus, neurohypophyseal, 125700 (3)	AVP, AVRP, VP	192340	20p13	Endocrine
427	Diabetes mellitus, 125853 (3)	ABCC8, SUR, PHHI, SUR1	600509	11p15.1	Endocrine
427	Diabetes mellitus, insulin-dependent, 222100 (3)	TCF1, HNF1A, MODY3	142410	12q24.2	Endocrine
427	Diabetes mellitus, insulin-dependent, 5, 600320 (3)	SUMO4, IDDM5	608829	6q25	Endocrine
427	Diabetes mellitus, insulin-dependent, susceptibility to, 222100 (3)	PTPN8, PEP, PTPN22, LYP	600716	1p13	Endocrine
427	Diabetes mellitus, insulin-resistant, with acanthosis nigricans (3)	INSR	147670	19p13.2	Endocrine
427	Diabetes mellitus, insulin-resistant, with acanthosis nigricans and hypertension, 604367 (3)	PPARG, PPARG1, PPARG2	601487	3p25	Endocrine
427	Diabetes mellitus, neonatal-onset, 606176 (3)	GCK	138079	7p15-p13	Endocrine
427	Diabetes mellitus, noninsulin-dependent, 125853 (3)	GCGR	138033	17q25	Endocrine
427	Diabetes mellitus, noninsulin-dependent, 125853 (3)	GPD2	138430	2q24.1	Endocrine
427	Diabetes mellitus, noninsulin-dependent, 125853 (3)	HNF4A, TCF14, MODY1	600281	20q12-q13.1	Endocrine
427	Diabetes mellitus, noninsulin-dependent, 125853 (3)	IRS2	600797	13q34	Endocrine
427	Diabetes mellitus, noninsulin-dependent, 125853 (3)	MAPK8IP1, IB1	604641	11p12-p11.2	Endocrine
427	Diabetes mellitus, noninsulin-dependent, 125853 (3)	NEUROD1, NIDDM	601724	2q32	Endocrine
427	Diabetes mellitus, noninsulin-dependent, 125853 (3)	TCF2, HNF2	189907	17cen-q21.3	Endocrine
427	Diabetes mellitus, noninsulin-dependent, 2, 125853 (3)	TCF1, HNF1A, MODY3	142410	12q24.2	Endocrine
427	Diabetes mellitus, noninsulin-dependent (3)	IRS1	147545	2q36	Endocrine
427	Diabetes mellitus, noninsulin-dependent (3)	SLC2A2, GLUT2	138160	3q26.1-q26.3	Endocrine
427	Diabetes mellitus, noninsulin-dependent (3)	SLC2A4, GLUT4	138190	17p13	Endocrine
427	Diabetes mellitus, noninsulin-dependent, 601283 (3)	CAPN10	605286	2q37.3	Endocrine
427	Diabetes mellitus, non-insulin-dependent, susceptibility to, 125853 (3)	ENPP1, PDNP1, NPPS, M6S1, PCA1	173335	6q22-q23	Endocrine
427	Diabetes mellitus, noninsulin-dependent, susceptibility to, 125853 (3)	RETN, RSTN, FIZZ3	605565	19p13.2	Endocrine
427	Diabetes mellitus, permanent neonatal, with cerebellar agenesis, 609069 (3)	PTF1A	607194	10p12.3	Endocrine
427	Diabetes mellitus, permanent neonatal, with neurologic features, 606176 (3)	KCNJ11, BIR, PHHI	600937	11p15.1	Endocrine
427	Diabetes mellitus, type II, 125853 (3)	AKT2	164731	19q13.1-q13.2	Endocrine
427	Diabetes mellitus, type II, susceptibility to, 125853 (3)	IPF1	600733	13q12.1	Endocrine
427	Diabetes mellitus, type I, susceptibility to, 222100 (3)	FOXP3, IPEX, AIID, XPID, PIDX	300292	Xp11.23-q13.3	Endocrine
427	Diabetes, permanent neonatal, 606176 (3)	KCNJ11, BIR, PHHI	600937	11p15.1	Endocrine
427	Diabetic nephropathy, susceptibility to, 603933 (3)	ACE, DCP1, ACE1	106180	17q23	Endocrine
427	Diabetic retinopathy, NIDDM-related, susceptibility to, 125853 (3)	VEGF	192240	6p12	Endocrine
430	Diastrophic dysplasia, 222600 (3)	SLC26A2, DTD, DTDST, D5S1708, EDM4	606718	5q32-q33.1	Skeletal
430	Diastrophic dysplasia, broad bone-platyspondylic variant (3)	SLC26A2, DTD, DTDST, D5S1708, EDM4	606718	5q32-q33.1	Skeletal
432	DiGeorge syndrome, 188400 (3)	TBX1, DGS, CTHM, CAFS, TGA, DORV, VCFS, DGCR	602054	22q11.2	multiple
433	Dihydropyrimidinuria (3)	DPYS, DHP	222748	8q22	Metabolic
434	Dilated cardiomyopathy with woolly hair and keratoderma, 605676 (3)	DSP, KPPS2, PPKS2	125647	6p24	multiple
435	Dimethylglycine dehydrogenase deficiency, 605850 (3)	DMGDH, DMGDHD	605849	5q12.2-q12.3	Metabolic
438	Disordered steroidogenesis, isolated (3)	POR	124015	7q11.2	Metabolic
439	Dissection of cervical arteries (3)	COL1A1	120150	17q21.31-q22	Connective tissue
2440	DNA ligase I deficiency (3)	LIG1	126391	19q13.2-q13.3	multiple
440	DNA topoisomerase I, camptothecin-resistant (3)	TOP1	126420	20q12-q13.1	Metabolic

440	DNA topoisomerase II, resistance to inhibition of, by amsacrine (3)	TOP2A, TOP2	126430	17q21-q22	Metabolic
441	Dopamine-beta-hydroxylase activity levels, plasma (3)	DBH	609312	9q34	Metabolic
441	Dopamine beta-hydroxylase deficiency, 223360 (3)	DBH	609312	9q34	Metabolic
443	Dosage-sensitive sex reversal, 300018 (3)	DAX1, AHC, AHX, NROB1	300473	Xp21.3-p21.2	Endocrine
444	Double-outlet right ventricle, 217095 (3)	CFC1, CRYPTIC, HTX2	605194	2q21.1	Cardiovascular
445	Down syndrome, risk of, 190685 (3)	MTR	156570	1q43	multiple
446	Doyne honeycomb degeneration of retina, 126600 (3)	EFEMP1, FBNL, DHRD	601548	2p16	Ophthamological
447	Drug addiction, susceptibility to (3)	FAAH	602935	1p35-p34	Psychiatric
449	Duane-radial ray syndrome, 607323 (3)	SALL4, HSAL4	607343	20q13.13-q13.2	multiple
450	Dubin-Johnson syndrome, 237500 (3)	ABCC2, CMOAT	601107	10q24	Metabolic
451	Duchenne muscular dystrophy, 310200 (3)	DMD, BMD	300377	Xp21.2	Muscular
452	Dyggve-Melchior-Clausen disease, 223800 (3)	DYM, FLJ90130, DMC, SMC	607461	18q12-q21.1	multiple
453	Dysalbuminemic hyperthyroxinemia (3)	ALB	103600	4q11-q13	Hematological
454	Dysautonomia, familial, 223900 (3)	IKBKAP, IKAP	603722	9q31	Neurological
455	Dyschromatosis symmetrica hereditaria, 127400 (3)	ADAR, DRADA, DSH, DSRAD	601059	1q21.3	Dermatological
456	Dyserythropoietic anemia with thrombocytopenia, 300367 (3)	GATA1, GF1, ERYF1, NFE1	305371	Xp11.23	Hematological
457	Dysfibrinogenemia, alpha type, causing bleeding diathesis (3)	FGA	134820	4q28	Hematological
457	Dysfibrinogenemia, alpha type, causing recurrent thrombosis (3)	FGA	134820	4q28	Hematological
457	Dysfibrinogenemia, beta type (3)	FGB	134830	4q28	Hematological
457	Dysfibrinogenemia, gamma type (3)	FGG	134850	4q28	Hematological
458	Dyskeratosis congenita-1, 305000 (3)	DKC1, DKC	300126	Xq28	Dermatological
458	Dyskeratosis congenita, autosomal dominant, 127550 (3)	TERC, TRC3, TR	602322	3q21-q28	Dermatological
459	Dyslexia, susceptibility to, 1, 127700 (3)	DYX1C1, DYXC1, DYX1	608706	15q21	Psychiatric
459	Dyslexia, susceptibility to, 2, 600202 (3)	KIAA0319, DYX2, DYLX2, DLX2	609269	6p22.2	Psychiatric
460	Dysprothrombinemia (3)	F2	176930	11p11-q12	Hematological
461	Dyssegmental dysplasia, Silverman-Handmaker type, 224410 (3)	HSPG2, PLC, SJS, SJA, SJS1	142461	1p36.1	Neurological
462	Dystonia-12, 128235 (3)	ATP1A3, DYT12, RDP	182350	19q12-q13.2	Neurological
462	Dystonia-1, torsion, 128100 (3)	DYT1, TOR1A	605204	9q34	Neurological
462	Dystonia, DOPA-responsive, 128230 (3)	GCH1, DYT5	600225	14q22.1-q22.2	Neurological
462	Dystonia, early-onset atypical, with myoclonic features (3)	DYT1, TOR1A	605204	9q34	Neurological
462	Dystonia, myoclonic, 159900 (3)	DRD2	126450	11q23	Neurological
462	Dystonia, myoclonic, 159900 (3)	SGCE, DYT11	604149	7q21	Neurological
462	Dystonia, primary cervical (3)	DRD5, DRD1B, DRD1L2	126453	4p16.1-p15.3	Neurological
463	Dystransthyretinemic hyperthyroxinemia(3)	TTR, PALB	176300	18q11.2-q12.1	Hematological
465	EBD, Bart type, 132000 (3)	COL7A1	120120	3p21.3	Dermatological
465	EBD, localisata variant (3)	COL7A1	120120	3p21.3	Dermatological
466	Ectodermal dysplasia-1, anhidrotic, 305100 (3)	ED1, EDA, HED	300451	Xq12-q13.1	Dermatological
466	Ectodermal dysplasia 2, hidrotic, 129500 (3)	GJB6, CX30, DFNA3, HED, ED2	604418	13q12	Dermatological
466	Ectodermal dysplasia, anhidrotic, 224900 (3)	EDARADD	606603	1q42.2-q43	Dermatological
466	Ectodermal dysplasia, anhidrotic, lymphedema and immunodeficiency, 300301 (3)	IKBKG, NEMO, FIP3, IP2	300248	Xq28	Dermatological
466	Ectodermal dysplasia, anhidrotic, with T-cell immunodeficiency (3)	NFKBIA, IKBA	164008	14q13	Dermatological
466	Ectodermal dysplasia, hypohidrotic, autosomal dominant, 129490 (3)	EDAR, DL, ED3, EDA3	604095	2q11-q13	Dermatological
466	Ectodermal dysplasia, hypohidrotic, autosomal recessive, 224900 (3)	EDAR, DL, ED3, EDA3	604095	2q11-q13	Dermatological
466	Ectodermal dysplasia, hypohidrotic, with immune deficiency, 300291 (3)	IKBKG, NEMO, FIP3, IP2	300248	Xq28	Dermatological
466	Ectodermal dysplasia, Margarita Island type, 225060 (3)	HVEC, PVRL1, PVRR1, PRR1	600644	11q23-q24	Dermatological
466	Ectodermal dysplasia/skin fragility syndrome, 604536 (3)	PKP1	601975	1q32	Dermatological
467	Ectopia lentis, familial, 129600 (3)	FBN1, MFS1, WMS	134797	15q21.1	Ophthamological
467	Ectopia pupillae, 129750 (3)	PAX6, AN2, MGDA	607108	11p13	Ophthamological

468	Ectrodactyly, ectodermal dysplasia, and cleft lip/palate syndrome 3, 604292 (3)	TP73L, TP63, KET, EEC3, SHFM4, LMS, RHS	603273	3q27	Skeletal
470	Ehlers-Danlos due to tenascin X deficiency, 606408 (3)	TNXB, TNX, TNXB1, TNXBS, TNXB2	600985	6p21.3	Connective tissue
470	Ehlers-Danlos syndrome, hypermobility type, 130020 (3)	TNXB, TNX, TNXB1, TNXBS, TNXB2	600985	6p21.3	Connective tissue
470	Ehlers-Danlos syndrome, progeroid form, 130070 (3)	B4GALT7, XGALT1, XGPT1	604327	5q35.2-q35.3	Connective tissue
470	Ehlers-Danlos syndrome, type I, 130000 (3)	COL1A1	120150	17q21.31-q22	Connective tissue
470	Ehlers-Danlos syndrome, type I, 130000 (3)	COL5A1	120215	9q34.2-q34.3	Connective tissue
470	Ehlers-Danlos syndrome, type I, 130000 (3)	COL5A2	120190	2q31	Connective tissue
470	Ehlers-Danlos syndrome, type II, 130010 (3)	COL5A1	120215	9q34.2-q34.3	Connective tissue
470	Ehlers-Danlos syndrome, type III, 130020 (3)	COL3A1	120180	2q31	Connective tissue
470	Ehlers-Danlos syndrome, type IV, 130050 (3)	COL3A1	120180	2q31	Connective tissue
470	Ehlers-Danlos syndrome, type VI, 225400 (3)	PLOD, PLOD1	153454	1p36.3-p36.2	Connective tissue
470	Ehlers-Danlos syndrome, type VII, 130060 (3)	COL1A1	120150	17q21.31-q22	Connective tissue
470	Ehlers-Danlos syndrome, type VIIA2, 130060 (3)	COL1A2	120160	7q22.1	Connective tissue
470	Ehlers-Danlos syndrome, type VIIC, 225410 (3)	ADAMTS2, NPI	604539	5q23	Connective tissue
471	Elite sprint athletic performance (3)	ACTN3	102574	11q13-q14	Muscular
472	Elliptocytosis-1 (3)	EPB41, EL1	130500	1p36.2-p34	Hematological
472	Elliptocytosis-2 (3)	SPTA1	182860	1q21	Hematological
472	Elliptocytosis-3 (3)	SPTB	182870	14q22-q23.2	Hematological
472	Elliptocytosis, Malaysian-Melanesian type (3)	SLC4A1, AE1, EPB3	109270	17q21-q22	Hematological
473	Ellis-van Creveld syndrome, 225500 (3)	EVC	604831	4p16	Skeletal
473	Ellis-van Creveld syndrome, 225500 (3)	LBN, EVC2	607261	4p16	Skeletal
474	Emery-Dreifuss muscular dystrophy, 310300 (3)	EMD, EDMD, STA	300384	Xq28	Muscular
474	Emery-Dreifuss muscular dystrophy, AD, 181350 (3)	LMNA, LMN1, EMD2, FPLD, CMD1A, HGPS, LGMD1B	150330	1q21.2	Muscular
474	Emery-Dreifuss muscular dystrophy, AR, 604929 (3)	LMNA, LMN1, EMD2, FPLD, CMD1A, HGPS, LGMD1B	150330	1q21.2	Muscular
475	Emphysema (3)	PI, AAT	107400	14q32.1	Respiratory
475	Emphysema-cirrhosis (3)	PI, AAT	107400	14q32.1	Respiratory
476	Encephalopathy, familial, with neuroserpin inclusion bodies, 604218 (3)	SERPINI1, PI12	602445	3q26	Neurological
476	Encephalopathy, progressive mitochondrial, with proximal renal tubulopathy due to cytochrome c oxidase deficiency (3)	COX10	602125	17p12-p11.2	Neurological
477	Enchondromatosis, Ollier type, 166000 (3)	PTHR1, PTHR	168468	3p22-p21.1	Cancer
479	Endometrial carcinoma (3)	CDH1, UVO	192090	16q22.1	Cancer
479	Endometrial carcinoma (3)	MSH3	600887	5q11-q12	Cancer
479	Endometrial carcinoma (3)	MSH6, GTBP, HNPCC5	600678	2p16	Cancer
479	Endometrial carcinoma (3)	PTEN, MMAC1	601728	10q23.31	Cancer
481	Endotoxin hyporesponsiveness (3)	TLR4	603030	9q32-q33	Immunological
482	Endplate acetylcholinesterase deficiency, 603034 (3)	COLQ, EAD	603033	3p25	Neurological
483	Enhanced S-cone syndrome, 268100 (3)	NR2E3, PNR, ESCS	604485	15q23	Ophthamological
484	Enlarged vestibular aqueduct, 603545 (3)	SLC26A4, PDS, DFNB4	605646	7q31	Ear,Nose,Throat
485	Enolase-beta deficiency (3)	ENO3	131370	17pter-p12	Metabolic
487	Enterokinase deficiency, 226200 (3)	PRSS7, ENTK	606635	21q21	Gastrointestinal
491	Eosinophil peroxidase deficiency, 261500 (3)	EPX	131399	17q23.1	Hematological
492	Epidermodysplasia verruciformis, 226400 (3)	EVER1, EV1	605828	17q25	Dermatological
492	Epidermodysplasia verruciformis, 226400 (3)	EVER2, EV2	605829	17q25	Dermatological
493	Epidermolysis bullosa dystrophica, AD, 131750 (3)	COL7A1	120120	3p21.3	Dermatological
493	Epidermolysis bullosa dystrophica, AR, 226600 (3)	COL7A1	120120	3p21.3	Dermatological
493	Epidermolysis bullosa, generalized atrophic benign, 226650 (3)	COL17A1, BPAG2	113811	10q24.3	Dermatological
493	Epidermolysis bullosa, generalized atrophic benign, 226650 (3)	ITGB4	147557	17q11-qter	Dermatological

493	Epidermolysis bullosa, generalized atrophic benign, 226650 (3)	LAMA3, LOCS	600805	18q11.2	Dermatological
493	Epidermolysis bullosa, generalized atrophic benign, 226650 (3)	LAMB3	150310	1q32	Dermatological
493	Epidermolysis bullosa, generalized atrophic benign, 226650 (3)	LAMC2, LAMNB2, LAMB2T	150292	1q25-q31	Dermatological
493	Epidermolysis bullosa, Herlitz junctional type, 226700 (3)	LAMB3	150310	1q32	Dermatological
493	Epidermolysis bullosa, Herlitz junctional type, 226700 (3)	LAMC2, LAMNB2, LAMB2T	150292	1q25-q31	Dermatological
493	Epidermolysis bullosa, junctional, Herlitz type, 226700 (3)	LAMA3, LOCS	600805	18q11.2	Dermatological
493	Epidermolysis bullosa, junctional, with pyloric atresia, 226730 (3)	ITGB4	147557	17q11-qter	Dermatological
493	Epidermolysis bullosa, junctional, with pyloric stenosis, 226730 (3)	ITGA6	147556	Chr.2	Dermatological
493	Epidermolysis bullosa, lethal acantholytic, 609638 (3)	DSP, KPPS2, PPKS2	125647	6p24	Dermatological
493	Epidermolysis bullosa of hands and feet, 131800 (3)	ITGB4	147557	17q11-qter	Dermatological
493	Epidermolysis bullosa, pretibial, 131850 (3)	COL7A1	120120	3p21.3	Dermatological
493	Epidermolysis bullosa pruriginosa, 604129 (3)	COL7A1	120120	3p21.3	Dermatological
493	Epidermolysis bullosa simplex, Koebner, Dowling-Meara, and Weber-Cockayne types, 131900, 131760, 131800 (3)	KRT14	148066	17q12-q21	Dermatological
493	Epidermolysis bullosa simplex, Koebner, Dowling-Meara, and Weber-Cockayne types, 131900, 131760, 131800 (3)	KRT5	148040	12q13	Dermatological
493	Epidermolysis bullosa simplex, Ogna type, 131950 (3)	PLEC1, PLTN, EBS1	601282	8q24	Dermatological
493	Epidermolysis bullosa simplex, recessive, 601001 (3)	KRT14	148066	17q12-q21	Dermatological
493	Epidermolysis bullosa simplex with mottled pigmentation, 131960 (3)	KRT5	148040	12q13	Dermatological
494	Epidermolytic hyperkeratosis, 113800 (3)	KRT10	148080	17q21-q22	Dermatological
494	Epidermolytic hyperkeratosis, 113800 (3)	KRT1	139350	12q13	Dermatological
494	Epidermolytic palmoplantar keratoderma, 144200 (3)	KRT9, EPPK	607606	17q12-q21	Dermatological
495	Epilepsy, benign, neonatal, type 1, 121200 (3)	KCNQ2, EBN1	602235	20q13.3	Neurological
495	Epilepsy, benign neonatal, type 2, 121201 (3)	KCNQ3, EBN2, BFNC2	602232	8q24	Neurological
495	Epilepsy, childhood absence, 607681 (3)	GABRG2, GEFSP3, CAE2, ECA2	137164	5q31.1-q33.1	Neurological
495	Epilepsy, childhood absence, 607682 (3)	CLCN2, EGMA, ECA3, EGI3	600570	3q26-qter	Neurological
495	Epilepsy, childhood absence, evolving to juvenile myoclonic epilepsy (3)	JRK, JH8	603210	8q24	Neurological
495	Epilepsy, generalized idiopathic, 600669 (3)	CACNB4, EJM	601949	2q22-q23	Neurological
495	Epilepsy, generalized, with febrile seizures plus, 604233 (3)	GABRG2, GEFSP3, CAE2, ECA2	137164	5q31.1-q33.1	Neurological
495	Epilepsy, generalized, with febrile seizures plus, type 2, 604233 (3)	SCN1A, GEFSP2, SMEI	182389	2q24	Neurological
495	Epilepsy, idopathic generalized, susceptibility to, 600669 (3)	ME2	154270	18q21	Neurological
495	Epilepsy, juvenile absence, 607631 (3)	CLCN2, EGMA, ECA3, EGI3	600570	3q26-qter	Neurological
495	Epilepsy, juvenile myoclonic, 606904 (3)	CACNB4, EJM	601949	2q22-q23	Neurological
495	Epilepsy, juvenile myoclonic, 606904 (3)	CLCN2, EGMA, ECA3, EGI3	600570	3q26-qter	Neurological
495	Epilepsy, juvenile myoclonic, 606904 (3)	GABRA1, EJM	137160	5q34-q35	Neurological
495	Epilepsy, myoclonic, Lafora type, 254780 (3)	EPM2A, MELF, EPM2	607566	6q24	Neurological
495	Epilepsy, myoclonic, Lafora type, 254780 (3)	NHLRC1, EPM2A, EPM2B	608072	6p22.3	Neurological
495	Epilepsy, neonatal myoclonic, with suppression-burst pattern, 609304 (3)	SLC25A22, GC1	609302	11p15.5	Neurological
495	Epilepsy, nocturnal frontal lobe, 1, 600513 (3)	CHRNA4, ENFL1	118504	20q13.2-q13.3	Neurological
495	Epilepsy, nocturnal frontal lobe, 3, 605375 (3)	CHRNB2, EFNL3	118507	1q21	Neurological
495	Epilepsy, partial, with auditory features, 600512 (3)	LGI1, EPT, ETL1	604619	10q24	Neurological
495	Epilepsy, progressive myoclonic 1, 254800 (3)	CSTB, STFB, EPM1	601145	21q22.3	Neurological
495	Epilepsy, progressive myoclonic 2B, 254780 (3)	NHLRC1, EPM2A, EPM2B	608072	6p22.3	Neurological
495	Epilepsy, severe myoclonic, of infancy, 607208 (3)	SCN1A, GEFSP2, SMEI	182389	2q24	Neurological
495	Epilepsy with grand mal seizures on awakening, 607628 (3)	CLCN2, EGMA, ECA3, EGI3	600570	3q26-qter	Neurological
495	Epilepsy, X-linked, with variable learning disabilities and behavior disorders, 300491 (3)	SYN1	313440	Xp11.4-p11.2	Neurological
496	Epiphyseal dysplasia, multiple 1, 132400 (3)	COMP, EDM1, MED, PSACH	600310	19p13.1	Bone
496	Epiphyseal dysplasia, multiple, 226900 (3)	SLC26A2, DTD, DTDST, D5S1708, EDM4	606718	5q32-q33.1	Bone

496	Epiphyseal dysplasia, multiple, 3, 600969 (3)	COL9A3, EDM3, IDD	120270	20q13.3	Bone
496	Epiphyseal dysplasia, multiple, 5, 607078 (3)	MATN3, EDM5, HOA	602109	2p24-p23	Bone
496	Epiphyseal dysplasia, multiple, COL9A1-related (3)	COL9A1, MED	120210	6q13	Bone
496	Epiphyseal dysplasia, multiple, type 2, 600204 (3)	COL9A2, EDM2	120260	1p33-p32.2	Bone
496	Epiphyseal dysplasia, multiple, with myopathy (3)	COL9A3, EDM3, IDD	120270	20q13.3	Bone
497	Episodic ataxia/myokymia syndrome, 160120 (3)	KCNA1, AEMK, EA1	176260	12p13	Neurological
497	Episodic ataxia, type 2, 108500 (3)	CACNA1A, CACNL1A4, SCA6	601011	19p13	Neurological
498	Epithelial ovarian cancer, somatic, 604370 (3)	OPCML	600632	11q25	Cancer
500	Epstein syndrome, 153650 (3)	MYH9, MHA, FTNS, DFNA17	160775	22q11.2	Hematological
502	Erythermalgia, primary, 133020 (3)	SCN9A, NENA, PN1	603415	2q24	Neurological
504	Erythremias, alpha- (3)	HBA1	141800	16pter-p13.3	Hematological
504	Erythremias, beta- (3)	HBB	141900	11p15.5	Hematological
505	Erythrocytosis (3)	HBA2	141850	16pter-p13.3	Hematological
505	Erythrocytosis, familial, 133100 (3)	EPOR	133171	19p13.3-p13.2	Hematological
507	Erythrokeratoderma, progressive symmetric, 602036 (3)	LOR	152445	1q21	Dermatological
507	Erythrokeratodermia variabilis, 133200 (3)	GJB3, CX31, DFNA2	603324	1p35.1	Dermatological
507	Erythrokeratodermia variabilis with erythema gyratum repens, 133200 (3)	GJB4, CX30.3	605425	1p35.1	Dermatological
508	Esophageal cancer, 133239 (3)	TGFBR2, HNPCC6	190182	3p22	Cancer
508	Esophageal carcinoma, somatic, 133239 (3)	RNF6	604242	13q12.11	Cancer
508	Esophageal squamous cell carcinoma, 133239 (3)	LZTS1, F37, FEZ1	606551	8p22	Cancer
508	Esophageal squamous cell carcinoma, 133239 (3)	WWOX, FOR	605131	16q23.3-q24.1	Cancer
509	Estrogen resistance (3)	ESR1, ESR	133430	6q25.1	Endocrine
510	Ethylmalonic encephalopathy, 602473 (3)	ETHE1, HSCO, D83198	608451	19q13.32	Metabolic
511	Ewing sarcoma (3)	EWSR1, EWS	133450	22q12	Cancer
512	Exertional myoglobinuria due to deficiency of LDH-A (3)	LDHA, LDH1	150000	11p15.4	Metabolic
514	Exostoses, multiple, type 1, 133700 (3)	EXT1	608177	8q24.11-q24.13	Bone
514	Exostoses, multiple, type 2, 133701 (3)	EXT2	608210	11p12-p11	Bone
515	Exudative vitreoretinopathy, 133780 (3)	FZD4, EVR1	604579	11q14-q21	Ophthamological
515	Exudative vitreoretinopathy, dominant, 133780 (3)	LRP5, BMND1, LRP7, LR3, OPPG, VBCH2	603506	11q13.4	Ophthamological
515	Exudative vitreoretinopathy, recessive, 601813 (3)	LRP5, BMND1, LRP7, LR3, OPPG, VBCH2	603506	11q13.4	Ophthamological
515	Exudative vitreoretinopathy, X-linked, 305390 (3)	NDP, ND	310600	Xp11.4	Ophthamological
516	Eye anomalies, multiplex (3)	PAX6, AN2, MGDA	607108	11p13	Ophthamological
517	Ezetimibe, nonresponse to (3)	NPC1L1	608010	7p13	Unclassified
518	Fabry disease (3)	GLA	301500	Xq22	Metabolic
519	Facioscapulohumeral muscular dystrophy-1A (3)	FSHMD1A, FSHD1A	158900	4q35	Muscular
520	Factor H and factor H-like 1 (3)	HF1, CFH, HUS	134370	1q32	Hematological
520	Factor V and factor VIII, combined deficiency of, 227300 (3)	MCFD2	607788	2p21-p16.3	Hematological
520	Factor VII deficiency (3)	F7	227500	13q34	Hematological
520	Factor X deficiency (3)	F10	227600	13q34	Hematological
520	Factor XI deficiency, autosomal dominant (3)	F11	264900	4q35	Hematological
520	Factor XI deficiency, autosomal recessive (3)	F11	264900	4q35	Hematological
520	Factor XII deficiency (3)	F12, HAF	234000	5q33-qter	Hematological
520	Factor XIIIA deficiency (3)	F13A1, F13A	134570	6p25-p24	Hematological
520	Factor XIIIB deficiency (3)	F13B	134580	1q31-q32.1	Hematological
522	Familial Mediterranean fever, 249100 (3)	MEFV, MEF, FMF	608107	16p13	Immunological
523	Fanconi anemia, complementation group A, 227650 (3)	FANCA, FACA, FA1, FA, FAA	607139	16q24.3	multiple
523	Fanconi anemia, complementation group B, 300514 (3)	FAAP95, FAAP90, FLJ34064, FANCB	300515	Xp22.31	multiple
523	Fanconi anemia, complementation group C (3)	FANCC, FACC	227645	9q22.3	multiple

523	Fanconi anemia, complementation group D1, 605724 (3)	BRCA2, FANCD1	600185	13q12.3	multiple
523	Fanconi anemia, complementation group D2 (3)	FANCD2, FANCD, FACD, FAD	227646	3p25.3	multiple
523	Fanconi anemia, complementation group E (3)	FANCE, FACE	600901	6p22-p21	multiple
523	Fanconi anemia, complementation group F (3)	FANCF	603467	11p15	multiple
523	Fanconi anemia, complementation group G (3)	XRCC9, FANCG	602956	9p13	multiple
523	Fanconi anemia, complementation group J, 609054 (3)	BRIP1, BACH1, FANCJ	605882	17q22	multiple
523	Fanconi anemia, complementation group L (3)	PHF9, FANCL	608111	2p16.1	multiple
523	Fanconi anemia, complementation group M (3)	FANCM, KIAA1596	609644	14q21.3	multiple
524	Fanconi-Bickel syndrome, 227810 (3)	SLC2A2, GLUT2	138160	3q26.1-q26.3	Metabolic
526	Farber lipogranulomatosis (3)	ASAH, AC	228000	8p22-p21.3	Metabolic
527	Fatty liver, acute, of pregnancy (3)	HADHA, MTPA	600890	2p23	Metabolic
528	Favism (3)	G6PD, G6PD1	305900	Xq28	Metabolic
530	Fechtner syndrome, 153640 (3)	MYH9, MHA, FTNS, DFNA17	160775	22q11.2	multiple
531	Feingold syndrome, 164280 (3)	MYCN, NMYC, ODED, MODED	164840	2p24.1	multiple
532	Fertile eunuch syndrome, 228300 (3)	GNRHR, LHRHR	138850	4q21.2	Endocrine
535	Fibrocalculous pancreatic diabetes, susceptibility to (3)	SPINK1, PSTI, PCTT, TATI	167790	5q32	Gastrointestinal
537	Fibromatosis, gingival, 135300 (3)	SOS1, GINGF, GF1, HGF	182530	2p22-p21	Connective tissue
537	Fibromatosis, juvenile hyaline, 228600 (3)	ANTXR2, CMG2, JHF, ISH	608041	4q21	Connective tissue
538	Fibrosis of extraocular muscles, congenital, 1, 135700 (3)	KIF21A, KIAA1708, FEOM1, CFEOM1	608283	12q12	Ophthamological
538	Fibrosis of extraocular muscles, congenital, 2, 602078 (3)	PHOX2A, ARIX, CFEOM2	602753	11q13.3-q13.4	Ophthamological
539	Fibular hypoplasia and complex brachydactyly, 228900 (3)	GDF5, CDMP1	601146	20q11.2	Skeletal
540	Fish-eye disease, 136120 (3)	LCAT	606967	16q22.1	Metabolic
541	Fish-odor syndrome, 602079 (3)	FMO3	136132	1q23-q25	Metabolic
542	Fitzgerald factor deficiency (3)	KNG	228960	3q27	Hematological
544	Fluorouracil toxicity, sensitivity to (3)	DPYD, DPD	274270	1p22	Metabolic
545	Focal cortical dysplasia, Taylor balloon cell type, 607341 (3)	TSC1, LAM	605284	9q34	Developmental
546	Follicle-stimulating hormone deficiency, isolated, 229070 (3)	FSHB	136530	11p13	Endocrine
547	Forebrain defects (3)	TDGF1	187395	3p23-p21	Neurological
548	Foveal hypoplasia, isolated, 136520 (3)	PAX6, AN2, MGDA	607108	11p13	Ophthamological
549	Foveomacular dystrophy, adult-onset, with choroidal neovascularization, 608161 (3)	RDS, RP7, PRPH2, PRPH, AVMD, AOFMD	179605	6p21.1-cen	Ophthamological
550	Fragile X syndrome (3)	FMR1, FRAXA	309550	Xq27.3	Neurological
551	Fraser syndrome, 219000 (3)	FRAS1	607830	4q21	multiple
551	Fraser syndrome, 219000 (3)	FREM2	608945	13q13.3	multiple
552	Frasier syndrome, 136680 (3)	WT1	607102	11p13	multiple
553	Friedreich ataxia, 229300 (3)	FRDA, FARR	606829	9q13	Neurological
553	Friedreich ataxia with retained reflexes, 229300 (3)	FRDA, FARR	606829	9q13	Neurological
554	Frontometaphyseal dysplasia, 304120 (3)	FLNA, FLN1, ABPX, NHBP, OPD1, OPD2, FMD, MNS	300017	Xq28	Skeletal
555	Fructose-bisphosphatase deficiency (3)	FBP1	229700	9q22.2-q22.3	Metabolic
556	Fructose intolerance (3)	ALDOB	229600	9q22.3	Metabolic
557	Fructosuria (3)	KHK	229800	2p23.3-p23.2	Metabolic
558	Fuchs endothelial corneal dystrophy, 136800 (3)	COL8A2, FECD, PPCD2	120252	1p34.3-p32.3	Ophthamological
559	Fucosidosis (3)	FUCA1	230000	1p34	Metabolic
560	Fucosyltransferase-6 deficiency (3)	FUT6	136836	19p13.3	Metabolic
561	Fumarase deficiency, 606812 (3)	FH	136850	1q42.1	Metabolic
562	Fundus albipunctatus, 136880 (3)	RDH5	601617	12q13-q14	Ophthamological
562	Fundus albipunctatus, 136880 (3)	RLBP1	180090	15q26	Ophthamological
562	Fundus flavimaculatus, 248200 (3)	ABCA4, ABCR, STGD1, FFM, RP19	601691	1p21-p13	Ophthamological
563	G6PD deficiency (3)	G6PD, G6PD1	305900	Xq28	Metabolic

564	GABA-transaminase deficiency (3)	ABAT, GABAT	137150	16p13.3	Metabolic
565	Galactokinase deficiency with cataracts, 230200 (3)	GALK1	604313	17q24	Metabolic
566	Galactose epimerase deficiency, 230350 (3)	GALE	606953	1p36-p35	Metabolic
567	Galactosemia, 230400 (3)	GALT	606999	9p13	Metabolic
568	Galactosialidosis (3)	PPGB, GSL, NGBE, GLB2, CTSA	256540	20q13.1	Metabolic
570	GAMT deficiency (3)	GAMT	601240	19p13.3	Metabolic
571	Gardner syndrome (3)	APC, GS, FPC	175100	5q21-q22	Cancer
572	Gastric cancer, 137215 (3)	APC, GS, FPC	175100	5q21-q22	Cancer
572	Gastric cancer, 137215 (3)	IRF1, MAR	147575	5q31.1	Cancer
572	Gastric cancer, familial diffuse, 137215 (3)	CDH1, UVO	192090	16q22.1	Cancer
572	Gastric cancer risk after H. pylori infection, 137215 (3)	IL1B	147720	2q14	Cancer
572	Gastric cancer risk after H. pylori infection, 137215 (3)	IL1RN	147679	2q14.2	Cancer
572	Gastric cancer, somatic, 137215 (3)	CASP10, MCH4, ALPS2	601762	2q33-q34	Cancer
572	Gastric cancer, somatic, 137215 (3)	ERBB2, NGL, NEU, HER2	164870	17q21.1	Cancer
572	Gastric cancer, somatic, 137215 (3)	FGFR2, BEK, CFD1, JWS	176943	10q26	Cancer
572	Gastric cancer, somatic, 137215 (3)	KLF6, COPEB, BCD1, ZF9	602053	10p15	Cancer
572	Gastric cancer, somatic, 137215 (3)	MUTYH	604933	1p34.3-p32.1	Cancer
574	Gastrointestinal stromal tumor, somatic, 606764 (3)	KIT, PBT	164920	4q12	Cancer
574	Gastrointestinal stromal tumor, somatic, 606764 (3)	PDGFRA	173490	4q12	Cancer
575	Gaucher disease, 230800 (3)	GBA	606463	1q21	Metabolic
575	Gaucher disease, variant form (3)	PSAP, SAP1	176801	10q22.1	Metabolic
575	Gaucher disease with cardiovascular calcification, 231005 (3)	GBA	606463	1q21	Metabolic
576	Gaze palsy, horizontal, with progressive scoliosis, 607313 (3)	ROBO3, RBIG1, RIG1, HGPPS	608630	11q23-q25	Neurological
578	Generalized epilepsy and paroxysmal dyskinesia, 609446 (3)	KCNMA1, SLO	600150	10q22.3	Neurological
578	Generalized epilepsy with febrile seizures plus, 604233 (3)	SCN1B, GEFSP1	600235	19q13.1	Neurological
580	Germ cell tumor (3)	BCL10	603517	1p22	Cancer
580	Germ cell tumors, 273300 (3)	KIT, PBT	164920	4q12	Cancer
581	Gerstmann-Straussler disease, 137440 (3)	PRNP, PRIP	176640	20pter-p12	Neurological
582	Giant axonal neuropathy-1, 256850 (3)	GAN, GAN1	605379	16q24.1	Neurological
583	Giant-cell fibroblastoma (3)	PDGFB, SIS	190040	22q12.3-q13.1	Cancer
2584	Giant cell hepatitis, neonatal, 231100 (3)	CYP7B1	603711	8q21.3	Gastrointestinal
584	Giant platelet disorder, isolated (3)	GP1BB	138720	22q11.2	Hematological
586	Gilbert syndrome, 143500 (3)	UGT1A1, UGT1, GNT1	191740	2q37	Metabolic
587	Gitelman syndrome, 263800 (3)	SLC12A3, NCCT, TSC	600968	16q13	Renal
588	Glanzmann thrombasthenia, type A, 273800 (3)	ITGA2B, GP2B, CD41B	607759	17q21.32	Hematological
588	Glanzmann thrombasthenia, type B (3)	ITGB3, GP3A	173470	17q21.32	Hematological
589	Glaucoma 1A, primary open angle, juvenile-onset, 137750 (3)	MYOC, TIGR, GLC1A, JOAG, GPOA	601652	1q24.3-q25.2	Ophthamological
589	Glaucoma 1A, primary open angle, recessive (3)	MYOC, TIGR, GLC1A, JOAG, GPOA	601652	1q24.3-q25.2	Ophthamological
589	Glaucoma 1E, primary open angle, adult-onset, 137760 (3)	OPTN, GLC1E, FIP2, HYPL, NRP	602432	10p15-p14	Ophthamological
589	Glaucoma 3A, primary congenital, 231300 (3)	CYP1B1, GLC3A	601771	2p22-p21	Ophthamological
589	Glaucoma, early-onset, digenic (3)	CYP1B1, GLC3A	601771	2p22-p21	Ophthamological
589	Glaucoma, early-onset, digenic (3)	MYOC, TIGR, GLC1A, JOAG, GPOA	601652	1q24.3-q25.2	Ophthamological
589	Glaucoma, normal tension, susceptibility to, 606657 (3)	OPA1, NTG, NPG	605290	3q28-q29	Ophthamological
589	Glaucoma, normal tension, susceptibility to, 606657 (3)	OPTN, GLC1E, FIP2, HYPL, NRP	602432	10p15-p14	Ophthamological
589	Glaucoma, primary open angle, adult-onset, 137760 (3)	CYP1B1, GLC3A	601771	2p22-p21	Ophthamological
589	Glaucoma, primary open angle, juvenile-onset, 137750 (3)	CYP1B1, GLC3A	601771	2p22-p21	Ophthamological
590	Glioblastoma, early-onset, 137800 (3)	MSH2, COCA1, FCC1, HNPCC1	609309	2p22-p21	Cancer
590	Glioblastoma multiforme, somatic, 137800 (3)	DMBT1	601969	10q25.3-q26.1	Cancer
590	Glioblastoma, somatic, 137800 (3)	ERBB2, NGL, NEU, HER2	164870	17q21.1	Cancer
590	Glioblastoma, somatic, 137800 (3)	LGI1, EPT, ETL1	604619	10q24	Cancer

590	Glioblastoma, susceptibility to, 137800 (3)	PPARG, PPARG1, PPARG2	601487	3p25	Cancer
594	Glomerulocystic kidney disease, hypoplastic, 137920 (3)	TCF2, HNF2	189907	17cen-q21.3	Renal
596	Glomerulosclerosis, focal segmental, 1, 603278 (3)	ACTN4, FSGS1, FSGS	604638	19q13	Renal
596	Glomerulosclerosis, focal segmental, 2, 603965 (3)	TRPC6, TRP6, FSGS2	603652	11q21-q22	Renal
596	Glomerulosclerosis, focal segmental, 3, 607832 (3)	CD2AP, CMS	604241	Chr.6	Renal
597	Glomuvenous malformations, 138000 (3)	GLML, GVM, VMGLOM	601749	1p22-p21	Cardiovascular
598	Glucocorticoid deficiency 2, 607398 (3)	MRAP, FALP, C21orf61	609196	21q22.1	Endocrine
598	Glucocorticoid deficiency, due to ACTH unresponsiveness, 202200 (3)	MC2R	607397	18p11.2	Endocrine
599	Glucose/galactose malabsorption, 606824 (3)	SLC5A1, SGLT1	182380	22q13.1	Metabolic
600	Glucose transport defect, blood-brain barrier, 606777 (3)	SLC2A1, GLUT1	138140	1p35-p31.3	Metabolic
601	Glucosidase I deficiency, 606056 (3)	GCS1	601336	2p13-p12	Metabolic
602	Glutamate formiminotransferase deficiency, 229100 (3)	FTCD	606806	21q22.3	Metabolic
603	Glutaricaciduria, type I, 231670 (3)	GCDH	608801	19p13.2	Metabolic
603	Glutaricaciduria, type IIA, 231680 (3)	ETFA, GA2, MADD	608053	15q23-q25	Metabolic
603	Glutaricaciduria, type IIB, 231680 (3)	ETFB, MADD	130410	19q13.3	Metabolic
603	Glutaricaciduria, type IIC, 231680 (3)	ETFDH, MADD	231675	4q32-qter	Metabolic
604	Glutathione synthetase deficiency, 266130 (3)	GSS, GSHS	601002	20q11.2	Metabolic
607	Glycerol kinase deficiency, 307030 (3)	GK	300474	Xp21.3-p21.2	Metabolic
608	Glycine encephalopathy, 605899 (3)	AMT, NKH, GCE	238310	3p21.2-p21.1	Metabolic
608	Glycine encephalopathy, 605899 (3)	GCSH, NKH	238330	16q24	Metabolic
608	Glycine encephalopathy, 605899 (3)	GLDC, HYGN1, GCSP, GCE, NKH	238300	9p22	Metabolic
608	Glycine N-methyltransferase deficiency, 606664 (3)	GNMT	606628	6p12	Metabolic
609	Glycogenosis, hepatic, autosomal (3)	PHKG2	172471	16p12.1-p11.2	Metabolic
609	Glycogenosis, X-linked hepatic, type I (3)	PHKA2, PHK	306000	Xp22.2-p22.1	Metabolic
609	Glycogenosis, X-linked hepatic, type II (3)	PHKA2, PHK	306000	Xp22.2-p22.1	Metabolic
610	Glycogen storage disease I (3)	G6PC, G6PT	232200	17q21	Metabolic
610	Glycogen storage disease Ib, 232220 (3)	G6PT1	602671	11q23	Metabolic
610	Glycogen storage disease Ic, 232240 (3)	G6PT1	602671	11q23	Metabolic
610	Glycogen storage disease II, 232300 (3)	GAA	606800	17q25.2-q25.3	Metabolic
610	Glycogen storage disease IIb, 300257 (3)	LAMP2, LAMPB	309060	Xq24	Metabolic
610	Glycogen storage disease IIIa (3)	AGL, GDE	232400	1p21	Metabolic
610	Glycogen storage disease IIIb (3)	AGL, GDE	232400	1p21	Metabolic
610	Glycogen storage disease IV, 232500 (3)	GBE1	607839	3p12	Metabolic
610	Glycogen storage disease, type 0, 240600 (3)	GYS2	138571	12p12.2	Metabolic
610	Glycogen storage disease VI (3)	PYGL	232700	14q21-q22	Metabolic
610	Glycogen storage disease VII (3)	PFKM	232800	12q13.3	Metabolic
614	GM1-gangliosidosis (3)	GLB1	230500	3p21.33	Metabolic
614	GM2-gangliosidosis, AB variant (3)	GM2A	272750	5q31.3-q33.1	Metabolic
614	GM2-gangliosidosis, several forms, 272800 (3)	HEXA, TSD	606869	15q23-q24	Metabolic
615	Gnthodiaphyseal dysplasia, 166260 (3)	TMEM16E, GDD1	608662	11p14.3	Bone
617	Goiter, congenital (3)	TPO, TPX	606765	2p25	Endocrine
617	Goiter, nonendemic, simple (3)	TG, AITD3	188450	8q24.2-q24.3	Endocrine
618	Goldberg-Shprintzen megacolon syndrome, 609460 (3)	KIAA1279	609367	10q22.1	multiple
619	Gonadal dysgenesis, 46XY, partial, with minifascicular neuropathy, 607080 (3)	DHH	605423	12q13.1	Endocrine
619	Gonadal dysgenesis, XY type (3)	SRY, TDF	480000	Yp11.3	Endocrine
622	GRACILE syndrome, 603358 (3)	BCS1L, FLNMS, GRACILE	603647	2q33	Metabolic
623	Graft-versus-host disease, protection against (3)	IL10, CSIF	124092	1q31-q32	Immunological
624	Graves disease, susceptibility to, 275000 (3)	CTLA4	123890	2q33	Endocrine
624	Graves disease, susceptibility to, 3, 275000 (3)	GC, DBP	139200	4q12	Endocrine

625	Greenberg dysplasia, 215140 (3)	LBR, PHA	600024	1q42.1	Skeletal
626	Greig cephalopolysyndactyly syndrome, 175700 (3)	GLI3, PAPA, PAPB, ACLS	165240	7p13	Skeletal
627	Griscelli syndrome, type 1, 214450 (3)	MYO5A, MYH12, GS1	160777	15q21	Dermatological
627	Griscelli syndrome, type 2, 607624 (3)	RAB27A, RAM, GS2	603868	15q21	Dermatological
627	Griscelli syndrome, type 3, 609227 (3)	MLPH	606526	2q37	Dermatological
628	Growth hormone deficient dwarfism (3)	GHRHR	139191	7p15-p14	Endocrine
628	Growth hormone insensitivity with immunodeficiency, 245590 (3)	STAT5B	604260	17q11.2	Endocrine
2628	Growth retardation with deafness and mental retardation due to IGF1 deficiency, 608747 (3)	IGF1	147440	12q22-q24.1	Developmental
630	Guttmacher syndrome, 176305 (3)	HOXA13, HOX1J	142959	7p15-p14.2	multiple
632	Gyrate atrophy of choroid and retina with ornithinemia, B6 responsive or unresponsive (3)	OAT	258870	10q26	Metabolic
633	Hailey-Hailey disease, 169600 (3)	ATP2C1, BCPM, HHD	604384	3q21-q24	Dermatological
634	Haim-Munk syndrome, 245010 (3)	CTSC, CPPI, PALS, PLS, HMS	602365	11q14.1-q14.3	multiple
638	Hand-foot-uterus syndrome, 140000 (3)	HOXA13, HOX1J	142959	7p15-p14.2	multiple
639	Harderoporphyrinuria (3)	CPO	121300	3q12	Metabolic
640	HARP syndrome, 607236 (3)	PANK2, NBIA1, PKAN, HARP	606157	20p13-p12.3	Metabolic
641	Hartnup disorder, 234500 (3)	SLC6A19, HND	608893	5p15	Metabolic
643	Hay-Wells syndrome, 106260 (3)	TP73L, TP63, KET, EEC3, SHFM4, LMS, RHS	603273	3q27	multiple
644	HDL deficiency, familial, 604091 (3)	ABCA1, ABC1, HDLDT1, TGD	600046	9q22-q31	Metabolic
644	HDL response to hormone replacement, augmented (3)	ESR1, ESR	133430	6q25.1	Metabolic
646	Hearing loss, low-frequency sensorineural, 600965 (3)	WFS1, WFRS, WFS, DFNA6	606201	4p16.1	Ear,Nose,Throat
647	Heart block, nonprogressive, 113900 (3)	SCN5A, LQT3, IVF, HB1, SSS1	600163	3p21	Cardiovascular
647	Heart block, progressive, type I, 113900 (3)	SCN5A, LQT3, IVF, HB1, SSS1	600163	3p21	Cardiovascular
648	Heinz body anemia (3)	HBA2	141850	16pter-p13.3	Hematological
648	Heinz body anemias, alpha- (3)	HBA1	141800	16pter-p13.3	Hematological
648	Heinz body anemias, beta- (3)	HBB	141900	11p15.5	Hematological
649	HELLP syndrome, maternal, of pregnancy (3)	HADHA, MTPA	600890	2p23	Metabolic
650	Hemangioblastoma, cerebellar, somatic (3)	VHL	608537	3p26-p25	Cancer
651	Hemangioma, capillary infantile, somatic, 602089 (3)	FLT4, VEGFR3, PCL	136352	5q35.3	Cancer
651	Hemangioma, capillary infantile, somatic, 602089 (3)	KDR	191306	4q12	Cancer
652	Hematopoiesis, cyclic, 162800 (3)	ELA2	130130	19p13.3	Hematological
653	Hematuria, familial benign (3)	COL4A4	120131	2q36-q37	Renal
654	Heme oxygenase-1 deficiency (3)	HMOX1	141250	22q12	Metabolic
656	Hemiplegic migraine, familial, 141500 (3)	CACNA1A, CACNL1A4, SCA6	601011	19p13	Neurological
657	Hemochromatosis (3)	HFE, HLA-H, HFE1	235200	6p21.3	Metabolic
657	Hemochromatosis, juvenile, 602390 (3)	HAMP, LEAP1, HEPC, HFE2	606464	19q13	Metabolic
657	Hemochromatosis, juvenile, digenic, 602390 (3)	HAMP, LEAP1, HEPC, HFE2	606464	19q13	Metabolic
657	Hemochromatosis, type 2A, 602390 (3)	HJV, HFE2A	608374	1q21	Metabolic
657	Hemochromatosis, type 3, 604250 (3)	TFR2, HFE3	604720	7q22	Metabolic
657	Hemochromatosis, type 4, 606069 (3)	SLC40A1, SLC11A3, FPN1, IREG1, HFE4	604653	2q32	Metabolic
659	Hemoglobin H disease (3)	HBA2	141850	16pter-p13.3	Hematological
660	Hemolytic anemia due to adenylate kinase deficiency (3)	AK1	103000	9q34.1	Hematological
660	Hemolytic anemia due to band 3 defect defect (3)	SLC4A1, AE1, EPB3	109270	17q21-q22	Hematological
660	Hemolytic anemia due to bisphosphoglycerate mutase deficiency (3)	BPGM	222800	7q31-q34	Hematological
660	Hemolytic anemia due to G6PD deficiency (3)	G6PD, G6PD1	305900	Xq28	Hematological
660	Hemolytic anemia due to gamma-glutamylcysteine synthetase deficiency, 230450 (3)	GCLC, GLCLC	606857	6p12	Hematological

660	Hemolytic anemia due to glucosephosphate isomerase deficiency (3)	GPI	172400	19q13.1	Hematological
660	Hemolytic anemia due to glutathione synthetase deficiency, 231900 (3)	GSS, GSHS	601002	20q11.2	Hematological
660	Hemolytic anemia due to hexokinase deficiency (3)	HK1	142600	10q22	Hematological
660	Hemolytic anemia due to PGK deficiency (3)	PGK1, PGKA	311800	Xq13	Hematological
660	Hemolytic anemia due to triosephosphate isomerase deficiency (3)	TPI1	190450	12p13	Hematological
661	Hemolytic-uremic syndrome, 235400 (3)	HF1, CFH, HUS	134370	1q32	Hematological
662	Hemophagocytic lymphohistiocytosis, familial, 2, 603553 (3)	PRF1, HPLH2	170280	10q22	Hematological
662	Hemophagocytic lymphohistiocytosis, familial, 3, 608898 (3)	UNC13D, MUNC13-4, HPLH3, HLH3, FHL3	608897	17q25.1	Hematological
663	Hemophilia A (3)	F8, F8C, HEMA	306700	Xq28	Hematological
663	Hemophilia B (3)	F9, HEMB	306900	Xq27.1-q27.2	Hematological
664	Hemorrhagic diathesis due to \`antithrombin\' Pittsburgh (3)	PI, AAT	107400	14q32.1	Hematological
664	Hemorrhagic diathesis due to factor V deficiency (3)	F5	227400	1q23	Hematological
665	Hemosiderosis, systemic, due to aceruloplasminemia, 604290 (3)	CP	117700	3q23-q24	Hematological
668	Hepatic adenoma, 142330 (3)	TCF1, HNF1A, MODY3	142410	12q24.2	Cancer
666	Hepatic failure, early onset, and neurologic disorder (3)	SCOD1, SCO1	603644	17p13-p12	Gastrointestinal
4666	Hepatic lipase deficiency (3)	LIPC	151670	15q21-q23	Metabolic
668	Hepatoblastoma (3)	CTNNB1	116806	3p22-p21.3	Cancer
668	Hepatocellular cancer, 114550 (3)	PDGFRL, PDGRL, PRLTS	604584	8p22-p21.3	Cancer
668	Hepatocellular carcinoma, 114550 (3)	AXIN1, AXIN	603816	16p13.3	Cancer
668	Hepatocellular carcinoma, 114550 (3)	CTNNB1	116806	3p22-p21.3	Cancer
668	Hepatocellular carcinoma, 114550 (3)	TP53, P53, LFS1	191170	17p13.1	Cancer
668	Hepatocellular carcinoma (3)	IGF2R, MPRI	147280	6q26	Cancer
668	Hepatocellular carcinoma, childhood type, 114550 (3)	MET	164860	7q31	Cancer
668	Hepatocellular carcinoma, somatic, 114550 (3)	CASP8, MCH5	601763	2q33-q34	Cancer
669	Hereditary hemorrhagic telangiectasia-1, 187300 (3)	ENG, END, HHT1, ORW	131195	9q34.1	Cardiovascular
669	Hereditary hemorrhagic telangiectasia-2, 600376 (3)	ACVRL1, ACVRLK1, ALK1, HHT2	601284	12q11-q14	Cardiovascular
2669	Hereditary persistence of alpha-fetoprotein (3)	AFP, HPAFP	104150	4q11-q13	Hematological
670	Hermansky-Pudlak syndrome, 203300 (3)	HPS1	604982	10q23.1	multiple
670	Hermansky-Pudlak syndrome, 203300 (3)	HPS3	606118	3q24	multiple
670	Hermansky-Pudlak syndrome, 203300 (3)	HPS4	606682	22q11.2-q12.2	multiple
670	Hermansky-pudlak syndrome, 203300 (3)	HPS5, RU2, KIAA1017	607521	11p15-p13	multiple
670	Hermansky-Pudlak syndrome, 203300 (3)	HPS6, RU	607522	10q24.32	multiple
670	Hermansky-Pudlak syndrome, 608233 (3)	AP3B1, ADTB3A, HPS2	603401	5q14.1	multiple
670	Hermansky-Pudlak syndrome 7, 203300 (3)	DTNBP1, HPS7	607145	6p22.3	multiple
675	Heterotaxy, visceral, 605376 (3)	CFC1, CRYPTIC, HTX2	605194	2q21.1	multiple
675	Heterotaxy, X-linked visceral, 306955 (3)	ZIC3, HTX1, HTX	300265	Xq26.2	multiple
676	Heterotopia, periventricular, 300049 (3)	FLNA, FLN1, ABPX, NHBP, OPD1, OPD2, FMD, MNS	300017	Xq28	Neurological
676	Heterotopia, periventricular, ED variant, 300537 (3)	FLNA, FLN1, ABPX, NHBP, OPD1, OPD2, FMD, MNS	300017	Xq28	Neurological
676	Heterotopia, periventricular nodular, with frontometaphyseal dysplasia, 300049 (3)	FLNA, FLN1, ABPX, NHBP, OPD1, OPD2, FMD, MNS	300017	Xq28	Neurological
677	Hex A pseudodeficiency, 272800 (3)	HEXA, TSD	606869	15q23-q24	Metabolic
679	High-molecular-weight kininogen deficiency (3)	KNG	228960	3q27	Hematological
681	Hirschsprung disease, 142623 (3)	EDN3	131242	20q13.2-q13.3	Gastrointestinal
681	Hirschsprung disease, 142623 (3)	GDNF	600837	5p13.1-p12	Gastrointestinal
681	Hirschsprung disease, 142623 (3)	NRTN, NTN	602018	19p13.3	Gastrointestinal
681	Hirschsprung disease, 142623 (3)	RET, MEN2A	164761	10q11.2	Gastrointestinal
681	Hirschsprung disease-2, 600155 (3)	EDNRB, HSCR2, ABCDS	131244	13q22	Gastrointestinal

681	Hirschsprung disease, cardiac defects, and autonomic dysfunction (3)	ECE1	600423	1p36.1	Gastrointestinal
681	Hirschsprung disease, short-segment, 142623 (3)	PMX2B, NBPHOX, PHOX2B	603851	4p12	Gastrointestinal
682	Histidinemia, 235800 (3)	HAL, HSTD	609457	12q22-q23	Metabolic
683	Histiocytoma (3)	TP53, P53, LFS1	191170	17p13.1	Cancer
684	HIV-1 disease, delayed progression of (3)	CCL5, SCYA5, D17S136E, TCP228	187011	17q11.2-q12	Immunological
684	HIV-1 disease, rapid progression of (3)	CCL5, SCYA5, D17S136E, TCP228	187011	17q11.2-q12	Immunological
684	HIV-1, susceptibility to (3)	IL10, CSIF	124092	1q31-q32	Immunological
684	HIV infection, susceptibility/resistance to (3)	CMKBR2, CCR2	601267	3p21	Immunological
684	HIV infection, susceptibility/resistance to (3)	CMKBR5, CCCKR5	601373	3p21	Immunological
686	HMG-CoA lyase deficiency (3)	HMGCL	246450	1pter-p33	Metabolic
686	HMG-CoA synthase-2 deficiency, 605911 (3)	HMGCS2	600234	1p13-p12	Metabolic
688	Holocarboxylase synthetase deficiency, 253270 (3)	HLCS, HCS	609018	21q22.1	Metabolic
689	Holoprosencephaly-2, 157170 (3)	SIX3, HPE2	603714	2p21	Developmental
689	Holoprosencephaly-3, 142945 (3)	SHH, HPE3, HLP3, SMMCI	600725	7q36	Developmental
689	Holoprosencephaly-4, 142946 (3)	TGIF, HPE4	602630	18p11.3	Developmental
689	Holoprosencephaly-5, 609637 (3)	ZIC2, HPE5	603073	13q32	Developmental
689	Holoprosencephaly-7 (3)	PTCH, NBCCS, BCNS, HPE7	601309	9q22.3	Developmental
696	Holt-Oram syndrome, 142900 (3)	TBX5	601620	12q24.1	Developmental
697	Homocysteine, total plasma, elevated (3)	CTH	607657	1p31.1	Metabolic
698	Homocystinuria, B6-responsive and nonresponsive types (3)	CBS	236200	21q22.3	Metabolic
698	Homocystinuria due to MTHFR deficiency, 236250 (3)	MTHFR	607093	1p36.3	Metabolic
699	Homocystinuria-megaloblastic anemia, cbl E type, 236270 (3)	MTRR	602568	5p15.3-p15.2	Metabolic
701	Homozygous 2p16 deletion syndrome, 606407 (3)	SLC3A1, ATR1, D2H, NBAT	104614	2p16.3	multiple
702	Hoyeraal-Hreidarsson syndrome, 300240 (3)	DKC1, DKC	300126	Xq28	multiple
703	HPFH, deletion type (3)	HBB	141900	11p15.5	Hematological
703	HPFH, nondeletion type A (3)	HBG1	142200	11p15.5	Hematological
703	HPFH, nondeletion type G (3)	HBG2	142250	11p15.5	Hematological
704	HPRT-related gout, 300323 (3)	HPRT1, HPRT	308000	Xq26-q27.2	Metabolic
705	H. pylori infection, susceptibility to, 600263 (3)	IFNGR1	107470	6q23-q24	Immunological
708	Huntington disease (3)	HD, IT15	143100	4p16.3	Neurological
708	Huntington disease-like 1, 603218 (3)	PRNP, PRIP	176640	20pter-p12	Neurological
708	Huntington disease-like 2, 606438 (3)	JPH3, JP3, HDL2	605268	16q24.3	Neurological
708	Huntington disease-like-4, 607136 (3)	TBP, SCA17	600075	6q27	Neurological
710	Hyalinosis, infantile systemic, 236490 (3)	ANTXR2, CMG2, JHF, ISH	608041	4q21	multiple
712	Hydrocephalus due to aqueductal stenosis, 307000 (3)	L1CAM, CAML1, HSAS1	308840	Xq28	Neurological
712	Hydrocephalus with congenital idiopathic intestinal pseudoobstruction, 307000 (3)	L1CAM, CAML1, HSAS1	308840	Xq28	Neurological
712	Hydrocephalus with Hirschsprung disease and cleft palate, 142623 (3)	L1CAM, CAML1, HSAS1	308840	Xq28	Neurological
716	Hyperalphalipoproteinemia, 143470 (3)	CETP	118470	16q21	Metabolic
717	Hyperammonemia with hypoornithinemia, hypocitrullinemia, hypoargininemia, and hypoprolinemia (3)	PYCS, GSAS	138250	10q24.3	Metabolic
718	Hyperandrogenism, nonclassic type, due to 21-hydroxylase deficiency (3)	CYP21A2, CYP21, CA21H	201910	6p21.3	Endocrine
719	Hyperapobetalipoproteinemia, susceptibility to (3)	PPARA, PPAR	170998	22q12-q13.1	Metabolic
720	Hyperbilirubinemia, familial transcient neonatal, 237900 (3)	UGT1A1, UGT1, GNT1	191740	2q37	Gastrointestinal
721	Hypercalciuria, absorptive, susceptibility to, 143870 (3)	SAC, HCA2	605205	1q24	Renal
723	Hypercholanemia, familial, 607748 (3)	BAAT	602938	9q22.3	Gastrointestinal
723	Hypercholanemia, familial, 607748 (3)	EPHX1	132810	1q42.1	Gastrointestinal
723	Hypercholanemia, familial, 607748 (3)	TJP2, ZO2	607709	9q12-q13	Gastrointestinal
724	Hypercholesterolemia, due to ligand-defective apo B, 144010 (3)	APOB, FLDB	107730	2p24	Metabolic
724	Hypercholesterolemia, familial, 143890 (3)	LDLR, FHC, FH	606945	19p13.2	Metabolic

724	Hypercholesterolemia, familial, 3, 603776 (3)	PCSK9, NARC1, HCHOLA3, FH3	607786	1p34.1-p32	Metabolic
724	Hypercholesterolemia, familial, autosomal recessive, 603813 (3)	ARH, FHCB2, FHCB1	605747	1p36-p35	Metabolic
724	Hypercholesterolemia, familial, due to LDLR defect, modifier of, 143890 (3)	EPHX2	132811	8p21-p12	Metabolic
724	Hypercholesterolemia, familial, modification of, 143890 (3)	APOA2	107670	1q21-q23	Metabolic
724	Hypercholesterolemia, susceptibility to, 143890 (3)	GSBS	604088	7p15	Metabolic
724	Hypercholesterolemia, susceptibility to, 143890 (3)	ITIH4, PK120, ITIHL1	600564	3p21.2-p14.1	Metabolic
725	Hyperekplexia and spastic paraparesis (3)	GLRA1, STHE	138491	5q32	Neurological
725	Hyperekplexia, autosomal recessive, 149400 (3)	GLRB	138492	4q31.3	Neurological
726	Hypereosinophilic syndrome, idiopathic, resistant to imatinib, 607685 (3)	PDGFRA	173490	4q12	Hematological
727	Hyperferritinemia-cataract syndrome, 600886 (3)	FTL	134790	19q13.3-q13.4	Ophthamological
728	Hyper-IgD syndrome, 260920 (3)	MVK, MVLK	251170	12q24	Immunological
731	Hyperinsulinism, familial, 602485 (3)	GCK	138079	7p15-p13	Metabolic
732	Hyperinsulinism-hyperammonemia syndrome, 606762 (3)	GLUD1	138130	10q23.3	Metabolic
733	Hyperkalemic periodic paralysis, 170500 (3)	SCN4A, HYPP, NAC1A	603967	17q23.1-q25.3	Neurological
734	Hyperkeratotic cutaneous capillary-venous malformations associated with cerebral capillary malformations, 116860 (3)	CCM1, CAM, KRIT1	604214	7q11.2-q21	Neurological
736	Hyperlipidemia, familial combined, susceptibility to, 602491 (3)	USF1, HYPLIP1	191523	1q22-q23	Metabolic
737	Hyperlipoproteinemia, type Ib, 207750 (3)	APOC2	608083	19q13.2	Metabolic
737	Hyperlipoproteinemia, type III (3)	APOE, AD2	107741	19q13.2	Metabolic
738	Hyperlysinemia, 238700 (3)	AASS	605113	7q31.3	Metabolic
739	Hypermethioninemia, persistent, autosomal dominant, due to methionine adenosyltransferase I/III deficiency (3)	MAT1A, MATA1, SAMS1	250850	10q22	Metabolic
739	Hypermethioninemia with deficiency of S-adenosylhomocysteine hydrolase (3)	AHCY, SAHH	180960	20cen-q13.1	Metabolic
740	Hyperornithinemia-hyperammonemia-homocitrullinemia syndrome, 238970 (3)	SLC25A15, ORNT1, HHH	603861	13q14	Metabolic
741	Hyperostosis, endosteal, 144750 (3)	LRP5, BMND1, LRP7, LR3, OPPG, VBCH2	603506	11q13.4	Bone
742	Hyperoxaluria, primary, type 1, 259900 (3)	AGXT, SPAT	604285	2q36-q37	Metabolic
742	Hyperoxaluria, primary, type II, 260000 (3)	GRHPR, GLXR	604296	9cen	Metabolic
743	Hyperparathyroidism, AD, 145000 (3)	MEN1	131100	11q13	Endocrine
743	Hyperparathyroidism, familial primary, 145000 (3)	HRPT2, C1orf28	607393	1q25-q31	Endocrine
743	Hyperparathyroidism-jaw tumor syndrome, 145001 (3)	HRPT2, C1orf28	607393	1q25-q31	Endocrine
743	Hyperparathyroidism, neonatal, 239200 (3)	CASR, HHC1, PCAR1, FIH	601199	3q13.3-q21	Endocrine
746	Hyperphenylalaninemia due to pterin-4a-carbinolamine dehydratase deficiency, 264070 (3)	PCBD, DCOH	126090	10q22	Metabolic
746	Hyperphenylalaninemia, mild (3)	PAH, PKU1	261600	12q24.1	Metabolic
748	Hyperproinsulinemia, familial (3)	INS	176730	11p15.5	Endocrine
749	Hyperprolinemia, type I, 239500 (3)	PRODH, PRODH2, SCZD4	606810	22q11.2	Metabolic
749	Hyperprolinemia, type II, 239510 (3)	ALDH4A1, ALDH4, P5CDH	606811	1p36	Metabolic
750	Hyperproreninemia (3)	REN	179820	1q32	Cardiovascular
751	Hyperprothrombinemia (3)	F2	176930	11p11-q12	Hematological
752	Hypertension, diastolic, resistance to, 608622 (3)	KCNMB1	603951	5q34	Cardiovascular
752	Hypertension, early-onset, autosomal dominant, with exacerbation in pregnancy, 605115 (3)	NR3C2, MLR, MCR	600983	4q31.1	Cardiovascular
752	Hypertension, essential, 145500 (3)	AGTR1, AGTR1A, AT2R1	106165	3q21-q25	Cardiovascular
752	Hypertension, essential, 145500 (3)	PTGIS, CYP8A1, PGIS, CYP8	601699	20q13.11-q13.13	Cardiovascular
752	Hypertension, essential, salt-sensitive, 145500 (3)	ADD1	102680	4p16.3	Cardiovascular
752	Hypertension, essential, susceptibility to, 145500 (3)	AGT, SERPINA8	106150	1q42-q43	Cardiovascular
752	Hypertension, essential, susceptibility to, 145500 (3)	ECE1	600423	1p36.1	Cardiovascular
752	Hypertension, essential, susceptibility to, 145500 (3)	GNB3	139130	12p13	Cardiovascular
752	Hypertension, insulin resistance-related, susceptibility to, 125853 (3)	RETN, RSTN, FIZZ3	605565	19p13.2	Cardiovascular

752	Hypertension, mild low-renin (3)	HSD11B2, HSD11K	218030	16q22	Cardiovascular
752	Hypertension, pregnancy-induced, 189800 (3)	NOS3	163729	7q36	Cardiovascular
752	Hypertension, salt-sensitive essential, susceptibility to, 145500 (3)	CYP3A5, P450PCN3	605325	7q22.1	Cardiovascular
752	Hypertension, susceptibility to, 145500 (3)	NOS3	163729	7q36	Cardiovascular
754	Hyperthroidism, congenital (3)	TSHR	603372	14q31	Endocrine
755	Hyperthyroidism, congenital (3)	TPO, TPX	606765	2p25	Endocrine
757	Hypertriglyceridemia, one form (3)	APOA1	107680	11q23	Metabolic
757	Hypertriglyceridemia, susceptibility to, 145750 (3)	APOA5	606368	11q23	Metabolic
757	Hypertriglyceridemia, susceptibility to, 145750 (3)	LIPI, LPDL, PRED5	609252	21q11.2	Metabolic
757	Hypertriglyceridemia, susceptibility to, 145750 (3)	RP1, ORP1	603937	8q11-q13	Metabolic
758	Hypertrypsinemia, neonatal (3)	CFTR, ABCC7, CF, MRP7	602421	7q31.2	Gastrointestinal
759	Hyperuricemic nephropathy, familial juvenile, 162000 (3)	UMOD, HNFJ, FJHN, MCKD2, ADMCKD2	191845	16p12.3	Renal
761	Hypoaldosteronism, congenital, due to CMO I deficiency, 203400 (3)	CYP11B2	124080	8q21	Metabolic
761	Hypoaldosteronism, congenital, due to CMO II deficiency (3)	CYP11B2	124080	8q21	Metabolic
762	Hypoalphalipoproteinemia (3)	APOA1	107680	11q23	Metabolic
763	Hypobetalipoproteinemia (3)	APOB, FLDB	107730	2p24	Metabolic
764	Hypocalcemia, autosomal dominant, 146200 (3)	CASR, HHC1, PCAR1, FIH	601199	3q13.3-q21	Endocrine
764	Hypocalcemia, autosomal dominant, with Bartter syndrome (3)	CASR, HHC1, PCAR1, FIH	601199	3q13.3-q21	Endocrine
765	Hypocalciuric hypercalcemia, type I, 145980 (3)	CASR, HHC1, PCAR1, FIH	601199	3q13.3-q21	Endocrine
766	Hypoceruloplasminemia, hereditary, 604290 (3)	CP	117700	3q23-q24	Metabolic
767	Hypochondroplasia, 146000 (3)	FGFR3, ACH	134934	4p16.3	Skeletal
768	Hypochromic microcytic anemia (3)	HBA2	141850	16pter-p13.3	Hematological
769	Hypodontia, 106600 (3)	PAX9	167416	14q12-q13	Skeletal
769	Hypodontia, autosomal dominant, 106600 (3)	MSX1, HOX7, HYD1, OFC5	142983	4p16.1	Skeletal
769	Hypodontia with orofacial cleft, 106600 (3)	MSX1, HOX7, HYD1, OFC5	142983	4p16.1	Skeletal
770	Hypofibrinogenemia, gamma type (3)	FGG	134850	4q28	Hematological
771	Hypoglobulinemia and absent B cells (3)	BLNK, SLP65	604515	10q23.2	Immunological
772	Hypoglycemia of infancy, leucine-sensitive, 240800 (3)	ABCC8, SUR, PHHI, SUR1	600509	11p15.1	Metabolic
772	Hypoglycemia of infancy, persistent hyperinsulinemic, 256450 (3)	ABCC8, SUR, PHHI, SUR1	600509	11p15.1	Metabolic
773	Hypogonadism, hypergonadotropic (3)	LHB	152780	19q13.32	Endocrine
774	Hypogonadotropic hypogonadism, 146110 (3)	GPR54	604161	19p13.3	Endocrine
774	Hypogonadotropic hypogonadism, 146110 (3)	NELF	608137	9q34.3	Endocrine
774	Hypogonadotropic hypogonadism (3)	GNRHR, LHRHR	138850	4q21.2	Endocrine
774	Hypogonadotropic hypogonadism (3)	LHCGR	152790	2p21	Endocrine
775	Hypohaptoglobinemia (3)	HP	140100	16q22.1	Hematological
776	Hypokalemic periodic paralysis, 170400 (3)	CACNA1S, CACNL1A3, CCHL1A3	114208	1q32	Renal
776	Hypokalemic periodic paralysis, 170400 (3)	KCNE3, HOKPP	604433	11q13-q14	Renal
776	Hypokalemic periodic paralysis, 170400 (3)	SCN4A, HYPP, NAC1A	603967	17q23.1-q25.3	Renal
777	Hypolactasia, adult type, 223100 (3)	LCT, LAC, LPH	603202	2q21	Metabolic
777	Hypolactasia, adult type, 223100 (3)	MCM6	601806	2q21	Metabolic
778	Hypomagnesemia-2, renal, 154020 (3)	FXYD2, ATP1G1, HOMG2	601814	11q23	Renal
778	Hypomagnesemia, primary, 248250 (3)	CLDN16, PCLN1	603959	3q27	Renal
778	Hypomagnesemia with secondary hypocalcemia, 602014 (3)	TRPM6, CHAK2	607009	9q22	Renal
779	Hypoparathyroidism, autosomal dominant(3)	PTH	168450	11p15.3-p15.1	Endocrine
779	Hypoparathyroidism, autosomal recessive (3)	PTH	168450	11p15.3-p15.1	Endocrine
779	Hypoparathyroidism, familial isolated, 146200 (3)	GCMB	603716	6p24.2	Endocrine
780	Hypoparathyroidism-retardation-dysmorphism syndrome, 241410 (3)	TBCE, KCS, KCS1, HRD	604934	1q42-q43	Endocrine
781	Hypoparathyroidism, sensorineural deafness, and renal dysplasia, 146255 (3)	GATA3, HDR	131320	10p15	Endocrine
782	Hypophosphatasia, childhood, 241510 (3)	ALPL, HOPS, TNSALP	171760	1p36.1-p34	Metabolic

782	Hypophosphatasia, infantile, 241500 (3)	ALPL, HOPS, TNSALP	171760	1p36.1-p34	Metabolic
783	Hypophosphatemia, type III (3)	CLCN5, CLCK2, NPHL2, DENTS	300008	Xp11.22	Metabolic
783	Hypophosphatemia, X-linked, 307800 (3)	PHEX, HYP, HPDR1	300550	Xp22.2-p22.1	Metabolic
784	Hypophosphatemic rickets, autosomal dominant, 193100 (3)	FGF23, ADHR, HPDR2, PHPTC	605380	12p13.3	Bone
785	Hypoplastic enamel pitting, localized, 608563 (3)	ENAM	606585	4q21	Connective tissue
2785	Hypoplastic left heart syndrome, 241550 (3)	GJA1, CX43, ODDD, SDTY3, ODOD	121014	6q21-q23.2	Cardiovascular
786	Hypoprothrombinemia (3)	F2	176930	11p11-q12	Hematological
787	Hypothyroidism, autoimmune, 140300 (3)	CTLA4	123890	2q33	Endocrine
787	Hypothyroidism, congenital, 274400 (3)	SLC5A5, NIS	601843	19p13.2-p12	Endocrine
787	Hypothyroidism, congenital, due to DUOX2 deficiency, 607200 (3)	DUOX2, THOX2	606759	15q15.3	Endocrine
787	Hypothyroidism, congenital, due to thyroid dysgenesis or hypoplasia, 218700 (3)	PAX8	167415	2q12-q14	Endocrine
787	Hypothyroidism, congenital, due to TSH resistance, 275200 (3)	TSHR	603372	14q31	Endocrine
787	Hypothyroidism, hereditary congenital (3)	TG, AITD3	188450	8q24.2-q24.3	Endocrine
787	Hypothyroidism, nongoitrous (3)	TSHB	188540	1p13	Endocrine
787	Hypothyroidism, subclinical (3)	TSHR	603372	14q31	Endocrine
788	Hypotrichosis, congential, with juvenile macular dystrophy, 601553 (3)	CDH3, CDHP, PCAD, HJMD	114021	16q22.1	Dermatological
788	Hypotrichosis, localized, autosomal recessive, 607903 (3)	DSG4, LAH	607892	18q12	Dermatological
788	Hypotrichosis-lymphedema-telangiectasia syndrome, 607823 (3)	SOX18, HLTS	601618	20q13.33	Dermatological
788	Hypotrichosis simplex of scalp, 146520 (3)	CDSN, HTSS	602593	6p21.3	Dermatological
791	Hypouricemia, renal, 220150 (3)	SLC22A12, OAT4L, URAT1	607096	11q13	Renal
792	Hystrix-like ichthyosis with deafness, 602540 (3)	GJB2, CX26, DFNB1, PPK, DFNA3, KID, HID	121011	13q11-q12	multiple
793	Ichthyosiform erythroderma, congenital, 242100 (3)	TGM1, ICR2, LI1	190195	14q11.2	Dermatological
793	Ichthyosiform erythroderma, congenital, nonbullous, 1, 242100 (3)	ALOX12B	603741	17pter-p13.1	Dermatological
793	Ichthyosiform erythroderma, congenital, nonbullous, 1, 242100 (3)	ALOXE3	607206	17p13.1	Dermatological
794	Ichthyosis bullosa of Siemens, 146800 (3)	KRT2A, KRT2E	600194	12q11-q13	Dermatological
794	Ichthyosis, congenital, autosomal recessive (3)	ICHYN	609383	5q33	Dermatological
794	Ichthyosis, cyclic, with epidermolytic hyperkeratosis, 607602 (3)	KRT10	148080	17q21-q22	Dermatological
794	Ichthyosis, harlequin, 242500 (3)	ABCA12, ICR2B, LI2	607800	2q34	Dermatological
794	Ichthyosis histrix, Curth-Macklin type, 146590 (3)	KRT1	139350	12q13	Dermatological
794	Ichthyosis, lamellar 2, 601277 (3)	ABCA12, ICR2B, LI2	607800	2q34	Dermatological
794	Ichthyosis, lamellar, autosomal recessive, 242300 (3)	TGM1, ICR2, LI1	190195	14q11.2	Dermatological
794	Ichthyosis, X-linked (3)	STS, ARSC1, ARSC, SSDD	308100	Xp22.32	Dermatological
795	ICOS deficiency, 607594 (3)	ICOS, AILIM	604558	2q33	Immunological
797	IgE levels QTL, 147050 (3)	PHF11, NYREN34	607796	13q14.1	Immunological
798	IgG2 deficiency, selective (3)	IGHG2	147110	14q32.33	Immunological
799	IgG receptor I, phagocytic, familial deficiency of (3)	FCGR1A, IGFR1, CD64	146760	1q21.2-q21.3	Immunological
801	Immunodeficiency-centromeric instability-facial anomalies syndrome, 242860 (3)	DNMT3B, ICF	602900	20q11.2	multiple
802	Immunodeficiency due to defect in CD3-epsilon (3)	CD3E	186830	11q23	Immunological
802	Immunodeficiency due to defect in CD3-gamma (3)	CD3G	186740	11q23	Immunological
802	Immunodeficiency with hyper-IgM, type 2, 605258 (3)	AICDA, AID, HIGM2	605257	12p13	Immunological
802	Immunodeficiency with hyper-IgM, type 3, 606843 (3)	TNFRSF5, CD40	109535	20q12-q13.2	Immunological
802	Immunodeficiency with hyper IgM, type 4, 608106 (3)	UNG, DGU, HIGM4	191525	12q23-q24.1	Immunological
802	Immunodeficiency, X-linked, with hyper-IgM, 308230 (3)	TNFSF5, CD40LG, HIGM1, IGM	300386	Xq26	Immunological
803	Immunodysregulation, polyendocrinopathy, and enteropathy, X-linked, 304790 (3)	FOXP3, IPEX, AIID, XPID, PIDX	300292	Xp11.23-q13.3	multiple
804	Immunoglobulin A deficiency, 609529 (3)	TNFRSF14B, TACI	604907	17p11.2	Immunological
805	Inclusion body myopathy-3, 605637 (3)	MYH2	160740	17p13.1	Muscular

805	Inclusion body myopathy, autosomal recessive, 600737 (3)	GNE, GLCNE, IBM2, DMRV, NM	603824	9p12-p11	Muscular
805	Inclusion body myopathy with early-onset Paget disease and frontotemporal dementia, 167320 (3)	VCP, IBMPFD	601023	9p13-p12	Muscular
806	Incontinentia pigmenti, type II, 308300 (3)	IKBKG, NEMO, FIP3, IP2	300248	Xq28	Dermatological
807	Infantile spasm syndrome, 308350 (3)	ARX, ISSX, PRTS, MRXS1, MRX36, MRX54	300382	Xp22.13	Neurological
809	Infundibular hypoplasia and hypopituitarism (3)	SOX3, MRGH	313430	Xq26.3	Endocrine
810	Inosine triphosphatase deficiency (3)	ITPA	147520	20p	Metabolic
811	Insensitivity to pain, congenital, with anhidrosis, 256800 (3)	NTRK1, TRKA, MTC	191315	1q21-q22	Neurological
812	Insomnia (3) ()	GABRB3	137192	15q11.2-q12	Psychiatric
812	Insomnia, fatal familial, 600072 (3)	PRNP, PRIP	176640	20pter-p12	Psychiatric
814	Insulin resistance, severe, digenic, 604367 (3)	PPARG, PPARG1, PPARG2	601487	3p25	Metabolic
814	Insulin resistance, severe, digenic, 604367 (3)	PPP1R3A, PPP1R3	600917	7q11.23-q21.11	Metabolic
814	Insulin resistance, susceptibility to (3)	PTPN1, PTP1B	176885	20q13.1-q13.2	Metabolic
816	Interleukin-2 receptor, alpha chain, deficiency of (3)	IL2RA, IL2R	147730	10p15-p14	Immunological
817	Intervertebral disc disease, susceptibility to, 603932 (3)	COL9A2, EDM2	120260	1p33-p32.2	Neurological
817	Intervertebral disc disease, susceptibility to, 603932 (3)	COL9A3, EDM3, IDD	120270	20q13.3	Neurological
819	Intrauterine and postnatal growth retardation (3)	IGF1R	147370	15q25-q26	Developmental
819	Intrauterine and postnatal growth retardation (3)	IGF2	147470	11p15.5	Developmental
820	Intrinsic factor deficiency, 261000 (3)	GIF, IF	609342	11q13	Hematological
821	IRAK4 deficiency, 607676 (3)	IRAK4, REN64	606883	12q12	Immunological
822	Iridogoniodysgenesis, 601631 (3)	FOXC1, FKHL7, FREAC3	601090	6p25	Ophthamological
822	Iridogoniodysgenesis syndrome-2, 137600 (3)	PITX2, IDG2, RIEG1, RGS, IGDS2	601542	4q25-q26	Ophthamological
823	Iris hypoplasia and glaucoma (3)	FOXC1, FKHL7, FREAC3	601090	6p25	Ophthamological
824	Iron deficiency anemia, susceptibility to (3)	TF	190000	3q21	Hematological
824	Iron overload, autosomal dominant (3)	FTH1, FTHL6	134770	11q12-q13	Hematological
825	Isolated growth hormone deficiency, Illig type with absent GH and Kowarski type with bioinactive GH (3)	GH1, GHN	139250	17q22-q24	Endocrine
826	Isovaleric acidemia, 243500 (3)	IVD	607036	15q14-q15	Metabolic
827	Jackson-Weiss syndrome, 123150 (3)	FGFR1, FLT2, KAL2	136350	8p11.2-p11.1	Skeletal
827	Jackson-Weiss syndrome, 123150 (3)	FGFR2, BEK, CFD1, JWS	176943	10q26	Skeletal
829	Jensen syndrome, 311150 (3)	TIMM8A, DFN1, DDP, MTS, DDP1	300356	Xq22	Neurological
830	Jervell and Lange-Nielsen syndrome, 220400 (3)	KCNE1, JLNS, LQT5	176261	21q22.1-q22.2	multiple
830	Jervell and Lange-Nielsen syndrome, 220400 (3)	KCNQ1, KCNA9, LQT1, KVLQT1, ATFB1	607542	11p15.5	multiple
831	Joubert syndrome, 213300 (3)	NPHP1, NPH1, SLSN1	607100	2q13	multiple
831	Joubert syndrome-3, 608629 (3)	AHI1	608894	6q23.3	multiple
832	Juberg-Marsidi syndrome, 309590 (3)	ATRX, XH2, XNP, MRXS3, SHS	300032	Xq13	multiple
833	Juvenile polyposis/hereditary hemorrhagic telangiectasia syndrome, 175050 (3)	MADH4, DPC4, SMAD4, JIP	600993	18q21.1	Cancer
835	Kallikrein, decreased urinary activity of (3)	KLK1, KLKR	147910	19q13.2-q13.4	Renal
836	Kallmann syndrome 2, 147950 (3)	FGFR1, FLT2, KAL2	136350	8p11.2-p11.1	multiple
836	Kallmann syndrome (3)	KAL1, KMS, ADMLX	308700	Xp22.3	multiple
837	Kanzaki disease, 609242 (3)	NAGA	104170	22q11	Metabolic
838	Kaposi sarcoma, susceptibility to, 148000 (3)	IL6, IFNB2, BSF2	147620	7p21	Immunological
839	Kappa light chain deficiency (3)	IGKC	147200	2p12	Immunological
840	Kartagener syndrome, 244400 (3)	DNAH11, DNAHC11	603339	Chr.7	multiple
840	Kartagener syndrome, 244400 (3)	DNAH5, HL1, PCD, CILD3	603335	5p15-p14	multiple
840	Kartagener syndrome, 244400 (3)	DNAI1, CILD1, ICS, PCD	604366	9p21-p13	multiple
841	Kenny-Caffey syndrome-1, 244460 (3)	TBCE, KCS, KCS1, HRD	604934	1q42-q43	multiple

842	Keratitis, 148190 (3)	PAX6, AN2, MGDA	607108	11p13	Ophthamological
843	Keratitis-ichthyosis-deafness syndrome, 148210 (3)	GJB2, CX26, DFNB1, PPK, DFNA3, KID, HID	121011	13q11-q12	multiple
844	Keratoconus, 148300 (3)	VSX1, RINX, PPCD, PPD, KTCN	605020	20p11.2	Ophthamological
845	Keratoderma, palmoplantar, with deafness, 148350 (3)	GJB2, CX26, DFNB1, PPK, DFNA3, KID, HID	121011	13q11-q12	Dermatological
847	Keratosis follicularis spinulosa decalvans, 308800 (3)	SAT, SSAT, KFSD	313020	Xp22.1	Dermatological
847	Keratosis palmoplantaria striata, 148700 (3)	KRT1	139350	12q13	Dermatological
847	Keratosis palmoplantaris striata I, 148700 (3)	DSG1	125670	18q12.1-q12.2	Dermatological
847	Keratosis palmoplantaris striata II (3)	DSP, KPPS2, PPKS2	125647	6p24	Dermatological
847	Keratosis palmoplantaris striata III, 607654 (3)	KRT1	139350	12q13	Dermatological
848	Ketoacidosis due to SCOT deficiency (3)	SCOT, OXCT	245050	5p13	Metabolic
849	Keutel syndrome, 245150 (3)	MGP, NTI	154870	12p13.1-p12.3	multiple
850	Kindler syndrome, 173650 (3)	KIND1, URP1, C20orf42	607900	20p13	Dermatological
851	Kininogen deficiency (3)	KNG	228960	3q27	Hematological
853	Klippel-Trenaunay syndrome, 149000 (3)	VG5Q, HUS84971, FLJ10283	608464	5q13.3	multiple
854	Kniest dysplasia, 156550 (3)	COL2A1	120140	12q13.11-q13.2	Skeletal
855	Knobloch syndrome, 267750 (3)	COL18A1, KNO	120328	21q22.3	multiple
856	Krabbe disease, 245200 (3)	GALC	606890	14q31	Neurological
857	L-2-hydroxyglutaric aciduria, 236792 (3)	L2HGDH, C14orf160	609584	14q22.1	Metabolic
858	Lactate dehydrogenase-B deficiency (3)	LDHB	150100	12p12.2-p12.1	Metabolic
859	Lacticacidemia due to PDX1 deficiency, 245349 (3)	PDX1	608769	11p13	Metabolic
862	Langer mesomelic dysplasia, 249700 (3)	SHOX, GCFX, SS, PHOG	312865	Xpter-p22.32	Skeletal
862	Langer mesomelic dysplasia, 249700 (3)	SHOXY	400020	Ypter-p11.2	Skeletal
863	Laron dwarfism, 262500 (3)	GHR	600946	5p13-p12	Skeletal
865	Larson syndrome, 150250 (3)	FLNB, SCT, AOI	603381	3p14.3	Skeletal
868	Laryngoonychocutaneous syndrome, 245660 (3)	LAMA3, LOCS	600805	18q11.2	multiple
869	Lathosterolosis, 607330 (3)	SC5DL, ERG3	602286	11q23.3	Metabolic
870	LCHAD deficiency (3)	HADHA, MTPA	600890	2p23	Metabolic
871	Lead poisoning, susceptibility to (3)	ALAD	125270	9q34	Metabolic
872	Leanness, inherited (3)	AGRP, ART, AGRT	602311	16q22	Nutritional
873	Leber congenital amaurosis, 204000 (3)	CRB1, RP12	604210	1q31-q32.1	Ophthamological
873	Leber congenital amaurosis, 204000 (3)	CRX, CORD2, CRD	602225	19q13.3	Ophthamological
873	Leber congenital amaurosis, 204000 (3)	RPGRIP1, LCA6, CORD9	605446	14q11	Ophthamological
873	Leber congenital amaurosis-2, 204100 (3)	RPE65, RP20	180069	1p31	Ophthamological
873	Leber congenital amaurosis, 604393 (3)	AIPL1, LCA4	604392	17p13.1	Ophthamological
873	Leber congenital amaurosis, type I, 204000 (3)	GUCY2D, GUC2D, LCA1, CORD6	600179	17p13.1	Ophthamological
873	Leber congenital amaurosis, type III, 604232 (3)	RDH12, LCA3	608830	14q23.3	Ophthamological
874	Left-right axis malformations (3)	ACVR2B	602730	3p22-p21.3	Developmental
874	Left-right axis malformations (3)	EBAF, TGFB4, LEFTY2, LEFTA, LEFTYA	601877	1q42.1	Developmental
875	Left ventricular noncompaction, familial isolated, 1, 604169 (3)	DTNA, D18S892E, DRP3, LVNC1	601239	18q12.1-q12.2	Cardiovascular
875	Left ventricular noncompaction with congenital heart defects, 606617 (3)	DTNA, D18S892E, DRP3, LVNC1	601239	18q12.1-q12.2	Cardiovascular
876	Legionaire disease, susceptibility to, 608556 (3)	TLR5, TIL3	603031	1q41-q42	Immunological
877	Leigh syndrome, 256000 (3)	BCS1L, FLNMS, GRACILE	603647	2q33	Neurological
877	Leigh syndrome, 256000 (3)	DLD, LAD, PHE3	238331	7q31-q32	Neurological
877	Leigh syndrome, 256000 (3)	NDUFS3	603846	11p11.11	Neurological
877	Leigh syndrome, 256000 (3)	NDUFS4, AQDQ	602694	5q11.1	Neurological
877	Leigh syndrome, 256000 (3)	NDUFS7, PSST	601825	19p13	Neurological
877	Leigh syndrome, 256000 (3)	NDUFS8	602141	11q13	Neurological

877	Leigh syndrome, 256000 (3)	NDUFV1, UQOR1	161015	11q13	Neurological
877	Leigh syndrome, 256000 (3)	SDHA, SDH2, SDHF	600857	5p15	Neurological
877	Leigh syndrome, due to COX deficiency, 256000 (3)	SURF1	185620	9q34	Neurological
877	Leigh syndrome due to cytochrome c oxidase deficiency, 256000 (3)	COX15	603646	10q24	Neurological
877	Leigh syndrome, French-Canadian type, 220111 (3)	LRPPRC, LRP130, LSFC	607544	2p21-p16	Neurological
877	Leigh syndrome, X-linked, 308930 (3)	PDHA1, PHE1A	312170	Xp22.2-p22.1	Neurological
878	Leiomyomatosis and renal cell cancer, 605839 (3)	FH	136850	1q42.1	Cancer
878	Leiomyomatosis, diffuse, with Alport syndrome, 308940 (3)	COL4A6	303631	Xq22.3	Cancer
880	Leopard syndrome, 151100 (3)	PTPN11, PTP2C, SHP2, NS1	176876	12q24.1	multiple
881	Leprechaunism, 246200 (3)	INSR	147670	19p13.2	Developmental
882	Leprosy, susceptibility to, 607572 (3)	PRKN, PARK2, PDJ	602544	6q25.2-q27	Immunological
883	Leri-Weill dyschondrosteosis, 127300 (3)	SHOX, GCFX, SS, PHOG	312865	Xpter-p22.32	Skeletal
883	Leri-Weill dyschondrosteosis, 127300 (3)	SHOXY	400020	Ypter-p11.2	Skeletal
884	Lesch-Nyhan syndrome, 300322, (3)	HPRT1, HPRT	308000	Xq26-q27.2	Metabolic
886	Leukemia-1, T-cell acute lymphocytic (3)	TAL1, TCL5, SCL	187040	1p32	Cancer
886	Leukemia-2, T-cell acute lymphoblastic (3)	TAL2	186855	9q31	Cancer
886	Leukemia, acute lymphoblastic (3)	FLT3	136351	13q12	Cancer
886	Leukemia, acute lymphoblastic (3)	NBS1, NBS	602667	8q21	Cancer
886	Leukemia, acute lymphoblastic (3)	ZNFN1A1, IK1, LYF1	603023	7p12	Cancer
886	Leukemia, acute lymphoblastic, susceptibility to (3)	HOXD4, HOX4B	142981	2q31-q32	Cancer
886	Leukemia, acute lymphocytic (3)	BCR, CML, PHL, ALL	151410	22q11.21	Cancer
886	Leukemia, acute myeloblastic (3)	ARNT	126110	1q21	Cancer
886	Leukemia, acute myelogenous (3)	KRAS2, RASK2	190070	12p12.1	Cancer
886	Leukemia, acute myelogenous, 601626 (3)	GMPS	600358	3q24	Cancer
886	Leukemia, acute myeloid, 601626 (3)	AF10	602409	10p12	Cancer
886	Leukemia, acute myeloid, 601626 (3)	ARHGEF12, LARG, KIAA0382	604763	11q23.3	Cancer
886	Leukemia, acute myeloid, 601626 (3)	CALM, CLTH	603025	11q14	Cancer
886	Leukemia, acute myeloid, 601626 (3)	CEBPA, CEBP	116897	19q13.1	Cancer
886	Leukemia, acute myeloid, 601626 (3)	CHIC2, BTL	604332	4q11-q12	Cancer
886	Leukemia, acute myeloid, 601626 (3)	FLT3	136351	13q12	Cancer
886	Leukemia, acute myeloid, 601626 (3)	KIT, PBT	164920	4q12	Cancer
886	Leukemia, acute myeloid, 601626 (3)	LPP	600700	3q28	Cancer
886	Leukemia, acute myeloid, 601626 (3)	NPM1	164040	5q35	Cancer
886	Leukemia, acute myeloid, 601626 (3)	NUP214, D9S46E, CAN, CAIN	114350	9q34.1	Cancer
886	Leukemia, acute myeloid, 601626 (3)	RUNX1, CBFA2, AML1	151385	21q22.3	Cancer
886	Leukemia, acute myeloid, 601626 (3)	WHSC1L1, NSD3	607083	8p12	Cancer
886	Leukemia, acute myeloid, reduced survival in (3)	FLT3	136351	13q12	Cancer
886	Leukemia, acute myelomonocytic (3)	AF1Q	604684	1q21	Cancer
886	Leukemia, acute promyelocytic, NPM/RARA type (3)	NPM1	164040	5q35	Cancer
886	Leukemia, acute promyelocytic, NUMA/RARA type (3)	NUMA1	164009	11q13	Cancer
886	Leukemia, acute promyelocytic, PL2F/RARA type (3)	ZNF145, PLZF	176797	11q23.1	Cancer
886	Leukemia, acute promyelocytic, PML/RARA type (3)	PML, MYL	102578	15q22	Cancer
886	Leukemia, acute promyeloyctic, STAT5B/RARA type (3)	STAT5B	604260	17q11.2	Cancer
886	Leukemia, acute T-cell lymphoblastic (3)	AF10	602409	10p12	Cancer
886	Leukemia, acute T-cell lymphoblastic (3)	CALM, CLTH	603025	11q14	Cancer
886	Leukemia, chronic lymphatic, susceptibility to, 151400 (3)	ARL11, ARLTS1	609351	13q14.3	Cancer
886	Leukemia, chronic lymphatic, susceptibility to, 151400 (3)	P2RX7, P2X7	602566	12q24	Cancer
886	Leukemia, chronic myeloid, 608232 (3)	BCR, CML, PHL, ALL	151410	22q11.21	Cancer
886	Leukemia, juvenile myelomonocytic, 607785 (3)	GRAF	605370	5q31	Cancer
886	Leukemia, juvenile myelomonocytic, 607785 (3)	NF1, VRNF, WSS, NFNS	162200	17q11.2	Cancer

886	Leukemia, juvenile myelomonocytic, 607785 (3)	PTPN11, PTP2C, SHP2, NS1	176876	12q24.1	Cancer
886	Leukemia/lymphoma, B-cell, 2 (3)	BCL2	151430	18q21.3	Cancer
886	Leukemia/lymphoma, chronic B-cell, 151400 (3)	CCND1, PRAD1, BCL1	168461	11q13	Cancer
886	Leukemia/lymphoma, T-cell (3)	TCRA	186880	14q11.2	Cancer
886	Leukemia, megakaryoblastic, of Down syndrome, 190685 (3)	GATA1, GF1, ERYF1, NFE1	305371	Xp11.23	Cancer
886	Leukemia, megakaryoblastic, with or without Down syndrome, 190685 (3)	GATA1, GF1, ERYF1, NFE1	305371	Xp11.23	Cancer
886	Leukemia, Philadelphia chromosome-positive, resistant to imatinib (3)	ABL1	189980	9q34.1	Cancer
886	Leukemia, post-chemotherapy, susceptibility to (3)	NQO1, DIA4, NMOR1	125860	16q22.1	Cancer
886	Leukemia, T-cell acute lymphoblastic (3)	NUP214, D9S46E, CAN, CAIN	114350	9q34.1	Cancer
889	Leukocyte adhesion deficiency, 116920 (3)	ITGB2, CD18, LCAMB, LAD	600065	21q22.3	Immunological
891	Leukoencephalopathy with vanishing white matter, 603896 (3)	EIF2B1, EIF2BA	606686	Chr.12	Neurological
891	Leukoencephalopathy with vanishing white matter, 603896 (3)	EIF2B2	606454	14q24	Neurological
891	Leukoencephalopathy with vanishing white matter, 603896 (3)	EIF2B3	606273	1p34.1	Neurological
891	Leukoencephalopathy with vanishing white matter, 603896 (3)	EIF2B5, LVWM, CACH, CLE	603945	3q27	Neurological
891	Leukoencephaly with vanishing white matter, 603896 (3)	EIF2B4	606687	2p23.3	Neurological
894	Leydig cell adenoma, with precocious puberty (3)	LHCGR	152790	2p21	Cancer
895	Lhermitte-Duclos syndrome (3)	PTEN, MMAC1	601728	10q23.31	Cancer
896	Liddle syndrome, 177200 (3)	SCNN1B	600760	16p13-p12	Renal
896	Liddle syndrome, 177200 (3)	SCNN1G, PHA1	600761	16p13-p12	Renal
897	Li Fraumeni syndrome, 151623 (3)	CDKN2A, MTS1, P16, MLM, CMM2	600160	9p21	Cancer
898	Li-Fraumeni syndrome, 151623 (3)	TP53, P53, LFS1	191170	17p13.1	Cancer
898	Li-Fraumeni syndrome, 609265 (3)	CHEK2, RAD53, CHK2, CDS1, LFS2	604373	22q12.1	Cancer
899	LIG4 syndrome, 606593 (3)	LIG4	601837	13q22-q34	multiple
901	Limb-mammary syndrome, 603543 (3)	TP73L, TP63, KET, EEC3, SHFM4, LMS, RHS	603273	3q27	multiple
902	Lipodystrophy, congenital generalized, type 1, 608594 (3)	AGPAT2, LPAAB, BSCL, BSCL1	603100	9q34.3	Metabolic
902	Lipodystrophy, congenital generalized, type 2, 269700 (3)	BSCL2, SPG17	606158	11q13	Metabolic
902	Lipodystrophy, familial partial, 151660 (3)	LMNA, LMN1, EMD2, FPLD, CMD1A, HGPS, LGMD1B	150330	1q21.2	Metabolic
902	Lipodystrophy, familial partial, 151660 (3)	PPARG, PPARG1, PPARG2	601487	3p25	Metabolic
902	Lipodystrophy, familial partial, with decreased subcutaneous fat of face and neck (3)	PPARGC1A, PPARGC1	604517	4p15.1	Metabolic
903	Lipoid adrenal hyperplasia, 201710 (3)	STAR	600617	8p11.2	Endocrine
903	Lipoid congenital adrenal hyperplasia, 201710 (3)	CYP11A, P450SCC	118485	15q23-q24	Endocrine
2903	Lipoid proteinosis, 247100 (3)	ECM1	602201	1q21	Metabolic
904	Lipoma (3)	HMGA2, HMGIC, BABL, LIPO	600698	12q14.3	Cancer
904	Lipoma (3)	LPP	600700	3q28	Cancer
904	Lipoma, sporadic (3)	MEN1	131100	11q13	Cancer
904	Lipomatosis, mutiple, 151900 (3)	HMGA2, HMGIC, BABL, LIPO	600698	12q14.3	Cancer
906	Lipoprotein lipase deficiency (3)	LPL, LIPD	238600	8p22	Metabolic
908	Lissencephaly-1, 607432 (3)	PAFAH1B1, LIS1	601545	17p13.3	Neurological
908	Lissencephaly syndrome, Norman-Roberts type, 257320 (3)	RELN, RL	600514	7q22	Neurological
908	Lissencephaly, X-linked, 300067 (3)	DCX, DBCN, LISX	300121	Xq22.3-q23	Neurological
908	Lissencephaly, X-linked with ambiguous genitalia, 300215 (3)	ARX, ISSX, PRTS, MRXS1, MRX36, MRX54	300382	Xp22.13	Neurological
909	Listeria monocytogenes, susceptibility to (3)	CDH1, UVO	192090	16q22.1	Immunological
910	Loeys-Dietz syndrome, 609192 (3)	TGFBR1	190181	9q33-q34	Connective tissue
910	Loeys-Dietz syndrome, 609192 (3)	TGFBR2, HNPCC6	190182	3p22	Connective tissue
911	Longevity, exceptional, 152430 (3)	CETP	118470	16q21	Developmental
911	Longevity, reduced, 152430 (3)	AKAP10	604694	17p11.1	Developmental

912	Long QT syndrome-1, 192500 (3)	KCNQ1, KCNA9, LQT1, KVLQT1, ATFB1	607542	11p15.5	Cardiovascular
912	Long QT syndrome-2 (3)	KCNH2, LQT2, HERG	152427	7q35-q36	Cardiovascular
912	Long QT syndrome-3, 603830 (3)	SCN5A, LQT3, IVF, HB1, SSS1	600163	3p21	Cardiovascular
912	Long QT syndrome 4, 600919 (3)	ANK2, LQT4	106410	4q25-q27	Cardiovascular
912	Long QT syndrome-5 (3)	KCNE1, JLNS, LQT5	176261	21q22.1-q22.2	Cardiovascular
912	Long QT syndrome-6 (3)	KCNE2, MIRP1, LQT6	603796	21q22.1	Cardiovascular
912	Long QT syndrome-7, 170390 (3)	KCNJ2, HHIRK1, KIR2.1, IRK1, LQT7	600681	17q23.1-q24.2	Cardiovascular
913	Lower motor neuron disease, progressive, without sensory symptoms, 607641 (3)	DCTN1	601143	2p13	Neurological
914	Lowe syndrome, 309000 (3)	OCRL, LOCR, OCRL1, NPHL2	300535	Xq26.1	Metabolic
915	Low renin hypertension, susceptibility to (3)	CYP11B2	124080	8q21	Cardiovascular
916	LPA deficiency, congenital (3)	LPA	152200	6q27	Metabolic
917	Lumbar disc disease, susceptibility to, 603932 (3)	CILP	603489	15q22	Skeletal
918	Lung cancer, 211980 (3)	KRAS2, RASK2	190070	12p12.1	Cancer
918	Lung cancer, 211980 (3)	PPP2R1B	603113	11q22-q24	Cancer
918	Lung cancer, 211980 (3)	SLC22A1L, BWSCR1A, IMPT1	602631	11p15.5	Cancer
918	Lung cancer, somatic, 211980 (3)	MAP3K8, COT, EST, TPL2	191195	10p11.2	Cancer
919	Lupus nephritis, susceptibility to (3)	FCGR2A, IGFR2, CD32	146790	1q21-q23	Connective tissue
920	Lymphangioleiomyomatosis, 606690 (3)	TSC1, LAM	605284	9q34	Respiratory
920	Lymphangioleiomyomatosis, somatic, 606690 (3)	TSC2, LAM	191092	16p13.3	Respiratory
921	Lymphedema and ptosis, 153000 (3)	FOXC2, FKHL14, MFH1	602402	16q24.3	Hematological
921	Lymphedema-distichiasis syndrome, 153400 (3)	FOXC2, FKHL14, MFH1	602402	16q24.3	Hematological
921	Lymphedema-distichiasis syndrome with renal disease and diabetes mellitus (3)	FOXC2, FKHL14, MFH1	602402	16q24.3	Hematological
921	Lymphedema, hereditary I, 153100 (3)	FLT4, VEGFR3, PCL	136352	5q35.3	Hematological
921	Lymphedema, hereditary II, 153200 (3)	FOXC2, FKHL14, MFH1	602402	16q24.3	Hematological
925	Lymphocytic leukemia, acute T-cell (3)	RAP1GDS1	179502	4q21-q25	Cancer
925	Lymphoma, B-cell non-Hodgkin, somatic (3)	ATM, ATA, AT1	607585	11q22.3	Cancer
925	Lymphoma, diffuse large cell (3)	BCL8	601889	15q11-q13	Cancer
925	Lymphoma, follicular (3)	BCL10	603517	1p22	Cancer
925	Lymphoma, MALT (3)	BCL10	603517	1p22	Cancer
925	Lymphoma, mantle cell (3)	ATM, ATA, AT1	607585	11q22.3	Cancer
925	Lymphoma, non-Hodgkin (3)	RAD54B	604289	8q21.3-q22	Cancer
925	Lymphoma, non-Hodgkin (3)	RAD54L, HR54, HRAD54	603615	1p32	Cancer
925	Lymphoma, progression of (3)	FCGR2B, CD32	604590	1q22	Cancer
925	Lymphoma, somatic (3)	MAD1L1, TXBP181	602686	7p22	Cancer
925	Lymphoma, T-cell (3)	MSH2, COCA1, FCC1, HNPCC1	609309	2p22-p21	Cancer
925	Lymphoproliferative syndrome, X-linked, 308240 (3)	SH2D1A, LYP, IMD5, XLP, XLPD	300490	Xq25	Cancer
930	Lynch cancer family syndrome II, 114400 (3)	MSH2, COCA1, FCC1, HNPCC1	609309	2p22-p21	Cancer
931	Lysinuric protein intolerance, 222700 (3)	SLC7A7, LPI	603593	14q11.2	Metabolic
933	Machado-Joseph disease, 109150 (3)	ATXN3, MJD, SCA3	607047	14q24.3-q31	Neurological
935	Macrocytic anemia, refractory, of 5q- syndrome, 153550 (3)	IRF1, MAR	147575	5q31.1	Hematological
936	Macrothrombocytopenia, 300367 (3)	GATA1, GF1, ERYF1, NFE1	305371	Xp11.23	Hematological
2937	Macular corneal dystrophy, 217800 (3)	CHST6, MCDC1	605294	16q22	Ophthamological
937	Macular degeneration, age-related, 1, 603075 (3)	HF1, CFH, HUS	134370	1q32	Ophthamological
937	Macular degeneration, age-related, 1, 603075 (3)	HMCN1, FBLN6, FIBL6	608548	1q24-q25	Ophthamological
937	Macular degeneration, age-related, 3, 608895 (3)	FBLN5, ARMD3	604580	14q32.1	Ophthamological
937	Macular degeneration, juvenile, 248200 (3)	CNGB3, ACHM3	605080	8q21-q22	Ophthamological
937	Macular degeneration, X-linked atrophic (3)	RPGR, RP3, CRD, RP15, COD1	312610	Xp21.1	Ophthamological

2937	Macular dystrophy (3)	RDS, RP7, PRPH2, PRPH, AVMD, AOFMD	179605	6p21.1-cen	Ophthamological
2937	Macular dystrophy, age-related, 2, 153800 (3)	ABCA4, ABCR, STGD1, FFM, RP19	601691	1p21-p13	Ophthamological
2937	Macular dystrophy, autosomal dominant, chromosome 6-linked, 600110 (3)	ELOVL4, ADMD, STGD2, STGD3	605512	6q14	Ophthamological
2937	Macular dystrophy, vitelliform, 608161 (3)	RDS, RP7, PRPH2, PRPH, AVMD, AOFMD	179605	6p21.1-cen	Ophthamological
2937	Macular dystrophy, vitelliform type, 153700 (3)	VMD2	607854	11q13	Ophthamological
938	Maculopathy, bull's-eye, 153870 (3)	VMD2	607854	11q13	Ophthamological
939	Major depressive disorder and accelerated response to antidepressant drug treatment, 608616 (3)	FKBP5, FKBP51	602623	6p21.3-p21.2	Psychiatric
940	Malaria, cerebral, reduced risk of, 248310 (3)	CD36	173510	7q11.2	Immunological
940	Malaria, cerebral, susceptibility to, 248310 (3)	CD36	173510	7q11.2	Immunological
940	Malaria, cerebral, susceptibility to (3)	ICAM1	147840	19p13.3-p13.2	Immunological
940	Malaria, cerebral, susceptibility to (3)	TNF, TNFA	191160	6p21.3	Immunological
940	Malaria, resistance to, 248310 (3)	GYPC, GE, GPC	110750	2q14-q21	Immunological
940	Malaria, resistance to, 248310 (3)	NOS2A, NOS2	163730	17cen-q11.2	Immunological
942	Malignant hyperthermia susceptibility 1, 145600 (3)	RYR1, MHS, CCO	180901	19q13.1	Neurological
942	Malignant hyperthermia susceptibility 5, 601887 (3)	CACNA1S, CACNL1A3, CCHL1A3	114208	1q32	Neurological
943	Malonyl-CoA decarboxylase deficiency, 248360 (3)	MLYCD, MCD	606761	16q24	Metabolic
944	MALT lymphoma (3)	MALT1, MLT	604860	18q21	Cancer
945	Mandibuloacral dysplasia with type B lipodystrophy, 608612 (3)	ZMPSTE24, FACE1, STE24, MADB	606480	1p34	multiple
947	Mannosidosis, alpha-, types I and II, 248500 (3)	MAN2B1, MANB	609458	19cen-q12	Metabolic
947	Mannosidosis, beta, 248510 (3)	MANBA, MANB1	609489	4q22-q25	Metabolic
948	Maple syrup urine disease, type Ia, 248600 (3)	BCKDHA, MSUD1	608348	19q13.1-q13.2	Metabolic
948	Maple syrup urine disease, type Ib (3)	BCKDHB, E1B	248611	6p22-p21	Metabolic
948	Maple syrup urine disease, type II (3)	DBT, BCATE2	248610	1p31	Metabolic
948	Maple syrup urine disease, type III, 248600 (3)	DLD, LAD, PHE3	238331	7q31-q32	Metabolic
950	Marfan syndrome, 154700 (3)	FBN1, MFS1, WMS	134797	15q21.1	Connective tissue
950	Marfan syndrome, atypical (3)	COL1A2	120160	7q22.1	Connective tissue
952	Maroteaux-Lamy syndrome, several forms (3)	ARSB, MPS6	253200	5q11-q13	Metabolic
953	Marshall syndrome, 154780 (3)	COL11A1, STL2	120280	1p21	multiple
955	MASA syndrome, 303350 (3)	L1CAM, CAML1, HSAS1	308840	Xq28	multiple
956	MASP2 deficiency (3)	MASP2	605102	1p36.3-p36.2	Immunological
957	MASS syndrome, 604308 (3)	FBN1, MFS1, WMS	134797	15q21.1	Connective tissue
958	Mast cell leukemia (3)	KIT, PBT	164920	4q12	Cancer
959	Mastocytosis with associated hematologic disorder (3)	KIT, PBT	164920	4q12	Immunological
960	Mast syndrome, 248900 (3)	ACP33, MAST, SPG21	608181	15q21-q22	Neurological
961	May-Hegglin anomaly, 155100 (3)	MYH9, MHA, FTNS, DFNA17	160775	22q11.2	Hematological
962	McArdle disease, 232600 (3)	PYGM	608455	11q13	Metabolic
963	McCune-Albright syndrome, 174800 (3)	GNAS, GNAS1, GPSA, POH, PHP1B, PHP1A, AHO	139320	20q13.2	multiple
964	McKusick-Kaufman syndrome, 236700 (3)	MKKS, HMCS, KMS, MKS, BBS6	604896	20p12	Developmental
965	McLeod syndrome (3)	XK	314850	Xp21.2-p21.1	Hematological
965	McLeod syndrome with neuroacanthosis (3)	XK	314850	Xp21.2-p21.1	Hematological
969	Medullary cystic kidney disease 2, 603860 (3)	UMOD, HNFJ, FJHN, MCKD2, ADMCKD2	191845	16p12.3	Renal
2969	Medullary thyroid carcinoma, 155240 (3)	RET, MEN2A	164761	10q11.2	Cancer
2969	Medullary thyroid carcinoma, familial, 155240 (3)	NTRK1, TRKA, MTC	191315	1q21-q22	Cancer
970	Medulloblastoma, 155255 (3)	PTCH2	603673	1p32	Cancer
970	Medulloblastoma, desmoplastic, 155255 (3)	SUFU, SUFUXL, SUFUH	607035	10q24-q25	Cancer

971	Meesmann corneal dystrophy, 122100 (3)	KRT12	601687	17q12	Ophthamological
971	Meesmann corneal dystrophy, 122100 (3)	KRT3	148043	12q13	Ophthamological
973	Megakaryoblastic leukemia, acute (3)	MKL1, AMKL, MAL	606078	22q13	Cancer
974	Megalencephalic leukoencephalopathy with subcortical cysts, 604004 (3)	MLC1, LVM, VL	605908	22qter	Neurological
975	Megaloblastic anemia-1, Finnish type, 261100 (3)	CUBN, IFCR, MGA1	602997	10p12.1	Hematological
975	Megaloblastic anemia-1, Norwegian type, 261100 (3)	AMN	605799	14q32	Hematological
978	Melanoma (3)	CDK4, CMM3	123829	12q14	Cancer
978	Melanoma and neural system tumor syndrome, 155755 (3)	CDKN2A, MTS1, P16, MLM, CMM2	600160	9p21	Cancer
978	Melanoma, cutaneous malignant, 2, 155601 (3)	CDKN2A, MTS1, P16, MLM, CMM2	600160	9p21	Cancer
978	Melanoma, cutaneous malignant, susceptibility to (3)	XRCC3	600675	14q32.3	Cancer
978	Melanoma, malignant sporadic (3)	STK11, PJS, LKB1	602216	19p13.3	Cancer
978	Melanoma, melignant, somatic (3)	BRAF	164757	7q34	Cancer
979	Meleda disease, 248300 (3)	SLURP1, MDM	606119	8qter	Dermatological
981	Melnick-Needles syndrome, 309350 (3)	FLNA, FLN1, ABPX, NHBP, OPD1, OPD2, FMD, MNS	300017	Xq28	Skeletal
982	Melorheostosis with osteopoikilosis, 155950 (3)	LEMD3, MAN1	607844	12q14	Developmental
984	Memory impairment, susceptibility to (3)	BDNF	113505	11p13	Neurological
985	Meniere disease 156000 (3) ()	COCH, DFNA9	603196	14q12-q13	Neurological
986	Meningioma, 607174 (3)	MN1, MGCR	156100	22q12.3-qter	Cancer
986	Meningioma, 607174 (3)	PTEN, MMAC1	601728	10q23.31	Cancer
986	Meningioma, NF2-related, somatic, 607174 (3)	NF2	607379	22q12.2	Cancer
986	Meningioma, SIS-related (3)	PDGFB, SIS	190040	22q12.3-q13.1	Cancer
987	Meningococcal disease, susceptibility to (3)	MBL2, MBL, MBP1	154545	10q11.2-q21	Immunological
988	Menkes disease, 309400 (3)	ATP7A, MNK, MK, OHS	300011	Xq12-q13	Neurological
990	Mental retardation, nonsyndromic, autosomal recessive, 249500 (3)	PRSS12, BSSP3	606709	4q25-q26	Neurological
990	Mental retardation, nonsyndromic, autosomal recessive, 2A, 607417 (3)	CRBN, MRT2A	609262	3p26.2	Neurological
990	Mental retardation, X-linked, 300425 (3)	NLGN4, KIAA1260, AUTSX2	300427	Xp22.33	Neurological
990	Mental retardation, X-linked, 300458 (3)	MECP2, RTT, PPMX, MRX16, MRX79	300005	Xq28	Neurological
990	Mental retardation, X-linked 30, 300558 (3)	PAK3, MRX30, MRX47	300142	Xq21.3-q24	Neurological
990	Mental retardation, X-linked, 34, 300426 (3)	IL1RAPL, MRX34	300206	Xp22.1-p21.3	Neurological
990	Mental retardation, X-linked 36, 300430 (3)	ARX, ISSX, PRTS, MRXS1, MRX36, MRX54	300382	Xp22.13	Neurological
990	Mental retardation, X-linked (3)	SLC6A8, CRTR	300036	Xq28	Neurological
990	Mental retardation, X-linked-44, 300501 (3)	FTSJ1, JM23, SPB1, MRX44, MRX9	300499	Xp11.23	Neurological
990	Mental retardation, X-linked 45, 300498 (3)	ZNF81, MRX45	314998	Xp22.1-p11	Neurological
990	Mental retardation, X-linked 54, 300419 (3)	ARX, ISSX, PRTS, MRXS1, MRX36, MRX54	300382	Xp22.13	Neurological
990	Mental retardation, X-linked 58, 300218 (3)	TM4SF2, MXS1, A15	300096	Xq11	Neurological
990	Mental retardation, X-linked, 60, 300486 (3)	OPHN1	300127	Xq12	Neurological
990	Mental retardation, X-linked-9, 309549 (3)	FTSJ1, JM23, SPB1, MRX44, MRX9	300499	Xp11.23	Neurological
990	Mental retardation, X-linked, FRAXE type (3)	FMR2, FRAXE, MRX2	309548	Xq28	Neurological
990	Mental retardation, X-linked, JARID1C-related, 300534 (3)	SMCX, MRXJ, DXS1272E, XE169, JARID1C	314690	Xp11.22-p11.21	Neurological
990	Mental retardation, X-linked nonspecific, 309541 (3)	GDI1, RABGD1A, MRX41, MRX48	300104	Xq28	Neurological
990	Mental retardation, X-linked nonspecific, 63, 300387 (3)	FACL4, ACS4, MRX63	300157	Xq22.3	Neurological
990	Mental retardation, X-linked nonspecific, type 19 (3)	RPS6KA3, RSK2, MRX19	300075	Xp22.2-p22.1	Neurological
990	Mental retardation, X-linked nonspecific, type 46, 300436 (3)	ARHGEF6, MRX46, COOL2	300267	Xq26	Neurological
990	Mental retardation, X-linked nonsyndromic (3)	AGTR2	300034	Xq22-q23	Neurological
990	Mental retardation, X-linked nonsyndromic (3)	FGD1, FGDY, AAS	305400	Xp11.21	Neurological
990	Mental retardation, X-linked nonsyndromic (3)	ZNF41	314995	Xp22.1-cen	Neurological

990	Mental retardation, X-linked nonsyndromic, DLG3-related (3)	DLG3, NEDLG, SAP102, MRX	300189	Xq13.1	Neurological
990	Mental retardation, X-linked, Snyder-Robinson type, 309583 (3)	SMS, SRS, MRSR	300105	Xp22.1	Neurological
990	Mental retardation, X-linked, with isolated growth hormone deficiency, 300123 (3)	SOX3, MRGH	313430	Xq26.3	Neurological
990	Mental retardation, X-linked, with progressive spasticity, 300279 (3)	MECP2, RTT, PPMX, MRX16, MRX79	300005	Xq28	Neurological
990	Mental retardation, X-linked, with seizures and carrier manifestations, 300397 (3)	SLC6A8, CRTR	300036	Xq28	Neurological
991	Mephenytoin poor metabolizer (3)	CYP2C, CYP2C19	124020	10q24.1-q24.3	Metabolic
992	Merkel cell carcinoma, somatic (3)	SDHD, PGL1	602690	11q23	Cancer
993	Mesangial sclerosis, isolated diffuse, 256370 (3)	WT1	607102	11p13	Renal
995	Mesothelioma (3)	BCL10	603517	1p22	Cancer
996	Metachromatic leukodystrophy, 250100 (3)	ARSA	607574	22q13.31-qter	Neurological
996	Metachromatic leukodystrophy due to deficiency of SAP-1 (3)	PSAP, SAP1	176801	10q22.1	Neurological
997	Metaphyseal chondrodysplasia, Murk Jansen type, 156400 (3)	PTHR1, PTHR	168468	3p22-p21.1	Connective tissue
997	Metaphyseal chondrodysplasia, Schmid type (3)	COL10A1	120110	6q21-q22.3	Connective tissue
997	Metaphyseal dysplasia without hypotrichosis, 250460 (3)	RMRP, RMRPR, CHH	157660	9p21-p12	Connective tissue
999	Methemoglobinemia due to cytochrome b5 deficiency (3)	CYB5	250790	18q23	Hematological
999	Methemoglobinemias, alpha- (3)	HBA1	141800	16pter-p13.3	Hematological
999	Methemoglobinemias, beta- (3)	HBB	141900	11p15.5	Hematological
999	Methemoglobinemia, type I (3)	DIA1	250800	22q13.31-qter	Hematological
999	Methemoglobinemia, type II (3)	DIA1	250800	22q13.31-qter	Hematological
1001	Methionine adenosyltransferase deficiency, autosomal recessive (3)	MAT1A, MATA1, SAMS1	250850	10q22	Metabolic
1002	Methylcobalamin deficiency, cblG type, 250940 (3)	MTR	156570	1q43	Metabolic
1003	Methylmalonate semialdehyde dehydrogenase deficiency (3)	ALDH6A1, MMSDH	603178	14q24.3	Metabolic
1004	Methylmalonic aciduria, mut(0) type, 251000 (3)	MUT, MCM	609058	6p21	Metabolic
1004	Methylmalonic aciduria, vitamin B12-responsive, 251100 (3)	MMAA	607481	4q31.1-q31.2	Metabolic
1004	Methylmalonic aciduria, vitamin B12-responsive, due to defect in synthesis of adenosylcobalamin, cblB complementation type, 251110 (3)	MMAB	607568	12q24	Metabolic
1005	Mevalonicaciduria (3)	MVK, MVLK	251170	12q24	Metabolic
1006	MHC class II deficiency, complementation group B, 209920 (3)	RFXANK	603200	19p12	Immunological
1007	Microcephaly, Amish type, 607196 (3)	SLC25A19, DNC, MUP1, MCPHA	606521	17q25.3	Neurological
1007	Microcephaly, autosomal recessive 1, 251200 (3)	MCPH1	607117	8p23	Neurological
1007	Microcephaly, primary autosomal recessive, 3, 604804 (3)	CDK5RAP2, KIAA1633, MCPH3	608201	9q33.3	Neurological
1007	Microcephaly, primary autosomal recessive, 5, 608716 (3)	ASPM, MCPH5	605481	1q31	Neurological
1007	Microcephaly, primary autosomal recessive, 6, 608393 (3)	CEMPJ, CPAP, MCPH6	609279	13q12.2	Neurological
1009	Microcoria-congenital nephrosis syndrome, 609049 (3)	LAMB2, LAMS	150325	3p21	Ophthamological
1011	Micropenis (3)	LHCGR	152790	2p21	Renal
1012	Microphthalmia, cataracts, and iris abnormalities (3)	CHX10, HOX10	142993	14q24.3	Ophthamological
1012	Microphthalmia, SIX6-related (3)	SIX6	606326	14q23	Ophthamological
1012	Microphthalmia with associated anomalies 2, 300412 (3)	BCOR, KIAA1575, MAA2, ANOP2	300485	Xp11.4	Ophthamological
1013	Migraine, familial hemiplegic, 2, 602481 (3)	ATP1A2, FHM2, MHP2	182340	1q21-q23	Neurological
1013	Migraine, resistance to, 157300 (3)	EDNRA	131243	4q31.2	Neurological
1013	Migraine, susceptibility to, 157300 (3)	ESR1, ESR	133430	6q25.1	Neurological
1013	Migraine without aura, susceptibility to, 157300 (3)	TNF, TNFA	191160	6p21.3	Neurological
1014	Miller-Dieker lissencephaly, 247200 (3)	YWHAE, MDCR, MDS	605066	17p13.3	multiple
1016	Mitochondrial complex I deficiency, 252010 (3)	NDUFS1	157655	2q33-q34	multiple
1016	Mitochondrial complex I deficiency, 252010 (3)	NDUFS2	602985	1q23	multiple
1016	Mitochondrial complex I deficiency, 252010 (3)	NDUFS4, AQDQ	602694	5q11.1	multiple
1016	Mitochondrial complex I deficiency, 252010 (3)	NDUFV1, UQOR1	161015	11q13	multiple
1016	Mitochondrial complex III deficiency, 124000 (3)	BCS1L, FLNMS, GRACILE	603647	2q33	multiple

1016	Mitochondrial complex III deficiency, 124000 (3)	UQCRB, UQBP, QPC	191330	8q22	multiple
3016	Mitochondrial DNA depletion myopathy, 251880 (3)	TK2	188250	16q22	Muscular
5016	Mitochondrial DNA depletion syndrome, 251880 (3)	SUCLA2	603921	13q12.2-q13	multiple
5016	Mitochondrial DNA-depletion syndrome, hepatocerebral form, 251880 (3)	DGUOK, DGK	601465	2p13	multiple
7016	Mitochondrial myopathy and sideroblastic anemia, 600462 (3)	PUS1, MLASA	608109	12q24.33	multiple
1016	Mitochondrial respiratory chain complex II deficiency, 252011 (3)	SDHA, SDH2, SDHF	600857	5p15	multiple
1018	Miyoshi myopathy, 254130 (3)	DYSF, LGMD2B	603009	2p13.3-p13.1	Muscular
1020	MODY5 with nephron agenesis (3)	TCF2, HNF2	189907	17cen-q21.3	Endocrine
1020	MODY5 with non-diabetic renal disease and Mullerian aplasia (3)	TCF2, HNF2	189907	17cen-q21.3	Endocrine
1020	MODY, one form, 125850 (3)	INS	176730	11p15.5	Endocrine
1020	MODY, type I, 125850 (3)	HNF4A, TCF14, MODY1	600281	20q12-q13.1	Endocrine
1020	MODY, type II, 125851 (3)	GCK	138079	7p15-p13	Endocrine
1020	MODY, type III, 600496 (3)	TCF1, HNF1A, MODY3	142410	12q24.2	Endocrine
1020	MODY, type IV (3)	IPF1	600733	13q12.1	Endocrine
1020	MODY, type V, 604284 (3)	TCF2, HNF2	189907	17cen-q21.3	Endocrine
1022	Mohr-Tranebjaerg syndrome, 304700 (3)	TIMM8A, DFN1, DDP, MTS, DDP1	300356	Xq22	Neurological
1023	Molybdenum cofactor deficiency, type A, 252150 (3)	MOCS1, MOCOD	603707	6p21.3	Metabolic
1023	Molybdenum cofactor deficiency, type B, 252150 (3)	MOCS2, MPTS	603708	5q11	Metabolic
1023	Molybdenum cofactor deficiency, type C, 252150 (3)	GPH, KIAA1385, GEPH	603930	14q24	Metabolic
1024	Monilethrix, 158000 (3)	KRTHB1, HB1	602153	12q13	Dermatological
1024	Monilethrix, 158000 (3)	KRTHB6, HB6	601928	12q13	Dermatological
1026	Morning glory disc anomaly (3)	PAX6, AN2, MGDA	607108	11p13	Skeletal
1028	Mowat-Wilson syndrome, 235730 (3)	ZFHX1B, SMADIP1, SIP1	605802	2q22	Developmental
1029	Moyamoya disease 3 (3)	MYMY3	608796	8q24	Neurological
1030	Muckle-Wells syndrome, 191900 (3)	CIAS1, C1orf7, FCU, FCAS	606416	1q44	multiple
1031	Mucoepidermoid salivary gland carcinoma (3)	MAML2, MAM3	607537	11q21	Cancer
1031	Mucoepidermoid salivary gland carcinoma (3)	MECT1, KIAA0616	607536	19p13	Cancer
1032	Mucolipidosis IIIA, 252600 (3)	GNPTAB, GNPTA	607840	4q21-q23	Metabolic
1032	Mucolipidosis IIIC, 252605 (3)	GNPTAG	607838	16p	Metabolic
1032	Mucolipidosis IV, 252650 (3)	MCOLN1, ML4	605248	19p13.3-p13.2	Metabolic
1033	Mucopolysaccharidosis Ih, 607014 (3)	IDUA, IDA	252800	4p16.3	Metabolic
1033	Mucopolysaccharidosis Ih/s, 607015 (3)	IDUA, IDA	252800	4p16.3	Metabolic
1033	Mucopolysaccharidosis II (3)	IDS, MPS2, SIDS	309900	Xq28	Metabolic
1033	Mucopolysaccharidosis Is, 607016 (3)	IDUA, IDA	252800	4p16.3	Metabolic
1033	Mucopolysaccharidosis IVA (3)	GALNS, MPS4A	253000	16q24.3	Metabolic
1033	Mucopolysaccharidosis IVB (3)	GLB1	230500	3p21.33	Metabolic
1033	Mucopolysaccharidosis type IIID, 252940 (3)	GNS, G6S	607664	12q14	Metabolic
1033	Mucopolysaccharidosis type IX, 601492 (3)	HYAL1	607071	3p21.3-p21.2	Metabolic
1033	Mucopolysaccharidosis VII (3)	GUSB, MPS7	253220	7q21.11	Metabolic
1034	Muenke syndrome, 602849 (3)	FGFR3, ACH	134934	4p16.3	Skeletal
1035	Muir-Torre syndrome, 158320 (3)	MLH1, COCA2, HNPCC2	120436	3p21.3	Cancer
1035	Muir-Torre syndrome, 158320 (3)	MSH2, COCA1, FCC1, HNPCC1	609309	2p22-p21	Cancer
1036	Mulibrey nanism, 253250 (3)	TRIM37, MUL, KIAA0898	605073	17q22-q23	multiple
3037	Multiple cutaneous and uterine leiomyomata, 150800 (3)	FH	136850	1q42.1	Cancer
1037	Multiple endocrine neoplasia I (3)	MEN1	131100	11q13	Cancer
1037	Multiple endocrine neoplasia IIA, 171400 (3)	RET, MEN2A	164761	10q11.2	Cancer
1037	Multiple endocrine neoplasia IIB, 162300 (3)	RET, MEN2A	164761	10q11.2	Cancer
5037	Multiple malignancy syndrome (3)	TP53, P53, LFS1	191170	17p13.1	Cancer
9037	Multiple myeloma (3)	IRF4, LSIRF	601900	6p25-p23	Cancer
9037	Multiple myeloma, resistance to, 254500 (3)	LIG4	601837	13q22-q34	Cancer

9038	Multiple sclerosis, susceptibility to, 126200 (3)	MHC2TA, C2TA	600005	16p13	Neurological
9038	Multiple sclerosis, susceptibility to, 126200 (3)	PTPRC, CD45, LCA	151460	1q31-q32	Neurological
9039	Multiple sulfatase deficiency, 272200 (3)	SUMF1, FGE	607939	3p26	Metabolic
1038	Muscle-eye-brain disease, 253280 (3)	POMGNT1, MEB	606822	1p34-p33	multiple
1039	Muscle glycogenosis (3)	PHKA1	311870	Xq13	Muscular
1039	Muscle hypertrophy (3)	GDF8, MSTN	601788	2q32.2	Muscular
1040	Muscular dystrophy, congenital, 1C (3)	FKRP, MDC1C, LGMD2I	606596	19q13.3	Muscular
1040	Muscular dystrophy, congenital, due to partial LAMA2 deficiency, 607855 (3)	LAMA2, LAMM	156225	6q22-q23	Muscular
1040	Muscular dystrophy, congenital merosin-deficient, 607855 (3)	LAMA2, LAMM	156225	6q22-q23	Muscular
1040	Muscular dystrophy, congenital, type 1D, 608840 (3)	LARGE, KIAA0609, MDC1D	603590	22q12.3-q13.1	Muscular
1040	Muscular dystrophy, Fukuyama congenital, 253800 (3)	FCMD	607440	9q31	Muscular
1040	Muscular dystrophy, limb-girdle, type 1A, 159000 (3)	TTID, MYOT	604103	5q31	Muscular
1040	Muscular dystrophy, limb-girdle, type 2A, 253600 (3)	CAPN3, CANP3	114240	15q15.1-q21.1	Muscular
1040	Muscular dystrophy, limb-girdle, type 2B, 253601 (3)	DYSF, LGMD2B	603009	2p13.3-p13.1	Muscular
1040	Muscular dystrophy, limb-girdle, type 2C, 253700 (3)	SGCG, LGMD2C, DMDA1, SCG3	608896	13q12	Muscular
1040	Muscular dystrophy, limb-girdle, type 2D, 608099 (3)	SGCA, ADL, DAG2, LGMD2D, DMDA2	600119	17q12-q21.33	Muscular
1040	Muscular dystrophy, limb-girdle, type 2E, 604286 (3)	SGCB, LGMD2E	600900	4q12	Muscular
1040	Muscular dystrophy, limb-girdle, type 2F, 601287 (3)	SGCD, SGD, LGMD2F, CMD1L	601411	5q33	Muscular
1040	Muscular dystrophy, limb-girdle, type 2G, 601954 (3)	TCAP, LGMD2G, CMD1N	604488	17q12	Muscular
1040	Muscular dystrophy, limb-girdle, type 2H, 254110 (3)	TRIM32, HT2A, LGMD2H	602290	9q31-q34.1	Muscular
1040	Muscular dystrophy, limb-girdle, type 2I, 607155 (3)	FKRP, MDC1C, LGMD2I	606596	19q13.3	Muscular
1040	Muscular dystrophy, limb-girdle, type 2J, 608807 (3)	TTN, CMD1G, TMD, LGMD2J	188840	2q24.3	Muscular
1040	Muscular dystrophy, limb-girdle, type 2K, 609308 (3)	POMT1	607423	9q34.1	Muscular
1040	Muscular dystrophy, limb-girdle, type IC, 607801 (3)	CAV3, LGMD1C	601253	3p25	Muscular
1040	Muscular dystrophy, rigid spine, 1, 602771 (3)	SEPN1, SELN, RSMD1	606210	1p36-p35	Muscular
1040	Muscular dystrophy with epidermolysis bullosa simplex, 226670 (3)	PLEC1, PLTN, EBS1	601282	8q24	Muscular
1041	Myasthenia, familial infantile, 1, 605809 (3)	CMS1A1, FIM1	605809	17p13	Muscular
1042	Myasthenic syndrome (3)	SCN4A, HYPP, NAC1A	603967	17q23.1-q25.3	Muscular
1042	Myasthenic syndrome, congenital, associated with acetylcholine receptor deficiency, 608931 (3)	CHRNB1, ACHRB, SCCMS, CMS2A, CMS1D	100710	17p12-p11	Muscular
1042	Myasthenic syndrome, congenital, associated with acetylcholine receptor deficiency, 608931 (3)	CHRNE, SCCMS, CMS2A, FCCMS, CMS1E, CMS1D	100725	17p13-p12	Muscular
1042	Myasthenic syndrome, congenital, associated with acetylcholine receptor deficiency, 608931 (3)	RAPSN, CMS1D, CMS1E	601592	11p11.2-p11.1	Muscular
1042	Myasthenic syndrome, congenital, associated with episodic apnea, 254210 (3)	CHAT, CMS1A2	118490	10q11.2	Muscular
1042	Myasthenic syndrome, congenital, associated with facial dysmorphism and acetylcholine receptor deficiency, 608931 (3)	RAPSN, CMS1D, CMS1E	601592	11p11.2-p11.1	Muscular
1042	Myasthenic syndrome, fast-channel congenital, 608930 (3)	CHRNA1, ACHRD, CMS2A, SCCMS, FCCMS	100690	2q24-q32	Muscular
1042	Myasthenic syndrome, fast-channel congenital, 608930 (3)	CHRND, ACHRD, SCCMS, CMS2A, FCCMS	100720	2q33-q34	Muscular
1042	Myasthenic syndrome, fast-channel congenital, 608930 (3)	CHRNE, SCCMS, CMS2A, FCCMS, CMS1E, CMS1D	100725	17p13-p12	Muscular
1042	Myasthenic syndrome, slow-channel congenital, 601462 (3)	CHRNA1, ACHRD, CMS2A, SCCMS, FCCMS	100690	2q24-q32	Muscular
1042	Myasthenic syndrome, slow-channel congenital, 601462 (3)	CHRNB1, ACHRB, SCCMS, CMS2A, CMS1D	100710	17p12-p11	Muscular
1042	Myasthenic syndrome, slow-channel congenital, 601462 (3)	CHRND, ACHRD, SCCMS, CMS2A, FCCMS	100720	2q33-q34	Muscular

1042	Myasthenic syndrome, slow-channel congenital, 601462 (3)	CHRNE, SCCMS, CMS2A, FCCMS, CMS1E, CMS1D	100725	17p13-p12	Muscular
1043	Mycobacterial and salmonella infections, susceptibility to, 209950 (3)	IL12RB1	601604	19p13.1	Immunological
1043	Mycobacterial infection, atypical, familial disseminated, 209950 (3)	IFNGR1	107470	6q23-q24	Immunological
1043	Mycobacterial infection, atypical, familial disseminated, 209950 (3)	IFNGR2, IFNGT1, IFGR2	147569	21q22.1-q22.2	Immunological
1043	Mycobacterial infection, atypical, familial disseminated, 209950 (3)	STAT1	600555	2q32.2-q32.3	Immunological
1043	Mycobacterium tuberculosis, suceptibility to infection by, 607948 (3)	NRAMP1, NRAMP	600266	2q35	Immunological
1045	Myelodysplasia syndrome-1 (3)	MDS1	600049	3q26	Muscular
1045	Myelodysplastic syndrome (3)	FACL6, ACS2	604443	5q31	Muscular
1045	Myelodysplastic syndrome, preleukemic (3)	IRF1, MAR	147575	5q31.1	Muscular
1046	Myelofibrosis, idiopathic, 254450 (3)	JAK2	147796	9p24	Hematological
1047	Myelogenous leukemia, acute (3)	FACL6, ACS2	604443	5q31	Cancer
1047	Myelogenous leukemia, acute (3)	IRF1, MAR	147575	5q31.1	Cancer
1047	Myeloid leukemia, acute, M4Eo subtype (3)	CBFB	121360	16q22	Cancer
1047	Myeloid malignancy, predisposition to (3)	CSF1R, FMS	164770	5q33.2-q33.3	Cancer
1049	Myelokathexis, isolated (3)	CXCR4, D2S201E, NPY3R, WHIM	162643	2q21	Immunological
1050	Myelomonocytic leukemia, chronic (3)	PDGFRB, PDGFR	173410	5q31-q32	Cancer
1051	Myeloperoxidase deficiency, 254600 (3)	MPO	606989	17q23.1	Immunological
1052	Myeloproliferative disorder with eosinophilia, 131440 (3)	PDGFRB, PDGFR	173410	5q31-q32	Cancer
1053	Myoadenylate deaminase deficiency (3)	AMPD1	102770	1p21-p13	Muscular
1054	Myocardial infarction, decreased susceptibility to (3)	F7	227500	13q34	Cardiovascular
1054	Myocardial infarction susceptibility (3)	APOE, AD2	107741	19q13.2	Cardiovascular
1054	Myocardial infarction, susceptibility to (3)	ACE, DCP1, ACE1	106180	17q23	Cardiovascular
1054	Myocardial infarction, susceptibility to (3)	ALOX5AP, FLAP	603700	13q12	Cardiovascular
1054	Myocardial infarction, susceptibility to (3)	LGALS2	150571	22q13.1	Cardiovascular
1054	Myocardial infarction, susceptibility to (3)	LTA, TNFB	153440	6p21.3	Cardiovascular
1054	Myocardial infarction, susceptibility to (3)	OLR1, LOX1	602601	12p13-p12	Cardiovascular
1054	Myocardial infarction, susceptibility to (3)	THBD, THRM	188040	20p11.2	Cardiovascular
1054	Myocardial infarction, susceptibility to, 608446 (3)	GCLM, GLCLR	601176	1p22.1	Cardiovascular
1054	Myocardial infarction, susceptibility to, 608446 (3)	TNFSF4, GP34, OX4OL	603594	1q25	Cardiovascular
1055	Myoclonic epilepsy, juvenile, 1, 254770 (3)	EFHC1, FLJ10466, EJM1	608815	6p12-p11	Neurological
1055	Myoclonic epilepsy, severe, of infancy, 607208 (3)	GABRG2, GEFSP3, CAE2, ECA2	137164	5q31.1-q33.1	Neurological
1055	Myoclonic epilepsy with mental retardation and spasticity, 300432 (3)	ARX, ISSX, PRTS, MRXS1, MRX36, MRX54	300382	Xp22.13	Neurological
1056	Myoglobinuria/hemolysis due to PGK deficiency (3)	PGK1, PGKA	311800	Xq13	Metabolic
1057	Myokymia with neonatal epilepsy, 606437 (3)	KCNQ2, EBN1	602235	20q13.3	Neurological
1058	Myoneurogastrointestinal encephalomyopathy syndrome, 603041 (3)	ECGF1	131222	22q13.32-qter	multiple
1059	Myopathy, actin, congenital, with cores (3)	ACTA1, ASMA, NEM3, NEM1	102610	1q42.1	Muscular
1059	Myopathy, actin, congenital, with excess of thin myofilaments, 161800 (3)	ACTA1, ASMA, NEM3, NEM1	102610	1q42.1	Muscular
1059	Myopathy, cardioskeletal, desmin-related, with cataract, 608810 (3)	CRYAB, CRYA2, CTPP2	123590	11q22.3-q23.1	Muscular
1059	Myopathy, centronuclear, 160150 (3)	MYF6	159991	12q21	Muscular
1059	Myopathy, congenital (3)	ITGA7	600536	12q13	Muscular
1059	Myopathy, desmin-related, cardioskeletal, 601419 (3)	DES, CMD1I	125660	2q35	Muscular
1059	Myopathy, distal, with anterior tibial onset, 606768 (3)	DYSF, LGMD2B	603009	2p13.3-p13.1	Muscular
1059	Myopathy, distal, with decreased caveolin 3 (3)	CAV3, LGMD1C	601253	3p25	Muscular
1059	Myopathy due to CPT II deficiency, 255110 (3)	CPT2	600650	1p32	Muscular
1059	Myopathy due to phosphoglycerate mutase deficiency (3)	PGAM2, PGAMM	261670	7p13-p12.3	Muscular
1059	Myopathy, Laing distal, 160500 (3)	MYH7, CMH1, MPD1	160760	14q12	Muscular
1059	Myopathy, myosin storage, 608358 (3)	MYH7, CMH1, MPD1	160760	14q12	Muscular
1059	Myopathy, nemaline, 3, 161800 (3)	ACTA1, ASMA, NEM3, NEM1	102610	1q42.1	Muscular

1061	Myotilinopathy, 609200 (3)	TTID, MYOT	604103	5q31	Muscular
1062	Myotonia congenita, atypical, acetazolamide-responsive, 608390 (3)	SCN4A, HYPP, NAC1A	603967	17q23.1-q25.3	Muscular
1062	Myotonia congenita, dominant, 160800 (3)	CLCN1	118425	7q35	Muscular
1062	Myotonia congenita, recessive, 255700 (3)	CLCN1	118425	7q35	Muscular
1062	Myotonia levior, recessive (3)	CLCN1	118425	7q35	Muscular
1063	Myotonic dystrophy, 160900 (3)	DMPK, DM, DMK	605377	19q13.2-q13.3	Muscular
1063	Myotonic dystrophy, type 2, 602668 (3)	ZNF9, CNBP1, DM2, PROMM	116955	3q13.3-q24	Muscular
1064	Myotubular myopathy, X-linked, 310400 (3)	MTM1, MTMX	300415	Xq28	Muscular
1065	Myxoid liposarcoma (3)	DDIT3, GADD153, CHOP10	126337	12q13.1-q13.2	Cancer
1066	Myxoma, intracardiac, 255960 (3)	PRKAR1A, TSE1, CNC1, CAR	188830	17q23-q24	Cardiovascular
1067	N-acetylglutamate synthase deficiency, 237310 (3)	NAGS	608300	17q21.31	Metabolic
1070	Nail-patella syndrome, 161200 (3)	LMX1B, NPS1	602575	9q34.1	multiple
1070	Nail-patella syndrome with open-angle glaucoma, 137750 (3)	LMX1B, NPS1	602575	9q34.1	multiple
1071	Nance-Horan syndrome, 302350 (3)	NHS	300457	Xp22.13	Ophthamological
1073	Narcolepsy, 161400 (3)	HCRT, OX	602358	17q21	Psychiatric
1074	Nasopharyngeal carcinoma, 161550 (3)	TP53, P53, LFS1	191170	17p13.1	Cancer
1075	Nasu-Hakola disease, 221770 (3)	TREM2	605086	6p21.2	Bone
1075	Nasu-Hakola disease, 221770 (3)	TYROBP, PLOSL, DAP12	604142	19q13.1	Bone
1077	Naxos disease, 601214 (3)	JUP, DP3, PDGB	173325	17q21	multiple
1078	Nemaline myopathy, 161800 (3)	TPM2, TMSB, AMCD1, DA1	190990	9p13.2-p13.1	Muscular
1078	Nemaline myopathy 1, autosomal dominant, 161800 (3)	TPM3, NEM1	191030	1q22-q23	Muscular
1078	Nemaline myopathy 2, autosomal recessive, 256030 (3)	NEB, NEM2	161650	2q22	Muscular
1078	Nemaline myopathy, Amish type, 605355 (3)	TNNT1, ANM	191041	19q13.4	Muscular
3079	Neonatal ichthyosis-sclerosing cholangitis syndrome, 607626 (3)	CLDN1, SEMP1	603718	3q28-q29	multiple
1080	Nephrogenic syndrome of inappropriate antidiuresis, 300539 (3)	AVPR2, DIR, DI1, ADHR	300538	Xq28	Renal
1081	Nephrolithiasis, type I, 310468 (3)	CLCN5, CLCK2, NPHL2, DENTS	300008	Xp11.22	Renal
1081	Nephrolithiasis, uric acid, susceptibility to, 605990 (3)	ZNF365, UAN	607818	10q21.2	Renal
1082	Nephronophthisis 2, infantile, 602088 (3)	INVS, INV, NPHP2, NPH2	243305	9q31	Renal
1082	Nephronophthisis 4, 606966 (3)	NPHP4, SLSN4	607215	1p36	Renal
1082	Nephronophthisis, adolescent, 604387 (3)	NPHP3, NPH3	608002	3q22	Renal
1082	Nephronophthisis, juvenile, 256100 (3)	NPHP1, NPH1, SLSN1	607100	2q13	Renal
1084	Nephropathy, chronic hypocomplementemic (3)	HF1, CFH, HUS	134370	1q32	Renal
1085	Nephropathy with pretibial epidermolysis bullosa and deafness, 609057 (3)	CD151, PETA3, SFA1	602243	11p15.5	Renal
1087	Nephrosis-1, congenital, Finnish type, 256300 (3)	NPHS1, NPHN	602716	19q13.1	Renal
1087	Nephrotic syndrome, steroid-resistant, 600995 (3)	PDCN, NPHS2, SRN1	604766	1q25-q31	Renal
1088	Netherton syndrome, 256500 (3)	SPINK5, LEKTI	605010	5q32	Dermatological
1090	Neural tube defects, maternal risk of, 601634 (3)	MTHFD, MTHFC	172460	14q24	Developmental
1091	Neuroblastoma, 256700 (3)	NME1, NM23	156490	17q21.3	Cancer
1091	Neuroblastoma, 256700 (3)	PMX2B, NBPHOX, PHOX2B	603851	4p12	Cancer
1092	Neurodegeneration, pantothenate kinase-associated, 234200 (3)	PANK2, NBIA1, PKAN, HARP	606157	20p13-p12.3	Neurological
1093	Neuroectodermal tumors, supratentorial primitive, with cafe-au-lait spots, 608623 (3)	PMS2, PMSL2, HNPCC4	600259	7p22	multiple
1095	Neurofibromatosis, familial spinal, 162210 (3)	NF1, VRNF, WSS, NFNS	162200	17q11.2	Cancer
1096	Neurofibromatosis-Noonan syndrome, 601321 (3)	NF1, VRNF, WSS, NFNS	162200	17q11.2	Cancer
1097	Neurofibromatosis, type 1 (3)	NF1, VRNF, WSS, NFNS	162200	17q11.2	Cancer
1097	Neurofibromatosis, type 2, 101000 (3)	NF2	607379	22q12.2	Cancer
1097	Neurofibromatosis, type I, with leukemia, 162200 (3)	MSH2, COCA1, FCC1, HNPCC1	609309	2p22-p21	Cancer
1098	Neurofibrosarcoma (3)	MXI1	600020	10q25	Cancer
1099	Neuropathy, congenital hypomyelinating, 1, 605253 (3)	EGR2, KROX20	129010	10q21.1-q22.1	Neurological
1099	Neuropathy, congenital hypomyelinating, 605253 (3)	MPZ, CMT1B, CMTDI3, CHM, DSS	159440	1q22	Neurological

1099	Neuropathy, distal hereditary motor, 608634 (3)	HSPB1, HSP27, CMT2F	602195	7q11.23	Neurological
1099	Neuropathy, distal hereditary motor, type II, 158590 (3)	HSPB8, H11, E2IG1, DHMN2	608014	12q24-qter	Neurological
1099	Neuropathy, hereditary sensory and autonomic, type 1, 162400 (3)	SPTLC1, LBC1, SPT1, HSN1, HSAN	605712	9q22.1-q22.3	Neurological
1099	Neuropathy, hereditary sensory and autonomic, type V, 608654 (3)	NGFB, HSAN5	162030	1p13.1	Neurological
1099	Neuropathy, hereditary sensory, type II, 201300 (3)	HSN2	608620	12p13.33	Neurological
1099	Neuropathy, recurrent, with pressure palsies, 162500 (3)	PMP22, CMT1A, CMT1E, DSS	601097	17p11.2	Neurological
1101	Neutropenia, alloimmune neonatal (3)	FCGR3A, CD16, IGFR3	146740	1q23	Hematological
1101	Neutropenia, congenital, 202700 (3)	ELA2	130130	19p13.3	Hematological
1101	Neutropenia, severe congenital, 202700 (3)	GFI1, ZNF163	600871	1p22	Hematological
1101	Neutropenia, severe congenital, X-linked, 300299 (3)	WAS, IMD2, THC	300392	Xp11.23-p11.22	Hematological
1102	Neutrophil immunodeficiency syndrome, 608203 (3)	RAC2	602049	22q12.3-q13.2	Immunological
1103	Nevo syndrome, 601451 (3)	PLOD, PLOD1	153454	1p36.3-p36.2	Connective tissue
1104	Nevus, epidermal, epidermolytic hyperkeratotic type, 600648 (3)	KRT10	148080	17q21-q22	Dermatological
1105	Newfoundland rod-cone dystrophy, 607476 (3)	RLBP1	180090	15q26	Ophthamological
1106	Nicotine addiction, protection from (3)	CYP2A6, CYP2A3, CYP2A, P450C2A	122720	19q13.2	Psychiatric
1106	Nicotine addiction, susceptibility to, 188890 (3)	CHRNA4, ENFL1	118504	20q13.2-q13.3	Psychiatric
1106	Nicotine dependence, susceptibility to, 188890 (3)	GPR51, GABBR2	607340	9q22.1	Psychiatric
1107	Niemann-Pick disease, type A, 257200 (3)	SMPD1, NPD	607608	11p15.4-p15.1	Metabolic
1107	Niemann-Pick disease, type B, 607616 (3)	SMPD1, NPD	607608	11p15.4-p15.1	Metabolic
1107	Niemann-Pick disease, type C1, 257220 (3)	NPC1, NPC	607623	18q11-q12	Metabolic
1107	Niemann-pick disease, type C2, 607625 (3)	NPC2, HE1	601015	14q24.3	Metabolic
1107	Niemann-Pick disease, type D, 257220 (3)	NPC1, NPC	607623	18q11-q12	Metabolic
1110	Night blindness, congenital stationary (3)	GNAT1	139330	3p21	Ophthamological
1110	Night blindness, congenital stationary, type 1, 310500 (3)	CSNB1, NYX	300278	Xp11.4	Ophthamological
1110	Night blindness, congenital stationary, type 3, 163500 (3)	PDE6B, PDEB, CSNB3	180072	4p16.3	Ophthamological
1110	Night blindness, congenital stationary, X-linked, type 2, 300071 (3)	CACNA1F, CSNB2	300110	Xp11.23	Ophthamological
1110	Night blindness, congenital stationery, rhodopsin-related (3)	RHO, RP4, OPN2	180380	3q21-q24	Ophthamological
1111	Nijmegen breakage syndrome, 251260 (3)	NBS1, NBS	602667	8q21	multiple
1112	Nonaka myopathy, 605820 (3)	GNE, GLCNE, IBM2, DMRV, NM	603824	9p12-p11	Muscular
1113	Noncompaction of left ventricular myocardium, isolated, 300183 (3)	TAZ, EFE2, BTHS, CMD3A, LVNCX	300394	Xq28	Cardiovascular
1114	Non-Hodgkin lymphoma, somatic, 605027 (3)	CASP10, MCH4, ALPS2	601762	2q33-q34	Cancer
1115	Nonsmall cell lung cancer (3)	IRF1, MAR	147575	5q31.1	Cancer
1115	Nonsmall cell lung cancer, response to tyrosine kinase inhibitor in, 211980 (3)	EGFR	131550	7p12.3-p12.1	Cancer
1115	Nonsmall cell lung cancer, somatic (3)	BRAF	164757	7q34	Cancer
1116	Noonan syndrome 1, 163950 (3)	PTPN11, PTP2C, SHP2, NS1	176876	12q24.1	Developmental
1117	Norrie disease (3)	NDP, ND	310600	Xp11.4	Neurological
1118	Norum disease, 245900 (3)	LCAT	606967	16q22.1	Metabolic
1119	Norwalk virus infection, resistance to (3)	FUT2, SE	182100	19q13.3	Immunological
1122	Nucleoside phosphorylase deficiency, immunodeficiency due to (3)	NP	164050	14q13.1	Immunological
1126	Obesity, adrenal insufficiency, and red hair (3)	POMC	176830	2p23.3	Nutritional
1126	Obesity, autosomal dominant, 601665 (3)	MC4R	155541	18q22	Nutritional
1126	Obesity, hyperphagia, and developmental delay (3)	AKR1C2, DDH2, DD2, HAKRD	600450	10p15-p14	Nutritional
1126	Obesity, hyperphagia, and developmental delay (3)	NTRK2, TRKB	600456	9q22.1	Nutritional
1126	Obesity, late-onset, 601665 (3)	AGRP, ART, AGRT	602311	16q22	Nutritional
1126	Obesity, mild, early-onset, 601665 (3)	NR0B2, SHP	604630	1p36.1	Nutritional
1126	Obesity, morbid, with hypogonadism (3)	LEP, OB	164160	7q31.3	Nutritional
1126	Obesity, morbid, with hypogonadism (3)	LEPR, OBR	601007	1p31	Nutritional
1126	Obesity, resistance to (3)	PPARG, PPARG1, PPARG2	601487	3p25	Nutritional
1126	Obesity, severe, 601665 (3)	PPARG, PPARG1, PPARG2	601487	3p25	Nutritional
1126	Obesity, severe, 601665 (3)	SIM1	603128	6q16.3-q21	Nutritional

1126	Obesity, severe, and type II diabetes, 601665 (3)	UCP3	602044	11q13	Nutritional
1126	Obesity, severe, due to leptin deficiency (3)	LEP, OB	164160	7q31.3	Nutritional
1126	Obesity, severe, susceptibility to, 601665 (3)	MC3R	155540	20q13.2	Nutritional
1126	Obesity, susceptibility to, 300306 (3)	SLC6A14, OBX	300444	Xq23-q24	Nutritional
1126	Obesity, susceptibility to, 601665 (3)	ADRB2	109690	5q32-q34	Nutritional
1126	Obesity, susceptibility to, 601665 (3)	ADRB3	109691	8p12-p11.2	Nutritional
1126	Obesity, susceptibility to, 601665 (3)	CART	602606	5q13.2	Nutritional
1126	Obesity, susceptibility to, 601665 (3)	ENPP1, PDNP1, NPPS, M6S1, PCA1	173335	6q22-q23	Nutritional
1126	Obesity, susceptibility to, 601665 (3)	GHRL	605353	3p26-p25	Nutritional
1126	Obesity, susceptibility to, 601665 (3)	UCP1	113730	4q31	Nutritional
1126	Obesity, susceptibility to, 601665 (3)	UCP2	601693	11q13	Nutritional
1126	Obestiy with impaired prohormone processing, 600955 (3)	PCSK1, NEC1, PC1, PC3	162150	5q15-q21	Nutritional
1128	Obsessive-compulsive disorder 1, 164230 (3)	SLC6A4, HTT, OCD1	182138	17q11.1-q12	Psychiatric
1128	Obsessive-compulsive disorder, protection against, 164230 (3)	BDNF	113505	11p13	Psychiatric
1128	Obsessive-compulsive disorder, susceptibility to, 164230 (3)	HTR2A	182135	13q14-q21	Psychiatric
1129	Occipital horn syndrome, 304150 (3)	ATP7A, MNK, MK, OHS	300011	Xq12-q13	multiple
1130	Ocular albinism, Nettleship-Falls type (3)	OA1	300500	Xp22.3	Ophthamological
1130	Oculocutaneous albinism, type II, modifier of (3)	MC1R	155555	16q24.3	Ophthamological
1130	Oculocutaneous albinism, type IV, 606574 (3)	MATP, AIM1	606202	5p13.3	Ophthamological
1132	Oculodentodigital dysplasia, 164200 (3)	GJA1, CX43, ODDD, SDTY3, ODOD	121014	6q21-q23.2	Skeletal
1133	Oculofaciocardiodental syndrome, 300166 (3)	BCOR, KIAA1575, MAA2, ANOP2	300485	Xp11.4	multiple
1135	Oculopharyngeal muscular dystorphy, 164300 (3)	PABPN1, PABP2, PAB2	602279	14q11.2-q13	Muscular
1135	Oculopharyngeal muscular dystrophy, autosomal recessive, 257950 (3)	PABPN1, PABP2, PAB2	602279	14q11.2-q13	Muscular
1136	Odontohypophosphatasia, 146300 (3)	ALPL, HOPS, TNSALP	171760	1p36.1-p34	Bone
1137	Oguchi disease-1, 258100 (3)	SAG	181031	2q37.1	Ophthamological
1137	Oguchi disease-2, 258100 (3)	RHOK, RK, GRK1	180381	13q34	Ophthamological
1138	Oligodendroglioma, 137800 (3)	PTEN, MMAC1	601728	10q23.31	Cancer
1139	Oligodontia, 604625 (3)	PAX9	167416	14q12-q13	Skeletal
1140	Oligodontia-colorectal cancer syndrome, 608615 (3)	AXIN2	604025	17q24	Cancer
1141	Omenn syndrome, 603554 (3)	DCLRE1C, ARTEMIS, SCIDA	605988	10p	Immunological
1141	Omenn syndrome, 603554 (3)	RAG1	179615	11p13	Immunological
1141	Omenn syndrome, 603554 (3)	RAG2	179616	11p13	Immunological
1142	Opitz G syndrome, type I, 300000 (3)	MID1, OGS1, BBBG1, FXY, OSX	300552	Xp22	multiple
1143	Opremazole poor metabolizer (3)	CYP2C, CYP2C19	124020	10q24.1-q24.3	Metabolic
1144	Optic atrophy 1, 165500 (3)	OPA1, NTG, NPG	605290	3q28-q29	Ophthamological
1144	Optic atrophy and cataract, 165300 (3)	OPA3, MGA3	606580	19q13.2-q13.3	Ophthamological
3144	Optic nerve coloboma with renal disease, 120330 (3)	PAX2	167409	10q24.3-q25.1	multiple
5144	Optic nerve hypoplasia/aplasia, 165550 (3)	PAX6, AN2, MGDA	607108	11p13	Ophthamological
1145	Oral-facial-digital syndrome 1, 311200 (3)	OFD1, CXorf5	300170	Xp22.3-p22.2	Skeletal
1146	Ornithine transcarbamylase deficiency, 311250 (3)	OTC	300461	Xp21.1	Metabolic
1147	Orofacial cleft 6, 608864 (3)	IRF6, VWS, LPS, PIT, PPS, OFC6	607199	1q32-q41	Skeletal
1148	Orolaryngeal cancer, multiple, (3)	CDKN2A, MTS1, P16, MLM, CMM2	600160	9p21	Cancer
1149	Oroticaciduria (3)	UMPS, OPRT	258900	3q13	Metabolic
1150	Orthostatic intolerance, 604715 (3)	SLC6A2, NAT1, NET1	163970	16q12.2	Cardiovascular
1151	OSMED syndrome, 215150 (3)	COL11A2, STL3, DFNA13	120290	6p21.3	Bone
1152	Osseous heteroplasia, progressive, 166350 (3)	GNAS, GNAS1, GPSA, POH, PHP1B, PHP1A, AHO	139320	20q13.2	Bone
1153	Ossification of posterior longitudinal ligament of spine, 602475 (3)	ENPP1, PDNP1, NPPS, M6S1, PCA1	173335	6q22-q23	Connective tissue
1154	Osteoarthritis, hand, susceptibility to, 607850 (3)	MATN3, EDM5, HOA	602109	2p24-p23	Connective tissue
1154	Osteoarthritis of hip, female-specific, susceptibility to, 165720 (3)	FRZB, FRZB1, SRFP3	605083	2q31-q33	Connective tissue

1154	Osteoarthritis, susceptibility to, 165720 (3)	ASPN, PLAP1	608135	9q21.3-q22	Connective tissue
1154	Osteoarthrosis, 165720 (3)	COL2A1	120140	12q13.11-q13.2	Connective tissue
1156	Osteogenesis imperfecta, 3 clinical forms, 166200, 166210, 259420 (3)	COL1A2	120160	7q22.1	Bone
1156	Osteogenesis imperfecta, type I, 166200 (3)	COL1A1	120150	17q21.31-q22	Bone
1156	Osteogenesis imperfecta, type II, 166210 (3)	COL1A1	120150	17q21.31-q22	Bone
1156	Osteogenesis imperfecta, type III, 259420 (3)	COL1A1	120150	17q21.31-q22	Bone
1156	Osteogenesis imperfecta, type IV, 166220 (3)	COL1A1	120150	17q21.31-q22	Bone
1157	Osteolysis, familial expansile, 174810 (3)	TNFRSF11A, RANK, ODFR, OFE	603499	18q22.1	Bone
1157	Osteolysis, idiopathic, Saudi type, 605156 (3)	MMP2, CLG4A, MONA	120360	16q13	Bone
1161	Osteopetrosis, autosomal dominant, type I, 607634 (3)	LRP5, BMND1, LRP7, LR3, OPPG, VBCH2	603506	11q13.4	Bone
1161	Osteopetrosis, autosomal dominant, type II, 166600 (3)	CLCN7, CLC7, OPTA2	602727	16p13	Bone
1161	Osteopetrosis, autosomal recessive, 259700 (3)	OSTM1, GL	607649	6q21	Bone
1161	Osteopetrosis, recessive, 259700 (3)	CLCN7, CLC7, OPTA2	602727	16p13	Bone
1161	Osteopetrosis, recessive, 259700 (3)	TCIRG1, TIRC7, OC116, OPTB1	604592	11q13.4-q13.5	Bone
1162	Osteopoikilosis, 166700 (3)	LEMD3, MAN1	607844	12q14	Bone
1163	Osteoporosis, 166710 (3)	COL1A1	120150	17q21.31-q22	Bone
1163	Osteoporosis, 166710 (3)	LRP5, BMND1, LRP7, LR3, OPPG, VBCH2	603506	11q13.4	Bone
1163	Osteoporosis (3)	CALCA, CALC1	114130	11p15.2-p15.1	Bone
1163	Osteoporosis, hypophosphatemic, (3)	SLC17A2, NPT2	182309	5q35	Bone
1163	Osteoporosis, idiopathic, 166710 (3)	COL1A2	120160	7q22.1	Bone
1163	Osteoporosis, postmenopausal, susceptibility, 166710 (3)	CALCR, CRT	114131	7q21.3	Bone
1164	Osteoporosis-pseudoglioma syndrome, 259770 (3)	LRP5, BMND1, LRP7, LR3, OPPG, VBCH2	603506	11q13.4	Bone
1165	Osteoporosis, susceptibility to, 166710 (3)	RIL	603422	5q31.1	Bone
1166	Osteosarcoma (3)	TP53, P53, LFS1	191170	17p13.1	Cancer
1166	Osteosarcoma, somatic, 259500 (3)	CHEK2, RAD53, CHK2, CDS1, LFS2	604373	22q12.1	Cancer
1168	Otopalatodigital syndrome, type I, 311300 (3)	FLNA, FLN1, ABPX, NHBP, OPD1, OPD2, FMD, MNS	300017	Xq28	multiple
1168	Otopalatodigital syndrome, type II, 304120 (3)	FLNA, FLN1, ABPX, NHBP, OPD1, OPD2, FMD, MNS	300017	Xq28	multiple
1170	Ovarian cancer (3)	BRCA1, PSCP	113705	17q21	Cancer
1170	Ovarian cancer (3)	MSH2, COCA1, FCC1, HNPCC1	609309	2p22-p21	Cancer
1170	Ovarian cancer, 604370 (3)	PIK3CA	171834	3q26.3	Cancer
1170	Ovarian cancer, endometrial type (3)	MSH6, GTBP, HNPCC5	600678	2p16	Cancer
1170	Ovarian cancer, somatic, (3)	ERBB2, NGL, NEU, HER2	164870	17q21.1	Cancer
1170	Ovarian carcinoma (3)	CDH1, UVO	192090	16q22.1	Cancer
1170	Ovarian carcinoma (3)	RRAS2, TC21	600098	11pter-p15.5	Cancer
1170	Ovarian carcinoma, endometrioid type (3)	CTNNB1	116806	3p22-p21.3	Cancer
3171	Ovarian dysgenesis 1, 233300 (3)	FSHR, ODG1	136435	2p21-p16	Endocrine
3171	Ovarian dysgenesis 2, 300510 (3)	BMP15, GDF9B, ODG2	300247	Xp11.2	Endocrine
5170	Ovarian hyperstimulation syndrome, gestational, 608115 (3)	FSHR, ODG1	136435	2p21-p16	Endocrine
7170	Ovarian sex cord tumors (3)	FSHR, ODG1	136435	2p21-p16	Cancer
1171	Ovarioleukodystrophy, 603896 (3)	EIF2B2	606454	14q24	Neurological
1171	Ovarioleukodystrophy, 603896 (3)	EIF2B4	606687	2p23.3	Neurological
1171	Ovarioleukodystrophy, 603896 (3)	EIF2B5, LVWM, CACH, CLE	603945	3q27	Neurological
1172	Pachyonychia congenita, Jackson-Lawler type, 167210 (3)	KRT17, PC2, PCHC1	148069	17q12-q21	Dermatological
1172	Pachyonychia congenita, Jackson-Lawler type, 167210 (3)	KRT6B, PC2	148042	12q13	Dermatological
1172	Pachyonychia congenita, Jadassohn-Lewandowsky type, 167200 (3)	KRT16	148067	17q12-q21	Dermatological

1172	Pachyonychia congenita, Jadassohn-Lewandowsky type, 167200 (3)	KRT6A	148041	12q13	Dermatological
1173	Paget disease, juvenile, 239000 (3)	TNFRSF11B, OPG, OCIF	602643	8q24	Bone
1173	Paget disease of bone, 602080 (3)	SQSTM1, P62, PDB3	601530	5q35	Bone
1173	Paget disease of bone, 602080 (3)	TNFRSF11A, RANK, ODFR, OFE	603499	18q22.1	Bone
1174	Pallidopontonigral degeneration, 168610 (3)	MAPT, MTBT1, DDPAC, MSTD	157140	17q21.1	Neurological
1175	Pallister-Hall syndrome, 146510 (3)	GLI3, PAPA, PAPB, ACLS	165240	7p13	multiple
1176	Palmoplantar keratoderma, nonepidermolytic, 600962 (3)	KRT16	148067	17q12-q21	Dermatological
1176	Palmoplantar verrucous nevus, unilateral, 144200 (3)	KRT16	148067	17q12-q21	Dermatological
3178	Pancreatic agenesis, 260370 (3)	IPF1	600733	13q12.1	Gastrointestinal
1178	Pancreatic cancer, 260350 (3)	ARMET, ARP	601916	3p21.1	Cancer
1178	Pancreatic cancer, 260350 (3)	BRCA2, FANCD1	600185	13q12.3	Cancer
1178	Pancreatic cancer, 260350 (3)	TP53, P53, LFS1	191170	17p13.1	Cancer
1178	Pancreatic cancer (3)	MADH4, DPC4, SMAD4, JIP	600993	18q21.1	Cancer
1178	Pancreatic cancer/melanoma syndrome, 606719 (3)	CDKN2A, MTS1, P16, MLM, CMM2	600160	9p21	Cancer
1178	Pancreatic cancer, somatic (3)	ACVR1B, ACVRLK4, ALK4	601300	12q13	Cancer
1178	Pancreatic cancer, sporadic (3)	STK11, PJS, LKB1	602216	19p13.3	Cancer
1178	Pancreatic carcinoma, somatic, 260350 (3)	KRAS2, RASK2	190070	12p12.1	Cancer
1178	Pancreatic carcinoma, somatic (3)	RBBP8, RIM	604124	18q11.2	Cancer
1179	Pancreatitis, hereditary, 167800 (3)	PRSS1, TRY1	276000	7q35	Gastrointestinal
1179	Pancreatitis, hereditary, 167800 (3)	SPINK1, PSTI, PCTT, TATI	167790	5q32	Gastrointestinal
1179	Pancreatitis, idiopathic (3)	CFTR, ABCC7, CF, MRP7	602421	7q31.2	Gastrointestinal
1183	Papillary serous carcinoma of the peritoneum (3)	BRCA1, PSCP	113705	17q21	Cancer
1184	Papillon-Lefevre syndrome, 245000 (3)	CTSC, CPPI, PALS, PLS, HMS	602365	11q14.1-q14.3	multiple
1186	Paraganglioma, familial malignant, 168000 (3)	SDHB, SDH1, SDHIP	185470	1p36.1-p35	Cancer
1186	Paragangliomas, familial central nervous system, 168000 (3)	SDHD, PGL1	602690	11q23	Cancer
1186	Paragangliomas, familial nonchromaffin, 1, with and without deafness, 168000 (3)	SDHD, PGL1	602690	11q23	Cancer
1186	Paragangliomas, familial nonchromaffin, 3, 605373 (3)	SDHC, PGL3	602413	1q21	Cancer
1186	Paraganglioma, sporadic corotid body, 168000 (3)	SDHD, PGL1	602690	11q23	Cancer
1188	Paramyotonia congenita, 168300 (3)	SCN4A, HYPP, NAC1A	603967	17q23.1-q25.3	Muscular
1189	Parathyroid adenoma, sporadic (3)	MEN1	131100	11q13	Cancer
1189	Parathyroid adenoma with cystic changes, 145001 (3)	HRPT2, C1orf28	607393	1q25-q31	Cancer
1189	Parathyroid carcinoma, 608266 (3)	HRPT2, C1orf28	607393	1q25-q31	Cancer
1190	Parietal foramina 1, 168500 (3)	MSX2, CRS2, HOX8	123101	5q34-q35	Skeletal
1190	Parietal foramina 2, 168500 (3)	ALX4, PFM2, FPP	605420	11p11.2	Skeletal
1190	Parietal foramina with cleidocranial dysplasia, 168550 (3)	MSX2, CRS2, HOX8	123101	5q34-q35	Skeletal
1191	Parkes Weber syndrome, 608355 (3)	RASA1, GAP, CMAVM, PKWS	139150	5q13.3	multiple
1192	Parkinson disease, 168600 (3)	NR4A2, NURR1, NOT, TINUR	601828	2q22-q23	Neurological
1192	Parkinson disease, 168600 (3)	SNCAIP	603779	5q23.1-q23.3	Neurological
1192	Parkinson disease, 168600 (3)	TBP, SCA17	600075	6q27	Neurological
1192	Parkinson disease 4, autosomal dominant Lewy body, 605543 (3)	SNCA, NACP, PARK1, PARK4	163890	4q21	Neurological
1192	Parkinson disease 7, autosomal recessive early-onset, 606324 (3)	DJ1, PARK7	602533	1p36	Neurological
1192	Parkinson disease-8, 607060 (3)	LRRK2, PARK8	609007	12q12	Neurological
1192	Parkinson disease, early onset, 605909 (3)	PINK1, PARK6	608309	1p36	Neurological
1192	Parkinson disease, familial, 168600 (3)	UCHL1, PARK5	191342	4p14	Neurological
1192	Parkinson disease, familial, 168601 (3)	SNCA, NACP, PARK1, PARK4	163890	4q21	Neurological
1192	Parkinson disease, juvenile, type 2, 600116 (3)	PRKN, PARK2, PDJ	602544	6q25.2-q27	Neurological
1192	Parkinson disease, resistance to, 168600 (3)	DBH	609312	9q34	Neurological
1192	Parkinson disease, susceptibility to, 168600 (3)	NDUFV2	600532	18p11.31-p11.2	Neurological
3195	Paroxysmal nocturnal hemoglobinuria (3)	PIGA	311770	Xp22.1	Hematological

1195	Paroxysmal nonkinesigenic dyskinesia, 118800 (3)	MR1, TAHCCP2, KIPP1184, BRP17, PNKD, FPD1, PDC, DYT8	609023	2q35	Neurological
1196	Partington syndrome, 309510 (3)	ARX, ISSX, PRTS, MRXS1, MRX36, MRX54	300382	Xp22.13	Neurological
1198	PCWH, 609136 (3)	SOX10, WS4	602229	22q13	Neurological
1199	Pelger-Huet anomaly, 169400 (3)	LBR, PHA	600024	1q42.1	Hematological
1200	Pelizaeus-Merzbacher disease, 312080 (3)	PLP1, PMD	300401	Xq22	Neurological
1201	Pelizaeus-Merzbacher-like disease, autosomal recessive, 608804 (3)	GJA12, CX47, PMLDAR	608803	1q41-q42	Neurological
1204	Pendred syndrome, 274600 (3)	SLC26A4, PDS, DFNB4	605646	7q31	Ear,Nose,Throat
1205	Perineal hypospadias (3)	AR, DHTR, TFM, SBMA, KD, SMAX1	313700	Xq11-q12	Endocrine
1206	Periodic fever, familial, 142680 (3)	TNFRSF1A, TNFR1, TNFAR, FPF	191190	12p13.2	Immunological
1207	Periodontitis, juvenile, 170650 (3)	CTSC, CPPI, PALS, PLS, HMS	602365	11q14.1-q14.3	Ear,Nose,Throat
1209	Periventricular heterotopia with microcephaly, 608097 (3)	ARFGEF2, BIG2	605371	20q13.13	Neurological
1210	Peroxisomal biogenesis disorder, complementation group 4 (3)	PEX6, PXAAA1, PAF2	601498	6p21.1	multiple
1210	Peroxisomal biogenesis disorder, complementation group 6 (3)	PEX6, PXAAA1, PAF2	601498	6p21.1	multiple
1210	Peroxisome biogenesis factor 12 (3)	PEX12	601758	Chr.17	multiple
3212	Persistent hyperinsulinemic hypoglycemia of infancy, 256450 (3)	KCNJ11, BIR, PHHI	600937	11p15.1	Metabolic
1212	Persistent Mullerian duct syndrome, type I, 261550 (3)	AMH, MIF	600957	19p13.3-p13.2	Developmental
1212	Persistent Mullerian duct syndrome, type II, 261550 (3)	AMHR2, AMHR	600956	12q13	Developmental
1213	Peters anomaly, 603807 (3)	PAX6, AN2, MGDA	607108	11p13	Developmental
1213	Peters anomaly, 604229 (3)	CYP1B1, GLC3A	601771	2p22-p21	Developmental
1214	Peutz-Jeghers syndrome, 175200 (3)	STK11, PJS, LKB1	602216	19p13.3	Cancer
1215	Pfeiffer syndrome, 101600 (3)	FGFR1, FLT2, KAL2	136350	8p11.2-p11.1	Skeletal
1215	Pfeiffer syndrome, 101600 (3)	FGFR2, BEK, CFD1, JWS	176943	10q26	Skeletal
1216	Phenylketonuria (3)	PAH, PKU1	261600	12q24.1	Metabolic
1216	Phenylketonuria due to dihydropteridine reductase deficiency (3)	QDPR, DHPR	261630	4p15.31	Metabolic
1216	Phenylketonuria due to PTS deficiency (3)	PTS	261640	11q22.3-q23.3	Metabolic
1217	Phenylthiocarbamide tasting, 171200 (3)	TAS2R38, T2R61, PTC	607751	7q35-q36	Ear,Nose,Throat
1218	Pheochromocytoma, 171300 (3)	SDHD, PGL1	602690	11q23	Cancer
1218	Pheochromocytoma, 171300 (3)	VHL	608537	3p26-p25	Cancer
1218	Pheochromocytoma, extraadrenal, and cervical paraganglioma, 115310 (3)	SDHB, SDH1, SDHIP	185470	1p36.1-p35	Cancer
1220	Phosphoglycerate dehydrogenase deficiency, 601815 (3)	PHGDH	606879	1q12	Metabolic
1221	Phosphoribosyl pyrophosphate synthetase-related gout (3)	PRPS1	311850	Xq22-q24	Metabolic
1222	Phosphorylase kinase deficiency of liver and muscle, autosomal recessive, 261750 (3)	PHKB	172490	16q12-q13	Metabolic
1223	Phosphoserine phosphatase deficiency (3)	PSP	172480	7p15.2-p15.1	Metabolic
1225	Pick disease, 172700 (3)	PSEN1, AD3	104311	14q24.3	Neurological
1226	Piebaldism (3)	KIT, PBT	164920	4q12	Dermatological
1227	Pigmentation of hair, skin, and eyes, variation in (3)	MATP, AIM1	606202	5p13.3	Dermatological
3229	Pigmented adrenocortical disease, primary isolated, 160980 (3)	PRKAR1A, TSE1, CNC1, CAR	188830	17q23-q24	Cancer
1229	Pigmented paravenous chorioretinal atrophy, 172870 (3)	CRB1, RP12	604210	1q31-q32.1	Ophthamological
1230	Pilomatricoma, 132600 (3)	CTNNB1	116806	3p22-p21.3	Cancer
1232	Pituitary ACTH-secreting adenoma (3)	GNAI2, GNAI2B, GIP	139360	3p21	Cancer
1232	Pituitary ACTH secreting adenoma (3)	GNAS, GNAS1, GPSA, POH, PHP1B, PHP1A, AHO	139320	20q13.2	Cancer
1232	Pituitary adenoma, nonfunctioning (3)	THRA, ERBA1, THRA1	190120	17q11.2	Cancer
3232	Pituitary anomalies with holoprosencephaly-like features (3)	GLI2	165230	2q14	multiple
5232	Pituitary hormone deficiency, combined (3)	POU1F1, PIT1	173110	3p11	Endocrine
5232	Pituitary hormone deficiency, combined (3)	PROP1	601538	5q	Endocrine
5232	Pituitary hormone deficiency, combined, HESX1-related, 182230 (3)	HESX1, RPX	601802	3p21.2-p21.1	Endocrine

5232	Pituitary hormone deficiency, combined, with rigid cervical spine, 262600 (3)	LHX3	600577	9q34.3	Endocrine
7232	Pituitary tumor, invasive (3)	PRKCA, PKCA	176960	17q22-q23.2	Cancer
1233	Placental abruption (3)	NOS3	163729	7q36	Unclassified
5233	Placental steroid sulfatase deficiency (3)	STS, ARSC1, ARSC, SSDD	308100	Xp22.32	Metabolic
1234	Plasmin inhibitor deficiency (3)	PLI, SERPINF2	262850	17pter-p12	Hematological
1235	Plasminogen Tochigi disease (3)	PLG	173350	6q26	Hematological
1237	Platelet-activating factor acetylhydrolase deficiency (3)	PLA2G7, PAFAH	601690	6p21.2-p12	Hematological
1237	Platelet ADP receptor defect (3)	P2RY12, P2Y12	600515	3q24-q25	Hematological
1237	Platelet disorder, familial, with associated myeloid malignancy, 601399 (3)	RUNX1, CBFA2, AML1	151385	21q22.3	Hematological
1237	Platelet glycoprotein IV deficiency, 608404 (3)	CD36	173510	7q11.2	Hematological
1238	Pneumonitis, desquamative interstitial, 263000 (3)	SFTPC, SFTP2	178620	8p21	Respiratory
1239	Pneumothorax, primary spontaneous, 173600 (3)	FLCN, BHD	607273	17p11.2	Respiratory
1241	Polycystic kidney and hepatic disease, 263200 (3)	FCYT, PKHD1, ARPKD	606702	6p21.1-p12	Renal
1241	Polycystic kidney disease, adult type I, 173900 (3)	PKD1	601313	16p13.3-p13.12	Renal
1241	Polycystic kidney disease, adult, type II (3)	PKD2, PKD4	173910	4q21-q23	Renal
1241	Polycystic kidney disease, infantile severe, with tuberous sclerosis (3)	PKDTS	600273	16p13.3	Renal
3241	Polycystic liver disease, 174050 (3)	PRKCSH, G19P1, PCLD	177060	19p13.2-p13.1	Gastrointestinal
3241	Polycystic liver disease, 174050 (3)	SEC63	608648	6q21	Gastrointestinal
1242	Polycythemia, benign familial, 263400 (3)	VHL	608537	3p26-p25	Hematological
1242	Polycythemia vera, 263300 (3)	JAK2	147796	9p24	Hematological
1243	Polydactyly, postaxial, types A1 and B, 174200 (3)	GLI3, PAPA, PAPB, ACLS	165240	7p13	Skeletal
1243	Polydactyly, preaxial, type IV, 174700 (3)	GLI3, PAPA, PAPB, ACLS	165240	7p13	Skeletal
1244	Polymicrogyria, bilateral frontoparietal, 606854 (3)	GPR56, TM7XN1, BFPP	604110	16q13	Neurological
1245	Polyposis, juvenile intestinal, 174900 (3)	BMPR1A, ACVRLK3, ALK3	601299	10q22.3	Cancer
1245	Polyposis, juvenile intestinal, 174900 (3)	MADH4, DPC4, SMAD4, JIP	600993	18q21.1	Cancer
1246	Popliteal pterygium syndrome, 119500 (3)	IRF6, VWS, LPS, PIT, PPS, OFC6	607199	1q32-q41	multiple
1247	Porencephaly, 175780 (3)	COL4A1	120130	13q34	Neurological
1249	Porphyria, acute hepatic (3)	ALAD	125270	9q34	Metabolic
1249	Porphyria, acute intermittent (3)	HMBS, PBGD, UPS	176000	11q23.3	Metabolic
1249	Porphyria, acute intermittent, nonerythroid variant (3)	HMBS, PBGD, UPS	176000	11q23.3	Metabolic
1249	Porphyria, congenital erythropoietic, 263700 (3)	UROS	606938	10q25.2-q26.3	Metabolic
1249	Porphyria cutanea tarda (3)	UROD	176100	1p34	Metabolic
1249	Porphyria, hepatoerythropoietic (3)	UROD	176100	1p34	Metabolic
1249	Porphyria variegata, 176200 (3)	HFE, HLA-H, HFE1	235200	6p21.3	Metabolic
1249	Porphyria variegata, 176200 (3)	PPOX	600923	1q22	Metabolic
1253	PPM-X syndrome, 300055 (3)	MECP2, RTT, PPMX, MRX16, MRX79	300005	Xq28	Neurological
1254	Prader-Willi syndrome, 176270 (3)	NDN	602117	15q11-q13	multiple
1254	Prader-Willi syndrome, 176270 (3)	SNRPN	182279	15q12	multiple
1256	Precocious puberty, male, 176410 (3)	LHCGR	152790	2p21	Developmental
1257	Preeclampsia/eclampsia 4 (3)	STOX1, PEE4	609397	10q22.1	Cardiovascular
1257	Preeclampsia, susceptibility to, 189800 (3)	EPHX1	132810	1q42.1	Cardiovascular
1257	Preeclampsia, susceptibility to (3)	AGT, SERPINA8	106150	1q42-q43	Cardiovascular
1259	Prekallikrein deficiency (3)	KLKB1, KLK3	229000	4q35	Hematological
3260	Premature chromosome condensation with microcephaly and mental retardation, 606858 (3)	MCPH1	607117	8p23	Neurological
1260	Premature ovarian failure, 300511 (3)	DIAPH2, DIA, POF2	300108	Xq22	Renal
1260	Premature ovarian failure 3, 608996 (3)	FOXL2, BPES, BPES1, PFRK, POF3	605597	3q23	Renal
1261	Primary lateral sclerosis, juvenile, 606353 (3)	ALS2, ALSJ, PLSJ, IAHSP	606352	2q33	Neurological
1263	Prion disease with protracted course, 606688 (3)	PRNP, PRIP	176640	20pter-p12	Neurological

1265	Progressive external ophthalmoplegia with mitochondrial DNA deletions, 157640 (3)	C10orf2, TWINKLE, PEO1, PEO	606075	10q24	Ophthamological
1265	Progressive external ophthalmoplegia with mitochondrial DNA deletions, 157640 (3)	POLG, POLG1, POLGA, PEO	174763	15q25	Ophthamological
1265	Progressive external ophthalmoplegia with mitochondrial DNA deletions, 157640 (3)	SLC25A4, ANT1, T1, PEO3	103220	4q35	Ophthamological
1266	Proguanil poor metabolizer (3)	CYP2C, CYP2C19	124020	10q24.1-q24.3	Metabolic
1267	Prolactinoma, hyperparathyroidism, carcinoid syndrome (3)	MEN1	131100	11q13	Endocrine
1268	Prolidase deficiency (3)	PEPD	170100	19cen-q13.11	Connective tissue
1270	Properdin deficiency, X-linked, 312060 (3)	PFC, PFD	300383	Xp11.4-p11.23	Immunological
1271	Propionicacidemia, 606054 (3)	PCCA	232000	13q32	Metabolic
1271	Propionicacidemia, 606054 (3)	PCCB	232050	3q21-q22	Metabolic
1272	Prostate cancer 1, 176807, 601518 (3)	RNASEL, RNS4, PRCA1, HPC1	180435	1q25	Cancer
1272	Prostate cancer, 176807 (3)	BRCA2, FANCD1	600185	13q12.3	Cancer
1272	Prostate cancer, 176807 (3)	PTEN, MMAC1	601728	10q23.31	Cancer
1272	Prostate cancer (3)	AR, DHTR, TFM, SBMA, KD, SMAX1	313700	Xq11-q12	Cancer
1272	Prostate cancer, familial, 176807 (3)	CHEK2, RAD53, CHK2, CDS1, LFS2	604373	22q12.1	Cancer
1272	Prostate cancer, hereditary, 176807 (3)	MSR1	153622	8p22	Cancer
1272	Prostate cancer, progression and metastasis of, 176807 (3)	EPHB2, EPHT3, DRT, ERK	600997	1p36.1-p35	Cancer
1272	Prostate cancer, somatic, 176807 (3)	KLF6, COPEB, BCD1, ZF9	602053	10p15	Cancer
1272	Prostate cancer, somatic, 176807 (3)	MAD1L1, TXBP181	602686	7p22	Cancer
1272	Prostate cancer, susceptibility to, 176807 (3)	AR, DHTR, TFM, SBMA, KD, SMAX1	313700	Xq11-q12	Cancer
1272	Prostate cancer, susceptibility to, 176807 (3)	ATBF1	104155	16q22.3-q23.1	Cancer
1272	Prostate cancer, susceptibility to, 176807 (3)	ELAC2, HPC2	605367	17p11	Cancer
1272	Prostate cancer, susceptibility to, 176807 (3)	MXI1	600020	10q25	Cancer
1273	Protein S deficiency (3)	PROS1	176880	3p11.1-q11.2	Hematological
1274	Proteinuria, low molecular weight, with hypercalciuric nephrocalcinosis (3)	CLCN5, CLCK2, NPHL2, DENTS	300008	Xp11.22	Renal
1276	Protoporphyria, erythropoietic (3)	FECH, FCE	177000	18q21.3	Metabolic
1276	Protoporphyria, erythropoietic, recessive, with liver failure (3)	FECH, FCE	177000	18q21.3	Metabolic
1277	Proud syndrome, 300004 (3)	ARX, ISSX, PRTS, MRXS1, MRX36, MRX54	300382	Xp22.13	multiple
1278	Pseudoachondroplasia, 177170 (3)	COMP, EDM1, MED, PSACH	600310	19p13.1	Skeletal
1279	Pseudohermaphroditism, male, with gynecomastia, 264300 (3)	HSD17B3, EDH17B3	605573	9q22	Developmental
1279	Pseudohermaphroditism, male, with Leydig cell hypoplasia (3)	LHCGR	152790	2p21	Developmental
1281	Pseudohypoaldosteronism, type I, 264350 (3)	SCNN1A	600228	12p13	Endocrine
1281	Pseudohypoaldosteronism, type I, 264350 (3)	SCNN1B	600760	16p13-p12	Endocrine
1281	Pseudohypoaldosteronism, type I, 264350 (3)	SCNN1G, PHA1	600761	16p13-p12	Endocrine
1281	Pseudohypoaldosteronism type I, autosomal dominant, 177735 (3)	NR3C2, MLR, MCR	600983	4q31.1	Endocrine
1281	Pseudohypoaldosteronism type II (3)	WNK4, PRKWNK4, PHA2B	601844	17q21-q22	Endocrine
1281	Pseudohypoaldosteronism, type IIC, 145260 (3)	WNK1, PRKWNK1, KDP, PHA2C	605232	12p13	Endocrine
1282	Pseudohypoparathyroidism, type Ia, 103580 (3)	GNAS, GNAS1, GPSA, POH, PHP1B, PHP1A, AHO	139320	20q13.2	Endocrine
1282	Pseudohypoparathyroidism, type Ib, 603233 (3)	GNAS, GNAS1, GPSA, POH, PHP1B, PHP1A, AHO	139320	20q13.2	Endocrine
1283	Pseudovaginal perineoscrotal hypospadias, 264600 (3)	SRD5A2	607306	2p23	Unclassified
1284	Pseudovitamin D deficiency rickets 1 (3)	CYP27B1, PDDR, VDD1	264700	12q14	Bone
1285	Pseudoxanthoma elasticum, autosomal dominant, 177850 (3)	ABCC6, ARA, ABC34, MLP1, PXE	603234	16p13.1	Connective tissue
1285	Pseudoxanthoma elasticum, autosomal recessive, 264800 (3)	ABCC6, ARA, ABC34, MLP1, PXE	603234	16p13.1	Connective tissue
1288	Psoriasis, susceptibility to, 177900 (3)	PSORS6	605364	19p13	Dermatological

1288	Psoriatic arthritis, susceptibility to, 607507 (3)	CARD15, NOD2, IBD1, CD, ACUG, PSORAS1	605956	16q12	Dermatological
1291	Pulmonary alveolar proteinosis, 265120 (3)	CSF2RB	138981	22q12.2-q13.1	Respiratory
1291	Pulmonary alveolar proteinosis, 265120 (3)	SFTPC, SFTP2	178620	8p21	Respiratory
1291	Pulmonary alveolar proteinosis, congenital, 265120 (3)	SFTPB, SFTB3	178640	2p12-p11.2	Respiratory
1291	Pulmonary fibrosis, idiopathic, familial, 178500 (3)	SFTPC, SFTP2	178620	8p21	Respiratory
1291	Pulmonary fibrosis, idiopathic, susceptibility to, 178500 (3)	SFTPA1, SFTP1	178630	10q22.2-q23.1	Respiratory
5291	Pulmonary hypertension, familial primary, 178600 (3)	BMPR2, PPH1	600799	2q33	Cardiovascular
1293	Pycnodysostosis, 265800 (3)	CTSK	601105	1q21	Skeletal
1294	Pyloric stenosis, infantile hypertrophic, susceptibility to, 179010 (3)	NOS1	163731	12q24.2-q24.31	Developmental
1295	Pyogenic sterile arthritis, pyoderma gangrenosum, and acne, 604416 (3)	PSTPIP1, PSTPIP, CD2BP1, PAPAS	606347	15q24-q25.1	Dermatological
1296	Pyropoikilocytosis (3)	SPTA1	182860	1q21	Hematological
1297	Pyruvate carboxylase deficiency, 266150 (3)	PC	608786	11q13.4-q13.5	Metabolic
1297	Pyruvate dehydrogenase deficiency (3)	PDHA1, PHE1A	312170	Xp22.2-p22.1	Metabolic
1297	Pyruvate dehydrogenase E1-beta deficiency (3)	PDHB	179060	3p13-q23	Metabolic
1298	Rabson-Mendenhall syndrome, 262190 (3)	INSR	147670	19p13.2	multiple
1301	Radioulnar synostosis with amegakaryocytic thrombocytopenia, 605432 (3)	HOXA11, HOX1I	142958	7p15-p14.2	multiple
1303	RAPADILINO syndrome, 266280 (3)	RECQL4, RTS, RECQ4	603780	8q24.3	multiple
1304	Rapid progression to AIDS from HIV1 infection (3)	CX3CR1, GPR13, V28	601470	3pter-p21	Immunological
1305	Rapp-Hodgkin syndrome, 129400 (3)	TP73L, TP63, KET, EEC3, SHFM4, LMS, RHS	603273	3q27	multiple
1306	Red hair/fair skin (3)	MC1R	155555	16q24.3	Dermatological
1307	Refsum disease, 266500 (3)	PEX7, RCDP1	601757	6q22-q24	Neurological
1307	Refsum disease, 266500 (3)	PHYH, PAHX	602026	10pter-p11.2	Neurological
1307	Refsum disease, infantile, 266510 (3)	PEX1, ZWS1	602136	7q21-q22	Neurological
1307	Refsum disease, infantile form, 266510 (3)	PEX26	608666	22q11.21	Neurological
1307	Refsum disease, infantile form, 266510 (3)	PXMP3, PAF1, PMP35, PEX2	170993	8q21.1	Neurological
1308	Renal carcinoma, chromophobe, somatic, 144700 (3)	FLCN, BHD	607273	17p11.2	Cancer
1308	Renal cell carcinoma, 144700 (3)	TRC8, RCA1, HRCA1	603046	8q24.1	Cancer
1308	Renal cell carcinoma, clear cell, somatic, 144700 (3)	OGG1	601982	3p26.2	Cancer
1308	Renal cell carcinoma, papillary, 1, 605074 (3)	PRCC, RCCP1	179755	1q21	Cancer
1308	Renal cell carcinoma, papillary, 1, 605074 (3)	TFE3	314310	Xp11.22	Cancer
1308	Renal cell carcinoma, papillary, familial and sporadic, 605074 (3)	MET	164860	7q31	Cancer
1308	Renal cell carcinoma, somatic (3)	VHL	608537	3p26-p25	Cancer
3308	Renal glucosuria, 233100 (3)	SLC5A2, SGLT2	182381	16p11.2	Renal
5308	Renal hypoplasia, isolated (3)	PAX2	167409	10q24.3-q25.1	Renal
7308	Renal tubular acidosis, distal, 179800, 602722 (3)	SLC4A1, AE1, EPB3	109270	17q21-q22	Renal
7308	Renal tubular acidosis, distal, autosomal recessive, 602722 (3)	ATP6V0A4, ATP6N1B, VPP2, RTA1C, RTADR	605239	7q33-q34	Renal
7308	Renal tubular acidosis-osteopetrosis syndrome (3)	CA2	259730	8q22	Renal
7308	Renal tubular acidosis, proximal, with ocular abnormalities, 604278 (3)	SLC4A4, NBC1, KNBC, SLC4A5	603345	4q21	Renal
7308	Renal tubular acidosis with deafness, 267300 (3)	ATP6B1, VPP3	192132	2cen-q13	Renal
9308	Renal tubular dysgenesis, 267430 (3)	ACE, DCP1, ACE1	106180	17q23	Renal
9308	Renal tubular dysgenesis, 267430 (3)	AGTR1, AGTR1A, AT2R1	106165	3q21-q25	Renal
9308	Renal tubular dysgenesis, 267430 (3)	AGT, SERPINA8	106150	1q42-q43	Renal
9308	Renal tubular dysgenesis, 267430 (3)	REN	179820	1q32	Renal
1309	Renpenning syndrome, 309500 (3)	PQBP1, NPW38, SHS, MRX55, MRXS3, RENS1, MRXS8	300463	Xp11.23	Neurological
1311	Response to morphine-6-glucuronide (3)	OPRM1	600018	6q24-q25	Neurological
1312	Resting heart rate, 607276 (3)	ADRB1, ADRB1R, RHR	109630	10q24-q26	Cardiovascular

1314	Restrictive dermopathy, lethal, 275210 (3)	ZMPSTE24, FACE1, STE24, MADB	606480	1p34	Dermatological
1315	Retinal degeneration, autosomal recessive, clumped pigment type (3)	NRL, D14S46E, RP27	162080	14q11.1-q11.2	Ophthamological
1315	Retinal degeneration, autosomal recessive, prominin-related (3)	PROM1, PROML1, AC133	604365	4p16.2-p12	Ophthamological
1315	Retinal degeneration, late-onset, autosomal dominant, 605670 (3)	C1QTNF5, CTRP5, LORD	608752	11q23.3	Ophthamological
1315	Retinal dystrophy, early-onset severe (3)	LRAT	604863	4q31	Ophthamological
1316	Retinitis pigmentosa-10, 180105 (3)	IMPDH1	146690	7q31.3-q32	Ophthamological
1316	Retinitis pigmentosa-11, 600138 (3)	PRPF31, PRP31	606419	19q13.4	Ophthamological
1316	Retinitis pigmentosa-1, 180100 (3)	RP1, ORP1	603937	8q11-q13	Ophthamological
1316	Retinitis pigmentosa-12, autosomal recessive, 600105 (3)	CRB1, RP12	604210	1q31-q32.1	Ophthamological
1316	Retinitis pigmentosa-13, 600059 (3)	PRPF8, PRPC8, RP13	607300	17p13.3	Ophthamological
1316	Retinitis pigmentosa-14, 600132 (3)	TULP1, RP14	602280	6p21.3	Ophthamological
1316	Retinitis pigmentosa-17, 600852 (3)	CA4, RP17	114760	17q23	Ophthamological
1316	Retinitis pigmentosa-18, 601414 (3)	HPRP3, RP18	607301	1q21.2	Ophthamological
1316	Retinitis pigmentosa-19, 601718 (3)	ABCA4, ABCR, STGD1, FFM, RP19	601691	1p21-p13	Ophthamological
1316	Retinitis pigmentosa-20 (3)	RPE65, RP20	180069	1p31	Ophthamological
1316	Retinitis pigmentosa-2 (3)	RP2	312600	Xp11.3	Ophthamological
1316	Retinitis pigmentosa-26, 608380 (3)	CERKL	608381	2q31.2-q32.3	Ophthamological
1316	Retinitis pigmentosa-27 (3)	NRL, D14S46E, RP27	162080	14q11.1-q11.2	Ophthamological
1316	Retinitis pigmentosa-30, 607921 (3)	FSCN2, RFSN	607643	17q25	Ophthamological
1316	Retinitis pigmentosa-3, 300389 (3)	RPGR, RP3, CRD, RP15, COD1	312610	Xp21.1	Ophthamological
1316	Retinitis pigmentosa-4, autosomal dominant (3)	RHO, RP4, OPN2	180380	3q21-q24	Ophthamological
1316	Retinitis pigmentosa-7, 608133 (3)	RDS, RP7, PRPH2, PRPH, AVMD, AOFMD	179605	6p21.1-cen	Ophthamological
1316	Retinitis pigmentosa-9, 180104 (3)	RP9	607331	7p14.2	Ophthamological
1316	Retinitis pigmentosa, AR, 268000 (3)	RLBP1	180090	15q26	Ophthamological
1316	Retinitis pigmentosa, AR, without hearing loss, 268000 (3)	USH2A	608400	1q41	Ophthamological
1316	Retinitis pigmentosa, autosomal dominant (3)	RGR	600342	10q23	Ophthamological
1316	Retinitis pigmentosa, autosomal recessive, 268000 (3)	CNGB1, CNCG3L, CNCG2	600724	16q13	Ophthamological
1316	Retinitis pigmentosa, autosomal recessive (3)	CNGA1, CNCG1	123825	4p12-cen	Ophthamological
1316	Retinitis pigmentosa, autosomal recessive (3)	PDE6A, PDEA	180071	5q31.2-q34	Ophthamological
1316	Retinitis pigmentosa, autosomal recessive (3)	PDE6B, PDEB, CSNB3	180072	4p16.3	Ophthamological
1316	Retinitis pigmentosa, autosomal recessive (3)	RGR	600342	10q23	Ophthamological
1316	Retinitis pigmentosa, autosomal recessive (3)	RHO, RP4, OPN2	180380	3q21-q24	Ophthamological
1316	Retinitis pigmentosa, digenic (3)	ROM1, ROSP1	180721	11q13	Ophthamological
1316	Retinitis pigmentosa, digenic, 608133 (3)	RDS, RP7, PRPH2, PRPH, AVMD, AOFMD	179605	6p21.1-cen	Ophthamological
1316	Retinitis pigmentosa, juvenile (3)	AIPL1, LCA4	604392	17p13.1	Ophthamological
1316	Retinitis pigmentosa, late onset, 268000 (3)	NR2E3, PNR, ESCS	604485	15q23	Ophthamological
1316	Retinitis pigmentosa, late-onset dominant, 268000 (3)	CRX, CORD2, CRD	602225	19q13.3	Ophthamological
1316	Retinitis pigmentosa, MERTK-related, 268000 (3)	MERTK	604705	2q14.1	Ophthamological
1316	Retinitis pigmentosa, X-linked with deafness and sinorespiratory infections, 300455 (3)	RPGR, RP3, CRD, RP15, COD1	312610	Xp21.1	Ophthamological
1316	Retinitis pigmentosa, X-linked, with recurrent respiratory infections, 300455 (3)	RPGR, RP3, CRD, RP15, COD1	312610	Xp21.1	Ophthamological
1316	Retinitis punctata albescens, 136880 (3)	RDS, RP7, PRPH2, PRPH, AVMD, AOFMD	179605	6p21.1-cen	Ophthamological
1316	Retinitis punctata albescens, 136880 (3)	RLBP1	180090	15q26	Ophthamological
1317	Retinoblastoma (3)	RB1	180200	13q14.1-q14.2	Cancer
1318	Retinol binding protein, deficiency of (3)	RBP4	180250	10q24	Ophthamological
1320	Retinoschisis (3)	RS1, XLRS1	312700	Xp22.2-p22.1	Ophthamological
1321	Rett syndrome, 312750 (3)	MECP2, RTT, PPMX, MRX16, MRX79	300005	Xq28	Neurological

1321	Rett syndrome, atypical, 312750 (3)	CDKL5, STK9	300203	Xp22	Neurological
1321	Rett syndrome, preserved speech variant, 312750 (3)	MECP2, RTT, PPMX, MRX16, MRX79	300005	Xq28	Neurological
1322	Rhabdoid predisposition syndrome, familial (3)	SMARCB1, SNF5, INI1, RDT	601607	22q11	Cancer
1322	Rhabdoid tumors (3)	SMARCB1, SNF5, INI1, RDT	601607	22q11	Cancer
1323	Rhabdomyosarcoma, 268210 (3)	SLC22A1L, BWSCR1A, IMPT1	602631	11p15.5	Cancer
1323	Rhabdomyosarcoma, alveolar, 268220 (3)	FOXO1A, FKHR	136533	13q14.1	Cancer
1323	Rhabdomyosarcoma, alveolar, 268220 (3)	PAX3, WS1, HUP2, CDHS	606597	2q35	Cancer
1323	Rhabdomyosarcoma, alveolar, 268220 (3)	PAX7	167410	1p36.2-p36.12	Cancer
1324	Rheumatoid arthritis, progression of, 180300 (3)	IL10, CSIF	124092	1q31-q32	Connective tissue
1324	Rheumatoid arthritis, susceptibility to, 180300 (3)	MHC2TA, C2TA	600005	16p13	Connective tissue
1324	Rheumatoid arthritis, susceptibility to, 180300 (3)	NFKBIL1	601022	6p21.3	Connective tissue
1324	Rheumatoid arthritis, susceptibility to, 180300 (3)	PADI4, PADI5, PAD	605347	1p36	Connective tissue
1324	Rheumatoid arthritis, susceptibility to, 180300 (3)	PTPN8, PEP, PTPN22, LYP	600716	1p13	Connective tissue
1324	Rheumatoid arthritis, susceptibility to, 180300 (3)	RUNX1, CBFA2, AML1	151385	21q22.3	Connective tissue
1324	Rheumatoid arthritis, susceptibility to, 180300 (3)	SLC22A4, OCTN1	604190	5q31	Connective tissue
1324	Rheumatoid arthritis, systemic juvenile, susceptibility to, 604302 (3)	MIF	153620	22q11.2	Connective tissue
1325	Rhizomelic chondrodysplasia punctata, type 1, 215100 (3)	PEX7, RCDP1	601757	6q22-q24	multiple
1325	Rhizomelic chondrodysplasia punctata, type 3, 600121 (3)	AGPS, ADHAPS	603051	2q31	multiple
1326	Rh-mod syndrome (3)	RHAG, RH50A	180297	6p21.1-p11	Hematological
1327	Rh-negative blood type (3)	RHD	111680	1p36.2-p34	Hematological
1327	Rh-null disease, amorph type (3)	RHCE	111700	1p36.2-p34	Hematological
1329	Ribose 5-phosphate isomerase deficiency, 608611 (3)	RPIA, RPI	180430	2p11.2	Metabolic
1330	Rickets due to defect in vitamin D 25-hydroxylation, 600081 (3)	CYP2R1	608713	11p15.2	Bone
1330	Rickets, vitamin D-resistant, type IIA, 277440 (3)	VDR	601769	12q12-q14	Bone
1330	Rickets, vitamin D-resistant, type IIB, 277420 (3)	VDR	601769	12q12-q14	Bone
1331	Rieger anomaly (3)	FOXC1, FKHL7, FREAC3	601090	6p25	multiple
1331	Rieger syndrome, 180500 (3)	PITX2, IDG2, RIEG1, RGS, IGDS2	601542	4q25-q26	multiple
1332	Ring dermoid of cornea, 180550 (3)	PITX2, IDG2, RIEG1, RGS, IGDS2	601542	4q25-q26	Ophthamological
1333	Rippling muscle disease, 606072 (3)	CAV3, LGMD1C	601253	3p25	Muscular
1334	Roberts syndrome, 268300 (3)	ESCO2	609353	8p21.1	Developmental
1335	Robinow syndrome, autosomal recessive, 268310 (3)	ROR2, BDB1, BDB, NTRKR2	602337	9q22	multiple
1337	Rokitansky-Kuster-Hauser syndrome, 277000 (3)	WNT4	603490	1p35	Developmental
1338	Rothmund-Thomson syndrome, 268400 (3)	RECQL4, RTS, RECQ4	603780	8q24.3	multiple
1339	Roussy-Levy syndrome, 180800 (3)	MPZ, CMT1B, CMTDI3, CHM, DSS	159440	1q22	multiple
1339	Roussy-Levy syndrome, 180800 (3)	PMP22, CMT1A, CMT1E, DSS	601097	17p11.2	multiple
1341	Rubenstein-Taybi syndrome, 180849 (3)	CREBBP, CBP, RSTS	600140	16p13.3	multiple
1341	Rubinstein-Taybi syndrome, 180849 (3)	EP300	602700	22q13	multiple
1344	Saethre-Chotzen syndrome, 101400 (3)	FGFR2, BEK, CFD1, JWS	176943	10q26	Developmental
1344	Saethre-Chotzen syndrome, 101400 (3)	TWIST, ACS3, SCS	601622	7p21	Developmental
1344	Saethre-Chotzen syndrome with eyelid anomalies, 101400 (3)	TWIST, ACS3, SCS	601622	7p21	Developmental
1345	Salivary adenoma (3)	HMGA2, HMGIC, BABL, LIPO	600698	12q14.3	Cancer
1346	Salla disease, 604369 (3)	SLC17A5, SIASD, SLD	604322	6q14-q15	Metabolic
1347	Sandhoff disease, infantile, juvenile, and adult forms, 268800 (3)	HEXB	606873	5q13	Metabolic
1348	Sanfilippo syndrome, type A, 252900 (3)	SGSH, MPS3A, SFMD	605270	17q25.3	Metabolic
1348	Sanfilippo syndrome, type B (3)	NAGLU	252920	17q21	Metabolic
1349	Sarcoidosis, early-onset, 181000 (3)	CARD15, NOD2, IBD1, CD, ACUG, PSORAS1	605956	16q12	Immunological
1349	Sarcoidosis, susceptibility to, 181000 (3)	BTNL2	606000	6p21.3	Immunological
1349	Sarcoidosis, susceptibility to, 181000 (3)	HLA-DR1B	142857	6p21.3	Immunological
1350	Sarcoma, synovial (3)	SSX1, SSRC	312820	Xp11.2	Cancer

1350	Sarcoma, synovial (3)	SSX2	300192	Xp11.2	Cancer
1352	SARS, progression of (3)	ACE, DCP1, ACE1	106180	17q23	Immunological
1354	Schimke immunoosseous dysplasia, 242900 (3)	SMARCAL1, HARP, SIOD	606622	2q34-q36	Connective tissue
1355	Schindler disease, type I, 609241 (3)	NAGA	104170	22q11	Metabolic
1355	Schindler disease, type III, 609241 (3)	NAGA	104170	22q11	Metabolic
1357	Schizencephaly, 269160 (3)	EMX2	600035	10q26.1	Neurological
1359	Schizoaffective disorder, susceptibility to, 181500 (3)	DISC1	605210	1q42.1	Psychiatric
1359	Schizophrenia 5, 603175 (3)	TRAR4	608923	6q23.2	Psychiatric
1359	Schizophrenia, chronic (3)	APP, AAA, CVAP, AD1	104760	21q21	Psychiatric
1359	Schizophrenia, susceptibility to, 181500 (3)	COMT	116790	22q11.2	Psychiatric
1359	Schizophrenia, susceptibility to, 181500 (3)	DISC1	605210	1q42.1	Psychiatric
1359	Schizophrenia, susceptibility to, 181500 (3)	HTR2A	182135	13q14-q21	Psychiatric
1359	Schizophrenia, susceptibility to, 181500 (3)	RTN4R, NOGOR	605566	22q11	Psychiatric
1359	Schizophrenia, susceptibility to, 181500 (3)	SYN2	600755	3p25	Psychiatric
1359	Schizophrenia, susceptibility to, 181510 (3)	EPN4, EPNR, KIAA0171, SCZD1	607265	5q33.3	Psychiatric
1359	Schizophrenia, susceptibility to, 4 600850 (3)	PRODH, PRODH2, SCZD4	606810	22q11.2	Psychiatric
1360	Schwannomatosis, 162091 (3)	NF2	607379	22q12.2	Cancer
1361	Schwartz-Jampel syndrome, type 1, 255800 (3)	HSPG2, PLC, SJS, SJA, SJS1	142461	1p36.1	multiple
1362	SCID, autosomal recessive, T-negative/B-positive type (3)	JAK3, JAKL	600173	19p13.1	Immunological
1363	Sclerosteosis, 269500 (3)	SOST	605740	17q12-q21	Skeletal
1365	Scurvy (3)	GULOP, GULO	240400	8p21.1	Nutritional
1366	Sea-blue histiocyte disease, 269600 (3)	APOE, AD2	107741	19q13.2	Hematological
1367	Seasonal affective disorder, susceptibility to, 608516 (3)	HTR2A	182135	13q14-q21	Psychiatric
1368	Sebastian syndrome, 605249 (3)	MYH9, MHA, FTNS, DFNA17	160775	22q11.2	Hematological
1369	Seckel syndrome 1, 210600 (3)	ATR, FRP1, SCKL	601215	3q22-q24	Developmental
1370	Segawa syndrome, recessive (3)	TH, TYH	191290	11p15.5	Neurological
1371	Seizures, afebrile, 604233 (3)	SCN2A1, SCN2A	182390	2q23-q24.3	Neurological
1371	Seizures, benign familial neonatal-infantile, 607745 (3)	SCN2A1, SCN2A	182390	2q23-q24.3	Neurological
1372	Selective T-cell defect (3)	ZAP70, SRK, STD	176947	2q12	Immunological
1373	Self-healing collodion baby, 242300 (3)	TGM1, ICR2, LI1	190195	14q11.2	Dermatological
1374	SEMD, Pakistani type (3)	PAPSS2, ATPSK2	603005	10q22-q24	Connective tissue
1375	Senior-Loken syndrome-1, 266900 (3)	NPHP1, NPH1, SLSN1	607100	2q13	Renal
1375	Senior-Loken syndrome 4, 606996 (3)	NPHP4, SLSN4	607215	1p36	Renal
1375	Senior-Loken syndrome 5, 609254 (3)	IQCB1, NPHP5, KIAA0036	609237	3q21.1	Renal
1376	Sensory ataxic neuropathy, dysarthria, and ophthalmoparesis, 157640 (3)	POLG, POLG1, POLGA, PEO	174763	15q25	Ophthamological
1377	Sepiapterin reductase deficiency (3)	SPR	182125	2p14-p12	Metabolic
1378	Sepsis, susceptibility to (3)	CASP12, CASP12P1	608633	11q22.3	Immunological
1378	Septic shock, susceptibility to (3)	TNF, TNFA	191160	6p21.3	Immunological
1380	Septooptic dysplasia, 182230 (3)	HESX1, RPX	601802	3p21.2-p21.1	multiple
1381	Sertoli cell-only syndrome, susceptibility to, 305700 (3)	USP26	300309	Xq26.2	Renal
1383	Severe combined immunodeficiency, Athabascan type, 602450 (3)	DCLRE1C, ARTEMIS, SCIDA	605988	10p	Immunological
1383	Severe combined immunodeficiency, B cell-negative, 601457 (3)	RAG1	179615	11p13	Immunological
1383	Severe combined immunodeficiency, B cell-negative, 601457 (3)	RAG2	179616	11p13	Immunological
1383	Severe combined immunodeficiency due to ADA deficiency, 102700 (3)	ADA	608958	20q13.11	Immunological
1383	Severe combined immunodeficiency due to PTPRC deficiency (3)	PTPRC, CD45, LCA	151460	1q31-q32	Immunological
1383	Severe combined immunodeficiency, T-cell negative, B-cell/natural killer cell-positive type, 600802 (3)	IL7R	146661	5p13	Immunological
1383	Severe combined immunodeficiency, T-negative/B-positive type, 600802 (3)	CD3D, T3D	186790	11q23	Immunological
1383	Severe combined immunodeficiency, X-linked, 300400 (3)	IL2RG, SCIDX1, SCIDX, IMD4	308380	Xq13	Immunological
1384	Sex reversal, XY, with adrenal failure (3)	FTZF1, FTZ1, SF1	184757	9q33	Unclassified

1385	Sezary syndrome (3)	BCL10	603517	1p22	Cancer
1386	Shah-Waardenburg syndrome, 277580 (3)	EDN3	131242	20q13.2-q13.3	multiple
1387	Short stature, autosomal dominant, with normal serum growth hormone binding protein (3)	GHR	600946	5p13-p12	Skeletal
1387	Short stature, idiopathic (3)	GHR	600946	5p13-p12	Skeletal
1387	Short stature, idiopathic familial, 604271 (3)	SHOX, GCFX, SS, PHOG	312865	Xpter-p22.32	Skeletal
1387	Short stature, idiopathic familial, 604271 (3)	SHOXY	400020	Ypter-p11.2	Skeletal
1387	Short stature, pituitary and cerebellar defects, and small sella turcica, 606606 (3)	LHX4	602146	1q25	Skeletal
1388	Shprintzen-Goldberg syndrome, 182212 (3)	FBN1, MFS1, WMS	134797	15q21.1	multiple
1389	Shwachman-Diamond syndrome, 260400 (3)	SBDS, SDS	607444	7q11	multiple
1391	Sialic acid storage disorder, infantile, 269920 (3)	SLC17A5, SIASD, SLD	604322	6q14-q15	Metabolic
1391	Sialidosis, type I, 256550 (3)	NEU1, NEU, SIAL1	608272	6p21.3	Metabolic
1391	Sialidosis, type II, 256550 (3)	NEU1, NEU, SIAL1	608272	6p21.3	Metabolic
1392	Sialuria, 269921 (3)	GNE, GLCNE, IBM2, DMRV, NM	603824	9p12-p11	Metabolic
1393	Sickle cell anemia (3)	HBB	141900	11p15.5	Hematological
1394	Sick sinus syndrome, 608567 (3)	SCN5A, LQT3, IVF, HB1, SSS1	600163	3p21	Cardiovascular
1396	Silver spastic paraplegia syndrome, 270685 (3)	BSCL2, SPG17	606158	11q13	Neurological
1397	Simpson-Golabi-Behmel syndrome, type 1, 312870 (3)	GPC3, SDYS, SGBS1	300037	Xq26	multiple
1398	Sitosterolemia, 210250 (3)	ABCG5	605459	2p21	Metabolic
1398	Sitosterolemia, 210250 (3)	ABCG8	605460	2p21	Metabolic
1399	Situs ambiguus (3)	NODAL	601265	Chr.10	Developmental
1399	Situs inversus viscerum, 270100 (3)	DNAH11, DNAHC11	603339	Chr.7	Developmental
1400	Sjogren-Larsson syndrome, 270200 (3)	ALDH3A2, ALDH10, SLS, FALDH	609523	17p11.2	Metabolic
1401	Skin fragility-woolly hair syndrome, 607655 (3)	DSP, KPPS2, PPKS2	125647	6p24	Dermatological
1403	Slow acetylation (3)	NAT2, AAC2	243400	8p23.1-p21.3	Metabolic
1404	Slowed nerve conduction velocity, AD, 608236 (3)	ARHGEF10, KIAA0294	608136	8p23	Neurological
1406	Small patella syndrome, 147891 (3)	TBX4	601719	17q21-q22	Skeletal
1408	SMED Strudwick type, 184250 (3)	COL2A1	120140	12q13.11-q13.2	Skeletal
1409	Smith-Fineman-Myers syndrome, 309580 (3)	ATRX, XH2, XNP, MRXS3, SHS	300032	Xq13	multiple
1410	Smith-Lemli-Opitz syndrome, 270400 (3)	DHCR7, SLOS	602858	11q12-q13	multiple
1411	Smith-Magenis syndrome, 182290 (3)	RAI1, SMCR, SMS	607642	17p11.2	multiple
1412	Smith-McCort dysplasia, 607326 (3)	DYM, FLJ90130, DMC, SMC	607461	18q12-q21.1	Skeletal
1414	Solitary median maxillary central incisor, 147250 (3)	SHH, HPE3, HLP3, SMMCI	600725	7q36	Skeletal
1415	Somatotrophinoma (3)	GNAS, GNAS1, GPSA, POH, PHP1B, PHP1A, AHO	139320	20q13.2	Endocrine
1416	Sorsby fundus dystrophy, 136900 (3)	TIMP3, SFD	188826	22q12.1-q13.2	Ophthamological
1417	Sotos syndrome, 117550 (3)	NSD1, ARA267, STO	606681	5q35	Developmental
1418	Spastic ataxia, Charlevoix-Saguenay type, 270550 (3)	SACS, ARSACS	604490	13q12	Neurological
1418	Spastic paralysis, infantile onset ascending, 607225 (3)	ALS2, ALSJ, PLSJ, IAHSP	606352	2q33	Neurological
1418	Spastic paraplegia 10, 604187 (3)	KIF5A, NKHC, SPG10	602821	12q13	Neurological
1418	Spastic paraplegia-13, 605280 (3)	HSPD1, SPG13, HSP60	118190	2q33.1	Neurological
1418	Spastic paraplegia-2, 312920 (3)	PLP1, PMD	300401	Xq22	Neurological
1418	Spastic paraplegia-3A, 182600 (3)	SPG3A	606439	14q11-q21	Neurological
1418	Spastic paraplegia-4, 182601 (3)	SPG4, SPAST	604277	2p22-p21	Neurological
1418	Spastic paraplegia-6, 600363 (3)	NIPA1, SPG6	608145	15q11.1	Neurological
1418	Spastic paraplegia-7, 607259 (3)	PGN, SPG7, CMAR, CAR	602783	16q24.3	Neurological
3419	Specific granule deficiency, 245480 (3)	CEBPE, CRP1	600749	14q11.2	Immunological
1419	Speech-language disorder-1, 602081 (3)	FOXP2, SPCH1, TNRC10, CAGH44	605317	7q31	Neurological
1422	Spermatogenic failure, susceptibility to (3)	DAZL, DAZH, SPGYLA	601486	3p24	Renal

1423	Spherocytosis-1 (3)	SPTB	182870	14q22-q23.2	Hematological
1423	Spherocytosis-2 (3)	ANK1, SPH2	182900	8p11.2	Hematological
1423	Spherocytosis, hereditary (3)	SLC4A1, AE1, EPB3	109270	17q21-q22	Hematological
1423	Spherocytosis, hereditary, Japanese type (3)	EPB42	177070	15q15	Hematological
1423	Spherocytosis, recessive (3)	SPTA1	182860	1q21	Hematological
1425	Spina bifida, 601634 (3)	MTHFD, MTHFC	172460	14q24	Developmental
1425	Spina bifida, risk of, 601634, 182940 (3)	MTR	156570	1q43	Developmental
1425	Spina bifida, risk of, 601634, 182940 (3)	MTRR	602568	5p15.3-p15.2	Developmental
1426	Spinal and bulbar muscular atrophy of Kennedy, 313200 (3)	AR, DHTR, TFM, SBMA, KD, SMAX1	313700	Xq11-q12	Muscular
1426	Spinal muscrular atrophy, late-onset, Finkel type, 182980 (3)	VAPB, VAPC, ALS8	605704	20q13.3	Muscular
1426	Spinal muscular atrophy-1, 253300 (3)	SMN1, SMA1, SMA2, SMA3, SMA4	600354	5q12.2-q13.3	Muscular
1426	Spinal muscular atrophy-2, 253550 (3)	SMN1, SMA1, SMA2, SMA3, SMA4	600354	5q12.2-q13.3	Muscular
1426	Spinal muscular atrophy-3, 253400 (3)	SMN1, SMA1, SMA2, SMA3, SMA4	600354	5q12.2-q13.3	Muscular
1426	Spinal muscular atrophy-4, 271150 (3)	SMN1, SMA1, SMA2, SMA3, SMA4	600354	5q12.2-q13.3	Muscular
1426	Spinal muscular atrophy, distal, type V, 600794 (3)	BSCL2, SPG17	606158	11q13	Muscular
1426	Spinal muscular atrophy, distal, type V, 600794 (3)	GARS, SMAD1, CMT2D	600287	7p15	Muscular
1426	Spinal muscular atrophy, juvenile (3)	HEXB	606873	5q13	Muscular
1426	Spinal muscular atrophy with respiratory distress, 604320 (3)	IGHMBP2, SMUBP2, CATF1, SMARD1	600502	11q13.2-q13.4	Muscular
1428	Spinocerebellar ataxia-10 (3)	ATXN10, SCA10	603516	22q13	Neurological
1428	Spinocerebellar ataxia-1, 164400 (3)	ATXN1, ATX1, SCA1	601556	6p23	Neurological
1428	Spinocerebellar ataxia 12, 604326 (3)	PPP2R2B	604325	5q31-q33	Neurological
1428	Spinocerebellar ataxia 14, 605361 (3)	PRKCG, PKCC, PKCG, SCA14	176980	19q13.4	Neurological
1428	Spinocerebellar ataxia 17, 607136 (3)	TBP, SCA17	600075	6q27	Neurological
1428	Spinocerebellar ataxia-2, 183090 (3)	ATXN2, ATX2, SCA2	601517	12q24	Neurological
1428	Spinocerebellar ataxia 25 (3)	SCA25	608703	2p21-p13	Neurological
1428	Spinocerebellar ataxia-27, 609307 (3)	FGF14, FHF4, SCA27	601515	13q34	Neurological
1428	Spinocerebellar ataxia 4, pure Japanese type, 117210 (3)	PLEKHG4	609526	16q22.1	Neurological
1428	Spinocerebellar ataxia-6, 183086 (3)	CACNA1A, CACNL1A4, SCA6	601011	19p13	Neurological
1428	Spinocerebellar ataxia-7, 164500 (3)	ATXN7, SCA7, OPCA3	607640	3p21.1-p12	Neurological
1428	Spinocerebellar ataxia 8, 608768 (3)	SCA8	603680	13q21	Neurological
1428	Spinocerebellar ataxia, autosomal recessive with axonal neuropathy, 607250 (3)	TDP1	607198	14q31-q32	Neurological
1430	Split hand/foot malformation, type 3, 600095 (3)	SHFM3, DAC	608071	10q24	Skeletal
1430	Split-hand/foot malformation, type 4, 605289 (3)	TP73L, TP63, KET, EEC3, SHFM4, LMS, RHS	603273	3q27	Skeletal
1432	Spondylocarpotarsal synostosis syndrome, 272460 (3)	FLNB, SCT, AOI	603381	3p14.3	Skeletal
1433	Spondylocostal dysostosis, autosomal recessive, 1, 277300 (3)	DLL3, SCDO1	602768	19q13	Skeletal
1433	Spondylocostal dysostosis, autosomal recessive 2, 608681 (3)	MESP2	605195	15q26.1	Skeletal
1435	Spondyloepimetaphyseal dysplasia, 608728 (3)	MATN3, EDM5, HOA	602109	2p24-p23	Skeletal
1435	Spondyloepiphyseal dysplasia, Kimberley type, 608361 (3)	AGC1, CSPG1, MSK16, SEDK	155760	15q26.1	Skeletal
1435	Spondyloepiphyseal dysplasia, Omani type, 608637 (3)	CHST3, C6ST, C6ST1	603799	10q22.1	Skeletal
1435	Spondyloepiphyseal dysplasia tarda, 313400 (3)	SEDL, SEDT	300202	Xp22.2-p22.1	Skeletal
1435	Spondyloepiphyseal dysplasia tarda with progressive arthropathy, 208230 (3)	WISP3, PPAC, PPD	603400	6q22-q23	Skeletal
1436	Spondylometaphyseal dysplasia, Japanese type (3)	COL10A1	120110	6q21-q22.3	Skeletal
1437	Squamous cell carcinoma, burn scar-related, somatic (3)	TNFRSF6, APT1, FAS, CD95, ALPS1A	134637	10q24.1	Cancer
1437	Squamous cell carcinoma, head and neck, 601400 (3)	ING1	601566	13q34	Cancer
1437	Squamous cell carcinoma, head and neck, 601400 (3)	TNFRSF10B, DR5, TRAILR2	603612	8p22-p21	Cancer
1438	Stapes ankylosis syndrome without symphalangism, 184460 (3)	NOG, SYM1, SYNS1	602991	17q22	multiple
1439	Stargardt disease-1, 248200 (3)	ABCA4, ABCR, STGD1, FFM, RP19	601691	1p21-p13	Ophthamological
1439	Stargardt disease 3, 600110 (3)	ELOVL4, ADMD, STGD2, STGD3	605512	6q14	Ophthamological

1440	Startle disease, autosomal recessive (3)	GLRA1, STHE	138491	5q32	Neurological
1440	Startle disease/hyperekplexia, autosomal dominant, 149400 (3)	GLRA1, STHE	138491	5q32	Neurological
1441	STAT1 deficiency, complete (3)	STAT1	600555	2q32.2-q32.3	Unclassified
1442	Statins, attenuated cholesterol lowering by (3)	HMGCR	142910	5q13.3-q14	Metabolic
1444	Steatocystoma multiplex, 184500 (3)	KRT17, PC2, PCHC1	148069	17q12-q21	Dermatological
1445	Stem-cell leukemia/lymphoma syndrome (3)	ZNF198, SCLL, RAMP, FIM	602221	13q11-q12	Cancer
1446	Stevens-Johnson syndrome, carbamazepine-induced, susceptibility to, 608579 (3)	HLA-B	142830	6p21.3	Dermatological
1447	Stickler syndrome, type I, 108300 (3)	COL2A1	120140	12q13.11-q13.2	multiple
1447	Stickler syndrome, type II, 604841 (3)	COL11A1, STL2	120280	1p21	multiple
1447	Stickler syndrome, type III, 184840 (3)	COL11A2, STL3, DFNA13	120290	6p21.3	multiple
1449	Stomach cancer, 137215 (3)	KRAS2, RASK2	190070	12p12.1	Cancer
1454	Stroke, susceptibility to, 1, 606799 (3)	PDE4D, DPDE3, STRK1	600129	5q12	Cardiovascular
1454	Stroke, susceptibility to, 601367 (3)	ALOX5AP, FLAP	603700	13q12	Cardiovascular
1455	Stuve-Wiedemann syndrome/Schwartz-Jampel type 2 syndrome, 601559 (3)	LIFR, STWS, SWS, SJS2	151443	5p13.1	multiple
1456	Subcortical laminal heteropia, X-linked, 300067 (3)	DCX, DBCN, LISX	300121	Xq22.3-q23	Neurological
1456	Subcortical laminar heterotopia (3)	PAFAH1B1, LIS1	601545	17p13.3	Neurological
1457	Succinic semialdehyde dehydrogenase deficiency (3)	SSADH	271980	6p22	Metabolic
1458	Sucrose intolerance (3)	SI	222900	3q25-q26	Metabolic
1459	Sudden infant death with dysgenesis of the testes syndrome, 608800 (3)	TSPYL1, TSPYL, SIDDT	604714	6q22-q23	Unclassified
1460	Sulfite oxidase deficiency, 272300 (3)	SUOX	606887	Chr.12	Metabolic
1461	Superoxide dismutase, elevated extracellular (3)	SOD3	185490	4p15.3-p15.1	Unclassified
1462	Supranuclear palsy, progressive, 601104 (3)	MAPT, MTBT1, DDPAC, MSTD	157140	17q21.1	Neurological
1462	Supranuclear palsy, progressive atypical, 260540 (3)	MAPT, MTBT1, DDPAC, MSTD	157140	17q21.1	Neurological
1463	Supravalvar aortic stenosis, 185500 (3)	ELN	130160	7q11.2	Cardiovascular
1464	Surfactant deficiency, neonatal, 267450 (3)	ABCA3, ABC3	601615	16p13.3	Respiratory
1464	Surfactant protein C deficiency (3)	SFTPC, SFTP2	178620	8p21	Respiratory
1465	Sutherland-Haan syndrome-like, 300465 (3)	ATRX, XH2, XNP, MRXS3, SHS	300032	Xq13	multiple
1466	Sweat chloride elevation without CF (3)	CFTR, ABCC7, CF, MRP7	602421	7q31.2	Unclassified
1467	Symphalangism, proximal, 185800 (3)	NOG, SYM1, SYNS1	602991	17q22	Skeletal
1468	Syndactyly, type III, 186100 (3)	GJA1, CX43, ODDD, SDTY3, ODOD	121014	6q21-q23.2	Skeletal
1469	Synostoses syndrome, multiple, 1, 186500 (3)	NOG, SYM1, SYNS1	602991	17q22	multiple
1470	Synpolydactyly, 3/3'4, associated with metacarpal and metatarsal synostoses, 608180 (3)	FBLN1	135820	22q13.3	Skeletal
1470	Synpolydactyly, type II, 186000 (3)	HOXD13, HOX4I, SPD	142989	2q31-q32	Skeletal
1470	Synpolydactyly with foot anomalies, 186000 (3)	HOXD13, HOX4I, SPD	142989	2q31-q32	Skeletal
1471	Systemic lupus erythematosus, susceptibility, 152700 (3)	TNFSF6, APT1LG1, FASL	134638	1q23	Immunological
1471	Systemic lupus erythematosus, susceptibility to, 152700 (3)	DNASE1, DNL1	125505	16p13.3	Immunological
1471	Systemic lupus erythematosus, susceptibility to, 152700 (3)	PTPN8, PEP, PTPN22, LYP	600716	1p13	Immunological
1471	Systemic lupus erythematosus, susceptibility to, 2, 605218, 152700 (3)	PDCD1, SLEB2	600244	2q37.3	Immunological
1472	Tall stature, susceptibility to (3)	MCM6	601806	2q21	Skeletal
1473	Tangier disease, 205400 (3)	ABCA1, ABC1, HDLDT1, TGD	600046	9q22-q31	Metabolic
1475	Tarsal-carpal coalition syndrome, 186570 (3)	NOG, SYM1, SYNS1	602991	17q22	Skeletal
1476	Tauopathy and respiratory failure (3)	MAPT, MTBT1, DDPAC, MSTD	157140	17q21.1	Neurological
1477	Tay-Sachs disease, 272800 (3)	HEXA, TSD	606869	15q23-q24	Metabolic
1478	T-cell acute lymphoblastic leukemia (3)	BAX	600040	19q13.3-q13.4	Cancer
3478	T-cell immunodeficiency, congenital alopecia, and nail dystrophy (3)	WHN	600838	17q11-q12	Immunological
1478	T-cell prolymphocytic leukemia, sporadic (3)	ATM, ATA, AT1	607585	11q22.3	Cancer
1480	Temperature-sensitive apoptosis, cellular (3)	DAD1	600243	14q11-q12	Unclassified
1482	Tetra-amelia, autosomal recessive, 273395 (3)	WNT3, INT4	165330	17q21	multiple

1483	Tetralogy of Fallot, 187500 (3)	JAG1, AGS, AHD	601920	20p12	Cardiovascular
1483	Tetralogy of Fallot, 187500 (3)	ZFPM2, FOG2	603693	8q23	Cardiovascular
1483	Tetrology of Fallot, 187500 (3)	NKX2E, CSX	600584	5q34	Cardiovascular
1486	Thalassemia, alpha- (3)	HBA2	141850	16pter-p13.3	Hematological
1486	Thalassemia-beta, dominant inclusion-body, 603902 (3)	HBB	141900	11p15.5	Hematological
1486	Thalassemia, delta- (3)	HBD	142000	11p15.5	Hematological
1486	Thalassemia due to Hb Lepore (3)	HBD	142000	11p15.5	Hematological
1486	Thalassemia, Hispanic gamma-delta-beta (3)	LCRB	152424	11p15.5	Hematological
1486	Thalassemias, alpha- (3)	HBA1	141800	16pter-p13.3	Hematological
1486	Thalassemias, beta- (3)	HBB	141900	11p15.5	Hematological
1490	Thanatophoric dysplasia, types I and II, 187600 (3)	FGFR3, ACH	134934	4p16.3	Skeletal
1491	Thiamine-responsive megaloblastic anemia syndrome, 249270 (3)	SLC19A2, THTR1	603941	1q23.3	Hematological
1493	Thrombocythemia, essential, 187950 (3)	JAK2	147796	9p24	Hematological
1493	Thrombocythemia, essential, 187950 (3)	THPO, MGDF, MPLLG, TPO	600044	3q26.3-q27	Hematological
1494	Thrombocytopenia-2, 188000 (3)	FLJ14813, THC2	608221	10p12.1	Hematological
1494	Thrombocytopenia, congenital amegakaryocytic, 604498 (3)	MPL, TPOR, MPLV	159530	1p34	Hematological
1494	Thrombocytopenia, X-linked, 313900 (3)	WAS, IMD2, THC	300392	Xp11.23-p11.22	Hematological
1494	Thrombocytopenia, X-linked, intermittent, 313900 (3)	WAS, IMD2, THC	300392	Xp11.23-p11.22	Hematological
1494	Thromboembolism susceptibility due to factor V Leiden (3)	F5	227400	1q23	Hematological
1497	Thrombophilia due to factor V Liverpool (3)	F5	227400	1q23	Hematological
1497	Thrombophilia due to heparin cofactor II deficiency (3)	HCF2, HC2, SERPIND1	142360	22q11	Hematological
1497	Thrombophilia due to HRG deficiency (3)	HRG	142640	3q27	Hematological
1497	Thrombophilia due to protein C deficiency (3)	PROC	176860	2q13-q14	Hematological
1497	Thrombophilia due to thrombomodulin defect (3)	THBD, THRM	188040	20p11.2	Hematological
1497	Thrombophilia, dysfibrinogenemic (3)	FGB	134830	4q28	Hematological
1497	Thrombophilia, dysfibrinogenemic (3)	FGG	134850	4q28	Hematological
1497	Thrombosis, hyperhomocysteinemic (3)	CBS	236200	21q22.3	Hematological
1497	Thrombotic thrombocytopenic purpura, familial, 274150 (3)	ADAMTS13, VWFCP, TTP	604134	9q34	Hematological
1494	Thrombycytosis, susceptibility to, 187950 (3)	MPL, TPOR, MPLV	159530	1p34	Hematological
1502	Thymine-uraciluria (3)	DPYD, DPD	274270	1p22	Metabolic
1503	Thyroid adenoma, hyperfunctioning (3)	TSHR	603372	14q31	Cancer
1503	Thyroid carcinoma (3)	TP53, P53, LFS1	191170	17p13.1	Cancer
1503	Thyroid carcinoma, follicular, 188470 (3)	MINPP1, HIPER1	605391	10q23	Cancer
1503	Thyroid carcinoma, follicular, 188470 (3)	PTEN, MMAC1	601728	10q23.31	Cancer
1503	Thyroid carcinoma, follicular, somatic, 188470 (3)	HRAS	190020	11p15.5	Cancer
1503	Thyroid carcinoma, papillary, 188550 (3)	GOLGA5, RFG5, PTC5	606918	14q	Cancer
1503	Thyroid carcinoma, papillary, 188550 (3)	NCOA4, ELE1, PTC3	601984	10q11.2	Cancer
1503	Thyroid carcinoma, papillary, 188550 (3)	PCM1, PTC4	600299	8p22-p21.3	Cancer
1503	Thyroid carcinoma, papillary, 188550 (3)	PRKAR1A, TSE1, CNC1, CAR	188830	17q23-q24	Cancer
1503	Thyroid carcinoma, papillary, 188550 (3)	TIF1G, RFG7, PTC7	605769	1p13	Cancer
1503	Thyroid carcinoma, papillary, 188550 (3)	TRIM24, TIF1, TIF1A, PTC6	603406	7q32-q34	Cancer
3503	Thyroid hormone organification defect IIA, 274500 (3)	TPO, TPX	606765	2p25	Endocrine
3503	Thyroid hormone resistance, 188570 (3)	THRB, ERBA2, THR1	190160	3p24.3	Endocrine
3503	Thyroid hormone resistance, autosomal recessive, 274300 (3)	THRB, ERBA2, THR1	190160	3p24.3	Endocrine
1504	Thyrotoxic periodic paralysis, susceptibility to, 188580 (3)	CACNA1S, CACNL1A3, CCHL1A3	114208	1q32	Endocrine
1505	Thyrotropin-releasing hormone resistance, generalized (3)	TRHR	188545	8q23	Endocrine
1506	Thyroxine-binding globulin deficiency (3)	TBG	314200	Xq22.2	Hematological
1508	Tietz syndrome, 103500 (3)	MITF, WS2A	156845	3p14.1-p12.3	multiple
1509	Timothy syndrome, 601005 (3)	CACNA1C, CACNL1A1, CCHL1A1, TS	114205	12p13.3	multiple
1510	Toenail dystrophy, isolated, 607523 (3)	COL7A1	120120	3p21.3	Dermatological

1511	Tolbutamide poor metabolizer (3)	CYP2C9	601130	10q24	Unclassified
3512	Total iodide organification defect, 274500 (3)	TPO, TPX	606765	2p25	Endocrine
1514	Townes-Brocks branchiootorenal-like syndrome, 107480 (3)	SALL1, HSAL1, TBS	602218	16q12.1	multiple
1514	Townes-Brocks syndrome, 107480 (3)	SALL1, HSAL1, TBS	602218	16q12.1	multiple
1515	Transaldolase deficiency, 606003 (3)	TALDO1	602063	11p15.5-p15.4	Metabolic
1516	Transcobalamin II deficiency (3)	TCN2, TC2	275350	22q11.2-qter	Hematological
1518	Transient bullous of the newborn, 131705 (3)	COL7A1	120120	3p21.3	Dermatological
1519	Transposition of great arteries, dextro-looped, 217095 (3)	CFC1, CRYPTIC, HTX2	605194	2q21.1	Developmental
1519	Transposition of the great arteries, dextro-looped, 608808 (3)	THRAP2, PROSIT240, TRAP240L, KIAA1025	608771	12q24	Developmental
1520	Treacher Collins mandibulofacial dysostosis, 154500 (3)	TCOF1, MFD1	606847	5q32-q33.1	Developmental
1521	Tremor, familial essential, 2, 602134 (3)	HS1BP3, FLJ14249, ETM2	609359	2p24.1	Neurological
1522	Trichodontoosseous syndrome, 190320 (3)	DLX3, TDO	600525	17q21.3-q22	multiple
1524	Trichorhinophalangeal syndrome, type I, 190350 (3)	TRPS1	604386	8q24.12	Developmental
1524	Trichorhinophalangeal syndrome, type III, 190351 (3)	TRPS1	604386	8q24.12	Developmental
1525	Trichothiodystrophy (3)	ERCC3, XPB	133510	2q21	Dermatological
1525	Trichothiodystrophy, 601675 (3)	ERCC2, EM9	126340	19q13.2-q13.3	Dermatological
1525	Trichothiodystrophy, complementation group A, 601675 (3)	TGF2H5, TTDA, TFB5, C6orf175	608780	6p25.3	Dermatological
1525	Trichothiodystrophy, nonphotosensitive 1, 234050 (3)	TTDN1, C7orf11, ABHS	609188	7p14	Dermatological
1526	Trifunctional protein deficiency, type 1 (3)	HADHA, MTPA	600890	2p23	Metabolic
1526	Trifunctional protein deficiency, type II (3)	HADHB	143450	2p23	Metabolic
1528	Trismus-pseudocomptodactyly syndrome, 158300 (3)	MYH8	160741	17p13.1	multiple
1529	Tropical calcific pancreatitis, 608189 (3)	SPINK1, PSTI, PCTT, TATI	167790	5q32	Gastrointestinal
1530	Troyer syndrome, 275900 (3)	SPG20	607111	13q12.3	Neurological
1534	TSC2 angiomyolipomas, renal, modifier of, 191100 (3)	IFNG	147570	12q14	multiple
1533	Tuberculosis, susceptibility to (3)	IFNGR1	107470	6q23-q24	Respiratory
1533	Tuberculosis, susceptibility to, 607948 (3)	IFNG	147570	12q14	Respiratory
1534	Tuberous sclerosis-1, 191100 (3)	TSC1, LAM	605284	9q34	multiple
1534	Tuberous sclerosis-2, 191100 (3)	TSC2, LAM	191092	16p13.3	multiple
1536	Turcot syndrome, 276300 (3)	APC, GS, FPC	175100	5q21-q22	Cancer
1536	Turcot syndrome with glioblastoma, 276300 (3)	MLH1, COCA2, HNPCC2	120436	3p21.3	Cancer
1536	Turcot syndrome with glioblastoma, 276300 (3)	PMS2, PMSL2, HNPCC4	600259	7p22	Cancer
1538	Twinning, dizygotic, 276400 (3)	FSHR, ODG1	136435	2p21-p16	Unclassified
1540	Tyrosinemia, type I (3)	FAH	276700	15q23-q25	Metabolic
1540	Tyrosinemia, type II (3)	TAT	276600	16q22.1-q22.3	Metabolic
1540	Tyrosinemia, type III (3)	HPD	276710	12q24-qter	Metabolic
1542	Ullrich congenital muscular dystrophy, 254090 (3)	COL6A1, OPLL	120220	21q22.3	Muscular
1542	Ullrich congenital muscular dystrophy, 254090 (3)	COL6A3	120250	2q37	Muscular
1542	Ullrich scleroatonic muscular dystrophy, 254090 (3)	COL6A2	120240	21q22.3	Muscular
1543	Ulnar-mammary syndrome, 181450 (3)	TBX3	601621	12q24.1	multiple
1544	Unipolar depression, susceptibility to, 608516 (3)	TPH2, NTPH	607478	12q21.1	Psychiatric
1545	Unna-Thost disease, nonepidermolytic, 600962 (3)	KRT1	139350	12q13	Dermatological
1550	Urolithiasis, 2,8-dihydroxyadenine (3)	APRT	102600	16q24.3	Metabolic
1550	Urolithiasis, hypophosphatemic (3)	SLC17A2, NPT2	182309	5q35	Metabolic
1551	Usher syndrome, type 1B (3)	MYO7A, USH1B, DFNB2, DFNA11	276903	11q13.5	multiple
1551	Usher syndrome, type 1C, 276904 (3)	USH1C, DFNB18	605242	11p15.1	multiple
1551	Usher syndrome, type 1D, 601067 (3)	CDH23, USH1D	605516	10q21-q22	multiple
1551	Usher syndrome, type 1F, 602083 (3)	PCDH15, DFNB23	605514	10q21-q22	multiple
1551	Usher syndrome, type 1G, 606943 (3)	SANS, USH1G	607696	17q24-q25	multiple
1551	Usher syndrome, type 2A, 276901 (3)	USH2A	608400	1q41	multiple

1551	Usher syndrome, type 3, 276902 (3)	USH3A, USH3	606397	3q21-q25	multiple
1551	Usher syndrome, type IIC, 605472 (3)	MASS1, VLGR1, KIAA0686, FEB4, USH2C	602851	5q14	multiple
1552	Uterine leiomyoma (3)	HMGA2, HMGIC, BABL, LIPO	600698	12q14.3	Cancer
1553	UV-induced skin damage, vulnerability to (3)	MC1R	155555	16q24.3	Dermatological
1554	van Buchem disease, type 2, 607636 (3)	LRP5, BMND1, LRP7, LR3, OPPG, VBCH2	603506	11q13.4	Unclassified
3554	van der Woude syndrome, 119300 (3)	IRF6, VWS, LPS, PIT, PPS, OFC6	607199	1q32-q41	Developmental
1555	VATER association with hydrocephalus, 276950 (3)	PTEN, MMAC1	601728	10q23.31	multiple
1556	Velocardiofacial syndrome, 192430 (3)	TBX1, DGS, CTHM, CAFS, TGA, DORV, VCFS, DGCR	602054	22q11.2	multiple
1557	Venous malformations, multiple cutaneous and mucosal, 600195 (3)	TEK, TIE2, VMCM	600221	9p21	Cardiovascular
1557	Venous thrombosis, susceptibility to (3)	SERPINA10, ZPI	605271	14q32.1	Cardiovascular
3558	Ventricular fibrillation, idiopathic, 603829 (3)	SCN5A, LQT3, IVF, HB1, SSS1	600163	3p21	Cardiovascular
1558	Ventricular tachycardia, idiopathic, 192605 (3)	GNAI2, GNAI2B, GIP	139360	3p21	Cardiovascular
1558	Ventricular tachycardia, stress-induced polymorphic, 604772 (3)	CASQ2	114251	1p13.3-p11	Cardiovascular
1558	Ventricular tachycardia, stress-induced polymorphic, 604772 (3)	RYR2, VTSIP	180902	1q42.1-q43	Cardiovascular
1559	Vertical talus, congenital, 192950 (3)	HOXD10, HOX4D	142984	2q31-q32	Skeletal
1562	Viral infections, recurrent (3)	FCGR3A, CD16, IGFR3	146740	1q23	Immunological
1562	Viral infection, susceptibility to (3)	OAS1, OIAS	164350	12q24.2	Immunological
1563	Virilization, maternal and fetal, from placental aromatase deficiency (3)	CYP19A1, CYP19, ARO	107910	15q21.1	Developmental
1565	Vitamin K-dependent clotting factors, combined deficiency of, 2, 607473 (3)	VKORC1, VKOR, VKCFD2, FLJ00289	608547	16p11.2	Hematological
1565	Vitamin K-dependent coagulation defect, 277450 (3)	GGCX	137167	2p12	Hematological
1566	Vitelliform macular dystrophy, adult-onset, 608161 (3)	VMD2	607854	11q13	Ophthamological
1570	VLCAD deficiency, 201475 (3)	ACADVL, VLCAD	609575	17p13	Metabolic
1571	Vohwinkel syndrome, 124500 (3)	GJB2, CX26, DFNB1, PPK, DFNA3, KID, HID	121011	13q11-q12	multiple
1571	Vohwinkel syndrome with ichthyosis, 604117 (3)	LOR	152445	1q21	multiple
1572	von Hippel-Lindau disease, modification of, 193300 (3)	CCND1, PRAD1, BCL1	168461	11q13	Cancer
1572	von Hippel-Lindau syndrome, 193300 (3)	VHL	608537	3p26-p25	Cancer
3572	von Willebrand disease (3)	VWF, F8VWF	193400	12p13.3	Hematological
1573	Waardenburg-Shah syndrome, 277580 (3)	EDNRB, HSCR2, ABCDS	131244	13q22	multiple
1573	Waardenburg-Shah syndrome, 277580 (3)	SOX10, WS4	602229	22q13	multiple
1574	Waardenburg syndrome/albinism, digenic, 103470 (3)	TYR	606933	11q14-q21	multiple
1574	Waardenburg syndrome/ocular albinism, digenic, 103470 (3)	MITF, WS2A	156845	3p14.1-p12.3	multiple
1574	Waardenburg syndrome, type I, 193500 (3)	PAX3, WS1, HUP2, CDHS	606597	2q35	multiple
1574	Waardenburg syndrome, type IIA, 193510 (3)	MITF, WS2A	156845	3p14.1-p12.3	multiple
1574	Waardenburg syndrome, type III, 148820 (3)	PAX3, WS1, HUP2, CDHS	606597	2q35	multiple
1574	Waardenburg syndrome, typ IID, 608890 (3)	SNAI2, SLUG, WS2D	602150	8q11	multiple
1575	Wagner syndrome, 143200 (3)	COL2A1	120140	12q13.11-q13.2	Ophthamological
1576	WAGR syndrome, 194072 (3)	WT1	607102	11p13	multiple
1578	Walker-Warburg syndrome, 236670 (3)	FCMD	607440	9q31	multiple
1578	Walker-Warburg syndrome, 236670 (3)	POMT1	607423	9q34.1	multiple
1578	Warburg micro syndrome 1, 600118 (3)	RAB3GAP, WARBM1, P130	602536	2q21.3	multiple
1580	Warfarin resistance, 122700 (3)	VKORC1, VKOR, VKCFD2, FLJ00289	608547	16p11.2	Hematological
1580	Warfarin sensitivity, 122700 (3)	CYP2C9	601130	10q24	Hematological
1580	Warfarin sensitivity (3)	F9, HEMB	306900	Xq27.1-q27.2	Hematological
1581	Watson syndrome, 193520 (3)	NF1, VRNF, WSS, NFNS	162200	17q11.2	Cancer
1582	Weaver syndrome, 277590 (3)	NSD1, ARA267, STO	606681	5q35	Developmental
1583	Wegener-like granulomatosis (3)	TAP2, ABCB3, PSF2, RING11	170261	6p21.3	Immunological

1585	Weill-Marchesani syndrome, dominant, 608328 (3)	FBN1, MFS1, WMS	134797	15q21.1	Connective tissue
1585	Weill-Marchesani syndrome, recessive, 277600 (3)	ADAMTS10, WMS	608990	19p13.3-p13.2	Connective tissue
1586	Weissenbacher-Zweymuller syndrome, 277610 (3)	COL11A2, STL3, DFNA13	120290	6p21.3	Connective tissue
1588	Werner syndrome, 277700 (3)	RECQL2, RECQ3, WRN	604611	8p12-p11.2	multiple
1589	Wernicke-Korsakoff syndrome, susceptibility to, 277730 (3)	TKT	606781	3p14.3	Metabolic
1590	Weyers acrodental dysostosis, 193530 (3)	EVC	604831	4p16	Skeletal
1591	WHIM syndrome, 193670 (3)	CXCR4, D2S201E, NPY3R, WHIM	162643	2q21	Immunological
1592	White sponge nevus, 193900 (3)	KRT13	148065	17q21-q22	Connective tissue
1592	White sponge nevus, 193900 (3)	KRT4, CYK4	123940	12q13	Connective tissue
1594	Williams-Beuren syndrome, 194050 (3)	ELN	130160	7q11.2	multiple
1595	Wilms tumor, 194070 (3)	BRCA2, FANCD1	600185	13q12.3	Cancer
1595	Wilms tumor, somatic, 194070 (3)	GPC3, SDYS, SGBS1	300037	Xq26	Cancer
1595	Wilms tumor susceptibility-5, 601583 (3)	POU6F2, WTSL, WT5	609062	7p14-p13	Cancer
1595	Wilms tumor, type 1, 194070 (3)	WT1	607102	11p13	Cancer
1596	Wilson disease, 277900 (3)	ATP7B, WND	606882	13q14.3-q21.1	Metabolic
1598	Wiskott-Aldrich syndrome, 301000 (3)	WAS, IMD2, THC	300392	Xp11.23-p11.22	Immunological
1599	Witkop syndrome, 189500 (3)	MSX1, HOX7, HYD1, OFC5	142983	4p16.1	Developmental
1600	Wolcott-Rallison syndrome, 226980 (3)	EIF2AK3, PEK, PERK, WRS	604032	2p12	Bone
1601	Wolff-Parkinson-White syndrome, 194200 (3)	PRKAG2, WPWS	602743	7q36	Cardiovascular
1603	Wolfram syndrome, 222300 (3)	WFS1, WFRS, WFS, DFNA6	606201	4p16.1	Metabolic
1604	Wolman disease (3)	LIPA	278000	10q24-q25	Metabolic
1607	Xanthinuria, type I, 278300 (3)	XDH	607633	2p23-p22	Metabolic
1608	Xeroderma pigmentosum, group A (3)	XPA	278700	9q22.3	Dermatological
1608	Xeroderma pigmentosum, group B (3)	ERCC3, XPB	133510	2q21	Dermatological
1608	Xeroderma pigmentosum, group C (3)	XPC, XPCC	278720	3p25	Dermatological
1608	Xeroderma pigmentosum, group D, 278730 (3)	ERCC2, EM9	126340	19q13.2-q13.3	Dermatological
1608	Xeroderma pigmentosum, group E, DDB-negative subtype, 278740 (3)	DDB2	600811	11p12-p11	Dermatological
1608	Xeroderma pigmentosum, group F, 278760 (3)	ERCC4, XPF	133520	16p13.3-p13.13	Dermatological
1608	Xeroderma pigmentosum, group G, 278780 (3)	ERCC5, XPG	133530	13q33	Dermatological
1608	Xeroderma pigmentosum, variant type, 278750 (3)	POLH, XPV	603968	6p21.1-p12	Dermatological
1610	X-inactivation, familial skewed, 300087 (3)	XIC, XCE, XIST, SXI1	314670	Xq13.2	Unclassified
1611	XLA and isolated growth hormone deficiency, 307200 (3)	BTK, AGMX1, IMD1, XLA, AT	300300	Xq21.3-q22	Immunological
1613	Yellow nail syndrome, 153300 (3)	FOXC2, FKHL14, MFH1	602402	16q24.3	Immunological
1614	Yemenite deaf-blind hypopigmentation syndrome, 601706 (3)	SOX10, WS4	602229	22q13	multiple
1615	Zellweger syndrome-1, 214100 (3)	PEX1, ZWS1	602136	7q21-q22	multiple
1615	Zellweger syndrome, 214100 (3)	PEX10, NALD	602859	Chr.1	multiple
1615	Zellweger syndrome, 214100 (3)	PEX13, ZWS, NALD	601789	2p15	multiple
1615	Zellweger syndrome, 214100 (3)	PEX14	601791	1p36.2	multiple
1615	Zellweger syndrome, 214100 (3)	PEX26	608666	22q11.21	multiple
1615	Zellweger syndrome, 214100 (3)	PXF, HK33, D1S2223E, PEX19	600279	1q22	multiple
1615	Zellweger syndrome, 214100 (3)	PXR1, PEX5, PTS1R	600414	12p13.3	multiple
1615	Zellweger syndrome-2 (3)	ABCD3, PXMP1, PMP70	170995	1p22-p21	multiple
1615	Zellweger syndrome-3 (3)	PXMP3, PAF1, PMP35, PEX2	170993	8q21.1	multiple
1615	Zellweger syndrome, complementation group 9 (3)	PEX16	603360	11p12-p11.2	multiple
1615	Zellweger syndrome, complementation group G, 214100 (3)	PEX3	603164	6q23-q24	multiple
1617	Zlotogora-Ogur syndrome, 225000 (3)	HVEC, PVRL1, PVRR1, PRR1	600644	11q23-q24	multiple

Supporting Information Table 2. **Network characteristics of diseases.**

Disease ID	Name	Disorder class	Size (s)	Degree (k)	Class-degree (κ)	Genes implicated (Entrez ID) [comma-deliminated]
1	17,20-lyase_deficiency	Endocrine	1	0	0	CYP17A1 (1586)
3	2-methyl-3-hydroxybutyryl-CoA_dehydrogenase_deficiency	Metabolic	1	0	0	HADH2 (3028)
4	2-methylbutyrylglycinuria	Metabolic	1	0	0	ACADSB (36)
5	3-beta-hydroxysteroid_dehydrogenase,_type_II,_deficiency	Metabolic	1	0	0	HSD3B2 (3284)
6	3-hydroxyacyl-CoA_dehydrogenase_deficiency	Metabolic	1	0	0	HADHSC (3033)
7	3-Methylcrotonyl-CoA_carboxylase_deficiency	Metabolic	2	0	0	MCCC1 (56922), MCCC2 (64087)
8	3-methylglutaconic_aciduria	Metabolic	1	0	0	AUH (549)
9	3-methylglutaconicaciduria	Metabolic	1	1	1	OPA3 (80207)
10	3-M_syndrome	multiple	1	0	0	CUL7 (9820)
12	6-mercaptopurine_sensitivity	Metabolic	1	0	0	TPMT (7172)
13	Aarskog-Scott_syndrome	multiple	1	1	1	FGD1 (2245)
14	Abacavir_hypersensitivity	Immunological	1	2	2	HLA-B (3106)
15	ABCD_syndrome	multiple	1	2	1	EDNRB (1910)
17	Abetalipoproteinemia	Metabolic	2	2	1	MTP (4547), APOB (338)
18	Acampomelic_campolelic_dysplasia	Skeletal	1	1	1	SOX9 (6662)
21	Acatalasemia	Hematological	1	0	0	CAT (847)
22	Accelerated_tumor_formation	Cancer	1	0	0	MDM2 (4193)
24	Achalasia-addisonianism-alacrimia_syndrome	multiple	1	0	0	AAAS (8086)
25	Acheiropody	Skeletal	1	0	0	LMBR1 (64327)
26	Achondrogenesis-hypochondrogenesis,_type_II	Bone	1	5	3	COL2A1 (1280)
27	Achondrogenesis_Ib	Bone	1	3	3	SLC26A2 (1836)
28	Achondroplasia	Skeletal	1	7	2	FGFR3 (2261)
29	Achromatopsia	Ophthamological	3	1	1	CNGA3 (1261), CNGB3 (54714), GNAT2 (2780)
30	Acid-labile_subunit,_deficiency_of	Endocrine	1	0	0	IGFALS (3483)
31	Acquired_long_QT_syndrome	Cardiovascular	1	1	1	KCNH2 (3757)
32	Acrocallosal_syndrome	multiple	1	3	1	GLI3 (2737)
33	Acrocapitofemoral_dysplasia	Skeletal	1	1	1	IHH (3549)
34	Acrodermatitis_enteropathica	Dermatological	1	0	0	SLC39A4 (55630)
36	Acrokeratosis_verruciformis	Dermatological	1	1	1	ATP2A2 (488)
38	Acromegaly	Endocrine	2	5	3	GNAS (2778), SSTR5 (6755)
39	Acromesomelic_dysplasia	Skeletal	2	3	1	GDF5 (8200), NPR2 (4882)
44	Acyl-CoA_dehydrogenase,_deficiency_of	Metabolic	3	0	0	ACADL (33), ACADM (34), ACADS (35)
45	Adenocarcinoma	Cancer	4	8	3	EGFR (1956), BRAF (673), ERBB2 (2064), PARK2 (5071)
46	Adenoma,_periampullary	Cancer	1	6	1	APC (324)
47	Adenomas	Cancer	3	6	1	MUTYH (4595), PLAG1 (5324), APC (324)
49	Adenosine_deaminase_deficiency	Immunological	1	1	1	ADA (100)
50	Adenylosuccinase_deficiency	Metabolic	1	0	0	ADSL (158)
52	Adiponectin_deficiency	Endocrine	1	0	0	ADIPOQ (9370)
53	Adrenal_hyperplasia,_congenital	Endocrine	4	5	3	CYP11B1 (1584), CYP21A2 (1589), POR (5447), NR0B1 (190)
54	Adrenocortical_carcinoma	Cancer	1	4	2	PRKAR1A (5573)
55	Adrenocorticotropic_hormone_deficiency	Endocrine	1	0	0	TBX19 (9095)
56	Adrenoleukodystrophy	Neurological	6	3	2	ABCD1 (215), PEX10 (5192), PEX13 (5194), PEX1 (5189), PEX26 (55670), PEX5 (5830)
57	Adrenomyeloneuropathy	Metabolic	1	1	1	ABCD1 (215)
58	Adult_i_phenotype	Hematological	1	1	1	GCNT2 (2651)

59	ADULT_syndrome	multiple	1	5	1	TP73L (8626)
60	Advanced_sleep_phase_syndrome	Neurological	1	0	0	PER2 (8864)
61	Afibrinogenemia	Hematological	2	3	2	FGA (2243), FGB (2244)
63	Agammaglobulinemia	Hematological	4	1	1	IGHM (3507), IGLL1 (3543), LRRC8A (56262), BTK (695)
64	AGAT_deficiency	Metabolic	1	0	0	GATM (2628)
65	Agenesis_of_the_corpus_callosum_with_peripheral_neuropathy	Neurological	1	0	0	SLC12A6 (9990)
69	AICA-ribosiduria_due_to_ATIC_deficiency	Metabolic	1	0	0	ATIC (471)
70	AIDS	Immunological	3	3	2	KIR3DL1 (3811), IFNG (3458), CXCL12 (6387)
71	Alagille_syndrome	multiple	1	2	2	JAG1 (182)
72	Albinism	Dermatological	3	1	0	OCA2 (4948), TYR (7299), TYRP1 (7306)
74	Alcohol_dependence	Unclassified	1	4	2	HTR2A (3356)
75	Alcoholism	Unclassified	1	0	0	GABRA2 (2555)
76	Aldolase_A_deficiency	Metabolic	1	0	0	ALDOA (226)
77	Aldosterone_to_renin_ratio_raised	Endocrine	1	2	2	CYP11B2 (1585)
78	Aldosteronism	Endocrine	1	1	1	CYP11B1 (1584)
79	Alexander_disease	multiple	2	2	1	GFAP (2670), NDUFV1 (4723)
80	Alkaptonuria	Metabolic	1	0	0	HGD (3081)
82	Allan-Herndon-Dudley_syndrome	Neurological	1	0	0	SLC16A2 (6567)
83	Allergic_rhinitis	Immunological	1	1	1	IL13 (3596)
85	Alopecia_universalis	Dermatological	1	1	1	HR (55806)
86	Alpers_syndrome	Neurological	1	2	1	POLG (5428)
87	Alpha-1-antichymotrypsin_deficiency	Respiratory	1	1	1	SERPINA3 (12)
88	Alpha-actinin-3_deficiency	Muscular	1	1	1	ACTN3 (89)
90	Alpha-methylacetoacetic_aciduria	Metabolic	1	0	0	ACAT1 (38)
91	Alpha-methylacyl-CoA_racemase_deficiency	Metabolic	1	0	0	AMACR (23600)
92	Alpha-thalassemia/mental_retardation_syndrome	Hematological	1	4	0	ATRX (546)
94	Alport_syndrome	Renal	3	1	1	COL4A5 (1287), COL4A3 (1285), COL4A4 (1286)
95	(null)	Neurological	1	0	0	ALMS1 (7840)
96	Alternating_hemiplegia_of_childhood	Neurological	1	1	1	ATP1A2 (477)
97	Alveolar_soft-part_sarcoma	Cancer	1	0	0	ASPSCR1 (79058)
98	Alzheimer_disease	Neurological	12	15	9	APP (351), APOE (348), PSEN2 (5664), APBB2 (323), NOS3 (4846), PLAU (5328), ACE (1636), MPO (4353), PAXIP1 (22976), A2M (2), BLMH (642), PSEN1 (5663)
99	Amelogenesis_imperfecta	Bone	4	2	1	ENAM (10117), AMELX (265), DLX3 (1747), KLK4 (9622)
100	Amish_infantile_epilepsy_syndrome	Neurological	1	0	0	ST3GAL5 (8869)
101	AMP_deaminase_deficiency	Hematological	1	0	0	AMPD3 (272)
102	Amyloid_neuropathy	Neurological	1	3	3	TTR (7276)
103	Amyloidosis	Neurological	6	11	6	APOA1 (335), APP (351), GSN (2934), FGA (2243), LYZ (4069), TTR (7276)
104	Amyotrophic_lateral_sclerosis	Neurological	6	4	2	VAPB (9217), SOD1 (6647), ALS2 (57679), DCTN1 (1639), NEFH (4744), PRPH (5630)
105	Analbuminemia	Hematological	1	1	1	ALB (213)
107	Analgesia_from_kappa-opioid_receptor_agonist,_female-specific	Unclassified	1	3	2	MC1R (4157)
108	Anderson_disease	Gastrointestinal	1	1	1	SAR1B (51128)
109	Androgen_insensitivity	Endocrine	1	4	3	AR (367)
110	Anemia	Hematological	9	3	1	CDAN1 (146059), RPS19 (6223), PKLR (5313), NT5C3 (51251), RHAG (6005), SLC11A2 (4891), SPTB (6710), ALAS2 (212), ABCB7 (22)

113	Angelman_syndrome	Developmental	2	4	2	MECP2 (4204), UBE3A (7337)
114	Angioedema	Immunological	2	0	0	SERPING1 (710), XPNPEP2 (7512)
115	Angiofibroma,_sporadic	Endocrine	1	7	2	MEN1 (4221)
117	Angiotensin_I-converting_enzyme	Endocrine	1	5	5	ACE (1636)
118	Anhaptoglobinemia	Hematological	1	1	1	HP (3240)
119	Aniridia,_type_II	Ophthamological	1	9	3	PAX6 (5080)
121	Ankylosing_spoldylitis	Connective_tissue_disorder	1	2	2	HLA-B (3106)
122	Anophthalmia	Ophthamological	1	0	0	SOX2 (6657)
124	Anorexia_nervosa	Nutritional	1	4	2	HTR2A (3356)
126	Anterior_segment_anomalies_and_cataract	Ophthamological	4	6	2	EYA1 (2138), FOXE3 (2301), FOXC1 (2296), PITX3 (5309)
127	Antithrombin_III_deficiency	Hematological	1	0	0	SERPINC1 (462)
128	Antley-Bixler_syndrome	Unclassified	1	2	2	POR (5447)
129	Anxiety-related_personality_traits	Psychiatric	1	1	1	SLC6A4 (6532)
130	Aortic_aneurysm	Cardiovascular	1	5	2	FBN1 (2200)
131	Apert_syndrome	Connective_tissue_disorder	1	8	3	FGFR2 (2263)
132	Aplasia_of_lacrimal_and_salivary_glands	Gastrointestinal	1	0	0	FGF10 (2255)
133	Aplastic_anemia	Hematological	3	4	3	IFNG (3458), TERC (7012), TERT (7015)
134	Apnea,_postanesthetic	Unclassified	1	0	0	BCHE (590)
136	Apolipoprotein_deficiency	Metabolic	4	5	3	APOA1 (335), APOA2 (336), APOC3 (345), APOH (350)
137	Apparent_mineralocorticoid_excess,_hypertension_due_to	Bone	1	1	1	HSD11B2 (3291)
138	Aquaporin-1_deficiency	Unclassified	1	1	1	AQP1 (358)
139	ARC_syndrome	Gastrointestinal	1	0	0	VPS33B (26276)
140	Argininemia	Metabolic	2	0	0	ARG1 (383), ASL (435)
142	Aromatase_deficiency	Metabolic	1	1	1	CYP19A1 (1588)
143	Aromatic_L-amino_acid_decarboxylase_deficiency	Metabolic	1	0	0	DDC (1644)
144	Arrhythmogenic_right_ventricular_dysplasia	Cardiovascular	3	5	2	RYR2 (6262), DSP (1832), PKP2 (5318)
146	Arthrogryposis	Developmental	3	1	1	TPM2 (7169), TNNI2 (7136), TNNT3 (7140)
147	Arthropathy	Bone	1	1	1	WISP3 (8838)
150	Aspartylglucosaminuria	Metabolic	1	0	0	AGA (175)
151	Asperger_syndrome	Psychiatric	2	2	2	NLGN3 (54413), NLGN4X (57502)
153	Asthma	Respiratory	13	11	6	PHF11 (51131), MS4A2 (2206), ALOX5 (240), ADRB2 (154), PTGDR (5729), GPR154 (387129), HNMT (3176), IL12B (3593), IL13 (3596), PLA2G7 (7941), SCGB3A2 (117156), TNF (7124), SCGB1A1 (7356)
154	Ataxia	Neurological	5	1	1	ATCAY (85300), APTX (54840), CACNB4 (785), ALS4 (23064), TTPA (7274)
157	Ataxia-telangiectasia	Immunological	2	3	1	ATM (472), MRE11A (4361)
160	Atelosteogenesis	Connective_tissue_disorder	2	5	2	SLC26A2 (1836), FLNB (2317)
162	Athabaskan_brainstem_dysgenesis_syndrome	Neurological	1	1	1	HOXA1 (3198)
163	Atherosclerosis	Cardiovascular	1	1	1	ALOX5 (240)
164	Atopy	Immunological	5	3	3	SPINK5 (11005), HAVCR1 (26762), PLA2G7 (7941), SELP (6403), IL4R (3566)
165	Atransferrinemia	Hematological	1	1	1	TF (7018)
166	Atrial_fibrillation	Cardiovascular	5	5	1	KCNE2 (9992), KCNQ1 (3784), GATA4 (2626), MYH6 (4624), NKX2-5 (1482)
167	Atrichia_with_papular_lesions	Dermatological	1	1	1	HR (55806)

168	Atrioventricular_block	Cardiovascular	3	5	2	NKX2-5 (1482), GJA1 (2697), CRELD1 (78987)
171	Attention-deficit_hyperactivity_disorder	Psychiatric	1	2	2	DRD5 (1816)
173	Autism	Psychiatric	4	5	3	GLO1 (2739), MECP2 (4204), NLGN3 (54413), NLGN4X (57502)
174	Autoimmune_disease	Immunological	4	4	1	FAS (355), CASP10 (843), CASP8 (841), AIRE (326)
175	Autonomic_nervous_system_dysfunction	Psychiatric	1	0	0	DRD4 (1815)
177	Axenfeld_anomaly	Ophthamological	1	4	1	FOXC1 (2296)
178	Azoospermia	Endocrine	2	0	0	USP9Y (8287), SYCP3 (50511)
180	Bamforth-Lazarus_syndrome	Endocrine	1	0	0	FOXE1 (2304)
182	Bannayan-Riley-Ruvalcaba_syndrome	Unclassified	1	8	1	PTEN (5728)
183	Bardet-Biedl_syndrome	multiple	8	1	1	BBS1 (582), ARL6 (84100), BBS7 (55212), BBS2 (583), BBS4 (585), BBS5 (129880), MKKS (8195), TTC8 (123016)
184	Bare_lymphocyte_syndrome	Immunological	5	3	3	TAPBP (6892), TAP2 (6891), CIITA (4261), RFX5 (5993), RFXAP (5994)
185	Barth_syndrome	multiple	1	2	1	TAZ (6901)
186	Bart-Pumphrey_syndrome	multiple	1	5	2	GJB2 (2706)
187	Bartter_syndrome	multiple	5	0	0	SLC12A1 (6557), KCNJ1 (3758), CLCNKB (1188), BSND (7809), CLCNKA (1187)
188	Basal_cell_carcinoma	Cancer	4	5	3	RASA1 (5921), PTCH2 (8643), PTCH (5727), SMO (6608)
190	B-cell_non-Hodgkin_lymphoma,_high-grade	Cancer	1	0	0	BCL7A (605)
191	BCG_infection	Immunological	1	3	2	IFNGR1 (3459)
192	Beare-Stevenson_cutis_gyrata_syndrome	multiple	1	8	4	FGFR2 (2263)
193	Becker_muscular_dystrophy	Muscular	2	3	2	DMD (1756), MYF6 (4618)
194	Beckwith-Wiedemann_syndrome	multiple	4	2	1	CDKN1C (1028), H19 (283120), KCNQ1OT1 (10984), NSD1 (64324)
195	Benzene_toxicity	Unclassified	1	1	1	NQO1 (1728)
196	Bernard-Soulier_syndrome	Hematological	3	1	1	GP1BA (2811), GP1BB (2812), GP9 (2815)
197	Beryllium_disease,_chronic	Unclassified	1	0	0	HLA-DPB1 (3115)
198	Beta-2-adrenoreceptor_agonist,_reduced_response_to	Unclassified	1	2	2	ADRB2 (154)
199	Beta-ureidopropionase_deficiency	Metabolic	1	0	0	UPB1 (51733)
200	Bethlem_myopathy	Muscular	3	1	1	COL6A1 (1291), COL6A2 (1292), COL6A3 (1293)
201	Bietti_crystalline_corneoretinal_dystrophy	Ophthamological	1	0	0	CYP4V2 (285440)
202	Bile_acid_malabsorption,_primary	Gastrointestinal	1	0	0	SLC10A2 (6555)
203	Biotinidase_deficiency	Metabolic	1	0	0	BTD (686)
204	Bipolar_disorder	Psychiatric	1	0	0	XBP1 (7494)
205	Birt-Hogg-Dube_syndrome	Dermatological	1	3	2	FLCN (201163)
207	Bladder_cancer	Cancer	4	15	2	FGFR3 (2261), KRAS (3845), RB1 (5925), HRAS (3265)
208	Blau_syndrome	multiple	1	3	3	CARD15 (64127)
209	Bleeding_disorder	Hematological	2	0	0	TBXA2R (6915), P2RX1 (5023)
210	Blepharophimosis,_epicanthus_inversus,_and_ptosis	multiple	1	1	1	FOXL2 (668)
211	Blepharospasm	Ophthamological	1	2	2	DRD5 (1816)
212	Blood_group	Hematological	23	8	4	ABO (28), LU (4059), AQP1 (358), DAF (1604), SLC4A1 (6521), DO (420), GYPC (2995), AQP3 (360), GCNT2 (2651), CD44 (960), KEL (3792), SLC14A1 (6563), CR1 (1378), ICAM4 (3386), FUT3 (2525), GYPA (2993), BSG (682), A4GALT (53947), B3GALT3 (8706), RHCE (6006), GYPB (2994), XG (7499), ACHE (43)
213	Bloom_syndrome	Cancer	1	0	0	BLM (641)
214	Blue-cone_monochromacy	Ophthamological	2	1	1	OPN1LW (5956), OPN1MW (2652)
216	Bombay_phenotype	Hematological	2	1	1	FUT1 (2523), FUT2 (2524)

217	Bone_mineral_density_variability	Bone	1	6	3	LRP5 (4041)
218	Borjeson-Forssman-Lehmann_syndrome	multiple	1	0	0	PHF6 (84295)
220	Bosley-Salih-Alorainy_syndrome	Neurological	1	1	1	HOXA1 (3198)
221	Bothnia_retinal_dystrophy	Ophthamological	1	3	1	RLBP1 (6017)
224	Brachydactyly	Skeletal	5	6	1	IHH (3549), BMPR1B (658), ROR2 (4920), GDF5 (8200), HOXD13 (3239)
225	Bradyopsia	Ophthamological	2	0	0	R9AP (342880), RGS9 (8787)
226	Branchiootic_syndrome	Neurological	1	1	1	EYA1 (2138)
228	Breast_cancer	Cancer	19	30	4	CHEK2 (11200), PIK3CA (5290), PPM1D (8493), SLC22A18 (5002), TP53 (7157), BRCA1 (672), BRCA2 (675), TSG101 (7251), BRIP1 (83990), RAD54L (8438), CDH1 (999), AR (367), KRAS (3845), RB1CC1 (9821), PHB (5245), ATM (472), BARD1 (580), RAD51 (5888), XRCC3 (7517)
231	Brody_myopathy	Muscular	1	0	0	ATP2A1 (487)
233	Bruck_syndrome	Unclassified	1	0	0	PLOD2 (5352)
234	Brugada_syndrome	Cardiovascular	1	4	1	SCN5A (6331)
235	Brunner_syndrome	Unclassified	1	0	0	MAOA (4128)
237	Burkitt_lymphoma	Cancer	1	0	0	MYC (4609)
238	Buschke-Ollendorff_syndrome	multiple	1	2	2	LEMD3 (23592)
239	Butterfly_dystrophy,_retinal	Ophthamological	1	3	1	RDS (5961)
240	Complementary_component_deficiency	Immunological	13	1	1	C1QA (712), C1QB (713), C1QG (714), C1S (716), C2 (717), IF (3426), C3 (718), C4A (720), C4B (721), C6 (729), C7 (730), C8B (732), C9 (735)
252	Cafe-au-lait_spots	Cancer	2	8	1	MSH2 (4436), MLH1 (4292)
253	Caffey_disease	Connective_tissue_disorder	1	4	2	COL1A1 (1277)
254	Calcinosis,_tumoral	Bone	2	1	1	FGF23 (8074), GALNT3 (2591)
255	Campomelic_dysplasia	Skeletal	1	1	1	SOX9 (6662)
256	Camptodactyly-arthropathy-coxa_vara-pericarditis_syndrome	Skeletal	1	0	0	PRG4 (10216)
257	Camurati-Engelmann_disease	Skeletal	1	0	0	TGFB1 (7040)
258	Canavan_disease	Metabolic	1	0	0	ASPA (443)
259	Cancer_susceptibility	Cancer	2	3	1	FGFR4 (2264), MSH6 (2956)
261	Capillary_malformations	Cardiovascular	1	2	1	RASA1 (5921)
262	Carbamoylphosphate_synthetase_I_deficiency	Metabolic	1	0	0	CPS1 (1373)
263	Carbohydrate-deficient_glycoprotein_syndrome	Metabolic	3	0	0	PMM2 (5373), MPI (4351), MGAT2 (4247)
264	Carboxypeptidase_N_deficiency	Hematological	1	0	0	CPN1 (1369)
265	Carcinoid_tumors,_intestinal	Cancer	1	3	1	SDHD (6392)
267	Cardioencephalomyopathy,_fatal_infantile,_due_to_cytochrome_c_oxidase_deficiency	Cardiovascular	1	0	0	SCO2 (9997)
268	Cardiomyopathy	Cardiovascular	25	15	5	MYL3 (4634), ACTC (70), MYH7 (4625), LMNA (4000), TNNT2 (7139), TTN (7273), DES (1674), EYA4 (2070), SGCD (6444), CSRP3 (8048), TCAP (8557), ABCC9 (10060), DMD (1756), MYL2 (4633), CAV3 (859), MYH6 (4624), TNNC1 (7134), TPM1 (7168), TNNI3 (7137), MYBPC3 (4607), COX15 (1355), MYLK2 (85366), PRKAG2 (51422), PLN (5350), TAZ (6901)
269	Carney_complex	multiple	2	5	2	PRKAR1A (5573), MYH8 (4626)
271	Carnitine-acylcarnitine_translocase_deficiency	Metabolic	1	0	0	SLC25A20 (788)
272	Carnitine_deficiency	Metabolic	1	0	0	SLC22A5 (6584)
275	Carpal_tunnel_syndrome,_familial	Unclassified	1	3	2	TTR (7276)

276	Cartilage-hair_hypoplasia	Skeletal	1	1	1	RMRP (6023)
277	Cataract	Ophthamological	15	11	4	CRYAA (1409), CRYBB2 (1415), PITX3 (5309), BFSP2 (8419), PAX6 (5080), CRYBA1 (1411), CRYGC (1420), LIM2 (3982), CRYGD (1421), HSF4 (3299), MIP (4284), CRYAB (1410), CRYBB1 (1414), GJA8 (2703), GJA3 (2700)
279	Cavernous_malformations_of_CNS_and_retina	Cardiovascular	1	2	1	KRIT1 (889)
283	CD59_deficiency	Immunological	1	0	0	CD59 (966)
284	CD8_deficiency,_familial	Immunological	1	0	0	CD8A (925)
287	Central_hypoventilation_syndrome	Respiratory	5	8	4	GDNF (2668), BDNF (627), EDN3 (1908), PHOX2B (8929), RET (5979)
289	Cerebellar_ataxia	Neurological	2	5	3	CP (1356), CACNA1A (773)
291	Cerebral_amyloid_angiopathy	Neurological	2	3	2	ABCA1 (19), CST3 (1471)
292	Cerebrooculofacioskeletal_syndrome	multiple	3	4	1	ERCC2 (2068), ERCC5 (2073), ERCC6 (2074)
293	Cerebrotendinous_xanthomatosis	Metabolic	1	0	0	CYP27A1 (1593)
294	Cerebrovascular_disease,_occlusive	Unclassified	1	1	1	SERPINA3 (12)
295	Ceroid_lipofuscinosis	Neurological	1	1	1	PPT1 (5538)
296	Ceroid-lipofuscinosis	Neurological	6	1	1	TPP1 (1200), CLN3 (1201), CLN5 (1203), CLN6 (54982), CLN8 (2055), PPT1 (5538)
298	Cervical_carcinoma	Cancer	1	7	2	FGFR3 (2261)
299	CETP_deficiency	Metabolic	1	2	2	CETP (1071)
300	Chanarin-Dorfman_syndrome	Metabolic	1	0	0	ABHD5 (51099)
301	Charcot-Marie-Tooth_disease	Neurological	18	5	3	HSPB1 (3315), MPZ (4359), DNM2 (1785), HOXD10 (3236), GDAP1 (54332), PMP22 (5376), LITAF (9516), EGR2 (1959), NEFL (4747), KIF1B (23095), MFN2 (9927), RAB7 (7879), GARS (2617), MTMR2 (8898), SBF2 (81846), SH3TC2 (79628), NDRG1 (10397), GJB1 (2705)
302	CHARGE_syndrome	multiple	1	0	0	CHD7 (55636)
303	Char_syndrome	multiple	1	0	0	TFAP2B (7021)
304	Chediak-Higashi_syndrome	multiple	1	0	0	LYST (1130)
305	Cherubism	Unclassified	1	0	0	SH3BP2 (6452)
306	CHILD_syndrome	Developmental	1	0	0	NSDHL (50814)
307	Chitotriosidase_deficiency	Metabolic	1	0	0	CHIT1 (1118)
308	Chloride_diarrhea,_congenital,_Finnish_type	Gastrointestinal	1	0	0	SLC26A3 (1811)
309	Cholelithiasis	Gastrointestinal	1	1	1	ABCB4 (5244)
310	Cholestasis	Gastrointestinal	4	1	1	ATP8B1 (5205), ABCB4 (5244), ABCB11 (8647), HSD3B7 (80270)
313	Cholesteryl_ester_storage_disease	Metabolic	1	1	1	LIPA (3988)
314	Chondrocalcinosis	Connective_tissue_disorder	1	1	1	ANKH (56172)
315	Chondrodysplasia_punctata	Connective_tissue_disorder	3	0	0	GNPAT (8443), EBP (10682), ARSE (415)
316	Chondrosarcoma	Cancer	3	2	2	EXT1 (2131), NR4A3 (8013), EWSR1 (2130)
318	Chorea,_hereditary_benign	Neurological	1	1	0	TITF1 (7080)
319	Choreoacanthocytosis	Neurological	1	0	0	VPS13A (23230)
320	Choreoathetosis,_hypothyroidism,_and_respiratory_distress	multiple	1	1	1	TITF1 (7080)
323	Choroidal_dystrophy	Ophthamological	1	0	0	CHM (1121)
326	Chromosome_22q13.3_deletion_syndrome	multiple	1	0	0	SHANK3 (85358)
327	Chronic_granulomatous_disease	Immunological	4	0	0	CYBA (1535), NCF1 (4687), NCF2 (4688), CYBB (1536)
328	Chudley-Lowry_syndrome	multiple	1	4	1	ATRX (546)

329	Chylomicronemia_syndrome,_familial	Metabolic	1	2	1	LPL (4023)
330	Chylomicron_retention_disease	Gastrointestinal	1	1	1	SAR1B (51128)
331	Ciliary_dyskinesia	Respiratory	2	1	0	DNAI1 (27019), DNAH5 (1767)
332	CINCA_syndrome	multiple	1	2	1	CIAS1 (114548)
334	Cirrhosis	Gastrointestinal	3	0	0	KRT18 (3875), KRT8 (3856), CIRH1A (84916)
335	Citrullinemia	Metabolic	2	0	0	ASS (445), SLC25A13 (10165)
336	Cleft_palate	Developmental	3	4	3	PVRL1 (5818), MSX1 (4487), TBX22 (50945)
337	Cleidocranial_dysplasia	Skeletal	1	1	1	RUNX2 (860)
338	Coats_disease	Ophthamological	1	2	2	NDP (4693)
339	Cockayne_syndrome	multiple	2	2	0	ERCC8 (1161), ERCC6 (2074)
340	Codeine_sensitivity	Metabolic	1	1	1	CYP2D6 (1565)
341	Coffin-Lowry_syndrome	multiple	1	1	1	RPS6KA3 (6197)
342	Cohen_syndrome	multiple	1	0	0	VPS13B (157680)
343	Colchicine_resistance	Unclassified	1	0	0	ABCB1 (5243)
344	Cold-induced_autoinflammatory_syndrome	Immunological	1	2	0	CIAS1 (114548)
345	Coloboma,_ocular	Ophthamological	2	11	3	PAX6 (5080), SHH (6469)
346	Colon_cancer	Cancer	34	50	5	RAD54B (25788), RAD54L (8438), BCL10 (8915), PTPN12 (5782), TGFBR2 (7048), SRC (6714), MLH3 (27030), PTPRJ (5795), ODC1 (4953), MUTYH (4595), AXIN2 (8313), BUB1B (701), EP300 (2033), PDGFRL (5157), PIK3CA (5290), TP53 (7157), APC (324), BAX (581), CTNNB1 (1499), DCC (1630), MCC (4163), NRAS (4893), MSH2 (4436), MLH1 (4292), PMS1 (5378), PMS2 (5395), MSH6 (2956), FGFR3 (2261), FLCN (201163), BRAF (673), DLC1 (10395), PLA2G2A (5320), CCND1 (595), BUB1 (699)
347	Colonic_aganglionosis,_total,_with_small_bowel_involvement	Gastrointestinal	1	4	3	RET (5979)
348	Colorblindness	Ophthamological	3	1	1	OPN1MW (2652), OPN1LW (5956), OPN1SW (611)
350	Combined_factor_V_and_VIII_deficiency	Hematological	1	0	0	LMAN1 (3998)
351	Complex_mitochondrial_respiratory_chain,_deficiency_of	multiple	2	0	0	NDUFS6 (4726), ATPAF2 (91647)
352	Cone_dystrophy	Ophthamological	7	6	1	RPGR (6103), GUCA1A (2978), ABCA4 (24), AIPL1 (23746), GUCY2D (3000), RPGRIP1 (57096), CRX (1406)
354	Congenital_disorder_of_glycosylation	Metabolic	13	0	0	ALG6 (29929), ALG3 (10195), DPM1 (8813), MPDU1 (9526), ALG12 (79087), ALG8 (79053), ALG2 (85365), ALG9 (79796), SLC35C1 (55343), B4GALT1 (2683), COG7 (91949), DPAGT1 (1798), ALG1 (56052)
355	Congestive_heart_failure	Cardiovascular	2	1	1	ADRA2C (152), ADRB1 (153)
356	Conjunctivitis,_ligneous	Ophthamological	1	1	1	PLG (5340)
357	Conotruncal_anomaly_face_syndrome	Cardiovascular	1	2	0	TBX1 (6899)
358	Contractural_arachnodactyly,_congenital	Connective_tissue_disorder	1	0	0	FBN2 (2201)
359	Convulsions	Neurological	1	1	0	MASS1 (84059)
360	COPD,_rate_of_decline_of_lung_function_in	Respiratory	1	0	0	MMP1 (4312)
361	Coproporphyria	Metabolic	1	1	1	CPOX (1371)
362	Corneal_dystrophy	Ophthamological	7	7	3	APOA1 (335), TGFBI (7045), TACSTD2 (4070), VSX1 (30813), COL8A2 (1296), PIP5K3 (200576), KERA (11081)
364	Cornelia_de_Lange_syndrome	Developmental	1	0	0	NIPBL (25836)
365	Coronary_artery_disease	Cardiovascular	6	3	2	MEF2A (4205), ABCA1 (19), KL (9365), PON1 (5444), PON2 (5445), MMP3 (4314)

366	Corpus_callosum,_agenesis_of,_with_mental_retardation,_ocular_coloboma_and_micrognathia	Neurological	1	0	0	IGBP1 (3476)
367	Cortisol_resistance	Endocrine	1	0	0	NR3C1 (2908)
368	Cortisone_reductase_deficiency	Metabolic	2	0	0	H6PD (9563), HSD11B1 (3290)
369	Costello_syndrome	multiple	1	2	1	HRAS (3265)
370	Coumarin_resistance	Hematological	1	1	1	CYP2A6 (1548)
372	Cowden_disease	Cancer	2	9	2	PTEN (5728), BMPR1A (657)
374	CPT_deficiency,_hepatic	Metabolic	2	1	1	CPT1A (1374), CPT2 (1376)
376	Cramps,_potassium-aggravated	Muscular	1	5	3	SCN4A (6329)
377	Craniofacial_anomalies,_empty_sella_turcica,_corneal_endothelial_changes,_and_abnormal_retinal_and_auditory_bipolar_cells	multiple	1	2	1	VSX1 (30813)
378	Craniofacial-deafness-hand_syndrome	multiple	1	2	1	PAX3 (5077)
379	Craniofacial-skeletal-dermatologic_dysplasia	multiple	1	8	4	FGFR2 (2263)
380	Craniofrontonasal_dysplasia	Skeletal	1	0	0	EFNB1 (1947)
382	Craniometaphyseal_dysplasia	Bone	1	1	1	ANKH (56172)
383	Craniosynostosis	Skeletal	2	9	4	FGFR2 (2263), MSX2 (4488)
384	CRASH_syndrome	multiple	1	2	1	L1CAM (3897)
385	Creatine_phosphokinase	Metabolic	1	4	2	CAV3 (859)
388	Creutzfeldt-Jakob_disease	Neurological	2	4	2	PRNP (5621), HLA-DQB1 (3119)
389	Crigler-Najjar_syndrome	multiple	1	2	2	UGT1A1 (54658)
390	Crohn_disease	Gastrointestinal	2	3	2	CARD15 (64127), DLG5 (9231)
391	Crouzon_syndrome	Skeletal	2	15	4	FGFR2 (2263), FGFR3 (2261)
392	Cryptorchidism	Renal	2	0	0	LGR8 (122042), INSL3 (3640)
394	Currarino_syndrome	Skeletal	1	0	0	HLXB9 (3110)
395	Cutis_laxa	Connective_tissue_disorder	3	5	3	ELN (2006), FBLN5 (10516), ATP7A (538)
396	Cyclic_ichthyosis_with_epidermolytic_hyperkeratosis	Dermatological	1	4	1	KRT1 (3848)
397	Cylindromatosis,_familial	Dermatological	1	0	0	CYLD (1540)
398	Cystathioninuria	Metabolic	1	1	1	CTH (1491)
399	Cystic_fibrosis	Respiratory	1	4	2	CFTR (1080)
400	Cystinosis	Renal	1	0	0	CTNS (1497)
401	Cystinuria	Renal	2	1	0	SLC3A1 (6519), SLC7A9 (11136)
402	D-2-hydroxyglutaric_aciduria	Metabolic	1	0	0	MGC25181 (257054)
404	Darier_disease	Dermatological	1	1	1	ATP2A2 (488)
405	D-bifunctional_protein_deficiency	Metabolic	1	0	0	HSD17B4 (3295)
406	Deafness	Ear,Nose,Throat	41	25	7	EYA4 (2070), DIAPH1 (1729), MYO7A (4647), TECTA (7007), COL11A2 (1302), POU4F3 (5459), MYH9 (4627), ACTG1 (71), MYO6 (4646), GJB3 (2707), KCNQ4 (9132), GRHL2 (79977), GJB2 (2706), GJB6 (10804), TMC1 (117531), DSPP (1834), CRYM (1428), MYH14 (79784), DFNA5 (1687), COCH (1690), MYO1A (4640), TMPRSS3 (64699), CDH23 (64072), ATP2B2 (491), STRC (161497), USH1C (10083), OTOA (146183), PCDH15 (65217), CLDN14 (23562), MYO3A (53904), DFNB31 (25861), MYO15A (51168), ESPN (83715), SLC26A4 (5172), SLC26A5 (375611), TMIE (259236), OTOF (9381), JAG1 (182), KIAA1199 (57214), TIMM8A (1678), POU3F4 (5456)
407	Debrisoquine_sensitivity	Metabolic	1	1	1	CYP2D6 (1565)
410	Dejerine-Sottas_disease	multiple	4	3	1	PMP22 (5376), EGR2 (1959), PRX (57716), MPZ (4359)

411	Delayed_sleep_phase_syndrome	Psychiatric	1	0	0	AANAT (15)
412	Dementia	Neurological	6	10	3	ITM2B (9445), PSEN1 (5663), MAPT (4137), SNCA (6622), SNCB (6620), TNF (7124)
413	Dengue_fever,_protection_against	Immunological	1	0	0	CD209 (30835)
414	Dental_anomalies,_isolated	Skeletal	1	1	1	RUNX2 (860)
415	Dentatorubro-pallidoluysian_atrophy	Neurological	1	0	0	ATN1 (1822)
416	Dent_disease	Renal	2	4	2	CLCN5 (1184), OCRL (4952)
417	Dentin_dysplasia,_type_II	Bone	1	2	2	DSPP (1834)
418	Dentinogenesis_imperfecta,_Shields_type	Bone	1	2	2	DSPP (1834)
420	Denys-Drash_syndrome	Renal	1	4	2	WT1 (7490)
422	Dermatofibrosarcoma_protuberans	Cancer	1	2	1	PDGFB (5155)
424	De_Sanctis-Cacchione_syndrome	multiple	1	2	0	ERCC6 (2074)
425	Desmoid_disease,_hereditary	Cancer	1	6	1	APC (324)
426	Desmosterolosis	Metabolic	1	0	0	DHCR24 (1718)
427	Diabetes_mellitus	Endocrine	27	24	11	ABCC8 (6833), TCF1 (6927), SUMO4 (387082), PTPN22 (26191), INSR (3643), PPARG (5468), GCK (2645), GCGR (2642), GPD2 (2820), HNF4A (3172), IRS2 (8660), MAPK8IP1 (9479), NEUROD1 (4760), TCF2 (6928), IRS1 (3667), SLC2A2 (6514), SLC2A4 (6517), CAPN10 (11132), ENPP1 (5167), RETN (56729), PTF1A (256297), KCNJ11 (3767), AKT2 (208), IPF1 (3651), FOXP3 (50943), ACE (1636), VEGF (7422)
430	Diastrophic_dysplasia	Skeletal	1	3	2	SLC26A2 (1836)
432	DiGeorge_syndrome	multiple	1	2	1	TBX1 (6899)
433	Dihydropyrimidinuria	Metabolic	1	0	0	DPYS (1807)
434	Dilated_cardiomyopathy_with_woolly_hair_and_keratoderma	multiple	1	4	2	DSP (1832)
435	Dimethylglycine_dehydrogenase_deficiency	Metabolic	1	0	0	DMGDH (29958)
438	Disordered_steroidogenesis,_isolated	Metabolic	1	2	2	POR (5447)
439	Dissection_of_cervical_arteries	Connective_tissue_disorder	1	4	2	COL1A1 (1277)
440	DNA_topoisomerase	Metabolic	2	0	0	TOP1 (7150), TOP2A (7153)
441	Dopamine_beta-hydroxylase_deficiency	Metabolic	1	1	1	DBH (1621)
443	Dosage-sensitive_sex_reversal	Endocrine	1	1	1	NR0B1 (190)
444	Double-outlet_right_ventricle	Cardiovascular	1	2	1	CFC1 (55997)
445	Down_syndrome	multiple	1	2	2	MTR (4548)
446	Doyne_honeycomb_degeneration_of_retina	Ophthamological	1	0	0	EFEMP1 (2202)
447	Drug_addiction	Psychiatric	1	0	0	FAAH (2166)
449	Duane_syndrome	multiple	1	0	0	SALL4 (57167)
450	Dubin-Johnson_syndrome	Metabolic	1	0	0	ABCC2 (1244)
451	Duchenne_muscular_dystrophy	Muscular	1	2	2	DMD (1756)
452	Dyggve-Melchior-Clausen_disease	multiple	1	1	1	DYM (54808)
453	Dysalbuminemic_hyperthyroxinemia	Hematological	1	1	1	ALB (213)
454	Dysautonomia	Neurological	1	0	0	IKBKAP (8518)
455	Dyschromatosis	Dermatological	1	0	0	ADAR (103)
456	Dyserythropoietic_anemia	Hematological	1	2	2	GATA1 (2623)
457	Dysfibrinogenemia	Hematological	3	4	2	FGA (2243), FGB (2244), FGG (2266)
458	Dyskeratosis	Dermatological	2	2	1	DKC1 (1736), TERC (7012)
459	Dyslexia	Psychiatric	2	0	0	DYX1C1 (161582), KIAA0319 (9856)
460	Dysprothrombinemia	Hematological	1	2	1	F2 (2147)

461	Dyssegmental_dysplasia,_Silverman-Handmaker_type	Neurological	1	1	0	HSPG2 (3339)
462	Dystonia	Neurological	6	2	2	ATP1A3 (478), TOR1A (1861), GCH1 (2643), DRD2 (1813), SGCE (8910), DRD5 (1816)
463	Dystransthyretinemic_hyperthyroxinemia	Hematological	1	3	2	TTR (7276)
465	EBD	Dermatological	1	3	1	COL7A1 (1294)
466	Ectodermal_dysplasia	Dermatological	8	4	3	EDA (1896), GJB6 (10804), EDARADD (128178), IKBKG (8517), NFKBIA (4792), EDAR (10913), PVRL1 (5818), PKP1 (5317)
467	Ectopia	Ophthamological	2	14	5	FBN1 (2200), PAX6 (5080)
468	EEC_syndrome	Skeletal	1	5	1	TP73L (8626)
470	Ehlers-Danlos_syndrome	Connective_tissue_disorder	9	7	3	TNXB (7148), B4GALT7 (11285), COL1A1 (1277), COL5A1 (1289), COL5A2 (1290), COL3A1 (1281), PLOD1 (5351), COL1A2 (1278), ADAMTS2 (9509)
471	Elite_sprint_athletic_performance	Muscular	1	1	1	ACTN3 (89)
472	Elliptocytosis	Hematological	4	6	2	EPB41 (2035), SPTA1 (6708), SPTB (6710), SLC4A1 (6521)
473	Ellis-van_Creveld_syndrome	Skeletal	2	1	1	EVC (2121), EVC2 (132884)
474	Emery-Dreifuss_muscular_dystrophy	Muscular	2	2	2	EMD (2010), LMNA (4000)
475	Emphysema	Respiratory	1	1	1	SERPINA1 (5265)
476	Encephalopathy	Neurological	2	0	0	SERPINI1 (5274), COX10 (1352)
477	Enchondromatosis	Cancer	1	1	1	PTHR1 (5745)
479	Endometrial_carcinoma	Cancer	4	14	3	CDH1 (999), MSH3 (4437), MSH6 (2956), PTEN (5728)
481	Endotoxin_hyporesponsiveness	Immunological	1	0	0	TLR4 (7099)
482	Endplate_acetylcholinesterase_deficiency	Neurological	1	0	0	COLQ (8292)
483	Enhanced_S-cone_syndrome	Ophthamological	1	1	1	NR2E3 (10002)
484	Enlarged_vestibular_aqueduct	Ear,Nose,Throat	1	2	1	SLC26A4 (5172)
485	Enolase_deficiency	Metabolic	1	0	0	ENO3 (2027)
487	Enterokinase_deficiency	Gastrointestinal	1	0	0	PRSS7 (5651)
491	Eosinophil_peroxidase_deficiency	Hematological	1	0	0	EPX (8288)
492	Epidermodysplasia_verruciformis	Dermatological	2	0	0	EVER1 (11322), EVER2 (147138)
493	Epidermolysis_bullosa	Dermatological	11	9	3	COL7A1 (1294), COL17A1 (1308), ITGB4 (3691), LAMA3 (3909), LAMB3 (3914), LAMC2 (3918), ITGA6 (3655), DSP (1832), KRT14 (3861), KRT5 (3852), PLEC1 (5339)
494	Epidermolytic_hyperkeratosis	Dermatological	3	5	1	KRT10 (3858), KRT1 (3848), KRT9 (3857)
495	Epilepsy	Neurological	17	5	3	KCNQ2 (3785), KCNQ3 (3786), GABRG2 (2566), CLCN2 (1181), JRK (8629), CACNB4 (785), SCN1A (6323), ME2 (4200), GABRA1 (2554), EPM2A (7957), NHLRC1 (378884), SLC25A22 (79751), CHRNA4 (1137), CHRNB2 (1141), LGI1 (9211), CSTB (1476), SYN1 (6853)
496	Epiphyseal_dysplasia	Bone	6	7	4	COMP (1311), SLC26A2 (1836), COL9A3 (1299), MATN3 (4148), COL9A1 (1297), COL9A2 (1298)
497	Episodic_ataxia	Neurological	2	3	1	KCNA1 (3736), CACNA1A (773)
498	Epithelial_ovarian_cancer,_somatic	Cancer	1	0	0	OPCML (4978)
500	Epstein_syndrome	Hematological	1	4	2	MYH9 (4627)
502	Erythermalgia	Neurological	1	0	0	SCN9A (6335)
504	Erythremias	Hematological	2	5	1	HBA1 (3039), HBB (3043)
505	Erythrocytosis	Hematological	2	4	1	HBA2 (3040), EPOR (2057)
507	Erythrokeratoderma	Dermatological	3	2	1	LOR (4014), GJB3 (2707), GJB4 (127534)
508	Esophageal_cancer	Cancer	4	2	2	TGFBR2 (7048), RNF6 (6049), LZTS1 (11178), WWOX (51741)
509	Estrogen_resistance	Endocrine	1	2	2	ESR1 (2099)
510	Ethylmalonic_encephalopathy	Metabolic	1	0	0	ETHE1 (23474)

511	Ewing_sarcoma	Cancer	1	1	1	EWSR1 (2130)
512	Exertional_myoglobinuria_due_to_deficiency_of_LDH-A	Metabolic	1	0	0	LDHA (3939)
514	Exostoses	Bone	2	1	1	EXT1 (2131), EXT2 (2132)
515	Exudative_vitreoretinopathy	Ophthamological	3	8	4	FZD4 (8322), LRP5 (4041), NDP (4693)
516	Eye_anomalies	Ophthamological	1	9	3	PAX6 (5080)
517	Ezetimibe,_nonresponse_to	Unclassified	1	0	0	NPC1L1 (29881)
518	Fabry_disease	Metabolic	1	0	0	GLA (2717)
519	Facioscapulohumeral_muscular_dystrophy	Muscular	1	0	0	FSHMD1A (2489)
520	Factor_x_deficiency	Hematological	8	4	4	CFH (3075), MCFD2 (90411), F7 (2155), F10 (2159), F11 (2160), F12 (2161), F13A1 (2162), F13B (2165)
522	Familial_Mediterranean_fever	Immunological	1	0	0	MEFV (4210)
523	Fanconi_anemia	multiple	11	4	1	FANCA (2175), FANCB (2187), FANCC (2176), BRCA2 (675), FANCD2 (2177), FANCE (2178), FANCF (2188), FANCG (2189), BRIP1 (83990), FANCL (55120), FANCM (57697)
524	Fanconi-Bickel_syndrome	Metabolic	1	1	1	SLC2A2 (6514)
526	Farber_lipogranulomatosis	Metabolic	1	0	0	ASAH1 (427)
527	Fatty_liver,_acute,_of_pregnancy	Metabolic	1	3	1	HADHA (3030)
528	Favism	Metabolic	1	2	2	G6PD (2539)
530	Fechtner_syndrome	multiple	1	4	2	MYH9 (4627)
531	Feingold_syndrome	multiple	1	0	0	MYCN (4613)
532	Fertile_eunuch_syndrome	Endocrine	1	1	1	GNRHR (2798)
535	Fibrocalculous_pancreatic_diabetes	Gastrointestinal	1	2	1	SPINK1 (6690)
537	Fibromatosisl	Connective_tissue_disorder	2	1	0	SOS1 (6654), ANTXR2 (118429)
538	Fibrosis	Ophthamological	2	0	0	KIF21A (55605), PHOX2A (401)
539	Fibular_hypoplasia_and_complex_brachydactyly	Skeletal	1	3	1	GDF5 (8200)
540	Fish-eye_disease	Metabolic	1	1	1	LCAT (3931)
541	Fish-odor_syndrome	Metabolic	1	0	0	FMO3 (2328)
542	Fitzgerald_factor_deficiency	Hematological	1	2	1	KNG1 (3827)
544	Fluorouracil_toxicity,_sensitivity_to	Metabolic	1	1	1	DPYD (1806)
545	Focal_cortical_dysplasia,_Taylor_balloon_cell_type	Developmental	1	2	1	TSC1 (7248)
546	Follicle-stimulating_hormone_deficiency,_isolated	Endocrine	1	0	0	FSHB (2488)
547	Forebrain_defects	Neurological	1	0	0	TDGF1 (6997)
548	Foveal_hypoplasia	Ophthamological	1	9	3	PAX6 (5080)
549	Foveomacular_dystrophy,_adult-onset,_with_choroidal_neovascularization	Ophthamological	1	3	1	RDS (5961)
550	Fragile_X_syndrome	Neurological	1	0	0	FMR1 (2332)
551	Fraser_syndrome	multiple	2	0	0	FRAS1 (80144), FREM2 (341640)
552	Frasier_syndrome	multiple	1	4	2	WT1 (7490)
553	Friedreich_ataxia	Neurological	1	0	0	FXN (2395)
554	Frontometaphyseal_dysplasia	Skeletal	1	3	2	FLNA (2316)
555	Fructose-bisphosphatase_deficiency	Metabolic	1	0	0	FBP1 (2203)
556	Fructose_intolerance	Metabolic	1	0	0	ALDOB (229)
557	Fructosuria	Metabolic	1	0	0	KHK (3795)
558	Fuchs_endothelial_corneal_dystrophy	Ophthamological	1	1	1	COL8A2 (1296)
559	Fucosidosis	Metabolic	1	0	0	FUCA1 (2517)
560	Fucosyltransferase-6_deficiency	Metabolic	1	0	0	FUT6 (2528)
561	Fumarase_deficiency	Metabolic	1	2	1	FH (2271)
562	Fundus_albipunctatus	Ophthamological	3	6	1	RDH5 (5959), RLBP1 (6017), ABCA4 (24)

563	G6PD_deficiency	Metabolic	1	2	2	G6PD (2539)
564	GABA-transaminase_deficiency	Metabolic	1	0	0	ABAT (18)
565	Galactokinase_deficiency	Metabolic	1	0	0	GALK1 (2584)
566	Galactose_epimerase_deficiency	Metabolic	1	0	0	GALE (2582)
567	Galactosemia	Metabolic	1	0	0	GALT (2592)
568	Galactosialidosis	Metabolic	1	0	0	PPGB (5476)
570	GAMT_deficiency	Metabolic	1	0	0	GAMT (2593)
571	Gardner_syndrome	Cancer	1	6	1	APC (324)
572	Gastric_cancer	Cancer	10	27	7	APC (324), IRF1 (3659), CDH1 (999), IL1B (3553), IL1RN (3557), CASP10 (843), ERBB2 (2064), FGFR2 (2263), KLF6 (1316), MUTYH (4595)
574	Gastrointestinal_stromal_tumor	Cancer	2	6	4	KIT (3815), PDGFRA (5156)
575	Gaucher_disease	Metabolic	2	2	2	GBA (2629), PSAP (5660)
576	Gaze_palsy	Neurological	1	0	0	ROBO3 (64221)
578	Generalized_epilepsy	Neurological	2	0	0	KCNMA1 (3778), SCN1B (6324)
580	Germ_cell_tumor	Cancer	2	9	3	BCL10 (8915), KIT (3815)
581	Gerstmann-Straussler_disease	Neurological	1	4	2	PRNP (5621)
582	Giant_axonal_neuropathy	Neurological	1	0	0	GAN (8139)
583	Giant-cell_fibroblastoma	Cancer	1	2	1	PDGFB (5155)
584	Giant_platelet_disorder,_isolated	Hematological	1	1	1	GP1BB (2812)
586	Gilbert_syndrome	Metabolic	1	2	1	UGT1A1 (54658)
587	Gitelman_syndrome	Renal	1	0	0	SLC12A3 (6559)
588	Glanzmann_thrombasthenia	Hematological	2	0	0	ITGA2B (3674), ITGB3 (3690)
589	Glaucoma	Ophthamological	4	2	2	MYOC (4653), OPTN (10133), CYP1B1 (1545), OPA1 (4976)
590	Glioblastoma	Cancer	5	14	5	MSH2 (4436), DMBT1 (1755), ERBB2 (2064), LGI1 (9211), PPARG (5468)
594	Glomerulocystic_kidney_disease,_hypoplastic	Renal	1	2	1	TCF2 (6928)
596	Glomerulosclerosis	Renal	3	0	0	ACTN4 (81), TRPC6 (7225), CD2AP (23607)
597	Glomuvenous_malformations	Cardiovascular	1	0	0	GLMN (11146)
598	Glucocorticoid_deficiency	Endocrine	2	0	0	MRAP (56246), MC2R (4158)
599	Glucose/galactose_malabsorption	Metabolic	1	0	0	SLC5A1 (6523)
600	Glucose_transport_defect,_blood-brain_barrier	Metabolic	1	0	0	SLC2A1 (6513)
601	Glucosidase_I_deficiency	Metabolic	1	0	0	GCS1 (7841)
602	Glutamate_formiminotransferase_deficiency	Metabolic	1	0	0	FTCD (10841)
603	Glutaricaciduria	Metabolic	4	0	0	GCDH (2639), ETFA (2108), ETFB (2109), ETFDH (2110)
604	Glutathione_synthetase_deficiency	Metabolic	1	1	1	GSS (2937)
607	Glycerol_kinase_deficiency	Metabolic	1	0	0	GK (2710)
608	Glycine_encephalopathy	Metabolic	4	0	0	AMT (275), GCSH (2653), GLDC (2731), GNMT (27232)
609	Glycogenosis	Metabolic	2	0	0	PHKG2 (5261), PHKA2 (5256)
610	Glycogen_storage_disease	Metabolic	9	0	0	G6PC (2538), SLC37A4 (2542), GAA (2548), LAMP2 (3920), AGL (178), GBE1 (2632), GYS2 (2998), PYGL (5836), PFKM (5213)
614	GM-gangliosidosis	Metabolic	3	3	1	GLB1 (2720), GM2A (2760), HEXA (3073)
615	Gnthodiaphyseal_dysplasia	Bone	1	0	0	TMEM16E (203859)
617	Goiter	Endocrine	2	5	1	TPO (7173), TG (7038)
618	Goldberg-Shprintzen_megacolon_syndrome	multiple	1	0	0	KIAA1279 (26128)
619	Gonadal_dysgenesis	Endocrine	2	0	0	DHH (50846), SRY (6736)
622	GRACILE_syndrome	Metabolic	1	2	1	BCS1L (617)
623	Graft-versus-host_disease	Immunological	1	2	2	IL10 (3586)
624	Graves_disease	Endocrine	2	1	1	CTLA4 (1493), GC (2638)

625	Greenberg_dysplasia	Skeletal	1	1	1	LBR (3930)
626	Greig_cephalopolysyndactyly_syndrome	Skeletal	1	3	1	GLI3 (2737)
627	Griscelli_syndrome	Dermatological	3	0	0	MYO5A (4644), RAB27A (5873), MLPH (79083)
628	Growth_hormone	Endocrine	2	1	1	GHRHR (2692), STAT5B (6777)
630	Guttmacher_syndrome	multiple	1	1	0	HOXA13 (3209)
632	Gyrate_atrophy_of_choroid_and_retina_with_ornithinemia,_B6_responsive_or_unresponsive	Metabolic	1	0	0	OAT (4942)
633	Hailey-Hailey_disease	Dermatological	1	0	0	ATP2C1 (27032)
634	Haim-Munk_syndrome	multiple	1	2	1	CTSC (1075)
638	Hand-foot-uterus_syndrome	multiple	1	1	0	HOXA13 (3209)
639	Harderoporphyrinuria	Metabolic	1	1	1	CPOX (1371)
640	HARP_syndrome	Metabolic	1	1	1	PANK2 (80025)
641	Hartnup_disorder	Metabolic	1	0	0	SLC6A19 (340024)
643	Hay-Wells_syndrome	multiple	1	5	1	TP73L (8626)
644	HDL_cholesterol_level_QTL	Metabolic	2	5	4	ABCA1 (19), ESR1 (2099)
646	Hearing_loss,_low-frequency_sensorineural	Ear,Nose,Throat	1	1	1	WFS1 (7466)
647	Heart_block	Cardiovascular	1	4	1	SCN5A (6331)
648	Heinz_body_anemia	Hematological	3	8	1	HBA2 (3040), HBA1 (3039), HBB (3043)
649	HELLP_syndrome	Metabolic	1	3	1	HADHA (3030)
650	Hemangioblastoma,_cerebellar	Cancer	1	4	2	VHL (7428)
651	Hemangioma	Cancer	2	1	1	FLT4 (2324), KDR (3791)
652	Hematopoiesis,_cyclic	Hematological	1	1	1	ELA2 (1991)
653	Hematuria,_familial_benign	Renal	1	1	1	COL4A4 (1286)
654	Heme_oxygenase-1_deficiency	Metabolic	1	0	0	HMOX1 (3162)
656	Hemiplegic_migraine,_familial	Neurological	1	3	1	CACNA1A (773)
657	Hemochromatosis	Metabolic	5	1	1	HFE (3077), HAMP (57817), HFE2 (148738), TFR2 (7036), SLC40A1 (30061)
659	Hemoglobin_H_disease	Hematological	1	4	1	HBA2 (3040)
660	Hemolytic_anemia	Hematological	10	8	3	AK1 (203), SLC4A1 (6521), BPGM (669), G6PD (2539), GCLC (2729), GPI (2821), GSS (2937), HK1 (3098), PGK1 (5230), TPI1 (7167)
661	Hemolytic-uremic_syndrome	Hematological	1	3	3	CFH (3075)
662	Hemophagocytic_lymphohistiocytosis	Hematological	2	0	0	PRF1 (5551), UNC13D (201294)
663	Hemophilia	Hematological	2	1	1	F8 (2157), F9 (2158)
664	Hemorrhagic_diathesis	Hematological	2	3	2	SERPINA1 (5265), F5 (2153)
665	Hemosiderosis,_systemic,_due_to_aceruloplasminemia	Hematological	1	2	2	CP (1356)
666	Hepatic_failure,_early_onset,_and_neurologic_disorder	Gastrointestinal	1	0	0	SCO1 (6341)
668	Hepatic_adenoma	Cancer	8	16	3	TCF1 (6927), CTNNB1 (1499), PDGFRL (5157), AXIN1 (8312), TP53 (7157), IGF2R (3482), MET (4233), CASP8 (841)
669	Hereditary_hemorrhagic_telangiectasia	Cardiovascular	2	0	0	ENG (2022), ACVRL1 (94)
670	Hermansky-Pudlak_syndrome	multiple	7	0	0	HPS1 (3257), HPS3 (84343), HPS4 (89781), HPS5 (11234), HPS6 (79803), AP3B1 (8546), DTNBP1 (84062)
675	Heterotaxy	multiple	2	2	2	CFC1 (55997), ZIC3 (7547)
676	Heterotopia	Neurological	1	3	1	FLNA (2316)
677	Hex_A_pseudodeficiency	Metabolic	1	2	1	HEXA (3073)
679	High-molecular-weight_kininogen_deficiency	Hematological	1	2	1	KNG1 (3827)
681	Hirschsprung_disease	Gastrointestinal	7	9	4	EDN3 (1908), GDNF (2668), NRTN (4902), RET (5979), EDNRB (1910), ECE1 (1889), PHOX2B (8929)

682	Histidinemia	Metabolic	1	0	0	HAL (3034)
683	Histiocytoma	Cancer	1	10	1	TP53 (7157)
684	HIV	Immunological	4	2	2	CCL5 (6352), IL10 (3586), CCR2 (1231), CCR5 (1234)
686	HMG-CoA_deficiency	Metabolic	2	0	0	HMGCL (3155), HMGCS2 (3158)
688	Holocarboxylase_synthetase_deficiency	Metabolic	1	0	0	HLCS (3141)
689	Holoprosencephaly	Developmental	5	4	3	SIX3 (6496), SHH (6469), TGIF (7050), ZIC2 (7546), PTCH (5727)
696	Holt-Oram_syndrome	Developmental	1	0	0	TBX5 (6910)
697	Homocysteine_plasma_level	Metabolic	1	1	1	CTH (1491)
698	Homocystinuria	Metabolic	2	1	1	CBS (875), MTHFR (4524)
699	Homocystinuria-megaloblastic_anemia,_cbl_E_type	Metabolic	1	1	1	MTRR (4552)
701	Homozygous_2p16_deletion_syndrome	multiple	1	1	1	SLC3A1 (6519)
702	Hoyeraal-Hreidarsson_syndrome	multiple	1	1	1	DKC1 (1736)
703	HPFH	Hematological	3	5	1	HBB (3043), HBG1 (3047), HBG2 (3048)
704	HPRT-related_gout	Metabolic	1	1	1	HPRT1 (3251)
705	H._pylori_infection	Immunological	1	3	2	IFNGR1 (3459)
708	Huntington_disease	Neurological	4	6	2	HD (3064), PRNP (5621), JPH3 (57338), TBP (6908)
710	Hyalinosis,_infantile_systemic	multiple	1	1	1	ANTXR2 (118429)
712	Hydrocephalus	Neurological	1	2	0	L1CAM (3897)
716	Hyperalphalipoproteinemia	Metabolic	1	2	2	CETP (1071)
717	Hyperammonemia	Metabolic	1	0	0	ALDH18A1 (5832)
718	Hyperandrogenism	Endocrine	1	1	1	CYP21A2 (1589)
719	Hyperapobetalipoproteinemia	Metabolic	1	0	0	PPARA (5465)
720	Hyperbilirubinemia	Gastrointestinal	1	2	1	UGT1A1 (54658)
721	Hypercalciuria	Renal	1	0	0	SAC (55811)
723	Hypercholanemia	Gastrointestinal	3	1	1	BAAT (570), EPHX1 (2052), TJP2 (9414)
724	Hypercholesterolemia	Metabolic	8	3	1	APOB (338), LDLR (3949), PCSK9 (255738), LDLRAP1 (26119), EPHX2 (2053), APOA2 (336), C7orf16 (10842), ITIH4 (3700)
725	Hyperekplexia	Neurological	2	1	1	GLRA1 (2741), GLRB (2743)
726	Hypereosinophilic_syndrome	Hematological	1	1	1	PDGFRA (5156)
727	Hyperferritinemia-cataract_syndrome	Ophthamological	1	1	1	FTL (2512)
728	Hyper-IgD_syndrome	Immunological	1	1	1	MVK (4598)
731	Hyperinsulinism	Metabolic	1	2	1	GCK (2645)
732	Hyperinsulinism-hyperammonemia_syndrome	Metabolic	1	0	0	GLUD1 (2746)
733	Hyperkalemic_periodic_paralysis	Neurological	1	5	2	SCN4A (6329)
734	Hyperkeratotic_cutaneous_capillary-venous_malformations_associated_with_cerebral_capillary_malformations	Neurological	1	2	2	KRIT1 (889)
736	Hyperlipidemia	Metabolic	1	0	0	USF1 (7391)
737	Hyperlipoproteinemia	Metabolic	2	3	3	APOC2 (344), APOE (348)
738	Hyperlysinemia	Metabolic	1	0	0	AASS (10157)
739	Hypermethioninemia	Metabolic	2	1	1	MAT1A (4143), AHCY (191)
740	Hyperornithinemia-hyperammonemia-homocitrullinemia_syndrome	Metabolic	1	0	0	SLC25A15 (10166)
741	Hyperostosis,_endosteal	Bone	1	6	3	LRP5 (4041)
742	Hyperoxaluria	Metabolic	2	0	0	AGXT (189), GRHPR (9380)
743	Hyperparathyroidism	Endocrine	3	9	2	MEN1 (4221), CDC73 (79577), CASR (846)
746	Hyperphenylalaninemia	Metabolic	2	1	1	PCBD1 (5092), PAH (5053)
748	Hyperproinsulinemia	Endocrine	1	1	1	INS (3630)
749	Hyperprolinemia	Metabolic	2	1	1	PRODH (5625), ALDH4A1 (8659)

750	Hyperproreninemia	Cardiovascular	1	1	1	REN (5972)
751	Hyperprothrombinemia	Hematological	1	2	1	F2 (2147)
752	Hypertension	Cardiovascular	12	9	7	KCNMB1 (3779), NR3C2 (4306), AGTR1 (185), PTGIS (5740), ADD1 (118), AGT (183), ECE1 (1889), GNB3 (2784), RETN (56729), HSD11B2 (3291), NOS3 (4846), CYP3A5 (1577)
754	Hyperthroidism	Endocrine	1	2	2	TSHR (7253)
755	Hyperthyroidism	Endocrine	1	3	1	TPO (7173)
757	Hypertriglyceridemia	Metabolic	4	5	3	APOA1 (335), APOA5 (116519), LIPI (149998), RP1 (6101)
758	Hypertrypsinemia	Gastrointestinal	1	4	3	CFTR (1080)
759	Hyperuricemic_nephropathy	Renal	1	1	1	UMOD (7369)
761	Hypoaldosteronism	Metabolic	1	2	2	CYP11B2 (1585)
762	Hypoalphalipoproteinemia	Metabolic	1	4	3	APOA1 (335)
763	Hypobetalipoproteinemia	Metabolic	1	2	1	APOB (338)
764	Hypocalcemia	Endocrine	1	2	1	CASR (846)
765	Hypocalciuric_hypercalcemia	Endocrine	1	2	1	CASR (846)
766	Hypoceruloplasminemia	Metabolic	1	2	2	CP (1356)
767	Hypochondroplasia	Skeletal	1	7	2	FGFR3 (2261)
768	Hypochromic_microcytic_anemia	Hematological	1	4	1	HBA2 (3040)
769	Hypodontia	Skeletal	2	3	2	PAX9 (5083), MSX1 (4487)
770	Hypofibrinogenemia	Hematological	1	2	1	FGG (2266)
771	Hypoglobulinemia_and_absent_B_cells	Immunological	1	0	0	BLNK (29760)
772	Hypoglycemia	Metabolic	1	1	1	ABCC8 (6833)
773	Hypogonadism,_hypergonadotropic	Endocrine	1	0	0	LHB (3972)
774	Hypogonadotropic_hypogonadism	Endocrine	4	5	4	GPR54 (84634), NELF (26012), GNRHR (2798), LHCGR (3973)
775	Hypohaptoglobinemia	Hematological	1	1	1	HP (3240)
776	Hypokalemic_periodic_paralysis	Renal	3	7	3	CACNA1S (779), KCNE3 (10008), SCN4A (6329)
777	Hypolactasia,_adult_type	Metabolic	2	1	1	LCT (3938), MCM6 (4175)
778	Hypomagnesemia	Renal	3	0	0	FXYD2 (486), CLDN16 (10686), TRPM6 (140803)
779	Hypoparathyroidism	Endocrine	2	0	0	PTH (5741), GCM2 (9247)
780	Hypoparathyroidism-retardation-dysmorphism_syndrome	Endocrine	1	1	0	TBCE (6905)
781	Hypoparathyroidism	Endocrine	1	0	0	GATA3 (2625)
782	Hypophosphatasia	Metabolic	1	1	1	ALPL (249)
783	Hypophosphatemia	Metabolic	2	3	1	CLCN5 (1184), PHEX (5251)
784	Hypophosphatemic_rickets	Bone	1	1	1	FGF23 (8074)
785	Hypoplastic_enamel_pitting,_localized	Connective_tissue_disorder	1	1	1	ENAM (10117)
786	Hypoprothrombinemia	Hematological	1	2	1	F2 (2147)
787	Hypothyroidism	Endocrine	7	5	2	CTLA4 (1493), SLC5A5 (6528), DUOX2 (50506), PAX8 (7849), TSHR (7253), TG (7038), TSHB (7252)
788	Hypotrichosis	Dermatological	4	0	0	CDH3 (1001), DSG4 (147409), SOX18 (54345), CDSN (1041)
791	Hypouricemia	Renal	1	0	0	SLC22A12 (116085)
792	Hystrix-like_ichthyosis_with_deafness	multiple	1	5	2	GJB2 (2706)
793	Ichthyosiform_erythroderma	Dermatological	3	2	1	TGM1 (7051), ALOX12B (242), ALOXE3 (59344)
794	Ichthyosis	Dermatological	7	8	2	KRT2A (3849), ICHTHYIN (348938), KRT10 (3858), ABCA12 (26154), KRT1 (3848), TGM1 (7051), STS (412)
795	ICOS_deficiency	Immunological	1	0	0	ICOS (29851)
797	IgE_levels_QTL	Immunological	1	1	1	PHF11 (51131)
798	IgG2_deficiency	Immunological	1	0	0	IGHG2 (3501)
799	IgG_receptor_I,_phagocytic,_familial_deficiency_of	Immunological	1	0	0	FCGR1A (2209)

801	Immunodeficiency-centromeric_instability-facial_anomalies_syndrome	multiple	1	0	0	DNMT3B (1789)
802	Immunodeficiency	Immunological	6	0	0	CD3E (916), CD3G (917), AICDA (57379), CD40 (958), UNG (7374), CD40LG (959)
803	Immunodysregulation,_polyendocrinopathy,_and_enteropathy,_X-linked	multiple	1	1	1	FOXP3 (50943)
804	Immunoglobulin_A_deficiency	Immunological	1	0	0	TNFRSF13B (23495)
805	Inclusion_body_myopathy	Muscular	3	2	2	MYH2 (4620), GNE (10020), VCP (7415)
806	Incontinentia_pigmenti	Dermatological	1	1	1	IKBKG (8517)
807	Infantile_spasm_syndrome	Neurological	1	5	1	ARX (170302)
809	Infundibular_hypoplasia_and_hypopituitarism	Endocrine	1	1	1	SOX3 (6658)
810	Inosine_triphosphatase_deficiency	Metabolic	1	0	0	ITPA (3704)
811	Insensitivity_to_pain	Neurological	1	1	1	NTRK1 (4914)
812	Insomnia	Psychiatric	2	4	1	GABRB3 (2562), PRNP (5621)
814	Insulin_resistance	Metabolic	3	4	4	PPARG (5468), PPP1R3A (5506), PTPN1 (5770)
816	Interleukin-2_receptor,_alpha_chain,_deficiency_of	Immunological	1	0	0	IL2RA (3559)
817	Intervertebral_disc_disease	Neurological	2	1	1	COL9A2 (1298), COL9A3 (1299)
819	Intrauterine_and_postnatal_growth_retardation	Developmental	2	0	0	IGF1R (3480), IGF2 (3481)
820	Intrinsic_factor_deficiency	Hematological	1	0	0	GIF (2694)
821	IRAK4_deficiency	Immunological	1	0	0	IRAK4 (51135)
822	Iridogoniodysgenesis	Ophthamological	2	5	1	FOXC1 (2296), PITX2 (5308)
823	Iris_hypoplasia_and_glaucoma	Ophthamological	1	4	1	FOXC1 (2296)
824	Iron_overload/deficiency	Hematological	2	1	1	TF (7018), FTH1 (2495)
825	Isolated_growth_hormone_deficiency	Endocrine	1	0	0	GH1 (2688)
826	Isovaleric_acidemia	Metabolic	1	0	0	IVD (3712)
827	Jackson-Weiss_syndrome	Skeletal	2	9	4	FGFR1 (2260), FGFR2 (2263)
829	Jensen_syndrome	Neurological	1	2	2	TIMM8A (1678)
830	Jervell_and_Lange-Nielsen_syndrome	multiple	2	2	1	KCNE1 (3753), KCNQ1 (3784)
831	Joubert_syndrome	multiple	2	2	1	NPHP1 (4867), AHI1 (54806)
832	Juberg-Marsidi_syndrome	multiple	1	4	1	ATRX (546)
833	Juvenile_polyposis/hereditary_hemorrhagic_telangiectasia_syndrome	Cancer	1	2	1	SMAD4 (4089)
835	Kallikrein,_decreased_urinary_activity_of	Renal	1	0	0	KLK1 (3816)
836	Kallmann_syndrome	multiple	2	2	1	FGFR1 (2260), KAL1 (3730)
837	Kanzaki_disease	Metabolic	1	1	1	NAGA (4668)
838	Kaposi_sarcoma	Immunological	1	0	0	IL6 (3569)
839	Kappa_light_chain_deficiency	Immunological	1	0	0	IGKC (3514)
840	Kartagener_syndrome	multiple	3	2	2	DNAH11 (8701), DNAH5 (1767), DNAI1 (27019)
841	Kenny-Caffey_syndrome-1	multiple	1	1	1	TBCE (6905)
842	Keratitis	Ophthamological	1	9	3	PAX6 (5080)
843	Keratitis-ichthyosis-deafness_syndrome	multiple	1	5	2	GJB2 (2706)
844	Keratoconus	Ophthamological	1	2	1	VSX1 (30813)
845	Keratoderma,_palmoplantar,_with_deafness	Dermatological	1	5	1	GJB2 (2706)
847	Keratosis_palmoplantaria_striata	Dermatological	4	8	2	SAT (6303), KRT1 (3848), DSG1 (1828), DSP (1832)
848	Ketoacidosis	Metabolic	1	0	0	OXCT1 (5019)
849	Keutel_syndrome	multiple	1	0	0	MGP (4256)
850	Kindler_syndrome	Dermatological	1	0	0	C20orf42 (55612)
851	Kininogen_deficiency	Hematological	1	2	1	KNG1 (3827)
853	Klippel-Trenaunay_syndrome	multiple	1	0	0	AGGF1 (55109)
854	Kniest_dysplasia	Skeletal	1	5	4	COL2A1 (1280)

855	Knobloch_syndrome	multiple	1	0	0	COL18A1 (80781)
856	Krabbe_disease	Neurological	1	0	0	GALC (2581)
857	L-2-hydroxyglutaric_aciduria	Metabolic	1	0	0	L2HGDH (79944)
858	Lactate_dehydrogenase-B_deficiency	Metabolic	1	0	0	LDHB (3945)
859	Lacticacidemia_due_to_PDX1_deficiency	Metabolic	1	0	0	PDHX (8050)
862	Langer_mesomelic_dysplasia	Skeletal	1	2	1	SHOX (6473)
863	Laron_dwarfism	Skeletal	1	1	1	GHR (2690)
865	Larson_syndrome	Skeletal	1	2	2	FLNB (2317)
868	Laryngoonychocutaneous_syndrome	multiple	1	1	1	LAMA3 (3909)
869	Lathosterolosis	Metabolic	1	0	0	SC5DL (6309)
870	LCHAD_deficiency	Metabolic	1	3	1	HADHA (3030)
871	Lead_poisoning	Metabolic	1	1	1	ALAD (210)
872	Leanness,_inherited	Nutritional	1	1	1	AGRP (181)
873	Leber_congenital_amaurosis	Ophthamological	7	3	1	CRB1 (23418), CRX (1406), RPGRIP1 (57096), RPE65 (6121), AIPL1 (23746), GUCY2D (3000), RDH12 (145226)
874	Left-right_axis_malformations	Developmental	2	0	0	ACVR2B (93), LEFTY2 (7044)
875	Left_ventricular_noncompaction	Cardiovascular	1	0	0	DTNA (1837)
876	Legionaire_disease	Immunological	1	0	0	TLR5 (7100)
877	Leigh_syndrome	Neurological	12	6	2	BCS1L (617), GCSL (2654), NDUFS3 (4722), NDUFS4 (4724), NDUFS7 (374291), NDUFS8 (4728), NDUFV1 (4723), SDHA (6389), SURF1 (6834), COX15 (1355), LRPPRC (10128), PDHA1 (5160)
878	Leiomyomatosis	Cancer	2	2	2	FH (2271), COL4A6 (1288)
880	Leopard_syndrome	multiple	1	2	2	PTPN11 (5781)
881	Leprechaunism	Developmental	1	2	1	INSR (3643)
882	Leprosy	Immunological	1	2	2	PARK2 (5071)
883	Leri-Weill_dyschondrosteosis	Skeletal	1	2	1	SHOX (6473)
884	Lesch-Nyhan_syndrome,	Metabolic	1	1	1	HPRT1 (3251)
886	Leukemia	Cancer	37	26	8	TAL1 (6886), TAL2 (6887), FLT3 (2322), NBN (4683), ZNFN1A1 (10320), HOXD4 (3233), BCR (613), ARNT (405), KRAS (3845), GMPS (8833), MLLT10 (8028), ARHGEF12 (23365), PICALM (8301), CEBPA (1050), CHIC2 (26511), KIT (3815), LPP (4026), NPM1 (4869), NUP214 (8021), RUNX1 (861), WHSC1L1 (54904), MLLT11 (10962), NUMA1 (4926), ZBTB16 (7704), PML (5371), STAT5B (6777), ARL11 (115761), P2RX7 (5027), ARHGAP26 (23092), NF1 (4763), PTPN11 (5781), BCL2 (596), CCND1 (595), TRA@ (6955), GATA1 (2623), ABL1 (25), NQO1 (1728)
889	Leukocyte_adhesion_deficiency	Immunological	1	0	0	ITGB2 (3689)
891	Leukoencephalopathy_with_vanishing_white_matter	Neurological	5	1	1	EIF2B1 (1967), EIF2B2 (8892), EIF2B3 (8891), EIF2B5 (8893), EIF2B4 (8890)
894	Leydig_cell_adenoma	Cancer	1	4	3	LHCGR (3973)
895	Lhermitte-Duclos_syndrome	Cancer	1	8	2	PTEN (5728)
896	Liddle_syndrome	Renal	2	1	1	SCNN1B (6338), SCNN1G (6340)
897	Li_Fraumeni_syndrome	Cancer	1	3	1	CDKN2A (1029)
898	Li-Fraumeni_syndrome	Cancer	2	11	1	TP53 (7157), CHEK2 (11200)
899	LIG4_syndrome	multiple	1	1	1	LIG4 (3981)
901	Limb-mammary_syndrome	multiple	1	5	1	TP73L (8626)
902	Lipodystrophy	Metabolic	5	8	7	AGPAT2 (10555), BSCL2 (26580), LMNA (4000), PPARG (5468), PPARGC1A (10891)

903	Lipoid_adrenal_hyperplasia	Endocrine	2	0	0	STAR (6770), CYP11A1 (1583)
904	Lipoma	Cancer	3	10	2	HMGA2 (8091), LPP (4026), MEN1 (4221)
906	Lipoprotein_lipase_deficiency	Metabolic	1	2	1	LPL (4023)
908	Lissencephaly	Neurological	4	6	1	PAFAH1B1 (5048), RELN (5649), DCX (1641), ARX (170302)
909	Listeria_monocytogenes	Immunological	1	4	1	CDH1 (999)
910	Loeys-Dietz_syndrome	Connective_tissue_disorder	2	2	1	TGFBR1 (7046), TGFBR2 (7048)
911	Longevity	Developmental	2	2	1	CETP (1071), AKAP10 (11216)
912	Long_QT_syndrome	Cardiovascular	7	7	1	KCNQ1 (3784), KCNH2 (3757), SCN5A (6331), ANK2 (287), KCNE1 (3753), KCNE2 (9992), KCNJ2 (3759)
913	Lower_motor_neuron_disease,_progressive,_without_sensory_symptoms	Neurological	1	1	1	DCTN1 (1639)
914	Lowe_syndrome	Metabolic	1	1	1	OCRL (4952)
915	Low_renin_hypertension	Cardiovascular	1	2	2	CYP11B2 (1585)
916	LPA_deficiency,_congenital	Metabolic	1	0	0	LPA (4018)
917	Lumbar_disc_disease	Skeletal	1	0	0	CILP (8483)
918	Lung_cancer	Cancer	4	6	1	KRAS (3845), PPP2R1B (5519), SLC22A18 (5002), MAP3K8 (1326)
919	Lupus_erythematosus	Connective_tissue_disorder	1	0	0	FCGR2A (2212)
920	Lymphangioleiomyomatosis	Respiratory	2	2	1	TSC1 (7248), TSC2 (7249)
921	Lymphedema	Hematological	2	2	2	FOXC2 (2303), FLT4 (2324)
925	Lymphoma	Cancer	10	14	2	RAP1GDS1 (5910), ATM (472), BCL8 (606), BCL10 (8915), RAD54B (25788), RAD54L (8438), FCGR2B (2213), MAD1L1 (8379), MSH2 (4436), SH2D1A (4068)
930	Lynch_cancer_family_syndrome_II	Cancer	1	7	1	MSH2 (4436)
931	Lysinuric_protein_intolerance	Metabolic	1	0	0	SLC7A7 (9056)
933	Machado-Joseph_disease	Neurological	1	0	0	ATXN3 (4287)
935	Macrocytic_anemia	Hematological	1	4	2	IRF1 (3659)
936	Macrothrombocytopenia	Hematological	1	2	2	GATA1 (2623)
937	Macular_degeneration	Ophthamological	5	7	4	CFH (3075), HMCN1 (83872), FBLN5 (10516), CNGB3 (54714), RPGR (6103)
938	Maculopathy,_bull's-eye	Ophthamological	1	2	1	VMD2 (7439)
939	Major_depressive_disorder	Psychiatric	1	0	0	FKBP5 (2289)
940	Malaria	Immunological	5	6	4	CD36 (948), ICAM1 (3383), TNF (7124), GYPC (2995), NOS2A (4843)
942	Malignant_hyperthermia_susceptibility	Neurological	2	3	3	RYR1 (6261), CACNA1S (779)
943	Malonyl-CoA_decarboxylase_deficiency	Metabolic	1	0	0	MLYCD (23417)
944	MALT_lymphoma	Cancer	1	0	0	MALT1 (10892)
945	Mandibuloacral_dysplasia_with_type_B_lipodystrophy	multiple	1	1	1	ZMPSTE24 (10269)
947	Mannosidosis	Metabolic	2	0	0	MAN2B1 (4125), MANBA (4126)
948	Maple_syrup_urine_disease	Metabolic	4	1	1	BCKDHA (593), BCKDHB (594), DBT (1629), GCSL (2654)
950	Marfan_syndrome	Connective_tissue_disorder	2	8	4	FBN1 (2200), COL1A2 (1278)
952	Maroteaux-Lamy_syndrome	Metabolic	1	0	0	ARSB (411)
953	Marshall_syndrome	multiple	1	1	0	COL11A1 (1301)
955	MASA_syndrome	multiple	1	2	1	L1CAM (3897)
956	MASP2_deficiency	Immunological	1	0	0	MASP2 (10747)

957	MASS_syndrome	Connective_tissue_disorder	1	5	3	FBN1 (2200)
958	Mast_cell_leukemia	Cancer	1	5	3	KIT (3815)
959	Mastocytosis_with_associated_hematologic_disorder	Immunological	1	5	2	KIT (3815)
960	Mast_syndrome	Neurological	1	0	0	SPG21 (51324)
961	May-Hegglin_anomaly	Hematological	1	4	2	MYH9 (4627)
962	McArdle_disease	Metabolic	1	0	0	PYGM (5837)
963	McCune-Albright_syndrome	multiple	1	5	3	GNAS (2778)
964	McKusick-Kaufman_syndrome	Developmental	1	1	0	MKKS (8195)
965	McLeod_syndrome	Hematological	1	0	0	XK (7504)
969	Medullary_cystic_kidney_disease	Renal	1	1	1	UMOD (7369)
970	Medulloblastoma	Cancer	2	1	1	PTCH2 (8643), SUFU (51684)
971	Meesmann_corneal_dystrophy	Ophthamological	2	0	0	KRT12 (3859), KRT3 (3850)
973	Megakaryoblastic_leukemia,_acute	Cancer	1	0	0	MKL1 (57591)
974	Megalencephalic_leukoencephalopathy_with_subcortical_cysts	Neurological	1	0	0	MLC1 (23209)
975	Megaloblastic_anemia	Hematological	2	0	0	CUBN (8029), AMN (81693)
978	Melanoma	Cancer	5	8	1	CDK4 (1019), CDKN2A (1029), XRCC3 (7517), STK11 (6794), BRAF (673)
979	Meleda_disease	Dermatological	1	0	0	SLURP1 (57152)
981	Melnick-Needles_syndrome	Skeletal	1	3	2	FLNA (2316)
982	Melorheostosis_with_osteopoikilosis	Developmental	1	2	1	LEMD3 (23592)
984	Memory_impairment	Neurological	1	2	2	BDNF (627)
985	Meniere_disease	Neurological	1	1	1	COCH (1690)
986	Meningioma	Cancer	4	12	2	MN1 (4330), PTEN (5728), NF2 (4771), PDGFB (5155)
987	Meningococcal_disease	Immunological	1	1	1	MBL2 (4153)
988	Menkes_disease	Neurological	1	2	1	ATP7A (538)
990	Mental_retardation	Neurological	24	14	4	PRSS12 (8492), CRBN (51185), NLGN4X (57502), MECP2 (4204), PAK3 (5063), IL1RAPL1 (11141), ARX (170302), SLC6A8 (6535), FTSJ1 (24140), ZNF81 (347344), TSPAN7 (7102), OPHN1 (4983), AFF2 (2334), SMCX (8242), GDI1 (2664), ACSL4 (2182), RPS6KA3 (6197), ARHGEF6 (9459), AGTR2 (186), FGD1 (2245), ZNF41 (7592), DLG3 (1741), SMS (6611), SOX3 (6658)
991	Mephenytoin_poor_metabolizer	Metabolic	1	2	1	CYP2C19 (1557)
992	Merkel_cell_carcinoma	Cancer	1	3	1	SDHD (6392)
993	Mesangial_sclerosis	Renal	1	4	2	WT1 (7490)
995	Mesothelioma	Cancer	1	4	1	BCL10 (8915)
996	Metachromatic_leukodystrophy	Neurological	2	2	1	ARSA (410), PSAP (5660)
997	Metaphyseal_chondrodysplasia	Connective_tissue_disorder	3	3	2	PTHR1 (5745), COL10A1 (1300), RMRP (6023)
999	Methemoglobinemia	Hematological	4	5	1	CYB5 (1528), HBA1 (3039), HBB (3043), CYB5R3 (1727)
1001	Methionine_adenosyltransferase_deficiency,_autosomal_recessive	Metabolic	1	1	1	MAT1A (4143)
1002	Methylcobalamin_deficiency,_cblG_type	Metabolic	1	2	1	MTR (4548)
1003	Methylmalonate_semialdehyde_dehydrogenase_deficiency	Metabolic	1	0	0	ALDH6A1 (4329)
1004	Methylmalonic_aciduria	Metabolic	3	0	0	MUT (4594), MMAA (166785), MMAB (326625)
1005	Mevalonicaciduria	Metabolic	1	1	1	MVK (4598)

1006	MHC_class_II_deficiency	Immunological	1	0	0	RFXANK (8625)
1007	Microcephaly	Neurological	5	1	1	SLC25A19 (60386), MCPH1 (79648), CDK5RAP2 (55755), ASPM (259266), CENPJ (55835)
1009	Microcoria-congenital_nephrosis_syndrome	Ophthamological	1	0	0	LAMB2 (3913)
1011	Micropenis	Renal	1	4	3	LHCGR (3973)
1012	Microphthalmia	Ophthamological	3	1	0	CHX10 (338917), SIX6 (4990), BCOR (54880)
1013	Migraine	Neurological	4	7	5	ATP1A2 (477), EDNRA (1909), ESR1 (2099), TNF (7124)
1014	Miller-Dieker_lissencephaly	multiple	1	0	0	YWHAE (7531)
1016	Mitochondrial_complex_deficiency	multiple	7	3	2	NDUFS1 (4719), NDUFS2 (4720), NDUFS4 (4724), NDUFV1 (4723), BCS1L (617), UQCRB (7381), SDHA (6389)
1018	Miyoshi_myopathy	Muscular	1	2	1	DYSF (8291)
1020	MODY	Endocrine	6	6	5	TCF2 (6928), INS (3630), HNF4A (3172), GCK (2645), TCF1 (6927), IPF1 (3651)
1022	Mohr-Tranebjaerg_syndrome	Neurological	1	2	2	TIMM8A (1678)
1023	Molybdenum_cofactor_deficiency	Metabolic	3	0	0	MOCS1 (4337), MOCS2 (4338), GPHN (10243)
1024	Monilethrix	Dermatological	2	0	0	KRTHB1 (3887), KRTHB6 (3892)
1026	Morning_glory_disc_anomaly	Skeletal	1	9	2	PAX6 (5080)
1028	Mowat-Wilson_syndrome	Developmental	1	0	0	ZFHX1B (9839)
1029	Moyamoya_disease	Neurological	1	0	0	MYMY3 (493818)
1030	Muckle-Wells_syndrome	multiple	1	2	1	CIAS1 (114548)
1031	Mucoepidermoid_salivary_gland_carcinoma	Cancer	2	0	0	MAML2 (84441), MECT1 (23373)
1032	Mucolipidosis	Metabolic	3	0	0	GNPTAB (79158), GNPTG (84572), MCOLN1 (57192)
1033	Mucopolysaccharidosis	Metabolic	7	1	1	IDUA (3425), IDS (3423), GALNS (2588), GLB1 (2720), GNS (2799), HYAL1 (3373), GUSB (2990)
1034	Muenke_syndrome	Skeletal	1	7	2	FGFR3 (2261)
1035	Muir-Torre_syndrome	Cancer	2	8	1	MLH1 (4292), MSH2 (4436)
1036	Mulibrey_nanism	multiple	1	0	0	TRIM37 (4591)
1037	Multiple_endocrine_neoplasia	Cancer	2	11	4	MEN1 (4221), RET (5979)
1038	Muscle-eye-brain_disease	multiple	1	0	0	POMGNT1 (55624)
1039	Muscle_hypertrophy	Muscular	2	0	0	PHKA1 (5255), GDF8 (2660)
1040	Muscular_dystrophy	Muscular	18	8	4	FKRP (79147), LAMA2 (3908), LARGE (9215), FCMD (2218), MYOT (9499), CAPN3 (825), DYSF (8291), SGCG (6445), SGCA (6442), SGCB (6443), SGCD (6444), TCAP (8557), TRIM32 (22954), TTN (7273), POMT1 (10585), CAV3 (859), SEPN1 (57190), PLEC1 (5339)
1041	Myasthenia	Muscular	1	0	0	FIMG1 (8144)
1042	Myasthenic_syndrome	Muscular	7	5	3	SCN4A (6329), CHRNB1 (1140), CHRNE (1145), RAPSN (5913), CHAT (1103), CHRNA1 (1134), CHRND (1144)
1043	Mycobacterial_infection	Immunological	5	4	3	IL12RB1 (3594), IFNGR1 (3459), IFNGR2 (3460), STAT1 (6772), SLC11A1 (6556)
1045	Myelodysplastic_syndrome	Muscular	3	4	2	MDS1 (4197), ACSL6 (23305), IRF1 (3659)
1046	Myelofibrosis,_idiopathic	Hematological	1	2	1	JAK2 (3717)
1047	Myelogenous_leukemia	Cancer	4	4	3	ACSL6 (23305), IRF1 (3659), CBFB (865), CSF1R (1436)
1049	Myelokathexis,_isolated	Immunological	1	1	1	CXCR4 (7852)
1050	Myelomonocytic_leukemia,_chronic	Cancer	1	1	1	PDGFRB (5159)
1051	Myeloperoxidase_deficiency	Immunological	1	1	1	MPO (4353)
1052	Myeloproliferative_disorder	Cancer	1	1	1	PDGFRB (5159)
1053	Myoadenylate_deaminase_deficiency	Muscular	1	0	0	AMPD1 (270)

1054	Myocardial_infarction	Cardiovascular	10	10	7	F7 (2155), APOE (348), ACE (1636), ALOX5AP (241), LGALS2 (3957), LTA (4049), OLR1 (4973), THBD (7056), GCLM (2730), TNFSF4 (7292)
1055	Myoclonic_epilepsy	Neurological	3	6	1	EFHC1 (114327), GABRG2 (2566), ARX (170302)
1056	Myoglobinuria/hemolysis_due_to_PGK_deficiency	Metabolic	1	1	1	PGK1 (5230)
1057	Myokymia_with_neonatal_epilepsy	Neurological	1	1	1	KCNQ2 (3785)
1058	Myoneurogastrointestinal_encephalomyopathy_syndrome	multiple	1	0	0	ECGF1 (1890)
1059	Myopathy	Muscular	10	9	4	ACTA1 (58), CRYAB (1410), MYF6 (4618), ITGA7 (3679), DES (1674), DYSF (8291), CAV3 (859), CPT2 (1376), PGAM2 (5224), MYH7 (4625)
1061	Myotilinopathy	Muscular	1	1	1	MYOT (9499)
1062	Myotonia_congenita	Muscular	2	5	3	SCN4A (6329), CLCN1 (1180)
1063	Myotonic_dystrophy	Muscular	2	0	0	DMPK (1760), ZNF9 (7555)
1064	Myotubular_myopathy	Muscular	1	0	0	MTM1 (4534)
1065	Myxoid_liposarcoma	Cancer	1	0	0	DDIT3 (1649)
1066	Myxoma,_intracardiac	Cardiovascular	1	4	1	PRKAR1A (5573)
1067	N-acetylglutamate_synthase_deficiency	Metabolic	1	0	0	NAGS (162417)
1070	Nail-patella_syndrome	multiple	1	0	0	LMX1B (4010)
1071	Nance-Horan_syndrome	Ophthamological	1	0	0	NHS (4810)
1073	Narcolepsy	Psychiatric	1	0	0	HCRT (3060)
1074	Nasopharyngeal_carcinoma	Cancer	1	10	1	TP53 (7157)
1075	Nasu-Hakola_disease	Bone	2	0	0	TREM2 (54209), TYROBP (7305)
1077	Naxos_disease	multiple	1	0	0	JUP (3728)
1078	Nemaline_myopathy	Muscular	4	1	1	TPM2 (7169), TPM3 (7170), NEB (4703), TNNT1 (7138)
1080	Nephrogenic_syndrome_of_inappropriate_antidiuresis	Renal	1	1	1	AVPR2 (554)
1081	Nephrolithiasis	Renal	2	3	2	CLCN5 (1184), ZNF365 (22891)
1082	Nephronophthisis	Renal	4	2	1	INVS (27130), NPHP4 (261734), NPHP3 (27031), NPHP1 (4867)
1084	Nephropathy-hypertension	Renal	1	3	2	CFH (3075)
1085	Nephropathy	Renal	1	0	0	CD151 (977)
1087	Nephrotic_syndrome	Renal	2	0	0	NPHS1 (4868), NPHS2 (7827)
1088	Netherton_syndrome	Dermatological	1	1	1	SPINK5 (11005)
1090	Neural_tube_defects,_maternal_risk_of	Developmental	1	1	1	MTHFD1 (4522)
1091	Neuroblastoma	Cancer	2	2	2	NME1 (4830), PHOX2B (8929)
1092	Neurodegeneration	Neurological	1	1	1	PANK2 (80025)
1093	Neuroectodermal_tumors	multiple	1	2	1	PMS2 (5395)
1095	Neurofibromatosis	Cancer	1	4	1	NF1 (4763)
1096	Neurofibromatosis-Noonan_syndrome	Cancer	1	4	1	NF1 (4763)
1097	Neurofibromatosis	Cancer	3	13	1	NF1 (4763), NF2 (4771), MSH2 (4436)
1098	Neurofibrosarcoma	Cancer	1	1	1	MXI1 (4601)
1099	Neuropathy	Neurological	8	3	1	EGR2 (1959), MPZ (4359), HSPB1 (3315), HSPB8 (26353), SPTLC1 (10558), NGFB (4803), HSN2 (378465), PMP22 (5376)
1101	Neutropenia	Hematological	4	4	2	FCGR3A (2214), ELA2 (1991), GFI1 (2672), WAS (7454)
1102	Neutrophil_immunodeficiency_syndrome	Immunological	1	0	0	RAC2 (5880)
1103	Nevo_syndrome	Connective_tissue_disorder	1	1	1	PLOD1 (5351)
1104	Nevus,_epidermal,_epidermolytic_hyperkeratotic_type	Dermatological	1	2	1	KRT10 (3858)
1105	Newfoundland_rod-cone_dystrophy	Ophthamological	1	3	1	RLBP1 (6017)

1106	Nicotine_addiction	Psychiatric	3	2	2	CYP2A6 (1548), CHRNA4 (1137), GPR51 (9568)
1107	Niemann-Pick_disease	Metabolic	3	0	0	SMPD1 (6609), NPC1 (4864), NPC2 (10557)
1110	Night_blindness	Ophthamological	5	1	1	GNAT1 (2779), NYX (60506), PDE6B (5158), CACNA1F (778), RHO (6010)
1111	Nijmegen_breakage_syndrome	multiple	1	1	1	NBN (4683)
1112	Nonaka_myopathy	Muscular	1	2	2	GNE (10020)
1113	Noncompaction_of_left_ventricular_myocardium	Cardiovascular	1	2	1	TAZ (6901)
1114	Non-Hodgkin_lymphoma	Cancer	1	2	2	CASP10 (843)
1115	Nonsmall_cell_lung_cancer	Cancer	3	7	3	IRF1 (3659), EGFR (1956), BRAF (673)
1116	Noonan_syndrome	Developmental	1	2	1	PTPN11 (5781)
1117	Norrie_disease	Neurological	1	2	1	NDP (4693)
1118	Norum_disease	Metabolic	1	1	1	LCAT (3931)
1119	Norwalk_virus_infection,_resistance_to	Immunological	1	1	1	FUT2 (2524)
1122	Nucleoside_phosphorylase_deficiency,_immunodeficiency_due_to	Immunological	1	0	0	NP (4860)
1126	Obesity	Nutritional	21	8	7	POMC (5443), MC4R (4160), AKR1C2 (1646), NTRK2 (4915), AGRP (181), NR0B2 (8431), LEP (3952), LEPR (3953), PPARG (5468), SIM1 (6492), UCP3 (7352), MC3R (4159), SLC6A14 (11254), ADRB2 (154), ADRB3 (155), CART (9607), ENPP1 (5167), GHRL (51738), UCP1 (7350), UCP2 (7351), PCSK1 (5122)
1128	Obsessive-compulsive_disorder	Psychiatric	3	7	5	SLC6A4 (6532), BDNF (627), HTR2A (3356)
1129	Occipital_horn_syndrome	multiple	1	2	2	ATP7A (538)
1130	Ocular_albinism	Ophthamological	3	4	2	GPR143 (4935), MC1R (4157), SLC45A2 (51151)
1132	Oculodentodigital_dysplasia	Skeletal	1	3	2	GJA1 (2697)
1133	Oculofaciocardiodental_syndrome	multiple	1	1	1	BCOR (54880)
1135	Oculopharyngeal_muscular_dystorphy	Muscular	1	0	0	PABPN1 (8106)
1136	Odontohypophosphatasia	Bone	1	1	1	ALPL (249)
1137	Oguchi_disease	Ophthamological	2	0	0	SAG (6295), GRK1 (6011)
1138	Oligodendroglioma	Cancer	1	8	2	PTEN (5728)
1139	Oligodontia	Skeletal	1	1	1	PAX9 (5083)
1140	Oligodontia-colorectal_cancer_syndrome	Cancer	1	1	1	AXIN2 (8313)
1141	Omenn_syndrome	Immunological	3	1	1	DCLRE1C (64421), RAG1 (5896), RAG2 (5897)
1142	Opitz_G_syndrome	multiple	1	0	0	MID1 (4281)
1143	Opremazole_poor_metabolizer	Metabolic	1	2	1	CYP2C19 (1557)
1144	Optic_atrophy	Ophthamological	2	2	2	OPA1 (4976), OPA3 (80207)
1145	Oral-facial-digital_syndrome	Skeletal	1	0	0	OFD1 (8481)
1146	Ornithine_transcarbamylase_deficiency	Metabolic	1	0	0	OTC (5009)
1147	Orofacial_cleft	Skeletal	1	2	1	IRF6 (3664)
1148	Orolaryngeal_cancer	Cancer	1	3	1	CDKN2A (1029)
1149	Oroticaciduria	Metabolic	1	0	0	UMPS (7372)
1150	Orthostatic_intolerance	Cardiovascular	1	0	0	SLC6A2 (6530)
1151	OSMED_syndrome	Bone	1	3	2	COL11A2 (1302)
1152	Osseous_heteroplasia	Bone	1	5	2	GNAS (2778)
1153	Ossification_of_the_posterior_longitudinal_spinal_ligaments	Connective_tissue_disorder	1	2	2	ENPP1 (5167)
1154	Osteoarthritis	Connective_tissue_disorder	4	7	3	MATN3 (4148), FRZB (2487), ASPN (54829), COL2A1 (1280)
1156	Osteogenesis_imperfecta	Bone	2	5	2	COL1A2 (1278), COL1A1 (1277)
1157	Osteolysis	Bone	2	1	1	TNFRSF11A (8792), MMP2 (4313)

1161	Osteopetrosis	Bone	4	6	3	LRP5 (4041), CLCN7 (1186), OSTM1 (28962), TCIRG1 (10312)
1162	Osteopoikilosis	Bone	1	2	1	LEMD3 (23592)
1163	Osteoporosis	Bone	6	12	5	COL1A1 (1277), LRP5 (4041), CALCA (796), SLC34A1 (6569), COL1A2 (1278), CALCR (799)
1164	Osteoporosis-pseudoglioma_syndrome	Bone	1	6	3	LRP5 (4041)
1165	Osteoporosis	Bone	1	0	0	PDLIM4 (8572)
1166	Osteosarcoma	Cancer	2	11	1	TP53 (7157), CHEK2 (11200)
1168	Otopalatodigital_syndrome	multiple	1	3	2	FLNA (2316)
1170	Ovarian_cancer	Cancer	8	16	2	BRCA1 (672), MSH2 (4436), PIK3CA (5290), MSH6 (2956), ERBB2 (2064), CDH1 (999), RRAS2 (22800), CTNNB1 (1499)
1171	Ovarioleukodystrophy	Neurological	3	1	1	EIF2B2 (8892), EIF2B4 (8890), EIF2B5 (8893)
1172	Pachyonychia_congenita	Dermatological	4	2	1	KRT17 (3872), KRT6B (3854), KRT16 (3868), KRT6A (3853)
1173	Paget_disease	Bone	3	1	1	TNFRSF11B (4982), SQSTM1 (8878), TNFRSF11A (8792)
1174	Pallidopontonigral_degeneration	Neurological	1	3	1	MAPT (4137)
1175	Pallister-Hall_syndrome	multiple	1	3	1	GLI3 (2737)
1176	Palmoplantar_keratoderma	Dermatological	1	1	1	KRT16 (3868)
1178	Pancreatic_cancer	Cancer	9	23	1	ARMET (7873), BRCA2 (675), TP53 (7157), SMAD4 (4089), CDKN2A (1029), ACVR1B (91), STK11 (6794), KRAS (3845), RBBP8 (5932)
1179	Pancreatitis	Gastrointestinal	3	6	3	PRSS1 (5644), SPINK1 (6690), CFTR (1080)
1183	Papillary_serous_carcinoma_of_the_peritoneum	Cancer	1	2	1	BRCA1 (672)
1184	Papillon-Lefevre_syndrome	multiple	1	2	1	CTSC (1075)
1186	Paragangliomas	Cancer	3	3	1	SDHB (6390), SDHD (6392), SDHC (6391)
1188	Paramyotonia_congenita	Muscular	1	5	3	SCN4A (6329)
1189	Parathyroid_adenoma	Cancer	2	7	2	MEN1 (4221), CDC73 (79577)
1190	Parietal_foramina	Skeletal	2	1	1	MSX2 (4488), ALX4 (60529)
1191	Parkes_Weber_syndrome	multiple	1	2	2	RASA1 (5921)
1192	Parkinson_disease	Neurological	11	6	4	NR4A2 (4929), SNCAIP (9627), TBP (6908), SNCA (6622), PARK7 (11315), LRRK2 (120892), PINK1 (65018), UCHL1 (7345), PARK2 (5071), DBH (1621), NDUFV2 (4729)
1195	Paroxysmal_kinesigenic_choreoathetosis	Neurological	1	0	0	MR-1 (25953)
1196	Partington_syndrome	Neurological	1	5	1	ARX (170302)
1198	PCWH	Neurological	1	2	0	SOX10 (6663)
1199	Pelger-Huet_anomaly	Hematological	1	1	1	LBR (3930)
1200	Pelizaeus-Merzbacher_disease	Neurological	1	1	1	PLP1 (5354)
1201	(null)	Neurological	1	0	0	GJA12 (57165)
1204	Pendred_syndrome	Ear,Nose,Throat	1	2	1	SLC26A4 (5172)
1205	Perineal_hypospadias	Endocrine	1	4	3	AR (367)
1206	Periodic_fever,_familial	Immunological	1	0	0	TNFRSF1A (7132)
1207	Periodontitis	Ear,Nose,Throat	1	2	0	CTSC (1075)
1209	Periventricular_heterotopia_with_microcephaly	Neurological	1	0	0	ARFGEF2 (10564)
1210	Peroxisomal_biogenesis_disorder	multiple	2	0	0	PEX6 (5190), PEX12 (5193)
1212	Persistent_Mullerian_duct_syndrome	Developmental	2	0	0	AMH (268), AMHR2 (269)
1213	Peters_anomaly	Developmental	2	10	2	PAX6 (5080), CYP1B1 (1545)
1214	Peutz-Jeghers_syndrome	Cancer	1	2	1	STK11 (6794)
1215	Pfeiffer_syndrome	Skeletal	2	9	4	FGFR1 (2260), FGFR2 (2263)
1216	Phenylketonuria	Metabolic	3	1	1	PAH (5053), QDPR (5860), PTS (5805)
1217	Phenylthiocarbamide_tasting	Ear,Nose,Throat	1	0	0	TAS2R38 (5726)
1218	Pheochromocytoma	Cancer	3	7	2	SDHD (6392), VHL (7428), SDHB (6390)
1220	Phosphoglycerate_dehydrogenase_deficiency	Metabolic	1	0	0	PHGDH (26227)

1221	Phosphoribosyl_pyrophosphate_synthetase-related_gout	Metabolic	1	0	0	PRPS1 (5631)
1222	Phosphorylase_kinase_deficiency_of_liver_and_muscle,_autosomal_recessive	Metabolic	1	0	0	PHKB (5257)
1223	Phosphoserine_phosphatase_deficiency	Metabolic	1	0	0	PSPH (5723)
1225	Pick_disease	Neurological	1	2	1	PSEN1 (5663)
1226	Piebaldism	Dermatological	1	5	2	KIT (3815)
1227	Pigmentation_of_hair,_skin,_and_eyes,_variation_in	Dermatological	1	1	1	SLC45A2 (51151)
1229	Pigmented_paravenous_chorioretinal_atrophy	Ophthamological	1	2	1	CRB1 (23418)
1230	Pilomatricoma	Cancer	1	3	1	CTNNB1 (1499)
1232	Pituitary_ACTH-secreting_adenoma	Cancer	3	6	3	GNAI2 (2771), GNAS (2778), THRA (7067)
1233	Placental_abruption	Unclassified	1	3	2	NOS3 (4846)
1234	Plasmin_inhibitor_deficiency	Hematological	1	0	0	SERPINF2 (5345)
1235	Plasminogen_deficiency	Hematological	1	1	1	PLG (5340)
1237	Platelet_defect/deficiency	Hematological	4	5	4	PLA2G7 (7941), P2RY12 (64805), RUNX1 (861), CD36 (948)
1238	Pneumonitis,_desquamative_interstitial	Respiratory	1	2	1	SFTPC (6440)
1239	Pneumothorax,_primary_spontaneous	Respiratory	1	3	2	FLCN (201163)
1241	Polycystic_kidney_disease	Renal	4	0	0	PKHD1 (5314), PKD1 (5310), PKD2 (5311), PKDTS (8132)
1242	Polycythemia	Hematological	2	6	2	VHL (7428), JAK2 (3717)
1243	Polydactyly	Skeletal	1	3	1	GLI3 (2737)
1244	Polymicrogyria	Neurological	1	0	0	GPR56 (9289)
1245	Polyposis	Cancer	2	3	1	BMPR1A (657), SMAD4 (4089)
1246	Popliteal_pterygium_syndrome	multiple	1	2	2	IRF6 (3664)
1247	Porencephaly	Neurological	1	0	0	COL4A1 (1282)
1249	Porphyria	Metabolic	6	2	1	ALAD (210), HMBS (3145), UROS (7390), UROD (7389), HFE (3077), PPOX (5498)
1253	PPM-X_syndrome	Neurological	1	4	3	MECP2 (4204)
1254	Prader-Willi_syndrome	multiple	2	0	0	NDN (4692), SNRPN (6638)
1256	Precocious_puberty,_male	Developmental	1	4	4	LHCGR (3973)
1257	Preeclampsia	Cardiovascular	3	3	3	STOX1 (219736), EPHX1 (2052), AGT (183)
1259	Prekallikrein_deficiency	Hematological	1	0	0	KLKB1 (3818)
1260	Premature_ovarian_failure	Renal	2	1	0	DIAPH2 (1730), FOXL2 (668)
1261	Primary_lateral_sclerosis	Neurological	1	2	1	ALS2 (57679)
1263	Prion_disease_with_protracted_course	Neurological	1	4	2	PRNP (5621)
1265	Progressive_external_ophthalmoplegia_with_mitochondrial_DNA_deletions	Ophthamological	3	2	2	PEO1 (56652), POLG (5428), SLC25A4 (291)
1266	Proguanil_poor_metabolizer	Metabolic	1	2	1	CYP2C19 (1557)
1267	Prolactinoma,_hyperparathyroidism,_carcinoid_syndrome	Endocrine	1	7	2	MEN1 (4221)
1268	Prolidase_deficiency	Connective_tissue_disorder	1	0	0	PEPD (5184)
1270	Properdin_deficiency	Immunological	1	0	0	PFC (5199)
1271	Propionicacidemia	Metabolic	2	0	0	PCCA (5095), PCCB (5096)
1272	Prostate_cancer	Cancer	12	20	4	RNASEL (6041), BRCA2 (675), PTEN (5728), AR (367), CHEK2 (11200), MSR1 (4481), EPHB2 (2048), KLF6 (1316), MAD1L1 (8379), ATBF1 (463), ELAC2 (60528), MXI1 (4601)
1273	Protein_S_deficiency	Hematological	1	0	0	PROS1 (5627)
1274	Proteinuria	Renal	1	3	2	CLCN5 (1184)
1276	Protoporphyria	Metabolic	1	0	0	FECH (2235)
1277	Proud_syndrome	multiple	1	5	1	ARX (170302)

1278	Pseudoachondroplasia	Skeletal	1	1	1	COMP (1311)
1279	Pseudohermaphroditism,_male	Developmental	2	4	4	HSD17B3 (3293), LHCGR (3973)
1281	Pseudohypoaldosteronism	Endocrine	6	2	2	SCNN1A (6337), SCNN1B (6338), SCNN1G (6340), NR3C2 (4306), WNK4 (65266), WNK1 (65125)
1282	Pseudohypoparathyroidism	Endocrine	1	5	3	GNAS (2778)
1283	Pseudovaginal_perineoscrotal_hypospadias	Unclassified	1	0	0	SRD5A2 (6716)
1284	Pseudovitamin_D_deficiency_rickets_1	Bone	1	0	0	CYP27B1 (1594)
1285	Pseudoxanthoma_elasticum	Connective_tissue_disorder	1	0	0	ABCC6 (368)
1288	Psoraisis	Dermatological	2	3	2	PSORS6 (63869), CARD15 (64127)
1291	Pulmonary_fibrosis	Respiratory	4	2	1	CSF2RB (1439), SFTPC (6440), SFTPB (6439), SFTPA1 (6435)
1293	Pycnodysostosis	Skeletal	1	0	0	CTSK (1513)
1294	Pyloric_stenosis,_infantile_hypertrophic	Developmental	1	0	0	NOS1 (4842)
1295	Pyogenic_sterile_arthritis,_pyoderma_gangrenosum,_and_acne	Dermatological	1	0	0	PSTPIP1 (9051)
1296	Pyropoikilocytosis	Hematological	1	2	1	SPTA1 (6708)
1297	Pyruvate_dehydrogenase_deficiency	Metabolic	3	1	1	PC (5091), PDHA1 (5160), PDHB (5162)
1298	Rabson-Mendenhall_syndrome	multiple	1	2	2	INSR (3643)
1301	Radioulnar_synostosis_with_amegakaryocytic_thrombocytopenia	multiple	1	0	0	HOXA11 (3207)
1303	RAPADILINO_syndrome	multiple	1	1	0	RECQL4 (9401)
1304	Rapid_progression_to_AIDS_from_HIV1_infection	Immunological	1	0	0	CX3CR1 (1524)
1305	Rapp-Hodgkin_syndrome	multiple	1	5	1	TP73L (8626)
1306	Red_hair/fair_skin	Dermatological	1	3	3	MC1R (4157)
1307	Refsum_disease	Neurological	5	3	1	PEX7 (5191), PHYH (5264), PEX1 (5189), PEX26 (55670), PXMP3 (5828)
1308	Renal_cell_carcinoma	Cancer	7	8	4	FLCN (201163), RNF139 (11236), OGG1 (4968), PRCC (5546), TFE3 (7030), MET (4233), VHL (7428)
1309	Renpenning_syndrome	Neurological	1	0	0	PQBP1 (10084)
1311	Response_to_morphine-6-glucuronide	Neurological	1	0	0	OPRM1 (4988)
1312	Resting_heart_rate	Cardiovascular	1	1	1	ADRB1 (153)
1314	Restrictive_dermopathy,_lethal	Dermatological	1	1	0	ZMPSTE24 (10269)
1315	Retinal_cone_dsytrophy	Ophthamological	4	1	1	NRL (4901), PROM1 (8842), C1QTNF5 (114902), LRAT (9227)
1316	Retinitis_pigmentosa	Ophthamological	30	16	2	IMPDH1 (3614), PRPF31 (26121), RP1 (6101), CRB1 (23418), PRPF8 (10594), TULP1 (7287), CA4 (762), PRPF3 (9129), ABCA4 (24), RPE65 (6121), RP2 (6102), CERKL (375298), NRL (4901), FSCN2 (25794), RPGR (6103), RHO (6010), RDS (5961), RP9 (6100), RLBP1 (6017), USH2A (7399), RGR (5995), CNGB1 (1258), CNGA1 (1259), PDE6A (5145), PDE6B (5158), ROM1 (6094), AIPL1 (23746), NR2E3 (10002), CRX (1406), MERTK (10461)
1317	Retinoblastoma	Cancer	1	1	1	RB1 (5925)
1318	Retinol_binding_protein,_deficiency_of	Ophthamological	1	0	0	RBP4 (5950)
1320	Retinoschisis	Ophthamological	1	0	0	RS1 (6247)
1321	Rett_syndrome	Neurological	2	4	3	MECP2 (4204), CDKL5 (6792)
1322	Rhabdoid_tumors	Cancer	1	0	0	SMARCB1 (6598)
1323	Rhabdomyosarcoma	Cancer	4	4	1	SLC22A18 (5002), FOXO1A (2308), PAX3 (5077), PAX7 (5081)
1324	Rheumatoid_arthritis	Connective_tissue_disorder	8	8	5	IL10 (3586), CIITA (4261), NFKBIL1 (4795), PADI4 (23569), PTPN22 (26191), RUNX1 (861), SLC22A4 (6583), MIF (4282)
1325	Rhizomelic_chondrodysplasia_punctata	multiple	2	1	1	PEX7 (5191), AGPS (8540)

1326	Rh-mod_syndrome	Hematological	1	1	1	RHAG (6005)
1327	Rh-negative_blood_type	Hematological	2	1	1	RHD (6007), RHCE (6006)
1329	Ribose_5-phosphate_isomerase_deficiency	Metabolic	1	0	0	RPIA (22934)
1330	Rickets	Bone	2	0	0	CYP2R1 (120227), VDR (7421)
1331	Rieger_syndrome	multiple	2	5	1	FOXC1 (2296), PITX2 (5308)
1332	Ring_dermoid_of_cornea	Ophthamological	1	2	1	PITX2 (5308)
1333	Rippling_muscle_disease	Muscular	1	4	3	CAV3 (859)
1334	Roberts_syndrome	Developmental	1	0	0	ESCO2 (157570)
1335	Robinow_syndrome,_autosomal_recessive	multiple	1	1	1	ROR2 (4920)
1337	Rokitansky-Kuster-Hauser_syndrome	Developmental	1	0	0	WNT4 (54361)
1338	Rothmund-Thomson_syndrome	multiple	1	1	0	RECQL4 (9401)
1339	Roussy-Levy_syndrome	multiple	2	3	1	MPZ (4359), PMP22 (5376)
1341	Rubenstein-Taybi_syndrome	multiple	2	1	1	CREBBP (1387), EP300 (2033)
1344	Saethre-Chotzen_syndrome	Developmental	2	8	3	FGFR2 (2263), TWIST1 (7291)
1345	Salivary_adenoma	Cancer	1	2	1	HMGA2 (8091)
1346	Salla_disease	Metabolic	1	1	1	SLC17A5 (26503)
1347	Sandhoff_disease,_infantile,_juvenile,_and_adult_forms	Metabolic	1	1	1	HEXB (3074)
1348	Sanfilippo_syndrome	Metabolic	2	0	0	SGSH (6448), NAGLU (4669)
1349	Sarcoidosis	Immunological	3	3	2	CARD15 (64127), BTNL2 (56244), HLA-DRB1 (3123)
1350	Sarcoma,_synovial	Cancer	2	0	0	SSX1 (6756), SSX2 (6757)
1352	SARS,_progression_of	Immunological	1	5	4	ACE (1636)
1354	Schimke_immunoosseous_dysplasia	Connective_tissue_disorder	1	0	0	SMARCAL1 (50485)
1355	Schindler_disease	Metabolic	1	1	1	NAGA (4668)
1357	Schizencephaly	Neurological	1	0	0	EMX2 (2018)
1359	Schizophrenia	Psychiatric	9	7	5	DISC1 (27185), TAAR6 (319100), APP (351), COMT (1312), HTR2A (3356), RTN4R (65078), SYN2 (6854), ENTH (9685), PRODH (5625)
1360	Schwannomatosis	Cancer	1	2	1	NF2 (4771)
1361	Schwartz-Jampel_syndrome,_type_1	multiple	1	1	1	HSPG2 (3339)
1362	SCID	Immunological	1	0	0	JAK3 (3718)
1363	Sclerosteosis	Skeletal	1	0	0	SOST (50964)
1365	Scurvy	Nutritional	1	0	0	GULOP (2989)
1366	Sea-blue_histiocyte_disease	Hematological	1	3	3	APOE (348)
1367	Seasonal_affective_disorder	Psychiatric	1	4	3	HTR2A (3356)
1368	Sebastian_syndrome	Hematological	1	4	2	MYH9 (4627)
1369	Seckel_syndrome	Developmental	1	0	0	ATR (545)
1370	Segawa_syndrome	Neurological	1	0	0	TH (7054)
1371	Seizures	Neurological	1	0	0	SCN2A1 (6325)
1372	Selective_T-cell_defect	Immunological	1	0	0	ZAP70 (7535)
1373	Self-healing_collodion_baby	Dermatological	1	2	1	TGM1 (7051)
1374	SEMD,_Pakistani_type	Connective_tissue_disorder	1	0	0	PAPSS2 (9060)
1375	Senior-Loken_syndrome	Renal	3	2	1	NPHP1 (4867), NPHP4 (261734), IQCB1 (9657)
1376	Sensory_ataxic_neuropathy,_dysarthria,_and_ophthalmoparesis	Ophthamological	1	2	2	POLG (5428)
1377	Sepiapterin_reductase_deficiency	Metabolic	1	0	0	SPR (6697)
1378	Sepsis	Immunological	2	4	3	CASP12P1 (120329), TNF (7124)
1380	Septooptic_dysplasia	multiple	1	1	1	HESX1 (8820)

1381	Sertoli-cell-only_syndrome	Renal	1	0	0	USP26 (83844)
1383	Severe_combined_immunodeficiency	Immunological	8	4	2	DCLRE1C (64421), RAG1 (5896), RAG2 (5897), ADA (100), PTPRC (5788), IL7R (3575), CD3D (915), IL2RG (3561)
1384	Sex_reversal	Unclassified	1	1	1	NR5A1 (2516)
1385	Sezary_syndrome	Cancer	1	4	1	BCL10 (8915)
1386	Shah-Waardenburg_syndrome	multiple	1	2	2	EDN3 (1908)
1387	Short_stature	Skeletal	3	3	1	GHR (2690), SHOX (6473), LHX4 (89884)
1388	Shprintzen-Goldberg_syndrome	multiple	1	5	3	FBN1 (2200)
1389	Shwachman-Diamond_syndrome	multiple	1	0	0	SBDS (51119)
1391	Sialidosis	Metabolic	2	1	1	SLC17A5 (26503), NEU1 (4758)
1392	Sialuria	Metabolic	1	2	1	GNE (10020)
1393	Sickle_cell_anemia	Hematological	1	5	1	HBB (3043)
1394	Sick_sinus_syndrome	Cardiovascular	1	4	1	SCN5A (6331)
1396	Silver_spastic_paraplegia_syndrome	Neurological	1	2	2	BSCL2 (26580)
1397	Simpson-Golabi-Behmel_syndrome	multiple	1	1	1	GPC3 (2719)
1398	Sitosterolemia	Metabolic	2	0	0	ABCG5 (64240), ABCG8 (64241)
1399	Situs_ambiguus	Developmental	2	1	0	NODAL (4838), DNAH11 (8701)
1400	Sjogren-Larsson_syndrome	Metabolic	1	0	0	ALDH3A2 (224)
1401	Skin_fragility-woolly_hair_syndrome	Dermatological	1	4	2	DSP (1832)
1403	Slow_acetylation	Metabolic	1	0	0	NAT2 (10)
1404	Slowed_nerve_conduction_velocity,_AD	Neurological	1	0	0	ARHGEF10 (9639)
1406	Small_patella_syndrome	Skeletal	1	0	0	TBX4 (9496)
1408	SMED_Strudwick_type	Skeletal	1	5	4	COL2A1 (1280)
1409	Smith-Fineman-Myers_syndrome	multiple	1	4	1	ATRX (546)
1410	Smith-Lemli-Opitz_syndrome	multiple	1	0	0	DHCR7 (1717)
1411	Smith-Magenis_syndrome	multiple	1	0	0	RAI1 (10743)
1412	Smith-McCort_dysplasia	Skeletal	1	1	0	DYM (54808)
1414	Solitary_median_maxillary_central_incisor	Skeletal	1	2	2	SHH (6469)
1415	Somatotrophinoma	Endocrine	1	5	3	GNAS (2778)
1416	Sorsby_fundus_dystrophy	Ophthamological	1	0	0	TIMP3 (7078)
1417	Sotos_syndrome	Developmental	1	2	1	NSD1 (64324)
1418	Spastic_ataxia/paraplegia	Neurological	9	3	1	SACS (26278), ALS2 (57679), KIF5A (3798), HSPD1 (3329), PLP1 (5354), SPG3A (51062), SPAST (6683), NIPA1 (123606), SPG7 (6687)
1419	Specific_language_impairment_QTL	Neurological	1	0	0	FOXP2 (93986)
1422	Spermatogenic_failure	Renal	1	0	0	DAZL (1618)
1423	Spherocytosis	Hematological	5	6	2	SPTB (6710), ANK1 (286), SLC4A1 (6521), EPB42 (2038), SPTA1 (6708)
1425	Spina_bifida	Developmental	3	4	2	MTHFD1 (4522), MTR (4548), MTRR (4552)
1426	Spinal_muscular_atrophy	Muscular	7	9	4	AR (367), VAPB (9217), SMN1 (6606), BSCL2 (26580), GARS (2617), HEXB (3074), IGHMBP2 (3508)
1428	Spinocereballar_ataxia	Neurological	13	5	1	ATXN10 (25814), ATXN1 (6310), PPP2R2B (5521), PRKCG (5582), TBP (6908), ATXN2 (6311), SCA25 (338435), FGF14 (2259), PLEKHG4 (25894), CACNA1A (773), ATXN7 (6314), KLHL1AS (6315), TDP1 (55775)
1430	Split-hand/foot_malformation	Skeletal	2	5	1	FBXW4 (6468), TP73L (8626)
1432	Spondylocarpotarsal_synostosis_syndrome	Skeletal	1	2	2	FLNB (2317)
1433	Spondylocostal_dysostosis	Skeletal	2	0	0	DLL3 (10683), MESP2 (145873)
1435	Spondyloepiphyseal_dysplasia	Skeletal	5	3	2	MATN3 (4148), AGC1 (176), CHST3 (9469), TRAPPC2 (6399), WISP3 (8838)

1436	Spondylometaphyseal_dysplasia	Skeletal	1	1	1	COL10A1 (1300)
1437	Squamous_cell_carcinoma	Cancer	3	1	1	FAS (355), ING1 (3621), TNFRSF10B (8795)
1438	Stapes_ankylosis_syndrome_without_symphalangism	multiple	1	3	1	NOG (9241)
1439	Stargardt_disease	Ophthamological	2	4	1	ABCA4 (24), ELOVL4 (6785)
1440	Startle_disease	Neurological	1	1	1	GLRA1 (2741)
1441	STAT1_deficiency	Unclassified	1	1	1	STAT1 (6772)
1442	Statins	Metabolic	1	0	0	HMGCR (3156)
1444	Steatocystoma_multiplex	Dermatological	1	1	1	KRT17 (3872)
1445	Stem-cell_leukemia/lymphoma_syndrome	Cancer	1	0	0	ZNF198 (7750)
1446	Stevens-Johnson_syndrome,_carbamazepine-induced	Dermatological	1	2	2	HLA-B (3106)
1447	Stickler_syndrome	multiple	3	9	5	COL2A1 (1280), COL11A1 (1301), COL11A2 (1302)
1449	Stomach_cancer	Cancer	1	5	1	KRAS (3845)
1454	Stroke	Cardiovascular	2	1	1	PDE4D (5144), ALOX5AP (241)
1455	Stuve-Wiedemann_syndrome/Schwartz-Jampel_type_2_syndrome	multiple	1	0	0	LIFR (3977)
1456	Subcortical_laminar_heterotopia	Neurological	2	1	1	DCX (1641), PAFAH1B1 (5048)
1457	Succinic_semialdehyde_dehydrogenase_deficiency	Metabolic	1	0	0	ALDH5A1 (7915)
1458	Sucrose_intolerance	Metabolic	1	0	0	SI (6476)
1459	Sudden_infant_death_with_dysgenesis_of_the_testes_syndrome	Unclassified	1	0	0	TSPYL1 (7259)
1460	Sulfite_oxidase_deficiency	Metabolic	1	0	0	SUOX (6821)
1461	Superoxide_dismutase,_elevated_extracellular	Unclassified	1	0	0	SOD3 (6649)
1462	Supranuclear_palsy	Neurological	1	3	1	MAPT (4137)
1463	Supravalvar_aortic_stenosis	Cardiovascular	1	2	1	ELN (2006)
1464	Surfactant_deficiency	Respiratory	2	2	1	ABCA3 (21), SFTPC (6440)
1465	Sutherland-Haan_syndrome-like	multiple	1	4	1	ATRX (546)
1466	Sweat_chloride_elevation_without_CF	Unclassified	1	4	3	CFTR (1080)
1467	Symphalangism,_proximal	Skeletal	1	3	1	NOG (9241)
1468	Syndactyly	Skeletal	1	3	2	GJA1 (2697)
1469	Synostoses_syndrome	multiple	1	3	1	NOG (9241)
1470	Synpolydactyly	Skeletal	2	1	1	FBLN1 (2192), HOXD13 (3239)
1471	Systemic_lupus_erythematosus	Immunological	4	2	2	FASLG (356), DNASE1 (1773), PTPN22 (26191), PDCD1 (5133)
1472	Tall_stature	Skeletal	1	1	1	MCM6 (4175)
1473	Tangier_disease	Metabolic	1	3	3	ABCA1 (19)
1475	Tarsal-carpal_coalition_syndrome	Skeletal	1	3	1	NOG (9241)
1476	Tauopathy_and_respiratory_failure	Neurological	1	3	1	MAPT (4137)
1477	Tay-Sachs_disease	Metabolic	1	2	1	HEXA (3073)
1478	T-cell_lymphoblastic_leukemia	Cancer	2	4	2	BAX (581), ATM (472)
1480	Temperature-sensitive_apoptosis,_cellular	Unclassified	1	0	0	DAD1 (1603)
1482	Tetra-amelia,_autosomal_recessive	multiple	1	0	0	WNT3 (7473)
1483	Tetralogy_of_Fallot	Cardiovascular	3	4	2	JAG1 (182), ZFPM2 (23414), NKX2-5 (1482)
1486	Thalassemias	Hematological	5	8	1	HBA2 (3040), HBB (3043), HBD (3045), LCRB (387281), HBA1 (3039)
1490	Thanatophoric_dysplasia,_types_I_and_II	Skeletal	1	7	2	FGFR3 (2261)
1491	Thiamine-responsive_megaloblastic_anemia_syndrome	Hematological	1	0	0	SLC19A2 (10560)
1493	Thrombocythemia	Hematological	2	2	1	JAK2 (3717), THPO (7066)
1494	Thrombocytopenia	Hematological	4	4	2	MASTL (84930), MPL (4352), WAS (7454), F5 (2153)

1497	Thrombophilia	Hematological	9	7	3	F5 (2153), SERPIND1 (3053), HRG (3273), PROC (5624), THBD (7056), FGB (2244), FGG (2266), CBS (875), ADAMTS13 (11093)
1502	Thymine-uraciluria	Metabolic	1	1	1	DPYD (1806)
1503	Thyroid_carcinoma	Cancer	11	26	4	TSHR (7253), TP53 (7157), MINPP1 (9562), PTEN (5728), HRAS (3265), GOLGA5 (9950), NCOA4 (8031), PCM1 (5108), PRKAR1A (5573), TRIM33 (51592), TRIM24 (8805)
1504	Thyrotoxic_periodic_paralysis	Endocrine	1	2	2	CACNA1S (779)
1505	Thyrotropin-releasing_hormone_deficiency	Endocrine	1	0	0	TRHR (7201)
1506	Thyroxine-binding_globulin_deficiency	Hematological	1	0	0	SERPINA7 (6906)
1508	Tietz_syndrome	multiple	1	1	0	MITF (4286)
1509	Timothy_syndrome	multiple	1	0	0	CACNA1C (775)
1510	Toenail_dystrophy,_isolated	Dermatological	1	3	1	COL7A1 (1294)
1511	Tolbutamide_poor_metabolizer	Unclassified	1	1	1	CYP2C9 (1559)
1514	Townes-Brocks_syndrome	multiple	1	0	0	SALL1 (6299)
1515	Transaldolase_deficiency	Metabolic	1	0	0	TALDO1 (6888)
1516	Transcobalamin_II_deficiency	Hematological	1	0	0	TCN2 (6948)
1518	Transient_bullous_of_the_newborn	Dermatological	1	3	1	COL7A1 (1294)
1519	Transposition_of_great_arteries,_dextro-looped	Developmental	2	2	1	CFC1 (55997), THRAP2 (23389)
1520	Treacher_Collins_mandibulofacial_dysostosis	Developmental	1	0	0	TCOF1 (6949)
1521	Tremor,_familial_essential	Neurological	1	0	0	HS1BP3 (64342)
1522	Trichodontoosseous_syndrome	multiple	1	1	1	DLX3 (1747)
1524	Trichorhinophalangeal_syndrome	Developmental	1	0	0	TRPS1 (7227)
1525	Trichothiodystrophy	Dermatological	4	2	1	ERCC3 (2071), ERCC2 (2068), GTF2H5 (404672), C7orf11 (136647)
1526	Trifunctional_protein_deficiency	Metabolic	2	3	1	HADHA (3030), HADHB (3032)
1528	Trismus-pseudocomptodactyly_syndrome	multiple	1	1	0	MYH8 (4626)
1529	Tropical_calcific_pancreatitis	Gastrointestinal	1	2	1	SPINK1 (6690)
1530	Troyer_syndrome	Neurological	1	0	0	SPG20 (23111)
1533	Tuberculosis	Respiratory	2	6	2	IFNGR1 (3459), IFNG (3458)
1534	Tuberous_sclerosis	multiple	3	5	4	IFNG (3458), TSC1 (7248), TSC2 (7249)
1536	Turcot_syndrome	Cancer	3	9	1	APC (324), MLH1 (4292), PMS2 (5395)
1538	Twinning,_dizygotic	Unclassified	1	3	2	FSHR (2492)
1540	Tyrosinemia	Metabolic	3	0	0	FAH (2184), TAT (6898), HPD (3242)
1542	Ullrich_congenital_muscular_dystrophy	Muscular	3	1	1	COL6A1 (1291), COL6A3 (1293), COL6A2 (1292)
1543	Ulnar-mammary_syndrome	multiple	1	0	0	TBX3 (6926)
1544	Unipolar_depression	Psychiatric	1	0	0	TPH2 (121278)
1545	Unna-Thost_disease,_nonepidermolytic	Dermatological	1	4	1	KRT1 (3848)
1550	Urolithiasise	Metabolic	2	1	1	APRT (353), SLC34A1 (6569)
1551	Usher_syndrome	multiple	8	3	3	MYO7A (4647), USH1C (10083), CDH23 (64072), PCDH15 (65217), USH1G (124590), USH2A (7399), USH3A (7401), MASS1 (84059)
1552	Uterine_leiomyoma	Cancer	1	2	1	HMGA2 (8091)
1553	UV-induced_skin_damage	Dermatological	1	3	3	MC1R (4157)
1554	van_Buchem_disease	Unclassified	1	6	2	LRP5 (4041)
1555	VATER_association_with_hydrocephalus	multiple	1	8	2	PTEN (5728)
1556	Velocardiofacial_syndrome	multiple	1	2	1	TBX1 (6899)
1557	Venous_thrombosis	Cardiovascular	2	0	0	TEK (7010), SERPINA10 (51156)
1558	Ventricular_tachycardia	Cardiovascular	3	2	2	GNAI2 (2771), CASQ2 (845), RYR2 (6262)
1559	Vertical_talus	Skeletal	1	1	1	HOXD10 (3236)

1562	Viral_infection	Immunological	2	1	1	FCGR3A (2214), OAS1 (4938)
1563	Virilization	Developmental	1	1	1	CYP19A1 (1588)
1565	Vitamin_K-dependent_coagulation_defect	Hematological	2	1	1	VKORC1 (79001), GGCX (2677)
1566	Vitelliform_macular_dystrophy	Ophthamological	1	2	1	VMD2 (7439)
1570	VLCAD_deficiency	Metabolic	1	0	0	ACADVL (37)
1571	Vohwinkel_syndrome	multiple	2	6	2	GJB2 (2706), LOR (4014)
1572	von_Hippel-Lindau_syndrome	Cancer	2	6	2	CCND1 (595), VHL (7428)
1573	Waardenburg-Shah_syndrome	multiple	2	4	2	EDNRB (1910), SOX10 (6663)
1574	Waardenburg_syndrome	multiple	4	4	2	TYR (7299), MITF (4286), PAX3 (5077), SNAI2 (6591)
1575	Wagner_syndrome	Ophthamological	1	5	3	COL2A1 (1280)
1576	WAGR_syndrome	multiple	1	4	2	WT1 (7490)
1578	Walker-Warburg_syndrome	multiple	3	1	1	FCMD (2218), POMT1 (10585), RAB3GAP1 (22930)
1580	Warfarin_resistance/sensitivity	Hematological	3	3	2	VKORC1 (79001), CYP2C9 (1559), F9 (2158)
1581	Watson_syndrome	Cancer	1	4	1	NF1 (4763)
1582	Weaver_syndrome	Developmental	1	2	1	NSD1 (64324)
1583	Wegener_granulomatosis	Immunological	1	1	1	TAP2 (6891)
1585	Weill-Marchesani_syndrome	Connective_tissue_disorder	2	5	3	FBN1 (2200), ADAMTS10 (81794)
1586	Weissenbacher-Zweymuller_syndrome	Connective_tissue_disorder	1	3	2	COL11A2 (1302)
1588	Werner_syndrome	multiple	1	0	0	WRN (7486)
1589	Wernicke-Korsakoff_syndrome	Metabolic	1	0	0	TKT (7086)
1590	Weyers_acrodental_dysostosis	Skeletal	1	1	1	EVC (2121)
1591	WHIM_syndrome	Immunological	1	1	1	CXCR4 (7852)
1592	White_sponge_nevus	Connective_tissue_disorder	2	0	0	KRT13 (3860), KRT4 (3851)
1594	Williams-Beuren_syndrome	multiple	1	2	2	ELN (2006)
1595	Wilms_tumor	Cancer	4	9	2	BRCA2 (675), GPC3 (2719), POU6F2 (11281), WT1 (7490)
1596	Wilson_disease	Metabolic	1	0	0	ATP7B (540)
1598	Wiskott-Aldrich_syndrome	Immunological	1	2	1	WAS (7454)
1599	Witkop_syndrome	Developmental	1	2	2	MSX1 (4487)
1600	Wolcott-Rallison_syndrome	Bone	1	0	0	EIF2AK3 (9451)
1601	Wolff-Parkinson-White_syndrome	Cardiovascular	1	1	1	PRKAG2 (51422)
1603	Wolfram_syndrome	Metabolic	1	1	1	WFS1 (7466)
1604	Wolman_disease	Metabolic	1	1	1	LIPA (3988)
1607	Xanthinuria,_type_I	Metabolic	1	0	0	XDH (7498)
1608	Xeroderma_pigmentosum	Dermatological	8	2	1	XPA (7507), ERCC3 (2071), XPC (7508), ERCC2 (2068), DDB2 (1643), ERCC4 (2072), ERCC5 (2073), POLH (5429)
1610	X-inactivation,_familial_skewed	Unclassified	1	0	0	XIST (7503)
1611	XLA_and_isolated_growth_hormone_deficiency	Immunological	1	1	1	BTK (695)
1613	Yellow_nail_syndrome	Immunological	1	1	1	FOXC2 (2303)
1614	Yemenite_deaf-blind_hypopigmentation_syndrome	multiple	1	2	1	SOX10 (6663)
1615	Zellweger_syndrome	multiple	11	2	1	PEX1 (5189), PEX10 (5192), PEX13 (5194), PEX14 (5195), PEX26 (55670), PEX19 (5824), PEX5 (5830), ABCD3 (5825), PXMP3 (5828), PEX16 (9409), PEX3 (8504)
1617	Zlotogora-Ogur_syndrome	multiple	1	2	2	PVRL1 (5818)
2053	Adrenal_adenoma	Cancer	1	7	2	MEN1 (4221)
2054	Adrenal_cortical_carcinoma	Cancer	1	10	1	TP53 (7157)
2055	Adrenocortical_insufficiency	Endocrine	1	1	1	NR5A1 (2516)
2074	Alcohol_intolerance	Metabolic	1	0	0	ALDH2 (217)

2112	Aneurysm,_familial_arterial	Unclassified	1	1	1	COL3A1 (1281)
2174	Autoimmune_thyroid_disease	Endocrine	1	2	1	TG (7038)
2188	Basal_cell_nevus_syndrome	multiple	1	2	2	PTCH (5727)
2265	Carcinoid_tumor_of_lung	Cancer	1	7	2	MEN1 (4221)
2287	Central_core_disease	Muscular	2	3	3	RYR1 (6261), MYH7 (4625)
2291	Cerebral_arteriopathy_with_subcortical_infarcts_and_leukoencephalopathy	Cardiovascular	1	0	0	NOTCH3 (4854)
2315	Chondrodysplasia,_Grebe_type	Skeletal	1	3	1	GDF5 (8200)
2327	Chronic_infections,_due_to_opsonin_defect	Immunological	1	1	1	MBL2 (4153)
2344	Cold-induced_sweating_syndrome	multiple	1	0	0	CRLF1 (9244)
2350	Combined_hyperlipemia	Metabolic	1	2	1	LPL (4023)
2354	Congenital_bilateral_absence_of_vas_deferens	Unclassified	1	4	3	CFTR (1080)
2365	Coronary_spasms	Cardiovascular	1	3	3	NOS3 (4846)
2385	Creatine_deficiency_syndrome,_X-linked	Neurological	1	1	1	SLC6A8 (6535)
2427	Diabetes_insipidus	Endocrine	3	1	1	AVPR2 (554), AQP2 (359), AVP (551)
2440	DNA_ligase_I_deficiency	multiple	1	0	0	LIG1 (3978)
2584	Giant_cell_hepatitis	Gastrointestinal	1	0	0	CYP7B1 (9420)
2628	Growth_retardation	Developmental	1	0	0	IGF1 (3479)
2669	Hereditary_persistence_of_fetal_hemoglobin	Hematological	1	0	0	AFP (174)
2785	Hypoplastic_left_heart_syndrome	Cardiovascular	1	3	2	GJA1 (2697)
2903	Lipoid_proteinosis	Metabolic	1	0	0	ECM1 (1893)
2937	Macular_dystrophy	Ophthamological	5	8	1	CHST6 (4166), RDS (5961), ABCA4 (24), ELOVL4 (6785), VMD2 (7439)
2969	Medullary_thyroid_carcinoma	Cancer	2	5	4	RET (5979), NTRK1 (4914)
3016	Mitochondrial_DNA_depletion_myopathy	Muscular	1	0	0	TK2 (7084)
3037	Multiple_cutaneous_and_uterine_leiomyomata	Cancer	1	2	2	FH (2271)
3079	Neonatal_ichthyosis-sclerosing_cholangitis_syndrome	multiple	1	0	0	CLDN1 (9076)
3144	Optic_nerve_coloboma_with_renal_disease	multiple	1	1	1	PAX2 (5076)
3171	Ovarian_dysgenesis	Endocrine	2	3	3	FSHR (2492), BMP15 (9210)
3178	Pancreatic_agenesis	Gastrointestinal	1	2	1	IPF1 (3651)
3195	Paroxysmal_nocturnal_hemoglobinuria	Hematological	1	0	0	PIGA (5277)
3212	Persistent_hyperinsulinemic_hypoglycemia_of_infancy	Metabolic	1	1	1	KCNJ11 (3767)
3229	Pigmented_adrenocortical_disease,_primary_isolated	Cancer	1	4	2	PRKAR1A (5573)
3232	Pituitary_anomalies_with_holoprosencephaly-like_features	multiple	1	0	0	GLI2 (2736)
3241	Polycystic_liver_disease	Gastrointestinal	2	0	0	PRKCSH (5589), SEC63 (11231)
3260	Premature_chromosome_condensation_with_microcephaly_and_mental_retardation	Neurological	1	1	1	MCPH1 (79648)
3308	Renal_glucosuria	Renal	1	0	0	SLC5A2 (6524)
3419	Specific_granule_deficiency	Immunological	1	0	0	CEBPE (1053)
3478	T-cell_immunodeficiency,_congenital_alopecia,_and_nail_dystrophy	Immunological	1	0	0	FOXN1 (8456)
3503	Thyroid_hormone_resistance	Endocrine	2	3	1	TPO (7173), THRB (7068)
3512	Total_iodide_organification_defect	Endocrine	1	3	1	TPO (7173)
3554	van_der_Woude_syndrome	Developmental	1	2	1	IRF6 (3664)
3558	Ventricular_fibrillation,_idiopathic	Cardiovascular	1	4	1	SCN5A (6331)
3572	von_Willebrand_disease	Hematological	1	0	0	VWF (7450)

4188	Basal_ganglia_disease	Neurological	2	1	1	FTL (2512), SLC19A3 (80704)
4289	Cerebellar_hypoplasia,_VLDLR-associated	Neurological	1	0	0	VLDLR (7436)
4291	Cerebral_cavernous_malformations	Neurological	3	2	2	KRIT1 (889), CCM2 (83605), PDCD10 (11235)
4350	Combined_immunodeficiency	Immunological	2	2	1	C6 (729), IL2RG (3561)
4354	Congenital_cataracts	Ophthamological	1	0	0	CTDP1 (9150)
4666	Hepatic_lipase_deficiency	Metabolic	1	0	0	LIPC (3990)
5016	Mitochondrial_DNA_depletion_syndrome	multiple	2	0	0	SUCLA2 (8803), DGUOK (1716)
5037	Multiple_malignancy_syndrome	Cancer	1	10	1	TP53 (7157)
5144	Optic_nerve_hypoplasia/aplasia	Ophthamological	1	9	3	PAX6 (5080)
5170	Ovarian_hyperstimulation_syndrome	Endocrine	1	3	3	FSHR (2492)
5232	Pituitary_hormone_deficiency	Endocrine	4	1	0	POU1F1 (5449), PROP1 (5626), HESX1 (8820), LHX3 (8022)
5233	Placental_steroid_sulfatase_deficiency	Metabolic	1	1	1	STS (412)
5291	Pulmonary_hypertension,_familial_primary	Cardiovascular	1	0	0	BMPR2 (659)
5308	Renal_hypoplasia,_isolated	Renal	1	1	0	PAX2 (5076)
6291	Cerebral_dysgenesis,_neuropathy,_ichthyosis,_and_palmo plantar_keratoderma_syndrome	Neurological	1	0	0	SNAP29 (9342)
6350	Combined_oxidative_phosphorylation_deficiency	multiple	1	0	0	GFM1 (85476)
7016	Mitochondrial_myopathy_and_sideroblastic_anemia	multiple	1	0	0	PUS1 (80324)
7170	Ovarian_sex_cord_tumors	Cancer	1	3	2	FSHR (2492)
7232	Pituitary_tumor,_invasive	Cancer	1	0	0	PRKCA (5578)
7308	Renal_tubular_acidosis	Renal	5	4	1	SLC4A1 (6521), ATP6V0A4 (50617), CA2 (760), SLC4A4 (8671), ATP6V1B1 (525)
8350	Combined_SAP_deficiency	Metabolic	1	2	2	PSAP (5660)
9037	Multiple_myeloma	Cancer	2	1	0	IRF4 (3662), LIG4 (3981)
9038	Multiple_sclerosis	Neurological	2	3	2	CIITA (4261), PTPRC (5788)
9039	Multiple_sulfatase_deficiency	Metabolic	1	0	0	SUMF1 (285362)
9308	Renal_tubular_dysgenesis	Renal	4	8	4	ACE (1636), AGTR1 (185), AGT (183), REN (5972)

Supporing Information Table 3. **Network characteristics of disease genes.**
Class of disease gene is assigned if all the implicated diseases are of same class, otherwise, it is assigned "Grey."

Entrez ID	Symbol	Disorder class	Size (s)	Degree (k)	Number of classes associated	Implicated diseases (Disease ID) [comma-deliminated]
2	A2M	Neurological	1	11	1	Alzheimer_disease (98)
10	NAT2	Metabolic	1	0	1	Slow_acetylation (1403)
12	SERPINA3	Grey	2	0	1	Alpha-1-antichymotrypsin_deficiency (87), Cerebrovascular_disease,_occlusive (294)
15	AANAT	Psychiatric	1	0	1	Delayed_sleep_phase_syndrome (411)
18	ABAT	Metabolic	1	0	1	GABA-transaminase_deficiency (564)
19	ABCA1	Grey	4	7	3	Cerebral_amyloid_angiopathy (291), Coronary_artery_disease (365), HDL_cholesterol_level_QTL (644), Tangier_disease (1473)
21	ABCA3	Respiratory	1	1	1	Surfactant_deficiency (1464)
22	ABCB7	Hematological	1	8	1	Anemia (110)
24	ABCA4	Ophthamological	5	36	1	Cone_dystrophy (352), Fundus_albipunctatus (562), Macular_dystrophy (2937), Retinitis_pigmentosa (1316), Stargardt_disease (1439)
25	ABL1	Cancer	1	36	1	Leukemia (886)
28	ABO	Hematological	1	22	1	Blood_group (212)
33	ACADL	Metabolic	1	2	1	Acyl-CoA_dehydrogenase,_deficiency_of (44)
34	ACADM	Metabolic	1	2	1	Acyl-CoA_dehydrogenase,_deficiency_of (44)
35	ACADS	Metabolic	1	2	1	Acyl-CoA_dehydrogenase,_deficiency_of (44)
36	ACADSB	Metabolic	1	0	1	2-methylbutyrylglycinuria (4)
37	ACADVL	Metabolic	1	0	1	VLCAD_deficiency (1570)
38	ACAT1	Metabolic	1	0	1	Alpha-methylacetoacetic_aciduria (90)
43	ACHE	Hematological	1	22	1	Blood_group (212)
58	ACTA1	Muscular	1	9	1	Myopathy (1059)
70	ACTC	Cardiovascular	1	24	1	Cardiomyopathy (268)
71	ACTG1	Ear,Nose,Throat	1	40	1	Deafness (406)
81	ACTN4	Renal	1	2	1	Glomerulosclerosis (596)
89	ACTN3	Muscular	2	0	1	Alpha-actinin-3_deficiency (88), Elite_sprint_athletic_performance (471)
91	ACVR1B	Cancer	1	8	1	Pancreatic_cancer (1178)
93	ACVR2B	Developmental	1	1	1	Left-right_axis_malformations (874)
94	ACVRL1	Cardiovascular	1	1	1	Hereditary_hemorrhagic_telangiectasia (669)
100	ADA	Immunological	2	7	1	Adenosine_deaminase_deficiency (49), Severe_combined_immunodeficiency (1383)
103	ADAR	Dermatological	1	0	1	Dyschromatosis (455)
118	ADD1	Cardiovascular	1	11	1	Hypertension (752)
152	ADRA2C	Cardiovascular	1	1	1	Congestive_heart_failure (355)
153	ADRB1	Cardiovascular	2	1	1	Congestive_heart_failure (355), Resting_heart_rate (1312)
154	ADRB2	Grey	3	32	2	Asthma (153), Beta-2-adrenoreceptor_agonist,_reduced_response_to (198), Obesity (1126)
155	ADRB3	Nutritional	1	20	1	Obesity (1126)
158	ADSL	Metabolic	1	0	1	Adenylosuccinase_deficiency (50)
174	AFP	Hematological	1	0	1	Hereditary_persistence_of_fetal_hemoglobin (2669)
175	AGA	Metabolic	1	0	1	Aspartylglucosaminuria (150)
176	AGC1	Skeletal	1	4	1	Spondyloepiphyseal_dysplasia (1435)
178	AGL	Metabolic	1	8	1	Glycogen_storage_disease (610)
181	AGRP	Nutritional	2	20	1	Leanness,_inherited (872), Obesity (1126)
182	JAG1	Grey	3	42	3	Alagille_syndrome (71), Deafness (406), Tetralogy_of_Fallot (1483)
183	AGT	Grey	3	15	2	Hypertension (752), Preeclampsia (1257), Renal_tubular_dysgenesis (9308)
185	AGTR1	Grey	2	13	2	Hypertension (752), Renal_tubular_dysgenesis (9308)
186	AGTR2	Neurological	1	23	1	Mental_retardation (990)
189	AGXT	Metabolic	1	1	1	Hyperoxaluria (742)

190	NR0B1	Endocrine	2	3	1	Adrenal_hyperplasia,_congenital (53), Dosage-sensitive_sex_reversal (443)
191	AHCY	Metabolic	1	1	1	Hypermethioninemia (739)
203	AK1	Hematological	1	9	1	Hemolytic_anemia (660)
208	AKT2	Endocrine	1	26	1	Diabetes_mellitus (427)
210	ALAD	Metabolic	2	5	1	Lead_poisoning (871), Porphyria (1249)
212	ALAS2	Hematological	1	8	1	Anemia (110)
213	ALB	Hematological	2	0	1	Analbuminemia (105), Dysalbuminemic_hyperthyroxinemia (453)
215	ABCD1	Grey	2	5	2	Adrenoleukodystrophy (56), Adrenomyeloneuropathy (57)
217	ALDH2	Metabolic	1	0	1	Alcohol_intolerance (2074)
224	ALDH3A2	Metabolic	1	0	1	Sjogren-Larsson_syndrome (1400)
226	ALDOA	Metabolic	1	0	1	Aldolase_A_deficiency (76)
229	ALDOB	Metabolic	1	0	1	Fructose_intolerance (556)
240	ALOX5	Grey	2	12	2	Asthma (153), Atherosclerosis (163)
241	ALOX5AP	Cardiovascular	2	10	1	Myocardial_infarction (1054), Stroke (1454)
242	ALOX12B	Dermatological	1	2	1	Ichthyosiform_erythroderma (793)
249	ALPL	Grey	2	0	2	Hypophosphatasia (782), Odontohypophosphatasia (1136)
265	AMELX	Bone	1	3	1	Amelogenesis_imperfecta (99)
268	AMH	Developmental	1	1	1	Persistent_Mullerian_duct_syndrome (1212)
269	AMHR2	Developmental	1	1	1	Persistent_Mullerian_duct_syndrome (1212)
270	AMPD1	Muscular	1	0	1	Myoadenylate_deaminase_deficiency (1053)
272	AMPD3	Hematological	1	0	1	AMP_deaminase_deficiency (101)
275	AMT	Metabolic	1	3	1	Glycine_encephalopathy (608)
286	ANK1	Hematological	1	4	1	Spherocytosis (1423)
287	ANK2	Cardiovascular	1	6	1	Long_QT_syndrome (912)
291	SLC25A4	Ophthamological	1	2	1	Progressive_external_ophthalmoplegia_with_mitochondrial_DNA_deletions (1265)
323	APBB2	Neurological	1	11	1	Alzheimer_disease (98)
324	APC	Cancer	7	42	1	Adenoma,_periampullary (46), Adenomas (47), Colon_cancer (346), Desmoid_disease,_hereditary (425), Gardner_syndrome (571), Gastric_cancer (572), Turcot_syndrome (1536)
326	AIRE	Immunological	1	3	1	Autoimmune_disease (174)
335	APOA1	Grey	5	17	3	Amyloidosis (103), Apolipoprotein_deficiency (136), Corneal_dystrophy (362), Hypertriglyceridemia (757), Hypoalphalipoproteinemia (762)
336	APOA2	Metabolic	2	10	1	Apolipoprotein_deficiency (136), Hypercholesterolemia (724)
338	APOB	Metabolic	3	8	1	Abetalipoproteinemia (17), Hypercholesterolemia (724), Hypobetalipoproteinemia (763)
344	APOC2	Metabolic	1	1	1	Hyperlipoproteinemia (737)
345	APOC3	Metabolic	1	3	1	Apolipoprotein_deficiency (136)
348	APOE	Grey	4	20	4	Alzheimer_disease (98), Hyperlipoproteinemia (737), Myocardial_infarction (1054), Sea-blue_histiocyte_disease (1366)
350	APOH	Metabolic	1	3	1	Apolipoprotein_deficiency (136)
351	APP	Grey	3	24	2	Alzheimer_disease (98), Amyloidosis (103), Schizophrenia (1359)
353	APRT	Metabolic	1	1	1	Urolithiasise (1550)
355	FAS	Grey	2	5	2	Autoimmune_disease (174), Squamous_cell_carcinoma (1437)
356	FASLG	Immunological	1	3	1	Systemic_lupus_erythematosus (1471)
358	AQP1	Grey	2	22	1	Aquaporin-1_deficiency (138), Blood_group (212)
359	AQP2	Endocrine	1	2	1	Diabetes_insipidus (2427)
360	AQP3	Hematological	1	22	1	Blood_group (212)
367	AR	Grey	5	33	3	Androgen_insensitivity (109), Breast_cancer (228), Perineal_hypospadias (1205), Prostate_cancer (1272), Spinal_muscular_atrophy (1426)
368	ABCC6	Connective_tissue_disorder	1	0	1	Pseudoxanthoma_elasticum (1285)
383	ARG1	Metabolic	1	1	1	Argininemia (140)

401	PHOX2A	Ophthamological	1	1	1	Fibrosis (538)
405	ARNT	Cancer	1	36	1	Leukemia (886)
410	ARSA	Neurological	1	1	1	Metachromatic_leukodystrophy (996)
411	ARSB	Metabolic	1	0	1	Maroteaux-Lamy_syndrome (952)
412	STS	Grey	2	6	2	Ichthyosis (794), Placental_steroid_sulfatase_deficiency (5233)
415	ARSE	Connective_tissue_disorder	1	2	1	Chondrodysplasia_punctata (315)
420	DO	Hematological	1	22	1	Blood_group (212)
427	ASAH1	Metabolic	1	0	1	Farber_lipogranulomatosis (526)
435	ASL	Metabolic	1	1	1	Argininemia (140)
443	ASPA	Metabolic	1	0	1	Canavan_disease (258)
445	ASS	Metabolic	1	1	1	Citrullinemia (335)
462	SERPINC1	Hematological	1	0	1	Antithrombin_III_deficiency (127)
463	ATBF1	Cancer	1	11	1	Prostate_cancer (1272)
471	ATIC	Metabolic	1	0	1	AICA-ribosiduria_due_to_ATIC_deficiency (69)
472	ATM	Grey	4	28	2	Ataxia-telangiectasia (157), Breast_cancer (228), Lymphoma (925), T-cell_lymphoblastic_leukemia (1478)
477	ATP1A2	Neurological	2	3	1	Alternating_hemiplegia_of_childhood (96), Migraine (1013)
478	ATP1A3	Neurological	1	5	1	Dystonia (462)
486	FXYD2	Renal	1	2	1	Hypomagnesemia (778)
487	ATP2A1	Muscular	1	0	1	Brody_myopathy (231)
488	ATP2A2	Dermatological	2	0	1	Acrokeratosis_verruciformis (36), Darier_disease (404)
491	ATP2B2	Ear,Nose,Throat	1	40	1	Deafness (406)
525	ATP6V1B1	Renal	1	4	1	Renal_tubular_acidosis (7308)
538	ATP7A	Grey	3	2	3	Cutis_laxa (395), Menkes_disease (988), Occipital_horn_syndrome (1129)
540	ATP7B	Metabolic	1	0	1	Wilson_disease (1596)
545	ATR	Developmental	1	0	1	Seckel_syndrome (1369)
546	ATRX	Grey	5	0	2	Alpha-thalassemia/mental_retardation_syndrome (92), Chudley-Lowry_syndrome (328), Juberg-Marsidi_syndrome (832), Smith-Fineman-Myers_syndrome (1409), Sutherland-Haan_syndrome-like (1465)
549	AUH	Metabolic	1	0	1	3-methylglutaconic_aciduria (8)
551	AVP	Endocrine	1	2	1	Diabetes_insipidus (2427)
554	AVPR2	Grey	2	2	2	Diabetes_insipidus (2427), Nephrogenic_syndrome_of_inappropriate_antidiuresis (1080)
570	BAAT	Gastrointestinal	1	2	1	Hypercholanemia (723)
580	BARD1	Cancer	1	18	1	Breast_cancer (228)
581	BAX	Cancer	2	34	1	Colon_cancer (346), T-cell_lymphoblastic_leukemia (1478)
582	BBS1	multiple	1	7	1	Bardet-Biedl_syndrome (183)
583	BBS2	multiple	1	7	1	Bardet-Biedl_syndrome (183)
585	BBS4	multiple	1	7	1	Bardet-Biedl_syndrome (183)
590	BCHE	Unclassified	1	0	0	Apnea,_postanesthetic (134)
593	BCKDHA	Metabolic	1	3	1	Maple_syrup_urine_disease (948)
594	BCKDHB	Metabolic	1	3	1	Maple_syrup_urine_disease (948)
595	CCND1	Cancer	3	70	1	Colon_cancer (346), Leukemia (886), von_Hippel-Lindau_syndrome (1572)
596	BCL2	Cancer	1	36	1	Leukemia (886)
605	BCL7A	Cancer	1	0	1	B-cell_non-Hodgkin_lymphoma,_high-grade (190)
606	BCL8	Cancer	1	9	1	Lymphoma (925)
611	OPN1SW	Ophthamological	1	2	1	Colorblindness (348)
613	BCR	Cancer	1	36	1	Leukemia (886)
617	BCS1L	Grey	3	14	3	GRACILE_syndrome (622), Leigh_syndrome (877), Mitochondrial_complex_deficiency (1016)
627	BDNF	Grey	3	6	3	Central_hypoventilation_syndrome (287), Memory_impairment (984), Obsessive-compulsive_disorder (1128)
641	BLM	Cancer	1	0	1	Bloom_syndrome (213)
642	BLMH	Neurological	1	11	1	Alzheimer_disease (98)

657	BMPR1A	Cancer	2	2	1	Cowden_disease (372), Polyposis (1245)
658	BMPR1B	Skeletal	1	4	1	Brachydactyly (224)
659	BMPR2	Cardiovascular	1	0	1	Pulmonary_hypertension,_familial_primary (5291)
668	FOXL2	Grey	2	1	2	Blepharophimosis,_epicanthus_inversus,_and_ptosis (210), Premature_ovarian_failure (1260)
669	BPGM	Hematological	1	9	1	Hemolytic_anemia (660)
672	BRCA1	Cancer	3	23	1	Breast_cancer (228), Ovarian_cancer (1170), Papillary_serous_carcinoma_of_the_peritoneum (1183)
673	BRAF	Cancer	4	41	1	Adenocarcinoma (45), Colon_cancer (346), Melanoma (978), Nonsmall_cell_lung_cancer (1115)
675	BRCA2	Grey	5	45	2	Breast_cancer (228), Fanconi_anemia (523), Pancreatic_cancer (1178), Prostate_cancer (1272), Wilms_tumor (1595)
682	BSG	Hematological	1	22	1	Blood_group (212)
686	BTD	Metabolic	1	0	1	Biotinidase_deficiency (203)
695	BTK	Grey	2	3	2	Agammaglobulinemia (63), XLA_and_isolated_growth_hormone_deficiency (1611)
699	BUB1	Cancer	1	33	1	Colon_cancer (346)
701	BUB1B	Cancer	1	33	1	Colon_cancer (346)
710	SERPING1	Immunological	1	1	1	Angioedema (114)
712	C1QA	Immunological	1	12	1	Complementary_component_deficiency (240)
713	C1QB	Immunological	1	12	1	Complementary_component_deficiency (240)
714	C1QG	Immunological	1	12	1	Complementary_component_deficiency (240)
716	C1S	Immunological	1	12	1	Complementary_component_deficiency (240)
717	C2	Immunological	1	12	1	Complementary_component_deficiency (240)
718	C3	Immunological	1	12	1	Complementary_component_deficiency (240)
720	C4A	Immunological	1	12	1	Complementary_component_deficiency (240)
721	C4B	Immunological	1	12	1	Complementary_component_deficiency (240)
729	C6	Immunological	2	13	1	Complementary_component_deficiency (240), Combined_immunodeficiency (4350)
730	C7	Immunological	1	12	1	Complementary_component_deficiency (240)
732	C8B	Immunological	1	12	1	Complementary_component_deficiency (240)
735	C9	Immunological	1	12	1	Complementary_component_deficiency (240)
760	CA2	Renal	1	4	1	Renal_tubular_acidosis (7308)
762	CA4	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
773	CACNA1A	Neurological	4	14	1	Cerebellar_ataxia (289), Episodic_ataxia (497), Hemiplegic_migraine,_familial (656), Spinocereballar_ataxia (1428)
775	CACNA1C	multiple	1	0	1	Timothy_syndrome (1509)
778	CACNA1F	Ophthamological	1	4	1	Night_blindness (1110)
779	CACNA1S	Grey	3	3	3	Hypokalemic_periodic_paralysis (776), Malignant_hyperthermia_susceptibility (942), Thyrotoxic_periodic_paralysis (1504)
785	CACNB4	Neurological	2	20	1	Ataxia (154), Epilepsy (495)
788	SLC25A20	Metabolic	1	0	1	Carnitine-acylcarnitine_translocase_deficiency (271)
796	CALCA	Bone	1	5	1	Osteoporosis (1163)
799	CALCR	Bone	1	5	1	Osteoporosis (1163)
825	CAPN3	Muscular	1	17	1	Muscular_dystrophy (1040)
841	CASP8	Grey	2	10	2	Autoimmune_disease (174), Hepatic_adenoma (668)
843	CASP10	Grey	3	12	2	Autoimmune_disease (174), Gastric_cancer (572), Non-Hodgkin_lymphoma (1114)
845	CASQ2	Cardiovascular	1	2	1	Ventricular_tachycardia (1558)
846	CASR	Endocrine	3	2	1	Hyperparathyroidism (743), Hypocalcemia (764), Hypocalciuric_hypercalcemia (765)
847	CAT	Hematological	1	0	1	Acatalasemia (21)
859	CAV3	Grey	5	44	3	Cardiomyopathy (268), Creatine_phosphokinase (385), Muscular_dystrophy (1040), Myopathy (1059), Rippling_muscle_disease (1333)
860	RUNX2	Skeletal	2	0	1	Cleidocranial_dysplasia (337), Dental_anomalies,_isolated (414)
861	RUNX1	Grey	3	46	3	Leukemia (886), Platelet_defect/deficiency (1237), Rheumatoid_arthritis (1324)
865	CBFB	Cancer	1	3	1	Myelogenous_leukemia (1047)

875	CBS	Grey	2	9	2	Homocystinuria (698), Thrombophilia (1497)
889	KRIT1	Grey	3	2	2	Cavernous_malformations_of_CNS_and_retina (279), Cerebral_cavernous_malformations (4291), Hyperkeratotic_cutaneous_capillary-venous_malformations_associated_with_cerebral_capillary_malformations (734)
915	CD3D	Immunological	1	7	1	Severe_combined_immunodeficiency (1383)
916	CD3E	Immunological	1	5	1	Immunodeficiency (802)
917	CD3G	Immunological	1	5	1	Immunodeficiency (802)
925	CD8A	Immunological	1	0	1	CD8_deficiency,_familial (284)
948	CD36	Grey	2	7	2	Malaria (940), Platelet_defect/deficiency (1237)
958	CD40	Immunological	1	5	1	Immunodeficiency (802)
959	CD40LG	Immunological	1	5	1	Immunodeficiency (802)
960	CD44	Hematological	1	22	1	Blood_group (212)
966	CD59	Immunological	1	0	1	CD59_deficiency (283)
977	CD151	Renal	1	0	1	Nephropathy (1085)
999	CDH1	Grey	5	33	2	Breast_cancer (228), Endometrial_carcinoma (479), Gastric_cancer (572), Listeria_monocytogenes (909), Ovarian_cancer (1170)
1001	CDH3	Dermatological	1	3	1	Hypotrichosis (788)
1019	CDK4	Cancer	1	4	1	Melanoma (978)
1028	CDKN1C	multiple	1	3	1	Beckwith-Wiedemann_syndrome (194)
1029	CDKN2A	Cancer	4	11	1	Li_Fraumeni_syndrome (897), Melanoma (978), Orolaryngeal_cancer (1148), Pancreatic_cancer (1178)
1041	CDSN	Dermatological	1	3	1	Hypotrichosis (788)
1050	CEBPA	Cancer	1	36	1	Leukemia (886)
1053	CEBPE	Immunological	1	0	1	Specific_granule_deficiency (3419)
1071	CETP	Grey	3	1	2	CETP_deficiency (299), Hyperalphalipoproteinemia (716), Longevity (911)
1075	CTSC	Grey	3	0	2	Haim-Munk_syndrome (634), Papillon-Lefevre_syndrome (1184), Periodontitis (1207)
1080	CFTR	Grey	5	2	2	Congenital_bilateral_absence_of_vas_deferens (2354), Cystic_fibrosis (399), Hypertrypsinemia (758), Pancreatitis (1179), Sweat_chloride_elevation_without_CF (1466)
1103	CHAT	Muscular	1	6	1	Myasthenic_syndrome (1042)
1118	CHIT1	Metabolic	1	0	1	Chitotriosidase_deficiency (307)
1121	CHM	Ophthamological	1	0	1	Choroidal_dystrophy (323)
1130	LYST	multiple	1	0	1	Chediak-Higashi_syndrome (304)
1134	CHRNA1	Muscular	1	6	1	Myasthenic_syndrome (1042)
1137	CHRNA4	Grey	2	18	2	Epilepsy (495), Nicotine_addiction (1106)
1140	CHRNB1	Muscular	1	6	1	Myasthenic_syndrome (1042)
1141	CHRNB2	Neurological	1	16	1	Epilepsy (495)
1144	CHRND	Muscular	1	6	1	Myasthenic_syndrome (1042)
1145	CHRNE	Muscular	1	6	1	Myasthenic_syndrome (1042)
1161	ERCC8	multiple	1	1	1	Cockayne_syndrome (339)
1180	CLCN1	Muscular	1	1	1	Myotonia_congenita (1062)
1181	CLCN2	Neurological	1	16	1	Epilepsy (495)
1184	CLCN5	Grey	4	3	2	Dent_disease (416), Hypophosphatemia (783), Nephrolithiasis (1081), Proteinuria (1274)
1186	CLCN7	Bone	1	3	1	Osteopetrosis (1161)
1187	CLCNKA	multiple	1	4	1	Bartter_syndrome (187)
1188	CLCNKB	multiple	1	4	1	Bartter_syndrome (187)
1200	TPP1	Neurological	1	5	1	Ceroid-lipofuscinosis (296)
1201	CLN3	Neurological	1	5	1	Ceroid-lipofuscinosis (296)
1203	CLN5	Neurological	1	5	1	Ceroid-lipofuscinosis (296)
1231	CCR2	Immunological	1	3	1	HIV (684)
1234	CCR5	Immunological	1	3	1	HIV (684)
1244	ABCC2	Metabolic	1	0	1	Dubin-Johnson_syndrome (450)

1258	CNGB1	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
1259	CNGA1	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
1261	CNGA3	Ophthamological	1	2	1	Achromatopsia (29)
1277	COL1A1	Grey	5	12	2	Caffey_disease (253), Dissection_of_cervical_arteries (439), Ehlers-Danlos_syndrome (470), Osteogenesis_imperfecta (1156), Osteoporosis (1163)
1278	COL1A2	Grey	4	13	2	Ehlers-Danlos_syndrome (470), Marfan_syndrome (950), Osteogenesis_imperfecta (1156), Osteoporosis (1163)
1280	COL2A1	Grey	6	5	5	Achondrogenesis-hypochondrogenesis,_type_II (26), Kniest_dysplasia (854), Osteoarthritis (1154), SMED_Strudwick_type (1408), Stickler_syndrome (1447), Wagner_syndrome (1575)
1281	COL3A1	Grey	2	8	1	Aneurysm,_familial_arterial (2112), Ehlers-Danlos_syndrome (470)
1282	COL4A1	Neurological	1	0	1	Porencephaly (1247)
1285	COL4A3	Renal	1	2	1	Alport_syndrome (94)
1286	COL4A4	Renal	2	2	1	Alport_syndrome (94), Hematuria,_familial_benign (653)
1287	COL4A5	Renal	1	2	1	Alport_syndrome (94)
1288	COL4A6	Cancer	1	1	1	Leiomyomatosis (878)
1289	COL5A1	Connective_tissue_disorder	1	8	1	Ehlers-Danlos_syndrome (470)
1290	COL5A2	Connective_tissue_disorder	1	8	1	Ehlers-Danlos_syndrome (470)
1291	COL6A1	Muscular	2	2	1	Bethlem_myopathy (200), Ullrich_congenital_muscular_dystrophy (1542)
1292	COL6A2	Muscular	2	2	1	Bethlem_myopathy (200), Ullrich_congenital_muscular_dystrophy (1542)
1293	COL6A3	Muscular	2	2	1	Bethlem_myopathy (200), Ullrich_congenital_muscular_dystrophy (1542)
1294	COL7A1	Dermatological	4	10	1	EBD (465), Epidermolysis_bullosa (493), Toenail_dystrophy,_isolated (1510), Transient_bullous_of_the_newborn (1518)
1296	COL8A2	Ophthamological	2	6	1	Corneal_dystrophy (362), Fuchs_endothelial_corneal_dystrophy (558)
1297	COL9A1	Bone	1	5	1	Epiphyseal_dysplasia (496)
1298	COL9A2	Grey	2	5	2	Epiphyseal_dysplasia (496), Intervertebral_disc_disease (817)
1299	COL9A3	Grey	2	5	2	Epiphyseal_dysplasia (496), Intervertebral_disc_disease (817)
1300	COL10A1	Grey	2	2	2	Metaphyseal_chondrodysplasia (997), Spondylometaphyseal_dysplasia (1436)
1301	COL11A1	multiple	2	2	1	Marshall_syndrome (953), Stickler_syndrome (1447)
1302	COL11A2	Grey	4	42	4	Deafness (406), OSMED_syndrome (1151), Stickler_syndrome (1447), Weissenbacher-Zweymuller_syndrome (1586)
1308	COL17A1	Dermatological	1	10	1	Epidermolysis_bullosa (493)
1311	COMP	Grey	2	5	2	Epiphyseal_dysplasia (496), Pseudoachondroplasia (1278)
1312	COMT	Psychiatric	1	8	1	Schizophrenia (1359)
1316	KLF6	Cancer	2	20	1	Gastric_cancer (572), Prostate_cancer (1272)
1326	MAP3K8	Cancer	1	3	1	Lung_cancer (918)
1352	COX10	Neurological	1	1	1	Encephalopathy (476)
1355	COX15	Grey	2	35	2	Cardiomyopathy (268), Leigh_syndrome (877)
1356	CP	Grey	3	1	3	Cerebellar_ataxia (289), Hemosiderosis,_systemic,_due_to_aceruloplasminemia (665), Hypoceruloplasminemia (766)
1369	CPN1	Hematological	1	0	1	Carboxypeptidase_N_deficiency (264)
1371	CPOX	Metabolic	2	0	1	Coproporphyria (361), Harderoporphyrinuria (639)
1373	CPS1	Metabolic	1	0	1	Carbamoylphosphate_synthetase_I_deficiency (262)
1374	CPT1A	Metabolic	1	1	1	CPT_deficiency,_hepatic (374)
1376	CPT2	Grey	2	10	2	CPT_deficiency,_hepatic (374), Myopathy (1059)
1378	CR1	Hematological	1	22	1	Blood_group (212)
1387	CREBBP	multiple	1	1	1	Rubenstein-Taybi_syndrome (1341)
1406	CRX	Ophthamological	3	33	1	Cone_dystrophy (352), Leber_congenital_amaurosis (873), Retinitis_pigmentosa (1316)
1409	CRYAA	Ophthamological	1	14	1	Cataract (277)
1410	CRYAB	Grey	2	23	2	Cataract (277), Myopathy (1059)

1411	CRYBA1	Ophthamological	1	14	1	Cataract (277)
1414	CRYBB1	Ophthamological	1	14	1	Cataract (277)
1415	CRYBB2	Ophthamological	1	14	1	Cataract (277)
1420	CRYGC	Ophthamological	1	14	1	Cataract (277)
1421	CRYGD	Ophthamological	1	14	1	Cataract (277)
1428	CRYM	Ear,Nose,Throat	1	40	1	Deafness (406)
1436	CSF1R	Cancer	1	3	1	Myelogenous_leukemia (1047)
1439	CSF2RB	Respiratory	1	3	1	Pulmonary_fibrosis (1291)
1471	CST3	Neurological	1	1	1	Cerebral_amyloid_angiopathy (291)
1476	CSTB	Neurological	1	16	1	Epilepsy (495)
1482	NKX2-5	Cardiovascular	3	8	1	Atrial_fibrillation (166), Atrioventricular_block (168), Tetralogy_of_Fallot (1483)
1491	CTH	Metabolic	2	0	1	Cystathioninuria (398), Homocysteine_plasma_level (697)
1493	CTLA4	Endocrine	2	7	1	Graves_disease (624), Hypothyroidism (787)
1497	CTNS	Renal	1	0	1	Cystinosis (400)
1499	CTNNB1	Cancer	4	42	1	Colon_cancer (346), Hepatic_adenoma (668), Ovarian_cancer (1170), Pilomatricoma (1230)
1513	CTSK	Skeletal	1	0	1	Pycnodysostosis (1293)
1524	CX3CR1	Immunological	1	0	1	Rapid_progression_to_AIDS_from_HIV1_infection (1304)
1528	CYB5	Hematological	1	3	1	Methemoglobinemia (999)
1535	CYBA	Immunological	1	3	1	Chronic_granulomatous_disease (327)
1536	CYBB	Immunological	1	3	1	Chronic_granulomatous_disease (327)
1540	CYLD	Dermatological	1	0	1	Cylindromatosis,_familial (397)
1545	CYP1B1	Grey	2	4	2	Glaucoma (589), Peters_anomaly (1213)
1548	CYP2A6	Grey	2	2	2	Coumarin_resistance (370), Nicotine_addiction (1106)
1557	CYP2C19	Metabolic	3	0	1	Mephenytoin_poor_metabolizer (991), Opremazole_poor_metabolizer (1143), Proguanil_poor_metabolizer (1266)
1559	CYP2C9	Grey	2	2	1	Tolbutamide_poor_metabolizer (1511), Warfarin_resistance/sensitivity (1580)
1565	CYP2D6	Metabolic	2	0	1	Codeine_sensitivity (340), Debrisoquine_sensitivity (407)
1577	CYP3A5	Cardiovascular	1	11	1	Hypertension (752)
1583	CYP11A1	Endocrine	1	1	1	Lipoid_adrenal_hyperplasia (903)
1584	CYP11B1	Endocrine	2	3	1	Adrenal_hyperplasia,_congenital (53), Aldosteronism (78)
1585	CYP11B2	Grey	3	0	3	Aldosterone_to_renin_ratio_raised (77), Hypoaldosteronism (761), Low_renin_hypertension (915)
1586	CYP17A1	Endocrine	1	0	1	17,20-lyase_deficiency (1)
1588	CYP19A1	Grey	2	0	2	Aromatase_deficiency (142), Virilization (1563)
1589	CYP21A2	Endocrine	2	3	1	Adrenal_hyperplasia,_congenital (53), Hyperandrogenism (718)
1593	CYP27A1	Metabolic	1	0	1	Cerebrotendinous_xanthomatosis (293)
1594	CYP27B1	Bone	1	0	1	Pseudovitamin_D_deficiency_rickets_1 (1284)
1603	DAD1	Unclassified	1	0	0	Temperature-sensitive_apoptosis,_cellular (1480)
1604	DAF	Hematological	1	22	1	Blood_group (212)
1618	DAZL	Renal	1	0	1	Spermatogenic_failure (1422)
1621	DBH	Grey	2	10	2	Dopamine_beta-hydroxylase_deficiency (441), Parkinson_disease (1192)
1629	DBT	Metabolic	1	3	1	Maple_syrup_urine_disease (948)
1630	DCC	Cancer	1	33	1	Colon_cancer (346)
1636	ACE	Grey	6	48	5	Alzheimer_disease (98), Angiotensin_I-converting_enzyme (117), Diabetes_mellitus (427), Myocardial_infarction (1054), Renal_tubular_dysgenesis (9308), SARS,_progression_of (1352)
1639	DCTN1	Neurological	2	5	1	Amyotrophic_lateral_sclerosis (104), Lower_motor_neuron_disease,_progressive,_without_sensory_symptoms (913)
1641	DCX	Neurological	2	3	1	Lissencephaly (908), Subcortical_laminar_heterotopia (1456)
1643	DDB2	Dermatological	1	7	1	Xeroderma_pigmentosum (1608)
1644	DDC	Metabolic	1	0	1	Aromatic_L-amino_acid_decarboxylase_deficiency (143)
1646	AKR1C2	Nutritional	1	20	1	Obesity (1126)
1649	DDIT3	Cancer	1	0	1	Myxoid_liposarcoma (1065)

1674	DES	Grey	2	31	2	Cardiomyopathy (268), Myopathy (1059)
1678	TIMM8A	Grey	3	40	2	Deafness (406), Jensen_syndrome (829), Mohr-Tranebjaerg_syndrome (1022)
1687	DFNA5	Ear,Nose,Throat	1	40	1	Deafness (406)
1690	COCH	Grey	2	40	2	Deafness (406), Meniere_disease (985)
1716	DGUOK	multiple	1	1	1	Mitochondrial_DNA_depletion_syndrome (5016)
1717	DHCR7	multiple	1	0	1	Smith-Lemli-Opitz_syndrome (1410)
1718	DHCR24	Metabolic	1	0	1	Desmosterolosis (426)
1727	CYB5R3	Hematological	1	3	1	Methemoglobinemia (999)
1728	NQO1	Grey	2	36	1	Benzene_toxicity (195), Leukemia (886)
1729	DIAPH1	Ear,Nose,Throat	1	40	1	Deafness (406)
1730	DIAPH2	Renal	1	1	1	Premature_ovarian_failure (1260)
1736	DKC1	Grey	2	1	2	Dyskeratosis (458), Hoyeraal-Hreidarsson_syndrome (702)
1741	DLG3	Neurological	1	23	1	Mental_retardation (990)
1747	DLX3	Grey	2	3	2	Amelogenesis_imperfecta (99), Trichodontoosseous_syndrome (1522)
1755	DMBT1	Cancer	1	4	1	Glioblastoma (590)
1756	DMD	Grey	3	25	2	Becker_muscular_dystrophy (193), Cardiomyopathy (268), Duchenne_muscular_dystrophy (451)
1760	DMPK	Muscular	1	1	1	Myotonic_dystrophy (1063)
1767	DNAH5	Grey	2	2	2	Ciliary_dyskinesia (331), Kartagener_syndrome (840)
1773	DNASE1	Immunological	1	3	1	Systemic_lupus_erythematosus (1471)
1785	DNM2	Neurological	1	17	1	Charcot-Marie-Tooth_disease (301)
1789	DNMT3B	multiple	1	0	1	Immunodeficiency-centromeric_instability-facial_anomalies_syndrome (801)
1798	DPAGT1	Metabolic	1	12	1	Congenital_disorder_of_glycosylation (354)
1806	DPYD	Metabolic	2	0	1	Fluorouracil_toxicity,_sensitivity_to (544), Thymine-uraciluria (1502)
1807	DPYS	Metabolic	1	0	1	Dihydropyrimidinuria (433)
1811	SLC26A3	Gastrointestinal	1	0	1	Chloride_diarrhea,_congenital,_Finnish_type (308)
1813	DRD2	Neurological	1	5	1	Dystonia (462)
1815	DRD4	Psychiatric	1	0	1	Autonomic_nervous_system_dysfunction (175)
1816	DRD5	Grey	3	5	3	Attention-deficit_hyperactivity_disorder (171), Blepharospasm (211), Dystonia (462)
1822	ATN1	Neurological	1	0	1	Dentatorubro-pallidoluysian_atrophy (415)
1828	DSG1	Dermatological	1	3	1	Keratosis_palmoplantaria_striata (847)
1832	DSP	Grey	5	15	3	Arrhythmogenic_right_ventricular_dysplasia (144), Dilated_cardiomyopathy_with_woolly_hair_and_keratoderma (434), Epidermolysis_bullosa (493), Keratosis_palmoplantaria_striata (847), Skin_fragility-woolly_hair_syndrome (1401)
1834	DSPP	Grey	3	40	2	Deafness (406), Dentin_dysplasia,_type_II (417), Dentinogenesis_imperfecta,_Shields_type (418)
1836	SLC26A2	Grey	4	6	3	Achondrogenesis_Ib (27), Atelosteogenesis (160), Diastrophic_dysplasia (430), Epiphyseal_dysplasia (496)
1837	DTNA	Cardiovascular	1	0	1	Left_ventricular_noncompaction (875)
1861	TOR1A	Neurological	1	5	1	Dystonia (462)
1889	ECE1	Grey	2	17	2	Hirschsprung_disease (681), Hypertension (752)
1890	ECGF1	multiple	1	0	1	Myoneurogastrointestinal_encephalomyopathy_syndrome (1058)
1893	ECM1	Metabolic	1	0	1	Lipoid_proteinosis (2903)
1896	EDA	Dermatological	1	7	1	Ectodermal_dysplasia (466)
1908	EDN3	Grey	3	7	3	Central_hypoventilation_syndrome (287), Hirschsprung_disease (681), Shah-Waardenburg_syndrome (1386)
1909	EDNRA	Neurological	1	3	1	Migraine (1013)
1910	EDNRB	Grey	3	7	2	ABCD_syndrome (15), Hirschsprung_disease (681), Waardenburg-Shah_syndrome (1573)
1947	EFNB1	Skeletal	1	0	1	Craniofrontonasal_dysplasia (380)
1956	EGFR	Cancer	2	4	1	Adenocarcinoma (45), Nonsmall_cell_lung_cancer (1115)
1959	EGR2	Grey	3	22	2	Charcot-Marie-Tooth_disease (301), Dejerine-Sottas_disease (410), Neuropathy (1099)
1967	EIF2B1	Neurological	1	4	1	Leukoencephalopathy_with_vanishing_white_matter (891)
1991	ELA2	Hematological	2	3	1	Hematopoiesis,_cyclic (652), Neutropenia (1101)
2006	ELN	Grey	3	2	3	Cutis_laxa (395), Supravalvar_aortic_stenosis (1463), Williams-Beuren_syndrome (1594)

2010	EMD	Muscular	1	1	1	Emery-Dreifuss_muscular_dystrophy (474)
2018	EMX2	Neurological	1	0	1	Schizencephaly (1357)
2022	ENG	Cardiovascular	1	1	1	Hereditary_hemorrhagic_telangiectasia (669)
2027	ENO3	Metabolic	1	0	1	Enolase_deficiency (485)
2033	EP300	Grey	2	34	2	Colon_cancer (346), Rubenstein-Taybi_syndrome (1341)
2035	EPB41	Hematological	1	3	1	Elliptocytosis (472)
2038	EPB42	Hematological	1	4	1	Spherocytosis (1423)
2048	EPHB2	Cancer	1	11	1	Prostate_cancer (1272)
2052	EPHX1	Grey	2	4	2	Hypercholanemia (723), Preeclampsia (1257)
2053	EPHX2	Metabolic	1	7	1	Hypercholesterolemia (724)
2055	CLN8	Neurological	1	5	1	Ceroid-lipofuscinosis (296)
2057	EPOR	Hematological	1	1	1	Erythrocytosis (505)
2064	ERBB2	Cancer	4	21	1	Adenocarcinoma (45), Gastric_cancer (572), Glioblastoma (590), Ovarian_cancer (1170)
2068	ERCC2	Grey	3	10	2	Cerebrooculofacioskeletal_syndrome (292), Trichothiodystrophy (1525), Xeroderma_pigmentosum (1608)
2070	EYA4	Grey	2	64	2	Cardiomyopathy (268), Deafness (406)
2071	ERCC3	Dermatological	2	9	1	Trichothiodystrophy (1525), Xeroderma_pigmentosum (1608)
2072	ERCC4	Dermatological	1	7	1	Xeroderma_pigmentosum (1608)
2073	ERCC5	Grey	2	8	2	Cerebrooculofacioskeletal_syndrome (292), Xeroderma_pigmentosum (1608)
2074	ERCC6	multiple	3	3	1	Cerebrooculofacioskeletal_syndrome (292), Cockayne_syndrome (339), De_Sanctis-Cacchione_syndrome (424)
2099	ESR1	Grey	3	4	3	Estrogen_resistance (509), HDL_cholesterol_level_QTL (644), Migraine (1013)
2108	ETFA	Metabolic	1	3	1	Glutaricaciduria (603)
2109	ETFB	Metabolic	1	3	1	Glutaricaciduria (603)
2110	ETFDH	Metabolic	1	3	1	Glutaricaciduria (603)
2121	EVC	Skeletal	2	1	1	Ellis-van_Creveld_syndrome (473), Weyers_acrodental_dysostosis (1590)
2130	EWSR1	Cancer	2	2	1	Chondrosarcoma (316), Ewing_sarcoma (511)
2131	EXT1	Grey	2	3	2	Chondrosarcoma (316), Exostoses (514)
2132	EXT2	Bone	1	1	1	Exostoses (514)
2138	EYA1	Grey	2	3	2	Anterior_segment_anomalies_and_cataract (126), Branchiootic_syndrome (226)
2147	F2	Hematological	3	0	1	Dysprothrombinemia (460), Hyperprothrombinemia (751), Hypoprothrombinemia (786)
2153	F5	Hematological	3	12	1	Hemorrhagic_diathesis (664), Thrombocytopenia (1494), Thrombophilia (1497)
2155	F7	Grey	2	16	2	Factor_x_deficiency (520), Myocardial_infarction (1054)
2157	F8	Hematological	1	1	1	Hemophilia (663)
2158	F9	Hematological	2	3	1	Hemophilia (663), Warfarin_resistance/sensitivity (1580)
2159	F10	Hematological	1	7	1	Factor_x_deficiency (520)
2160	F11	Hematological	1	7	1	Factor_x_deficiency (520)
2161	F12	Hematological	1	7	1	Factor_x_deficiency (520)
2162	F13A1	Hematological	1	7	1	Factor_x_deficiency (520)
2165	F13B	Hematological	1	7	1	Factor_x_deficiency (520)
2166	FAAH	Psychiatric	1	0	1	Drug_addiction (447)
2175	FANCA	multiple	1	10	1	Fanconi_anemia (523)
2176	FANCC	multiple	1	10	1	Fanconi_anemia (523)
2177	FANCD2	multiple	1	10	1	Fanconi_anemia (523)
2178	FANCE	multiple	1	10	1	Fanconi_anemia (523)
2182	ACSL4	Neurological	1	23	1	Mental_retardation (990)
2184	FAH	Metabolic	1	2	1	Tyrosinemia (1540)
2187	FANCB	multiple	1	10	1	Fanconi_anemia (523)
2188	FANCF	multiple	1	10	1	Fanconi_anemia (523)
2189	FANCG	multiple	1	10	1	Fanconi_anemia (523)
2192	FBLN1	Skeletal	1	1	1	Synpolydactyly (1470)

2200	FBN1	Grey	6	3	4	Aortic_aneurysm (130), Ectopia (467), Marfan_syndrome (950), MASS_syndrome (957), Shprintzen-Goldberg_syndrome (1388), Weill-Marchesani_syndrome (1585)
2201	FBN2	Connective_tissue_disorder	1	0	1	Contractural_arachnodactyly,_congenital (358)
2202	EFEMP1	Ophthamological	1	0	1	Doyne_honeycomb_degeneration_of_retina (446)
2203	FBP1	Metabolic	1	0	1	Fructose-bisphosphatase_deficiency (555)
2206	MS4A2	Respiratory	1	12	1	Asthma (153)
2209	FCGR1A	Immunological	1	0	1	IgG_receptor_I,_phagocytic,_familial_deficiency_of (799)
2212	FCGR2A	Connective_tissue_disorder	1	0	1	Lupus_erythematosus (919)
2213	FCGR2B	Cancer	1	9	1	Lymphoma (925)
2214	FCGR3A	Grey	2	4	2	Neutropenia (1101), Viral_infection (1562)
2218	FCMD	Grey	2	18	2	Muscular_dystrophy (1040), Walker-Warburg_syndrome (1578)
2235	FECH	Metabolic	1	0	1	Protoporphyria (1276)
2243	FGA	Grey	3	7	2	Afibrinogenemia (61), Amyloidosis (103), Dysfibrinogenemia (457)
2244	FGB	Hematological	3	9	1	Afibrinogenemia (61), Dysfibrinogenemia (457), Thrombophilia (1497)
2245	FGD1	Grey	2	23	2	Aarskog-Scott_syndrome (13), Mental_retardation (990)
2255	FGF10	Gastrointestinal	1	0	1	Aplasia_of_lacrimal_and_salivary_glands (132)
2259	FGF14	Neurological	1	12	1	Spinocereballar_ataxia (1428)
2260	FGFR1	Grey	3	2	2	Jackson-Weiss_syndrome (827), Kallmann_syndrome (836), Pfeiffer_syndrome (1215)
2261	FGFR3	Grey	8	37	2	Achondroplasia (28), Bladder_cancer (207), Cervical_carcinoma (298), Colon_cancer (346), Crouzon_syndrome (391), Hypochondroplasia (767), Muenke_syndrome (1034), Thanatophoric_dysplasia,_types_I_and_II (1490)
2263	FGFR2	Grey	9	13	5	Apert_syndrome (131), Beare-Stevenson_cutis_gyrata_syndrome (192), Craniofacial-skeletal-dermatologic_dysplasia (379), Craniosynostosis (383), Crouzon_syndrome (391), Gastric_cancer (572), Jackson-Weiss_syndrome (827), Pfeiffer_syndrome (1215), Saethre-Chotzen_syndrome (1344)
2264	FGFR4	Cancer	1	1	1	Cancer_susceptibility (259)
2266	FGG	Hematological	3	9	1	Dysfibrinogenemia (457), Hypofibrinogenemia (770), Thrombophilia (1497)
2271	FH	Grey	3	1	2	Fumarase_deficiency (561), Leiomyomatosis (878), Multiple_cutaneous_and_uterine_leiomyomata (3037)
2289	FKBP5	Psychiatric	1	0	1	Major_depressive_disorder (939)
2296	FOXC1	Grey	5	4	2	Anterior_segment_anomalies_and_cataract (126), Axenfeld_anomaly (177), Iridogoniodysgenesis (822), Iris_hypoplasia_and_glaucoma (823), Rieger_syndrome (1331)
2301	FOXE3	Ophthamological	1	3	1	Anterior_segment_anomalies_and_cataract (126)
2303	FOXC2	Grey	2	1	2	Lymphedema (921), Yellow_nail_syndrome (1613)
2304	FOXE1	Endocrine	1	0	1	Bamforth-Lazarus_syndrome (180)
2308	FOXO1A	Cancer	1	3	1	Rhabdomyosarcoma (1323)
2316	FLNA	Grey	4	0	3	Frontometaphyseal_dysplasia (554), Heterotopia (676), Melnick-Needles_syndrome (981), Otopalatodigital_syndrome (1168)
2317	FLNB	Grey	3	1	2	Atelosteogenesis (160), Larson_syndrome (865), Spondylocarpotarsal_synostosis_syndrome (1432)
2322	FLT3	Cancer	1	36	1	Leukemia (886)
2324	FLT4	Grey	2	2	2	Hemangioma (651), Lymphedema (921)
2328	FMO3	Metabolic	1	0	1	Fish-odor_syndrome (541)
2332	FMR1	Neurological	1	0	1	Fragile_X_syndrome (550)
2334	AFF2	Neurological	1	23	1	Mental_retardation (990)
2395	FXN	Neurological	1	0	1	Friedreich_ataxia (553)
2487	FRZB	Connective_tissue_disorder	1	3	1	Osteoarthritis (1154)
2488	FSHB	Endocrine	1	0	1	Follicle-stimulating_hormone_deficiency,_isolated (546)
2489	FSHMD1A	Muscular	1	0	1	Facioscapulohumeral_muscular_dystrophy (519)
2492	FSHR	Grey	4	1	2	Ovarian_dysgenesis (3171), Ovarian_hyperstimulation_syndrome (5170), Ovarian_sex_cord_tumors (7170), Twinning,_dizygotic (1538)

2495	FTH1	Hematological	1	1	1	Iron_overload/deficiency (824)
2512	FTL	Grey	2	1	2	Basal_ganglia_disease (4188), Hyperferritinemia-cataract_syndrome (727)
2516	NR5A1	Grey	2	0	1	Adrenocortical_insufficiency (2055), Sex_reversal (1384)
2517	FUCA1	Metabolic	1	0	1	Fucosidosis (559)
2523	FUT1	Hematological	1	1	1	Bombay_phenotype (216)
2524	FUT2	Grey	2	1	2	Bombay_phenotype (216), Norwalk_virus_infection,_resistance_to (1119)
2525	FUT3	Hematological	1	22	1	Blood_group (212)
2528	FUT6	Metabolic	1	0	1	Fucosyltransferase-6_deficiency (560)
2538	G6PC	Metabolic	1	8	1	Glycogen_storage_disease (610)
2539	G6PD	Grey	3	9	2	Favism (528), G6PD_deficiency (563), Hemolytic_anemia (660)
2542	SLC37A4	Metabolic	1	8	1	Glycogen_storage_disease (610)
2548	GAA	Metabolic	1	8	1	Glycogen_storage_disease (610)
2554	GABRA1	Neurological	1	16	1	Epilepsy (495)
2555	GABRA2	Unclassified	1	0	0	Alcoholism (75)
2562	GABRB3	Psychiatric	1	1	1	Insomnia (812)
2566	GABRG2	Neurological	2	18	1	Epilepsy (495), Myoclonic_epilepsy (1055)
2581	GALC	Neurological	1	0	1	Krabbe_disease (856)
2582	GALE	Metabolic	1	0	1	Galactose_epimerase_deficiency (566)
2584	GALK1	Metabolic	1	0	1	Galactokinase_deficiency (565)
2588	GALNS	Metabolic	1	6	1	Mucopolysaccharidosis (1033)
2591	GALNT3	Bone	1	1	1	Calcinosis,_tumoral (254)
2592	GALT	Metabolic	1	0	1	Galactosemia (567)
2593	GAMT	Metabolic	1	0	1	GAMT_deficiency (570)
2617	GARS	Grey	2	23	2	Charcot-Marie-Tooth_disease (301), Spinal_muscular_atrophy (1426)
2623	GATA1	Grey	3	36	2	Dyserythropoietic_anemia (456), Leukemia (886), Macrothrombocytopenia (936)
2625	GATA3	Endocrine	1	0	1	Hypoparathyroidism (781)
2626	GATA4	Cardiovascular	1	4	1	Atrial_fibrillation (166)
2628	GATM	Metabolic	1	0	1	AGAT_deficiency (64)
2629	GBA	Metabolic	1	1	1	Gaucher_disease (575)
2632	GBE1	Metabolic	1	8	1	Glycogen_storage_disease (610)
2638	GC	Endocrine	1	1	1	Graves_disease (624)
2639	GCDH	Metabolic	1	3	1	Glutaricaciduria (603)
2642	GCGR	Endocrine	1	26	1	Diabetes_mellitus (427)
2643	GCH1	Neurological	1	5	1	Dystonia (462)
2645	GCK	Grey	3	27	2	Diabetes_mellitus (427), Hyperinsulinism (731), MODY (1020)
2651	GCNT2	Hematological	2	22	1	Adult_i_phenotype (58), Blood_group (212)
2652	OPN1MW	Ophthamological	2	2	1	Blue-cone_monochromacy (214), Colorblindness (348)
2653	GCSH	Metabolic	1	3	1	Glycine_encephalopathy (608)
2654	GCSL	Grey	2	14	2	Leigh_syndrome (877), Maple_syrup_urine_disease (948)
2660	GDF8	Muscular	1	1	1	Muscle_hypertrophy (1039)
2664	GDI1	Neurological	1	23	1	Mental_retardation (990)
2668	GDNF	Grey	2	7	2	Central_hypoventilation_syndrome (287), Hirschsprung_disease (681)
2670	GFAP	multiple	1	1	1	Alexander_disease (79)
2672	GFI1	Hematological	1	3	1	Neutropenia (1101)
2677	GGCX	Hematological	1	1	1	Vitamin_K-dependent_coagulation_defect (1565)
2683	B4GALT1	Metabolic	1	12	1	Congenital_disorder_of_glycosylation (354)
2688	GH1	Endocrine	1	0	1	Isolated_growth_hormone_deficiency (825)
2690	GHR	Skeletal	2	2	1	Laron_dwarfism (863), Short_stature (1387)
2692	GHRHR	Endocrine	1	1	1	Growth_hormone (628)
2694	GIF	Hematological	1	0	1	Intrinsic_factor_deficiency (820)

2697	GJA1	Grey	4	2	2	Atrioventricular_block (168), Hypoplastic_left_heart_syndrome (2785), Oculodentodigital_dysplasia (1132), Syndactyly (1468)
2700	GJA3	Ophthamological	1	14	1	Cataract (277)
2703	GJA8	Ophthamological	1	14	1	Cataract (277)
2705	GJB1	Neurological	1	17	1	Charcot-Marie-Tooth_disease (301)
2706	GJB2	Grey	6	41	3	Bart-Pumphrey_syndrome (186), Deafness (406), Hystrix-like_ichthyosis_with_deafness (792), Keratitis-ichthyosis-deafness_syndrome (843), Keratoderma,_palmoplantar,_with_deafness (845), Vohwinkel_syndrome (1571)
2707	GJB3	Grey	2	42	2	Deafness (406), Erythrokeratoderma (507)
2710	GK	Metabolic	1	0	1	Glycerol_kinase_deficiency (607)
2717	GLA	Metabolic	1	0	1	Fabry_disease (518)
2719	GPC3	Grey	2	3	2	Simpson-Golabi-Behmel_syndrome (1397), Wilms_tumor (1595)
2720	GLB1	Metabolic	2	8	1	GM-gangliosidosis (614), Mucopolysaccharidosis (1033)
2729	GCLC	Hematological	1	9	1	Hemolytic_anemia (660)
2730	GCLM	Cardiovascular	1	9	1	Myocardial_infarction (1054)
2731	GLDC	Metabolic	1	3	1	Glycine_encephalopathy (608)
2736	GLI2	multiple	1	0	1	Pituitary_anomalies_with_holoprosencephaly-like_features (3232)
2737	GLI3	Grey	4	0	2	Acrocallosal_syndrome (32), Greig_cephalopolysyndactyly_syndrome (626), Pallister-Hall_syndrome (1175), Polydactyly (1243)
2739	GLO1	Psychiatric	1	3	1	Autism (173)
2741	GLRA1	Neurological	2	1	1	Hyperekplexia (725), Startle_disease (1440)
2743	GLRB	Neurological	1	1	1	Hyperekplexia (725)
2746	GLUD1	Metabolic	1	0	1	Hyperinsulinism-hyperammonemia_syndrome (732)
2760	GM2A	Metabolic	1	2	1	GM-gangliosidosis (614)
2771	GNAI2	Grey	2	4	2	Pituitary_ACTH-secreting_adenoma (1232), Ventricular_tachycardia (1558)
2778	GNAS	Grey	6	3	4	Acromegaly (38), McCune-Albright_syndrome (963), Osseous_heteroplasia (1152), Pituitary_ACTH-secreting_adenoma (1232), Pseudohypoparathyroidism (1282), Somatotrophinoma (1415)
2779	GNAT1	Ophthamological	1	4	1	Night_blindness (1110)
2780	GNAT2	Ophthamological	1	2	1	Achromatopsia (29)
2784	GNB3	Cardiovascular	1	11	1	Hypertension (752)
2798	GNRHR	Endocrine	2	3	1	Fertile_eunuch_syndrome (532), Hypogonadotropic_hypogonadism (774)
2799	GNS	Metabolic	1	6	1	Mucopolysaccharidosis (1033)
2811	GP1BA	Hematological	1	2	1	Bernard-Soulier_syndrome (196)
2812	GP1BB	Hematological	2	2	1	Bernard-Soulier_syndrome (196), Giant_platelet_disorder,_isolated (584)
2815	GP9	Hematological	1	2	1	Bernard-Soulier_syndrome (196)
2820	GPD2	Endocrine	1	26	1	Diabetes_mellitus (427)
2821	GPI	Hematological	1	9	1	Hemolytic_anemia (660)
2908	NR3C1	Endocrine	1	0	1	Cortisol_resistance (367)
2934	GSN	Neurological	1	5	1	Amyloidosis (103)
2937	GSS	Grey	2	9	2	Glutathione_synthetase_deficiency (604), Hemolytic_anemia (660)
2956	MSH6	Cancer	4	40	1	Cancer_susceptibility (259), Colon_cancer (346), Endometrial_carcinoma (479), Ovarian_cancer (1170)
2978	GUCA1A	Ophthamological	1	6	1	Cone_dystrophy (352)
2989	GULOP	Nutritional	1	0	1	Scurvy (1365)
2990	GUSB	Metabolic	1	6	1	Mucopolysaccharidosis (1033)
2993	GYPA	Hematological	1	22	1	Blood_group (212)
2994	GYPB	Hematological	1	22	1	Blood_group (212)
2995	GYPC	Grey	2	26	2	Blood_group (212), Malaria (940)
2998	GYS2	Metabolic	1	8	1	Glycogen_storage_disease (610)
3000	GUCY2D	Ophthamological	2	9	1	Cone_dystrophy (352), Leber_congenital_amaurosis (873)
3028	HADH2	Metabolic	1	0	1	2-methyl-3-hydroxybutyryl-CoA_dehydrogenase_deficiency (3)

3030	HADHA	Metabolic	4	1	1	Fatty_liver,_acute,_of_pregnancy (527), HELLP_syndrome (649), LCHAD_deficiency (870), Trifunctional_protein_deficiency (1526)
3032	HADHB	Metabolic	1	1	1	Trifunctional_protein_deficiency (1526)
3033	HADHSC	Metabolic	1	0	1	3-hydroxyacyl-CoA_dehydrogenase_deficiency (6)
3034	HAL	Metabolic	1	0	1	Histidinemia (682)
3039	HBA1	Hematological	4	6	1	Erythremias (504), Heinz_body_anemia (648), Methemoglobinemia (999), Thalassemias (1486)
3040	HBA2	Hematological	5	5	1	Erythrocytosis (505), Heinz_body_anemia (648), Hemoglobin_H_disease (659), Hypochromic_microcytic_anemia (768), Thalassemias (1486)
3043	HBB	Hematological	6	8	1	Erythremias (504), Heinz_body_anemia (648), HPFH (703), Methemoglobinemia (999), Sickle_cell_anemia (1393), Thalassemias (1486)
3045	HBD	Hematological	1	4	1	Thalassemias (1486)
3047	HBG1	Hematological	1	2	1	HPFH (703)
3048	HBG2	Hematological	1	2	1	HPFH (703)
3053	SERPIND1	Hematological	1	8	1	Thrombophilia (1497)
3060	HCRT	Psychiatric	1	0	1	Narcolepsy (1073)
3064	HD	Neurological	1	3	1	Huntington_disease (708)
3073	HEXA	Metabolic	3	2	1	GM-gangliosidosis (614), Hex_A_pseudodeficiency (677), Tay-Sachs_disease (1477)
3074	HEXB	Grey	2	6	2	Sandhoff_disease,_infantile,_juvenile,_and_adult_forms (1347), Spinal_muscular_atrophy (1426)
3075	CFH	Grey	4	11	3	Factor_x_deficiency (520), Hemolytic-uremic_syndrome (661), Macular_degeneration (937), Nephropathy-hypertension (1084)
3077	HFE	Metabolic	2	9	1	Hemochromatosis (657), Porphyria (1249)
3081	HGD	Metabolic	1	0	1	Alkaptonuria (80)
3098	HK1	Hematological	1	9	1	Hemolytic_anemia (660)
3106	HLA-B	Grey	3	0	3	Abacavir_hypersensitivity (14), Ankylosing_spoldylitis (121), Stevens-Johnson_syndrome,_carbamazepine-induced (1446)
3110	HLXB9	Skeletal	1	0	1	Currarino_syndrome (394)
3115	HLA-DPB1	Unclassified	1	0	0	Beryllium_disease,_chronic (197)
3119	HLA-DQB1	Neurological	1	1	1	Creutzfeldt-Jakob_disease (388)
3123	HLA-DRB1	Immunological	1	2	1	Sarcoidosis (1349)
3141	HLCS	Metabolic	1	0	1	Holocarboxylase_synthetase_deficiency (688)
3145	HMBS	Metabolic	1	5	1	Porphyria (1249)
3155	HMGCL	Metabolic	1	1	1	HMG-CoA_deficiency (686)
3156	HMGCR	Metabolic	1	0	1	Statins (1442)
3158	HMGCS2	Metabolic	1	1	1	HMG-CoA_deficiency (686)
3162	HMOX1	Metabolic	1	0	1	Heme_oxygenase-1_deficiency (654)
3172	HNF4A	Endocrine	2	27	1	Diabetes_mellitus (427), MODY (1020)
3176	HNMT	Respiratory	1	12	1	Asthma (153)
3198	HOXA1	Neurological	2	0	1	Athabaskan_brainstem_dysgenesis_syndrome (162), Bosley-Salih-Alorainy_syndrome (220)
3207	HOXA11	multiple	1	0	1	Radioulnar_synostosis_with_amegakaryocytic_thrombocytopenia (1301)
3209	HOXA13	multiple	2	0	1	Guttmacher_syndrome (630), Hand-foot-uterus_syndrome (638)
3233	HOXD4	Cancer	1	36	1	Leukemia (886)
3236	HOXD10	Grey	2	17	2	Charcot-Marie-Tooth_disease (301), Vertical_talus (1559)
3239	HOXD13	Skeletal	2	5	1	Brachydactyly (224), Synpolydactyly (1470)
3240	HP	Hematological	2	0	1	Anhaptoglobinemia (118), Hypohaptoglobinemia (775)
3242	HPD	Metabolic	1	2	1	Tyrosinemia (1540)
3251	HPRT1	Metabolic	2	0	1	HPRT-related_gout (704), Lesch-Nyhan_syndrome, (884)
3257	HPS1	multiple	1	6	1	Hermansky-Pudlak_syndrome (670)
3265	HRAS	Grey	3	13	2	Bladder_cancer (207), Costello_syndrome (369), Thyroid_carcinoma (1503)
3273	HRG	Hematological	1	8	1	Thrombophilia (1497)
3284	HSD3B2	Metabolic	1	0	1	3-beta-hydroxysteroid_dehydrogenase,_type_II,_deficiency (5)

3290	HSD11B1	Metabolic	1	1	1	Cortisone_reductase_deficiency (368)
3291	HSD11B2	Grey	2	11	2	Apparent_mineralocorticoid_excess,_hypertension_due_to (137), Hypertension (752)
3293	HSD17B3	Developmental	1	1	1	Pseudohermaphroditism,_male (1279)
3295	HSD17B4	Metabolic	1	0	1	D-bifunctional_protein_deficiency (405)
3299	HSF4	Ophthamological	1	14	1	Cataract (277)
3315	HSPB1	Neurological	2	21	1	Charcot-Marie-Tooth_disease (301), Neuropathy (1099)
3329	HSPD1	Neurological	1	8	1	Spastic_ataxia/paraplegia (1418)
3339	HSPG2	Grey	2	0	2	Dyssegmental_dysplasia,_Silverman-Handmaker_type (461), Schwartz-Jampel_syndrome,_type_1 (1361)
3356	HTR2A	Grey	5	10	2	Alcohol_dependence (74), Anorexia_nervosa (124), Obsessive-compulsive_disorder (1128), Schizophrenia (1359), Seasonal_affective_disorder (1367)
3373	HYAL1	Metabolic	1	6	1	Mucopolysaccharidosis (1033)
3383	ICAM1	Immunological	1	4	1	Malaria (940)
3386	ICAM4	Hematological	1	22	1	Blood_group (212)
3423	IDS	Metabolic	1	6	1	Mucopolysaccharidosis (1033)
3425	IDUA	Metabolic	1	6	1	Mucopolysaccharidosis (1033)
3426	IF	Immunological	1	12	1	Complementary_component_deficiency (240)
3458	IFNG	Grey	4	7	4	AIDS (70), Aplastic_anemia (133), Tuberous_sclerosis (1534), Tuberculosis (1533)
3459	IFNGR1	Grey	4	5	2	BCG_infection (191), H._pylori_infection (705), Mycobacterial_infection (1043), Tuberculosis (1533)
3460	IFNGR2	Immunological	1	4	1	Mycobacterial_infection (1043)
3476	IGBP1	Neurological	1	0	1	Corpus_callosum,_agenesis_of,_with_mental_retardation,_ocular_coloboma_and_micrognathia (366)
3479	IGF1	Developmental	1	0	1	Growth_retardation (2628)
3480	IGF1R	Developmental	1	1	1	Intrauterine_and_postnatal_growth_retardation (819)
3481	IGF2	Developmental	1	1	1	Intrauterine_and_postnatal_growth_retardation (819)
3482	IGF2R	Cancer	1	7	1	Hepatic_adenoma (668)
3483	IGFALS	Endocrine	1	0	1	Acid-labile_subunit,_deficiency_of (30)
3501	IGHG2	Immunological	1	0	1	IgG2_deficiency (798)
3507	IGHM	Hematological	1	3	1	Agammaglobulinemia (63)
3508	IGHMBP2	Muscular	1	6	1	Spinal_muscular_atrophy (1426)
3514	IGKC	Immunological	1	0	1	Kappa_light_chain_deficiency (839)
3543	IGLL1	Hematological	1	3	1	Agammaglobulinemia (63)
3549	IHH	Skeletal	2	4	1	Acrocapitofemoral_dysplasia (33), Brachydactyly (224)
3553	IL1B	Cancer	1	9	1	Gastric_cancer (572)
3557	IL1RN	Cancer	1	9	1	Gastric_cancer (572)
3559	IL2RA	Immunological	1	0	1	Interleukin-2_receptor,_alpha_chain,_deficiency_of (816)
3561	IL2RG	Immunological	2	8	1	Combined_immunodeficiency (4350), Severe_combined_immunodeficiency (1383)
3566	IL4R	Immunological	1	4	1	Atopy (164)
3569	IL6	Immunological	1	0	1	Kaposi_sarcoma (838)
3575	IL7R	Immunological	1	7	1	Severe_combined_immunodeficiency (1383)
3586	IL10	Grey	3	10	2	Graft-versus-host_disease (623), HIV (684), Rheumatoid_arthritis (1324)
3593	IL12B	Respiratory	1	12	1	Asthma (153)
3594	IL12RB1	Immunological	1	4	1	Mycobacterial_infection (1043)
3596	IL13	Grey	2	12	2	Allergic_rhinitis (83), Asthma (153)
3614	IMPDH1	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
3621	ING1	Cancer	1	2	1	Squamous_cell_carcinoma (1437)
3630	INS	Endocrine	2	5	1	Hyperproinsulinemia (748), MODY (1020)
3640	INSL3	Renal	1	1	1	Cryptorchidism (392)
3643	INSR	Grey	3	26	3	Diabetes_mellitus (427), Leprechaunism (881), Rabson-Mendenhall_syndrome (1298)
3651	IPF1	Grey	3	27	2	Diabetes_mellitus (427), MODY (1020), Pancreatic_agenesis (3178)
3655	ITGA6	Dermatological	1	10	1	Epidermolysis_bullosa (493)

3659	IRF1	Grey	5	15	3	Gastric_cancer (572), Macrocytic_anemia (935), Myelodysplastic_syndrome (1045), Myelogenous_leukemia (1047), Nonsmall_cell_lung_cancer (1115)
3662	IRF4	Cancer	1	1	1	Multiple_myeloma (9037)
3664	IRF6	Grey	3	0	3	Orofacial_cleft (1147), Popliteal_pterygium_syndrome (1246), van_der_Woude_syndrome (3554)
3667	IRS1	Endocrine	1	26	1	Diabetes_mellitus (427)
3674	ITGA2B	Hematological	1	1	1	Glanzmann_thrombasthenia (588)
3679	ITGA7	Muscular	1	9	1	Myopathy (1059)
3689	ITGB2	Immunological	1	0	1	Leukocyte_adhesion_deficiency (889)
3690	ITGB3	Hematological	1	1	1	Glanzmann_thrombasthenia (588)
3691	ITGB4	Dermatological	1	10	1	Epidermolysis_bullosa (493)
3700	ITIH4	Metabolic	1	7	1	Hypercholesterolemia (724)
3704	ITPA	Metabolic	1	0	1	Inosine_triphosphatase_deficiency (810)
3712	IVD	Metabolic	1	0	1	Isovaleric_acidemia (826)
3717	JAK2	Hematological	3	2	1	Myelofibrosis,_idiopathic (1046), Polycythemia (1242), Thrombocythemia (1493)
3718	JAK3	Immunological	1	0	1	SCID (1362)
3728	JUP	multiple	1	0	1	Naxos_disease (1077)
3730	KAL1	multiple	1	1	1	Kallmann_syndrome (836)
3736	KCNA1	Neurological	1	1	1	Episodic_ataxia (497)
3753	KCNE1	Grey	2	6	2	Jervell_and_Lange-Nielsen_syndrome (830), Long_QT_syndrome (912)
3757	KCNH2	Cardiovascular	2	6	1	Acquired_long_QT_syndrome (31), Long_QT_syndrome (912)
3758	KCNJ1	multiple	1	4	1	Bartter_syndrome (187)
3759	KCNJ2	Cardiovascular	1	6	1	Long_QT_syndrome (912)
3767	KCNJ11	Grey	2	26	2	Diabetes_mellitus (427), Persistent_hyperinsulinemic_hypoglycemia_of_infancy (3212)
3778	KCNMA1	Neurological	1	1	1	Generalized_epilepsy (578)
3779	KCNMB1	Cardiovascular	1	11	1	Hypertension (752)
3784	KCNQ1	Grey	3	9	2	Atrial_fibrillation (166), Jervell_and_Lange-Nielsen_syndrome (830), Long_QT_syndrome (912)
3785	KCNQ2	Neurological	2	16	1	Epilepsy (495), Myokymia_with_neonatal_epilepsy (1057)
3786	KCNQ3	Neurological	1	16	1	Epilepsy (495)
3791	KDR	Cancer	1	1	1	Hemangioma (651)
3792	KEL	Hematological	1	22	1	Blood_group (212)
3795	KHK	Metabolic	1	0	1	Fructosuria (557)
3798	KIF5A	Neurological	1	8	1	Spastic_ataxia/paraplegia (1418)
3811	KIR3DL1	Immunological	1	2	1	AIDS (70)
3815	KIT	Grey	6	38	3	Gastrointestinal_stromal_tumor (574), Germ_cell_tumor (580), Leukemia (886), Mast_cell_leukemia (958), Mastocytosis_with_associated_hematologic_disorder (959), Piebaldism (1226)
3816	KLK1	Renal	1	0	1	Kallikrein,_decreased_urinary_activity_of (835)
3818	KLKB1	Hematological	1	0	1	Prekallikrein_deficiency (1259)
3827	KNG1	Hematological	3	0	1	Fitzgerald_factor_deficiency (542), High-molecular-weight_kininogen_deficiency (679), Kininogen_deficiency (851)
3845	KRAS	Cancer	6	65	1	Bladder_cancer (207), Breast_cancer (228), Leukemia (886), Lung_cancer (918), Pancreatic_cancer (1178), Stomach_cancer (1449)
3848	KRT1	Dermatological	5	10	1	Cyclic_ichthyosis_with_epidermolytic_hyperkeratosis (396), Epidermolytic_hyperkeratosis (494), Ichthyosis (794), Keratosis_palmoplantaria_striata (847), Unna-Thost_disease,_nonepidermolytic (1545)
3849	KRT2A	Dermatological	1	6	1	Ichthyosis (794)
3850	KRT3	Ophthamological	1	1	1	Meesmann_corneal_dystrophy (971)
3851	KRT4	Connective_tissue_disorder	1	1	1	White_sponge_nevus (1592)
3852	KRT5	Dermatological	1	10	1	Epidermolysis_bullosa (493)
3853	KRT6A	Dermatological	1	3	1	Pachyonychia_congenita (1172)
3854	KRT6B	Dermatological	1	3	1	Pachyonychia_congenita (1172)

3856	KRT8	Gastrointestinal	1	2	1	Cirrhosis (334)
3857	KRT9	Dermatological	1	2	1	Epidermolytic_hyperkeratosis (494)
3858	KRT10	Dermatological	3	7	1	Epidermolytic_hyperkeratosis (494), Ichthyosis (794), Nevus,_epidermal,_epidermolytic_hyperkeratotic_type (1104)
3859	KRT12	Ophthamological	1	1	1	Meesmann_corneal_dystrophy (971)
3860	KRT13	Connective_tissue_disorder	1	1	1	White_sponge_nevus (1592)
3861	KRT14	Dermatological	1	10	1	Epidermolysis_bullosa (493)
3868	KRT16	Dermatological	2	3	1	Pachyonychia_congenita (1172), Palmoplantar_keratoderma (1176)
3872	KRT17	Dermatological	2	3	1	Pachyonychia_congenita (1172), Steatocystoma_multiplex (1444)
3875	KRT18	Gastrointestinal	1	2	1	Cirrhosis (334)
3887	KRTHB1	Dermatological	1	1	1	Monilethrix (1024)
3892	KRTHB6	Dermatological	1	1	1	Monilethrix (1024)
3897	L1CAM	Grey	3	0	2	CRASH_syndrome (384), Hydrocephalus (712), MASA_syndrome (955)
3908	LAMA2	Muscular	1	17	1	Muscular_dystrophy (1040)
3909	LAMA3	Grey	2	10	2	Epidermolysis_bullosa (493), Laryngoonychocutaneous_syndrome (868)
3913	LAMB2	Ophthamological	1	0	1	Microcoria-congenital_nephrosis_syndrome (1009)
3914	LAMB3	Dermatological	1	10	1	Epidermolysis_bullosa (493)
3918	LAMC2	Dermatological	1	10	1	Epidermolysis_bullosa (493)
3920	LAMP2	Metabolic	1	8	1	Glycogen_storage_disease (610)
3930	LBR	Grey	2	0	2	Greenberg_dysplasia (625), Pelger-Huet_anomaly (1199)
3931	LCAT	Metabolic	2	0	1	Fish-eye_disease (540), Norum_disease (1118)
3938	LCT	Metabolic	1	1	1	Hypolactasia,_adult_type (777)
3939	LDHA	Metabolic	1	0	1	Exertional_myoglobinuria_due_to_deficiency_of_LDH-A (512)
3945	LDHB	Metabolic	1	0	1	Lactate_dehydrogenase-B_deficiency (858)
3949	LDLR	Metabolic	1	7	1	Hypercholesterolemia (724)
3952	LEP	Nutritional	1	20	1	Obesity (1126)
3953	LEPR	Nutritional	1	20	1	Obesity (1126)
3957	LGALS2	Cardiovascular	1	9	1	Myocardial_infarction (1054)
3972	LHB	Endocrine	1	0	1	Hypogonadism,_hypergonadotropic (773)
3973	LHCGR	Grey	5	4	4	Hypogonadotropic_hypogonadism (774), Leydig_cell_adenoma (894), Micropenis (1011), Precocious_puberty,_male (1256), Pseudohermaphroditism,_male (1279)
3977	LIFR	multiple	1	0	1	Stuve-Wiedemann_syndrome/Schwartz-Jampel_type_2_syndrome (1455)
3978	LIG1	multiple	1	0	1	DNA_ligase_I_deficiency (2440)
3981	LIG4	Grey	2	1	2	LIG4_syndrome (899), Multiple_myeloma (9037)
3982	LIM2	Ophthamological	1	14	1	Cataract (277)
3988	LIPA	Metabolic	2	0	1	Cholesteryl_ester_storage_disease (313), Wolman_disease (1604)
3990	LIPC	Metabolic	1	0	1	Hepatic_lipase_deficiency (4666)
3998	LMAN1	Hematological	1	0	1	Combined_factor_V_and_VIII_deficiency (350)
4000	LMNA	Grey	3	29	3	Cardiomyopathy (268), Emery-Dreifuss_muscular_dystrophy (474), Lipodystrophy (902)
4010	LMX1B	multiple	1	0	1	Nail-patella_syndrome (1070)
4014	LOR	Grey	2	3	2	Erythrokeratoderma (507), Vohwinkel_syndrome (1571)
4018	LPA	Metabolic	1	0	1	LPA_deficiency,_congenital (916)
4023	LPL	Metabolic	3	0	1	Chylomicronemia_syndrome,_familial (329), Combined_hyperlipemia (2350), Lipoprotein_lipase_deficiency (906)
4026	LPP	Cancer	2	38	1	Leukemia (886), Lipoma (904)
4041	LRP5	Grey	7	10	2	Bone_mineral_density_variability (217), Exudative_vitreoretinopathy (515), Hyperostosis,_endosteal (741), Osteopetrosis (1161), Osteoporosis (1163), Osteoporosis-pseudoglioma_syndrome (1164), van_Buchem_disease (1554)
4049	LTA	Cardiovascular	1	9	1	Myocardial_infarction (1054)
4059	LU	Hematological	1	22	1	Blood_group (212)

4068	SH2D1A	Cancer	1	9	1	Lymphoma (925)
4069	LYZ	Neurological	1	5	1	Amyloidosis (103)
4070	TACSTD2	Ophthamological	1	6	1	Corneal_dystrophy (362)
4089	SMAD4	Cancer	3	9	1	Juvenile_polyposis/hereditary_hemorrhagic_telangiectasia_syndrome (833), Pancreatic_cancer (1178), Polyposis (1245)
4125	MAN2B1	Metabolic	1	1	1	Mannosidosis (947)
4126	MANBA	Metabolic	1	1	1	Mannosidosis (947)
4128	MAOA	Unclassified	1	0	0	Brunner_syndrome (235)
4137	MAPT	Neurological	4	5	1	Dementia (412), Pallidopontonigral_degeneration (1174), Supranuclear_palsy (1462), Tauopathy_and_respiratory_failure (1476)
4143	MAT1A	Metabolic	2	1	1	Hypermethioninemia (739), Methionine_adenosyltransferase_deficiency,_autosomal_recessive (1001)
4148	MATN3	Grey	3	12	3	Epiphyseal_dysplasia (496), Osteoarthritis (1154), Spondyloepiphyseal_dysplasia (1435)
4153	MBL2	Immunological	2	0	1	Chronic_infections,_due_to_opsonin_defect (2327), Meningococcal_disease (987)
4157	MC1R	Grey	4	2	2	Analgesia_from_kappa-opioid_receptor_agonist,_female-specific (107), Ocular_albinism (1130), Red_hair/fair_skin (1306), UV-induced_skin_damage (1553)
4158	MC2R	Endocrine	1	1	1	Glucocorticoid_deficiency (598)
4159	MC3R	Nutritional	1	20	1	Obesity (1126)
4160	MC4R	Nutritional	1	20	1	Obesity (1126)
4163	MCC	Cancer	1	33	1	Colon_cancer (346)
4166	CHST6	Ophthamological	1	4	1	Macular_dystrophy (2937)
4175	MCM6	Grey	2	1	2	Hypolactasia,_adult_type (777), Tall_stature (1472)
4193	MDM2	Cancer	1	0	1	Accelerated_tumor_formation (22)
4197	MDS1	Muscular	1	2	1	Myelodysplastic_syndrome (1045)
4200	ME2	Neurological	1	16	1	Epilepsy (495)
4204	MECP2	Grey	5	27	3	Angelman_syndrome (113), Autism (173), Mental_retardation (990), PPM-X_syndrome (1253), Rett_syndrome (1321)
4205	MEF2A	Cardiovascular	1	5	1	Coronary_artery_disease (365)
4210	MEFV	Immunological	1	0	1	Familial_Mediterranean_fever (522)
4221	MEN1	Grey	8	5	2	Adrenal_adenoma (2053), Angiofibroma,_sporadic (115), Carcinoid_tumor_of_lung (2265), Hyperparathyroidism (743), Lipoma (904), Multiple_endocrine_neoplasia (1037), Parathyroid_adenoma (1189), Prolactinoma,_hyperparathyroidism,_carcinoid_syndrome (1267)
4233	MET	Cancer	2	13	1	Hepatic_adenoma (668), Renal_cell_carcinoma (1308)
4247	MGAT2	Metabolic	1	2	1	Carbohydrate-deficient_glycoprotein_syndrome (263)
4256	MGP	multiple	1	0	1	Keutel_syndrome (849)
4261	CIITA	Grey	3	12	3	Bare_lymphocyte_syndrome (184), Multiple_sclerosis (9038), Rheumatoid_arthritis (1324)
4281	MID1	multiple	1	0	1	Opitz_G_syndrome (1142)
4282	MIF	Connective_tissue_disorder	1	7	1	Rheumatoid_arthritis (1324)
4284	MIP	Ophthamological	1	14	1	Cataract (277)
4286	MITF	multiple	2	3	1	Tietz_syndrome (1508), Waardenburg_syndrome (1574)
4287	ATXN3	Neurological	1	0	1	Machado-Joseph_disease (933)
4292	MLH1	Cancer	4	33	1	Cafe-au-lait_spots (252), Colon_cancer (346), Muir-Torre_syndrome (1035), Turcot_syndrome (1536)
4306	NR3C2	Grey	2	16	2	Hypertension (752), Pseudohypoaldosteronism (1281)
4312	MMP1	Respiratory	1	0	1	COPD,_rate_of_decline_of_lung_function_in (360)
4313	MMP2	Bone	1	1	1	Osteolysis (1157)
4314	MMP3	Cardiovascular	1	5	1	Coronary_artery_disease (365)
4329	ALDH6A1	Metabolic	1	0	1	Methylmalonate_semialdehyde_dehydrogenase_deficiency (1003)
4330	MN1	Cancer	1	3	1	Meningioma (986)
4337	MOCS1	Metabolic	1	2	1	Molybdenum_cofactor_deficiency (1023)
4338	MOCS2	Metabolic	1	2	1	Molybdenum_cofactor_deficiency (1023)

4351	MPI	Metabolic	1	2	1	Carbohydrate-deficient_glycoprotein_syndrome (263)
4352	MPL	Hematological	1	3	1	Thrombocytopenia (1494)
4353	MPO	Grey	2	11	2	Alzheimer_disease (98), Myeloperoxidase_deficiency (1051)
4359	MPZ	Grey	4	22	2	Charcot-Marie-Tooth_disease (301), Dejerine-Sottas_disease (410), Neuropathy (1099), Roussy-Levy_syndrome (1339)
4361	MRE11A	Immunological	1	1	1	Ataxia-telangiectasia (157)
4436	MSH2	Cancer	8	48	1	Cafe-au-lait_spots (252), Colon_cancer (346), Glioblastoma (590), Lymphoma (925), Lynch_cancer_family_syndrome_II (930), Muir-Torre_syndrome (1035), Neurofibromatosis (1097), Ovarian_cancer (1170)
4437	MSH3	Cancer	1	3	1	Endometrial_carcinoma (479)
4481	MSR1	Cancer	1	11	1	Prostate_cancer (1272)
4487	MSX1	Grey	3	3	2	Cleft_palate (336), Hypodontia (769), Witkop_syndrome (1599)
4488	MSX2	Skeletal	2	2	1	Craniosynostosis (383), Parietal_foramina (1190)
4522	MTHFD1	Developmental	2	2	1	Neural_tube_defects,_maternal_risk_of (1090), Spina_bifida (1425)
4524	MTHFR	Metabolic	1	1	1	Homocystinuria (698)
4534	MTM1	Muscular	1	0	1	Myotubular_myopathy (1064)
4547	MTP	Metabolic	1	1	1	Abetalipoproteinemia (17)
4548	MTR	Grey	3	2	3	Down_syndrome (445), Methylcobalamin_deficiency,_cblG_type (1002), Spina_bifida (1425)
4552	MTRR	Grey	2	2	2	Homocystinuria-megaloblastic_anemia,_cbl_E_type (699), Spina_bifida (1425)
4591	TRIM37	multiple	1	0	1	Mulibrey_nanism (1036)
4594	MUT	Metabolic	1	2	1	Methylmalonic_aciduria (1004)
4595	MUTYH	Cancer	3	42	1	Adenomas (47), Colon_cancer (346), Gastric_cancer (572)
4598	MVK	Grey	2	0	2	Hyper-IgD_syndrome (728), Mevalonicaciduria (1005)
4601	MXI1	Cancer	2	11	1	Neurofibrosarcoma (1098), Prostate_cancer (1272)
4607	MYBPC3	Cardiovascular	1	24	1	Cardiomyopathy (268)
4609	MYC	Cancer	1	0	1	Burkitt_lymphoma (237)
4613	MYCN	multiple	1	0	1	Feingold_syndrome (531)
4618	MYF6	Muscular	2	10	1	Becker_muscular_dystrophy (193), Myopathy (1059)
4620	MYH2	Muscular	1	2	1	Inclusion_body_myopathy (805)
4624	MYH6	Cardiovascular	2	28	1	Atrial_fibrillation (166), Cardiomyopathy (268)
4625	MYH7	Grey	3	32	2	Cardiomyopathy (268), Central_core_disease (2287), Myopathy (1059)
4626	MYH8	multiple	2	1	1	Carney_complex (269), Trismus-pseudocomptodactyly_syndrome (1528)
4627	MYH9	Grey	5	40	3	Deafness (406), Epstein_syndrome (500), Fechtner_syndrome (530), May-Hegglin_anomaly (961), Sebastian_syndrome (1368)
4633	MYL2	Cardiovascular	1	24	1	Cardiomyopathy (268)
4634	MYL3	Cardiovascular	1	24	1	Cardiomyopathy (268)
4640	MYO1A	Ear,Nose,Throat	1	40	1	Deafness (406)
4644	MYO5A	Dermatological	1	2	1	Griscelli_syndrome (627)
4646	MYO6	Ear,Nose,Throat	1	40	1	Deafness (406)
4647	MYO7A	Grey	2	44	2	Deafness (406), Usher_syndrome (1551)
4653	MYOC	Ophthamological	1	3	1	Glaucoma (589)
4668	NAGA	Metabolic	2	0	1	Kanzaki_disease (837), Schindler_disease (1355)
4669	NAGLU	Metabolic	1	1	1	Sanfilippo_syndrome (1348)
4683	NBN	Grey	2	36	2	Leukemia (886), Nijmegen_breakage_syndrome (1111)
4687	NCF1	Immunological	1	3	1	Chronic_granulomatous_disease (327)
4688	NCF2	Immunological	1	3	1	Chronic_granulomatous_disease (327)
4692	NDN	multiple	1	1	1	Prader-Willi_syndrome (1254)
4693	NDP	Grey	3	2	2	Coats_disease (338), Exudative_vitreoretinopathy (515), Norrie_disease (1117)
4703	NEB	Muscular	1	3	1	Nemaline_myopathy (1078)
4719	NDUFS1	multiple	1	6	1	Mitochondrial_complex_deficiency (1016)

4720	NDUFS2	multiple	1	6	1	Mitochondrial_complex_deficiency (1016)
4722	NDUFS3	Neurological	1	11	1	Leigh_syndrome (877)
4723	NDUFV1	Grey	3	15	2	Alexander_disease (79), Leigh_syndrome (877), Mitochondrial_complex_deficiency (1016)
4724	NDUFS4	Grey	2	14	2	Leigh_syndrome (877), Mitochondrial_complex_deficiency (1016)
4726	NDUFS6	multiple	1	1	1	Complex_mitochondrial_respiratory_chain,_deficiency_of (351)
4728	NDUFS8	Neurological	1	11	1	Leigh_syndrome (877)
4729	NDUFV2	Neurological	1	10	1	Parkinson_disease (1192)
4744	NEFH	Neurological	1	5	1	Amyotrophic_lateral_sclerosis (104)
4747	NEFL	Neurological	1	17	1	Charcot-Marie-Tooth_disease (301)
4758	NEU1	Metabolic	1	1	1	Sialidosis (1391)
4760	NEUROD1	Endocrine	1	26	1	Diabetes_mellitus (427)
4763	NF1	Cancer	5	38	1	Leukemia (886), Neurofibromatosis (1095), Neurofibromatosis-Noonan_syndrome (1096), Neurofibromatosis (1097), Watson_syndrome (1581)
4771	NF2	Cancer	3	5	1	Meningioma (986), Neurofibromatosis (1097), Schwannomatosis (1360)
4792	NFKBIA	Dermatological	1	7	1	Ectodermal_dysplasia (466)
4795	NFKBIL1	Connective_tissue_disorder	1	7	1	Rheumatoid_arthritis (1324)
4803	NGFB	Neurological	1	7	1	Neuropathy (1099)
4810	NHS	Ophthamological	1	0	1	Nance-Horan_syndrome (1071)
4830	NME1	Cancer	1	1	1	Neuroblastoma (1091)
4838	NODAL	Developmental	1	1	1	Situs_ambiguus (1399)
4842	NOS1	Developmental	1	0	1	Pyloric_stenosis,_infantile_hypertrophic (1294)
4843	NOS2A	Immunological	1	4	1	Malaria (940)
4846	NOS3	Grey	4	22	2	Alzheimer_disease (98), Coronary_spasms (2365), Hypertension (752), Placental_abruption (1233)
4854	NOTCH3	Cardiovascular	1	0	1	Cerebral_arteriopathy_with_subcortical_infarcts_and_leukoencephalopathy (2291)
4860	NP	Immunological	1	0	1	Nucleoside_phosphorylase_deficiency,_immunodeficiency_due_to (1122)
4864	NPC1	Metabolic	1	2	1	Niemann-Pick_disease (1107)
4867	NPHP1	Grey	3	5	2	Joubert_syndrome (831), Nephronophthisis (1082), Senior-Loken_syndrome (1375)
4868	NPHS1	Renal	1	1	1	Nephrotic_syndrome (1087)
4869	NPM1	Cancer	1	36	1	Leukemia (886)
4882	NPR2	Skeletal	1	1	1	Acromesomelic_dysplasia (39)
4891	SLC11A2	Hematological	1	8	1	Anemia (110)
4893	NRAS	Cancer	1	33	1	Colon_cancer (346)
4901	NRL	Ophthamological	2	32	1	Retinal_cone_dsytrophy (1315), Retinitis_pigmentosa (1316)
4902	NRTN	Gastrointestinal	1	6	1	Hirschsprung_disease (681)
4914	NTRK1	Grey	2	1	2	Insensitivity_to_pain (811), Medullary_thyroid_carcinoma (2969)
4915	NTRK2	Nutritional	1	20	1	Obesity (1126)
4920	ROR2	Grey	2	4	2	Brachydactyly (224), Robinow_syndrome,_autosomal_recessive (1335)
4926	NUMA1	Cancer	1	36	1	Leukemia (886)
4929	NR4A2	Neurological	1	10	1	Parkinson_disease (1192)
4935	GPR143	Ophthamological	1	2	1	Ocular_albinism (1130)
4938	OAS1	Immunological	1	1	1	Viral_infection (1562)
4942	OAT	Metabolic	1	0	1	Gyrate_atrophy_of_choroid_and_retina_with_ornithinemia,_B6_responsive_or_unresponsive (632)
4948	OCA2	Dermatological	1	2	1	Albinism (72)
4952	OCRL	Grey	2	1	2	Dent_disease (416), Lowe_syndrome (914)
4953	ODC1	Cancer	1	33	1	Colon_cancer (346)
4968	OGG1	Cancer	1	6	1	Renal_cell_carcinoma (1308)
4973	OLR1	Cardiovascular	1	9	1	Myocardial_infarction (1054)
4976	OPA1	Ophthamological	2	4	1	Glaucoma (589), Optic_atrophy (1144)
4978	OPCML	Cancer	1	0	1	Epithelial_ovarian_cancer,_somatic (498)

4982	TNFRSF11B	Bone	1	2	1	Paget_disease (1173)
4983	OPHN1	Neurological	1	23	1	Mental_retardation (990)
4988	OPRM1	Neurological	1	0	1	Response_to_morphine-6-glucuronide (1311)
4990	SIX6	Ophthamological	1	2	1	Microphthalmia (1012)
5002	SLC22A18	Cancer	3	23	1	Breast_cancer (228), Lung_cancer (918), Rhabdomyosarcoma (1323)
5009	OTC	Metabolic	1	0	1	Ornithine_transcarbamylase_deficiency (1146)
5019	OXCT1	Metabolic	1	0	1	Ketoacidosis (848)
5023	P2RX1	Hematological	1	1	1	Bleeding_disorder (209)
5027	P2RX7	Cancer	1	36	1	Leukemia (886)
5048	PAFAH1B1	Neurological	2	3	1	Lissencephaly (908), Subcortical_laminar_heterotopia (1456)
5053	PAH	Metabolic	2	3	1	Hyperphenylalaninemia (746), Phenylketonuria (1216)
5063	PAK3	Neurological	1	23	1	Mental_retardation (990)
5071	PARK2	Grey	3	13	3	Adenocarcinoma (45), Leprosy (882), Parkinson_disease (1192)
5076	PAX2	Grey	2	0	2	Optic_nerve_coloboma_with_renal_disease (3144), Renal_hypoplasia,_isolated (5308)
5077	PAX3	Grey	3	6	2	Craniofacial-deafness-hand_syndrome (378), Rhabdomyosarcoma (1323), Waardenburg_syndrome (1574)
5080	PAX6	Grey	10	17	3	Aniridia,_type_II (119), Cataract (277), Coloboma,_ocular (345), Ectopia (467), Eye_anomalies (516), Foveal_hypoplasia (548), Keratitis (842), Morning_glory_disc_anomaly (1026), Optic_nerve_hypoplasia/aplasia (5144), Peters_anomaly (1213)
5081	PAX7	Cancer	1	3	1	Rhabdomyosarcoma (1323)
5083	PAX9	Skeletal	2	1	1	Hypodontia (769), Oligodontia (1139)
5091	PC	Metabolic	1	2	1	Pyruvate_dehydrogenase_deficiency (1297)
5092	PCBD1	Metabolic	1	1	1	Hyperphenylalaninemia (746)
5095	PCCA	Metabolic	1	1	1	Propionicacidemia (1271)
5096	PCCB	Metabolic	1	1	1	Propionicacidemia (1271)
5108	PCM1	Cancer	1	10	1	Thyroid_carcinoma (1503)
5122	PCSK1	Nutritional	1	20	1	Obesity (1126)
5133	PDCD1	Immunological	1	3	1	Systemic_lupus_erythematosus (1471)
5144	PDE4D	Cardiovascular	1	1	1	Stroke (1454)
5145	PDE6A	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
5155	PDGFB	Cancer	3	3	1	Dermatofibrosarcoma_protuberans (422), Giant-cell_fibroblastoma (583), Meningioma (986)
5156	PDGFRA	Grey	2	1	2	Gastrointestinal_stromal_tumor (574), Hypereosinophilic_syndrome (726)
5157	PDGFRL	Cancer	2	38	1	Colon_cancer (346), Hepatic_adenoma (668)
5158	PDE6B	Ophthamological	2	32	1	Night_blindness (1110), Retinitis_pigmentosa (1316)
5159	PDGFRB	Cancer	2	0	1	Myelomonocytic_leukemia,_chronic (1050), Myeloproliferative_disorder (1052)
5160	PDHA1	Grey	2	13	2	Leigh_syndrome (877), Pyruvate_dehydrogenase_deficiency (1297)
5162	PDHB	Metabolic	1	2	1	Pyruvate_dehydrogenase_deficiency (1297)
5167	ENPP1	Grey	3	45	3	Diabetes_mellitus (427), Obesity (1126), Ossification_of_the_posterior_longitudinal_spinal_ligaments (1153)
5172	SLC26A4	Ear,Nose,Throat	3	40	1	Deafness (406), Enlarged_vestibular_aqueduct (484), Pendred_syndrome (1204)
5184	PEPD	Connective_tissue_disorder	1	0	1	Prolidase_deficiency (1268)
5189	PEX1	Grey	3	13	2	Adrenoleukodystrophy (56), Refsum_disease (1307), Zellweger_syndrome (1615)
5190	PEX6	multiple	1	1	1	Peroxisomal_biogenesis_disorder (1210)
5191	PEX7	Grey	2	5	2	Refsum_disease (1307), Rhizomelic_chondrodysplasia_punctata (1325)
5192	PEX10	Grey	2	11	2	Adrenoleukodystrophy (56), Zellweger_syndrome (1615)
5193	PEX12	multiple	1	1	1	Peroxisomal_biogenesis_disorder (1210)
5194	PEX13	Grey	2	11	2	Adrenoleukodystrophy (56), Zellweger_syndrome (1615)
5195	PEX14	multiple	1	10	1	Zellweger_syndrome (1615)
5199	PFC	Immunological	1	0	1	Properdin_deficiency (1270)
5205	ATP8B1	Gastrointestinal	1	3	1	Cholestasis (310)
5213	PFKM	Metabolic	1	8	1	Glycogen_storage_disease (610)

5224	PGAM2	Muscular	1	9	1	Myopathy (1059)
5230	PGK1	Grey	2	9	2	Hemolytic_anemia (660), Myoglobinuria/hemolysis_due_to_PGK_deficiency (1056)
5243	ABCB1	Unclassified	1	0	0	Colchicine_resistance (343)
5244	ABCB4	Gastrointestinal	2	3	1	Cholelithiasis (309), Cholestasis (310)
5245	PHB	Cancer	1	18	1	Breast_cancer (228)
5251	PHEX	Metabolic	1	1	1	Hypophosphatemia (783)
5255	PHKA1	Muscular	1	1	1	Muscle_hypertrophy (1039)
5256	PHKA2	Metabolic	1	1	1	Glycogenosis (609)
5257	PHKB	Metabolic	1	0	1	Phosphorylase_kinase_deficiency_of_liver_and_muscle,_autosomal_recessive (1222)
5261	PHKG2	Metabolic	1	1	1	Glycogenosis (609)
5264	PHYH	Neurological	1	4	1	Refsum_disease (1307)
5265	SERPINA1	Grey	2	1	2	Emphysema (475), Hemorrhagic_diathesis (664)
5274	SERPINI1	Neurological	1	1	1	Encephalopathy (476)
5277	PIGA	Hematological	1	0	1	Paroxysmal_nocturnal_hemoglobinuria (3195)
5290	PIK3CA	Cancer	3	51	1	Breast_cancer (228), Colon_cancer (346), Ovarian_cancer (1170)
5308	PITX2	Grey	3	1	2	Iridogoniodysgenesis (822), Rieger_syndrome (1331), Ring_dermoid_of_cornea (1332)
5309	PITX3	Ophthamological	2	17	1	Anterior_segment_anomalies_and_cataract (126), Cataract (277)
5310	PKD1	Renal	1	3	1	Polycystic_kidney_disease (1241)
5311	PKD2	Renal	1	3	1	Polycystic_kidney_disease (1241)
5313	PKLR	Hematological	1	8	1	Anemia (110)
5314	PKHD1	Renal	1	3	1	Polycystic_kidney_disease (1241)
5317	PKP1	Dermatological	1	7	1	Ectodermal_dysplasia (466)
5318	PKP2	Cardiovascular	1	2	1	Arrhythmogenic_right_ventricular_dysplasia (144)
5320	PLA2G2A	Cancer	1	33	1	Colon_cancer (346)
5324	PLAG1	Cancer	1	2	1	Adenomas (47)
5328	PLAU	Neurological	1	11	1	Alzheimer_disease (98)
5339	PLEC1	Grey	2	27	2	Epidermolysis_bullosa (493), Muscular_dystrophy (1040)
5340	PLG	Grey	2	0	2	Conjunctivitis,_ligneous (356), Plasminogen_deficiency (1235)
5345	SERPINF2	Hematological	1	0	1	Plasmin_inhibitor_deficiency (1234)
5350	PLN	Cardiovascular	1	24	1	Cardiomyopathy (268)
5351	PLOD1	Connective_tissue_disorder	2	8	1	Ehlers-Danlos_syndrome (470), Nevo_syndrome (1103)
5352	PLOD2	Unclassified	1	0	0	Bruck_syndrome (233)
5354	PLP1	Neurological	2	8	1	Pelizaeus-Merzbacher_disease (1200), Spastic_ataxia/paraplegia (1418)
5371	PML	Cancer	1	36	1	Leukemia (886)
5373	PMM2	Metabolic	1	2	1	Carbohydrate-deficient_glycoprotein_syndrome (263)
5376	PMP22	Grey	4	22	2	Charcot-Marie-Tooth_disease (301), Dejerine-Sottas_disease (410), Neuropathy (1099), Roussy-Levy_syndrome (1339)
5378	PMS1	Cancer	1	33	1	Colon_cancer (346)
5395	PMS2	Grey	3	33	2	Colon_cancer (346), Neuroectodermal_tumors (1093), Turcot_syndrome (1536)
5428	POLG	Grey	3	2	2	Alpers_syndrome (86), Progressive_external_ophthalmoplegia_with_mitochondrial_DNA_deletions (1265), Sensory_ataxic_neuropathy,_dysarthria,_and_ophthalmoparesis (1376)
5429	POLH	Dermatological	1	7	1	Xeroderma_pigmentosum (1608)
5443	POMC	Nutritional	1	20	1	Obesity (1126)
5444	PON1	Cardiovascular	1	5	1	Coronary_artery_disease (365)
5445	PON2	Cardiovascular	1	5	1	Coronary_artery_disease (365)
5447	POR	Grey	3	3	2	Adrenal_hyperplasia,_congenital (53), Antley-Bixler_syndrome (128), Disordered_steroidogenesis,_isolated (438)
5449	POU1F1	Endocrine	1	3	1	Pituitary_hormone_deficiency (5232)
5456	POU3F4	Ear,Nose,Throat	1	40	1	Deafness (406)

5459	POU4F3	Ear,Nose,Throat	1	40	1	Deafness (406)
5465	PPARA	Metabolic	1	0	1	Hyperapobetalipoproteinemia (719)
5468	PPARG	Grey	5	55	4	Diabetes_mellitus (427), Glioblastoma (590), Insulin_resistance (814), Lipodystrophy (902), Obesity (1126)
5476	PPGB	Metabolic	1	0	1	Galactosialidosis (568)
5498	PPOX	Metabolic	1	5	1	Porphyria (1249)
5506	PPP1R3A	Metabolic	1	2	1	Insulin_resistance (814)
5519	PPP2R1B	Cancer	1	3	1	Lung_cancer (918)
5521	PPP2R2B	Neurological	1	12	1	Spinocereballar_ataxia (1428)
5538	PPT1	Neurological	2	5	1	Ceroid_lipofuscinosis (295), Ceroid-lipofuscinosis (296)
5546	PRCC	Cancer	1	6	1	Renal_cell_carcinoma (1308)
5551	PRF1	Hematological	1	1	1	Hemophagocytic_lymphohistiocytosis (662)
5573	PRKAR1A	Grey	5	11	3	Adrenocortical_carcinoma (54), Carney_complex (269), Myxoma,_intracardiac (1066), Pigmented_adrenocortical_disease,_primary_isolated (3229), Thyroid_carcinoma (1503)
5578	PRKCA	Cancer	1	0	1	Pituitary_tumor,_invasive (7232)
5582	PRKCG	Neurological	1	12	1	Spinocereballar_ataxia (1428)
5589	PRKCSH	Gastrointestinal	1	1	1	Polycystic_liver_disease (3241)
5621	PRNP	Grey	5	5	2	Creutzfeldt-Jakob_disease (388), Gerstmann-Straussler_disease (581), Huntington_disease (708), Insomnia (812), Prion_disease_with_protracted_course (1263)
5624	PROC	Hematological	1	8	1	Thrombophilia (1497)
5625	PRODH	Grey	2	9	2	Hyperprolinemia (749), Schizophrenia (1359)
5626	PROP1	Endocrine	1	3	1	Pituitary_hormone_deficiency (5232)
5627	PROS1	Hematological	1	0	1	Protein_S_deficiency (1273)
5630	PRPH	Neurological	1	5	1	Amyotrophic_lateral_sclerosis (104)
5631	PRPS1	Metabolic	1	0	1	Phosphoribosyl_pyrophosphate_synthetase-related_gout (1221)
5644	PRSS1	Gastrointestinal	1	2	1	Pancreatitis (1179)
5649	RELN	Neurological	1	3	1	Lissencephaly (908)
5651	PRSS7	Gastrointestinal	1	0	1	Enterokinase_deficiency (487)
5660	PSAP	Grey	3	2	2	Combined_SAP_deficiency (8350), Gaucher_disease (575), Metachromatic_leukodystrophy (996)
5663	PSEN1	Neurological	3	16	1	Alzheimer_disease (98), Dementia (412), Pick_disease (1225)
5664	PSEN2	Neurological	1	11	1	Alzheimer_disease (98)
5723	PSPH	Metabolic	1	0	1	Phosphoserine_phosphatase_deficiency (1223)
5726	TAS2R38	Ear,Nose,Throat	1	0	1	Phenylthiocarbamide_tasting (1217)
5727	PTCH	Grey	3	7	3	Basal_cell_carcinoma (188), Basal_cell_nevus_syndrome (2188), Holoprosencephaly (689)
5728	PTEN	Grey	9	28	2	Bannayan-Riley-Ruvalcaba_syndrome (182), Cowden_disease (372), Endometrial_carcinoma (479), Lhermitte-Duclos_syndrome (895), Meningioma (986), Oligodendroglioma (1138), Prostate_cancer (1272), Thyroid_carcinoma (1503), VATER_association_with_hydrocephalus (1555)
5729	PTGDR	Respiratory	1	12	1	Asthma (153)
5740	PTGIS	Cardiovascular	1	11	1	Hypertension (752)
5741	PTH	Endocrine	1	1	1	Hypoparathyroidism (779)
5745	PTHR1	Grey	2	2	2	Enchondromatosis (477), Metaphyseal_chondrodysplasia (997)
5770	PTPN1	Metabolic	1	2	1	Insulin_resistance (814)
5781	PTPN11	Grey	3	36	3	Leopard_syndrome (880), Leukemia (886), Noonan_syndrome (1116)
5782	PTPN12	Cancer	1	33	1	Colon_cancer (346)
5788	PTPRC	Grey	2	8	2	Multiple_sclerosis (9038), Severe_combined_immunodeficiency (1383)
5795	PTPRJ	Cancer	1	33	1	Colon_cancer (346)
5805	PTS	Metabolic	1	2	1	Phenylketonuria (1216)
5818	PVRL1	Grey	3	9	3	Cleft_palate (336), Ectodermal_dysplasia (466), Zlotogora-Ogur_syndrome (1617)
5824	PEX19	multiple	1	10	1	Zellweger_syndrome (1615)
5825	ABCD3	multiple	1	10	1	Zellweger_syndrome (1615)
5828	PXMP3	Grey	2	12	2	Refsum_disease (1307), Zellweger_syndrome (1615)

5830	PEX5	Grey	2	11	2	Adrenoleukodystrophy (56), Zellweger_syndrome (1615)
5832	ALDH18A1	Metabolic	1	0	1	Hyperammonemia (717)
5836	PYGL	Metabolic	1	8	1	Glycogen_storage_disease (610)
5837	PYGM	Metabolic	1	0	1	McArdle_disease (962)
5860	QDPR	Metabolic	1	2	1	Phenylketonuria (1216)
5873	RAB27A	Dermatological	1	2	1	Griscelli_syndrome (627)
5880	RAC2	Immunological	1	0	1	Neutrophil_immunodeficiency_syndrome (1102)
5888	RAD51	Cancer	1	18	1	Breast_cancer (228)
5896	RAG1	Immunological	2	7	1	Omenn_syndrome (1141), Severe_combined_immunodeficiency (1383)
5897	RAG2	Immunological	2	7	1	Omenn_syndrome (1141), Severe_combined_immunodeficiency (1383)
5910	RAP1GDS1	Cancer	1	9	1	Lymphoma (925)
5913	RAPSN	Muscular	1	6	1	Myasthenic_syndrome (1042)
5921	RASA1	Grey	3	3	3	Basal_cell_carcinoma (188), Capillary_malformations (261), Parkes_Weber_syndrome (1191)
5925	RB1	Cancer	2	3	1	Bladder_cancer (207), Retinoblastoma (1317)
5932	RBBP8	Cancer	1	8	1	Pancreatic_cancer (1178)
5950	RBP4	Ophthamological	1	0	1	Retinol_binding_protein,_deficiency_of (1318)
5956	OPN1LW	Ophthamological	2	2	1	Blue-cone_monochromacy (214), Colorblindness (348)
5959	RDH5	Ophthamological	1	2	1	Fundus_albipunctatus (562)
5961	RDS	Ophthamological	4	32	1	Butterfly_dystrophy,_retinal (239), Foveomacular_dystrophy,_adult-onset,_with_choroidal_neovascularization (549), Macular_dystrophy (2937), Retinitis_pigmentosa (1316)
5972	REN	Grey	2	3	2	Hyperproreninemia (750), Renal_tubular_dysgenesis (9308)
5979	RET	Grey	5	9	3	Central_hypoventilation_syndrome (287), Colonic_aganglionosis,_total,_with_small_bowel_involvement (347), Hirschsprung_disease (681), Medullary_thyroid_carcinoma (2969), Multiple_endocrine_neoplasia (1037)
5993	RFX5	Immunological	1	4	1	Bare_lymphocyte_syndrome (184)
5994	RFXAP	Immunological	1	4	1	Bare_lymphocyte_syndrome (184)
5995	RGR	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
6005	RHAG	Hematological	2	8	1	Anemia (110), Rh-mod_syndrome (1326)
6006	RHCE	Hematological	2	23	1	Blood_group (212), Rh-negative_blood_type (1327)
6007	RHD	Hematological	1	1	1	Rh-negative_blood_type (1327)
6010	RHO	Ophthamological	2	32	1	Night_blindness (1110), Retinitis_pigmentosa (1316)
6011	GRK1	Ophthamological	1	1	1	Oguchi_disease (1137)
6017	RLBP1	Ophthamological	4	30	1	Bothnia_retinal_dystrophy (221), Fundus_albipunctatus (562), Newfoundland_rod-cone_dystrophy (1105), Retinitis_pigmentosa (1316)
6023	RMRP	Grey	2	2	2	Cartilage-hair_hypoplasia (276), Metaphyseal_chondrodysplasia (997)
6041	RNASEL	Cancer	1	11	1	Prostate_cancer (1272)
6049	RNF6	Cancer	1	3	1	Esophageal_cancer (508)
6094	ROM1	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
6100	RP9	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
6101	RP1	Grey	2	32	2	Hypertriglyceridemia (757), Retinitis_pigmentosa (1316)
6102	RP2	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
6103	RPGR	Ophthamological	3	36	1	Cone_dystrophy (352), Macular_degeneration (937), Retinitis_pigmentosa (1316)
6121	RPE65	Ophthamological	2	32	1	Leber_congenital_amaurosis (873), Retinitis_pigmentosa (1316)
6197	RPS6KA3	Grey	2	23	2	Coffin-Lowry_syndrome (341), Mental_retardation (990)
6223	RPS19	Hematological	1	8	1	Anemia (110)
6247	RS1	Ophthamological	1	0	1	Retinoschisis (1320)
6261	RYR1	Grey	2	2	2	Central_core_disease (2287), Malignant_hyperthermia_susceptibility (942)
6262	RYR2	Cardiovascular	2	4	1	Arrhythmogenic_right_ventricular_dysplasia (144), Ventricular_tachycardia (1558)
6295	SAG	Ophthamological	1	1	1	Oguchi_disease (1137)
6299	SALL1	multiple	1	0	1	Townes-Brocks_syndrome (1514)
6303	SAT	Dermatological	1	3	1	Keratosis_palmoplantaria_striata (847)

6309	SC5DL	Metabolic	1	0	1	Lathosterolosis (869)
6310	ATXN1	Neurological	1	12	1	Spinocereballar_ataxia (1428)
6311	ATXN2	Neurological	1	12	1	Spinocereballar_ataxia (1428)
6314	ATXN7	Neurological	1	12	1	Spinocereballar_ataxia (1428)
6315	KLHL1AS	Neurological	1	12	1	Spinocereballar_ataxia (1428)
6323	SCN1A	Neurological	1	16	1	Epilepsy (495)
6324	SCN1B	Neurological	1	1	1	Generalized_epilepsy (578)
6325	SCN2A1	Neurological	1	0	1	Seizures (1371)
6329	SCN4A	Grey	6	9	3	Cramps,_potassium-aggravated (376), Hyperkalemic_periodic_paralysis (733), Hypokalemic_periodic_paralysis (776), Myasthenic_syndrome (1042), Myotonia_congenita (1062), Paramyotonia_congenita (1188)
6331	SCN5A	Cardiovascular	5	6	1	Brugada_syndrome (234), Heart_block (647), Long_QT_syndrome (912), Sick_sinus_syndrome (1394), Ventricular_fibrillation,_idiopathic (3558)
6335	SCN9A	Neurological	1	0	1	Erythermalgia (502)
6337	SCNN1A	Endocrine	1	5	1	Pseudohypoaldosteronism (1281)
6338	SCNN1B	Grey	2	5	2	Liddle_syndrome (896), Pseudohypoaldosteronism (1281)
6340	SCNN1G	Grey	2	5	2	Liddle_syndrome (896), Pseudohypoaldosteronism (1281)
6341	SCO1	Gastrointestinal	1	0	1	Hepatic_failure,_early_onset,_and_neurologic_disorder (666)
6352	CCL5	Immunological	1	3	1	HIV (684)
6387	CXCL12	Immunological	1	2	1	AIDS (70)
6389	SDHA	Grey	2	14	2	Leigh_syndrome (877), Mitochondrial_complex_deficiency (1016)
6390	SDHB	Cancer	2	3	1	Paragangliomas (1186), Pheochromocytoma (1218)
6391	SDHC	Cancer	1	2	1	Paragangliomas (1186)
6392	SDHD	Cancer	4	3	1	Carcinoid_tumors,_intestinal (265), Merkel_cell_carcinoma (992), Paragangliomas (1186), Pheochromocytoma (1218)
6399	TRAPPC2	Skeletal	1	4	1	Spondyloepiphyseal_dysplasia (1435)
6403	SELP	Immunological	1	4	1	Atopy (164)
6435	SFTPA1	Respiratory	1	3	1	Pulmonary_fibrosis (1291)
6439	SFTPB	Respiratory	1	3	1	Pulmonary_fibrosis (1291)
6440	SFTPC	Respiratory	3	4	1	Pneumonitis,_desquamative_interstitial (1238), Pulmonary_fibrosis (1291), Surfactant_deficiency (1464)
6442	SGCA	Muscular	1	17	1	Muscular_dystrophy (1040)
6443	SGCB	Muscular	1	17	1	Muscular_dystrophy (1040)
6444	SGCD	Grey	2	38	2	Cardiomyopathy (268), Muscular_dystrophy (1040)
6445	SGCG	Muscular	1	17	1	Muscular_dystrophy (1040)
6448	SGSH	Metabolic	1	1	1	Sanfilippo_syndrome (1348)
6452	SH3BP2	Unclassified	1	0	0	Cherubism (305)
6468	FBXW4	Skeletal	1	1	1	Split-hand/foot_malformation (1430)
6469	SHH	Grey	3	5	3	Coloboma,_ocular (345), Holoprosencephaly (689), Solitary_median_maxillary_central_incisor (1414)
6473	SHOX	Skeletal	3	2	1	Langer_mesomelic_dysplasia (862), Leri-Weill_dyschondrosteosis (883), Short_stature (1387)
6476	SI	Metabolic	1	0	1	Sucrose_intolerance (1458)
6492	SIM1	Nutritional	1	20	1	Obesity (1126)
6496	SIX3	Developmental	1	4	1	Holoprosencephaly (689)
6513	SLC2A1	Metabolic	1	0	1	Glucose_transport_defect,_blood-brain_barrier (600)
6514	SLC2A2	Grey	2	26	2	Diabetes_mellitus (427), Fanconi-Bickel_syndrome (524)
6517	SLC2A4	Endocrine	1	26	1	Diabetes_mellitus (427)
6519	SLC3A1	Grey	2	1	2	Cystinuria (401), Homozygous_2p16_deletion_syndrome (701)
6521	SLC4A1	Grey	5	40	2	Blood_group (212), Elliptocytosis (472), Hemolytic_anemia (660), Renal_tubular_acidosis (7308), Spherocytosis (1423)
6523	SLC5A1	Metabolic	1	0	1	Glucose/galactose_malabsorption (599)
6524	SLC5A2	Renal	1	0	1	Renal_glucosuria (3308)
6528	SLC5A5	Endocrine	1	6	1	Hypothyroidism (787)

6530	SLC6A2	Cardiovascular	1	0	1	Orthostatic_intolerance (1150)
6532	SLC6A4	Psychiatric	2	2	1	Anxiety-related_personality_traits (129), Obsessive-compulsive_disorder (1128)
6535	SLC6A8	Neurological	2	23	1	Creatine_deficiency_syndrome,_X-linked (2385), Mental_retardation (990)
6555	SLC10A2	Gastrointestinal	1	0	1	Bile_acid_malabsorption,_primary (202)
6556	SLC11A1	Immunological	1	4	1	Mycobacterial_infection (1043)
6557	SLC12A1	multiple	1	4	1	Bartter_syndrome (187)
6559	SLC12A3	Renal	1	0	1	Gitelman_syndrome (587)
6563	SLC14A1	Hematological	1	22	1	Blood_group (212)
6567	SLC16A2	Neurological	1	0	1	Allan-Herndon-Dudley_syndrome (82)
6569	SLC34A1	Grey	2	6	2	Osteoporosis (1163), Urolithiasise (1550)
6583	SLC22A4	Connective_tissue_disorder	1	7	1	Rheumatoid_arthritis (1324)
6584	SLC22A5	Metabolic	1	0	1	Carnitine_deficiency (272)
6591	SNAI2	multiple	1	3	1	Waardenburg_syndrome (1574)
6598	SMARCB1	Cancer	1	0	1	Rhabdoid_tumors (1322)
6606	SMN1	Muscular	1	6	1	Spinal_muscular_atrophy (1426)
6608	SMO	Cancer	1	3	1	Basal_cell_carcinoma (188)
6609	SMPD1	Metabolic	1	2	1	Niemann-Pick_disease (1107)
6611	SMS	Neurological	1	23	1	Mental_retardation (990)
6620	SNCB	Neurological	1	5	1	Dementia (412)
6622	SNCA	Neurological	2	15	1	Dementia (412), Parkinson_disease (1192)
6638	SNRPN	multiple	1	1	1	Prader-Willi_syndrome (1254)
6647	SOD1	Neurological	1	5	1	Amyotrophic_lateral_sclerosis (104)
6649	SOD3	Unclassified	1	0	0	Superoxide_dismutase,_elevated_extracellular (1461)
6654	SOS1	Connective_tissue_disorder	1	1	1	Fibromatosisl (537)
6657	SOX2	Ophthamological	1	0	1	Anophthalmia (122)
6658	SOX3	Grey	2	23	2	Infundibular_hypoplasia_and_hypopituitarism (809), Mental_retardation (990)
6662	SOX9	Skeletal	2	0	1	Acampomelic_campolelic_dysplasia (18), Campomelic_dysplasia (255)
6663	SOX10	Grey	3	1	2	PCWH (1198), Waardenburg-Shah_syndrome (1573), Yemenite_deaf-blind_hypopigmentation_syndrome (1614)
6683	SPAST	Neurological	1	8	1	Spastic_ataxia/paraplegia (1418)
6687	SPG7	Neurological	1	8	1	Spastic_ataxia/paraplegia (1418)
6690	SPINK1	Gastrointestinal	3	2	1	Fibrocalculous_pancreatic_diabetes (535), Pancreatitis (1179), Tropical_calcific_pancreatitis (1529)
6697	SPR	Metabolic	1	0	1	Sepiapterin_reductase_deficiency (1377)
6708	SPTA1	Hematological	3	5	1	Elliptocytosis (472), Pyropoikilocytosis (1296), Spherocytosis (1423)
6710	SPTB	Hematological	3	13	1	Anemia (110), Elliptocytosis (472), Spherocytosis (1423)
6714	SRC	Cancer	1	33	1	Colon_cancer (346)
6716	SRD5A2	Unclassified	1	0	0	Pseudovaginal_perineoscrotal_hypospadias (1283)
6736	SRY	Endocrine	1	1	1	Gonadal_dysgenesis (619)
6755	SSTR5	Endocrine	1	1	1	Acromegaly (38)
6756	SSX1	Cancer	1	1	1	Sarcoma,_synovial (1350)
6757	SSX2	Cancer	1	1	1	Sarcoma,_synovial (1350)
6770	STAR	Endocrine	1	1	1	Lipoid_adrenal_hyperplasia (903)
6772	STAT1	Grey	2	4	1	Mycobacterial_infection (1043), STAT1_deficiency (1441)
6777	STAT5B	Grey	2	37	2	Growth_hormone (628), Leukemia (886)
6785	ELOVL4	Ophthamological	2	4	1	Macular_dystrophy (2937), Stargardt_disease (1439)
6792	CDKL5	Neurological	1	1	1	Rett_syndrome (1321)
6794	STK11	Cancer	3	11	1	Melanoma (978), Pancreatic_cancer (1178), Peutz-Jeghers_syndrome (1214)
6821	SUOX	Metabolic	1	0	1	Sulfite_oxidase_deficiency (1460)
6833	ABCC8	Grey	2	26	2	Diabetes_mellitus (427), Hypoglycemia (772)

6834	SURF1	Neurological	1	11	1	Leigh_syndrome (877)
6853	SYN1	Neurological	1	16	1	Epilepsy (495)
6854	SYN2	Psychiatric	1	8	1	Schizophrenia (1359)
6886	TAL1	Cancer	1	36	1	Leukemia (886)
6887	TAL2	Cancer	1	36	1	Leukemia (886)
6888	TALDO1	Metabolic	1	0	1	Transaldolase_deficiency (1515)
6891	TAP2	Immunological	2	4	1	Bare_lymphocyte_syndrome (184), Wegener_granulomatosis (1583)
6892	TAPBP	Immunological	1	4	1	Bare_lymphocyte_syndrome (184)
6898	TAT	Metabolic	1	2	1	Tyrosinemia (1540)
6899	TBX1	Grey	3	0	2	Conotruncal_anomaly_face_syndrome (357), DiGeorge_syndrome (432), Velocardiofacial_syndrome (1556)
6901	TAZ	Grey	3	24	2	Barth_syndrome (185), Cardiomyopathy (268), Noncompaction_of_left_ventricular_myocardium (1113)
6905	TBCE	Grey	2	0	2	Hypoparathyroidism-retardation-dysmorphism_syndrome (780), Kenny-Caffey_syndrome-1 (841)
6906	SERPINA7	Hematological	1	0	1	Thyroxine-binding_globulin_deficiency (1506)
6908	TBP	Neurological	3	25	1	Huntington_disease (708), Parkinson_disease (1192), Spinocereballar_ataxia (1428)
6910	TBX5	Developmental	1	0	1	Holt-Oram_syndrome (696)
6915	TBXA2R	Hematological	1	1	1	Bleeding_disorder (209)
6926	TBX3	multiple	1	0	1	Ulnar-mammary_syndrome (1543)
6927	TCF1	Grey	3	34	2	Diabetes_mellitus (427), Hepatic_adenoma (668), MODY (1020)
6928	TCF2	Grey	3	27	2	Diabetes_mellitus (427), Glomerulocystic_kidney_disease,_hypoplastic (594), MODY (1020)
6948	TCN2	Hematological	1	0	1	Transcobalamin_II_deficiency (1516)
6949	TCOF1	Developmental	1	0	1	Treacher_Collins_mandibulofacial_dysostosis (1520)
6955	TRA@	Cancer	1	36	1	Leukemia (886)
6997	TDGF1	Neurological	1	0	1	Forebrain_defects (547)
7007	TECTA	Ear,Nose,Throat	1	40	1	Deafness (406)
7010	TEK	Cardiovascular	1	1	1	Venous_thrombosis (1557)
7012	TERC	Grey	2	3	2	Aplastic_anemia (133), Dyskeratosis (458)
7015	TERT	Hematological	1	2	1	Aplastic_anemia (133)
7018	TF	Hematological	2	1	1	Atransferrinemia (165), Iron_overload/deficiency (824)
7021	TFAP2B	multiple	1	0	1	Char_syndrome (303)
7030	TFE3	Cancer	1	6	1	Renal_cell_carcinoma (1308)
7036	TFR2	Metabolic	1	4	1	Hemochromatosis (657)
7038	TG	Endocrine	3	7	1	Autoimmune_thyroid_disease (2174), Goiter (617), Hypothyroidism (787)
7040	TGFB1	Skeletal	1	0	1	Camurati-Engelmann_disease (257)
7044	LEFTY2	Developmental	1	1	1	Left-right_axis_malformations (874)
7045	TGFBI	Ophthamological	1	6	1	Corneal_dystrophy (362)
7046	TGFBR1	Connective_tissue_disorder	1	1	1	Loeys-Dietz_syndrome (910)
7048	TGFBR2	Grey	3	37	2	Colon_cancer (346), Esophageal_cancer (508), Loeys-Dietz_syndrome (910)
7050	TGIF	Developmental	1	4	1	Holoprosencephaly (689)
7051	TGM1	Dermatological	3	8	1	Ichthyosiform_erythroderma (793), Ichthyosis (794), Self-healing_collodion_baby (1373)
7054	TH	Neurological	1	0	1	Segawa_syndrome (1370)
7056	THBD	Grey	2	17	2	Myocardial_infarction (1054), Thrombophilia (1497)
7066	THPO	Hematological	1	1	1	Thrombocythemia (1493)
7067	THRA	Cancer	1	2	1	Pituitary_ACTH-secreting_adenoma (1232)
7068	THRB	Endocrine	1	1	1	Thyroid_hormone_resistance (3503)
7078	TIMP3	Ophthamological	1	0	1	Sorsby_fundus_dystrophy (1416)
7080	TITF1	Grey	2	0	2	Chorea,_hereditary_benign (318), Choreoathetosis,_hypothyroidism,_and_respiratory_distress (320)
7084	TK2	Muscular	1	0	1	Mitochondrial_DNA_depletion_myopathy (3016)
7086	TKT	Metabolic	1	0	1	Wernicke-Korsakoff_syndrome (1589)
7099	TLR4	Immunological	1	0	1	Endotoxin_hyporesponsiveness (481)

7100	TLR5	Immunological	1	0	1	Legionaire_disease (876)
7102	TSPAN7	Neurological	1	23	1	Mental_retardation (990)
7124	TNF	Grey	5	25	3	Asthma (153), Dementia (412), Malaria (940), Migraine (1013), Sepsis (1378)
7132	TNFRSF1A	Immunological	1	0	1	Periodic_fever,_familial (1206)
7134	TNNC1	Cardiovascular	1	24	1	Cardiomyopathy (268)
7136	TNNI2	Developmental	1	2	1	Arthrogryposis (146)
7137	TNNI3	Cardiovascular	1	24	1	Cardiomyopathy (268)
7138	TNNT1	Muscular	1	3	1	Nemaline_myopathy (1078)
7139	TNNT2	Cardiovascular	1	24	1	Cardiomyopathy (268)
7140	TNNT3	Developmental	1	2	1	Arthrogryposis (146)
7148	TNXB	Connective_tissue_disorder	1	8	1	Ehlers-Danlos_syndrome (470)
7150	TOP1	Metabolic	1	1	1	DNA_topoisomerase (440)
7153	TOP2A	Metabolic	1	1	1	DNA_topoisomerase (440)
7157	TP53	Cancer	11	70	1	Adrenal_cortical_carcinoma (2054), Breast_cancer (228), Colon_cancer (346), Hepatic_adenoma (668), Histiocytoma (683), Li-Fraumeni_syndrome (898), Multiple_malignancy_syndrome (5037), Nasopharyngeal_carcinoma (1074), Osteosarcoma (1166), Pancreatic_cancer (1178), Thyroid_carcinoma (1503)
7167	TPI1	Hematological	1	9	1	Hemolytic_anemia (660)
7168	TPM1	Cardiovascular	1	24	1	Cardiomyopathy (268)
7169	TPM2	Grey	2	5	2	Arthrogryposis (146), Nemaline_myopathy (1078)
7170	TPM3	Muscular	1	3	1	Nemaline_myopathy (1078)
7172	TPMT	Metabolic	1	0	1	6-mercaptopurine_sensitivity (12)
7173	TPO	Endocrine	4	2	1	Goiter (617), Hyperthyroidism (755), Thyroid_hormone_resistance (3503), Total_iodide_organification_defect (3512)
7201	TRHR	Endocrine	1	0	1	Thyrotropin-releasing_hormone_deficiency (1505)
7225	TRPC6	Renal	1	2	1	Glomerulosclerosis (596)
7227	TRPS1	Developmental	1	0	1	Trichorhinophalangeal_syndrome (1524)
7248	TSC1	Grey	3	2	3	Focal_cortical_dysplasia,_Taylor_balloon_cell_type (545), Lymphangioleiomyomatosis (920), Tuberous_sclerosis (1534)
7249	TSC2	Grey	2	2	2	Lymphangioleiomyomatosis (920), Tuberous_sclerosis (1534)
7251	TSG101	Cancer	1	18	1	Breast_cancer (228)
7252	TSHB	Endocrine	1	6	1	Hypothyroidism (787)
7253	TSHR	Grey	3	16	2	Hyperthroidism (754), Hypothyroidism (787), Thyroid_carcinoma (1503)
7259	TSPYL1	Unclassified	1	0	0	Sudden_infant_death_with_dysgenesis_of_the_testes_syndrome (1459)
7273	TTN	Grey	2	38	2	Cardiomyopathy (268), Muscular_dystrophy (1040)
7274	TTPA	Neurological	1	4	1	Ataxia (154)
7276	TTR	Grey	4	5	2	Amyloid_neuropathy (102), Amyloidosis (103), Carpal_tunnel_syndrome,_familial (275), Dystransthyretinemic_hyperthyroxinemia (463)
7287	TULP1	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
7291	TWIST1	Developmental	1	1	1	Saethre-Chotzen_syndrome (1344)
7292	TNFSF4	Cardiovascular	1	9	1	Myocardial_infarction (1054)
7299	TYR	Grey	2	5	2	Albinism (72), Waardenburg_syndrome (1574)
7305	TYROBP	Bone	1	1	1	Nasu-Hakola_disease (1075)
7306	TYRP1	Dermatological	1	2	1	Albinism (72)
7337	UBE3A	Developmental	1	1	1	Angelman_syndrome (113)
7345	UCHL1	Neurological	1	10	1	Parkinson_disease (1192)
7350	UCP1	Nutritional	1	20	1	Obesity (1126)
7351	UCP2	Nutritional	1	20	1	Obesity (1126)
7352	UCP3	Nutritional	1	20	1	Obesity (1126)

7356	SCGB1A1	Respiratory	1	12	1	Asthma (153)
7369	UMOD	Renal	2	0	1	Hyperuricemic_nephropathy (759), Medullary_cystic_kidney_disease (969)
7372	UMPS	Metabolic	1	0	1	Oroticaciduria (1149)
7374	UNG	Immunological	1	5	1	Immunodeficiency (802)
7381	UQCRB	multiple	1	6	1	Mitochondrial_complex_deficiency (1016)
7389	UROD	Metabolic	1	5	1	Porphyria (1249)
7390	UROS	Metabolic	1	5	1	Porphyria (1249)
7391	USF1	Metabolic	1	0	1	Hyperlipidemia (736)
7399	USH2A	Grey	2	36	2	Retinitis_pigmentosa (1316), Usher_syndrome (1551)
7401	USH3A	multiple	1	7	1	Usher_syndrome (1551)
7415	VCP	Muscular	1	2	1	Inclusion_body_myopathy (805)
7421	VDR	Bone	1	1	1	Rickets (1330)
7422	VEGF	Endocrine	1	26	1	Diabetes_mellitus (427)
7428	VHL	Grey	5	10	2	Hemangioblastoma,_cerebellar (650), Pheochromocytoma (1218), Polycythemia (1242), Renal_cell_carcinoma (1308), von_Hippel-Lindau_syndrome (1572)
7436	VLDLR	Neurological	1	0	1	Cerebellar_hypoplasia,_VLDLR-associated (4289)
7439	VMD2	Ophthamological	3	4	1	Macular_dystrophy (2937), Maculopathy,_bull's-eye (938), Vitelliform_macular_dystrophy (1566)
7450	VWF	Hematological	1	0	1	von_Willebrand_disease (3572)
7454	WAS	Grey	3	6	2	Neutropenia (1101), Thrombocytopenia (1494), Wiskott-Aldrich_syndrome (1598)
7466	WFS1	Grey	2	0	2	Hearing_loss,_low-frequency_sensorineural (646), Wolfram_syndrome (1603)
7473	WNT3	multiple	1	0	1	Tetra-amelia,_autosomal_recessive (1482)
7486	WRN	multiple	1	0	1	Werner_syndrome (1588)
7490	WT1	Grey	5	3	3	Denys-Drash_syndrome (420), Frasier_syndrome (552), Mesangial_sclerosis (993), WAGR_syndrome (1576), Wilms_tumor (1595)
7494	XBP1	Psychiatric	1	0	1	Bipolar_disorder (204)
7498	XDH	Metabolic	1	0	1	Xanthinuria,_type_I (1607)
7499	XG	Hematological	1	22	1	Blood_group (212)
7503	XIST	Unclassified	1	0	0	X-inactivation,_familial_skewed (1610)
7504	XK	Hematological	1	0	1	McLeod_syndrome (965)
7507	XPA	Dermatological	1	7	1	Xeroderma_pigmentosum (1608)
7508	XPC	Dermatological	1	7	1	Xeroderma_pigmentosum (1608)
7512	XPNPEP2	Immunological	1	1	1	Angioedema (114)
7517	XRCC3	Cancer	2	22	1	Breast_cancer (228), Melanoma (978)
7531	YWHAE	multiple	1	0	1	Miller-Dieker_lissencephaly (1014)
7535	ZAP70	Immunological	1	0	1	Selective_T-cell_defect (1372)
7546	ZIC2	Developmental	1	4	1	Holoprosencephaly (689)
7547	ZIC3	multiple	1	1	1	Heterotaxy (675)
7555	ZNF9	Muscular	1	1	1	Myotonic_dystrophy (1063)
7592	ZNF41	Neurological	1	23	1	Mental_retardation (990)
7704	ZBTB16	Cancer	1	36	1	Leukemia (886)
7750	ZNF198	Cancer	1	0	1	Stem-cell_leukemia/lymphoma_syndrome (1445)
7809	BSND	multiple	1	4	1	Bartter_syndrome (187)
7827	NPHS2	Renal	1	1	1	Nephrotic_syndrome (1087)
7840	ALMS1	Neurological	1	0	1	(null) (95)
7841	GCS1	Metabolic	1	0	1	Glucosidase_I_deficiency (601)
7849	PAX8	Endocrine	1	6	1	Hypothyroidism (787)
7852	CXCR4	Immunological	2	0	1	Myelokathexis,_isolated (1049), WHIM_syndrome (1591)
7873	ARMET	Cancer	1	8	1	Pancreatic_cancer (1178)
7879	RAB7	Neurological	1	17	1	Charcot-Marie-Tooth_disease (301)
7915	ALDH5A1	Metabolic	1	0	1	Succinic_semialdehyde_dehydrogenase_deficiency (1457)

7941	PLA2G7	Grey	3	19	3	Asthma (153), Atopy (164), Platelet_defect/deficiency (1237)
7957	EPM2A	Neurological	1	16	1	Epilepsy (495)
8013	NR4A3	Cancer	1	2	1	Chondrosarcoma (316)
8021	NUP214	Cancer	1	36	1	Leukemia (886)
8022	LHX3	Endocrine	1	3	1	Pituitary_hormone_deficiency (5232)
8028	MLLT10	Cancer	1	36	1	Leukemia (886)
8029	CUBN	Hematological	1	1	1	Megaloblastic_anemia (975)
8031	NCOA4	Cancer	1	10	1	Thyroid_carcinoma (1503)
8048	CSRP3	Cardiovascular	1	24	1	Cardiomyopathy (268)
8050	PDHX	Metabolic	1	0	1	Lacticacidemia_due_to_PDX1_deficiency (859)
8074	FGF23	Bone	2	1	1	Calcinosis,_tumoral (254), Hypophosphatemic_rickets (784)
8086	AAAS	multiple	1	0	1	Achalasia-addisonianism-alacrimia_syndrome (24)
8091	HMGA2	Cancer	3	2	1	Lipoma (904), Salivary_adenoma (1345), Uterine_leiomyoma (1552)
8106	PABPN1	Muscular	1	0	1	Oculopharyngeal_muscular_dystorphy (1135)
8132	PKDTS	Renal	1	3	1	Polycystic_kidney_disease (1241)
8139	GAN	Neurological	1	0	1	Giant_axonal_neuropathy (582)
8144	FIMG1	Muscular	1	0	1	Myasthenia (1041)
8195	MKKS	Grey	2	7	2	Bardet-Biedl_syndrome (183), McKusick-Kaufman_syndrome (964)
8200	GDF5	Skeletal	4	5	1	Acromesomelic_dysplasia (39), Brachydactyly (224), Chondrodysplasia,_Grebe_type (2315), Fibular_hypoplasia_and_complex_brachydactyly (539)
8242	SMCX	Neurological	1	23	1	Mental_retardation (990)
8287	USP9Y	Endocrine	1	1	1	Azoospermia (178)
8288	EPX	Hematological	1	0	1	Eosinophil_peroxidase_deficiency (491)
8291	DYSF	Muscular	3	25	1	Miyoshi_myopathy (1018), Muscular_dystrophy (1040), Myopathy (1059)
8292	COLQ	Neurological	1	0	1	Endplate_acetylcholinesterase_deficiency (482)
8301	PICALM	Cancer	1	36	1	Leukemia (886)
8312	AXIN1	Cancer	1	7	1	Hepatic_adenoma (668)
8313	AXIN2	Cancer	2	33	1	Colon_cancer (346), Oligodontia-colorectal_cancer_syndrome (1140)
8322	FZD4	Ophthamological	1	2	1	Exudative_vitreoretinopathy (515)
8379	MAD1L1	Cancer	2	20	1	Lymphoma (925), Prostate_cancer (1272)
8419	BFSP2	Ophthamological	1	14	1	Cataract (277)
8431	NR0B2	Nutritional	1	20	1	Obesity (1126)
8438	RAD54L	Cancer	3	54	1	Breast_cancer (228), Colon_cancer (346), Lymphoma (925)
8443	GNPAT	Connective_tissue_disorder	1	2	1	Chondrodysplasia_punctata (315)
8456	FOXN1	Immunological	1	0	1	T-cell_immunodeficiency,_congenital_alopecia,_and_nail_dystrophy (3478)
8481	OFD1	Skeletal	1	0	1	Oral-facial-digital_syndrome (1145)
8483	CILP	Skeletal	1	0	1	Lumbar_disc_disease (917)
8492	PRSS12	Neurological	1	23	1	Mental_retardation (990)
8493	PPM1D	Cancer	1	18	1	Breast_cancer (228)
8504	PEX3	multiple	1	10	1	Zellweger_syndrome (1615)
8517	IKBKG	Dermatological	2	7	1	Ectodermal_dysplasia (466), Incontinentia_pigmenti (806)
8518	IKBKAP	Neurological	1	0	1	Dysautonomia (454)
8540	AGPS	multiple	1	1	1	Rhizomelic_chondrodysplasia_punctata (1325)
8546	AP3B1	multiple	1	6	1	Hermansky-Pudlak_syndrome (670)
8557	TCAP	Grey	2	38	2	Cardiomyopathy (268), Muscular_dystrophy (1040)
8572	PDLIM4	Bone	1	0	1	Osteoporosis (1165)
8625	RFXANK	Immunological	1	0	1	MHC_class_II_deficiency (1006)
8626	TP73L	Grey	6	1	2	ADULT_syndrome (59), EEC_syndrome (468), Hay-Wells_syndrome (643), Limb-mammary_syndrome (901), Rapp-Hodgkin_syndrome (1305), Split-hand/foot_malformation (1430)

8629	JRK	Neurological	1	16	1	Epilepsy (495)
8643	PTCH2	Cancer	2	4	1	Basal_cell_carcinoma (188), Medulloblastoma (970)
8647	ABCB11	Gastrointestinal	1	3	1	Cholestasis (310)
8659	ALDH4A1	Metabolic	1	1	1	Hyperprolinemia (749)
8660	IRS2	Endocrine	1	26	1	Diabetes_mellitus (427)
8671	SLC4A4	Renal	1	4	1	Renal_tubular_acidosis (7308)
8701	DNAH11	Grey	2	3	2	Kartagener_syndrome (840), Situs_ambiguus (1399)
8706	B3GALT3	Hematological	1	22	1	Blood_group (212)
8787	RGS9	Ophthamological	1	1	1	Bradyopsia (225)
8792	TNFRSF11A	Bone	2	3	1	Osteolysis (1157), Paget_disease (1173)
8795	TNFRSF10B	Cancer	1	2	1	Squamous_cell_carcinoma (1437)
8803	SUCLA2	multiple	1	1	1	Mitochondrial_DNA_depletion_syndrome (5016)
8805	TRIM24	Cancer	1	10	1	Thyroid_carcinoma (1503)
8813	DPM1	Metabolic	1	12	1	Congenital_disorder_of_glycosylation (354)
8820	HESX1	Grey	2	3	2	Pituitary_hormone_deficiency (5232), Septooptic_dysplasia (1380)
8833	GMPS	Cancer	1	36	1	Leukemia (886)
8838	WISP3	Grey	2	4	2	Arthropathy (147), Spondyloepiphyseal_dysplasia (1435)
8842	PROM1	Ophthamological	1	3	1	Retinal_cone_dsytrophy (1315)
8864	PER2	Neurological	1	0	1	Advanced_sleep_phase_syndrome (60)
8869	ST3GAL5	Neurological	1	0	1	Amish_infantile_epilepsy_syndrome (100)
8878	SQSTM1	Bone	1	2	1	Paget_disease (1173)
8890	EIF2B4	Neurological	2	4	1	Leukoencephalopathy_with_vanishing_white_matter (891), Ovarioleukodystrophy (1171)
8891	EIF2B3	Neurological	1	4	1	Leukoencephalopathy_with_vanishing_white_matter (891)
8892	EIF2B2	Neurological	2	4	1	Leukoencephalopathy_with_vanishing_white_matter (891), Ovarioleukodystrophy (1171)
8893	EIF2B5	Neurological	2	4	1	Leukoencephalopathy_with_vanishing_white_matter (891), Ovarioleukodystrophy (1171)
8898	MTMR2	Neurological	1	17	1	Charcot-Marie-Tooth_disease (301)
8910	SGCE	Neurological	1	5	1	Dystonia (462)
8915	BCL10	Cancer	5	40	1	Colon_cancer (346), Germ_cell_tumor (580), Lymphoma (925), Mesothelioma (995), Sezary_syndrome (1385)
8929	PHOX2B	Grey	3	8	3	Central_hypoventilation_syndrome (287), Hirschsprung_disease (681), Neuroblastoma (1091)
9051	PSTPIP1	Dermatological	1	0	1	Pyogenic_sterile_arthritis,_pyoderma_gangrenosum,_and_acne (1295)
9056	SLC7A7	Metabolic	1	0	1	Lysinuric_protein_intolerance (931)
9060	PAPSS2	Connective_tissue_disorder	1	0	1	SEMD,_Pakistani_type (1374)
9076	CLDN1	multiple	1	0	1	Neonatal_ichthyosis-sclerosing_cholangitis_syndrome (3079)
9095	TBX19	Endocrine	1	0	1	Adrenocorticotropic_hormone_deficiency (55)
9129	PRPF3	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
9132	KCNQ4	Ear,Nose,Throat	1	40	1	Deafness (406)
9150	CTDP1	Ophthamological	1	0	1	Congenital_cataracts (4354)
9210	BMP15	Endocrine	1	1	1	Ovarian_dysgenesis (3171)
9211	LGI1	Grey	2	20	2	Epilepsy (495), Glioblastoma (590)
9215	LARGE	Muscular	1	17	1	Muscular_dystrophy (1040)
9217	VAPB	Grey	2	11	2	Amyotrophic_lateral_sclerosis (104), Spinal_muscular_atrophy (1426)
9227	LRAT	Ophthamological	1	3	1	Retinal_cone_dsytrophy (1315)
9231	DLG5	Gastrointestinal	1	1	1	Crohn_disease (390)
9241	NOG	Grey	4	0	2	Stapes_ankylosis_syndrome_without_symphalangism (1438), Symphalangism,_proximal (1467), Synostoses_syndrome (1469), Tarsal-carpal_coalition_syndrome (1475)
9244	CRLF1	multiple	1	0	1	Cold-induced_sweating_syndrome (2344)
9247	GCM2	Endocrine	1	1	1	Hypoparathyroidism (779)
9289	GPR56	Neurological	1	0	1	Polymicrogyria (1244)
9342	SNAP29	Neurological	1	0	1	Cerebral_dysgenesis,_neuropathy,_ichthyosis,_and_palmoplantar_keratoderma_syndrome (6291)

9365	KL	Cardiovascular	1	5	1	Coronary_artery_disease (365)
9370	ADIPOQ	Endocrine	1	0	1	Adiponectin_deficiency (52)
9380	GRHPR	Metabolic	1	1	1	Hyperoxaluria (742)
9381	OTOF	Ear,Nose,Throat	1	40	1	Deafness (406)
9401	RECQL4	multiple	2	0	1	RAPADILINO_syndrome (1303), Rothmund-Thomson_syndrome (1338)
9409	PEX16	multiple	1	10	1	Zellweger_syndrome (1615)
9414	TJP2	Gastrointestinal	1	2	1	Hypercholanemia (723)
9420	CYP7B1	Gastrointestinal	1	0	1	Giant_cell_hepatitis (2584)
9445	ITM2B	Neurological	1	5	1	Dementia (412)
9451	EIF2AK3	Bone	1	0	1	Wolcott-Rallison_syndrome (1600)
9459	ARHGEF6	Neurological	1	23	1	Mental_retardation (990)
9469	CHST3	Skeletal	1	4	1	Spondyloepiphyseal_dysplasia (1435)
9479	MAPK8IP1	Endocrine	1	26	1	Diabetes_mellitus (427)
9496	TBX4	Skeletal	1	0	1	Small_patella_syndrome (1406)
9499	MYOT	Muscular	2	17	1	Muscular_dystrophy (1040), Myotilinopathy (1061)
9509	ADAMTS2	Connective_tissue_disorder	1	8	1	Ehlers-Danlos_syndrome (470)
9516	LITAF	Neurological	1	17	1	Charcot-Marie-Tooth_disease (301)
9526	MPDU1	Metabolic	1	12	1	Congenital_disorder_of_glycosylation (354)
9562	MINPP1	Cancer	1	10	1	Thyroid_carcinoma (1503)
9563	H6PD	Metabolic	1	1	1	Cortisone_reductase_deficiency (368)
9568	GPR51	Psychiatric	1	2	1	Nicotine_addiction (1106)
9607	CART	Nutritional	1	20	1	Obesity (1126)
9622	KLK4	Bone	1	3	1	Amelogenesis_imperfecta (99)
9627	SNCAIP	Neurological	1	10	1	Parkinson_disease (1192)
9639	ARHGEF10	Neurological	1	0	1	Slowed_nerve_conduction_velocity,_AD (1404)
9657	IQCB1	Renal	1	2	1	Senior-Loken_syndrome (1375)
9685	ENTH	Psychiatric	1	8	1	Schizophrenia (1359)
9820	CUL7	multiple	1	0	1	3-M_syndrome (10)
9821	RB1CC1	Cancer	1	18	1	Breast_cancer (228)
9839	ZFHX1B	Developmental	1	0	1	Mowat-Wilson_syndrome (1028)
9856	KIAA0319	Psychiatric	1	1	1	Dyslexia (459)
9927	MFN2	Neurological	1	17	1	Charcot-Marie-Tooth_disease (301)
9950	GOLGA5	Cancer	1	10	1	Thyroid_carcinoma (1503)
9990	SLC12A6	Neurological	1	0	1	Agenesis_of_the_corpus_callosum_with_peripheral_neuropathy (65)
9992	KCNE2	Cardiovascular	2	9	1	Atrial_fibrillation (166), Long_QT_syndrome (912)
9997	SCO2	Cardiovascular	1	0	1	Cardioencephalomyopathy,_fatal_infantile,_due_to_cytochrome_c_oxidase_deficiency (267)
10002	NR2E3	Ophthamological	2	29	1	Enhanced_S-cone_syndrome (483), Retinitis_pigmentosa (1316)
10008	KCNE3	Renal	1	2	1	Hypokalemic_periodic_paralysis (776)
10020	GNE	Grey	3	2	2	Inclusion_body_myopathy (805), Nonaka_myopathy (1112), Sialuria (1392)
10060	ABCC9	Cardiovascular	1	24	1	Cardiomyopathy (268)
10083	USH1C	Grey	2	44	2	Deafness (406), Usher_syndrome (1551)
10084	PQBP1	Neurological	1	0	1	Renpenning_syndrome (1309)
10117	ENAM	Grey	2	3	2	Amelogenesis_imperfecta (99), Hypoplastic_enamel_pitting,_localized (785)
10128	LRPPRC	Neurological	1	11	1	Leigh_syndrome (877)
10133	OPTN	Ophthamological	1	3	1	Glaucoma (589)
10157	AASS	Metabolic	1	0	1	Hyperlysinemia (738)
10165	SLC25A13	Metabolic	1	1	1	Citrullinemia (335)
10166	SLC25A15	Metabolic	1	0	1	Hyperornithinemia-hyperammonemia-homocitrullinemia_syndrome (740)
10195	ALG3	Metabolic	1	12	1	Congenital_disorder_of_glycosylation (354)

10216	PRG4	Skeletal	1	0	1	Camptodactyly-arthropathy-coxa_vara-pericarditis_syndrome (256)
10243	GPHN	Metabolic	1	2	1	Molybdenum_cofactor_deficiency (1023)
10269	ZMPSTE24	Grey	2	0	2	Mandibuloacral_dysplasia_with_type_B_lipodystrophy (945), Restrictive_dermopathy,_lethal (1314)
10312	TCIRG1	Bone	1	3	1	Osteopetrosis (1161)
10320	ZNFN1A1	Cancer	1	36	1	Leukemia (886)
10395	DLC1	Cancer	1	33	1	Colon_cancer (346)
10397	NDRG1	Neurological	1	17	1	Charcot-Marie-Tooth_disease (301)
10461	MERTK	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
10516	FBLN5	Grey	2	6	2	Cutis_laxa (395), Macular_degeneration (937)
10555	AGPAT2	Metabolic	1	4	1	Lipodystrophy (902)
10558	SPTLC1	Neurological	1	7	1	Neuropathy (1099)
10560	SLC19A2	Hematological	1	0	1	Thiamine-responsive_megaloblastic_anemia_syndrome (1491)
10564	ARFGEF2	Neurological	1	0	1	Periventricular_heterotopia_with_microcephaly (1209)
10577	NPC2	Metabolic	1	2	1	Niemann-Pick_disease (1107)
10585	POMT1	Grey	2	18	2	Muscular_dystrophy (1040), Walker-Warburg_syndrome (1578)
10594	PRPF8	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
10682	EBP	Connective_tissue_disorder	1	2	1	Chondrodysplasia_punctata (315)
10683	DLL3	Skeletal	1	1	1	Spondylocostal_dysostosis (1433)
10686	CLDN16	Renal	1	2	1	Hypomagnesemia (778)
10743	RAI1	multiple	1	0	1	Smith-Magenis_syndrome (1411)
10747	MASP2	Immunological	1	0	1	MASP2_deficiency (956)
10804	GJB6	Grey	2	47	2	Deafness (406), Ectodermal_dysplasia (466)
10841	FTCD	Metabolic	1	0	1	Glutamate_formiminotransferase_deficiency (602)
10842	C7orf16	Metabolic	1	7	1	Hypercholesterolemia (724)
10891	PPARGC1A	Metabolic	1	4	1	Lipodystrophy (902)
10892	MALT1	Cancer	1	0	1	MALT_lymphoma (944)
10913	EDAR	Dermatological	1	7	1	Ectodermal_dysplasia (466)
10962	MLLT11	Cancer	1	36	1	Leukemia (886)
10984	KCNQ1OT1	multiple	1	3	1	Beckwith-Wiedemann_syndrome (194)
11005	SPINK5	Grey	2	4	2	Atopy (164), Netherton_syndrome (1088)
11081	KERA	Ophthamological	1	6	1	Corneal_dystrophy (362)
11093	ADAMTS13	Hematological	1	8	1	Thrombophilia (1497)
11132	CAPN10	Endocrine	1	26	1	Diabetes_mellitus (427)
11136	SLC7A9	Renal	1	1	1	Cystinuria (401)
11141	IL1RAPL1	Neurological	1	23	1	Mental_retardation (990)
11146	GLMN	Cardiovascular	1	0	1	Glomuvenous_malformations (597)
11178	LZTS1	Cancer	1	3	1	Esophageal_cancer (508)
11200	CHEK2	Cancer	4	27	1	Breast_cancer (228), Li-Fraumeni_syndrome (898), Osteosarcoma (1166), Prostate_cancer (1272)
11216	AKAP10	Developmental	1	1	1	Longevity (911)
11231	SEC63	Gastrointestinal	1	1	1	Polycystic_liver_disease (3241)
11234	HPS5	multiple	1	6	1	Hermansky-Pudlak_syndrome (670)
11235	PDCD10	Neurological	1	2	1	Cerebral_cavernous_malformations (4291)
11236	RNF139	Cancer	1	6	1	Renal_cell_carcinoma (1308)
11254	SLC6A14	Nutritional	1	20	1	Obesity (1126)
11281	POU6F2	Cancer	1	3	1	Wilms_tumor (1595)
11285	B4GALT7	Connective_tissue_disorder	1	8	1	Ehlers-Danlos_syndrome (470)
11315	PARK7	Neurological	1	10	1	Parkinson_disease (1192)
11322	EVER1	Dermatological	1	1	1	Epidermodysplasia_verruciformis (492)

22800	RRAS2	Cancer	1	7	1	Ovarian_cancer (1170)
22891	ZNF365	Renal	1	1	1	Nephrolithiasis (1081)
22930	RAB3GAP1	multiple	1	2	1	Walker-Warburg_syndrome (1578)
22934	RPIA	Metabolic	1	0	1	Ribose_5-phosphate_isomerase_deficiency (1329)
22954	TRIM32	Muscular	1	17	1	Muscular_dystrophy (1040)
22976	PAXIP1	Neurological	1	11	1	Alzheimer_disease (98)
23064	ALS4	Neurological	1	4	1	Ataxia (154)
23092	ARHGAP26	Cancer	1	36	1	Leukemia (886)
23095	KIF1B	Neurological	1	17	1	Charcot-Marie-Tooth_disease (301)
23111	SPG20	Neurological	1	0	1	Troyer_syndrome (1530)
23209	MLC1	Neurological	1	0	1	Megalencephalic_leukoencephalopathy_with_subcortical_cysts (974)
23230	VPS13A	Neurological	1	0	1	Choreoacanthocytosis (319)
23305	ACSL6	Grey	2	4	2	Myelodysplastic_syndrome (1045), Myelogenous_leukemia (1047)
23365	ARHGEF12	Cancer	1	36	1	Leukemia (886)
23373	MECT1	Cancer	1	1	1	Mucoepidermoid_salivary_gland_carcinoma (1031)
23389	THRAP2	Developmental	1	1	1	Transposition_of_great_arteries,_dextro-looped (1519)
23414	ZFPM2	Cardiovascular	1	2	1	Tetralogy_of_Fallot (1483)
23417	MLYCD	Metabolic	1	0	1	Malonyl-CoA_decarboxylase_deficiency (943)
23418	CRB1	Ophthamological	3	32	1	Leber_congenital_amaurosis (873), Pigmented_paravenous_chorioretinal_atrophy (1229), Retinitis_pigmentosa (1316)
23474	ETHE1	Metabolic	1	0	1	Ethylmalonic_encephalopathy (510)
23495	TNFRSF13B	Immunological	1	0	1	Immunoglobulin_A_deficiency (804)
23562	CLDN14	Ear,Nose,Throat	1	40	1	Deafness (406)
23569	PADI4	Connective_tissue_disorder	1	7	1	Rheumatoid_arthritis (1324)
23592	LEMD3	Grey	3	0	3	Buschke-Ollendorff_syndrome (238), Melorheostosis_with_osteopoikilosis (982), Osteopoikilosis (1162)
23600	AMACR	Metabolic	1	0	1	Alpha-methylacyl-CoA_racemase_deficiency (91)
23607	CD2AP	Renal	1	2	1	Glomerulosclerosis (596)
23746	AIPL1	Ophthamological	3	33	1	Cone_dystrophy (352), Leber_congenital_amaurosis (873), Retinitis_pigmentosa (1316)
24140	FTSJ1	Neurological	1	23	1	Mental_retardation (990)
25788	RAD54B	Cancer	2	39	1	Colon_cancer (346), Lymphoma (925)
25794	FSCN2	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
25814	ATXN10	Neurological	1	12	1	Spinocereballar_ataxia (1428)
25836	NIPBL	Developmental	1	0	1	Cornelia_de_Lange_syndrome (364)
25861	DFNB31	Ear,Nose,Throat	1	40	1	Deafness (406)
25894	PLEKHG4	Neurological	1	12	1	Spinocereballar_ataxia (1428)
25953	MR-1	Neurological	1	0	1	Paroxysmal_kinesigenic_choreoathetosis (1195)
26012	NELF	Endocrine	1	3	1	Hypogonadotropic_hypogonadism (774)
26119	LDLRAP1	Metabolic	1	7	1	Hypercholesterolemia (724)
26121	PRPF31	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
26128	KIAA1279	multiple	1	0	1	Goldberg-Shprintzen_megacolon_syndrome (618)
26154	ABCA12	Dermatological	1	6	1	Ichthyosis (794)
26191	PTPN22	Grey	3	36	3	Diabetes_mellitus (427), Rheumatoid_arthritis (1324), Systemic_lupus_erythematosus (1471)
26227	PHGDH	Metabolic	1	0	1	Phosphoglycerate_dehydrogenase_deficiency (1220)
26276	VPS33B	Gastrointestinal	1	0	1	ARC_syndrome (139)
26278	SACS	Neurological	1	8	1	Spastic_ataxia/paraplegia (1418)
26353	HSPB8	Neurological	1	7	1	Neuropathy (1099)
26503	SLC17A5	Metabolic	2	1	1	Salla_disease (1346), Sialidosis (1391)
26511	CHIC2	Cancer	1	36	1	Leukemia (886)
26580	BSCL2	Grey	3	10	3	Lipodystrophy (902), Silver_spastic_paraplegia_syndrome (1396), Spinal_muscular_atrophy (1426)

26762	HAVCR1	Immunological	1	4	1	Atopy (164)
27019	DNAI1	Grey	2	2	2	Ciliary_dyskinesia (331), Kartagener_syndrome (840)
27030	MLH3	Cancer	1	33	1	Colon_cancer (346)
27031	NPHP3	Renal	1	3	1	Nephronophthisis (1082)
27032	ATP2C1	Dermatological	1	0	1	Hailey-Hailey_disease (633)
27130	INVS	Renal	1	3	1	Nephronophthisis (1082)
27185	DISC1	Psychiatric	1	8	1	Schizophrenia (1359)
27232	GNMT	Metabolic	1	3	1	Glycine_encephalopathy (608)
28962	OSTM1	Bone	1	3	1	Osteopetrosis (1161)
29760	BLNK	Immunological	1	0	1	Hypoglobulinemia_and_absent_B_cells (771)
29851	ICOS	Immunological	1	0	1	ICOS_deficiency (795)
29881	NPC1L1	Unclassified	1	0	0	Ezetimibe,_nonresponse_to (517)
29929	ALG6	Metabolic	1	12	1	Congenital_disorder_of_glycosylation (354)
29958	DMGDH	Metabolic	1	0	1	Dimethylglycine_dehydrogenase_deficiency (435)
30061	SLC40A1	Metabolic	1	4	1	Hemochromatosis (657)
30813	VSX1	Grey	3	6	2	Corneal_dystrophy (362), Craniofacial_anomalies,_empty_sella_turcica,_corneal_endothelial_changes,_and_abnormal_retinal_and_auditory_bipolar_cells (377), Keratoconus (844)
30835	CD209	Immunological	1	0	1	Dengue_fever,_protection_against (413)
50485	SMARCAL1	Connective_tissue_disorder	1	0	1	Schimke_immunoosseous_dysplasia (1354)
50506	DUOX2	Endocrine	1	6	1	Hypothyroidism (787)
50511	SYCP3	Endocrine	1	1	1	Azoospermia (178)
50617	ATP6V0A4	Renal	1	4	1	Renal_tubular_acidosis (7308)
50814	NSDHL	Developmental	1	0	1	CHILD_syndrome (306)
50846	DHH	Endocrine	1	1	1	Gonadal_dysgenesis (619)
50943	FOXP3	Grey	2	26	2	Diabetes_mellitus (427), Immunodysregulation,_polyendocrinopathy,_and_enteropathy,_X-linked (803)
50945	TBX22	Developmental	1	2	1	Cleft_palate (336)
50964	SOST	Skeletal	1	0	1	Sclerosteosis (1363)
51062	SPG3A	Neurological	1	8	1	Spastic_ataxia/paraplegia (1418)
51099	ABHD5	Metabolic	1	0	1	Chanarin-Dorfman_syndrome (300)
51119	SBDS	multiple	1	0	1	Shwachman-Diamond_syndrome (1389)
51128	SAR1B	Gastrointestinal	2	0	1	Anderson_disease (108), Chylomicron_retention_disease (330)
51131	PHF11	Grey	2	12	2	Asthma (153), IgE_levels_QTL (797)
51135	IRAK4	Immunological	1	0	1	IRAK4_deficiency (821)
51151	SLC45A2	Grey	2	2	2	Ocular_albinism (1130), Pigmentation_of_hair,_skin,_and_eyes,_variation_in (1227)
51156	SERPINA10	Cardiovascular	1	1	1	Venous_thrombosis (1557)
51168	MYO15A	Ear,Nose,Throat	1	40	1	Deafness (406)
51185	CRBN	Neurological	1	23	1	Mental_retardation (990)
51251	NT5C3	Hematological	1	8	1	Anemia (110)
51324	SPG21	Neurological	1	0	1	Mast_syndrome (960)
51422	PRKAG2	Cardiovascular	2	24	1	Cardiomyopathy (268), Wolff-Parkinson-White_syndrome (1601)
51592	TRIM33	Cancer	1	10	1	Thyroid_carcinoma (1503)
51684	SUFU	Cancer	1	1	1	Medulloblastoma (970)
51733	UPB1	Metabolic	1	0	1	Beta-ureidopropionase_deficiency (199)
51738	GHRL	Nutritional	1	20	1	Obesity (1126)
51741	WWOX	Cancer	1	3	1	Esophageal_cancer (508)
53904	MYO3A	Ear,Nose,Throat	1	40	1	Deafness (406)
53947	A4GALT	Hematological	1	22	1	Blood_group (212)
54209	TREM2	Bone	1	1	1	Nasu-Hakola_disease (1075)

54332	GDAP1	Neurological	1	17	1	Charcot-Marie-Tooth_disease (301)
54345	SOX18	Dermatological	1	3	1	Hypotrichosis (788)
54361	WNT4	Developmental	1	0	1	Rokitansky-Kuster-Hauser_syndrome (1337)
54413	NLGN3	Psychiatric	2	3	1	Asperger_syndrome (151), Autism (173)
54658	UGT1A1	Grey	3	0	3	Crigler-Najjar_syndrome (389), Gilbert_syndrome (586), Hyperbilirubinemia (720)
54714	CNGB3	Ophthamological	2	6	1	Achromatopsia (29), Macular_degeneration (937)
54806	AHI1	multiple	1	1	1	Joubert_syndrome (831)
54808	DYM	Grey	2	0	2	Dyggve-Melchior-Clausen_disease (452), Smith-McCort_dysplasia (1412)
54829	ASPN	Connective_tissue_disorder	1	3	1	Osteoarthritis (1154)
54840	APTX	Neurological	1	4	1	Ataxia (154)
54880	BCOR	Grey	2	2	2	Microphthalmia (1012), Oculofaciocardiodental_syndrome (1133)
54904	WHSC1L1	Cancer	1	36	1	Leukemia (886)
54982	CLN6	Neurological	1	5	1	Ceroid-lipofuscinosis (296)
55109	AGGF1	multiple	1	0	1	Klippel-Trenaunay_syndrome (853)
55120	FANCL	multiple	1	10	1	Fanconi_anemia (523)
55212	BBS7	multiple	1	7	1	Bardet-Biedl_syndrome (183)
55343	SLC35C1	Metabolic	1	12	1	Congenital_disorder_of_glycosylation (354)
55605	KIF21A	Ophthamological	1	1	1	Fibrosis (538)
55612	C20orf42	Dermatological	1	0	1	Kindler_syndrome (850)
55624	POMGNT1	multiple	1	0	1	Muscle-eye-brain_disease (1038)
55630	SLC39A4	Dermatological	1	0	1	Acrodermatitis_enteropathica (34)
55636	CHD7	multiple	1	0	1	CHARGE_syndrome (302)
55670	PEX26	Grey	3	13	2	Adrenoleukodystrophy (56), Refsum_disease (1307), Zellweger_syndrome (1615)
55755	CDK5RAP2	Neurological	1	4	1	Microcephaly (1007)
55775	TDP1	Neurological	1	12	1	Spinocereballar_ataxia (1428)
55806	HR	Dermatological	2	0	1	Alopecia_universalis (85), Atrichia_with_papular_lesions (167)
55811	SAC	Renal	1	0	1	Hypercalciuria (721)
55835	CENPJ	Neurological	1	4	1	Microcephaly (1007)
55997	CFC1	Grey	3	2	3	Double-outlet_right_ventricle (444), Heterotaxy (675), Transposition_of_great_arteries,_dextro-looped (1519)
56052	ALG1	Metabolic	1	12	1	Congenital_disorder_of_glycosylation (354)
56172	ANKH	Grey	2	0	2	Chondrocalcinosis (314), Craniometaphyseal_dysplasia (382)
56244	BTNL2	Immunological	1	2	1	Sarcoidosis (1349)
56246	MRAP	Endocrine	1	1	1	Glucocorticoid_deficiency (598)
56262	LRRC8A	Hematological	1	3	1	Agammaglobulinemia (63)
56652	PEO1	Ophthamological	1	2	1	Progressive_external_ophthalmoplegia_with_mitochondrial_DNA_deletions (1265)
56729	RETN	Grey	2	37	2	Diabetes_mellitus (427), Hypertension (752)
56922	MCCC1	Metabolic	1	1	1	3-Methylcrotonyl-CoA_carboxylase_deficiency (7)
57096	RPGRIP1	Ophthamological	2	9	1	Cone_dystrophy (352), Leber_congenital_amaurosis (873)
57152	SLURP1	Dermatological	1	0	1	Meleda_disease (979)
57165	GJA12	Neurological	1	0	1	(null) (1201)
57167	SALL4	multiple	1	0	1	Duane_syndrome (449)
57190	SEPN1	Muscular	1	17	1	Muscular_dystrophy (1040)
57192	MCOLN1	Metabolic	1	2	1	Mucolipidosis (1032)
57214	KIAA1199	Ear,Nose,Throat	1	40	1	Deafness (406)
57338	JPH3	Neurological	1	3	1	Huntington_disease (708)
57379	AICDA	Immunological	1	5	1	Immunodeficiency (802)
57502	NLGN4X	Grey	3	25	2	Asperger_syndrome (151), Autism (173), Mental_retardation (990)
57591	MKL1	Cancer	1	0	1	Megakaryoblastic_leukemia,_acute (973)
57679	ALS2	Neurological	3	13	1	Amyotrophic_lateral_sclerosis (104), Primary_lateral_sclerosis (1261), Spastic_ataxia/paraplegia (1418)

57697	FANCM	multiple	1	10	1	Fanconi_anemia (523)
57716	PRX	multiple	1	3	1	Dejerine-Sottas_disease (410)
57817	HAMP	Metabolic	1	4	1	Hemochromatosis (657)
59344	ALOXE3	Dermatological	1	2	1	Ichthyosiform_erythroderma (793)
60386	SLC25A19	Neurological	1	4	1	Microcephaly (1007)
60506	NYX	Ophthamological	1	4	1	Night_blindness (1110)
60528	ELAC2	Cancer	1	11	1	Prostate_cancer (1272)
60529	ALX4	Skeletal	1	1	1	Parietal_foramina (1190)
63869	PSORS6	Dermatological	1	1	1	Psoraisis (1288)
64072	CDH23	Grey	2	44	2	Deafness (406), Usher_syndrome (1551)
64087	MCCC2	Metabolic	1	1	1	3-Methylcrotonyl-CoA_carboxylase_deficiency (7)
64127	CARD15	Grey	4	4	4	Blau_syndrome (208), Crohn_disease (390), Psoraisis (1288), Sarcoidosis (1349)
64221	ROBO3	Neurological	1	0	1	Gaze_palsy (576)
64240	ABCG5	Metabolic	1	1	1	Sitosterolemia (1398)
64241	ABCG8	Metabolic	1	1	1	Sitosterolemia (1398)
64324	NSD1	Grey	3	3	2	Beckwith-Wiedemann_syndrome (194), Sotos_syndrome (1417), Weaver_syndrome (1582)
64327	LMBR1	Skeletal	1	0	1	Acheiropody (25)
64342	HS1BP3	Neurological	1	0	1	Tremor,_familial_essential (1521)
64421	DCLRE1C	Immunological	2	7	1	Omenn_syndrome (1141), Severe_combined_immunodeficiency (1383)
64699	TMPRSS3	Ear,Nose,Throat	1	40	1	Deafness (406)
64805	P2RY12	Hematological	1	3	1	Platelet_defect/deficiency (1237)
65018	PINK1	Neurological	1	10	1	Parkinson_disease (1192)
65078	RTN4R	Psychiatric	1	8	1	Schizophrenia (1359)
65125	WNK1	Endocrine	1	5	1	Pseudohypoaldosteronism (1281)
65217	PCDH15	Grey	2	44	2	Deafness (406), Usher_syndrome (1551)
65266	WNK4	Endocrine	1	5	1	Pseudohypoaldosteronism (1281)
78987	CRELD1	Cardiovascular	1	2	1	Atrioventricular_block (168)
79001	VKORC1	Hematological	2	3	1	Vitamin_K-dependent_coagulation_defect (1565), Warfarin_resistance/sensitivity (1580)
79053	ALG8	Metabolic	1	12	1	Congenital_disorder_of_glycosylation (354)
79058	ASPSCR1	Cancer	1	0	1	Alveolar_soft-part_sarcoma (97)
79083	MLPH	Dermatological	1	2	1	Griscelli_syndrome (627)
79087	ALG12	Metabolic	1	12	1	Congenital_disorder_of_glycosylation (354)
79147	FKRP	Muscular	1	17	1	Muscular_dystrophy (1040)
79158	GNPTAB	Metabolic	1	2	1	Mucolipidosis (1032)
79577	CDC73	Grey	2	2	2	Hyperparathyroidism (743), Parathyroid_adenoma (1189)
79628	SH3TC2	Neurological	1	17	1	Charcot-Marie-Tooth_disease (301)
79648	MCPH1	Neurological	2	4	1	Microcephaly (1007), Premature_chromosome_condensation_with_microcephaly_and_mental_retardation (3260)
79751	SLC25A22	Neurological	1	16	1	Epilepsy (495)
79784	MYH14	Ear,Nose,Throat	1	40	1	Deafness (406)
79796	ALG9	Metabolic	1	12	1	Congenital_disorder_of_glycosylation (354)
79803	HPS6	multiple	1	6	1	Hermansky-Pudlak_syndrome (670)
79944	L2HGDH	Metabolic	1	0	1	L-2-hydroxyglutaric_aciduria (857)
79977	GRHL2	Ear,Nose,Throat	1	40	1	Deafness (406)
80025	PANK2	Grey	2	0	2	HARP_syndrome (640), Neurodegeneration (1092)
80144	FRAS1	multiple	1	1	1	Fraser_syndrome (551)
80207	OPA3	Grey	2	1	2	3-methylglutaconicaciduria (9), Optic_atrophy (1144)
80270	HSD3B7	Gastrointestinal	1	3	1	Cholestasis (310)
80324	PUS1	multiple	1	0	1	Mitochondrial_myopathy_and_sideroblastic_anemia (7016)
80704	SLC19A3	Neurological	1	1	1	Basal_ganglia_disease (4188)
80781	COL18A1	multiple	1	0	1	Knobloch_syndrome (855)

81693	AMN	Hematological	1	1	1	Megaloblastic_anemia (975)
81794	ADAMTS10	Connective_tissue_disorder	1	1	1	Weill-Marchesani_syndrome (1585)
81846	SBF2	Neurological	1	17	1	Charcot-Marie-Tooth_disease (301)
83605	CCM2	Neurological	1	2	1	Cerebral_cavernous_malformations (4291)
83715	ESPN	Ear,Nose,Throat	1	40	1	Deafness (406)
83844	USP26	Renal	1	0	1	Sertoli-cell-only_syndrome (1381)
83872	HMCN1	Ophthamological	1	4	1	Macular_degeneration (937)
83990	BRIP1	Grey	2	27	2	Breast_cancer (228), Fanconi_anemia (523)
84059	MASS1	Grey	2	7	2	Convulsions (359), Usher_syndrome (1551)
84062	DTNBP1	multiple	1	6	1	Hermansky-Pudlak_syndrome (670)
84100	ARL6	multiple	1	7	1	Bardet-Biedl_syndrome (183)
84295	PHF6	multiple	1	0	1	Borjeson-Forssman-Lehmann_syndrome (218)
84343	HPS3	multiple	1	6	1	Hermansky-Pudlak_syndrome (670)
84441	MAML2	Cancer	1	1	1	Mucoepidermoid_salivary_gland_carcinoma (1031)
84572	GNPTG	Metabolic	1	2	1	Mucolipidosis (1032)
84634	GPR54	Endocrine	1	3	1	Hypogonadotropic_hypogonadism (774)
84916	CIRH1A	Gastrointestinal	1	2	1	Cirrhosis (334)
84930	MASTL	Hematological	1	3	1	Thrombocytopenia (1494)
85300	ATCAY	Neurological	1	4	1	Ataxia (154)
85358	SHANK3	multiple	1	0	1	Chromosome_22q13.3_deletion_syndrome (326)
85365	ALG2	Metabolic	1	12	1	Congenital_disorder_of_glycosylation (354)
85366	MYLK2	Cardiovascular	1	24	1	Cardiomyopathy (268)
85476	GFM1	multiple	1	0	1	Combined_oxidative_phosphorylation_deficiency (6350)
89781	HPS4	multiple	1	6	1	Hermansky-Pudlak_syndrome (670)
89884	LHX4	Skeletal	1	2	1	Short_stature (1387)
90411	MCFD2	Hematological	1	7	1	Factor_x_deficiency (520)
91647	ATPAF2	multiple	1	1	1	Complex_mitochondrial_respiratory_chain,_deficiency_of (351)
91949	COG7	Metabolic	1	12	1	Congenital_disorder_of_glycosylation (354)
93986	FOXP2	Neurological	1	0	1	Specific_language_impairment_QTL (1419)
114327	EFHC1	Neurological	1	2	1	Myoclonic_epilepsy (1055)
114548	CIAS1	Grey	3	0	2	CINCA_syndrome (332), Cold-induced_autoinflammatory_syndrome (344), Muckle-Wells_syndrome (1030)
114902	C1QTNF5	Ophthamological	1	3	1	Retinal_cone_dsytrophy (1315)
115761	ARL11	Cancer	1	36	1	Leukemia (886)
116085	SLC22A12	Renal	1	0	1	Hypouricemia (791)
116519	APOA5	Metabolic	1	3	1	Hypertriglyceridemia (757)
117156	SCGB3A2	Respiratory	1	12	1	Asthma (153)
117531	TMC1	Ear,Nose,Throat	1	40	1	Deafness (406)
118429	ANTXR2	Grey	2	1	2	Fibromatosisl (537), Hyalinosis,_infantile_systemic (710)
120227	CYP2R1	Bone	1	1	1	Rickets (1330)
120329	CASP12P1	Immunological	1	1	1	Sepsis (1378)
120892	LRRK2	Neurological	1	10	1	Parkinson_disease (1192)
121278	TPH2	Psychiatric	1	0	1	Unipolar_depression (1544)
122042	LGR8	Renal	1	1	1	Cryptorchidism (392)
123016	TTC8	multiple	1	7	1	Bardet-Biedl_syndrome (183)
123606	NIPA1	Neurological	1	8	1	Spastic_ataxia/paraplegia (1418)
124590	USH1G	multiple	1	7	1	Usher_syndrome (1551)
127534	GJB4	Dermatological	1	2	1	Erythrokeratoderma (507)
128178	EDARADD	Dermatological	1	7	1	Ectodermal_dysplasia (466)
129880	BBS5	multiple	1	7	1	Bardet-Biedl_syndrome (183)

132884	EVC2	Skeletal	1	1	1	Ellis-van_Creveld_syndrome (473)
136647	C7orf11	Dermatological	1	3	1	Trichothiodystrophy (1525)
140803	TRPM6	Renal	1	2	1	Hypomagnesemia (778)
145226	RDH12	Ophthamological	1	6	1	Leber_congenital_amaurosis (873)
145873	MESP2	Skeletal	1	1	1	Spondylocostal_dysostosis (1433)
146059	CDAN1	Hematological	1	8	1	Anemia (110)
146183	OTOA	Ear,Nose,Throat	1	40	1	Deafness (406)
147138	EVER2	Dermatological	1	1	1	Epidermodysplasia_verruciformis (492)
147409	DSG4	Dermatological	1	3	1	Hypotrichosis (788)
148738	HFE2	Metabolic	1	4	1	Hemochromatosis (657)
149998	LIPI	Metabolic	1	3	1	Hypertriglyceridemia (757)
157570	ESCO2	Developmental	1	0	1	Roberts_syndrome (1334)
157680	VPS13B	multiple	1	0	1	Cohen_syndrome (342)
161497	STRC	Ear,Nose,Throat	1	40	1	Deafness (406)
161582	DYX1C1	Psychiatric	1	1	1	Dyslexia (459)
162417	NAGS	Metabolic	1	0	1	N-acetylglutamate_synthase_deficiency (1067)
166785	MMAA	Metabolic	1	2	1	Methylmalonic_aciduria (1004)
170302	ARX	Grey	6	28	2	Infantile_spasm_syndrome (807), Lissencephaly (908), Mental_retardation (990), Myoclonic_epilepsy (1055), Partington_syndrome (1196), Proud_syndrome (1277)
200576	PIP5K3	Ophthamological	1	6	1	Corneal_dystrophy (362)
201163	FLCN	Grey	4	39	3	Birt-Hogg-Dube_syndrome (205), Colon_cancer (346), Pneumothorax,_primary_spontaneous (1239), Renal_cell_carcinoma (1308)
201294	UNC13D	Hematological	1	1	1	Hemophagocytic_lymphohistiocytosis (662)
203859	TMEM16E	Bone	1	0	1	Gnthodiaphyseal_dysplasia (615)
219736	STOX1	Cardiovascular	1	2	1	Preeclampsia (1257)
255738	PCSK9	Metabolic	1	7	1	Hypercholesterolemia (724)
256297	PTF1A	Endocrine	1	26	1	Diabetes_mellitus (427)
257054	MGC25181	Metabolic	1	0	1	D-2-hydroxyglutaric_aciduria (402)
259236	TMIE	Ear,Nose,Throat	1	40	1	Deafness (406)
259266	ASPM	Neurological	1	4	1	Microcephaly (1007)
261734	NPHP4	Renal	2	4	1	Nephronophthisis (1082), Senior-Loken_syndrome (1375)
283120	H19	multiple	1	3	1	Beckwith-Wiedemann_syndrome (194)
285362	SUMF1	Metabolic	1	0	1	Multiple_sulfatase_deficiency (9039)
285440	CYP4V2	Ophthamological	1	0	1	Bietti_crystalline_corneoretinal_dystrophy (201)
319100	TAAR6	Psychiatric	1	8	1	Schizophrenia (1359)
326625	MMAB	Metabolic	1	2	1	Methylmalonic_aciduria (1004)
338435	SCA25	Neurological	1	12	1	Spinocereballar_ataxia (1428)
338917	CHX10	Ophthamological	1	2	1	Microphthalmia (1012)
340024	SLC6A19	Metabolic	1	0	1	Hartnup_disorder (641)
341640	FREM2	multiple	1	1	1	Fraser_syndrome (551)
342880	R9AP	Ophthamological	1	1	1	Bradyopsia (225)
347344	ZNF81	Neurological	1	23	1	Mental_retardation (990)
348938	ICHTHYIN	Dermatological	1	6	1	Ichthyosis (794)
374291	NDUFS7	Neurological	1	11	1	Leigh_syndrome (877)
375298	CERKL	Ophthamological	1	29	1	Retinitis_pigmentosa (1316)
375611	SLC26A5	Ear,Nose,Throat	1	40	1	Deafness (406)
378465	HSN2	Neurological	1	7	1	Neuropathy (1099)
378884	NHLRC1	Neurological	1	16	1	Epilepsy (495)
387082	SUMO4	Endocrine	1	26	1	Diabetes_mellitus (427)
387129	GPR154	Respiratory	1	12	1	Asthma (153)

387281	LCRB	Hematological	1	4	1	Thalassemias (1486)
404672	GTF2H5	Dermatological	1	3	1	Trichothiodystrophy (1525)
493818	MYMY3	Neurological	1	0	1	Moyamoya_disease (1029)

Supporting Information Table 4. **List of human protein-protein interactons.**

Entrez ID 1	Symbol 1	Entrez ID 2	Symbol 2	Data Source (R: Rual et al; S: Stelzl et al; L: Literature curation)
1	A1BG	10321	CRISP3	L
2	A2M	259	AMBP	L
2	A2M	348	APOE	L
2	A2M	351	APP	L
2	A2M	354	KLK3	L
2	A2M	567	B2M	L
2	A2M	1508	CTSB	L
2	A2M	1990	ELA1	L
2	A2M	3309	HSPA5	L
2	A2M	3553	IL1B	L
2	A2M	3586	IL10	L
2	A2M	3931	LCAT	L
2	A2M	3952	LEP	L
2	A2M	4035	LRP1	L
2	A2M	4803	NGFB	L
2	A2M	5047	PAEP	L
2	A2M	7045	TGFBI	L
2	A2M	8728	ADAM19	L
2	A2M	9510	ADAMTS1	L
2	A2M	10944	SMAP	S
2	A2M	55729	ATF7IP	L
9	NAT1	8260	ARD1A	L
12	SERPINA3	351	APP	L
12	SERPINA3	354	KLK3	L
12	SERPINA3	1215	CMA1	L
12	SERPINA3	1504	CTRB1	L
12	SERPINA3	1506	CTRL	L
12	SERPINA3	1511	CTSG	L
12	SERPINA3	1990	ELA1	L
12	SERPINA3	1991	ELA2	L
12	SERPINA3	2064	ERBB2	L
12	SERPINA3	2153	F5	L
12	SERPINA3	3817	KLK2	L
12	SERPINA3	4035	LRP1	L
12	SERPINA3	4485	MST1	L
12	SERPINA3	5422	POLA	L
12	SERPINA3	64215	DNAJC1	L
14	AAMP	51497	TH1L	S
15	AANAT	7534	YWHAZ	L
18	ABAT	7915	ALDH5A1	L
19	ABCA1	335	APOA1	L
19	ABCA1	6645	SNTB2	L
19	ABCA1	8772	FADD	L
20	ABCA2	55755	CDK5RAP2	L
22	ABCB7	2235	FECH	L
23	ABCF1	3692	ITGB4BP	S
24	ABCA4	1258	CNGB1	L
25	ABL1	27	ABL2	L
25	ABL1	472	ATM	L
25	ABL1	613	BCR	L
25	ABL1	718	C3	L
25	ABL1	867	CBL	L
25	ABL1	1501	CTNND2	L
25	ABL1	2048	EPHB2	L
25	ABL1	2547	XRCC6	L
25	ABL1	2876	GPX1	L
25	ABL1	2885	GRB2	L
25	ABL1	3055	HCK	L
25	ABL1	3636	INPPL1	L
25	ABL1	3716	JAK1	L
25	ABL1	4193	MDM2	L
25	ABL1	4690	NCK1	L
25	ABL1	4914	NTRK1	L
25	ABL1	5062	PAK2	L
25	ABL1	5295	PIK3R1	L

25	ABL1	5335	PLCG1	L
25	ABL1	5591	PRKDC	L
25	ABL1	5829	PXN	L
25	ABL1	5883	RAD9A	L
25	ABL1	5901	RAN	L
25	ABL1	5921	RASA1	L
25	ABL1	5925	RB1	L
25	ABL1	5989	RFX1	L
25	ABL1	6091	ROBO1	L
25	ABL1	6098	ROS1	L
25	ABL1	6549	SLC9A2	L
25	ABL1	6714	SRC	L
25	ABL1	6764	ST5	L
25	ABL1	7157	TP53	L
25	ABL1	7161	TP73	L
25	ABL1	7275	TUB	L
25	ABL1	7535	ZAP70	L
25	ABL1	8751	ADAM15	L
25	ABL1	8936	WASF1	L
25	ABL1	9051	PSTPIP1	L
25	ABL1	9564	BCAR1	L
25	ABL1	9610	RIN1	L
25	ABL1	10006	ABI1	L
25	ABL1	10152	ABI2	L
25	ABL1	10580	SORBS1	L
25	ABL1	11183	MAP4K5	L
25	ABL1	23385	NCSTN	L
25	ABL1	23616	SH3BP1	L
25	ABL1	51466	EVL	L
25	ABL1	55824	PAG1	L
25	ABL1	91746	YT521	L
26	ABP1	1785	DNM2	L
27	ABL2	613	BCR	L
27	ABL2	847	CAT	L
27	ABL2	1398	CRK	L
27	ABL2	2048	EPHB2	L
27	ABL2	2876	GPX1	L
27	ABL2	3055	HCK	L
31	ACACA	672	BRCA1	L
31	ACACA	1114	CHGB	S
39	ACAT2	1045	CDX2	L
40	ACCN1	41	ACCN2	L
40	ACCN1	9311	ACCN3	L
43	ACHE	351	APP	L
43	ACHE	1282	COL4A1	L
43	ACHE	1939	LGTN	L
43	ACHE	8292	COLQ	L
43	ACHE	284217	LAMA1	L
49	ACR	5104	SERPINA5	L
49	ACR	7783	ZP2	L
51	ACOX1	6342	SCP2	L
52	ACP1	1969	EPHA2	L
52	ACP1	2047	EPHB1	L
52	ACP1	2048	EPHB2	L
52	ACP1	7535	ZAP70	L
52	ACP1	51460	SFMBT1	R
52	ACP1	54874	FNBP1L	S
52	ACP1	55052	MRPL20	S
54	ACP5	1959	EGR2	S
54	ACP5	2239	GPC4	L
54	ACP5	5601	MAPK9	S
54	ACP5	6118	RPA2	S
54	ACP5	7704	ZBTB16	S
54	ACP5	8743	TNFSF10	S
54	ACP5	9141	PDCD5	S
54	ACP5	9410	WDR57	S
54	ACP5	54978	C2orf18	S

58	ACTA1	1072	CFL1	L
58	ACTA1	1756	DMD	L
58	ACTA1	1773	DNASE1	L
58	ACTA1	2638	GC	L
58	ACTA1	2934	GSN	L
58	ACTA1	4632	MYL1	L
58	ACTA1	5216	PFN1	L
58	ACTA1	5578	PRKCA	L
58	ACTA1	5879	RAC1	L
58	ACTA1	6525	SMTN	L
58	ACTA1	6624	FSCN1	L
58	ACTA1	6876	TAGLN	L
58	ACTA1	7094	TLN1	L
58	ACTA1	7114	TMSB4X	L
58	ACTA1	7187	TRAF3	L
58	ACTA1	9468	PCYT1B	L
58	ACTA1	10575	CCT4	L
58	ACTA1	22948	CCT5	L
59	ACTA2	1072	CFL1	L
59	ACTA2	1773	DNASE1	L
59	ACTA2	2638	GC	L
59	ACTA2	4632	MYL1	L
59	ACTA2	7114	TMSB4X	L
59	ACTA2	9468	PCYT1B	L
59	ACTA2	10575	CCT4	L
59	ACTA2	22948	CCT5	L
60	ACTB	70	ACTC	L
60	ACTB	71	ACTG1	R
60	ACTB	1072	CFL1	R
60	ACTB	1073	CFL2	R
60	ACTB	2010	EMD	L
60	ACTB	2314	FLII	L
60	ACTB	2934	GSN	L
60	ACTB	4093	SMAD9	L
60	ACTB	4687	NCF1	L
60	ACTB	4892	NRAP	L
60	ACTB	5027	P2RX7	L
60	ACTB	5201	PFDN1	L
60	ACTB	5216	PFN1	L
60	ACTB	5217	PFN2	L
60	ACTB	5337	PLD1	L
60	ACTB	5338	PLD2	L
60	ACTB	5764	PTN	L
60	ACTB	5879	RAC1	L
60	ACTB	5880	RAC2	L
60	ACTB	6336	SCN10A	L
60	ACTB	6597	SMARCA4	L
60	ACTB	6709	SPTAN1	L
60	ACTB	7168	TPM1	L
60	ACTB	7169	TPM2	L
60	ACTB	7170	TPM3	L
60	ACTB	7430	VIL2	L
60	ACTB	7447	VSNL1	L
60	ACTB	8655	DNCL1	L
60	ACTB	8904	CPNE1	L
60	ACTB	11034	DSTN	R
60	ACTB	23214	XPO6	L
60	ACTB	25932	CLIC4	L
60	ACTB	55729	ATF7IP	L
60	ACTB	83988	NCALD	L
60	ACTB	131034	CPNE4	L
60	ACTB	221184	CPNE2	L
70	ACTC	81	ACTN4	L
70	ACTC	283	ANG	L
70	ACTC	1072	CFL1	L
70	ACTC	1756	DMD	L
70	ACTC	2039	EPB49	L

70	ACTC	2638	GC	L
70	ACTC	3315	HSPB1	L
70	ACTC	3927	LASP1	L
70	ACTC	4638	MYLK	L
70	ACTC	5339	PLEC1	L
70	ACTC	5581	PRKCE	L
70	ACTC	5756	PTK9	L
70	ACTC	6624	FSCN1	L
70	ACTC	7094	TLN1	L
70	ACTC	7414	VCL	L
70	ACTC	7430	VIL2	L
70	ACTC	7454	WAS	L
70	ACTC	7456	WASPIP	L
70	ACTC	8655	DNCL1	L
70	ACTC	10097	ACTR2	L
70	ACTC	23224	SYNE2	L
70	ACTC	23345	SYNE1	L
70	ACTC	51660	BRP44L	S
70	ACTC	60312	AFAP	L
70	ACTC	84687	PPP1R9B	L
70	ACTC	85477	SCIN	L
70	ACTC	137735	STARS	L
71	ACTG1	308	ANXA5	L
71	ACTG1	1072	CFL1	R
71	ACTG1	1073	CFL2	R
71	ACTG1	1773	DNASE1	L
71	ACTG1	3692	ITGB4BP	S
71	ACTG1	4640	MYO1A	L
71	ACTG1	5217	PFN2	S
71	ACTG1	5800	PTPRO	S
71	ACTG1	5829	PXN	L
71	ACTG1	6456	SH3GL2	S
71	ACTG1	6487	ST3GAL3	S
71	ACTG1	7094	TLN1	L
71	ACTG1	7114	TMSB4X	L
71	ACTG1	7414	VCL	L
71	ACTG1	8655	DNCL1	L
71	ACTG1	8936	WASF1	L
71	ACTG1	10134	BCAP31	L
71	ACTG1	11034	DSTN	R
71	ACTG1	11098	PRSS23	S
71	ACTG1	55729	ATF7IP	L
81	ACTN4	135	ADORA2A	L
81	ACTN4	525	ATP6V1B1	L
81	ACTN4	818	CAMK2G	L
81	ACTN4	1308	COL17A1	L
81	ACTN4	2934	GSN	L
81	ACTN4	3688	ITGB1	L
81	ACTN4	4703	NEB	L
81	ACTN4	9124	PDLIM1	RL
81	ACTN4	9223	MAGI1	L
81	ACTN4	9351	SLC9A3R2	L
81	ACTN4	9712	USP6NL	L
81	ACTN4	10612	TRIM3	L
81	ACTN4	51778	MYOZ2	R
81	ACTN4	57554	LRRC7	L
81	ACTN4	58529	MYOZ1	R
86	ACTL6A	396	ARHGDIA	S
86	ACTL6A	2130	EWSR1	R
86	ACTL6A	4609	MYC	L
86	ACTL6A	5430	POLR2A	L
86	ACTL6A	6597	SMARCA4	L
86	ACTL6A	9031	BAZ1B	L
87	ACTN1	135	ADORA2A	L
87	ACTN1	815	CAMK2A	L
87	ACTN1	1308	COL17A1	L
87	ACTN1	1495	CTNNA1	L

87	ACTN1	2203	FBP1	L
87	ACTN1	2903	GRIN2A	L
87	ACTN1	4110	MAGEA11	R
87	ACTN1	5585	PKN1	L
87	ACTN1	5834	PYGB	L
87	ACTN1	7273	TTN	L
87	ACTN1	7518	XRCC4	R
87	ACTN1	7791	ZYX	L
87	ACTN1	8048	CSRP3	L
87	ACTN1	8851	CDK5R1	L
87	ACTN1	8941	CDK5R2	L
87	ACTN1	9124	PDLIM1	L
87	ACTN1	9499	MYOT	L
87	ACTN1	10755	GIPC1	L
87	ACTN1	26136	TES	L
87	ACTN1	51778	MYOZ2	L
87	ACTN1	58529	MYOZ1	RL
87	ACTN1	117178	SSX2IP	L
87	ACTN1	125950	RAVER1	L
88	ACTN2	89	ACTN3	L
88	ACTN2	135	ADORA2A	L
88	ACTN2	1739	DLG1	L
88	ACTN2	1742	DLG4	L
88	ACTN2	2904	GRIN2B	L
88	ACTN2	3739	KCNA4	L
88	ACTN2	3741	KCNA5	L
88	ACTN2	5585	PKN1	L
88	ACTN2	6401	SELE	L
88	ACTN2	8038	ADAM12	L
88	ACTN2	9124	PDLIM1	L
88	ACTN2	22142	(null)	S
88	ACTN2	23022	KIAA0992	L
88	ACTN2	27185	DISC1	L
88	ACTN2	51778	MYOZ2	L
88	ACTN2	58529	MYOZ1	L
88	ACTN2	84665	MYPN	L
88	ACTN2	117178	SSX2IP	L
88	ACTN2	125950	RAVER1	L
89	ACTN3	135	ADORA2A	L
89	ACTN3	84665	MYPN	L
90	ACVR1	91	ACVR1B	L
90	ACVR1	650	BMP2	L
90	ACVR1	655	BMP7	L
90	ACVR1	2022	ENG	L
90	ACVR1	2339	FNTA	L
90	ACVR1	3547	IGSF1	L
90	ACVR1	3624	INHBA	L
90	ACVR1	3625	INHBB	L
90	ACVR1	3626	INHBC	L
90	ACVR1	4086	SMAD1	L
90	ACVR1	4090	SMAD5	L
90	ACVR1	4093	SMAD9	L
90	ACVR1	8200	GDF5	L
91	ACVR1B	92	ACVR2A	L
91	ACVR1B	93	ACVR2B	L
91	ACVR1B	3547	IGSF1	L
91	ACVR1B	3624	INHBA	L
91	ACVR1B	3625	INHBB	L
91	ACVR1B	3626	INHBC	L
91	ACVR1B	4089	SMAD4	L
91	ACVR1B	4092	SMAD7	L
91	ACVR1B	6642	SNX1	L
91	ACVR1B	6997	TDGF1	L
91	ACVR1B	9392	TGFBRAP1	L
92	ACVR2A	650	BMP2	L
92	ACVR2A	654	BMP6	L
92	ACVR2A	655	BMP7	L

92	ACVR2A	2022	ENG	L
92	ACVR2A	2661	GDF9	L
92	ACVR2A	3547	IGSF1	L
92	ACVR2A	3624	INHBA	L
92	ACVR2A	3625	INHBB	L
92	ACVR2A	3626	INHBC	L
92	ACVR2A	7049	TGFBR3	L
92	ACVR2A	8200	GDF5	L
93	ACVR2B	655	BMP7	L
93	ACVR2B	2660	GDF8	L
93	ACVR2B	3547	IGSF1	L
93	ACVR2B	3624	INHBA	L
93	ACVR2B	3625	INHBB	L
93	ACVR2B	3626	INHBC	L
93	ACVR2B	6642	SNX1	L
93	ACVR2B	6643	SNX2	L
93	ACVR2B	8200	GDF5	L
93	ACVR2B	9392	TGFBRAP1	L
93	ACVR2B	10220	GDF11	L
94	ACVRL1	7040	TGFB1	L
94	ACVRL1	7048	TGFBR2	L
94	ACVRL1	9392	TGFBRAP1	L
95	ACY1	7265	TTC1	R
100	ADA	134	ADORA1	L
100	ADA	135	ADORA2A	L
100	ADA	1803	DPP4	L
100	ADA	1812	DRD1	L
100	ADA	2885	GRB2	L
100	ADA	2908	NR3C1	L
102	ADAM10	1943	EFNA2	L
103	ADAR	7514	XPO1	L
107	ADCY1	108	ADCY2	L
108	ADCY2	111	ADCY5	L
108	ADCY2	2778	GNAS	L
111	ADCY5	2770	GNAI1	L
111	ADCY5	2778	GNAS	L
111	ADCY5	5578	PRKCA	L
111	ADCY5	5590	PRKCZ	L
111	ADCY5	5997	RGS2	L
112	ADCY6	1139	CHRNA7	L
116	ADCYAP1	117	ADCYAP1R1	L
116	ADCYAP1	6344	SCTR	L
116	ADCYAP1	6469	SHH	L
116	ADCYAP1	7434	VIPR2	L
118	ADD1	119	ADD2	L
118	ADD1	801	CALM1	L
118	ADD1	3398	ID2	L
118	ADD1	6708	SPTA1	L
118	ADD1	6709	SPTAN1	L
118	ADD1	6710	SPTB	L
118	ADD1	10808	HSPH1	L
119	ADD2	801	CALM1	L
119	ADD2	2534	FYN	L
119	ADD2	6709	SPTAN1	L
128	ADH5	1107	CHD3	S
133	ADM	1906	EDN1	L
133	ADM	3075	CFH	L
133	ADM	4880	NPPC	L
133	ADM	11318	ADMR	L
134	ADORA1	1812	DRD1	L
134	ADORA1	2037	EPB41L2	L
134	ADORA1	2771	GNAI2	L
134	ADORA1	2775	GNAO1	L
134	ADORA1	2781	GNAZ	L
134	ADORA1	2911	GRM1	L
134	ADORA1	5028	P2RY1	L
135	ADORA2A	1813	DRD2	L

142	PARP1	596	BCL2	L
142	PARP1	836	CASP3	L
142	PARP1	1026	CDKN1A	L
142	PARP1	1058	CENPA	L
142	PARP1	1059	CENPB	L
142	PARP1	4605	MYBL2	L
142	PARP1	4790	NFKB1	L
142	PARP1	5111	PCNA	L
142	PARP1	5422	POLA	L
142	PARP1	5451	POU2F1	L
142	PARP1	5970	RELA	L
142	PARP1	6189	RPS3A	L
142	PARP1	6256	RXRA	L
142	PARP1	7157	TP53	L
142	PARP1	7515	XRCC1	L
142	PARP1	9184	BUB3	L
142	PARP1	10038	PARP2	L
142	PARP1	10039	PARP3	L
142	PARP1	10432	RBM14	L
142	PARP1	23090	ZNF423	L
142	PARP1	23649	POLA2	L
142	PARP1	54840	APTX	L
143	PARP4	9961	MVP	L
147	ADRA1B	1173	AP2M1	L
147	ADRA1B	2767	GNA11	L
147	ADRA1B	6295	SAG	L
148	ADRA1A	84687	PPP1R9B	L
150	ADRA2A	153	ADRB1	L
150	ADRA2A	1967	EIF2B1	L
150	ADRA2A	2770	GNAI1	L
150	ADRA2A	2775	GNAO1	L
150	ADRA2A	7534	YWHAZ	L
151	ADRA2B	1967	EIF2B1	L
151	ADRA2B	2771	GNAI2	L
151	ADRA2B	7534	YWHAZ	L
152	ADRA2C	1967	EIF2B1	L
152	ADRA2C	2775	GNAO1	L
152	ADRA2C	7534	YWHAZ	L
153	ADRB1	408	ARRB1	L
153	ADRB1	1742	DLG4	L
153	ADRB1	2885	GRB2	L
153	ADRB1	10755	GIPC1	L
154	ADRB2	407	ARR3	L
154	ADRB2	1967	EIF2B1	L
154	ADRB2	2767	GNA11	L
154	ADRB2	2769	GNA15	L
154	ADRB2	2870	GRK6	L
154	ADRB2	2885	GRB2	L
154	ADRB2	3763	KCNJ6	L
154	ADRB2	3765	KCNJ9	L
154	ADRB2	4985	OPRD1	L
154	ADRB2	5578	PRKCA	L
154	ADRB2	9351	SLC9A3R2	L
154	ADRB2	9368	SLC9A3R1	L
154	ADRB2	9495	AKAP5	L
154	ADRB2	9630	GNA14	L
155	ADRB3	2778	GNAS	L
155	ADRB3	6714	SRC	L
156	ADRBK1	408	ARRB1	L
156	ADRBK1	857	CAV1	L
156	ADRBK1	1233	CCR4	L
156	ADRBK1	2492	FSHR	L
156	ADRBK1	2776	GNAQ	L
156	ADRBK1	5037	PBP	L
156	ADRBK1	5082	PDCL	L
156	ADRBK1	5132	PDC	L
156	ADRBK1	5579	PRKCB1	L

156	ADRBK1	5957	RCV1	L
156	ADRBK1	6010	RHO	L
156	ADRBK1	6714	SRC	L
156	ADRBK1	9815	GIT2	L
156	ADRBK1	23413	FREQ	L
156	ADRBK1	28964	GIT1	L
157	ADRBK2	1233	CCR4	L
157	ADRBK2	7852	CXCR4	L
157	ADRBK2	28964	GIT1	L
160	AP2A1	274	BIN1	L
160	AP2A1	1175	AP2S1	L
160	AP2A1	2060	EPS15	L
160	AP2A1	2690	GHR	L
160	AP2A1	3092	HIP1	L
160	AP2A1	4093	SMAD9	L
160	AP2A1	6016	RIT1	S
160	AP2A1	6464	SHC1	L
160	AP2A1	7913	DEK	L
160	AP2A1	8301	PICALM	L
160	AP2A1	9685	ENTH	L
160	AP2A1	22841	RAB11FIP2	L
160	AP2A1	84258	SYT3	L
160	AP2A1	114034	TOE1	S
161	AP2A2	163	AP2B1	L
161	AP2A2	2060	EPS15	L
161	AP2A2	3064	HD	L
161	AP2A2	4086	SMAD1	L
161	AP2A2	6464	SHC1	L
162	AP1B1	164	AP1G1	L
162	AP1B1	375	ARF1	L
162	AP1B1	381	ARF5	L
162	AP1B1	382	ARF6	L
162	AP1B1	409	ARRB2	L
162	AP1B1	699	BUB1	L
162	AP1B1	701	BUB1B	L
162	AP1B1	1213	CLTC	L
162	AP1B1	4087	SMAD2	L
162	AP1B1	10053	AP1M2	L
162	AP1B1	23523	CABIN1	L
162	AP1B1	55729	ATF7IP	L
162	AP1B1	63971	KIF13A	L
163	AP2B1	701	BUB1B	L
163	AP2B1	1173	AP2M1	RL
163	AP2B1	1175	AP2S1	L
163	AP2B1	4201	MEA1	R
163	AP2B1	4292	MLH1	R
163	AP2B1	7046	TGFBR1	L
163	AP2B1	8907	AP1M1	R
163	AP2B1	9550	ATP6V1G1	R
163	AP2B1	9685	ENTH	L
163	AP2B1	9729	KIAA0408	R
163	AP2B1	9883	POM121	R
163	AP2B1	10053	AP1M2	RL
163	AP2B1	26119	LDLRAP1	R
163	AP2B1	26150	RIBC2	R
163	AP2B1	27229	76P	R
163	AP2B1	53371	NUP54	R
163	AP2B1	54386	TERF2IP	R
163	AP2B1	54855	FAM46C	R
163	AP2B1	55145	THAP1	R
163	AP2B1	55707	NECAP2	R
163	AP2B1	79132	LGP2	R
164	AP1G1	375	ARF1	L
164	AP1G1	1174	AP1S1	L
164	AP1G1	1213	CLTC	L
164	AP1G1	4130	MAP1A	L
164	AP1G1	6710	SPTB	L

164	AP1G1	8905	AP1S2	L
164	AP1G1	9135	RABEP1	L
164	AP1G1	9685	ENTH	L
164	AP1G1	10053	AP1M2	L
164	AP1G1	11276	AP1GBP1	L
164	AP1G1	54812	AFTIPHILIN	L
164	AP1G1	57473	GM632	L
164	AP1G1	63971	KIF13A	L
164	AP1G1	92737	DNER	L
165	AEBP1	6929	TCF3	L
166	AES	367	AR	L
166	AES	2960	GTF2E1	L
166	AES	3146	HMGB1	L
166	AES	4990	SIX6	L
166	AES	5970	RELA	L
166	AES	6142	RPL18A	S
166	AES	6354	CCL7	S
166	AES	6457	SH3GL3	S
166	AES	6495	SIX1	L
166	AES	6496	SIX3	L
166	AES	9627	SNCAIP	S
166	AES	10736	SIX2	L
166	AES	11337	GABARAP	S
166	AES	51003	MED31	S
166	AES	51651	BIT1	L
174	AFP	1234	CCR5	L
174	AFP	9905	RUTBC1	S
175	AGA	3482	IGF2R	L
176	AGC1	1404	HAPLN1	L
176	AGC1	2192	FBLN1	L
176	AGC1	2199	FBLN2	L
176	AGC1	7130	TNFAIP6	L
176	AGC1	7143	TNR	L
177	AGER	3146	HMGB1	L
177	AGER	6271	S100A1	L
177	AGER	6283	S100A12	L
177	AGER	6285	S100B	L
177	AGER	6286	S100P	L
177	AGER	55140	ELP3	L
181	AGRP	4159	MC3R	L
181	AGRP	4160	MC4R	L
181	AGRP	4161	MC5R	L
181	AGRP	51738	GHRL	L
182	JAG1	4242	MFNG	L
182	JAG1	4301	MLLT4	L
182	JAG1	4851	NOTCH1	L
182	JAG1	4853	NOTCH2	L
182	JAG1	4854	NOTCH3	L
183	AGT	185	AGTR1	L
183	AGT	186	AGTR2	L
183	AGT	2130	EWSR1	R
183	AGT	4142	MAS1	L
183	AGT	4224	MEP1A	L
183	AGT	5553	PRG2	L
183	AGT	23549	DNPEP	L
185	AGTR1	624	BDKRB2	L
185	AGTR1	3717	JAK2	L
185	AGTR1	5868	RAB5A	L
186	AGTR2	7704	ZBTB16	L
186	AGTR2	57509	MTUS1	L
187	AGTRL1	8862	APLN	L
189	AGXT	9627	SNCAIP	S
190	NR0B1	367	AR	L
190	NR0B1	6720	SREBF1	L
190	NR0B1	9318	COPS2	L
196	AHR	405	ARNT	L
196	AHR	406	ARNTL	L

196	AHR	904	CCNT1	L
196	AHR	2099	ESR1	L
196	AHR	2963	GTF2F2	L
196	AHR	3320	HSPCA	L
196	AHR	4738	NEDD8	L
196	AHR	5925	RB1	L
196	AHR	5970	RELA	L
196	AHR	6597	SMARCA4	L
196	AHR	6667	SP1	L
196	AHR	6908	TBP	L
196	AHR	7025	NR2F1	L
196	AHR	7514	XPO1	L
196	AHR	7818	DAP3	L
196	AHR	8204	NRIP1	L
196	AHR	8648	NCOA1	L
196	AHR	9049	AIP	L
196	AHR	10728	PTGES3	L
197	AHSG	1634	DCN	L
197	AHSG	3643	INSR	L
197	AHSG	22800	RRAS2	L
197	AHSG	26232	FBXO2	L
203	AK1	2274	FHL2	L
207	AKT1	673	BRAF	L
207	AKT1	1147	CHUK	L
207	AKT1	1326	MAP3K8	L
207	AKT1	2475	FRAP1	L
207	AKT1	2887	GRB10	L
207	AKT1	3064	HD	L
207	AKT1	3164	NR4A1	L
207	AKT1	3320	HSPCA	L
207	AKT1	3611	ILK	L
207	AKT1	3615	IMPDH2	L
207	AKT1	3654	IRAK1	L
207	AKT1	3667	IRS1	L
207	AKT1	3858	KRT10	L
207	AKT1	4193	MDM2	L
207	AKT1	4296	MAP3K11	L
207	AKT1	4303	MLLT7	L
207	AKT1	4515	MTCP1	L
207	AKT1	4687	NCF1	L
207	AKT1	5170	PDPK1	L
207	AKT1	5586	PKN2	L
207	AKT1	5588	PRKCQ	L
207	AKT1	5590	PRKCZ	L
207	AKT1	5770	PTPN1	L
207	AKT1	5894	RAF1	L
207	AKT1	6198	RPS6KB1	L
207	AKT1	6416	MAP2K4	L
207	AKT1	7248	TSC1	L
207	AKT1	7249	TSC2	L
207	AKT1	7534	YWHAZ	L
207	AKT1	8115	TCL1A	L
207	AKT1	8600	TNFSF11	L
207	AKT1	8682	PEA15	L
207	AKT1	9479	MAPK8IP1	L
207	AKT1	9623	TCL1B	L
207	AKT1	9846	GAB2	L
207	AKT1	27004	TCL6	L
207	AKT1	57761	TRIB3	L
207	AKT1	64400	FTS	L
208	AKT2	1147	CHUK	L
208	AKT2	2932	GSK3B	L
208	AKT2	4515	MTCP1	L
208	AKT2	6517	SLC2A4	L
208	AKT2	8115	TCL1A	L
208	AKT2	9623	TCL1B	L
208	AKT2	26060	APPL	L

208	AKT2	57761	TRIB3	L
212	ALAS2	8803	SUCLA2	L
213	ALB	259	AMBP	L
213	ALB	348	APOE	L
213	ALB	1409	CRYAA	L
213	ALB	2217	FCGRT	L
213	ALB	4036	LRP2	L
213	ALB	5004	ORM1	L
213	ALB	5444	PON1	L
213	ALB	5552	PRG1	L
213	ALB	5950	RBP4	L
213	ALB	6927	TCF1	L
213	ALB	8029	CUBN	L
213	ALB	51631	LUC7L2	S
214	ALCAM	923	CD6	L
215	ABCD1	225	ABCD2	L
215	ABCD1	5824	PEX19	L
215	ABCD1	5825	ABCD3	L
217	ALDH2	1400	CRMP1	S
217	ALDH2	3329	HSPD1	L
217	ALDH2	3336	HSPE1	L
217	ALDH2	3692	ITGB4BP	S
217	ALDH2	9094	UNC119	S
217	ALDH2	11161	C14orf1	S
217	ALDH2	54978	C2orf18	S
217	ALDH2	55855	FAM45B	S
217	ALDH2	84966	IGSF21	S
225	ABCD2	5824	PEX19	L
225	ABCD2	5825	ABCD3	L
226	ALDOA	529	ATP6V1E1	L
226	ALDOA	2820	GPD2	L
226	ALDOA	5338	PLD2	L
226	ALDOA	8655	DNCL1	L
226	ALDOA	54464	XRN1	L
229	ALDOB	529	ATP6V1E1	L
230	ALDOC	5338	PLD2	L
231	AKR1B1	4086	SMAD1	L
238	ALK	3320	HSPCA	L
238	ALK	3667	IRS1	L
238	ALK	3718	JAK3	L
238	ALK	5335	PLCG1	L
238	ALK	5764	PTN	L
238	ALK	5921	RASA1	L
238	ALK	6464	SHC1	L
238	ALK	51530	ZC3HC1	L
239	ALOX12	3691	ITGB4	L
239	ALOX12	3852	KRT5	L
239	ALOX12	4000	LMNA	L
240	ALOX5	241	ALOX5AP	L
240	ALOX5	2885	GRB2	L
240	ALOX5	9392	TGFBRAP1	L
240	ALOX5	23406	COTL1	L
242	ALOX12B	3852	KRT5	L
242	ALOX12B	4000	LMNA	L
250	ALPP	2822	GPLD1	L
250	ALPP	10026	PIGK	L
259	AMBP	2147	F2	L
259	AMBP	2335	FN1	L
267	AMFR	7322	UBE2D2	L
267	AMFR	7327	UBE2G2	L
268	AMH	269	AMHR2	L
268	AMH	1956	EGFR	L
268	AMH	5125	PCSK5	L
270	AMPD1	4620	MYH2	L
273	AMPH	274	BIN1	L
273	AMPH	1213	CLTC	L
273	AMPH	1759	DNM1	L

273	AMPH	5338	PLD2	L
273	AMPH	6853	SYN1	L
273	AMPH	7448	VTN	L
273	AMPH	8851	CDK5R1	L
273	AMPH	23523	CABIN1	L
274	BIN1	1523	CUTL1	S
274	BIN1	1759	DNM1	L
274	BIN1	3672	ITGA1	L
274	BIN1	3675	ITGA3	L
274	BIN1	5338	PLD2	L
274	BIN1	5747	PTK2	L
274	BIN1	6456	SH3GL2	L
274	BIN1	6853	SYN1	L
274	BIN1	8491	MAP4K3	L
274	BIN1	8723	SNX4	L
274	BIN1	8867	SYNJ1	L
274	BIN1	79890	RIN3	L
276	AMY1A	10270	AKAP8	L
279	AMY2A	2813	GP2	L
283	ANG	537	ATP6AP1	S
283	ANG	944	TNFSF8	L
283	ANG	5728	PTEN	S
283	ANG	6050	RNH1	L
283	ANG	6997	TDGF1	S
284	ANGPT1	285	ANGPT2	L
284	ANGPT1	7010	TEK	L
285	ANGPT2	7010	TEK	L
286	ANK1	3897	L1CAM	L
286	ANK1	6005	RHAG	L
286	ANK1	6508	SLC4A3	L
286	ANK1	6521	SLC4A1	L
286	ANK1	6709	SPTAN1	L
286	ANK1	7074	TIAM1	L
286	ANK1	7273	TTN	L
286	ANK1	84033	OBSCN	L
286	ANK1	84224	AE2	L
287	ANK2	3897	L1CAM	L
287	ANK2	4897	NRCAM	L
287	ANK2	10280	OPRS1	L
288	ANK3	4087	SMAD2	L
288	ANK3	4088	SMAD3	L
288	ANK3	6324	SCN1B	L
291	SLC25A4	367	AR	L
291	SLC25A4	581	BAX	L
291	SLC25A4	2908	NR3C1	L
292	SLC25A5	1159	CKMT1B	L
292	SLC25A5	5829	PXN	L
292	SLC25A5	7414	VCL	L
293	SLC25A6	1114	CHGB	S
293	SLC25A6	2261	FGFR3	S
293	SLC25A6	3735	KARS	S
293	SLC25A6	5359	PLSCR1	R
293	SLC25A6	7431	VIM	S
293	SLC25A6	11098	PRSS23	S
293	SLC25A6	29888	STRN4	S
293	SLC25A6	83755	KRTAP4-12	R
301	ANXA1	2357	FPR1	L
301	ANXA1	3856	KRT8	L
301	ANXA1	6282	S100A11	L
301	ANXA1	7052	TGM2	L
302	ANXA2	350	APOH	L
302	ANXA2	634	CEACAM1	L
302	ANXA2	1508	CTSB	L
302	ANXA2	2885	GRB2	L
302	ANXA2	5111	PCNA	L
302	ANXA2	5245	PHB	L
302	ANXA2	5327	PLAT	L

302	ANXA2	5340	PLG	L
302	ANXA2	5829	PXN	L
302	ANXA2	6277	S100A6	L
302	ANXA2	6281	S100A10	L
302	ANXA2	6714	SRC	L
302	ANXA2	7414	VCL	L
302	ANXA2	10434	LYPLA1	L
302	ANXA2	51365	PLA1A	L
306	ANXA3	7157	TP53	S
306	ANXA3	9094	UNC119	S
306	ANXA3	10436	C2F	S
306	ANXA3	84966	IGSF21	S
306	ANXA3	197131	UBR1	S
307	ANXA4	2813	GP2	L
308	ANXA5	1280	COL2A1	L
308	ANXA5	1300	COL10A1	L
308	ANXA5	1981	EIF4G1	S
308	ANXA5	2222	FDFT1	S
308	ANXA5	3693	ITGB5	L
308	ANXA5	3791	KDR	L
308	ANXA5	6827	SUPT4H1	S
308	ANXA5	8726	EED	L
309	ANXA6	1380	CR2	L
309	ANXA6	5921	RASA1	L
309	ANXA6	6271	S100A1	L
309	ANXA6	6285	S100B	L
309	ANXA6	79577	CDC73	S
310	ANXA7	6281	S100A10	L
310	ANXA7	6717	SRI	L
311	ANXA11	2026	ENO2	S
311	ANXA11	3189	HNRPH3	S
311	ANXA11	5359	PLSCR1	R
311	ANXA11	6277	S100A6	L
311	ANXA11	6717	SRI	L
311	ANXA11	10016	PDCD6	L
312	ANXA13	4734	NEDD4	L
317	APAF1	598	BCL2L1	L
317	APAF1	837	CASP4	L
317	APAF1	841	CASP8	L
317	APAF1	842	CASP9	L
317	APAF1	3303	HSPA1A	L
317	APAF1	54205	CYCS	L
317	APAF1	57099	AVEN	L
319	APOF	335	APOA1	L
319	APOF	336	APOA2	L
320	APBA1	351	APP	L
320	APBA1	774	CACNA1B	L
320	APBA1	3358	HTR2C	L
320	APBA1	3768	KCNJ12	L
320	APBA1	5663	PSEN1	L
320	APBA1	6804	STX1A	L
320	APBA1	6812	STXBP1	L
320	APBA1	8573	CASK	L
320	APBA1	9973	CCS	L
320	APBA1	57576	KIF17	L
320	APBA1	64130	LIN7B	L
320	APBA1	79937	CNTNAP3	L
321	APBA2	351	APP	L
321	APBA2	4035	LRP1	L
321	APBA2	4036	LRP2	L
321	APBA2	5970	RELA	L
321	APBA2	22883	CLSTN1	L
321	APBA2	63941	APBA2BP	L
322	APBB1	333	APLP1	L
322	APBB1	351	APP	L
322	APBB1	356	FASLG	L
322	APBB1	4035	LRP1	L

322	APBB1	7024	TFCP2	L
322	APBB1	10524	HTATIP	L
322	APBB1	22883	CLSTN1	L
322	APBB1	51466	EVL	L
323	APBB2	334	APLP2	L
323	APBB2	351	APP	L
324	APC	699	BUB1	L
324	APC	991	CDC20	L
324	APC	1499	CTNNB1	L
324	APC	3728	JUP	L
324	APC	4085	MAD2L1	L
324	APC	5525	PPP2R5A	L
324	APC	5747	PTK2	L
324	APC	6101	RP1	L
324	APC	6477	SIAH1	L
324	APC	8312	AXIN1	L
324	APC	8313	AXIN2	L
324	APC	9229	DLGAP1	L
324	APC	22919	MAPRE1	L
324	APC	22920	KIFAP3	L
324	APC	50649	ARHGEF4	L
325	APCS	712	C1QA	L
325	APCS	722	C4BPA	L
325	APCS	813	CALU	L
325	APCS	1401	CRP	L
325	APCS	2209	FCGR1A	L
325	APCS	2213	FCGR2B	L
325	APCS	2214	FCGR3A	L
325	APCS	2215	FCGR3B	L
325	APCS	2335	FN1	L
325	APCS	7038	TG	L
326	AIRE	1387	CREBBP	L
327	APEH	9798	KIAA0174	R
327	APEH	79876	UBE1DC1	R
327	APEH	80021	TMEM62	S
328	APEX1	1639	DCTN1	L
328	APEX1	2237	FEN1	L
328	APEX1	2547	XRCC6	L
328	APEX1	3091	HIF1A	L
328	APEX1	3148	HMGB2	L
328	APEX1	3191	HNRPL	L
328	APEX1	3303	HSPA1A	L
328	APEX1	4595	MUTYH	L
328	APEX1	4830	NME1	L
328	APEX1	5111	PCNA	L
328	APEX1	5423	POLB	L
328	APEX1	6418	SET	L
328	APEX1	7157	TP53	L
328	APEX1	7295	TXN	L
328	APEX1	7329	UBE2I	L
328	APEX1	7515	XRCC1	L
329	BIRC2	836	CASP3	L
329	BIRC2	840	CASP7	L
329	BIRC2	842	CASP9	L
329	BIRC2	2935	GSPT1	L
329	BIRC2	3728	JUP	R
329	BIRC2	4055	LTBR	L
329	BIRC2	4110	MAGEA11	R
329	BIRC2	7185	TRAF1	L
329	BIRC2	7186	TRAF2	R
329	BIRC2	8717	TRADD	L
329	BIRC2	8767	RIPK2	L
329	BIRC2	27429	HTRA2	L
330	BIRC3	836	CASP3	L
330	BIRC3	840	CASP7	L
330	BIRC3	842	CASP9	L
330	BIRC3	2935	GSPT1	L

330	BIRC3	7185	TRAF1	L
330	BIRC3	7186	TRAF2	L
330	BIRC3	56616	DIABLO	L
331	BIRC4	836	CASP3	L
331	BIRC4	840	CASP7	L
331	BIRC4	842	CASP9	RL
331	BIRC4	2935	GSPT1	L
331	BIRC4	6885	MAP3K7	L
331	BIRC4	7189	TRAF6	L
331	BIRC4	9500	MAGED1	L
331	BIRC4	10454	MAP3K7IP1	L
331	BIRC4	23118	MAP3K7IP2	L
331	BIRC4	27429	HTRA2	L
331	BIRC4	54739	BIRC4BP	L
331	BIRC4	55093	C8orf32	R
331	BIRC4	55437	ALS2CR2	L
331	BIRC4	56616	DIABLO	L
331	BIRC4	140735	Dlc2	R
331	BIRC4	150684	COMMD1	L
332	BIRC5	836	CASP3	L
332	BIRC5	840	CASP7	L
332	BIRC5	842	CASP9	L
332	BIRC5	983	CDC2	L
332	BIRC5	1019	CDK4	L
332	BIRC5	3619	INCENP	L
332	BIRC5	56616	DIABLO	L
333	APLP1	1031	CDKN2C	S
333	APLP1	1600	DAB1	L
333	APLP1	2948	GSTM4	S
333	APLP1	3117	HLA-DQA1	S
333	APLP1	3336	HSPE1	S
333	APLP1	4666	NACA	S
333	APLP1	4860	NP	S
333	APLP1	6303	SAT	S
333	APLP1	6811	STX5A	S
333	APLP1	6943	TCF21	S
333	APLP1	7083	TK1	S
333	APLP1	7572	ZNF24	S
333	APLP1	8848	TSC22D1	S
333	APLP1	8894	EIF2S2	S
333	APLP1	10200	MPHOSPH6	S
333	APLP1	10813	UTP14A	S
333	APLP1	19241	(null)	S
333	APLP1	54544	C1orf42	S
333	APLP1	55274	PHF10	S
333	APLP1	56144	PCDHA4	S
333	APLP1	114034	TOE1	S
334	APLP2	1600	DAB1	L
334	APLP2	10307	APBB3	L
334	APLP2	57473	GM632	L
335	APOA1	506	ATP5B	L
335	APOA1	949	SCARB1	L
335	APOA1	1071	CETP	L
335	APOA1	3078	CFHL1	L
335	APOA1	3250	HPR	L
335	APOA1	3931	LCAT	L
335	APOA1	5110	PCMT1	S
335	APOA1	8542	APOL1	L
335	APOA1	8794	TNFRSF10C	S
335	APOA1	9804	TOMM20	S
335	APOA1	55700	RPRC1	S
336	APOA2	341	APOC1	L
336	APOA2	347	APOD	L
336	APOA2	720	C4A	L
336	APOA2	5360	PLTP	L
337	APOA4	2822	GPLD1	L
338	APOB	633	BGN	L

338	APOB	811	CALR	L
338	APOB	821	CANX	L
338	APOB	3303	HSPA1A	L
338	APOB	3309	HSPA5	L
338	APOB	3320	HSPCA	L
338	APOB	3949	LDLR	L
338	APOB	3990	LIPC	L
338	APOB	4036	LRP2	L
338	APOB	4547	MTP	L
338	APOB	5479	PPIB	L
338	APOB	7184	TRA1	L
338	APOB	9601	PDIA4	L
338	APOB	10952	SEC61B	L
339	APOBEC1	9530	BAG4	L
339	APOBEC1	10659	CUGBP2	L
339	APOBEC1	10930	APOBEC2	L
339	APOBEC1	29974	ACF	L
339	APOBEC1	51726	DNAJB11	L
344	APOC2	4023	LPL	L
347	APOD	3953	LEPR	L
347	APOD	81488	GRINL1A	S
348	APOE	949	SCARB1	L
348	APOE	1270	CNTF	L
348	APOE	1508	CTSB	L
348	APOE	3949	LDLR	L
348	APOE	4035	LRP1	L
348	APOE	4036	LRP2	L
348	APOE	4133	MAP2	L
348	APOE	4137	MAPT	L
348	APOE	4741	NEF3	L
348	APOE	5360	PLTP	L
348	APOE	6383	SDC2	L
348	APOE	7436	VLDLR	L
348	APOE	7804	LRP8	L
350	APOH	2161	F12	L
350	APOH	4036	LRP2	L
350	APOH	7804	LRP8	L
351	APP	633	BGN	L
351	APP	642	BLMH	L
351	APP	811	CALR	L
351	APP	841	CASP8	L
351	APP	857	CAV1	L
351	APP	1278	COL1A2	L
351	APP	1282	COL4A1	L
351	APP	1284	COL4A2	L
351	APP	1285	COL4A3	L
351	APP	1287	COL4A5	L
351	APP	1288	COL4A6	L
351	APP	1504	CTRB1	L
351	APP	1600	DAB1	L
351	APP	2161	F12	L
351	APP	2192	FBLN1	L
351	APP	2597	GAPDH	L
351	APP	2934	GSN	L
351	APP	3028	HADH2	L
351	APP	3032	HADHB	L
351	APP	3163	HMOX2	L
351	APP	3339	HSPG2	L
351	APP	3416	IDE	L
351	APP	3827	KNG1	L
351	APP	3831	KNS2	L
351	APP	4035	LRP1	L
351	APP	4811	NID1	L
351	APP	5644	PRSS1	L
351	APP	5646	PRSS3	L
351	APP	5663	PSEN1	L
351	APP	6464	SHC1	L

351	APP	6622	SNCA	L
351	APP	7040	TGFB1	L
351	APP	7042	TGFB2	L
351	APP	8650	NUMB	L
351	APP	8883	APPBP1	L
351	APP	9479	MAPK8IP1	L
351	APP	9546	APBA3	L
351	APP	10134	BCAP31	L
351	APP	10307	APBB3	L
351	APP	10513	APPBP2	L
351	APP	10524	HTATIP	L
351	APP	22883	CLSTN1	L
351	APP	23385	NCSTN	L
351	APP	84570	COL25A1	L
354	KLK3	2057	EPOR	L
354	KLK3	2335	FN1	L
354	KLK3	3486	IGFBP3	L
354	KLK3	5104	SERPINA5	L
354	KLK3	5858	PZP	L
355	FAS	356	FASLG	L
355	FAS	695	BTK	L
355	FAS	841	CASP8	L
355	FAS	843	CASP10	L
355	FAS	1400	CRMP1	S
355	FAS	1616	DAXX	L
355	FAS	1915	EEF1A1	S
355	FAS	2534	FYN	L
355	FAS	3932	LCK	L
355	FAS	5783	PTPN13	L
355	FAS	7329	UBE2I	L
355	FAS	7341	SUMO1	L
355	FAS	8717	TRADD	L
355	FAS	8737	RIPK1	L
355	FAS	8772	FADD	L
355	FAS	9994	CASP8AP2	L
355	FAS	10016	PDCD6	L
355	FAS	10114	HIPK3	L
355	FAS	11124	FAF1	L
355	FAS	11161	C14orf1	S
355	FAS	23017	FAIM2	L
355	FAS	55791	C1orf103	S
355	FAS	85302	FBF1	L
355	FAS	407977	TNFSF12-TNFSF13	L
356	FASLG	1616	DAXX	L
356	FASLG	1756	DMD	L
356	FASLG	2335	FN1	L
356	FASLG	2534	FYN	L
356	FASLG	2885	GRB2	L
356	FASLG	3932	LCK	L
356	FASLG	4297	MLL	L
356	FASLG	4316	MMP7	L
356	FASLG	4687	NCF1	L
356	FASLG	4690	NCK1	L
356	FASLG	5295	PIK3R1	L
356	FASLG	5783	PTPN13	L
356	FASLG	6714	SRC	L
356	FASLG	7341	SUMO1	L
356	FASLG	7430	VIL2	L
356	FASLG	8771	TNFRSF6B	L
356	FASLG	9402	GRAP2	L
356	FASLG	10016	PDCD6	L
356	FASLG	10750	GRAP	L
356	FASLG	11252	PACSIN2	L
356	FASLG	23048	FNBP1	L
358	AQP1	4188	MDFI	R
358	AQP1	7205	TRIP6	R
358	AQP1	11007	DIPA	R

358	AQP1	30008	EFEMP2	R
358	AQP1	79734	KCTD17	R
358	AQP1	83755	KRTAP4-12	R
360	AQP3	5338	PLD2	L
362	AQP5	4188	MDFI	R
367	AR	573	BAG1	L
367	AR	595	CCND1	L
367	AR	672	BRCA1	L
367	AR	811	CALR	L
367	AR	834	CASP1	L
367	AR	836	CASP3	L
367	AR	840	CASP7	L
367	AR	841	CASP8	L
367	AR	857	CAV1	L
367	AR	898	CCNE1	L
367	AR	994	CDC25B	L
367	AR	1329	COX5B	L
367	AR	1387	CREBBP	L
367	AR	1499	CTNNB1	L
367	AR	2099	ESR1	L
367	AR	2274	FHL2	L
367	AR	2308	FOXO1A	L
367	AR	2316	FLNA	L
367	AR	2597	GAPDH	L
367	AR	2908	NR3C1	L
367	AR	2934	GSN	L
367	AR	2962	GTF2F1	L
367	AR	2963	GTF2F2	L
367	AR	2965	GTF2H1	L
367	AR	3065	HDAC1	L
367	AR	3146	HMGB1	L
367	AR	3169	FOXA1	L
367	AR	3320	HSPCA	L
367	AR	3416	IDE	L
367	AR	3725	JUN	L
367	AR	4088	SMAD3	L
367	AR	4089	SMAD4	L
367	AR	4790	NFKB1	L
367	AR	4841	NONO	L
367	AR	5451	POU2F1	L
367	AR	5469	PPARBP	L
367	AR	5881	RAC3	L
367	AR	5883	RAD9A	L
367	AR	5894	RAF1	L
367	AR	5901	RAN	L
367	AR	5925	RB1	L
367	AR	5970	RELA	L
367	AR	6047	RNF4	L
367	AR	6736	SRY	L
367	AR	6774	STAT3	L
367	AR	6840	SVIL	L
367	AR	6925	TCF4	L
367	AR	7041	TGFB1I1	L
367	AR	7181	NR2C1	L
367	AR	7182	NR2C2	L
367	AR	7251	TSG101	L
367	AR	7818	DAP3	L
367	AR	8031	NCOA4	L
367	AR	8202	NCOA3	L
367	AR	8409	UXT	L
367	AR	8431	NR0B2	L
367	AR	8648	NCOA1	L
367	AR	8805	TRIM24	L
367	AR	9063	PIAS2	L
367	AR	9282	CRSP2	L
367	AR	9604	RNF14	L
367	AR	9611	NCOR1	L

367	AR	9733	SART3	L
367	AR	10048	RANBP9	L
367	AR	10399	GNB2L1	L
367	AR	10499	NCOA2	L
367	AR	10514	MYBBP1A	L
367	AR	10524	HTATIP	L
367	AR	11140	CDC37	L
367	AR	11143	MYST2	L
367	AR	11188	NISCH	L
367	AR	24148	C20orf14	L
367	AR	25898	RCHY1	L
367	AR	27043	PELP1	L
367	AR	51588	PIAS4	L
367	AR	56924	PAK6	L
367	AR	64324	NSD1	L
368	ABCC6	7414	VCL	L
369	ARAF	445	ASS	L
369	ARAF	1460	CSNK2B	L
369	ARAF	2202	EFEMP1	L
369	ARAF	5295	PIK3R1	L
369	ARAF	5604	MAP2K1	L
369	ARAF	5605	MAP2K2	L
369	ARAF	6237	RRAS	L
369	ARAF	8533	COPS3	L
369	ARAF	10469	TIMM44	L
369	ARAF	24148	C20orf14	L
369	ARAF	51497	TH1L	L
369	ARAF	55872	PBK	L
369	ARAF	59349	KLHL12	R
372	ARCN1	1314	COPA	L
372	ARCN1	1315	COPB	L
372	ARCN1	9276	COPB2	L
372	ARCN1	22820	COPG	L
372	ARCN1	26958	COPG2	L
373	TRIM23	2669	GEM	R
373	TRIM23	7536	SF1	R
373	TRIM23	9266	PSCD2	L
373	TRIM23	9267	PSCD1	L
373	TRIM23	9883	POM121	R
373	TRIM23	23062	GGA2	R
373	TRIM23	26150	RIBC2	R
373	TRIM23	51545	ZNF581	R
373	TRIM23	58500	ZNF250	R
373	TRIM23	79173	MGC11271	R
373	TRIM23	80308	FLAD1	R
373	TRIM23	84708	LNX	R
374	AREG	896	CCND3	L
374	AREG	1956	EGFR	L
374	AREG	4318	MMP9	L
375	ARF1	1131	CHRM3	L
375	ARF1	1315	COPB	L
375	ARF1	1937	EEF1G	S
375	ARF1	4194	MDM4	L
375	ARF1	5337	PLD1	L
375	ARF1	5338	PLD2	L
375	ARF1	5898	RALA	L
375	ARF1	7094	TLN1	L
375	ARF1	8394	PIP5K1A	L
375	ARF1	8853	DDEF2	L
375	ARF1	8943	AP3D1	L
375	ARF1	9179	AP4M1	L
375	ARF1	9266	PSCD2	L
375	ARF1	9267	PSCD1	L
375	ARF1	9463	PRKCABP	L
375	ARF1	10945	KDELR1	L
375	ARF1	11316	COPE	L
375	ARF1	22820	COPG	L

375	ARF1	23163	GGA3	L
375	ARF1	23431	AP4E1	L
375	ARF1	23647	ARFIP2	L
375	ARF1	27236	ARFIP1	L
375	ARF1	51729	WBP11	S
375	ARF1	55738	ARFGAP1	L
375	ARF1	84273	C4orf14	S
375	ARF1	84725	PLEKHA8	L
377	ARF3	9463	PRKCABP	L
377	ARF3	9493	KIF23	L
377	ARF3	23062	GGA2	L
377	ARF3	23647	ARFIP2	L
377	ARF3	27236	ARFIP1	L
378	ARF4	1956	EGFR	L
379	ARF4L	1967	EIF2B1	S
379	ARF4L	2058	EPRS	S
379	ARF4L	3301	DNAJA1	S
379	ARF4L	5223	PGAM1	S
379	ARF4L	5589	PRKCSH	S
379	ARF4L	6638	SNRPN	S
379	ARF4L	7088	TLE1	S
379	ARF4L	9094	UNC119	S
379	ARF4L	10397	NDRG1	S
379	ARF4L	23162	MAPK8IP3	S
379	ARF4L	23204	ARL6IP	L
379	ARF4L	27436	EML4	S
379	ARF4L	29058	C20orf30	S
379	ARF4L	197131	UBR1	S
379	ARF4L	245812	MGC40499	S
381	ARF5	8394	PIP5K1A	L
381	ARF5	8853	DDEF2	L
381	ARF5	23647	ARFIP2	L
382	ARF6	408	ARRB1	L
382	ARF6	409	ARRB2	L
382	ARF6	1131	CHRM3	L
382	ARF6	5337	PLD1	L
382	ARF6	8394	PIP5K1A	L
382	ARF6	8853	DDEF2	L
382	ARF6	8943	AP3D1	L
382	ARF6	9266	PSCD2	L
382	ARF6	10640	SEC10L1	L
382	ARF6	23396	PIP5K1C	L
382	ARF6	23647	ARFIP2	L
383	ARG1	384	ARG2	L
383	ARG1	4842	NOS1	L
387	RHOA	392	ARHGAP1	RL
387	RHOA	396	ARHGDIA	L
387	RHOA	397	ARHGDIB	L
387	RHOA	398	ARHGDIG	L
387	RHOA	1609	DGKQ	L
387	RHOA	2316	FLNA	L
387	RHOA	3708	ITPR1	L
387	RHOA	3737	KCNA2	L
387	RHOA	3895	KTN1	L
387	RHOA	4168	MCF2	L
387	RHOA	4659	PPP1R12A	L
387	RHOA	4983	OPHN1	L
387	RHOA	5147	PDE6D	L
387	RHOA	5335	PLCG1	L
387	RHOA	5337	PLD1	L
387	RHOA	5578	PRKCA	L
387	RHOA	5585	PKN1	L
387	RHOA	5586	PKN2	L
387	RHOA	5910	RAP1GDS1	L
387	RHOA	6093	ROCK1	L
387	RHOA	6242	RTKN	L
387	RHOA	7052	TGM2	L

387	RHOA	7204	TRIO	L
387	RHOA	7410	VAV2	L
387	RHOA	8506	CNTNAP1	L
387	RHOA	9181	ARHGEF2	L
387	RHOA	9600	PITPNM1	L
387	RHOA	9826	ARHGEF11	L
387	RHOA	10256	CNKSR1	L
387	RHOA	10451	VAV3	L
387	RHOA	10567	RABAC1	L
387	RHOA	11214	AKAP13	L
387	RHOA	23002	DAAM1	L
387	RHOA	23263	MCF2L	L
387	RHOA	23365	ARHGEF12	L
387	RHOA	23463	ICMT	L
387	RHOA	23616	SH3BP1	L
387	RHOA	50619	DEF6	L
387	RHOA	50649	ARHGEF4	L
387	RHOA	51291	GMIP	L
387	RHOA	57522	SRGAP1	L
388	RHOB	398	ARHGDIG	L
388	RHOB	5147	PDE6D	L
388	RHOB	85415	RHPN2	L
389	RHOC	392	ARHGAP1	R
389	RHOC	6242	RTKN	L
390	RND3	6093	ROCK1	L
390	RND3	91544	UBXD5	L
391	RHOG	398	ARHGDIG	L
391	RHOG	1793	DOCK1	L
391	RHOG	3895	KTN1	L
391	RHOG	4296	MAP3K11	L
391	RHOG	5337	PLD1	L
391	RHOG	7410	VAV2	L
391	RHOG	10451	VAV3	L
391	RHOG	10788	IQGAP2	L
392	ARHGAP1	663	BNIP2	L
392	ARHGAP1	998	CDC42	L
392	ARHGAP1	5295	PIK3R1	L
392	ARHGAP1	5921	RASA1	L
392	ARHGAP1	6714	SRC	L
392	ARHGAP1	7454	WAS	L
393	ARHGAP4	4214	MAP3K1	L
393	ARHGAP4	4893	NRAS	L
394	ARHGAP5	3678	ITGA5	L
394	ARHGAP5	3688	ITGB1	L
394	ARHGAP5	5921	RASA1	L
394	ARHGAP5	64750	SMURF2	L
396	ARHGDIA	998	CDC42	L
396	ARHGDIA	1027	CDKN1B	S
396	ARHGDIA	2237	FEN1	S
396	ARHGDIA	3728	JUP	S
396	ARHGDIA	5058	PAK1	L
396	ARHGDIA	5879	RAC1	L
396	ARHGDIA	5880	RAC2	L
396	ARHGDIA	5962	RDX	L
396	ARHGDIA	6457	SH3GL3	S
396	ARHGDIA	6484	ST3GAL4	S
396	ARHGDIA	23327	NEDD4L	S
397	ARHGDIB	399	RHOH	L
397	ARHGDIB	998	CDC42	L
397	ARHGDIB	5879	RAC1	L
397	ARHGDIB	5880	RAC2	L
397	ARHGDIB	7409	VAV1	L
397	ARHGDIB	7430	VIL2	L
398	ARHGDIG	399	RHOH	L
398	ARHGDIG	998	CDC42	L
398	ARHGDIG	5683	PSMA2	L
398	ARHGDIG	5879	RAC1	L

399	RHOH	2664	GDI1	L
399	RHOH	3757	KCNH2	S
399	RHOH	10813	UTP14A	S
399	RHOH	55791	C1orf103	S
400	ARL1	2800	GOLGA1	L
400	ARL1	2803	GOLGA4	L
401	PHOX2A	1387	CREBBP	L
401	PHOX2A	1388	CREBL1	L
401	PHOX2A	5566	PRKACA	L
401	PHOX2A	9464	HAND2	L
402	ARL2	5147	PDE6D	RL
403	ARL3	2803	GOLGA4	L
403	ARL3	5147	PDE6D	SL
403	ARL3	6102	RP2	L
403	ARL3	7088	TLE1	S
403	ARL3	7157	TP53	S
403	ARL3	7846	TUBA3	L
403	ARL3	9094	UNC119	SL
403	ARL3	55791	C1orf103	S
403	ARL3	197131	UBR1	S
405	ARNT	2034	EPAS1	L
405	ARNT	2963	GTF2F2	L
405	ARNT	3091	HIF1A	L
405	ARNT	4093	SMAD9	L
405	ARNT	5371	PML	L
405	ARNT	6492	SIM1	L
405	ARNT	6493	SIM2	L
405	ARNT	8648	NCOA1	L
405	ARNT	9049	AIP	L
405	ARNT	10499	NCOA2	L
405	ARNT	10728	PTGES3	L
405	ARNT	23462	HEY1	L
405	ARNT	23493	HEY2	L
405	ARNT	57491	AHRR	L
406	ARNTL	1407	CRY1	L
406	ARNTL	1454	CSNK1E	L
406	ARNTL	2034	EPAS1	L
406	ARNTL	3091	HIF1A	L
406	ARNTL	3320	HSPCA	L
406	ARNTL	9575	CLOCK	L
407	ARR3	826	CAPNS1	S
407	ARR3	1213	CLTC	L
407	ARR3	1457	CSNK2A1	L
407	ARR3	1856	DVL2	R
407	ARR3	5609	MAP2K7	S
407	ARR3	6010	RHO	L
407	ARR3	6039	RNASE6	S
407	ARR3	6714	SRC	L
407	ARR3	8546	AP3B1	L
407	ARR3	27232	GNMT	R
407	ARR3	84838	ZNF496	R
407	ARR3	283248	RCOR2	S
408	ARRB1	1213	CLTC	L
408	ARRB1	1231	CCR2	L
408	ARRB1	1234	CCR5	L
408	ARRB1	1445	CSK	L
408	ARRB1	1855	DVL1	L
408	ARRB1	1856	DVL2	L
408	ARRB1	2268	FGR	L
408	ARRB1	3579	IL8RB	L
408	ARRB1	4792	NFKBIA	L
408	ARRB1	4905	NSF	L
408	ARRB1	4985	OPRD1	L
408	ARRB1	5144	PDE4D	L
408	ARRB1	5744	PTHLH	L
408	ARRB1	5745	PTHR1	L
408	ARRB1	5900	RALGDS	L

408	ARRB1	7201	TRHR	L
408	ARRB1	9266	PSCD2	L
408	ARRB1	23099	ZNF297B	R
408	ARRB1	27232	GNMT	R
409	ARRB2	554	AVPR2	L
409	ARRB2	4193	MDM2	L
409	ARRB2	4217	MAP3K5	L
409	ARRB2	4922	NTS	L
409	ARRB2	4923	NTSR1	L
409	ARRB2	4985	OPRD1	L
409	ARRB2	5021	OXTR	L
409	ARRB2	5144	PDE4D	L
409	ARRB2	5602	MAPK10	L
409	ARRB2	5900	RALGDS	L
409	ARRB2	6416	MAP2K4	L
409	ARRB2	6601	SMARCC2	S
409	ARRB2	7200	TRH	L
409	ARRB2	8614	STC2	S
409	ARRB2	9266	PSCD2	L
409	ARRB2	10114	HIPK3	L
409	ARRB2	112950	MED8	S
409	ARRB2	374291	NDUFS7	S
415	ARSE	4692	NDN	S
415	ARSE	10188	TNK2	S
415	ARSE	51004	COQ6	S
416	ARSF	6625	SNRP70	L
417	ART1	5155	PDGFB	L
421	ARVCF	999	CDH1	L
421	ARVCF	1000	CDH2	L
421	ARVCF	1013	CDH15	L
421	ARVCF	55914	ERBB2IP	L
427	ASAH1	8848	TSC22D1	S
427	ASAH1	9869	SETDB1	S
429	ASCL1	650	BMP2	L
429	ASCL1	4205	MEF2A	L
429	ASCL1	6925	TCF4	L
430	ASCL2	801	CALM1	L
430	ASCL2	805	CALM2	L
430	ASCL2	808	CALM3	L
432	ASGR1	433	ASGR2	L
432	ASGR1	1719	DHFR	L
432	ASGR1	3320	HSPCA	L
432	ASGR1	7038	TG	L
432	ASGR1	7184	TRA1	L
432	ASGR1	29956	LASS2	L
433	ASGR2	29956	LASS2	L
434	ASIP	4157	MC1R	L
434	ASIP	4158	MC2R	L
434	ASIP	4159	MC3R	L
434	ASIP	4160	MC4R	L
435	ASL	5859	QARS	R
440	ASNS	29888	STRN4	S
444	ASPH	10345	TRDN	L
445	ASS	2006	ELN	L
445	ASS	64400	FTS	S
445	ASS	84164	ASCC2	S
462	SERPINC1	2147	F2	L
462	SERPINC1	5340	PLG	L
462	SERPINC1	6383	SDC2	L
463	ATBF1	22981	KIAA0980	R
463	ATBF1	55660	FNBP3	L
466	ATF1	571	BACH1	L
466	ATF1	672	BRCA1	L
466	ATF1	1385	CREB1	L
466	ATF1	1387	CREBBP	L
466	ATF1	1390	CREM	L
466	ATF1	1457	CSNK2A1	L

466	ATF1	1459	CSNK2A2	L
466	ATF1	2551	GABPA	L
466	ATF1	3725	JUN	L
466	ATF1	4783	NFIL3	L
466	ATF1	6688	SPI1	L
466	ATF1	6928	TCF2	L
466	ATF1	8721	EDF1	L
467	ATF3	468	ATF4	L
467	ATF3	1054	CEBPG	L
467	ATF3	1386	ATF2	L
467	ATF3	1649	DDIT3	L
467	ATF3	2261	FGFR3	S
467	ATF3	3725	JUN	L
467	ATF3	3726	JUNB	L
467	ATF3	3727	JUND	L
467	ATF3	4088	SMAD3	L
467	ATF3	7157	TP53	SL
467	ATF3	9586	CREB5	L
467	ATF3	11016	ATF7	L
467	ATF3	55509	SNFT	L
467	ATF3	55791	C1orf103	S
467	ATF3	83540	CDCA1	S
467	ATF3	84966	IGSF21	S
468	ATF4	1050	CEBPA	L
468	ATF4	1051	CEBPB	L
468	ATF4	1052	CEBPD	L
468	ATF4	1053	CEBPE	L
468	ATF4	1054	CEBPG	L
468	ATF4	1613	DAPK3	L
468	ATF4	1649	DDIT3	L
468	ATF4	2353	FOS	L
468	ATF4	2354	FOSB	L
468	ATF4	2874	GPS2	R
468	ATF4	2963	GTF2F2	L
468	ATF4	3131	HLF	L
468	ATF4	3725	JUN	L
468	ATF4	4094	MAF	L
468	ATF4	4779	NFE2L1	L
468	ATF4	4780	NFE2L2	L
468	ATF4	5432	POLR2C	L
468	ATF4	7276	TTR	R
468	ATF4	9568	GPR51	L
468	ATF4	9586	CREB5	L
468	ATF4	10538	BATF	L
468	ATF4	11016	ATF7	L
468	ATF4	11219	TREX2	R
468	ATF4	23641	LDOC1	R
468	ATF4	27185	DISC1	L
468	ATF4	29903	HSU79303	S
468	ATF4	55037	FLJ20758	R
468	ATF4	55509	SNFT	L
468	ATF4	57761	TRIB3	L
468	ATF4	58487	ZF	L
472	ATM	847	CAT	L
472	ATM	3014	H2AFX	L
472	ATM	3094	HINT1	L
472	ATM	5591	PRKDC	L
472	ATM	5830	PEX5	L
472	ATM	5884	RAD17	L
472	ATM	5976	RENT1	L
472	ATM	7013	TERF1	L
472	ATM	7157	TP53	L
472	ATM	11200	CHEK2	L
473	RERE	1822	ATN1	L
473	RERE	7205	TRIP6	L
475	ATOX1	538	ATP7A	L
475	ATOX1	540	ATP7B	L

476	ATP1A1	1072	CFL1	L
476	ATP1A1	2146	EZH2	S
476	ATP1A1	5348	FXYD1	L
476	ATP1A1	5595	MAPK3	L
476	ATP1A1	53822	FXYD7	L
481	ATP1B1	5348	FXYD1	L
481	ATP1B1	53822	FXYD7	L
481	ATP1B1	55791	C1orf103	S
482	ATP1B2	58157	NGB	L
487	ATP2A1	3667	IRS1	L
487	ATP2A1	5350	PLN	L
487	ATP2A1	6588	SLN	L
487	ATP2A1	8660	IRS2	L
488	ATP2A2	5350	PLN	L
488	ATP2A2	6271	S100A1	L
491	ATP2B2	1739	DLG1	L
491	ATP2B2	1740	DLG2	L
491	ATP2B2	1742	DLG4	L
491	ATP2B2	9351	SLC9A3R2	L
491	ATP2B2	51248	PDZK11	L
493	ATP2B4	805	CALM2	L
493	ATP2B4	1739	DLG1	L
493	ATP2B4	1740	DLG2	L
493	ATP2B4	1741	DLG3	L
493	ATP2B4	1742	DLG4	L
493	ATP2B4	8573	CASK	L
496	ATP4B	6804	STX1A	L
498	ATP5A1	91647	ATPAF2	L
501	ALDH7A1	9400	RECQL5	S
506	ATP5B	5340	PLG	L
506	ATP5B	7414	VCL	L
506	ATP5B	10197	PSME3	S
506	ATP5B	91647	ATPAF2	L
509	ATP5C1	771	CA12	S
509	ATP5C1	896	CCND3	S
509	ATP5C1	1956	EGFR	S
509	ATP5C1	3698	ITIH2	S
509	ATP5C1	4354	MPP1	S
509	ATP5C1	4709	NDUFB3	S
509	ATP5C1	5074	PAWR	S
509	ATP5C1	5764	PTN	S
509	ATP5C1	10072	DPP3	S
509	ATP5C1	10574	CCT7	S
509	ATP5C1	23649	POLA2	S
509	ATP5C1	25791	NGEF	S
509	ATP5C1	25978	CHMP2B	S
509	ATP5C1	26152	ZNF337	S
509	ATP5C1	51586	PCQAP	S
509	ATP5C1	54857	GDPD2	S
509	ATP5C1	56902	LOC56902	S
509	ATP5C1	64219	PJA1	S
509	ATP5C1	84337	ELOF1	S
518	ATP5G3	7920	BAT5	L
527	ATP6V0C	4140	MARK3	S
527	ATP6V0C	29956	LASS2	L
529	ATP6V1E1	534	ATP6V1G2	L
529	ATP6V1E1	2547	XRCC6	S
529	ATP6V1E1	6654	SOS1	L
529	ATP6V1E1	9368	SLC9A3R1	L
529	ATP6V1E1	9550	ATP6V1G1	S
529	ATP6V1E1	51606	ATP6V1H	L
537	ATP6AP1	3039	HBA1	S
538	ATP7A	1356	CP	L
545	ATR	672	BRCA1	L
545	ATR	1108	CHD4	L
545	ATR	4436	MSH2	L
545	ATR	5371	PML	L

545	ATR	11200	CHEK2	L
545	ATR	11277	TREX1	L
545	ATR	63967	CLSPN	L
546	ATRX	2146	EZH2	L
546	ATRX	5764	PTN	S
546	ATRX	5775	PTPN4	S
546	ATRX	51631	LUC7L2	S
546	ATRX	54462	KIAA1128	S
546	ATRX	57473	GM632	L
546	ATRX	57562	KIAA1377	S
547	KIF1A	28964	GIT1	L
550	AUP1	3672	ITGA1	L
550	AUP1	3673	ITGA2	L
550	AUP1	3674	ITGA2B	L
550	AUP1	3678	ITGA5	L
550	AUP1	3684	ITGAM	L
550	AUP1	3685	ITGAV	L
550	AUP1	26994	RNF11	L
551	AVP	552	AVPR1A	L
551	AVP	553	AVPR1B	L
551	AVP	554	AVPR2	L
551	AVP	5021	OXTR	L
552	AVPR1A	2869	GRK5	L
552	AVPR1A	5578	PRKCA	L
553	AVPR1B	2869	GRK5	L
554	AVPR2	2778	GNAS	L
554	AVPR2	2869	GRK5	L
558	AXL	2621	GAS6	L
558	AXL	2885	GRB2	L
558	AXL	3932	LCK	L
558	AXL	5296	PIK3R2	L
558	AXL	6464	SHC1	L
558	AXL	6714	SRC	L
563	AZGP1	3685	ITGAV	L
567	B2M	909	CD1A	L
567	B2M	910	CD1B	L
567	B2M	912	CD1D	L
567	B2M	913	CD1E	L
567	B2M	925	CD8A	L
567	B2M	2217	FCGRT	L
567	B2M	3077	HFE	L
567	B2M	3105	HLA-A	L
567	B2M	3106	HLA-B	L
567	B2M	3107	HLA-C	L
567	B2M	3133	HLA-E	L
567	B2M	3135	HLA-G	L
567	B2M	7414	VCL	L
567	B2M	7917	BAT3	S
567	B2M	10859	LILRB1	L
567	B2M	11098	PRSS23	S
570	BAAT	23657	SLC7A11	L
571	BACH1	672	BRCA1	L
571	BACH1	1386	ATF2	L
571	BACH1	1390	CREM	L
571	BACH1	4094	MAF	L
571	BACH1	4097	MAFG	L
571	BACH1	7975	MAFK	L
571	BACH1	9586	CREB5	L
571	BACH1	9935	MAFB	L
571	BACH1	11016	ATF7	L
572	BAD	596	BCL2	L
572	BAD	597	BCL2A1	L
572	BAD	598	BCL2L1	L
572	BAD	599	BCL2L2	L
572	BAD	2130	EWSR1	R
572	BAD	2810	SFN	R
572	BAD	4170	MCL1	L

572	BAD	6281	S100A10	L
572	BAD	6622	SNCA	L
572	BAD	7009	TEGT	L
572	BAD	7529	YWHAB	L
572	BAD	7531	YWHAE	L
572	BAD	7533	YWHAH	L
572	BAD	7534	YWHAZ	L
572	BAD	10017	BCL2L10	L
572	BAD	10971	YWHAQ	L
572	BAD	11040	PIM2	L
573	BAG1	596	BCL2	L
573	BAG1	598	BCL2L1	L
573	BAG1	1839	HBEGF	L
573	BAG1	2099	ESR1	L
573	BAG1	2908	NR3C1	L
573	BAG1	3312	HSPA8	L
573	BAG1	4233	MET	L
573	BAG1	5159	PDGFRB	L
573	BAG1	5894	RAF1	L
573	BAG1	5914	RARA	L
573	BAG1	5925	RB1	L
573	BAG1	6477	SIAH1	L
573	BAG1	6767	ST13	L
573	BAG1	7421	VDR	L
573	BAG1	10273	STUB1	L
573	BAG1	23645	PPP1R15A	L
575	BAI1	1742	DLG4	L
575	BAI1	8938	BAIAP3	L
575	BAI1	9223	MAGI1	L
575	BAI1	10458	BAIAP2	L
575	BAI1	260425	MAGI3	L
576	BAI2	7094	TLN1	L
576	BAI2	22941	SHANK2	L
576	BAI2	50944	SHANK1	L
576	BAI2	55805	LRP2BP	L
576	BAI2	90627	STARD13	L
576	BAI2	307255	(null)	S
578	BAK1	581	BAX	L
578	BAK1	596	BCL2	L
578	BAK1	597	BCL2A1	L
578	BAK1	598	BCL2L1	RL
578	BAK1	3329	HSPD1	L
578	BAK1	4170	MCL1	L
578	BAK1	7157	TP53	L
578	BAK1	7417	VDAC2	L
580	BARD1	602	BCL3	L
580	BARD1	672	BRCA1	L
580	BARD1	1477	CSTF1	L
580	BARD1	2130	EWSR1	L
580	BARD1	4436	MSH2	L
580	BARD1	5430	POLR2A	L
580	BARD1	5451	POU2F1	L
580	BARD1	5932	RBBP8	L
580	BARD1	7323	UBE2D3	L
580	BARD1	7332	UBE2L3	L
581	BAX	596	BCL2	L
581	BAX	597	BCL2A1	L
581	BAX	598	BCL2L1	L
581	BAX	4170	MCL1	L
581	BAX	7416	VDAC1	L
581	BAX	10017	BCL2L10	L
581	BAX	10971	YWHAQ	L
581	BAX	51100	SH3GLB1	L
581	BAX	64112	MOAP1	L
583	BBS2	10197	PSME3	R
585	BBS4	5108	PCM1	L
586	BCAT1	4090	SMAD5	L

590	BCHE	8292	COLQ	L
593	BCKDHA	594	BCKDHB	L
595	CCND1	672	BRCA1	L
595	CCND1	801	CALM1	L
595	CCND1	1019	CDK4	L
595	CCND1	1021	CDK6	L
595	CCND1	1026	CDKN1A	L
595	CCND1	1027	CDKN1B	L
595	CCND1	1032	CDKN2D	L
595	CCND1	1316	KLF6	L
595	CCND1	1499	CTNNB1	L
595	CCND1	2033	EP300	L
595	CCND1	2099	ESR1	L
595	CCND1	3429	IFI27	L
595	CCND1	4605	MYBL2	L
595	CCND1	5000	ORC4L	L
595	CCND1	5925	RB1	L
595	CCND1	5933	RBL1	L
595	CCND1	5981	RFC1	L
595	CCND1	6774	STAT3	L
595	CCND1	6872	TAF1	L
595	CCND1	7067	THRA	L
595	CCND1	8202	NCOA3	L
595	CCND1	8452	CUL3	L
595	CCND1	8648	NCOA1	L
595	CCND1	8850	PCAF	L
595	CCND1	9978	RBX1	L
595	CCND1	9988	DMTF1	L
595	CCND1	10270	AKAP8	L
595	CCND1	23582	CCNDBP1	L
595	CCND1	51191	HERC5	L
595	CCND1	55388	MCM10	L
596	BCL2	637	BID	L
596	BCL2	638	BIK	L
596	BCL2	640	BLK	L
596	BCL2	662	BNIP1	L
596	BCL2	663	BNIP2	L
596	BCL2	664	BNIP3	L
596	BCL2	665	BNIP3L	L
596	BCL2	836	CASP3	L
596	BCL2	841	CASP8	L
596	BCL2	1017	CDK2	L
596	BCL2	3164	NR4A1	L
596	BCL2	3265	HRAS	L
596	BCL2	3303	HSPA1A	L
596	BCL2	3708	ITPR1	L
596	BCL2	3845	KRAS	L
596	BCL2	4893	NRAS	L
596	BCL2	5300	PIN1	L
596	BCL2	5515	PPP2CA	L
596	BCL2	5525	PPP2R5A	L
596	BCL2	5530	PPP3CA	L
596	BCL2	5594	MAPK1	L
596	BCL2	5663	PSEN1	L
596	BCL2	5883	RAD9A	L
596	BCL2	5894	RAF1	L
596	BCL2	6009	RHEB	L
596	BCL2	6237	RRAS	L
596	BCL2	6606	SMN1	L
596	BCL2	6647	SOD1	L
596	BCL2	7009	TEGT	L
596	BCL2	7159	TP53BP2	L
596	BCL2	7536	SF1	L
596	BCL2	8678	BECN1	L
596	BCL2	8739	HRK	L
596	BCL2	9088	PKMYT1	L
596	BCL2	9445	ITM2B	L

596	BCL2	9530	BAG4	L
596	BCL2	9531	BAG3	L
596	BCL2	9774	BCLAF1	L
596	BCL2	9804	TOMM20	L
596	BCL2	10017	BCL2L10	L
596	BCL2	10018	BCL2L11	L
596	BCL2	10134	BCAP31	L
596	BCL2	23770	FKBP8	L
596	BCL2	54205	CYCS	L
596	BCL2	57142	RTN4	L
596	BCL2	63970	P53AIP1	L
596	BCL2	64112	MOAP1	L
596	BCL2	79370	BCL2L14	L
596	BCL2	83985	SPIN1	L
596	BCL2	90427	BMF	L
597	BCL2A1	637	BID	L
597	BCL2A1	638	BIK	L
597	BCL2A1	666	BOK	L
597	BCL2A1	2885	GRB2	L
598	BCL2L1	637	BID	L
598	BCL2L1	638	BIK	RL
598	BCL2L1	662	BNIP1	L
598	BCL2L1	664	BNIP3	L
598	BCL2L1	665	BNIP3L	L
598	BCL2L1	841	CASP8	L
598	BCL2L1	842	CASP9	L
598	BCL2L1	3667	IRS1	L
598	BCL2L1	5663	PSEN1	L
598	BCL2L1	5664	PSEN2	L
598	BCL2L1	5883	RAD9A	L
598	BCL2L1	6252	RTN1	L
598	BCL2L1	6622	SNCA	L
598	BCL2L1	7009	TEGT	L
598	BCL2L1	7157	TP53	L
598	BCL2L1	7416	VDAC1	L
598	BCL2L1	8660	IRS2	L
598	BCL2L1	8678	BECN1	L
598	BCL2L1	8739	HRK	L
598	BCL2L1	8837	CFLAR	L
598	BCL2L1	10018	BCL2L11	L
598	BCL2L1	10134	BCAP31	L
598	BCL2L1	22806	ZNFN1A3	L
598	BCL2L1	23770	FKBP8	L
598	BCL2L1	54205	CYCS	L
598	BCL2L1	57099	AVEN	L
598	BCL2L1	57142	RTN4	L
598	BCL2L1	64112	MOAP1	L
598	BCL2L1	79370	BCL2L14	L
598	BCL2L1	83596	BCL2L12	L
598	BCL2L1	83985	SPIN1	L
598	BCL2L1	84168	ANTXR1	L
599	BCL2L2	90427	BMF	L
602	BCL3	1387	CREBBP	L
602	BCL3	2353	FOS	L
602	BCL3	2534	FYN	L
602	BCL3	2957	GTF2A1	L
602	BCL3	2959	GTF2B	L
602	BCL3	3725	JUN	L
602	BCL3	4790	NFKB1	L
602	BCL3	4791	NFKB2	L
602	BCL3	6256	RXRA	L
602	BCL3	6464	SHC1	L
602	BCL3	6908	TBP	L
602	BCL3	8648	NCOA1	L
602	BCL3	9367	RAB9A	L
602	BCL3	10524	HTATIP	L
602	BCL3	10987	COPS5	L

602	BCL3	55728	N4BP2	L
604	BCL6	3662	IRF4	L
604	BCL6	3725	JUN	L
604	BCL6	3726	JUNB	L
604	BCL6	3727	JUND	L
604	BCL6	5467	PPARD	L
604	BCL6	6667	SP1	L
604	BCL6	7704	ZBTB16	L
604	BCL6	9611	NCOR1	L
604	BCL6	9612	NCOR2	L
604	BCL6	9734	HDAC9	L
604	BCL6	9759	HDAC4	L
604	BCL6	10014	HDAC5	L
604	BCL6	25942	SIN3A	L
604	BCL6	51341	ZBTB7A	L
604	BCL6	51564	HDAC7A	L
604	BCL6	54880	BCOR	L
607	BCL9	1499	CTNNB1	L
607	BCL9	26108	PYGO1	L
607	BCL9	90780	PYGO2	L
608	TNFRSF17	7185	TRAF1	L
608	TNFRSF17	7186	TRAF2	L
608	TNFRSF17	7187	TRAF3	L
608	TNFRSF17	10673	TNFSF13B	L
608	TNFRSF17	407977	TNFSF12-TNFSF13	L
610	HCN2	348980	HCN1	L
613	BCR	640	BLK	L
613	BCR	2071	ERCC3	L
613	BCR	2242	FES	L
613	BCR	2885	GRB2	L
613	BCR	2887	GRB10	L
613	BCR	3717	JAK2	L
613	BCR	4301	MLLT4	L
613	BCR	5335	PLCG1	L
613	BCR	5777	PTPN6	L
613	BCR	5781	PTPN11	L
613	BCR	5921	RASA1	L
613	BCR	6464	SHC1	L
613	BCR	6714	SRC	L
613	BCR	7157	TP53	S
613	BCR	7409	VAV1	L
613	BCR	7534	YWHAZ	L
613	BCR	8440	NCK2	L
613	BCR	9094	UNC119	S
613	BCR	11183	MAP4K5	L
613	BCR	84966	IGSF21	S
617	BCS1L	57062	DDX24	S
624	BDKRB2	4842	NOS1	L
624	BDKRB2	4846	NOS3	L
624	BDKRB2	5781	PTPN11	L
627	BDNF	4684	NCAM1	L
627	BDNF	4846	NOS3	L
627	BDNF	4908	NTF3	L
627	BDNF	4909	NTF5	L
627	BDNF	4915	NTRK2	L
629	BF	718	C3	L
629	BF	721	C4B	L
629	BF	5199	PFC	L
631	BFSP1	7431	VIM	L
631	BFSP1	8419	BFSP2	L
632	BGLAP	2677	GGCX	L
633	BGN	1277	COL1A1	L
633	BGN	1278	COL1A2	L
633	BGN	1284	COL4A2	L
633	BGN	2006	ELN	L
633	BGN	4237	MFAP2	L
633	BGN	6442	SGCA	L

633	BGN	7040	TGFB1	L
633	BGN	7124	TNF	L
634	CEACAM1	1088	CEACAM8	L
634	CEACAM1	4680	CEACAM6	L
634	CEACAM1	5777	PTPN6	L
634	CEACAM1	5781	PTPN11	L
634	CEACAM1	5829	PXN	L
634	CEACAM1	6464	SHC1	L
636	BICD1	5870	RAB6A	L
636	BICD1	10540	DCTN2	L
637	BID	823	CAPN1	L
637	BID	835	CASP2	L
639	PRDM1	3662	IRF4	L
639	PRDM1	7088	TLE1	L
639	PRDM1	7089	TLE2	L
640	BLK	867	CBL	L
640	BLK	2212	FCGR2A	L
640	BLK	5336	PLCG2	L
640	BLK	7337	UBE3A	L
640	BLK	9646	SH2BP1	L
640	BLK	10286	BCAS2	L
641	BLM	4292	MLH1	L
641	BLM	4599	MX1	L
641	BLM	5888	RAD51	L
641	BLM	5892	RAD51L3	L
641	BLM	6117	RPA1	L
641	BLM	7014	TERF2	L
641	BLM	7156	TOP3A	L
641	BLM	7157	TP53	L
641	BLM	7486	WRN	L
641	BLM	8243	SMC1L1	L
642	BLMH	6135	RPL11	L
642	BLMH	6159	RPL29	L
642	BLMH	7204	TRIO	S
642	BLMH	7329	UBE2I	L
642	BLMH	84078	KBTBD7	R
643	BLR1	10563	CXCL13	L
648	PCGF4	1876	E2F6	L
648	PCGF4	1912	PHC2	L
648	PCGF4	4297	MLL	L
648	PCGF4	5764	PTN	S
648	PCGF4	6015	RING1	L
648	PCGF4	7704	ZBTB16	L
648	PCGF4	10524	HTATIP	S
648	PCGF4	10989	IMMT	S
648	PCGF4	55791	C1orf103	S
648	PCGF4	57562	KIAA1377	S
649	BMP1	3909	LAMA3	L
649	BMP1	3914	LAMB3	L
649	BMP1	3918	LAMC2	L
649	BMP1	56252	YLPM1	S
649	BMP1	57045	TWSG1	L
650	BMP2	657	BMPR1A	L
650	BMP2	658	BMPR1B	L
650	BMP2	659	BMPR2	L
650	BMP2	1280	COL2A1	L
650	BMP2	2022	ENG	L
650	BMP2	4256	MGP	L
650	BMP2	7040	TGFB1	L
650	BMP2	7042	TGFB2	L
650	BMP2	9241	NOG	L
651	BMP3	7040	TGFB1	L
652	BMP4	656	BMP8B	L
652	BMP4	657	BMPR1A	L
652	BMP4	658	BMPR1B	L
652	BMP4	659	BMPR2	L
652	BMP4	9241	NOG	L

652	BMP4	9372	ZFYVE9	L
652	BMP4	55620	STAP2	L
653	BMP5	657	BMPR1A	L
653	BMP5	9241	NOG	L
653	BMP5	10468	FST	L
654	BMP6	657	BMPR1A	L
654	BMP6	658	BMPR1B	L
654	BMP6	659	BMPR2	L
654	BMP6	4090	SMAD5	L
654	BMP6	8202	NCOA3	L
655	BMP7	657	BMPR1A	L
655	BMP7	658	BMPR1B	L
655	BMP7	659	BMPR2	L
655	BMP7	2022	ENG	L
655	BMP7	8202	NCOA3	L
655	BMP7	9241	NOG	L
657	BMPR1A	658	BMPR1B	L
657	BMPR1A	659	BMPR2	L
657	BMPR1A	2661	GDF9	L
657	BMPR1A	3224	HOXC8	L
657	BMPR1A	4086	SMAD1	L
657	BMPR1A	8200	GDF5	L
657	BMPR1A	9392	TGFBRAP1	L
657	BMPR1A	10454	MAP3K7IP1	L
658	BMPR1B	659	BMPR2	L
658	BMPR1B	2661	GDF9	L
658	BMPR1B	8200	GDF5	L
659	BMPR2	2661	GDF9	L
659	BMPR2	3984	LIMK1	L
659	BMPR2	8200	GDF5	L
659	BMPR2	392255	GDF6	L
660	BMX	836	CASP3	L
660	BMX	857	CAV1	L
660	BMX	5058	PAK1	L
660	BMX	5747	PTK2	L
660	BMX	6714	SRC	L
660	BMX	6772	STAT1	L
660	BMX	6774	STAT3	L
660	BMX	6776	STAT5A	L
660	BMX	11099	PTPN21	L
660	BMX	80230	RUFY1	L
662	BNIP1	4686	NCBP1	L
663	BNIP2	998	CDC42	L
663	BNIP2	2260	FGFR1	L
663	BNIP2	10488	CREB3	R
664	BNIP3	665	BNIP3L	R
664	BNIP3	961	CD47	L
664	BNIP3	4686	NCBP1	L
664	BNIP3	8834	TMEM11	R
665	BNIP3L	2130	EWSR1	R
665	BNIP3L	8834	TMEM11	R
665	BNIP3L	55240	STEAP3	L
665	BNIP3L	55816	DOK5	R
665	BNIP3L	60561	RINT-1	S
666	BOK	4170	MCL1	L
667	DST	1308	COL17A1	L
667	DST	1639	DCTN1	L
667	DST	3691	ITGB4	L
667	DST	4093	SMAD9	L
667	DST	25865	PRKD2	L
667	DST	55914	ERBB2IP	L
669	BPGM	2597	GAPDH	L
672	BRCA1	675	BRCA2	L
672	BRCA1	890	CCNA2	L
672	BRCA1	891	CCNB1	L
672	BRCA1	983	CDC2	L
672	BRCA1	1017	CDK2	L

672	BRCA1	1019	CDK4	L
672	BRCA1	1040	CDS1	L
672	BRCA1	1387	CREBBP	L
672	BRCA1	1457	CSNK2A1	L
672	BRCA1	1460	CSNK2B	L
672	BRCA1	1487	CTBP1	L
672	BRCA1	1488	CTBP2	L
672	BRCA1	1660	DHX9	L
672	BRCA1	1869	E2F1	L
672	BRCA1	1874	E2F4	L
672	BRCA1	2002	ELK1	L
672	BRCA1	2033	EP300	L
672	BRCA1	2099	ESR1	L
672	BRCA1	2175	FANCA	L
672	BRCA1	2177	FANCD2	L
672	BRCA1	2316	FLNA	L
672	BRCA1	3065	HDAC1	L
672	BRCA1	3066	HDAC2	L
672	BRCA1	3716	JAK1	L
672	BRCA1	3717	JAK2	L
672	BRCA1	3725	JUN	L
672	BRCA1	3726	JUNB	L
672	BRCA1	3727	JUND	L
672	BRCA1	3836	KPNA1	L
672	BRCA1	4215	MAP3K3	L
672	BRCA1	4436	MSH2	L
672	BRCA1	4609	MYC	L
672	BRCA1	4790	NFKB1	L
672	BRCA1	4800	NFYA	L
672	BRCA1	5430	POLR2A	L
672	BRCA1	5440	POLR2K	L
672	BRCA1	5469	PPARBP	L
672	BRCA1	5888	RAD51	L
672	BRCA1	5925	RB1	L
672	BRCA1	5928	RBBP4	L
672	BRCA1	5931	RBBP7	L
672	BRCA1	5932	RBBP8	L
672	BRCA1	5970	RELA	L
672	BRCA1	5981	RFC1	L
672	BRCA1	6597	SMARCA4	L
672	BRCA1	6667	SP1	L
672	BRCA1	6772	STAT1	L
672	BRCA1	6774	STAT3	L
672	BRCA1	6776	STAT5A	L
672	BRCA1	7157	TP53	L
672	BRCA1	7283	TUBG1	L
672	BRCA1	7323	UBE2D3	L
672	BRCA1	7332	UBE2L3	L
672	BRCA1	7392	USF2	L
672	BRCA1	7415	VCP	L
672	BRCA1	7515	XRCC1	L
672	BRCA1	8243	SMC1L1	L
672	BRCA1	8314	BAP1	L
672	BRCA1	8315	BRAP	L
672	BRCA1	8543	LMO4	L
672	BRCA1	8900	CCNA1	L
672	BRCA1	9111	NMI	L
672	BRCA1	10111	RAD50	L
672	BRCA1	11200	CHEK2	L
672	BRCA1	25920	COBRA1	L
672	BRCA1	59348	ZNF350	L
672	BRCA1	63967	CLSPN	L
672	BRCA1	83990	BRIP1	L
672	BRCA1	84168	ANTXR1	L
673	BRAF	3265	HRAS	L
673	BRAF	5604	MAP2K1	L
673	BRAF	5605	MAP2K2	L

673	BRAF	5894	RAF1	L
673	BRAF	7529	YWHAB	L
673	BRAF	7533	YWHAH	L
673	BRAF	7534	YWHAZ	L
673	BRAF	10971	YWHAQ	L
673	BRAF	22808	MRAS	L
675	BRCA2	701	BUB1B	L
675	BRCA2	2177	FANCD2	L
675	BRCA2	2189	FANCG	L
675	BRCA2	2316	FLNA	L
675	BRCA2	4088	SMAD3	L
675	BRCA2	5888	RAD51	L
675	BRCA2	6776	STAT5A	L
675	BRCA2	7157	TP53	L
675	BRCA2	7979	SHFM1	L
675	BRCA2	8850	PCAF	L
675	BRCA2	10362	HMG20B	L
675	BRCA2	56946	C11orf30	L
677	ZFP36L1	1432	MAPK14	R
677	ZFP36L1	5049	PAFAH1B2	S
682	BSG	4312	MMP1	L
682	BSG	6566	SLC16A1	L
682	BSG	9123	SLC16A3	L
682	BSG	9260	PDLIM7	R
683	BST1	857	CAV1	L
685	BTC	1956	EGFR	L
685	BTC	2064	ERBB2	L
685	BTC	2066	ERBB4	L
685	BTC	4318	MMP9	L
687	KLF9	5241	PGR	L
688	KLF5	1387	CREBBP	L
688	KLF5	2961	GTF2E2	L
688	KLF5	2963	GTF2F2	L
688	KLF5	4790	NFKB1	L
689	BTF3	1460	CSNK2B	L
694	BTG1	9337	CNOT8	R
695	BTK	857	CAV1	L
695	BTK	867	CBL	L
695	BTK	1820	ARID3A	L
695	BTK	2130	EWSR1	L
695	BTK	2768	GNA12	L
695	BTK	2776	GNAQ	L
695	BTK	2969	GTF2I	L
695	BTK	3055	HCK	L
695	BTK	3716	JAK1	L
695	BTK	4067	LYN	L
695	BTK	5587	PRKD1	L
695	BTK	7409	VAV1	L
695	BTK	7454	WAS	L
695	BTK	10163	WASF2	L
695	BTK	10657	KHDRBS1	L
695	BTK	25998	IBTK	L
695	BTK	29760	BLNK	L
696	BTN1A1	7498	XDH	L
699	BUB1	1398	CRK	R
699	BUB1	8546	AP3B1	L
699	BUB1	9184	BUB3	L
699	BUB1	10425	ARIH2	R
699	BUB1	10717	AP4B1	L
701	BUB1B	996	CDC27	L
701	BUB1B	1062	CENPE	L
701	BUB1B	4216	MAP3K4	L
701	BUB1B	6623	SNCG	L
701	BUB1B	7094	TLN1	L
701	BUB1B	8546	AP3B1	L
701	BUB1B	8881	CDC16	L
701	BUB1B	9184	BUB3	L

701	BUB1B	10717	AP4B1	L
705	BYSL	3856	KRT8	L
705	BYSL	4591	TRIM37	R
705	BYSL	7216	TRO	L
705	BYSL	10024	TROAP	L
708	C1QBP	2549	GAB1	L
708	C1QBP	3184	HNRPD	L
708	C1QBP	4323	MMP14	L
708	C1QBP	5578	PRKCA	L
708	C1QBP	5580	PRKCD	L
708	C1QBP	5587	PRKD1	L
708	C1QBP	5590	PRKCZ	L
708	C1QBP	5594	MAPK1	L
708	C1QBP	5595	MAPK3	L
708	C1QBP	6426	SFRS1	L
708	C1QBP	7916	BAT2	L
708	C1QBP	8739	HRK	L
708	C1QBP	118460	EXOSC6	L
710	SERPING1	715	C1R	L
710	SERPING1	716	C1S	L
710	SERPING1	1991	ELA2	L
710	SERPING1	2147	F2	L
710	SERPING1	5327	PLAT	L
710	SERPING1	5340	PLG	L
710	SERPING1	5648	MASP1	L
710	SERPING1	6401	SELE	L
710	SERPING1	6403	SELP	L
710	SERPING1	10747	MASP2	L
712	C1QA	713	C1QB	L
712	C1QA	714	C1QG	L
712	C1QA	715	C1R	L
712	C1QA	716	C1S	L
712	C1QA	1280	COL2A1	L
712	C1QA	1378	CR1	L
712	C1QA	1634	DCN	L
712	C1QA	2335	FN1	L
712	C1QA	3273	HRG	L
712	C1QA	5806	PTX3	L
712	C1QA	10114	HIPK3	L
712	C1QA	22918	C1QR1	L
713	C1QB	714	C1QG	L
713	C1QB	715	C1R	L
713	C1QB	1667	DEFA1	L
713	C1QB	3273	HRG	L
713	C1QB	5806	PTX3	L
714	C1QG	5806	PTX3	L
715	C1R	716	C1S	L
717	C2	718	C3	L
717	C2	721	C4B	L
717	C2	727	C5	L
717	C2	5648	MASP1	L
717	C2	5685	PSMA4	L
718	C3	719	C3AR1	L
718	C3	727	C5	L
718	C3	1369	CPN1	L
718	C3	1378	CR1	L
718	C3	1380	CR2	L
718	C3	2638	GC	L
718	C3	3075	CFH	L
718	C3	3426	IF	L
718	C3	3684	ITGAM	L
718	C3	3687	ITGAX	L
718	C3	4035	LRP1	L
718	C3	4179	MCP	L
718	C3	5069	PAPPA	L
718	C3	5199	PFC	L
718	C3	5648	MASP1	L

718	C3	10562	OLFM4	L
718	C3	10877	CFHL4	L
718	C3	10878	CFHL3	L
718	C3	81494	CFHL5	L
719	C3AR1	720	C4A	L
720	C4A	1378	CR1	L
720	C4A	1471	CST3	L
721	C4B	722	C4BPA	L
721	C4B	1378	CR1	L
721	C4B	1915	EEF1A1	L
721	C4B	4179	MCP	L
722	C4BPA	4035	LRP1	L
722	C4BPA	5627	PROS1	L
727	C5	728	C5R1	L
727	C5	729	C6	L
727	C5	730	C7	L
727	C5	732	C8B	L
728	C5R1	2771	GNAI2	L
728	C5R1	6223	RPS19	L
729	C6	2147	F2	L
730	C7	1191	CLU	L
730	C7	5340	PLG	L
731	C8A	732	C8B	L
731	C8A	735	C9	L
731	C8A	966	CD59	L
732	C8B	1191	CLU	L
735	C9	966	CD59	L
735	C9	1191	CLU	L
752	FMNL1	2547	XRCC6	S
752	FMNL1	5216	PFN1	L
752	FMNL1	5879	RAC1	L
752	FMNL1	7094	TLN1	L
752	FMNL1	55660	FNBP3	L
754	PTTG1IP	9232	PTTG1	L
760	CA2	3329	HSPD1	L
760	CA2	6508	SLC4A3	L
760	CA2	6521	SLC4A1	L
760	CA2	6548	SLC9A1	L
760	CA2	8655	DNCL1	L
760	CA2	8671	SLC4A4	L
760	CA2	9498	SLC4A8	L
760	CA2	55139	FLJ10415	S
760	CA2	57540	PTCHD2	S
762	CA4	6508	SLC4A3	L
762	CA4	6521	SLC4A1	L
765	CA6	2217	FCGRT	L
767	CA8	3708	ITPR1	L
767	CA8	4034	LRCH4	S
768	CA9	999	CDH1	L
768	CA9	1499	CTNNB1	L
771	CA12	1523	CUTL1	S
771	CA12	3963	LGALS7	S
771	CA12	9905	RUTBC1	S
771	CA12	65005	MRPL9	S
771	CA12	79768	C15orf29	S
771	CA12	114034	TOE1	S
773	CACNA1A	785	CACNB4	L
773	CACNA1A	6857	SYT1	L
774	CACNA1B	8573	CASK	L
774	CACNA1B	10611	PDLIM5	L
775	CACNA1C	5092	PCBD1	L
775	CACNA1C	6262	RYR2	L
775	CACNA1C	6717	SRI	L
776	CACNA1D	2263	FGFR2	L
776	CACNA1D	6804	STX1A	L
777	CACNA1E	114327	EFHC1	L
779	CACNA1S	6261	RYR1	L

779	CACNA1S	6717	SRI	L
779	CACNA1S	9699	RIMS2	L
780	DDR1	1280	COL2A1	L
780	DDR1	1281	COL3A1	L
780	DDR1	1290	COL5A2	L
780	DDR1	1301	COL11A1	L
780	DDR1	4071	TM4SF1	S
780	DDR1	5335	PLCG1	L
780	DDR1	5997	RGS2	S
780	DDR1	6464	SHC1	L
780	DDR1	7276	TTR	S
780	DDR1	9410	WDR57	S
780	DDR1	10818	FRS2	L
780	DDR1	23557	SNAPAP	S
780	DDR1	67621	(null)	S
780	DDR1	150421	(null)	S
785	CACNB4	5764	PTN	S
785	CACNB4	10607	TBL3	S
785	CACNB4	51003	MED31	S
788	SLC25A20	90861	C16orf34	S
793	CALB1	3612	IMPA1	L
793	CALB1	10048	RANBP9	L
794	CALB2	3848	KRT1	L
794	CALB2	7277	TUBA1	L
796	CALCA	799	CALCR	L
796	CALCA	10267	RAMP1	L
799	CALCR	4153	MBL2	L
799	CALCR	10267	RAMP1	L
799	CALCR	10268	RAMP3	L
800	CALD1	801	CALM1	L
800	CALD1	805	CALM2	L
800	CALD1	808	CALM3	L
800	CALD1	2885	GRB2	L
800	CALD1	6464	SHC1	L
801	CALM1	818	CAMK2G	L
801	CALM1	1130	LYST	L
801	CALM1	1264	CNN1	L
801	CALM1	1956	EGFR	L
801	CALM1	2099	ESR1	L
801	CALM1	2100	ESR2	L
801	CALM1	2596	GAP43	L
801	CALM1	2868	GRK4	L
801	CALM1	2915	GRM5	L
801	CALM1	2917	GRM7	L
801	CALM1	3320	HSPCA	L
801	CALM1	3781	KCNN2	L
801	CALM1	3785	KCNQ2	L
801	CALM1	3786	KCNQ3	L
801	CALM1	4137	MAPT	L
801	CALM1	4617	MYF5	L
801	CALM1	4618	MYF6	L
801	CALM1	4638	MYLK	L
801	CALM1	4650	MYO9B	L
801	CALM1	4654	MYOD1	L
801	CALM1	4656	MYOG	L
801	CALM1	4760	NEUROD1	L
801	CALM1	4988	OPRM1	L
801	CALM1	5136	PDE1A	L
801	CALM1	5260	PHKG1	L
801	CALM1	5470	PPEF2	L
801	CALM1	5475	PPEF1	L
801	CALM1	5865	RAB3B	L
801	CALM1	5898	RALA	L
801	CALM1	5899	RALB	L
801	CALM1	6011	GRK1	L
801	CALM1	6261	RYR1	L
801	CALM1	6622	SNCA	L

801	CALM1	6640	SNTA1	L
801	CALM1	6925	TCF4	L
801	CALM1	6929	TCF3	L
801	CALM1	7273	TTN	L
801	CALM1	7442	TRPV1	L
801	CALM1	7531	YWHAE	L
801	CALM1	8721	EDF1	L
801	CALM1	10788	IQGAP2	L
805	CALM2	2099	ESR1	L
805	CALM2	2100	ESR2	L
805	CALM2	2596	GAP43	L
805	CALM2	2915	GRM5	L
805	CALM2	2917	GRM7	L
805	CALM2	3785	KCNQ2	L
805	CALM2	3786	KCNQ3	L
805	CALM2	4082	MARCKS	L
805	CALM2	4617	MYF5	L
805	CALM2	4618	MYF6	L
805	CALM2	4646	MYO6	S
805	CALM2	4654	MYOD1	L
805	CALM2	4656	MYOG	L
805	CALM2	4760	NEUROD1	L
805	CALM2	5116	PCNT2	L
805	CALM2	5470	PPEF2	L
805	CALM2	5475	PPEF1	L
805	CALM2	5865	RAB3B	L
805	CALM2	5898	RALA	L
805	CALM2	5899	RALB	L
805	CALM2	6925	TCF4	L
805	CALM2	8721	EDF1	L
805	CALM2	55052	MRPL20	S
805	CALM2	80726	KIAA1683	R
808	CALM3	2099	ESR1	L
808	CALM3	2100	ESR2	L
808	CALM3	2915	GRM5	L
808	CALM3	2917	GRM7	L
808	CALM3	3785	KCNQ2	L
808	CALM3	3786	KCNQ3	L
808	CALM3	4617	MYF5	L
808	CALM3	4618	MYF6	L
808	CALM3	4654	MYOD1	L
808	CALM3	4656	MYOG	L
808	CALM3	4760	NEUROD1	L
808	CALM3	5470	PPEF2	L
808	CALM3	5475	PPEF1	L
808	CALM3	5540	PPYR1	L
808	CALM3	5865	RAB3B	L
808	CALM3	5898	RALA	L
808	CALM3	5899	RALB	L
808	CALM3	6925	TCF4	L
808	CALM3	6929	TCF3	L
808	CALM3	8721	EDF1	L
810	CALML3	4651	MYO10	L
810	CALML3	80726	KIAA1683	R
811	CALR	912	CD1D	L
811	CALR	2153	F5	L
811	CALR	2157	F8	L
811	CALR	2200	FBN1	L
811	CALR	2244	FGB	L
811	CALR	2908	NR3C1	L
811	CALR	2923	PDIA3	L
811	CALR	3107	HLA-C	L
811	CALR	3674	ITGA2B	L
811	CALR	3675	ITGA3	L
811	CALR	4035	LRP1	L
811	CALR	4153	MBL2	L
811	CALR	5327	PLAT	L

811	CALR	5551	PRF1	L
811	CALR	6513	SLC2A1	L
811	CALR	6532	SLC6A4	L
811	CALR	7018	TF	L
811	CALR	7057	THBS1	L
811	CALR	7080	TITF1	L
811	CALR	7253	TSHR	L
811	CALR	7450	VWF	L
811	CALR	8578	SCARF1	L
811	CALR	64714	PDIA2	L
814	CAMK4	5970	RELA	L
814	CAMK4	10645	CAMKK2	L
815	CAMK2A	2904	GRIN2B	L
815	CAMK2A	3706	ITPKA	L
815	CAMK2A	8851	CDK5R1	L
815	CAMK2A	23604	DAPK2	L
815	CAMK2A	57554	LRRC7	L
817	CAMK2D	6222	RPS18	L
818	CAMK2G	4088	SMAD3	L
818	CAMK2G	4089	SMAD4	L
818	CAMK2G	6236	RRAD	L
818	CAMK2G	6772	STAT1	L
818	CAMK2G	7074	TIAM1	L
818	CAMK2G	51475	CABP2	L
819	CAMLG	1956	EGFR	L
819	CAMLG	5479	PPIB	L
819	CAMLG	23495	TNFRSF13B	L
820	CAMP	1511	CTSG	L
820	CAMP	2358	FPRL1	L
820	CAMP	3929	LBP	L
820	CAMP	5657	PRTN3	L
821	CANX	912	CD1D	L
821	CANX	915	CD3D	L
821	CANX	1080	CFTR	L
821	CANX	1244	ABCC2	L
821	CANX	2157	F8	L
821	CANX	2890	GRIA1	L
821	CANX	3359	HTR3A	L
821	CANX	3655	ITGA6	L
821	CANX	3688	ITGB1	L
821	CANX	3732	CD82	L
821	CANX	3938	LCT	L
821	CANX	4018	LPA	L
821	CANX	4035	LRP1	L
821	CANX	5376	PMP22	L
821	CANX	5589	PRKCSH	L
821	CANX	6513	SLC2A1	L
821	CANX	6521	SLC4A1	L
821	CANX	6955	TRA@	L
821	CANX	7018	TF	L
821	CANX	7038	TG	L
821	CANX	7253	TSHR	L
821	CANX	8720	MBTPS1	L
821	CANX	9695	EDEM1	L
821	CANX	10134	BCAP31	L
821	CANX	11170	TU3A	S
821	CANX	64750	SMURF2	L
822	CAPG	23397	BRRN1	L
823	CAPN1	826	CAPNS1	L
823	CAPN1	831	CAST	L
823	CAPN1	3631	INPP4A	L
823	CAPN1	3827	KNG1	L
823	CAPN1	4792	NFKBIA	L
823	CAPN1	5664	PSEN2	L
824	CAPN2	826	CAPNS1	L
824	CAPN2	2620	GAS2	L
824	CAPN2	3827	KNG1	L

824	CAPN2	7145	TNS1	L
825	CAPN3	2318	FLNC	L
825	CAPN3	6709	SPTAN1	L
825	CAPN3	7273	TTN	L
825	CAPN3	54550	EFCBP2	R
826	CAPNS1	831	CAST	L
826	CAPNS1	1019	CDK4	S
826	CAPNS1	2783	GNB2	S
826	CAPNS1	3561	IL2RG	L
826	CAPNS1	4733	DRG1	S
826	CAPNS1	5861	RAB1A	S
826	CAPNS1	7013	TERF1	S
826	CAPNS1	9551	ATP5J2	S
826	CAPNS1	51608	C7orf20	S
826	CAPNS1	85444	LRRCC1	S
829	CAPZA1	6271	S100A1	L
829	CAPZA1	6285	S100B	L
829	CAPZA1	23607	CD2AP	L
829	CAPZA1	30011	SH3KBP1	L
830	CAPZA2	5829	PXN	L
832	CAPZB	5764	PTN	S
832	CAPZB	55052	MRPL20	S
832	CAPZB	56647	BCCIP	S
833	CARS	1937	EEF1G	L
834	CASP1	1956	EGFR	L
834	CASP1	3064	HD	L
834	CASP1	4287	ATXN3	L
834	CASP1	4780	NFE2L2	L
834	CASP1	5663	PSEN1	L
834	CASP1	8767	RIPK2	L
834	CASP1	10134	BCAP31	L
834	CASP1	10392	CARD4	L
834	CASP1	23581	CASP14	L
834	CASP1	29108	PYCARD	L
834	CASP1	58484	CARD12	L
835	CASP2	840	CASP7	L
835	CASP2	843	CASP10	L
835	CASP2	896	CCND3	L
835	CASP2	1639	DCTN1	L
835	CASP2	2802	GOLGA3	L
835	CASP2	3064	HD	L
835	CASP2	8738	CRADD	L
835	CASP2	8996	NOL3	L
835	CASP2	10392	CARD4	L
835	CASP2	22861	NALP1	L
835	CASP2	23581	CASP14	L
835	CASP2	51237	PACAP	L
835	CASP2	55367	LRDD	L
836	CASP3	1499	CTNNB1	L
836	CASP3	1630	DCC	L
836	CASP3	1639	DCTN1	L
836	CASP3	1676	DFFA	L
836	CASP3	1975	EIF4B	L
836	CASP3	3059	HCLS1	L
836	CASP3	3064	HD	L
836	CASP3	3329	HSPD1	L
836	CASP3	3336	HSPE1	L
836	CASP3	3856	KRT8	L
836	CASP3	3875	KRT18	L
836	CASP3	4001	LMNB1	L
836	CASP3	4287	ATXN3	L
836	CASP3	4719	NDUFS1	L
836	CASP3	4756	NEO1	L
836	CASP3	4780	NFE2L2	L
836	CASP3	5530	PPP3CA	L
836	CASP3	5663	PSEN1	L
836	CASP3	6721	SREBF2	L

836	CASP3	6731	SRP72	L
836	CASP3	7052	TGM2	L
836	CASP3	7185	TRAF1	L
836	CASP3	7187	TRAF3	L
836	CASP3	7531	YWHAE	L
836	CASP3	8301	PICALM	L
836	CASP3	8505	PARG	L
836	CASP3	8615	VDP	L
836	CASP3	8837	CFLAR	L
836	CASP3	9191	DEDD	L
836	CASP3	9748	SLK	L
836	CASP3	30818	CSEN	L
836	CASP3	64689	GORASP1	L
836	CASP3	79444	BIRC7	L
837	CASP4	843	CASP10	L
837	CASP4	5272	SERPINB9	L
837	CASP4	5663	PSEN1	L
837	CASP4	10392	CARD4	L
837	CASP4	23581	CASP14	L
838	CASP5	51535	PPHLN1	L
839	CASP6	841	CASP8	L
839	CASP6	843	CASP10	L
839	CASP6	1107	CHD3	S
839	CASP6	3064	HD	L
839	CASP6	3329	HSPD1	L
839	CASP6	4001	LMNB1	L
840	CASP7	843	CASP10	L
840	CASP7	1639	DCTN1	L
840	CASP7	3064	HD	L
840	CASP7	3309	HSPA5	L
840	CASP7	5663	PSEN1	L
840	CASP7	7132	TNFRSF1A	L
840	CASP7	9616	RNF7	L
840	CASP7	64689	GORASP1	L
840	CASP7	79444	BIRC7	L
841	CASP8	843	CASP10	L
841	CASP8	999	CDH1	L
841	CASP8	1107	CHD3	S
841	CASP8	1147	CHUK	L
841	CASP8	1499	CTNNB1	L
841	CASP8	3064	HD	L
841	CASP8	3092	HIP1	L
841	CASP8	3551	IKBKB	L
841	CASP8	7024	TFCP2	S
841	CASP8	7431	VIM	S
841	CASP8	8301	PICALM	L
841	CASP8	8682	PEA15	L
841	CASP8	8717	TRADD	L
841	CASP8	8737	RIPK1	L
841	CASP8	8738	CRADD	L
841	CASP8	8767	RIPK2	L
841	CASP8	8772	FADD	L
841	CASP8	8795	TNFRSF10B	L
841	CASP8	8797	TNFRSF10A	L
841	CASP8	8837	CFLAR	L
841	CASP8	8996	NOL3	L
841	CASP8	9020	MAP3K14	L
841	CASP8	9191	DEDD	L
841	CASP8	9448	MAP4K4	L
841	CASP8	9971	NR1H4	L
841	CASP8	9994	CASP8AP2	L
841	CASP8	10134	BCAP31	L
841	CASP8	10392	CARD4	L
841	CASP8	23581	CASP14	L
841	CASP8	55081	ESRRBL1	L
841	CASP8	162989	DEDD2	L
842	CASP9	843	CASP10	L

842	CASP9	1630	DCC	L
842	CASP9	3002	GZMB	L
842	CASP9	4671	BIRC1	L
842	CASP9	5594	MAPK1	L
842	CASP9	5595	MAPK3	L
842	CASP9	10392	CARD4	L
842	CASP9	22861	NALP1	L
842	CASP9	54205	CYCS	L
842	CASP9	57448	BIRC6	L
842	CASP9	79444	BIRC7	L
843	CASP10	7132	TNFRSF1A	L
843	CASP10	8772	FADD	L
843	CASP10	8837	CFLAR	L
843	CASP10	9191	DEDD	L
843	CASP10	23429	RYBP	L
843	CASP10	23581	CASP14	L
843	CASP10	162989	DEDD2	L
845	CASQ2	10345	TRDN	L
846	CASR	2316	FLNA	L
857	CAV1	858	CAV2	L
857	CAV1	1445	CSK	L
857	CAV1	1901	EDG1	L
857	CAV1	1910	EDNRB	L
857	CAV1	1956	EGFR	L
857	CAV1	2064	ERBB2	L
857	CAV1	2099	ESR1	L
857	CAV1	2316	FLNA	L
857	CAV1	2319	FLOT2	L
857	CAV1	2697	GJA1	L
857	CAV1	2700	GJA3	L
857	CAV1	2706	GJB2	L
857	CAV1	2869	GRK5	L
857	CAV1	3643	INSR	L
857	CAV1	4804	NGFR	L
857	CAV1	4843	NOS2A	L
857	CAV1	4846	NOS3	L
857	CAV1	4914	NTRK1	L
857	CAV1	5156	PDGFRA	L
857	CAV1	5338	PLD2	L
857	CAV1	5499	PPP1CA	L
857	CAV1	5621	PRNP	L
857	CAV1	5728	PTEN	L
857	CAV1	5743	PTGS2	L
857	CAV1	5770	PTPN1	L
857	CAV1	5777	PTPN6	L
857	CAV1	5781	PTPN11	L
857	CAV1	5792	PTPRF	L
857	CAV1	5957	RCV1	L
857	CAV1	6011	GRK1	L
857	CAV1	6342	SCP2	L
857	CAV1	7046	TGFBR1	L
857	CAV1	7133	TNFRSF1B	L
857	CAV1	7186	TRAF2	L
857	CAV1	8165	AKAP1	L
857	CAV1	8717	TRADD	L
857	CAV1	10825	NEU3	L
858	CAV2	2319	FLOT2	L
858	CAV2	2804	GOLGB1	S
858	CAV2	4690	NCK1	L
859	CAV3	1605	DAG1	L
859	CAV3	1956	EGFR	L
859	CAV3	2778	GNAS	L
859	CAV3	4842	NOS1	L
859	CAV3	5213	PFKM	L
859	CAV3	6546	SLC8A1	L
859	CAV3	8291	DYSF	L
860	RUNX2	1051	CEBPB	L

860	RUNX2	2113	ETS1	L
860	RUNX2	2353	FOS	L
860	RUNX2	3725	JUN	L
860	RUNX2	4087	SMAD2	L
860	RUNX2	4088	SMAD3	L
860	RUNX2	4488	MSX2	L
860	RUNX2	8841	HDAC3	L
860	RUNX2	10013	HDAC6	L
860	RUNX2	10413	YAP1	L
860	RUNX2	23522	MYST4	L
861	RUNX1	863	CBFA2T3	L
861	RUNX1	865	CBFB	L
861	RUNX1	1051	CEBPB	L
861	RUNX1	2000	ELF4	L
861	RUNX1	2353	FOS	L
861	RUNX1	3725	JUN	L
861	RUNX1	5079	PAX5	L
861	RUNX1	6839	SUV39H1	L
861	RUNX1	7088	TLE1	L
861	RUNX1	7089	TLE2	L
861	RUNX1	9139	CBFA2T2	L
861	RUNX1	23522	MYST4	L
861	RUNX1	25937	WWTR1	L
862	RUNX1T1	863	CBFA2T3	L
862	RUNX1T1	2672	GFI1	L
862	RUNX1T1	3065	HDAC1	L
862	RUNX1T1	3320	HSPCA	L
862	RUNX1T1	3836	KPNA1	L
862	RUNX1T1	3837	KPNB1	L
862	RUNX1T1	6925	TCF4	L
862	RUNX1T1	6929	TCF3	L
862	RUNX1T1	6938	TCF12	L
862	RUNX1T1	7704	ZBTB16	L
862	RUNX1T1	8841	HDAC3	L
862	RUNX1T1	9139	CBFA2T2	L
862	RUNX1T1	9611	NCOR1	L
862	RUNX1T1	9612	NCOR2	L
862	RUNX1T1	25942	SIN3A	L
862	RUNX1T1	51225	ABI3	R
862	RUNX1T1	51616	TAF9L	R
862	RUNX1T1	51729	WBP11	R
862	RUNX1T1	54550	EFCBP2	R
862	RUNX1T1	55869	HDAC8	L
862	RUNX1T1	79173	MGC11271	R
862	RUNX1T1	220766	KIAA0470L	R
863	CBFA2T3	3065	HDAC1	L
863	CBFA2T3	5576	PRKAR2A	L
863	CBFA2T3	8841	HDAC3	L
863	CBFA2T3	9139	CBFA2T2	L
864	RUNX3	865	CBFB	L
864	RUNX3	7088	TLE1	L
865	CBFB	1114	CHGB	S
865	CBFB	9139	CBFA2T2	L
867	CBL	921	CD5	L
867	CBL	930	CD19	L
867	CBL	1399	CRKL	L
867	CBL	1436	CSF1R	L
867	CBL	1445	CSK	L
867	CBL	2051	EPHB6	L
867	CBL	2185	PTK2B	L
867	CBL	2268	FGR	L
867	CBL	2534	FYN	L
867	CBL	2885	GRB2	L
867	CBL	3055	HCK	L
867	CBL	3636	INPPL1	L
867	CBL	3702	ITK	L
867	CBL	3875	KRT18	L

867	CBL	3932	LCK	L
867	CBL	3937	LCP2	L
867	CBL	4058	LTK	L
867	CBL	4067	LYN	L
867	CBL	4233	MET	L
867	CBL	4641	MYO1C	L
867	CBL	4643	MYO1E	L
867	CBL	5296	PIK3R2	L
867	CBL	5777	PTPN6	L
867	CBL	6456	SH3GL2	L
867	CBL	6457	SH3GL3	L
867	CBL	6464	SHC1	L
867	CBL	6503	SLA	L
867	CBL	6714	SRC	L
867	CBL	6850	SYK	L
867	CBL	7297	TYK2	L
867	CBL	7322	UBE2D2	L
867	CBL	7326	UBE2G1	L
867	CBL	7327	UBE2G2	L
867	CBL	7332	UBE2L3	L
867	CBL	7409	VAV1	L
867	CBL	7410	VAV2	L
867	CBL	7535	ZAP70	L
867	CBL	10211	FLOT1	L
867	CBL	10253	SPRY2	L
867	CBL	10580	SORBS1	L
867	CBL	10818	FRS2	L
867	CBL	10971	YWHAQ	L
867	CBL	23607	CD2AP	L
867	CBL	26191	PTPN22	L
867	CBL	26578	OSTF1	L
867	CBL	30011	SH3KBP1	L
867	CBL	84174	SLA2	L
868	CBLB	1399	CRKL	L
868	CBLB	1407	CRY1	R
868	CBLB	1956	EGFR	L
868	CBLB	2322	FLT3	L
868	CBLB	2885	GRB2	L
868	CBLB	4690	NCK1	L
868	CBLB	4734	NEDD4	L
868	CBLB	5336	PLCG2	L
868	CBLB	6464	SHC1	L
868	CBLB	6850	SYK	L
868	CBLB	7409	VAV1	L
868	CBLB	7535	ZAP70	L
868	CBLB	8440	NCK2	R
868	CBLB	10174	SORBS3	R
868	CBLB	26003	GORASP2	R
868	CBLB	26994	RNF11	L
868	CBLB	29760	BLNK	L
868	CBLB	30011	SH3KBP1	L
871	SERPINH1	928	CD9	L
871	SERPINH1	5829	PXN	L
871	SERPINH1	7343	UBTF	L
871	SERPINH1	7414	VCL	L
871	SERPINH1	51621	KLF13	L
871	SERPINH1	54978	C2orf18	S
873	CBR1	1161	ERCC8	S
874	CBR3	10425	ARIH2	S
874	CBR3	11021	RAB35	S
875	CBS	3064	HD	L
875	CBS	9513	FXR2	R
875	CBS	51534	C6orf55	R
875	CBS	283987	C17orf28	R
885	CCK	886	CCKAR	L
889	KRIT1	5906	RAP1A	L
889	KRIT1	9270	ITGB1BP1	L

890	CCNA2	983	CDC2	L
890	CCNA2	990	CDC6	L
890	CCNA2	991	CDC20	L
890	CCNA2	995	CDC25C	L
890	CCNA2	1017	CDK2	L
890	CCNA2	1018	CDK3	L
890	CCNA2	1027	CDKN1B	L
890	CCNA2	1869	E2F1	L
890	CCNA2	4605	MYBL2	L
890	CCNA2	5757	PTMA	L
890	CCNA2	5933	RBL1	L
890	CCNA2	5934	RBL2	L
890	CCNA2	6500	SKP1A	L
890	CCNA2	6502	SKP2	L
890	CCNA2	6872	TAF1	L
890	CCNA2	7157	TP53	L
890	CCNA2	7290	HIRA	L
890	CCNA2	7343	UBTF	L
890	CCNA2	23421	ITGB3BP	L
890	CCNA2	51191	HERC5	L
891	CCNB1	899	CCNF	L
891	CCNB1	993	CDC25A	L
891	CCNB1	995	CDC25C	L
891	CCNB1	4134	MAP4	L
891	CCNB1	4616	GADD45B	L
891	CCNB1	5111	PCNA	L
891	CCNB1	5300	PIN1	L
891	CCNB1	5757	PTMA	L
891	CCNB1	5891	RAGE	L
891	CCNB1	7048	TGFBR2	L
891	CCNB1	7088	TLE1	L
891	CCNB1	7248	TSC1	L
891	CCNB1	10912	GADD45G	L
891	CCNB1	10928	RALBP1	L
891	CCNB1	51191	HERC5	L
891	CCNB1	51343	FZR1	L
892	CCNC	5430	POLR2A	L
894	CCND2	1019	CDK4	L
894	CCND2	1020	CDK5	L
894	CCND2	1021	CDK6	L
894	CCND2	1026	CDKN1A	R
894	CCND2	1027	CDKN1B	R
894	CCND2	9988	DMTF1	L
894	CCND2	10270	AKAP8	L
896	CCND3	984	CDC2L1	L
896	CCND3	1019	CDK4	RL
896	CCND3	1021	CDK6	L
896	CCND3	1026	CDKN1A	RL
896	CCND3	1027	CDKN1B	RL
896	CCND3	1382	CRABP2	L
896	CCND3	5111	PCNA	L
896	CCND3	5914	RARA	L
896	CCND3	9988	DMTF1	L
896	CCND3	10270	AKAP8	L
896	CCND3	27335	EIF3S12	L
896	CCND3	30008	EFEMP2	R
896	CCND3	55388	MCM10	L
896	CCND3	84062	DTNBP1	R
896	CCND3	84232	MAF1	R
898	CCNE1	983	CDC2	L
898	CCNE1	993	CDC25A	L
898	CCNE1	1018	CDK3	L
898	CCNE1	5934	RBL2	L
898	CCNE1	5966	REL	L
898	CCNE1	6502	SKP2	L
898	CCNE1	6597	SMARCA4	L
898	CCNE1	6599	SMARCC1	L

898	CCNE1	8161	COIL	L
898	CCNE1	8452	CUL3	L
898	CCNE1	10575	CCT4	L
898	CCNE1	51191	HERC5	L
898	CCNE1	55294	FBXW7	L
900	CCNG1	1020	CDK5	L
900	CCNG1	1029	CDKN2A	L
900	CCNG1	2580	GAK	L
900	CCNG1	4193	MDM2	L
900	CCNG1	5524	PPP2R4	L
900	CCNG1	7157	TP53	L
901	CCNG2	5515	PPP2CA	L
901	CCNG2	5524	PPP2R4	L
902	CCNH	2071	ERCC3	L
902	CCNH	2961	GTF2E2	L
902	CCNH	4176	MCM7	L
902	CCNH	5682	PSMA1	R
902	CCNH	8880	FUBP1	L
902	CCNH	9112	MTA1	L
902	CCNH	10534	SSSCA1	R
902	CCNH	404672	GTF2H5	L
904	CCNT1	2896	GRN	L
904	CCNT1	4609	MYC	L
904	CCNT1	5371	PML	L
904	CCNT1	5813	PURA	L
904	CCNT1	6502	SKP2	L
904	CCNT1	10614	HEXIM1	L
904	CCNT1	27125	AFF4	L
904	CCNT1	27336	HTATSF1	L
905	CCNT2	5925	RB1	L
905	CCNT2	10614	HEXIM1	L
912	CD1D	972	CD74	L
912	CD1D	5788	PTPRC	L
914	CD2	919	CD3Z	L
914	CD2	920	CD4	L
914	CD2	921	CD5	L
914	CD2	962	CD48	L
914	CD2	963	CD53	L
914	CD2	965	CD58	L
914	CD2	966	CD59	L
914	CD2	2534	FYN	L
914	CD2	3932	LCK	L
914	CD2	3956	LGALS1	L
914	CD2	4084	MXD1	L
914	CD2	5788	PTPRC	L
914	CD2	6667	SP1	L
914	CD2	9051	PSTPIP1	L
914	CD2	10421	CD2BP2	L
914	CD2	23607	CD2AP	L
914	CD2	30011	SH3KBP1	L
915	CD3D	919	CD3Z	L
915	CD3D	925	CD8A	L
915	CD3D	926	CD8B1	L
916	CD3E	919	CD3Z	L
916	CD3E	974	CD79B	L
916	CD3E	3932	LCK	L
916	CD3E	5295	PIK3R1	L
916	CD3E	6464	SHC1	L
916	CD3E	6850	SYK	L
916	CD3E	7155	TOP2B	L
916	CD3E	7535	ZAP70	L
916	CD3E	8440	NCK2	L
916	CD3E	10849	CD3EAP	L
917	CD3G	6955	TRA@	L
917	CD3G	6964	TRD@	L
919	CD3Z	921	CD5	L
919	CD3Z	940	CD28	L

919	CD3Z	1445	CSK	L
919	CD3Z	1794	DOCK2	L
919	CD3Z	2534	FYN	L
919	CD3Z	3718	JAK3	L
919	CD3Z	4061	LY6E	L
919	CD3Z	5788	PTPRC	L
919	CD3Z	6464	SHC1	L
919	CD3Z	6503	SLA	L
919	CD3Z	6776	STAT5A	L
919	CD3Z	6777	STAT5B	L
919	CD3Z	6955	TRA@	L
919	CD3Z	7037	TFRC	L
919	CD3Z	7535	ZAP70	L
919	CD3Z	9094	UNC119	L
919	CD3Z	9437	NCR1	L
919	CD3Z	9846	GAB2	L
919	CD3Z	10019	LNK	L
919	CD3Z	50852	TRAT1	L
919	CD3Z	84174	SLA2	L
919	CD3Z	114609	TIRAP	L
919	CD3Z	259197	NCR3	L
920	CD4	921	CD5	L
920	CD4	940	CD28	L
920	CD4	952	CD38	L
920	CD4	960	CD44	L
920	CD4	963	CD53	L
920	CD4	1234	CCR5	L
920	CD4	1509	CTSD	L
920	CD4	1803	DPP4	L
920	CD4	2214	FCGR3A	L
920	CD4	3113	HLA-DPA1	L
920	CD4	3118	HLA-DQA2	L
920	CD4	3119	HLA-DQB1	L
920	CD4	3559	IL2RA	L
920	CD4	3603	IL16	L
920	CD4	3732	CD82	L
920	CD4	3932	LCK	L
920	CD4	3956	LGALS1	L
920	CD4	5295	PIK3R1	L
920	CD4	5297	PIK4CA	L
920	CD4	5304	PIP	L
920	CD4	5747	PTK2	L
920	CD4	5788	PTPRC	L
920	CD4	6387	CXCL12	L
920	CD4	6402	SELL	L
920	CD4	6520	SLC3A2	L
920	CD4	7037	TFRC	L
920	CD4	8797	TNFRSF10A	L
920	CD4	8945	BTRC	L
920	CD4	9094	UNC119	L
920	CD4	27040	LAT	L
920	CD4	51324	SPG21	L
921	CD5	923	CD6	L
921	CD5	971	CD72	L
921	CD5	3932	LCK	L
921	CD5	5295	PIK3R1	L
921	CD5	5777	PTPN6	L
921	CD5	5921	RASA1	L
921	CD5	6990	TCTE1L	L
921	CD5	7535	ZAP70	L
924	CD7	3956	LGALS1	L
924	CD7	5295	PIK3R1	L
924	CD7	5297	PIK4CA	L
924	CD7	6398	SECTM1	L
925	CD8A	926	CD8B1	L
925	CD8A	3105	HLA-A	L
925	CD8A	3106	HLA-B	L

925	CD8A	3107	HLA-C	L
925	CD8A	3133	HLA-E	L
925	CD8A	3135	HLA-G	L
925	CD8A	3956	LGALS1	L
925	CD8A	5788	PTPRC	L
925	CD8A	27040	LAT	L
928	CD9	930	CD19	L
928	CD9	948	CD36	L
928	CD9	963	CD53	L
928	CD9	966	CD59	L
928	CD9	967	CD63	L
928	CD9	975	CD81	L
928	CD9	1839	HBEGF	L
928	CD9	2515	ADAM2	L
928	CD9	3678	ITGA5	L
928	CD9	3815	KIT	L
928	CD9	5578	PRKCA	L
928	CD9	5738	PTGFRN	L
928	CD9	7106	TSPAN4	L
928	CD9	93185	IGSF8	L
929	CD14	1604	DAF	L
929	CD14	3684	ITGAM	L
929	CD14	3689	ITGB2	L
929	CD14	3929	LBP	L
929	CD14	3959	LGALS3BP	L
929	CD14	4057	LTF	L
929	CD14	7097	TLR2	L
929	CD14	7099	TLR4	L
930	CD19	933	CD22	L
930	CD19	973	CD79A	L
930	CD19	974	CD79B	L
930	CD19	975	CD81	L
930	CD19	1380	CR2	L
930	CD19	2534	FYN	L
930	CD19	3732	CD82	L
930	CD19	4067	LYN	L
930	CD19	5295	PIK3R1	L
930	CD19	6850	SYK	L
930	CD19	7409	VAV1	L
930	CD19	7410	VAV2	L
931	MS4A1	958	CD40	L
931	MS4A1	2534	FYN	L
932	MS4A3	1017	CDK2	L
932	MS4A3	1033	CDKN3	L
933	CD22	1173	AP2M1	L
933	CD22	2885	GRB2	L
933	CD22	3240	HP	L
933	CD22	4067	LYN	L
933	CD22	5295	PIK3R1	L
933	CD22	5335	PLCG1	L
933	CD22	5777	PTPN6	L
933	CD22	5788	PTPRC	L
933	CD22	6464	SHC1	L
933	CD22	6850	SYK	L
934	CD24	2268	FGR	L
934	CD24	4067	LYN	L
934	CD24	6403	SELP	L
939	TNFRSF7	7186	TRAF2	L
939	TNFRSF7	7187	TRAF3	L
939	TNFRSF7	7188	TRAF5	L
940	CD28	941	CD80	L
940	CD28	942	CD86	L
940	CD28	2885	GRB2	L
940	CD28	3592	IL12A	L
940	CD28	3702	ITK	L
940	CD28	3932	LCK	L
940	CD28	4905	NSF	L

940	CD28	5295	PIK3R1	L
940	CD28	5296	PIK3R2	L
940	CD28	5335	PLCG1	L
940	CD28	5788	PTPRC	L
940	CD28	9402	GRAP2	L
940	CD28	10233	B7	L
940	CD28	11072	DUSP14	L
941	CD80	1493	CTLA4	L
942	CD86	1493	CTLA4	L
943	TNFRSF8	944	TNFSF8	L
943	TNFRSF8	7185	TRAF1	L
943	TNFRSF8	7186	TRAF2	L
943	TNFRSF8	7187	TRAF3	L
943	TNFRSF8	7188	TRAF5	L
943	TNFRSF8	10293	TRIP	L
943	TNFRSF8	51567	TTRAP	L
945	CD33	5777	PTPN6	L
945	CD33	5781	PTPN11	L
947	CD34	1399	CRKL	L
948	CD36	1277	COL1A1	L
948	CD36	1278	COL1A2	L
948	CD36	2534	FYN	L
948	CD36	3655	ITGA6	L
948	CD36	3674	ITGA2B	L
948	CD36	3688	ITGB1	L
948	CD36	3690	ITGB3	L
948	CD36	4067	LYN	L
948	CD36	4145	MATK	L
948	CD36	6714	SRC	L
948	CD36	7057	THBS1	L
948	CD36	7525	YES1	L
949	SCARB1	5174	PDZK1	L
950	SCARB2	1176	AP3S1	L
950	SCARB2	7057	THBS1	L
952	CD38	2214	FCGR3A	L
952	CD38	3932	LCK	L
952	CD38	5175	PECAM1	L
958	CD40	959	CD40LG	L
958	CD40	2547	XRCC6	L
958	CD40	7185	TRAF1	L
958	CD40	7186	TRAF2	L
958	CD40	7187	TRAF3	L
958	CD40	7188	TRAF5	L
958	CD40	7189	TRAF6	L
958	CD40	7520	XRCC5	L
958	CD40	8439	NSMAF	L
958	CD40	8767	RIPK2	L
958	CD40	10758	TRAF3IP2	L
958	CD40	51567	TTRAP	L
959	CD40LG	3500	IGHG1	L
960	CD44	972	CD74	L
960	CD44	1277	COL1A1	L
960	CD44	1278	COL1A2	L
960	CD44	1445	CSK	L
960	CD44	1462	CSPG2	L
960	CD44	1758	DMP1	L
960	CD44	1839	HBEGF	L
960	CD44	1956	EGFR	L
960	CD44	2066	ERBB4	L
960	CD44	2247	FGF2	L
960	CD44	2534	FYN	L
960	CD44	3486	IGFBP3	L
960	CD44	3932	LCK	L
960	CD44	4316	MMP7	L
960	CD44	4318	MMP9	L
960	CD44	4771	NF2	L
960	CD44	5552	PRG1	L

960	CD44	6401	SELE	L
960	CD44	6696	SPP1	L
960	CD44	7046	TGFBR1	L
960	CD44	7048	TGFBR2	L
960	CD44	7074	TIAM1	L
960	CD44	7373	COL14A1	L
960	CD44	7410	VAV2	L
960	CD44	7430	VIL2	L
960	CD44	8174	MADCAM1	L
960	CD44	9138	ARHGEF1	L
961	CD47	2038	EPB42	L
961	CD47	2770	GNAI1	L
961	CD47	5029	P2RY2	L
961	CD47	5747	PTK2	L
961	CD47	6005	RHAG	L
961	CD47	7057	THBS1	L
961	CD47	140885	PTPNS1	L
962	CD48	1936	EEF1D	S
962	CD48	2534	FYN	L
962	CD48	2773	GNAI3	L
962	CD48	3932	LCK	L
962	CD48	55299	BXDC2	S
963	CD53	2678	GGT1	L
963	CD53	3558	IL2	L
963	CD53	3565	IL4	L
965	CD58	3301	DNAJA1	S
965	CD58	9709	HERPUD1	S
966	CD59	2773	GNAI3	L
966	CD59	4089	SMAD4	L
966	CD59	6535	SLC6A8	L
966	CD59	6714	SRC	L
966	CD59	9437	NCR1	L
966	CD59	259197	NCR3	L
967	CD63	3109	HLA-DMB	L
967	CD63	3122	HLA-DRA	L
967	CD63	3655	ITGA6	L
967	CD63	3732	CD82	L
967	CD63	3815	KIT	L
967	CD63	5738	PTGFRN	L
967	CD63	9179	AP4M1	L
971	CD72	2885	GRB2	L
971	CD72	5777	PTPN6	L
971	CD72	10507	SEMA4D	L
971	CD72	29760	BLNK	L
972	CD74	3108	HLA-DMA	L
972	CD74	3109	HLA-DMB	L
972	CD74	4282	MIF	L
973	CD79A	974	CD79B	L
973	CD79A	2204	FCAR	L
973	CD79A	3059	HCLS1	L
973	CD79A	3507	IGHM	L
973	CD79A	3512	IGJ	L
973	CD79A	5284	PIGR	L
973	CD79A	5788	PTPRC	L
973	CD79A	6850	SYK	L
973	CD79A	29760	BLNK	L
975	CD81	3676	ITGA4	L
975	CD81	3815	KIT	L
975	CD81	7704	ZBTB16	S
975	CD81	9231	DLG5	S
975	CD81	83444	ZNHIT4	S
975	CD81	93185	IGSF8	L
976	CD97	1604	DAF	L
977	CD151	5738	PTGFRN	L
983	CDC2	995	CDC25C	L
983	CDC2	1033	CDKN3	L
983	CDC2	1163	CKS1B	L

983	CDC2	1164	CKS2	L
983	CDC2	1601	DAB2	L
983	CDC2	1647	GADD45A	L
983	CDC2	1785	DNM2	L
983	CDC2	1936	EEF1D	L
983	CDC2	2068	ERCC2	L
983	CDC2	2176	FANCC	L
983	CDC2	2534	FYN	L
983	CDC2	2810	SFN	L
983	CDC2	4001	LMNB1	L
983	CDC2	4067	LYN	L
983	CDC2	4616	GADD45B	L
983	CDC2	5300	PIN1	L
983	CDC2	5757	PTMA	L
983	CDC2	7088	TLE1	L
983	CDC2	7157	TP53	L
983	CDC2	7248	TSC1	L
983	CDC2	7704	ZBTB16	L
983	CDC2	8208	CHAF1B	L
983	CDC2	8900	CCNA1	L
983	CDC2	9088	PKMYT1	L
983	CDC2	9113	LATS1	L
983	CDC2	9133	CCNB2	L
983	CDC2	9600	PITPNM1	L
983	CDC2	10600	USP16	L
983	CDC2	10615	SPAG5	L
983	CDC2	10912	GADD45G	L
983	CDC2	11178	LZTS1	L
983	CDC2	29883	CNOT7	L
983	CDC2	64689	GORASP1	L
984	CDC2L1	81605	C9orf74	S
984	CDC2L1	81669	CCNL2	L
985	CDC2L2	2683	B4GALT1	L
985	CDC2L2	5058	PAK1	L
985	CDC2L2	6432	SFRS7	L
985	CDC2L2	6499	SKIV2L	L
985	CDC2L2	10921	RNPS1	L
985	CDC2L2	57018	CCNL1	L
988	CDC5L	1026	CDKN1A	L
988	CDC5L	1029	CDKN2A	L
988	CDC5L	4172	MCM3	L
988	CDC5L	4173	MCM4	L
988	CDC5L	4174	MCM5	L
988	CDC5L	4998	ORC1L	L
988	CDC5L	4999	ORC2L	L
988	CDC5L	5001	ORC5L	L
988	CDC5L	5356	PLRG1	L
988	CDC5L	5511	PPP1R8	L
988	CDC5L	8458	TTF2	L
988	CDC5L	55388	MCM10	L
988	CDC5L	81620	CDT1	L
989	SEPT7	10435	CDC42EP2	L
989	SEPT7	10801	SEPT9	L
989	SEPT7	54443	ANLN	L
990	CDC6	1026	CDKN1A	L
990	CDC6	1029	CDKN2A	L
990	CDC6	4171	MCM2	L
990	CDC6	4172	MCM3	L
990	CDC6	4176	MCM7	L
990	CDC6	4609	MYC	L
990	CDC6	4998	ORC1L	L
990	CDC6	4999	ORC2L	L
990	CDC6	5001	ORC5L	L
990	CDC6	5111	PCNA	L
990	CDC6	5523	PPP2R3A	L
990	CDC6	23594	ORC6L	L
990	CDC6	23595	ORC3L	L

990	CDC6	26993	AKAP8L	L
990	CDC6	28227	PPP2R3B	L
990	CDC6	55388	MCM10	L
990	CDC6	81620	CDT1	L
991	CDC20	996	CDC27	L
991	CDC20	4085	MAD2L1	L
991	CDC20	6790	STK6	L
991	CDC20	8881	CDC16	L
991	CDC20	9232	PTTG1	L
991	CDC20	26271	FBXO5	L
993	CDC25A	1017	CDK2	L
993	CDC25A	1033	CDKN3	L
993	CDC25A	1111	CHEK1	L
993	CDC25A	1523	CUTL1	L
993	CDC25A	1956	EGFR	L
993	CDC25A	3265	HRAS	L
993	CDC25A	4217	MAP3K5	L
993	CDC25A	5292	PIM1	L
993	CDC25A	5894	RAF1	L
993	CDC25A	6093	ROCK1	L
993	CDC25A	7529	YWHAB	L
993	CDC25A	7531	YWHAE	L
993	CDC25A	7534	YWHAZ	L
993	CDC25A	8260	ARD1A	R
993	CDC25A	8900	CCNA1	L
994	CDC25B	1111	CHEK1	L
994	CDC25B	1387	CREBBP	L
994	CDC25B	1460	CSNK2B	L
994	CDC25B	2099	ESR1	L
994	CDC25B	7529	YWHAB	L
994	CDC25B	7531	YWHAE	L
994	CDC25B	7533	YWHAH	L
994	CDC25B	7534	YWHAZ	L
994	CDC25B	8850	PCAF	L
994	CDC25B	9833	MELK	L
994	CDC25B	10971	YWHAQ	L
995	CDC25C	1111	CHEK1	L
995	CDC25C	1263	PLK3	L
995	CDC25C	1432	MAPK14	L
995	CDC25C	3932	LCK	L
995	CDC25C	4734	NEDD4	L
995	CDC25C	5111	PCNA	L
995	CDC25C	5300	PIN1	L
995	CDC25C	5347	PLK1	L
995	CDC25C	7157	TP53	L
995	CDC25C	7533	YWHAH	L
995	CDC25C	7534	YWHAZ	L
996	CDC27	3226	HOXC10	L
996	CDC27	4085	MAD2L1	L
996	CDC27	4087	SMAD2	L
996	CDC27	4088	SMAD3	L
996	CDC27	5300	PIN1	L
996	CDC27	5536	PPP5C	L
996	CDC27	6498	SKIL	L
996	CDC27	8881	CDC16	L
996	CDC27	51433	ANAPC5	L
997	CDC34	1390	CREM	L
997	CDC34	1460	CSNK2B	L
997	CDC34	4605	MYBL2	L
997	CDC34	4654	MYOD1	L
997	CDC34	6502	SKP2	L
997	CDC34	22809	ATF5	L
998	CDC42	1464	CSPG4	L
998	CDC42	1937	EEF1G	S
998	CDC42	2245	FGD1	L
998	CDC42	2316	FLNA	L
998	CDC42	2664	GDI1	L

998	CDC42	3895	KTN1	L
998	CDC42	4216	MAP3K4	L
998	CDC42	4294	MAP3K10	L
998	CDC42	4296	MAP3K11	L
998	CDC42	4649	MYO9A	S
998	CDC42	4688	NCF2	L
998	CDC42	4983	OPHN1	L
998	CDC42	5058	PAK1	L
998	CDC42	5062	PAK2	L
998	CDC42	5147	PDE6D	S
998	CDC42	5295	PIK3R1	L
998	CDC42	5337	PLD1	L
998	CDC42	5578	PRKCA	L
998	CDC42	5880	RAC2	L
998	CDC42	6198	RPS6KB1	L
998	CDC42	6453	ITSN1	L
998	CDC42	7157	TP53	S
998	CDC42	7409	VAV1	L
998	CDC42	7454	WAS	L
998	CDC42	8826	IQGAP1	L
998	CDC42	8936	WASF1	L
998	CDC42	8976	WASL	L
998	CDC42	9094	UNC119	S
998	CDC42	9322	TRIP10	L
998	CDC42	10096	ACTR3	L
998	CDC42	10163	WASF2	L
998	CDC42	10188	TNK2	L
998	CDC42	10298	PAK4	L
998	CDC42	10435	CDC42EP2	L
998	CDC42	10458	BAIAP2	L
998	CDC42	10524	HTATIP	S
998	CDC42	10602	CDC42EP3	L
998	CDC42	10788	IQGAP2	L
998	CDC42	11135	CDC42EP1	R
998	CDC42	11161	C14orf1	S
998	CDC42	23263	MCF2L	L
998	CDC42	23348	DOCK9	L
998	CDC42	50619	DEF6	L
998	CDC42	50855	PARD6A	L
998	CDC42	54206	ERRFI1	L
998	CDC42	55791	C1orf103	S
998	CDC42	56288	PARD3	L
998	CDC42	56924	PAK6	L
998	CDC42	57144	PAK7	L
998	CDC42	57381	RHOJ	L
998	CDC42	57522	SRGAP1	L
998	CDC42	81704	DOCK8	L
998	CDC42	84218	TBC1D3	L
998	CDC42	84552	PARD6G	L
998	CDC42	197131	UBR1	S
999	CDH1	1434	CSE1L	L
999	CDH1	1499	CTNNB1	L
999	CDH1	1500	CTNND1	L
999	CDH1	1739	DLG1	L
999	CDH1	1956	EGFR	L
999	CDH1	2768	GNA12	L
999	CDH1	3667	IRS1	L
999	CDH1	3728	JUP	L
999	CDH1	5310	PKD1	L
999	CDH1	5663	PSEN1	L
999	CDH1	5784	PTPN14	L
999	CDH1	5792	PTPRF	L
999	CDH1	7430	VIL2	L
999	CDH1	8826	IQGAP1	L
999	CDH1	10096	ACTR3	L
999	CDH1	10672	GNA13	L
999	CDH1	51762	RAB8B	L

999	CDH1	55591	VEZATIN	L
999	CDH1	55914	ERBB2IP	L
999	CDH1	79872	CBLL1	L
1000	CDH2	1002	CDH4	L
1000	CDH2	1009	CDH11	L
1000	CDH2	1495	CTNNA1	L
1000	CDH2	2768	GNA12	L
1000	CDH2	2898	GRIK2	L
1000	CDH2	3728	JUP	L
1000	CDH2	5770	PTPN1	L
1000	CDH2	10672	GNA13	L
1000	CDH2	57554	LRRC7	L
1001	CDH3	1499	CTNNB1	L
1001	CDH3	1500	CTNND1	L
1003	CDH5	1495	CTNNA1	L
1003	CDH5	1499	CTNNB1	L
1003	CDH5	1500	CTNND1	L
1003	CDH5	1832	DSP	L
1003	CDH5	2243	FGA	L
1003	CDH5	3728	JUP	L
1003	CDH5	3791	KDR	L
1003	CDH5	5025	P2RX4	L
1003	CDH5	5781	PTPN11	L
1003	CDH5	5787	PTPRB	L
1003	CDH5	6464	SHC1	L
1003	CDH5	7431	VIM	L
1003	CDH5	8502	PKP4	L
1003	CDH5	9127	P2RXL1	L
1003	CDH5	23049	SMG1	L
1004	CDH6	1008	CDH10	L
1004	CDH6	1016	CDH18	L
1004	CDH6	28513	CDH19	L
1006	CDH8	1499	CTNNB1	L
1008	CDH10	5764	PTN	S
1008	CDH10	10980	COPS6	S
1009	CDH11	1499	CTNNB1	L
1009	CDH11	55729	ATF7IP	L
1010	CDH12	1016	CDH18	L
1013	CDH15	1499	CTNNB1	L
1013	CDH15	2768	GNA12	L
1013	CDH15	3728	JUP	L
1017	CDK2	1026	CDKN1A	L
1017	CDK2	1027	CDKN1B	L
1017	CDK2	1033	CDKN3	L
1017	CDK2	1050	CEBPA	L
1017	CDK2	1163	CKS1B	L
1017	CDK2	1869	E2F1	L
1017	CDK2	2237	FEN1	L
1017	CDK2	2946	GSTM2	L
1017	CDK2	4067	LYN	L
1017	CDK2	4087	SMAD2	L
1017	CDK2	4088	SMAD3	L
1017	CDK2	4172	MCM3	L
1017	CDK2	4999	ORC2L	L
1017	CDK2	5583	PRKCH	L
1017	CDK2	5757	PTMA	L
1017	CDK2	5925	RB1	L
1017	CDK2	5933	RBL1	L
1017	CDK2	5934	RBL2	L
1017	CDK2	6502	SKP2	L
1017	CDK2	7343	UBTF	L
1017	CDK2	8099	CDK2AP1	L
1017	CDK2	8208	CHAF1B	L
1017	CDK2	8900	CCNA1	L
1017	CDK2	9133	CCNB2	L
1017	CDK2	9134	CCNE2	L
1017	CDK2	29883	CNOT7	L

1017	CDK2	85417	CCNB3	L
1018	CDK3	1033	CDKN3	L
1018	CDK3	1163	CKS1B	L
1018	CDK3	1869	E2F1	L
1018	CDK3	1870	E2F2	L
1018	CDK3	1871	E2F3	L
1019	CDK4	1026	CDKN1A	L
1019	CDK4	1027	CDKN1B	L
1019	CDK4	1029	CDKN2A	L
1019	CDK4	1030	CDKN2B	RSL
1019	CDK4	1031	CDKN2C	L
1019	CDK4	1032	CDKN2D	R
1019	CDK4	1050	CEBPA	L
1019	CDK4	3429	IFI27	L
1019	CDK4	4087	SMAD2	L
1019	CDK4	4088	SMAD3	L
1019	CDK4	4171	MCM2	L
1019	CDK4	4654	MYOD1	L
1019	CDK4	5716	PSMD10	L
1019	CDK4	5757	PTMA	L
1019	CDK4	5925	RB1	L
1019	CDK4	5981	RFC1	L
1019	CDK4	5984	RFC4	L
1019	CDK4	7917	BAT3	S
1019	CDK4	8317	CDC7	L
1019	CDK4	9869	SETDB1	S
1019	CDK4	11140	CDC37	L
1019	CDK4	29883	CNOT7	L
1019	CDK4	51534	C6orf55	R
1019	CDK4	79159	MGC3731	S
1020	CDK5	1499	CTNNB1	L
1020	CDK5	2580	GAK	L
1020	CDK5	6418	SET	L
1020	CDK5	6804	STX1A	L
1020	CDK5	6812	STXBP1	L
1020	CDK5	8851	CDK5R1	L
1020	CDK5	8941	CDK5R2	L
1020	CDK5	10763	NES	L
1021	CDK6	1026	CDKN1A	L
1021	CDK6	1029	CDKN2A	L
1021	CDK6	1031	CDKN2C	L
1021	CDK6	1032	CDKN2D	L
1021	CDK6	4171	MCM2	L
1021	CDK6	5111	PCNA	L
1021	CDK6	5495	PPM1B	L
1021	CDK6	29883	CNOT7	L
1021	CDK6	55388	MCM10	L
1022	CDK7	5914	RARA	L
1022	CDK7	7067	THRA	L
1022	CDK7	7421	VDR	L
1024	CDK8	1030	CDKN2B	L
1026	CDKN1A	1027	CDKN1B	L
1026	CDKN1A	1387	CREBBP	L
1026	CDKN1A	1460	CSNK2B	L
1026	CDKN1A	1647	GADD45A	L
1026	CDKN1A	4616	GADD45B	L
1026	CDKN1A	5111	PCNA	RL
1026	CDKN1A	5292	PIM1	L
1026	CDKN1A	5425	POLD2	L
1026	CDKN1A	5684	PSMA3	L
1026	CDKN1A	5861	RAB1A	S
1026	CDKN1A	6418	SET	L
1026	CDKN1A	6774	STAT3	L
1026	CDKN1A	7083	TK1	L
1026	CDKN1A	7251	TSG101	L
1026	CDKN1A	8317	CDC7	L
1026	CDKN1A	8318	CDC45L	L

1026	CDKN1A	8402	SLC25A11	S
1026	CDKN1A	8900	CCNA1	L
1026	CDKN1A	9133	CCNB2	L
1026	CDKN1A	9134	CCNE2	L
1026	CDKN1A	10399	GNB2L1	S
1026	CDKN1A	10912	GADD45G	L
1026	CDKN1A	11007	DIPA	R
1026	CDKN1A	23093	TTLL5	S
1026	CDKN1A	27231	ITGB1BP3	S
1026	CDKN1A	51053	GMNN	L
1026	CDKN1A	51608	C7orf20	S
1026	CDKN1A	54987	C1orf123	S
1026	CDKN1A	55388	MCM10	L
1026	CDKN1A	56159	TEX11	R
1026	CDKN1A	79885	HDAC11	S
1026	CDKN1A	115106	CCDC5	L
1027	CDKN1B	2885	GRB2	L
1027	CDKN1B	6502	SKP2	L
1027	CDKN1B	7186	TRAF2	R
1027	CDKN1B	7345	UCHL1	L
1027	CDKN1B	7514	XPO1	L
1027	CDKN1B	7531	YWHAE	L
1027	CDKN1B	7533	YWHAH	L
1027	CDKN1B	8900	CCNA1	L
1027	CDKN1B	9134	CCNE2	L
1027	CDKN1B	10762	NUP50	L
1027	CDKN1B	10971	YWHAQ	L
1028	CDKN1C	3984	LIMK1	L
1028	CDKN1C	4654	MYOD1	L
1028	CDKN1C	5111	PCNA	L
1028	CDKN1C	6502	SKP2	L
1029	CDKN2A	1031	CDKN2C	L
1029	CDKN2A	1877	E4F1	L
1029	CDKN2A	3091	HIF1A	L
1029	CDKN2A	4171	MCM2	L
1029	CDKN2A	4174	MCM5	L
1029	CDKN2A	4193	MDM2	L
1029	CDKN2A	5000	ORC4L	L
1029	CDKN2A	5702	PSMC3	L
1029	CDKN2A	7528	YY1	L
1029	CDKN2A	8317	CDC7	L
1029	CDKN2A	8318	CDC45L	L
1029	CDKN2A	51053	GMNN	L
1029	CDKN2A	55388	MCM10	L
1029	CDKN2A	55602	CARF	L
1029	CDKN2A	84687	PPP1R9B	L
1029	CDKN2A	115106	CCDC5	L
1030	CDKN2B	4110	MAGEA11	R
1030	CDKN2B	7709	ZBTB17	L
1030	CDKN2B	8099	CDK2AP1	L
1030	CDKN2B	8518	IKBKAP	S
1030	CDKN2B	10094	ARPC3	S
1030	CDKN2B	57562	KIAA1377	S
1030	CDKN2B	60492	MDS025	S
1031	CDKN2C	2661	GDF9	S
1031	CDKN2C	4809	NHP2L1	S
1031	CDKN2C	7088	TLE1	S
1031	CDKN2C	7157	TP53	S
1031	CDKN2C	9094	UNC119	S
1031	CDKN2C	10589	DRAP1	S
1031	CDKN2C	10980	COPS6	S
1031	CDKN2C	55791	C1orf103	S
1031	CDKN2C	60492	MDS025	S
1031	CDKN2C	84060	DKFZP564O0523	S
1032	CDKN2D	79735	TBC1D17	R
1033	CDKN3	1050	CEBPA	L
1039	CDR2	5585	PKN1	L

1045	CDX2	1387	CREBBP	L
1045	CDX2	2033	EP300	L
1045	CDX2	5080	PAX6	L
1045	CDX2	6927	TCF1	L
1047	CLGN	2515	ADAM2	L
1048	CEACAM5	2130	EWSR1	R
1048	CEACAM5	4670	HNRPM	L
1050	CEBPA	1051	CEBPB	L
1050	CEBPA	1052	CEBPD	L
1050	CEBPA	1053	CEBPE	L
1050	CEBPA	1054	CEBPG	L
1050	CEBPA	1386	ATF2	L
1050	CEBPA	1499	CTNNB1	L
1050	CEBPA	1649	DDIT3	L
1050	CEBPA	2908	NR3C1	L
1050	CEBPA	4488	MSX2	L
1050	CEBPA	4609	MYC	L
1050	CEBPA	5981	RFC1	L
1050	CEBPA	6688	SPI1	L
1050	CEBPA	6927	TCF1	L
1050	CEBPA	9586	CREB5	L
1050	CEBPA	10538	BATF	L
1050	CEBPA	11016	ATF7	L
1050	CEBPA	22809	ATF5	L
1050	CEBPA	23054	NCOA6	L
1050	CEBPA	55509	SNFT	L
1051	CEBPB	1052	CEBPD	L
1051	CEBPB	1053	CEBPE	L
1051	CEBPB	1054	CEBPG	L
1051	CEBPB	1385	CREB1	L
1051	CEBPB	1386	ATF2	L
1051	CEBPB	1628	DBP	L
1051	CEBPB	1649	DDIT3	L
1051	CEBPB	1956	EGFR	L
1051	CEBPB	1958	EGR1	L
1051	CEBPB	2002	ELK1	L
1051	CEBPB	2033	EP300	L
1051	CEBPB	2099	ESR1	L
1051	CEBPB	2308	FOXO1A	L
1051	CEBPB	2908	NR3C1	L
1051	CEBPB	3159	HMGA1	L
1051	CEBPB	3190	HNRPK	L
1051	CEBPB	3297	HSF1	L
1051	CEBPB	4088	SMAD3	L
1051	CEBPB	4089	SMAD4	L
1051	CEBPB	4602	MYB	L
1051	CEBPB	4609	MYC	L
1051	CEBPB	4790	NFKB1	L
1051	CEBPB	5925	RB1	L
1051	CEBPB	5970	RELA	L
1051	CEBPB	6348	CCL3	L
1051	CEBPB	6597	SMARCA4	L
1051	CEBPB	6598	SMARCB1	L
1051	CEBPB	6599	SMARCC1	L
1051	CEBPB	6667	SP1	L
1051	CEBPB	6688	SPI1	L
1051	CEBPB	6722	SRF	L
1051	CEBPB	6776	STAT5A	L
1051	CEBPB	6778	STAT6	L
1051	CEBPB	9221	NOLC1	L
1051	CEBPB	9439	CRSP3	L
1051	CEBPB	9586	CREB5	L
1051	CEBPB	10155	TRIM28	L
1051	CEBPB	10538	BATF	L
1051	CEBPB	11016	ATF7	L
1051	CEBPB	22809	ATF5	L
1051	CEBPB	55509	SNFT	L

1052	CEBPD	1053	CEBPE	L
1052	CEBPD	1054	CEBPG	L
1052	CEBPD	1649	DDIT3	L
1052	CEBPD	5970	RELA	L
1052	CEBPD	10538	BATF	L
1052	CEBPD	22809	ATF5	L
1052	CEBPD	55509	SNFT	L
1053	CEBPE	1054	CEBPG	L
1053	CEBPE	1649	DDIT3	L
1053	CEBPE	3725	JUN	L
1053	CEBPE	4602	MYB	L
1053	CEBPE	9586	CREB5	L
1053	CEBPE	10538	BATF	L
1053	CEBPE	55509	SNFT	L
1054	CEBPG	1386	ATF2	L
1054	CEBPG	1628	DBP	L
1054	CEBPG	1649	DDIT3	RL
1054	CEBPG	2353	FOS	L
1054	CEBPG	2355	FOSL2	L
1054	CEBPG	3131	HLF	L
1054	CEBPG	4302	MLLT6	R
1054	CEBPG	4783	NFIL3	L
1054	CEBPG	7008	TEF	L
1054	CEBPG	7975	MAFK	L
1054	CEBPG	8061	FOSL1	L
1054	CEBPG	9586	CREB5	L
1054	CEBPG	10488	CREB3	L
1054	CEBPG	10538	BATF	L
1054	CEBPG	11016	ATF7	L
1054	CEBPG	22809	ATF5	L
1054	CEBPG	55509	SNFT	L
1054	CEBPG	81488	GRINL1A	R
1054	CEBPG	84699	CREB3L3	L
1054	CEBPG	90993	CREB3L1	L
1054	CEBPG	148327	CREB3L4	L
1058	CENPA	1729	DIAPH1	L
1058	CENPA	1730	DIAPH2	L
1058	CENPA	10038	PARP2	L
1059	CENPB	9464	HAND2	L
1059	CENPB	10038	PARP2	L
1060	CENPC1	1616	DAXX	L
1060	CENPC1	7343	UBTF	L
1062	CENPE	1063	CENPF	L
1063	CENPF	8315	BRAP	L
1063	CENPF	8940	TOP3B	L
1066	CES1	2990	GUSB	L
1069	CETN2	5887	RAD23B	L
1069	CETN2	7508	XPC	L
1069	CETN2	9814	SFI1	L
1070	CETN3	9094	UNC119	S
1071	CETP	2130	EWSR1	R
1071	CETP	4023	LPL	L
1071	CETP	10094	ARPC3	S
1072	CFL1	3984	LIMK1	L
1072	CFL1	7167	TPI1	L
1072	CFL1	10487	CAP1	L
1072	CFL1	10808	HSPH1	L
1072	CFL1	26292	MYCBP	S
1072	CFL1	54434	SSH1	L
1072	CFL1	54961	SSH3	L
1072	CFL1	85464	SSH2	L
1080	CFTR	3301	DNAJA1	L
1080	CFTR	5174	PDZK1	L
1080	CFTR	5562	PRKAA1	L
1080	CFTR	5576	PRKAR2A	L
1080	CFTR	5581	PRKCE	L
1080	CFTR	6804	STX1A	L

1080	CFTR	7430	VIL2	L
1080	CFTR	8773	SNAP23	L
1080	CFTR	9351	SLC9A3R2	L
1080	CFTR	9368	SLC9A3R1	L
1080	CFTR	9497	SLC4A7	L
1080	CFTR	9498	SLC4A8	L
1080	CFTR	57120	GOPC	L
1080	CFTR	80331	DNAJC5	L
1081	CGA	1082	CGB	L
1081	CGA	2488	FSHB	L
1081	CGA	3972	LHB	L
1081	CGA	3973	LHCGR	L
1081	CGA	5764	PTN	S
1081	CGA	5782	PTPN12	L
1081	CGA	7252	TSHB	L
1081	CGA	93659	CGB5	L
1081	CGA	94027	CGB7	L
1082	CGB	2488	FSHB	L
1082	CGB	3973	LHCGR	L
1088	CEACAM8	4680	CEACAM6	L
1101	CHAD	1280	COL2A1	L
1102	RCBTB2	51138	COPS4	R
1104	RCC1	1119	CHKA	L
1104	RCC1	1452	CSNK1A1	L
1104	RCC1	3839	KPNA3	L
1104	RCC1	5757	PTMA	L
1104	RCC1	5901	RAN	L
1104	RCC1	5902	RANBP1	L
1104	RCC1	7514	XPO1	L
1104	RCC1	8337	HIST2H2AA	L
1104	RCC1	8349	HIST2H2BE	L
1104	RCC1	8498	RANBP3	L
1105	CHD1	3065	HDAC1	L
1105	CHD1	6294	SAFB	L
1105	CHD1	6428	SFRS3	L
1105	CHD1	6749	SSRP1	L
1105	CHD1	9611	NCOR1	L
1107	CHD3	1363	CPE	S
1107	CHD3	1385	CREB1	S
1107	CHD3	1478	CSTF2	S
1107	CHD3	2017	CTTN	S
1107	CHD3	2874	GPS2	S
1107	CHD3	3065	HDAC1	L
1107	CHD3	3066	HDAC2	L
1107	CHD3	3550	IK	S
1107	CHD3	4097	MAFG	S
1107	CHD3	4122	MAN2A2	S
1107	CHD3	5110	PCMT1	S
1107	CHD3	5553	PRG2	S
1107	CHD3	5720	PSME1	S
1107	CHD3	5764	PTN	S
1107	CHD3	5802	PTPRS	S
1107	CHD3	5888	RAD51	S
1107	CHD3	6159	RPL29	S
1107	CHD3	6294	SAFB	S
1107	CHD3	6303	SAT	S
1107	CHD3	6304	SATB1	L
1107	CHD3	6613	SUMO2	S
1107	CHD3	7105	TSPAN6	S
1107	CHD3	7157	TP53	L
1107	CHD3	7161	TP73	L
1107	CHD3	7276	TTR	S
1107	CHD3	7329	UBE2I	L
1107	CHD3	7341	SUMO1	L
1107	CHD3	7518	XRCC4	S
1107	CHD3	8553	BHLHB2	S
1107	CHD3	8764	TNFRSF14	S

1107	CHD3	8789	FBP2	S
1107	CHD3	8880	FUBP1	S
1107	CHD3	9039	UBE1C	S
1107	CHD3	9905	RUTBC1	S
1107	CHD3	10120	ACTR1B	S
1107	CHD3	10155	TRIM28	S
1107	CHD3	10169	SERF2	S
1107	CHD3	10190	TXNDC9	S
1107	CHD3	10320	ZNFN1A1	L
1107	CHD3	10606	PAICS	S
1107	CHD3	10625	IVNS1ABP	S
1107	CHD3	10807	SDCCAG3	S
1107	CHD3	10808	HSPH1	S
1107	CHD3	10989	IMMT	S
1107	CHD3	22827	SIAHBP1	S
1107	CHD3	22927	HABP4	S
1107	CHD3	26135	SERBP1	SL
1107	CHD3	28965	SLC27A6	S
1107	CHD3	51548	SIRT6	S
1107	CHD3	51593	ARS2	S
1107	CHD3	51631	LUC7L2	S
1107	CHD3	54544	C1orf42	S
1107	CHD3	56992	KIF15	S
1107	CHD3	57002	C7orf36	S
1107	CHD3	79137	C2orf17	S
1107	CHD3	80145	NIF3L1BP1	S
1107	CHD3	84103	C4orf17	S
1107	CHD3	84213	(null)	S
1107	CHD3	93974	ATPIF1	S
1108	CHD4	54464	XRN1	L
1108	CHD4	64375	ZNFN1A4	L
1111	CHEK1	2547	XRCC6	L
1111	CHEK1	7157	TP53	L
1111	CHEK1	63967	CLSPN	L
1112	CHES1	11340	EXOSC8	L
1113	CHGA	5340	PLG	L
1113	CHGA	29106	SCG3	L
1114	CHGB	2261	FGFR3	S
1114	CHGB	4140	MARK3	S
1114	CHGB	4968	OGG1	S
1114	CHGB	5424	POLD1	S
1114	CHGB	5434	POLR2E	S
1114	CHGB	5728	PTEN	S
1114	CHGB	6258	RXRG	S
1114	CHGB	6279	S100A8	S
1114	CHGB	6311	ATXN2	S
1114	CHGB	6901	TAZ	S
1114	CHGB	7280	TUBB2	S
1114	CHGB	7343	UBTF	S
1114	CHGB	7841	GCS1	S
1114	CHGB	9667	SAFB2	S
1114	CHGB	11343	MGLL	S
1114	CHGB	11344	PTK9L	S
1114	CHGB	56252	YLPM1	S
1114	CHGB	80126	FLJ23185	S
1114	CHGB	80212	FLJ22471	S
1114	CHGB	157285	DKFZp761P0423	S
1121	CHM	5864	RAB3A	L
1121	CHM	9545	RAB3D	L
1121	CHM	81876	RAB1B	L
1122	CHML	5861	RAB1A	L
1122	CHML	5864	RAB3A	L
1122	CHML	5868	RAB5A	L
1122	CHML	5870	RAB6A	L
1123	CHN1	2975	GTF3C1	S
1123	CHN1	6189	RPS3A	S
1124	CHN2	4690	NCK1	L

1124	CHN2	7917	BAT3	S
1124	CHN2	222019	(null)	S
1128	CHRM1	2771	GNAI2	L
1129	CHRM2	2767	GNA11	L
1129	CHRM2	2769	GNA15	L
1129	CHRM2	2869	GRK5	L
1129	CHRM2	6295	SAG	L
1129	CHRM2	9630	GNA14	L
1130	LYST	1460	CSNK2B	L
1130	LYST	1822	ATN1	L
1130	LYST	2101	ESRRA	L
1130	LYST	3837	KPNB1	L
1130	LYST	4670	HNRPM	L
1130	LYST	7529	YWHAB	L
1130	LYST	8220	DGCR14	L
1130	LYST	9146	HGS	L
1130	LYST	9968	MED12	L
1130	LYST	10971	YWHAQ	L
1130	LYST	23154	NCDN	L
1130	LYST	63875	MRPL17	L
1131	CHRM3	1452	CSNK1A1	L
1131	CHRM3	2776	GNAQ	L
1131	CHRM3	2870	GRK6	L
1131	CHRM3	3002	GZMB	L
1134	CHRNA1	1144	CHRND	L
1134	CHRNA1	1145	CHRNE	L
1134	CHRNA1	1146	CHRNG	L
1134	CHRNA1	3679	ITGA7	L
1135	CHRNA2	1141	CHRNB2	L
1135	CHRNA2	1143	CHRNB4	L
1136	CHRNA3	1143	CHRNB4	L
1137	CHRNA4	1143	CHRNB4	L
1137	CHRNA4	7447	VSNL1	L
1137	CHRNA4	7533	YWHAH	L
1138	CHRNA5	1143	CHRNB4	L
1139	CHRNA7	5295	PIK3R1	L
1140	CHRNB1	10980	COPS6	S
1144	CHRND	2885	GRB2	L
1147	CHUK	1326	MAP3K8	L
1147	CHUK	1499	CTNNB1	L
1147	CHUK	2309	FOXO3A	L
1147	CHUK	3320	HSPCA	L
1147	CHUK	3667	IRS1	L
1147	CHUK	4296	MAP3K11	L
1147	CHUK	4790	NFKB1	L
1147	CHUK	4793	NFKBIB	L
1147	CHUK	5591	PRKDC	L
1147	CHUK	6885	MAP3K7	L
1147	CHUK	7128	TNFAIP3	L
1147	CHUK	7132	TNFRSF1A	L
1147	CHUK	7157	TP53	L
1147	CHUK	7186	TRAF2	L
1147	CHUK	8518	IKBKAP	L
1147	CHUK	8915	BCL10	L
1147	CHUK	9020	MAP3K14	L
1147	CHUK	10477	UBE2E3	L
1147	CHUK	10758	TRAF3IP2	L
1147	CHUK	11140	CDC37	L
1147	CHUK	26133	TRPC4AP	L
1147	CHUK	147945	NALP4	L
1149	CIDEA	7704	ZBTB16	S
1152	CKB	1158	CKM	L
1152	CKB	140462	ASB9	R
1152	CKB	387923	C13orf21	R
1153	CIRBP	3276	HRMT1L2	L
1153	CIRBP	7094	TLN1	L
1153	CIRBP	7414	VCL	L

1153	CIRBP	27316	RBMX	R
1154	CISH	2057	EPOR	L
1154	CISH	3560	IL2RB	L
1154	CISH	3563	IL3RA	L
1154	CISH	4087	SMAD2	L
1154	CISH	5618	PRLR	L
1154	CISH	8649	MAP2K1IP1	L
1155	CKAP1	7277	TUBA1	L
1159	CKMT1B	7416	VDAC1	L
1160	CKMT2	9094	UNC119	S
1160	CKMT2	55791	C1orf103	S
1160	CKMT2	56944	OLFML3	S
1161	ERCC8	27089	QP-C	S
1163	CKS1B	6502	SKP2	L
1164	CKS2	1915	EEF1A1	S
1164	CKS2	9094	UNC119	S
1164	CKS2	81628	TSC22D4	R
1173	AP2M1	1493	CTLA4	L
1173	AP2M1	1601	DAB2	L
1173	AP2M1	1856	DVL2	R
1173	AP2M1	2580	GAK	L
1173	AP2M1	3916	LAMP1	L
1173	AP2M1	4063	LY9	L
1173	AP2M1	5045	FURIN	L
1173	AP2M1	9513	FXR2	R
1173	AP2M1	9779	TBC1D5	R
1173	AP2M1	10320	ZNFN1A1	R
1173	AP2M1	10900	RPIP8	R
1173	AP2M1	10928	RALBP1	L
1173	AP2M1	27156	RTDR1	R
1173	AP2M1	29079	MED4	R
1173	AP2M1	30846	EHD2	L
1173	AP2M1	127557	ZBTB8	R
1173	AP2M1	151871	DPPA2	R
1174	AP1S1	8906	AP1G2	L
1174	AP1S1	10053	AP1M2	L
1174	AP1S1	23431	AP4E1	L
1176	AP3S1	3667	IRS1	L
1176	AP3S1	8120	AP3B2	L
1176	AP3S1	10239	AP3S2	L
1179	CLCA1	3779	KCNMB1	L
1182	CLCN3	5174	PDZK1	L
1182	CLCN3	9368	SLC9A3R1	L
1182	CLCN3	57120	GOPC	L
1191	CLU	2547	XRCC6	L
1191	CLU	3952	LEP	L
1191	CLU	3953	LEPR	L
1191	CLU	4036	LRP2	L
1191	CLU	5444	PON1	L
1191	CLU	7046	TGFBR1	L
1191	CLU	7048	TGFBR2	L
1191	CLU	7436	VLDLR	L
1191	CLU	7804	LRP8	L
1191	CLU	64386	MMP25	L
1192	CLIC1	6399	TRAPPC2	L
1192	CLIC1	10142	AKAP9	L
1192	CLIC1	27257	LSM1	L
1192	CLIC1	286262	C9orf75	L
1193	CLIC2	6399	TRAPPC2	L
1195	CLK1	4155	MBP	L
1195	CLK1	6426	SFRS1	L
1195	CLK1	6431	SFRS6	L
1195	CLK1	9128	PRPF4	L
1195	CLK1	9360	PPIG	L
1195	CLK1	51280	GOLPH2	S
1195	CLK1	59286	UBL5	L
1196	CLK2	1198	CLK3	R

1198	CLK3	57035	C1orf63	R
1207	CLNS1A	2035	EPB41	L
1207	CLNS1A	13682	(null)	S
1208	CLPS	5406	PNLIP	L
1208	CLPS	8513	LIPF	L
1211	CLTA	1213	CLTC	L
1211	CLTA	3092	HIP1	L
1211	CLTA	3312	HSPA8	L
1211	CLTA	9026	HIP1R	L
1212	CLTB	1213	CLTC	L
1212	CLTB	3092	HIP1	L
1212	CLTB	9026	HIP1R	L
1212	CLTB	10084	PQBP1	S
1213	CLTC	2580	GAK	L
1213	CLTC	3092	HIP1	L
1213	CLTC	3815	KIT	L
1213	CLTC	4294	MAP3K10	L
1213	CLTC	7414	VCL	L
1213	CLTC	8120	AP3B2	L
1213	CLTC	8546	AP3B1	L
1213	CLTC	9026	HIP1R	L
1213	CLTC	9146	HGS	L
1213	CLTC	9685	ENTH	L
1213	CLTC	10043	TOM1	L
1213	CLTC	26119	LDLRAP1	L
1213	CLTC	29924	EPN1	L
1213	CLTC	51566	ARMCX3	S
1213	CLTC	80007	C10orf88	S
1213	CLTC	83988	NCALD	L
1230	CCR1	6348	CCL3	L
1230	CCR1	6349	CCL3L1	L
1230	CCR1	6352	CCL5	L
1230	CCR1	6354	CCL7	L
1230	CCR1	6355	CCL8	L
1230	CCR1	6358	CCL14	L
1230	CCR1	6359	CCL15	L
1230	CCR1	6360	CCL16	L
1230	CCR1	6368	CCL23	L
1230	CCR1	9630	GNA14	L
1231	CCR2	1234	CCR5	L
1231	CCR2	3717	JAK2	L
1231	CCR2	6347	CCL2	L
1231	CCR2	6354	CCL7	L
1231	CCR2	6355	CCL8	L
1231	CCR2	6356	CCL11	L
1231	CCR2	6357	CCL13	L
1231	CCR2	6360	CCL16	L
1232	CCR3	2268	FGR	L
1232	CCR3	3055	HCK	L
1232	CCR3	6349	CCL3L1	L
1232	CCR3	6352	CCL5	L
1232	CCR3	6354	CCL7	L
1232	CCR3	6355	CCL8	L
1232	CCR3	6356	CCL11	L
1232	CCR3	6357	CCL13	L
1232	CCR3	6358	CCL14	L
1232	CCR3	6359	CCL15	L
1232	CCR3	6369	CCL24	L
1232	CCR3	10344	CCL26	L
1232	CCR3	56477	CCL28	L
1233	CCR4	6348	CCL3	L
1233	CCR4	6352	CCL5	L
1233	CCR4	6361	CCL17	L
1233	CCR4	6367	CCL22	L
1234	CCR5	2185	PTK2B	L
1234	CCR5	3717	JAK2	L
1234	CCR5	3932	LCK	L

1234	CCR5	5747	PTK2	L
1234	CCR5	6347	CCL2	L
1234	CCR5	6348	CCL3	L
1234	CCR5	6349	CCL3L1	L
1234	CCR5	6351	CCL4	L
1234	CCR5	6352	CCL5	L
1234	CCR5	6354	CCL7	L
1234	CCR5	6355	CCL8	L
1234	CCR5	6356	CCL11	L
1234	CCR5	6357	CCL13	L
1234	CCR5	6358	CCL14	L
1234	CCR5	6360	CCL16	L
1234	CCR5	7294	TXK	L
1234	CCR5	7852	CXCR4	L
1235	CCR6	1673	DEFB4	L
1235	CCR6	6364	CCL20	L
1235	CCR6	55894	DEFB103A	L
1236	CCR7	6363	CCL19	L
1236	CCR7	6366	CCL21	L
1237	CCR8	6346	CCL1	L
1237	CCR8	6351	CCL4	L
1237	CCR8	6360	CCL16	L
1237	CCR8	6361	CCL17	L
1238	CCBP2	6347	CCL2	L
1238	CCBP2	6348	CCL3	L
1238	CCBP2	6351	CCL4	L
1238	CCBP2	6352	CCL5	L
1238	CCBP2	6354	CCL7	L
1238	CCBP2	6355	CCL8	L
1238	CCBP2	6356	CCL11	L
1238	CCBP2	6357	CCL13	L
1238	CCBP2	6358	CCL14	L
1238	CCBP2	6363	CCL19	L
1238	CCBP2	6366	CCL21	L
1238	CCBP2	6370	CCL25	L
1238	CCBP2	10850	CCL27	L
1238	CCBP2	56477	CCL28	L
1241	LTB4R	2769	GNA15	L
1244	ABCC2	5174	PDZK1	L
1244	ABCC2	5962	RDX	L
1244	ABCC2	9368	SLC9A3R1	L
1258	CNGB1	5961	RDS	L
1259	CNGA1	9187	SLC24A1	L
1260	CNGA2	9368	SLC9A3R1	L
1263	PLK3	7157	TP53	L
1263	PLK3	9319	TRIP13	R
1263	PLK3	10519	CIB1	L
1263	PLK3	11200	CHEK2	L
1264	CNN1	5581	PRKCE	L
1264	CNN1	7170	TPM3	L
1267	CNP	7846	TUBA3	L
1268	CNR1	2769	GNA15	L
1268	CNR1	2770	GNAI1	L
1268	CNR1	2771	GNAI2	L
1268	CNR1	2773	GNAI3	L
1268	CNR1	3061	HCRTR1	L
1269	CNR2	2769	GNA15	L
1270	CNTF	1271	CNTFR	L
1270	CNTF	3570	IL6R	L
1270	CNTF	3572	IL6ST	L
1270	CNTF	3977	LIFR	L
1271	CNTFR	3572	IL6ST	L
1271	CNTFR	3977	LIFR	L
1271	CNTFR	5359	PLSCR1	R
1271	CNTFR	9244	CRLF1	L
1271	CNTFR	10513	APPBP2	R
1271	CNTFR	23529	CLCF1	L

1271	CNTFR	83755	KRTAP4-12	R
1272	CNTN1	2534	FYN	L
1272	CNTN1	3371	TNC	L
1272	CNTN1	3897	L1CAM	L
1272	CNTN1	4851	NOTCH1	L
1272	CNTN1	4853	NOTCH2	L
1272	CNTN1	5787	PTPRB	L
1272	CNTN1	6338	SCNN1B	L
1272	CNTN1	6900	CNTN2	L
1272	CNTN1	7143	TNR	L
1277	COL1A1	1294	COL7A1	L
1277	COL1A1	1634	DCN	L
1277	COL1A1	2252	FGF7	L
1277	COL1A1	2335	FN1	L
1277	COL1A1	3486	IGFBP3	L
1277	COL1A1	3673	ITGA2	L
1277	COL1A1	3678	ITGA5	L
1277	COL1A1	4147	MATN2	L
1277	COL1A1	4313	MMP2	L
1277	COL1A1	4318	MMP9	L
1277	COL1A1	4811	NID1	L
1277	COL1A1	4921	DDR2	L
1277	COL1A1	5034	P4HB	L
1277	COL1A1	5058	PAK1	L
1277	COL1A1	5155	PDGFB	L
1277	COL1A1	5549	PRELP	L
1277	COL1A1	5829	PXN	L
1277	COL1A1	6678	SPARC	L
1277	COL1A1	7045	TGFBI	L
1277	COL1A1	7057	THBS1	L
1277	COL1A1	7295	TXN	L
1277	COL1A1	7450	VWF	L
1277	COL1A1	22918	C1QR1	L
1277	COL1A1	164656	TMPRSS6	L
1278	COL1A2	1634	DCN	L
1278	COL1A2	2335	FN1	L
1278	COL1A2	3673	ITGA2	L
1278	COL1A2	3674	ITGA2B	L
1278	COL1A2	4060	LUM	L
1278	COL1A2	4318	MMP9	L
1278	COL1A2	5034	P4HB	L
1278	COL1A2	5829	PXN	L
1278	COL1A2	6678	SPARC	L
1278	COL1A2	7045	TGFBI	L
1278	COL1A2	7450	VWF	L
1278	COL1A2	22918	C1QR1	L
1278	COL1A2	50509	COL5A3	L
1280	COL2A1	1291	COL6A1	L
1280	COL2A1	1298	COL9A2	L
1280	COL2A1	1299	COL9A3	L
1280	COL2A1	1311	COMP	L
1280	COL2A1	1634	DCN	L
1280	COL2A1	2252	FGF7	L
1280	COL2A1	2335	FN1	L
1280	COL2A1	3674	ITGA2B	L
1280	COL2A1	4099	MAG	L
1280	COL2A1	4146	MATN1	L
1280	COL2A1	5310	PKD1	L
1280	COL2A1	5549	PRELP	L
1280	COL2A1	6678	SPARC	L
1280	COL2A1	7040	TGFB1	L
1280	COL2A1	7045	TGFBI	L
1280	COL2A1	7057	THBS1	L
1280	COL2A1	8797	TNFRSF10A	L
1280	COL2A1	84171	LOXL4	L
1281	COL3A1	2252	FGF7	L
1281	COL3A1	4099	MAG	L

1281	COL3A1	4921	DDR2	L
1281	COL3A1	6678	SPARC	L
1281	COL3A1	7057	THBS1	L
1282	COL4A1	1284	COL4A2	L
1282	COL4A1	1294	COL7A1	L
1282	COL4A1	1634	DCN	L
1282	COL4A1	2199	FBLN2	L
1282	COL4A1	3026	HABP2	L
1282	COL4A1	4147	MATN2	L
1282	COL4A1	4318	MMP9	L
1282	COL4A1	5008	OSM	L
1282	COL4A1	5270	SERPINE2	L
1282	COL4A1	5829	PXN	L
1282	COL4A1	6288	SAA1	L
1282	COL4A1	7045	TGFBI	L
1282	COL4A1	22918	C1QR1	L
1284	COL4A2	1634	DCN	L
1284	COL4A2	2199	FBLN2	L
1284	COL4A2	3026	HABP2	L
1284	COL4A2	4147	MATN2	L
1284	COL4A2	4318	MMP9	L
1284	COL4A2	5008	OSM	L
1284	COL4A2	5270	SERPINE2	L
1284	COL4A2	6288	SAA1	L
1284	COL4A2	6498	SKIL	L
1284	COL4A2	7045	TGFBI	L
1284	COL4A2	22918	C1QR1	L
1284	COL4A2	55603	FAM46A	L
1284	COL4A2	55729	ATF7IP	L
1284	COL4A2	118429	ANTXR2	L
1285	COL4A3	1634	DCN	L
1285	COL4A3	2199	FBLN2	L
1285	COL4A3	2335	FN1	L
1285	COL4A3	3026	HABP2	L
1285	COL4A3	4147	MATN2	L
1285	COL4A3	4237	MFAP2	L
1285	COL4A3	4318	MMP9	L
1285	COL4A3	5008	OSM	L
1285	COL4A3	5270	SERPINE2	L
1285	COL4A3	6288	SAA1	L
1285	COL4A3	7045	TGFBI	L
1285	COL4A3	7399	USH2A	L
1285	COL4A3	10087	COL4A3BP	L
1285	COL4A3	22918	C1QR1	L
1285	COL4A3	118429	ANTXR2	L
1286	COL4A4	1634	DCN	L
1286	COL4A4	2199	FBLN2	L
1286	COL4A4	2335	FN1	L
1286	COL4A4	3026	HABP2	L
1286	COL4A4	4147	MATN2	L
1286	COL4A4	4318	MMP9	L
1286	COL4A4	5008	OSM	L
1286	COL4A4	5270	SERPINE2	L
1286	COL4A4	6288	SAA1	L
1286	COL4A4	7045	TGFBI	L
1286	COL4A4	22918	C1QR1	L
1286	COL4A4	118429	ANTXR2	L
1287	COL4A5	1634	DCN	L
1287	COL4A5	2199	FBLN2	L
1287	COL4A5	2335	FN1	L
1287	COL4A5	3026	HABP2	L
1287	COL4A5	4147	MATN2	L
1287	COL4A5	4318	MMP9	L
1287	COL4A5	5008	OSM	L
1287	COL4A5	5270	SERPINE2	L
1287	COL4A5	9921	RNF10	S
1287	COL4A5	22918	C1QR1	L

1288	COL4A6	1634	DCN	L
1288	COL4A6	2199	FBLN2	L
1288	COL4A6	2335	FN1	L
1288	COL4A6	4147	MATN2	L
1288	COL4A6	4318	MMP9	L
1288	COL4A6	5008	OSM	L
1288	COL4A6	5270	SERPINE2	L
1288	COL4A6	22918	C1QR1	L
1289	COL5A1	3959	LGALS3BP	L
1289	COL5A1	5829	PXN	L
1289	COL5A1	7057	THBS1	L
1289	COL5A1	9672	SDC3	L
1289	COL5A1	50509	COL5A3	L
1290	COL5A2	5829	PXN	L
1290	COL5A2	7094	TLN1	L
1291	COL6A1	3912	LAMB1	L
1291	COL6A1	3959	LGALS3BP	L
1291	COL6A1	5829	PXN	L
1292	COL6A2	5825	ABCD3	L
1292	COL6A2	5829	PXN	L
1294	COL7A1	2335	FN1	L
1294	COL7A1	3312	HSPA8	S
1294	COL7A1	3911	LAMA5	L
1294	COL7A1	3914	LAMB3	L
1294	COL7A1	3918	LAMC2	L
1294	COL7A1	4313	MMP2	L
1294	COL7A1	7057	THBS1	L
1294	COL7A1	25827	FBXL2	S
1294	COL7A1	29066	ZC3H7A	S
1294	COL7A1	92799	SHKBP1	S
1295	COL8A1	1296	COL8A2	L
1295	COL8A1	3672	ITGA1	L
1295	COL8A1	3673	ITGA2	L
1295	COL8A1	5829	PXN	L
1295	COL8A1	7414	VCL	L
1295	COL8A1	30008	EFEMP2	R
1295	COL8A1	59349	KLHL12	R
1295	COL8A1	83755	KRTAP4-12	R
1297	COL9A1	4099	MAG	L
1298	COL9A2	4099	MAG	L
1298	COL9A2	9001	HAP1	S
1298	COL9A2	9638	FEZ1	S
1298	COL9A2	84273	C4orf14	S
1299	COL9A3	4099	MAG	L
1300	COL10A1	5034	P4HB	L
1303	COL12A1	5829	PXN	L
1303	COL12A1	7094	TLN1	L
1305	COL13A1	2335	FN1	L
1305	COL13A1	3339	HSPG2	L
1305	COL13A1	3672	ITGA1	L
1305	COL13A1	4811	NID1	L
1305	COL13A1	6678	SPARC	L
1305	COL13A1	22795	NID2	L
1308	COL17A1	1500	CTNND1	L
1308	COL17A1	3655	ITGA6	L
1308	COL17A1	3691	ITGB4	L
1308	COL17A1	3875	KRT18	L
1308	COL17A1	3898	LAD1	L
1308	COL17A1	5493	PPL	L
1312	COMT	1636	ACE	L
1312	COMT	9319	TRIP13	R
1312	COMT	9516	LITAF	S
1312	COMT	22803	XRN2	L
1314	COPA	5159	PDGFRB	L
1314	COPA	8402	SLC25A11	S
1314	COPA	9482	STX8	L
1314	COPA	11316	COPE	S

1314	COPA	55738	ARFGAP1	L
1315	COPB	3135	HLA-G	L
1315	COPB	3777	KCNK3	L
1315	COPB	4591	TRIM37	R
1315	COPB	5159	PDGFRB	L
1315	COPB	5581	PRKCE	L
1315	COPB	5997	RGS2	L
1315	COPB	5999	RGS4	L
1315	COPB	6892	TAPBP	L
1315	COPB	8615	VDP	L
1315	COPB	8728	ADAM19	L
1315	COPB	10945	KDELR1	L
1315	COPB	22820	COPG	L
1315	COPB	23433	RHOQ	L
1315	COPB	26958	COPG2	L
1316	KLF6	1952	CELSR2	S
1316	KLF6	2975	GTF3C1	S
1316	KLF6	6667	SP1	L
1316	KLF6	9314	KLF4	L
1316	KLF6	10919	EHMT2	R
1316	KLF6	23649	POLA2	S
1316	KLF6	55937	APOM	S
1316	KLF6	56902	LOC56902	S
1325	CORT	2693	GHSR	L
1325	CORT	6751	SSTR1	L
1325	CORT	6752	SSTR2	L
1325	CORT	6753	SSTR3	L
1325	CORT	6754	SSTR4	L
1325	CORT	6755	SSTR5	L
1325	CORT	117194	MRGPRX2	L
1326	MAP3K8	4790	NFKB1	L
1326	MAP3K8	6416	MAP2K4	L
1326	MAP3K8	7186	TRAF2	L
1326	MAP3K8	9020	MAP3K14	L
1345	COX6C	5764	PTN	S
1356	CP	2512	FTL	L
1356	CP	2520	GAST	L
1356	CP	4057	LTF	L
1356	CP	5624	PROC	L
1361	CPB2	5340	PLG	L
1361	CPB2	5858	PZP	L
1361	CPB2	7056	THBD	L
1363	CPE	2641	GCG	L
1363	CPE	2975	GTF3C1	S
1363	CPE	4922	NTS	L
1363	CPE	5367	PMCH	L
1363	CPE	6092	ROBO2	S
1363	CPE	6117	RPA1	S
1363	CPE	10813	UTP14A	S
1363	CPE	23649	POLA2	S
1363	CPE	26073	POLDIP2	S
1363	CPE	51003	MED31	S
1363	CPE	55791	C1orf103	S
1364	CLDN4	7082	TJP1	L
1365	CLDN3	7082	TJP1	L
1365	CLDN3	7122	CLDN5	L
1365	CLDN3	9076	CLDN1	L
1366	CLDN7	7082	TJP1	L
1366	CLDN7	84528	PEPP-2	R
1371	CPOX	6622	SNCA	L
1378	CR1	1380	CR2	L
1378	CR1	1604	DAF	L
1378	CR1	2526	FUT4	L
1380	CR2	2208	FCER2	L
1380	CR2	3192	HNRPU	L
1380	CR2	3439	IFNA1	L
1380	CR2	7157	TP53	L

1380	CR2	8519	IFITM1	L
1381	CRABP1	4356	MPP3	S
1385	CREB1	1387	CREBBP	L
1385	CREB1	1390	CREM	L
1385	CREB1	1432	MAPK14	L
1385	CREB1	2736	GLI2	L
1385	CREB1	2908	NR3C1	L
1385	CREB1	2963	GTF2F2	L
1385	CREB1	3651	IPF1	L
1385	CREB1	5861	RAB1A	S
1385	CREB1	7431	VIM	S
1385	CREB1	7528	YY1	L
1385	CREB1	8721	EDF1	L
1385	CREB1	8986	RPS6KA4	L
1385	CREB1	9400	RECQL5	S
1385	CREB1	9457	FHL5	L
1385	CREB1	10524	HTATIP	L
1385	CREB1	11161	C14orf1	S
1385	CREB1	30818	CSEN	L
1385	CREB1	79803	HPS6	S
1386	ATF2	1432	MAPK14	L
1386	ATF2	1457	CSNK2A1	L
1386	ATF2	1459	CSNK2A2	L
1386	ATF2	1649	DDIT3	L
1386	ATF2	2353	FOS	L
1386	ATF2	2354	FOSB	L
1386	ATF2	2355	FOSL2	L
1386	ATF2	2963	GTF2F2	L
1386	ATF2	3159	HMGA1	L
1386	ATF2	3725	JUN	L
1386	ATF2	3726	JUNB	L
1386	ATF2	3727	JUND	L
1386	ATF2	4088	SMAD3	L
1386	ATF2	4089	SMAD4	L
1386	ATF2	5599	MAPK8	L
1386	ATF2	5603	MAPK13	L
1386	ATF2	5925	RB1	L
1386	ATF2	7329	UBE2I	L
1386	ATF2	7528	YY1	L
1386	ATF2	8061	FOSL1	L
1386	ATF2	8550	MAPKAPK5	L
1386	ATF2	8721	EDF1	L
1386	ATF2	9586	CREB5	L
1386	ATF2	10538	BATF	L
1386	ATF2	11016	ATF7	L
1386	ATF2	55509	SNFT	L
1387	CREBBP	1445	CSK	L
1387	CREBBP	1457	CSNK2A1	L
1387	CREBBP	1459	CSNK2A2	L
1387	CREBBP	1523	CUTL1	L
1387	CREBBP	1655	DDX5	L
1387	CREBBP	1879	EBF	L
1387	CREBBP	1958	EGR1	L
1387	CREBBP	2122	EVI1	L
1387	CREBBP	2130	EWSR1	L
1387	CREBBP	2308	FOXO1A	L
1387	CREBBP	2908	NR3C1	L
1387	CREBBP	3064	HD	L
1387	CREBBP	3091	HIF1A	L
1387	CREBBP	3172	HNF4A	L
1387	CREBBP	3175	ONECUT1	L
1387	CREBBP	3217	HOXB7	L
1387	CREBBP	3297	HSF1	L
1387	CREBBP	3661	IRF3	L
1387	CREBBP	3725	JUN	L
1387	CREBBP	4087	SMAD2	L
1387	CREBBP	4094	MAF	L

1387	CREBBP	4097	MAFG	L
1387	CREBBP	4255	MGMT	L
1387	CREBBP	4297	MLL	L
1387	CREBBP	4303	MLLT7	L
1387	CREBBP	4435	CITED1	L
1387	CREBBP	4487	MSX1	L
1387	CREBBP	4602	MYB	L
1387	CREBBP	4605	MYBL2	L
1387	CREBBP	4654	MYOD1	L
1387	CREBBP	4762	NEUROG1	L
1387	CREBBP	4773	NFATC2	L
1387	CREBBP	4776	NFATC4	L
1387	CREBBP	4780	NFE2L2	L
1387	CREBBP	4928	NUP98	L
1387	CREBBP	5371	PML	L
1387	CREBBP	5430	POLR2A	L
1387	CREBBP	5629	PROX1	L
1387	CREBBP	5757	PTMA	L
1387	CREBBP	5928	RBBP4	L
1387	CREBBP	5970	RELA	L
1387	CREBBP	6195	RPS6KA1	L
1387	CREBBP	6197	RPS6KA3	L
1387	CREBBP	6721	SREBF2	L
1387	CREBBP	6772	STAT1	L
1387	CREBBP	6773	STAT2	L
1387	CREBBP	6778	STAT6	L
1387	CREBBP	6927	TCF1	L
1387	CREBBP	6929	TCF3	L
1387	CREBBP	6996	TDG	L
1387	CREBBP	7157	TP53	L
1387	CREBBP	7533	YWHAH	L
1387	CREBBP	8092	CART1	L
1387	CREBBP	8202	NCOA3	L
1387	CREBBP	8648	NCOA1	L
1387	CREBBP	8850	PCAF	L
1387	CREBBP	8932	MBD2	L
1387	CREBBP	9314	KLF4	L
1387	CREBBP	9325	TRIP4	L
1387	CREBBP	9794	MAML1	L
1387	CREBBP	10370	CITED2	L
1387	CREBBP	10657	KHDRBS1	L
1387	CREBBP	26039	SS18L1	L
1387	CREBBP	27043	PELP1	L
1387	CREBBP	28996	HIPK2	L
1387	CREBBP	55728	N4BP2	L
1387	CREBBP	55809	TRERF1	L
1387	CREBBP	79753	SNIP1	L
1388	CREBL1	4802	NFYC	L
1388	CREBL1	8720	MBTPS1	L
1388	CREBL1	51360	MBTPS2	L
1390	CREM	3725	JUN	L
1390	CREM	4783	NFIL3	L
1390	CREM	6688	SPI1	L
1390	CREM	6874	TAF4	L
1390	CREM	6908	TBP	L
1390	CREM	9457	FHL5	L
1390	CREM	30818	CSEN	L
1390	CREM	84699	CREB3L3	L
1390	CREM	90993	CREB3L1	L
1392	CRH	1394	CRHR1	L
1392	CRH	1395	CRHR2	L
1393	CRHBP	7349	UCN	L
1394	CRHR1	2770	GNAI1	L
1394	CRHR1	2775	GNAO1	L
1394	CRHR1	2776	GNAQ	L
1394	CRHR1	2778	GNAS	L
1395	CRHR2	7349	UCN	L

1396	CRIP1	6457	SH3GL3	S
1396	CRIP1	9001	HAP1	S
1396	CRIP1	9737	GPRASP1	S
1397	CRIP2	6722	SRF	L
1398	CRK	1399	CRKL	L
1398	CRK	1795	DOCK3	L
1398	CRK	2042	EPHA3	L
1398	CRK	2049	EPHB3	L
1398	CRK	2060	EPS15	L
1398	CRK	2185	PTK2B	L
1398	CRK	2549	GAB1	L
1398	CRK	5156	PDGFRA	L
1398	CRK	5159	PDGFRB	L
1398	CRK	5359	PLSCR1	R
1398	CRK	5599	MAPK8	L
1398	CRK	5706	PSMC6	R
1398	CRK	5829	PXN	L
1398	CRK	6461	SHB	L
1398	CRK	6853	SYN1	L
1398	CRK	7465	WEE1	L
1398	CRK	7514	XPO1	L
1398	CRK	7535	ZAP70	L
1398	CRK	8471	IRS4	L
1398	CRK	11183	MAP4K5	L
1398	CRK	11184	MAP4K1	L
1398	CRK	23616	SH3BP1	L
1398	CRK	23624	CBLC	L
1398	CRK	55211	DPPA4	R
1398	CRK	80725	SNIP	L
1399	CRKL	1794	DOCK2	L
1399	CRKL	1796	DOK1	L
1399	CRKL	2057	EPOR	L
1399	CRKL	2209	FCGR1A	L
1399	CRKL	2549	GAB1	L
1399	CRKL	2885	GRB2	L
1399	CRKL	3454	IFNAR1	L
1399	CRKL	3815	KIT	L
1399	CRKL	5156	PDGFRA	L
1399	CRKL	5295	PIK3R1	L
1399	CRKL	5296	PIK3R2	L
1399	CRKL	5829	PXN	L
1399	CRKL	6464	SHC1	L
1399	CRKL	6654	SOS1	L
1399	CRKL	6776	STAT5A	L
1399	CRKL	6850	SYK	L
1399	CRKL	7041	TGFB1I1	L
1399	CRKL	7297	TYK2	L
1399	CRKL	7454	WAS	L
1399	CRKL	8471	IRS4	L
1399	CRKL	9564	BCAR1	L
1399	CRKL	11183	MAP4K5	L
1399	CRKL	11184	MAP4K1	L
1399	CRKL	29760	BLNK	L
1399	CRKL	51466	EVL	L
1400	CRMP1	1808	DPYSL2	L
1400	CRMP1	1936	EEF1D	S
1400	CRMP1	2495	FTH1	S
1400	CRMP1	3146	HMGB1	S
1400	CRMP1	3187	HNRPH1	S
1400	CRMP1	3189	HNRPH3	S
1400	CRMP1	3336	HSPE1	S
1400	CRMP1	4729	NDUFV2	S
1400	CRMP1	4931	NVL	S
1400	CRMP1	5050	PAFAH1B3	S
1400	CRMP1	5216	PFN1	S
1400	CRMP1	5272	SERPINB9	S
1400	CRMP1	5320	PLA2G2A	S

1400	CRMP1	5511	PPP1R8	S
1400	CRMP1	5717	PSMD11	S
1400	CRMP1	5863	RGL2	S
1400	CRMP1	6093	ROCK1	L
1400	CRMP1	6118	RPA2	S
1400	CRMP1	6183	MRPS12	S
1400	CRMP1	6303	SAT	S
1400	CRMP1	6362	CCL18	S
1400	CRMP1	6637	SNRPG	S
1400	CRMP1	7083	TK1	S
1400	CRMP1	7320	UBE2B	S
1400	CRMP1	7572	ZNF24	S
1400	CRMP1	8087	FXR1	S
1400	CRMP1	8312	AXIN1	S
1400	CRMP1	8880	FUBP1	S
1400	CRMP1	8886	DDX18	S
1400	CRMP1	8888	MCM3AP	S
1400	CRMP1	8894	EIF2S2	S
1400	CRMP1	9319	TRIP13	S
1400	CRMP1	10342	TFG	S
1400	CRMP1	10551	AGR2	S
1400	CRMP1	10574	CCT7	S
1400	CRMP1	11100	HNRPUL1	S
1400	CRMP1	11243	PMF1	S
1400	CRMP1	22929	SEPHS1	S
1400	CRMP1	25843	PREI3	S
1400	CRMP1	26151	NAT9	S
1400	CRMP1	27252	KLHL20	S
1400	CRMP1	29903	HSU79303	S
1400	CRMP1	29924	EPN1	S
1400	CRMP1	54622	ARFRP2	S
1400	CRMP1	55227	LRRC1	S
1400	CRMP1	55643	BTBD2	S
1400	CRMP1	55755	CDK5RAP2	S
1400	CRMP1	57142	RTN4	S
1400	CRMP1	57819	LSM2	S
1400	CRMP1	79756	(null)	S
1400	CRMP1	80279	CDK5RAP3	S
1400	CRMP1	90865	C9orf26	S
1400	CRMP1	307255	(null)	S
1401	CRP	2209	FCGR1A	L
1401	CRP	2212	FCGR2A	L
1401	CRP	2213	FCGR2B	L
1401	CRP	2335	FN1	L
1401	CRP	3075	CFH	L
1401	CRP	6625	SNRP70	L
1404	HAPLN1	1462	CSPG2	L
1406	CRX	4188	MDFI	R
1406	CRX	4901	NRL	L
1406	CRX	6314	ATXN7	L
1406	CRX	130951	LOC130951	R
1407	CRY1	1454	CSNK1E	L
1407	CRY1	4188	MDFI	R
1407	CRY1	5187	PER1	L
1407	CRY1	5359	PLSCR1	R
1407	CRY1	7186	TRAF2	R
1407	CRY1	8863	PER3	L
1407	CRY1	8864	PER2	L
1407	CRY1	8914	TIMELESS	L
1407	CRY1	83755	KRTAP4-12	R
1408	CRY2	5187	PER1	L
1408	CRY2	5536	PPP5C	L
1408	CRY2	8864	PER2	L
1409	CRYAA	1410	CRYAB	L
1409	CRYAA	1415	CRYBB2	L
1409	CRYAA	1420	CRYGC	L
1409	CRYAA	1429	CRYZ	L

1409	CRYAA	1431	CS	L
1409	CRYAA	3315	HSPB1	L
1409	CRYAA	3906	LALBA	L
1409	CRYAA	4284	MIP	L
1410	CRYAB	1415	CRYBB2	L
1410	CRYAB	1420	CRYGC	L
1410	CRYAB	1431	CS	L
1410	CRYAB	3315	HSPB1	L
1410	CRYAB	5684	PSMA3	L
1412	CRYBA2	57658	CALCOCO1	R
1414	CRYBB1	6833	ABCC8	L
1415	CRYBB2	1420	CRYGC	L
1415	CRYBB2	3315	HSPB1	L
1420	CRYGC	3315	HSPB1	L
1431	CS	4191	MDH2	L
1431	CS	8655	DNCL1	L
1432	MAPK14	1459	CSNK2A2	L
1432	MAPK14	1649	DDIT3	L
1432	MAPK14	1843	DUSP1	L
1432	MAPK14	1844	DUSP2	L
1432	MAPK14	1846	DUSP4	L
1432	MAPK14	2002	ELK1	L
1432	MAPK14	2316	FLNA	L
1432	MAPK14	2764	GMFB	L
1432	MAPK14	2885	GRB2	L
1432	MAPK14	3875	KRT18	L
1432	MAPK14	4092	SMAD7	L
1432	MAPK14	4141	MARS	L
1432	MAPK14	4205	MEF2A	L
1432	MAPK14	4208	MEF2C	L
1432	MAPK14	5371	PML	L
1432	MAPK14	5594	MAPK1	L
1432	MAPK14	5595	MAPK3	L
1432	MAPK14	5604	MAP2K1	L
1432	MAPK14	5606	MAP2K3	L
1432	MAPK14	5608	MAP2K6	L
1432	MAPK14	5778	PTPN7	L
1432	MAPK14	6416	MAP2K4	L
1432	MAPK14	7867	MAPKAPK3	L
1432	MAPK14	8569	MKNK1	L
1432	MAPK14	8986	RPS6KA4	L
1432	MAPK14	9043	SPAG9	L
1432	MAPK14	9149	DYRK1B	L
1432	MAPK14	9255	SCYE1	L
1432	MAPK14	9261	MAPKAPK2	L
1432	MAPK14	10454	MAP3K7IP1	L
1432	MAPK14	23770	FKBP8	S
1432	MAPK14	27347	STK39	L
1432	MAPK14	27429	HTRA2	L
1432	MAPK14	80824	DUSP16	L
1434	CSE1L	3191	HNRPL	S
1434	CSE1L	5536	PPP5C	S
1434	CSE1L	5901	RAN	L
1434	CSE1L	6146	RPL22	S
1434	CSE1L	23633	KPNA6	L
1434	CSE1L	80021	TMEM62	S
1435	CSF1	1436	CSF1R	L
1435	CSF1	7124	TNF	L
1435	CSF1	8651	SOCS1	L
1435	CSF1	139716	GAB3	L
1436	CSF1R	2534	FYN	L
1436	CSF1R	2885	GRB2	L
1436	CSF1R	4067	LYN	L
1436	CSF1R	5295	PIK3R1	L
1436	CSF1R	5296	PIK3R2	L
1436	CSF1R	5921	RASA1	L
1436	CSF1R	7525	YES1	L

1436	CSF1R	8651	SOCS1	L
1436	CSF1R	9021	SOCS3	L
1436	CSF1R	9402	GRAP2	L
1437	CSF2	1438	CSF2RA	L
1437	CSF2	1439	CSF2RB	L
1437	CSF2	1441	CSF3R	L
1437	CSF2	4254	KITLG	L
1437	CSF2	5553	PRG2	L
1437	CSF2	6383	SDC2	L
1438	CSF2RA	1439	CSF2RB	L
1438	CSF2RA	5295	PIK3R1	L
1439	CSF2RB	2057	EPOR	L
1439	CSF2RB	3562	IL3	L
1439	CSF2RB	3568	IL5RA	L
1439	CSF2RB	4067	LYN	L
1439	CSF2RB	4085	MAD2L1	L
1439	CSF2RB	5777	PTPN6	L
1439	CSF2RB	5781	PTPN11	L
1439	CSF2RB	6464	SHC1	L
1439	CSF2RB	7534	YWHAZ	L
1439	CSF2RB	10399	GNB2L1	L
1440	CSF3	1441	CSF3R	L
1441	CSF3R	2885	GRB2	L
1441	CSF3R	3055	HCK	L
1441	CSF3R	3716	JAK1	L
1441	CSF3R	3717	JAK2	L
1441	CSF3R	4067	LYN	L
1441	CSF3R	5781	PTPN11	L
1441	CSF3R	6464	SHC1	L
1441	CSF3R	6850	SYK	L
1442	CSH1	4087	SMAD2	L
1442	CSH1	4089	SMAD4	L
1442	CSH1	4093	SMAD9	L
1442	CSH1	5782	PTPN12	L
1443	CSH2	4088	SMAD3	L
1443	CSH2	5430	POLR2A	L
1444	CSHL1	84441	MAML2	L
1445	CSK	1601	DAB2	L
1445	CSK	2534	FYN	L
1445	CSK	3190	HNRPK	L
1445	CSK	3480	IGF1R	L
1445	CSK	3643	INSR	L
1445	CSK	5175	PECAM1	L
1445	CSK	5338	PLD2	L
1445	CSK	5747	PTK2	L
1445	CSK	5782	PTPN12	L
1445	CSK	5829	PXN	L
1445	CSK	5921	RASA1	L
1445	CSK	6464	SHC1	L
1445	CSK	6714	SRC	L
1445	CSK	9672	SDC3	L
1445	CSK	26469	PTPN18	L
1445	CSK	27240	SIT1	L
1445	CSK	55824	PAG1	L
1446	CSN1S1	6789	STK4	L
1446	CSN1S1	84630	TTBK1	L
1447	CSN2	1448	CSN3	L
1447	CSN2	1990	ELA1	L
1447	CSN2	4750	NEK1	L
1448	CSN3	1459	CSNK2A2	L
1452	CSNK1A1	3146	HMGB1	L
1452	CSNK1A1	3148	HMGB2	L
1452	CSNK1A1	3838	KPNA2	L
1452	CSNK1A1	5525	PPP2R5A	L
1452	CSNK1A1	7133	TNFRSF1B	L
1452	CSNK1A1	8312	AXIN1	L
1452	CSNK1A1	8546	AP3B1	L

1452	CSNK1A1	11033	CENTA1	L
1453	CSNK1D	1855	DVL1	L
1453	CSNK1D	1857	DVL3	R
1453	CSNK1D	2697	GJA1	L
1453	CSNK1D	5187	PER1	L
1453	CSNK1D	7157	TP53	L
1453	CSNK1D	8863	PER3	L
1453	CSNK1D	10142	AKAP9	L
1453	CSNK1D	55738	ARFGAP1	L
1454	CSNK1E	1855	DVL1	L
1454	CSNK1E	1856	DVL2	R
1454	CSNK1E	5187	PER1	L
1454	CSNK1E	7157	TP53	L
1454	CSNK1E	8312	AXIN1	L
1454	CSNK1E	8863	PER3	L
1454	CSNK1E	10142	AKAP9	L
1454	CSNK1E	22881	ANKRD6	L
1454	CSNK1E	25788	RAD54B	R
1455	CSNK1G2	4690	NCK1	L
1455	CSNK1G2	10087	COL4A3BP	R
1457	CSNK2A1	1460	CSNK2B	L
1457	CSNK2A1	1649	DDIT3	L
1457	CSNK2A1	1855	DVL1	L
1457	CSNK2A1	1857	DVL3	L
1457	CSNK2A1	1936	EEF1D	L
1457	CSNK2A1	2246	FGF1	L
1457	CSNK2A1	2247	FGF2	L
1457	CSNK2A1	2353	FOS	L
1457	CSNK2A1	2668	GDNF	L
1457	CSNK2A1	2972	BRF1	L
1457	CSNK2A1	3066	HDAC2	L
1457	CSNK2A1	3181	HNRPA2B1	L
1457	CSNK2A1	3660	IRF2	L
1457	CSNK2A1	3725	JUN	L
1457	CSNK2A1	4255	MGMT	L
1457	CSNK2A1	4691	NCL	L
1457	CSNK2A1	5048	PAFAH1B1	L
1457	CSNK2A1	5058	PAK1	L
1457	CSNK2A1	5300	PIN1	L
1457	CSNK2A1	5685	PSMA4	L
1457	CSNK2A1	5970	RELA	L
1457	CSNK2A1	6125	RPL5	L
1457	CSNK2A1	6689	SPIB	L
1457	CSNK2A1	7150	TOP1	L
1457	CSNK2A1	7184	TRA1	L
1457	CSNK2A1	7343	UBTF	L
1457	CSNK2A1	8894	EIF2S2	L
1457	CSNK2A1	9158	FIBP	L
1457	CSNK2A1	10661	KLF1	L
1457	CSNK2A1	11244	ZHX1	S
1459	CSNK2A2	1460	CSNK2B	L
1459	CSNK2A2	2246	FGF1	L
1459	CSNK2A2	2247	FGF2	L
1459	CSNK2A2	2353	FOS	L
1459	CSNK2A2	2668	GDNF	L
1459	CSNK2A2	3320	HSPCA	L
1459	CSNK2A2	5058	PAK1	L
1459	CSNK2A2	5300	PIN1	L
1459	CSNK2A2	7184	TRA1	L
1459	CSNK2A2	10661	KLF1	L
1460	CSNK2B	2246	FGF1	L
1460	CSNK2B	4067	LYN	L
1460	CSNK2B	4528	MTIF2	L
1460	CSNK2B	4687	NCF1	L
1460	CSNK2B	5300	PIN1	L
1460	CSNK2B	5590	PRKCZ	L
1460	CSNK2B	6125	RPL5	L

1460	CSNK2B	6470	SHMT1	L
1460	CSNK2B	6472	SHMT2	L
1460	CSNK2B	7155	TOP2B	L
1460	CSNK2B	7157	TP53	L
1460	CSNK2B	8099	CDK2AP1	L
1460	CSNK2B	8894	EIF2S2	L
1460	CSNK2B	8930	MBD4	L
1460	CSNK2B	9158	FIBP	L
1460	CSNK2B	9221	NOLC1	L
1460	CSNK2B	9332	CD163	L
1460	CSNK2B	9616	RNF7	L
1460	CSNK2B	10467	ZNHIT1	L
1460	CSNK2B	11124	FAF1	L
1460	CSNK2B	90480	GADD45GIP1	L
1462	CSPG2	2192	FBLN1	L
1462	CSPG2	2199	FBLN2	L
1462	CSPG2	2200	FBN1	L
1462	CSPG2	3627	CXCL10	L
1462	CSPG2	3676	ITGA4	L
1462	CSPG2	3688	ITGB1	L
1462	CSPG2	5320	PLA2G2A	L
1462	CSPG2	6347	CCL2	L
1462	CSPG2	6352	CCL5	L
1462	CSPG2	6355	CCL8	L
1462	CSPG2	6364	CCL20	L
1462	CSPG2	6366	CCL21	L
1462	CSPG2	6375	XCL1	L
1462	CSPG2	6403	SELP	L
1462	CSPG2	7143	TNR	L
1463	CSPG3	3146	HMGB1	L
1463	CSPG3	3371	TNC	L
1463	CSPG3	3897	L1CAM	L
1463	CSPG3	4684	NCAM1	L
1463	CSPG3	5764	PTN	L
1463	CSPG3	6900	CNTN2	L
1464	CSPG4	5747	PTK2	L
1464	CSPG4	8777	MPDZ	L
1464	CSPG4	9564	BCAR1	L
1464	CSPG4	10188	TNK2	L
1464	CSPG4	55729	ATF7IP	L
1466	CSRP2	8554	PIAS1	L
1468	SLC25A10	6993	TCTEL1	L
1468	SLC25A10	8655	DNCL1	L
1468	SLC25A10	22924	MAPRE3	L
1468	SLC25A10	83755	KRTAP4-12	R
1471	CST3	1508	CTSB	L
1471	CST3	1520	CTSS	L
1471	CST3	23037	PDZK3	L
1473	CST5	1520	CTSS	L
1475	CSTA	1508	CTSB	L
1475	CSTA	1512	CTSH	L
1475	CSTA	1514	CTSL	L
1475	CSTA	5764	PTN	S
1476	CSTB	1508	CTSB	L
1476	CSTB	1509	CTSD	L
1476	CSTB	1512	CTSH	L
1476	CSTB	1514	CTSL	L
1477	CSTF1	1479	CSTF3	L
1478	CSTF2	1479	CSTF3	L
1478	CSTF2	1653	DDX1	L
1478	CSTF2	1891	ECH1	S
1478	CSTF2	1937	EEF1G	S
1478	CSTF2	7917	BAT3	S
1478	CSTF2	8189	SYMPK	L
1478	CSTF2	8518	IKBKAP	S
1478	CSTF2	9638	FEZ1	S
1478	CSTF2	10524	HTATIP	S

1478	CSTF2	10923	SUB1	L
1478	CSTF2	10989	IMMT	S
1478	CSTF2	11161	C14orf1	S
1478	CSTF2	29979	UBQLN1	R
1478	CSTF2	57562	KIAA1377	S
1482	NKX2-5	2626	GATA4	L
1482	NKX2-5	6722	SRF	L
1482	NKX2-5	6910	TBX5	L
1482	NKX2-5	28996	HIPK2	L
1482	NKX2-5	204851	HIPK1	L
1487	CTBP1	1488	CTBP2	L
1487	CTBP1	2004	ELK3	L
1487	CTBP1	2122	EVI1	L
1487	CTBP1	3064	HD	L
1487	CTBP1	3065	HDAC1	L
1487	CTBP1	3066	HDAC2	L
1487	CTBP1	5925	RB1	L
1487	CTBP1	5932	RBBP8	L
1487	CTBP1	7050	TGIF	L
1487	CTBP1	8204	NRIP1	L
1487	CTBP1	8543	LMO4	L
1487	CTBP1	9734	HDAC9	L
1487	CTBP1	10320	ZNFN1A1	L
1487	CTBP1	23414	ZFPM2	L
1487	CTBP1	64375	ZNFN1A4	L
1488	CTBP2	2275	FHL3	L
1488	CTBP2	6935	TCF8	L
1488	CTBP2	7005	TEAD3	R
1488	CTBP2	7050	TGIF	R
1488	CTBP2	8204	NRIP1	R
1488	CTBP2	8535	CBX4	L
1488	CTBP2	8715	NOL4	R
1488	CTBP2	9491	PSMF1	R
1488	CTBP2	10742	RAI2	R
1488	CTBP2	11279	KLF8	L
1488	CTBP2	23414	ZFPM2	L
1488	CTBP2	29994	BAZ2B	R
1488	CTBP2	55553	SOX6	L
1488	CTBP2	57473	GM632	L
1488	CTBP2	60528	ELAC2	L
1488	CTBP2	64400	FTS	R
1489	CTF1	3572	IL6ST	L
1489	CTF1	3977	LIFR	L
1490	CTGF	2066	ERBB4	L
1490	CTGF	4035	LRP1	L
1490	CTGF	7040	TGFB1	L
1490	CTGF	7042	TGFB2	L
1490	CTGF	7043	TGFB3	L
1490	CTGF	7422	VEGF	L
1493	CTLA4	2534	FYN	L
1493	CTLA4	3717	JAK2	L
1493	CTLA4	3932	LCK	L
1493	CTLA4	4067	LYN	L
1493	CTLA4	5295	PIK3R1	L
1493	CTLA4	5525	PPP2R5A	L
1493	CTLA4	5781	PTPN11	L
1493	CTLA4	8907	AP1M1	L
1495	CTNNA1	1499	CTNNB1	L
1495	CTNNA1	1739	DLG1	L
1495	CTNNA1	3728	JUP	L
1495	CTNNA1	4301	MLLT4	L
1495	CTNNA1	5663	PSEN1	L
1495	CTNNA1	6709	SPTAN1	L
1495	CTNNA1	7414	VCL	L
1495	CTNNA1	9414	TJP2	L
1495	CTNNA1	55591	VEZATIN	L
1495	CTNNA1	157638	FAM84B	L

1499	CTNNB1	1739	DLG1	L
1499	CTNNB1	1825	DSC3	L
1499	CTNNB1	1855	DVL1	L
1499	CTNNB1	1857	DVL3	L
1499	CTNNB1	1956	EGFR	L
1499	CTNNB1	2064	ERBB2	L
1499	CTNNB1	2274	FHL2	L
1499	CTNNB1	2494	NR5A2	L
1499	CTNNB1	2516	NR5A1	L
1499	CTNNB1	2898	GRIK2	L
1499	CTNNB1	3551	IKBKB	L
1499	CTNNB1	4087	SMAD2	L
1499	CTNNB1	4088	SMAD3	L
1499	CTNNB1	4089	SMAD4	L
1499	CTNNB1	4582	MUC1	L
1499	CTNNB1	5175	PECAM1	L
1499	CTNNB1	5295	PIK3R1	L
1499	CTNNB1	5300	PIN1	L
1499	CTNNB1	5310	PKD1	L
1499	CTNNB1	5318	PKP2	L
1499	CTNNB1	5663	PSEN1	L
1499	CTNNB1	5770	PTPN1	L
1499	CTNNB1	5784	PTPN14	L
1499	CTNNB1	5787	PTPRB	L
1499	CTNNB1	5792	PTPRF	L
1499	CTNNB1	5795	PTPRJ	L
1499	CTNNB1	5796	PTPRK	L
1499	CTNNB1	5803	PTPRZ1	L
1499	CTNNB1	6597	SMARCA4	L
1499	CTNNB1	6907	TBL1X	L
1499	CTNNB1	6925	TCF4	L
1499	CTNNB1	6927	TCF1	L
1499	CTNNB1	6929	TCF3	L
1499	CTNNB1	6934	TCF7L2	L
1499	CTNNB1	7046	TGFBR1	L
1499	CTNNB1	7430	VIL2	L
1499	CTNNB1	8239	USP9X	L
1499	CTNNB1	8312	AXIN1	L
1499	CTNNB1	8313	AXIN2	L
1499	CTNNB1	8607	RUVBL1	L
1499	CTNNB1	8826	IQGAP1	L
1499	CTNNB1	8851	CDK5R1	L
1499	CTNNB1	8945	BTRC	L
1499	CTNNB1	9223	MAGI1	L
1499	CTNNB1	9231	DLG5	L
1499	CTNNB1	9368	SLC9A3R1	L
1499	CTNNB1	9372	ZFYVE9	L
1499	CTNNB1	10076	PTPRU	L
1499	CTNNB1	10297	APC2	L
1499	CTNNB1	10672	GNA13	L
1499	CTNNB1	25776	PGEA1	L
1499	CTNNB1	25794	FSCN2	L
1499	CTNNB1	26108	PYGO1	L
1499	CTNNB1	29119	CTNNA3	L
1499	CTNNB1	50649	ARHGEF4	L
1499	CTNNB1	51176	LEF1	L
1499	CTNNB1	55591	VEZATIN	L
1499	CTNNB1	56998	CTNNBIP1	L
1499	CTNNB1	83439	TCF7L1	L
1500	CTNND1	2017	CTTN	L
1500	CTNND1	2241	FER	L
1500	CTNND1	2898	GRIK2	L
1500	CTNND1	4582	MUC1	L
1500	CTNND1	5777	PTPN6	L
1500	CTNND1	5795	PTPRJ	L
1500	CTNND1	5797	PTPRM	L
1500	CTNND1	10009	ZBTB33	L

1500	CTNND1	55914	ERBB2IP	L
1501	CTNND2	2017	CTTN	L
1501	CTNND2	2534	FYN	L
1501	CTNND2	3932	LCK	L
1501	CTNND2	5663	PSEN1	L
1501	CTNND2	5664	PSEN2	L
1501	CTNND2	23037	PDZK3	L
1501	CTNND2	55914	ERBB2IP	L
1501	CTNND2	57554	LRRC7	L
1504	CTRB1	5265	SERPINA1	L
1504	CTRB1	5345	SERPINF2	L
1508	CTSB	4082	MARCKS	L
1508	CTSB	5275	SERPINB13	L
1508	CTSB	5997	RGS2	S
1508	CTSB	6281	S100A10	L
1508	CTSB	7917	BAT3	S
1508	CTSB	8530	CST7	L
1509	CTSD	2335	FN1	L
1509	CTSD	5660	PSAP	L
1510	CTSE	7917	BAT3	S
1510	CTSE	10436	C2F	S
1511	CTSG	2151	F2RL2	L
1511	CTSG	2153	F5	L
1511	CTSG	2811	GP1BA	L
1511	CTSG	3827	KNG1	L
1511	CTSG	4035	LRP1	L
1511	CTSG	5275	SERPINB13	L
1511	CTSG	5473	PPBP	L
1511	CTSG	6382	SDC1	L
1511	CTSG	7057	THBS1	L
1513	CTSK	2261	FGFR3	S
1513	CTSK	5275	SERPINB13	L
1513	CTSK	6317	SERPINB3	L
1514	CTSL	3827	KNG1	L
1514	CTSL	5275	SERPINB13	L
1514	CTSL	6256	RXRA	L
1514	CTSL	6317	SERPINB3	L
1514	CTSL	8530	CST7	L
1514	CTSL	80781	COL18A1	L
1520	CTSS	3827	KNG1	L
1520	CTSS	5335	PLCG1	L
1520	CTSS	6317	SERPINB3	L
1520	CTSS	6318	SERPINB4	L
1523	CUTL1	5925	RB1	L
1523	CUTL1	6304	SATB1	L
1523	CUTL1	8850	PCAF	L
1523	CUTL1	9400	RECQL5	S
1523	CUTL1	9672	SDC3	L
1523	CUTL1	60528	ELAC2	S
1524	CX3CR1	6376	CX3CL1	L
1525	CXADR	2130	EWSR1	R
1527	CXorf2	2059	EPS8	R
1528	CYB5	1543	CYP1A1	L
1528	CYB5	1727	CYB5R3	L
1528	CYB5	6319	SCD	L
1528	CYB5	54205	CYCS	L
1535	CYBA	1536	CYBB	L
1535	CYBA	4687	NCF1	L
1535	CYBA	4688	NCF2	L
1535	CYBA	5879	RAC1	L
1536	CYBB	4688	NCF2	L
1537	CYC1	7386	UQCRFS1	L
1537	CYC1	54205	CYCS	L
1544	CYP1A2	5447	POR	L
1557	CYP2C19	5447	POR	L
1559	CYP2C9	5447	POR	L
1583	CYP11A1	1585	CYP11B2	L

1583	CYP11A1	2230	FDX1	L
1583	CYP11A1	4087	SMAD2	L
1583	CYP11A1	4088	SMAD3	L
1583	CYP11A1	4093	SMAD9	L
1584	CYP11B1	1585	CYP11B2	L
1585	CYP11B2	2230	FDX1	L
1586	CYP17A1	5447	POR	L
1588	CYP19A1	2189	FANCG	L
1600	DAB1	3949	LDLR	L
1600	DAB1	4035	LRP1	L
1600	DAB1	4036	LRP2	L
1600	DAB1	5048	PAFAH1B1	L
1600	DAB1	6477	SIAH1	L
1600	DAB1	7436	VLDLR	L
1600	DAB1	7804	LRP8	L
1600	DAB1	153090	DAB2IP	L
1601	DAB2	1857	DVL3	L
1601	DAB2	2268	FGR	L
1601	DAB2	2885	GRB2	L
1601	DAB2	4036	LRP2	L
1601	DAB2	4087	SMAD2	L
1601	DAB2	4088	SMAD3	L
1601	DAB2	4646	MYO6	L
1601	DAB2	5300	PIN1	L
1601	DAB2	6714	SRC	L
1601	DAB2	7046	TGFBR1	L
1601	DAB2	7048	TGFBR2	L
1601	DAB2	23181	C21orf106	L
1601	DAB2	57534	MIB1	L
1601	DAB2	64750	SMURF2	L
1602	DACH1	7329	UBE2I	R
1602	DACH1	55577	NAGK	R
1604	DAF	2534	FYN	L
1604	DAF	2822	GPLD1	L
1604	DAF	3932	LCK	L
1605	DAG1	1756	DMD	L
1605	DAG1	2885	GRB2	L
1605	DAG1	3908	LAMA2	L
1605	DAG1	3911	LAMA5	L
1605	DAG1	5913	RAPSN	L
1605	DAG1	6464	SHC1	L
1605	DAG1	7402	UTRN	L
1605	DAG1	9215	LARGE	L
1606	DGKA	59067	IL21	L
1611	DAP	1742	DLG4	L
1611	DAP	7132	TNFRSF1A	L
1611	DAP	9869	SETDB1	S
1612	DAPK1	7132	TNFRSF1A	L
1612	DAPK1	7529	YWHAB	L
1612	DAPK1	8717	TRADD	L
1612	DAPK1	8772	FADD	L
1612	DAPK1	57534	MIB1	L
1613	DAPK3	1616	DAXX	L
1613	DAPK3	5590	PRKCZ	L
1613	DAPK3	9002	F2RL3	L
1615	DARS	1915	EEF1A1	L
1615	DARS	3320	HSPCA	L
1615	DARS	7965	JTV1	R
1616	DAXX	2113	ETS1	L
1616	DAXX	3065	HDAC1	L
1616	DAXX	3315	HSPB1	L
1616	DAXX	4217	MAP3K5	L
1616	DAXX	4599	MX1	L
1616	DAXX	5077	PAX3	L
1616	DAXX	5079	PAX5	L
1616	DAXX	5371	PML	L
1616	DAXX	6517	SLC2A4	L

1616	DAXX	7040	TGFB1	L
1616	DAXX	7048	TGFBR2	L
1616	DAXX	7157	TP53	L
1616	DAXX	7329	UBE2I	L
1616	DAXX	7341	SUMO1	L
1616	DAXX	8837	CFLAR	L
1616	DAXX	10445	MCRS1	L
1616	DAXX	28996	HIPK2	L
1616	DAXX	204851	HIPK1	L
1618	DAZL	9802	DAZAP2	L
1618	DAZL	23369	PUM2	L
1618	DAZL	26528	DAZAP1	L
1620	DBC1	10924	SMPDL3A	L
1622	DBI	60490	PPCDC	S
1627	DBN1	9455	HOMER2	L
1627	DBN1	20924	(null)	S
1627	DBN1	23268	DNMBP	L
1627	DBN1	25836	NIPBL	S
1628	DBP	1649	DDIT3	L
1628	DBP	3131	HLF	L
1628	DBP	3725	JUN	L
1628	DBP	7008	TEF	L
1628	DBP	10538	BATF	L
1628	DBP	55509	SNFT	L
1629	DBT	5829	PXN	L
1630	DCC	4150	MAZ	L
1630	DCC	4690	NCK1	L
1630	DCC	5595	MAPK3	L
1630	DCC	6477	SIAH1	L
1630	DCC	6478	SIAH2	L
1630	DCC	9423	NTN1	L
1630	DCC	26060	APPL	L
1633	DCK	11269	DDX19B	S
1633	DCK	51280	GOLPH2	S
1633	DCK	219541	MED19	S
1634	DCN	1956	EGFR	L
1634	DCN	2006	ELN	L
1634	DCN	2200	FBN1	L
1634	DCN	2316	FLNA	L
1634	DCN	2335	FN1	L
1634	DCN	5320	PLA2G2A	L
1634	DCN	6441	SFTPD	L
1634	DCN	7040	TGFB1	L
1634	DCN	7057	THBS1	L
1634	DCN	7124	TNF	L
1634	DCN	7373	COL14A1	L
1635	DCTD	60491	NIF3L1	R
1635	DCTD	79873	NUDT18	R
1635	DCTD	79959	C18orf9	R
1635	DCTD	84708	LNX	R
1638	DCT	7414	VCL	L
1639	DCTN1	1780	DNCI1	L
1639	DCTN1	1781	DNCI2	L
1639	DCTN1	2885	GRB2	L
1639	DCTN1	3064	HD	L
1639	DCTN1	3832	KIF11	L
1639	DCTN1	5048	PAFAH1B1	L
1639	DCTN1	5223	PGAM1	S
1639	DCTN1	6249	RSN	L
1639	DCTN1	7431	VIM	L
1639	DCTN1	23299	BICD2	L
1639	DCTN1	57473	GM632	L
1641	DCX	5048	PAFAH1B1	L
1642	DDB1	1643	DDB2	L
1642	DDB1	8543	LMO4	L
1642	DDB1	9341	VAMP3	S
1643	DDB2	3065	HDAC1	L

1647	GADD45A	2512	FTL	S
1647	GADD45A	4216	MAP3K4	L
1647	GADD45A	4616	GADD45B	L
1647	GADD45A	5111	PCNA	L
1647	GADD45A	5465	PPARA	L
1647	GADD45A	6256	RXRA	L
1647	GADD45A	10540	DCTN2	R
1647	GADD45A	10912	GADD45G	L
1647	GADD45A	90480	GADD45GIP1	L
1649	DDIT3	2353	FOS	L
1649	DDIT3	2354	FOSB	L
1649	DDIT3	2355	FOSL2	L
1649	DDIT3	3131	HLF	L
1649	DDIT3	3725	JUN	L
1649	DDIT3	3727	JUND	L
1649	DDIT3	4097	MAFG	L
1649	DDIT3	4783	NFIL3	L
1649	DDIT3	6189	RPS3A	L
1649	DDIT3	7008	TEF	L
1649	DDIT3	7975	MAFK	L
1649	DDIT3	8061	FOSL1	L
1649	DDIT3	8301	PICALM	L
1649	DDIT3	8405	SPOP	R
1649	DDIT3	9586	CREB5	L
1649	DDIT3	10488	CREB3	L
1649	DDIT3	10538	BATF	RL
1649	DDIT3	11016	ATF7	L
1649	DDIT3	51171	DHRS10	R
1649	DDIT3	55509	SNFT	L
1649	DDIT3	79892	C10orf119	R
1653	DDX1	3190	HNRPK	L
1653	DDX1	5829	PXN	L
1653	DDX1	7414	VCL	L
1654	DDX3X	7414	VCL	L
1654	DDX3X	57473	GM632	L
1655	DDX5	2091	FBL	L
1655	DDX5	10270	AKAP8	L
1655	DDX5	10521	DDX17	L
1656	DDX6	11338	U2AF2	L
1660	DHX9	3276	HRMT1L2	L
1660	DHX9	6606	SMN1	L
1660	DHX9	7153	TOP2A	L
1660	DHX9	10482	NXF1	L
1660	DHX9	10657	KHDRBS1	L
1660	DHX9	26993	AKAP8L	L
1663	DDX11	5217	PFN2	S
1663	DDX11	11143	MYST2	S
1667	DEFA1	5201	PFDN1	S
1667	DEFA1	5345	SERPINF2	L
1674	DES	1832	DSP	L
1674	DES	6271	S100A1	L
1674	DES	6285	S100B	L
1674	DES	6709	SPTAN1	L
1674	DES	23336	DMN	L
1675	DF	5345	SERPINF2	L
1675	DF	307255	(null)	S
1676	DFFA	1677	DFFB	L
1676	DFFA	2130	EWSR1	R
1676	DFFA	29888	STRN4	S
1676	DFFA	54550	EFCBP2	R
1677	DFFB	7153	TOP2A	L
1678	TIMM8A	8027	STAM	L
1687	DFNA5	5764	PTN	S
1719	DHFR	2280	FKBP1A	L
1719	DHFR	3329	HSPD1	L
1719	DHFR	7057	THBS1	L
1719	DHFR	9804	TOMM20	L

1725	DHPS	1984	EIF5A	L
1725	DHPS	6133	RPL9	R
1725	DHPS	56648	EIF5A2	R
1725	DHPS	60491	NIF3L1	R
1725	DHPS	79873	NUDT18	R
1727	CYB5R3	54205	CYCS	L
1728	NQO1	3303	HSPA1A	L
1729	DIAPH1	5311	PKD2	L
1729	DIAPH1	5879	RAC1	L
1729	DIAPH1	8317	CDC7	L
1729	DIAPH1	10458	BAIAP2	L
1729	DIAPH1	23214	XPO6	L
1729	DIAPH1	55660	FNBP3	L
1730	DIAPH2	29984	RHOD	L
1731	SEPT1	23157	SEPT6	R
1731	SEPT1	54472	TOLLIP	R
1734	DIO2	10868	USP20	L
1734	DIO2	23032	USP33	L
1736	DKC1	1937	EEF1G	S
1736	DKC1	6745	SSR1	S
1736	DKC1	8665	EIF3S5	S
1736	DKC1	11313	LYPLA2	S
1737	DLAT	1738	DLD	L
1737	DLAT	5160	PDHA1	L
1737	DLAT	5162	PDHB	L
1737	DLAT	5163	PDK1	L
1737	DLAT	5164	PDK2	L
1737	DLAT	5165	PDK3	L
1737	DLAT	5166	PDK4	L
1737	DLAT	8050	PDHX	L
1738	DLD	4967	OGDH	L
1739	DLG1	1740	DLG2	L
1739	DLG1	1741	DLG3	L
1739	DLG1	2035	EPB41	L
1739	DLG1	2066	ERBB4	L
1739	DLG1	2890	GRIA1	L
1739	DLG1	2898	GRIK2	L
1739	DLG1	2903	GRIN2A	L
1739	DLG1	2977	GUCY1A2	L
1739	DLG1	3739	KCNA4	L
1739	DLG1	3759	KCNJ2	L
1739	DLG1	3766	KCNJ10	L
1739	DLG1	3768	KCNJ12	L
1739	DLG1	3932	LCK	L
1739	DLG1	4036	LRP2	L
1739	DLG1	4130	MAP1A	L
1739	DLG1	4646	MYO6	L
1739	DLG1	5728	PTEN	L
1739	DLG1	6868	ADAM17	L
1739	DLG1	7430	VIL2	L
1739	DLG1	7881	KCNAB1	L
1739	DLG1	8573	CASK	L
1739	DLG1	9228	DLGAP2	L
1739	DLG1	9229	DLGAP1	L
1739	DLG1	9419	CRIPT	L
1739	DLG1	9495	AKAP5	L
1739	DLG1	9615	GDA	L
1739	DLG1	23095	KIF1B	L
1739	DLG1	23303	KIF13B	L
1739	DLG1	54910	SEMA4C	L
1739	DLG1	57596	KIAA1446	L
1739	DLG1	93643	TJAP1	L
1739	DLG1	166647	GPR125	L
1740	DLG2	1742	DLG4	L
1740	DLG2	2066	ERBB4	L
1740	DLG2	2903	GRIN2A	L
1740	DLG2	2904	GRIN2B	L

1740	DLG2	2977	GUCY1A2	L
1740	DLG2	3739	KCNA4	L
1740	DLG2	3761	KCNJ4	L
1740	DLG2	3768	KCNJ12	L
1740	DLG2	4036	LRP2	L
1740	DLG2	4130	MAP1A	L
1740	DLG2	4842	NOS1	L
1740	DLG2	8825	LIN7A	L
1740	DLG2	9419	CRIPT	L
1740	DLG2	54413	NLGN3	L
1741	DLG3	1742	DLG4	L
1741	DLG3	2066	ERBB4	L
1741	DLG3	2185	PTK2B	L
1741	DLG3	2898	GRIK2	L
1741	DLG3	2903	GRIN2A	L
1741	DLG3	2904	GRIN2B	L
1741	DLG3	2905	GRIN2C	L
1741	DLG3	2977	GUCY1A2	L
1741	DLG3	3768	KCNJ12	L
1741	DLG3	4036	LRP2	L
1741	DLG3	8825	LIN7A	L
1741	DLG3	9419	CRIPT	L
1741	DLG3	9615	GDA	L
1741	DLG3	54413	NLGN3	L
1741	DLG3	54910	SEMA4C	L
1742	DLG4	2064	ERBB2	L
1742	DLG4	2066	ERBB4	L
1742	DLG4	2185	PTK2B	L
1742	DLG4	2534	FYN	L
1742	DLG4	2897	GRIK1	L
1742	DLG4	2898	GRIK2	L
1742	DLG4	2901	GRIK5	L
1742	DLG4	2903	GRIN2A	L
1742	DLG4	2904	GRIN2B	L
1742	DLG4	2905	GRIN2C	L
1742	DLG4	2906	GRIN2D	L
1742	DLG4	2977	GUCY1A2	L
1742	DLG4	3064	HD	L
1742	DLG4	3356	HTR2A	L
1742	DLG4	3358	HTR2C	L
1742	DLG4	3737	KCNA2	L
1742	DLG4	3739	KCNA4	L
1742	DLG4	3759	KCNJ2	L
1742	DLG4	3766	KCNJ10	L
1742	DLG4	3768	KCNJ12	L
1742	DLG4	4035	LRP1	L
1742	DLG4	4036	LRP2	L
1742	DLG4	4067	LYN	L
1742	DLG4	4130	MAP1A	L
1742	DLG4	4179	MCP	L
1742	DLG4	4294	MAP3K10	L
1742	DLG4	4842	NOS1	L
1742	DLG4	5578	PRKCA	L
1742	DLG4	5793	PTPRG	L
1742	DLG4	7525	YES1	L
1742	DLG4	8321	FZD1	L
1742	DLG4	8322	FZD4	L
1742	DLG4	8573	CASK	L
1742	DLG4	8655	DNCL1	L
1742	DLG4	8825	LIN7A	L
1742	DLG4	9146	HGS	L
1742	DLG4	9228	DLGAP2	L
1742	DLG4	9229	DLGAP1	L
1742	DLG4	9311	ACCN3	L
1742	DLG4	9419	CRIPT	L
1742	DLG4	9495	AKAP5	L
1742	DLG4	9615	GDA	L

1742	DLG4	10369	CACNG2	L
1742	DLG4	10505	SEMA4F	L
1742	DLG4	22941	SHANK2	L
1742	DLG4	23095	KIF1B	L
1742	DLG4	23303	KIF13B	L
1742	DLG4	50944	SHANK1	L
1742	DLG4	54413	NLGN3	L
1742	DLG4	54910	SEMA4C	L
1742	DLG4	55227	LRRC1	L
1742	DLG4	55914	ERBB2IP	L
1742	DLG4	57502	NLGN4X	L
1742	DLG4	57596	KIAA1446	L
1742	DLG4	140735	Dlc2	L
1743	DLST	2314	FLII	S
1743	DLST	4673	NAP1L1	S
1743	DLST	4967	OGDH	L
1743	DLST	5217	PFN2	S
1743	DLST	7372	UMPS	S
1743	DLST	7704	ZBTB16	S
1743	DLST	9231	DLG5	S
1743	DLST	9853	RUSC2	S
1743	DLST	10298	PAK4	S
1743	DLST	10383	TUBB2	S
1743	DLST	10425	ARIH2	S
1743	DLST	11244	ZHX1	S
1743	DLST	23256	SCFD1	S
1743	DLST	79080	MGC2574	S
1745	DLX1	4089	SMAD4	L
1746	DLX2	4488	MSX2	L
1748	DLX4	9500	MAGED1	L
1749	DLX5	4488	MSX2	L
1749	DLX5	9500	MAGED1	L
1749	DLX5	23013	SPEN	L
1755	DMBT1	6435	SFTPA1	L
1755	DMBT1	6441	SFTPD	L
1756	DMD	1837	DTNA	L
1756	DMD	3768	KCNJ12	L
1756	DMD	5239	PGM5	L
1756	DMD	6640	SNTA1	L
1756	DMD	6641	SNTB1	L
1756	DMD	8525	DGKZ	L
1759	DNM1	2017	CTTN	L
1759	DNM1	2060	EPS15	L
1759	DNM1	2885	GRB2	L
1759	DNM1	4690	NCK1	L
1759	DNM1	5217	PFN2	L
1759	DNM1	5303	PIN4	S
1759	DNM1	6453	ITSN1	L
1759	DNM1	6455	SH3GL1	L
1759	DNM1	6456	SH3GL2	L
1759	DNM1	9022	CLIC3	L
1759	DNM1	10399	GNB2L1	L
1759	DNM1	23048	FNBP1	L
1759	DNM1	23268	DNMBP	L
1759	DNM1	23523	CABIN1	L
1759	DNM1	29763	PACSIN3	L
1759	DNM1	29993	PACSIN1	L
1759	DNM1	51003	MED31	S
1759	DNM1	57562	KIAA1377	S
1759	DNM1	79754	ASB13	S
1759	DNM1	92609	TIMM50	S
1760	DMPK	3316	HSPB2	L
1760	DMPK	4659	PPP1R12A	L
1760	DMPK	5894	RAF1	L
1760	DMPK	11337	GABARAP	S
1762	DMWD	5473	PPBP	S
1778	DNCH1	4087	SMAD2	L

1778	DNCH1	8655	DNCL1	L
1778	DNCH1	55603	FAM46A	L
1780	DNCI1	83658	DNCL2A	R
1780	DNCI1	140735	Dlc2	R
1781	DNCI2	6990	TCTE1L	R
1783	DNCLI2	2039	EPB49	S
1785	DNM2	2017	CTTN	L
1785	DNM2	2060	EPS15	L
1785	DNM2	5216	PFN1	L
1785	DNM2	5479	PPIB	S
1785	DNM2	7919	BAT1	S
1785	DNM2	8655	DNCL1	L
1785	DNM2	10200	MPHOSPH6	L
1785	DNM2	22941	SHANK2	L
1785	DNM2	23578	(null)	S
1785	DNM2	50944	SHANK1	L
1785	DNM2	51386	EIF3S6IP	S
1785	DNM2	51678	MPP6	L
1785	DNM2	54469	ZA20D3	S
1785	DNM2	55729	ATF7IP	L
1786	DNMT1	1788	DNMT3A	L
1786	DNMT1	1789	DNMT3B	L
1786	DNMT1	3066	HDAC2	L
1786	DNMT1	5111	PCNA	L
1786	DNMT1	5925	RB1	L
1786	DNMT1	5987	RFP	S
1786	DNMT1	7251	TSG101	L
1786	DNMT1	8655	DNCL1	L
1786	DNMT1	8932	MBD2	L
1786	DNMT1	10951	CBX1	L
1786	DNMT1	53615	MBD3	L
1786	DNMT1	55929	DMAP1	L
1787	DNMT2	1915	EEF1A1	S
1787	DNMT2	6804	STX1A	S
1787	DNMT2	9094	UNC119	S
1787	DNMT2	9869	SETDB1	S
1787	DNMT2	10813	UTP14A	S
1787	DNMT2	10980	COPS6	S
1787	DNMT2	55791	C1orf103	S
1787	DNMT2	57062	DDX24	S
1787	DNMT2	84060	DKFZP564O0523	S
1788	DNMT3A	1789	DNMT3B	L
1788	DNMT3A	3065	HDAC1	L
1788	DNMT3A	4609	MYC	L
1788	DNMT3A	6839	SUV39H1	L
1788	DNMT3A	7329	UBE2I	L
1788	DNMT3A	10951	CBX1	L
1788	DNMT3A	29947	DNMT3L	L
1789	DNMT3B	3065	HDAC1	L
1789	DNMT3B	7329	UBE2I	L
1789	DNMT3B	7341	SUMO1	L
1789	DNMT3B	10951	CBX1	L
1789	DNMT3B	23468	CBX5	L
1789	DNMT3B	29947	DNMT3L	L
1791	DNTT	2547	XRCC6	L
1791	DNTT	30836	ERBP	L
1793	DOCK1	5879	RAC1	L
1793	DOCK1	8440	NCK2	L
1793	DOCK1	10163	WASF2	L
1793	DOCK1	23210	PTDSR	L
1794	DOCK2	5879	RAC1	L
1794	DOCK2	5880	RAC2	L
1794	DOCK2	7409	VAV1	L
1795	DOCK3	5663	PSEN1	L
1795	DOCK3	5664	PSEN2	L
1796	DOK1	3815	KIT	L
1796	DOK1	4068	SH2D1A	L

1796	DOK1	4690	NCK1	L
1796	DOK1	5777	PTPN6	L
1796	DOK1	5794	PTPRH	L
1796	DOK1	5921	RASA1	L
1796	DOK1	5979	RET	L
1796	DOK1	8440	NCK2	L
1796	DOK1	9448	MAP4K4	L
1797	DOM3Z	2319	FLOT2	L
1797	DOM3Z	5394	EXOSC10	L
1797	DOM3Z	5976	RENT1	L
1797	DOM3Z	22803	XRN2	L
1797	DOM3Z	23016	EXOSC7	L
1797	DOM3Z	54464	XRN1	L
1797	DOM3Z	54512	EXOSC4	L
1800	DPEP1	26128	KIAA1279	R
1801	DPH1	3309	HSPA5	L
1801	DPH1	9939	RBM8A	L
1803	DPP4	2922	GRP	L
1803	DPP4	27151	CPAMD8	L
1805	DPT	4015	LOX	L
1805	DPT	7917	BAT3	S
1807	DPYS	56896	DPYSL5	L
1808	DPYSL2	6093	ROCK1	L
1808	DPYSL2	8650	NUMB	L
1808	DPYSL2	56896	DPYSL5	L
1809	DPYSL3	56896	DPYSL5	L
1810	DR1	4783	NFIL3	L
1810	DR1	6908	TBP	L
1810	DR1	10589	DRAP1	L
1810	DR1	54107	POLE3	R
1811	SLC26A3	9368	SLC9A3R1	L
1812	DRD1	2037	EPB41L2	L
1812	DRD1	2316	FLNA	L
1812	DRD1	22820	COPG	L
1812	DRD1	26958	COPG2	L
1812	DRD1	50632	DRD1IP	L
1813	DRD2	2035	EPB41	L
1813	DRD2	2036	EPB41L1	L
1813	DRD2	2316	FLNA	L
1813	DRD2	2771	GNAI2	L
1813	DRD2	2773	GNAI3	L
1813	DRD2	2781	GNAZ	L
1813	DRD2	3763	KCNJ6	L
1813	DRD2	3765	KCNJ9	L
1813	DRD2	6755	SSTR5	L
1813	DRD2	23413	FREQ	L
1813	DRD2	54102	CLIC6	L
1813	DRD2	84687	PPP1R9B	L
1814	DRD3	2035	EPB41	L
1814	DRD3	2036	EPB41L1	L
1814	DRD3	2037	EPB41L2	L
1814	DRD3	2316	FLNA	L
1814	DRD3	2770	GNAI1	L
1814	DRD3	2885	GRB2	L
1814	DRD3	4690	NCK1	L
1814	DRD3	8777	MPDZ	L
1814	DRD3	23413	FREQ	L
1814	DRD3	54102	CLIC6	L
1815	DRD4	2554	GABRA1	L
1815	DRD4	2885	GRB2	L
1815	DRD4	3765	KCNJ9	L
1815	DRD4	4690	NCK1	L
1815	DRD4	6714	SRC	L
1815	DRD4	54102	CLIC6	L
1816	DRD5	2566	GABRG2	L
1816	DRD5	2768	GNA12	L
1816	DRD5	2781	GNAZ	L

1816	DRD5	10672	GNA13	L
1816	DRD5	23413	FREQ	L
1819	DRG2	51389	RWDD1	R
1820	ARID3A	1832	DSP	L
1820	ARID3A	1869	E2F1	L
1821	DRP2	1837	DTNA	L
1821	DRP2	57716	PRX	L
1822	ATN1	7088	TLE1	S
1822	ATN1	7431	VIM	S
1822	ATN1	9223	MAGI1	L
1822	ATN1	10015	PDCD6IP	L
1822	ATN1	10458	BAIAP2	L
1822	ATN1	11059	WWP1	L
1822	ATN1	11060	WWP2	L
1822	ATN1	11143	MYST2	S
1822	ATN1	83737	ITCH	L
1822	ATN1	222019	(null)	S
1823	DSC1	1829	DSG2	L
1823	DSC1	1832	DSP	L
1823	DSC1	3728	JUP	L
1823	DSC1	5318	PKP2	L
1823	DSC1	11187	PKP3	L
1824	DSC2	1828	DSG1	L
1824	DSC2	1829	DSG2	L
1824	DSC2	3728	JUP	L
1824	DSC2	5318	PKP2	L
1824	DSC2	11187	PKP3	L
1825	DSC3	3728	JUP	L
1825	DSC3	8502	PKP4	L
1825	DSC3	11187	PKP3	L
1828	DSG1	3728	JUP	L
1828	DSG1	5317	PKP1	L
1828	DSG1	5318	PKP2	L
1828	DSG1	25818	KLK5	L
1829	DSG2	3728	JUP	L
1829	DSG2	5318	PKP2	L
1829	DSG2	11187	PKP3	L
1830	DSG3	3728	JUP	L
1831	TSC22D3	2353	FOS	L
1831	TSC22D3	3725	JUN	L
1831	TSC22D3	4790	NFKB1	L
1831	TSC22D3	4791	NFKB2	L
1831	TSC22D3	5894	RAF1	L
1831	TSC22D3	51440	HPCAL4	R
1831	TSC22D3	79666	PLEKHF2	R
1832	DSP	2125	EVPL	L
1832	DSP	3728	JUP	L
1832	DSP	3848	KRT1	L
1832	DSP	5175	PECAM1	L
1832	DSP	5317	PKP1	L
1832	DSP	5318	PKP2	L
1832	DSP	7431	VIM	L
1837	DTNA	3768	KCNJ12	L
1837	DTNA	6640	SNTA1	L
1837	DTNA	6641	SNTB1	L
1837	DTNA	6645	SNTB2	L
1837	DTNA	6714	SRC	L
1837	DTNA	7402	UTRN	L
1837	DTNA	23336	DMN	L
1837	DTNA	84062	DTNBP1	L
1838	DTNB	3798	KIF5A	L
1838	DTNB	7186	TRAF2	R
1838	DTNB	8495	PPFIBP2	R
1838	DTNB	10363	HMG20A	R
1838	DTNB	11007	DIPA	R
1838	DTNB	23636	NUP62	R
1838	DTNB	56952	PRTFDC1	R

1838	DTNB	57596	KIAA1446	R
1838	DTNB	128229	C1orf182	R
1839	HBEGF	1956	EGFR	L
1839	HBEGF	2066	ERBB4	L
1839	HBEGF	3732	CD82	L
1839	HBEGF	4316	MMP7	L
1839	HBEGF	4898	NRD1	L
1839	HBEGF	7704	ZBTB16	L
1840	DTX1	2033	EP300	L
1840	DTX1	2885	GRB2	L
1840	DTX1	4853	NOTCH2	L
1843	DUSP1	5594	MAPK1	L
1843	DUSP1	5595	MAPK3	L
1843	DUSP1	5599	MAPK8	L
1843	DUSP1	6300	MAPK12	L
1845	DUSP3	1950	EGF	L
1845	DUSP3	2252	FGF7	L
1845	DUSP3	5594	MAPK1	L
1845	DUSP3	5595	MAPK3	L
1846	DUSP4	5594	MAPK1	L
1846	DUSP4	5595	MAPK3	L
1847	DUSP5	5595	MAPK3	L
1848	DUSP6	4188	MDFI	R
1848	DUSP6	5594	MAPK1	L
1848	DUSP6	5595	MAPK3	L
1848	DUSP6	56159	TEX11	R
1854	DUT	5465	PPARA	L
1854	DUT	5467	PPARD	L
1854	DUT	5468	PPARG	L
1854	DUT	9825	SPATA2	R
1854	DUT	79873	NUDT18	R
1855	DVL1	1857	DVL3	L
1855	DVL1	2059	EPS8	L
1855	DVL1	2932	GSK3B	L
1855	DVL1	4087	SMAD2	L
1855	DVL1	5494	PPM1A	L
1855	DVL1	6993	TCTEL1	L
1855	DVL1	8312	AXIN1	L
1855	DVL1	8975	USP13	S
1855	DVL1	10023	FRAT1	L
1855	DVL1	23002	DAAM1	L
1855	DVL1	23072	HECW1	L
1855	DVL1	57216	VANGL2	L
1855	DVL1	307255	(null)	S
1856	DVL2	5092	PCBD1	R
1856	DVL2	5494	PPM1A	L
1856	DVL2	6993	TCTEL1	L
1856	DVL2	7157	TP53	R
1856	DVL2	7186	TRAF2	R
1856	DVL2	7718	ZNF165	R
1856	DVL2	8078	USP5	R
1856	DVL2	8312	AXIN1	L
1856	DVL2	8907	AP1M1	R
1856	DVL2	9129	PRPF3	R
1856	DVL2	9531	BAG3	R
1856	DVL2	10127	ZNF263	R
1856	DVL2	10174	SORBS3	R
1856	DVL2	10445	MCRS1	R
1856	DVL2	10921	RNPS1	R
1856	DVL2	11030	RBPMS	R
1856	DVL2	11201	POLI	R
1856	DVL2	11267	SNF8	R
1856	DVL2	11338	U2AF2	R
1856	DVL2	22893	BAHD1	R
1856	DVL2	51224	TCEB3B	R
1856	DVL2	55145	THAP1	R
1856	DVL2	58500	ZNF250	R

1856	DVL2	79753	SNIP1	R
1856	DVL2	79869	FLJ12529	R
1856	DVL2	80125	FLJ32855	R
1856	DVL2	84080	C16orf48	R
1856	DVL2	84528	PEPP-2	R
1856	DVL2	84904	C9orf100	R
1856	DVL2	90268	LOC90268	R
1856	DVL2	92610	TIFA	R
1856	DVL2	127557	ZBTB8	R
1856	DVL2	151871	DPPA2	R
1856	DVL2	414301	DDI1	R
1857	DVL3	3104	HKR3	R
1857	DVL3	4062	LY6H	S
1857	DVL3	5307	PITX1	R
1857	DVL3	8812	CCNK	R
1857	DVL3	9129	PRPF3	R
1857	DVL3	11143	MYST2	R
1857	DVL3	22893	BAHD1	R
1857	DVL3	57473	GM632	L
1857	DVL3	59349	KLHL12	R
1857	DVL3	79797	ZNF408	R
1857	DVL3	79856	SNX22	R
1857	DVL3	84708	LNX	R
1857	DVL3	85362	(null)	R
1857	DVL3	126282	TNFAIP8L1	R
1857	DVL3	151871	DPPA2	R
1859	DYRK1A	81669	CCNL2	L
1861	TOR1A	6622	SNCA	L
1869	E2F1	2965	GTF2H1	L
1869	E2F1	4194	MDM4	L
1869	E2F1	4331	MNAT1	L
1869	E2F1	4692	NDN	L
1869	E2F1	4790	NFKB1	L
1869	E2F1	5245	PHB	L
1869	E2F1	5813	PURA	L
1869	E2F1	5925	RB1	L
1869	E2F1	5926	ARID4A	L
1869	E2F1	5934	RBL2	L
1869	E2F1	6046	BRD2	L
1869	E2F1	6502	SKP2	L
1869	E2F1	6667	SP1	L
1869	E2F1	6668	SP2	L
1869	E2F1	6670	SP3	L
1869	E2F1	6671	SP4	L
1869	E2F1	7027	TFDP1	L
1869	E2F1	7029	TFDP2	L
1869	E2F1	8202	NCOA3	L
1869	E2F1	8295	TRRAP	L
1869	E2F1	8454	CUL1	L
1869	E2F1	8900	CCNA1	L
1869	E2F1	9150	CTDP1	L
1869	E2F1	11073	TOPBP1	L
1870	E2F2	5925	RB1	L
1870	E2F2	6046	BRD2	L
1870	E2F2	6667	SP1	L
1870	E2F2	7027	TFDP1	L
1870	E2F2	7029	TFDP2	L
1870	E2F2	7528	YY1	L
1870	E2F2	9564	BCAR1	S
1870	E2F2	23429	RYBP	L
1871	E2F3	6667	SP1	L
1871	E2F3	7027	TFDP1	L
1871	E2F3	7029	TFDP2	L
1871	E2F3	7030	TFE3	L
1871	E2F3	7528	YY1	L
1871	E2F3	23429	RYBP	L
1874	E2F4	3065	HDAC1	L

1874	E2F4	4087	SMAD2	L
1874	E2F4	4088	SMAD3	L
1874	E2F4	4692	NDN	L
1874	E2F4	5933	RBL1	L
1874	E2F4	5934	RBL2	L
1874	E2F4	7027	TFDP1	L
1874	E2F4	7029	TFDP2	L
1874	E2F4	23309	SIN3B	L
1875	E2F5	5934	RBL2	L
1875	E2F5	7027	TFDP1	L
1875	E2F5	7514	XPO1	L
1876	E2F6	7027	TFDP1	R
1876	E2F6	7029	TFDP2	RL
1876	E2F6	23429	RYBP	L
1876	E2F6	84108	PCGF6	L
1877	E4F1	4093	SMAD9	L
1877	E4F1	5925	RB1	L
1877	E4F1	7157	TP53	L
1877	E4F1	10919	EHMT2	R
1879	EBF	23090	ZNF423	L
1880	EBI2	9112	MTA1	S
1891	ECH1	1937	EEF1G	S
1891	ECH1	5050	PAFAH1B3	S
1891	ECH1	5272	SERPINB9	S
1891	ECH1	7076	TIMP1	S
1892	ECHS1	150472	CBWD2	S
1896	EDA	10913	EDAR	L
1896	EDA	60401	EDA2R	L
1901	EDG1	2770	GNAI1	L
1901	EDG1	2773	GNAI3	L
1901	EDG1	3350	HTR1A	L
1901	EDG1	3352	HTR1D	L
1901	EDG1	5159	PDGFRB	L
1902	EDG2	2773	GNAI3	L
1903	EDG3	2770	GNAI1	L
1903	EDG3	2776	GNAQ	L
1903	EDG3	3350	HTR1A	L
1903	EDG3	10672	GNA13	L
1906	EDN1	1909	EDNRA	L
1906	EDN1	1910	EDNRB	L
1906	EDN1	4880	NPPC	L
1906	EDN1	7917	BAT3	S
1906	EDN1	10980	COPS6	S
1908	EDN3	1909	EDNRA	L
1908	EDN3	1910	EDNRB	L
1909	EDNRA	2767	GNA11	L
1909	EDNRA	2771	GNAI2	L
1909	EDNRA	2870	GRK6	L
1910	EDNRB	2767	GNA11	L
1910	EDNRB	2870	GRK6	L
1910	EDNRB	10672	GNA13	L
1911	PHC1	1912	PHC2	R
1911	PHC1	3312	HSPA8	S
1911	PHC1	7329	UBE2I	R
1911	PHC1	51460	SFMBT1	R
1912	PHC2	2275	FHL3	R
1912	PHC2	4171	MCM2	S
1912	PHC2	6129	RPL7	S
1912	PHC2	10445	MCRS1	R
1912	PHC2	10939	AFG3L2	S
1912	PHC2	22955	SCMH1	S
1912	PHC2	51460	SFMBT1	R
1912	PHC2	54968	TMEM70	S
1912	PHC2	55108	BSDC1	S
1912	PHC2	55885	LMO3	R
1915	EEF1A1	3336	HSPE1	S
1915	EEF1A1	3910	LAMA4	S

1915	EEF1A1	4087	SMAD2	L
1915	EEF1A1	4089	SMAD4	L
1915	EEF1A1	4300	MLLT3	S
1915	EEF1A1	4331	MNAT1	S
1915	EEF1A1	4758	NEU1	S
1915	EEF1A1	5047	PAEP	S
1915	EEF1A1	5050	PAFAH1B3	S
1915	EEF1A1	5217	PFN2	S
1915	EEF1A1	5272	SERPINB9	S
1915	EEF1A1	5329	PLAUR	S
1915	EEF1A1	5335	PLCG1	L
1915	EEF1A1	5427	POLE2	S
1915	EEF1A1	5432	POLR2C	S
1915	EEF1A1	5678	PSG9	S
1915	EEF1A1	5717	PSMD11	S
1915	EEF1A1	5775	PTPN4	S
1915	EEF1A1	5790	PTPRCAP	S
1915	EEF1A1	5873	RAB27A	S
1915	EEF1A1	5985	RFC5	S
1915	EEF1A1	6118	RPA2	S
1915	EEF1A1	6176	RPLP1	S
1915	EEF1A1	6362	CCL18	S
1915	EEF1A1	6453	ITSN1	S
1915	EEF1A1	6745	SSR1	S
1915	EEF1A1	6783	SULT1E1	S
1915	EEF1A1	6880	TAF9	S
1915	EEF1A1	7050	TGIF	S
1915	EEF1A1	7159	TP53BP2	S
1915	EEF1A1	7276	TTR	S
1915	EEF1A1	7407	VARS	L
1915	EEF1A1	7414	VCL	L
1915	EEF1A1	7572	ZNF24	S
1915	EEF1A1	8312	AXIN1	S
1915	EEF1A1	8655	DNCL1	S
1915	EEF1A1	8665	EIF3S5	S
1915	EEF1A1	8738	CRADD	S
1915	EEF1A1	8882	ZNF259	L
1915	EEF1A1	9061	PAPSS1	S
1915	EEF1A1	9587	MAD2L1BP	S
1915	EEF1A1	9796	PHYHIP	S
1915	EEF1A1	9921	RNF10	S
1915	EEF1A1	10063	COX17	S
1915	EEF1A1	10084	PQBP1	S
1915	EEF1A1	10301	DLEU1	S
1915	EEF1A1	10425	ARIH2	S
1915	EEF1A1	10542	HBXIP	S
1915	EEF1A1	10571	SMA3	S
1915	EEF1A1	10916	MAGED2	S
1915	EEF1A1	11075	STMN2	S
1915	EEF1A1	19241	(null)	S
1915	EEF1A1	22803	XRN2	L
1915	EEF1A1	23095	KIF1B	S
1915	EEF1A1	25855	BRMS1	S
1915	EEF1A1	27258	LSM3	S
1915	EEF1A1	28977	MRPL42	S
1915	EEF1A1	51319	RSRC1	S
1915	EEF1A1	54512	EXOSC4	L
1915	EEF1A1	54544	C1orf42	S
1915	EEF1A1	54819	ZCCHC10	S
1915	EEF1A1	54949	FLJ20487	S
1915	EEF1A1	55004	FLJ20625	S
1915	EEF1A1	55643	BTBD2	S
1915	EEF1A1	56144	PCDHA4	S
1915	EEF1A1	56893	UBQLN4	S
1915	EEF1A1	57510	XPO5	L
1915	EEF1A1	64699	TMPRSS3	S
1915	EEF1A1	81576	MGC10471	S

1915	EEF1A1	94103	ORMDL3	S
1915	EEF1A1	170961	ANKRD24	S
1933	EEF1B2	1937	EEF1G	RS
1933	EEF1B2	3035	HARS	L
1933	EEF1B2	7076	TIMP1	S
1933	EEF1B2	9706	ULK2	S
1936	EEF1D	1937	EEF1G	RS
1936	EEF1D	2617	GARS	L
1936	EEF1D	3895	KTN1	L
1936	EEF1D	7407	VARS	L
1936	EEF1D	84164	ASCC2	S
1936	EEF1D	118924	C10orf4	S
1936	EEF1D	162952	(null)	S
1936	EEF1D	284004	FLJ23825	S
1937	EEF1G	1942	EFNA1	S
1937	EEF1G	2237	FEN1	S
1937	EEF1G	2290	FOXG1B	S
1937	EEF1G	3035	HARS	L
1937	EEF1G	3163	HMOX2	S
1937	EEF1G	3189	HNRPH3	S
1937	EEF1G	3608	ILF2	R
1937	EEF1G	3735	KARS	S
1937	EEF1G	4597	MVD	S
1937	EEF1G	5717	PSMD11	S
1937	EEF1G	5775	PTPN4	S
1937	EEF1G	5802	PTPRS	S
1937	EEF1G	5863	RGL2	S
1937	EEF1G	6234	RPS28	S
1937	EEF1G	6303	SAT	S
1937	EEF1G	6498	SKIL	L
1937	EEF1G	6633	SNRPD2	S
1937	EEF1G	7572	ZNF24	S
1937	EEF1G	8440	NCK2	S
1937	EEF1G	9141	PDCD5	S
1937	EEF1G	9400	RECQL5	S
1937	EEF1G	9446	GSTO1	S
1937	EEF1G	9540	TP53I3	S
1937	EEF1G	10014	HDAC5	S
1937	EEF1G	10060	ABCC9	R
1937	EEF1G	10301	DLEU1	S
1937	EEF1G	10381	TUBB3	S
1937	EEF1G	10425	ARIH2	S
1937	EEF1G	10563	CXCL13	S
1937	EEF1G	10574	CCT7	S
1937	EEF1G	23557	SNAPAP	S
1937	EEF1G	29903	HSU79303	S
1937	EEF1G	51003	MED31	S
1937	EEF1G	51520	LARS	L
1937	EEF1G	51608	C7orf20	S
1937	EEF1G	55068	FLJ10094	S
1937	EEF1G	55339	WDR33	S
1937	EEF1G	55743	CHFR	S
1937	EEF1G	55755	CDK5RAP2	S
1937	EEF1G	55803	CENTA2	S
1937	EEF1G	57332	CBX8	S
1937	EEF1G	57664	PLEKHA4	S
1937	EEF1G	57761	TRIB3	S
1937	EEF1G	65220	NADK	S
1937	EEF1G	78987	CRELD1	S
1937	EEF1G	79676	FLJ13491	S
1937	EEF1G	79902	PCNT1	S
1937	EEF1G	84331	MGC15416	S
1937	EEF1G	116154	PHACTR3	S
1937	EEF1G	126272	EID-3	S
1937	EEF1G	158345	LOC158345	S
1937	EEF1G	196549	LOC196549	R
1937	EEF1G	222019	(null)	S

1937	EEF1G	339448	LOC339448	S
1938	EEF2	7157	TP53	L
1938	EEF2	54822	TRPM7	L
1942	EFNA1	1969	EPHA2	L
1942	EFNA1	2041	EPHA1	L
1942	EFNA1	2043	EPHA4	L
1942	EFNA1	2044	EPHA5	L
1942	EFNA1	2045	EPHA7	L
1942	EFNA1	5473	PPBP	S
1942	EFNA1	10524	HTATIP	S
1942	EFNA1	222019	(null)	S
1943	EFNA2	1969	EPHA2	L
1943	EFNA2	2042	EPHA3	L
1944	EFNA3	1969	EPHA2	L
1944	EFNA3	2043	EPHA4	L
1944	EFNA3	2044	EPHA5	L
1944	EFNA3	2045	EPHA7	L
1944	EFNA3	11098	PRSS23	S
1945	EFNA4	1969	EPHA2	L
1945	EFNA4	2043	EPHA4	L
1945	EFNA4	2045	EPHA7	L
1946	EFNA5	1969	EPHA2	L
1946	EFNA5	2042	EPHA3	L
1946	EFNA5	2043	EPHA4	L
1946	EFNA5	2044	EPHA5	L
1946	EFNA5	2045	EPHA7	L
1946	EFNA5	2046	EPHA8	L
1946	EFNA5	2047	EPHB1	L
1947	EFNB1	2047	EPHB1	L
1947	EFNB1	2048	EPHB2	L
1947	EFNB1	5783	PTPN13	L
1947	EFNB1	5998	RGS3	L
1947	EFNB1	6386	SDCBP	L
1947	EFNB1	6714	SRC	L
1947	EFNB1	8440	NCK2	L
1947	EFNB1	10580	SORBS1	L
1948	EFNB2	2042	EPHA3	L
1948	EFNB2	2043	EPHA4	L
1948	EFNB2	2047	EPHB1	L
1948	EFNB2	2048	EPHB2	L
1948	EFNB2	2050	EPHB4	L
1948	EFNB2	2051	EPHB6	L
1948	EFNB2	6386	SDCBP	L
1948	EFNB2	8440	NCK2	L
1948	EFNB2	54933	RHBDL2	L
1949	EFNB3	2043	EPHA4	L
1949	EFNB3	2049	EPHB3	L
1949	EFNB3	54933	RHBDL2	L
1950	EGF	1956	EGFR	L
1950	EGF	2064	ERBB2	L
1950	EGF	2065	ERBB3	L
1950	EGF	2250	FGF5	L
1950	EGF	2885	GRB2	L
1950	EGF	3084	NRG1	L
1950	EGF	5296	PIK3R2	L
1950	EGF	7448	VTN	L
1951	CELSR3	9905	RUTBC1	S
1951	CELSR3	23075	SWAP70	L
1952	CELSR2	2617	GARS	S
1952	CELSR2	55274	PHF10	S
1956	EGFR	2059	EPS8	L
1956	EGFR	2060	EPS15	L
1956	EGFR	2064	ERBB2	L
1956	EGFR	2065	ERBB3	L
1956	EGFR	2069	EREG	L
1956	EGFR	2099	ESR1	L
1956	EGFR	2185	PTK2B	L

1956	EGFR	2241	FER	L
1956	EGFR	2547	XRCC6	L
1956	EGFR	2549	GAB1	L
1956	EGFR	2771	GNAI2	L
1956	EGFR	2885	GRB2	L
1956	EGFR	2886	GRB7	L
1956	EGFR	2887	GRB10	L
1956	EGFR	2888	GRB14	L
1956	EGFR	3064	HD	L
1956	EGFR	3084	NRG1	L
1956	EGFR	3320	HSPCA	L
1956	EGFR	3371	TNC	L
1956	EGFR	3636	INPPL1	L
1956	EGFR	3678	ITGA5	L
1956	EGFR	3732	CD82	L
1956	EGFR	3855	KRT7	L
1956	EGFR	3856	KRT8	L
1956	EGFR	3872	KRT17	L
1956	EGFR	3875	KRT18	L
1956	EGFR	4582	MUC1	L
1956	EGFR	4690	NCK1	L
1956	EGFR	5058	PAK1	L
1956	EGFR	5159	PDGFRB	L
1956	EGFR	5287	PIK3C2B	L
1956	EGFR	5295	PIK3R1	L
1956	EGFR	5296	PIK3R2	L
1956	EGFR	5306	PITPNA	L
1956	EGFR	5335	PLCG1	L
1956	EGFR	5338	PLD2	L
1956	EGFR	5339	PLEC1	L
1956	EGFR	5359	PLSCR1	L
1956	EGFR	5566	PRKACA	L
1956	EGFR	5573	PRKAR1A	L
1956	EGFR	5578	PRKCA	L
1956	EGFR	5747	PTK2	L
1956	EGFR	5753	PTK6	L
1956	EGFR	5770	PTPN1	L
1956	EGFR	5777	PTPN6	L
1956	EGFR	5781	PTPN11	L
1956	EGFR	5795	PTPRJ	L
1956	EGFR	5921	RASA1	L
1956	EGFR	6004	RGS16	L
1956	EGFR	6464	SHC1	L
1956	EGFR	6633	SNRPD2	L
1956	EGFR	6642	SNX1	L
1956	EGFR	6643	SNX2	L
1956	EGFR	6654	SOS1	L
1956	EGFR	6655	SOS2	L
1956	EGFR	6714	SRC	L
1956	EGFR	6772	STAT1	L
1956	EGFR	6774	STAT3	L
1956	EGFR	6776	STAT5A	L
1956	EGFR	6777	STAT5B	L
1956	EGFR	7039	TGFA	L
1956	EGFR	7082	TJP1	L
1956	EGFR	7409	VAV1	L
1956	EGFR	7410	VAV2	L
1956	EGFR	8440	NCK2	L
1956	EGFR	8651	SOCS1	L
1956	EGFR	8723	SNX4	L
1956	EGFR	8737	RIPK1	L
1956	EGFR	8882	ZNF259	L
1956	EGFR	9020	MAP3K14	L
1956	EGFR	9021	SOCS3	L
1956	EGFR	9046	DOK2	L
1956	EGFR	9905	RUTBC1	S
1956	EGFR	10045	SH2D3A	L

1956	EGFR	10188	TNK2	L
1956	EGFR	10451	VAV3	L
1956	EGFR	11184	MAP4K1	L
1956	EGFR	23624	CBLC	L
1956	EGFR	54206	ERRFI1	L
1956	EGFR	83481	EPPK1	L
1958	EGR1	2033	EP300	L
1958	EGR1	3725	JUN	L
1958	EGR1	4664	NAB1	L
1958	EGR1	4665	NAB2	L
1958	EGR1	4773	NFATC2	L
1958	EGR1	5307	PITX1	L
1958	EGR1	5684	PSMA3	L
1958	EGR1	5970	RELA	L
1958	EGR1	6667	SP1	L
1958	EGR1	7157	TP53	L
1959	EGR2	3054	HCFC1	L
1959	EGR2	51003	MED31	S
1961	EGR4	4773	NFATC2	L
1962	EHHADH	6342	SCP2	L
1964	EIF1AX	1983	EIF5	L
1964	EIF1AX	5901	RAN	L
1964	EIF1AX	8663	EIF3S8	L
1964	EIF1AX	9669	EIF5B	L
1965	EIF2S1	5610	EIF2AK2	L
1965	EIF2S1	8892	EIF2B2	L
1965	EIF2S1	23645	PPP1R15A	L
1967	EIF2B1	8892	EIF2B2	L
1967	EIF2B1	8894	EIF2S2	L
1967	EIF2B1	51073	MRPL4	S
1968	EIF2S3	10988	METAP2	L
1969	EPHA2	2885	GRB2	L
1969	EPHA2	5295	PIK3R1	L
1969	EPHA2	5747	PTK2	L
1969	EPHA2	5781	PTPN11	L
1969	EPHA2	6464	SHC1	L
1969	EPHA2	6503	SLA	L
1969	EPHA2	7126	TNFAIP1	L
1973	EIF4A1	9890	LPPR4	S
1973	EIF4A1	26019	UPF2	L
1975	EIF4B	1977	EIF4E	L
1975	EIF4B	8661	EIF3S10	L
1975	EIF4B	26986	PABPC1	L
1977	EIF4E	1978	EIF4EBP1	RL
1977	EIF4E	1979	EIF4EBP2	L
1977	EIF4E	1981	EIF4G1	L
1977	EIF4E	1982	EIF4G2	L
1977	EIF4E	5371	PML	L
1977	EIF4E	7414	VCL	L
1977	EIF4E	8550	MAPKAPK5	L
1977	EIF4E	8637	EIF4EBP3	L
1977	EIF4E	8672	EIF4G3	L
1977	EIF4E	56478	EIF4ENIF1	L
1978	EIF4EBP1	4597	MVD	S
1978	EIF4EBP1	8550	MAPKAPK5	L
1978	EIF4EBP1	54921	DERPC	R
1981	EIF4G1	1983	EIF5	L
1981	EIF4G1	8569	MKNK1	L
1981	EIF4G1	9372	ZFYVE9	L
1981	EIF4G1	27250	PDCD4	L
1982	EIF4G2	6498	SKIL	L
1982	EIF4G2	8569	MKNK1	L
1983	EIF5	8666	EIF3S4	L
1983	EIF5	8894	EIF2S2	L
1984	EIF5A	6125	RPL5	L
1984	EIF5A	7514	XPO1	L
1984	EIF5A	22803	XRN2	L

1990	ELA1	5265	SERPINA1	L
1990	ELA1	5266	PI3	L
1991	ELA2	1992	SERPINB1	L
1991	ELA2	2006	ELN	L
1991	ELA2	3827	KNG1	L
1991	ELA2	4035	LRP1	L
1991	ELA2	5054	SERPINE1	L
1991	ELA2	5265	SERPINA1	L
1991	ELA2	5275	SERPINB13	L
1991	ELA2	5345	SERPINF2	L
1991	ELA2	6382	SDC1	L
1991	ELA2	6590	SLPI	L
1991	ELA2	7057	THBS1	L
1992	SERPINB1	5657	PRTN3	L
1995	ELAVL3	2130	EWSR1	R
1996	ELAVL4	2130	EWSR1	R
1997	ELF1	4790	NFKB1	L
1997	ELF1	4801	NFYB	L
1997	ELF1	5925	RB1	L
1997	ELF1	6667	SP1	L
1999	ELF3	2060	EPS15	L
1999	ELF3	4790	NFKB1	L
1999	ELF3	9439	CRSP3	L
2001	ELF5	6210	RPS15A	R
2001	ELF5	51548	SIRT6	R
2002	ELK1	2353	FOS	L
2002	ELK1	2885	GRB2	L
2002	ELK1	2887	GRB10	L
2002	ELK1	5594	MAPK1	L
2002	ELK1	5595	MAPK3	L
2002	ELK1	6622	SNCA	L
2002	ELK1	8576	STK16	L
2002	ELK1	25843	PREI3	S
2004	ELK3	6929	TCF3	L
2005	ELK4	6722	SRF	L
2006	ELN	2192	FBLN1	L
2006	ELN	2199	FBLN2	L
2006	ELN	2200	FBN1	L
2006	ELN	2201	FBN2	L
2006	ELN	2219	FCN1	L
2006	ELN	3958	LGALS3	L
2006	ELN	4015	LOX	L
2006	ELN	4069	LYZ	L
2006	ELN	4237	MFAP2	L
2006	ELN	5657	PRTN3	L
2006	ELN	6690	SPINK1	L
2006	ELN	22795	NID2	L
2006	ELN	60681	FKBP10	L
2009	EML1	2895	GRID2	L
2009	EML1	81875	ISG20L2	R
2010	EMD	4000	LMNA	L
2010	EMD	5829	PXN	L
2010	EMD	6456	SH3GL2	S
2010	EMD	6457	SH3GL3	S
2010	EMD	8815	BANF1	L
2010	EMD	10488	CREB3	R
2010	EMD	10980	COPS6	S
2010	EMD	23345	SYNE1	L
2010	EMD	26993	AKAP8L	L
2010	EMD	55211	DPPA4	S
2010	EMD	89885	FATE1	R
2010	EMD	91746	YT521	L
2010	EMD	222389	C10orf30	R
2017	CTTN	2241	FER	L
2017	CTTN	2245	FGD1	L
2017	CTTN	2885	GRB2	L
2017	CTTN	3737	KCNA2	L

2017	CTTN	4638	MYLK	L
2017	CTTN	6850	SYK	L
2017	CTTN	7082	TJP1	L
2017	CTTN	9672	SDC3	L
2017	CTTN	22941	SHANK2	L
2017	CTTN	55139	FLJ10415	S
2022	ENG	3624	INHBA	L
2022	ENG	7040	TGFB1	L
2022	ENG	7042	TGFB2	L
2022	ENG	7043	TGFB3	L
2022	ENG	7046	TGFBR1	L
2022	ENG	7048	TGFBR2	L
2023	ENO1	5340	PLG	L
2023	ENO1	5829	PXN	L
2023	ENO1	6399	TRAPPC2	L
2026	ENO2	2029	ENSA	S
2026	ENO2	3098	HK1	S
2026	ENO2	3297	HSF1	S
2026	ENO2	4134	MAP4	S
2026	ENO2	6483	ST3GAL2	S
2026	ENO2	7277	TUBA1	S
2026	ENO2	10073	RNUT1	S
2026	ENO2	11065	UBE2C	S
2026	ENO2	22927	HABP4	S
2026	ENO2	26151	NAT9	S
2026	ENO2	27190	IL17B	S
2026	ENO2	57827	C6orf47	S
2026	ENO2	59307	SIGIRR	S
2026	ENO2	89927	C16orf45	S
2026	ENO2	374291	NDUFS7	S
2029	ENSA	10425	ARIH2	S
2029	ENSA	79047	KCTD15	S
2030	SLC29A1	8859	STK19	L
2033	EP300	2099	ESR1	L
2033	EP300	2113	ETS1	L
2033	EP300	2114	ETS2	L
2033	EP300	2237	FEN1	L
2033	EP300	2627	GATA6	L
2033	EP300	2959	GTF2B	L
2033	EP300	3091	HIF1A	L
2033	EP300	3164	NR4A1	L
2033	EP300	3192	HNRPU	L
2033	EP300	3621	ING1	L
2033	EP300	4086	SMAD1	L
2033	EP300	4087	SMAD2	L
2033	EP300	4088	SMAD3	L
2033	EP300	4092	SMAD7	L
2033	EP300	4094	MAF	L
2033	EP300	4193	MDM2	L
2033	EP300	4194	MDM4	L
2033	EP300	4205	MEF2A	L
2033	EP300	4255	MGMT	L
2033	EP300	4435	CITED1	L
2033	EP300	4605	MYBL2	L
2033	EP300	4654	MYOD1	L
2033	EP300	4773	NFATC2	L
2033	EP300	4862	NPAS2	L
2033	EP300	5111	PCNA	L
2033	EP300	5467	PPARD	L
2033	EP300	5629	PROX1	L
2033	EP300	5757	PTMA	L
2033	EP300	5886	RAD23A	L
2033	EP300	5970	RELA	L
2033	EP300	6095	RORA	L
2033	EP300	6721	SREBF2	L
2033	EP300	6760	SS18	L
2033	EP300	6772	STAT1	L

2033	EP300	6773	STAT2	L
2033	EP300	6774	STAT3	L
2033	EP300	6778	STAT6	L
2033	EP300	6886	TAL1	L
2033	EP300	6908	TBP	L
2033	EP300	6927	TCF1	L
2033	EP300	6929	TCF3	L
2033	EP300	6996	TDG	L
2033	EP300	7020	TFAP2A	L
2033	EP300	7157	TP53	L
2033	EP300	7161	TP73	L
2033	EP300	7251	TSG101	L
2033	EP300	7291	TWIST1	L
2033	EP300	7329	UBE2I	L
2033	EP300	7392	USF2	L
2033	EP300	7528	YY1	L
2033	EP300	8092	CART1	L
2033	EP300	9325	TRIP4	L
2033	EP300	9406	ZNF265	L
2033	EP300	9464	HAND2	L
2033	EP300	9794	MAML1	L
2033	EP300	10370	CITED2	L
2033	EP300	10432	RBM14	L
2033	EP300	10474	TADA3L	L
2033	EP300	10499	NCOA2	L
2033	EP300	10923	SUB1	L
2033	EP300	10980	COPS6	S
2033	EP300	23741	CRI1	L
2033	EP300	26039	SS18L1	L
2033	EP300	27043	PELP1	L
2033	EP300	51147	ING4	L
2033	EP300	51176	LEF1	L
2033	EP300	55728	N4BP2	L
2033	EP300	55809	TRERF1	L
2033	EP300	79753	SNIP1	L
2033	EP300	84289	ING5	L
2033	EP300	133746	JMY	L
2033	EP300	163732	CITED4	L
2034	EPAS1	4088	SMAD3	L
2035	EPB41	2038	EPB42	L
2035	EPB41	2995	GYPC	L
2035	EPB41	3838	KPNA2	L
2035	EPB41	4926	NUMA1	L
2035	EPB41	6521	SLC4A1	L
2035	EPB41	6709	SPTAN1	L
2035	EPB41	6710	SPTB	L
2035	EPB41	7307	U2AF1	L
2035	EPB41	8573	CASK	L
2035	EPB41	8666	EIF3S4	L
2035	EPB41	9414	TJP2	L
2035	EPB41	55835	CENPJ	L
2036	EPB41L1	2890	GRIA1	L
2036	EPB41L1	3708	ITPR1	L
2036	EPB41L1	4926	NUMA1	L
2036	EPB41L1	116986	CENTG1	L
2037	EPB41L2	2286	FKBP2	L
2037	EPB41L2	2890	GRIA1	L
2037	EPB41L2	4926	NUMA1	L
2037	EPB41L2	6709	SPTAN1	L
2038	EPB42	2039	EPB49	L
2038	EPB42	3845	KRAS	L
2038	EPB42	6522	SLC4A2	L
2038	EPB42	6709	SPTAN1	L
2038	EPB42	23673	STX12	L
2039	EPB49	6633	SNRPD2	S
2039	EPB49	6710	SPTB	L
2039	EPB49	10544	PROCR	S

2039	EPB49	53635	PTOV1	S
2040	STOM	6513	SLC2A1	L
2040	STOM	9311	ACCN3	L
2042	EPHA3	55680	RUFY2	L
2043	EPHA4	2534	FYN	L
2043	EPHA4	22899	ARHGEF15	L
2043	EPHA4	25791	NGEF	L
2045	EPHA7	4301	MLLT4	L
2046	EPHA8	2534	FYN	L
2046	EPHA8	5294	PIK3CG	L
2047	EPHB1	2051	EPHB6	L
2047	EPHB1	2885	GRB2	L
2047	EPHB1	2887	GRB10	L
2047	EPHB1	4690	NCK1	L
2047	EPHB1	5159	PDGFRB	L
2048	EPHB2	4301	MLLT4	L
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2048	EPHB2	6259	RYK	L
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2048	EPHB2	6714	SRC	L
2048	EPHB2	6868	ADAM17	L
2049	EPHB3	2534	FYN	L
2049	EPHB3	4301	MLLT4	L
2049	EPHB3	5921	RASA1	L
2049	EPHB3	6259	RYK	L
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2051	EPHB6	6303	SAT	S
2051	EPHB6	307255	(null)	S
2053	EPHX2	25934	NIPSNAP3A	S
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2056	EPO	10399	GNB2L1	L
2057	EPOR	2770	GNAI1	L
2057	EPOR	2885	GRB2	L
2057	EPOR	3717	JAK2	L
2057	EPOR	3815	KIT	L
2057	EPOR	4067	LYN	L
2057	EPOR	4254	KITLG	L
2057	EPOR	5295	PIK3R1	L
2057	EPOR	5594	MAPK1	L
2057	EPOR	5595	MAPK3	L
2057	EPOR	5777	PTPN6	L
2057	EPOR	5781	PTPN11	L
2057	EPOR	6464	SHC1	L
2057	EPOR	6776	STAT5A	L
2057	EPOR	6850	SYK	L
2057	EPOR	7409	VAV1	L
2057	EPOR	8660	IRS2	L
2057	EPOR	8835	SOCS2	L
2057	EPOR	9021	SOCS3	L
2057	EPOR	9846	GAB2	L
2057	EPOR	10399	GNB2L1	L
2057	EPOR	10750	GRAP	L
2057	EPOR	11273	ATXN2L	L
2058	EPRS	3320	HSPCA	L
2058	EPRS	3376	IARS	L
2058	EPRS	51497	TH1L	S
2059	EPS8	5108	PCM1	R
2059	EPS8	6461	SHB	L
2059	EPS8	6464	SHC1	L
2059	EPS8	6714	SRC	L
2059	EPS8	7802	DNALI1	S
2059	EPS8	7965	JTV1	R
2059	EPS8	9712	USP6NL	L
2059	EPS8	10006	ABI1	L
2059	EPS8	10458	BAIAP2	RL
2059	EPS8	11007	DIPA	R

2059	EPS8	26258	PLDN	R
2059	EPS8	29911	HOOK2	R
2059	EPS8	51168	MYO15A	S
2059	EPS8	55052	MRPL20	S
2060	EPS15	3267	HRB	L
2060	EPS15	3268	HRBL	L
2060	EPS15	4734	NEDD4	L
2060	EPS15	6453	ITSN1	L
2060	EPS15	7805	LAPTM5	L
2060	EPS15	8650	NUMB	L
2060	EPS15	8867	SYNJ1	L
2060	EPS15	9146	HGS	L
2060	EPS15	9185	REPS2	L
2060	EPS15	9253	NUMBL	L
2060	EPS15	9892	SNAP91	L
2060	EPS15	10254	STAM2	L
2060	EPS15	22905	EPN2	L
2060	EPS15	23677	SH3BP4	L
2060	EPS15	26994	RNF11	L
2060	EPS15	29924	EPN1	L
2060	EPS15	51362	CDC40	L
2060	EPS15	85439	STN2	L
2063	NR2F6	2099	ESR1	L
2063	NR2F6	2908	NR3C1	L
2063	NR2F6	7026	NR2F2	L
2063	NR2F6	7068	THRB	L
2063	NR2F6	8648	NCOA1	L
2063	NR2F6	9068	ANGPTL1	L
2064	ERBB2	2065	ERBB3	L
2064	ERBB2	2185	PTK2B	L
2064	ERBB2	2885	GRB2	L
2064	ERBB2	2886	GRB7	L
2064	ERBB2	3084	NRG1	L
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2064	ERBB2	3572	IL6ST	L
2064	ERBB2	3691	ITGB4	L
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2064	ERBB2	3728	JUP	L
2064	ERBB2	3732	CD82	L
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2064	ERBB2	4582	MUC1	L
2064	ERBB2	5058	PAK1	L
2064	ERBB2	5295	PIK3R1	L
2064	ERBB2	5296	PIK3R2	L
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2064	ERBB2	10140	TOB1	L
2064	ERBB2	10273	STUB1	L
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2065	ERBB3	9542	NRG2	L

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2065	ERBB3	10728	PTGES3	L
2065	ERBB3	57489	ODF2L	S
2065	ERBB3	84256	FLYWCH1	S
2066	ERBB4	2069	EREG	L
2066	ERBB4	3084	NRG1	L
2066	ERBB4	4582	MUC1	L
2066	ERBB4	6645	SNTB2	L
2066	ERBB4	9542	NRG2	L
2066	ERBB4	10413	YAP1	L
2067	ERCC1	2072	ERCC4	L
2067	ERCC1	7507	XPA	L
2067	ERCC1	84993	UBL7	R
2068	ERCC2	2073	ERCC5	L
2068	ERCC2	2966	GTF2H2	L
2068	ERCC2	7157	TP53	L
2068	ERCC2	8878	SQSTM1	L
2068	ERCC2	404672	GTF2H5	L
2071	ERCC3	2960	GTF2E1	L
2071	ERCC3	2961	GTF2E2	L
2071	ERCC3	2965	GTF2H1	L
2071	ERCC3	2966	GTF2H2	L
2071	ERCC3	2967	GTF2H3	L
2071	ERCC3	2968	GTF2H4	L
2071	ERCC3	4331	MNAT1	L
2071	ERCC3	5705	PSMC5	L
2071	ERCC3	7157	TP53	L
2071	ERCC3	7508	XPC	L
2071	ERCC3	404672	GTF2H5	L
2073	ERCC5	2074	ERCC6	L
2073	ERCC5	2965	GTF2H1	L
2073	ERCC5	4913	NTHL1	L
2073	ERCC5	5111	PCNA	L
2074	ERCC6	2961	GTF2E2	L
2074	ERCC6	5430	POLR2A	L
2074	ERCC6	7157	TP53	L
2074	ERCC6	7507	XPA	L
2074	ERCC6	11200	CHEK2	L
2074	ERCC6	26994	RNF11	L
2077	ERF	7514	XPO1	L
2078	ERG	2114	ETS2	L
2078	ERG	2313	FLI1	L
2078	ERG	2353	FOS	L
2078	ERG	3725	JUN	L
2079	ERH	3312	HSPA8	S
2079	ERH	6456	SH3GL2	S
2079	ERH	7088	TLE1	S
2079	ERH	7157	TP53	S
2079	ERH	9094	UNC119	S
2079	ERH	9869	SETDB1	S
2079	ERH	10980	COPS6	S
2079	ERH	51003	MED31	S
2079	ERH	84060	DKFZP564O0523	S
2079	ERH	84966	IGSF21	S
2081	ERN1	3309	HSPA5	L
2081	ERN1	3320	HSPCA	L
2081	ERN1	4217	MAP3K5	L
2081	ERN1	5663	PSEN1	L
2081	ERN1	7186	TRAF2	L
2091	FBL	3276	HRMT1L2	L
2091	FBL	5303	PIN4	L
2091	FBL	5694	PSMB6	L
2091	FBL	6606	SMN1	L
2091	FBL	6638	SNRPN	L
2091	FBL	51602	NOP5/NOP58	L
2091	FBL	79735	TBC1D17	S
2099	ESR1	2100	ESR2	L

2099	ESR1	2308	FOXO1A	L
2099	ESR1	2647	BLOC1S1	L
2099	ESR1	2872	MKNK2	L
2099	ESR1	2965	GTF2H1	L
2099	ESR1	3275	HRMT1L1	L
2099	ESR1	3320	HSPCA	L
2099	ESR1	3326	HSPCB	L
2099	ESR1	3670	ISL1	L
2099	ESR1	3725	JUN	L
2099	ESR1	4087	SMAD2	L
2099	ESR1	4193	MDM2	L
2099	ESR1	4303	MLLT7	L
2099	ESR1	4331	MNAT1	L
2099	ESR1	4616	GADD45B	L
2099	ESR1	5295	PIK3R1	L
2099	ESR1	5458	POU4F2	L
2099	ESR1	5469	PPARBP	L
2099	ESR1	5594	MAPK1	L
2099	ESR1	5927	JARID1A	L
2099	ESR1	5992	RFX4	L
2099	ESR1	5998	RGS3	L
2099	ESR1	6294	SAFB	L
2099	ESR1	6464	SHC1	L
2099	ESR1	6595	SMARCA2	L
2099	ESR1	6597	SMARCA4	L
2099	ESR1	6605	SMARCE1	L
2099	ESR1	6776	STAT5A	L
2099	ESR1	6908	TBP	L
2099	ESR1	6996	TDG	L
2099	ESR1	7025	NR2F1	L
2099	ESR1	7157	TP53	L
2099	ESR1	7181	NR2C1	L
2099	ESR1	7182	NR2C2	L
2099	ESR1	7494	XBP1	L
2099	ESR1	7533	YWHAH	L
2099	ESR1	7704	ZBTB16	L
2099	ESR1	7799	PRDM2	L
2099	ESR1	8202	NCOA3	L
2099	ESR1	8204	NRIP1	L
2099	ESR1	8431	NR0B2	L
2099	ESR1	8648	NCOA1	L
2099	ESR1	8668	EIF3S2	L
2099	ESR1	8805	TRIM24	L
2099	ESR1	9112	MTA1	L
2099	ESR1	9325	TRIP4	L
2099	ESR1	9584	RNPC2	L
2099	ESR1	9604	RNF14	L
2099	ESR1	9611	NCOR1	L
2099	ESR1	9612	NCOR2	L
2099	ESR1	9862	THRAP4	L
2099	ESR1	9961	MVP	L
2099	ESR1	10474	TADA3L	L
2099	ESR1	10499	NCOA2	L
2099	ESR1	10728	PTGES3	L
2099	ESR1	10891	PPARGC1A	L
2099	ESR1	10912	GADD45G	L
2099	ESR1	11214	AKAP13	L
2099	ESR1	11331	PHB2	L
2099	ESR1	24148	C20orf14	L
2099	ESR1	25920	COBRA1	L
2099	ESR1	27043	PELP1	L
2099	ESR1	29931	LOH3CR2A	L
2099	ESR1	30836	ERBP	L
2099	ESR1	55629	PNRC2	L
2099	ESR1	56924	PAK6	L
2099	ESR1	57109	REXO4	L
2099	ESR1	64324	NSD1	L

2099	ESR1	84172	POLR1B	L
2099	ESR1	133522	PPARGC1B	L
2100	ESR2	2872	MKNK2	L
2100	ESR2	4085	MAD2L1	L
2100	ESR2	5020	OXT	L
2100	ESR2	5469	PPARBP	L
2100	ESR2	6605	SMARCE1	L
2100	ESR2	6776	STAT5A	L
2100	ESR2	7533	YWHAH	L
2100	ESR2	8202	NCOA3	L
2100	ESR2	8431	NR0B2	L
2100	ESR2	8648	NCOA1	L
2100	ESR2	8805	TRIM24	L
2100	ESR2	9584	RNPC2	L
2100	ESR2	23054	NCOA6	L
2100	ESR2	27043	PELP1	L
2100	ESR2	30836	ERBP	L
2100	ESR2	57109	REXO4	L
2101	ESRRA	8648	NCOA1	L
2101	ESRRA	55629	PNRC2	L
2101	ESRRA	118460	EXOSC6	L
2103	ESRRB	8202	NCOA3	L
2103	ESRRB	10499	NCOA2	L
2104	ESRRG	8648	NCOA1	L
2104	ESRRG	10891	PPARGC1A	L
2104	ESRRG	133522	PPARGC1B	L
2107	ETF1	2935	GSPT1	L
2107	ETF1	9817	KEAP1	R
2107	ETF1	23708	GSPT2	L
2108	ETFA	2109	ETFB	L
2113	ETS1	2114	ETS2	L
2113	ETS1	2353	FOS	L
2113	ETS1	2625	GATA3	L
2113	ETS1	2908	NR3C1	L
2113	ETS1	3725	JUN	L
2113	ETS1	4094	MAF	L
2113	ETS1	4790	NFKB1	L
2113	ETS1	5079	PAX5	L
2113	ETS1	6672	SP100	L
2113	ETS1	7329	UBE2I	L
2113	ETS1	51567	TTRAP	L
2114	ETS2	2625	GATA3	L
2114	ETS2	2908	NR3C1	L
2114	ETS2	3725	JUN	L
2114	ETS2	8558	CDK10	L
2114	ETS2	9372	ZFYVE9	L
2114	ETS2	10771	ZMYND11	L
2115	ETV1	6195	RPS6KA1	L
2115	ETV1	8202	NCOA3	L
2120	ETV6	7329	UBE2I	L
2120	ETV6	7341	SUMO1	L
2122	EVI1	3065	HDAC1	L
2122	EVI1	4088	SMAD3	L
2122	EVI1	8850	PCAF	L
2122	EVI1	9759	HDAC4	L
2125	EVPL	3713	IVL	L
2125	EVPL	3848	KRT1	L
2125	EVPL	3849	KRT2A	L
2125	EVPL	3852	KRT5	L
2125	EVPL	3858	KRT10	L
2125	EVPL	5493	PPL	L
2125	EVPL	6707	SPRR3	L
2130	EWSR1	2185	PTK2B	L
2130	EWSR1	2194	FASN	R
2130	EWSR1	3159	HMGA1	R
2130	EWSR1	3779	KCNMB1	R
2130	EWSR1	3792	KEL	R

2130	EWSR1	4086	SMAD1	L
2130	EWSR1	4089	SMAD4	R
2130	EWSR1	4110	MAGEA11	R
2130	EWSR1	4145	MATK	R
2130	EWSR1	4188	MDFI	R
2130	EWSR1	4515	MTCP1	R
2130	EWSR1	4542	MYO1F	R
2130	EWSR1	4591	TRIM37	R
2130	EWSR1	4598	MVK	R
2130	EWSR1	4637	MYL6	R
2130	EWSR1	4707	NDUFB1	R
2130	EWSR1	4723	NDUFV1	R
2130	EWSR1	4879	NPPB	R
2130	EWSR1	5359	PLSCR1	R
2130	EWSR1	5457	POU4F1	L
2130	EWSR1	5829	PXN	L
2130	EWSR1	5886	RAD23A	R
2130	EWSR1	6160	RPL31	R
2130	EWSR1	6210	RPS15A	R
2130	EWSR1	6297	SALL2	R
2130	EWSR1	6505	SLC1A1	R
2130	EWSR1	6631	SNRPC	L
2130	EWSR1	6872	TAF1	L
2130	EWSR1	6944	VPS72	R
2130	EWSR1	7094	TLN1	L
2130	EWSR1	7288	TULP2	R
2130	EWSR1	7536	SF1	L
2130	EWSR1	7718	ZNF165	R
2130	EWSR1	8050	PDHX	R
2130	EWSR1	9087	TMSB4Y	R
2130	EWSR1	9242	MSC	R
2130	EWSR1	9709	HERPUD1	R
2130	EWSR1	10007	GNPDA1	R
2130	EWSR1	10099	TSPAN3	R
2130	EWSR1	10428	CFDP1	R
2130	EWSR1	11026	LILRA3	R
2130	EWSR1	11030	RBPMS	R
2130	EWSR1	11052	CPSF6	R
2130	EWSR1	11059	WWP1	R
2130	EWSR1	11060	WWP2	R
2130	EWSR1	11103	HRB2	R
2130	EWSR1	22884	WDR37	R
2130	EWSR1	22981	KIAA0980	R
2130	EWSR1	23635	SSBP2	R
2130	EWSR1	25796	PGLS	R
2130	EWSR1	25941	C18orf10	R
2130	EWSR1	26148	C10orf12	R
2130	EWSR1	27104	(null)	R
2130	EWSR1	28973	MRPS18B	R
2130	EWSR1	51304	ZDHHC3	R
2130	EWSR1	51778	MYOZ2	R
2130	EWSR1	54475	NLE1	R
2130	EWSR1	55249	YY1AP1	R
2130	EWSR1	55297	FLJ11088	R
2130	EWSR1	55329	MNS1	R
2130	EWSR1	56302	TRPV5	R
2130	EWSR1	56673	C11orf16	R
2130	EWSR1	56952	PRTFDC1	R
2130	EWSR1	57126	CD177	R
2130	EWSR1	60313	GPBP1L1	R
2130	EWSR1	63948	DMRTB1	R
2130	EWSR1	64777	FLJ22318	R
2130	EWSR1	65997	RASL11B	R
2130	EWSR1	66036	MTMR9	R
2130	EWSR1	79004	CUEDC2	R
2130	EWSR1	79036	MGC2749	R
2130	EWSR1	79173	MGC11271	R

2130	EWSR1	79723	SUV39H2	R
2130	EWSR1	79869	FLJ12529	R
2130	EWSR1	84224	AE2	R
2130	EWSR1	84528	PEPP-2	R
2130	EWSR1	84628	NTNG2	R
2130	EWSR1	85465	SELI	R
2130	EWSR1	93487	C14orf32	R
2130	EWSR1	138046	LOC138046	R
2130	EWSR1	138065	RNF183	R
2130	EWSR1	140735	Dlc2	R
2130	EWSR1	158471	C9orf65	R
2130	EWSR1	163882	C1orf71	R
2130	EWSR1	202559	KHDRBS2	R
2130	EWSR1	221016	CCDC7	R
2130	EWSR1	283238	MGC34821	R
2130	EWSR1	326624	RAB37	R
2130	EWSR1	348487	C1orf117	R
2130	EWSR1	387338	NSUN4	R
2130	EWSR1	387923	C13orf21	R
2130	EWSR1	414061	HCG3	R
2131	EXT1	2132	EXT2	L
2131	EXT1	10131	TRAP1	L
2132	EXT2	10131	TRAP1	L
2132	EXT2	11227	GALNT5	L
2138	EYA1	6495	SIX1	L
2138	EYA1	6496	SIX3	L
2139	EYA2	2771	GNAI2	L
2139	EYA2	2781	GNAZ	L
2139	EYA2	6495	SIX1	L
2139	EYA2	11030	RBPMS	R
2139	EYA2	51804	SIX4	L
2139	EYA2	63948	DMRTB1	R
2140	EYA3	6495	SIX1	L
2140	EYA3	10736	SIX2	L
2140	EYA3	51804	SIX4	L
2140	EYA3	147912	SIX5	L
2145	EZH1	8726	EED	L
2146	EZH2	2975	GTF3C1	S
2146	EZH2	3065	HDAC1	L
2146	EZH2	5252	PHF1	L
2146	EZH2	5303	PIN4	S
2146	EZH2	5694	PSMB6	S
2146	EZH2	6185	RPN2	S
2146	EZH2	6611	SMS	S
2146	EZH2	7409	VAV1	L
2146	EZH2	8726	EED	L
2146	EZH2	11007	DIPA	R
2146	EZH2	22981	KIAA0980	S
2146	EZH2	23588	KLHDC2	S
2146	EZH2	23649	POLA2	S
2146	EZH2	55884	WSB2	S
2146	EZH2	80349	WDR61	S
2147	F2	2151	F2RL2	L
2147	F2	2153	F5	L
2147	F2	2158	F9	L
2147	F2	2160	F11	L
2147	F2	2243	FGA	L
2147	F2	2811	GP1BA	L
2147	F2	3053	SERPIND1	L
2147	F2	3674	ITGA2B	L
2147	F2	3678	ITGA5	L
2147	F2	3827	KNG1	L
2147	F2	5054	SERPINE1	L
2147	F2	5104	SERPINA5	L
2147	F2	5269	SERPINB6	L
2147	F2	5270	SERPINE2	L
2147	F2	5271	SERPINB8	L

2147	F2	5624	PROC	L
2147	F2	7056	THBD	L
2147	F2	7057	THBS1	L
2147	F2	9002	F2RL3	L
2149	F2R	2172	FABP6	L
2149	F2R	2768	GNA12	L
2149	F2R	2769	GNA15	L
2149	F2R	2771	GNAI2	L
2149	F2R	3685	ITGAV	L
2149	F2R	6642	SNX1	L
2149	F2R	10672	GNA13	L
2150	F2RL1	6768	ST14	L
2151	F2RL2	58494	JAM2	L
2151	F2RL2	83700	JAM3	L
2152	F3	2155	F7	L
2152	F3	2159	F10	L
2152	F3	2316	FLNA	L
2152	F3	5340	PLG	L
2153	F5	2159	F10	L
2153	F5	5624	PROC	L
2153	F5	5627	PROS1	L
2153	F5	8475	EPR1	L
2155	F7	2158	F9	L
2155	F7	2159	F10	L
2157	F8	2158	F9	L
2157	F8	2159	F10	L
2157	F8	3309	HSPA5	L
2157	F8	3998	LMAN1	L
2157	F8	4035	LRP1	L
2157	F8	5264	PHYH	L
2157	F8	5624	PROC	L
2157	F8	5627	PROS1	L
2157	F8	7450	VWF	L
2158	F9	4035	LRP1	L
2159	F10	3006	HIST1H1C	S
2159	F10	4259	MGST3	S
2159	F10	5104	SERPINA5	L
2159	F10	5269	SERPINB6	L
2159	F10	5271	SERPINB8	L
2159	F10	5327	PLAT	L
2159	F10	5340	PLG	L
2159	F10	5564	PRKAB1	S
2159	F10	5627	PROS1	L
2159	F10	7035	TFPI	L
2160	F11	2811	GP1BA	L
2160	F11	3827	KNG1	L
2160	F11	5104	SERPINA5	L
2160	F11	5345	SERPINF2	L
2160	F11	7980	TFPI2	L
2161	F12	2811	GP1BA	L
2161	F12	3848	KRT1	L
2161	F12	22918	C1QR1	L
2162	F13A1	2165	F13B	L
2162	F13A1	2243	FGA	L
2162	F13A1	2266	FGG	L
2162	F13A1	2335	FN1	L
2165	F13B	2266	FGG	L
2166	FAAH	5829	PXN	L
2167	FABP4	3991	LIPE	L
2167	FABP4	7431	VIM	S
2168	FABP1	5465	PPARA	L
2168	FABP1	5468	PPARG	L
2170	FABP3	51160	VPS28	S
2171	FABP5	6278	S100A7	L
2175	FANCA	2176	FANCC	L
2175	FANCA	2178	FANCE	L
2175	FANCA	2188	FANCF	L

2175	FANCA	2189	FANCG	RL
2175	FANCA	3551	IKBKB	L
2175	FANCA	6597	SMARCA4	L
2175	FANCA	6599	SMARCC1	L
2175	FANCA	6604	SMARCD3	L
2175	FANCA	27131	SNX5	L
2176	FANCC	2177	FANCD2	L
2176	FANCC	2178	FANCE	L
2176	FANCC	2188	FANCF	L
2176	FANCC	2189	FANCG	L
2176	FANCC	3303	HSPA1A	L
2176	FANCC	6708	SPTA1	L
2176	FANCC	7184	TRA1	L
2177	FANCD2	2178	FANCE	L
2177	FANCD2	5888	RAD51	L
2178	FANCE	2189	FANCG	L
2185	PTK2B	2885	GRB2	L
2185	PTK2B	2903	GRIN2A	L
2185	PTK2B	2934	GSN	L
2185	PTK2B	3689	ITGB2	L
2185	PTK2B	3690	ITGB3	L
2185	PTK2B	3716	JAK1	L
2185	PTK2B	3717	JAK2	L
2185	PTK2B	3718	JAK3	L
2185	PTK2B	3737	KCNA2	L
2185	PTK2B	3932	LCK	L
2185	PTK2B	4067	LYN	L
2185	PTK2B	4145	MATK	L
2185	PTK2B	4162	MCAM	L
2185	PTK2B	4867	NPHP1	L
2185	PTK2B	5295	PIK3R1	L
2185	PTK2B	5580	PRKCD	L
2185	PTK2B	5777	PTPN6	L
2185	PTK2B	5781	PTPN11	L
2185	PTK2B	5782	PTPN12	L
2185	PTK2B	5829	PXN	L
2185	PTK2B	5921	RASA1	L
2185	PTK2B	6464	SHC1	L
2185	PTK2B	6513	SLC2A1	L
2185	PTK2B	6714	SRC	L
2185	PTK2B	6850	SYK	L
2185	PTK2B	7041	TGFB1I1	L
2185	PTK2B	7094	TLN1	L
2185	PTK2B	7409	VAV1	L
2185	PTK2B	7535	ZAP70	L
2185	PTK2B	8853	DDEF2	L
2185	PTK2B	9404	LPXN	L
2185	PTK2B	9564	BCAR1	L
2185	PTK2B	9600	PITPNM1	L
2185	PTK2B	10278	EFS	L
2185	PTK2B	10672	GNA13	L
2185	PTK2B	57605	PITPNM2	L
2185	PTK2B	83394	PITPNM3	L
2186	FALZ	4150	MAZ	L
2188	FANCF	2189	FANCG	L
2188	FANCF	4140	MARK3	S
2188	FANCF	93145	OLFM2	S
2189	FANCG	2553	GABPB2	R
2189	FANCG	3880	KRT19	R
2189	FANCG	9189	ZBED1	R
2189	FANCG	83878	USHBP1	R
2189	FANCG	154075	SAMD3	R
2191	FAP	5329	PLAUR	L
2192	FBLN1	2244	FGB	L
2192	FBLN1	2335	FN1	L
2192	FBLN1	3339	HSPG2	L
2192	FBLN1	4089	SMAD4	L

2192	FBLN1	4856	NOV	L
2192	FBLN1	6498	SKIL	L
2192	FBLN1	8076	MFAP5	L
2193	FARSLA	10236	HNRPR	S
2197	FAU	5829	PXN	L
2197	FAU	10980	COPS6	S
2199	FBLN2	2200	FBN1	L
2199	FBLN2	2335	FN1	L
2199	FBLN2	3339	HSPG2	L
2199	FBLN2	3911	LAMA5	L
2199	FBLN2	4811	NID1	L
2199	FBLN2	5549	PRELP	L
2199	FBLN2	63827	BCAN	L
2199	FBLN2	80781	COL18A1	L
2199	FBLN2	284217	LAMA1	L
2200	FBN1	2201	FBN2	L
2200	FBN1	4237	MFAP2	L
2200	FBN1	4653	MYOC	L
2200	FBN1	8076	MFAP5	L
2201	FBN2	4087	SMAD2	L
2201	FBN2	4147	MATN2	L
2201	FBN2	8076	MFAP5	L
2202	EFEMP1	4089	SMAD4	L
2202	EFEMP1	6449	SGTA	R
2203	FBP1	3312	HSPA8	S
2203	FBP1	9513	FXR2	R
2203	FBP1	9551	ATP5J2	S
2203	FBP1	64430	C14orf135	R
2203	FBP1	84164	ASCC2	S
2203	FBP1	84708	LNX	R
2203	FBP1	138065	RNF183	R
2204	FCAR	2209	FCGR1A	L
2204	FCAR	4067	LYN	L
2205	FCER1A	2206	MS4A2	L
2205	FCER1A	2207	FCER1G	L
2205	FCER1A	3497	IGHE	L
2206	MS4A2	4067	LYN	L
2206	MS4A2	6850	SYK	L
2207	FCER1G	4067	LYN	L
2207	FCER1G	5336	PLCG2	L
2207	FCER1G	6850	SYK	L
2207	FCER1G	9437	NCR1	L
2207	FCER1G	51206	GP6	L
2208	FCER2	2534	FYN	L
2208	FCER2	3687	ITGAX	L
2209	FCGR1A	2214	FCGR3A	L
2209	FCGR1A	3055	HCK	L
2209	FCGR1A	3273	HRG	L
2209	FCGR1A	6850	SYK	L
2209	FCGR1A	27040	LAT	L
2212	FCGR2A	3055	HCK	L
2212	FCGR2A	3958	LGALS3	L
2212	FCGR2A	5295	PIK3R1	L
2212	FCGR2A	6464	SHC1	L
2212	FCGR2A	27040	LAT	L
2213	FCGR2B	3636	INPPL1	L
2213	FCGR2B	4061	LY6E	L
2213	FCGR2B	5777	PTPN6	L
2213	FCGR2B	11161	C14orf1	S
2214	FCGR3A	3932	LCK	L
2214	FCGR3A	5788	PTPRC	L
2214	FCGR3A	6464	SHC1	L
2214	FCGR3A	7535	ZAP70	L
2215	FCGR3B	3500	IGHG1	L
2219	FCN1	7040	TGFB1	L
2220	FCN2	5648	MASP1	L
2220	FCN2	10747	MASP2	L

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2222	FDFT1	23204	ARL6IP	S
2222	FDFT1	73121	(null)	S
2222	FDFT1	79188	TMEM43	S
2222	FDFT1	257218	SHPRH	S
2224	FDPS	2260	FGFR1	L
2230	FDX1	2232	FDXR	L
2230	FDX1	54205	CYCS	L
2237	FEN1	3178	HNRPA1	L
2237	FEN1	5111	PCNA	L
2237	FEN1	7414	VCL	L
2237	FEN1	7486	WRN	L
2239	GPC4	2247	FGF2	L
2239	GPC4	80781	COL18A1	L
2241	FER	6774	STAT3	L
2241	FER	7110	TMF1	L
2242	FES	3566	IL4R	L
2242	FES	5295	PIK3R1	L
2242	FES	5921	RASA1	L
2242	FES	6774	STAT3	L
2242	FES	9564	BCAR1	L
2242	FES	22821	RASA3	L
2242	FES	56896	DPYSL5	L
2243	FGA	2244	FGB	L
2243	FGA	2266	FGG	L
2243	FGA	3273	HRG	L
2243	FGA	3674	ITGA2B	L
2243	FGA	3690	ITGB3	L
2243	FGA	4811	NID1	L
2243	FGA	5104	SERPINA5	L
2243	FGA	5327	PLAT	L
2243	FGA	7057	THBS1	L
2243	FGA	7916	BAT2	L
2244	FGB	2266	FGG	L
2244	FGB	4018	LPA	L
2244	FGB	4811	NID1	L
2244	FGB	5104	SERPINA5	L
2246	FGF1	2260	FGFR1	L
2246	FGF1	2261	FGFR3	L
2246	FGF1	2263	FGFR2	L
2246	FGF1	2264	FGFR4	L
2246	FGF1	3313	HSPA9B	L
2246	FGF1	6284	S100A13	L
2246	FGF1	6857	SYT1	L
2246	FGF1	9158	FIBP	L
2246	FGF1	9982	FGFBP1	L
2247	FGF2	2260	FGFR1	L
2247	FGF2	2263	FGFR2	L
2247	FGF2	2264	FGFR4	L
2247	FGF2	2719	GPC3	L
2247	FGF2	3339	HSPG2	L
2247	FGF2	5196	PF4	L
2247	FGF2	6128	RPL6	L
2247	FGF2	6223	RPS19	L
2247	FGF2	7448	VTN	L
2247	FGF2	9672	SDC3	L
2247	FGF2	9982	FGFBP1	L
2247	FGF2	10563	CXCL13	L
2248	FGF3	2263	FGFR2	L
2250	FGF5	2260	FGFR1	L
2250	FGF5	2263	FGFR2	L
2250	FGF5	7039	TGFA	L
2250	FGF5	7422	VEGF	L
2251	FGF6	2264	FGFR4	L
2252	FGF7	2263	FGFR2	L
2252	FGF7	3339	HSPG2	L
2253	FGF8	2261	FGFR3	L

2253	FGF8	2264	FGFR4	L
2254	FGF9	2261	FGFR3	L
2254	FGF9	2263	FGFR2	L
2255	FGF10	2263	FGFR2	L
2257	FGF12	23542	MAPK8IP2	L
2258	FGF13	23542	MAPK8IP2	L
2260	FGFR1	2885	GRB2	L
2260	FGFR1	2888	GRB14	L
2260	FGFR1	3837	KPNB1	L
2260	FGFR1	4684	NCAM1	L
2260	FGFR1	6461	SHB	L
2260	FGFR1	6464	SHC1	L
2260	FGFR1	10817	FRS3	L
2260	FGFR1	10818	FRS2	L
2261	FGFR3	2885	GRB2	L
2261	FGFR3	2975	GTF3C1	S
2261	FGFR3	3050	HBZ	S
2261	FGFR3	3191	HNRPL	S
2261	FGFR3	3856	KRT8	S
2261	FGFR3	4726	NDUFS6	S
2261	FGFR3	5781	PTPN11	L
2261	FGFR3	6132	RPL8	S
2261	FGFR3	9887	C1orf16	S
2261	FGFR3	10571	SMA3	S
2261	FGFR3	23649	POLA2	S
2261	FGFR3	55698	FLJ10324	S
2261	FGFR3	55819	RNF130	S
2261	FGFR3	57562	KIAA1377	S
2261	FGFR3	63940	GPSM3	L
2261	FGFR3	79866	FLJ22624	S
2261	FGFR3	116985	CENTD2	S
2261	FGFR3	149483	CCDC17	S
2263	FGFR2	5335	PLCG1	L
2264	FGFR4	9965	FGF19	L
2266	FGG	3383	ICAM1	L
2266	FGG	3684	ITGAM	L
2266	FGG	5104	SERPINA5	L
2266	FGG	7448	VTN	L
2268	FGR	5747	PTK2	L
2268	FGR	6504	SLAMF1	L
2268	FGR	6850	SYK	L
2268	FGR	7454	WAS	L
2268	FGR	10971	YWHAQ	L
2271	FH	4191	MDH2	L
2272	FHIT	7329	UBE2I	L
2273	FHL1	2274	FHL2	L
2274	FHL2	2275	FHL3	L
2274	FHL2	3488	IGFBP5	L
2274	FHL2	3675	ITGA3	L
2274	FHL2	3679	ITGA7	L
2274	FHL2	3688	ITGB1	L
2274	FHL2	3689	ITGB2	L
2274	FHL2	3694	ITGB6	L
2274	FHL2	4176	MCM7	L
2274	FHL2	5664	PSEN2	L
2274	FHL2	6421	SFPQ	L
2274	FHL2	7273	TTN	L
2274	FHL2	7704	ZBTB16	L
2274	FHL2	9372	ZFYVE9	L
2274	FHL2	9457	FHL5	L
2274	FHL2	22900	CARD8	L
2274	FHL2	51455	REV1L	L
2275	FHL3	3927	LASP1	R
2275	FHL3	5594	MAPK1	L
2275	FHL3	7205	TRIP6	R
2275	FHL3	7965	JTV1	R
2275	FHL3	11135	CDC42EP1	R

2275	FHL3	11279	KLF8	L
2275	FHL3	51586	PCQAP	R
2275	FHL3	54507	TSRC1	R
2275	FHL3	57144	PAK7	R
2275	FHL3	79171	MGC10433	R
2275	FHL3	84708	LNX	R
2275	FHL3	222546	RFXDC1	R
2277	FIGF	2324	FLT4	L
2277	FIGF	3791	KDR	L
2280	FKBP1A	2288	FKBP4	L
2280	FKBP1A	2475	FRAP1	L
2280	FKBP1A	3708	ITPR1	L
2280	FKBP1A	5530	PPP3CA	L
2280	FKBP1A	5534	PPP3R1	L
2280	FKBP1A	6261	RYR1	L
2280	FKBP1A	6263	RYR3	L
2280	FKBP1A	7041	TGFB1I1	L
2280	FKBP1A	7046	TGFBR1	L
2280	FKBP1A	7528	YY1	L
2280	FKBP1A	11146	GLMN	L
2281	FKBP1B	6262	RYR2	L
2286	FKBP2	7917	BAT3	S
2286	FKBP2	10565	ARFGEF1	L
2287	FKBP3	3065	HDAC1	L
2287	FKBP3	3066	HDAC2	L
2287	FKBP3	7528	YY1	L
2288	FKBP4	2908	NR3C1	L
2288	FKBP4	3662	IRF4	L
2288	FKBP4	5264	PHYH	L
2288	FKBP4	11146	GLMN	L
2289	FKBP5	3320	HSPCA	L
2289	FKBP5	5241	PGR	L
2290	FOXG1B	2308	FOXO1A	L
2290	FOXG1B	2661	GDF9	S
2290	FOXG1B	3065	HDAC1	L
2290	FOXG1B	3280	HES1	L
2290	FOXG1B	4086	SMAD1	L
2290	FOXG1B	4303	MLLT7	L
2290	FOXG1B	7088	TLE1	L
2290	FOXG1B	7090	TLE3	L
2290	FOXG1B	10765	JARID1B	L
2295	FOXF2	2959	GTF2B	L
2295	FOXF2	6908	TBP	L
2304	FOXE1	5331	PLCB3	L
2307	FKHL18	11030	RBPMS	R
2308	FOXO1A	2538	G6PC	L
2308	FOXO1A	3172	HNF4A	L
2308	FOXO1A	3202	HOXA5	L
2308	FOXO1A	4088	SMAD3	L
2308	FOXO1A	4089	SMAD4	L
2308	FOXO1A	6714	SRC	L
2308	FOXO1A	7532	YWHAG	L
2308	FOXO1A	7534	YWHAZ	L
2309	FOXO3A	3551	IKBKB	L
2309	FOXO3A	4087	SMAD2	L
2309	FOXO3A	4088	SMAD3	L
2309	FOXO3A	4089	SMAD4	L
2309	FOXO3A	7534	YWHAZ	L
2313	FLI1	2623	GATA1	L
2313	FLI1	4093	SMAD9	L
2313	FLI1	6722	SRF	L
2314	FLII	9208	LRRFIP1	L
2314	FLII	9209	LRRFIP2	L
2314	FLII	10133	OPTN	L
2314	FLII	10293	TRIP	L
2316	FLNA	2317	FLNB	L
2316	FLNA	2811	GP1BA	L

2316	FLNA	2897	GRIK1	L
2316	FLNA	2899	GRIK3	L
2316	FLNA	2918	GRM8	L
2316	FLNA	3688	ITGB1	L
2316	FLNA	3695	ITGB7	L
2316	FLNA	4088	SMAD3	L
2316	FLNA	4090	SMAD5	L
2316	FLNA	4867	NPHP1	L
2316	FLNA	5045	FURIN	L
2316	FLNA	5663	PSEN1	L
2316	FLNA	5664	PSEN2	L
2316	FLNA	5829	PXN	L
2316	FLNA	5898	RALA	L
2316	FLNA	6401	SELE	L
2316	FLNA	6416	MAP2K4	L
2316	FLNA	7094	TLN1	L
2316	FLNA	7186	TRAF2	L
2316	FLNA	7204	TRIO	L
2316	FLNA	7428	VHL	L
2316	FLNA	9499	MYOT	L
2316	FLNA	10019	LNK	L
2316	FLNA	54751	FBLIM1	L
2316	FLNA	80790	CMIP	L
2316	FLNA	89790	SIGLEC10	L
2317	FLNB	2811	GP1BA	L
2317	FLNB	3688	ITGB1	L
2317	FLNB	4867	NPHP1	L
2317	FLNB	5663	PSEN1	L
2317	FLNB	5664	PSEN2	L
2317	FLNB	7253	TSHR	L
2317	FLNB	54751	FBLIM1	L
2317	FLNB	55729	ATF7IP	L
2317	FLNB	64750	SMURF2	L
2318	FLNC	3636	INPPL1	L
2318	FLNC	3751	KCND2	L
2318	FLNC	4867	NPHP1	L
2318	FLNC	5045	FURIN	L
2318	FLNC	6416	MAP2K4	L
2318	FLNC	6444	SGCD	L
2318	FLNC	6445	SGCG	L
2318	FLNC	9499	MYOT	L
2318	FLNC	10114	HIPK3	L
2318	FLNC	58529	MYOZ1	L
2318	FLNC	90102	PHLDB2	L
2321	FLT1	3791	KDR	L
2321	FLT1	5228	PGF	L
2321	FLT1	5336	PLCG2	L
2321	FLT1	6464	SHC1	L
2321	FLT1	7422	VEGF	L
2321	FLT1	7423	VEGFB	L
2321	FLT1	25759	SHC2	L
2322	FLT3	2323	FLT3LG	L
2322	FLT3	2885	GRB2	L
2322	FLT3	6464	SHC1	L
2322	FLT3	8651	SOCS1	L
2323	FLT3LG	4254	KITLG	L
2323	FLT3LG	5217	PFN2	S
2324	FLT4	2885	GRB2	L
2324	FLT4	3688	ITGB1	L
2324	FLT4	6464	SHC1	L
2324	FLT4	7424	VEGFC	L
2324	FLT4	55729	ATF7IP	L
2329	FMO4	7094	TLN1	L
2331	FMOD	7040	TGFB1	L
2331	FMOD	7042	TGFB2	L
2331	FMOD	7043	TGFB3	L
2332	FMR1	7329	UBE2I	L

2332	FMR1	8087	FXR1	L
2332	FMR1	9513	FXR2	L
2332	FMR1	23191	CYFIP1	L
2332	FMR1	26747	NUFIP1	L
2332	FMR1	26999	CYFIP2	L
2332	FMR1	57532	182-FIP	L
2335	FN1	2934	GSN	L
2335	FN1	3371	TNC	L
2335	FN1	3486	IGFBP3	L
2335	FN1	3675	ITGA3	L
2335	FN1	3676	ITGA4	L
2335	FN1	3694	ITGB6	L
2335	FN1	3695	ITGB7	L
2335	FN1	3959	LGALS3BP	L
2335	FN1	4018	LPA	L
2335	FN1	4052	LTBP1	L
2335	FN1	4089	SMAD4	L
2335	FN1	4093	SMAD9	L
2335	FN1	4147	MATN2	L
2335	FN1	4224	MEP1A	L
2335	FN1	4225	MEP1B	L
2335	FN1	4318	MMP9	L
2335	FN1	4653	MYOC	L
2335	FN1	4856	NOV	L
2335	FN1	5068	REG3A	L
2335	FN1	5310	PKD1	L
2335	FN1	5549	PRELP	L
2335	FN1	5829	PXN	L
2335	FN1	6383	SDC2	L
2335	FN1	6387	CXCL12	L
2335	FN1	6498	SKIL	L
2335	FN1	6863	TAC1	L
2335	FN1	7045	TGFBI	L
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2335	FN1	8516	ITGA8	L
2335	FN1	55660	FNBP3	L
2335	FN1	90070	LACRT	L
2335	FN1	164656	TMPRSS6	L
2339	FNTA	2342	FNTB	L
2339	FNTA	7040	TGFB1	L
2339	FNTA	7046	TGFBR1	L
2348	FOLR1	4067	LYN	L
2353	FOS	2355	FOSL2	L
2353	FOS	2626	GATA4	L
2353	FOS	2963	GTF2F2	L
2353	FOS	3725	JUN	L
2353	FOS	3726	JUNB	L
2353	FOS	3727	JUND	L
2353	FOS	4094	MAF	L
2353	FOS	4286	MITF	L
2353	FOS	4773	NFATC2	L
2353	FOS	4790	NFKB1	L
2353	FOS	5371	PML	L
2353	FOS	5925	RB1	L
2353	FOS	5970	RELA	L
2353	FOS	6602	SMARCD1	L
2353	FOS	6872	TAF1	L
2353	FOS	6885	MAP3K7	L
2353	FOS	6908	TBP	L
2353	FOS	6927	TCF1	L

2353	FOS	7392	USF2	L
2353	FOS	7494	XBP1	L
2353	FOS	8648	NCOA1	L
2353	FOS	8986	RPS6KA4	L
2353	FOS	9586	CREB5	L
2353	FOS	9612	NCOR2	L
2353	FOS	9935	MAFB	L
2353	FOS	10538	BATF	L
2353	FOS	11016	ATF7	L
2353	FOS	25920	COBRA1	L
2354	FOSB	3725	JUN	L
2354	FOSB	3726	JUNB	L
2354	FOSB	3727	JUND	L
2354	FOSB	8061	FOSL1	L
2354	FOSB	9586	CREB5	L
2354	FOSB	9935	MAFB	L
2354	FOSB	11016	ATF7	L
2355	FOSL2	3725	JUN	L
2355	FOSL2	3726	JUNB	L
2355	FOSL2	3727	JUND	L
2355	FOSL2	7008	TEF	L
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2357	FPR1	2771	GNAI2	L
2395	FXN	9512	PMPCB	L
2444	FRK	5925	RB1	L
2475	FRAP1	5170	PDPK1	L
2475	FRAP1	10243	GPHN	L
2475	FRAP1	29979	UBQLN1	L
2475	FRAP1	57521	raptor	L
2475	FRAP1	253260	AVO3	L
2488	FSHB	2492	FSHR	L
2492	FSHR	2868	GRK4	L
2492	FSHR	2870	GRK6	L
2492	FSHR	6281	S100A10	L
2492	FSHR	7150	TOP1	L
2492	FSHR	7704	ZBTB16	L
2492	FSHR	10971	YWHAQ	L
2492	FSHR	23468	CBX5	L
2492	FSHR	26060	APPL	L
2494	NR5A2	8431	NR0B2	L
2494	NR5A2	8721	EDF1	L
2495	FTH1	2512	FTL	RS
2495	FTH1	9513	FXR2	R
2495	FTH1	29117	BRD7	S
2495	FTH1	51280	GOLPH2	S
2495	FTH1	80237	ELL3	S
2495	FTH1	197131	UBR1	S
2512	FTL	3827	KNG1	L
2512	FTL	4093	SMAD9	L
2512	FTL	5764	PTN	S
2512	FTL	6881	TAF10	S
2512	FTL	7786	MAP3K12	S
2512	FTL	10200	MPHOSPH6	L
2512	FTL	51678	MPP6	L
2516	NR5A1	2626	GATA4	L
2516	NR5A1	2959	GTF2B	L
2516	NR5A1	3725	JUN	L
2516	NR5A1	5307	PITX1	L
2516	NR5A1	6662	SOX9	L
2516	NR5A1	6667	SP1	L
2516	NR5A1	8204	NRIP1	L
2516	NR5A1	8648	NCOA1	L
2516	NR5A1	8721	EDF1	L
2516	NR5A1	55629	PNRC2	L
2516	NR5A1	55809	TRERF1	L

2517	FUCA1	7414	VCL	L
2521	FUS	3276	HRMT1L2	SL
2521	FUS	3609	ILF3	L
2521	FUS	4904	YBX1	L
2521	FUS	5725	PTBP1	L
2521	FUS	5970	RELA	L
2521	FUS	6256	RXRA	L
2521	FUS	6427	SFRS2	L
2521	FUS	6429	SFRS4	L
2521	FUS	6688	SPI1	L
2521	FUS	7067	THRA	L
2521	FUS	7094	TLN1	L
2521	FUS	7414	VCL	L
2521	FUS	7536	SF1	L
2521	FUS	10250	SRRM1	L
2521	FUS	10772	FUSIP1	L
2526	FUT4	3689	ITGB2	L
2526	FUT4	6403	SELP	L
2532	FY	2919	CXCL1	L
2532	FY	3576	IL8	L
2532	FY	6347	CCL2	L
2532	FY	6352	CCL5	L
2533	FYB	2534	FYN	L
2533	FYB	3937	LCP2	L
2533	FYB	4068	SH2D1A	L
2533	FYB	7408	VASP	L
2533	FYB	7454	WAS	L
2533	FYB	8631	SCAP1	L
2533	FYB	8935	SCAP2	L
2534	FYN	2887	GRB10	L
2534	FYN	2903	GRIN2A	L
2534	FYN	2904	GRIN2B	L
2534	FYN	3190	HNRPK	L
2534	FYN	3575	IL7R	L
2534	FYN	3702	ITK	L
2534	FYN	3717	JAK2	L
2534	FYN	4068	SH2D1A	L
2534	FYN	4099	MAG	L
2534	FYN	4162	MCAM	L
2534	FYN	4868	NPHS1	L
2534	FYN	4915	NTRK2	L
2534	FYN	5159	PDGFRB	L
2534	FYN	5175	PECAM1	L
2534	FYN	5295	PIK3R1	L
2534	FYN	5296	PIK3R2	L
2534	FYN	5329	PLAUR	L
2534	FYN	5335	PLCG1	L
2534	FYN	5336	PLCG2	L
2534	FYN	5338	PLD2	L
2534	FYN	5588	PRKCQ	L
2534	FYN	5781	PTPN11	L
2534	FYN	5786	PTPRA	L
2534	FYN	5788	PTPRC	L
2534	FYN	5829	PXN	L
2534	FYN	5894	RAF1	L
2534	FYN	6504	SLAMF1	L
2534	FYN	6622	SNCA	L
2534	FYN	6654	SOS1	L
2534	FYN	6693	SPN	L
2534	FYN	6850	SYK	L
2534	FYN	7070	THY1	L
2534	FYN	7225	TRPC6	L
2534	FYN	7277	TUBA1	L
2534	FYN	7278	TUBA2	L
2534	FYN	7297	TYK2	L
2534	FYN	7301	TYRO3	L
2534	FYN	7409	VAV1	L

2534	FYN	7454	WAS	L
2534	FYN	7535	ZAP70	L
2534	FYN	8631	SCAP1	L
2534	FYN	8651	SOCS1	L
2534	FYN	8751	ADAM15	L
2534	FYN	8935	SCAP2	L
2534	FYN	8936	WASF1	L
2534	FYN	9094	UNC119	L
2534	FYN	9564	BCAR1	L
2534	FYN	9672	SDC3	L
2534	FYN	10163	WASF2	L
2534	FYN	10188	TNK2	L
2534	FYN	10376	K-ALPHA-1	L
2534	FYN	10399	GNB2L1	L
2534	FYN	10657	KHDRBS1	L
2534	FYN	10666	CD226	L
2534	FYN	23360	FNBP4	L
2534	FYN	23607	CD2AP	L
2534	FYN	27240	SIT1	L
2534	FYN	51206	GP6	L
2534	FYN	51466	EVL	L
2534	FYN	55824	PAG1	L
2534	FYN	59341	TRPV4	L
2534	FYN	84867	PTPN5	L
2534	FYN	91746	YT521	L
2534	FYN	139716	GAB3	L
2547	XRCC6	2648	GCN5L2	L
2547	XRCC6	3221	HOXC4	L
2547	XRCC6	3297	HSF1	L
2547	XRCC6	4088	SMAD3	L
2547	XRCC6	4092	SMAD7	L
2547	XRCC6	4361	MRE11A	L
2547	XRCC6	4689	NCF4	L
2547	XRCC6	4809	NHP2L1	S
2547	XRCC6	4817	NIT1	S
2547	XRCC6	4851	NOTCH1	S
2547	XRCC6	5047	PAEP	S
2547	XRCC6	5050	PAFAH1B3	S
2547	XRCC6	5111	PCNA	L
2547	XRCC6	5175	PECAM1	S
2547	XRCC6	5223	PGAM1	S
2547	XRCC6	5272	SERPINB9	S
2547	XRCC6	5447	POR	S
2547	XRCC6	5451	POU2F1	L
2547	XRCC6	5452	POU2F2	L
2547	XRCC6	5599	MAPK8	L
2547	XRCC6	5826	ABCD4	S
2547	XRCC6	5829	PXN	L
2547	XRCC6	5928	RBBP4	S
2547	XRCC6	6176	RPLP1	S
2547	XRCC6	6498	SKIL	L
2547	XRCC6	6640	SNTA1	S
2547	XRCC6	6904	TBCD	S
2547	XRCC6	7014	TERF2	L
2547	XRCC6	7015	TERT	L
2547	XRCC6	7409	VAV1	L
2547	XRCC6	7486	WRN	L
2547	XRCC6	7520	XRCC5	L
2547	XRCC6	7534	YWHAZ	S
2547	XRCC6	8900	CCNA1	L
2547	XRCC6	9232	PTTG1	L
2547	XRCC6	10994	ILVBL	S
2547	XRCC6	22800	RRAS2	S
2547	XRCC6	23054	NCOA6	L
2547	XRCC6	23199	KIAA0182	S
2547	XRCC6	23411	SIRT1	L
2547	XRCC6	23468	CBX5	L

2547	XRCC6	55848	C9orf46	S
2547	XRCC6	57473	GM632	L
2547	XRCC6	65057	ACD	S
2547	XRCC6	79690	GAL3ST4	S
2547	XRCC6	79756	(null)	S
2547	XRCC6	90861	C16orf34	S
2547	XRCC6	113130	CDCA5	S
2547	XRCC6	116985	CENTD2	S
2547	XRCC6	380789	(null)	S
2549	GAB1	2885	GRB2	L
2549	GAB1	3643	INSR	L
2549	GAB1	4215	MAP3K3	L
2549	GAB1	4233	MET	L
2549	GAB1	5295	PIK3R1	L
2549	GAB1	5335	PLCG1	L
2549	GAB1	5336	PLCG2	L
2549	GAB1	5781	PTPN11	L
2549	GAB1	5979	RET	L
2549	GAB1	6654	SOS1	L
2549	GAB1	9402	GRAP2	L
2550	GABBR1	9568	GPR51	L
2550	GABBR1	22809	ATF5	L
2550	GABBR1	55743	CHFR	S
2550	GABBR1	152789	MARLIN1	L
2551	GABPA	6667	SP1	L
2551	GABPA	6670	SP3	L
2553	GABPB2	8615	VDP	R
2553	GABPB2	23424	TDRD7	R
2553	GABPB2	55885	LMO3	R
2553	GABPB2	286514	MAGEB18	R
2554	GABRA1	5580	PRKCD	L
2554	GABRA1	5582	PRKCG	L
2557	GABRA4	5582	PRKCG	L
2561	GABRB2	3350	HTR1A	L
2561	GABRB2	66008	ALS2CR3	L
2563	GABRD	29979	UBQLN1	R
2566	GABRG2	11337	GABARAP	L
2571	GAD1	23498	HAAO	R
2577	GAGE5	64396	GMCL1L	R
2580	GAK	3312	HSPA8	L
2580	GAK	8312	AXIN1	S
2580	GAK	8615	VDP	R
2580	GAK	8907	AP1M1	L
2580	GAK	10053	AP1M2	L
2587	GALR1	51083	GAL	L
2588	GALNS	4758	NEU1	L
2589	GALNT1	4582	MUC1	L
2590	GALNT2	4582	MUC1	L
2592	GALT	9319	TRIP13	R
2596	GAP43	5333	PLCD1	L
2596	GAP43	6709	SPTAN1	L
2596	GAP43	9135	RABEP1	L
2597	GAPDH	2911	GRM1	L
2597	GAPDH	3064	HD	L
2597	GAPDH	3910	LAMA4	S
2597	GAPDH	5050	PAFAH1B3	S
2597	GAPDH	5052	PRDX1	S
2597	GAPDH	5230	PGK1	L
2597	GAPDH	5272	SERPINB9	S
2597	GAPDH	5338	PLD2	L
2597	GAPDH	5584	PRKCI	L
2597	GAPDH	5717	PSMD11	S
2597	GAPDH	5829	PXN	L
2597	GAPDH	6118	RPA2	S
2597	GAPDH	6277	S100A6	L
2597	GAPDH	6310	ATXN1	L
2597	GAPDH	6513	SLC2A1	L

2597	GAPDH	7083	TK1	S
2597	GAPDH	7094	TLN1	L
2597	GAPDH	7414	VCL	L
2597	GAPDH	8655	DNCL1	L
2597	GAPDH	10542	HBXIP	S
2597	GAPDH	54622	ARFRP2	S
2597	GAPDH	55643	BTBD2	S
2597	GAPDH	56144	PCDHA4	S
2597	GAPDH	64714	PDIA2	L
2617	GARS	3376	IARS	L
2617	GARS	10243	GPHN	L
2619	GAS1	8788	DLK1	L
2621	GAS6	7301	TYRO3	L
2621	GAS6	10461	MERTK	L
2623	GATA1	4005	LMO2	L
2623	GATA1	6886	TAL1	L
2623	GATA1	7704	ZBTB16	L
2623	GATA1	10014	HDAC5	L
2623	GATA1	23414	ZFPM2	L
2624	GATA2	3725	JUN	L
2624	GATA2	5371	PML	L
2624	GATA2	5449	POU1F1	L
2624	GATA2	5914	RARA	L
2624	GATA2	6688	SPI1	L
2624	GATA2	7704	ZBTB16	L
2624	GATA2	8841	HDAC3	L
2624	GATA2	10014	HDAC5	L
2624	GATA2	161882	ZFPM1	L
2625	GATA3	4004	LMO1	L
2625	GATA3	4005	LMO2	L
2625	GATA3	6886	TAL1	L
2626	GATA4	4776	NFATC4	L
2626	GATA4	5595	MAPK3	L
2626	GATA4	6722	SRF	L
2626	GATA4	6910	TBX5	L
2626	GATA4	9464	HAND2	L
2626	GATA4	23414	ZFPM2	L
2629	GBA	5660	PSAP	L
2632	GBE1	5226	PGD	S
2634	GBP2	3336	HSPE1	S
2634	GBP2	5050	PAFAH1B3	S
2634	GBP2	5272	SERPINB9	S
2634	GBP2	5511	PPP1R8	S
2634	GBP2	6303	SAT	S
2634	GBP2	8087	FXR1	S
2634	GBP2	9223	MAGI1	S
2634	GBP2	10342	TFG	S
2634	GBP2	22929	SEPHS1	S
2634	GBP2	27252	KLHL20	S
2634	GBP2	55643	BTBD2	S
2634	GBP2	57819	LSM2	S
2635	GBP3	9448	MAP4K4	L
2638	GC	4036	LRP2	L
2638	GC	8029	CUBN	L
2638	GC	10169	SERF2	S
2638	GC	55791	C1orf103	S
2638	GC	79577	CDC73	S
2641	GCG	2642	GCGR	L
2641	GCG	2740	GLP1R	L
2641	GCG	9340	GLP2R	L
2642	GCGR	2778	GNAS	L
2643	GCH1	2644	GCHFR	L
2645	GCK	2646	GCKR	L
2647	BLOC1S1	4149	MAX	L
2647	BLOC1S1	5089	PBX2	L
2647	BLOC1S1	5764	PTN	S
2647	BLOC1S1	9112	MTA1	L

2648	GCN5L2	4609	MYC	L
2648	GCN5L2	6871	TADA2L	L
2649	NR6A1	9611	NCOR1	L
2649	NR6A1	10681	GNB5	S
2649	NR6A1	51720	RAP80	L
2650	GCNT1	5579	PRKCB1	L
2652	OPN1MW	5903	RANBP2	L
2653	GCSH	7704	ZBTB16	S
2653	GCSH	9111	NMI	R
2653	GCSH	84289	ING5	S
2660	GDF8	8557	TCAP	L
2660	GDF8	10272	FSTL3	L
2661	GDF9	3609	ILF3	S
2661	GDF9	3835	KIF22	S
2661	GDF9	4715	NDUFB9	S
2661	GDF9	5050	PAFAH1B3	S
2661	GDF9	5272	SERPINB9	S
2661	GDF9	5717	PSMD11	S
2661	GDF9	5873	RAB27A	S
2661	GDF9	6279	S100A8	S
2661	GDF9	6303	SAT	S
2661	GDF9	6606	SMN1	S
2661	GDF9	6637	SNRPG	S
2661	GDF9	6997	TDGF1	S
2661	GDF9	7083	TK1	S
2661	GDF9	8575	PRKRA	S
2661	GDF9	10200	MPHOSPH6	S
2661	GDF9	10301	DLEU1	S
2661	GDF9	11243	PMF1	S
2661	GDF9	23028	AOF2	S
2661	GDF9	25843	PREI3	S
2661	GDF9	26292	MYCBP	S
2661	GDF9	27258	LSM3	S
2661	GDF9	29888	STRN4	S
2661	GDF9	51019	CGI-116	S
2661	GDF9	51319	RSRC1	S
2661	GDF9	53826	FXYD6	S
2661	GDF9	55643	BTBD2	S
2661	GDF9	56144	PCDHA4	S
2661	GDF9	57761	TRIB3	S
2661	GDF9	78987	CRELD1	S
2661	GDF9	79756	(null)	S
2661	GDF9	80228	C7orf19	S
2661	GDF9	83440	ADPGK	S
2664	GDI1	5880	RAC2	L
2664	GDI1	10567	RABAC1	L
2664	GDI1	81876	RAB1B	L
2665	GDI2	4218	RAB8A	L
2665	GDI2	5862	RAB2	L
2665	GDI2	5867	RAB4A	L
2665	GDI2	5868	RAB5A	L
2665	GDI2	8766	RAB11A	L
2665	GDI2	9367	RAB9A	L
2668	GDNF	2674	GFRA1	L
2668	GDNF	2675	GFRA2	L
2668	GDNF	5979	RET	L
2669	GEM	9260	PDLIM7	R
2669	GEM	51291	GMIP	L
2670	GFAP	4221	MEN1	L
2670	GFAP	5174	PDZK1	R
2670	GFAP	5663	PSEN1	L
2670	GFAP	6271	S100A1	L
2670	GFAP	6285	S100B	L
2670	GFAP	6714	SRC	L
2670	GFAP	7431	VIM	R
2670	GFAP	9124	PDLIM1	R
2670	GFAP	9260	PDLIM7	R

2670	GFAP	9402	GRAP2	R
2670	GFAP	9729	KIAA0408	R
2670	GFAP	9883	POM121	R
2670	GFAP	26150	RIBC2	R
2670	GFAP	26751	SH3YL1	R
2670	GFAP	27229	76P	R
2670	GFAP	79959	C18orf9	R
2670	GFAP	80022	MYO15B	R
2671	GFER	10987	COPS5	L
2671	GFER	84164	ASCC2	S
2671	GFER	149428	BNIPL	L
2672	GFI1	10401	PIAS3	L
2674	GFRA1	4902	NRTN	L
2674	GFRA1	5979	RET	L
2676	GFRA3	9048	ARTN	L
2683	B4GALT1	3906	LALBA	L
2688	GH1	2690	GHR	L
2688	GH1	5618	PRLR	L
2689	GH2	2690	GHR	L
2690	GHR	2885	GRB2	L
2690	GHR	2887	GRB10	L
2690	GHR	3716	JAK1	L
2690	GHR	3717	JAK2	L
2690	GHR	5295	PIK3R1	L
2690	GHR	5777	PTPN6	L
2690	GHR	5781	PTPN11	L
2690	GHR	6449	SGTA	L
2690	GHR	6464	SHC1	L
2690	GHR	6774	STAT3	L
2690	GHR	6776	STAT5A	L
2690	GHR	6777	STAT5B	L
2690	GHR	7297	TYK2	L
2690	GHR	8651	SOCS1	L
2690	GHR	8835	SOCS2	L
2690	GHR	9021	SOCS3	L
2691	GHRH	2692	GHRHR	L
2692	GHRHR	51738	GHRL	L
2693	GHSR	51738	GHRL	L
2694	GIF	8029	CUBN	L
2697	GJA1	2700	GJA3	L
2697	GJA1	2702	GJA5	L
2697	GJA1	5578	PRKCA	L
2697	GJA1	5581	PRKCE	L
2697	GJA1	5598	MAPK7	L
2697	GJA1	6271	S100A1	L
2697	GJA1	6714	SRC	L
2697	GJA1	7082	TJP1	L
2700	GJA3	4284	MIP	L
2700	GJA3	7082	TJP1	L
2702	GJA5	25980	C20orf4	R
2703	GJA8	4284	MIP	L
2703	GJA8	7082	TJP1	L
2705	GJB1	2706	GJB2	L
2705	GJB1	4950	OCLN	L
2707	GJB3	7082	TJP1	L
2719	GPC3	3481	IGF2	L
2719	GPC3	10518	CIB2	L
2720	GLB1	4758	NEU1	L
2733	GLE1L	9631	NUP155	L
2734	GLG1	6401	SELE	L
2735	GLI1	7545	ZIC1	L
2735	GLI1	7546	ZIC2	L
2735	GLI1	27148	STK36	L
2735	GLI1	51684	SUFU	L
2736	GLI2	7545	ZIC1	L
2736	GLI2	7546	ZIC2	L
2736	GLI2	27148	STK36	L

2736	GLI2	51684	SUFU	L
2737	GLI3	4086	SMAD1	L
2737	GLI3	4087	SMAD2	L
2737	GLI3	4088	SMAD3	L
2737	GLI3	4089	SMAD4	L
2737	GLI3	7291	TWIST1	L
2737	GLI3	7545	ZIC1	L
2737	GLI3	7546	ZIC2	L
2737	GLI3	27148	STK36	L
2737	GLI3	51684	SUFU	L
2742	GLRA2	5662	PSD	S
2742	GLRA2	7917	BAT3	S
2742	GLRA2	56927	GPR108	S
2743	GLRB	10243	GPHN	L
2744	GLS	6640	SNTA1	L
2745	GLRX	4217	MAP3K5	L
2747	GLUD2	10040	TOM1L1	S
2752	GLUL	6498	SKIL	L
2752	GLUL	8655	DNCL1	L
2752	GLUL	79666	PLEKHF2	R
2752	GLUL	79873	NUDT18	R
2760	GM2A	2822	GPLD1	L
2760	GM2A	3073	HEXA	L
2760	GM2A	5338	PLD2	L
2764	GMFB	5594	MAPK1	L
2764	GMFB	5595	MAPK3	L
2767	GNA11	3356	HTR2A	L
2767	GNA11	4543	MTNR1A	L
2767	GNA11	5739	PTGIR	L
2767	GNA11	5998	RGS3	L
2767	GNA11	6915	TBXA2R	L
2768	GNA12	2782	GNB1	L
2768	GNA12	3320	HSPCA	L
2768	GNA12	5536	PPP5C	L
2768	GNA12	5578	PRKCA	L
2768	GNA12	5922	RASA2	L
2768	GNA12	6915	TBXA2R	L
2768	GNA12	7006	TEC	L
2768	GNA12	7253	TSHR	L
2768	GNA12	8698	EDG6	L
2768	GNA12	9826	ARHGEF11	L
2768	GNA12	23365	ARHGEF12	L
2769	GNA15	3577	IL8RA	L
2769	GNA15	3579	IL8RB	L
2769	GNA15	4985	OPRD1	L
2769	GNA15	4986	OPRK1	L
2769	GNA15	4988	OPRM1	L
2769	GNA15	5997	RGS2	L
2769	GNA15	7265	TTC1	L
2769	GNA15	59340	HRH4	L
2770	GNAI1	2825	GPR1	L
2770	GNAI1	2864	GPR40	L
2770	GNAI1	3356	HTR2A	L
2770	GNAI1	3480	IGF1R	L
2770	GNAI1	4935	GPR143	L
2770	GNAI1	4988	OPRM1	L
2770	GNAI1	5147	PDE6D	L
2770	GNAI1	5999	RGS4	L
2770	GNAI1	6000	RGS7	L
2770	GNAI1	6001	RGS10	L
2770	GNAI1	6002	RGS12	L
2770	GNAI1	6752	SSTR2	L
2770	GNAI1	6753	SSTR3	L
2770	GNAI1	9294	EDG5	L
2770	GNAI1	10287	RGS19	L
2770	GNAI1	10636	RGS14	L
2770	GNAI1	51655	RASD1	L

2770	GNAI1	53637	EDG8	L
2770	GNAI1	58157	NGB	L
2770	GNAI1	59340	HRH4	L
2770	GNAI1	64407	RGS18	L
2771	GNAI2	3480	IGF1R	L
2771	GNAI2	3576	IL8	L
2771	GNAI2	3577	IL8RA	L
2771	GNAI2	3973	LHCGR	L
2771	GNAI2	4188	MDFI	R
2771	GNAI2	4543	MTNR1A	L
2771	GNAI2	4924	NUCB1	L
2771	GNAI2	4985	OPRD1	L
2771	GNAI2	4988	OPRM1	L
2771	GNAI2	5359	PLSCR1	R
2771	GNAI2	5999	RGS4	L
2771	GNAI2	6002	RGS12	L
2771	GNAI2	8490	RGS5	L
2771	GNAI2	10287	RGS19	L
2771	GNAI2	10636	RGS14	L
2771	GNAI2	22142	(null)	S
2771	GNAI2	23566	EDG7	L
2771	GNAI2	29899	GPSM2	L
2771	GNAI2	51655	RASD1	L
2771	GNAI2	58157	NGB	L
2771	GNAI2	64407	RGS18	L
2771	GNAI2	64805	P2RY12	L
2773	GNAI3	4543	MTNR1A	L
2773	GNAI3	5998	RGS3	L
2773	GNAI3	6000	RGS7	L
2773	GNAI3	6001	RGS10	L
2773	GNAI3	6002	RGS12	L
2773	GNAI3	6004	RGS16	L
2773	GNAI3	8490	RGS5	L
2773	GNAI3	10287	RGS19	L
2773	GNAI3	10636	RGS14	L
2773	GNAI3	29899	GPSM2	L
2773	GNAI3	58157	NGB	L
2773	GNAI3	64407	RGS18	L
2775	GNAO1	2867	GPR43	L
2775	GNAO1	3355	HTR1F	L
2775	GNAO1	4985	OPRD1	L
2775	GNAO1	4988	OPRM1	L
2775	GNAO1	5999	RGS4	L
2775	GNAO1	6000	RGS7	L
2775	GNAO1	6334	SCN8A	L
2775	GNAO1	8490	RGS5	L
2775	GNAO1	10287	RGS19	L
2775	GNAO1	10540	DCTN2	S
2775	GNAO1	10636	RGS14	L
2775	GNAO1	29899	GPSM2	L
2775	GNAO1	53637	EDG8	L
2775	GNAO1	58157	NGB	L
2775	GNAO1	59340	HRH4	L
2776	GNAQ	2864	GPR40	L
2776	GNAQ	2867	GPR43	L
2776	GNAQ	2912	GRM2	L
2776	GNAQ	2914	GRM4	L
2776	GNAQ	2917	GRM7	L
2776	GNAQ	3356	HTR2A	L
2776	GNAQ	3357	HTR2B	L
2776	GNAQ	3362	HTR6	L
2776	GNAQ	5290	PIK3CA	L
2776	GNAQ	5330	PLCB2	L
2776	GNAQ	5739	PTGIR	L
2776	GNAQ	5997	RGS2	L
2776	GNAQ	5999	RGS4	L
2776	GNAQ	6000	RGS7	L

2776	GNAQ	6915	TBXA2R	L
2776	GNAQ	7265	TTC1	L
2776	GNAQ	7433	VIPR1	L
2776	GNAQ	8490	RGS5	L
2776	GNAQ	8811	GALR2	L
2776	GNAQ	9294	EDG5	L
2776	GNAQ	9368	SLC9A3R1	L
2776	GNAQ	11214	AKAP13	L
2776	GNAQ	23236	PLCB1	L
2776	GNAQ	64407	RGS18	L
2778	GNAS	2782	GNB1	L
2778	GNAS	3362	HTR6	L
2778	GNAS	3973	LHCGR	L
2778	GNAS	5729	PTGDR	L
2778	GNAS	5739	PTGIR	L
2778	GNAS	5997	RGS2	L
2778	GNAS	7265	TTC1	L
2778	GNAS	7433	VIPR1	L
2778	GNAS	23161	SNX13	L
2778	GNAS	55188	RIC8B	L
2778	GNAS	58473	PLEKHB1	L
2781	GNAZ	4985	OPRD1	L
2781	GNAZ	5909	RAP1GA1	L
2781	GNAZ	6000	RGS7	L
2781	GNAZ	6001	RGS10	L
2781	GNAZ	8601	RGS20	L
2781	GNAZ	10287	RGS19	L
2782	GNB1	2788	GNG7	L
2782	GNB1	2790	GNG10	L
2782	GNB1	2792	GNGT1	L
2782	GNB1	10399	GNB2L1	L
2783	GNB2	2792	GNGT1	L
2784	GNB3	2792	GNGT1	L
2788	GNG7	4356	MPP3	S
2788	GNG7	10681	GNB5	L
2788	GNG7	51205	ACP6	S
2790	GNG10	8844	KSR	L
2791	GNG11	11244	ZHX1	S
2791	GNG11	51421	AMOTL2	R
2792	GNGT1	6010	RHO	L
2792	GNGT1	58473	PLEKHB1	L
2793	GNGT2	3761	KCNJ4	L
2796	GNRH1	2798	GNRHR	L
2798	GNRHR	6001	RGS10	L
2800	GOLGA1	5870	RAB6A	L
2801	GOLGA2	2874	GPS2	S
2801	GOLGA2	3983	ABLIM1	R
2801	GOLGA2	5861	RAB1A	L
2801	GOLGA2	5862	RAB2	RL
2801	GOLGA2	9883	POM121	R
2801	GOLGA2	23650	TRIM29	R
2801	GOLGA2	26003	GORASP2	L
2801	GOLGA2	27229	76P	R
2801	GOLGA2	58500	ZNF250	R
2801	GOLGA2	64689	GORASP1	L
2801	GOLGA2	81876	RAB1B	L
2801	GOLGA2	83452	RAB33B	L
2801	GOLGA2	84622	ZNF594	S
2803	GOLGA4	23499	MACF1	L
2804	GOLGB1	4694	NDUFA1	S
2804	GOLGB1	5217	PFN2	S
2804	GOLGB1	6498	SKIL	L
2804	GOLGB1	6515	SLC2A3	S
2804	GOLGB1	8615	VDP	L
2804	GOLGB1	10490	VTI1B	S
2804	GOLGB1	25855	BRMS1	S
2804	GOLGB1	57562	KIAA1377	S

2804	GOLGB1	64746	ACBD3	L
2804	GOLGB1	362598	(null)	S
2805	GOT1	83862	TMPIT	S
2806	GOT2	3312	HSPA8	L
2806	GOT2	4191	MDH2	L
2806	GOT2	64429	ZDHHC6	S
2806	GOT2	80145	NIF3L1BP1	S
2810	SFN	2908	NR3C1	L
2810	SFN	3875	KRT18	L
2810	SFN	4140	MARK3	R
2810	SFN	7538	ZFP36	L
2810	SFN	7706	TRIM25	L
2810	SFN	8534	CHST1	R
2810	SFN	9413	C9orf61	R
2810	SFN	9721	KIAA0514	R
2810	SFN	9729	KIAA0408	R
2810	SFN	10014	HDAC5	L
2810	SFN	10607	TBL3	R
2810	SFN	10733	PLK4	R
2810	SFN	55093	C8orf32	R
2810	SFN	55749	CCAR1	L
2810	SFN	79666	PLEKHF2	R
2811	GP1BA	2814	GP5	L
2811	GP1BA	3684	ITGAM	L
2811	GP1BA	3827	KNG1	L
2811	GP1BA	6403	SELP	L
2811	GP1BA	7450	VWF	L
2811	GP1BA	7534	YWHAZ	L
2811	GP1BA	55644	OSGEP	L
2812	GP1BB	7534	YWHAZ	L
2817	GPC1	6585	SLIT1	L
2817	GPC1	7422	VEGF	L
2817	GPC1	9353	SLIT2	L
2817	GPC1	80781	COL18A1	L
2819	GPD1	4190	MDH1	L
2819	GPD1	5764	PTN	S
2826	CCR10	6347	CCL2	L
2826	CCR10	6354	CCL7	L
2826	CCR10	7916	BAT2	L
2826	CCR10	10850	CCL27	L
2826	CCR10	56477	CCL28	L
2829	XCR1	6375	XCL1	L
2829	XCR1	6846	XCL2	L
2831	GPR7	6129	RPL7	L
2833	CXCR3	3627	CXCL10	L
2833	CXCR3	4283	CXCL9	L
2833	CXCR3	5196	PF4	L
2833	CXCR3	6373	CXCL11	L
2833	CXCR3	10563	CXCL13	L
2834	GPR10	51052	PRLH	L
2837	UTS2R	10911	UTS2	L
2840	GPR17	10672	GNA13	L
2849	GPR26	3350	HTR1A	L
2861	GPR37	5071	PARK2	L
2861	GPR37	10273	STUB1	L
2862	MLNR	51738	GHRL	L
2869	GRK5	5957	RCV1	L
2869	GRK5	6010	RHO	L
2869	GRK5	6623	SNCG	L
2869	GRK5	6869	TACR1	L
2869	GRK5	6915	TBXA2R	L
2869	GRK5	28964	GIT1	L
2870	GRK6	5957	RCV1	L
2870	GRK6	6010	RHO	L
2870	GRK6	6915	TBXA2R	L
2870	GRK6	9368	SLC9A3R1	L
2870	GRK6	11098	PRSS23	S

2870	GRK6	28964	GIT1	L
2872	MKNK2	5594	MAPK1	L
2873	GPS1	79735	TBC1D17	S
2874	GPS2	7157	TP53	L
2874	GPS2	8900	CCNA1	L
2874	GPS2	9869	SETDB1	S
2874	GPS2	54908	FLJ20364	S
2874	GPS2	55872	PBK	S
2874	GPS2	56911	C21orf7	R
2874	GPS2	79173	MGC11271	R
2882	GPX7	6449	SGTA	R
2885	GRB2	2886	GRB7	L
2885	GRB2	2889	RAPGEF1	L
2885	GRB2	3064	HD	L
2885	GRB2	3183	HNRPC	L
2885	GRB2	3265	HRAS	L
2885	GRB2	3560	IL2RB	L
2885	GRB2	3635	INPP5D	L
2885	GRB2	3655	ITGA6	L
2885	GRB2	3667	IRS1	L
2885	GRB2	3674	ITGA2B	L
2885	GRB2	3691	ITGB4	L
2885	GRB2	3702	ITK	L
2885	GRB2	3716	JAK1	L
2885	GRB2	3717	JAK2	L
2885	GRB2	3791	KDR	L
2885	GRB2	3815	KIT	L
2885	GRB2	4133	MAP2	L
2885	GRB2	4233	MET	L
2885	GRB2	4486	MST1R	L
2885	GRB2	4582	MUC1	L
2885	GRB2	4914	NTRK1	L
2885	GRB2	4952	OCRL	L
2885	GRB2	5058	PAK1	L
2885	GRB2	5148	PDE6G	L
2885	GRB2	5159	PDGFRB	L
2885	GRB2	5287	PIK3C2B	L
2885	GRB2	5295	PIK3R1	L
2885	GRB2	5296	PIK3R2	L
2885	GRB2	5335	PLCG1	L
2885	GRB2	5573	PRKAR1A	L
2885	GRB2	5621	PRNP	L
2885	GRB2	5716	PSMD10	L
2885	GRB2	5747	PTK2	L
2885	GRB2	5770	PTPN1	L
2885	GRB2	5777	PTPN6	L
2885	GRB2	5781	PTPN11	L
2885	GRB2	5782	PTPN12	L
2885	GRB2	5786	PTPRA	L
2885	GRB2	5788	PTPRC	L
2885	GRB2	5791	PTPRE	L
2885	GRB2	5913	RAPSN	L
2885	GRB2	5921	RASA1	L
2885	GRB2	5979	RET	L
2885	GRB2	6300	MAPK12	L
2885	GRB2	6352	CCL5	L
2885	GRB2	6402	SELL	L
2885	GRB2	6442	SGCA	L
2885	GRB2	6452	SH3BP2	L
2885	GRB2	6461	SHB	L
2885	GRB2	6640	SNTA1	L
2885	GRB2	6654	SOS1	L
2885	GRB2	6655	SOS2	L
2885	GRB2	6714	SRC	L
2885	GRB2	6850	SYK	L
2885	GRB2	6853	SYN1	L
2885	GRB2	7010	TEK	L

2885	GRB2	7132	TNFRSF1A	L
2885	GRB2	7275	TUB	L
2885	GRB2	7409	VAV1	L
2885	GRB2	7410	VAV2	L
2885	GRB2	7454	WAS	L
2885	GRB2	7462	LAT2	L
2885	GRB2	7916	BAT2	L
2885	GRB2	8038	ADAM12	L
2885	GRB2	8471	IRS4	L
2885	GRB2	8626	TP73L	L
2885	GRB2	8631	SCAP1	L
2885	GRB2	8651	SOCS1	L
2885	GRB2	8660	IRS2	L
2885	GRB2	8751	ADAM15	L
2885	GRB2	8867	SYNJ1	L
2885	GRB2	8871	SYNJ2	L
2885	GRB2	8936	WASF1	L
2885	GRB2	8976	WASL	L
2885	GRB2	9101	USP8	L
2885	GRB2	9112	MTA1	L
2885	GRB2	9185	REPS2	L
2885	GRB2	9564	BCAR1	L
2885	GRB2	9649	RALGPS1	L
2885	GRB2	9712	USP6NL	L
2885	GRB2	9846	GAB2	L
2885	GRB2	10019	LNK	L
2885	GRB2	10040	TOM1L1	L
2885	GRB2	10163	WASF2	L
2885	GRB2	10188	TNK2	L
2885	GRB2	10252	SPRY1	L
2885	GRB2	10253	SPRY2	L
2885	GRB2	10451	VAV3	L
2885	GRB2	10461	MERTK	L
2885	GRB2	10657	KHDRBS1	L
2885	GRB2	10817	FRS3	L
2885	GRB2	10818	FRS2	L
2885	GRB2	10825	NEU3	L
2885	GRB2	11184	MAP4K1	L
2885	GRB2	23607	CD2AP	L
2885	GRB2	23624	CBLC	L
2885	GRB2	26191	PTPN22	L
2885	GRB2	27036	SIGLEC7	L
2885	GRB2	27040	LAT	L
2885	GRB2	27240	SIT1	L
2885	GRB2	29760	BLNK	L
2885	GRB2	30011	SH3KBP1	L
2885	GRB2	51517	NCKIPSD	L
2885	GRB2	54900	LAX1	L
2885	GRB2	55824	PAG1	L
2885	GRB2	85021	REPS1	L
2885	GRB2	139716	GAB3	L
2886	GRB7	3643	INSR	L
2886	GRB7	3815	KIT	L
2886	GRB7	5747	PTK2	L
2886	GRB7	5979	RET	L
2886	GRB7	7010	TEK	L
2887	GRB10	3480	IGF1R	L
2887	GRB10	3643	INSR	L
2887	GRB10	3717	JAK2	L
2887	GRB10	3791	KDR	L
2887	GRB10	3815	KIT	L
2887	GRB10	4734	NEDD4	L
2887	GRB10	5159	PDGFRB	L
2887	GRB10	5604	MAP2K1	L
2887	GRB10	5894	RAF1	L
2887	GRB10	5979	RET	L
2887	GRB10	26058	TNRC15	L

2887	GRB10	64599	PERQ1	L
2888	GRB14	3643	INSR	L
2888	GRB14	5156	PDGFRA	L
2888	GRB14	5159	PDGFRB	L
2888	GRB14	5590	PRKCZ	L
2888	GRB14	7010	TEK	L
2888	GRB14	80351	TNKS2	L
2889	RAPGEF1	3055	HCK	L
2889	RAPGEF1	5156	PDGFRA	L
2889	RAPGEF1	6464	SHC1	L
2889	RAPGEF1	9564	BCAR1	L
2889	RAPGEF1	22800	RRAS2	L
2890	GRIA1	2893	GRIA4	L
2890	GRIA1	2895	GRID2	L
2890	GRIA1	2898	GRIK2	L
2890	GRIA1	3309	HSPA5	L
2890	GRIA1	6386	SDCBP	L
2890	GRIA1	9456	HOMER1	L
2890	GRIA1	10369	CACNG2	L
2891	GRIA2	6386	SDCBP	L
2891	GRIA2	6709	SPTAN1	L
2892	GRIA3	4067	LYN	L
2892	GRIA3	5496	PPM1G	L
2892	GRIA3	6386	SDCBP	L
2893	GRIA4	5582	PRKCG	L
2893	GRIA4	6386	SDCBP	L
2895	GRID2	2898	GRIK2	L
2895	GRID2	2901	GRIK5	L
2895	GRID2	5775	PTPN4	L
2895	GRID2	57120	GOPC	L
2896	GRN	3101	HK3	L
2896	GRN	3198	HOXA1	R
2896	GRN	3339	HSPG2	L
2896	GRN	4093	SMAD9	L
2896	GRN	6590	SLPI	L
2896	GRN	8788	DLK1	L
2896	GRN	8940	TOP3B	L
2896	GRN	348487	C1orf117	R
2897	GRIK1	6386	SDCBP	L
2897	GRIK1	9456	HOMER1	L
2898	GRIK2	2900	GRIK4	L
2898	GRIK2	2901	GRIK5	L
2898	GRIK2	6386	SDCBP	L
2898	GRIK2	8573	CASK	L
2899	GRIK3	2901	GRIK5	L
2901	GRIK5	4291	MLF1	S
2901	GRIK5	8733	GPAA1	S
2901	GRIK5	51280	GOLPH2	S
2901	GRIK5	90678	LRSAM1	S
2902	GRIN1	2903	GRIN2A	L
2903	GRIN2A	3603	IL16	L
2903	GRIN2A	5775	PTPN4	L
2903	GRIN2A	6714	SRC	L
2903	GRIN2A	9229	DLGAP1	L
2903	GRIN2A	10207	INADL	L
2904	GRIN2B	3603	IL16	L
2904	GRIN2B	5071	PARK2	L
2904	GRIN2B	6714	SRC	L
2904	GRIN2B	8825	LIN7A	L
2904	GRIN2B	10207	INADL	L
2904	GRIN2B	10399	GNB2L1	L
2904	GRIN2B	260425	MAGI3	L
2905	GRIN2C	3603	IL16	L
2905	GRIN2C	10207	INADL	L
2906	GRIN2D	3603	IL16	L
2906	GRIN2D	10207	INADL	L
2908	NR3C1	3175	ONECUT1	L

2908	NR3C1	3192	HNRPU	L
2908	NR3C1	3211	HOXB1	L
2908	NR3C1	3320	HSPCA	L
2908	NR3C1	3416	IDE	L
2908	NR3C1	3557	IL1RN	L
2908	NR3C1	4088	SMAD3	L
2908	NR3C1	4306	NR3C2	L
2908	NR3C1	4691	NCL	L
2908	NR3C1	4790	NFKB1	L
2908	NR3C1	4791	NFKB2	L
2908	NR3C1	5087	PBX1	L
2908	NR3C1	5449	POU1F1	L
2908	NR3C1	5452	POU2F2	L
2908	NR3C1	5763	PTMS	L
2908	NR3C1	5894	RAF1	L
2908	NR3C1	5927	JARID1A	L
2908	NR3C1	5970	RELA	L
2908	NR3C1	6595	SMARCA2	L
2908	NR3C1	6598	SMARCB1	L
2908	NR3C1	6602	SMARCD1	L
2908	NR3C1	6605	SMARCE1	L
2908	NR3C1	6774	STAT3	L
2908	NR3C1	6776	STAT5A	L
2908	NR3C1	6777	STAT5B	L
2908	NR3C1	6908	TBP	L
2908	NR3C1	7041	TGFB1I1	L
2908	NR3C1	7157	TP53	L
2908	NR3C1	7251	TSG101	L
2908	NR3C1	7295	TXN	L
2908	NR3C1	7329	UBE2I	L
2908	NR3C1	7341	SUMO1	L
2908	NR3C1	7533	YWHAH	L
2908	NR3C1	7704	ZBTB16	L
2908	NR3C1	7818	DAP3	L
2908	NR3C1	8204	NRIP1	L
2908	NR3C1	8648	NCOA1	L
2908	NR3C1	8805	TRIM24	L
2908	NR3C1	8991	SELENBP1	L
2908	NR3C1	9282	CRSP2	L
2908	NR3C1	9604	RNF14	L
2908	NR3C1	9611	NCOR1	L
2908	NR3C1	9612	NCOR2	L
2908	NR3C1	10155	TRIM28	L
2908	NR3C1	10499	NCOA2	L
2908	NR3C1	10891	PPARGC1A	L
2908	NR3C1	11319	HSGT1	L
2908	NR3C1	23054	NCOA6	L
2908	NR3C1	24148	C20orf14	L
2908	NR3C1	27043	PELP1	L
2911	GRM1	3708	ITPR1	L
2911	GRM1	7280	TUBB2	L
2911	GRM1	9456	HOMER1	L
2912	GRM2	6002	RGS12	L
2913	GRM3	6386	SDCBP	L
2915	GRM5	6002	RGS12	L
2917	GRM7	7277	TUBA1	L
2917	GRM7	7278	TUBA2	L
2917	GRM7	7846	TUBA3	L
2917	GRM7	10376	K-ALPHA-1	L
2917	GRM7	51807	TUBA8	L
2919	CXCL1	3577	IL8RA	L
2919	CXCL1	3579	IL8RB	L
2920	CXCL2	3577	IL8RA	L
2920	CXCL2	3579	IL8RB	L
2920	CXCL2	5340	PLG	L
2921	CXCL3	3577	IL8RA	L
2921	CXCL3	3579	IL8RB	L

2922	GRP	2925	GRPR	L
2923	PDIA3	2995	GYPC	L
2923	PDIA3	3105	HLA-A	L
2923	PDIA3	3458	IFNG	L
2923	PDIA3	5829	PXN	L
2923	PDIA3	6513	SLC2A1	L
2923	PDIA3	6559	SLC12A3	L
2923	PDIA3	6774	STAT3	L
2923	PDIA3	6890	TAP1	L
2923	PDIA3	7094	TLN1	L
2923	PDIA3	7414	VCL	L
2928	GSCL	6047	RNF4	L
2932	GSK3B	3611	ILK	L
2932	GSK3B	4137	MAPT	L
2932	GSK3B	4582	MUC1	L
2932	GSK3B	4790	NFKB1	L
2932	GSK3B	4851	NOTCH1	L
2932	GSK3B	4853	NOTCH2	L
2932	GSK3B	5540	PPYR1	L
2932	GSK3B	5579	PRKCB1	L
2932	GSK3B	5747	PTK2	L
2932	GSK3B	5770	PTPN1	L
2932	GSK3B	6615	SNAI1	L
2932	GSK3B	7157	TP53	L
2932	GSK3B	8312	AXIN1	L
2932	GSK3B	8313	AXIN2	L
2932	GSK3B	10023	FRAT1	L
2932	GSK3B	10059	DNM1L	L
2932	GSK3B	11215	AKAP11	L
2932	GSK3B	23401	FRAT2	L
2932	GSK3B	23678	SGK3	L
2932	GSK3B	51199	NIN	L
2932	GSK3B	65110	UPF3A	L
2934	GSN	3985	LIMK2	L
2934	GSN	5829	PXN	L
2934	GSN	7408	VASP	L
2934	GSN	7414	VCL	L
2934	GSN	7416	VDAC1	L
2934	GSN	9564	BCAR1	L
2934	GSN	10040	TOM1L1	S
2934	GSN	53405	CLIC5	L
2935	GSPT1	26986	PABPC1	L
2936	GSR	64219	PJA1	S
2944	GSTM1	2946	GSTM2	L
2944	GSTM1	4217	MAP3K5	L
2946	GSTM2	2947	GSTM3	L
2948	GSTM4	7088	TLE1	S
2948	GSTM4	7704	ZBTB16	S
2948	GSTM4	51003	MED31	S
2948	GSTM4	51497	TH1L	S
2948	GSTM4	55791	C1orf103	S
2948	GSTM4	84966	IGSF21	S
2950	GSTP1	5599	MAPK8	L
2950	GSTP1	5764	PTN	S
2950	GSTP1	56902	LOC56902	S
2956	MSH6	5111	PCNA	L
2957	GTF2A1	2958	GTF2A2	L
2957	GTF2A1	2959	GTF2B	L
2957	GTF2A1	2960	GTF2E1	L
2957	GTF2A1	2961	GTF2E2	L
2957	GTF2A1	2962	GTF2F1	L
2957	GTF2A1	6908	TBP	L
2957	GTF2A1	9325	TRIP4	L
2957	GTF2A1	9519	TBPL1	L
2958	GTF2A2	2960	GTF2E1	L
2958	GTF2A2	3297	HSF1	L
2958	GTF2A2	6908	TBP	L

2958	GTF2A2	9519	TBPL1	L
2958	GTF2A2	11036	ALF	L
2959	GTF2B	2960	GTF2E1	L
2959	GTF2B	2961	GTF2E2	L
2959	GTF2B	2962	GTF2F1	L
2959	GTF2B	2963	GTF2F2	L
2959	GTF2B	3297	HSF1	L
2959	GTF2B	4171	MCM2	L
2959	GTF2B	6908	TBP	L
2959	GTF2B	7025	NR2F1	L
2959	GTF2B	7421	VDR	L
2959	GTF2B	8031	NCOA4	L
2959	GTF2B	8202	NCOA3	L
2959	GTF2B	8648	NCOA1	L
2959	GTF2B	9221	NOLC1	L
2959	GTF2B	9519	TBPL1	L
2959	GTF2B	10320	ZNFN1A1	L
2960	GTF2E1	2961	GTF2E2	L
2960	GTF2E1	2963	GTF2F2	L
2960	GTF2E1	2965	GTF2H1	L
2960	GTF2E1	2968	GTF2H4	L
2960	GTF2E1	6878	TAF6	L
2960	GTF2E1	6908	TBP	L
2960	GTF2E1	6917	TCEA1	L
2960	GTF2E1	8805	TRIM24	L
2960	GTF2E1	27044	SND1	L
2961	GTF2E2	2962	GTF2F1	L
2961	GTF2E2	2963	GTF2F2	L
2961	GTF2E2	2965	GTF2H1	L
2961	GTF2E2	4193	MDM2	L
2961	GTF2E2	4331	MNAT1	L
2961	GTF2E2	6908	TBP	L
2961	GTF2E2	7507	XPA	L
2961	GTF2E2	23636	NUP62	L
2961	GTF2E2	27044	SND1	L
2961	GTF2E2	55729	ATF7IP	L
2962	GTF2F1	2963	GTF2F2	L
2962	GTF2F1	4488	MSX2	L
2962	GTF2F1	4609	MYC	L
2962	GTF2F1	5701	PSMC2	L
2962	GTF2F1	5764	PTN	S
2962	GTF2F1	6722	SRF	L
2962	GTF2F1	9150	CTDP1	L
2962	GTF2F1	9638	FEZ1	S
2962	GTF2F1	55729	ATF7IP	L
2962	GTF2F1	58190	CTDSP1	L
2963	GTF2F2	3725	JUN	L
2963	GTF2F2	4488	MSX2	L
2963	GTF2F2	5430	POLR2A	L
2963	GTF2F2	6908	TBP	L
2963	GTF2F2	27336	HTATSF1	L
2965	GTF2H1	3192	HNRPU	L
2965	GTF2H1	4171	MCM2	L
2965	GTF2H1	5430	POLR2A	L
2965	GTF2H1	5701	PSMC2	L
2965	GTF2H1	7157	TP53	L
2965	GTF2H1	8880	FUBP1	L
2965	GTF2H1	54462	KIAA1128	S
2965	GTF2H1	55729	ATF7IP	L
2965	GTF2H1	63971	KIF13A	L
2965	GTF2H1	404672	GTF2H5	L
2966	GTF2H2	404672	GTF2H5	L
2967	GTF2H3	404672	GTF2H5	L
2968	GTF2H4	404672	GTF2H5	L
2969	GTF2I	4609	MYC	L
2969	GTF2I	5396	PRRX1	L
2969	GTF2I	5592	PRKG1	L

2969	GTF2I	5595	MAPK3	L
2969	GTF2I	6722	SRF	L
2969	GTF2I	6772	STAT1	L
2969	GTF2I	6774	STAT3	L
2969	GTF2I	7391	USF1	L
2969	GTF2I	7528	YY1	L
2969	GTF2I	7709	ZBTB17	L
2969	GTF2I	8841	HDAC3	L
2969	GTF2I	9063	PIAS2	L
2969	GTF2I	51691	LSM8	L
2971	GTF3A	2976	GTF3C2	L
2971	GTF3A	10133	OPTN	L
2972	BRF1	5933	RBL1	L
2972	BRF1	6908	TBP	L
2972	BRF1	7157	TP53	L
2975	GTF3C1	3486	IGFBP3	S
2975	GTF3C1	4809	NHP2L1	S
2975	GTF3C1	5602	MAPK10	S
2975	GTF3C1	9191	DEDD	L
2975	GTF3C1	20924	(null)	S
2975	GTF3C1	51236	C8orf30A	S
2975	GTF3C1	55147	RBM23	S
2975	GTF3C1	64400	FTS	S
2975	GTF3C1	79735	TBC1D17	S
2975	GTF3C1	84164	ASCC2	S
2975	GTF3C1	84950	PRPF38A	S
2976	GTF3C2	5925	RB1	L
2977	GUCY1A2	2983	GUCY1B3	L
2979	GUCA1B	2986	GUCY2F	L
2979	GUCA1B	3000	GUCY2D	L
2980	GUCA2A	2984	GUCY2C	L
2981	GUCA2B	3000	GUCY2D	L
2983	GUCY1B3	3320	HSPCA	L
2984	GUCY2C	79849	PDZK2	L
2992	GYG	2997	GYS1	R
2992	GYG	8908	GYG2	L
2992	GYG	9883	POM121	R
2992	GYG	81786	TRIM7	L
2994	GYPB	6005	RHAG	L
2995	GYPC	4354	MPP1	L
2997	GYS1	8550	MAPKAPK5	L
2997	GYS1	8908	GYG2	RL
3000	GUCY2D	8787	RGS9	L
3001	GZMA	3148	HMGB2	L
3001	GZMA	4691	NCL	L
3001	GZMA	6418	SET	L
3002	GZMB	3482	IGF2R	L
3002	GZMB	5272	SERPINB9	L
3002	GZMB	5551	PRF1	L
3002	GZMB	5552	PRG1	L
3002	GZMB	5873	RAB27A	L
3005	H1F0	3837	KPNB1	L
3005	H1F0	3838	KPNA2	L
3005	H1F0	3843	RANBP5	L
3005	H1F0	5890	RAD51L1	L
3005	H1F0	10527	IPO7	L
3005	H1F0	84273	C4orf14	S
3014	H2AFX	4683	NBN	L
3014	H2AFX	7158	TP53BP1	L
3014	H2AFX	20924	(null)	S
3014	H2AFX	79796	ALG9	L
3015	H2AFZ	3017	HIST1H2BD	L
3015	H2AFZ	3619	INCENP	L
3015	H2AFZ	6261	RYR1	L
3015	H2AFZ	8350	HIST1H3A	L
3015	H2AFZ	8359	HIST1H4A	L
3020	H3F3A	7089	TLE2	L

3021	H3F3B	7290	HIRA	L
3021	H3F3B	10919	EHMT2	R
3024	HIST1H1A	4678	NASP	L
3032	HADHB	7414	VCL	L
3035	HARS	6125	RPL5	L
3035	HARS	6897	TARS	L
3039	HBA1	3043	HBB	S
3039	HBA1	4673	NAP1L1	S
3039	HBA1	5728	PTEN	S
3040	HBA2	3043	HBB	L
3040	HBA2	3048	HBG2	L
3043	HBB	3050	HBZ	L
3043	HBB	3240	HP	L
3043	HBB	51714	SELT	S
3048	HBG2	4090	SMAD5	L
3054	HCFC1	5134	PDCD2	L
3054	HCFC1	5451	POU2F1	L
3054	HCFC1	6667	SP1	L
3054	HCFC1	7709	ZBTB17	L
3054	HCFC1	10488	CREB3	L
3054	HCFC1	10891	PPARGC1A	L
3054	HCFC1	11168	PSIP1	L
3054	HCFC1	58487	ZF	L
3055	HCK	3572	IL6ST	L
3055	HCK	5175	PECAM1	L
3055	HCK	5329	PLAUR	L
3055	HCK	5335	PLCG1	L
3055	HCK	5921	RASA1	L
3055	HCK	7456	WASPIP	L
3055	HCK	8751	ADAM15	L
3055	HCK	8935	SCAP2	L
3055	HCK	9094	UNC119	L
3055	HCK	9564	BCAR1	L
3055	HCK	10657	KHDRBS1	L
3055	HCK	22821	RASA3	L
3055	HCK	55750	MULK	S
3055	HCK	59341	TRPV4	L
3059	HCLS1	4067	LYN	L
3059	HCLS1	10097	ACTR2	L
3059	HCLS1	11184	MAP4K1	L
3059	HCLS1	63898	SH2D4A	R
3060	HCRT	3061	HCRTR1	L
3060	HCRT	3062	HCRTR2	L
3062	HCRTR2	4345	CD200	L
3064	HD	3092	HIP1	L
3064	HD	3093	HIP2	L
3064	HD	4102	MAGEA3	L
3064	HD	4294	MAP3K10	L
3064	HD	5164	PDK2	S
3064	HD	5921	RASA1	L
3064	HD	6457	SH3GL3	L
3064	HD	6667	SP1	L
3064	HD	6874	TAF4	L
3064	HD	6908	TBP	L
3064	HD	7052	TGM2	L
3064	HD	7157	TP53	L
3064	HD	7166	TPH1	L
3064	HD	7341	SUMO1	L
3064	HD	8189	SYMPK	L
3064	HD	8263	F8A1	L
3064	HD	8819	SAP30	L
3064	HD	9001	HAP1	L
3064	HD	9026	HIP1R	L
3064	HD	9322	TRIP10	L
3064	HD	9611	NCOR1	L
3064	HD	10133	OPTN	L
3064	HD	10915	TCERG1	L

3064	HD	11153	HYPE	L
3064	HD	23390	ZDHHC17	L
3064	HD	25763	CXorf27	L
3064	HD	25764	HYPK	L
3064	HD	25766	HYPC	L
3064	HD	25942	SIN3A	L
3064	HD	29072	HYPB	L
3064	HD	29993	PACSIN1	L
3064	HD	55081	ESRRBL1	L
3064	HD	55660	FNBP3	L
3065	HDAC1	3364	HUS1	L
3065	HDAC1	4084	MXD1	L
3065	HDAC1	4087	SMAD2	L
3065	HDAC1	4193	MDM2	L
3065	HDAC1	4197	MDS1	L
3065	HDAC1	4654	MYOD1	L
3065	HDAC1	4763	NF1	L
3065	HDAC1	4790	NFKB1	L
3065	HDAC1	5111	PCNA	L
3065	HDAC1	5195	PEX14	L
3065	HDAC1	5245	PHB	L
3065	HDAC1	5371	PML	L
3065	HDAC1	5467	PPARD	L
3065	HDAC1	5757	PTMA	L
3065	HDAC1	5883	RAD9A	L
3065	HDAC1	5925	RB1	L
3065	HDAC1	5926	ARID4A	L
3065	HDAC1	5928	RBBP4	L
3065	HDAC1	5933	RBL1	L
3065	HDAC1	5970	RELA	L
3065	HDAC1	5981	RFC1	L
3065	HDAC1	5984	RFC4	L
3065	HDAC1	6299	SALL1	L
3065	HDAC1	6304	SATB1	L
3065	HDAC1	6667	SP1	L
3065	HDAC1	6670	SP3	L
3065	HDAC1	6886	TAL1	L
3065	HDAC1	7026	NR2F2	L
3065	HDAC1	7153	TOP2A	L
3065	HDAC1	7155	TOP2B	L
3065	HDAC1	7164	TPD52L1	S
3065	HDAC1	7704	ZBTB16	L
3065	HDAC1	8204	NRIP1	L
3065	HDAC1	8462	KLF11	L
3065	HDAC1	8726	EED	L
3065	HDAC1	8841	HDAC3	L
3065	HDAC1	9112	MTA1	L
3065	HDAC1	9425	CDYL	L
3065	HDAC1	9643	MORF4L2	L
3065	HDAC1	9734	HDAC9	L
3065	HDAC1	9869	SETDB1	L
3065	HDAC1	10284	SAP18	L
3065	HDAC1	10320	ZNFN1A1	L
3065	HDAC1	10401	PIAS3	L
3065	HDAC1	10521	DDX17	L
3065	HDAC1	10524	HTATIP	L
3065	HDAC1	10628	TXNIP	L
3065	HDAC1	11176	BAZ2A	L
3065	HDAC1	23013	SPEN	L
3065	HDAC1	23028	AOF2	L
3065	HDAC1	23493	HEY2	L
3065	HDAC1	23523	CABIN1	L
3065	HDAC1	25942	SIN3A	L
3065	HDAC1	29947	DNMT3L	L
3065	HDAC1	51317	PHF21A	L
3065	HDAC1	54880	BCOR	L
3065	HDAC1	55662	HIF1AN	L

3065	HDAC1	55806	HR	L
3065	HDAC1	57708	MIER1	L
3065	HDAC1	60436	TGIF2	L
3066	HDAC2	3475	IFRD1	L
3066	HDAC2	4084	MXD1	L
3066	HDAC2	5036	PA2G4	L
3066	HDAC2	5371	PML	L
3066	HDAC2	5467	PPARD	L
3066	HDAC2	5511	PPP1R8	L
3066	HDAC2	5757	PTMA	L
3066	HDAC2	5926	ARID4A	L
3066	HDAC2	5970	RELA	L
3066	HDAC2	6299	SALL1	L
3066	HDAC2	6667	SP1	L
3066	HDAC2	6670	SP3	L
3066	HDAC2	6839	SUV39H1	L
3066	HDAC2	7067	THRA	L
3066	HDAC2	7068	THRB	L
3066	HDAC2	7153	TOP2A	L
3066	HDAC2	7528	YY1	L
3066	HDAC2	8726	EED	L
3066	HDAC2	9112	MTA1	L
3066	HDAC2	9425	CDYL	L
3066	HDAC2	9541	CIR	L
3066	HDAC2	9869	SETDB1	L
3066	HDAC2	10320	ZNFN1A1	L
3066	HDAC2	22938	SNW1	L
3066	HDAC2	23013	SPEN	L
3066	HDAC2	23523	CABIN1	L
3066	HDAC2	25942	SIN3A	L
3066	HDAC2	55662	HIF1AN	L
3066	HDAC2	55929	DMAP1	L
3066	HDAC2	64375	ZNFN1A4	L
3066	HDAC2	83933	HDAC10	L
3066	HDAC2	84168	ANTXR1	L
3066	HDAC2	84525	HOP	L
3069	HDLBP	4089	SMAD4	L
3069	HDLBP	11260	XPOT	L
3069	HDLBP	55603	FAM46A	L
3073	HEXA	23326	USP22	S
3075	CFH	3078	CFHL1	L
3075	CFH	3426	IF	L
3075	CFH	3684	ITGAM	L
3075	CFH	6402	SELL	L
3077	HFE	7036	TFR2	L
3077	HFE	7037	TFRC	L
3078	CFHL1	3929	LBP	L
3082	HGF	3083	HGFAC	L
3082	HGF	4233	MET	L
3082	HGF	6382	SDC1	L
3082	HGF	6383	SDC2	L
3082	HGF	7123	CLEC3B	L
3083	HGFAC	6692	SPINT1	L
3083	HGFAC	10653	SPINT2	L
3084	NRG1	3984	LIMK1	L
3087	HHEX	5371	PML	L
3087	HHEX	30008	EFEMP2	R
3087	HHEX	83755	KRTAP4-12	R
3091	HIF1A	3320	HSPCA	L
3091	HIF1A	3725	JUN	L
3091	HIF1A	4193	MDM2	L
3091	HIF1A	5187	PER1	L
3091	HIF1A	5230	PGK1	L
3091	HIF1A	5595	MAPK3	L
3091	HIF1A	5688	PSMA7	L
3091	HIF1A	5702	PSMC3	L
3091	HIF1A	6759	SSX4	R

3091	HIF1A	7157	TP53	L
3091	HIF1A	7428	VHL	L
3091	HIF1A	7818	DAP3	L
3091	HIF1A	8533	COPS3	L
3091	HIF1A	8648	NCOA1	L
3091	HIF1A	55662	HIF1AN	L
3092	HIP1	3692	ITGB4BP	S
3092	HIP1	5201	PFDN1	S
3092	HIP1	6204	RPS10	S
3092	HIP1	9026	HIP1R	L
3092	HIP1	55081	ESRRBL1	L
3093	HIP2	4738	NEDD8	L
3093	HIP2	4790	NFKB1	L
3093	HIP2	7157	TP53	L
3093	HIP2	10612	TRIM3	L
3096	HIVEP1	4088	SMAD3	L
3096	HIVEP1	5861	RAB1A	S
3096	HIVEP1	7414	VCL	L
3096	HIVEP1	10436	C2F	S
3098	HK1	7416	VDAC1	L
3098	HK1	22955	SCMH1	S
3099	HK2	29979	UBQLN1	R
3101	HK3	3487	IGFBP4	L
3101	HK3	3952	LEP	L
3101	HK3	7709	ZBTB17	L
3101	HK3	27306	PGDS	L
3104	HKR3	127557	ZBTB8	R
3104	HKR3	135927	C7orf34	R
3105	HLA-A	3812	KIR3DL2	L
3105	HLA-A	4103	MAGEA4	L
3105	HLA-A	6955	TRA@	L
3105	HLA-A	10859	LILRB1	L
3106	HLA-B	3811	KIR3DL1	L
3106	HLA-B	3824	KLRD1	L
3106	HLA-B	4100	MAGEA1	L
3106	HLA-B	6955	TRA@	L
3106	HLA-B	10859	LILRB1	L
3107	HLA-C	3309	HSPA5	L
3107	HLA-C	3803	KIR2DL2	L
3107	HLA-C	3804	KIR2DL3	L
3107	HLA-C	3806	KIR2DS1	L
3107	HLA-C	6891	TAP2	L
3107	HLA-C	6892	TAPBP	L
3107	HLA-C	10859	LILRB1	L
3108	HLA-DMA	3109	HLA-DMB	L
3108	HLA-DMA	3111	HLA-DOA	L
3108	HLA-DMA	3122	HLA-DRA	L
3108	HLA-DMA	3123	HLA-DRB1	L
3108	HLA-DMA	3732	CD82	L
3109	HLA-DMB	3112	HLA-DOB	L
3109	HLA-DMB	3122	HLA-DRA	L
3109	HLA-DMB	3732	CD82	L
3113	HLA-DPA1	3115	HLA-DPB1	L
3117	HLA-DQA1	6456	SH3GL2	S
3117	HLA-DQA1	7088	TLE1	S
3117	HLA-DQA1	9094	UNC119	S
3117	HLA-DQA1	55791	C1orf103	S
3118	HLA-DQA2	3119	HLA-DQB1	L
3118	HLA-DQA2	3630	INS	L
3119	HLA-DQB1	3630	INS	L
3122	HLA-DRA	3123	HLA-DRB1	L
3122	HLA-DRA	3125	HLA-DRB3	L
3122	HLA-DRA	3127	HLA-DRB5	L
3122	HLA-DRA	3732	CD82	L
3122	HLA-DRA	4155	MBP	L
3122	HLA-DRA	25766	HYPC	L
3123	HLA-DRB1	6955	TRA@	L

3125	HLA-DRB3	5443	POMC	L
3125	HLA-DRB3	375078	(null)	S
3131	HLF	3725	JUN	L
3131	HLF	3727	JUND	L
3131	HLF	7008	TEF	L
3131	HLF	10538	BATF	L
3131	HLF	55509	SNFT	L
3133	HLA-E	3821	KLRC1	L
3133	HLA-E	3822	KLRC2	L
3133	HLA-E	3824	KLRD1	L
3134	HLA-F	6890	TAP1	L
3134	HLA-F	10859	LILRB1	L
3135	HLA-G	3824	KLRD1	L
3135	HLA-G	6890	TAP1	L
3135	HLA-G	6891	TAP2	L
3135	HLA-G	10859	LILRB1	L
3146	HMGB1	3190	HNRPK	L
3146	HMGB1	3235	HOXD9	L
3146	HMGB1	4790	NFKB1	L
3146	HMGB1	5327	PLAT	L
3146	HMGB1	5340	PLG	L
3146	HMGB1	5460	POU5F1	L
3146	HMGB1	5591	PRKDC	L
3146	HMGB1	5896	RAG1	L
3146	HMGB1	5925	RB1	L
3146	HMGB1	5970	RELA	L
3146	HMGB1	6872	TAF1	L
3146	HMGB1	6908	TBP	L
3146	HMGB1	7088	TLE1	L
3146	HMGB1	7157	TP53	L
3146	HMGB1	7161	TP73	L
3146	HMGB1	9094	UNC119	S
3146	HMGB1	11161	C14orf1	S
3146	HMGB1	55791	C1orf103	S
3148	HMGB2	5241	PGR	L
3148	HMGB2	5451	POU2F1	L
3148	HMGB2	5452	POU2F2	L
3148	HMGB2	5453	POU3F1	L
3148	HMGB2	5460	POU5F1	L
3148	HMGB2	5591	PRKDC	L
3148	HMGB2	5896	RAG1	L
3148	HMGB2	6418	SET	L
3148	HMGB2	7157	TP53	L
3150	HMGN1	3151	HMGN2	L
3150	HMGN1	7534	YWHAZ	L
3155	HMGCL	58475	MS4A7	S
3156	HMGCR	3638	INSIG1	L
3156	HMGCR	90627	STARD13	L
3159	HMGA1	3659	IRF1	L
3159	HMGA1	3725	JUN	L
3159	HMGA1	4800	NFYA	L
3159	HMGA1	5453	POU3F1	L
3159	HMGA1	6047	RNF4	L
3159	HMGA1	6667	SP1	L
3159	HMGA1	28996	HIPK2	L
3159	HMGA1	51684	SUFU	L
3162	HMOX1	4842	NOS1	L
3163	HMOX2	9001	HAP1	S
3163	HMOX2	9737	GPRASP1	S
3163	HMOX2	9869	SETDB1	S
3163	HMOX2	10980	COPS6	S
3163	HMOX2	28964	GIT1	S
3163	HMOX2	55791	C1orf103	S
3163	HMOX2	57562	KIAA1377	S
3164	NR4A1	5349	FXYD3	S
3164	NR4A1	5371	PML	L
3164	NR4A1	5469	PPARBP	L

3164	NR4A1	6258	RXRG	L
3164	NR4A1	8202	NCOA3	L
3164	NR4A1	8648	NCOA1	L
3164	NR4A1	8850	PCAF	L
3164	NR4A1	9612	NCOR2	L
3164	NR4A1	27330	RPS6KA6	S
3164	NR4A1	55160	ARHGEF10L	S
3169	FOXA1	8290	HIST3H3	L
3170	FOXA2	3175	ONECUT1	L
3170	FOXA2	3202	HOXA5	L
3170	FOXA2	4284	MIP	L
3170	FOXA2	5015	OTX2	L
3170	FOXA2	7088	TLE1	L
3170	FOXA2	8648	NCOA1	L
3172	HNF4A	4087	SMAD2	L
3172	HNF4A	5469	PPARBP	L
3172	HNF4A	6927	TCF1	L
3172	HNF4A	7025	NR2F1	L
3172	HNF4A	7157	TP53	L
3172	HNF4A	7182	NR2C2	L
3172	HNF4A	8648	NCOA1	L
3172	HNF4A	8805	TRIM24	L
3172	HNF4A	9282	CRSP2	L
3172	HNF4A	9326	ZNHIT3	L
3172	HNF4A	10499	NCOA2	L
3172	HNF4A	10923	SUB1	L
3172	HNF4A	29982	NRBF2	L
3172	HNF4A	133522	PPARGC1B	L
3175	ONECUT1	8850	PCAF	L
3178	HNRPA1	6144	RPL21	S
3178	HNRPA1	7916	BAT2	L
3178	HNRPA1	7920	BAT5	L
3178	HNRPA1	8458	TTF2	L
3178	HNRPA1	9796	PHYHIP	S
3178	HNRPA1	54464	XRN1	L
3178	HNRPA1	65110	UPF3A	L
3181	HNRPA2B1	3191	HNRPL	L
3181	HNRPA2B1	6625	SNRP70	L
3181	HNRPA2B1	7428	VHL	L
3181	HNRPA2B1	8458	TTF2	L
3182	HNRPAB	4792	NFKBIA	L
3182	HNRPAB	8626	TP73L	L
3183	HNRPC	3839	KPNA3	R
3183	HNRPC	3845	KRAS	R
3183	HNRPC	5155	PDGFB	L
3183	HNRPC	5257	PHKB	R
3183	HNRPC	5300	PIN1	R
3183	HNRPC	7329	UBE2I	R
3183	HNRPC	8907	AP1M1	R
3183	HNRPC	9513	FXR2	R
3183	HNRPC	11007	DIPA	R
3183	HNRPC	51545	ZNF581	R
3183	HNRPC	55285	FLJ11016	R
3183	HNRPC	55885	LMO3	R
3183	HNRPC	138046	LOC138046	R
3184	HNRPD	3939	LDHA	L
3184	HNRPD	6294	SAFB	L
3184	HNRPD	23658	LSM5	L
3184	HNRPD	54512	EXOSC4	L
3185	HNRPF	4686	NCBP1	L
3185	HNRPF	5430	POLR2A	L
3185	HNRPF	8570	KHSRP	L
3185	HNRPF	22916	NCBP2	L
3187	HNRPH1	4686	NCBP1	L
3187	HNRPH1	7094	TLN1	L
3187	HNRPH1	7414	VCL	L
3187	HNRPH1	8570	KHSRP	L

3187	HNRPH1	10040	TOM1L1	S
3187	HNRPH1	10915	TCERG1	L
3187	HNRPH1	22916	NCBP2	L
3189	HNRPH3	6191	RPS4X	S
3189	HNRPH3	6357	CCL13	S
3189	HNRPH3	7094	TLN1	L
3189	HNRPH3	7276	TTR	S
3189	HNRPH3	7414	VCL	L
3189	HNRPH3	10524	HTATIP	S
3189	HNRPH3	10813	UTP14A	S
3189	HNRPH3	11040	PIM2	S
3189	HNRPH3	11161	C14orf1	S
3190	HNRPK	3191	HNRPL	L
3190	HNRPK	3276	HRMT1L2	L
3190	HNRPK	3702	ITK	L
3190	HNRPK	4904	YBX1	L
3190	HNRPK	5094	PCBP2	L
3190	HNRPK	5295	PIK3R1	L
3190	HNRPK	6294	SAFB	L
3190	HNRPK	6428	SFRS3	L
3190	HNRPK	6714	SRC	L
3190	HNRPK	7094	TLN1	L
3190	HNRPK	7329	UBE2I	R
3190	HNRPK	7409	VAV1	L
3190	HNRPK	7414	VCL	L
3190	HNRPK	8440	NCK2	RL
3190	HNRPK	9402	GRAP2	R
3190	HNRPK	9444	QKI	R
3190	HNRPK	9782	MATR3	R
3190	HNRPK	10174	SORBS3	R
3190	HNRPK	10179	RBM7	R
3190	HNRPK	10656	KHDRBS3	R
3190	HNRPK	10657	KHDRBS1	L
3190	HNRPK	26505	CNNM3	R
3190	HNRPK	27316	RBMX	R
3190	HNRPK	55285	FLJ11016	R
3190	HNRPK	56654	NPDC1	R
3190	HNRPK	79171	MGC10433	R
3190	HNRPK	85362	(null)	R
3190	HNRPK	202559	KHDRBS2	R
3191	HNRPL	5094	PCBP2	L
3191	HNRPL	5725	PTBP1	L
3191	HNRPL	10362	HMG20B	S
3191	HNRPL	64219	PJA1	S
3192	HNRPU	3276	HRMT1L2	L
3192	HNRPU	4692	NDN	L
3192	HNRPU	5456	POU3F4	L
3192	HNRPU	6606	SMN1	L
3192	HNRPU	6850	SYK	L
3192	HNRPU	8178	ELL	L
3195	TLX1	5540	PPYR1	L
3196	TLX2	7533	YWHAH	L
3198	HOXA1	4188	MDFI	R
3198	HOXA1	5316	PKNOX1	L
3198	HOXA1	5359	PLSCR1	R
3198	HOXA1	7205	TRIP6	R
3198	HOXA1	9404	LPXN	R
3198	HOXA1	26511	CHIC2	R
3198	HOXA1	30008	EFEMP2	R
3198	HOXA1	79090	TRAPPC6A	R
3198	HOXA1	83755	KRTAP4-12	R
3202	HOXA5	5087	PBX1	L
3204	HOXA7	4211	MEIS1	L
3205	HOXA9	4087	SMAD2	L
3205	HOXA9	4089	SMAD4	L
3205	HOXA9	5089	PBX2	L
3205	HOXA9	5359	PLSCR1	R

3205	HOXA9	7205	TRIP6	R
3205	HOXA9	11030	RBPMS	R
3206	HOXA10	4211	MEIS1	L
3206	HOXA10	5087	PBX1	L
3206	HOXA10	5777	PTPN6	L
3208	HPCA	4671	BIRC1	L
3211	HOXB1	4211	MEIS1	L
3211	HOXB1	5080	PAX6	L
3211	HOXB1	5087	PBX1	L
3211	HOXB1	5316	PKNOX1	L
3216	HOXB6	3217	HOXB7	L
3216	HOXB6	3866	KRT15	R
3216	HOXB6	5316	PKNOX1	L
3216	HOXB6	5359	PLSCR1	R
3216	HOXB6	6303	SAT	R
3217	HOXB7	4792	NFKBIA	L
3217	HOXB7	5316	PKNOX1	L
3218	HOXB8	4212	MEIS2	L
3218	HOXB8	5087	PBX1	L
3218	HOXB8	5089	PBX2	L
3219	HOXB9	4188	MDFI	R
3219	HOXB9	6303	SAT	R
3219	HOXB9	7832	BTG2	L
3219	HOXB9	11030	RBPMS	R
3219	HOXB9	83755	KRTAP4-12	R
3221	HOXC4	5451	POU2F1	L
3221	HOXC4	5591	PRKDC	L
3224	HOXC8	4086	SMAD1	L
3224	HOXC8	4089	SMAD4	L
3224	HOXC8	4091	SMAD6	L
3224	HOXC8	7832	BTG2	L
3233	HOXD4	4211	MEIS1	L
3233	HOXD4	5087	PBX1	L
3233	HOXD4	204851	HIPK1	L
3235	HOXD9	5316	PKNOX1	L
3236	HOXD10	5087	PBX1	L
3237	HOXD11	4211	MEIS1	L
3238	HOXD12	4097	MAFG	L
3238	HOXD12	4211	MEIS1	L
3238	HOXD12	23764	MAFF	L
3240	HP	3684	ITGAM	L
3240	HP	3689	ITGB2	L
3240	HP	9332	CD163	L
3241	HPCAL1	10363	HMG20A	R
3241	HPCAL1	113878	DTX2	R
3251	HPRT1	55093	C8orf32	R
3251	HPRT1	56952	PRTFDC1	R
3265	HRAS	3643	INSR	L
3265	HRAS	3654	IRAK1	L
3265	HRAS	3656	IRAK2	L
3265	HRAS	3956	LGALS1	L
3265	HRAS	4301	MLLT4	L
3265	HRAS	4763	NF1	L
3265	HRAS	5147	PDE6D	L
3265	HRAS	5155	PDGFB	L
3265	HRAS	5290	PIK3CA	L
3265	HRAS	5294	PIK3CG	L
3265	HRAS	5295	PIK3R1	L
3265	HRAS	5599	MAPK8	L
3265	HRAS	5604	MAP2K1	L
3265	HRAS	5894	RAF1	L
3265	HRAS	5900	RALGDS	L
3265	HRAS	5910	RAP1GDS1	L
3265	HRAS	5921	RASA1	L
3265	HRAS	6654	SOS1	L
3265	HRAS	6655	SOS2	L
3265	HRAS	7074	TIAM1	L

3265	HRAS	7409	VAV1	L
3265	HRAS	8036	SHOC2	L
3265	HRAS	8315	BRAP	L
3265	HRAS	8525	DGKZ	L
3265	HRAS	9610	RIN1	L
3265	HRAS	10567	RABAC1	L
3265	HRAS	11186	RASSF1	L
3265	HRAS	22806	ZNFN1A3	L
3265	HRAS	29899	GPSM2	L
3265	HRAS	55914	ERBB2IP	L
3265	HRAS	115727	RASGRP4	L
3265	HRAS	266747	Rgr	L
3266	ERAS	5293	PIK3CD	L
3266	ERAS	5295	PIK3R1	L
3267	HRB	7514	XPO1	L
3267	HRB	58513	EPS15L1	L
3269	HRH1	3569	IL6	L
3270	HRC	10345	TRDN	L
3273	HRG	5340	PLG	L
3273	HRG	7057	THBS1	L
3275	HRMT1L1	7916	BAT2	L
3275	HRMT1L1	11100	HNRPUL1	L
3275	HRMT1L1	63948	DMRTB1	R
3275	HRMT1L1	79869	FLJ12529	R
3276	HRMT1L2	3420	IDH3B	S
3276	HRMT1L2	3454	IFNAR1	L
3276	HRMT1L2	3609	ILF3	L
3276	HRMT1L2	6279	S100A8	S
3276	HRMT1L2	6829	SUPT5H	L
3276	HRMT1L2	7157	TP53	L
3276	HRMT1L2	7832	BTG2	L
3276	HRMT1L2	8202	NCOA3	L
3276	HRMT1L2	8648	NCOA1	L
3276	HRMT1L2	8715	NOL4	S
3276	HRMT1L2	9444	QKI	L
3276	HRMT1L2	10094	ARPC3	S
3276	HRMT1L2	10236	HNRPR	SL
3276	HRMT1L2	10499	NCOA2	L
3276	HRMT1L2	10656	KHDRBS3	L
3276	HRMT1L2	10657	KHDRBS1	L
3276	HRMT1L2	22927	HABP4	S
3276	HRMT1L2	51003	MED31	S
3276	HRMT1L2	55339	WDR33	S
3276	HRMT1L2	55791	C1orf103	S
3276	HRMT1L2	56252	YLPM1	S
3276	HRMT1L2	84966	IGSF21	S
3280	HES1	7088	TLE1	L
3280	HES1	23411	SIRT1	L
3280	HES1	23493	HEY2	L
3280	HES1	55502	HES6	L
3281	HSBP1	3297	HSF1	L
3281	HSBP1	51019	CGI-116	R
3297	HSF1	3298	HSF2	L
3297	HSF1	3303	HSPA1A	L
3297	HSF1	3312	HSPA8	L
3297	HSF1	3337	DNAJB1	L
3297	HSF1	5591	PRKDC	L
3297	HSF1	5601	MAPK9	L
3297	HSF1	6597	SMARCA4	L
3297	HSF1	6772	STAT1	L
3297	HSF1	6872	TAF1	L
3297	HSF1	6879	TAF7	L
3297	HSF1	6908	TBP	L
3297	HSF1	7520	XRCC5	L
3297	HSF1	8189	SYMPK	L
3297	HSF1	10923	SUB1	L
3297	HSF1	23054	NCOA6	L

3297	HSF1	85021	REPS1	L
3298	HSF2	7329	UBE2I	L
3298	HSF2	11077	HSF2BP	L
3298	HSF2	23636	NUP62	L
3300	DNAJB2	4089	SMAD4	L
3301	DNAJA1	3312	HSPA8	L
3301	DNAJA1	4071	TM4SF1	S
3301	DNAJA1	9232	PTTG1	L
3301	DNAJA1	51343	FZR1	S
3301	DNAJA1	51497	TH1L	S
3301	DNAJA1	57819	LSM2	L
3303	HSPA1A	3337	DNAJB1	L
3303	HSPA1A	3855	KRT7	L
3303	HSPA1A	4217	MAP3K5	L
3303	HSPA1A	4481	MSR1	L
3303	HSPA1A	5610	EIF2AK2	L
3303	HSPA1A	5757	PTMA	L
3303	HSPA1A	5830	PEX5	L
3303	HSPA1A	6523	SLC5A1	L
3303	HSPA1A	6662	SOX9	L
3303	HSPA1A	6767	ST13	L
3303	HSPA1A	7157	TP53	L
3303	HSPA1A	7917	BAT3	L
3303	HSPA1A	8517	IKBKG	L
3303	HSPA1A	8805	TRIM24	L
3303	HSPA1A	9093	DNAJA3	L
3303	HSPA1A	9131	PDCD8	L
3303	HSPA1A	9530	BAG4	L
3303	HSPA1A	9531	BAG3	L
3303	HSPA1A	9532	BAG2	L
3303	HSPA1A	10273	STUB1	L
3303	HSPA1A	10915	TCERG1	L
3303	HSPA1A	23640	HSPBP1	L
3303	HSPA1A	23645	PPP1R15A	L
3303	HSPA1A	51726	DNAJB11	L
3304	HSPA1B	5611	DNAJC3	L
3304	HSPA1B	192111	MGC5352	S
3306	HSPA2	23640	HSPBP1	R
3308	HSPA4	4306	NR3C2	L
3308	HSPA4	8841	HDAC3	L
3308	HSPA4	11098	PRSS23	S
3308	HSPA4	79577	CDC73	S
3309	HSPA5	3359	HTR3A	L
3309	HSPA5	3507	IGHM	L
3309	HSPA5	3856	KRT8	L
3309	HSPA5	3875	KRT18	L
3309	HSPA5	3925	STMN1	L
3309	HSPA5	3938	LCT	L
3309	HSPA5	3949	LDLR	L
3309	HSPA5	5829	PXN	L
3309	HSPA5	6955	TRA@	L
3309	HSPA5	7253	TSHR	L
3309	HSPA5	7450	VWF	L
3309	HSPA5	9159	PCSK7	L
3309	HSPA5	9451	EIF2AK3	L
3309	HSPA5	9564	BCAR1	S
3309	HSPA5	10197	PSME3	S
3309	HSPA5	10915	TCERG1	L
3309	HSPA5	10961	ERP29	L
3309	HSPA5	54431	DNAJC10	L
3309	HSPA5	54972	HSPA5BP1	L
3309	HSPA5	56896	DPYSL5	S
3309	HSPA5	57062	DDX24	S
3309	HSPA5	64215	DNAJC1	L
3309	HSPA5	80021	TMEM62	S
3312	HSPA8	3320	HSPCA	L
3312	HSPA8	3337	DNAJB1	L

3312	HSPA8	3717	JAK2	L
3312	HSPA8	3925	STMN1	L
3312	HSPA8	4071	TM4SF1	S
3312	HSPA8	4435	CITED1	L
3312	HSPA8	5829	PXN	L
3312	HSPA8	5966	REL	L
3312	HSPA8	5997	RGS2	S
3312	HSPA8	6667	SP1	L
3312	HSPA8	7132	TNFRSF1A	L
3312	HSPA8	7203	CCT3	L
3312	HSPA8	7316	UBC	S
3312	HSPA8	7414	VCL	L
3312	HSPA8	8841	HDAC3	L
3312	HSPA8	9093	DNAJA3	L
3312	HSPA8	9531	BAG3	L
3312	HSPA8	9532	BAG2	L
3312	HSPA8	10072	DPP3	S
3312	HSPA8	10273	STUB1	L
3312	HSPA8	10474	TADA3L	S
3312	HSPA8	10808	HSPH1	L
3312	HSPA8	10915	TCERG1	L
3312	HSPA8	23640	HSPBP1	RSL
3312	HSPA8	54205	CYCS	L
3312	HSPA8	84273	C4orf14	S
3312	HSPA8	286397	(null)	S
3313	HSPA9B	4597	MVD	L
3313	HSPA9B	7157	TP53	L
3313	HSPA9B	7184	TRA1	L
3313	HSPA9B	7416	VDAC1	L
3315	HSPB1	5464	PPA1	S
3315	HSPB1	7041	TGFB1I1	L
3315	HSPB1	7157	TP53	S
3315	HSPB1	8550	MAPKAPK5	L
3315	HSPB1	10248	POP7	L
3315	HSPB1	26353	HSPB8	L
3315	HSPB1	51003	MED31	S
3315	HSPB1	55791	C1orf103	S
3315	HSPB1	84060	DKFZP564O0523	S
3315	HSPB1	84966	IGSF21	S
3316	HSPB2	8988	HSPB3	L
3320	HSPCA	3551	IKBKB	L
3320	HSPCA	4141	MARS	L
3320	HSPCA	4306	NR3C2	L
3320	HSPCA	4609	MYC	L
3320	HSPCA	4654	MYOD1	L
3320	HSPCA	4846	NOS3	L
3320	HSPCA	4862	NPAS2	L
3320	HSPCA	5170	PDPK1	L
3320	HSPCA	5292	PIM1	L
3320	HSPCA	5465	PPARA	L
3320	HSPCA	5594	MAPK1	L
3320	HSPCA	5610	EIF2AK2	L
3320	HSPCA	5859	QARS	L
3320	HSPCA	5894	RAF1	L
3320	HSPCA	6189	RPS3A	S
3320	HSPCA	6449	SGTA	L
3320	HSPCA	6714	SRC	L
3320	HSPCA	6767	ST13	L
3320	HSPCA	6774	STAT3	L
3320	HSPCA	7132	TNFRSF1A	L
3320	HSPCA	7157	TP53	L
3320	HSPCA	7818	DAP3	L
3320	HSPCA	8517	IKBKG	L
3320	HSPCA	8737	RIPK1	L
3320	HSPCA	9049	AIP	L
3320	HSPCA	9451	EIF2AK3	L
3320	HSPCA	10273	STUB1	L

3320	HSPCA	10598	AHSA1	L
3320	HSPCA	10953	TOMM34	L
3320	HSPCA	27257	LSM1	L
3320	HSPCA	64754	SMYD3	L
3326	HSPCB	4846	NOS3	L
3326	HSPCB	57062	DDX24	S
3326	HSPCB	90627	STARD13	L
3329	HSPD1	3336	HSPE1	L
3329	HSPD1	3845	KRAS	L
3329	HSPD1	5621	PRNP	L
3329	HSPD1	8349	HIST2H2BE	L
3336	HSPE1	6303	SAT	S
3336	HSPE1	7088	TLE1	S
3336	HSPE1	7414	VCL	L
3336	HSPE1	9094	UNC119	S
3336	HSPE1	11161	C14orf1	S
3336	HSPE1	11244	ZHX1	S
3336	HSPE1	55791	C1orf103	S
3337	DNAJB1	5611	DNAJC3	L
3337	DNAJB1	10273	STUB1	L
3337	DNAJB1	10728	PTGES3	L
3339	HSPG2	3688	ITGB1	L
3339	HSPG2	5155	PDGFB	L
3339	HSPG2	5549	PRELP	L
3339	HSPG2	6678	SPARC	L
3339	HSPG2	7276	TTR	L
3339	HSPG2	9982	FGFBP1	L
3339	HSPG2	22795	NID2	L
3339	HSPG2	55660	FNBP3	L
3339	HSPG2	55729	ATF7IP	L
3339	HSPG2	284217	LAMA1	L
3350	HTR1A	3351	HTR1B	L
3350	HTR1A	3352	HTR1D	L
3351	HTR1B	3352	HTR1D	L
3356	HTR2A	3717	JAK2	L
3358	HTR2C	8777	MPDZ	L
3364	HUS1	5111	PCNA	L
3364	HUS1	5883	RAD9A	L
3364	HUS1	5884	RAD17	L
3364	HUS1	7266	DNAJC7	L
3371	TNC	3678	ITGA5	L
3371	TNC	3688	ITGB1	L
3371	TNC	3694	ITGB6	L
3371	TNC	5787	PTPRB	L
3371	TNC	5829	PXN	L
3371	TNC	8516	ITGA8	L
3375	IAPP	3651	IPF1	L
3375	IAPP	10267	RAMP1	L
3383	ICAM1	3559	IL2RA	L
3383	ICAM1	3561	IL2RG	L
3383	ICAM1	3683	ITGAL	L
3383	ICAM1	3684	ITGAM	L
3383	ICAM1	3689	ITGB2	L
3383	ICAM1	4478	MSN	L
3383	ICAM1	7430	VIL2	L
3384	ICAM2	3684	ITGAM	L
3384	ICAM2	3689	ITGB2	L
3384	ICAM2	4478	MSN	L
3384	ICAM2	30835	CD209	L
3385	ICAM3	3681	ITGAD	L
3385	ICAM3	3683	ITGAL	L
3385	ICAM3	3689	ITGB2	L
3385	ICAM3	4478	MSN	L
3385	ICAM3	7430	VIL2	L
3385	ICAM3	7704	ZBTB16	S
3385	ICAM3	30835	CD209	L
3386	ICAM4	3676	ITGA4	L

3386	ICAM4	3684	ITGAM	L
3386	ICAM4	3685	ITGAV	L
3386	ICAM4	3688	ITGB1	L
3386	ICAM4	3689	ITGB2	L
3386	ICAM4	6005	RHAG	L
3394	IRF8	3659	IRF1	L
3394	IRF8	3660	IRF2	L
3394	IRF8	6688	SPI1	L
3394	IRF8	9318	COPS2	L
3397	ID1	4617	MYF5	L
3397	ID1	4654	MYOD1	L
3397	ID1	8573	CASK	L
3398	ID2	4617	MYF5	L
3398	ID2	4654	MYOD1	L
3398	ID2	6925	TCF4	L
3398	ID2	6929	TCF3	L
3398	ID2	6938	TCF12	L
3398	ID2	9094	UNC119	S
3398	ID2	9242	MSC	L
3398	ID2	55791	C1orf103	S
3398	ID2	84060	DKFZP564O0523	S
3399	ID3	4617	MYF5	L
3399	ID3	4654	MYOD1	L
3399	ID3	5079	PAX5	L
3399	ID3	6720	SREBF1	L
3399	ID3	6925	TCF4	L
3399	ID3	6929	TCF3	L
3399	ID3	11036	ALF	L
3416	IDE	3479	IGF1	L
3416	IDE	3481	IGF2	L
3417	IDH1	11244	ZHX1	S
3419	IDH3A	3420	IDH3B	L
3419	IDH3A	3421	IDH3G	L
3420	IDH3B	3421	IDH3G	L
3420	IDH3B	11021	RAB35	S
3425	IDUA	4356	MPP3	S
3428	IFI16	7157	TP53	L
3430	IFI35	9111	NMI	L
3430	IFI35	10538	BATF	L
3431	SP110	4729	NDUFV2	S
3433	IFIT2	3437	IFIT3	R
3434	IFIT1	3437	IFIT3	R
3434	IFIT1	3646	EIF3S6	L
3437	IFIT3	159989	FLJ25393	R
3439	IFNA1	3558	IL2	L
3439	IFNA1	10379	ISGF3G	L
3440	IFNA2	3454	IFNAR1	L
3440	IFNA2	3455	IFNAR2	L
3454	IFNAR1	3456	IFNB1	L
3454	IFNAR1	3467	IFNW1	L
3454	IFNAR1	5295	PIK3R1	L
3454	IFNAR1	5566	PRKACA	L
3454	IFNAR1	5594	MAPK1	L
3454	IFNAR1	5777	PTPN6	L
3454	IFNAR1	5781	PTPN11	L
3454	IFNAR1	6773	STAT2	L
3454	IFNAR1	6774	STAT3	L
3454	IFNAR1	7297	TYK2	L
3454	IFNAR1	10399	GNB2L1	L
3455	IFNAR2	6773	STAT2	L
3455	IFNAR2	10399	GNB2L1	L
3458	IFNG	3459	IFNGR1	L
3458	IFNG	3460	IFNGR2	L
3459	IFNGR1	3460	IFNGR2	L
3459	IFNGR1	3716	JAK1	L
3460	IFNGR2	3717	JAK2	L
3460	IFNGR2	9093	DNAJA3	L

3475	IFRD1	6016	RIT1	S
3476	IGBP1	4281	MID1	L
3476	IGBP1	5515	PPP2CA	L
3476	IGBP1	5531	PPP4C	L
3476	IGBP1	5537	PPP6C	L
3476	IGBP1	11043	MID2	L
3479	IGF1	3480	IGF1R	L
3479	IGF1	3483	IGFALS	L
3479	IGF1	3484	IGFBP1	L
3479	IGF1	3485	IGFBP2	L
3479	IGF1	3486	IGFBP3	L
3479	IGF1	3487	IGFBP4	L
3479	IGF1	3488	IGFBP5	L
3479	IGF1	3489	IGFBP6	L
3479	IGF1	3490	IGFBP7	L
3479	IGF1	3547	IGSF1	L
3479	IGF1	4856	NOV	L
3480	IGF1R	3481	IGF2	L
3480	IGF1R	3486	IGFBP3	L
3480	IGF1R	3630	INS	L
3480	IGF1R	3667	IRS1	L
3480	IGF1R	3716	JAK1	L
3480	IGF1R	4734	NEDD4	L
3480	IGF1R	5295	PIK3R1	L
3480	IGF1R	5296	PIK3R2	L
3480	IGF1R	5770	PTPN1	L
3480	IGF1R	5781	PTPN11	L
3480	IGF1R	5921	RASA1	L
3480	IGF1R	6464	SHC1	L
3480	IGF1R	7529	YWHAB	L
3480	IGF1R	7531	YWHAE	L
3480	IGF1R	7534	YWHAZ	L
3480	IGF1R	8503	PIK3R3	L
3480	IGF1R	8651	SOCS1	L
3480	IGF1R	8660	IRS2	L
3480	IGF1R	8835	SOCS2	L
3480	IGF1R	9021	SOCS3	L
3480	IGF1R	10399	GNB2L1	L
3480	IGF1R	10451	VAV3	L
3480	IGF1R	10938	EHD1	L
3480	IGF1R	23365	ARHGEF12	L
3480	IGF1R	64599	PERQ1	L
3481	IGF2	3482	IGF2R	L
3481	IGF2	3484	IGFBP1	L
3481	IGF2	3485	IGFBP2	L
3481	IGF2	3486	IGFBP3	L
3481	IGF2	3487	IGFBP4	L
3481	IGF2	3488	IGFBP5	L
3481	IGF2	3489	IGFBP6	L
3481	IGF2	3490	IGFBP7	L
3481	IGF2	3643	INSR	L
3481	IGF2	4856	NOV	L
3481	IGF2	7448	VTN	L
3482	IGF2R	5328	PLAU	L
3482	IGF2R	8804	CREG1	L
3482	IGF2R	10226	M6PRBP1	L
3482	IGF2R	23062	GGA2	L
3482	IGF2R	23163	GGA3	L
3482	IGF2R	26088	GGA1	L
3482	IGF2R	55690	PACS1	L
3483	IGFALS	3486	IGFBP3	L
3483	IGFALS	3488	IGFBP5	L
3484	IGFBP1	7018	TF	L
3485	IGFBP2	7018	TF	L
3486	IGFBP3	3818	KLKB1	L
3486	IGFBP3	3837	KPNB1	L
3486	IGFBP3	4052	LTBP1	L

3486	IGFBP3	5340	PLG	L
3486	IGFBP3	6256	RXRA	L
3486	IGFBP3	7018	TF	L
3486	IGFBP3	8038	ADAM12	L
3486	IGFBP3	23649	POLA2	S
3486	IGFBP3	60676	PAPPA2	L
3487	IGFBP4	7018	TF	L
3488	IGFBP5	3837	KPNB1	L
3488	IGFBP5	5054	SERPINE1	L
3488	IGFBP5	6696	SPP1	L
3488	IGFBP5	7018	TF	L
3488	IGFBP5	7057	THBS1	L
3488	IGFBP5	7917	BAT3	S
3488	IGFBP5	8038	ADAM12	L
3488	IGFBP5	56902	LOC56902	S
3489	IGFBP6	7018	TF	L
3490	IGFBP7	3624	INHBA	L
3490	IGFBP7	3627	CXCL10	L
3490	IGFBP7	3630	INS	L
3490	IGFBP7	6352	CCL5	L
3490	IGFBP7	6366	CCL21	L
3490	IGFBP7	6382	SDC1	L
3490	IGFBP7	7422	VEGF	L
3491	CYR61	3685	ITGAV	L
3491	CYR61	3693	ITGB5	L
3500	IGHG1	3514	IGKC	L
3500	IGHG1	3538	IGLC2	L
3500	IGHG1	3586	IL10	L
3500	IGHG1	23075	SWAP70	L
3503	IGHG4	3514	IGKC	L
3507	IGHM	3512	IGJ	L
3507	IGHM	7441	VPREB1	L
3507	IGHM	29802	VPREB3	L
3507	IGHM	55722	Cep72	R
3508	IGHMBP2	51691	LSM8	L
3514	IGKC	7450	VWF	L
3516	RBPSUH	4851	NOTCH1	L
3516	RBPSUH	4853	NOTCH2	L
3516	RBPSUH	4854	NOTCH3	L
3516	RBPSUH	8850	PCAF	L
3516	RBPSUH	9541	CIR	L
3516	RBPSUH	9612	NCOR2	L
3516	RBPSUH	22938	SNW1	L
3516	RBPSUH	23013	SPEN	L
3516	RBPSUH	27044	SND1	L
3516	RBPSUH	51684	SUFU	L
3537	IGLC1	6449	SGTA	R
3537	IGLC1	29979	UBQLN1	R
3547	IGSF1	3625	INHBB	L
3549	IHH	5727	PTCH	L
3549	IHH	8643	PTCH2	L
3550	IK	5217	PFN2	S
3550	IK	10524	HTATIP	S
3550	IK	20924	(null)	S
3550	IK	23636	NUP62	S
3551	IKBKB	4296	MAP3K11	L
3551	IKBKB	4790	NFKB1	L
3551	IKBKB	4792	NFKBIA	L
3551	IKBKB	5588	PRKCQ	L
3551	IKBKB	5610	EIF2AK2	L
3551	IKBKB	7128	TNFAIP3	L
3551	IKBKB	7132	TNFRSF1A	L
3551	IKBKB	7186	TRAF2	L
3551	IKBKB	8202	NCOA3	L
3551	IKBKB	8518	IKBKAP	L
3551	IKBKB	8837	CFLAR	L
3551	IKBKB	9020	MAP3K14	L

3551	IKBKB	9175	MAP3K13	L
3551	IKBKB	10010	TANK	L
3551	IKBKB	10758	TRAF3IP2	L
3551	IKBKB	26133	TRPC4AP	L
3552	IL1A	3556	IL1RAP	L
3552	IL1A	4692	NDN	L
3552	IL1A	4794	NFKBIE	L
3552	IL1A	6284	S100A13	L
3552	IL1A	7850	IL1R2	L
3552	IL1A	10456	HAX1	L
3553	IL1B	3554	IL1R1	L
3553	IL1B	3556	IL1RAP	L
3553	IL1B	5657	PRTN3	L
3553	IL1B	7850	IL1R2	L
3554	IL1R1	3556	IL1RAP	L
3554	IL1R1	3557	IL1RN	L
3554	IL1R1	3656	IRAK2	L
3554	IL1R1	5295	PIK3R1	L
3556	IL1RAP	3654	IRAK1	L
3556	IL1RAP	4615	MYD88	L
3556	IL1RAP	5295	PIK3R1	L
3556	IL1RAP	5879	RAC1	L
3556	IL1RAP	6774	STAT3	L
3556	IL1RAP	7850	IL1R2	L
3556	IL1RAP	8809	IL18R1	L
3556	IL1RAP	54472	TOLLIP	L
3556	IL1RAP	55660	FNBP3	L
3557	IL1RN	7850	IL1R2	L
3557	IL1RN	8658	TNKS	L
3558	IL2	3559	IL2RA	L
3558	IL2	3560	IL2RB	L
3558	IL2	3561	IL2RG	L
3558	IL2	4804	NGFR	L
3558	IL2	6464	SHC1	L
3559	IL2RA	3560	IL2RB	L
3559	IL2RA	4790	NFKB1	L
3559	IL2RA	6774	STAT3	L
3559	IL2RA	6777	STAT5B	L
3560	IL2RB	3561	IL2RG	L
3560	IL2RB	3600	IL15	L
3560	IL2RB	3601	IL15RA	L
3560	IL2RB	3716	JAK1	L
3560	IL2RB	3718	JAK3	L
3560	IL2RB	3932	LCK	L
3560	IL2RB	5295	PIK3R1	L
3560	IL2RB	6461	SHB	L
3560	IL2RB	6464	SHC1	L
3560	IL2RB	6772	STAT1	L
3560	IL2RB	6774	STAT3	L
3560	IL2RB	6776	STAT5A	L
3560	IL2RB	6777	STAT5B	L
3560	IL2RB	8651	SOCS1	L
3560	IL2RB	8662	EIF3S9	L
3560	IL2RB	10399	GNB2L1	L
3561	IL2RG	3565	IL4	L
3561	IL2RG	3566	IL4R	L
3561	IL2RG	3574	IL7	L
3561	IL2RG	3575	IL7R	L
3561	IL2RG	3581	IL9R	L
3561	IL2RG	3600	IL15	L
3561	IL2RG	3601	IL15RA	L
3561	IL2RG	3718	JAK3	L
3561	IL2RG	5795	PTPRJ	L
3561	IL2RG	6461	SHB	L
3561	IL2RG	6464	SHC1	L
3561	IL2RG	6772	STAT1	L
3561	IL2RG	6776	STAT5A	L

3562	IL3	3563	IL3RA	L
3562	IL3	5293	PIK3CD	L
3565	IL4	3566	IL4R	L
3565	IL4	3598	IL13RA2	L
3565	IL4	5293	PIK3CD	L
3566	IL4R	3596	IL13	L
3566	IL4R	3597	IL13RA1	L
3566	IL4R	3635	INPP5D	L
3566	IL4R	3667	IRS1	L
3566	IL4R	3716	JAK1	L
3566	IL4R	4687	NCF1	L
3566	IL4R	5777	PTPN6	L
3566	IL4R	5781	PTPN11	L
3566	IL4R	6464	SHC1	L
3566	IL4R	6778	STAT6	L
3566	IL4R	8660	IRS2	L
3566	IL4R	10399	GNB2L1	L
3566	IL4R	10425	ARIH2	S
3567	IL5	3568	IL5RA	L
3568	IL5RA	3716	JAK1	L
3568	IL5RA	3717	JAK2	L
3568	IL5RA	6386	SDCBP	L
3568	IL5RA	9094	UNC119	L
3569	IL6	3570	IL6R	L
3569	IL6	3572	IL6ST	L
3569	IL6	5744	PTHLH	L
3569	IL6	6456	SH3GL2	S
3569	IL6	7704	ZBTB16	S
3570	IL6R	3572	IL6ST	L
3570	IL6R	6714	SRC	L
3570	IL6R	6774	STAT3	L
3572	IL6ST	3716	JAK1	L
3572	IL6ST	3976	LIF	L
3572	IL6ST	3977	LIFR	L
3572	IL6ST	5008	OSM	L
3572	IL6ST	5294	PIK3CG	L
3572	IL6ST	5580	PRKCD	L
3572	IL6ST	5777	PTPN6	L
3572	IL6ST	5781	PTPN11	L
3572	IL6ST	6774	STAT3	L
3572	IL6ST	7088	TLE1	L
3572	IL6ST	7297	TYK2	L
3572	IL6ST	7409	VAV1	L
3572	IL6ST	9021	SOCS3	L
3572	IL6ST	9180	OSMR	L
3574	IL7	3575	IL7R	L
3575	IL7R	4067	LYN	L
3575	IL7R	64109	CRLF2	L
3575	IL7R	85480	TSLP	L
3576	IL8	3577	IL8RA	L
3576	IL8	3579	IL8RB	L
3576	IL8	6351	CCL4	L
3576	IL8	6382	SDC1	L
3577	IL8RA	5473	PPBP	L
3577	IL8RA	6372	CXCL6	L
3577	IL8RA	6374	CXCL5	L
3578	IL9	3581	IL9R	L
3579	IL8RB	5473	PPBP	L
3579	IL8RB	6002	RGS12	L
3579	IL8RB	6372	CXCL6	L
3579	IL8RB	6374	CXCL5	L
3579	IL8RB	22841	RAB11FIP2	L
3581	IL9R	3716	JAK1	L
3581	IL9R	7534	YWHAZ	L
3581	IL9R	10524	HTATIP	L
3586	IL10	3587	IL10RA	L
3586	IL10	3588	IL10RB	L

3587	IL10RA	3588	IL10RB	L
3587	IL10RA	3716	JAK1	L
3588	IL10RB	50616	IL22	L
3588	IL10RB	282616	IL28A	L
3588	IL10RB	282617	IL28B	L
3588	IL10RB	282618	IL29	L
3589	IL11	3590	IL11RA	L
3589	IL11	4110	MAGEA11	R
3592	IL12A	3593	IL12B	L
3593	IL12B	3594	IL12RB1	L
3593	IL12B	3595	IL12RB2	L
3594	IL12RB1	3595	IL12RB2	L
3594	IL12RB1	6775	STAT4	L
3595	IL12RB2	3717	JAK2	L
3595	IL12RB2	6775	STAT4	L
3596	IL13	3597	IL13RA1	L
3596	IL13	3598	IL13RA2	L
3596	IL13	5295	PIK3R1	L
3596	IL13	7412	VCAM1	L
3597	IL13RA1	7297	TYK2	L
3600	IL15	3601	IL15RA	L
3601	IL15RA	7186	TRAF2	L
3603	IL16	3750	KCND1	L
3603	IL16	3751	KCND2	L
3603	IL16	3759	KCNJ2	L
3603	IL16	3761	KCNJ4	L
3603	IL16	3766	KCNJ10	L
3603	IL16	3772	KCNJ15	L
3603	IL16	4659	PPP1R12A	L
3603	IL16	4660	PPP1R12B	L
3603	IL16	10534	SSSCA1	R
3603	IL16	30008	EFEMP2	R
3603	IL16	54776	PPP1R12C	L
3603	IL16	63948	DMRTB1	R
3603	IL16	83878	USHBP1	R
3604	TNFRSF9	7185	TRAF1	L
3604	TNFRSF9	7186	TRAF2	L
3604	TNFRSF9	7187	TRAF3	L
3604	TNFRSF9	8744	TNFSF9	L
3605	IL17	23765	IL17R	L
3606	IL18	8807	IL18RAP	L
3606	IL18	8808	IL1RL2	L
3606	IL18	8809	IL18R1	L
3606	IL18	10068	IL18BP	L
3608	ILF2	3609	ILF3	L
3608	ILF2	5610	EIF2AK2	L
3609	ILF3	4110	MAGEA11	R
3609	ILF3	4188	MDFI	R
3609	ILF3	5359	PLSCR1	R
3609	ILF3	5591	PRKDC	L
3609	ILF3	5610	EIF2AK2	L
3609	ILF3	7205	TRIP6	R
3609	ILF3	57510	XPO5	L
3609	ILF3	83755	KRTAP4-12	R
3611	ILK	3688	ITGB1	L
3611	ILK	3689	ITGB2	L
3611	ILK	3690	ITGB3	L
3611	ILK	3987	LIMS1	L
3611	ILK	5163	PDK1	L
3611	ILK	5829	PXN	L
3611	ILK	8440	NCK2	L
3611	ILK	55679	LIMS2	L
3611	ILK	55742	PARVA	R
3613	IMPA2	9709	HERPUD1	S
3619	INCENP	23468	CBX5	L
3620	INDO	57062	DDX24	S
3620	INDO	84988	PPP1R16A	S

3621	ING1	5111	PCNA	L
3621	ING1	7157	TP53	L
3621	ING1	8850	PCAF	L
3623	INHA	3624	INHBA	L
3623	INHA	3625	INHBB	L
3623	INHA	7049	TGFBR3	L
3624	INHBA	3625	INHBB	L
3624	INHBA	3626	INHBC	L
3624	INHBA	7049	TGFBR3	L
3624	INHBA	10272	FSTL3	L
3624	INHBA	25884	CHRDL2	L
3625	INHBB	3626	INHBC	L
3625	INHBB	130399	ACVR1C	L
3628	INPP1	3978	LIG1	S
3630	INS	3643	INSR	L
3630	INS	4036	LRP2	L
3630	INS	4856	NOV	L
3630	INS	84817	TXNL5	L
3630	INS	94121	SYTL4	L
3631	INPP4A	4086	SMAD1	L
3631	INPP4A	5295	PIK3R1	L
3632	INPP5A	7534	YWHAZ	L
3635	INPP5D	4067	LYN	L
3635	INPP5D	5781	PTPN11	L
3635	INPP5D	6464	SHC1	L
3636	INPPL1	6464	SHC1	L
3636	INPPL1	9564	BCAR1	L
3636	INPPL1	10580	SORBS1	L
3638	INSIG1	22937	SCAP	L
3640	INSL3	122042	LGR8	L
3642	INSM1	4356	MPP3	S
3642	INSM1	10381	TUBB3	S
3642	INSM1	10580	SORBS1	L
3643	INSR	3645	INSRR	L
3643	INSR	3667	IRS1	L
3643	INSR	3716	JAK1	L
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3643	INSR	4087	SMAD2	L
3643	INSR	5167	ENPP1	L
3643	INSR	5295	PIK3R1	L
3643	INSR	5580	PRKCD	L
3643	INSR	5595	MAPK3	L
3643	INSR	5770	PTPN1	L
3643	INSR	5777	PTPN6	L
3643	INSR	5781	PTPN11	L
3643	INSR	5782	PTPN12	L
3643	INSR	5792	PTPRF	L
3643	INSR	5894	RAF1	L
3643	INSR	5921	RASA1	L
3643	INSR	6464	SHC1	L
3643	INSR	6642	SNX1	L
3643	INSR	6643	SNX2	L
3643	INSR	7409	VAV1	L
3643	INSR	8503	PIK3R3	L
3643	INSR	8651	SOCS1	L
3643	INSR	8660	IRS2	L
3643	INSR	8723	SNX4	L
3643	INSR	9021	SOCS3	L
3643	INSR	9306	SOCS6	L
3643	INSR	10451	VAV3	L
3643	INSR	10492	SYNCRIP	L
3643	INSR	10580	SORBS1	L
3643	INSR	10818	FRS2	L
3646	EIF3S6	4093	SMAD9	L
3646	EIF3S6	4905	NSF	S
3646	EIF3S6	7916	BAT2	L
3646	EIF3S6	8733	GPAA1	S

3646	EIF3S6	9001	HAP1	S
3646	EIF3S6	10900	RPIP8	R
3646	EIF3S6	51386	EIF3S6IP	L
3646	EIF3S6	57062	DDX24	S
3646	EIF3S6	60313	GPBP1L1	R
3646	EIF3S6	64708	COPS7B	L
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3651	IPF1	6514	SLC2A2	L
3651	IPF1	6929	TCF3	L
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3654	IRAK1	4615	MYD88	L
3654	IRAK1	4916	NTRK3	L
3654	IRAK1	5590	PRKCZ	L
3654	IRAK1	7097	TLR2	L
3654	IRAK1	7189	TRAF6	L
3654	IRAK1	8772	FADD	L
3654	IRAK1	8878	SQSTM1	L
3654	IRAK1	23118	MAP3K7IP2	L
3654	IRAK1	51135	IRAK4	L
3654	IRAK1	54472	TOLLIP	L
3654	IRAK1	92610	TIFA	L
3655	ITGA6	3732	CD82	L
3655	ITGA6	3921	RPSA	L
3655	ITGA6	5829	PXN	L
3655	ITGA6	7106	TSPAN4	L
3655	ITGA6	10755	GIPC1	L
3656	IRAK2	4615	MYD88	L
3656	IRAK2	7189	TRAF6	L
3656	IRAK2	114609	TIRAP	L
3658	IREB2	4904	YBX1	L
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3659	IRF1	6772	STAT1	L
3659	IRF1	8850	PCAF	L
3660	IRF2	4790	NFKB1	L
3660	IRF2	5970	RELA	L
3660	IRF2	8850	PCAF	L
3661	IRF3	3663	IRF5	L
3661	IRF3	3665	IRF7	L
3661	IRF3	5052	PRDX1	R
3661	IRF3	5055	SERPINB2	L
3662	IRF4	4773	NFATC2	L
3662	IRF4	6688	SPI1	L
3662	IRF4	6689	SPIB	L
3662	IRF4	6778	STAT6	L
3662	IRF4	7186	TRAF2	R
3667	IRS1	3718	JAK3	L
3667	IRS1	5295	PIK3R1	L
3667	IRS1	5296	PIK3R2	L
3667	IRS1	5580	PRKCD	L
3667	IRS1	5599	MAPK8	L
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3667	IRS1	7275	TUB	L
3667	IRS1	7297	TYK2	L
3667	IRS1	7343	UBTF	L
3667	IRS1	7529	YWHAB	L
3667	IRS1	7531	YWHAE	L
3667	IRS1	7534	YWHAZ	L
3667	IRS1	8503	PIK3R3	L
3667	IRS1	8517	IKBKG	L
3667	IRS1	8651	SOCS1	L
3667	IRS1	9021	SOCS3	L

3667	IRS1	55023	PHIP	L
3670	ISL1	4005	LMO2	L
3670	ISL1	4009	LMX1A	L
3670	ISL1	7025	NR2F1	L
3670	ISL1	8022	LHX3	L
3670	ISL1	64843	ISL2	L
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3672	ITGA1	4146	MATN1	L
3672	ITGA1	7094	TLN1	L
3672	ITGA1	284217	LAMA1	L
3673	ITGA2	4312	MMP1	L
3673	ITGA2	284217	LAMA1	L
3674	ITGA2B	7450	VWF	L
3674	ITGA2B	10519	CIB1	L
3675	ITGA3	3732	CD82	L
3675	ITGA3	3909	LAMA3	L
3675	ITGA3	5877	RABIF	L
3675	ITGA3	7106	TSPAN4	L
3676	ITGA4	3695	ITGB7	L
3676	ITGA4	3732	CD82	L
3676	ITGA4	8726	EED	L
3676	ITGA4	9404	LPXN	L
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3678	ITGA5	3897	L1CAM	L
3678	ITGA5	6696	SPP1	L
3678	ITGA5	10755	GIPC1	L
3678	ITGA5	11188	NISCH	L
3678	ITGA5	27329	ANGPTL3	L
3678	ITGA5	80781	COL18A1	L
3680	ITGA9	5829	PXN	L
3681	ITGAD	3689	ITGB2	L
3681	ITGAD	7412	VCAM1	L
3682	ITGAE	8726	EED	L
3682	ITGAE	55743	CHFR	S
3683	ITGAL	7087	ICAM5	L
3684	ITGAM	3689	ITGB2	L
3684	ITGAM	5329	PLAUR	L
3684	ITGAM	83700	JAM3	L
3685	ITGAV	3690	ITGB3	L
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3685	ITGAV	3694	ITGB6	L
3685	ITGAV	3696	ITGB8	L
3685	ITGAV	3897	L1CAM	L
3685	ITGAV	4313	MMP2	L
3685	ITGAV	5029	P2RY2	L
3685	ITGAV	5156	PDGFRA	L
3685	ITGAV	5747	PTK2	L
3685	ITGAV	6696	SPP1	L
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3687	ITGAX	83700	JAM3	L
3688	ITGB1	3732	CD82	L
3688	ITGB1	3959	LGALS3BP	L
3688	ITGB1	3964	LGALS8	L
3688	ITGB1	4179	MCP	L
3688	ITGB1	4651	MYO10	L
3688	ITGB1	4830	NME1	L
3688	ITGB1	5578	PRKCA	L
3688	ITGB1	5747	PTK2	L
3688	ITGB1	5829	PXN	L
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3688	ITGB1	7057	THBS1	L
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3688	ITGB1	7106	TSPAN4	L
3688	ITGB1	7529	YWHAB	L
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3688	ITGB1	9448	MAP4K4	L
3688	ITGB1	10399	GNB2L1	L
3688	ITGB1	10618	TGOLN2	L
3688	ITGB1	22801	ITGA11	L
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3689	ITGB2	3732	CD82	L
3689	ITGB2	3827	KNG1	L
3689	ITGB2	5657	PRTN3	L
3689	ITGB2	5747	PTK2	L
3689	ITGB2	7087	ICAM5	L
3689	ITGB2	7094	TLN1	L
3689	ITGB2	8533	COPS3	L
3689	ITGB2	8875	VNN2	L
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3689	ITGB2	10666	CD226	L
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3690	ITGB3	4651	MYO10	L
3690	ITGB3	4811	NID1	L
3690	ITGB3	5029	P2RY2	L
3690	ITGB3	5156	PDGFRA	L
3690	ITGB3	5159	PDGFRB	L
3690	ITGB3	5175	PECAM1	L
3690	ITGB3	5747	PTK2	L
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3690	ITGB3	10519	CIB1	L
3690	ITGB3	23421	ITGB3BP	L
3690	ITGB3	27329	ANGPTL3	L
3691	ITGB4	3692	ITGB4BP	L
3691	ITGB4	5339	PLEC1	L
3691	ITGB4	55914	ERBB2IP	L
3692	ITGB4BP	5160	PDHA1	S
3692	ITGB4BP	5579	PRKCB1	L
3692	ITGB4BP	5720	PSME1	S
3692	ITGB4BP	6128	RPL6	S
3692	ITGB4BP	7466	WFS1	S
3692	ITGB4BP	8481	OFD1	S
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3692	ITGB4BP	23032	USP33	S
3692	ITGB4BP	23649	POLA2	S
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3692	ITGB4BP	65109	UPF3B	S
3692	ITGB4BP	65991	FUNDC2	S
3692	ITGB4BP	78987	CRELD1	S
3692	ITGB4BP	84335	AKT1S1	S
3692	ITGB4BP	116983	CENTB5	S
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3693	ITGB5	10298	PAK4	L
3693	ITGB5	10399	GNB2L1	L
3693	ITGB5	23421	ITGB3BP	L

3694	ITGB6	7040	TGFB1	L
3695	ITGB7	7412	VCAM1	L
3695	ITGB7	8174	MADCAM1	L
3695	ITGB7	8726	EED	L
3695	ITGB7	10399	GNB2L1	L
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3702	ITK	7454	WAS	L
3702	ITK	8651	SOCS1	L
3702	ITK	10657	KHDRBS1	L
3702	ITK	27040	LAT	L
3703	ITM1	7812	CSDE1	S
3703	ITM1	55355	DKFZp762E1312	S
3703	ITM1	81618	ITM2C	S
3705	ITPK1	7186	TRAF2	R
3707	ITPKB	5566	PRKACA	L
3707	ITPKB	5578	PRKCA	L
3707	ITPKB	10197	PSME3	R
3708	ITPR1	3710	ITPR3	L
3708	ITPR1	6262	RYR2	L
3708	ITPR1	7223	TRPC4	L
3708	ITPR1	9454	HOMER3	L
3708	ITPR1	9455	HOMER2	L
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3708	ITPR1	10768	AHCYL1	L
3708	ITPR1	55024	BANK1	L
3708	ITPR1	90627	STARD13	L
3709	ITPR2	7223	TRPC4	L
3710	ITPR3	7224	TRPC5	L
3710	ITPR3	7225	TRPC6	L
3710	ITPR3	7226	TRPM2	L
3710	ITPR3	10280	OPRS1	L
3713	IVL	6707	SPRR3	L
3714	JAG2	4851	NOTCH1	L
3714	JAG2	4853	NOTCH2	L
3714	JAG2	4854	NOTCH3	L
3716	JAK1	4192	MDK	L
3716	JAK1	5295	PIK3R1	L
3716	JAK1	5329	PLAUR	L
3716	JAK1	5781	PTPN11	L
3716	JAK1	5894	RAF1	L
3716	JAK1	6461	SHB	L
3716	JAK1	6772	STAT1	L
3716	JAK1	6774	STAT3	L
3716	JAK1	6776	STAT5A	L
3716	JAK1	6850	SYK	L
3716	JAK1	7006	TEC	L
3716	JAK1	7132	TNFRSF1A	L
3716	JAK1	7253	TSHR	L
3716	JAK1	7297	TYK2	L
3716	JAK1	8651	SOCS1	L
3716	JAK1	8660	IRS2	L
3716	JAK1	9180	OSMR	L
3716	JAK1	10254	STAM2	L
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3716	JAK1	10419	SKB1	L
3716	JAK1	50615	IL21R	L
3717	JAK2	3815	KIT	L
3717	JAK2	3953	LEPR	L
3717	JAK2	4067	LYN	L

3717	JAK2	4192	MDK	L
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3717	JAK2	5478	PPIA	L
3717	JAK2	5519	PPP2R1B	L
3717	JAK2	5525	PPP2R5A	L
3717	JAK2	5618	PRLR	L
3717	JAK2	5747	PTK2	L
3717	JAK2	5770	PTPN1	L
3717	JAK2	5777	PTPN6	L
3717	JAK2	5781	PTPN11	L
3717	JAK2	5782	PTPN12	L
3717	JAK2	5894	RAF1	L
3717	JAK2	6464	SHC1	L
3717	JAK2	6774	STAT3	L
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3717	JAK2	7409	VAV1	L
3717	JAK2	7415	VCP	L
3717	JAK2	7525	YES1	L
3717	JAK2	7852	CXCR4	L
3717	JAK2	8027	STAM	L
3717	JAK2	8651	SOCS1	L
3717	JAK2	9021	SOCS3	L
3717	JAK2	9093	DNAJA3	L
3717	JAK2	9180	OSMR	L
3717	JAK2	10254	STAM2	L
3717	JAK2	10419	SKB1	L
3717	JAK2	140885	PTPNS1	L
3718	JAK3	3932	LCK	L
3718	JAK3	5788	PTPRC	L
3718	JAK3	6461	SHB	L
3718	JAK3	6774	STAT3	L
3718	JAK3	6776	STAT5A	L
3718	JAK3	7852	CXCR4	L
3718	JAK3	8027	STAM	L
3718	JAK3	8651	SOCS1	L
3718	JAK3	8660	IRS2	L
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3718	JAK3	10254	STAM2	L
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3725	JUN	4654	MYOD1	L
3725	JUN	4666	NACA	L
3725	JUN	4670	HNRPM	L
3725	JUN	4779	NFE2L1	L
3725	JUN	4780	NFE2L2	L
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3725	JUN	5925	RB1	L
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3725	JUN	6497	SKI	L
3725	JUN	6602	SMARCD1	L

3725	JUN	6667	SP1	L
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3725	JUN	6689	SPIB	L
3725	JUN	6772	STAT1	L
3725	JUN	6774	STAT3	L
3725	JUN	6775	STAT4	L
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3725	JUN	7153	TOP2A	L
3725	JUN	7329	UBE2I	L
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3725	JUN	7975	MAFK	L
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3725	JUN	8204	NRIP1	L
3725	JUN	8550	MAPKAPK5	L
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3725	JUN	9325	TRIP4	L
3725	JUN	9584	RNPC2	L
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3725	JUN	9612	NCOR2	L
3725	JUN	10514	MYBBP1A	L
3725	JUN	10538	BATF	L
3725	JUN	10987	COPS5	L
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3725	JUN	55690	PACS1	L
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3725	JUN	60468	BACH2	L
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3726	JUNB	4089	SMAD4	L
3726	JUNB	4097	MAFG	L
3726	JUNB	4779	NFE2L1	L
3726	JUNB	5599	MAPK8	L
3726	JUNB	7975	MAFK	L
3726	JUNB	8061	FOSL1	RL
3726	JUNB	9586	CREB5	L
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3726	JUNB	11016	ATF7	L
3726	JUNB	22981	KIAA0980	R
3726	JUNB	55509	SNFT	L
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3727	JUND	4221	MEN1	L
3727	JUND	4779	NFE2L1	L
3727	JUND	4780	NFE2L2	L
3727	JUND	5599	MAPK8	L
3727	JUND	5601	MAPK9	L
3727	JUND	6908	TBP	L
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3727	JUND	64326	RFWD2	L
3728	JUP	4582	MUC1	L
3728	JUP	4794	NFKBIE	R
3728	JUP	5175	PECAM1	L
3728	JUP	5310	PKD1	L
3728	JUP	5318	PKP2	L
3728	JUP	5784	PTPN14	L

3728	JUP	5792	PTPRF	L
3728	JUP	5795	PTPRJ	L
3728	JUP	5796	PTPRK	L
3728	JUP	6934	TCF7L2	L
3728	JUP	8945	BTRC	L
3728	JUP	9372	ZFYVE9	L
3728	JUP	26150	RIBC2	R
3728	JUP	55093	C8orf32	R
3728	JUP	56998	CTNNBIP1	RL
3730	KAL1	6383	SDC2	L
3732	CD82	4035	LRP1	L
3732	CD82	4927	NUP88	S
3732	CD82	93185	IGSF8	L
3735	KARS	5048	PAFAH1B1	S
3735	KARS	7965	JTV1	R
3735	KARS	10817	FRS3	S
3736	KCNA1	23704	KCNE4	L
3737	KCNA2	3739	KCNA4	L
3737	KCNA2	5786	PTPRA	L
3737	KCNA2	7881	KCNAB1	L
3739	KCNA4	6303	SAT	S
3739	KCNA4	9229	DLGAP1	L
3739	KCNA4	56901	LOC56901	S
3745	KCNB1	3755	KCNG1	L
3745	KCNB1	3790	KCNS3	L
3745	KCNB1	5791	PTPRE	L
3745	KCNB1	6616	SNAP25	L
3745	KCNB1	6804	STX1A	L
3750	KCND1	30820	KCNIP1	L
3751	KCND2	23413	FREQ	L
3753	KCNE1	3757	KCNH2	L
3753	KCNE1	3784	KCNQ1	L
3754	KCNF1	3756	KCNH1	L
3756	KCNH1	27133	KCNH5	L
3756	KCNH1	84920	ALG10	L
3757	KCNH2	4726	NDUFS6	S
3757	KCNH2	7531	YWHAE	L
3757	KCNH2	7533	YWHAH	L
3757	KCNH2	9992	KCNE2	L
3757	KCNH2	79577	CDC73	S
3757	KCNH2	84920	ALG10	L
3758	KCNJ1	9351	SLC9A3R2	L
3758	KCNJ1	9368	SLC9A3R1	L
3759	KCNJ2	3764	KCNJ8	L
3759	KCNJ2	3767	KCNJ11	L
3759	KCNJ2	8573	CASK	L
3759	KCNJ2	9495	AKAP5	L
3760	KCNJ3	3765	KCNJ9	L
3761	KCNJ4	8573	CASK	L
3761	KCNJ4	64130	LIN7B	L
3763	KCNJ6	3765	KCNJ9	L
3764	KCNJ8	6833	ABCC8	L
3764	KCNJ8	10060	ABCC9	L
3766	KCNJ10	10207	INADL	L
3767	KCNJ11	3939	LDHA	L
3767	KCNJ11	6833	ABCC8	L
3768	KCNJ12	3983	ABLIM1	L
3768	KCNJ12	6640	SNTA1	L
3768	KCNJ12	6641	SNTB1	L
3768	KCNJ12	6645	SNTB2	L
3768	KCNJ12	8573	CASK	L
3768	KCNJ12	8825	LIN7A	L
3768	KCNJ12	64130	LIN7B	L
3772	KCNJ15	10207	INADL	L
3777	KCNK3	6281	S100A10	L
3784	KCNQ1	9992	KCNE2	L
3784	KCNQ1	10142	AKAP9	L

3784	KCNQ1	23704	KCNE4	L
3785	KCNQ2	3786	KCNQ3	L
3785	KCNQ2	10425	ARIH2	S
3786	KCNQ3	9132	KCNQ4	L
3791	KDR	5335	PLCG1	L
3791	KDR	5336	PLCG2	L
3791	KDR	6461	SHB	L
3791	KDR	6464	SHC1	L
3791	KDR	7422	VEGF	L
3791	KDR	7424	VEGFC	L
3791	KDR	25759	SHC2	L
3791	KDR	80781	COL18A1	L
3792	KEL	7504	XK	L
3797	KIF3C	5683	PSMA2	L
3797	KIF3C	11127	KIF3A	L
3798	KIF5A	3831	KNS2	L
3798	KIF5A	6453	ITSN1	S
3798	KIF5A	7159	TP53BP2	S
3800	KIF5C	23557	SNAPAP	S
3807	KIR2DS2	7305	TYROBP	L
3814	KISS1	84634	GPR54	L
3815	KIT	3932	LCK	L
3815	KIT	4067	LYN	L
3815	KIT	4145	MATK	L
3815	KIT	4254	KITLG	L
3815	KIT	5295	PIK3R1	L
3815	KIT	5296	PIK3R2	L
3815	KIT	5335	PLCG1	L
3815	KIT	5777	PTPN6	L
3815	KIT	5781	PTPN11	L
3815	KIT	5800	PTPRO	L
3815	KIT	6772	STAT1	L
3815	KIT	7006	TEC	L
3815	KIT	8651	SOCS1	L
3815	KIT	8777	MPDZ	L
3815	KIT	9402	GRAP2	L
3815	KIT	10750	GRAP	L
3816	KLK1	5104	SERPINA5	L
3816	KLK1	5267	SERPINA4	L
3817	KLK2	5104	SERPINA5	L
3817	KLK2	5267	SERPINA4	L
3817	KLK2	5269	SERPINB6	L
3817	KLK2	5345	SERPINF2	L
3818	KLKB1	3827	KNG1	L
3818	KLKB1	5104	SERPINA5	L
3818	KLKB1	7980	TFPI2	L
3821	KLRC1	3824	KLRD1	L
3821	KLRC1	5777	PTPN6	L
3821	KLRC1	5781	PTPN11	L
3823	KLRC3	3824	KLRD1	L
3823	KLRC3	7305	TYROBP	L
3827	KNG1	3848	KRT1	L
3827	KNG1	5329	PLAUR	L
3827	KNG1	5340	PLG	L
3827	KNG1	7057	THBS1	L
3827	KNG1	7448	VTN	L
3827	KNG1	22918	C1QR1	L
3831	KNS2	90678	LRSAM1	S
3835	KIF22	6477	SIAH1	L
3835	KIF22	10989	IMMT	S
3835	KIF22	64219	PJA1	S
3836	KPNA1	5079	PAX5	L
3836	KPNA1	5896	RAG1	L
3836	KPNA1	6728	SRP19	L
3836	KPNA1	6772	STAT1	L
3836	KPNA1	8290	HIST3H3	L
3836	KPNA1	8349	HIST2H2BE	L

3836	KPNA1	8543	LMO4	L
3836	KPNA1	51176	LEF1	L
3836	KPNA1	51366	EDD1	L
3837	KPNB1	3838	KPNA2	L
3837	KPNB1	3839	KPNA3	L
3837	KPNB1	4087	SMAD2	L
3837	KPNB1	4088	SMAD3	L
3837	KPNB1	4928	NUP98	L
3837	KPNB1	5744	PTHLH	L
3837	KPNB1	5757	PTMA	L
3837	KPNB1	5901	RAN	L
3837	KPNB1	5903	RANBP2	L
3837	KPNB1	6606	SMN1	L
3837	KPNB1	6662	SOX9	L
3837	KPNB1	7157	TP53	L
3837	KPNB1	9972	NUP153	L
3837	KPNB1	10073	RNUT1	L
3837	KPNB1	10526	IPO8	L
3837	KPNB1	10527	IPO7	L
3837	KPNB1	10762	NUP50	L
3837	KPNB1	23633	KPNA6	L
3837	KPNB1	23636	NUP62	L
3837	KPNB1	51366	EDD1	L
3838	KPNA2	5079	PAX5	L
3838	KPNA2	5324	PLAG1	L
3838	KPNA2	5757	PTMA	L
3838	KPNA2	5896	RAG1	L
3838	KPNA2	5965	RECQL	L
3838	KPNA2	5970	RELA	L
3838	KPNA2	6446	SGK	L
3838	KPNA2	6514	SLC2A2	L
3838	KPNA2	7157	TP53	L
3838	KPNA2	10762	NUP50	L
3838	KPNA2	51176	LEF1	L
3838	KPNA2	51366	EDD1	L
3839	KPNA3	7052	TGM2	L
3839	KPNA3	26240	FAM50B	R
3840	KPNA4	5965	RECQL	L
3840	KPNA4	7052	TGM2	L
3842	TNPO1	4928	NUP98	L
3842	TNPO1	5901	RAN	L
3842	TNPO1	5903	RANBP2	L
3842	TNPO1	6125	RPL5	L
3842	TNPO1	6201	RPS7	L
3842	TNPO1	6728	SRP19	L
3842	TNPO1	8021	NUP214	L
3842	TNPO1	8106	PABPN1	L
3842	TNPO1	8290	HIST3H3	L
3842	TNPO1	8349	HIST2H2BE	L
3842	TNPO1	9972	NUP153	L
3842	TNPO1	10482	NXF1	L
3842	TNPO1	84220	RANBP2L1	L
3843	RANBP5	4928	NUP98	L
3843	RANBP5	5897	RAG2	L
3843	RANBP5	5901	RAN	L
3843	RANBP5	5903	RANBP2	L
3843	RANBP5	6125	RPL5	L
3843	RANBP5	6201	RPS7	L
3843	RANBP5	8021	NUP214	L
3843	RANBP5	9972	NUP153	L
3843	RANBP5	23636	NUP62	L
3845	KRAS	5294	PIK3CG	L
3845	KRAS	5910	RAP1GDS1	L
3845	KRAS	8036	SHOC2	L
3845	KRAS	10235	RASGRP2	L
3845	KRAS	83593	RASSF5	L
3848	KRT1	4153	MBL2	L

3848	KRT1	5581	PRKCE	L
3852	KRT5	3861	KRT14	L
3852	KRT5	3875	KRT18	L
3852	KRT5	5318	PKP2	L
3853	KRT6A	3866	KRT15	R
3853	KRT6A	3872	KRT17	R
3853	KRT6A	11007	DIPA	R
3853	KRT6A	51019	CGI-116	R
3854	KRT6B	3866	KRT15	R
3854	KRT6B	3880	KRT19	R
3855	KRT7	7805	LAPTM5	L
3855	KRT7	8661	EIF3S10	L
3855	KRT7	55729	ATF7IP	L
3856	KRT8	5317	PKP1	L
3856	KRT8	5327	PLAT	L
3856	KRT8	5411	PNN	L
3858	KRT10	5590	PRKCZ	L
3861	KRT14	5317	PKP1	L
3861	KRT14	8717	TRADD	L
3866	KRT15	3875	KRT18	R
3866	KRT15	3880	KRT19	R
3866	KRT15	3887	KRTHB1	R
3866	KRT15	3983	ABLIM1	R
3866	KRT15	5108	PCM1	R
3866	KRT15	5630	PRPH	R
3866	KRT15	5682	PSMA1	R
3866	KRT15	5705	PSMC5	R
3866	KRT15	6602	SMARCD1	R
3866	KRT15	7251	TSG101	R
3866	KRT15	9099	USP2	R
3866	KRT15	9587	MAD2L1BP	R
3866	KRT15	9729	KIAA0408	R
3866	KRT15	10152	ABI2	R
3866	KRT15	11067	C10orf10	R
3866	KRT15	11170	TU3A	R
3866	KRT15	23237	ARC	R
3866	KRT15	23641	LDOC1	R
3866	KRT15	26150	RIBC2	R
3866	KRT15	27229	76P	R
3866	KRT15	27332	ZNF638	R
3866	KRT15	51061	TXNDC11	R
3866	KRT15	51225	ABI3	R
3866	KRT15	51322	WAC	R
3866	KRT15	51421	AMOTL2	R
3866	KRT15	54474	KRT20	R
3866	KRT15	55388	MCM10	R
3866	KRT15	55758	RCOR3	R
3866	KRT15	56243	KIAA1217	R
3866	KRT15	57658	CALCOCO1	R
3866	KRT15	60491	NIF3L1	R
3866	KRT15	79050	NOC4L	R
3866	KRT15	79696	C14orf140	R
3866	KRT15	79873	NUDT18	R
3866	KRT15	83878	USHBP1	R
3866	KRT15	84260	MGC10854	R
3866	KRT15	84708	LNX	R
3866	KRT15	84832	MGC12538	R
3866	KRT15	85359	DGCR6L	R
3866	KRT15	90060	JM11	R
3866	KRT15	112869	LOC112869	R
3866	KRT15	114822	RHPN1	R
3866	KRT15	127703	FLJ38984	R
3866	KRT15	149371	EXOC8	R
3866	KRT15	150483	MGC27019	R
3866	KRT15	164127	C1orf65	R
3866	KRT15	284058	LOC284058	R
3872	KRT17	11007	DIPA	R

3875	KRT18	5310	PKD1	L
3875	KRT18	5318	PKP2	L
3875	KRT18	5411	PNN	L
3875	KRT18	5581	PRKCE	L
3875	KRT18	7133	TNFRSF1B	L
3875	KRT18	7399	USH2A	L
3875	KRT18	7529	YWHAB	L
3875	KRT18	7531	YWHAE	L
3875	KRT18	7532	YWHAG	L
3875	KRT18	7533	YWHAH	L
3875	KRT18	7534	YWHAZ	L
3875	KRT18	8717	TRADD	L
3875	KRT18	9146	HGS	R
3875	KRT18	9191	DEDD	L
3875	KRT18	10049	DNAJB6	L
3875	KRT18	11007	DIPA	R
3875	KRT18	23641	LDOC1	R
3875	KRT18	27229	76P	R
3875	KRT18	29922	NME7	R
3875	KRT18	85415	RHPN2	L
3875	KRT18	149371	EXOC8	R
3880	KRT19	5108	PCM1	R
3880	KRT19	5411	PNN	L
3880	KRT19	9146	HGS	R
3880	KRT19	9814	SFI1	R
3880	KRT19	10152	ABI2	R
3880	KRT19	11067	C10orf10	R
3880	KRT19	11170	TU3A	R
3880	KRT19	27332	ZNF638	R
3880	KRT19	83878	USHBP1	R
3880	KRT19	85359	DGCR6L	R
3880	KRT19	149371	EXOC8	R
3887	KRTHB1	6498	SKIL	L
3887	KRTHB1	79036	MGC2749	R
3895	KTN1	5879	RAC1	L
3897	L1CAM	4478	MSN	L
3897	L1CAM	4684	NCAM1	L
3897	L1CAM	5962	RDX	L
3897	L1CAM	6900	CNTN2	L
3897	L1CAM	7430	VIL2	L
3897	L1CAM	8650	NUMB	L
3897	L1CAM	8682	PEA15	S
3902	LAG3	10153	CEBPZ	L
3902	LAG3	55835	CENPJ	L
3903	LAIR1	4072	TACSTD1	L
3903	LAIR1	5777	PTPN6	L
3903	LAIR1	5781	PTPN11	L
3906	LALBA	8349	HIST2H2BE	L
3908	LAMA2	3921	RPSA	L
3909	LAMA3	3914	LAMB3	L
3909	LAMA3	5327	PLAT	L
3909	LAMA3	5340	PLG	L
3909	LAMA3	6383	SDC2	L
3909	LAMA3	79939	SLC35E1	S
3910	LAMA4	5764	PTN	S
3910	LAMA4	7157	TP53	S
3910	LAMA4	7280	TUBB2	S
3910	LAMA4	9094	UNC119	S
3910	LAMA4	10980	COPS6	S
3910	LAMA4	11244	ZHX1	S
3910	LAMA4	29117	BRD7	S
3910	LAMA4	51003	MED31	S
3910	LAMA4	55729	ATF7IP	L
3910	LAMA4	55791	C1orf103	S
3910	LAMA4	197131	UBR1	S
3910	LAMA4	222019	(null)	S
3911	LAMA5	3915	LAMC1	L

3911	LAMA5	4059	LU	L
3911	LAMA5	4087	SMAD2	L
3911	LAMA5	4224	MEP1A	L
3911	LAMA5	9900	SV2A	L
3911	LAMA5	55729	ATF7IP	L
3911	LAMA5	84280	BTBD10	S
3913	LAMB2	57473	GM632	L
3914	LAMB3	3918	LAMC2	L
3914	LAMB3	7057	THBS1	L
3915	LAMC1	4811	NID1	L
3915	LAMC1	22795	NID2	L
3915	LAMC1	23557	SNAPAP	S
3915	LAMC1	51019	CGI-116	S
3915	LAMC1	55729	ATF7IP	L
3916	LAMP1	8907	AP1M1	L
3920	LAMP2	6622	SNCA	L
3921	RPSA	5829	PXN	L
3921	RPSA	6227	RPS21	S
3921	RPSA	7414	VCL	L
3921	RPSA	23468	CBX5	L
3927	LASP1	4188	MDFI	R
3927	LASP1	5359	PLSCR1	R
3927	LASP1	9319	TRIP13	R
3929	LBP	6227	RPS21	L
3930	LBR	4001	LMNB1	L
3930	LBR	11335	CBX3	L
3930	LBR	23360	FNBP4	L
3930	LBR	23468	CBX5	L
3930	LBR	26993	AKAP8L	L
3932	LCK	4851	NOTCH1	L
3932	LCK	5175	PECAM1	L
3932	LCK	5290	PIK3CA	L
3932	LCK	5295	PIK3R1	L
3932	LCK	5335	PLCG1	L
3932	LCK	5338	PLD2	L
3932	LCK	5777	PTPN6	L
3932	LCK	5781	PTPN11	L
3932	LCK	5788	PTPRC	L
3932	LCK	5829	PXN	L
3932	LCK	5894	RAF1	L
3932	LCK	6774	STAT3	L
3932	LCK	6850	SYK	L
3932	LCK	7010	TEK	L
3932	LCK	7070	THY1	L
3932	LCK	7275	TUB	L
3932	LCK	7535	ZAP70	L
3932	LCK	8631	SCAP1	L
3932	LCK	8751	ADAM15	L
3932	LCK	8878	SQSTM1	L
3932	LCK	9046	DOK2	L
3932	LCK	9094	UNC119	L
3932	LCK	9564	BCAR1	L
3932	LCK	10019	LNK	L
3932	LCK	10657	KHDRBS1	L
3932	LCK	27240	SIT1	L
3932	LCK	55824	PAG1	L
3932	LCK	59341	TRPV4	L
3933	LCN1	4057	LTF	L
3933	LCN1	4069	LYZ	L
3934	LCN2	4313	MMP2	L
3934	LCN2	4318	MMP9	L
3936	LCP1	25801	GCA	L
3937	LCP2	4067	LYN	L
3937	LCP2	4690	NCK1	L
3937	LCP2	5335	PLCG1	L
3937	LCP2	5336	PLCG2	L
3937	LCP2	5777	PTPN6	L

3937	LCP2	5788	PTPRC	L
3937	LCP2	6461	SHB	L
3937	LCP2	6464	SHC1	L
3937	LCP2	6850	SYK	L
3937	LCP2	7409	VAV1	L
3937	LCP2	7454	WAS	L
3937	LCP2	9402	GRAP2	RL
3937	LCP2	11184	MAP4K1	L
3937	LCP2	27040	LAT	L
3937	LCP2	55824	PAG1	L
3937	LCP2	84106	PRAM1	L
3939	LDHA	7414	VCL	L
3939	LDHA	8655	DNCL1	L
3939	LDHA	10060	ABCC9	L
3939	LDHA	54464	XRN1	L
3949	LDLR	4043	LRPAP1	L
3949	LDLR	5196	PF4	L
3949	LDLR	9784	SNX17	L
3949	LDLR	10053	AP1M2	L
3949	LDLR	26119	LDLRAP1	L
3952	LEP	3953	LEPR	L
3952	LEP	5563	PRKAA2	L
3952	LEP	51738	GHRL	L
3953	LEPR	5300	PIN1	S
3953	LEPR	5781	PTPN11	L
3953	LEPR	6642	SNX1	L
3953	LEPR	6643	SNX2	L
3953	LEPR	6774	STAT3	L
3953	LEPR	8525	DGKZ	L
3953	LEPR	8723	SNX4	L
3953	LEPR	9021	SOCS3	L
3955	LFNG	4851	NOTCH1	L
3955	LFNG	4853	NOTCH2	L
3956	LGALS1	3959	LGALS3BP	L
3956	LGALS1	5788	PTPRC	L
3956	LGALS1	5829	PXN	L
3956	LGALS1	6693	SPN	L
3956	LGALS1	7414	VCL	L
3956	LGALS1	50628	GEMIN4	L
3956	LGALS1	94025	MUC16	L
3957	LGALS2	4049	LTA	L
3958	LGALS3	3959	LGALS3BP	L
3958	LGALS3	3982	LIM2	L
3958	LGALS3	8029	CUBN	L
3958	LGALS3	50628	GEMIN4	L
3958	LGALS3	51684	SUFU	L
3959	LGALS3BP	4811	NID1	L
3959	LGALS3BP	7414	VCL	L
3960	LGALS4	10094	ARPC3	S
3960	LGALS4	22800	RRAS2	S
3960	LGALS4	57670	KIAA1549	S
3964	LGALS8	10241	NDP52	R
3972	LHB	3973	LHCGR	L
3973	LHCGR	7253	TSHR	L
3976	LIF	3977	LIFR	L
3977	LIFR	5008	OSM	L
3977	LIFR	5335	PLCG1	L
3977	LIFR	5451	POU2F1	L
3977	LIFR	5777	PTPN6	L
3977	LIFR	5781	PTPN11	L
3978	LIG1	4361	MRE11A	L
3978	LIG1	5111	PCNA	L
3978	LIG1	10381	TUBB3	S
3980	LIG3	7515	XRCC1	L
3980	LIG3	79661	NEIL1	L
3983	ABLIM1	7186	TRAF2	R
3983	ABLIM1	7431	VIM	R

3983	ABLIM1	10241	NDP52	R
3983	ABLIM1	23641	LDOC1	R
3983	ABLIM1	29911	HOOK2	R
3983	ABLIM1	57596	KIAA1446	R
3983	ABLIM1	81628	TSC22D4	R
3983	ABLIM1	83878	USHBP1	R
3984	LIMK1	3985	LIMK2	L
3984	LIMK1	5058	PAK1	L
3984	LIMK1	6093	ROCK1	L
3984	LIMK1	7534	YWHAZ	L
3984	LIMK1	9113	LATS1	L
3984	LIMK1	10298	PAK4	L
3984	LIMK1	51132	RNF12	L
3985	LIMK2	10114	HIPK3	L
3987	LIMS1	5932	RBBP8	R
3987	LIMS1	8440	NCK2	L
3987	LIMS1	9404	LPXN	R
3987	LIMS1	10919	EHMT2	R
3990	LIPC	4035	LRP1	L
3991	LIPE	6770	STAR	L
3991	LIPE	55968	NSFL1C	S
3996	LLGL1	4179	MCP	L
3996	LLGL1	65057	ACD	S
3998	LMAN1	90411	MCFD2	L
4000	LMNA	4001	LMNB1	L
4000	LMNA	5578	PRKCA	L
4000	LMNA	5829	PXN	L
4000	LMNA	5925	RB1	L
4000	LMNA	6720	SREBF1	L
4000	LMNA	7112	TMPO	L
4000	LMNA	8187	ZNF239	L
4000	LMNA	9816	KIAA0133	L
4000	LMNA	10524	HTATIP	S
4000	LMNA	23345	SYNE1	L
4000	LMNA	26502	NARF	L
4001	LMNB1	5578	PRKCA	L
4001	LMNB1	5579	PRKCB1	L
4001	LMNB1	5580	PRKCD	L
4001	LMNB1	5630	PRPH	L
4001	LMNB1	7112	TMPO	L
4001	LMNB1	9816	KIAA0133	L
4004	LMO1	4066	LYL1	L
4004	LMO1	4807	NHLH1	L
4004	LMO1	6886	TAL1	L
4004	LMO1	6887	TAL2	L
4005	LMO2	4066	LYL1	L
4005	LMO2	4301	MLLT4	L
4005	LMO2	4807	NHLH1	L
4005	LMO2	5927	JARID1A	L
4005	LMO2	5932	RBBP8	L
4005	LMO2	6772	STAT1	R
4005	LMO2	6886	TAL1	L
4005	LMO2	6887	TAL2	L
4005	LMO2	9802	DAZAP2	R
4005	LMO2	10919	EHMT2	R
4005	LMO2	10982	MAPRE2	R
4005	LMO2	22924	MAPRE3	R
4005	LMO2	51132	RNF12	L
4008	LMO7	337867	PHGDHL1	S
4012	LNPEP	4093	SMAD9	L
4012	LNPEP	8658	TNKS	L
4012	LNPEP	25865	PRKD2	L
4012	LNPEP	29109	FHOD1	L
4014	LOR	7431	VIM	S
4016	LOXL1	10516	FBLN5	L
4018	LPA	4036	LRP2	L
4018	LPA	10516	FBLN5	L

4023	LPL	4035	LRP1	L
4023	LPL	4036	LRP2	L
4023	LPL	5775	PTPN4	S
4023	LPL	6142	RPL18A	S
4023	LPL	7436	VLDLR	L
4023	LPL	10980	COPS6	S
4023	LPL	51631	LUC7L2	S
4023	LPL	57562	KIAA1377	S
4023	LPL	65264	FLJ13855	S
4023	LPL	84164	ASCC2	S
4023	LPL	374923	(null)	S
4026	LPP	7408	VASP	L
4026	LPP	9551	ATP5J2	S
4026	LPP	51374	C2orf28	S
4026	LPP	257218	SHPRH	S
4034	LRCH4	4188	MDFI	R
4034	LRCH4	57142	RTN4	R
4035	LRP1	4043	LRPAP1	L
4035	LRP1	4057	LTF	L
4035	LRP1	4192	MDK	L
4035	LRP1	4322	MMP13	L
4035	LRP1	4323	MMP14	L
4035	LRP1	4324	MMP15	L
4035	LRP1	4325	MMP16	L
4035	LRP1	4326	MMP17	L
4035	LRP1	5045	FURIN	L
4035	LRP1	5054	SERPINE1	L
4035	LRP1	5155	PDGFB	L
4035	LRP1	5265	SERPINA1	L
4035	LRP1	5327	PLAT	L
4035	LRP1	5329	PLAUR	L
4035	LRP1	5829	PXN	L
4035	LRP1	6328	SCN3A	L
4035	LRP1	6464	SHC1	L
4035	LRP1	6498	SKIL	L
4035	LRP1	7057	THBS1	L
4035	LRP1	7094	TLN1	L
4035	LRP1	7184	TRA1	L
4035	LRP1	7414	VCL	L
4035	LRP1	9270	ITGB1BP1	L
4035	LRP1	9479	MAPK8IP1	L
4035	LRP1	9567	GTPBP1	L
4035	LRP1	9784	SNX17	L
4035	LRP1	10524	HTATIP	L
4035	LRP1	10755	GIPC1	L
4035	LRP1	23542	MAPK8IP2	L
4036	LRP2	4043	LRPAP1	L
4036	LRP2	4192	MDK	L
4036	LRP2	5054	SERPINE1	L
4036	LRP2	5328	PLAU	L
4036	LRP2	5947	RBP1	L
4036	LRP2	6550	SLC9A3	L
4036	LRP2	7038	TG	L
4036	LRP2	7094	TLN1	L
4036	LRP2	7276	TTR	L
4036	LRP2	7356	SCGB1A1	L
4036	LRP2	8029	CUBN	L
4036	LRP2	9223	MAGI1	L
4036	LRP2	9270	ITGB1BP1	L
4036	LRP2	9479	MAPK8IP1	L
4036	LRP2	9737	GPRASP1	L
4036	LRP2	10755	GIPC1	L
4036	LRP2	23396	PIP5K1C	L
4036	LRP2	23542	MAPK8IP2	L
4036	LRP2	26119	LDLRAP1	L
4036	LRP2	55805	LRP2BP	L
4036	LRP2	56899	EB-1	L

4037	LRP3	23062	GGA2	L
4037	LRP3	26088	GGA1	L
4038	LRP4	25861	DFNB31	L
4040	LRP6	22943	DKK1	L
4040	LRP6	27123	DKK2	L
4041	LRP5	4093	SMAD9	L
4041	LRP5	7057	THBS1	L
4041	LRP5	8312	AXIN1	L
4041	LRP5	22943	DKK1	L
4043	LRPAP1	5496	PPM1G	S
4043	LRPAP1	5829	PXN	L
4043	LRPAP1	6272	SORT1	L
4043	LRPAP1	6653	SORL1	L
4043	LRPAP1	7094	TLN1	L
4043	LRPAP1	7414	VCL	L
4043	LRPAP1	7436	VLDLR	L
4043	LRPAP1	7804	LRP8	L
4043	LRPAP1	23649	POLA2	S
4043	LRPAP1	57142	RTN4	S
4048	LTA4H	10094	ARPC3	S
4048	LTA4H	80021	TMEM62	S
4049	LTA	4050	LTB	L
4049	LTA	4055	LTBR	L
4049	LTA	7132	TNFRSF1A	L
4049	LTA	7133	TNFRSF1B	L
4049	LTA	8764	TNFRSF14	L
4050	LTB	4055	LTBR	L
4050	LTB	7132	TNFRSF1A	L
4054	LTBP3	7040	TGFB1	L
4054	LTBP3	7042	TGFB2	L
4054	LTBP3	7043	TGFB3	L
4054	LTBP3	55660	FNBP3	L
4055	LTBR	7186	TRAF2	L
4055	LTBR	7187	TRAF3	L
4055	LTBR	7188	TRAF5	L
4055	LTBR	8740	TNFSF14	L
4055	LTBR	9618	TRAF4	L
4055	LTBR	56616	DIABLO	L
4057	LTF	4069	LYZ	L
4057	LTF	4589	MUC7	L
4058	LTK	5287	PIK3C2B	L
4058	LTK	5770	PTPN1	L
4058	LTK	6464	SHC1	L
4060	LUM	4323	MMP14	L
4060	LUM	6434	SFRS10	S
4061	LY6E	56005	C19orf10	L
4062	LY6H	84988	PPP1R16A	S
4063	LY9	4068	SH2D1A	L
4064	CD180	9450	LY86	L
4066	LYL1	4790	NFKB1	L
4066	LYL1	6929	TCF3	L
4067	LYN	4311	MME	L
4067	LYN	4836	NMT1	L
4067	LYN	4868	NPHS1	L
4067	LYN	5141	PDE4A	L
4067	LYN	5175	PECAM1	L
4067	LYN	5294	PIK3CG	L
4067	LYN	5335	PLCG1	L
4067	LYN	5511	PPP1R8	L
4067	LYN	5588	PRKCQ	L
4067	LYN	5591	PRKDC	L
4067	LYN	5595	MAPK3	L
4067	LYN	5777	PTPN6	L
4067	LYN	6464	SHC1	L
4067	LYN	6850	SYK	L
4067	LYN	7297	TYK2	L
4067	LYN	7314	UBB	L

4067	LYN	8631	SCAP1	L
4067	LYN	8935	SCAP2	L
4067	LYN	9094	UNC119	L
4067	LYN	9322	TRIP10	L
4067	LYN	9564	BCAR1	L
4067	LYN	9846	GAB2	L
4067	LYN	23624	CBLC	L
4067	LYN	23645	PPP1R15A	L
4067	LYN	51206	GP6	L
4067	LYN	51466	EVL	L
4067	LYN	55024	BANK1	L
4067	LYN	55824	PAG1	L
4067	LYN	59341	TRPV4	L
4067	LYN	84106	PRAM1	L
4067	LYN	139716	GAB3	L
4068	SH2D1A	6504	SLAMF1	L
4068	SH2D1A	8832	CD84	L
4068	SH2D1A	51744	CD244	L
4068	SH2D1A	57823	SLAMF7	L
4068	SH2D1A	114836	SLAMF6	L
4071	TM4SF1	22142	(null)	S
4074	M6PR	5972	REN	L
4074	M6PR	23163	GGA3	L
4074	M6PR	26088	GGA1	L
4074	M6PR	63971	KIF13A	L
4076	M11S1	5829	PXN	L
4077	NBR1	9638	FEZ1	L
4077	NBR1	10519	CIB1	L
4077	NBR1	51534	C6orf55	R
4082	MARCKS	10140	TOB1	L
4084	MXD1	4149	MAX	L
4084	MXD1	4609	MYC	L
4084	MXD1	4610	MYCL1	L
4084	MXD1	4613	MYCN	L
4084	MXD1	5371	PML	L
4084	MXD1	8819	SAP30	L
4084	MXD1	9126	CSPG6	L
4084	MXD1	23309	SIN3B	L
4084	MXD1	84106	PRAM1	L
4085	MAD2L1	4153	MBL2	L
4085	MAD2L1	5980	REV3L	L
4085	MAD2L1	6868	ADAM17	L
4085	MAD2L1	8379	MAD1L1	RL
4085	MAD2L1	8881	CDC16	L
4085	MAD2L1	9587	MAD2L1BP	L
4085	MAD2L1	10403	KNTC2	L
4085	MAD2L1	10537	UBD	L
4085	MAD2L1	81628	TSC22D4	R
4086	SMAD1	4089	SMAD4	L
4086	SMAD1	4090	SMAD5	L
4086	SMAD1	4091	SMAD6	L
4086	SMAD1	4152	MBD1	L
4086	SMAD1	4734	NEDD4	L
4086	SMAD1	4739	NEDD9	L
4086	SMAD1	4762	NEUROG1	L
4086	SMAD1	4853	NOTCH2	L
4086	SMAD1	5692	PSMB4	L
4086	SMAD1	5707	PSMD1	L
4086	SMAD1	5717	PSMD11	L
4086	SMAD1	6498	SKIL	L
4086	SMAD1	6605	SMARCE1	L
4086	SMAD1	6625	SNRP70	L
4086	SMAD1	6660	SOX5	L
4086	SMAD1	6942	TCF20	L
4086	SMAD1	7508	XPC	L
4086	SMAD1	7514	XPO1	L
4086	SMAD1	7554	ZNF8	L

4086	SMAD1	7629	ZNF76	L
4086	SMAD1	8085	MLL2	L
4086	SMAD1	8458	TTF2	L
4086	SMAD1	8554	PIAS1	L
4086	SMAD1	9091	PIGQ	L
4086	SMAD1	9698	PUM1	L
4086	SMAD1	9839	ZFHX1B	L
4086	SMAD1	10140	TOB1	L
4086	SMAD1	10691	GMEB1	L
4086	SMAD1	22858	ICK	L
4086	SMAD1	22869	ZNF510	L
4086	SMAD1	23090	ZNF423	L
4086	SMAD1	23269	MGA	L
4086	SMAD1	23592	LEMD3	L
4086	SMAD1	26959	HBP1	L
4086	SMAD1	28996	HIPK2	L
4086	SMAD1	29068	BTBD15	L
4086	SMAD1	51176	LEF1	L
4086	SMAD1	51304	ZDHHC3	L
4086	SMAD1	51588	PIAS4	L
4086	SMAD1	51652	VPS24	L
4086	SMAD1	55914	ERBB2IP	L
4086	SMAD1	57154	SMURF1	L
4086	SMAD1	57473	GM632	L
4086	SMAD1	57496	MKL2	L
4086	SMAD1	64750	SMURF2	L
4086	SMAD1	79753	SNIP1	L
4086	SMAD1	84079	ANKRD27	L
4086	SMAD1	90627	STARD13	L
4086	SMAD1	90987	ZNF251	L
4086	SMAD1	157922	CAMSAP1	L
4086	SMAD1	201516	ZSCAN4	L
4086	SMAD1	392255	GDF6	L
4087	SMAD2	4088	SMAD3	L
4087	SMAD2	4089	SMAD4	L
4087	SMAD2	4093	SMAD9	L
4087	SMAD2	4205	MEF2A	L
4087	SMAD2	4208	MEF2C	L
4087	SMAD2	4301	MLLT4	L
4087	SMAD2	4609	MYC	L
4087	SMAD2	4802	NFYC	L
4087	SMAD2	5069	PAPPA	L
4087	SMAD2	5371	PML	L
4087	SMAD2	5518	PPP2R1A	L
4087	SMAD2	5573	PRKAR1A	L
4087	SMAD2	5660	PSAP	L
4087	SMAD2	5678	PSG9	L
4087	SMAD2	5714	PSMD8	L
4087	SMAD2	5717	PSMD11	L
4087	SMAD2	5824	PEX19	L
4087	SMAD2	5915	RARB	L
4087	SMAD2	5933	RBL1	L
4087	SMAD2	6093	ROCK1	L
4087	SMAD2	6208	RPS14	L
4087	SMAD2	6233	RPS27A	L
4087	SMAD2	6256	RXRA	L
4087	SMAD2	6497	SKI	L
4087	SMAD2	6498	SKIL	L
4087	SMAD2	6625	SNRP70	L
4087	SMAD2	6667	SP1	L
4087	SMAD2	6717	SRI	L
4087	SMAD2	6764	ST5	L
4087	SMAD2	6767	ST13	L
4087	SMAD2	6935	TCF8	L
4087	SMAD2	7046	TGFBR1	L
4087	SMAD2	7050	TGIF	L
4087	SMAD2	7052	TGM2	L

4087	SMAD2	7266	DNAJC7	L
4087	SMAD2	7311	UBA52	L
4087	SMAD2	7554	ZNF8	L
4087	SMAD2	7592	ZNF41	L
4087	SMAD2	8021	NUP214	L
4087	SMAD2	8065	CUL5	L
4087	SMAD2	8312	AXIN1	L
4087	SMAD2	8881	CDC16	L
4087	SMAD2	8928	FOXH1	L
4087	SMAD2	9372	ZFYVE9	L
4087	SMAD2	9392	TGFBRAP1	L
4087	SMAD2	9516	LITAF	L
4087	SMAD2	9839	ZFHX1B	L
4087	SMAD2	9972	NUP153	L
4087	SMAD2	10048	RANBP9	L
4087	SMAD2	10140	TOB1	L
4087	SMAD2	10226	M6PRBP1	L
4087	SMAD2	10274	STAG1	L
4087	SMAD2	10393	ANAPC10	L
4087	SMAD2	10401	PIAS3	L
4087	SMAD2	10657	KHDRBS1	L
4087	SMAD2	10771	ZMYND11	L
4087	SMAD2	10914	PAPOLA	L
4087	SMAD2	10956	OS9	L
4087	SMAD2	10987	COPS5	L
4087	SMAD2	11171	STRAP	L
4087	SMAD2	11177	BAZ1A	L
4087	SMAD2	22938	SNW1	L
4087	SMAD2	22976	PAXIP1	L
4087	SMAD2	23054	NCOA6	L
4087	SMAD2	23325	KIAA1033	L
4087	SMAD2	23557	SNAPAP	L
4087	SMAD2	26953	RANBP6	L
4087	SMAD2	28996	HIPK2	L
4087	SMAD2	29882	ANAPC2	L
4087	SMAD2	51176	LEF1	L
4087	SMAD2	51366	EDD1	L
4087	SMAD2	51386	EIF3S6IP	L
4087	SMAD2	54165	DCUN1D1	L
4087	SMAD2	54680	C1orf181	L
4087	SMAD2	55223	TRIM62	L
4087	SMAD2	55577	NAGK	L
4087	SMAD2	55599	RNPC3	L
4087	SMAD2	55643	BTBD2	L
4087	SMAD2	55914	ERBB2IP	L
4087	SMAD2	56288	PARD3	L
4087	SMAD2	57154	SMURF1	L
4087	SMAD2	57459	GATAD2B	L
4087	SMAD2	63891	RNF123	L
4087	SMAD2	64750	SMURF2	L
4087	SMAD2	79640	FLJ23584	L
4087	SMAD2	79753	SNIP1	L
4087	SMAD2	80325	ABTB1	L
4087	SMAD2	81704	DOCK8	L
4087	SMAD2	118429	ANTXR2	L
4087	SMAD2	145483	C14orf44	L
4088	SMAD3	4089	SMAD4	L
4088	SMAD3	4149	MAX	L
4088	SMAD3	4152	MBD1	L
4088	SMAD3	4194	MDM4	L
4088	SMAD3	4221	MEN1	L
4088	SMAD3	4303	MLLT7	L
4088	SMAD3	4609	MYC	L
4088	SMAD3	4739	NEDD9	L
4088	SMAD3	4802	NFYC	L
4088	SMAD3	4851	NOTCH1	L
4088	SMAD3	5069	PAPPA	L

4088	SMAD3	5097	PCDH1	L
4088	SMAD3	5190	PEX6	L
4088	SMAD3	5324	PLAG1	L
4088	SMAD3	5325	PLAGL1	L
4088	SMAD3	5371	PML	L
4088	SMAD3	5518	PPP2R1A	L
4088	SMAD3	5599	MAPK8	L
4088	SMAD3	5717	PSMD11	L
4088	SMAD3	5933	RBL1	L
4088	SMAD3	6175	RPLP0	L
4088	SMAD3	6497	SKI	L
4088	SMAD3	6498	SKIL	L
4088	SMAD3	6625	SNRP70	L
4088	SMAD3	6935	TCF8	L
4088	SMAD3	7030	TFE3	L
4088	SMAD3	7052	TGM2	L
4088	SMAD3	7421	VDR	L
4088	SMAD3	7554	ZNF8	L
4088	SMAD3	7704	ZBTB16	L
4088	SMAD3	7750	ZNF198	L
4088	SMAD3	8021	NUP214	L
4088	SMAD3	8312	AXIN1	L
4088	SMAD3	8881	CDC16	L
4088	SMAD3	8888	MCM3AP	L
4088	SMAD3	8928	FOXH1	L
4088	SMAD3	9372	ZFYVE9	L
4088	SMAD3	9728	KIAA0256	L
4088	SMAD3	9757	MLL4	L
4088	SMAD3	9839	ZFHX1B	L
4088	SMAD3	10048	RANBP9	L
4088	SMAD3	10140	TOB1	L
4088	SMAD3	10148	EBI3	L
4088	SMAD3	10393	ANAPC10	L
4088	SMAD3	10401	PIAS3	L
4088	SMAD3	10428	CFDP1	L
4088	SMAD3	10610	ST6GALNAC2	L
4088	SMAD3	10691	GMEB1	L
4088	SMAD3	11018	TMED1	L
4088	SMAD3	11108	PRDM4	L
4088	SMAD3	11171	STRAP	L
4088	SMAD3	22823	MTF2	L
4088	SMAD3	22938	SNW1	L
4088	SMAD3	22992	FBXL11	L
4088	SMAD3	23054	NCOA6	L
4088	SMAD3	23462	HEY1	L
4088	SMAD3	26088	GGA1	L
4088	SMAD3	26508	HEYL	L
4088	SMAD3	51176	LEF1	L
4088	SMAD3	51523	CXXC5	L
4088	SMAD3	54778	RNF111	L
4088	SMAD3	55769	ZNF83	L
4088	SMAD3	55914	ERBB2IP	L
4088	SMAD3	56478	EIF4ENIF1	L
4088	SMAD3	57154	SMURF1	L
4088	SMAD3	57648	KIAA1522	L
4088	SMAD3	60436	TGIF2	L
4088	SMAD3	64115	C10orf54	L
4088	SMAD3	64750	SMURF2	L
4088	SMAD3	79595	SAP130	L
4088	SMAD3	79673	ZNF329	L
4088	SMAD3	79987	SVEP1	L
4088	SMAD3	284058	LOC284058	L
4089	SMAD4	4090	SMAD5	L
4089	SMAD4	4093	SMAD9	R
4089	SMAD4	4149	MAX	L
4089	SMAD4	4205	MEF2A	L
4089	SMAD4	4303	MLLT7	L

4089	SMAD4	4435	CITED1	L
4089	SMAD4	4654	MYOD1	L
4089	SMAD4	5603	MAPK13	L
4089	SMAD4	5670	PSG2	L
4089	SMAD4	5678	PSG9	L
4089	SMAD4	5717	PSMD11	L
4089	SMAD4	5898	RALA	L
4089	SMAD4	5933	RBL1	L
4089	SMAD4	6158	RPL28	L
4089	SMAD4	6497	SKI	L
4089	SMAD4	6498	SKIL	L
4089	SMAD4	6625	SNRP70	L
4089	SMAD4	6667	SP1	L
4089	SMAD4	6988	TCTA	L
4089	SMAD4	7030	TFE3	L
4089	SMAD4	7329	UBE2I	RL
4089	SMAD4	7332	UBE2L3	L
4089	SMAD4	7554	ZNF8	L
4089	SMAD4	7750	ZNF198	L
4089	SMAD4	8554	PIAS1	L
4089	SMAD4	8945	BTRC	L
4089	SMAD4	9375	TM9SF2	L
4089	SMAD4	9392	TGFBRAP1	L
4089	SMAD4	10140	TOB1	L
4089	SMAD4	10256	CNKSR1	L
4089	SMAD4	10272	FSTL3	L
4089	SMAD4	10363	HMG20A	L
4089	SMAD4	10401	PIAS3	L
4089	SMAD4	10457	GPNMB	L
4089	SMAD4	10987	COPS5	L
4089	SMAD4	23090	ZNF423	L
4089	SMAD4	51176	LEF1	L
4089	SMAD4	51497	TH1L	L
4089	SMAD4	55660	FNBP3	L
4089	SMAD4	55714	ODZ3	L
4089	SMAD4	55802	DCP1A	L
4089	SMAD4	55914	ERBB2IP	L
4089	SMAD4	57510	XPO5	L
4089	SMAD4	58486	LOC58486	L
4089	SMAD4	60676	PAPPA2	L
4089	SMAD4	64777	FLJ22318	L
4089	SMAD4	79650	FLJ13154	L
4089	SMAD4	79753	SNIP1	L
4089	SMAD4	114790	STK11IP	L
4089	SMAD4	115426	UHRF2	L
4089	SMAD4	196513	DCP1B	L
4090	SMAD5	4152	MBD1	L
4090	SMAD5	4734	NEDD4	L
4090	SMAD5	5717	PSMD11	L
4090	SMAD5	5782	PTPN12	L
4090	SMAD5	5936	RBM4	L
4090	SMAD5	6262	RYR2	L
4090	SMAD5	6421	SFPQ	L
4090	SMAD5	6625	SNRP70	L
4090	SMAD5	6626	SNRPA	L
4090	SMAD5	6660	SOX5	L
4090	SMAD5	7554	ZNF8	L
4090	SMAD5	9839	ZFHX1B	L
4090	SMAD5	10140	TOB1	L
4090	SMAD5	11059	WWP1	L
4090	SMAD5	11284	PNKP	L
4090	SMAD5	11338	U2AF2	L
4090	SMAD5	51523	CXXC5	L
4090	SMAD5	51652	VPS24	L
4090	SMAD5	54893	MTMR10	L
4090	SMAD5	57154	SMURF1	L
4090	SMAD5	64750	SMURF2	L

4090	SMAD5	83595	SOX7	L
4090	SMAD5	85313	PPIL4	L
4090	SMAD5	392255	GDF6	L
4091	SMAD6	4092	SMAD7	L
4091	SMAD6	6885	MAP3K7	L
4091	SMAD6	10454	MAP3K7IP1	L
4091	SMAD6	10617	STAMBP	L
4091	SMAD6	11171	STRAP	L
4091	SMAD6	54778	RNF111	L
4091	SMAD6	57154	SMURF1	L
4091	SMAD6	64750	SMURF2	L
4092	SMAD7	4152	MBD1	L
4092	SMAD7	4654	MYOD1	L
4092	SMAD7	5606	MAP2K3	L
4092	SMAD7	5608	MAP2K6	L
4092	SMAD7	6660	SOX5	L
4092	SMAD7	6885	MAP3K7	L
4092	SMAD7	7046	TGFBR1	L
4092	SMAD7	7048	TGFBR2	L
4092	SMAD7	8458	TTF2	L
4092	SMAD7	8554	PIAS1	L
4092	SMAD7	9580	SOX13	L
4092	SMAD7	10413	YAP1	L
4092	SMAD7	10454	MAP3K7IP1	L
4092	SMAD7	10617	STAMBP	L
4092	SMAD7	11171	STRAP	L
4092	SMAD7	22992	FBXL11	L
4092	SMAD7	26508	HEYL	L
4092	SMAD7	27107	ZBTB11	L
4092	SMAD7	29068	BTBD15	L
4092	SMAD7	51427	ZNF588	L
4092	SMAD7	51523	CXXC5	L
4092	SMAD7	51588	PIAS4	L
4092	SMAD7	54778	RNF111	L
4092	SMAD7	55870	ASH1L	L
4092	SMAD7	55914	ERBB2IP	L
4092	SMAD7	56288	PARD3	L
4092	SMAD7	57154	SMURF1	L
4092	SMAD7	57496	MKL2	L
4092	SMAD7	64750	SMURF2	L
4092	SMAD7	83595	SOX7	L
4093	SMAD9	4125	MAN2B1	L
4093	SMAD9	4152	MBD1	L
4093	SMAD9	4245	MGAT1	L
4093	SMAD9	4299	AFF1	L
4093	SMAD9	5069	PAPPA	L
4093	SMAD9	5256	PHKA2	L
4093	SMAD9	5318	PKP2	L
4093	SMAD9	5339	PLEC1	L
4093	SMAD9	5467	PPARD	L
4093	SMAD9	5529	PPP2R5E	L
4093	SMAD9	5660	PSAP	L
4093	SMAD9	5714	PSMD8	L
4093	SMAD9	5859	QARS	L
4093	SMAD9	6238	RRBP1	L
4093	SMAD9	6625	SNRP70	L
4093	SMAD9	6711	SPTBN1	L
4093	SMAD9	6904	TBCD	L
4093	SMAD9	7013	TERF1	L
4093	SMAD9	7266	DNAJC7	L
4093	SMAD9	7337	UBE3A	L
4093	SMAD9	7403	UTX	L
4093	SMAD9	8085	MLL2	L
4093	SMAD9	8543	LMO4	L
4093	SMAD9	8544	PIR	L
4093	SMAD9	8663	EIF3S8	L
4093	SMAD9	8665	EIF3S5	L

4093	SMAD9	8761	PABPC4	L
4093	SMAD9	8888	MCM3AP	L
4093	SMAD9	9070	ASH2L	L
4093	SMAD9	9093	DNAJA3	L
4093	SMAD9	9320	TRIP12	L
4093	SMAD9	9640	ZNF592	L
4093	SMAD9	9646	SH2BP1	L
4093	SMAD9	9652	KIAA0372	L
4093	SMAD9	9662	CEP4	L
4093	SMAD9	9839	ZFHX1B	L
4093	SMAD9	10048	RANBP9	L
4093	SMAD9	10274	STAG1	L
4093	SMAD9	10903	MTMR11	L
4093	SMAD9	10905	MAN1A2	L
4093	SMAD9	10971	YWHAQ	L
4093	SMAD9	11034	DSTN	L
4093	SMAD9	11177	BAZ1A	L
4093	SMAD9	22943	DKK1	L
4093	SMAD9	23049	SMG1	L
4093	SMAD9	23086	EXPH5	L
4093	SMAD9	23173	METAP1	L
4093	SMAD9	23355	KIAA0804	L
4093	SMAD9	23462	HEY1	L
4093	SMAD9	23592	LEMD3	L
4093	SMAD9	23650	TRIM29	L
4093	SMAD9	26508	HEYL	L
4093	SMAD9	27043	PELP1	L
4093	SMAD9	29979	UBQLN1	L
4093	SMAD9	51523	CXXC5	L
4093	SMAD9	51676	ASB2	L
4093	SMAD9	54893	MTMR10	L
4093	SMAD9	55219	TMEM57	L
4093	SMAD9	55236	FLJ10808	L
4093	SMAD9	55577	NAGK	L
4093	SMAD9	55611	OTUB1	L
4093	SMAD9	55769	ZNF83	L
4093	SMAD9	55898	SMAP-1	L
4093	SMAD9	56652	PEO1	L
4093	SMAD9	56893	UBQLN4	L
4093	SMAD9	57104	PNPLA2	L
4093	SMAD9	57134	MAN1C1	L
4093	SMAD9	57492	ARID1B	L
4093	SMAD9	63891	RNF123	L
4093	SMAD9	64129	TINAGL1	L
4093	SMAD9	64333	ARHGAP9	L
4093	SMAD9	64374	SIL1	L
4093	SMAD9	64795	FLJ13910	L
4093	SMAD9	79048	SECISBP2	L
4093	SMAD9	79230	ZNF557	L
4093	SMAD9	79586	CHPF	L
4093	SMAD9	79987	SVEP1	L
4093	SMAD9	80124	VCPIP1	L
4093	SMAD9	80325	ABTB1	L
4093	SMAD9	81570	CLPB	L
4093	SMAD9	81624	DIAPH3	L
4093	SMAD9	84914	ZNF587	L
4093	SMAD9	132884	EVC2	L
4093	SMAD9	147664	FLJ32214	L
4093	SMAD9	157922	CAMSAP1	L
4093	SMAD9	201516	ZSCAN4	L
4094	MAF	4097	MAFG	L
4094	MAF	4602	MYB	L
4094	MAF	6662	SOX9	L
4094	MAF	7392	USF2	L
4094	MAF	9935	MAFB	L
4097	MAFG	4778	NFE2	L
4097	MAFG	4779	NFE2L1	L

4097	MAFG	4780	NFE2L2	L
4097	MAFG	5080	PAX6	L
4097	MAFG	5396	PRRX1	L
4097	MAFG	7431	VIM	S
4097	MAFG	7975	MAFK	L
4097	MAFG	9586	CREB5	L
4097	MAFG	9603	NFE2L3	L
4097	MAFG	11016	ATF7	L
4097	MAFG	51003	MED31	S
4097	MAFG	55509	SNFT	L
4097	MAFG	60468	BACH2	L
4097	MAFG	84060	DKFZP564O0523	S
4099	MAG	4131	MAP1B	L
4099	MAG	4155	MBP	L
4099	MAG	5354	PLP1	L
4100	MAGEA1	7381	UQCRB	R
4100	MAGEA1	11074	TRIM31	R
4100	MAGEA1	54471	FLJ20232	R
4100	MAGEA1	56904	SH3GLB2	R
4103	MAGEA4	5716	PSMD10	L
4103	MAGEA4	7381	UQCRB	R
4103	MAGEA4	140691	RNF36	R
4103	MAGEA4	150483	MGC27019	R
4110	MAGEA11	4291	MLF1	R
4110	MAGEA11	4715	NDUFB9	R
4110	MAGEA11	5264	PHYH	R
4110	MAGEA11	5987	RFP	R
4110	MAGEA11	6919	TCEA2	R
4110	MAGEA11	7704	ZBTB16	R
4110	MAGEA11	8644	AKR1C3	R
4110	MAGEA11	8715	NOL4	R
4110	MAGEA11	9167	COX7A2L	R
4110	MAGEA11	9411	ARHGAP29	R
4110	MAGEA11	9491	PSMF1	R
4110	MAGEA11	9589	WTAP	R
4110	MAGEA11	9729	KIAA0408	R
4110	MAGEA11	10445	MCRS1	R
4110	MAGEA11	10495	COVA1	R
4110	MAGEA11	10935	PRDX3	R
4110	MAGEA11	11284	PNKP	R
4110	MAGEA11	22980	KIAA1049	R
4110	MAGEA11	23059	CLUAP1	R
4110	MAGEA11	25953	MR-1	R
4110	MAGEA11	27042	C1orf107	R
4110	MAGEA11	29057	TMEM29	R
4110	MAGEA11	51082	POLR1D	R
4110	MAGEA11	51103	NDUFAF1	R
4110	MAGEA11	51375	SNX7	R
4110	MAGEA11	51534	C6orf55	R
4110	MAGEA11	51619	UBE2D4	R
4110	MAGEA11	54431	DNAJC10	R
4110	MAGEA11	55621	TRMT1	R
4110	MAGEA11	55698	FLJ10324	R
4110	MAGEA11	58529	MYOZ1	R
4110	MAGEA11	60491	NIF3L1	R
4110	MAGEA11	63898	SH2D4A	R
4110	MAGEA11	64770	CCDC14	R
4110	MAGEA11	78990	OTUB2	R
4110	MAGEA11	79027	ZNF655	R
4110	MAGEA11	79706	PRKRIP1	R
4110	MAGEA11	79959	C18orf9	R
4110	MAGEA11	80306	MED28	R
4110	MAGEA11	81565	NDEL1	R
4110	MAGEA11	83463	MXD3	R
4110	MAGEA11	84707	BEX2	R
4110	MAGEA11	84708	LNX	R
4110	MAGEA11	84767	TRIM51	R

4110	MAGEA11	92667	C20orf72	R
4110	MAGEA11	114908	PORIMIN	R
4110	MAGEA11	124460	SLIC1	R
4110	MAGEA11	130013	ACMSD	R
4110	MAGEA11	151112	ZSWIM2	R
4110	MAGEA11	162681	C18orf54	R
4110	MAGEA11	164127	C1orf65	R
4110	MAGEA11	170082	MGC17403	R
4110	MAGEA11	200523	FLJ25369	R
4110	MAGEA11	387338	NSUN4	R
4111	MAGEA12	6776	STAT5A	R
4115	MAGEB4	117246	FTSJ3	R
4116	MAGOH	9939	RBM8A	L
4116	MAGOH	10482	NXF1	L
4122	MAN2A2	7431	VIM	S
4122	MAN2A2	8518	IKBKAP	S
4122	MAN2A2	28964	GIT1	S
4122	MAN2A2	51631	LUC7L2	S
4123	MAN2C1	7916	BAT2	L
4130	MAP1A	4131	MAP1B	L
4130	MAP1A	7280	TUBB2	L
4130	MAP1A	27185	DISC1	L
4130	MAP1A	84557	MAP1LC3A	L
4131	MAP1B	5599	MAPK8	L
4131	MAP1B	6622	SNCA	L
4131	MAP1B	8125	ANP32A	L
4131	MAP1B	8139	GAN	L
4131	MAP1B	8655	DNCL1	L
4133	MAP2	4647	MYO7A	L
4133	MAP2	5339	PLEC1	L
4133	MAP2	57787	MARK4	L
4133	MAP2	84630	TTBK1	L
4134	MAP4	5829	PXN	L
4134	MAP4	7094	TLN1	L
4134	MAP4	7280	TUBB2	L
4134	MAP4	57787	MARK4	L
4137	MAPT	5300	PIN1	L
4137	MAPT	5663	PSEN1	L
4137	MAPT	6285	S100B	L
4137	MAPT	6622	SNCA	L
4137	MAPT	6710	SPTB	L
4137	MAPT	6812	STXBP1	L
4137	MAPT	7280	TUBB2	L
4137	MAPT	7529	YWHAB	L
4137	MAPT	7534	YWHAZ	L
4137	MAPT	8287	USP9Y	L
4137	MAPT	8473	OGT	L
4137	MAPT	57787	MARK4	L
4140	MARK3	5588	PRKCQ	L
4140	MARK3	6919	TCEA2	S
4140	MARK3	7276	TTR	S
4140	MARK3	8655	DNCL1	L
4140	MARK3	9512	PMPCB	S
4140	MARK3	10898	CPSF4	S
4140	MARK3	25926	NOL11	S
4140	MARK3	55823	VPS11	S
4140	MARK3	56311	ANKRD7	S
4140	MARK3	57104	PNPLA2	S
4140	MARK3	79754	ASB13	S
4140	MARK3	113174	LOC113174	S
4141	MARS	5917	RARS	L
4141	MARS	7975	MAFK	L
4141	MARS	9647	PPM1F	S
4141	MARS	11100	HNRPUL1	S
4144	MAT2A	27430	MAT2B	L
4145	MATK	4914	NTRK1	L
4145	MATK	5829	PXN	L

4145	MATK	6714	SRC	L
4146	MATN1	4147	MATN2	L
4146	MATN1	4148	MATN3	L
4146	MATN1	8785	MATN4	L
4147	MATN2	8785	MATN4	L
4148	MATN3	8785	MATN4	L
4149	MAX	4335	MNT	L
4149	MAX	4436	MSH2	L
4149	MAX	4601	MXI1	RL
4149	MAX	4609	MYC	L
4149	MAX	4610	MYCL1	L
4149	MAX	4613	MYCN	L
4149	MAX	7003	TEAD1	L
4149	MAX	8295	TRRAP	L
4149	MAX	9043	SPAG9	L
4149	MAX	10608	MXD4	L
4149	MAX	79666	PLEKHF2	R
4152	MBD1	6839	SUV39H1	L
4152	MBD1	10036	CHAF1A	L
4152	MBD1	10114	HIPK3	L
4152	MBD1	23468	CBX5	L
4152	MBD1	55729	ATF7IP	L
4152	MBD1	57473	GM632	L
4153	MBL2	5648	MASP1	L
4153	MBL2	5788	PTPRC	L
4153	MBL2	6399	TRAPPC2	L
4153	MBL2	10747	MASP2	L
4153	MBL2	22918	C1QR1	L
4155	MBP	4316	MMP7	L
4155	MBP	5354	PLP1	L
4155	MBP	5603	MAPK13	L
4155	MBP	5901	RAN	L
4155	MBP	6789	STK4	L
4155	MBP	8550	MAPKAPK5	L
4155	MBP	8569	MKNK1	L
4155	MBP	8576	STK16	L
4155	MBP	9149	DYRK1B	L
4155	MBP	10419	SKB1	L
4155	MBP	11011	TLK2	L
4155	MBP	27347	STK39	L
4155	MBP	51755	CRK7	L
4155	MBP	51765	MASK	L
4155	MBP	54822	TRPM7	L
4155	MBP	55589	BMP2K	L
4155	MBP	58190	CTDSP1	L
4155	MBP	91754	NEK9	L
4157	MC1R	4160	MC4R	L
4157	MC1R	5443	POMC	L
4158	MC2R	5443	POMC	L
4160	MC4R	4852	NPY	L
4160	MC4R	5443	POMC	L
4161	MC5R	5443	POMC	L
4162	MCAM	55729	ATF7IP	L
4168	MCF2	10188	TNK2	L
4170	MCL1	8658	TNKS	L
4170	MCL1	10018	BCL2L11	L
4171	MCM2	4172	MCM3	L
4171	MCM2	4174	MCM5	L
4171	MCM2	4175	MCM6	RL
4171	MCM2	4176	MCM7	L
4171	MCM2	4356	MPP3	S
4171	MCM2	4998	ORC1L	L
4171	MCM2	4999	ORC2L	L
4171	MCM2	5000	ORC4L	L
4171	MCM2	5001	ORC5L	L
4171	MCM2	6117	RPA1	L
4171	MCM2	6118	RPA2	L

4171	MCM2	6119	RPA3	L
4171	MCM2	6191	RPS4X	S
4171	MCM2	6908	TBP	L
4171	MCM2	8290	HIST3H3	L
4171	MCM2	8317	CDC7	L
4171	MCM2	9133	CCNB2	L
4171	MCM2	10270	AKAP8	L
4171	MCM2	10681	GNB5	S
4171	MCM2	10926	ASK	L
4171	MCM2	11143	MYST2	L
4171	MCM2	23594	ORC6L	L
4171	MCM2	25843	PREI3	S
4171	MCM2	29894	CPSF1	L
4171	MCM2	55388	MCM10	L
4172	MCM3	4174	MCM5	L
4172	MCM3	4175	MCM6	L
4172	MCM3	4176	MCM7	L
4172	MCM3	5000	ORC4L	L
4172	MCM3	5001	ORC5L	L
4172	MCM3	6772	STAT1	L
4172	MCM3	8317	CDC7	L
4172	MCM3	8318	CDC45L	L
4172	MCM3	8888	MCM3AP	L
4172	MCM3	10926	ASK	L
4172	MCM3	55388	MCM10	L
4172	MCM3	115106	CCDC5	L
4173	MCM4	4175	MCM6	L
4173	MCM4	4176	MCM7	L
4173	MCM4	8317	CDC7	L
4173	MCM4	8900	CCNA1	L
4173	MCM4	23594	ORC6L	L
4173	MCM4	55388	MCM10	L
4173	MCM4	115106	CCDC5	L
4174	MCM5	4176	MCM7	L
4174	MCM5	4188	MDFI	R
4174	MCM5	4998	ORC1L	L
4174	MCM5	5001	ORC5L	L
4174	MCM5	6772	STAT1	L
4174	MCM5	8317	CDC7	L
4174	MCM5	23595	ORC3L	L
4175	MCM6	4300	MLLT3	R
4175	MCM6	5682	PSMA1	R
4175	MCM6	8900	CCNA1	L
4175	MCM6	23594	ORC6L	L
4175	MCM6	26525	IL1F5	R
4175	MCM6	51053	GMNN	L
4175	MCM6	55388	MCM10	RL
4175	MCM6	79005	SCNM1	R
4175	MCM6	81620	CDT1	L
4175	MCM6	84289	ING5	R
4175	MCM6	151254	ALS2CR11	R
4176	MCM7	4331	MNAT1	L
4176	MCM7	4998	ORC1L	L
4176	MCM7	4999	ORC2L	L
4176	MCM7	5000	ORC4L	L
4176	MCM7	5001	ORC5L	L
4176	MCM7	5925	RB1	L
4176	MCM7	5933	RBL1	L
4176	MCM7	5934	RBL2	L
4176	MCM7	6117	RPA1	L
4176	MCM7	7337	UBE3A	L
4176	MCM7	8290	HIST3H3	L
4176	MCM7	8317	CDC7	L
4176	MCM7	8318	CDC45L	L
4176	MCM7	9939	RBM8A	R
4176	MCM7	10926	ASK	L
4176	MCM7	11277	TREX1	L

4176	MCM7	23594	ORC6L	L
4176	MCM7	23595	ORC3L	L
4176	MCM7	51562	MBIP	R
4176	MCM7	55388	MCM10	L
4179	MCP	4478	MSN	L
4179	MCP	6714	SRC	L
4179	MCP	7106	TSPAN4	L
4179	MCP	7525	YES1	L
4184	SMCP	5359	PLSCR1	R
4184	SMCP	83755	KRTAP4-12	R
4185	ADAM11	8614	STC2	S
4188	MDFI	4656	MYOG	L
4188	MDFI	5013	OTX1	R
4188	MDFI	5300	PIN1	R
4188	MDFI	5819	PVRL2	R
4188	MDFI	5990	RFX2	R
4188	MDFI	6495	SIX1	R
4188	MDFI	6548	SLC9A1	R
4188	MDFI	6687	SPG7	R
4188	MDFI	6890	TAP1	R
4188	MDFI	6944	VPS72	R
4188	MDFI	7355	SLC35A2	R
4188	MDFI	7376	NR1H2	R
4188	MDFI	7597	ZBTB25	R
4188	MDFI	7695	ZNF136	R
4188	MDFI	7755	ZNF205	R
4188	MDFI	8227	DXYS155E	R
4188	MDFI	8326	FZD9	R
4188	MDFI	9139	CBFA2T2	R
4188	MDFI	9140	ATG12	R
4188	MDFI	9721	KIAA0514	R
4188	MDFI	9726	ZNF646	R
4188	MDFI	9729	KIAA0408	R
4188	MDFI	9814	SFI1	R
4188	MDFI	9841	ZBTB24	R
4188	MDFI	9907	KIAA0415	R
4188	MDFI	10148	EBI3	R
4188	MDFI	10169	SERF2	R
4188	MDFI	10758	TRAF3IP2	R
4188	MDFI	10922	FASTK	R
4188	MDFI	22822	PHLDA1	R
4188	MDFI	22893	BAHD1	R
4188	MDFI	22943	DKK1	R
4188	MDFI	23549	DNPEP	R
4188	MDFI	25796	PGLS	R
4188	MDFI	26505	CNNM3	R
4188	MDFI	26511	CHIC2	R
4188	MDFI	50717	WDR42A	R
4188	MDFI	51298	THEG	R
4188	MDFI	51545	ZNF581	R
4188	MDFI	54461	FBXW5	R
4188	MDFI	54973	CPSF3L	R
4188	MDFI	55049	FLJ20850	R
4188	MDFI	55093	C8orf32	R
4188	MDFI	55308	DDX19A	R
4188	MDFI	55367	LRDD	R
4188	MDFI	55503	TRPV6	R
4188	MDFI	55684	C9orf86	R
4188	MDFI	55885	LMO3	R
4188	MDFI	56654	NPDC1	R
4188	MDFI	60496	AASDHPPT	R
4188	MDFI	64129	TINAGL1	R
4188	MDFI	64745	FLJ20859	R
4188	MDFI	79088	ZNF426	R
4188	MDFI	79797	ZNF408	R
4188	MDFI	79843	FLJ22746	R
4188	MDFI	79870	BAALC	R

4188	MDFI	80764	THAP7	R
4188	MDFI	84080	C16orf48	R
4188	MDFI	84527	ZNF559	R
4188	MDFI	84733	CBX2	R
4188	MDFI	84775	ZNF607	R
4188	MDFI	85019	C18orf45	R
4188	MDFI	90060	JM11	R
4188	MDFI	90594	ZNF439	R
4188	MDFI	92595	MGC13138	R
4188	MDFI	94039	ZNF101	R
4188	MDFI	113655	MFSD3	R
4188	MDFI	115817	DHRS1	R
4188	MDFI	117144	CATSPER1	R
4188	MDFI	126070	ZNF440	R
4188	MDFI	147687	ZNF417	R
4188	MDFI	154313	C6orf165	R
4188	MDFI	154865	FLJ35834	R
4188	MDFI	157773	C8orf48	R
4188	MDFI	164127	C1orf65	R
4188	MDFI	164312	C20orf75	R
4188	MDFI	164592	FLJ36046	R
4188	MDFI	168417	ZNF679	R
4188	MDFI	196477	C12orf12	R
4188	MDFI	286075	ZNF707	R
4188	MDFI	286301	MGC42630	R
4188	MDFI	389741	MGC21881	R
4188	MDFI	414157	C10orf62	R
4188	MDFI	494514	C18orf56	R
4189	DNAJB9	4637	MYL6	S
4189	DNAJB9	5347	PLK1	S
4189	DNAJB9	6624	FSCN1	S
4189	DNAJB9	6919	TCEA2	S
4189	DNAJB9	8655	DNCL1	S
4189	DNAJB9	10915	TCERG1	L
4189	DNAJB9	23539	SLC16A8	S
4189	DNAJB9	55312	RFK	S
4190	MDH1	4356	MPP3	S
4191	MDH2	4719	NDUFS1	L
4191	MDH2	5091	PC	L
4191	MDH2	7453	WARS	S
4192	MDK	4691	NCL	L
4192	MDK	5787	PTPRB	L
4192	MDK	5803	PTPRZ1	L
4192	MDK	6142	RPL18A	S
4192	MDK	6382	SDC1	L
4192	MDK	6385	SDC4	L
4192	MDK	6772	STAT1	L
4192	MDK	7051	TGM1	L
4192	MDK	9672	SDC3	L
4193	MDM2	4194	MDM4	L
4193	MDM2	5371	PML	L
4193	MDM2	5426	POLE	L
4193	MDM2	5925	RB1	L
4193	MDM2	6135	RPL11	L
4193	MDM2	6872	TAF1	L
4193	MDM2	7157	TP53	L
4193	MDM2	7161	TP73	L
4193	MDM2	7251	TSG101	L
4193	MDM2	7341	SUMO1	L
4193	MDM2	8650	NUMB	L
4193	MDM2	8850	PCAF	L
4193	MDM2	10524	HTATIP	L
4193	MDM2	23741	CRI1	L
4193	MDM2	64219	PJA1	L
4194	MDM4	5925	RB1	L
4194	MDM4	7157	TP53	L
4194	MDM4	7321	UBE2D1	L

4200	ME2	8655	DNCL1	L
4204	MECP2	6497	SKI	L
4204	MECP2	9611	NCOR1	L
4204	MECP2	55660	FNBP3	L
4205	MEF2A	4209	MEF2D	L
4205	MEF2A	4654	MYOD1	L
4205	MEF2A	4656	MYOG	L
4205	MEF2A	5598	MAPK7	L
4205	MEF2A	7003	TEAD1	L
4205	MEF2A	7067	THRA	L
4205	MEF2A	9734	HDAC9	L
4205	MEF2A	9759	HDAC4	L
4205	MEF2A	10014	HDAC5	L
4207	MEF2B	23523	CABIN1	L
4207	MEF2B	56159	TEX11	R
4208	MEF2C	4209	MEF2D	L
4208	MEF2C	5598	MAPK7	L
4208	MEF2C	6667	SP1	L
4208	MEF2C	9686	VGLL4	L
4208	MEF2C	9759	HDAC4	L
4208	MEF2C	54345	SOX18	L
4208	MEF2C	117581	TWIST2	L
4209	MEF2D	4773	NFATC2	L
4209	MEF2D	5598	MAPK7	L
4209	MEF2D	6667	SP1	L
4209	MEF2D	9759	HDAC4	L
4210	MEFV	29108	PYCARD	L
4211	MEIS1	5089	PBX2	L
4211	MEIS1	10481	HOXB13	L
4215	MAP3K3	5607	MAP2K5	L
4215	MAP3K3	7531	YWHAE	L
4215	MAP3K3	7534	YWHAZ	L
4215	MAP3K3	7704	ZBTB16	S
4215	MAP3K3	8737	RIPK1	L
4215	MAP3K3	9043	SPAG9	L
4216	MAP3K4	4616	GADD45B	L
4216	MAP3K4	5603	MAPK13	L
4216	MAP3K4	5604	MAP2K1	L
4216	MAP3K4	5606	MAP2K3	L
4216	MAP3K4	5608	MAP2K6	L
4216	MAP3K4	6416	MAP2K4	L
4216	MAP3K4	10912	GADD45G	L
4216	MAP3K4	29127	RACGAP1	L
4217	MAP3K5	5536	PPP5C	L
4217	MAP3K5	5610	EIF2AK2	L
4217	MAP3K5	5859	QARS	L
4217	MAP3K5	5894	RAF1	L
4217	MAP3K5	6885	MAP3K7	L
4217	MAP3K5	7186	TRAF2	L
4217	MAP3K5	7188	TRAF5	L
4217	MAP3K5	7189	TRAF6	L
4217	MAP3K5	7295	TXN	L
4217	MAP3K5	7534	YWHAZ	L
4217	MAP3K5	9064	MAP3K6	L
4217	MAP3K5	10016	PDCD6	L
4217	MAP3K5	153090	DAB2IP	L
4218	RAB8A	5871	MAP4K2	L
4218	RAB8A	7917	BAT3	S
4218	RAB8A	9501	RPH3AL	L
4218	RAB8A	9699	RIMS2	L
4218	RAB8A	10084	PQBP1	S
4218	RAB8A	10133	OPTN	L
4218	RAB8A	94121	SYTL4	L
4218	RAB8A	117177	RAB3IP	L
4221	MEN1	4790	NFKB1	L
4221	MEN1	4791	NFKB2	L
4221	MEN1	5970	RELA	L

4221	MEN1	6118	RPA2	L
4221	MEN1	7431	VIM	L
4222	MEOX1	5075	PAX1	L
4223	MEOX2	5075	PAX1	L
4223	MEOX2	5077	PAX3	L
4223	MEOX2	7288	TULP2	R
4223	MEOX2	7432	VIP	R
4223	MEOX2	8153	RND2	R
4223	MEOX2	25813	SAMM50	R
4223	MEOX2	83755	KRTAP4-12	R
4224	MEP1A	4225	MEP1B	L
4224	MEP1A	5741	PTH	L
4224	MEP1A	284217	LAMA1	L
4225	MEP1B	5697	PYY	L
4233	MET	5781	PTPN11	L
4233	MET	6464	SHC1	L
4233	MET	6714	SRC	L
4233	MET	6774	STAT3	L
4233	MET	9146	HGS	L
4233	MET	10048	RANBP9	L
4233	MET	11146	GLMN	L
4233	MET	30011	SH3KBP1	L
4234	METTL1	10785	WDR4	R
4239	MFAP4	6441	SFTPD	L
4242	MFNG	4851	NOTCH1	L
4242	MFNG	4853	NOTCH2	L
4254	KITLG	5293	PIK3CD	L
4254	KITLG	6320	CLEC11A	L
4254	KITLG	9820	CUL7	L
4255	MGMT	5566	PRKACA	L
4255	MGMT	7317	UBE1	L
4258	MGST2	307255	(null)	S
4261	CIITA	4801	NFYB	L
4261	CIITA	5993	RFX5	L
4261	CIITA	7514	XPO1	L
4261	CIITA	8625	RFXANK	L
4261	CIITA	8648	NCOA1	L
4267	CD99	29979	UBQLN1	R
4276	MICA	22914	KLRK1	L
4281	MID1	11043	MID2	L
4282	MIF	7414	VCL	L
4282	MIF	10987	COPS5	L
4282	MIF	26003	GORASP2	R
4282	MIF	29888	STRN4	S
4282	MIF	79797	ZNF408	L
4282	MIF	149428	BNIPL	L
4286	MITF	5080	PAX6	L
4286	MITF	6688	SPI1	L
4286	MITF	7030	TFE3	L
4286	MITF	7329	UBE2I	L
4286	MITF	7341	SUMO1	L
4286	MITF	7942	TFEB	L
4286	MITF	10401	PIAS3	L
4286	MITF	22797	TFEC	L
4286	MITF	23598	ZNF278	L
4286	MITF	51176	LEF1	L
4287	ATXN3	5886	RAD23A	L
4287	ATXN3	5887	RAD23B	L
4287	ATXN3	7415	VCP	L
4288	MKI67	5579	PRKCB1	L
4288	MKI67	11335	CBX3	L
4288	MKI67	23468	CBX5	L
4288	MKI67	56992	KIF15	L
4291	MLF1	7534	YWHAZ	L
4291	MLF1	29959	NRBP	L
4292	MLH1	4438	MSH4	L
4292	MLH1	4609	MYC	L

4292	MLH1	5378	PMS1	L
4292	MLH1	5395	PMS2	L
4292	MLH1	8930	MBD4	L
4292	MLH1	9156	EXO1	L
4292	MLH1	9877	ZC3H11A	R
4292	MLH1	22888	UBOX5	R
4292	MLH1	23650	TRIM29	R
4292	MLH1	27030	MLH3	L
4292	MLH1	122786	FRMD6	R
4294	MAP3K10	5245	PHB	L
4294	MAP3K10	6416	MAP2K4	L
4294	MAP3K10	7280	TUBB2	L
4294	MAP3K10	7531	YWHAE	L
4294	MAP3K10	9371	KIF3B	L
4294	MAP3K10	10059	DNM1L	L
4294	MAP3K10	11127	KIF3A	L
4294	MAP3K10	22920	KIFAP3	L
4294	MAP3K10	29127	RACGAP1	L
4296	MAP3K11	5604	MAP2K1	L
4296	MAP3K11	5609	MAP2K7	L
4296	MAP3K11	5879	RAC1	L
4296	MAP3K11	7786	MAP3K12	L
4296	MAP3K11	11127	KIF3A	L
4296	MAP3K11	11184	MAP4K1	L
4296	MAP3K11	23542	MAPK8IP2	L
4297	MLL	5364	PLXNB1	L
4297	MLL	6418	SET	L
4297	MLL	10450	PPIE	L
4297	MLL	23645	PPP1R15A	L
4300	MLLT3	5764	PTN	S
4300	MLLT3	10513	APPBP2	R
4300	MLLT3	54880	BCOR	L
4300	MLLT3	55791	C1orf103	S
4300	MLLT3	84060	DKFZP564O0523	S
4301	MLLT4	5216	PFN1	L
4301	MLLT4	5818	PVRL1	L
4301	MLLT4	5819	PVRL2	L
4301	MLLT4	5906	RAP1A	L
4301	MLLT4	5909	RAP1GA1	L
4301	MLLT4	5911	RAP2A	L
4301	MLLT4	6016	RIT1	L
4301	MLLT4	6237	RRAS	L
4301	MLLT4	7082	TJP1	L
4301	MLLT4	8239	USP9X	L
4301	MLLT4	9369	NRXN3	L
4301	MLLT4	10580	SORBS1	L
4301	MLLT4	22800	RRAS2	L
4301	MLLT4	22808	MRAS	L
4301	MLLT4	25945	PVRL3	L
4301	MLLT4	117178	SSX2IP	L
4302	MLLT6	51586	PCQAP	R
4303	MLLT7	7514	XPO1	L
4306	NR3C2	8805	TRIM24	L
4306	NR3C2	10728	PTGES3	L
4311	MME	5291	PIK3CB	L
4311	MME	5295	PIK3R1	L
4311	MME	6464	SHC1	L
4312	MMP1	4316	MMP7	L
4312	MMP1	7076	TIMP1	L
4312	MMP1	63827	BCAN	L
4313	MMP2	4326	MMP17	L
4313	MMP2	6354	CCL7	L
4313	MMP2	6387	CXCL12	L
4313	MMP2	7040	TGFB1	L
4313	MMP2	7057	THBS1	L
4313	MMP2	7058	THBS2	L
4313	MMP2	7077	TIMP2	L

4313	MMP2	7078	TIMP3	L
4313	MMP2	7079	TIMP4	L
4313	MMP2	9076	CLDN1	L
4313	MMP2	23621	BACE1	L
4313	MMP2	63827	BCAN	L
4313	MMP2	80781	COL18A1	L
4314	MMP3	7076	TIMP1	L
4314	MMP3	7078	TIMP3	L
4314	MMP3	63827	BCAN	L
4316	MMP7	4318	MMP9	L
4316	MMP7	4803	NGFB	L
4316	MMP7	63827	BCAN	L
4317	MMP8	7077	TIMP2	L
4317	MMP8	63827	BCAN	L
4318	MMP9	5858	PZP	L
4318	MMP9	6374	CXCL5	L
4318	MMP9	7057	THBS1	L
4318	MMP9	7058	THBS2	L
4318	MMP9	7078	TIMP3	L
4318	MMP9	8434	RECK	L
4319	MMP10	63827	BCAN	L
4320	MMP11	55660	FNBP3	L
4322	MMP13	7078	TIMP3	L
4322	MMP13	11096	ADAMTS5	L
4322	MMP13	63827	BCAN	L
4323	MMP14	7077	TIMP2	L
4323	MMP14	7078	TIMP3	L
4323	MMP14	9076	CLDN1	L
4331	MNAT1	5451	POU2F1	L
4331	MNAT1	5452	POU2F2	L
4331	MNAT1	5460	POU5F1	L
4331	MNAT1	5925	RB1	L
4331	MNAT1	7157	TP53	L
4331	MNAT1	9112	MTA1	L
4331	MNAT1	10980	COPS6	S
4331	MNAT1	55791	C1orf103	S
4331	MNAT1	79803	HPS6	S
4331	MNAT1	84060	DKFZP564O0523	S
4331	MNAT1	404672	GTF2H5	L
4335	MNT	25942	SIN3A	L
4338	MOCS2	6133	RPL9	S
4338	MOCS2	27304	MOCS3	L
4338	MOCS2	55324	ABCF3	S
4342	MOS	4654	MYOD1	L
4345	CD200	131450	CD200R1	L
4350	MPG	5886	RAD23A	L
4350	MPG	5887	RAD23B	L
4352	MPL	7066	THPO	L
4352	MPL	11273	ATXN2L	L
4354	MPP1	9905	RUTBC1	S
4354	MPP1	10273	STUB1	S
4354	MPP1	51421	AMOTL2	R
4356	MPP3	6187	RPS2	S
4356	MPP3	6326	SCN2A2	S
4356	MPP3	9001	HAP1	S
4356	MPP3	10769	PLK2	S
4356	MPP3	11031	RAB31	S
4356	MPP3	23450	SF3B3	S
4356	MPP3	23705	IGSF4	L
4356	MPP3	55709	KBTBD4	S
4356	MPP3	84273	C4orf14	S
4356	MPP3	90933	TRIM41	S
4356	MPP3	284208	B3GNTL1	S
4356	MPP3	339230	MGC16597	S
4356	MPP3	339231	LOC339231	S
4356	MPP3	378464	MOPT	S
4359	MPZ	5376	PMP22	L

4359	MPZ	54984	PINX1	S
4360	MRC1	11200	CHEK2	L
4361	MRE11A	4750	NEK1	L
4435	CITED1	7022	TFAP2C	L
4436	MSH2	4437	MSH3	L
4436	MSH2	5111	PCNA	L
4436	MSH2	8243	SMC1L1	L
4436	MSH2	9156	EXO1	L
4436	MSH2	11200	CHEK2	L
4436	MSH2	11277	TREX1	L
4437	MSH3	5111	PCNA	L
4437	MSH3	9156	EXO1	L
4438	MSH4	4439	MSH5	L
4438	MSH4	6117	RPA1	L
4438	MSH4	7411	VBP1	L
4438	MSH4	27030	MLH3	L
4440	MSI1	9240	PNMA1	S
4477	MSMB	284169	(null)	S
4478	MSN	4689	NCF4	L
4478	MSN	5339	PLEC1	L
4478	MSN	6693	SPN	L
4478	MSN	6850	SYK	L
4478	MSN	7248	TSC1	L
4478	MSN	7412	VCAM1	L
4478	MSN	7430	VIL2	L
4478	MSN	9368	SLC9A3R1	L
4485	MST1	4486	MST1R	L
4486	MST1R	5295	PIK3R1	L
4486	MST1R	5335	PLCG1	L
4486	MST1R	6464	SHC1	L
4486	MST1R	6714	SRC	L
4486	MST1R	8692	HYAL2	L
4487	MSX1	4488	MSX2	L
4487	MSX1	5077	PAX3	L
4487	MSX1	6000	RGS7	L
4487	MSX1	6667	SP1	L
4487	MSX1	6872	TAF1	L
4487	MSX1	6908	TBP	L
4487	MSX1	9355	LHX2	L
4488	MSX2	7709	ZBTB17	L
4488	MSX2	9063	PIAS2	L
4488	MSX2	9500	MAGED1	L
4488	MSX2	23013	SPEN	L
4502	MT2A	5587	PRKD1	L
4507	MTAP	29116	MYLIP	L
4520	MTF1	8907	AP1M1	R
4524	MTHFR	51691	LSM8	L
4543	MTNR1A	10672	GNA13	L
4548	MTR	8655	DNCL1	L
4582	MUC1	5580	PRKCD	L
4582	MUC1	6654	SOS1	L
4582	MUC1	6714	SRC	L
4582	MUC1	55644	OSGEP	L
4589	MUC7	6402	SELL	L
4591	TRIM37	7185	TRAF1	L
4591	TRIM37	7186	TRAF2	L
4591	TRIM37	7187	TRAF3	L
4591	TRIM37	7188	TRAF5	L
4591	TRIM37	7189	TRAF6	L
4591	TRIM37	9055	PRC1	R
4591	TRIM37	9513	FXR2	R
4591	TRIM37	9618	TRAF4	L
4591	TRIM37	9729	KIAA0408	R
4591	TRIM37	9787	DLG7	R
4591	TRIM37	10445	MCRS1	R
4591	TRIM37	11170	TU3A	R
4591	TRIM37	11284	PNKP	R

4591	TRIM37	26150	RIBC2	R
4591	TRIM37	27301	APEX2	R
4591	TRIM37	51224	TCEB3B	R
4591	TRIM37	55388	MCM10	R
4591	TRIM37	55872	PBK	R
4591	TRIM37	79027	ZNF655	R
4591	TRIM37	79843	FLJ22746	R
4591	TRIM37	79873	NUDT18	R
4591	TRIM37	114822	RHPN1	R
4591	TRIM37	147687	ZNF417	R
4591	TRIM37	286514	MAGEB18	R
4593	MUSK	5913	RAPSN	L
4593	MUSK	23345	SYNE1	L
4595	MUTYH	5111	PCNA	L
4595	MUTYH	6117	RPA1	L
4595	MUTYH	90678	LRSAM1	S
4597	MVD	9044	BTAF1	L
4597	MVD	10681	GNB5	S
4599	MX1	7280	TUBB2	L
4601	MXI1	9126	CSPG6	L
4602	MYB	5079	PAX5	L
4602	MYB	5371	PML	L
4602	MYB	7329	UBE2I	L
4602	MYB	8458	TTF2	L
4602	MYB	10514	MYBBP1A	L
4602	MYB	27044	SND1	L
4605	MYBL2	5933	RBL1	L
4605	MYBL2	6502	SKP2	L
4605	MYBL2	7314	UBB	L
4605	MYBL2	8900	CCNA1	L
4605	MYBL2	9612	NCOR2	L
4605	MYBL2	27044	SND1	L
4605	MYBL2	90441	ZNF622	L
4606	MYBPC2	4608	MYBPH	L
4607	MYBPC3	7273	TTN	L
4609	MYC	4801	NFYB	L
4609	MYC	4802	NFYC	L
4609	MYC	5598	MAPK7	L
4609	MYC	5599	MAPK8	L
4609	MYC	5604	MAP2K1	L
4609	MYC	5891	RAGE	L
4609	MYC	5894	RAF1	L
4609	MYC	5925	RB1	L
4609	MYC	5933	RBL1	L
4609	MYC	5970	RELA	L
4609	MYC	6598	SMARCB1	L
4609	MYC	6667	SP1	L
4609	MYC	7021	TFAP2B	L
4609	MYC	7074	TIAM1	L
4609	MYC	7161	TP73	L
4609	MYC	7277	TUBA1	L
4609	MYC	7278	TUBA2	L
4609	MYC	7528	YY1	L
4609	MYC	7709	ZBTB17	L
4609	MYC	7846	TUBA3	L
4609	MYC	8295	TRRAP	L
4609	MYC	8464	SUPT3H	L
4609	MYC	9043	SPAG9	L
4609	MYC	9111	NMI	L
4609	MYC	10376	K-ALPHA-1	L
4609	MYC	10524	HTATIP	L
4609	MYC	23077	MYCBP2	L
4609	MYC	26292	MYCBP	L
4609	MYC	51807	TUBA8	L
4613	MYCN	9111	NMI	L
4613	MYCN	10138	YAF2	L
4615	MYD88	7098	TLR3	L

4615	MYD88	7099	TLR4	L
4615	MYD88	8405	SPOP	R
4615	MYD88	8772	FADD	L
4615	MYD88	51135	IRAK4	L
4615	MYD88	114609	TIRAP	L
4616	GADD45B	5111	PCNA	L
4616	GADD45B	5465	PPARA	L
4616	GADD45B	5467	PPARD	L
4616	GADD45B	5468	PPARG	L
4616	GADD45B	90480	GADD45GIP1	L
4617	MYF5	6929	TCF3	L
4618	MYF6	8048	CSRP3	L
4620	MYH2	5581	PRKCE	L
4627	MYH9	5829	PXN	L
4627	MYH9	7414	VCL	L
4627	MYH9	10398	MYL9	S
4627	MYH9	84164	ASCC2	S
4628	MYH10	5087	PBX1	L
4628	MYH10	10134	BCAP31	L
4628	MYH10	57473	GM632	L
4629	MYH11	8550	MAPKAPK5	L
4633	MYL2	4653	MYOC	L
4633	MYL2	5062	PAK2	L
4633	MYL2	54776	PPP1R12C	L
4633	MYL2	90678	LRSAM1	S
4637	MYL6	5829	PXN	L
4637	MYL6	7414	VCL	L
4637	MYL6	11051	NUDT21	R
4637	MYL6	25843	PREI3	S
4638	MYLK	5058	PAK1	L
4638	MYLK	5578	PRKCA	L
4638	MYLK	5595	MAPK3	L
4638	MYLK	6714	SRC	L
4638	MYLK	25865	PRKD2	L
4644	MYO5A	5873	RAB27A	L
4644	MYO5A	8655	DNCL1	L
4644	MYO5A	10612	TRIM3	L
4644	MYO5A	79083	MLPH	L
4644	MYO5A	140465	MLC1SA	L
4645	MYO5B	8766	RAB11A	L
4645	MYO5B	9230	RAB11B	L
4645	MYO5B	22841	RAB11FIP2	L
4645	MYO5B	57111	RAB25	L
4646	MYO6	10755	GIPC1	L
4646	MYO6	26994	RNF11	L
4647	MYO7A	10083	USH1C	L
4647	MYO7A	55591	VEZATIN	L
4647	MYO7A	64072	CDH23	L
4649	MYO9A	81488	GRINL1A	S
4650	MYO9B	10489	LRRC41	S
4650	MYO9B	25843	PREI3	S
4651	MYO10	8399	PLA2G10	S
4651	MYO10	8655	DNCL1	L
4653	MYOC	118427	OLFM3	L
4654	MYOD1	5710	PSMD4	L
4654	MYOD1	5925	RB1	L
4654	MYOD1	6095	RORA	L
4654	MYOD1	6256	RXRA	L
4654	MYOD1	6667	SP1	L
4654	MYOD1	6722	SRF	L
4654	MYOD1	6774	STAT3	L
4654	MYOD1	6925	TCF4	L
4654	MYOD1	7026	NR2F2	L
4654	MYOD1	7291	TWIST1	L
4654	MYOD1	8048	CSRP3	L
4654	MYOD1	9421	HAND1	L
4654	MYOD1	9612	NCOR2	L

4654	MYOD1	10518	CIB2	L
4654	MYOD1	23462	HEY1	L
4656	MYOG	6667	SP1	L
4656	MYOG	6722	SRF	L
4656	MYOG	8048	CSRP3	L
4659	PPP1R12A	5592	PRKG1	L
4659	PPP1R12A	6093	ROCK1	L
4660	PPP1R12B	5500	PPP1CB	L
4661	MYT1	5300	PIN1	L
4666	NACA	6908	TBP	L
4666	NACA	8772	FADD	L
4666	NACA	11244	ZHX1	S
4666	NACA	55791	C1orf103	S
4666	NACA	60492	MDS025	S
4666	NACA	65991	FUNDC2	S
4666	NACA	84966	IGSF21	S
4666	NACA	150572	SMYD1	L
4670	HNRPM	5829	PXN	L
4670	HNRPM	7916	BAT2	L
4670	HNRPM	10915	TCERG1	L
4670	HNRPM	55885	LMO3	R
4670	HNRPM	83759	RBM30	R
4673	NAP1L1	8850	PCAF	L
4673	NAP1L1	79187	FSD1	S
4674	NAP1L2	8850	PCAF	L
4677	NARS	5829	PXN	L
4677	NARS	27257	LSM1	L
4678	NASP	8355	HIST1H3G	R
4678	NASP	8357	HIST1H3H	R
4678	NASP	9706	ULK2	S
4678	NASP	51631	LUC7L2	S
4678	NASP	126961	HIST2H3C	R
4681	NBL1	7917	BAT3	L
4681	NBL1	29979	UBQLN1	L
4682	NUBP1	4692	NDN	L
4683	NBN	7013	TERF1	L
4683	NBN	7014	TERF2	L
4684	NCAM1	6710	SPTB	L
4684	NCAM1	8128	ST8SIA2	L
4686	NCBP1	9810	RNF40	R
4686	NCBP1	22916	NCBP2	L
4687	NCF1	4688	NCF2	L
4687	NCF1	4790	NFKB1	L
4687	NCF1	5058	PAK1	L
4687	NCF1	9618	TRAF4	L
4687	NCF1	10657	KHDRBS1	L
4687	NCF1	114088	TRIM9	R
4688	NCF2	4689	NCF4	L
4688	NCF2	5879	RAC1	L
4688	NCF2	5880	RAC2	L
4689	NCF4	7295	TXN	L
4690	NCK1	4915	NTRK2	L
4690	NCK1	5058	PAK1	L
4690	NCK1	5062	PAK2	L
4690	NCK1	5159	PDGFRB	L
4690	NCK1	5586	PKN2	L
4690	NCK1	5829	PXN	L
4690	NCK1	5879	RAC1	L
4690	NCK1	5921	RASA1	L
4690	NCK1	6237	RRAS	L
4690	NCK1	6654	SOS1	L
4690	NCK1	7454	WAS	L
4690	NCK1	7456	WASPIP	L
4690	NCK1	8651	SOCS1	L
4690	NCK1	8892	EIF2B2	L
4690	NCK1	8894	EIF2S2	L
4690	NCK1	8976	WASL	L

4690	NCK1	9046	DOK2	L
4690	NCK1	9448	MAP4K4	L
4690	NCK1	9564	BCAR1	L
4690	NCK1	10006	ABI1	L
4690	NCK1	10188	TNK2	L
4690	NCK1	10657	KHDRBS1	L
4690	NCK1	10787	NCKAP1	L
4690	NCK1	29110	TBK1	L
4690	NCK1	29760	BLNK	L
4690	NCK1	50488	MINK1	L
4691	NCL	4869	NPM1	L
4691	NCL	5590	PRKCZ	L
4691	NCL	6282	S100A11	L
4691	NCL	7015	TERT	L
4691	NCL	7150	TOP1	L
4691	NCL	7157	TP53	L
4691	NCL	10891	PPARGC1A	L
4691	NCL	11033	CENTA1	L
4691	NCL	23075	SWAP70	L
4692	NDN	4804	NGFR	L
4692	NDN	4924	NUCB1	L
4692	NDN	4925	NUCB2	L
4692	NDN	7157	TP53	L
4692	NDN	64219	PJA1	L
4698	NDUFA5	4707	NDUFB1	R
4698	NDUFA5	9802	DAZAP2	R
4698	NDUFA5	11007	DIPA	R
4700	NDUFA6	7917	BAT3	S
4700	NDUFA6	9519	TBPL1	S
4700	NDUFA6	9551	ATP5J2	S
4701	NDUFA7	5564	PRKAB1	S
4701	NDUFA7	57519	STARD9	S
4701	NDUFA7	60528	ELAC2	S
4703	NEB	7111	TMOD1	L
4703	NEB	7273	TTN	L
4703	NEB	84665	MYPN	L
4714	NDUFB8	5217	PFN2	S
4714	NDUFB8	8891	EIF2B3	S
4714	NDUFB8	11040	PIM2	S
4715	NDUFB9	6457	SH3GL3	S
4715	NDUFB9	8518	IKBKAP	S
4715	NDUFB9	9001	HAP1	S
4715	NDUFB9	9638	FEZ1	S
4715	NDUFB9	10989	IMMT	S
4729	NDUFV2	10524	HTATIP	S
4731	NDUFV3	9796	PHYHIP	S
4733	DRG1	51389	RWDD1	R
4734	NEDD4	4778	NFE2	L
4734	NEDD4	6142	RPL18A	S
4734	NEDD4	6337	SCNN1A	L
4734	NEDD4	6338	SCNN1B	L
4734	NEDD4	6340	SCNN1G	L
4734	NEDD4	6446	SGK	L
4734	NEDD4	7322	UBE2D2	L
4734	NEDD4	7323	UBE2D3	L
4734	NEDD4	7324	UBE2E1	L
4734	NEDD4	7332	UBE2L3	L
4734	NEDD4	7805	LAPTM5	L
4734	NEDD4	9146	HGS	L
4734	NEDD4	9802	DAZAP2	L
4734	NEDD4	23138	N4BP3	L
4734	NEDD4	26994	RNF11	L
4734	NEDD4	30011	SH3KBP1	L
4734	NEDD4	55728	N4BP2	L
4734	NEDD4	56937	TMEPAI	L
4735	SEPT2	5413	SEPT5	L
4735	SEPT2	6804	STX1A	L

4735	SEPT2	9802	DAZAP2	R
4735	SEPT2	10801	SEPT9	L
4735	SEPT2	23157	SEPT6	R
4738	NEDD8	5710	PSMD4	L
4738	NEDD8	7345	UCHL1	S
4738	NEDD8	7347	UCHL3	L
4738	NEDD8	8452	CUL3	L
4738	NEDD8	9039	UBE1C	L
4738	NEDD8	9040	UBE2M	L
4738	NEDD8	10054	UBA2	L
4738	NEDD8	51667	NYREN18	L
4739	NEDD9	51343	FZR1	L
4739	NEDD9	83737	ITCH	L
4741	NEF3	4744	NEFH	L
4741	NEF3	6812	STXBP1	L
4744	NEFH	4747	NEFL	L
4744	NEFH	5585	PKN1	L
4744	NEFH	6812	STXBP1	L
4747	NEFL	5585	PKN1	L
4747	NEFL	6709	SPTAN1	L
4747	NEFL	7248	TSC1	L
4747	NEFL	55755	CDK5RAP2	S
4750	NEK1	7158	TP53BP1	L
4750	NEK1	7249	TSC2	L
4750	NEK1	8727	CTNNAL1	L
4750	NEK1	54512	EXOSC4	L
4750	NEK1	59348	ZNF350	L
4751	NEK2	5504	PPP1R2	L
4751	NEK2	5594	MAPK1	L
4751	NEK2	10403	KNTC2	L
4751	NEK2	11190	CEP2	L
4756	NEO1	9423	NTN1	L
4758	NEU1	5476	PPGB	L
4760	NEUROD1	5307	PITX1	L
4760	NEUROD1	6239	RREB1	L
4760	NEUROD1	9001	HAP1	L
4761	NEUROD2	5585	PKN1	L
4763	NF1	7266	DNAJC7	L
4771	NF2	5829	PXN	L
4771	NF2	6386	SDCBP	L
4771	NF2	6711	SPTBN1	L
4771	NF2	6895	TARBP2	L
4771	NF2	7248	TSC1	L
4771	NF2	7430	VIL2	L
4771	NF2	7514	XPO1	L
4771	NF2	9146	HGS	L
4771	NF2	9368	SLC9A3R1	L
4772	NFATC1	5292	PIM1	L
4773	NFATC2	5300	PIN1	L
4773	NFATC2	5590	PRKCZ	L
4773	NFATC2	7431	VIM	S
4773	NFATC2	7534	YWHAZ	L
4773	NFATC2	10971	YWHAQ	L
4773	NFATC2	51003	MED31	S
4776	NFATC4	7534	YWHAZ	L
4776	NFATC4	10971	YWHAQ	L
4778	NFE2	4780	NFE2L2	L
4778	NFE2	7975	MAFK	L
4778	NFE2	9586	CREB5	L
4778	NFE2	9603	NFE2L3	L
4778	NFE2	9796	PHYHIP	S
4778	NFE2	10413	YAP1	L
4778	NFE2	58487	ZF	L
4778	NFE2	90993	CREB3L1	L
4779	NFE2L1	7975	MAFK	L
4779	NFE2L1	9586	CREB5	L
4779	NFE2L1	9935	MAFB	L

4779	NFE2L1	23764	MAFF	L
4779	NFE2L1	58487	ZF	L
4780	NFE2L2	5468	PPARG	L
4780	NFE2L2	7975	MAFK	L
4780	NFE2L2	9451	EIF2AK3	L
4780	NFE2L2	11243	PMF1	L
4780	NFE2L2	23764	MAFF	L
4781	NFIB	4782	NFIC	L
4781	NFIB	4784	NFIX	L
4782	NFIC	23174	ZCCHC14	R
4782	NFIC	55888	ZNF167	R
4782	NFIC	84076	TKTL2	R
4782	NFIC	84298	MGC14817	R
4782	NFIC	89882	NYD-SP25	R
4783	NFIL3	10488	CREB3	L
4783	NFIL3	10538	BATF	L
4783	NFIL3	55509	SNFT	L
4783	NFIL3	84699	CREB3L3	L
4783	NFIL3	90993	CREB3L1	L
4784	NFIX	5989	RFX1	L
4784	NFIX	6497	SKI	L
4784	NFIX	8544	PIR	L
4790	NFKB1	4792	NFKBIA	L
4790	NFKB1	4794	NFKBIE	L
4790	NFKB1	4798	NFRKB	L
4790	NFKB1	4851	NOTCH1	L
4790	NFKB1	5531	PPP4C	L
4790	NFKB1	5591	PRKDC	L
4790	NFKB1	6256	RXRA	L
4790	NFKB1	6688	SPI1	L
4790	NFKB1	6774	STAT3	L
4790	NFKB1	6778	STAT6	L
4790	NFKB1	7295	TXN	L
4790	NFKB1	8091	HMGA2	L
4790	NFKB1	8600	TNFSF11	L
4790	NFKB1	8648	NCOA1	L
4790	NFKB1	9325	TRIP4	L
4790	NFKB1	9612	NCOR2	L
4790	NFKB1	9908	G3BP2	L
4790	NFKB1	23421	ITGB3BP	L
4790	NFKB1	51773	HBXAP	L
4790	NFKB1	64332	NFKBIZ	L
4790	NFKB1	136319	MTPN	L
4790	NFKB1	222643	UNC5CL	L
4791	NFKB2	4794	NFKBIE	L
4791	NFKB2	5966	REL	L
4791	NFKB2	5970	RELA	L
4791	NFKB2	5971	RELB	L
4791	NFKB2	8945	BTRC	L
4791	NFKB2	9020	MAP3K14	L
4791	NFKB2	55922	NKRF	L
4792	NFKBIA	5295	PIK3R1	L
4792	NFKBIA	5783	PTPN13	L
4792	NFKBIA	6195	RPS6KA1	L
4792	NFKBIA	7157	TP53	L
4792	NFKBIA	7278	TUBA2	L
4792	NFKBIA	7415	VCP	L
4792	NFKBIA	8600	TNFSF11	L
4792	NFKBIA	8655	DNCL1	L
4792	NFKBIA	8945	BTRC	L
4792	NFKBIA	9883	POM121	R
4792	NFKBIA	9908	G3BP2	L
4792	NFKBIA	10376	K-ALPHA-1	L
4792	NFKBIA	10477	UBE2E3	L
4792	NFKBIA	23085	RAB6IP2	L
4792	NFKBIA	23291	FBXW11	L
4792	NFKBIA	219541	MED19	S

4792	NFKBIA	387082	SUMO4	L
4793	NFKBIB	5970	RELA	L
4793	NFKBIB	6256	RXRA	L
4793	NFKBIB	8945	BTRC	L
4794	NFKBIE	5966	REL	L
4800	NFYA	5451	POU2F1	L
4800	NFYA	6667	SP1	L
4800	NFYA	10513	APPBP2	R
4800	NFYA	11244	ZHX1	L
4800	NFYA	23051	ZHX3	L
4801	NFYB	4802	NFYC	L
4801	NFYB	4904	YBX1	L
4801	NFYB	6900	CNTN2	L
4801	NFYB	6908	TBP	L
4801	NFYB	7161	TP73	L
4801	NFYB	8531	CSDA	L
4801	NFYB	10153	CEBPZ	L
4801	NFYB	10589	DRAP1	R
4803	NGFB	4804	NGFR	L
4803	NGFB	4914	NTRK1	L
4803	NGFB	4919	ROR1	L
4803	NGFB	5340	PLG	L
4803	NGFB	6272	SORT1	L
4803	NGFB	22986	SORCS3	L
4804	NGFR	4909	NTF5	L
4804	NGFR	4914	NTRK1	L
4804	NGFR	4916	NTRK3	L
4804	NGFR	5567	PRKACB	L
4804	NGFR	6434	SFRS10	L
4804	NGFR	6464	SHC1	L
4804	NGFR	6624	FSCN1	L
4804	NGFR	7186	TRAF2	L
4804	NGFR	7189	TRAF6	L
4804	NGFR	7314	UBB	L
4804	NGFR	9500	MAGED1	L
4804	NGFR	9618	TRAF4	L
4807	NHLH1	8048	CSRP3	L
4807	NHLH1	8543	LMO4	L
4809	NHP2L1	5884	RAD17	L
4809	NHP2L1	8241	RBM10	S
4809	NHP2L1	23649	POLA2	S
4809	NHP2L1	55791	C1orf103	S
4811	NID1	5328	PLAU	L
4811	NID1	5549	PRELP	L
4811	NID1	5792	PTPRF	L
4811	NID1	6498	SKIL	L
4811	NID1	90070	LACRT	L
4817	NIT1	9372	ZFYVE9	L
4824	NKX3-1	6722	SRF	L
4824	NKX3-1	28996	HIPK2	L
4828	NMB	4829	NMBR	L
4830	NME1	4832	NME3	RL
4830	NME1	4833	NME4	R
4830	NME1	6095	RORA	L
4830	NME1	6096	RORB	L
4830	NME1	6236	RRAD	L
4830	NME1	6418	SET	L
4830	NME1	6790	STK6	L
4830	NME1	7013	TERF1	L
4830	NME1	7074	TIAM1	L
4830	NME1	9533	POLR1C	R
4830	NME1	26003	GORASP2	R
4830	NME1	55093	C8orf32	R
4831	NME2	4832	NME3	SL
4831	NME2	6095	RORA	L
4831	NME2	7013	TERF1	L
4831	NME2	7414	VCL	L

4831	NME2	7431	VIM	L
4831	NME2	11214	AKAP13	L
4832	NME3	6449	SGTA	R
4833	NME4	9319	TRIP13	R
4835	NQO2	26003	GORASP2	R
4839	NOL1	5795	PTPRJ	L
4839	NOL1	10445	MCRS1	L
4841	NONO	5111	PCNA	L
4841	NONO	5300	PIN1	R
4841	NONO	5430	POLR2A	L
4841	NONO	5829	PXN	L
4841	NONO	6421	SFPQ	L
4841	NONO	6688	SPI1	L
4841	NONO	7414	VCL	L
4841	NONO	8379	MAD1L1	R
4841	NONO	9513	FXR2	R
4841	NONO	30834	ZNRD1	R
4841	NONO	55269	PSPC1	S
4841	NONO	79666	PLEKHF2	R
4842	NOS1	5777	PTPN6	L
4842	NOS1	5798	PTPRN	L
4842	NOS1	6640	SNTA1	L
4842	NOS1	8655	DNCL1	L
4842	NOS1	51655	RASD1	L
4843	NOS2A	5879	RAC1	L
4843	NOS2A	9368	SLC9A3R1	L
4846	NOS3	6667	SP1	L
4846	NOS3	115677	NOSTRIN	L
4848	CNOT2	4849	CNOT3	R
4848	CNOT2	23019	CNOT1	L
4849	CNOT3	9337	CNOT8	L
4850	CNOT4	9337	CNOT8	L
4850	CNOT4	23019	CNOT1	L
4851	NOTCH1	4856	NOV	L
4851	NOTCH1	5294	PIK3CG	L
4851	NOTCH1	5663	PSEN1	L
4851	NOTCH1	5970	RELA	L
4851	NOTCH1	7528	YY1	L
4851	NOTCH1	8650	NUMB	L
4851	NOTCH1	8850	PCAF	L
4851	NOTCH1	9794	MAML1	L
4851	NOTCH1	51176	LEF1	L
4851	NOTCH1	54567	DLL4	L
4851	NOTCH1	55294	FBXW7	L
4851	NOTCH1	83737	ITCH	L
4852	NPY	4886	NPY1R	L
4852	NPY	4887	NPY2R	L
4852	NPY	4889	NPY5R	L
4852	NPY	5367	PMCH	L
4852	NPY	5540	PPYR1	L
4852	NPY	8620	NPFF	L
4852	NPY	51738	GHRL	L
4853	NOTCH2	9794	MAML1	L
4853	NOTCH2	28514	DLL1	L
4854	NOTCH3	8850	PCAF	L
4854	NOTCH3	9794	MAML1	L
4854	NOTCH3	22938	SNW1	L
4854	NOTCH3	28514	DLL1	L
4855	NOTCH4	54567	DLL4	L
4855	NOTCH4	55294	FBXW7	L
4857	NOVA1	6601	SMARCC2	S
4860	NP	7157	TP53	S
4860	NP	11244	ZHX1	S
4860	NP	55791	C1orf103	S
4860	NP	60492	MDS025	S
4860	NP	83988	NCALD	L
4860	NP	84060	DKFZP564O0523	S

4862	NPAS2	6256	RXRA	L
4862	NPAS2	8202	NCOA3	L
4863	NPAT	5451	POU2F1	L
4867	NPHP1	7145	TNS1	L
4867	NPHP1	7280	TUBB2	L
4867	NPHP1	9564	BCAR1	L
4867	NPHP1	27031	NPHP3	L
4867	NPHP1	27130	INVS	L
4867	NPHP1	261734	NPHP4	L
4868	NPHS1	6714	SRC	L
4868	NPHS1	7525	YES1	L
4868	NPHS1	7827	NPHS2	L
4868	NPHS1	8573	CASK	L
4868	NPHS1	23607	CD2AP	L
4868	NPHS1	55243	KIRREL	L
4869	NPM1	8290	HIST3H3	L
4869	NPM1	9464	HAND2	L
4869	NPM1	10915	TCERG1	L
4869	NPM1	23075	SWAP70	L
4878	NPPA	4881	NPR1	L
4878	NPPA	4883	NPR3	L
4879	NPPB	4881	NPR1	L
4879	NPPB	4883	NPR3	L
4880	NPPC	4882	NPR2	L
4880	NPPC	4883	NPR3	L
4881	NPR1	5592	PRKG1	L
4881	NPR1	55729	ATF7IP	L
4886	NPY1R	51690	LSM7	L
4887	NPY2R	5697	PYY	L
4887	NPY2R	6002	RGS12	L
4892	NRAP	7094	TLN1	L
4892	NRAP	7414	VCL	L
4893	NRAS	5910	RAP1GDS1	L
4893	NRAS	8036	SHOC2	L
4893	NRAS	10235	RASGRP2	L
4893	NRAS	51196	PLCE1	S
4897	NRCAM	5787	PTPRB	L
4897	NRCAM	6900	CNTN2	L
4899	NRF1	7975	MAFK	L
4899	NRF1	8655	DNCL1	L
4899	NRF1	10891	PPARGC1A	L
4899	NRF1	23764	MAFF	L
4901	NRL	84922	FLJ14768	L
4902	NRTN	5979	RET	L
4904	YBX1	5111	PCNA	L
4904	YBX1	5813	PURA	L
4904	YBX1	5829	PXN	L
4904	YBX1	7020	TFAP2A	L
4904	YBX1	7094	TLN1	L
4904	YBX1	7157	TP53	L
4904	YBX1	8683	SFRS9	L
4904	YBX1	10664	CTCF	L
4905	NSF	6176	RPLP1	S
4905	NSF	6804	STX1A	L
4905	NSF	6810	STX4A	L
4905	NSF	8615	VDP	L
4905	NSF	9482	STX8	L
4905	NSF	9527	GOSR1	L
4905	NSF	11161	C14orf1	S
4905	NSF	11337	GABARAP	L
4905	NSF	51631	LUC7L2	S
4905	NSF	57562	KIAA1377	S
4905	NSF	65991	FUNDC2	S
4908	NTF3	4915	NTRK2	L
4908	NTF3	4916	NTRK3	L
4909	NTF5	4915	NTRK2	L
4914	NTRK1	5770	PTPN1	L

4914	NTRK1	6464	SHC1	L
4914	NTRK1	10755	GIPC1	L
4914	NTRK1	10818	FRS2	L
4914	NTRK1	23623	RUSC1	L
4915	NTRK2	5770	PTPN1	L
4915	NTRK2	8440	NCK2	L
4915	NTRK2	8655	DNCL1	L
4915	NTRK2	8878	SQSTM1	L
4915	NTRK2	10755	GIPC1	L
4916	NTRK3	5335	PLCG1	L
4916	NTRK3	5594	MAPK1	L
4916	NTRK3	5770	PTPN1	L
4916	NTRK3	6464	SHC1	L
4916	NTRK3	8878	SQSTM1	L
4916	NTRK3	27018	NGFRAP1	L
4920	ROR2	9500	MAGED1	L
4921	DDR2	6464	SHC1	L
4921	DDR2	6714	SRC	L
4922	NTS	4923	NTSR1	L
4922	NTS	6272	SORT1	L
4922	NTS	23620	NTSR2	L
4923	NTSR1	7189	TRAF6	L
4924	NUCB1	5743	PTGS2	L
4926	NUMA1	5292	PIM1	L
4926	NUMA1	5885	RAD21	L
4926	NUMA1	8089	YEATS4	L
4926	NUMA1	8243	SMC1L1	L
4926	NUMA1	8658	TNKS	L
4926	NUMA1	10121	ACTR1A	L
4926	NUMA1	29899	GPSM2	L
4927	NUP88	4928	NUP98	L
4927	NUP88	8021	NUP214	L
4928	NUP98	7175	TPR	L
4928	NUP98	8021	NUP214	L
4928	NUP98	10482	NXF1	L
4928	NUP98	23636	NUP62	L
4928	NUP98	55746	NUP133	L
4929	NR4A2	6256	RXRA	L
4929	NR4A2	6257	RXRB	L
4935	GPR143	8801	SUCLG2	L
4942	OAT	54978	C2orf18	S
4946	OAZ1	4953	ODC1	L
4950	OCLN	7082	TJP1	L
4950	OCLN	7525	YES1	L
4950	OCLN	9414	TJP2	L
4950	OCLN	83737	ITCH	L
4952	OCRL	9950	GOLGA5	L
4956	ODF1	4957	ODF2	L
4956	ODF1	6676	SPAG4	L
4956	ODF1	7205	TRIP6	L
4956	ODF1	10615	SPAG5	L
4967	OGDH	5359	PLSCR1	R
4968	OGG1	5578	PRKCA	L
4968	OGG1	7515	XRCC1	L
4982	TNFRSF11B	8600	TNFSF11	L
4982	TNFRSF11B	8743	TNFSF10	L
4982	TNFRSF11B	407977	TNFSF12-TNFSF13	L
4983	OPHN1	5879	RAC1	L
4985	OPRD1	4986	OPRK1	L
4985	OPRD1	4988	OPRM1	L
4985	OPRD1	9737	GPRASP1	L
4986	OPRK1	9368	SLC9A3R1	L
4987	OPRL1	5368	PNOC	L
4987	OPRL1	9630	GNA14	L
4987	OPRL1	10287	RGS19	L
4988	OPRM1	5338	PLD2	L
4988	OPRM1	9737	GPRASP1	L

4990	SIX6	7088	TLE1	L
4998	ORC1L	4999	ORC2L	L
4998	ORC1L	5000	ORC4L	L
4998	ORC1L	5001	ORC5L	L
4998	ORC1L	6502	SKP2	L
4998	ORC1L	7514	XPO1	L
4998	ORC1L	8317	CDC7	L
4998	ORC1L	11143	MYST2	L
4998	ORC1L	23595	ORC3L	L
4998	ORC1L	81620	CDT1	L
4998	ORC1L	115106	CCDC5	L
4999	ORC2L	5000	ORC4L	L
4999	ORC2L	5001	ORC5L	L
4999	ORC2L	6117	RPA1	L
4999	ORC2L	6118	RPA2	L
4999	ORC2L	7520	XRCC5	L
4999	ORC2L	10926	ASK	L
4999	ORC2L	23594	ORC6L	L
4999	ORC2L	23595	ORC3L	L
4999	ORC2L	55388	MCM10	L
4999	ORC2L	81620	CDT1	L
4999	ORC2L	115106	CCDC5	L
5000	ORC4L	5001	ORC5L	L
5000	ORC4L	23594	ORC6L	L
5000	ORC4L	23595	ORC3L	L
5000	ORC4L	55388	MCM10	L
5001	ORC5L	8317	CDC7	L
5001	ORC5L	8318	CDC45L	L
5001	ORC5L	23595	ORC3L	L
5004	ORM1	5054	SERPINE1	L
5008	OSM	9180	OSMR	L
5009	OTC	9804	TOMM20	L
5013	OTX1	11030	RBPMS	R
5013	OTX1	26511	CHIC2	R
5013	OTX1	83755	KRTAP4-12	R
5016	OVGP1	6779	STATH	L
5016	OVGP1	10156	RASA4	S
5027	P2RX7	6840	SVIL	L
5028	P2RY1	9351	SLC9A3R2	L
5028	P2RY1	9368	SLC9A3R1	L
5033	P4HA1	5829	PXN	L
5034	P4HB	5764	PTN	S
5034	P4HB	5829	PXN	L
5034	P4HB	7038	TG	L
5034	P4HB	9638	FEZ1	S
5034	P4HB	29979	UBQLN1	L
5036	PA2G4	5925	RB1	L
5037	PBP	5578	PRKCA	L
5037	PBP	5580	PRKCD	L
5037	PBP	5594	MAPK1	L
5037	PBP	5604	MAP2K1	L
5037	PBP	5894	RAF1	L
5037	PBP	6885	MAP3K7	L
5037	PBP	8614	STC2	S
5037	PBP	84246	TRG20	S
5045	FURIN	5271	SERPINB8	L
5045	FURIN	55690	PACS1	L
5047	PAEP	5788	PTPRC	L
5047	PAEP	7324	UBE2E1	S
5047	PAEP	10980	COPS6	S
5047	PAEP	55791	C1orf103	S
5047	PAEP	84966	IGSF21	S
5048	PAFAH1B1	5049	PAFAH1B2	L
5048	PAFAH1B1	5050	PAFAH1B3	L
5048	PAFAH1B1	6249	RSN	L
5048	PAFAH1B1	10808	HSPH1	L
5048	PAFAH1B1	27019	DNAI1	L

5048	PAFAH1B1	81565	NDEL1	L
5049	PAFAH1B2	5050	PAFAH1B3	R
5049	PAFAH1B2	5071	PARK2	S
5049	PAFAH1B2	6175	RPLP0	S
5049	PAFAH1B2	6503	SLA	S
5049	PAFAH1B2	7203	CCT3	S
5049	PAFAH1B2	10073	RNUT1	S
5049	PAFAH1B2	22985	ACIN1	S
5049	PAFAH1B2	25842	ASF1A	S
5049	PAFAH1B2	54776	PPP1R12C	S
5049	PAFAH1B2	54984	PINX1	S
5049	PAFAH1B2	57455	REXO1	S
5049	PAFAH1B2	92609	TIMM50	S
5050	PAFAH1B3	7088	TLE1	S
5050	PAFAH1B3	7157	TP53	S
5050	PAFAH1B3	7280	TUBB2	S
5050	PAFAH1B3	7704	ZBTB16	S
5050	PAFAH1B3	9094	UNC119	S
5050	PAFAH1B3	9842	PLEKHM1	S
5050	PAFAH1B3	9869	SETDB1	S
5050	PAFAH1B3	10980	COPS6	S
5050	PAFAH1B3	11161	C14orf1	S
5050	PAFAH1B3	11244	ZHX1	S
5050	PAFAH1B3	27111	SDCBP2	R
5050	PAFAH1B3	29117	BRD7	S
5050	PAFAH1B3	51003	MED31	S
5050	PAFAH1B3	55791	C1orf103	S
5050	PAFAH1B3	57062	DDX24	S
5050	PAFAH1B3	60492	MDS025	S
5050	PAFAH1B3	84060	DKFZP564O0523	S
5050	PAFAH1B3	84708	LNX	R
5050	PAFAH1B3	84966	IGSF21	S
5050	PAFAH1B3	91782	CHMP7	R
5050	PAFAH1B3	222019	(null)	S
5052	PRDX1	5829	PXN	L
5052	PRDX1	10549	PRDX4	L
5052	PRDX1	27244	SESN1	L
5054	SERPINE1	5327	PLAT	L
5054	SERPINE1	5340	PLG	L
5054	SERPINE1	7056	THBD	L
5054	SERPINE1	7448	VTN	L
5055	SERPINB2	5328	PLAU	L
5055	SERPINB2	5925	RB1	L
5058	PAK1	5335	PLCG1	L
5058	PAK1	5829	PXN	L
5058	PAK1	5879	RAC1	L
5058	PAK1	5894	RAF1	L
5058	PAK1	8440	NCK2	L
5058	PAK1	8851	CDK5R1	L
5058	PAK1	8874	ARHGEF7	L
5058	PAK1	9146	HGS	L
5058	PAK1	9459	ARHGEF6	L
5058	PAK1	9647	PPM1F	L
5058	PAK1	10095	ARPC1B	L
5058	PAK1	51225	ABI3	L
5058	PAK1	55003	PAK1IP1	L
5058	PAK1	57381	RHOJ	L
5062	PAK2	5879	RAC1	L
5062	PAK2	8874	ARHGEF7	L
5062	PAK2	10006	ABI1	L
5062	PAK2	30011	SH3KBP1	L
5062	PAK2	51225	ABI3	L
5063	PAK3	5829	PXN	L
5063	PAK3	8874	ARHGEF7	L
5063	PAK3	9459	ARHGEF6	L
5063	PAK3	9815	GIT2	L
5063	PAK3	28964	GIT1	L

5066	PAM	8997	KALRN	L
5066	PAM	9182	PAMCI	L
5068	REG3A	5967	REG1A	L
5068	REG3A	6383	SDC2	L
5069	PAPPA	5340	PLG	L
5069	PAPPA	5553	PRG2	L
5069	PAPPA	6498	SKIL	L
5069	PAPPA	55729	ATF7IP	L
5071	PARK2	5413	SEPT5	L
5071	PARK2	5414	SEPT4	L
5071	PARK2	5810	RAD1	S
5071	PARK2	5879	RAC1	S
5071	PARK2	5997	RGS2	S
5071	PARK2	6622	SNCA	L
5071	PARK2	7314	UBB	L
5071	PARK2	7326	UBE2G1	L
5071	PARK2	7332	UBE2L3	L
5071	PARK2	7414	VCL	L
5071	PARK2	7965	JTV1	L
5071	PARK2	8573	CASK	L
5071	PARK2	9246	UBE2L6	L
5071	PARK2	9319	TRIP13	R
5071	PARK2	9627	SNCAIP	L
5071	PARK2	55294	FBXW7	L
5071	PARK2	56901	LOC56901	S
5071	PARK2	284004	FLJ23825	S
5073	PARN	8570	KHSRP	L
5073	PARN	10200	MPHOSPH6	L
5073	PARN	84221	C21orf56	L
5074	PAWR	5371	PML	L
5074	PAWR	5590	PRKCZ	L
5074	PAWR	7490	WT1	L
5074	PAWR	22800	RRAS2	S
5076	PAX2	5599	MAPK8	L
5076	PAX2	22976	PAXIP1	L
5077	PAX3	6663	SOX10	L
5077	PAX3	10519	CIB1	L
5079	PAX5	7091	TLE4	L
5080	PAX6	5087	PBX1	L
5080	PAX6	6496	SIX3	L
5080	PAX6	6657	SOX2	L
5080	PAX6	6658	SOX3	L
5080	PAX6	6908	TBP	L
5080	PAX6	9670	IPO13	R
5080	PAX6	30062	RAX	L
5081	PAX7	7290	HIRA	L
5082	PDCL	6950	TCP1	L
5083	PAX9	10765	JARID1B	L
5089	PBX2	6124	RPL4	L
5089	PBX2	8518	IKBKAP	L
5089	PBX2	10445	MCRS1	L
5089	PBX2	10458	BAIAP2	L
5089	PBX2	10980	COPS6	L
5089	PBX2	11258	DCTN3	L
5089	PBX2	23636	NUP62	L
5089	PBX2	26750	RPS6KC1	L
5089	PBX2	55625	ZDHHC7	L
5089	PBX2	64754	SMYD3	L
5089	PBX2	197259	MLKL	L
5089	PBX2	283234	FLJ37970	L
5090	PBX3	57085	AGTRAP	R
5092	PCBD1	6927	TCF1	L
5092	PCBD1	9149	DYRK1B	L
5092	PCBD1	9513	FXR2	R
5092	PCBD1	26003	GORASP2	R
5092	PCBD1	55093	C8orf32	R
5092	PCBD1	60491	NIF3L1	R

5092	PCBD1	79873	NUDT18	R
5092	PCBD1	84708	LNX	R
5093	PCBP1	10915	TCERG1	L
5093	PCBP1	26986	PABPC1	L
5094	PCBP2	5725	PTBP1	L
5094	PCBP2	26986	PABPC1	L
5094	PCBP2	55660	FNBP3	L
5097	PCDH1	55729	ATF7IP	L
5104	SERPINA5	5327	PLAT	L
5104	SERPINA5	5328	PLAU	L
5104	SERPINA5	5624	PROC	L
5104	SERPINA5	6407	SEMG2	L
5104	SERPINA5	7056	THBD	L
5104	SERPINA5	10980	COPS6	S
5108	PCM1	5116	PCNT2	L
5108	PCM1	9001	HAP1	L
5108	PCM1	10152	ABI2	R
5108	PCM1	23392	KIAA0368	R
5108	PCM1	51019	CGI-116	R
5108	PCM1	55722	Cep72	R
5108	PCM1	84289	ING5	R
5108	PCM1	123016	TTC8	L
5108	PCM1	149371	EXOC8	R
5111	PCNA	5423	POLB	L
5111	PCNA	5424	POLD1	L
5111	PCNA	5425	POLD2	L
5111	PCNA	5426	POLE	L
5111	PCNA	5429	POLH	L
5111	PCNA	5591	PRKDC	L
5111	PCNA	5757	PTMA	L
5111	PCNA	5883	RAD9A	L
5111	PCNA	5981	RFC1	L
5111	PCNA	5982	RFC2	L
5111	PCNA	5983	RFC3	L
5111	PCNA	5984	RFC4	L
5111	PCNA	5985	RFC5	L
5111	PCNA	6949	TCOF1	L
5111	PCNA	7374	UNG	L
5111	PCNA	7486	WRN	L
5111	PCNA	7515	XRCC1	L
5111	PCNA	7520	XRCC5	L
5111	PCNA	9156	EXO1	L
5111	PCNA	10036	CHAF1A	L
5111	PCNA	10309	UNG2	L
5111	PCNA	10514	MYBBP1A	L
5111	PCNA	10714	POLD3	L
5111	PCNA	10912	GADD45G	L
5111	PCNA	10923	SUB1	L
5111	PCNA	26073	POLDIP2	L
5111	PCNA	27301	APEX2	L
5111	PCNA	27343	POLL	L
5111	PCNA	30836	ERBP	L
5111	PCNA	79075	DCC1	L
5111	PCNA	253980	KCTD13	L
5116	PCNT2	7283	TUBG1	L
5116	PCNT2	10142	AKAP9	L
5116	PCNT2	10426	TUBGCP3	L
5116	PCNT2	27185	DISC1	L
5118	PCOLCE	5829	PXN	L
5125	PCSK5	5972	REN	L
5125	PCSK5	10513	APPBP2	R
5126	PCSK2	6447	SGNE1	L
5127	PCTK1	7531	YWHAE	L
5127	PCTK1	7532	YWHAG	L
5127	PCTK1	7533	YWHAH	L
5127	PCTK1	7534	YWHAZ	L
5127	PCTK1	7917	BAT3	S

5128	PCTK2	23424	TDRD7	L
5129	PCTK3	8812	CCNK	R
5129	PCTK3	11007	DIPA	R
5130	PCYT1A	8841	HDAC3	L
5133	PDCD1	29126	CD274	L
5133	PDCD1	80380	PDCD1LG2	L
5134	PDCD2	9611	NCOR1	L
5134	PDCD2	25942	SIN3A	L
5134	PDCD2	51691	LSM8	L
5140	PDE3B	7529	YWHAB	L
5144	PDE4D	9472	AKAP6	L
5144	PDE4D	9659	PDE4DIP	L
5144	PDE4D	10399	GNB2L1	L
5147	PDE6D	5872	RAB13	L
5147	PDE6D	5886	RAD23A	R
5147	PDE6D	5906	RAP1A	L
5147	PDE6D	5912	RAP2B	L
5147	PDE6D	5921	RASA1	L
5147	PDE6D	6009	RHEB	L
5147	PDE6D	6103	RPGR	L
5147	PDE6D	22931	RAB18	S
5147	PDE6D	54622	ARFRP2	S
5147	PDE6D	203259	C9orf25	S
5148	PDE6G	6714	SRC	L
5152	PDE9A	22954	TRIM32	R
5152	PDE9A	84457	PHYHIPL	R
5155	PDGFB	5156	PDGFRA	L
5155	PDGFB	5159	PDGFRB	L
5155	PDGFB	7057	THBS1	L
5155	PDGFB	11333	PDAP1	L
5156	PDGFRA	5159	PDGFRB	L
5156	PDGFRA	5335	PLCG1	L
5156	PDGFRA	5781	PTPN11	L
5156	PDGFRA	6461	SHB	L
5156	PDGFRA	6643	SNX2	L
5156	PDGFRA	8723	SNX4	L
5156	PDGFRA	9368	SLC9A3R1	L
5156	PDGFRA	56034	PDGFC	L
5159	PDGFRB	5295	PIK3R1	L
5159	PDGFRB	5296	PIK3R2	L
5159	PDGFRB	5335	PLCG1	L
5159	PDGFRB	5610	EIF2AK2	L
5159	PDGFRB	5747	PTK2	L
5159	PDGFRB	5781	PTPN11	L
5159	PDGFRB	5894	RAF1	L
5159	PDGFRB	5921	RASA1	L
5159	PDGFRB	6461	SHB	L
5159	PDGFRB	6464	SHC1	L
5159	PDGFRB	6642	SNX1	L
5159	PDGFRB	6714	SRC	L
5159	PDGFRB	8440	NCK2	L
5159	PDGFRB	8503	PIK3R3	L
5159	PDGFRB	8651	SOCS1	L
5159	PDGFRB	9368	SLC9A3R1	L
5159	PDGFRB	11333	PDAP1	L
5159	PDGFRB	30011	SH3KBP1	L
5159	PDGFRB	83755	KRTAP4-12	R
5160	PDHA1	5162	PDHB	L
5161	PDHA2	5162	PDHB	L
5162	PDHB	8050	PDHX	L
5163	PDK1	5164	PDK2	L
5163	PDK1	5580	PRKCD	L
5163	PDK1	7533	YWHAH	L
5164	PDK2	8050	PDHX	L
5164	PDK2	23119	HIC2	S
5164	PDK2	79763	ISOC2	S
5170	PDPK1	5566	PRKACA	L

5170	PDPK1	5579	PRKCB1	L
5170	PDPK1	5580	PRKCD	L
5170	PDPK1	5584	PRKCI	L
5170	PDPK1	5585	PKN1	L
5170	PDPK1	5586	PKN2	L
5170	PDPK1	5590	PRKCZ	L
5170	PDPK1	5900	RALGDS	L
5170	PDPK1	6197	RPS6KA3	L
5170	PDPK1	6198	RPS6KB1	L
5170	PDPK1	6446	SGK	L
5170	PDPK1	7533	YWHAH	L
5170	PDPK1	9351	SLC9A3R2	L
5170	PDPK1	10971	YWHAQ	L
5170	PDPK1	11098	PRSS23	S
5170	PDPK1	64400	FTS	L
5170	PDPK1	146059	CDAN1	S
5174	PDZK1	5830	PEX5	R
5174	PDZK1	6550	SLC9A3	L
5174	PDZK1	6568	SLC17A1	L
5174	PDZK1	6583	SLC22A4	L
5174	PDZK1	10158	PDZK1IP1	L
5174	PDZK1	11216	AKAP10	L
5174	PDZK1	116085	SLC22A12	L
5175	PECAM1	5335	PLCG1	L
5175	PECAM1	5581	PRKCE	L
5175	PECAM1	5777	PTPN6	L
5175	PECAM1	5781	PTPN11	L
5175	PECAM1	6714	SRC	L
5175	PECAM1	7525	YES1	L
5175	PECAM1	55660	FNBP3	L
5178	PEG3	6477	SIAH1	L
5178	PEG3	6478	SIAH2	L
5187	PER1	8863	PER3	L
5187	PER1	8864	PER2	L
5187	PER1	8914	TIMELESS	L
5189	PEX1	5190	PEX6	L
5189	PEX1	55670	PEX26	L
5190	PEX6	55670	PEX26	L
5190	PEX6	55729	ATF7IP	L
5191	PEX7	5194	PEX13	L
5191	PEX7	5195	PEX14	L
5191	PEX7	5264	PHYH	L
5191	PEX7	5830	PEX5	L
5192	PEX10	5193	PEX12	L
5192	PEX10	5824	PEX19	L
5192	PEX10	5828	PXMP3	L
5192	PEX10	5830	PEX5	L
5193	PEX12	5824	PEX19	L
5193	PEX12	5830	PEX5	L
5194	PEX13	5195	PEX14	L
5194	PEX13	5824	PEX19	L
5194	PEX13	5830	PEX5	L
5195	PEX14	5824	PEX19	L
5195	PEX14	5830	PEX5	L
5195	PEX14	6601	SMARCC2	S
5195	PEX14	11244	ZHX1	S
5195	PEX14	112950	MED8	S
5196	PF4	5552	PRG1	L
5196	PF4	5624	PROC	L
5196	PF4	6383	SDC2	L
5196	PF4	7056	THBD	L
5201	PFDN1	5720	PSME1	S
5201	PFDN1	6176	RPLP1	S
5201	PFDN1	9001	HAP1	S
5201	PFDN1	9737	GPRASP1	S
5201	PFDN1	10989	IMMT	S
5201	PFDN1	28964	GIT1	S

5201	PFDN1	51003	MED31	S
5201	PFDN1	55791	C1orf103	S
5201	PFDN1	57562	KIAA1377	S
5201	PFDN1	79953	C20orf39	S
5204	PFDN5	7161	TP73	L
5208	PFKFB2	7534	YWHAZ	L
5208	PFKFB2	10971	YWHAQ	L
5211	PFKL	7094	TLN1	L
5211	PFKL	10980	COPS6	S
5211	PFKL	55660	FNBP3	L
5211	PFKL	83755	KRTAP4-12	R
5213	PFKM	8655	DNCL1	L
5213	PFKM	50617	ATP6V0A4	L
5214	PFKP	8655	DNCL1	L
5216	PFN1	5295	PIK3R1	L
5216	PFN1	7088	TLE1	S
5216	PFN1	7408	VASP	L
5216	PFN1	7414	VCL	L
5216	PFN1	8936	WASF1	L
5216	PFN1	8976	WASL	L
5216	PFN1	9231	DLG5	S
5216	PFN1	10243	GPHN	L
5216	PFN1	11161	C14orf1	S
5216	PFN1	23214	XPO6	L
5216	PFN1	23433	RHOQ	L
5217	PFN2	5329	PLAUR	S
5217	PFN2	5413	SEPT5	S
5217	PFN2	5802	PTPRS	S
5217	PFN2	5909	RAP1GA1	S
5217	PFN2	6093	ROCK1	L
5217	PFN2	6204	RPS10	S
5217	PFN2	6449	SGTA	S
5217	PFN2	7013	TERF1	S
5217	PFN2	7408	VASP	L
5217	PFN2	10625	IVNS1ABP	S
5217	PFN2	29070	HSPC065	S
5217	PFN2	29109	FHOD1	L
5217	PFN2	51466	EVL	L
5217	PFN2	55339	WDR33	S
5217	PFN2	65990	C16orf24	S
5217	PFN2	81847	RNF146	S
5223	PGAM1	8502	PKP4	S
5224	PGAM2	7414	VCL	L
5226	PGD	51691	LSM8	L
5228	PGF	7422	VEGF	L
5228	PGF	8828	NRP2	L
5228	PGF	8829	NRP1	L
5230	PGK1	10808	HSPH1	L
5236	PGM1	6271	S100A1	L
5236	PGM1	6285	S100B	L
5239	PGM5	7402	UTRN	L
5241	PGR	5970	RELA	L
5241	PGR	7337	UBE3A	L
5241	PGR	8648	NCOA1	L
5241	PGR	8805	TRIM24	L
5241	PGR	8850	PCAF	L
5241	PGR	51366	EDD1	L
5245	PHB	5894	RAF1	L
5245	PHB	5925	RB1	L
5245	PHB	5933	RBL1	L
5245	PHB	5934	RBL2	L
5245	PHB	6595	SMARCA2	L
5245	PHB	6597	SMARCA4	L
5245	PHB	7157	TP53	L
5245	PHB	9611	NCOR1	L
5245	PHB	25942	SIN3A	L
5251	PHEX	8074	FGF23	L

5252	PHF1	11030	RBPMS	R
5252	PHF1	55145	THAP1	R
5257	PHKB	54976	C20orf27	R
5264	PHYH	10040	TOM1L1	S
5265	SERPINA1	5644	PRSS1	L
5265	SERPINA1	5646	PRSS3	L
5265	SERPINA1	5657	PRTN3	L
5269	SERPINB6	5328	PLAU	L
5269	SERPINB6	5340	PLG	L
5269	SERPINB6	5624	PROC	L
5271	SERPINB8	5644	PRSS1	L
5271	SERPINB8	10487	CAP1	L
5272	SERPINB9	7088	TLE1	S
5272	SERPINB9	7157	TP53	S
5272	SERPINB9	7280	TUBB2	S
5272	SERPINB9	9094	UNC119	S
5272	SERPINB9	9842	PLEKHM1	S
5272	SERPINB9	9869	SETDB1	S
5272	SERPINB9	10980	COPS6	S
5272	SERPINB9	11161	C14orf1	S
5272	SERPINB9	11244	ZHX1	S
5272	SERPINB9	29117	BRD7	S
5272	SERPINB9	51003	MED31	S
5272	SERPINB9	55660	FNBP3	S
5272	SERPINB9	55791	C1orf103	S
5272	SERPINB9	60492	MDS025	S
5272	SERPINB9	84060	DKFZP564O0523	S
5272	SERPINB9	84966	IGSF21	S
5272	SERPINB9	197131	UBR1	S
5274	SERPINI1	5327	PLAT	L
5275	SERPINB13	5340	PLG	L
5275	SERPINB13	5644	PRSS1	L
5275	SERPINB13	5657	PRTN3	L
5276	SERPINI2	29979	UBQLN1	R
5277	PIGA	5279	PIGC	L
5277	PIGA	5283	PIGH	L
5277	PIGA	9091	PIGQ	L
5279	PIGC	5283	PIGH	L
5279	PIGC	9091	PIGQ	L
5279	PIGC	11244	ZHX1	S
5283	PIGH	9091	PIGQ	L
5284	PIGR	5865	RAB3B	L
5284	PIGR	6352	CCL5	L
5289	PIK3C3	5306	PITPNA	L
5289	PIK3C3	30849	PIK3R4	L
5290	PIK3CA	5295	PIK3R1	L
5290	PIK3CA	5580	PRKCD	L
5290	PIK3CA	8471	IRS4	L
5290	PIK3CA	8503	PIK3R3	L
5291	PIK3CB	5295	PIK3R1	L
5291	PIK3CB	5581	PRKCE	L
5292	PIM1	6470	SHMT1	S
5292	PIM1	10951	CBX1	L
5292	PIM1	11335	CBX3	L
5292	PIM1	27044	SND1	L
5293	PIK3CD	5295	PIK3R1	L
5293	PIK3CD	5296	PIK3R2	L
5293	PIK3CD	22913	RALY	S
5293	PIK3CD	30000	TNPO2	S
5293	PIK3CD	84164	ASCC2	S
5293	PIK3CD	84331	MGC15416	S
5294	PIK3CG	23533	PIK3R5	L
5294	PIK3CG	23541	SEC14L2	L
5295	PIK3R1	5747	PTK2	L
5295	PIK3R1	5777	PTPN6	L
5295	PIK3R1	5781	PTPN11	L
5295	PIK3R1	5879	RAC1	L

5295	PIK3R1	5925	RB1	L
5295	PIK3R1	5979	RET	L
5295	PIK3R1	6461	SHB	L
5295	PIK3R1	6464	SHC1	L
5295	PIK3R1	6549	SLC9A2	L
5295	PIK3R1	6714	SRC	L
5295	PIK3R1	6853	SYN1	L
5295	PIK3R1	7010	TEK	L
5295	PIK3R1	7046	TGFBR1	L
5295	PIK3R1	7075	TIE1	L
5295	PIK3R1	7283	TUBG1	L
5295	PIK3R1	7297	TYK2	L
5295	PIK3R1	7301	TYRO3	L
5295	PIK3R1	7430	VIL2	L
5295	PIK3R1	7454	WAS	L
5295	PIK3R1	8038	ADAM12	L
5295	PIK3R1	8471	IRS4	L
5295	PIK3R1	8660	IRS2	L
5295	PIK3R1	9146	HGS	L
5295	PIK3R1	9846	GAB2	L
5295	PIK3R1	10040	TOM1L1	L
5295	PIK3R1	10376	K-ALPHA-1	L
5295	PIK3R1	10451	VAV3	L
5295	PIK3R1	22800	RRAS2	L
5295	PIK3R1	23607	CD2AP	L
5295	PIK3R1	50852	TRAT1	L
5295	PIK3R1	116986	CENTG1	L
5295	PIK3R1	139716	GAB3	L
5296	PIK3R2	6464	SHC1	L
5296	PIK3R2	7046	TGFBR1	L
5296	PIK3R2	8651	SOCS1	L
5297	PIK4CA	29888	STRN4	S
5298	PIK4CB	23413	FREQ	L
5300	PIN1	5347	PLK1	L
5300	PIN1	5430	POLR2A	L
5300	PIN1	5770	PTPN1	L
5300	PIN1	5867	RAB4A	L
5300	PIN1	5932	RBBP8	R
5300	PIN1	6829	SUPT5H	L
5300	PIN1	7153	TOP2A	L
5300	PIN1	7157	TP53	L
5300	PIN1	7161	TP73	L
5300	PIN1	7186	TRAF2	R
5300	PIN1	8733	GPAA1	S
5300	PIN1	9021	SOCS3	S
5300	PIN1	9088	PKMYT1	L
5300	PIN1	9585	MPHOSPH1	L
5300	PIN1	9650	MTFR1	S
5300	PIN1	10743	RAI1	R
5300	PIN1	11030	RBPMS	R
5300	PIN1	23062	GGA2	R
5300	PIN1	27252	KLHL20	S
5300	PIN1	53635	PTOV1	S
5300	PIN1	54819	ZCCHC10	S
5300	PIN1	57062	DDX24	S
5300	PIN1	79586	CHPF	S
5300	PIN1	81628	TSC22D4	R
5300	PIN1	83637	DKFZp761I2123	R
5303	PIN4	6709	SPTAN1	S
5303	PIN4	84164	ASCC2	S
5306	PITPNA	5335	PLCG1	L
5307	PITX1	5449	POU1F1	L
5307	PITX1	11030	RBPMS	R
5307	PITX1	84528	PEPP-2	R
5308	PITX2	5626	PROP1	L
5310	PKD1	5311	PKD2	L
5310	PKD1	5747	PTK2	L

5310	PKD1	5829	PXN	L
5310	PKD1	6000	RGS7	L
5310	PKD1	6714	SRC	L
5310	PKD1	7094	TLN1	L
5310	PKD1	9564	BCAR1	L
5310	PKD1	55729	ATF7IP	L
5311	PKD2	7137	TNNI3	L
5311	PKD2	23607	CD2AP	L
5315	PKM2	5829	PXN	L
5315	PKM2	56915	EXOSC5	L
5315	PKM2	93145	OLFM2	S
5317	PKP1	7431	VIM	L
5319	PLA2G1B	9373	PLAA	L
5321	PLA2G4A	5322	PLA2G5	L
5321	PLA2G4A	10524	HTATIP	L
5327	PLAT	5328	PLAU	L
5327	PLAT	6678	SPARC	L
5327	PLAT	7123	CLEC3B	L
5327	PLAT	284217	LAMA1	L
5328	PLAU	5329	PLAUR	L
5328	PLAU	5340	PLG	L
5328	PLAU	6768	ST14	L
5329	PLAUR	6835	SURF2	S
5329	PLAUR	7448	VTN	L
5329	PLAUR	222019	(null)	S
5330	PLCB2	5606	MAP2K3	L
5330	PLCB2	5608	MAP2K6	L
5330	PLCB2	9368	SLC9A3R1	L
5330	PLCB2	54822	TRPM7	L
5331	PLCB3	6002	RGS12	L
5331	PLCB3	9351	SLC9A3R2	L
5333	PLCD1	7052	TGM2	L
5335	PLCG1	5336	PLCG2	L
5335	PLCG1	5338	PLD2	L
5335	PLCG1	5586	PKN2	L
5335	PLCG1	5587	PRKD1	L
5335	PLCG1	5747	PTK2	L
5335	PLCG1	5795	PTPRJ	L
5335	PLCG1	5979	RET	L
5335	PLCG1	6401	SELE	L
5335	PLCG1	6452	SH3BP2	L
5335	PLCG1	6461	SHB	L
5335	PLCG1	6654	SOS1	L
5335	PLCG1	6655	SOS2	L
5335	PLCG1	6714	SRC	L
5335	PLCG1	6850	SYK	L
5335	PLCG1	7275	TUB	L
5335	PLCG1	7454	WAS	L
5335	PLCG1	7462	LAT2	L
5335	PLCG1	7535	ZAP70	L
5335	PLCG1	8301	PICALM	L
5335	PLCG1	8525	DGKZ	L
5335	PLCG1	8615	VDP	L
5335	PLCG1	8660	IRS2	L
5335	PLCG1	8711	TNK1	L
5335	PLCG1	9531	BAG3	L
5335	PLCG1	9892	SNAP91	L
5335	PLCG1	10399	GNB2L1	L
5335	PLCG1	10451	VAV3	L
5335	PLCG1	10657	KHDRBS1	L
5335	PLCG1	28964	GIT1	L
5335	PLCG1	54822	TRPM7	L
5336	PLCG2	5587	PRKD1	L
5336	PLCG2	6452	SH3BP2	L
5336	PLCG2	7462	LAT2	L
5336	PLCG2	9846	GAB2	L
5336	PLCG2	10657	KHDRBS1	L

5336	PLCG2	27040	LAT	L
5336	PLCG2	29760	BLNK	L
5336	PLCG2	57473	GM632	L
5337	PLD1	5578	PRKCA	L
5337	PLD1	5585	PKN1	L
5337	PLD1	5879	RAC1	L
5337	PLD1	5898	RALA	L
5337	PLD1	6622	SNCA	L
5337	PLD1	8394	PIP5K1A	L
5337	PLD1	8682	PEA15	L
5337	PLD1	25820	ARIH1	L
5338	PLD2	5578	PRKCA	L
5338	PLD2	5580	PRKCD	L
5338	PLD2	8394	PIP5K1A	L
5338	PLD2	8682	PEA15	L
5339	PLEC1	6708	SPTA1	L
5339	PLEC1	6709	SPTAN1	L
5339	PLEC1	7431	VIM	L
5340	PLG	5345	SERPINF2	L
5340	PLG	5621	PRNP	L
5340	PLG	6281	S100A10	L
5340	PLG	6678	SPARC	L
5340	PLG	7057	THBS1	L
5340	PLG	7123	CLEC3B	L
5340	PLG	7980	TFPI2	L
5340	PLG	154796	AMOT	L
5340	PLG	284217	LAMA1	L
5345	SERPINF2	5644	PRSS1	L
5345	SERPINF2	26085	KLK13	L
5347	PLK1	5682	PSMA1	L
5347	PLK1	5684	PSMA3	L
5347	PLK1	5685	PSMA4	L
5347	PLK1	5686	PSMA5	L
5347	PLK1	5687	PSMA6	L
5347	PLK1	5688	PSMA7	L
5347	PLK1	5689	PSMB1	L
5347	PLK1	5690	PSMB2	L
5347	PLK1	5691	PSMB3	L
5347	PLK1	5692	PSMB4	L
5347	PLK1	5693	PSMB5	L
5347	PLK1	5694	PSMB6	L
5347	PLK1	5695	PSMB7	L
5347	PLK1	7277	TUBA1	L
5347	PLK1	7280	TUBB2	L
5347	PLK1	7283	TUBG1	L
5347	PLK1	9400	RECQL5	S
5347	PLK1	9493	KIF23	L
5347	PLK1	9500	MAGED1	S
5347	PLK1	9600	PITPNM1	L
5347	PLK1	10726	NUDC	L
5347	PLK1	11200	CHEK2	L
5347	PLK1	51608	C7orf20	S
5347	PLK1	64689	GORASP1	L
5347	PLK1	259266	ASPM	L
5348	FXYD1	5566	PRKACA	L
5348	FXYD1	8611	PPAP2A	L
5349	FXYD3	26135	SERBP1	S
5349	FXYD3	54850	FBXL12	S
5350	PLN	5506	PPP1R3A	L
5350	PLN	6271	S100A1	L
5350	PLN	6588	SLN	L
5355	PLP2	8518	IKBKAP	S
5355	PLP2	10134	BCAP31	L
5355	PLP2	22839	DLGAP4	S
5359	PLSCR1	6590	SLPI	L
5359	PLSCR1	6687	SPG7	R
5359	PLSCR1	7355	SLC35A2	R

5359	PLSCR1	7408	VASP	R
5359	PLSCR1	7536	SF1	R
5359	PLSCR1	7704	ZBTB16	R
5359	PLSCR1	9140	ATG12	R
5359	PLSCR1	9618	TRAF4	L
5359	PLSCR1	9721	KIAA0514	R
5359	PLSCR1	9802	DAZAP2	R
5359	PLSCR1	10253	SPRY2	R
5359	PLSCR1	10342	TFG	R
5359	PLSCR1	10539	TXNL2	R
5359	PLSCR1	11052	CPSF6	R
5359	PLSCR1	11067	C10orf10	R
5359	PLSCR1	11135	CDC42EP1	R
5359	PLSCR1	22822	PHLDA1	R
5359	PLSCR1	23493	HEY2	R
5359	PLSCR1	25796	PGLS	R
5359	PLSCR1	25844	YIPF3	R
5359	PLSCR1	27332	ZNF638	R
5359	PLSCR1	30008	EFEMP2	R
5359	PLSCR1	51447	IHPK2	R
5359	PLSCR1	51545	ZNF581	R
5359	PLSCR1	51586	PCQAP	R
5359	PLSCR1	51655	RASD1	R
5359	PLSCR1	54507	TSRC1	R
5359	PLSCR1	54932	FLJ20433	R
5359	PLSCR1	54973	CPSF3L	R
5359	PLSCR1	55707	NECAP2	R
5359	PLSCR1	56654	NPDC1	R
5359	PLSCR1	57048	PLSCR3	R
5359	PLSCR1	57088	PLSCR4	R
5359	PLSCR1	59277	NTN4	R
5359	PLSCR1	64115	C10orf54	R
5359	PLSCR1	64773	C20orf81	R
5359	PLSCR1	65989	EGFL9	R
5359	PLSCR1	79050	NOC4L	R
5359	PLSCR1	80028	FBXL18	R
5359	PLSCR1	80125	FLJ32855	R
5359	PLSCR1	80726	KIAA1683	R
5359	PLSCR1	83640	MGC2560	R
5359	PLSCR1	83755	KRTAP4-12	R
5359	PLSCR1	84080	C16orf48	R
5359	PLSCR1	92070	MGC21675	R
5359	PLSCR1	92595	MGC13138	R
5359	PLSCR1	113878	DTX2	R
5359	PLSCR1	115817	DHRS1	R
5359	PLSCR1	129807	NEU4	R
5359	PLSCR1	196477	C12orf12	R
5359	PLSCR1	284440	MGC39821	R
5359	PLSCR1	414157	C10orf62	R
5362	PLXNA2	9898	UBAP2L	L
5362	PLXNA2	23360	FNBP4	L
5362	PLXNA2	57214	KIAA1199	L
5362	PLXNA2	57560	WDR56	L
5364	PLXNB1	5879	RAC1	L
5364	PLXNB1	9826	ARHGEF11	L
5364	PLXNB1	10507	SEMA4D	L
5364	PLXNB1	10509	SEMA4B	L
5364	PLXNB1	23365	ARHGEF12	L
5364	PLXNB1	27289	RND1	L
5365	PLXNB3	9826	ARHGEF11	L
5366	PMAIP1	5473	PPBP	S
5366	PMAIP1	7704	ZBTB16	S
5371	PML	5914	RARA	L
5371	PML	5925	RB1	L
5371	PML	5970	RELA	L
5371	PML	6135	RPL11	L
5371	PML	6497	SKI	L

5371	PML	6613	SUMO2	L
5371	PML	6667	SP1	L
5371	PML	6722	SRF	L
5371	PML	6774	STAT3	L
5371	PML	6996	TDG	L
5371	PML	7046	TGFBR1	L
5371	PML	7048	TGFBR2	L
5371	PML	7067	THRA	L
5371	PML	7157	TP53	L
5371	PML	7161	TP73	L
5371	PML	7341	SUMO1	L
5371	PML	7704	ZBTB16	L
5371	PML	8805	TRIM24	L
5371	PML	8841	HDAC3	L
5371	PML	9372	ZFYVE9	L
5371	PML	9611	NCOR1	L
5371	PML	9612	NCOR2	L
5371	PML	11073	TOPBP1	L
5371	PML	25942	SIN3A	L
5371	PML	55743	CHFR	L
5371	PML	59343	SENP2	L
5371	PML	140691	RNF36	L
5372	PMM1	5870	RAB6A	R
5376	PMP22	5824	PEX19	L
5393	EXOSC9	7919	BAT1	L
5393	EXOSC9	51013	EXOSC1	L
5394	EXOSC10	6120	RPE	L
5394	EXOSC10	6499	SKIV2L	L
5394	EXOSC10	6749	SSRP1	L
5394	EXOSC10	9878	C14orf92	L
5394	EXOSC10	10438	C1D	L
5394	EXOSC10	10480	hfl-B5	L
5394	EXOSC10	10519	CIB1	L
5394	EXOSC10	10856	RUVBL2	L
5394	EXOSC10	22803	XRN2	L
5394	EXOSC10	22894	KIAA1008	L
5394	EXOSC10	23016	EXOSC7	L
5394	EXOSC10	23420	NOMO1	L
5394	EXOSC10	23435	TARDBP	L
5394	EXOSC10	23513	SCRIB	L
5394	EXOSC10	26019	UPF2	L
5394	EXOSC10	27005	USP21	L
5394	EXOSC10	27077	EPPB9	L
5394	EXOSC10	51691	LSM8	L
5394	EXOSC10	54464	XRN1	L
5394	EXOSC10	55572	H17	L
5394	EXOSC10	57819	LSM2	L
5394	EXOSC10	79586	CHPF	L
5394	EXOSC10	80142	PTGES2	L
5394	EXOSC10	83706	URP2	L
5394	EXOSC10	84641	HIATL1	L
5394	EXOSC10	118460	EXOSC6	L
5396	PRRX1	6722	SRF	L
5411	PNN	6429	SFRS4	L
5411	PNN	8899	PRPF4B	L
5411	PNN	10921	RNPS1	L
5411	PNN	23524	SRRM2	L
5411	PNN	25957	C6orf111	L
5413	SEPT5	6804	STX1A	L
5413	SEPT5	6810	STX4A	L
5413	SEPT5	11143	MYST2	S
5413	SEPT5	51691	LSM8	L
5414	SEPT4	6620	SNCB	L
5414	SEPT4	9627	SNCAIP	L
5422	POLA	5424	POLD1	L
5422	POLA	5426	POLE	L
5422	POLA	5925	RB1	L

5422	POLA	7157	TP53	L
5422	POLA	7520	XRCC5	L
5422	POLA	8099	CDK2AP1	L
5422	POLA	23649	POLA2	L
5422	POLA	92797	HELB	L
5423	POLB	7088	TLE1	S
5423	POLB	7515	XRCC1	L
5423	POLB	11143	MYST2	S
5423	POLB	79661	NEIL1	L
5424	POLD1	5981	RFC1	L
5424	POLD1	7520	XRCC5	L
5424	POLD1	10714	POLD3	L
5424	POLD1	57562	KIAA1377	S
5425	POLD2	11157	LSM6	L
5425	POLD2	26073	POLDIP2	L
5425	POLD2	84271	POLDIP3	L
5425	POLD2	253980	KCTD13	L
5426	POLE	5884	RAD17	L
5426	POLE	8859	STK19	L
5427	POLE2	7088	TLE1	S
5427	POLE2	10524	HTATIP	S
5427	POLE2	11161	C14orf1	S
5428	POLG	6742	SSBP1	L
5429	POLH	8655	DNCL1	L
5429	POLH	51455	REV1L	L
5430	POLR2A	5435	POLR2F	L
5430	POLR2A	5976	RENT1	L
5430	POLR2A	6294	SAFB	L
5430	POLR2A	6595	SMARCA2	L
5430	POLR2A	6597	SMARCA4	L
5430	POLR2A	6598	SMARCB1	L
5430	POLR2A	6599	SMARCC1	L
5430	POLR2A	6601	SMARCC2	L
5430	POLR2A	6605	SMARCE1	L
5430	POLR2A	6829	SUPT5H	L
5430	POLR2A	6917	TCEA1	L
5430	POLR2A	7625	ZNF74	L
5430	POLR2A	9412	SURB7	L
5430	POLR2A	10915	TCERG1	L
5430	POLR2A	22906	OIP106	L
5430	POLR2A	27044	SND1	L
5430	POLR2A	58190	CTDSP1	L
5430	POLR2A	146705	FLJ31528	L
5432	POLR2C	6601	SMARCC2	S
5432	POLR2C	8614	STC2	S
5432	POLR2C	11161	C14orf1	S
5432	POLR2C	55284	UBE2W	S
5432	POLR2C	55791	C1orf103	S
5434	POLR2E	8725	C19orf2	L
5436	POLR2G	8859	STK19	L
5439	POLR2J	26574	AATF	L
5441	POLR2L	11007	DIPA	R
5442	POLRMT	51106	TFB1M	L
5442	POLRMT	64216	TFB2M	L
5443	POMC	7448	VTN	L
5449	POU1F1	8856	NR1I2	L
5449	POU1F1	9970	NR1I3	L
5450	POU2AF1	5451	POU2F1	L
5450	POU2AF1	5452	POU2F2	L
5450	POU2AF1	6477	SIAH1	L
5450	POU2AF1	6478	SIAH2	L
5450	POU2AF1	6580	SLC22A1	L
5450	POU2AF1	6582	SLC22A2	L
5450	POU2AF1	10923	SUB1	L
5451	POU2F1	5970	RELA	L
5451	POU2F1	6256	RXRA	L
5451	POU2F1	6621	SNAPC4	L

5451	POU2F1	6657	SOX2	L
5451	POU2F1	6667	SP1	L
5451	POU2F1	6908	TBP	L
5451	POU2F1	9612	NCOR2	L
5452	POU2F2	6908	TBP	L
5454	POU3F2	6664	SOX11	L
5454	POU3F2	10084	PQBP1	L
5455	POU3F3	6664	SOX11	L
5455	POU3F3	23645	PPP1R15A	S
5460	POU5F1	6657	SOX2	L
5464	PPA1	7157	TP53	S
5464	PPA1	9094	UNC119	S
5464	PPA1	9869	SETDB1	S
5464	PPA1	55062	WIPI49	S
5465	PPARA	5970	RELA	L
5465	PPARA	6256	RXRA	L
5465	PPARA	6258	RXRG	S
5465	PPARA	7818	DAP3	L
5465	PPARA	8202	NCOA3	L
5465	PPARA	8204	NRIP1	L
5465	PPARA	8648	NCOA1	L
5465	PPARA	9049	AIP	L
5465	PPARA	9611	NCOR1	L
5465	PPARA	9612	NCOR2	L
5465	PPARA	10062	NR1H3	L
5465	PPARA	10912	GADD45G	L
5465	PPARA	11214	AKAP13	L
5465	PPARA	29982	NRBF2	L
5465	PPARA	85441	PRIC285	L
5465	PPARA	246329	STAC3	R
5467	PPARD	9612	NCOR2	L
5467	PPARD	10912	GADD45G	L
5467	PPARD	51564	HDAC7A	L
5468	PPARG	5469	PPARBP	L
5468	PPARG	6256	RXRA	L
5468	PPARG	6258	RXRG	L
5468	PPARG	8031	NCOA4	L
5468	PPARG	8204	NRIP1	L
5468	PPARG	8431	NR0B2	L
5468	PPARG	8648	NCOA1	L
5468	PPARG	8721	EDF1	L
5468	PPARG	8841	HDAC3	L
5468	PPARG	9862	THRAP4	L
5468	PPARG	10499	NCOA2	L
5468	PPARG	10891	PPARGC1A	L
5468	PPARG	10902	BRD8	L
5468	PPARG	10912	GADD45G	L
5468	PPARG	23054	NCOA6	L
5468	PPARG	30836	ERBP	L
5469	PPARBP	5914	RARA	L
5469	PPARBP	6095	RORA	L
5469	PPARBP	6256	RXRA	L
5469	PPARBP	7068	THRB	L
5469	PPARBP	7157	TP53	L
5469	PPARBP	7421	VDR	L
5469	PPARBP	7533	YWHAH	L
5473	PPBP	10063	COX17	S
5473	PPBP	10658	CUGBP1	S
5473	PPBP	23256	SCFD1	S
5473	PPBP	29888	STRN4	S
5473	PPBP	50813	COPS7A	S
5478	PPIA	5530	PPP3CA	L
5478	PPIA	5534	PPP3R1	L
5478	PPIA	5618	PRLR	L
5478	PPIA	5925	RB1	L
5478	PPIA	6279	S100A8	S
5478	PPIA	11098	PRSS23	S

5478	PPIA	20924	(null)	S
5478	PPIA	54458	DKFZp564J157	R
5479	PPIB	5617	PRL	L
5479	PPIB	6776	STAT5A	L
5481	PPID	9001	HAP1	S
5481	PPID	11143	MYST2	S
5493	PPL	6498	SKIL	L
5493	PPL	7431	VIM	L
5493	PPL	23254	KIAA1026	L
5493	PPL	51535	PPHLN1	L
5495	PPM1B	6885	MAP3K7	L
5495	PPM1B	8517	IKBKG	L
5498	PPOX	9001	HAP1	S
5498	PPOX	10989	IMMT	S
5499	PPP1CA	5511	PPP1R8	L
5499	PPP1CA	5514	PPP1R10	L
5499	PPP1CA	5610	EIF2AK2	L
5499	PPP1CA	5925	RB1	L
5499	PPP1CA	6780	STAU	L
5499	PPP1CA	7157	TP53	L
5499	PPP1CA	7159	TP53BP2	L
5499	PPP1CA	7991	TUSC3	L
5499	PPP1CA	8027	STAM	L
5499	PPP1CA	9372	ZFYVE9	L
5499	PPP1CA	9765	ZFYVE16	L
5499	PPP1CA	9858	KIAA0649	L
5499	PPP1CA	10199	MPHOSPH10	L
5499	PPP1CA	10848	PPP1R13L	L
5499	PPP1CA	23189	ANKRD15	L
5499	PPP1CA	23228	PLCL2	L
5499	PPP1CA	23368	PPP1R13B	L
5499	PPP1CA	23645	PPP1R15A	L
5499	PPP1CA	26092	TOR1AIP1	L
5499	PPP1CA	26508	HEYL	L
5499	PPP1CA	54843	SYTL2	L
5499	PPP1CA	57082	CASC5	L
5499	PPP1CA	57683	KIAA1571	L
5499	PPP1CA	57821	C1orf114	L
5499	PPP1CA	64434	NOM1	L
5499	PPP1CA	79660	PPP1R3B	L
5499	PPP1CA	81566	C12orf22	L
5499	PPP1CA	81930	KIF18A	L
5499	PPP1CA	84687	PPP1R9B	L
5499	PPP1CA	84919	PPP1R15B	L
5499	PPP1CA	161742	SPRED1	L
5499	PPP1CA	286262	C9orf75	L
5500	PPP1CB	5747	PTK2	L
5500	PPP1CB	9372	ZFYVE9	L
5500	PPP1CB	54776	PPP1R12C	L
5501	PPP1CC	5504	PPP1R2	L
5501	PPP1CC	5509	PPP1R3D	L
5501	PPP1CC	5610	EIF2AK2	L
5501	PPP1CC	7159	TP53BP2	L
5501	PPP1CC	9372	ZFYVE9	L
5504	PPP1R2	84687	PPP1R9B	L
5510	PPP1R7	284169	(null)	S
5511	PPP1R8	8614	STC2	S
5511	PPP1R8	8726	EED	L
5511	PPP1R8	9869	SETDB1	S
5511	PPP1R8	11161	C14orf1	S
5511	PPP1R8	84060	DKFZP564O0523	S
5515	PPP2CA	5520	PPP2R2A	L
5515	PPP2CA	5526	PPP2R5B	L
5515	PPP2CA	5764	PTN	S
5515	PPP2CA	7157	TP53	L
5515	PPP2CA	9319	TRIP13	R
5515	PPP2CA	51477	ISYNA1	S

5515	PPP2CA	64949	MRPS26	S
5516	PPP2CB	8312	AXIN1	L
5518	PPP2R1A	5523	PPP2R3A	L
5518	PPP2R1A	9372	ZFYVE9	L
5518	PPP2R1A	10425	ARIH2	S
5518	PPP2R1A	28227	PPP2R3B	L
5519	PPP2R1B	5520	PPP2R2A	L
5519	PPP2R1B	5527	PPP2R5C	L
5519	PPP2R1B	10142	AKAP9	L
5523	PPP2R3A	5933	RBL1	L
5525	PPP2R5A	5610	EIF2AK2	L
5525	PPP2R5A	6464	SHC1	L
5525	PPP2R5A	7439	VMD2	L
5526	PPP2R5B	8312	AXIN1	L
5527	PPP2R5C	5580	PRKCD	L
5527	PPP2R5C	8312	AXIN1	L
5528	PPP2R5D	8500	PPFIA1	R
5528	PPP2R5D	9464	HAND2	L
5530	PPP3CA	5534	PPP3R1	L
5530	PPP3CA	5590	PRKCZ	L
5530	PPP3CA	6647	SOD1	L
5530	PPP3CA	9495	AKAP5	L
5530	PPP3CA	23523	CABIN1	L
5530	PPP3CA	23770	FKBP8	L
5530	PPP3CA	51778	MYOZ2	L
5530	PPP3CA	404550	MGC17624	R
5531	PPP4C	5966	REL	L
5531	PPP4C	5970	RELA	L
5531	PPP4C	7114	TMSB4X	L
5531	PPP4C	9989	PPP4R1	L
5531	PPP4C	151987	PPP4R2	L
5532	PPP3CB	9021	SOCS3	L
5532	PPP3CB	23523	CABIN1	L
5532	PPP3CB	51778	MYOZ2	L
5533	PPP3CC	23523	CABIN1	L
5534	PPP3R1	51475	CABP2	L
5536	PPP5C	8881	CDC16	L
5536	PPP5C	8904	CPNE1	L
5536	PPP5C	10672	GNA13	L
5536	PPP5C	131034	CPNE4	L
5536	PPP5C	221184	CPNE2	L
5540	PPYR1	5697	PYY	L
5540	PPYR1	6262	RYR2	L
5540	PPYR1	23645	PPP1R15A	L
5540	PPYR1	84687	PPP1R9B	L
5551	PRF1	57062	DDX24	S
5552	PRG1	6348	CCL3	L
5552	PRG1	6449	SGTA	R
5553	PRG2	84060	DKFZP564O0523	S
5557	PRIM1	23649	POLA2	L
5557	PRIM1	64978	MRPL38	S
5558	PRIM2A	23649	POLA2	L
5562	PRKAA1	10953	TOMM34	L
5563	PRKAA2	6794	STK11	L
5564	PRKAB1	5571	PRKAG1	L
5564	PRKAB1	51422	PRKAG2	L
5565	PRKAB2	5571	PRKAG1	L
5565	PRKAB2	51422	PRKAG2	L
5566	PRKACA	5569	PKIA	L
5566	PRKACA	6262	RYR2	L
5566	PRKACA	9351	SLC9A3R2	L
5566	PRKACA	9464	HAND2	L
5566	PRKACA	51199	NIN	L
5566	PRKACA	158798	AKAP14	L
5567	PRKACB	5569	PKIA	L
5567	PRKACB	5570	PKIB	L
5571	PRKAG1	51422	PRKAG2	L

5573	PRKAR1A	5575	PRKAR1B	L
5573	PRKAR1A	5613	PRKX	L
5573	PRKAR1A	8165	AKAP1	L
5573	PRKAR1A	8852	AKAP4	L
5573	PRKAR1A	10564	ARFGEF2	L
5573	PRKAR1A	11215	AKAP11	L
5573	PRKAR1A	11216	AKAP10	RL
5573	PRKAR1A	29108	PYCARD	R
5573	PRKAR1A	55660	FNBP3	L
5573	PRKAR1A	79666	PLEKHF2	R
5573	PRKAR1A	84281	MGC13057	R
5575	PRKAR1B	7486	WRN	L
5575	PRKAR1B	8165	AKAP1	L
5576	PRKAR2A	5613	PRKX	L
5576	PRKAR2A	6262	RYR2	L
5576	PRKAR2A	6344	SCTR	L
5576	PRKAR2A	6407	SEMG2	L
5576	PRKAR2A	7430	VIL2	L
5576	PRKAR2A	8165	AKAP1	L
5576	PRKAR2A	8936	WASF1	L
5576	PRKAR2A	9472	AKAP6	L
5576	PRKAR2A	9495	AKAP5	L
5576	PRKAR2A	9590	AKAP12	L
5576	PRKAR2A	10142	AKAP9	L
5576	PRKAR2A	10270	AKAP8	L
5576	PRKAR2A	10564	ARFGEF2	L
5576	PRKAR2A	10566	AKAP3	L
5576	PRKAR2A	11214	AKAP13	L
5576	PRKAR2A	11215	AKAP11	L
5576	PRKAR2A	11216	AKAP10	L
5576	PRKAR2A	26960	NBEA	L
5576	PRKAR2A	84073	MYCBPAP	L
5576	PRKAR2A	158798	AKAP14	L
5576	PRKAR2A	445815	PALM2-AKAP2	L
5577	PRKAR2B	8852	AKAP4	L
5577	PRKAR2B	9495	AKAP5	L
5577	PRKAR2B	10142	AKAP9	L
5577	PRKAR2B	11215	AKAP11	L
5577	PRKAR2B	11216	AKAP10	L
5577	PRKAR2B	26960	NBEA	L
5577	PRKAR2B	89876	C3orf15	L
5577	PRKAR2B	158798	AKAP14	L
5578	PRKCA	5879	RAC1	L
5578	PRKCA	5997	RGS2	L
5578	PRKCA	6344	SCTR	L
5578	PRKCA	6406	SEMG1	L
5578	PRKCA	6407	SEMG2	L
5578	PRKCA	6505	SLC1A1	L
5578	PRKCA	6624	FSCN1	L
5578	PRKCA	7011	TEP1	L
5578	PRKCA	7015	TERT	L
5578	PRKCA	7074	TIAM1	L
5578	PRKCA	7157	TP53	L
5578	PRKCA	7430	VIL2	L
5578	PRKCA	7532	YWHAG	L
5578	PRKCA	7534	YWHAZ	L
5578	PRKCA	8436	SDPR	L
5578	PRKCA	8525	DGKZ	L
5578	PRKCA	9138	ARHGEF1	L
5578	PRKCA	9260	PDLIM7	L
5578	PRKCA	9464	HAND2	L
5578	PRKCA	9590	AKAP12	L
5578	PRKCA	10399	GNB2L1	L
5578	PRKCA	11033	CENTA1	L
5578	PRKCA	23650	TRIM29	L
5578	PRKCA	23704	KCNE4	L
5578	PRKCA	60312	AFAP	L

5579	PRKCB1	5597	MAPK6	L
5579	PRKCB1	5997	RGS2	L
5579	PRKCB1	6709	SPTAN1	L
5579	PRKCB1	7532	YWHAG	L
5579	PRKCB1	9260	PDLIM7	L
5579	PRKCB1	10399	GNB2L1	L
5579	PRKCB1	10611	PDLIM5	L
5579	PRKCB1	10672	GNA13	L
5579	PRKCB1	23613	PRKCBP1	L
5579	PRKCB1	54101	RIPK4	L
5579	PRKCB1	60312	AFAP	L
5580	PRKCD	5591	PRKDC	L
5580	PRKCD	5777	PTPN6	L
5580	PRKCD	6464	SHC1	L
5580	PRKCD	7074	TIAM1	L
5580	PRKCD	7532	YWHAG	L
5580	PRKCD	8754	ADAM9	L
5580	PRKCD	10672	GNA13	L
5580	PRKCD	54101	RIPK4	L
5580	PRKCD	57048	PLSCR3	L
5580	PRKCD	60312	AFAP	L
5581	PRKCE	5594	MAPK1	L
5581	PRKCE	5894	RAF1	L
5581	PRKCE	6622	SNCA	L
5581	PRKCE	6714	SRC	L
5581	PRKCE	7074	TIAM1	L
5581	PRKCE	7416	VDAC1	L
5581	PRKCE	9276	COPB2	L
5581	PRKCE	10399	GNB2L1	L
5581	PRKCE	10611	PDLIM5	L
5581	PRKCE	10672	GNA13	L
5581	PRKCE	60312	AFAP	L
5582	PRKCG	5997	RGS2	L
5582	PRKCG	7074	TIAM1	L
5582	PRKCG	7532	YWHAG	L
5582	PRKCG	10611	PDLIM5	L
5582	PRKCG	60312	AFAP	L
5584	PRKCI	5607	MAP2K5	L
5584	PRKCI	8878	SQSTM1	L
5584	PRKCI	11033	CENTA1	L
5584	PRKCI	23049	SMG1	L
5584	PRKCI	50855	PARD6A	R
5584	PRKCI	84552	PARD6G	L
5585	PKN1	7431	VIM	L
5585	PKN1	10142	AKAP9	L
5585	PKN1	11007	DIPA	R
5585	PKN1	23092	ARHGAP26	L
5585	PKN1	79658	ARHGAP10	L
5586	PKN2	5783	PTPN13	L
5586	PKN2	8440	NCK2	L
5586	PKN2	10746	MAP3K2	L
5587	PRKD1	5599	MAPK8	L
5587	PRKD1	5601	MAPK9	L
5587	PRKD1	10971	YWHAQ	L
5587	PRKD1	11033	CENTA1	L
5588	PRKCQ	7409	VAV1	L
5588	PRKCQ	7532	YWHAG	L
5588	PRKCQ	10539	TXNL2	L
5589	PRKCSH	5788	PTPRC	L
5589	PRKCSH	5997	RGS2	S
5589	PRKCSH	23193	GANAB	L
5589	PRKCSH	51608	C7orf20	S
5590	PRKCZ	5607	MAP2K5	L
5590	PRKCZ	5894	RAF1	L
5590	PRKCZ	5970	RELA	L
5590	PRKCZ	6714	SRC	L
5590	PRKCZ	7189	TRAF6	L

5590	PRKCZ	7529	YWHAB	L
5590	PRKCZ	8471	IRS4	L
5590	PRKCZ	8772	FADD	L
5590	PRKCZ	8878	SQSTM1	L
5590	PRKCZ	9260	PDLIM7	L
5590	PRKCZ	9637	FEZ2	L
5590	PRKCZ	9638	FEZ1	L
5590	PRKCZ	10000	AKT3	L
5590	PRKCZ	11033	CENTA1	L
5590	PRKCZ	23286	KIBRA	L
5590	PRKCZ	50855	PARD6A	RL
5590	PRKCZ	60312	AFAP	L
5590	PRKCZ	84552	PARD6G	L
5591	PRKDC	5599	MAPK8	L
5591	PRKDC	6117	RPA1	L
5591	PRKDC	6118	RPA2	L
5591	PRKDC	7157	TP53	L
5591	PRKDC	7486	WRN	L
5591	PRKDC	8894	EIF2S2	L
5591	PRKDC	10438	C1D	L
5591	PRKDC	10519	CIB1	L
5591	PRKDC	64421	DCLRE1C	L
5592	PRKG1	5997	RGS2	L
5594	MAPK1	5604	MAP2K1	L
5594	MAPK1	5605	MAP2K2	L
5594	MAPK1	5778	PTPN7	L
5594	MAPK1	5794	PTPRH	L
5594	MAPK1	5801	PTPRR	L
5594	MAPK1	6195	RPS6KA1	L
5594	MAPK1	6196	RPS6KA2	L
5594	MAPK1	6197	RPS6KA3	L
5594	MAPK1	6464	SHC1	L
5594	MAPK1	6622	SNCA	L
5594	MAPK1	6623	SNCG	L
5594	MAPK1	6721	SREBF2	L
5594	MAPK1	6776	STAT5A	L
5594	MAPK1	6777	STAT5B	L
5594	MAPK1	7175	TPR	L
5594	MAPK1	7409	VAV1	L
5594	MAPK1	8462	KLF11	L
5594	MAPK1	8550	MAPKAPK5	L
5594	MAPK1	8569	MKNK1	L
5594	MAPK1	8600	TNFSF11	L
5594	MAPK1	8649	MAP2K1IP1	L
5594	MAPK1	8682	PEA15	L
5594	MAPK1	8870	IER3	L
5594	MAPK1	8986	RPS6KA4	L
5594	MAPK1	9149	DYRK1B	L
5594	MAPK1	9759	HDAC4	L
5594	MAPK1	10140	TOB1	L
5594	MAPK1	10318	TNIP1	L
5594	MAPK1	51366	EDD1	L
5594	MAPK1	80824	DUSP16	L
5594	MAPK1	84867	PTPN5	L
5595	MAPK3	5604	MAP2K1	L
5595	MAPK3	5605	MAP2K2	L
5595	MAPK3	5606	MAP2K3	L
5595	MAPK3	5778	PTPN7	L
5595	MAPK3	5801	PTPRR	L
5595	MAPK3	6195	RPS6KA1	L
5595	MAPK3	6196	RPS6KA2	L
5595	MAPK3	6197	RPS6KA3	L
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5595	MAPK3	6689	SPIB	L
5595	MAPK3	6721	SREBF2	L
5595	MAPK3	6887	TAL2	L
5595	MAPK3	7054	TH	L

5595	MAPK3	7157	TP53	L
5595	MAPK3	8600	TNFSF11	L
5595	MAPK3	8649	MAP2K1IP1	L
5595	MAPK3	8682	PEA15	L
5595	MAPK3	8870	IER3	L
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5595	MAPK3	10174	SORBS3	L
5595	MAPK3	84867	PTPN5	L
5598	MAPK7	5607	MAP2K5	L
5598	MAPK7	5801	PTPRR	L
5598	MAPK7	5894	RAF1	L
5598	MAPK7	6446	SGK	L
5598	MAPK7	7529	YWHAB	L
5599	MAPK8	5609	MAP2K7	L
5599	MAPK8	5966	REL	L
5599	MAPK8	6416	MAP2K4	L
5599	MAPK8	6623	SNCG	L
5599	MAPK8	6689	SPIB	L
5599	MAPK8	6885	MAP3K7	L
5599	MAPK8	7157	TP53	L
5599	MAPK8	8518	IKBKAP	L
5599	MAPK8	8600	TNFSF11	L
5599	MAPK8	9043	SPAG9	L
5599	MAPK8	9318	COPS2	L
5599	MAPK8	9466	IL27RA	L
5599	MAPK8	9467	SH3BP5	L
5599	MAPK8	9479	MAPK8IP1	L
5599	MAPK8	10746	MAP3K2	L
5599	MAPK8	23542	MAPK8IP2	L
5599	MAPK8	80824	DUSP16	L
5600	MAPK11	8841	HDAC3	L
5600	MAPK11	80824	DUSP16	L
5601	MAPK9	5925	RB1	L
5601	MAPK9	7157	TP53	L
5601	MAPK9	7186	TRAF2	L
5601	MAPK9	7511	XPNPEP1	S
5601	MAPK9	7597	ZBTB25	R
5601	MAPK9	8550	MAPKAPK5	L
5601	MAPK9	9467	SH3BP5	L
5601	MAPK9	10262	SF3B4	R
5601	MAPK9	11016	ATF7	L
5601	MAPK9	23039	XPO7	S
5601	MAPK9	57562	KIAA1377	S
5601	MAPK9	80817	KIAA1712	R
5601	MAPK9	80824	DUSP16	L
5601	MAPK9	284403	WDR62	R
5602	MAPK10	7157	TP53	L
5602	MAPK10	9094	UNC119	S
5602	MAPK10	9467	SH3BP5	L
5602	MAPK10	80824	DUSP16	L
5603	MAPK13	7867	MAPKAPK3	L
5603	MAPK13	8550	MAPKAPK5	L
5603	MAPK13	23542	MAPK8IP2	L
5604	MAP2K1	5894	RAF1	L
5604	MAP2K1	6196	RPS6KA2	L
5604	MAP2K1	7187	TRAF3	L
5604	MAP2K1	8649	MAP2K1IP1	L
5604	MAP2K1	8904	CPNE1	L
5604	MAP2K1	131034	CPNE4	L
5604	MAP2K1	157310	PEBP4	L
5605	MAP2K2	5894	RAF1	L
5605	MAP2K2	8649	MAP2K1IP1	L
5606	MAP2K3	23542	MAPK8IP2	L
5608	MAP2K6	6885	MAP3K7	L
5609	MAP2K7	7786	MAP3K12	L
5609	MAP2K7	9479	MAPK8IP1	L

5609	MAP2K7	10746	MAP3K2	L
5609	MAP2K7	23542	MAPK8IP2	L
5609	MAP2K7	51776	ZAK	L
5610	EIF2AK2	5611	DNAJC3	L
5610	EIF2AK2	6772	STAT1	L
5610	EIF2AK2	6774	STAT3	L
5610	EIF2AK2	6895	TARBP2	L
5610	EIF2AK2	7157	TP53	L
5610	EIF2AK2	8575	PRKRA	L
5610	EIF2AK2	10728	PTGES3	L
5610	EIF2AK2	10988	METAP2	L
5610	EIF2AK2	79706	PRKRIP1	L
5610	EIF2AK2	114609	TIRAP	L
5611	DNAJC3	5612	PRKRIR	L
5611	DNAJC3	9451	EIF2AK3	L
5612	PRKRIR	6789	STK4	L
5617	PRL	5618	PRLR	L
5618	PRLR	5781	PTPN11	L
5618	PRLR	7006	TEC	L
5618	PRLR	7409	VAV1	L
5618	PRLR	7535	ZAP70	L
5618	PRLR	8835	SOCS2	L
5618	PRLR	9021	SOCS3	L
5621	PRNP	7917	BAT3	S
5621	PRNP	10963	STIP1	L
5623	PSPN	64096	GFRA4	L
5624	PROC	5627	PROS1	L
5624	PROC	7056	THBD	L
5624	PROC	10544	PROCR	L
5626	PROP1	8820	HESX1	L
5627	PROS1	7301	TYRO3	L
5630	PRPH	5961	RDS	L
5631	PRPS1	5635	PRPSAP1	RL
5631	PRPS1	26003	GORASP2	R
5631	PRPS1	51324	SPG21	R
5634	PRPS2	5635	PRPSAP1	L
5635	PRPSAP1	11269	DDX19B	S
5635	PRPSAP1	79666	PLEKHF2	R
5636	PRPSAP2	284131	FLJ35220	S
5639	PRRG2	5829	PXN	L
5639	PRRG2	7414	VCL	L
5644	PRSS1	7263	TST	L
5644	PRSS1	11005	SPINK5	L
5645	PRSS2	6590	SLPI	L
5646	PRSS3	7035	TFPI	L
5649	RELN	7436	VLDLR	L
5649	RELN	7804	LRP8	L
5651	PRSS7	6690	SPINK1	L
5652	PRSS8	55729	ATF7IP	L
5654	HTRA1	55603	FAM46A	L
5655	KLK10	55791	C1orf103	S
5657	PRTN3	7124	TNF	L
5660	PSAP	9620	CELSR1	S
5660	PSAP	10980	COPS6	S
5660	PSAP	23764	MAFF	S
5660	PSAP	157285	DKFZp761P0423	S
5662	PSD	9535	GMFG	S
5662	PSD	10681	GNB5	S
5662	PSD	57799	RAB40C	S
5662	PSD	162952	(null)	S
5662	PSD	284004	FLJ23825	S
5663	PSEN1	6134	RPL10	L
5663	PSEN1	6934	TCF7L2	L
5663	PSEN1	7087	ICAM5	L
5663	PSEN1	8502	PKP4	L
5663	PSEN1	8766	RAB11A	L
5663	PSEN1	9709	HERPUD1	L

5663	PSEN1	10519	CIB1	L
5663	PSEN1	10730	YME1L1	L
5663	PSEN1	23385	NCSTN	L
5663	PSEN1	23621	BACE1	L
5663	PSEN1	29979	UBQLN1	L
5663	PSEN1	30818	CSEN	L
5663	PSEN1	51107	APH1A	L
5663	PSEN1	55294	FBXW7	L
5663	PSEN1	55798	METTL2	L
5663	PSEN1	55851	PSENEN	L
5663	PSEN1	83464	APH1B	L
5664	PSEN2	6717	SRI	L
5664	PSEN2	7087	ICAM5	L
5664	PSEN2	10519	CIB1	L
5664	PSEN2	23385	NCSTN	L
5664	PSEN2	29979	UBQLN1	L
5664	PSEN2	30818	CSEN	L
5664	PSEN2	51107	APH1A	L
5664	PSEN2	55798	METTL2	L
5664	PSEN2	55851	PSENEN	L
5664	PSEN2	83464	APH1B	L
5669	PSG1	10813	UTP14A	S
5671	PSG3	6498	SKIL	L
5671	PSG3	25865	PRKD2	L
5671	PSG3	55603	FAM46A	L
5671	PSG3	55729	ATF7IP	L
5673	PSG5	55660	FNBP3	L
5678	PSG9	5782	PTPN12	L
5678	PSG9	55791	C1orf103	S
5682	PSMA1	5688	PSMA7	L
5682	PSMA1	7431	VIM	R
5682	PSMA1	9111	NMI	R
5682	PSMA1	10241	NDP52	R
5682	PSMA1	10301	DLEU1	S
5682	PSMA1	11007	DIPA	R
5682	PSMA1	25788	RAD54B	R
5682	PSMA1	54550	EFCBP2	R
5682	PSMA1	79096	MGC4707	S
5682	PSMA1	79734	KCTD17	R
5682	PSMA1	81628	TSC22D4	R
5683	PSMA2	5685	PSMA4	L
5683	PSMA2	5688	PSMA7	L
5683	PSMA2	5699	PSMB10	L
5683	PSMA2	7414	VCL	L
5684	PSMA3	5687	PSMA6	S
5684	PSMA3	5688	PSMA7	L
5684	PSMA3	6628	SNRPB	S
5684	PSMA3	6636	SNRPF	S
5684	PSMA3	7916	BAT2	L
5684	PSMA3	8676	STX11	S
5684	PSMA3	22803	XRN2	L
5685	PSMA4	5688	PSMA7	L
5687	PSMA6	5688	PSMA7	L
5688	PSMA7	5700	PSMC1	L
5689	PSMB1	7414	VCL	L
5689	PSMB1	118460	EXOSC6	L
5689	PSMB1	167227	DCP2	L
5693	PSMB5	27257	LSM1	L
5695	PSMB7	10436	C2F	S
5696	PSMB8	27257	LSM1	L
5698	PSMB9	5699	PSMB10	L
5699	PSMB10	5764	PTN	S
5700	PSMC1	5701	PSMC2	L
5700	PSMC1	5708	PSMD2	RL
5700	PSMC1	5711	PSMD5	L
5700	PSMC1	5713	PSMD7	L
5700	PSMC1	6314	ATXN7	L

5700	PSMC1	7415	VCP	L
5700	PSMC1	11007	DIPA	R
5701	PSMC2	5704	PSMC4	L
5701	PSMC2	5708	PSMD2	L
5701	PSMC2	5711	PSMD5	RL
5701	PSMC2	6498	SKIL	L
5701	PSMC2	6908	TBP	L
5701	PSMC2	81488	GRINL1A	S
5702	PSMC3	5704	PSMC4	L
5702	PSMC3	5705	PSMC5	L
5702	PSMC3	7428	VHL	L
5702	PSMC3	8676	STX11	S
5702	PSMC3	10587	TXNRD2	L
5704	PSMC4	5705	PSMC5	R
5704	PSMC4	5716	PSMD10	RL
5705	PSMC5	6095	RORA	R
5705	PSMC5	6667	SP1	L
5705	PSMC5	7068	THRB	L
5705	PSMC5	7138	TNNT1	R
5706	PSMC6	5715	PSMD9	R
5706	PSMC6	11007	DIPA	R
5706	PSMC6	127703	FLJ38984	R
5708	PSMD2	5711	PSMD5	L
5708	PSMD2	5764	PTN	S
5708	PSMD2	7132	TNFRSF1A	L
5708	PSMD2	7704	ZBTB16	S
5708	PSMD2	9094	UNC119	S
5708	PSMD2	55791	C1orf103	S
5708	PSMD2	134510	UBLCP1	R
5710	PSMD4	5886	RAD23A	L
5710	PSMD4	5887	RAD23B	L
5710	PSMD4	6929	TCF3	L
5710	PSMD4	11228	RASSF8	R
5710	PSMD4	29978	UBQLN2	L
5710	PSMD4	51667	NYREN18	L
5713	PSMD7	5861	RAB1A	S
5714	PSMD8	51377	UCHL5	L
5715	PSMD9	6929	TCF3	L
5717	PSMD11	5764	PTN	S
5717	PSMD11	5796	PTPRK	S
5717	PSMD11	7088	TLE1	S
5717	PSMD11	7157	TP53	S
5717	PSMD11	7280	TUBB2	S
5717	PSMD11	7704	ZBTB16	S
5717	PSMD11	9001	HAP1	S
5717	PSMD11	9094	UNC119	S
5717	PSMD11	9869	SETDB1	S
5717	PSMD11	10980	COPS6	S
5717	PSMD11	11244	ZHX1	S
5717	PSMD11	29117	BRD7	S
5717	PSMD11	51003	MED31	S
5717	PSMD11	54462	KIAA1128	S
5717	PSMD11	55791	C1orf103	S
5717	PSMD11	60492	MDS025	S
5717	PSMD11	84060	DKFZP564O0523	S
5717	PSMD11	84966	IGSF21	S
5717	PSMD11	222019	(null)	S
5720	PSME1	5721	PSME2	RL
5720	PSME1	7414	VCL	S
5720	PSME1	7431	VIM	S
5720	PSME1	10383	TUBB2	S
5720	PSME1	10436	C2F	S
5720	PSME1	23326	USP22	S
5724	PTAFR	5999	RGS4	L
5725	PTBP1	5829	PXN	L
5725	PTBP1	6421	SFPQ	L
5725	PTBP1	6626	SNRPA	R

5725	PTBP1	8570	KHSRP	L
5725	PTBP1	10241	NDP52	R
5725	PTBP1	125950	RAVER1	L
5727	PTCH	6469	SHH	L
5727	PTCH	6608	SMO	L
5727	PTCH	28996	HIPK2	L
5727	PTCH	50846	DHH	L
5728	PTEN	5747	PTK2	L
5728	PTEN	5829	PXN	L
5728	PTEN	7157	TP53	L
5728	PTEN	7332	UBE2L3	L
5728	PTEN	9961	MVP	L
5728	PTEN	10813	UTP14A	S
5728	PTEN	10980	COPS6	S
5728	PTEN	260425	MAGI3	L
5730	PTGDS	5737	PTGFR	L
5739	PTGIR	55811	SAC	L
5741	PTH	5745	PTHR1	L
5741	PTH	5746	PTHR2	L
5741	PTH	7917	BAT3	S
5741	PTH	9638	FEZ1	S
5743	PTGS2	7157	TP53	L
5744	PTHLH	5745	PTHR1	L
5745	PTHR1	9351	SLC9A3R2	L
5745	PTHR1	9368	SLC9A3R1	L
5747	PTK2	5781	PTPN11	L
5747	PTK2	5782	PTPN12	L
5747	PTK2	5794	PTPRH	L
5747	PTK2	6401	SELE	L
5747	PTK2	6464	SHC1	L
5747	PTK2	6714	SRC	L
5747	PTK2	6772	STAT1	L
5747	PTK2	6850	SYK	L
5747	PTK2	7041	TGFB1I1	L
5747	PTK2	7094	TLN1	L
5747	PTK2	7205	TRIP6	L
5747	PTK2	7430	VIL2	L
5747	PTK2	8440	NCK2	L
5747	PTK2	8835	SOCS2	R
5747	PTK2	9140	ATG12	R
5747	PTK2	9564	BCAR1	L
5747	PTK2	9821	RB1CC1	L
5747	PTK2	10278	EFS	L
5747	PTK2	10519	CIB1	L
5747	PTK2	23092	ARHGAP26	L
5747	PTK2	28964	GIT1	L
5747	PTK2	50807	DDEF1	L
5747	PTK2	64780	MICAL1	L
5753	PTK6	10657	KHDRBS1	L
5753	PTK6	55620	STAP2	L
5757	PTMA	5901	RAN	L
5757	PTMA	6418	SET	L
5757	PTMA	7433	VIPR1	L
5757	PTMA	8290	HIST3H3	L
5757	PTMA	8349	HIST2H2BE	L
5757	PTMA	8359	HIST1H4A	L
5757	PTMA	9611	NCOR1	L
5757	PTMA	11331	PHB2	L
5757	PTMA	23636	NUP62	L
5757	PTMA	25942	SIN3A	L
5763	PTMS	51608	C7orf20	S
5764	PTN	5787	PTPRB	L
5764	PTN	5802	PTPRS	S
5764	PTN	5803	PTPRZ1	L
5764	PTN	6016	RIT1	S
5764	PTN	6176	RPLP1	S
5764	PTN	6303	SAT	S

5764	PTN	6382	SDC1	L
5764	PTN	6449	SGTA	S
5764	PTN	6745	SSR1	S
5764	PTN	6866	TAC3	S
5764	PTN	7159	TP53BP2	S
5764	PTN	8195	MKKS	S
5764	PTN	8614	STC2	S
5764	PTN	8665	EIF3S5	S
5764	PTN	9238	TBRG4	S
5764	PTN	9587	MAD2L1BP	S
5764	PTN	9627	SNCAIP	S
5764	PTN	9672	SDC3	L
5764	PTN	9804	TOMM20	S
5764	PTN	9905	RUTBC1	S
5764	PTN	9913	SUPT7L	S
5764	PTN	10190	TXNDC9	S
5764	PTN	10249	GLYAT	S
5764	PTN	10399	GNB2L1	S
5764	PTN	10406	WFDC2	S
5764	PTN	10425	ARIH2	S
5764	PTN	10927	SPIN	S
5764	PTN	11243	PMF1	S
5764	PTN	11266	DUSP12	S
5764	PTN	23654	PLXNB2	S
5764	PTN	26292	MYCBP	S
5764	PTN	50618	ITSN2	S
5764	PTN	51019	CGI-116	S
5764	PTN	51236	C8orf30A	S
5764	PTN	51631	LUC7L2	S
5764	PTN	51726	DNAJB11	S
5764	PTN	54544	C1orf42	S
5764	PTN	54622	ARFRP2	S
5764	PTN	54810	GIPC2	S
5764	PTN	55147	RBM23	S
5764	PTN	55186	SLC25A36	S
5764	PTN	55643	BTBD2	S
5764	PTN	55755	CDK5RAP2	S
5764	PTN	56647	BCCIP	S
5764	PTN	56893	UBQLN4	S
5764	PTN	57050	SAS10	S
5764	PTN	60489	APOBEC3G	S
5764	PTN	78987	CRELD1	S
5764	PTN	79101	MGC5306	S
5764	PTN	79663	HSPBAP1	S
5764	PTN	79886	C9orf82	S
5764	PTN	84141	FLJ13391	S
5764	PTN	266812	NAP1L5	S
5770	PTPN1	7297	TYK2	L
5770	PTPN1	9564	BCAR1	L
5770	PTPN1	22800	RRAS2	L
5771	PTPN2	6774	STAT3	L
5774	PTPN3	7529	YWHAB	L
5774	PTPN3	25865	PRKD2	L
5774	PTPN3	57473	GM632	L
5775	PTPN4	10524	HTATIP	S
5775	PTPN4	23140	ZZEF1	S
5777	PTPN6	5788	PTPRC	L
5777	PTPN6	6098	ROS1	L
5777	PTPN6	6752	SSTR2	L
5777	PTPN6	6777	STAT5B	L
5777	PTPN6	6850	SYK	L
5777	PTPN6	7132	TNFRSF1A	L
5777	PTPN6	7297	TYK2	L
5777	PTPN6	7409	VAV1	L
5777	PTPN6	7535	ZAP70	L
5777	PTPN6	7852	CXCR4	L
5777	PTPN6	8471	IRS4	L

5777	PTPN6	9846	GAB2	L
5777	PTPN6	29760	BLNK	L
5777	PTPN6	29992	PILRA	L
5777	PTPN6	50856	CLEC4A	L
5777	PTPN6	55824	PAG1	L
5777	PTPN6	80021	TMEM62	S
5777	PTPN6	80739	C6orf25	L
5777	PTPN6	114132	SIGLEC11	L
5777	PTPN6	114836	SLAMF6	L
5777	PTPN6	140885	PTPNS1	L
5777	PTPN6	151888	BTLA	L
5777	PTPN6	340205	TREML1	L
5780	PTPN9	10313	RTN3	R
5781	PTPN11	5829	PXN	L
5781	PTPN11	6401	SELE	L
5781	PTPN11	6464	SHC1	L
5781	PTPN11	6504	SLAMF1	L
5781	PTPN11	6774	STAT3	L
5781	PTPN11	6776	STAT5A	L
5781	PTPN11	7010	TEK	L
5781	PTPN11	7075	TIE1	L
5781	PTPN11	7094	TLN1	L
5781	PTPN11	7132	TNFRSF1A	L
5781	PTPN11	8471	IRS4	L
5781	PTPN11	8660	IRS2	L
5781	PTPN11	9019	MPZL1	L
5781	PTPN11	10817	FRS3	L
5781	PTPN11	10818	FRS2	L
5781	PTPN11	27036	SIGLEC7	L
5781	PTPN11	27240	SIT1	L
5781	PTPN11	29992	PILRA	L
5781	PTPN11	55824	PAG1	L
5781	PTPN11	80739	C6orf25	L
5781	PTPN11	114132	SIGLEC11	L
5781	PTPN11	114836	SLAMF6	L
5781	PTPN11	139716	GAB3	L
5781	PTPN11	151888	BTLA	L
5781	PTPN11	340205	TREML1	L
5782	PTPN12	5829	PXN	L
5782	PTPN12	6464	SHC1	L
5782	PTPN12	7041	TGFB1I1	L
5782	PTPN12	7402	UTRN	L
5782	PTPN12	7917	BAT3	L
5782	PTPN12	8675	STX16	L
5782	PTPN12	9051	PSTPIP1	L
5782	PTPN12	9564	BCAR1	L
5782	PTPN12	9904	RBM19	L
5782	PTPN12	10278	EFS	L
5782	PTPN12	54881	TEX10	L
5782	PTPN12	80108	ZFP2	L
5782	PTPN12	83591	THAP2	L
5782	PTPN12	90410	IFT20	L
5783	PTPN13	7205	TRIP6	L
5783	PTPN13	9411	ARHGAP29	L
5783	PTPN13	51735	RAPGEF6	L
5784	PTPN14	7082	TJP1	L
5787	PTPRB	8506	CNTNAP1	L
5787	PTPRB	260425	MAGI3	L
5788	PTPRC	5790	PTPRCAP	L
5788	PTPRC	5921	RASA1	L
5788	PTPRC	7409	VAV1	L
5788	PTPRC	7535	ZAP70	L
5788	PTPRC	8495	PPFIBP2	L
5788	PTPRC	8631	SCAP1	L
5788	PTPRC	10507	SEMA4D	L
5788	PTPRC	23193	GANAB	L
5788	PTPRC	26994	RNF11	L

5788	PTPRC	27257	LSM1	L
5789	PTPRD	5802	PTPRS	L
5789	PTPRD	8499	PPFIA2	L
5789	PTPRD	8500	PPFIA1	L
5789	PTPRD	8541	PPFIA3	L
5791	PTPRE	7094	TLN1	L
5792	PTPRF	5979	RET	L
5792	PTPRF	6498	SKIL	L
5792	PTPRF	7204	TRIO	L
5792	PTPRF	8499	PPFIA2	L
5792	PTPRF	8500	PPFIA1	L
5792	PTPRF	8541	PPFIA3	L
5792	PTPRF	9564	BCAR1	L
5792	PTPRF	10818	FRS2	L
5792	PTPRF	55660	FNBP3	L
5792	PTPRF	57473	GM632	L
5794	PTPRH	5829	PXN	L
5794	PTPRH	9564	BCAR1	L
5795	PTPRJ	6386	SDCBP	L
5795	PTPRJ	8878	SQSTM1	L
5795	PTPRJ	27040	LAT	L
5796	PTPRK	7083	TK1	S
5796	PTPRK	51064	(null)	S
5797	PTPRM	10399	GNB2L1	L
5798	PTPRN	6645	SNTB2	L
5798	PTPRN	57731	SPTBN4	L
5799	PTPRN2	9793	CKAP5	L
5799	PTPRN2	57731	SPTBN4	L
5802	PTPRS	7280	TUBB2	S
5802	PTPRS	8499	PPFIA2	L
5802	PTPRS	8500	PPFIA1	L
5802	PTPRS	8541	PPFIA3	L
5802	PTPRS	9094	UNC119	S
5802	PTPRS	9638	FEZ1	S
5802	PTPRS	9869	SETDB1	S
5802	PTPRS	10524	HTATIP	S
5802	PTPRS	10813	UTP14A	S
5802	PTPRS	11021	RAB35	S
5802	PTPRS	25843	PREI3	S
5802	PTPRS	57562	KIAA1377	S
5802	PTPRS	197131	UBR1	S
5802	PTPRS	222019	(null)	S
5802	PTPRS	284169	(null)	S
5810	RAD1	5883	RAD9A	L
5810	RAD1	5884	RAD17	L
5810	RAD1	7266	DNAJC7	L
5810	RAD1	81631	MAP1LC3B	S
5813	PURA	6667	SP1	L
5813	PURA	11033	CENTA1	L
5817	PVR	6990	TCTE1L	L
5817	PVR	7448	VTN	L
5817	PVR	10053	AP1M2	L
5817	PVR	25945	PVRL3	L
5818	PVRL1	56288	PARD3	L
5819	PVRL2	9551	ATP5J2	S
5822	PWP2H	10040	TOM1L1	S
5824	PEX19	5825	ABCD3	L
5824	PEX19	8504	PEX3	RL
5824	PEX19	8799	PEX11B	L
5824	PEX19	8800	PEX11A	L
5824	PEX19	9409	PEX16	L
5824	PEX19	10478	SLC25A17	L
5826	ABCD4	8682	PEA15	S
5826	ABCD4	10301	DLEU1	S
5826	ABCD4	51669	TMEM66	S
5828	PXMP3	5830	PEX5	L
5828	PXMP3	7088	TLE1	S

5828	PXMP3	11161	C14orf1	S
5829	PXN	5921	RASA1	L
5829	PXN	6122	RPL3	L
5829	PXN	6124	RPL4	L
5829	PXN	6125	RPL5	L
5829	PXN	6128	RPL6	L
5829	PXN	6129	RPL7	L
5829	PXN	6132	RPL8	L
5829	PXN	6133	RPL9	L
5829	PXN	6134	RPL10	L
5829	PXN	6135	RPL11	L
5829	PXN	6137	RPL13	L
5829	PXN	6138	RPL15	L
5829	PXN	6139	RPL17	L
5829	PXN	6143	RPL19	L
5829	PXN	6144	RPL21	L
5829	PXN	6146	RPL22	L
5829	PXN	6154	RPL26	L
5829	PXN	6155	RPL27	L
5829	PXN	6158	RPL28	L
5829	PXN	6159	RPL29	L
5829	PXN	6169	RPL38	L
5829	PXN	6175	RPLP0	L
5829	PXN	6181	RPLP2	L
5829	PXN	6194	RPS6	L
5829	PXN	6201	RPS7	L
5829	PXN	6228	RPS23	L
5829	PXN	6229	RPS24	L
5829	PXN	6232	RPS27	L
5829	PXN	6238	RRBP1	L
5829	PXN	6401	SELE	L
5829	PXN	6421	SFPQ	L
5829	PXN	6428	SFRS3	L
5829	PXN	6520	SLC3A2	L
5829	PXN	6714	SRC	L
5829	PXN	6742	SSBP1	L
5829	PXN	6850	SYK	L
5829	PXN	7024	TFCP2	L
5829	PXN	7041	TGFB1I1	L
5829	PXN	7052	TGM2	L
5829	PXN	7094	TLN1	L
5829	PXN	7108	TM7SF2	L
5829	PXN	7112	TMPO	L
5829	PXN	7205	TRIP6	L
5829	PXN	7278	TUBA2	L
5829	PXN	7283	TUBG1	L
5829	PXN	7414	VCL	L
5829	PXN	7431	VIM	L
5829	PXN	7520	XRCC5	L
5829	PXN	7534	YWHAZ	L
5829	PXN	7846	TUBA3	L
5829	PXN	8091	HMGA2	L
5829	PXN	8815	BANF1	L
5829	PXN	8853	DDEF2	L
5829	PXN	9045	RPL14	L
5829	PXN	9185	REPS2	L
5829	PXN	9349	RPL23	L
5829	PXN	9815	GIT2	L
5829	PXN	9961	MVP	L
5829	PXN	10146	G3BP	L
5829	PXN	10157	AASS	L
5829	PXN	10163	WASF2	L
5829	PXN	10376	K-ALPHA-1	L
5829	PXN	10383	TUBB2	L
5829	PXN	10466	COG5	L
5829	PXN	10620	ARID3B	L
5829	PXN	10970	CKAP4	L

5829	PXN	26986	PABPC1	L
5829	PXN	27175	TUBG2	L
5829	PXN	28964	GIT1	L
5829	PXN	51164	DCTN4	L
5829	PXN	51807	TUBA8	L
5829	PXN	55338	FLJ11292	L
5829	PXN	55567	DNAH3	L
5829	PXN	64780	MICAL1	L
5829	PXN	91662	NALP12	L
5829	PXN	114787	KIAA1893	L
5829	PXN	116840	LIP8	L
5829	PXN	118813	ZFYVE27	L
5829	PXN	146053	LOC146053	L
5829	PXN	151887	URB	L
5829	PXN	203068	TUBB	L
5830	PEX5	8528	DDO	L
5830	PEX5	10073	RNUT1	S
5830	PEX5	23410	SIRT3	R
5833	PCYT2	79831	FLJ13798	R
5837	PYGM	6271	S100A1	L
5858	PZP	7040	TGFB1	L
5858	PZP	7042	TGFB2	L
5859	QARS	7186	TRAF2	R
5859	QARS	7916	BAT2	L
5859	QARS	8446	DUSP11	S
5859	QARS	8895	CPNE3	S
5859	QARS	26994	RNF11	L
5861	RAB1A	6624	FSCN1	S
5861	RAB1A	6861	SYT5	S
5861	RAB1A	8615	VDP	L
5861	RAB1A	9950	GOLGA5	L
5861	RAB1A	10567	RABAC1	RL
5861	RAB1A	22924	MAPRE3	S
5861	RAB1A	23539	SLC16A8	S
5861	RAB1A	26003	GORASP2	L
5861	RAB1A	51042	ZNF593	S
5861	RAB1A	55312	RFK	S
5861	RAB1A	79735	TBC1D17	S
5861	RAB1A	85377	MICAL-L1	L
5862	RAB2	26003	GORASP2	L
5862	RAB2	196472	MGC39520	R
5863	RGL2	5908	RAP1B	L
5863	RGL2	9094	UNC119	S
5863	RGL2	10524	HTATIP	S
5863	RGL2	11143	MYST2	S
5863	RGL2	60492	MDS025	S
5864	RAB3A	5866	RAB3IL1	L
5864	RAB3A	5876	RABGGTB	L
5864	RAB3A	5877	RABIF	L
5864	RAB3A	8573	CASK	L
5864	RAB3A	9501	RPH3AL	L
5864	RAB3A	9699	RIMS2	L
5864	RAB3A	10567	RABAC1	L
5864	RAB3A	22999	RIMS1	L
5864	RAB3A	23312	DMXL2	L
5864	RAB3A	94121	SYTL4	L
5864	RAB3A	94122	SYTL5	L
5864	RAB3A	117177	RAB3IP	L
5865	RAB3B	9501	RPH3AL	L
5865	RAB3B	9699	RIMS2	L
5866	RAB3IL1	8766	RAB11A	R
5866	RAB3IL1	79873	NUDT18	R
5866	RAB3IL1	117177	RAB3IP	R
5867	RAB4A	6648	SOD2	S
5867	RAB4A	6810	STX4A	L
5867	RAB4A	7157	TP53	S
5867	RAB4A	8655	DNCL1	L

5867	RAB4A	9135	RABEP1	L
5867	RAB4A	9371	KIF3B	L
5867	RAB4A	10307	APBB3	S
5867	RAB4A	10567	RABAC1	L
5867	RAB4A	23607	CD2AP	L
5867	RAB4A	27342	RABGEF1	L
5867	RAB4A	51143	DNCLI1	L
5867	RAB4A	80223	RAB11FIP1	L
5868	RAB5A	6810	STX4A	L
5868	RAB5A	7249	TSC2	L
5868	RAB5A	8411	EEA1	L
5868	RAB5A	9135	RABEP1	L
5868	RAB5A	9610	RIN1	L
5868	RAB5A	9712	USP6NL	L
5868	RAB5A	10567	RABAC1	L
5868	RAB5A	84218	TBC1D3	L
5868	RAB5A	259173	ALS2CL	L
5868	RAB5A	326624	RAB37	L
5869	RAB5B	7037	TFRC	L
5869	RAB5B	8411	EEA1	L
5869	RAB5B	9610	RIN1	L
5869	RAB5B	79890	RIN3	L
5870	RAB6A	10112	KIF20A	L
5870	RAB6A	10567	RABAC1	L
5870	RAB6A	23299	BICD2	L
5870	RAB6A	94122	SYTL5	L
5871	MAP4K2	7186	TRAF2	L
5873	RAB27A	6804	STX1A	L
5873	RAB27A	7704	ZBTB16	S
5873	RAB27A	9501	RPH3AL	L
5873	RAB27A	10980	COPS6	S
5873	RAB27A	11161	C14orf1	S
5873	RAB27A	54843	SYTL2	L
5873	RAB27A	55791	C1orf103	S
5873	RAB27A	57562	KIAA1377	S
5873	RAB27A	79083	MLPH	L
5873	RAB27A	84060	DKFZP564O0523	S
5873	RAB27A	94121	SYTL4	L
5873	RAB27A	94122	SYTL5	L
5873	RAB27A	201294	UNC13D	L
5874	RAB27B	9501	RPH3AL	L
5874	RAB27B	79083	MLPH	L
5874	RAB27B	94121	SYTL4	L
5874	RAB27B	201294	UNC13D	L
5876	RABGGTB	8073	PTP4A2	L
5877	RABIF	10542	HBXIP	S
5877	RABIF	10813	UTP14A	S
5877	RABIF	56267	KAT3	S
5877	RABIF	376267	RAB15	L
5878	RAB5C	8411	EEA1	L
5878	RAB5C	10567	RABAC1	L
5878	RAB5C	79890	RIN3	L
5879	RAC1	5910	RAP1GDS1	L
5879	RAC1	6774	STAT3	L
5879	RAC1	7074	TIAM1	L
5879	RAC1	7204	TRIO	L
5879	RAC1	7277	TUBA1	L
5879	RAC1	7454	WAS	L
5879	RAC1	8826	IQGAP1	L
5879	RAC1	8871	SYNJ2	L
5879	RAC1	9181	ARHGEF2	L
5879	RAC1	10451	VAV3	L
5879	RAC1	10458	BAIAP2	L
5879	RAC1	10788	IQGAP2	L
5879	RAC1	10928	RALBP1	L
5879	RAC1	23191	CYFIP1	L
5879	RAC1	23463	ICMT	L

5879	RAC1	23616	SH3BP1	L
5879	RAC1	23647	ARFIP2	L
5879	RAC1	29109	FHOD1	L
5879	RAC1	50619	DEF6	L
5879	RAC1	50855	PARD6A	L
5879	RAC1	51495	HSPC121	L
5879	RAC1	55843	ARHGAP15	L
5879	RAC1	57144	PAK7	L
5879	RAC1	81704	DOCK8	L
5879	RAC1	84218	TBC1D3	L
5879	RAC1	84552	PARD6G	L
5880	RAC2	8454	CUL1	L
5880	RAC2	23463	ICMT	L
5880	RAC2	23647	ARFIP2	L
5880	RAC2	50619	DEF6	L
5881	RAC3	6927	TCF1	L
5881	RAC3	10519	CIB1	L
5881	RAC3	29959	NRBP	L
5883	RAD9A	5884	RAD17	L
5883	RAD9A	7266	DNAJC7	L
5883	RAD9A	11073	TOPBP1	L
5883	RAD9A	11200	CHEK2	L
5883	RAD9A	50618	ITSN2	L
5883	RAD9A	63967	CLSPN	L
5884	RAD17	5982	RFC2	L
5884	RAD17	5983	RFC3	L
5884	RAD17	5984	RFC4	L
5884	RAD17	5985	RFC5	L
5885	RAD21	8467	SMARCA5	L
5885	RAD21	10274	STAG1	L
5885	RAD21	10735	STAG2	L
5886	RAD23A	6184	RPN1	L
5886	RAD23A	7186	TRAF2	R
5886	RAD23A	7508	XPC	L
5886	RAD23A	8878	SQSTM1	R
5886	RAD23A	84993	UBL7	R
5887	RAD23B	6996	TDG	L
5887	RAD23B	7508	XPC	L
5888	RAD51	6117	RPA1	L
5888	RAD51	7157	TP53	L
5888	RAD51	7329	UBE2I	L
5888	RAD51	7341	SUMO1	L
5888	RAD51	7431	VIM	S
5888	RAD51	8438	RAD54L	L
5888	RAD51	9093	DNAJA3	L
5888	RAD51	10635	RAD51AP1	L
5888	RAD51	11144	DMC1	L
5888	RAD51	25788	RAD54B	L
5888	RAD51	283987	C17orf28	L
5889	RAD51C	7517	XRCC3	L
5892	RAD51L3	7516	XRCC2	L
5892	RAD51L3	7517	XRCC3	L
5893	RAD52	7486	WRN	L
5894	RAF1	5906	RAP1A	L
5894	RAF1	5911	RAP2A	L
5894	RAF1	5925	RB1	L
5894	RAF1	5934	RBL2	L
5894	RAF1	6009	RHEB	L
5894	RAF1	6714	SRC	L
5894	RAF1	7203	CCT3	L
5894	RAF1	7409	VAV1	L
5894	RAF1	7529	YWHAB	L
5894	RAF1	7531	YWHAE	L
5894	RAF1	7532	YWHAG	L
5894	RAF1	7533	YWHAH	L
5894	RAF1	7534	YWHAZ	L
5894	RAF1	8036	SHOC2	L

5894	RAF1	8837	CFLAR	L
5894	RAF1	22800	RRAS2	L
5894	RAF1	22808	MRAS	L
5894	RAF1	51555	PEX5L	L
5894	RAF1	51765	MASK	L
5894	RAF1	81848	SPRY4	L
5896	RAG1	5897	RAG2	L
5898	RALA	9649	RALGPS1	L
5898	RALA	10640	SEC10L1	L
5898	RALA	10928	RALBP1	L
5898	RALA	11336	SEC6L1	L
5898	RALA	22866	CNKSR2	L
5898	RALA	51762	RAB8B	L
5898	RALA	55763	SEC3L1	L
5898	RALA	55770	SEC5L1	L
5898	RALA	85021	REPS1	L
5898	RALA	149371	EXOC8	L
5898	RALA	266747	Rgr	L
5899	RALB	9185	REPS2	L
5899	RALB	10928	RALBP1	RL
5899	RALB	85021	REPS1	L
5899	RALB	266747	Rgr	L
5900	RALGDS	5906	RAP1A	L
5900	RALGDS	5911	RAP2A	L
5900	RALGDS	5912	RAP2B	L
5900	RALGDS	6016	RIT1	L
5900	RALGDS	6237	RRAS	L
5900	RALGDS	22800	RRAS2	L
5900	RALGDS	22808	MRAS	L
5901	RAN	5902	RANBP1	L
5901	RAN	5903	RANBP2	L
5901	RAN	5905	RANGAP1	L
5901	RAN	6749	SSRP1	L
5901	RAN	7514	XPO1	L
5901	RAN	8498	RANBP3	L
5901	RAN	8853	DDEF2	L
5901	RAN	10048	RANBP9	L
5901	RAN	10204	NUTF2	L
5901	RAN	10527	IPO7	L
5901	RAN	10762	NUP50	L
5901	RAN	11260	XPOT	L
5901	RAN	26012	NELF	S
5901	RAN	29098	RANGNRF	L
5901	RAN	51194	IPO11	L
5901	RAN	57510	XPO5	L
5901	RAN	57562	KIAA1377	S
5901	RAN	84220	RANBP2L1	L
5901	RAN	91754	NEK9	L
5902	RANBP1	29098	RANGNRF	L
5903	RANBP2	5905	RANGAP1	L
5903	RANBP2	5956	OPN1LW	L
5903	RANBP2	7329	UBE2I	L
5903	RANBP2	7514	XPO1	L
5903	RANBP2	11260	XPOT	L
5903	RANBP2	23636	NUP62	L
5905	RANGAP1	6613	SUMO2	L
5905	RANGAP1	7329	UBE2I	L
5905	RANGAP1	7341	SUMO1	L
5905	RANGAP1	10526	IPO8	L
5906	RAP1A	5910	RAP1GDS1	L
5906	RAP1A	10567	RABAC1	L
5906	RAP1A	10636	RGS14	L
5906	RAP1A	22821	RASA3	L
5906	RAP1A	51735	RAPGEF6	L
5906	RAP1A	115727	RASGRP4	L
5906	RAP1A	266747	Rgr	L
5908	RAP1B	5909	RAP1GA1	L

5908	RAP1B	83593	RASSF5	L
5909	RAP1GA1	84206	RKHD3	S
5910	RAP1GDS1	22920	KIFAP3	L
5910	RAP1GDS1	26036	ZNF451	R
5910	RAP1GDS1	51562	MBIP	R
5911	RAP2A	9448	MAP4K4	L
5911	RAP2A	10636	RGS14	L
5911	RAP2A	51735	RAPGEF6	L
5911	RAP2A	83593	RASSF5	L
5912	RAP2B	10900	RPIP8	R
5913	RAPSN	10657	KHDRBS1	L
5914	RARA	5927	JARID1A	L
5914	RARA	5948	RBP2	L
5914	RARA	6256	RXRA	L
5914	RARA	6257	RXRB	R
5914	RARA	6258	RXRG	R
5914	RARA	6667	SP1	L
5914	RARA	6777	STAT5B	L
5914	RARA	7080	TITF1	L
5914	RARA	7704	ZBTB16	L
5914	RARA	8125	ANP32A	L
5914	RARA	8202	NCOA3	L
5914	RARA	8204	NRIP1	L
5914	RARA	8431	NR0B2	L
5914	RARA	8648	NCOA1	L
5914	RARA	8805	TRIM24	L
5914	RARA	9318	COPS2	L
5914	RARA	9325	TRIP4	L
5914	RARA	9612	NCOR2	L
5914	RARA	10002	NR2E3	L
5914	RARA	10062	NR1H3	L
5914	RARA	10474	TADA3L	L
5914	RARA	10499	NCOA2	L
5914	RARA	23013	SPEN	L
5914	RARA	23054	NCOA6	L
5914	RARA	29982	NRBF2	L
5914	RARA	50805	IRX4	L
5914	RARA	55629	PNRC2	L
5914	RARA	64324	NSD1	L
5915	RARB	6257	RXRB	L
5915	RARB	8648	NCOA1	L
5915	RARB	25865	PRKD2	L
5916	RARG	6256	RXRA	L
5921	RASA1	6549	SLC9A2	L
5921	RASA1	6714	SRC	L
5921	RASA1	6790	STK6	L
5921	RASA1	6853	SYN1	L
5921	RASA1	7525	YES1	L
5921	RASA1	7535	ZAP70	L
5921	RASA1	9021	SOCS3	L
5921	RASA1	9046	DOK2	L
5921	RASA1	9093	DNAJA3	L
5921	RASA1	9212	AURKB	L
5921	RASA1	9448	MAP4K4	L
5921	RASA1	10146	G3BP	L
5921	RASA1	10399	GNB2L1	L
5921	RASA1	55824	PAG1	L
5923	RASGRF1	7531	YWHAE	L
5923	RASGRF1	9101	USP8	L
5923	RASGRF1	10188	TNK2	L
5925	RB1	5926	ARID4A	L
5925	RB1	5927	JARID1A	L
5925	RB1	5928	RBBP4	L
5925	RB1	5929	RBBP5	L
5925	RB1	5931	RBBP7	L
5925	RB1	5932	RBBP8	L
5925	RB1	6015	RING1	L

5925	RB1	6597	SMARCA4	L
5925	RB1	6598	SMARCB1	L
5925	RB1	6617	SNAPC1	L
5925	RB1	6619	SNAPC3	L
5925	RB1	6667	SP1	L
5925	RB1	6670	SP3	L
5925	RB1	6689	SPIB	L
5925	RB1	6839	SUV39H1	L
5925	RB1	6872	TAF1	L
5925	RB1	6908	TBP	L
5925	RB1	7052	TGM2	L
5925	RB1	7112	TMPO	L
5925	RB1	7343	UBTF	L
5925	RB1	7799	PRDM2	L
5925	RB1	8503	PIK3R3	L
5925	RB1	8507	ENC1	L
5925	RB1	8535	CBX4	L
5925	RB1	8575	PRKRA	L
5925	RB1	8804	CREG1	L
5925	RB1	8841	HDAC3	L
5925	RB1	8850	PCAF	L
5925	RB1	8900	CCNA1	L
5925	RB1	9321	TRIP11	L
5925	RB1	9643	MORF4L2	L
5925	RB1	9984	THOC1	L
5925	RB1	10131	TRAP1	L
5925	RB1	10399	GNB2L1	L
5925	RB1	10403	KNTC2	L
5925	RB1	10620	ARID3B	L
5925	RB1	10741	RBBP9	L
5925	RB1	10933	MORF4L1	L
5925	RB1	23741	CRI1	L
5925	RB1	26574	AATF	L
5925	RB1	27043	PELP1	L
5925	RB1	55814	BDP1	L
5926	ARID4A	8841	HDAC3	L
5926	ARID4A	23741	CRI1	L
5927	JARID1A	5933	RBL1	L
5927	JARID1A	6908	TBP	L
5927	JARID1A	7421	VDR	L
5928	RBBP4	6184	RPN1	S
5928	RBBP4	6667	SP1	L
5928	RBBP4	6670	SP3	L
5928	RBBP4	6839	SUV39H1	L
5928	RBBP4	8841	HDAC3	L
5928	RBBP4	9112	MTA1	L
5928	RBBP4	23013	SPEN	L
5930	RBBP6	6628	SNRPB	L
5930	RBBP6	9372	ZFYVE9	L
5931	RBBP7	6839	SUV39H1	L
5931	RBBP7	9112	MTA1	L
5932	RBBP8	5933	RBL1	RL
5932	RBBP8	5934	RBL2	L
5932	RBBP8	8543	LMO4	L
5932	RBBP8	9513	FXR2	R
5932	RBBP8	10320	ZNFN1A1	L
5932	RBBP8	22806	ZNFN1A3	L
5932	RBBP8	26574	AATF	L
5932	RBBP8	55093	C8orf32	R
5932	RBBP8	60436	TGIF2	L
5932	RBBP8	283987	C17orf28	R
5933	RBL1	6872	TAF1	L
5933	RBL1	7375	USP4	L
5933	RBL1	8804	CREG1	L
5933	RBL1	10741	RBBP9	L
5933	RBL1	22938	SNW1	L
5933	RBL1	57596	KIAA1446	R

5934	RBL2	6872	TAF1	L
5934	RBL2	7343	UBTF	L
5934	RBL2	8804	CREG1	L
5934	RBL2	10741	RBBP9	L
5934	RBL2	22938	SNW1	L
5934	RBL2	23309	SIN3B	L
5934	RBL2	55290	BRF2	L
5935	RBM3	7094	TLN1	L
5935	RBM3	7414	VCL	L
5936	RBM4	8900	CCNA1	L
5936	RBM4	55805	LRP2BP	L
5939	RBMS2	138311	FAM69B	S
5940	RBMY1A1	6434	SFRS10	L
5940	RBMY1A1	10656	KHDRBS3	L
5947	RBP1	9227	LRAT	L
5948	RBP2	9227	LRAT	L
5950	RBP4	7276	TTR	L
5955	RCN2	7917	BAT3	S
5957	RCV1	6011	GRK1	L
5959	RDH5	5995	RGR	L
5959	RDH5	6017	RLBP1	L
5961	RDS	6094	ROM1	L
5961	RDS	9402	GRAP2	L
5962	RDX	7248	TSC1	L
5962	RDX	7430	VIL2	L
5962	RDX	8904	CPNE1	L
5962	RDX	9351	SLC9A3R2	L
5962	RDX	9368	SLC9A3R1	L
5962	RDX	10672	GNA13	L
5962	RDX	131034	CPNE4	L
5962	RDX	221184	CPNE2	L
5966	REL	5970	RELA	L
5966	REL	6667	SP1	L
5966	REL	6908	TBP	L
5968	REG1B	7917	BAT3	S
5970	RELA	5981	RFC1	L
5970	RELA	6667	SP1	L
5970	RELA	6774	STAT3	L
5970	RELA	6872	TAF1	L
5970	RELA	6908	TBP	L
5970	RELA	7015	TERT	L
5970	RELA	7088	TLE1	L
5970	RELA	7159	TP53BP2	L
5970	RELA	7291	TWIST1	L
5970	RELA	8091	HMGA2	L
5970	RELA	8841	HDAC3	L
5970	RELA	8945	BTRC	L
5970	RELA	9325	TRIP4	L
5970	RELA	9612	NCOR2	L
5970	RELA	10401	PIAS3	L
5970	RELA	10614	HEXIM1	L
5970	RELA	10848	PPP1R13L	L
5970	RELA	23421	ITGB3BP	L
5970	RELA	23474	ETHE1	L
5970	RELA	51147	ING4	L
5970	RELA	57761	TRIB3	L
5970	RELA	64320	RNF25	L
5970	RELA	222643	UNC5CL	L
5972	REN	5973	RENBP	L
5972	REN	10159	ATP6AP2	L
5972	REN	79047	KCTD15	S
5973	RENBP	9189	ZBED1	R
5976	RENT1	7290	HIRA	L
5976	RENT1	7920	BAT5	L
5976	RENT1	23049	SMG1	L
5976	RENT1	23248	KIAA0460	L
5976	RENT1	51504	HSPC152	L

5976	RENT1	51691	LSM8	L
5976	RENT1	54464	XRN1	L
5976	RENT1	55041	PLEKHB2	L
5976	RENT1	55191	NADSYN1	L
5976	RENT1	55902	ACSS2	L
5976	RENT1	65110	UPF3A	L
5976	RENT1	84528	PEPP-2	L
5976	RENT1	84572	GNPTG	L
5978	REST	10919	EHMT2	L
5978	REST	23186	RCOR1	L
5978	REST	23309	SIN3B	L
5979	RET	6464	SHC1	L
5979	RET	6714	SRC	L
5979	RET	6774	STAT3	L
5979	RET	9046	DOK2	L
5979	RET	10818	FRS2	L
5980	REV3L	10459	MAD2L2	L
5981	RFC1	5983	RFC3	L
5981	RFC1	9338	TCEAL1	L
5981	RFC1	23476	BRD4	L
5983	RFC3	5984	RFC4	L
5984	RFC4	5985	RFC5	RL
5984	RFC4	23476	BRD4	L
5985	RFC5	9094	UNC119	S
5985	RFC5	10980	COPS6	S
5985	RFC5	51003	MED31	S
5985	RFC5	55791	C1orf103	S
5985	RFC5	84060	DKFZP564O0523	S
5987	RFP	7704	ZBTB16	R
5987	RFP	53826	FXYD6	S
5987	RFP	57192	MCOLN1	S
5987	RFP	57596	KIAA1446	R
5987	RFP	79047	KCTD15	S
5987	RFP	85302	FBF1	R
5987	RFP	162952	(null)	S
5989	RFX1	5990	RFX2	L
5989	RFX1	5991	RFX3	L
5989	RFX1	9500	MAGED1	S
5989	RFX1	10474	TADA3L	S
5990	RFX2	5991	RFX3	L
5990	RFX2	5992	RFX4	L
5990	RFX2	222546	RFXDC1	R
5991	RFX3	5992	RFX4	L
5991	RFX3	7186	TRAF2	R
5991	RFX3	222546	RFXDC1	R
5993	RFX5	5994	RFXAP	L
5993	RFX5	8625	RFXANK	L
5994	RFXAP	8625	RFXANK	L
5995	RGR	26128	KIAA1279	R
5996	RGS1	7786	MAP3K12	S
5996	RGS1	8848	TSC22D1	S
5996	RGS1	10813	UTP14A	S
5996	RGS1	65991	FUNDC2	S
5997	RGS2	6331	SCN5A	S
5997	RGS2	8508	NIPSNAP1	S
5997	RGS2	8655	DNCL1	S
5997	RGS2	9276	COPB2	L
5997	RGS2	22981	KIAA0980	R
5997	RGS2	28964	GIT1	S
5997	RGS2	51699	VPS29	S
5997	RGS2	54663	WDR74	S
5997	RGS2	55738	ARFGAP1	S
5997	RGS2	57622	LRFN1	S
5998	RGS3	7531	YWHAE	L
5998	RGS3	7534	YWHAZ	L
5998	RGS3	10114	HIPK3	L
5999	RGS4	9276	COPB2	L

5999	RGS4	23236	PLCB1	L
6000	RGS7	7094	TLN1	L
6000	RGS7	23557	SNAPAP	L
6002	RGS12	23236	PLCB1	L
6004	RGS16	10672	GNA13	L
6005	RHAG	6521	SLC4A1	L
6009	RHEB	7249	TSC2	L
6010	RHO	6011	GRK1	L
6010	RHO	6295	SAG	L
6014	RIT2	7414	VCL	L
6015	RING1	8535	CBX4	L
6015	RING1	23429	RYBP	RL
6015	RING1	60528	ELAC2	L
6016	RIT1	6018	RLF	L
6016	RIT1	55791	C1orf103	S
6018	RLF	55660	FNBP3	L
6019	RLN2	59350	LGR7	L
6019	RLN2	122042	LGR8	L
6035	RNASE1	6050	RNH1	L
6041	RNASEL	6059	ABCE1	L
6045	RNF2	7024	TFCP2	L
6045	RNF2	8535	CBX4	S
6045	RNF2	222019	(null)	S
6047	RNF4	6498	SKIL	L
6047	RNF4	6942	TCF20	L
6047	RNF4	7227	TRPS1	L
6047	RNF4	23598	ZNF278	L
6048	RNF5	7322	UBE2D2	L
6048	RNF5	7323	UBE2D3	L
6048	RNF5	7324	UBE2E1	L
6048	RNF5	7920	BAT5	L
6048	RNF5	10477	UBE2E3	L
6048	RNF5	29109	FHOD1	L
6051	RNPEP	9372	ZFYVE9	L
6091	ROBO1	6585	SLIT1	L
6091	ROBO1	9353	SLIT2	L
6091	ROBO1	10381	TUBB3	S
6091	ROBO1	57522	SRGAP1	L
6092	ROBO2	6749	SSRP1	S
6092	ROBO2	84152	PPP1R1B	S
6092	ROBO2	93145	OLFM2	S
6095	RORA	10499	NCOA2	L
6096	RORB	8648	NCOA1	L
6098	ROS1	10451	VAV3	L
6100	RP9	7307	U2AF1	L
6103	RPGR	57096	RPGRIP1	L
6117	RPA1	6118	RPA2	L
6117	RPA1	6119	RPA3	L
6117	RPA1	6919	TCEA2	S
6117	RPA1	7507	XPA	L
6117	RPA1	8991	SELENBP1	S
6117	RPA1	11277	TREX1	L
6117	RPA1	29935	RPA4	L
6117	RPA1	51236	C8orf30A	S
6117	RPA1	55147	RBM23	S
6117	RPA1	64400	FTS	S
6117	RPA1	84164	ASCC2	S
6117	RPA1	92797	HELB	L
6118	RPA2	6119	RPA3	L
6118	RPA2	6176	RPLP1	S
6118	RPA2	6774	STAT3	L
6118	RPA2	7088	TLE1	S
6118	RPA2	7280	TUBB2	S
6118	RPA2	7374	UNG	L
6118	RPA2	7507	XPA	L
6118	RPA2	9094	UNC119	S
6118	RPA2	9709	HERPUD1	S

6118	RPA2	10309	UNG2	L
6118	RPA2	10813	UTP14A	S
6118	RPA2	10980	COPS6	S
6118	RPA2	51003	MED31	S
6118	RPA2	51280	GOLPH2	S
6118	RPA2	55791	C1orf103	S
6118	RPA2	57562	KIAA1377	S
6118	RPA2	84060	DKFZP564O0523	S
6119	RPA3	29935	RPA4	L
6122	RPL3	375078	(null)	S
6125	RPL5	10527	IPO7	L
6125	RPL5	26019	UPF2	L
6125	RPL5	27250	PDCD4	L
6128	RPL6	6159	RPL29	L
6129	RPL7	7553	ZNF7	L
6130	RPL7A	57003	GK001	S
6130	RPL7A	81488	GRINL1A	S
6132	RPL8	6487	ST3GAL3	S
6132	RPL8	10425	ARIH2	S
6132	RPL8	11165	NUDT3	S
6132	RPL8	20924	(null)	S
6132	RPL8	54622	ARFRP2	S
6132	RPL8	54935	DUSP23	S
6132	RPL8	79096	MGC4707	S
6132	RPL8	80013	C10orf97	S
6133	RPL9	6188	RPS3	S
6133	RPL9	8470	SORBS2	S
6133	RPL9	124402	LOC124402	S
6134	RPL10	7525	YES1	L
6134	RPL10	9519	TBPL1	S
6136	RPL12	10951	CBX1	S
6136	RPL12	22142	(null)	S
6136	RPL12	51194	IPO11	L
6138	RPL15	10980	COPS6	S
6139	RPL17	10073	RNUT1	S
6142	RPL18A	7786	MAP3K12	S
6142	RPL18A	10188	TNK2	S
6142	RPL18A	25873	RPL36	S
6142	RPL18A	26150	RIBC2	S
6144	RPL21	11040	PIM2	S
6146	RPL22	55968	NSFL1C	S
6152	RPL24	51691	LSM8	L
6154	RPL26	10236	HNRPR	S
6158	RPL28	29058	C20orf30	S
6159	RPL29	55638	FLJ20366	S
6165	RPL35A	6457	SH3GL3	S
6168	RPL37A	55791	C1orf103	S
6175	RPLP0	65095	FLJ12949	S
6176	RPLP1	6181	RPLP2	L
6176	RPLP1	6303	SAT	S
6176	RPLP1	7280	TUBB2	S
6176	RPLP1	9551	ATP5J2	S
6176	RPLP1	11051	NUDT21	S
6176	RPLP1	11165	NUDT3	S
6176	RPLP1	25874	BRP44	S
6176	RPLP1	27250	PDCD4	L
6176	RPLP1	29117	BRD7	S
6176	RPLP1	55791	C1orf103	S
6176	RPLP1	56905	DKFZP434H132	S
6176	RPLP1	84164	ASCC2	S
6176	RPLP1	124930	ANKRD13B	S
6182	MRPL12	55092	TMEM51	S
6183	MRPS12	9094	UNC119	S
6183	MRPS12	11161	C14orf1	S
6183	MRPS12	55791	C1orf103	S
6184	RPN1	8193	DPF1	S
6184	RPN1	9808	KIAA0087	S

6184	RPN1	29978	UBQLN2	L
6184	RPN1	55884	WSB2	S
6184	RPN1	59307	SIGIRR	S
6189	RPS3A	6648	SOD2	S
6189	RPS3A	10284	SAP18	S
6189	RPS3A	55729	ATF7IP	L
6189	RPS3A	55741	C20orf31	S
6189	RPS3A	79096	MGC4707	S
6189	RPS3A	114034	TOE1	S
6189	RPS3A	152137	C3orf6	S
6194	RPS6	93145	OLFM2	S
6195	RPS6KA1	7529	YWHAB	L
6195	RPS6KA1	10766	TOB2	L
6197	RPS6KA3	8682	PEA15	L
6198	RPS6KB1	9618	TRAF4	L
6198	RPS6KB1	80347	COASY	L
6201	RPS7	10527	IPO7	L
6203	RPS9	11033	CENTA1	L
6204	RPS10	9001	HAP1	S
6204	RPS10	9232	PTTG1	L
6204	RPS10	11143	MYST2	S
6207	RPS13	27250	PDCD4	L
6208	RPS14	6880	TAF9	R
6209	RPS15	26019	UPF2	L
6210	RPS15A	7919	BAT1	L
6223	RPS19	7414	VCL	L
6224	RPS20	7414	VCL	L
6224	RPS20	10200	MPHOSPH6	L
6224	RPS20	51678	MPP6	L
6227	RPS21	7414	VCL	L
6229	RPS24	7414	VCL	L
6230	RPS25	9001	HAP1	S
6230	RPS25	9905	RUTBC1	S
6230	RPS25	26019	UPF2	L
6231	RPS26	90121	RP1-112K5.2	R
6232	RPS27	58478	MASA	S
6233	RPS27A	9802	DAZAP2	R
6233	RPS27A	26994	RNF11	L
6233	RPS27A	55683	FLJ10081	S
6233	RPS27A	57473	GM632	L
6234	RPS28	83755	KRTAP4-12	R
6236	RRAD	7169	TPM2	L
6237	RRAS	6654	SOS1	L
6237	RRAS	83593	RASSF5	L
6238	RRBP1	25865	PRKD2	L
6238	RRBP1	55729	ATF7IP	L
6240	RRM1	6241	RRM2	L
6240	RRM1	50484	RRM2B	L
6240	RRM1	55791	C1orf103	S
6241	RRM2	7157	TP53	L
6242	RTKN	30851	TAX1BP3	L
6249	RSN	8826	IQGAP1	L
6252	RTN1	7357	UGCG	L
6252	RTN1	79666	PLEKHF2	R
6252	RTN1	84067	DKFZP566M1046	R
6256	RXRA	6667	SP1	L
6256	RXRA	6722	SRF	L
6256	RXRA	6908	TBP	L
6256	RXRA	7025	NR2F1	L
6256	RXRA	7067	THRA	L
6256	RXRA	7376	NR1H2	L
6256	RXRA	7421	VDR	L
6256	RXRA	7704	ZBTB16	L
6256	RXRA	8031	NCOA4	L
6256	RXRA	8202	NCOA3	L
6256	RXRA	8204	NRIP1	L
6256	RXRA	8431	NR0B2	L

6256	RXRA	8648	NCOA1	L
6256	RXRA	8721	EDF1	L
6256	RXRA	8805	TRIM24	L
6256	RXRA	8856	NR1I2	L
6256	RXRA	9025	RNF8	L
6256	RXRA	9318	COPS2	L
6256	RXRA	9322	TRIP10	L
6256	RXRA	9325	TRIP4	L
6256	RXRA	9326	ZNHIT3	L
6256	RXRA	9862	THRAP4	L
6256	RXRA	9970	NR1I3	L
6256	RXRA	9971	NR1H4	L
6256	RXRA	10474	TADA3L	L
6256	RXRA	10499	NCOA2	L
6256	RXRA	10891	PPARGC1A	L
6256	RXRA	10902	BRD8	L
6256	RXRA	10912	GADD45G	L
6256	RXRA	23421	ITGB3BP	L
6256	RXRA	25865	PRKD2	L
6256	RXRA	29982	NRBF2	L
6256	RXRA	30836	ERBP	L
6256	RXRA	55629	PNRC2	L
6256	RXRA	56893	UBQLN4	S
6256	RXRA	64324	NSD1	L
6256	RXRA	64699	TMPRSS3	S
6256	RXRA	221037	JMJD1C	L
6257	RXRB	7067	THRA	L
6257	RXRB	7376	NR1H2	L
6257	RXRB	8202	NCOA3	L
6257	RXRB	8204	NRIP1	L
6257	RXRB	8405	SPOP	R
6257	RXRB	8431	NR0B2	L
6257	RXRB	8648	NCOA1	L
6257	RXRB	8856	NR1I2	L
6257	RXRB	10002	NR2E3	L
6257	RXRB	11214	AKAP13	L
6258	RXRG	6722	SRF	L
6258	RXRG	7068	THRB	L
6258	RXRG	56902	LOC56902	S
6258	RXRG	90678	LRSAM1	S
6261	RYR1	6262	RYR2	L
6261	RYR1	6271	S100A1	L
6261	RYR1	9454	HOMER3	L
6261	RYR1	9455	HOMER2	L
6261	RYR1	9456	HOMER1	L
6261	RYR1	10345	TRDN	L
6262	RYR2	6263	RYR3	L
6262	RYR2	6717	SRI	L
6262	RYR2	9456	HOMER1	L
6262	RYR2	9472	AKAP6	L
6271	S100A1	6275	S100A4	RL
6271	S100A1	6285	S100B	RL
6271	S100A1	6286	S100P	R
6271	S100A1	27101	CACYBP	L
6271	S100A1	60491	NIF3L1	R
6272	SORT1	23062	GGA2	L
6272	SORT1	26088	GGA1	L
6275	S100A4	7917	BAT3	S
6275	S100A4	9094	UNC119	S
6277	S100A6	6285	S100B	L
6277	S100A6	11319	HSGT1	L
6277	S100A6	27101	CACYBP	L
6278	S100A7	10048	RANBP9	L
6278	S100A7	10987	COPS5	L
6279	S100A8	6280	S100A9	L
6279	S100A8	7157	TP53	S
6279	S100A8	9094	UNC119	S

6279	S100A8	11161	C14orf1	S
6279	S100A8	22142	(null)	S
6279	S100A8	22984	PDCD11	S
6279	S100A8	55791	C1orf103	S
6279	S100A8	64284	RAB17	S
6279	S100A8	64837	KLC2	S
6279	S100A8	84966	IGSF21	S
6281	S100A10	8605	PLA2G4C	L
6281	S100A10	9869	SETDB1	S
6281	S100A10	10980	COPS6	S
6281	S100A10	55503	TRPV6	L
6282	S100A11	6285	S100B	L
6283	S100A12	27101	CACYBP	L
6284	S100A13	6857	SYT1	L
6284	S100A13	7414	VCL	L
6284	S100A13	9796	PHYHIP	S
6285	S100B	7157	TP53	L
6285	S100B	8826	IQGAP1	L
6285	S100B	10397	NDRG1	L
6285	S100B	11319	HSGT1	L
6285	S100B	27101	CACYBP	L
6286	S100P	7430	VIL2	L
6286	S100P	27101	CACYBP	L
6291	SAA4	119369	NUDT9P1	R
6294	SAFB	7920	BAT5	L
6294	SAFB	8148	TAF15	L
6294	SAFB	8683	SFRS9	L
6294	SAFB	9667	SAFB2	L
6294	SAFB	54205	CYCS	L
6297	SALL2	79959	C18orf9	R
6297	SALL2	83637	DKFZp761I2123	R
6299	SALL1	7013	TERF1	L
6299	SALL1	7329	UBE2I	L
6299	SALL1	7341	SUMO1	L
6300	MAPK12	6641	SNTB1	L
6300	MAPK12	8550	MAPKAPK5	L
6303	SAT	7088	TLE1	S
6303	SAT	7157	TP53	S
6303	SAT	7280	TUBB2	S
6303	SAT	8525	DGKZ	S
6303	SAT	8703	B4GALT3	S
6303	SAT	9094	UNC119	S
6303	SAT	9869	SETDB1	S
6303	SAT	10524	HTATIP	S
6303	SAT	10813	UTP14A	S
6303	SAT	10980	COPS6	S
6303	SAT	11143	MYST2	S
6303	SAT	11161	C14orf1	S
6303	SAT	11194	ABCB8	S
6303	SAT	11244	ZHX1	S
6303	SAT	11257	TP53AP1	S
6303	SAT	22929	SEPHS1	S
6303	SAT	22980	KIAA1049	R
6303	SAT	23549	DNPEP	R
6303	SAT	27231	ITGB1BP3	S
6303	SAT	51003	MED31	S
6303	SAT	51204	LOC51204	R
6303	SAT	51631	LUC7L2	S
6303	SAT	51669	TMEM66	S
6303	SAT	55199	FLJ10661	R
6303	SAT	55791	C1orf103	S
6303	SAT	55848	C9orf46	S
6303	SAT	57562	KIAA1377	S
6303	SAT	60492	MDS025	S
6303	SAT	65991	FUNDC2	S
6303	SAT	81628	TSC22D4	R
6303	SAT	84060	DKFZP564O0523	S

6303	SAT	84141	FLJ13391	S
6303	SAT	84708	LNX	R
6303	SAT	84991	RBM17	R
6303	SAT	112483	SAT2	R
6303	SAT	117246	FTSJ3	R
6303	SAT	125476	C18orf37	S
6304	SATB1	7329	UBE2I	R
6304	SATB1	8467	SMARCA5	L
6304	SATB1	9219	MTA2	L
6305	SBF1	6839	SUV39H1	L
6305	SBF1	8898	MTMR2	L
6310	ATXN1	7531	YWHAE	L
6310	ATXN1	7534	YWHAZ	L
6310	ATXN1	7874	USP7	L
6310	ATXN1	8125	ANP32A	L
6310	ATXN1	8161	COIL	L
6310	ATXN1	10084	PQBP1	L
6310	ATXN1	56893	UBQLN4	L
6326	SCN2A2	6330	SCN4B	L
6326	SCN2A2	55160	ARHGEF10L	S
6326	SCN2A2	55819	RNF130	S
6329	SCN4A	6641	SNTB1	L
6329	SCN4A	6645	SNTB2	L
6331	SCN5A	6641	SNTB1	L
6331	SCN5A	6645	SNTB2	L
6337	SCNN1A	6338	SCNN1B	L
6337	SCNN1A	7329	UBE2I	L
6337	SCNN1A	11060	WWP2	L
6337	SCNN1A	23327	NEDD4L	L
6338	SCNN1B	6339	SCNN1D	L
6338	SCNN1B	6340	SCNN1G	L
6338	SCNN1B	6804	STX1A	L
6338	SCNN1B	11060	WWP2	L
6338	SCNN1B	23327	NEDD4L	L
6339	SCNN1D	6340	SCNN1G	L
6340	SCNN1G	6804	STX1A	L
6340	SCNN1G	11060	WWP2	L
6340	SCNN1G	23327	NEDD4L	L
6342	SCP2	10449	ACAA2	L
6343	SCT	6344	SCTR	L
6343	SCT	7433	VIPR1	L
6344	SCTR	27151	CPAMD8	L
6348	CCL3	6351	CCL4	L
6348	CCL3	7040	TGFB1	L
6352	CCL5	6382	SDC1	L
6352	CCL5	6385	SDC4	L
6354	CCL7	9638	FEZ1	S
6356	CCL11	7167	TPI1	S
6358	CCL14	10212	DDX39	L
6361	CCL17	7412	VCAM1	L
6362	CCL18	7088	TLE1	S
6362	CCL18	7157	TP53	S
6362	CCL18	9094	UNC119	S
6362	CCL18	11161	C14orf1	S
6363	CCL19	51554	CCRL1	L
6366	CCL21	51554	CCRL1	L
6367	CCL22	7412	VCAM1	L
6370	CCL25	10803	CCR9	L
6370	CCL25	51554	CCRL1	L
6382	SDC1	6386	SDCBP	L
6382	SDC1	8573	CASK	L
6383	SDC2	6386	SDCBP	L
6383	SDC2	6678	SPARC	L
6383	SDC2	7430	VIL2	L
6383	SDC2	8573	CASK	L
6385	SDC4	6386	SDCBP	L
6385	SDC4	7041	TGFB1I1	L

6385	SDC4	8573	CASK	L
6385	SDC4	10755	GIPC1	L
6386	SDCBP	6659	SOX4	L
6386	SDCBP	23705	IGSF4	L
6386	SDCBP	29062	HSPC049	S
6387	CXCL12	7852	CXCR4	L
6396	SEC13L1	54521	WDR44	L
6396	SEC13L1	89866	LZTR2	R
6401	SELE	6402	SELL	L
6401	SELE	7414	VCL	L
6402	SELL	7430	VIL2	L
6403	SELP	7430	VIL2	L
6403	SELP	8907	AP1M1	L
6403	SELP	9784	SNX17	L
6404	SELPLG	8460	TPST1	L
6405	SEMA3F	7317	UBE1	S
6405	SEMA3F	7422	VEGF	L
6405	SEMA3F	8828	NRP2	L
6405	SEMA3F	8829	NRP1	L
6405	SEMA3F	80723	TMEM22	S
6406	SEMG1	6407	SEMG2	L
6406	SEMG1	7051	TGM1	L
6407	SEMG2	7051	TGM1	L
6416	MAP2K4	7786	MAP3K12	L
6416	MAP2K4	9043	SPAG9	L
6418	SET	8125	ANP32A	L
6418	SET	8290	HIST3H3	L
6418	SET	8851	CDK5R1	L
6418	SET	9015	TAF1A	L
6418	SET	26040	SETBP1	L
6418	SET	80764	THAP7	R
6421	SFPQ	7094	TLN1	L
6421	SFPQ	7150	TOP1	L
6421	SFPQ	7316	UBC	S
6421	SFPQ	7414	VCL	L
6421	SFPQ	51155	HN1	S
6421	SFPQ	56915	EXOSC5	L
6422	SFRP1	7471	WNT1	L
6422	SFRP1	7472	WNT2	L
6422	SFRP1	8323	FZD6	L
6422	SFRP1	54361	WNT4	L
6426	SFRS1	6625	SNRP70	L
6426	SFRS1	6733	SRPK2	L
6426	SFRS1	7150	TOP1	L
6426	SFRS1	7307	U2AF1	L
6426	SFRS1	8233	U2AF1L2	L
6426	SFRS1	8487	SIP1	L
6426	SFRS1	8899	PRPF4B	L
6426	SFRS1	9128	PRPF4	L
6426	SFRS1	9169	SFRS2IP	L
6426	SFRS1	9295	SFRS11	L
6426	SFRS1	10915	TCERG1	L
6426	SFRS1	11168	PSIP1	L
6426	SFRS1	11338	U2AF2	RL
6426	SFRS1	51755	CRK7	L
6426	SFRS1	84708	LNX	R
6426	SFRS1	85362	(null)	R
6426	SFRS1	91746	YT521	L
6427	SFRS2	6625	SNRP70	L
6427	SFRS2	7307	U2AF1	L
6427	SFRS2	8233	U2AF1L2	L
6427	SFRS2	8487	SIP1	L
6427	SFRS2	9169	SFRS2IP	L
6427	SFRS2	9295	SFRS11	L
6427	SFRS2	9406	ZNF265	L
6427	SFRS2	11033	CENTA1	L
6427	SFRS2	51755	CRK7	L

6427	SFRS2	57018	CCNL1	L
6427	SFRS2	81669	CCNL2	L
6427	SFRS2	91746	YT521	L
6428	SFRS3	7094	TLN1	L
6428	SFRS3	8487	SIP1	L
6428	SFRS3	9169	SFRS2IP	L
6428	SFRS3	118460	EXOSC6	L
6429	SFRS4	6431	SFRS6	R
6429	SFRS4	9001	HAP1	S
6429	SFRS4	9169	SFRS2IP	L
6429	SFRS4	10250	SRRM1	L
6430	SFRS5	9398	IGSF2	S
6430	SFRS5	10188	TNK2	S
6430	SFRS5	10250	SRRM1	L
6430	SFRS5	93145	OLFM2	S
6431	SFRS6	10921	RNPS1	R
6432	SFRS7	8446	DUSP11	L
6432	SFRS7	23097	CDC2L6	L
6432	SFRS7	81669	CCNL2	L
6434	SFRS10	8683	SFRS9	L
6434	SFRS10	10625	IVNS1ABP	S
6434	SFRS10	27288	HNRNPG-T	L
6434	SFRS10	27316	RBMX	L
6435	SFTPA1	6436	SFTPA2	L
6435	SFTPA1	399687	MYO18A	L
6436	SFTPA2	22918	C1QR1	L
6446	SGK	9351	SLC9A3R2	L
6446	SGK	23327	NEDD4L	L
6447	SGNE1	56893	UBQLN4	S
6449	SGTA	6696	SPP1	R
6449	SGTA	6860	SYT4	R
6449	SGTA	7112	TMPO	L
6449	SGTA	7917	BAT3	L
6449	SGTA	30008	EFEMP2	R
6449	SGTA	50848	F11R	R
6449	SGTA	84888	SPPL2A	R
6449	SGTA	114897	C1QTNF1	R
6449	SGTA	123887	ZG16	R
6452	SH3BP2	6850	SYK	L
6452	SH3BP2	7018	TF	S
6452	SH3BP2	7409	VAV1	L
6452	SH3BP2	7410	VAV2	L
6452	SH3BP2	7535	ZAP70	L
6452	SH3BP2	10971	YWHAQ	L
6452	SH3BP2	27040	LAT	L
6453	ITSN1	6601	SMARCC2	S
6453	ITSN1	6616	SNAP25	L
6453	ITSN1	6654	SOS1	L
6453	ITSN1	8543	LMO4	L
6453	ITSN1	8773	SNAP23	L
6453	ITSN1	8867	SYNJ1	L
6453	ITSN1	8976	WASL	L
6453	ITSN1	9094	UNC119	S
6453	ITSN1	9522	SCAMP1	L
6453	ITSN1	27131	SNX5	S
6453	ITSN1	55052	MRPL20	S
6453	ITSN1	85439	STN2	L
6455	SH3GL1	6457	SH3GL3	S
6455	SH3GL1	8312	AXIN1	S
6455	SH3GL1	10015	PDCD6IP	L
6455	SH3GL1	30011	SH3KBP1	L
6455	SH3GL1	55211	DPPA4	S
6455	SH3GL1	63898	SH2D4A	R
6456	SH3GL2	6919	TCEA2	S
6456	SH3GL2	8491	MAP4K3	L
6456	SH3GL2	8751	ADAM15	L
6456	SH3GL2	8754	ADAM9	L

6456	SH3GL2	8867	SYNJ1	L
6456	SH3GL2	10015	PDCD6IP	L
6456	SH3GL2	25975	EGFL6	S
6457	SH3GL3	6638	SNRPN	S
6457	SH3GL3	7013	TERF1	S
6457	SH3GL3	9398	IGSF2	S
6457	SH3GL3	9568	GPR51	S
6457	SH3GL3	10015	PDCD6IP	L
6457	SH3GL3	10570	DPYSL4	S
6457	SH3GL3	11079	RER1	S
6457	SH3GL3	25975	EGFL6	S
6457	SH3GL3	28966	SNX24	S
6457	SH3GL3	30011	SH3KBP1	L
6457	SH3GL3	55211	DPPA4	S
6457	SH3GL3	55339	WDR33	S
6457	SH3GL3	57658	CALCOCO1	S
6457	SH3GL3	65990	C16orf24	S
6457	SH3GL3	81890	QTRT1	S
6457	SH3GL3	83638	Bles03	S
6457	SH3GL3	84103	C4orf17	S
6457	SH3GL3	114034	TOE1	S
6461	SHB	6714	SRC	L
6461	SHB	7409	VAV1	L
6461	SHB	7535	ZAP70	L
6461	SHB	9402	GRAP2	L
6461	SHB	27040	LAT	L
6464	SHC1	6667	SP1	L
6464	SHC1	6714	SRC	L
6464	SHC1	7535	ZAP70	L
6464	SHC1	8660	IRS2	L
6464	SHC1	9402	GRAP2	L
6464	SHC1	10241	NDP52	R
6464	SHC1	10451	VAV3	L
6464	SHC1	11184	MAP4K1	L
6464	SHC1	55824	PAG1	L
6464	SHC1	79801	SHCBP1	L
6469	SHH	8643	PTCH2	L
6470	SHMT1	10301	DLEU1	S
6470	SHMT1	11098	PRSS23	S
6477	SIAH1	6500	SKP1A	L
6477	SIAH1	6855	SYP	L
6477	SIAH1	6907	TBL1X	L
6477	SIAH1	7277	TUBA1	L
6477	SIAH1	7278	TUBA2	L
6477	SIAH1	7321	UBE2D1	L
6477	SIAH1	7329	UBE2I	L
6477	SIAH1	7846	TUBA3	L
6477	SIAH1	8650	NUMB	L
6477	SIAH1	8669	EIF3S1	L
6477	SIAH1	9351	SLC9A3R2	L
6477	SIAH1	10114	HIPK3	L
6477	SIAH1	10376	K-ALPHA-1	L
6477	SIAH1	10656	KHDRBS3	RL
6477	SIAH1	27101	CACYBP	L
6477	SIAH1	27125	AFF4	R
6477	SIAH1	51807	TUBA8	L
6478	SIAH2	6855	SYP	L
6478	SIAH2	7186	TRAF2	L
6478	SIAH2	7329	UBE2I	L
6478	SIAH2	7409	VAV1	L
6478	SIAH2	9246	UBE2L6	L
6478	SIAH2	10114	HIPK3	L
6478	SIAH2	27101	CACYBP	L
6487	ST3GAL3	7276	TTR	S
6487	ST3GAL3	9925	ZBTB5	S
6487	ST3GAL3	10066	SCAMP2	S
6494	SIPA1	64326	RFWD2	L

6495	SIX1	7088	TLE1	L
6495	SIX1	11007	DIPA	R
6496	SIX3	7088	TLE1	L
6496	SIX3	7090	TLE3	L
6496	SIX3	8013	NR4A3	L
6496	SIX3	51053	GMNN	L
6497	SKI	6498	SKIL	L
6497	SKI	22938	SNW1	L
6497	SKI	28996	HIPK2	L
6498	SKIL	6625	SNRP70	L
6498	SKIL	6731	SRP72	L
6498	SKIL	7169	TPM2	L
6498	SKIL	7329	UBE2I	L
6498	SKIL	7750	ZNF198	L
6498	SKIL	7980	TFPI2	L
6498	SKIL	8404	SPARCL1	L
6498	SKIL	8458	TTF2	L
6498	SKIL	8535	CBX4	L
6498	SKIL	8554	PIAS1	L
6498	SKIL	8881	CDC16	L
6498	SKIL	8904	CPNE1	L
6498	SKIL	9205	ZMYM5	L
6498	SKIL	9611	NCOR1	L
6498	SKIL	9612	NCOR2	L
6498	SKIL	9784	SNX17	L
6498	SKIL	9869	SETDB1	L
6498	SKIL	10401	PIAS3	L
6498	SKIL	10773	ZNF482	L
6498	SKIL	10973	ASCC3	L
6498	SKIL	11124	FAF1	L
6498	SKIL	22795	NID2	L
6498	SKIL	22906	OIP106	L
6498	SKIL	22907	DHX30	L
6498	SKIL	23140	ZZEF1	L
6498	SKIL	23328	SASH1	L
6498	SKIL	23462	HEY1	L
6498	SKIL	23499	MACF1	L
6498	SKIL	25987	LRRC54	L
6498	SKIL	26508	HEYL	L
6498	SKIL	26525	IL1F5	L
6498	SKIL	29761	USP25	L
6498	SKIL	29920	PYCR2	L
6498	SKIL	51343	FZR1	L
6498	SKIL	51523	CXXC5	L
6498	SKIL	51567	TTRAP	L
6498	SKIL	51588	PIAS4	L
6498	SKIL	51720	RAP80	L
6498	SKIL	55223	TRIM62	L
6498	SKIL	60314	C12orf10	L
6498	SKIL	64397	ZFP106	L
6498	SKIL	64750	SMURF2	L
6498	SKIL	79586	CHPF	L
6498	SKIL	79710	MORC4	L
6498	SKIL	79842	ZBTB3	L
6498	SKIL	79987	SVEP1	L
6498	SKIL	113026	PLCD3	L
6498	SKIL	131034	CPNE4	L
6498	SKIL	157922	CAMSAP1	L
6498	SKIL	168451	THAP5	L
6498	SKIL	204851	HIPK1	L
6498	SKIL	221184	CPNE2	L
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6499	SKIV2L	9948	WDR1	L
6499	SKIV2L	23203	PMPCA	L
6499	SKIV2L	54464	XRN1	L
6499	SKIV2L	54512	EXOSC4	L
6500	SKP1A	6502	SKP2	L

6500	SKP1A	6907	TBL1X	L
6500	SKP1A	8454	CUL1	L
6500	SKP1A	8945	BTRC	L
6500	SKP1A	9820	CUL7	L
6500	SKP1A	9978	RBX1	L
6500	SKP1A	11269	DDX19B	S
6500	SKP1A	25793	FBXO7	L
6500	SKP1A	25827	FBXL2	L
6500	SKP1A	26190	FBXW2	L
6500	SKP1A	26224	FBXL3	L
6500	SKP1A	26232	FBXO2	L
6500	SKP1A	26234	FBXL5	L
6500	SKP1A	26235	FBXL4	L
6500	SKP1A	26270	FBXO6	L
6500	SKP1A	26271	FBXO5	L
6500	SKP1A	26272	FBXO4	L
6500	SKP1A	27101	CACYBP	L
6500	SKP1A	55030	FBXO34	S
6500	SKP1A	55294	FBXW7	L
6500	SKP1A	83461	CDCA3	L
6500	SKP1A	84893	FBXO18	L
6500	SKP1A	114907	FBXO32	L
6502	SKP2	6929	TCF3	L
6502	SKP2	8409	UXT	L
6502	SKP2	8454	CUL1	L
6502	SKP2	51343	FZR1	L
6502	SKP2	81620	CDT1	L
6503	SLA	6850	SYK	L
6503	SLA	7409	VAV1	L
6503	SLA	7535	ZAP70	L
6503	SLA	27040	LAT	L
6505	SLC1A1	10550	ARL6IP5	L
6509	SLC1A4	30816	ERVWE1	L
6510	SLC1A5	30816	ERVWE1	L
6510	SLC1A5	79735	TBC1D17	S
6511	SLC1A6	9826	ARHGEF11	L
6511	SLC1A6	10425	ARIH2	S
6511	SLC1A6	286397	(null)	S
6513	SLC2A1	7329	UBE2I	L
6513	SLC2A1	7341	SUMO1	L
6513	SLC2A1	10755	GIPC1	L
6513	SLC2A1	10980	COPS6	S
6517	SLC2A4	7329	UBE2I	L
6517	SLC2A4	30846	EHD2	L
6520	SLC3A2	8140	SLC7A5	L
6520	SLC3A2	9056	SLC7A7	L
6520	SLC3A2	23657	SLC7A11	L
6521	SLC4A1	22950	SLC4A1AP	L
6529	SLC6A1	6804	STX1A	L
6531	SLC6A3	6622	SNCA	L
6531	SLC6A3	7041	TGFB1I1	L
6532	SLC6A4	6804	STX1A	L
6536	SLC6A9	6804	STX1A	L
6548	SLC9A1	9448	MAP4K4	L
6548	SLC9A1	11261	CHP	L
6548	SLC9A1	54997	TSC	L
6549	SLC9A2	6708	SPTA1	L
6549	SLC9A2	6709	SPTAN1	L
6549	SLC9A2	6714	SRC	L
6549	SLC9A2	11261	CHP	L
6550	SLC9A3	9351	SLC9A3R2	L
6550	SLC9A3	9368	SLC9A3R1	L
6550	SLC9A3	11261	CHP	L
6553	SLC9A5	11261	CHP	L
6558	SLC12A2	27347	STK39	L
6559	SLC12A3	65266	WNK4	L
6560	SLC12A4	55729	ATF7IP	L

6569	SLC34A1	9368	SLC9A3R1	L
6576	SLC25A1	7414	VCL	L
6580	SLC22A1	29956	LASS2	L
6594	SMARCA1	9031	BAZ1B	L
6595	SMARCA2	6760	SS18	L
6595	SMARCA2	9031	BAZ1B	L
6597	SMARCA4	6760	SS18	L
6597	SMARCA4	6773	STAT2	L
6597	SMARCA4	6794	STK11	L
6597	SMARCA4	8841	HDAC3	L
6597	SMARCA4	9031	BAZ1B	L
6597	SMARCA4	10200	MPHOSPH6	L
6597	SMARCA4	23468	CBX5	L
6597	SMARCA4	51678	MPP6	L
6598	SMARCB1	6714	SRC	L
6598	SMARCB1	7157	TP53	L
6598	SMARCB1	7514	XPO1	L
6598	SMARCB1	8089	YEATS4	L
6598	SMARCB1	9031	BAZ1B	L
6598	SMARCB1	10579	TACC2	L
6598	SMARCB1	56893	UBQLN4	S
6599	SMARCC1	9031	BAZ1B	L
6599	SMARCC1	10661	KLF1	L
6601	SMARCC2	9031	BAZ1B	L
6601	SMARCC2	9796	PHYHIP	S
6602	SMARCD1	9031	BAZ1B	L
6602	SMARCD1	10241	NDP52	R
6602	SMARCD1	11007	DIPA	R
6602	SMARCD1	23641	LDOC1	R
6602	SMARCD1	83878	USHBP1	R
6603	SMARCD2	54464	XRN1	L
6605	SMARCE1	6714	SRC	L
6605	SMARCE1	8202	NCOA3	L
6605	SMARCE1	8648	NCOA1	L
6605	SMARCE1	9031	BAZ1B	L
6605	SMARCE1	10499	NCOA2	L
6606	SMN1	7157	TP53	L
6606	SMN1	7917	BAT3	S
6606	SMN1	8161	COIL	L
6606	SMN1	8487	SIP1	L
6606	SMN1	8880	FUBP1	L
6606	SMN1	9094	UNC119	S
6606	SMN1	9406	ZNF265	L
6606	SMN1	10236	HNRPR	L
6606	SMN1	10248	POP7	L
6606	SMN1	10492	SYNCRIP	L
6606	SMN1	10980	COPS6	S
6606	SMN1	11157	LSM6	L
6606	SMN1	23658	LSM5	L
6606	SMN1	25804	LSM4	L
6606	SMN1	25929	GEMIN5	L
6606	SMN1	26578	OSTF1	L
6606	SMN1	27257	LSM1	L
6606	SMN1	27258	LSM3	L
6606	SMN1	51690	LSM7	L
6606	SMN1	54433	NOLA1	L
6606	SMN1	55093	C8orf32	R
6606	SMN1	55791	C1orf103	S
6606	SMN1	57819	LSM2	L
6606	SMN1	79760	GEMIN7	L
6606	SMN1	114823	LENG8	R
6606	SMN1	134353	LSM11	L
6607	SMN2	6628	SNRPB	L
6607	SMN2	6629	SNRPB2	L
6607	SMN2	6632	SNRPD1	L
6607	SMN2	6633	SNRPD2	L
6607	SMN2	6634	SNRPD3	L

6607	SMN2	6635	SNRPE	L
6607	SMN2	6636	SNRPF	L
6607	SMN2	6637	SNRPG	L
6607	SMN2	8487	SIP1	L
6607	SMN2	11218	DDX20	L
6607	SMN2	50628	GEMIN4	L
6608	SMO	8643	PTCH2	L
6612	SUMO3	7329	UBE2I	L
6612	SUMO3	7431	VIM	S
6612	SUMO3	10054	UBA2	L
6612	SUMO3	59343	SENP2	L
6613	SUMO2	7329	UBE2I	L
6613	SUMO2	7431	VIM	S
6613	SUMO2	9734	HDAC9	L
6613	SUMO2	9759	HDAC4	L
6613	SUMO2	26168	SENP3	L
6613	SUMO2	84232	MAF1	S
6613	SUMO2	84676	TRIM63	L
6614	SN	6693	SPN	L
6614	SN	7143	TNR	L
6616	SNAP25	6804	STX1A	SL
6616	SNAP25	6810	STX4A	L
6616	SNAP25	6812	STXBP1	L
6616	SNAP25	6845	SYBL1	L
6616	SNAP25	6857	SYT1	L
6616	SNAP25	8673	VAMP8	L
6616	SNAP25	8676	STX11	RS
6616	SNAP25	23557	SNAPAP	L
6616	SNAP25	29091	STXBP6	L
6616	SNAP25	80725	SNIP	L
6616	SNAP25	112476	LOC112476	S
6616	SNAP25	114088	TRIM9	L
6616	SNAP25	143425	SYT9	L
6617	SNAPC1	6619	SNAPC3	L
6617	SNAPC1	6621	SNAPC4	L
6618	SNAPC2	6621	SNAPC4	L
6618	SNAPC2	6908	TBP	L
6620	SNCB	6622	SNCA	L
6620	SNCB	80152	FLJ13111	S
6621	SNAPC4	6908	TBP	L
6621	SNAPC4	55290	BRF2	L
6622	SNCA	7054	TH	L
6622	SNCA	7345	UCHL1	L
6622	SNCA	7529	YWHAB	L
6622	SNCA	7531	YWHAE	L
6622	SNCA	7846	TUBA3	L
6622	SNCA	8878	SQSTM1	L
6622	SNCA	9479	MAPK8IP1	L
6622	SNCA	9627	SNCAIP	L
6622	SNCA	54205	CYCS	L
6625	SNRP70	8487	SIP1	L
6625	SNRP70	9150	CTDP1	L
6625	SNRP70	9169	SFRS2IP	L
6625	SNRP70	9295	SFRS11	L
6625	SNRP70	9406	ZNF265	L
6625	SNRP70	10521	DDX17	L
6625	SNRP70	10772	FUSIP1	L
6625	SNRP70	11051	NUDT21	L
6625	SNRP70	25865	PRKD2	L
6625	SNRP70	26994	RNF11	L
6625	SNRP70	55660	FNBP3	L
6625	SNRP70	64750	SMURF2	L
6626	SNRPA	7414	VCL	L
6626	SNRPA	10914	PAPOLA	L
6626	SNRPA	79002	MGC2803	R
6627	SNRPA1	6629	SNRPB2	L
6628	SNRPB	6634	SNRPD3	L

6628	SNRPB	7414	VCL	L
6628	SNRPB	8940	TOP3B	L
6628	SNRPB	9150	CTDP1	L
6628	SNRPB	11161	C14orf1	S
6628	SNRPB	25929	GEMIN5	L
6628	SNRPB	84164	ASCC2	S
6628	SNRPB	134353	LSM11	L
6632	SNRPD1	6633	SNRPD2	L
6632	SNRPD1	10419	SKB1	L
6632	SNRPD1	11218	DDX20	L
6632	SNRPD1	25929	GEMIN5	L
6632	SNRPD1	51691	LSM8	L
6632	SNRPD1	134353	LSM11	L
6633	SNRPD2	10524	HTATIP	S
6633	SNRPD2	11157	LSM6	L
6633	SNRPD2	11218	DDX20	L
6633	SNRPD2	25929	GEMIN5	L
6633	SNRPD2	57819	LSM2	L
6633	SNRPD2	79833	GEMIN6	L
6633	SNRPD2	134353	LSM11	L
6634	SNRPD3	7094	TLN1	L
6634	SNRPD3	10419	SKB1	L
6634	SNRPD3	11218	DDX20	L
6634	SNRPD3	25929	GEMIN5	L
6634	SNRPD3	27258	LSM3	L
6634	SNRPD3	51690	LSM7	L
6635	SNRPE	6637	SNRPG	L
6635	SNRPE	7094	TLN1	L
6635	SNRPE	7414	VCL	L
6635	SNRPE	11218	DDX20	L
6635	SNRPE	23658	LSM5	L
6635	SNRPE	25804	LSM4	L
6635	SNRPE	25929	GEMIN5	L
6635	SNRPE	27258	LSM3	L
6635	SNRPE	57819	LSM2	L
6635	SNRPE	79833	GEMIN6	L
6636	SNRPF	7094	TLN1	L
6636	SNRPF	7414	VCL	L
6636	SNRPF	11218	DDX20	L
6636	SNRPF	23658	LSM5	L
6637	SNRPG	6867	TACC1	L
6637	SNRPG	7088	TLE1	S
6637	SNRPG	7414	VCL	L
6637	SNRPG	10980	COPS6	S
6637	SNRPG	11161	C14orf1	S
6637	SNRPG	11218	DDX20	L
6637	SNRPG	57562	KIAA1377	S
6637	SNRPG	115265	DDIT4L	R
6638	SNRPN	7157	TP53	S
6638	SNRPN	55791	C1orf103	S
6640	SNTA1	7402	UTRN	L
6640	SNTA1	8525	DGKZ	L
6640	SNTA1	27165	GLS2	L
6640	SNTA1	112950	MED8	S
6641	SNTB1	8525	DGKZ	L
6642	SNX1	6643	SNX2	L
6642	SNX1	9146	HGS	L
6642	SNX1	55737	VPS35	L
6643	SNX2	8723	SNX4	L
6643	SNX2	23048	FNBP1	L
6645	SNTB2	7402	UTRN	L
6645	SNTB2	8525	DGKZ	L
6645	SNTB2	23139	MAST2	L
6647	SOD1	9973	CCS	L
6648	SOD2	51608	C7orf20	S
6648	SOD2	57670	KIAA1549	S
6648	SOD2	79159	MGC3731	S

6648	SOD2	307255	(null)	S
6651	SON	7205	TRIP6	L
6651	SON	55660	FNBP3	L
6651	SON	79753	SNIP1	L
6653	SORL1	23062	GGA2	L
6653	SORL1	26088	GGA1	L
6654	SOS1	7535	ZAP70	L
6654	SOS1	8440	NCK2	L
6654	SOS1	10006	ABI1	L
6654	SOS1	10750	GRAP	L
6654	SOS1	10818	FRS2	L
6654	SOS1	29993	PACSIN1	L
6654	SOS1	30011	SH3KBP1	L
6654	SOS1	51225	ABI3	L
6655	SOS2	9402	GRAP2	L
6655	SOS2	10006	ABI1	L
6662	SOX9	7186	TRAF2	L
6662	SOX9	23013	SPEN	L
6667	SP1	6670	SP3	L
6667	SP1	6671	SP4	L
6667	SP1	6720	SREBF1	L
6667	SP1	6721	SREBF2	L
6667	SP1	6874	TAF4	L
6667	SP1	6886	TAL1	L
6667	SP1	7025	NR2F1	L
6667	SP1	7071	KLF10	L
6667	SP1	7528	YY1	L
6667	SP1	7704	ZBTB16	L
6667	SP1	8863	PER3	L
6667	SP1	9314	KLF4	L
6667	SP1	10291	SF3A1	L
6667	SP1	10848	PPP1R13L	L
6667	SP1	23126	POGZ	L
6667	SP1	29102	RNASEN	L
6667	SP1	51341	ZBTB7A	L
6667	SP1	57708	MIER1	L
6670	SP3	8859	STK19	L
6670	SP3	51341	ZBTB7A	L
6671	SP4	51341	ZBTB7A	L
6672	SP100	7341	SUMO1	R
6672	SP100	10951	CBX1	L
6672	SP100	11335	CBX3	L
6672	SP100	23468	CBX5	L
6672	SP100	28996	HIPK2	L
6672	SP100	79753	SNIP1	L
6678	SPARC	7040	TGFB1	L
6678	SPARC	7052	TGM2	L
6678	SPARC	7057	THBS1	L
6678	SPARC	7422	VEGF	L
6687	SPG7	10155	TRIM28	S
6687	SPG7	22913	RALY	S
6687	SPG7	55791	C1orf103	S
6687	SPG7	83755	KRTAP4-12	R
6688	SPI1	6689	SPIB	L
6689	SPIB	6908	TBP	L
6692	SPINT1	6768	ST14	L
6692	SPINT1	55603	FAM46A	L
6693	SPN	7430	VIL2	L
6696	SPP1	9260	PDLIM7	R
6696	SPP1	55324	ABCF3	S
6696	SPP1	56259	CTNNBL1	R
6702	SPRR2C	8975	USP13	S
6708	SPTA1	6710	SPTB	L
6708	SPTA1	10006	ABI1	L
6709	SPTAN1	6853	SYN1	L
6709	SPTAN1	7803	PTP4A1	L
6709	SPTAN1	8936	WASF1	L

6709	SPTAN1	10006	ABI1	L
6709	SPTAN1	10078	TSSC4	S
6709	SPTAN1	50944	SHANK1	L
6709	SPTAN1	53635	PTOV1	S
6709	SPTAN1	57062	DDX24	S
6711	SPTBN1	8904	CPNE1	L
6711	SPTBN1	10121	ACTR1A	L
6711	SPTBN1	55729	ATF7IP	L
6711	SPTBN1	57473	GM632	L
6711	SPTBN1	60561	RINT-1	S
6711	SPTBN1	131034	CPNE4	L
6712	SPTBN2	8936	WASF1	L
6712	SPTBN2	10121	ACTR1A	L
6712	SPTBN2	10497	UNC13B	L
6714	SRC	6722	SRF	L
6714	SRC	6772	STAT1	L
6714	SRC	6774	STAT3	L
6714	SRC	6776	STAT5A	L
6714	SRC	6850	SYK	L
6714	SRC	6853	SYN1	L
6714	SRC	6927	TCF1	L
6714	SRC	7074	TIAM1	L
6714	SRC	7189	TRAF6	L
6714	SRC	7205	TRIP6	L
6714	SRC	7225	TRPC6	L
6714	SRC	7275	TUB	L
6714	SRC	7301	TYRO3	L
6714	SRC	7454	WAS	L
6714	SRC	7529	YWHAB	L
6714	SRC	7531	YWHAE	L
6714	SRC	7532	YWHAG	L
6714	SRC	7533	YWHAH	L
6714	SRC	8038	ADAM12	L
6714	SRC	8631	SCAP1	L
6714	SRC	8751	ADAM15	L
6714	SRC	9019	MPZL1	L
6714	SRC	9644	SH3MD1	L
6714	SRC	9846	GAB2	L
6714	SRC	10399	GNB2L1	L
6714	SRC	10657	KHDRBS1	SL
6714	SRC	11099	PTPN21	L
6714	SRC	22920	KIFAP3	L
6714	SRC	23607	CD2AP	L
6714	SRC	23616	SH3BP1	L
6714	SRC	28964	GIT1	L
6714	SRC	50807	DDEF1	L
6714	SRC	51466	EVL	L
6714	SRC	59341	TRPV4	L
6714	SRC	60312	AFAP	L
6714	SRC	91746	YT521	L
6714	SRC	139716	GAB3	L
6717	SRI	10241	NDP52	R
6717	SRI	25801	GCA	L
6720	SREBF1	7329	UBE2I	L
6720	SREBF1	7528	YY1	L
6720	SREBF1	117581	TWIST2	L
6721	SREBF2	7329	UBE2I	L
6721	SREBF2	7341	SUMO1	L
6721	SREBF2	22937	SCAP	L
6721	SREBF2	79434	(null)	S
6722	SRF	6749	SSRP1	L
6722	SRF	7003	TEAD1	L
6722	SRF	8648	NCOA1	L
6722	SRF	9612	NCOR2	L
6722	SRF	29108	PYCARD	L
6722	SRF	57591	MKL1	L
6722	SRF	84525	HOP	L

6722	SRF	93649	MYOCD	L
6722	SRF	159296	NKX2-3	L
6726	SRP9	6727	SRP14	L
6727	SRP14	55968	NSFL1C	S
6728	SRP19	6729	SRP54	L
6728	SRP19	10526	IPO8	L
6728	SRP19	10527	IPO7	L
6730	SRP68	6731	SRP72	L
6733	SRPK2	11338	U2AF2	R
6734	SRPR	6746	SSR2	L
6734	SRPR	9853	RUSC2	S
6737	TRIM21	7375	USP4	L
6737	TRIM21	60491	NIF3L1	R
6744	SSFA2	51631	LUC7L2	S
6745	SSR1	10813	UTP14A	S
6745	SSR1	53371	NUP54	L
6747	SSR3	7916	BAT2	L
6748	SSR4	23072	HECW1	L
6749	SSRP1	26292	MYCBP	S
6749	SSRP1	91754	NEK9	L
6750	SST	6751	SSTR1	L
6750	SST	6752	SSTR2	L
6750	SST	6753	SSTR3	L
6750	SST	6754	SSTR4	L
6750	SST	6755	SSTR5	L
6751	SSTR1	6755	SSTR5	L
6752	SSTR2	22941	SHANK2	L
6752	SSTR2	50944	SHANK1	L
6753	SSTR3	7157	TP53	L
6755	SSTR5	55811	SAC	L
6757	SSX2	117177	RAB3IP	L
6757	SSX2	117178	SSX2IP	L
6760	SS18	8028	MLLT10	L
6767	ST13	9398	IGSF2	S
6767	ST13	93145	OLFM2	S
6770	STAR	9638	FEZ1	S
6770	STAR	54535	CCHCR1	L
6772	STAT1	6773	STAT2	L
6772	STAT1	6774	STAT3	L
6772	STAT1	7132	TNFRSF1A	L
6772	STAT1	7329	UBE2I	L
6772	STAT1	7421	VDR	L
6772	STAT1	7514	XPO1	L
6772	STAT1	8554	PIAS1	L
6772	STAT1	8717	TRADD	L
6772	STAT1	9111	NMI	L
6772	STAT1	9466	IL27RA	L
6772	STAT1	10379	ISGF3G	L
6772	STAT1	10399	GNB2L1	L
6772	STAT1	84285	MGC11102	R
6773	STAT2	9282	CRSP2	L
6773	STAT2	10379	ISGF3G	L
6774	STAT3	6850	SYK	L
6774	STAT3	6927	TCF1	L
6774	STAT3	7253	TSHR	L
6774	STAT3	8553	BHLHB2	L
6774	STAT3	8648	NCOA1	L
6774	STAT3	9111	NMI	L
6774	STAT3	10401	PIAS3	L
6774	STAT3	10524	HTATIP	L
6774	STAT3	10657	KHDRBS1	L
6774	STAT3	51079	NDUFA13	L
6774	STAT3	85480	TSLP	L
6775	STAT4	9063	PIAS2	L
6775	STAT4	9111	NMI	L
6776	STAT5A	6777	STAT5B	L
6776	STAT5A	6850	SYK	L

6776	STAT5A	9111	NMI	L
6776	STAT5A	9612	NCOR2	L
6776	STAT5A	55835	CENPJ	L
6776	STAT5A	56952	PRTFDC1	R
6776	STAT5A	85480	TSLP	L
6777	STAT5B	9111	NMI	L
6777	STAT5B	9612	NCOR2	L
6777	STAT5B	55835	CENPJ	L
6778	STAT6	8648	NCOA1	L
6778	STAT6	9111	NMI	L
6778	STAT6	27044	SND1	L
6782	STCH	29978	UBQLN2	L
6782	STCH	29979	UBQLN1	R
6783	SULT1E1	6820	SULT2B1	R
6783	SULT1E1	7157	TP53	S
6783	SULT1E1	9094	UNC119	S
6783	SULT1E1	9869	SETDB1	S
6783	SULT1E1	10980	COPS6	S
6783	SULT1E1	11161	C14orf1	S
6783	SULT1E1	55068	FLJ10094	R
6783	SULT1E1	55791	C1orf103	S
6783	SULT1E1	84060	DKFZP564O0523	S
6783	SULT1E1	84966	IGSF21	S
6786	STIM1	57620	STIM2	L
6789	STK4	7157	TP53	L
6789	STK4	83593	RASSF5	L
6790	STK6	6867	TACC1	L
6790	STK6	7157	TP53	L
6790	STK6	7334	UBE2N	L
6790	STK6	9793	CKAP5	L
6790	STK6	22974	TPX2	L
6790	STK6	51199	NIN	L
6790	STK6	53615	MBD3	L
6794	STK11	7157	TP53	L
6794	STK11	11140	CDC37	L
6794	STK11	25843	PREI3	S
6794	STK11	114790	STK11IP	L
6801	STRN	55729	ATF7IP	L
6804	STX1A	6812	STXBP1	L
6804	STX1A	6813	STXBP2	L
6804	STX1A	6843	VAMP1	L
6804	STX1A	6844	VAMP2	L
6804	STX1A	6845	SYBL1	L
6804	STX1A	6857	SYT1	L
6804	STX1A	6860	SYT4	L
6804	STX1A	7431	VIM	S
6804	STX1A	8673	VAMP8	L
6804	STX1A	8773	SNAP23	L
6804	STX1A	8775	NAPA	L
6804	STX1A	9482	STX8	L
6804	STX1A	10497	UNC13B	L
6804	STX1A	10814	CPLX2	L
6804	STX1A	10815	CPLX1	L
6804	STX1A	29091	STXBP6	L
6804	STX1A	54462	KIAA1128	S
6804	STX1A	94121	SYTL4	L
6804	STX1A	134957	STXBP5	L
6804	STX1A	167838	TXLNB	L
6804	STX1A	200081	TXLNA	L
6809	STX3A	7094	TLN1	L
6809	STX3A	7414	VCL	L
6810	STX4A	6814	STXBP3	L
6810	STX4A	6860	SYT4	L
6810	STX4A	8673	VAMP8	L
6810	STX4A	8674	VAMP4	R
6810	STX4A	8766	RAB11A	L
6810	STX4A	8773	SNAP23	L

6810	STX4A	8775	NAPA	R
6810	STX4A	9341	VAMP3	R
6810	STX4A	29091	STXBP6	L
6810	STX4A	167838	TXLNB	L
6810	STX4A	200081	TXLNA	L
6811	STX5A	7157	TP53	S
6811	STX5A	7917	BAT3	S
6811	STX5A	8615	VDP	L
6811	STX5A	8775	NAPA	R
6811	STX5A	9001	HAP1	S
6811	STX5A	9527	GOSR1	L
6811	STX5A	9554	SEC22L1	L
6811	STX5A	9570	GOSR2	L
6811	STX5A	10980	COPS6	S
6811	STX5A	10989	IMMT	S
6811	STX5A	55791	C1orf103	S
6811	STX5A	55968	NSFL1C	L
6812	STXBP1	8447	DOC2B	L
6812	STXBP1	8448	DOC2A	L
6812	STXBP1	8615	VDP	L
6813	STXBP2	6844	VAMP2	L
6813	STXBP2	8773	SNAP23	L
6820	SULT2B1	130540	ALS2CR12	R
6829	SUPT5H	9372	ZFYVE9	L
6829	SUPT5H	10419	SKB1	L
6829	SUPT5H	27336	HTATSF1	L
6829	SUPT5H	57473	GM632	L
6835	SURF2	8703	B4GALT3	S
6837	SURF5	51280	GOLPH2	S
6839	SUV39H1	10014	HDAC5	L
6839	SUV39H1	10951	CBX1	L
6839	SUV39H1	23468	CBX5	RL
6840	SVIL	7041	TGFB1I1	L
6840	SVIL	51631	LUC7L2	S
6843	VAMP1	8773	SNAP23	L
6843	VAMP1	9217	VAPB	L
6843	VAMP1	9218	VAPA	L
6844	VAMP2	7222	TRPC3	L
6844	VAMP2	8673	VAMP8	L
6844	VAMP2	8676	STX11	L
6844	VAMP2	8773	SNAP23	L
6844	VAMP2	9217	VAPB	L
6844	VAMP2	9218	VAPA	L
6844	VAMP2	10567	RABAC1	L
6844	VAMP2	10815	CPLX1	L
6845	SYBL1	8417	STX7	L
6845	SYBL1	8773	SNAP23	L
6845	SYBL1	8943	AP3D1	L
6850	SYK	7189	TRAF6	L
6850	SYK	7314	UBB	L
6850	SYK	7409	VAV1	L
6850	SYK	7430	VIL2	L
6850	SYK	7846	TUBA3	L
6850	SYK	27040	LAT	L
6850	SYK	27240	SIT1	L
6850	SYK	29760	BLNK	L
6850	SYK	55824	PAG1	L
6853	SYN1	7431	VIM	S
6853	SYN1	8224	SYN3	L
6853	SYN1	10524	HTATIP	S
6854	SYN2	8224	SYN3	L
6857	SYT1	6860	SYT4	L
6857	SYT1	9899	SV2B	L
6857	SYT1	10399	GNB2L1	L
6857	SYT1	10492	SYNCRIP	L
6857	SYT1	10815	CPLX1	L
6857	SYT1	51280	GOLPH2	S

6857	SYT1	85439	STN2	L
6860	SYT4	7021	TFAP2B	L
6860	SYT4	10492	SYNCRIP	L
6861	SYT5	10492	SYNCRIP	L
6861	SYT5	84258	SYT3	L
6863	TAC1	6865	TACR2	L
6863	TAC1	6866	TAC3	L
6863	TAC1	6869	TACR1	L
6863	TAC1	6870	TACR3	L
6863	TAC1	7917	BAT3	S
6863	TAC1	55701	FLJ10357	S
6865	TACR2	6866	TAC3	L
6865	TACR2	255061	TAC4	L
6866	TAC3	6869	TACR1	L
6866	TAC3	6870	TACR3	L
6866	TAC3	8518	IKBKAP	S
6866	TAC3	9638	FEZ1	S
6866	TAC3	9737	GPRASP1	S
6866	TAC3	60492	MDS025	S
6866	TAC3	197131	UBR1	S
6867	TACC1	8089	YEATS4	L
6867	TACC1	9212	AURKB	L
6867	TACC1	51690	LSM7	L
6868	ADAM17	7078	TIMP3	L
6868	ADAM17	10459	MAD2L2	L
6869	TACR1	255061	TAC4	L
6870	TACR3	255061	TAC4	L
6871	TADA2L	9146	HGS	R
6871	TADA2L	10474	TADA3L	RL
6871	TADA2L	11170	TU3A	R
6871	TADA2L	149371	EXOC8	R
6872	TAF1	6873	TAF2	L
6872	TAF1	6879	TAF7	L
6872	TAF1	6908	TBP	L
6872	TAF1	7157	TP53	L
6872	TAF1	7343	UBTF	L
6872	TAF1	8148	TAF15	L
6872	TAF1	8290	HIST3H3	L
6872	TAF1	8721	EDF1	L
6872	TAF1	10923	SUB1	L
6872	TAF1	25842	ASF1A	L
6874	TAF4	6883	TAF12	L
6874	TAF4	23468	CBX5	L
6879	TAF7	8148	TAF15	L
6879	TAF7	8805	TRIM24	L
6879	TAF7	29894	CPSF1	L
6880	TAF9	10589	DRAP1	R
6880	TAF9	84060	DKFZP564O0523	S
6882	TAF11	6884	TAF13	L
6885	MAP3K7	8204	NRIP1	L
6885	MAP3K7	8792	TNFRSF11A	L
6885	MAP3K7	9020	MAP3K14	L
6885	MAP3K7	9146	HGS	L
6885	MAP3K7	9448	MAP4K4	L
6885	MAP3K7	10454	MAP3K7IP1	L
6885	MAP3K7	10758	TRAF3IP2	L
6885	MAP3K7	11184	MAP4K1	L
6885	MAP3K7	55437	ALS2CR2	L
6886	TAL1	6929	TCF3	L
6886	TAL1	54892	LUZP5	L
6887	TAL2	6929	TCF3	L
6888	TALDO1	51691	LSM8	L
6890	TAP1	83755	KRTAP4-12	R
6892	TAPBP	22820	COPG	L
6892	TAPBP	26958	COPG2	L
6895	TARBP2	9618	TRAF4	L
6895	TARBP2	10432	RBM14	L

6895	TARBP2	307255	(null)	S
6900	CNTN2	26047	CNTNAP2	L
6904	TBCD	7280	TUBB2	L
6904	TBCD	28955	DEXI	S
6905	TBCE	7277	TUBA1	L
6907	TBL1X	8349	HIST2H2BE	L
6907	TBL1X	9611	NCOR1	L
6907	TBL1X	9612	NCOR2	L
6907	TBL1X	27101	CACYBP	L
6908	TBP	7157	TP53	L
6908	TBP	7343	UBTF	L
6908	TBP	8202	NCOA3	L
6908	TBP	8648	NCOA1	L
6908	TBP	8721	EDF1	L
6908	TBP	8804	CREG1	L
6908	TBP	9013	TAF1C	L
6908	TBP	9014	TAF1B	L
6908	TBP	9015	TAF1A	L
6908	TBP	9044	BTAF1	L
6908	TBP	9325	TRIP4	L
6908	TBP	10320	ZNFN1A1	L
6908	TBP	10589	DRAP1	L
6908	TBP	10923	SUB1	L
6908	TBP	54457	TAF7L	L
6908	TBP	55290	BRF2	L
6908	TBP	138474	TAF1L	L
6908	TBP	284403	WDR62	S
6915	TBXA2R	10672	GNA13	L
6917	TCEA1	9150	CTDP1	L
6919	TCEA2	7186	TRAF2	R
6919	TCEA2	22911	WDR47	S
6919	TCEA2	30851	TAX1BP3	S
6919	TCEA2	54462	KIAA1128	S
6919	TCEA2	79012	CAMKV	S
6919	TCEA2	80152	FLJ13111	S
6919	TCEA2	84335	AKT1S1	S
6919	TCEA2	85302	FBF1	S
6921	TCEB1	6923	TCEB2	RL
6921	TCEB1	7428	VHL	L
6921	TCEB1	9021	SOCS3	L
6921	TCEB1	9306	SOCS6	L
6921	TCEB1	10489	LRRC41	L
6921	TCEB1	23032	USP33	L
6921	TCEB1	140461	ASB8	L
6923	TCEB2	7428	VHL	L
6923	TCEB2	9021	SOCS3	L
6923	TCEB2	9306	SOCS6	L
6923	TCEB2	10489	LRRC41	L
6923	TCEB2	23032	USP33	L
6923	TCEB2	140461	ASB8	L
6924	TCEB3	22981	KIAA0980	R
6925	TCF4	6929	TCF3	L
6925	TCF4	9242	MSC	L
6927	TCF1	6928	TCF2	L
6927	TCF1	7088	TLE1	L
6927	TCF1	8850	PCAF	L
6929	TCF3	6938	TCF12	L
6929	TCF3	7291	TWIST1	L
6929	TCF3	7867	MAPKAPK3	L
6929	TCF3	8850	PCAF	L
6929	TCF3	9242	MSC	L
6929	TCF3	9421	HAND1	L
6929	TCF3	9464	HAND2	L
6929	TCF3	29844	TFPT	L
6929	TCF3	256297	PTF1A	L
6935	TCF8	10524	HTATIP	L
6935	TCF8	10589	DRAP1	L

6936	C2orf3	7094	TLN1	L
6938	TCF12	6943	TCF21	L
6938	TCF12	9242	MSC	L
6938	TCF12	9421	HAND1	L
6938	TCF12	11098	PRSS23	S
6938	TCF12	256297	PTF1A	L
6940	ZNF354A	8655	DNCL1	L
6943	TCF21	8543	LMO4	L
6944	VPS72	10241	NDP52	R
6944	VPS72	11007	DIPA	R
6945	MLX	11345	GABARAPL2	R
6950	TCP1	51807	TUBA8	L
6955	TRA@	6964	TRD@	L
6955	TRA@	28639	TRBC1	L
6955	TRA@	50852	TRAT1	L
6955	TRA@	51176	LEF1	L
6990	TCTE1L	7416	VDAC1	L
6990	TCTE1L	54997	TSC	R
6993	TCTEL1	7416	VDAC1	L
6996	TDG	7067	THRA	L
6996	TDG	7341	SUMO1	L
6996	TDG	7421	VDR	L
6996	TDG	7508	XPC	L
6996	TDG	7919	BAT1	L
6997	TDGF1	7917	BAT3	S
6997	TDGF1	10980	COPS6	S
6997	TDGF1	55791	C1orf103	S
6997	TDGF1	130399	ACVR1C	L
6999	TDO2	8623	ASMTL	R
7003	TEAD1	9686	VGLL4	L
7003	TEAD1	10413	YAP1	L
7003	TEAD1	51442	VGLL1	L
7004	TEAD4	10413	YAP1	L
7004	TEAD4	11007	DIPA	R
7004	TEAD4	25937	WWTR1	R
7004	TEAD4	51442	VGLL1	L
7005	TEAD3	10413	YAP1	L
7005	TEAD3	25937	WWTR1	R
7005	TEAD3	51442	VGLL1	L
7006	TEC	7409	VAV1	L
7006	TEC	7454	WAS	L
7006	TEC	8503	PIK3R3	L
7006	TEC	8651	SOCS1	L
7006	TEC	10733	PLK4	L
7006	TEC	11099	PTPN21	L
7008	TEF	10538	BATF	L
7008	TEF	55509	SNFT	L
7010	TEK	7075	TIE1	L
7010	TEK	8651	SOCS1	L
7010	TEK	9046	DOK2	L
7010	TEK	9068	ANGPTL1	L
7010	TEK	51378	ANGPT4	L
7011	TEP1	7015	TERT	L
7011	TEP1	7157	TP53	L
7013	TERF1	7704	ZBTB16	S
7013	TERF1	8658	TNKS	L
7013	TERF1	9231	DLG5	S
7013	TERF1	10813	UTP14A	S
7013	TERF1	11244	ZHX1	S
7013	TERF1	22919	MAPRE1	L
7013	TERF1	25913	POT1	L
7013	TERF1	26277	TINF2	SL
7013	TERF1	28964	GIT1	S
7013	TERF1	54984	PINX1	L
7013	TERF1	60626	RIC8A	S
7013	TERF1	80351	TNKS2	L
7014	TERF2	7486	WRN	L

7014	TERF2	10111	RAD50	L
7014	TERF2	54386	TERF2IP	L
7015	TERT	7514	XPO1	L
7015	TERT	7520	XRCC5	L
7015	TERT	10445	MCRS1	L
7015	TERT	10519	CIB1	L
7015	TERT	10971	YWHAQ	L
7015	TERT	23293	C17orf31	L
7015	TERT	54984	PINX1	L
7016	TESK1	7529	YWHAB	L
7016	TESK1	81848	SPRY4	L
7018	TF	7036	TFR2	L
7018	TF	7037	TFRC	L
7018	TF	8029	CUBN	L
7018	TF	10381	TUBB3	S
7019	TFAM	51106	TFB1M	L
7020	TFAP2A	7157	TP53	L
7020	TFAP2A	7913	DEK	L
7020	TFAP2A	10370	CITED2	L
7020	TFAP2A	26119	LDLRAP1	L
7020	TFAP2A	163732	CITED4	L
7021	TFAP2B	8334	HIST1H2AC	S
7021	TFAP2B	55823	VPS11	S
7021	TFAP2B	163732	CITED4	L
7022	TFAP2C	7157	TP53	L
7022	TFAP2C	10370	CITED2	L
7022	TFAP2C	163732	CITED4	L
7025	NR2F1	7067	THRA	L
7025	NR2F1	8648	NCOA1	L
7025	NR2F1	53335	BCL11A	L
7025	NR2F1	64919	BCL11B	L
7026	NR2F2	8805	TRIM24	L
7026	NR2F2	8878	SQSTM1	L
7026	NR2F2	10114	HIPK3	L
7026	NR2F2	53335	BCL11A	L
7026	NR2F2	55603	FAM46A	L
7026	NR2F2	64919	BCL11B	L
7027	TFDP1	7157	TP53	L
7030	TFE3	7942	TFEB	L
7030	TFE3	22797	TFEC	L
7031	TFF1	29979	UBQLN1	R
7035	TFPI	7057	THBS1	L
7037	TFRC	7094	TLN1	L
7037	TFRC	7414	VCL	L
7037	TFRC	11337	GABARAP	L
7037	TFRC	148738	HFE2	L
7040	TGFB1	7042	TGFB2	L
7040	TGFB1	7046	TGFBR1	L
7040	TGFB1	7048	TGFBR2	L
7040	TGFB1	7049	TGFBR3	L
7040	TGFB1	7057	THBS1	L
7040	TGFB1	7448	VTN	L
7040	TGFB1	7531	YWHAE	L
7040	TGFB1	8425	LTBP4	L
7040	TGFB1	8668	EIF3S2	L
7040	TGFB1	114990	SLITL2	L
7041	TGFB1I1	7048	TGFBR2	L
7041	TGFB1I1	9618	TRAF4	L
7041	TGFB1I1	10114	HIPK3	L
7041	TGFB1I1	28964	GIT1	L
7042	TGFB2	7043	TGFB3	L
7042	TGFB2	7046	TGFBR1	L
7042	TGFB2	7048	TGFBR2	L
7042	TGFB2	7049	TGFBR3	L
7042	TGFB2	7448	VTN	L
7042	TGFB2	114990	SLITL2	L
7043	TGFB3	7046	TGFBR1	L

7043	TGFB3	7048	TGFBR2	L
7043	TGFB3	7049	TGFBR3	L
7043	TGFB3	114990	SLITL2	L
7046	TGFBR1	7049	TGFBR3	L
7046	TGFBR1	9372	ZFYVE9	L
7046	TGFBR1	9392	TGFBRAP1	L
7046	TGFBR1	11171	STRAP	L
7046	TGFBR1	51776	ZAK	L
7046	TGFBR1	64750	SMURF2	L
7048	TGFBR2	7049	TGFBR3	L
7048	TGFBR2	8668	EIF3S2	L
7048	TGFBR2	9133	CCNB2	L
7048	TGFBR2	9372	ZFYVE9	L
7048	TGFBR2	9392	TGFBRAP1	L
7048	TGFBR2	11171	STRAP	L
7049	TGFBR3	10755	GIPC1	L
7050	TGIF	51003	MED31	S
7050	TGIF	55791	C1orf103	S
7052	TGM2	7280	TUBB2	L
7052	TGM2	8349	HIST2H2BE	L
7052	TGM2	51535	PPHLN1	L
7052	TGM2	57473	GM632	L
7053	TGM3	51806	CALML5	L
7057	THBS1	11151	CORO1A	L
7058	THBS2	7059	THBS3	L
7064	THOP1	10200	MPHOSPH6	L
7064	THOP1	51678	MPP6	L
7067	THRA	7533	YWHAH	L
7067	THRA	8638	OASL	L
7067	THRA	8648	NCOA1	L
7067	THRA	9318	COPS2	L
7067	THRA	9412	SURB7	L
7067	THRA	9612	NCOR2	L
7067	THRA	11214	AKAP13	L
7067	THRA	64324	NSD1	L
7068	THRB	7157	TP53	L
7068	THRB	7205	TRIP6	L
7068	THRB	8125	ANP32A	L
7068	THRB	8202	NCOA3	L
7068	THRB	8648	NCOA1	L
7068	THRB	8841	HDAC3	L
7068	THRB	9318	COPS2	L
7068	THRB	9319	TRIP13	L
7068	THRB	9320	TRIP12	L
7068	THRB	9322	TRIP10	L
7068	THRB	9325	TRIP4	L
7068	THRB	9326	ZNHIT3	L
7068	THRB	9412	SURB7	L
7068	THRB	9612	NCOR2	L
7068	THRB	10499	NCOA2	L
7068	THRB	10664	CTCF	L
7068	THRB	10891	PPARGC1A	L
7068	THRB	10902	BRD8	L
7068	THRB	29982	NRBF2	L
7068	THRB	221037	JMJD1C	L
7071	KLF10	57473	GM632	L
7072	TIA1	10922	FASTK	L
7074	TIAM1	9479	MAPK8IP1	L
7074	TIAM1	23542	MAPK8IP2	L
7074	TIAM1	84687	PPP1R9B	L
7076	TIMP1	9400	RECQL5	S
7076	TIMP1	222019	(null)	S
7080	TITF1	7849	PAX8	L
7080	TITF1	8648	NCOA1	L
7080	TITF1	10499	NCOA2	L
7080	TITF1	28996	HIPK2	L
7082	TJP1	7122	CLDN5	L

7082	TJP1	9075	CLDN2	L
7082	TJP1	9076	CLDN1	L
7082	TJP1	9414	TJP2	L
7082	TJP1	10052	GJA7	L
7082	TJP1	55243	KIRREL	L
7082	TJP1	57530	CGN	L
7082	TJP1	58494	JAM2	L
7082	TJP1	83700	JAM3	L
7083	TK1	7088	TLE1	S
7083	TK1	7157	TP53	S
7083	TK1	7280	TUBB2	S
7083	TK1	9094	UNC119	S
7083	TK1	9869	SETDB1	S
7083	TK1	10589	DRAP1	S
7083	TK1	10980	COPS6	S
7083	TK1	11161	C14orf1	S
7083	TK1	55791	C1orf103	S
7083	TK1	60492	MDS025	S
7083	TK1	84060	DKFZP564O0523	S
7088	TLE1	7089	TLE2	L
7088	TLE1	7403	UTX	L
7088	TLE1	7404	UTY	L
7088	TLE1	8880	FUBP1	S
7088	TLE1	8894	EIF2S2	S
7088	TLE1	9802	DAZAP2	S
7088	TLE1	9921	RNF10	S
7088	TLE1	10200	MPHOSPH6	S
7088	TLE1	10301	DLEU1	S
7088	TLE1	10736	SIX2	L
7088	TLE1	11189	TNRC4	S
7088	TLE1	19241	(null)	S
7088	TLE1	51176	LEF1	L
7088	TLE1	51804	SIX4	L
7088	TLE1	53826	FXYD6	S
7088	TLE1	54544	C1orf42	S
7088	TLE1	55502	HES6	L
7088	TLE1	55643	BTBD2	S
7088	TLE1	55734	ZFP64	S
7088	TLE1	56144	PCDHA4	S
7089	TLE2	7404	UTY	L
7090	TLE3	51804	SIX4	L
7094	TLN1	7172	TPMT	L
7094	TLN1	7414	VCL	L
7094	TLN1	7431	VIM	L
7094	TLN1	9349	RPL23	L
7094	TLN1	9774	BCLAF1	L
7094	TLN1	9898	UBAP2L	L
7094	TLN1	9908	G3BP2	L
7094	TLN1	10146	G3BP	L
7094	TLN1	10276	NET1	L
7094	TLN1	10363	HMG20A	L
7094	TLN1	10399	GNB2L1	L
7094	TLN1	10409	BASP1	L
7094	TLN1	10493	VAT1	L
7094	TLN1	10565	ARFGEF1	L
7094	TLN1	10657	KHDRBS1	L
7094	TLN1	10863	ADAM28	L
7094	TLN1	22844	FRMPD1	L
7094	TLN1	23066	CAND2	L
7094	TLN1	23116	KIAA0423	L
7094	TLN1	23231	KIAA0746	L
7094	TLN1	23256	SCFD1	L
7094	TLN1	23332	CLASP1	L
7094	TLN1	26136	TES	L
7094	TLN1	26960	NBEA	L
7094	TLN1	26986	PABPC1	L
7094	TLN1	51493	HSPC117	L

7094	TLN1	51663	ZFR	L
7094	TLN1	54931	RG9MTD1	L
7094	TLN1	55901	THSD1	L
7094	TLN1	57099	AVEN	L
7094	TLN1	64754	SMYD3	L
7094	TLN1	80079	FLJ13769	L
7094	TLN1	114991	ZNF618	L
7094	TLN1	220885	LAMR1P15	L
7094	TLN1	284058	LOC284058	L
7095	TLOC1	11231	SEC63	L
7096	TLR1	7097	TLR2	L
7096	TLR1	7099	TLR4	L
7097	TLR2	7184	TRA1	L
7097	TLR2	10333	TLR6	L
7097	TLR2	23643	LY96	L
7097	TLR2	54472	TOLLIP	L
7099	TLR4	7184	TRA1	L
7099	TLR4	23643	LY96	L
7099	TLR4	54472	TOLLIP	L
7099	TLR4	114609	TIRAP	L
7102	TSPAN7	84248	FYTTD1	S
7105	TSPAN6	55791	C1orf103	S
7112	TMPO	8815	BANF1	L
7112	TMPO	26993	AKAP8L	L
7122	CLDN5	8777	MPDZ	L
7124	TNF	7132	TNFRSF1A	L
7124	TNF	7133	TNFRSF1B	L
7128	TNFAIP3	7185	TRAF1	L
7128	TNFAIP3	7186	TRAF2	L
7128	TNFAIP3	7189	TRAF6	L
7128	TNFAIP3	7529	YWHAB	L
7128	TNFAIP3	7531	YWHAE	L
7128	TNFAIP3	7532	YWHAG	L
7128	TNFAIP3	7533	YWHAH	L
7128	TNFAIP3	7534	YWHAZ	L
7128	TNFAIP3	7805	LAPTM5	L
7128	TNFAIP3	8517	IKBKG	L
7128	TNFAIP3	8737	RIPK1	L
7128	TNFAIP3	8887	TAX1BP1	L
7128	TNFAIP3	10318	TNIP1	L
7128	TNFAIP3	26994	RNF11	L
7128	TNFAIP3	79155	TNIP2	L
7132	TNFRSF1A	7185	TRAF1	L
7132	TNFRSF1A	7186	TRAF2	L
7132	TNFRSF1A	7329	UBE2I	L
7132	TNFRSF1A	7341	SUMO1	L
7132	TNFRSF1A	8396	PIP5K2B	L
7132	TNFRSF1A	8439	NSMAF	L
7132	TNFRSF1A	8517	IKBKG	L
7132	TNFRSF1A	8567	MADD	L
7132	TNFRSF1A	8717	TRADD	L
7132	TNFRSF1A	8737	RIPK1	L
7132	TNFRSF1A	8767	RIPK2	L
7132	TNFRSF1A	9530	BAG4	L
7132	TNFRSF1A	10131	TRAP1	L
7132	TNFRSF1A	10399	GNB2L1	L
7132	TNFRSF1A	11035	RIPK3	L
7132	TNFRSF1A	26133	TRPC4AP	L
7132	TNFRSF1A	407977	TNFSF12-TNFSF13	L
7133	TNFRSF1B	7185	TRAF1	L
7133	TNFRSF1B	7186	TRAF2	L
7133	TNFRSF1B	10293	TRIP	L
7133	TNFRSF1B	51567	TTRAP	L
7133	TNFRSF1B	59269	HIVEP3	L
7134	TNNC1	7137	TNNI3	L
7134	TNNC1	7139	TNNT2	L
7135	TNNI1	11007	DIPA	R

7137	TNNI3	7138	TNNT1	L
7137	TNNI3	7139	TNNT2	L
7138	TNNT1	8500	PPFIA1	R
7138	TNNT1	9240	PNMA1	S
7138	TNNT1	9513	FXR2	R
7138	TNNT1	11007	DIPA	R
7138	TNNT1	22981	KIAA0980	R
7138	TNNT1	79156	PLEKHF1	R
7138	TNNT1	116225	ZMYND19	R
7140	TNNT3	9001	HAP1	S
7140	TNNT3	10073	RNUT1	S
7143	TNR	63827	BCAN	L
7150	TOP1	7157	TP53	L
7150	TOP1	7329	UBE2I	L
7150	TOP1	7341	SUMO1	L
7150	TOP1	9295	SFRS11	L
7150	TOP1	10210	TOPORS	L
7150	TOP1	55775	TDP1	L
7153	TOP2A	7155	TOP2B	L
7153	TOP2A	7157	TP53	L
7153	TOP2A	7341	SUMO1	L
7153	TOP2A	7514	XPO1	L
7153	TOP2A	7531	YWHAE	L
7155	TOP2B	7157	TP53	L
7155	TOP2B	7341	SUMO1	L
7155	TOP2B	7514	XPO1	L
7155	TOP2B	11073	TOPBP1	L
7156	TOP3A	9400	RECQL5	L
7157	TP53	7158	TP53BP1	L
7157	TP53	7159	TP53BP2	L
7157	TP53	7251	TSG101	L
7157	TP53	7319	UBE2A	L
7157	TP53	7329	UBE2I	L
7157	TP53	7337	UBE3A	L
7157	TP53	7341	SUMO1	L
7157	TP53	7486	WRN	L
7157	TP53	7490	WT1	L
7157	TP53	7534	YWHAZ	L
7157	TP53	7572	ZNF24	S
7157	TP53	7707	ZNF148	L
7157	TP53	7874	USP7	L
7157	TP53	8178	ELL	L
7157	TP53	8554	PIAS1	L
7157	TP53	8555	CDC14B	L
7157	TP53	8556	CDC14A	L
7157	TP53	8575	PRKRA	L
7157	TP53	8894	EIF2S2	S
7157	TP53	9013	TAF1C	L
7157	TP53	9014	TAF1B	L
7157	TP53	9015	TAF1A	L
7157	TP53	9112	MTA1	L
7157	TP53	9232	PTTG1	L
7157	TP53	9314	KLF4	L
7157	TP53	9440	CRSP6	L
7157	TP53	9587	MAD2L1BP	S
7157	TP53	9808	KIAA0087	S
7157	TP53	10063	COX17	S
7157	TP53	10153	CEBPZ	L
7157	TP53	10200	MPHOSPH6	S
7157	TP53	10210	TOPORS	L
7157	TP53	10301	DLEU1	S
7157	TP53	10425	ARIH2	S
7157	TP53	10474	TADA3L	L
7157	TP53	10571	SMA3	S
7157	TP53	10848	PPP1R13L	L
7157	TP53	19241	(null)	S
7157	TP53	23113	PARC	L

7157	TP53	23411	SIRT1	L
7157	TP53	25898	RCHY1	L
7157	TP53	25942	SIN3A	L
7157	TP53	26354	GNL3	L
7157	TP53	28996	HIPK2	L
7157	TP53	29903	HSU79303	S
7157	TP53	30008	EFEMP2	L
7157	TP53	50484	RRM2B	L
7157	TP53	51147	ING4	L
7157	TP53	51246	SCOTIN	L
7157	TP53	51741	WWOX	L
7157	TP53	54819	ZCCHC10	S
7157	TP53	55339	WDR33	S
7157	TP53	55643	BTBD2	S
7157	TP53	56144	PCDHA4	S
7157	TP53	64326	RFWD2	L
7157	TP53	65990	C16orf24	S
7157	TP53	84289	ING5	L
7157	TP53	94241	TP53INP1	L
7157	TP53	199745	THAP8	S
7157	TP53	204851	HIPK1	L
7157	TP53	286514	MAGEB18	R
7158	TP53BP1	22059	(null)	S
7159	TP53BP2	7375	USP4	S
7159	TP53BP2	8883	APPBP1	L
7159	TP53BP2	9094	UNC119	S
7159	TP53BP2	10413	YAP1	L
7159	TP53BP2	10813	UTP14A	S
7159	TP53BP2	55052	MRPL20	S
7161	TP73	10153	CEBPZ	L
7161	TP73	10260	MYCPBP	L
7161	TP73	10399	GNB2L1	L
7161	TP73	10413	YAP1	L
7161	TP73	28996	HIPK2	L
7162	TPBG	10755	GIPC1	L
7163	TPD52	7164	TPD52L1	L
7163	TPD52	114569	MAL2	L
7164	TPD52L1	7529	YWHAB	L
7164	TPD52L1	7534	YWHAZ	L
7164	TPD52L1	8669	EIF3S1	S
7164	TPD52L1	57002	C7orf36	S
7164	TPD52L1	64582	GPR135	S
7164	TPD52L1	114569	MAL2	L
7166	TPH1	7533	YWHAH	L
7166	TPH1	7534	YWHAZ	L
7167	TPI1	9869	SETDB1	S
7167	TPI1	51601	LIPT1	S
7167	TPI1	57062	DDX24	S
7168	TPM1	7169	TPM2	L
7168	TPM1	79036	MGC2749	R
7169	TPM2	9260	PDLIM7	L
7170	TPM3	29844	TFPT	R
7170	TPM3	79036	MGC2749	R
7171	TPM4	7205	TRIP6	L
7171	TPM4	10915	TCERG1	L
7175	TPR	9972	NUP153	L
7181	NR2C1	7182	NR2C2	L
7181	NR2C1	8204	NRIP1	L
7181	NR2C1	8841	HDAC3	L
7181	NR2C1	9759	HDAC4	L
7182	NR2C2	257397	TAB3	L
7185	TRAF1	7186	TRAF2	L
7185	TRAF1	7874	USP7	L
7185	TRAF1	8717	TRADD	L
7185	TRAF1	8737	RIPK1	L
7185	TRAF1	8744	TNFSF9	L
7185	TRAF1	8764	TNFRSF14	L

7185	TRAF1	8767	RIPK2	L
7185	TRAF1	8784	TNFRSF18	L
7185	TRAF1	8792	TNFRSF11A	L
7185	TRAF1	8837	CFLAR	L
7185	TRAF1	9020	MAP3K14	L
7185	TRAF1	10010	TANK	L
7185	TRAF1	10293	TRIP	L
7185	TRAF1	51330	TNFRSF12A	L
7185	TRAF1	55504	TNFRSF19	L
7185	TRAF1	59269	HIVEP3	L
7186	TRAF2	7189	TRAF6	R
7186	TRAF2	7292	TNFSF4	L
7186	TRAF2	7293	TNFRSF4	L
7186	TRAF2	7597	ZBTB25	R
7186	TRAF2	7704	ZBTB16	R
7186	TRAF2	7755	ZNF205	R
7186	TRAF2	7874	USP7	L
7186	TRAF2	8204	NRIP1	R
7186	TRAF2	8717	TRADD	L
7186	TRAF2	8737	RIPK1	L
7186	TRAF2	8744	TNFSF9	L
7186	TRAF2	8764	TNFRSF14	L
7186	TRAF2	8767	RIPK2	L
7186	TRAF2	8784	TNFRSF18	L
7186	TRAF2	8792	TNFRSF11A	L
7186	TRAF2	8837	CFLAR	L
7186	TRAF2	8877	SPHK1	L
7186	TRAF2	8915	BCL10	L
7186	TRAF2	9020	MAP3K14	L
7186	TRAF2	9099	USP2	R
7186	TRAF2	9491	PSMF1	R
7186	TRAF2	9513	FXR2	R
7186	TRAF2	9726	ZNF646	R
7186	TRAF2	9729	KIAA0408	R
7186	TRAF2	9787	DLG7	R
7186	TRAF2	9825	SPATA2	R
7186	TRAF2	9994	CASP8AP2	L
7186	TRAF2	10010	TANK	L
7186	TRAF2	10241	NDP52	R
7186	TRAF2	10253	SPRY2	R
7186	TRAF2	10293	TRIP	L
7186	TRAF2	10636	RGS14	R
7186	TRAF2	10758	TRAF3IP2	R
7186	TRAF2	10892	MALT1	L
7186	TRAF2	11035	RIPK3	L
7186	TRAF2	11063	SOX30	R
7186	TRAF2	11074	TRIM31	R
7186	TRAF2	11170	TU3A	R
7186	TRAF2	11183	MAP4K5	L
7186	TRAF2	22893	BAHD1	R
7186	TRAF2	23099	ZNF297B	R
7186	TRAF2	23219	FBXO28	R
7186	TRAF2	23495	TNFRSF13B	L
7186	TRAF2	25978	CHMP2B	R
7186	TRAF2	25988	MIZF	R
7186	TRAF2	26003	GORASP2	R
7186	TRAF2	26060	APPL	R
7186	TRAF2	26133	TRPC4AP	L
7186	TRAF2	26150	RIBC2	R
7186	TRAF2	27018	NGFRAP1	L
7186	TRAF2	27125	AFF4	R
7186	TRAF2	27301	APEX2	R
7186	TRAF2	51194	IPO11	R
7186	TRAF2	51224	TCEB3B	R
7186	TRAF2	51324	SPG21	R
7186	TRAF2	51330	TNFRSF12A	L
7186	TRAF2	51347	TAOK3	L

7186	TRAF2	51567	TTRAP	L
7186	TRAF2	54469	ZA20D3	R
7186	TRAF2	54532	USP53	R
7186	TRAF2	54971	BANP	R
7186	TRAF2	55209	FLJ10707	R
7186	TRAF2	55504	TNFRSF19	L
7186	TRAF2	55707	NECAP2	R
7186	TRAF2	59269	HIVEP3	L
7186	TRAF2	60491	NIF3L1	R
7186	TRAF2	60496	AASDHPPT	R
7186	TRAF2	79873	NUDT18	R
7186	TRAF2	80125	FLJ32855	R
7186	TRAF2	80764	THAP7	R
7186	TRAF2	81576	MGC10471	R
7186	TRAF2	83461	CDCA3	R
7186	TRAF2	83707	TRPT1	R
7186	TRAF2	84080	C16orf48	R
7186	TRAF2	84445	LZTS2	R
7186	TRAF2	84498	KIAA1838	R
7186	TRAF2	84708	LNX	R
7186	TRAF2	84832	MGC12538	R
7186	TRAF2	85302	FBF1	R
7186	TRAF2	89885	FATE1	R
7186	TRAF2	91544	UBXD5	R
7186	TRAF2	92610	TIFA	RL
7186	TRAF2	116349	LOC116349	R
7186	TRAF2	170082	MGC17403	R
7186	TRAF2	257397	TAB3	L
7186	TRAF2	284058	LOC284058	R
7187	TRAF3	7293	TNFRSF4	L
7187	TRAF3	7874	USP7	L
7187	TRAF3	8717	TRADD	L
7187	TRAF3	8737	RIPK1	L
7187	TRAF3	8764	TNFRSF14	L
7187	TRAF3	8784	TNFRSF18	L
7187	TRAF3	8792	TNFRSF11A	L
7187	TRAF3	9020	MAP3K14	L
7187	TRAF3	10010	TANK	L
7187	TRAF3	10487	CAP1	L
7187	TRAF3	10758	TRAF3IP2	L
7187	TRAF3	22800	RRAS2	L
7187	TRAF3	23636	NUP62	L
7187	TRAF3	26146	TRAF3IP1	L
7187	TRAF3	51330	TNFRSF12A	L
7187	TRAF3	55504	TNFRSF19	L
7188	TRAF5	7293	TNFRSF4	L
7188	TRAF5	7874	USP7	L
7188	TRAF5	8737	RIPK1	L
7188	TRAF5	8767	RIPK2	L
7188	TRAF5	8792	TNFRSF11A	L
7188	TRAF5	23495	TNFRSF13B	L
7188	TRAF5	51567	TTRAP	L
7188	TRAF5	55504	TNFRSF19	L
7189	TRAF6	7314	UBB	L
7189	TRAF6	7874	USP7	L
7189	TRAF6	8600	TNFSF11	L
7189	TRAF6	8767	RIPK2	L
7189	TRAF6	8792	TNFRSF11A	L
7189	TRAF6	8878	SQSTM1	L
7189	TRAF6	8887	TAX1BP1	L
7189	TRAF6	9020	MAP3K14	L
7189	TRAF6	10454	MAP3K7IP1	L
7189	TRAF6	10758	TRAF3IP2	L
7189	TRAF6	10892	MALT1	L
7189	TRAF6	11213	IRAK3	L
7189	TRAF6	23139	MAST2	L
7189	TRAF6	23495	TNFRSF13B	L

7189	TRAF6	51135	IRAK4	L
7189	TRAF6	51567	TTRAP	L
7189	TRAF6	54764	ZRANB1	L
7189	TRAF6	55437	ALS2CR2	L
7189	TRAF6	55504	TNFRSF19	L
7189	TRAF6	55540	IL17RB	L
7189	TRAF6	56957	ZA20D1	L
7189	TRAF6	60401	EDA2R	L
7189	TRAF6	92610	TIFA	L
7189	TRAF6	257397	TAB3	L
7200	TRH	7201	TRHR	L
7203	CCT3	7428	VHL	L
7203	CCT3	8892	EIF2B2	S
7203	CCT3	10534	SSSCA1	R
7203	CCT3	10949	HNRPA0	S
7205	TRIP6	7414	VCL	R
7205	TRIP6	8440	NCK2	R
7205	TRIP6	8572	PDLIM4	L
7205	TRIP6	9170	EDG4	L
7205	TRIP6	9564	BCAR1	L
7205	TRIP6	9883	POM121	R
7205	TRIP6	23225	NUP210	L
7205	TRIP6	54855	FAM46C	R
7205	TRIP6	79843	FLJ22746	R
7205	TRIP6	80726	KIAA1683	R
7205	TRIP6	84988	PPP1R16A	R
7205	TRIP6	116349	LOC116349	R
7205	TRIP6	117144	CATSPER1	R
7222	TRPC3	8775	NAPA	L
7224	TRPC5	9368	SLC9A3R1	L
7224	TRPC5	11075	STMN2	L
7225	TRPC6	7226	TRPM2	L
7247	TSN	7257	TSNAX	L
7248	TSC1	7249	TSC2	L
7248	TSC1	7430	VIL2	L
7248	TSC1	7529	YWHAB	L
7248	TSC1	7531	YWHAE	L
7248	TSC1	7532	YWHAG	L
7248	TSC1	7533	YWHAH	L
7248	TSC1	7534	YWHAZ	L
7248	TSC1	10971	YWHAQ	L
7249	TSC2	7529	YWHAB	L
7249	TSC2	7531	YWHAE	L
7249	TSC2	7532	YWHAG	L
7249	TSC2	7533	YWHAH	L
7249	TSC2	7534	YWHAZ	L
7249	TSC2	9135	RABEP1	L
7249	TSC2	10971	YWHAQ	L
7251	TSG101	8495	PPFIBP2	R
7251	TSG101	9146	HGS	RL
7251	TSG101	51160	VPS28	RL
7251	TSG101	55165	C10orf3	R
7251	TSG101	55929	DMAP1	L
7251	TSG101	79720	VPS37B	L
7251	TSG101	90678	LRSAM1	R
7251	TSG101	137492	VPS37A	L
7252	TSHB	7253	TSHR	L
7253	TSHR	10672	GNA13	L
7257	TSNAX	10438	C1D	L
7257	TSNAX	10912	GADD45G	R
7257	TSNAX	55815	TSNAXIP1	L
7257	TSNAX	57326	PBXIP1	R
7257	TSNAX	114932	MRFAP1L1	R
7259	TSPYL1	9001	HAP1	S
7267	TTC3	55729	ATF7IP	L
7270	TTF1	8850	PCAF	L
7270	TTF1	11176	BAZ2A	L

7270	TTF1	284119	PTRF	L
7273	TTN	8557	TCAP	L
7273	TTN	8736	MYOM1	L
7273	TTN	9172	MYOM2	L
7273	TTN	27063	ANKRD1	L
7273	TTN	84033	OBSCN	L
7273	TTN	84676	TRIM63	L
7276	TTR	7431	VIM	S
7276	TTR	8518	IKBKAP	S
7276	TTR	9638	FEZ1	S
7276	TTR	9796	PHYHIP	S
7276	TTR	9869	SETDB1	S
7276	TTR	51608	C7orf20	S
7277	TUBA1	7535	ZAP70	L
7277	TUBA1	10808	HSPH1	L
7277	TUBA1	29127	RACGAP1	L
7277	TUBA1	51762	RAB8B	L
7277	TUBA1	55147	RBM23	S
7277	TUBA1	84103	C4orf17	S
7277	TUBA1	90627	STARD13	L
7277	TUBA1	375484	FLJ44216	S
7278	TUBA2	7283	TUBG1	L
7278	TUBA2	8655	DNCL1	L
7278	TUBA2	9111	NMI	R
7280	TUBB2	9419	CRIPT	L
7280	TUBB2	9672	SDC3	L
7280	TUBB2	10399	GNB2L1	L
7280	TUBB2	10567	RABAC1	S
7280	TUBB2	11186	RASSF1	L
7280	TUBB2	51762	RAB8B	L
7280	TUBB2	54622	ARFRP2	S
7280	TUBB2	57787	MARK4	L
7280	TUBB2	60626	RIC8A	S
7280	TUBB2	83988	NCALD	L
7283	TUBG1	10376	K-ALPHA-1	L
7283	TUBG1	10426	TUBGCP3	L
7283	TUBG1	11186	RASSF1	L
7283	TUBG1	25897	RNF19	L
7283	TUBG1	29127	RACGAP1	L
7283	TUBG1	55835	CENPJ	L
7283	TUBG1	79902	PCNT1	L
7286	TUFT1	24144	TFIP11	L
7290	HIRA	8349	HIST2H2BE	L
7290	HIRA	8479	HIRIP3	L
7290	HIRA	27247	HIRIP5	L
7290	HIRA	85236	HIST1H2BK	L
7291	TWIST1	8850	PCAF	L
7292	TNFSF4	7293	TNFRSF4	L
7294	TXK	91746	YT521	L
7295	TXN	10628	TXNIP	L
7296	TXNRD1	10628	TXNIP	L
7296	TXNRD1	84988	PPP1R16A	S
7297	TYK2	7409	VAV1	L
7297	TYK2	7520	XRCC5	L
7297	TYK2	8660	IRS2	L
7297	TYK2	10254	STAM2	L
7297	TYK2	10399	GNB2L1	L
7297	TYK2	10419	SKB1	L
7301	TYRO3	7525	YES1	L
7305	TYROBP	9436	NCR2	L
7305	TYROBP	10326	SIRPB1	L
7305	TYROBP	23601	CLEC5A	L
7305	TYROBP	54209	TREM2	L
7306	TYRP1	10755	GIPC1	L
7307	U2AF1	7414	VCL	L
7307	U2AF1	8233	U2AF1L2	L
7307	U2AF1	9406	ZNF265	L

7307	U2AF1	10482	NXF1	L
7307	U2AF1	11338	U2AF2	RL
7307	U2AF1	23451	SF3B1	L
7311	UBA52	7320	UBE2B	L
7311	UBA52	7805	LAPTM5	L
7311	UBA52	7874	USP7	L
7311	UBA52	8027	STAM	L
7311	UBA52	8728	ADAM19	L
7311	UBA52	8878	SQSTM1	L
7311	UBA52	9146	HGS	L
7311	UBA52	10013	HDAC6	L
7311	UBA52	10254	STAM2	L
7311	UBA52	26994	RNF11	L
7314	UBB	8517	IKBKG	L
7314	UBB	9627	SNCAIP	L
7314	UBB	9802	DAZAP2	R
7314	UBB	10892	MALT1	L
7314	UBB	26994	RNF11	L
7316	UBC	7345	UCHL1	S
7316	UBC	7414	VCL	L
7316	UBC	9802	DAZAP2	R
7316	UBC	22839	DLGAP4	S
7316	UBC	26994	RNF11	L
7316	UBC	56957	ZA20D1	L
7317	UBE1	9911	TMCC2	S
7317	UBE1	10078	TSSC4	S
7317	UBE1	10808	HSPH1	L
7318	UBE1L	9636	G1P2	R
7319	UBE2A	7750	ZNF198	L
7319	UBE2A	56852	RAD18	L
7320	UBE2B	9094	UNC119	S
7320	UBE2B	23304	UBR2	L
7320	UBE2B	51003	MED31	S
7320	UBE2B	56852	RAD18	L
7320	UBE2B	197131	UBR1	S
7321	UBE2D1	7337	UBE3A	L
7321	UBE2D1	10273	STUB1	L
7321	UBE2D1	55658	RNF126	R
7321	UBE2D1	56658	TRIM39	R
7322	UBE2D2	8945	BTRC	L
7322	UBE2D2	9867	PJA2	L
7322	UBE2D2	26994	RNF11	L
7323	UBE2D3	7337	UBE3A	L
7323	UBE2D3	55658	RNF126	R
7323	UBE2D3	56658	TRIM39	R
7323	UBE2D3	84206	RKHD3	S
7324	UBE2E1	7326	UBE2G1	L
7324	UBE2E1	7337	UBE3A	L
7324	UBE2E1	9025	RNF8	L
7324	UBE2E1	9604	RNF14	L
7324	UBE2E1	23327	NEDD4L	L
7324	UBE2E1	220869	CBWD5	S
7325	UBE2E2	9025	RNF8	L
7326	UBE2G1	7337	UBE3A	L
7327	UBE2G2	7337	UBE3A	L
7327	UBE2G2	23113	PARC	L
7328	UBE2H	8337	HIST2H2AA	L
7329	UBE2I	7341	SUMO1	L
7329	UBE2I	7490	WT1	L
7329	UBE2I	8535	CBX4	L
7329	UBE2I	8554	PIAS1	L
7329	UBE2I	8767	RIPK2	R
7329	UBE2I	9063	PIAS2	RL
7329	UBE2I	9094	UNC119	S
7329	UBE2I	9146	HGS	R
7329	UBE2I	9189	ZBED1	R
7329	UBE2I	9260	PDLIM7	R

7329	UBE2I	9618	TRAF4	L
7329	UBE2I	9726	ZNF646	R
7329	UBE2I	10210	TOPORS	L
7329	UBE2I	10320	ZNFN1A1	R
7329	UBE2I	22806	ZNFN1A3	R
7329	UBE2I	23386	NUDCD3	R
7329	UBE2I	23650	TRIM29	R
7329	UBE2I	25788	RAD54B	R
7329	UBE2I	26036	ZNF451	R
7329	UBE2I	28996	HIPK2	L
7329	UBE2I	51567	TTRAP	L
7329	UBE2I	55660	FNBP3	L
7329	UBE2I	79753	SNIP1	L
7329	UBE2I	84676	TRIM63	L
7329	UBE2I	93487	C14orf32	R
7329	UBE2I	128866	CHMP4B	R
7329	UBE2I	147339	C18orf25	R
7332	UBE2L3	7337	UBE3A	L
7332	UBE2L3	9781	RNF144	L
7332	UBE2L3	10425	ARIH2	S
7332	UBE2L3	23113	PARC	L
7332	UBE2L3	23327	NEDD4L	L
7332	UBE2L3	25820	ARIH1	L
7332	UBE2L3	25897	RNF19	L
7334	UBE2N	7336	UBE2V2	L
7334	UBE2N	8915	BCL10	L
7334	UBE2N	26994	RNF11	L
7334	UBE2N	387522	Kua-UEV	L
7336	UBE2V2	8915	BCL10	L
7336	UBE2V2	25843	PREI3	S
7336	UBE2V2	55791	C1orf103	S
7336	UBE2V2	79723	SUV39H2	S
7336	UBE2V2	84966	IGSF21	S
7337	UBE3A	9083	BPY2	L
7337	UBE3A	9246	UBE2L6	L
7337	UBE3A	9820	CUL7	L
7341	SUMO1	8554	PIAS1	L
7341	SUMO1	9063	PIAS2	L
7341	SUMO1	9734	HDAC9	L
7341	SUMO1	10054	UBA2	L
7341	SUMO1	10210	TOPORS	L
7341	SUMO1	26054	SENP6	L
7341	SUMO1	28996	HIPK2	L
7341	SUMO1	51567	TTRAP	L
7341	SUMO1	59343	SENP2	L
7341	SUMO1	114034	TOE1	S
7341	SUMO1	160140	MGC33948	R
7343	UBTF	8660	IRS2	L
7343	UBTF	10849	CD3EAP	L
7343	UBTF	51176	LEF1	L
7345	UCHL1	10048	RANBP9	L
7345	UCHL1	10951	CBX1	S
7345	UCHL1	10987	COPS5	L
7351	UCP2	7529	YWHAB	L
7351	UCP2	7534	YWHAZ	L
7351	UCP2	10971	YWHAQ	L
7352	UCP3	7529	YWHAB	L
7352	UCP3	7534	YWHAZ	L
7352	UCP3	10971	YWHAQ	L
7355	SLC35A2	7368	UGT8	L
7355	SLC35A2	284169	(null)	S
7356	SCGB1A1	8029	CUBN	L
7358	UGDH	26289	AK5	S
7360	UGP2	10425	ARIH2	R
7372	UMPS	10602	CDC42EP3	S
7374	UNG	8493	PPM1D	L
7375	USP4	9221	NOLC1	L

7376	NR1H2	8431	NR0B2	L
7378	UPP1	7431	VIM	L
7384	UQCRC1	54205	CYCS	L
7384	UQCRC1	57142	RTN4	L
7385	UQCRC2	57142	RTN4	L
7391	USF1	7392	USF2	L
7391	USF1	8061	FOSL1	L
7392	USF2	10891	PPARGC1A	L
7407	VARS	85476	GFM1	L
7408	VASP	7414	VCL	L
7408	VASP	7454	WAS	L
7408	VASP	7791	ZYX	L
7408	VASP	8996	NOL3	R
7408	VASP	11060	WWP2	R
7408	VASP	23214	XPO6	L
7408	VASP	26136	TES	L
7408	VASP	63948	DMRTB1	R
7408	VASP	114088	TRIM9	R
7409	VAV1	7535	ZAP70	L
7409	VAV1	7791	ZYX	L
7409	VAV1	8639	AOC3	L
7409	VAV1	8651	SOCS1	L
7409	VAV1	29127	RACGAP1	L
7409	VAV1	29760	BLNK	L
7409	VAV1	55824	PAG1	L
7410	VAV2	8651	SOCS1	L
7411	VBP1	7428	VHL	L
7412	VCAM1	7430	VIL2	L
7414	VCL	7431	VIM	L
7414	VCL	8087	FXR1	L
7414	VCL	8148	TAF15	L
7414	VCL	8665	EIF3S5	L
7414	VCL	9121	SLC16A5	L
7414	VCL	9530	BAG4	L
7414	VCL	9879	DDX46	L
7414	VCL	9898	UBAP2L	L
7414	VCL	9987	HNRPDL	L
7414	VCL	10146	G3BP	L
7414	VCL	10152	ABI2	R
7414	VCL	10196	HRMT1L3	L
7414	VCL	10383	TUBB2	L
7414	VCL	10391	CORO2B	L
7414	VCL	10399	GNB2L1	L
7414	VCL	10446	LRRN5	L
7414	VCL	10492	SYNCRIP	L
7414	VCL	10565	ARFGEF1	L
7414	VCL	10580	SORBS1	L
7414	VCL	10657	KHDRBS1	L
7414	VCL	10970	CKAP4	L
7414	VCL	11051	NUDT21	L
7414	VCL	11338	U2AF2	L
7414	VCL	23038	WDTC1	L
7414	VCL	23116	KIAA0423	L
7414	VCL	23231	KIAA0746	L
7414	VCL	23256	SCFD1	L
7414	VCL	23345	SYNE1	L
7414	VCL	26960	NBEA	L
7414	VCL	26986	PABPC1	L
7414	VCL	27136	MORC1	L
7414	VCL	51056	LAP3	L
7414	VCL	51493	HSPC117	L
7414	VCL	51637	C14orf166	L
7414	VCL	51806	CALML5	L
7414	VCL	54205	CYCS	L
7414	VCL	54914	KIAA1797	L
7414	VCL	55379	PRO1855	L
7414	VCL	55660	FNBP3	L

7414	VCL	57099	AVEN	L
7414	VCL	57448	BIRC6	L
7414	VCL	79173	MGC11271	R
7414	VCL	84733	CBX2	L
7414	VCL	121457	IKIP	L
7414	VCL	125950	RAVER1	L
7414	VCL	129563	MGC42174	L
7414	VCL	137994	LETM2	L
7414	VCL	151254	ALS2CR11	L
7414	VCL	201158	FAM18B2	L
7414	VCL	284058	LOC284058	L
7415	VCP	10013	HDAC6	L
7415	VCP	10953	TOMM34	L
7415	VCP	55829	SELS	L
7415	VCP	55968	NSFL1C	L
7416	VDAC1	9804	TOMM20	L
7416	VDAC1	10018	BCL2L11	L
7416	VDAC1	54205	CYCS	L
7417	VDAC2	54205	CYCS	L
7419	VDAC3	57062	DDX24	S
7421	VDR	7704	ZBTB16	L
7421	VDR	8202	NCOA3	L
7421	VDR	8648	NCOA1	L
7421	VDR	8805	TRIM24	L
7421	VDR	9031	BAZ1B	L
7421	VDR	10499	NCOA2	L
7421	VDR	22938	SNW1	L
7422	VEGF	7448	VTN	L
7422	VEGF	8828	NRP2	L
7422	VEGF	8829	NRP1	L
7422	VEGF	9510	ADAMTS1	L
7423	VEGFB	8829	NRP1	L
7428	VHL	10168	ZNF197	L
7428	VHL	11236	RNF139	L
7428	VHL	23032	USP33	L
7428	VHL	55662	HIF1AN	L
7428	VHL	57473	GM632	L
7428	VHL	79960	PHF17	L
7429	VIL1	56159	TEX11	R
7430	VIL2	9351	SLC9A3R2	L
7430	VIL2	9368	SLC9A3R1	L
7430	VIL2	23022	KIAA0992	L
7430	VIL2	53405	CLIC5	L
7430	VIL2	57147	SCYL3	L
7431	VIM	7518	XRCC4	S
7431	VIM	7534	YWHAZ	L
7431	VIM	8553	BHLHB2	S
7431	VIM	8655	DNCL1	L
7431	VIM	8764	TNFRSF14	S
7431	VIM	8880	FUBP1	S
7431	VIM	9124	PDLIM1	R
7431	VIM	9729	KIAA0408	R
7431	VIM	10155	TRIM28	S
7431	VIM	10362	HMG20B	S
7431	VIM	10567	RABAC1	S
7431	VIM	10625	IVNS1ABP	S
7431	VIM	10807	SDCCAG3	S
7431	VIM	11078	TRIOBP	S
7431	VIM	11143	MYST2	RS
7431	VIM	11170	TU3A	R
7431	VIM	22827	SIAHBP1	S
7431	VIM	22927	HABP4	S
7431	VIM	23650	TRIM29	L
7431	VIM	23762	OSBP2	L
7431	VIM	23774	BRD1	S
7431	VIM	26135	SERBP1	S
7431	VIM	26150	RIBC2	R

7431	VIM	26751	SH3YL1	S
7431	VIM	27229	76P	R
7431	VIM	28965	SLC27A6	S
7431	VIM	51074	MMRP19	R
7431	VIM	51548	SIRT6	S
7431	VIM	51593	ARS2	S
7431	VIM	51762	RAB8B	L
7431	VIM	54474	KRT20	R
7431	VIM	54544	C1orf42	S
7431	VIM	55211	DPPA4	S
7431	VIM	55791	C1orf103	S
7431	VIM	56992	KIF15	S
7431	VIM	57002	C7orf36	S
7431	VIM	57120	GOPC	R
7431	VIM	60491	NIF3L1	R
7431	VIM	64780	MICAL1	L
7431	VIM	65080	MRPL44	S
7431	VIM	79050	NOC4L	R
7431	VIM	79902	PCNT1	L
7431	VIM	84260	MGC10854	R
7431	VIM	129563	MGC42174	S
7431	VIM	151254	ALS2CR11	R
7433	VIPR1	8976	WASL	L
7436	VLDLR	9784	SNX17	L
7442	TRPV1	143425	SYT9	L
7447	VSNL1	113878	DTX2	R
7447	VSNL1	348487	C1orf117	R
7448	VTN	8516	ITGA8	L
7448	VTN	90070	LACRT	L
7450	VWF	57473	GM632	L
7453	WARS	10263	CDK2AP2	S
7454	WAS	7456	WASPIP	L
7454	WAS	9051	PSTPIP1	L
7454	WAS	9322	TRIP10	L
7454	WAS	23433	RHOQ	L
7454	WAS	50618	ITSN2	L
7454	WAS	57381	RHOJ	L
7456	WASPIP	8976	WASL	L
7458	WBSCR1	83638	Bles03	R
7462	LAT2	29760	BLNK	L
7465	WEE1	7529	YWHAB	L
7465	WEE1	83461	CDCA3	L
7471	WNT1	8326	FZD9	L
7474	WNT5A	7855	FZD5	L
7474	WNT5A	8321	FZD1	L
7476	WNT7A	29888	STRN4	S
7486	WRN	7520	XRCC5	L
7486	WRN	9533	POLR1C	L
7486	WRN	56897	WRNIP1	L
7486	WRN	201299	RDM1	L
7490	WT1	9589	WTAP	L
7490	WT1	11338	U2AF2	L
7494	XBP1	22926	ATF6	L
7494	XBP1	58487	ZF	L
7507	XPA	11321	XAB1	L
7508	XPC	27258	LSM3	L
7508	XPC	57473	GM632	L
7511	XPNPEP1	23649	POLA2	S
7511	XPNPEP1	60561	RINT-1	S
7514	XPO1	8021	NUP214	L
7514	XPO1	8498	RANBP3	L
7514	XPO1	8678	BECN1	L
7514	XPO1	8841	HDAC3	L
7514	XPO1	9972	NUP153	L
7514	XPO1	10073	RNUT1	L
7514	XPO1	10762	NUP50	L
7514	XPO1	23636	NUP62	L

7514	XPO1	56000	NXF3	L
7514	XPO1	57154	SMURF1	L
7514	XPO1	407977	TNFSF12-TNFSF13	L
7515	XRCC1	11284	PNKP	L
7515	XRCC1	54840	APTX	L
7515	XRCC1	79661	NEIL1	L
7518	XRCC4	25900	HOM-TES-103	R
7518	XRCC4	54840	APTX	L
7518	XRCC4	79886	C9orf82	S
7520	XRCC5	10432	RBM14	L
7525	YES1	8038	ADAM12	L
7525	YES1	10413	YAP1	L
7525	YES1	23607	CD2AP	L
7525	YES1	57473	GM632	L
7525	YES1	59341	TRPV4	L
7528	YY1	8726	EED	L
7528	YY1	8819	SAP30	L
7528	YY1	8841	HDAC3	L
7528	YY1	9406	ZNF265	L
7528	YY1	10138	YAF2	L
7528	YY1	11016	ATF7	L
7528	YY1	23429	RYBP	L
7529	YWHAB	7538	ZFP36	L
7529	YWHAB	9610	RIN1	L
7529	YWHAB	10014	HDAC5	L
7529	YWHAB	10420	TESK2	L
7529	YWHAB	10749	KIF1C	L
7529	YWHAB	22877	MONDOA	L
7529	YWHAB	23136	EPB41L3	L
7531	YWHAE	8470	SORBS2	R
7531	YWHAE	8660	IRS2	L
7531	YWHAE	9181	ARHGEF2	L
7531	YWHAE	9402	GRAP2	R
7531	YWHAE	9610	RIN1	L
7531	YWHAE	9721	KIAA0514	R
7531	YWHAE	9759	HDAC4	L
7531	YWHAE	10014	HDAC5	L
7531	YWHAE	10749	KIF1C	L
7531	YWHAE	25937	WWTR1	L
7531	YWHAE	27018	NGFRAP1	L
7531	YWHAE	81565	NDEL1	L
7532	YWHAG	7538	ZFP36	L
7532	YWHAG	9729	KIAA0408	R
7532	YWHAG	10749	KIF1C	L
7532	YWHAG	23136	EPB41L3	L
7532	YWHAG	27185	DISC1	L
7533	YWHAH	7538	ZFP36	L
7533	YWHAH	8202	NCOA3	L
7533	YWHAH	8204	NRIP1	L
7533	YWHAH	8648	NCOA1	L
7533	YWHAH	9699	RIMS2	L
7533	YWHAH	10499	NCOA2	L
7533	YWHAH	23136	EPB41L3	L
7533	YWHAH	147700	KLC3	L
7534	YWHAZ	8660	IRS2	L
7534	YWHAZ	8745	ADAM23	L
7534	YWHAZ	9181	ARHGEF2	L
7534	YWHAZ	9261	MAPKAPK2	L
7534	YWHAZ	9564	BCAR1	L
7534	YWHAZ	9610	RIN1	L
7534	YWHAZ	9759	HDAC4	L
7534	YWHAZ	10746	MAP3K2	L
7534	YWHAZ	10749	KIF1C	L
7534	YWHAZ	25932	CLIC4	L
7534	YWHAZ	53616	ADAM22	L
7534	YWHAZ	57562	KIAA1377	S
7535	ZAP70	9846	GAB2	L

7535	ZAP70	27240	SIT1	L
7535	ZAP70	28988	DBNL	L
7535	ZAP70	55824	PAG1	L
7535	ZAP70	84174	SLA2	L
7535	ZAP70	114836	SLAMF6	L
7535	ZAP70	115352	FCRL3	L
7536	SF1	8148	TAF15	L
7536	SF1	10521	DDX17	R
7536	SF1	10915	TCERG1	L
7536	SF1	11030	RBPMS	R
7536	SF1	11060	WWP2	R
7536	SF1	11338	U2AF2	RL
7536	SF1	55660	FNBP3	L
7538	ZFP36	8021	NUP214	L
7538	ZFP36	11007	DIPA	R
7538	ZFP36	11340	EXOSC8	L
7538	ZFP36	26019	UPF2	L
7538	ZFP36	54464	XRN1	L
7538	ZFP36	118460	EXOSC6	L
7542	ZFPL1	9551	ATP5J2	S
7553	ZNF7	10474	TADA3L	S
7556	ZNF10	8805	TRIM24	L
7556	ZNF10	10155	TRIM28	L
7558	ZNF11B	9001	HAP1	S
7568	ZNF20	7727	ZNF174	L
7568	ZNF20	9001	HAP1	S
7572	ZNF24	7704	ZBTB16	S
7572	ZNF24	7727	ZNF174	L
7572	ZNF24	9001	HAP1	S
7572	ZNF24	9094	UNC119	S
7572	ZNF24	9869	SETDB1	S
7572	ZNF24	10524	HTATIP	S
7572	ZNF24	10813	UTP14A	S
7572	ZNF24	10980	COPS6	S
7572	ZNF24	11161	C14orf1	S
7572	ZNF24	51282	SCAND1	R
7572	ZNF24	54925	ZNF434	R
7572	ZNF24	55663	ZNF446	R
7572	ZNF24	55791	C1orf103	S
7572	ZNF24	57562	KIAA1377	S
7572	ZNF24	81576	MGC10471	R
7572	ZNF24	84060	DKFZP564O0523	S
7579	ZNF31	51282	SCAND1	R
7596	ZNF45	374923	(null)	S
7597	ZBTB25	10174	SORBS3	R
7597	ZBTB25	79036	MGC2749	R
7625	ZNF74	10155	TRIM28	L
7704	ZBTB16	8405	SPOP	R
7704	ZBTB16	8813	DPM1	S
7704	ZBTB16	8894	EIF2S2	S
7704	ZBTB16	9611	NCOR1	L
7704	ZBTB16	9612	NCOR2	L
7704	ZBTB16	9734	HDAC9	L
7704	ZBTB16	9759	HDAC4	L
7704	ZBTB16	10013	HDAC6	L
7704	ZBTB16	10014	HDAC5	L
7704	ZBTB16	10542	HBXIP	S
7704	ZBTB16	10628	TXNIP	L
7704	ZBTB16	11007	DIPA	R
7704	ZBTB16	23149	FCHO1	S
7704	ZBTB16	23309	SIN3B	L
7704	ZBTB16	23641	LDOC1	R
7704	ZBTB16	25942	SIN3A	L
7704	ZBTB16	29924	EPN1	L
7704	ZBTB16	51004	COQ6	S
7704	ZBTB16	51433	ANAPC5	S
7704	ZBTB16	51534	C6orf55	R

7704	ZBTB16	51564	HDAC7A	L
7704	ZBTB16	54472	TOLLIP	S
7704	ZBTB16	54919	FLJ20397	S
7704	ZBTB16	55013	FLJ20647	S
7704	ZBTB16	55068	FLJ10094	R
7704	ZBTB16	55258	FLJ10916	S
7704	ZBTB16	55339	WDR33	S
7704	ZBTB16	55629	PNRC2	S
7704	ZBTB16	55646	LYAR	S
7704	ZBTB16	55722	Cep72	R
7704	ZBTB16	57670	KIAA1549	S
7704	ZBTB16	57819	LSM2	S
7704	ZBTB16	80321	Cep70	R
7704	ZBTB16	81576	MGC10471	S
7704	ZBTB16	81890	QTRT1	S
7704	ZBTB16	83755	KRTAP4-12	R
7704	ZBTB16	114783	LMTK3	S
7704	ZBTB16	192111	MGC5352	S
7704	ZBTB16	359845	MGC45871	S
7706	TRIM25	9246	UBE2L6	L
7707	ZNF148	284119	PTRF	L
7709	ZBTB17	11073	TOPBP1	L
7709	ZBTB17	22894	KIAA1008	L
7718	ZNF165	9260	PDLIM7	R
7718	ZNF165	11007	DIPA	R
7718	ZNF165	11143	MYST2	R
7718	ZNF165	51224	TCEB3B	R
7718	ZNF165	51282	SCAND1	R
7718	ZNF165	55663	ZNF446	R
7718	ZNF165	58500	ZNF250	R
7718	ZNF165	81576	MGC10471	R
7718	ZNF165	83755	KRTAP4-12	R
7718	ZNF165	220108	FLJ30707	R
7746	ZNF193	55663	ZNF446	R
7750	ZNF198	57473	GM632	L
7750	ZNF198	79753	SNIP1	L
7753	ZNF202	25888	ZNF473	R
7755	ZNF205	10241	NDP52	R
7755	ZNF205	11007	DIPA	R
7763	ZA20D2	8517	IKBKG	L
7775	ZNF232	55663	ZNF446	R
7784	ZP3	64772	FLJ21865	L
7786	MAP3K12	8848	TSC22D1	S
7786	MAP3K12	118924	C10orf4	S
7786	MAP3K12	200325	(null)	S
7791	ZYX	9113	LATS1	L
7791	ZYX	9501	RPH3AL	L
7791	ZYX	10114	HIPK3	L
7791	ZYX	10451	VAV3	L
7791	ZYX	10529	NEBL	L
7802	DNALI1	55324	ABCF3	S
7803	PTP4A1	11016	ATF7	L
7804	LRP8	9784	SNX17	L
7805	LAPTM5	8925	HERC1	L
7805	LAPTM5	8975	USP13	L
7805	LAPTM5	11059	WWP1	L
7805	LAPTM5	22905	EPN2	L
7805	LAPTM5	23327	NEDD4L	L
7805	LAPTM5	23462	HEY1	L
7805	LAPTM5	26508	HEYL	L
7805	LAPTM5	29924	EPN1	L
7805	LAPTM5	54165	DCUN1D1	L
7805	LAPTM5	55040	EPN3	L
7805	LAPTM5	64750	SMURF2	L
7805	LAPTM5	146691	TOM1L2	L
7805	LAPTM5	165918	RNF168	L
7818	DAP3	8772	FADD	L

7818	DAP3	8797	TNFRSF10A	L
7827	NPHS2	23607	CD2AP	L
7827	NPHS2	55243	KIRREL	L
7827	NPHS2	84623	KIRREL3	L
7832	BTG2	9337	CNOT8	L
7832	BTG2	29883	CNOT7	L
7837	PXDN	9618	TRAF4	L
7846	TUBA3	8936	WASF1	L
7846	TUBA3	9672	SDC3	L
7846	TUBA3	83988	NCALD	L
7851	MALL	10488	CREB3	R
7852	CXCR4	9021	SOCS3	L
7855	FZD5	57120	GOPC	L
7869	SEMA3B	8828	NRP2	L
7869	SEMA3B	8829	NRP1	L
7869	SEMA3B	10371	SEMA3A	L
7874	USP7	9618	TRAF4	L
7874	USP7	10010	TANK	L
7879	RAB7	10567	RABAC1	L
7879	RAB7	83547	RILP	L
7884	SLBP	9101	USP8	L
7884	SLBP	25888	ZNF473	L
7884	SLBP	90459	THEX1	L
7913	DEK	10250	SRRM1	L
7913	DEK	23524	SRRM2	L
7916	BAT2	8100	TTC10	L
7916	BAT2	8974	P4HA2	L
7916	BAT2	9898	UBAP2L	L
7916	BAT2	10459	MAD2L2	L
7916	BAT2	10989	IMMT	L
7916	BAT2	11218	DDX20	L
7916	BAT2	23193	GANAB	L
7916	BAT2	29894	CPSF1	L
7917	BAT3	8518	IKBKAP	S
7917	BAT3	8612	PPAP2C	S
7917	BAT3	9372	ZFYVE9	L
7917	BAT3	9804	TOMM20	S
7917	BAT3	9869	SETDB1	S
7917	BAT3	10094	ARPC3	S
7917	BAT3	10989	IMMT	S
7917	BAT3	23420	NOMO1	S
7917	BAT3	27043	PELP1	S
7917	BAT3	30008	EFEMP2	R
7917	BAT3	51726	DNAJB11	S
7917	BAT3	54464	XRN1	L
7917	BAT3	55603	FAM46A	L
7917	BAT3	55658	RNF126	L
7917	BAT3	55660	FNBP3	L
7917	BAT3	56005	C19orf10	S
7917	BAT3	59349	KLHL12	R
7917	BAT3	79948	PRG2	S
7917	BAT3	84223	IQCG	S
7917	BAT3	84993	UBL7	L
7918	BAT4	11007	DIPA	R
7919	BAT1	9063	PIAS2	L
7919	BAT1	10212	DDX39	L
7919	BAT1	10381	TUBB3	S
7919	BAT1	11244	ZHX1	L
7919	BAT1	29888	STRN4	S
7919	BAT1	85406	DNAJC14	L
7919	BAT1	92906	HNRPLL	L
7920	BAT5	8519	IFITM1	L
7920	BAT5	9552	SPAG7	L
7920	BAT5	10430	NIFIE14	L
7920	BAT5	29990	PILRB	L
7920	BAT5	55890	GPRC5C	L
7920	BAT5	64215	DNAJC1	L

7920	BAT5	84065	C1orf160	L
7936	RDBP	9341	VAMP3	S
7936	RDBP	9611	NCOR1	L
7936	RDBP	25920	COBRA1	L
7940	LST1	55632	KIAA1333	L
7942	TFEB	22797	TFEC	L
7957	EPM2A	9852	EPM2AIP1	L
7965	JTV1	8880	FUBP1	L
7965	JTV1	55885	LMO3	R
7965	JTV1	79173	MGC11271	R
7965	JTV1	84708	LNX	R
7965	JTV1	220766	KIAA0470L	R
7975	MAFK	9586	CREB5	L
7975	MAFK	9603	NFE2L3	L
7975	MAFK	10488	CREB3	L
7975	MAFK	11016	ATF7	L
7975	MAFK	55509	SNFT	L
7975	MAFK	60468	BACH2	L
7976	FZD3	10755	GIPC1	L
7979	SHFM1	55795	FLJ11305	R
7980	TFPI2	64750	SMURF2	L
7982	ST7	10399	GNB2L1	L
8021	NUP214	10482	NXF1	L
8021	NUP214	11260	XPOT	L
8021	NUP214	11269	DDX19B	L
8021	NUP214	56001	NXF2	L
8021	NUP214	57122	NUP107	L
8021	NUP214	57510	XPO5	L
8022	LHX3	10370	CITED2	L
8022	LHX3	26160	SLB	L
8022	LHX3	64843	ISL2	L
8027	STAM	9101	USP8	L
8027	STAM	9146	HGS	RL
8027	STAM	10617	STAMBP	L
8028	MLLT10	8089	YEATS4	L
8028	MLLT10	84220	RANBP2L1	L
8031	NCOA4	8850	PCAF	L
8031	NCOA4	9604	RNF14	L
8048	CSRP3	197257	LDHD	L
8061	FOSL1	9586	CREB5	L
8061	FOSL1	9935	MAFB	L
8061	FOSL1	11016	ATF7	L
8061	FOSL1	23641	LDOC1	R
8061	FOSL1	57658	CALCOCO1	R
8065	CUL5	9616	RNF7	L
8078	USP5	10474	TADA3L	R
8078	USP5	26994	RNF11	L
8087	FXR1	11098	PRSS23	S
8087	FXR1	11161	C14orf1	S
8087	FXR1	26999	CYFIP2	L
8087	FXR1	51631	LUC7L2	S
8087	FXR1	55791	C1orf103	S
8087	FXR1	57562	KIAA1377	S
8089	YEATS4	10579	TACC2	L
8091	HMGA2	10401	PIAS3	L
8092	CART1	9670	IPO13	R
8092	CART1	60529	ALX4	L
8099	CDK2AP1	10263	CDK2AP2	L
8106	PABPN1	22938	SNW1	L
8115	TCL1A	10000	AKT3	L
8115	TCL1A	10241	NDP52	R
8115	TCL1A	92815	HIST3H2A	R
8120	AP3B2	11033	CENTA1	L
8125	ANP32A	8312	AXIN1	S
8125	ANP32A	8988	HSPB3	S
8125	ANP32A	11033	CENTA1	L
8125	ANP32A	55968	NSFL1C	S

8153	RND2	27183	VPS4A	L
8153	RND2	29127	RACGAP1	L
8153	RND2	91544	UBXD5	L
8161	COIL	9221	NOLC1	L
8165	AKAP1	26292	MYCBP	L
8165	AKAP1	89876	C3orf15	L
8175	SF3A2	10946	SF3A3	L
8175	SF3A2	27336	HTATSF1	L
8175	SF3A2	56729	RETN	L
8175	SF3A2	64750	SMURF2	L
8178	ELL	55840	EAF2	L
8192	CLPP	10845	CLPX	L
8202	NCOA3	8850	PCAF	L
8202	NCOA3	9612	NCOR2	L
8202	NCOA3	51684	SUFU	L
8204	NRIP1	8764	TNFRSF14	L
8204	NRIP1	8850	PCAF	L
8204	NRIP1	10062	NR1H3	L
8204	NRIP1	11007	DIPA	R
8204	NRIP1	23641	LDOC1	R
8204	NRIP1	56159	TEX11	R
8204	NRIP1	80321	Cep70	R
8208	CHAF1B	10036	CHAF1A	L
8209	C21orf33	118924	C10orf4	S
8218	CLTCL1	8301	PICALM	L
8227	DXYS155E	11007	DIPA	R
8227	DXYS155E	22981	KIAA0980	R
8237	USP11	9869	SETDB1	S
8237	USP11	10048	RANBP9	L
8237	USP11	10607	TBL3	S
8241	RBM10	58155	PTBP2	R
8241	RBM10	220108	FLJ30707	R
8243	SMC1L1	10403	KNTC2	L
8260	ARD1A	10919	EHMT2	R
8289	ARID1A	9031	BAZ1B	L
8290	HIST3H3	8445	DYRK2	L
8290	HIST3H3	8479	HIRIP3	L
8290	HIST3H3	23569	PADI4	L
8290	HIST3H3	30836	ERBP	L
8290	HIST3H3	54822	TRPM7	L
8301	PICALM	30846	EHD2	L
8310	ACOX3	64750	SMURF2	L
8312	AXIN1	8440	NCK2	L
8312	AXIN1	10813	UTP14A	S
8312	AXIN1	59343	SENP2	L
8313	AXIN2	22881	ANKRD6	L
8317	CDC7	10926	ASK	L
8317	CDC7	23594	ORC6L	L
8317	CDC7	55388	MCM10	L
8318	CDC45L	23595	ORC3L	L
8318	CDC45L	55388	MCM10	L
8321	FZD1	89780	WNT3A	L
8324	FZD7	29979	UBQLN1	R
8325	FZD8	57120	GOPC	L
8338	HIST2H2AC	30836	ERBP	L
8341	HIST1H2BN	56647	BCCIP	R
8349	HIST2H2BE	8445	DYRK2	L
8349	HIST2H2BE	8479	HIRIP3	L
8349	HIST2H2BE	30836	ERBP	L
8359	HIST1H4A	8479	HIRIP3	L
8379	MAD1L1	10403	KNTC2	L
8379	MAD1L1	22981	KIAA0980	R
8379	MAD1L1	23309	SIN3B	L
8379	MAD1L1	23650	TRIM29	R
8379	MAD1L1	25942	SIN3A	L
8379	MAD1L1	27229	76P	R
8379	MAD1L1	51421	AMOTL2	R

8379	MAD1L1	56159	TEX11	R
8379	MAD1L1	348487	C1orf117	R
8382	NME5	84332	MGC16186	R
8382	NME5	143241	DYDC1	R
8394	PIP5K1A	8618	CADPS	S
8399	PLA2G10	22925	PLA2R1	L
8405	SPOP	10313	RTN3	R
8405	SPOP	151871	DPPA2	R
8409	UXT	8725	C19orf2	L
8409	UXT	10128	LRPPRC	L
8409	UXT	27257	LSM1	L
8409	UXT	27443	CECR2	L
8411	EEA1	8615	VDP	L
8411	EEA1	23673	STX12	L
8411	EEA1	57403	RAB22A	L
8416	ANXA9	55160	ARHGEF10L	S
8416	ANXA9	56901	LOC56901	S
8417	STX7	8673	VAMP8	L
8417	STX7	8775	NAPA	L
8417	STX7	10228	STX6	L
8417	STX7	57617	VPS18	L
8424	BBOX1	8988	HSPB3	S
8428	STK24	11235	PDCD10	R
8431	NR0B2	9970	NR1I3	L
8431	NR0B2	10062	NR1H3	L
8436	SDPR	79666	PLEKHF2	R
8436	SDPR	79873	NUDT18	R
8439	NSMAF	10399	GNB2L1	L
8440	NCK2	9513	FXR2	R
8440	NCK2	10006	ABI1	L
8440	NCK2	10152	ABI2	R
8440	NCK2	10262	SF3B4	R
8440	NCK2	11052	CPSF6	R
8440	NCK2	51517	NCKIPSD	R
8440	NCK2	51729	WBP11	R
8440	NCK2	56243	KIAA1217	R
8440	NCK2	79869	FLJ12529	R
8443	GNPAT	8540	AGPS	L
8443	GNPAT	11021	RAB35	S
8445	DYRK2	25788	RAD54B	R
8446	DUSP11	8683	SFRS9	L
8447	DOC2B	10497	UNC13B	L
8448	DOC2A	10497	UNC13B	L
8450	CUL4B	55832	CAND1	L
8451	CUL4A	9616	RNF7	L
8451	CUL4A	9978	RBX1	L
8452	CUL3	9978	RBX1	L
8453	CUL2	9616	RNF7	L
8454	CUL1	9616	RNF7	L
8454	CUL1	9978	RBX1	L
8454	CUL1	83461	CDCA3	L
8454	CUL1	84893	FBXO18	L
8458	TTF2	9782	MATR3	L
8458	TTF2	10015	PDCD6IP	L
8458	TTF2	10460	TACC3	L
8458	TTF2	10549	PRDX4	L
8458	TTF2	10589	DRAP1	L
8458	TTF2	24137	KIF4A	L
8458	TTF2	55802	DCP1A	L
8462	KLF11	25942	SIN3A	L
8463	TEAD2	8648	NCOA1	L
8463	TEAD2	10413	YAP1	L
8467	SMARCA5	9031	BAZ1B	L
8467	SMARCA5	11176	BAZ2A	L
8467	SMARCA5	54108	CHRAC1	L
8467	SMARCA5	80012	PHC3	L
8468	FKBP6	8812	CCNK	R

8468	FKBP6	29922	NME7	R
8470	SORBS2	9618	TRAF4	L
8471	IRS4	9306	SOCS6	L
8471	IRS4	11188	NISCH	L
8473	OGT	22906	OIP106	L
8473	OGT	54830	FLJ20130	R
8473	OGT	66008	ALS2CR3	L
8479	HIRIP3	55324	ABCF3	S
8480	RAE1	57062	DDX24	S
8481	OFD1	9737	GPRASP1	S
8481	OFD1	51631	LUC7L2	S
8481	OFD1	54462	KIAA1128	S
8481	OFD1	57562	KIAA1377	S
8482	SEMA7A	10154	PLXNC1	L
8487	SIP1	11338	U2AF2	L
8495	PPFIBP2	8499	PPFIA2	L
8495	PPFIBP2	8500	PPFIA1	L
8495	PPFIBP2	8541	PPFIA3	L
8496	PPFIBP1	8499	PPFIA2	L
8496	PPFIBP1	8500	PPFIA1	L
8496	PPFIBP1	8541	PPFIA3	L
8499	PPFIA2	8500	PPFIA1	L
8499	PPFIA2	8541	PPFIA3	L
8499	PPFIA2	26059	CAST1	L
8499	PPFIA2	28964	GIT1	L
8500	PPFIA1	8541	PPFIA3	L
8500	PPFIA1	10499	NCOA2	L
8500	PPFIA1	23085	RAB6IP2	L
8500	PPFIA1	26059	CAST1	L
8500	PPFIA1	28964	GIT1	L
8500	PPFIA1	51562	MBIP	R
8502	PKP4	11337	GABARAP	S
8502	PKP4	23037	PDZK3	L
8502	PKP4	55914	ERBB2IP	L
8503	PIK3R3	10589	DRAP1	R
8506	CNTNAP1	57142	RTN4	L
8508	NIPSNAP1	79735	TBC1D17	S
8517	IKBKG	8533	COPS3	L
8517	IKBKG	8737	RIPK1	L
8517	IKBKG	8767	RIPK2	L
8517	IKBKG	8915	BCL10	L
8517	IKBKG	9020	MAP3K14	L
8517	IKBKG	9230	RAB11B	L
8517	IKBKG	10010	TANK	L
8517	IKBKG	10758	TRAF3IP2	L
8517	IKBKG	11140	CDC37	L
8517	IKBKG	26133	TRPC4AP	L
8517	IKBKG	26994	RNF11	L
8517	IKBKG	257397	TAB3	L
8518	IKBKAP	9020	MAP3K14	L
8518	IKBKAP	10190	TXNDC9	S
8518	IKBKAP	23557	SNAPAP	S
8518	IKBKAP	25934	NIPSNAP3A	S
8518	IKBKAP	28977	MRPL42	S
8518	IKBKAP	54949	FLJ20487	S
8518	IKBKAP	55140	ELP3	L
8525	DGKZ	10125	RASGRP1	L
8525	DGKZ	54212	SNTG1	L
8525	DGKZ	81488	GRINL1A	S
8527	DGKD	10456	HAX1	S
8527	DGKD	84966	IGSF21	S
8527	DGKD	160851	DGKH	L
8533	COPS3	55805	LRP2BP	L
8536	CAMK1	10645	CAMKK2	L
8541	PPFIA3	10076	PTPRU	L
8541	PPFIA3	26059	CAST1	L
8541	PPFIA3	28964	GIT1	L

8543	LMO4	8861	LDB1	L
8543	LMO4	9079	LDB2	L
8543	LMO4	9371	KIF3B	L
8543	LMO4	9871	SEC24D	L
8543	LMO4	10461	MERTK	L
8543	LMO4	23760	PITPNB	L
8543	LMO4	64129	TINAGL1	L
8543	LMO4	116461	C1orf19	L
8543	LMO4	171392	ZNF675	L
8546	AP3B1	10239	AP3S2	L
8553	BHLHB2	9869	SETDB1	S
8553	BHLHB2	11244	ZHX1	S
8554	PIAS1	55660	FNBP3	L
8554	PIAS1	79753	SNIP1	L
8555	CDC14B	22933	SIRT2	L
8556	CDC14A	51343	FZR1	L
8557	TCAP	58529	MYOZ1	L
8562	DENR	28985	MCTS1	S
8567	MADD	55367	LRDD	L
8569	MKNK1	8672	EIF4G3	L
8570	KHSRP	8880	FUBP1	L
8570	KHSRP	23404	EXOSC2	L
8570	KHSRP	29974	ACF	L
8570	KHSRP	51010	EXOSC3	L
8572	PDLIM4	11030	RBPMS	R
8572	PDLIM4	79797	ZNF408	L
8573	CASK	8825	LIN7A	L
8573	CASK	9369	NRXN3	L
8573	CASK	10716	TBR1	L
8573	CASK	22895	RPH3A	L
8573	CASK	23705	IGSF4	L
8573	CASK	25861	DFNB31	L
8573	CASK	25865	PRKD2	L
8573	CASK	26047	CNTNAP2	L
8573	CASK	57524	CASKIN1	L
8573	CASK	64061	TSPYL2	L
8574	AKR7A2	22977	AKR7A3	R
8575	PRKRA	9869	SETDB1	S
8575	PRKRA	10980	COPS6	S
8576	STK16	22934	RPIA	R
8576	STK16	54507	TSRC1	R
8576	STK16	79734	KCTD17	R
8600	TNFSF11	8792	TNFRSF11A	L
8601	RGS20	11075	STMN2	L
8601	RGS20	28962	OSTM1	L
8607	RUVBL1	51602	NOP5/NOP58	L
8607	RUVBL1	57562	KIAA1377	S
8609	KLF7	81545	FBXO38	L
8612	PPAP2C	9094	UNC119	S
8614	STC2	8891	EIF2B3	S
8614	STC2	9131	PDCD8	S
8614	STC2	10621	POLR3F	S
8614	STC2	23589	CARHSP1	S
8614	STC2	55701	FLJ10357	S
8615	VDP	9527	GOSR1	L
8615	VDP	9570	GOSR2	L
8615	VDP	84970	C1orf94	R
8618	CADPS	51631	LUC7L2	S
8621	CDC2L5	55660	FNBP3	L
8626	TP73L	28996	HIPK2	L
8633	UNC5C	9423	NTN1	L
8637	EIF4EBP3	9470	EIF4E2	R
8642	DCHS1	222019	(null)	S
8643	PTCH2	50846	DHH	L
8644	AKR1C3	11244	ZHX1	S
8644	AKR1C3	22985	ACIN1	S
8644	AKR1C3	55284	UBE2W	S

8644	AKR1C3	55791	C1orf103	S
8646	CHRD	57045	TWSG1	L
8648	NCOA1	8850	PCAF	L
8648	NCOA1	8856	NR1I2	L
8648	NCOA1	9325	TRIP4	L
8648	NCOA1	9971	NR1H4	L
8648	NCOA1	10499	NCOA2	L
8648	NCOA1	10521	DDX17	L
8648	NCOA1	10987	COPS5	L
8649	MAP2K1IP1	51684	SUFU	L
8650	NUMB	83737	ITCH	L
8650	NUMB	222484	LNX2	L
8651	SOCS1	81603	TRIM8	L
8655	DNCL1	9112	MTA1	L
8655	DNCL1	10018	BCL2L11	L
8655	DNCL1	10243	GPHN	L
8655	DNCL1	10383	TUBB2	L
8655	DNCL1	10771	ZMYND11	L
8655	DNCL1	11161	C14orf1	S
8655	DNCL1	11244	ZHX1	S
8655	DNCL1	56288	PARD3	L
8655	DNCL1	56901	LOC56901	S
8655	DNCL1	57619	SHRM	L
8655	DNCL1	84817	TXNL5	L
8655	DNCL1	199745	THAP8	S
8658	TNKS	23048	FNBP1	L
8658	TNKS	25913	POT1	L
8658	TNKS	80351	TNKS2	L
8658	TNKS	85456	TNKS1BP1	L
8661	EIF3S10	8662	EIF3S9	L
8661	EIF3S10	8666	EIF3S4	L
8661	EIF3S10	8668	EIF3S2	L
8661	EIF3S10	8669	EIF3S1	L
8661	EIF3S10	27335	EIF3S12	L
8663	EIF3S8	8666	EIF3S4	L
8663	EIF3S8	8669	EIF3S1	L
8663	EIF3S8	56901	LOC56901	S
8663	EIF3S8	79719	FLJ11506	S
8663	EIF3S8	79753	SNIP1	L
8664	EIF3S7	8666	EIF3S4	L
8664	EIF3S7	8669	EIF3S1	L
8664	EIF3S7	22822	PHLDA1	L
8664	EIF3S7	51386	EIF3S6IP	L
8665	EIF3S5	10456	HAX1	R
8665	EIF3S5	10480	hfl-B5	S
8665	EIF3S5	23097	CDC2L6	L
8666	EIF3S4	8667	EIF3S3	L
8666	EIF3S4	10200	MPHOSPH6	L
8666	EIF3S4	51678	MPP6	L
8667	EIF3S3	11007	DIPA	R
8667	EIF3S3	27185	DISC1	L
8667	EIF3S3	51225	ABI3	R
8668	EIF3S2	118460	EXOSC6	L
8669	EIF3S1	9500	MAGED1	S
8669	EIF3S1	10474	TADA3L	S
8669	EIF3S1	10681	GNB5	S
8669	EIF3S1	51280	GOLPH2	S
8671	SLC4A4	9497	SLC4A7	L
8673	VAMP8	8773	SNAP23	L
8673	VAMP8	8775	NAPA	L
8674	VAMP4	8675	STX16	L
8674	VAMP4	8907	AP1M1	L
8674	VAMP4	10228	STX6	L
8674	VAMP4	55690	PACS1	L
8675	STX16	9341	VAMP3	L
8675	STX16	10228	STX6	L
8676	STX11	8724	SNX3	S

8676	STX11	8773	SNAP23	RL
8676	STX11	8812	CCNK	R
8676	STX11	10629	TAF6L	R
8676	STX11	54407	SLC38A2	S
8676	STX11	79036	MGC2749	R
8678	BECN1	57120	GOPC	L
8682	PEA15	8772	FADD	L
8682	PEA15	51631	LUC7L2	S
8682	PEA15	55229	PANK4	S
8682	PEA15	221264	C6orf199	S
8682	PEA15	380789	(null)	S
8683	SFRS9	8996	NOL3	L
8683	SFRS9	10656	KHDRBS3	L
8683	SFRS9	91746	YT521	L
8685	MARCO	92304	SCGB3A1	L
8685	MARCO	117156	SCGB3A2	L
8697	CDC23	11030	RBPMS	R
8697	CDC23	25788	RAD54B	R
8697	CDC23	81628	TSC22D4	R
8698	EDG6	10672	GNA13	L
8703	B4GALT3	54622	ARFRP2	S
8705	B3GALT4	11269	DDX19B	S
8715	NOL4	10302	SNAPC5	R
8717	TRADD	8718	TNFRSF25	L
8717	TRADD	8737	RIPK1	L
8717	TRADD	8772	FADD	L
8717	TRADD	8795	TNFRSF10B	L
8717	TRADD	8797	TNFRSF10A	L
8717	TRADD	8915	BCL10	L
8717	TRADD	11064	CEP1	L
8717	TRADD	26133	TRPC4AP	L
8717	TRADD	26136	TES	L
8717	TRADD	27242	TNFRSF21	L
8717	TRADD	28996	HIPK2	L
8718	TNFRSF25	8742	TNFSF12	L
8718	TNFRSF25	9530	BAG4	L
8718	TNFRSF25	9966	TNFSF15	L
8721	EDF1	10062	NR1H3	L
8723	SNX4	55750	MULK	S
8726	EED	8841	HDAC3	L
8726	EED	96764	NCOA6IP	L
8727	CTNNAL1	11214	AKAP13	L
8728	ADAM19	10152	ABI2	L
8728	ADAM19	51575	C20orf6	L
8731	RNMT	8732	RNGTT	L
8733	GPAA1	10026	PIGK	L
8733	GPAA1	54458	DKFZp564J157	S
8735	MYH13	51690	LSM7	L
8737	RIPK1	8738	CRADD	L
8737	RIPK1	8772	FADD	L
8737	RIPK1	8795	TNFRSF10B	L
8737	RIPK1	8797	TNFRSF10A	L
8737	RIPK1	8837	CFLAR	L
8737	RIPK1	8878	SQSTM1	L
8737	RIPK1	9020	MAP3K14	L
8737	RIPK1	10475	TRIM38	L
8737	RIPK1	11035	RIPK3	L
8737	RIPK1	26133	TRPC4AP	L
8738	CRADD	11161	C14orf1	S
8738	CRADD	54462	KIAA1128	S
8738	CRADD	55367	LRDD	L
8738	CRADD	55791	C1orf103	S
8740	TNFSF14	8764	TNFRSF14	L
8740	TNFSF14	8771	TNFRSF6B	L
8742	TNFSF12	51330	TNFRSF12A	L
8742	TNFSF12	55109	AGGF1	L
8743	TNFSF10	8793	TNFRSF10D	L

8743	TNFSF10	8794	TNFRSF10C	L
8743	TNFSF10	8795	TNFRSF10B	L
8743	TNFSF10	8797	TNFRSF10A	L
8743	TNFSF10	84060	DKFZP564O0523	S
8751	ADAM15	9319	TRIP13	R
8751	ADAM15	51429	SNX9	L
8754	ADAM9	10459	MAD2L2	L
8754	ADAM9	51429	SNX9	L
8761	PABPC4	22822	PHLDA1	L
8761	PABPC4	54464	XRN1	L
8764	TNFRSF14	8841	HDAC3	L
8764	TNFRSF14	9759	HDAC4	L
8764	TNFRSF14	407977	TNFSF12-TNFSF13	L
8766	RAB11A	22841	RAB11FIP2	L
8766	RAB11A	26056	RAB11FIP5	L
8766	RAB11A	54521	WDR44	L
8766	RAB11A	80223	RAB11FIP1	L
8766	RAB11A	84440	RAB11FIP4	L
8767	RIPK2	8837	CFLAR	L
8767	RIPK2	10392	CARD4	L
8767	RIPK2	64127	CARD15	L
8767	RIPK2	84674	CARD6	L
8771	TNFRSF6B	9966	TNFSF15	L
8772	FADD	8795	TNFRSF10B	L
8772	FADD	8797	TNFRSF10A	L
8772	FADD	8837	CFLAR	L
8772	FADD	8930	MBD4	L
8772	FADD	9191	DEDD	L
8772	FADD	9994	CASP8AP2	L
8772	FADD	10114	HIPK3	L
8772	FADD	23429	RYBP	L
8772	FADD	25843	PREI3	S
8772	FADD	55367	LRDD	L
8772	FADD	57062	DDX24	S
8772	FADD	57510	XPO5	L
8772	FADD	85444	LRRCC1	S
8773	SNAP23	8775	NAPA	R
8773	SNAP23	9341	VAMP3	L
8773	SNAP23	9513	FXR2	R
8773	SNAP23	9522	SCAMP1	L
8773	SNAP23	10066	SCAMP2	L
8773	SNAP23	10152	ABI2	R
8773	SNAP23	10228	STX6	L
8773	SNAP23	10590	SCGN	R
8773	SNAP23	23557	SNAPAP	L
8773	SNAP23	23673	STX12	L
8773	SNAP23	51225	ABI3	R
8773	SNAP23	134957	STXBP5	L
8774	NAPG	9482	STX8	L
8774	NAPG	26056	RAB11FIP5	L
8775	NAPA	9482	STX8	L
8775	NAPA	9527	GOSR1	L
8775	NAPA	9570	GOSR2	L
8775	NAPA	23673	STX12	L
8775	NAPA	57142	RTN4	R
8777	MPDZ	9076	CLDN1	L
8777	MPDZ	10413	YAP1	L
8777	MPDZ	59338	PLEKHA1	L
8778	SIGLEC5	9319	TRIP13	R
8784	TNFRSF18	8995	TNFSF18	L
8792	TNFRSF11A	23118	MAP3K7IP2	L
8794	TNFRSF10C	11244	ZHX1	S
8794	TNFRSF10C	28965	SLC27A6	S
8794	TNFRSF10C	90678	LRSAM1	S
8794	TNFRSF10C	359845	MGC45871	S
8795	TNFRSF10B	8837	CFLAR	L
8796	SCEL	10628	TXNIP	L

8797	TNFRSF10A	8915	BCL10	L
8805	TRIM24	10155	TRIM28	L
8805	TRIM24	10951	CBX1	L
8805	TRIM24	11335	CBX3	L
8805	TRIM24	23468	CBX5	L
8805	TRIM24	51592	TRIM33	L
8809	IL18R1	27178	IL1F7	L
8811	GALR2	51083	GAL	L
8812	CCNK	10363	HMG20A	R
8812	CCNK	11007	DIPA	R
8812	CCNK	11030	RBPMS	R
8812	CCNK	30008	EFEMP2	R
8812	CCNK	54550	EFCBP2	R
8812	CCNK	79959	C18orf9	R
8812	CCNK	81628	TSC22D4	R
8812	CCNK	83755	KRTAP4-12	R
8812	CCNK	83878	USHBP1	R
8812	CCNK	84528	PEPP-2	R
8812	CCNK	222546	RFXDC1	R
8812	CCNK	283518	KCNRG	R
8819	SAP30	9541	CIR	L
8819	SAP30	9611	NCOR1	L
8819	SAP30	9612	NCOR2	L
8820	HESX1	9611	NCOR1	L
8825	LIN7A	10458	BAIAP2	L
8825	LIN7A	51678	MPP6	L
8825	LIN7A	64398	MPP5	L
8826	IQGAP1	9495	AKAP5	L
8826	IQGAP1	53405	CLIC5	L
8829	NRP1	10371	SEMA3A	L
8829	NRP1	10755	GIPC1	L
8834	TMEM11	22955	SCMH1	S
8837	CFLAR	9191	DEDD	L
8837	CFLAR	162989	DEDD2	L
8841	HDAC3	9063	PIAS2	L
8841	HDAC3	9569	GTF2IRD1	L
8841	HDAC3	9611	NCOR1	L
8841	HDAC3	9612	NCOR2	L
8841	HDAC3	9734	HDAC9	L
8841	HDAC3	9759	HDAC4	L
8841	HDAC3	10014	HDAC5	L
8841	HDAC3	22948	CCT5	L
8841	HDAC3	23118	MAP3K7IP2	L
8841	HDAC3	25942	SIN3A	L
8841	HDAC3	51564	HDAC7A	L
8841	HDAC3	55662	HIF1AN	L
8841	HDAC3	55806	HR	L
8841	HDAC3	83933	HDAC10	L
8848	TSC22D1	9869	SETDB1	S
8848	TSC22D1	10391	CORO2B	S
8848	TSC22D1	60492	MDS025	S
8850	PCAF	51621	KLF13	L
8851	CDK5R1	10763	NES	L
8851	CDK5R1	55755	CDK5RAP2	L
8851	CDK5R1	81628	TSC22D4	R
8852	AKAP4	10566	AKAP3	L
8859	STK19	10262	SF3B4	L
8859	STK19	23532	PRAME	L
8861	LDB1	23635	SSBP2	R
8861	LDB1	54472	TOLLIP	R
8861	LDB1	55885	LMO3	R
8861	LDB1	58190	CTDSP1	L
8861	LDB1	170463	SSBP4	R
8863	PER3	8864	PER2	L
8863	PER3	9575	CLOCK	L
8864	PER2	8914	TIMELESS	L
8867	SYNJ1	29763	PACSIN3	L

8867	SYNJ1	29993	PACSIN1	L
8871	SYNJ2	50618	ITSN2	L
8872	C10orf7	57473	GM632	L
8874	ARHGEF7	9647	PPM1F	L
8874	ARHGEF7	9815	GIT2	L
8874	ARHGEF7	10381	TUBB3	S
8874	ARHGEF7	22941	SHANK2	L
8874	ARHGEF7	28964	GIT1	L
8874	ARHGEF7	50944	SHANK1	L
8877	SPHK1	26750	RPS6KC1	L
8878	SQSTM1	11345	GABARAPL2	R
8878	SQSTM1	23710	GABARAPL1	R
8878	SQSTM1	79686	C14orf139	S
8878	SQSTM1	81631	MAP1LC3B	S
8878	SQSTM1	114034	TOE1	S
8880	FUBP1	10658	CUGBP1	S
8880	FUBP1	10989	IMMT	L
8882	ZNF259	55755	CDK5RAP2	S
8883	APPBP1	9039	UBE1C	L
8883	APPBP1	56893	UBQLN4	S
8886	DDX18	9112	MTA1	S
8886	DDX18	10207	INADL	S
8887	TAX1BP1	26994	RNF11	L
8887	TAX1BP1	79735	TBC1D17	S
8887	TAX1BP1	90627	STARD13	L
8888	MCM3AP	11164	NUDT5	S
8888	MCM3AP	51259	MGC13379	S
8888	MCM3AP	56943	ENY2	S
8890	EIF2B4	8891	EIF2B3	L
8890	EIF2B4	8892	EIF2B2	L
8890	EIF2B4	8893	EIF2B5	L
8890	EIF2B4	8894	EIF2S2	L
8891	EIF2B3	8892	EIF2B2	L
8891	EIF2B3	8893	EIF2B5	L
8891	EIF2B3	51280	GOLPH2	S
8892	EIF2B2	8893	EIF2B5	L
8893	EIF2B5	8894	EIF2S2	L
8894	EIF2S2	9094	UNC119	S
8894	EIF2S2	9842	PLEKHM1	S
8894	EIF2S2	57562	KIAA1377	S
8894	EIF2S2	60492	MDS025	S
8899	PRPF4B	8988	HSPB3	S
8899	PRPF4B	10621	POLR3F	S
8900	CCNA1	10399	GNB2L1	L
8900	CCNA1	126823	KARCA1	L
8900	CCNA1	147011	PROCA1	L
8900	CCNA1	196528	ARID2	L
8900	CCNA1	388324	INCA1	L
8904	CPNE1	9040	UBE2M	L
8904	CPNE1	10016	PDCD6	L
8904	CPNE1	26292	MYCBP	L
8904	CPNE1	28952	CCDC22	L
8904	CPNE1	54880	BCOR	L
8904	CPNE1	57605	PITPNM2	L
8904	CPNE1	131034	CPNE4	L
8905	AP1S2	8906	AP1G2	L
8905	AP1S2	23163	GGA3	L
8906	AP1G2	9135	RABEP1	L
8906	AP1G2	11276	AP1GBP1	L
8906	AP1G2	54464	XRN1	L
8906	AP1G2	54812	AFTIPHILIN	L
8907	AP1M1	9513	FXR2	R
8907	AP1M1	10053	AP1M2	L
8907	AP1M1	10618	TGOLN2	L
8907	AP1M1	10900	RPIP8	R
8907	AP1M1	23641	LDOC1	R
8907	AP1M1	30846	EHD2	L

8907	AP1M1	63971	KIF13A	L
8907	AP1M1	92610	TIFA	R
8907	AP1M1	127557	ZBTB8	R
8910	SGCE	10425	ARIH2	S
8915	BCL10	10892	MALT1	L
8915	BCL10	29775	CARD10	L
8915	BCL10	58484	CARD12	L
8915	BCL10	64170	CARD9	L
8915	BCL10	79092	CARD14	L
8915	BCL10	84270	C9orf89	L
8915	BCL10	84433	CARD11	L
8924	HERC2	26994	RNF11	L
8925	HERC1	26994	RNF11	L
8927	BSN	26059	CAST1	L
8928	FOXH1	10589	DRAP1	L
8932	MBD2	11321	XAB1	L
8932	MBD2	25988	MIZF	L
8932	MBD2	54815	GATAD2A	L
8934	RAB7L1	51690	LSM7	L
8935	SCAP2	84106	PRAM1	L
8936	WASF1	9051	PSTPIP1	L
8936	WASF1	10152	ABI2	L
8936	WASF1	23268	DNMBP	L
8940	TOP3B	9400	RECQL5	L
8940	TOP3B	10516	FBLN5	L
8940	TOP3B	26511	CHIC2	R
8940	TOP3B	79797	ZNF408	L
8940	TOP3B	83755	KRTAP4-12	R
8940	TOP3B	161882	ZFPM1	L
8945	BTRC	9787	DLG7	L
8945	BTRC	23291	FBXW11	L
8945	BTRC	29978	UBQLN2	L
8945	BTRC	51684	SUFU	L
8945	BTRC	114088	TRIM9	R
8975	USP13	51168	MYO15A	S
8975	USP13	54874	FNBP1L	S
8975	USP13	55052	MRPL20	S
8975	USP13	65991	FUNDC2	S
8975	USP13	84675	TRIM55	L
8975	USP13	84676	TRIM63	L
8976	WASL	23268	DNMBP	L
8976	WASL	23433	RHOQ	L
8976	WASL	29763	PACSIN3	L
8976	WASL	29993	PACSIN1	L
8976	WASL	54874	FNBP1L	L
8976	WASL	55660	FNBP3	L
8985	PLOD3	10919	EHMT2	R
8985	PLOD3	11007	DIPA	R
8985	PLOD3	84528	PEPP-2	R
8985	PLOD3	151871	DPPA2	R
8985	PLOD3	285596	NY-REN-7	R
8987	GENX-3414	55729	ATF7IP	L
8988	HSPB3	9094	UNC119	S
8988	HSPB3	9869	SETDB1	S
8988	HSPB3	10268	RAMP3	S
8988	HSPB3	23140	ZZEF1	S
8988	HSPB3	26012	NELF	S
8988	HSPB3	26071	DKFZP564B147	S
8988	HSPB3	51003	MED31	S
8988	HSPB3	55791	C1orf103	S
8988	HSPB3	56944	OLFML3	S
8988	HSPB3	64978	MRPL38	S
8988	HSPB3	84060	DKFZP564O0523	S
8988	HSPB3	112950	MED8	S
8991	SELENBP1	9319	TRIP13	R
8991	SELENBP1	26073	POLDIP2	S
8991	SELENBP1	51003	MED31	S

8991	SELENBP1	55791	C1orf103	S
8994	LIMD1	10114	HIPK3	L
8996	NOL3	29844	TFPT	L
8996	NOL3	55224	ETNK2	R
8996	NOL3	60491	NIF3L1	R
8996	NOL3	140885	PTPNS1	R
9001	HAP1	9146	HGS	L
9001	HAP1	9551	ATP5J2	S
9001	HAP1	9804	TOMM20	S
9001	HAP1	10081	PDCD7	S
9001	HAP1	10440	TIMM17A	S
9001	HAP1	11079	RER1	S
9001	HAP1	23557	SNAPAP	S
9001	HAP1	25934	NIPSNAP3A	S
9001	HAP1	29070	HSPC065	S
9001	HAP1	29997	GLTSCR2	S
9001	HAP1	51058	ZNF691	S
9001	HAP1	54555	DDX49	S
9001	HAP1	55755	CDK5RAP2	S
9001	HAP1	57050	SAS10	S
9001	HAP1	57332	CBX8	S
9001	HAP1	64965	MRPS9	S
9001	HAP1	65265	C8orf33	S
9001	HAP1	65990	C16orf24	S
9001	HAP1	79101	MGC5306	S
9001	HAP1	79768	C15orf29	S
9001	HAP1	266812	NAP1L5	S
9013	TAF1C	9014	TAF1B	L
9013	TAF1C	9015	TAF1A	L
9014	TAF1B	9015	TAF1A	L
9019	MPZL1	54512	EXOSC4	L
9025	RNF8	10477	UBE2E3	L
9025	RNF8	11007	DIPA	R
9025	RNF8	23404	EXOSC2	L
9025	RNF8	80817	KIAA1712	R
9031	BAZ1B	10036	CHAF1A	L
9040	UBE2M	131034	CPNE4	L
9040	UBE2M	221184	CPNE2	L
9045	RPL14	22822	PHLDA1	L
9046	DOK2	26128	KIAA1279	R
9051	PSTPIP1	10163	WASF2	L
9051	PSTPIP1	26469	PTPN18	L
9053	MAP7	59341	TRPV4	L
9055	PRC1	11007	DIPA	R
9055	PRC1	54474	KRT20	R
9055	PRC1	83878	USHBP1	R
9061	PAPSS1	9094	UNC119	S
9061	PAPSS1	84988	PPP1R16A	S
9063	PIAS2	9569	GTF2IRD1	L
9063	PIAS2	11315	PARK7	L
9063	PIAS2	79753	SNIP1	L
9063	PIAS2	89797	NAV2	R
9069	CLDN12	29888	STRN4	S
9070	ASH2L	9094	UNC119	S
9070	ASH2L	84661	LOC84661	R
9075	CLDN2	83755	KRTAP4-12	R
9076	CLDN1	9414	TJP2	L
9076	CLDN1	10207	INADL	L
9076	CLDN1	23476	BRD4	S
9083	BPY2	55201	BPY2IP1	L
9088	PKMYT1	55240	STEAP3	L
9093	DNAJA3	9278	ZNF297	R
9093	DNAJA3	80196	RNF34	L
9093	DNAJA3	348487	C1orf117	R
9094	UNC119	9540	TP53I3	S
9094	UNC119	10063	COX17	S
9094	UNC119	10200	MPHOSPH6	S

9094	UNC119	10571	SMA3	S
9094	UNC119	11068	CYB561D2	S
9094	UNC119	19241	(null)	S
9094	UNC119	22902	RIPX	S
9094	UNC119	22929	SEPHS1	S
9094	UNC119	23028	AOF2	S
9094	UNC119	51631	LUC7L2	S
9094	UNC119	54622	ARFRP2	S
9094	UNC119	54810	GIPC2	S
9094	UNC119	55274	PHF10	S
9094	UNC119	55299	BXDC2	S
9094	UNC119	55643	BTBD2	S
9094	UNC119	55734	ZFP64	S
9094	UNC119	56144	PCDHA4	S
9094	UNC119	56893	UBQLN4	S
9094	UNC119	57332	CBX8	S
9094	UNC119	63943	FKBPL	S
9094	UNC119	79719	FLJ11506	S
9094	UNC119	80228	C7orf19	S
9094	UNC119	81890	QTRT1	S
9094	UNC119	170961	ANKRD24	S
9094	UNC119	404550	MGC17624	R
9099	USP2	11007	DIPA	R
9099	USP2	29911	HOOK2	R
9099	USP2	57596	KIAA1446	R
9099	USP2	79656	C1orf165	R
9100	USP10	10146	G3BP	L
9101	USP8	10049	DNAJB6	L
9101	USP8	10254	STAM2	L
9110	MTMR4	10114	HIPK3	L
9111	NMI	9146	HGS	R
9111	NMI	10302	SNAPC5	R
9111	NMI	11117	EMILIN1	R
9111	NMI	11147	HHLA3	R
9111	NMI	25804	LSM4	L
9111	NMI	55707	NECAP2	R
9111	NMI	374659	HDDC3	R
9112	MTA1	51497	TH1L	S
9124	PDLIM1	9489	PGS1	S
9124	PDLIM1	55750	MULK	S
9124	PDLIM1	140901	STK35	L
9126	CSPG6	22920	KIFAP3	L
9126	CSPG6	27127	SMC1L2	L
9128	PRPF4	9551	ATP5J2	S
9128	PRPF4	10465	PPIH	L
9129	PRPF3	9733	SART3	L
9129	PRPF3	11007	DIPA	R
9129	PRPF3	84661	LOC84661	R
9129	PRPF3	84705	GTPBP3	R
9131	PDCD8	9869	SETDB1	S
9131	PDCD8	23286	KIBRA	S
9131	PDCD8	84273	C4orf14	S
9134	CCNE2	23595	ORC3L	L
9135	RABEP1	23062	GGA2	L
9135	RABEP1	23163	GGA3	L
9135	RABEP1	27342	RABGEF1	L
9135	RABEP1	30811	HUNK	L
9135	RABEP1	83452	RAB33B	L
9138	ARHGEF1	10672	GNA13	L
9139	CBFA2T2	9611	NCOR1	L
9139	CBFA2T2	9612	NCOR2	L
9139	CBFA2T2	25942	SIN3A	L
9139	CBFA2T2	55093	C8orf32	R
9140	ATG12	83755	KRTAP4-12	R
9141	PDCD5	10524	HTATIP	S
9141	PDCD5	10813	UTP14A	S
9141	PDCD5	55791	C1orf103	S

9141	PDCD5	57562	KIAA1377	S
9146	HGS	9443	CRSP9	R
9146	HGS	9802	DAZAP2	R
9146	HGS	10254	STAM2	R
9146	HGS	10919	EHMT2	R
9146	HGS	23265	EXOC7	R
9146	HGS	23641	LDOC1	R
9146	HGS	29979	UBQLN1	R
9146	HGS	57409	AD023	R
9146	HGS	57596	KIAA1446	R
9146	HGS	80125	FLJ32855	R
9146	HGS	80318	GKAP1	R
9146	HGS	83878	USHBP1	R
9146	HGS	149371	EXOC8	R
9146	HGS	541468	C1orf190	R
9149	DYRK1B	10048	RANBP9	L
9149	DYRK1B	10238	WDR68	L
9158	FIBP	9982	FGFBP1	L
9158	FIBP	140545	RNF32	S
9169	SFRS2IP	11338	U2AF2	L
9173	IL1RL1	11018	TMED1	L
9175	MAP3K13	9479	MAPK8IP1	L
9175	MAP3K13	10935	PRDX3	L
9183	ZW10	9735	KNTC1	L
9184	BUB3	10038	PARP2	L
9185	REPS2	50807	DDEF1	L
9189	ZBED1	10174	SORBS3	R
9189	ZBED1	10597	SEDLP	R
9189	ZBED1	11321	XAB1	R
9189	ZBED1	25876	C20orf28	R
9189	ZBED1	26086	GPSM1	R
9189	ZBED1	51388	CGI-37	R
9189	ZBED1	60491	NIF3L1	R
9189	ZBED1	79873	NUDT18	R
9191	DEDD	162989	DEDD2	L
9205	ZMYM5	79753	SNIP1	L
9212	AURKB	10607	TBL3	S
9212	AURKB	29127	RACGAP1	L
9212	AURKB	55139	FLJ10415	S
9218	VAPA	150094	SNF1LK	L
9219	MTA2	23013	SPEN	L
9221	NOLC1	25885	POLR1A	L
9223	MAGI1	9311	ACCN3	L
9223	MAGI1	10276	NET1	L
9229	DLGAP1	22941	SHANK2	L
9229	DLGAP1	140735	Dlc2	L
9230	RAB11B	10133	OPTN	L
9230	RAB11B	22841	RAB11FIP2	L
9231	DLG5	10174	SORBS3	L
9231	DLG5	84280	BTBD10	S
9240	PNMA1	79165	LENG1	S
9240	PNMA1	84968	PNMA6A	S
9244	CRLF1	23529	CLCF1	L
9246	UBE2L6	9810	RNF40	L
9246	UBE2L6	25820	ARIH1	L
9246	UBE2L6	25897	RNF19	L
9260	PDLIM7	9491	PSMF1	R
9260	PDLIM7	11060	WWP2	R
9260	PDLIM7	25865	PRKD2	L
9260	PDLIM7	57144	PAK7	R
9260	PDLIM7	79025	MGC5356	R
9260	PDLIM7	84080	C16orf48	R
9260	PDLIM7	91056	DKFZp761E198	R
9260	PDLIM7	164127	C1orf65	R
9261	MAPKAPK2	10092	ARPC5	L
9261	MAPKAPK2	10949	HNRPA0	L
9262	STK17B	11261	CHP	L

9265	PSCD3	10256	CNKSR1	R
9265	PSCD3	57658	CALCOCO1	R
9266	PSCD2	90060	JM11	R
9267	PSCD1	9595	PSCDBP	L
9267	PSCD1	10139	ARFRP1	L
9278	ZNF297	56893	UBQLN4	S
9294	EDG5	10672	GNA13	L
9295	SFRS11	11338	U2AF2	L
9296	ATP6V1F	57562	KIAA1377	S
9311	ACCN3	10207	INADL	L
9311	ACCN3	57120	GOPC	L
9311	ACCN3	64130	LIN7B	L
9315	C5orf13	84966	IGSF21	S
9318	COPS2	60491	NIF3L1	L
9319	TRIP13	9587	MAD2L1BP	RS
9319	TRIP13	9721	KIAA0514	R
9319	TRIP13	10802	SEC24A	R
9319	TRIP13	11030	RBPMS	R
9319	TRIP13	23564	DDAH2	R
9319	TRIP13	23583	SMUG1	R
9319	TRIP13	26086	GPSM1	R
9319	TRIP13	28970	PTD012	R
9319	TRIP13	51316	PLAC8	R
9319	TRIP13	51700	CYB5R2	R
9319	TRIP13	54973	CPSF3L	R
9319	TRIP13	55093	C8orf32	R
9319	TRIP13	57048	PLSCR3	R
9319	TRIP13	57088	PLSCR4	R
9319	TRIP13	57559	AMSH-LP	R
9319	TRIP13	57707	KIAA1609	R
9319	TRIP13	57715	SEMA4G	R
9319	TRIP13	60491	NIF3L1	R
9319	TRIP13	64081	MAWBP	R
9319	TRIP13	79027	ZNF655	R
9319	TRIP13	79092	CARD14	R
9319	TRIP13	79754	ASB13	R
9319	TRIP13	81932	HDHD3	R
9319	TRIP13	83897	KRTAP3-2	R
9319	TRIP13	84171	LOXL4	R
9319	TRIP13	84708	LNX	R
9319	TRIP13	113878	DTX2	R
9319	TRIP13	115761	ARL11	R
9319	TRIP13	132158	GLYCTK	R
9319	TRIP13	200523	FLJ25369	R
9320	TRIP12	55729	ATF7IP	L
9322	TRIP10	10142	AKAP9	L
9322	TRIP10	23433	RHOQ	L
9322	TRIP10	51729	WBP11	R
9325	TRIP4	10973	ASCC3	L
9337	CNOT8	10766	TOB2	L
9337	CNOT8	10950	BTG3	L
9337	CNOT8	23019	CNOT1	L
9341	VAMP3	10134	BCAP31	L
9342	SNAP29	541468	C1orf190	R
9343	EFTUD2	10094	ARPC3	S
9343	EFTUD2	10594	PRPF8	L
9343	EFTUD2	24148	C20orf14	L
9343	EFTUD2	51280	GOLPH2	S
9349	RPL23	56647	BCCIP	R
9351	SLC9A3R2	23678	SGK3	L
9351	SLC9A3R2	25937	WWTR1	L
9355	LHX2	10370	CITED2	L
9355	LHX2	51132	RNF12	L
9356	SLC22A6	10513	APPBP2	R
9362	CPNE6	26289	AK5	S
9363	RAB33A	10313	RTN3	R
9363	RAB33A	10567	RABAC1	R

9363	RAB33A	57142	RTN4	R
9367	RAB9A	9375	TM9SF2	L
9367	RAB9A	10226	M6PRBP1	L
9367	RAB9A	10244	RABEPK	L
9368	SLC9A3R1	9498	SLC4A8	L
9368	SLC9A3R1	10413	YAP1	L
9368	SLC9A3R1	11216	AKAP10	L
9368	SLC9A3R1	23236	PLCB1	L
9368	SLC9A3R1	55824	PAG1	L
9370	ADIPOQ	79602	ADIPOR2	L
9371	KIF3B	22920	KIFAP3	L
9372	ZFYVE9	9631	NUP155	L
9372	ZFYVE9	9802	DAZAP2	L
9372	ZFYVE9	23111	SPG20	L
9372	ZFYVE9	23141	KIAA0692	L
9372	ZFYVE9	23613	PRKCBP1	L
9372	ZFYVE9	25870	SUMF2	L
9372	ZFYVE9	26994	RNF11	L
9372	ZFYVE9	55603	FAM46A	L
9372	ZFYVE9	55681	SCYL2	L
9372	ZFYVE9	55914	ERBB2IP	L
9372	ZFYVE9	79987	SVEP1	L
9372	ZFYVE9	84181	CHD6	L
9372	ZFYVE9	89941	RHOT2	L
9372	ZFYVE9	91544	UBXD5	L
9373	PLAA	10013	HDAC6	L
9377	COX5A	10980	COPS6	S
9378	NRXN1	26037	SIPA1L1	L
9379	NRXN2	57062	DDX24	S
9380	GRHPR	27257	LSM1	L
9382	COG1	25839	COG4	L
9382	COG1	83548	COG3	L
9388	LIPG	56915	EXOSC5	L
9391	WDR39	51280	GOLPH2	S
9391	WDR39	51647	FAM96B	R
9391	WDR39	84191	FAM96A	R
9391	WDR39	221016	CCDC7	R
9398	IGSF2	22827	SIAHBP1	S
9400	RECQL5	9479	MAPK8IP1	S
9400	RECQL5	9788	MTSS1	S
9400	RECQL5	10617	STAMBP	S
9400	RECQL5	11325	DDX42	S
9400	RECQL5	23421	ITGB3BP	S
9400	RECQL5	221442	LOC221442	S
9401	RECQL4	11098	PRSS23	S
9402	GRAP2	9846	GAB2	L
9402	GRAP2	10399	GNB2L1	L
9402	GRAP2	10617	STAMBP	RL
9402	GRAP2	10657	KHDRBS1	L
9402	GRAP2	11030	RBPMS	R
9402	GRAP2	11184	MAP4K1	L
9402	GRAP2	23582	CCNDBP1	L
9402	GRAP2	27040	LAT	L
9402	GRAP2	51043	ZBTB7B	R
9402	GRAP2	79656	C1orf165	R
9402	GRAP2	83755	KRTAP4-12	R
9402	GRAP2	139716	GAB3	L
9404	LPXN	9883	POM121	R
9404	LPXN	51317	PHF21A	R
9404	LPXN	55272	IMP3	R
9404	LPXN	79088	ZNF426	R
9410	WDR57	10594	PRPF8	L
9410	WDR57	24148	C20orf14	L
9413	C9orf61	9531	BAG3	R
9414	TJP2	30011	SH3KBP1	L
9414	TJP2	57530	CGN	L
9421	HAND1	9464	HAND2	L

9439	CRSP3	9969	THRAP1	L
9439	CRSP3	23038	WDTC1	L
9439	CRSP3	23054	NCOA6	L
9439	CRSP3	23369	PUM2	L
9446	GSTO1	9869	SETDB1	S
9446	GSTO1	10524	HTATIP	S
9446	GSTO1	57562	KIAA1377	S
9446	GSTO1	84060	DKFZP564O0523	S
9454	HOMER3	9456	HOMER1	L
9454	HOMER3	23045	KIAA0826	R
9454	HOMER3	140735	Dlc2	R
9455	HOMER2	116986	CENTG1	L
9456	HOMER1	23673	STX12	L
9456	HOMER1	50944	SHANK1	L
9456	HOMER1	51225	ABI3	R
9456	HOMER1	79098	C1orf116	R
9456	HOMER1	116986	CENTG1	L
9457	FHL5	10126	DNAL4	R
9457	FHL5	57576	KIF17	L
9459	ARHGEF6	28964	GIT1	L
9464	HAND2	10987	COPS5	L
9470	EIF4E2	25820	ARIH1	L
9470	EIF4E2	54474	KRT20	R
9470	EIF4E2	56478	EIF4ENIF1	R
9470	EIF4E2	83755	KRTAP4-12	R
9479	MAPK8IP1	80824	DUSP16	L
9482	STX8	10488	CREB3	R
9482	STX8	10490	VTI1B	R
9482	STX8	29062	HSPC049	S
9489	PGS1	11337	GABARAP	S
9491	PSMF1	10656	KHDRBS3	R
9491	PSMF1	11007	DIPA	R
9491	PSMF1	11051	NUDT21	R
9491	PSMF1	27316	RBMX	R
9491	PSMF1	29911	HOOK2	R
9491	PSMF1	55658	RNF126	R
9491	PSMF1	84528	PEPP-2	R
9491	PSMF1	125170	SMCR7	R
9491	PSMF1	222389	C10orf30	R
9493	KIF23	29127	RACGAP1	L
9496	TBX4	55603	FAM46A	L
9500	MAGED1	9867	PJA2	L
9500	MAGED1	22142	(null)	S
9500	MAGED1	51547	SIRT7	S
9500	MAGED1	51660	BRP44L	S
9500	MAGED1	64219	PJA1	L
9500	MAGED1	64582	GPR135	S
9501	RPH3AL	9545	RAB3D	L
9501	RPH3AL	9699	RIMS2	L
9501	RPH3AL	10497	UNC13B	L
9502	XAGE2	10919	EHMT2	R
9512	PMPCB	23203	PMPCA	L
9513	FXR2	10197	PSME3	R
9513	FXR2	10241	NDP52	R
9513	FXR2	10313	RTN3	R
9513	FXR2	10445	MCRS1	R
9513	FXR2	10534	SSSCA1	R
9513	FXR2	10567	RABAC1	R
9513	FXR2	10606	PAICS	R
9513	FXR2	11007	DIPA	R
9513	FXR2	11030	RBPMS	R
9513	FXR2	22934	RPIA	R
9513	FXR2	22978	NT5C2	R
9513	FXR2	23204	ARL6IP	R
9513	FXR2	23641	LDOC1	R
9513	FXR2	23650	TRIM29	R
9513	FXR2	26036	ZNF451	R

9513	FXR2	26999	CYFIP2	L
9513	FXR2	27316	RBMX	R
9513	FXR2	51421	AMOTL2	R
9513	FXR2	51451	LCMT1	R
9513	FXR2	51562	MBIP	R
9513	FXR2	54474	KRT20	R
9513	FXR2	54550	EFCBP2	R
9513	FXR2	55145	THAP1	R
9513	FXR2	56243	KIAA1217	R
9513	FXR2	57142	RTN4	R
9513	FXR2	64769	C1orf149	R
9513	FXR2	79036	MGC2749	R
9513	FXR2	80125	FLJ32855	R
9513	FXR2	80318	GKAP1	R
9513	FXR2	81628	TSC22D4	R
9513	FXR2	127557	ZBTB8	R
9513	FXR2	138046	LOC138046	R
9513	FXR2	151871	DPPA2	R
9513	FXR2	283518	KCNRG	R
9513	FXR2	386618	KCTD4	R
9513	FXR2	414157	C10orf62	R
9516	LITAF	55698	FLJ10324	S
9517	SPTLC2	10558	SPTLC1	L
9519	TBPL1	10226	M6PRBP1	S
9519	TBPL1	11021	RAB35	S
9519	TBPL1	51135	IRAK4	S
9519	TBPL1	54978	C2orf18	S
9519	TBPL1	55037	FLJ20758	S
9519	TBPL1	55324	ABCF3	S
9522	SCAMP1	10066	SCAMP2	L
9522	SCAMP1	11276	AP1GBP1	L
9531	BAG3	9802	DAZAP2	R
9531	BAG3	26353	HSPB8	R
9533	POLR1C	51082	POLR1D	R
9540	TP53I3	65991	FUNDC2	S
9540	TP53I3	197131	UBR1	S
9541	CIR	9612	NCOR2	L
9541	CIR	22938	SNW1	L
9545	RAB3D	9699	RIMS2	L
9545	RAB3D	117177	RAB3IP	L
9551	ATP5J2	23028	AOF2	S
9551	ATP5J2	55207	ARL10C	S
9551	ATP5J2	78987	CRELD1	S
9551	ATP5J2	339230	MGC16597	S
9564	BCAR1	10045	SH2D3A	L
9564	BCAR1	10278	EFS	S
9564	BCAR1	22142	(null)	S
9564	BCAR1	23607	CD2AP	L
9564	BCAR1	23645	PPP1R15A	S
9564	BCAR1	53826	FXYD6	S
9564	BCAR1	55823	VPS11	S
9564	BCAR1	80725	SNIP	L
9568	GPR51	22809	ATF5	L
9569	GTF2IRD1	54512	EXOSC4	L
9572	NR1D1	9611	NCOR1	L
9577	BRE	29086	HSPC142	R
9584	RNPC2	23054	NCOA6	L
9586	CREB5	10488	CREB3	L
9586	CREB5	10538	BATF	L
9586	CREB5	11016	ATF7	L
9586	CREB5	55509	SNFT	L
9586	CREB5	58487	ZF	L
9586	CREB5	60468	BACH2	L
9587	MAD2L1BP	9869	SETDB1	S
9587	MAD2L1BP	10524	HTATIP	S
9587	MAD2L1BP	55791	C1orf103	S
9587	MAD2L1BP	57562	KIAA1377	S

9587	MAD2L1BP	84966	IGSF21	S
9604	RNF14	55603	FAM46A	L
9610	RIN1	22800	RRAS2	L
9611	NCOR1	9734	HDAC9	L
9611	NCOR1	9759	HDAC4	L
9611	NCOR1	9975	NR1D2	L
9611	NCOR1	10009	ZBTB33	L
9611	NCOR1	10014	HDAC5	L
9611	NCOR1	10771	ZMYND11	L
9611	NCOR1	23013	SPEN	L
9611	NCOR1	23411	SIRT1	L
9611	NCOR1	23493	HEY2	L
9611	NCOR1	25942	SIN3A	L
9612	NCOR2	9759	HDAC4	L
9612	NCOR2	10014	HDAC5	L
9612	NCOR2	22938	SNW1	L
9612	NCOR2	23013	SPEN	L
9612	NCOR2	23411	SIRT1	L
9612	NCOR2	51564	HDAC7A	L
9612	NCOR2	83933	HDAC10	L
9616	RNF7	81618	ITM2C	R
9618	TRAF4	10295	BCKDK	L
9618	TRAF4	11138	TBC1D8	L
9618	TRAF4	27036	SIGLEC7	L
9618	TRAF4	54535	CCHCR1	L
9618	TRAF4	57473	GM632	L
9618	TRAF4	64750	SMURF2	L
9623	TCL1B	30000	TNPO2	S
9627	SNCAIP	10044	SH2D3C	S
9627	SNCAIP	51608	C7orf20	S
9628	RGS6	11075	STMN2	L
9628	RGS6	55929	DMAP1	L
9632	SEC24C	10483	SEC23B	R
9632	SEC24C	10484	SEC23A	L
9636	G1P2	11274	USP18	R
9638	FEZ1	9804	TOMM20	S
9638	FEZ1	10081	PDCD7	S
9638	FEZ1	10190	TXNDC9	S
9638	FEZ1	10519	CIB1	L
9638	FEZ1	27185	DISC1	L
9638	FEZ1	27336	HTATSF1	S
9638	FEZ1	51025	Magmas	S
9638	FEZ1	54919	FLJ20397	S
9638	FEZ1	56944	OLFML3	S
9638	FEZ1	57223	SMEK2	S
9638	FEZ1	79866	FLJ22624	S
9638	FEZ1	129563	MGC42174	S
9641	IKBKE	10010	TANK	L
9647	PPM1F	84140	FLJ13305	S
9659	PDE4DIP	57473	GM632	L
9685	ENTH	23062	GGA2	L
9694	KIAA0103	10328	COX4NB	R
9694	KIAA0103	51016	C14orf122	R
9699	RIMS2	10567	RABAC1	L
9699	RIMS2	11069	RAPGEF4	L
9699	RIMS2	115827	RAB3C	L
9704	DHX34	23649	POLA2	S
9706	ULK2	9869	SETDB1	S
9706	ULK2	23649	POLA2	S
9706	ULK2	51631	LUC7L2	S
9709	HERPUD1	57519	STARD9	S
9721	KIAA0514	10253	SPRY2	R
9721	KIAA0514	83755	KRTAP4-12	R
9721	KIAA0514	140735	Dlc2	R
9726	ZNF646	22981	KIAA0980	R
9728	KIAA0256	55729	ATF7IP	L
9729	KIAA0408	10174	SORBS3	R

9729	KIAA0408	11007	DIPA	R
9729	KIAA0408	29911	HOOK2	R
9729	KIAA0408	51225	ABI3	R
9729	KIAA0408	55722	Cep72	R
9729	KIAA0408	56159	TEX11	R
9729	KIAA0408	57596	KIAA1446	R
9729	KIAA0408	64170	CARD9	R
9733	SART3	10921	RNPS1	L
9734	HDAC9	9759	HDAC4	L
9734	HDAC9	23309	SIN3B	L
9734	HDAC9	23468	CBX5	L
9734	HDAC9	25942	SIN3A	L
9737	GPRASP1	10249	GLYAT	S
9737	GPRASP1	10342	TFG	S
9737	GPRASP1	10542	HBXIP	S
9737	GPRASP1	11075	STMN2	S
9737	GPRASP1	22823	MTF2	S
9737	GPRASP1	23557	SNAPAP	S
9737	GPRASP1	51236	C8orf30A	S
9737	GPRASP1	55700	RPRC1	S
9737	GPRASP1	55872	PBK	S
9737	GPRASP1	65265	C8orf33	S
9737	GPRASP1	79756	(null)	S
9741	LAPTM4A	10381	TUBB3	S
9744	CENTB1	25900	HOM-TES-103	R
9747	KIAA0738	10262	SF3B4	R
9747	KIAA0738	30008	EFEMP2	R
9757	MLL4	57473	GM632	L
9759	HDAC4	23468	CBX5	L
9759	HDAC4	54880	BCOR	L
9765	ZFYVE16	10043	TOM1	L
9765	ZFYVE16	26994	RNF11	L
9775	DDX48	51244	C3orf19	R
9778	KIAA0232	54978	C2orf18	S
9779	TBC1D5	11345	GABARAPL2	R
9785	DHX38	51362	CDC40	L
9789	SPCS2	50861	STMN3	S
9789	SPCS2	79736	C17orf42	S
9796	PHYHIP	10397	NDRG1	S
9796	PHYHIP	10419	SKB1	S
9796	PHYHIP	10450	PPIE	S
9796	PHYHIP	10980	COPS6	S
9796	PHYHIP	11161	C14orf1	S
9796	PHYHIP	20924	(null)	S
9796	PHYHIP	23140	ZZEF1	S
9796	PHYHIP	57104	PNPLA2	S
9796	PHYHIP	79885	HDAC11	S
9796	PHYHIP	81557	MAGED4	S
9796	PHYHIP	92342	C1orf156	S
9796	PHYHIP	112840	C14orf150	S
9796	PHYHIP	112950	MED8	S
9796	PHYHIP	131408	MGC21688	S
9796	PHYHIP	374923	(null)	S
9802	DAZAP2	10241	NDP52	R
9802	DAZAP2	10254	STAM2	R
9802	DAZAP2	10422	UBADC1	R
9802	DAZAP2	11030	RBPMS	R
9802	DAZAP2	11059	WWP1	R
9802	DAZAP2	11201	POLI	R
9802	DAZAP2	23543	RBM9	R
9802	DAZAP2	23578	(null)	R
9802	DAZAP2	26086	GPSM1	R
9802	DAZAP2	26574	AATF	R
9802	DAZAP2	51545	ZNF581	R
9802	DAZAP2	54165	DCUN1D1	R
9802	DAZAP2	54472	TOLLIP	R
9802	DAZAP2	54855	FAM46C	R

9802	DAZAP2	54932	FLJ20433	R
9802	DAZAP2	64750	SMURF2	L
9802	DAZAP2	79050	NOC4L	R
9802	DAZAP2	83459	DKFZP761H1710	R
9802	DAZAP2	84528	PEPP-2	R
9802	DAZAP2	84970	C1orf94	R
9802	DAZAP2	90060	JM11	R
9802	DAZAP2	116071	MGC20410	R
9802	DAZAP2	130617	ZFAND2B	R
9804	TOMM20	51535	PPHLN1	S
9804	TOMM20	56993	TOMM22	L
9804	TOMM20	57562	KIAA1377	S
9804	TOMM20	79577	CDC73	S
9807	IHPK1	23016	EXOSC7	R
9808	KIAA0087	54978	C2orf18	S
9810	RNF40	26036	ZNF451	R
9810	RNF40	84767	TRIM51	R
9814	SFI1	55698	FLJ10324	R
9817	KEAP1	55603	FAM46A	L
9818	NUPL1	23636	NUP62	L
9820	CUL7	23291	FBXW11	L
9825	SPATA2	55722	Cep72	R
9826	ARHGEF11	10672	GNA13	L
9832	KIAA0555	23650	TRIM29	R
9839	ZFHX1B	10980	COPS6	S
9842	PLEKHM1	25843	PREI3	S
9842	PLEKHM1	79756	(null)	S
9844	ELMO1	23210	PTDSR	L
9846	GAB2	27040	LAT	L
9849	ZNF518	55729	ATF7IP	L
9869	SETDB1	9921	RNF10	S
9869	SETDB1	10036	CHAF1A	L
9869	SETDB1	10140	TOB1	S
9869	SETDB1	10155	TRIM28	L
9869	SETDB1	10190	TXNDC9	S
9869	SETDB1	10301	DLEU1	S
9869	SETDB1	10571	SMA3	S
9869	SETDB1	10626	TRIM16	S
9869	SETDB1	10991	SLC38A3	S
9869	SETDB1	23028	AOF2	S
9869	SETDB1	23309	SIN3B	L
9869	SETDB1	23435	TARDBP	S
9869	SETDB1	23649	POLA2	S
9869	SETDB1	25843	PREI3	S
9869	SETDB1	25934	NIPSNAP3A	S
9869	SETDB1	25942	SIN3A	L
9869	SETDB1	28620	TRBV2	S
9869	SETDB1	29903	HSU79303	S
9869	SETDB1	51295	SITPEC	S
9869	SETDB1	54472	TOLLIP	S
9869	SETDB1	54810	GIPC2	S
9869	SETDB1	55274	PHF10	S
9869	SETDB1	55299	BXDC2	S
9869	SETDB1	55643	BTBD2	S
9869	SETDB1	55729	ATF7IP	L
9869	SETDB1	55734	ZFP64	S
9869	SETDB1	56144	PCDHA4	S
9869	SETDB1	56944	OLFML3	S
9869	SETDB1	57332	CBX8	S
9869	SETDB1	57664	PLEKHA4	S
9869	SETDB1	57761	TRIB3	S
9869	SETDB1	64776	C11orf1	S
9869	SETDB1	65080	MRPL44	S
9869	SETDB1	78987	CRELD1	S
9869	SETDB1	79753	SNIP1	L
9869	SETDB1	79756	(null)	S
9869	SETDB1	80228	C7orf19	S

9869	SETDB1	81890	QTRT1	S
9869	SETDB1	84256	FLYWCH1	S
9869	SETDB1	192111	MGC5352	S
9869	SETDB1	199745	THAP8	S
9869	SETDB1	375078	(null)	S
9871	SEC24D	10483	SEC23B	R
9873	FCHSD2	11007	DIPA	R
9873	FCHSD2	339965	FLJ25770	R
9874	TLK1	25842	ASF1A	R
9878	C14orf92	10114	HIPK3	L
9878	C14orf92	57473	GM632	L
9883	POM121	10087	COL4A3BP	R
9883	POM121	10551	AGR2	R
9883	POM121	11030	RBPMS	R
9883	POM121	55165	C10orf3	R
9883	POM121	56159	TEX11	R
9890	LPPR4	118924	C10orf4	S
9890	LPPR4	162952	(null)	S
9892	SNAP91	10376	K-ALPHA-1	L
9894	KIAA0683	10524	HTATIP	S
9905	RUTBC1	10656	KHDRBS3	S
9905	RUTBC1	54857	GDPD2	S
9905	RUTBC1	54874	FNBP1L	S
9905	RUTBC1	56902	LOC56902	S
9905	RUTBC1	56963	RGMA	S
9905	RUTBC1	67781	(null)	S
9911	TMCC2	53635	PTOV1	S
9912	KIAA0672	51155	HN1	S
9921	RNF10	10813	UTP14A	S
9921	RNF10	55791	C1orf103	S
9921	RNF10	60492	MDS025	S
9925	ZBTB5	11007	DIPA	R
9933	KIAA0020	79803	HPS6	S
9935	MAFB	60468	BACH2	L
9939	RBM8A	10250	SRRM1	L
9939	RBM8A	55110	FLJ10292	RL
9939	RBM8A	65110	UPF3A	L
9971	NR1H4	10891	PPARGC1A	L
9972	NUP153	10482	NXF1	L
9972	NUP153	11260	XPOT	L
9972	NUP153	23636	NUP62	L
9972	NUP153	56001	NXF2	L
9972	NUP153	57510	XPO5	L
9972	NUP153	59343	SENP2	L
9978	RBX1	84893	FBXO18	L
9984	THOC1	10189	THOC4	L
9984	THOC1	57187	THOC2	L
9984	THOC1	84321	THOC3	L
9985	REC8L1	27127	SMC1L2	L
9988	DMTF1	55729	ATF7IP	L
9993	DGCR2	64750	SMURF2	L
10010	TANK	11183	MAP4K5	L
10010	TANK	29110	TBK1	L
10010	TANK	80149	ZC3H12A	R
10011	SRA1	65264	FLJ13855	S
10013	HDAC6	22933	SIRT2	L
10013	HDAC6	54880	BCOR	L
10013	HDAC6	79885	HDAC11	L
10014	HDAC5	11337	GABARAP	S
10014	HDAC5	23468	CBX5	L
10014	HDAC5	55806	HR	L
10015	PDCD6IP	10016	PDCD6	L
10015	PDCD6IP	10268	RAMP3	S
10015	PDCD6IP	26994	RNF11	L
10015	PDCD6IP	29082	CHMP4A	L
10015	PDCD6IP	92421	CHMP4C	L
10015	PDCD6IP	128866	CHMP4B	L

10016	PDCD6	23578	(null)	RL
10016	PDCD6	23593	HEBP2	R
10016	PDCD6	30011	SH3KBP1	L
10016	PDCD6	93487	C14orf32	R
10016	PDCD6	131034	CPNE4	L
10016	PDCD6	221184	CPNE2	L
10036	CHAF1A	10915	TCERG1	L
10036	CHAF1A	10951	CBX1	L
10036	CHAF1A	23468	CBX5	L
10036	CHAF1A	79797	ZNF408	L
10039	PARP3	23075	SWAP70	L
10040	TOM1L1	10403	KNTC2	S
10040	TOM1L1	10630	PDPN	S
10040	TOM1L1	10658	CUGBP1	S
10040	TOM1L1	22931	RAB18	S
10040	TOM1L1	23190	UBXD2	S
10040	TOM1L1	23272	RAP140	S
10040	TOM1L1	23420	NOMO1	S
10040	TOM1L1	27043	PELP1	S
10040	TOM1L1	50813	COPS7A	S
10040	TOM1L1	55280	CWF19L1	S
10040	TOM1L1	57003	GK001	S
10040	TOM1L1	162952	(null)	S
10043	TOM1	54472	TOLLIP	L
10043	TOM1	57473	GM632	L
10044	SH2D3C	10278	EFS	R
10048	RANBP9	27185	DISC1	L
10048	RANBP9	28996	HIPK2	L
10051	SMC4L1	10592	SMC2L1	L
10053	AP1M2	10618	TGOLN2	L
10054	UBA2	10055	SAE1	R
10054	UBA2	55299	BXDC2	S
10059	DNM1L	23410	SIRT3	S
10063	COX17	10980	COPS6	S
10063	COX17	11161	C14orf1	S
10063	COX17	55791	C1orf103	S
10063	COX17	84056	KATNAL1	R
10063	COX17	84060	DKFZP564O0523	S
10063	COX17	222019	(null)	S
10066	SCAMP2	10425	ARIH2	S
10069	C21orf6	10912	GADD45G	R
10069	C21orf6	11269	DDX19B	S
10073	RNUT1	23285	KIAA1107	S
10081	PDCD7	55660	FNBP3	L
10083	USH1C	64072	CDH23	L
10083	USH1C	124590	USH1G	L
10084	PQBP1	11161	C14orf1	S
10084	PQBP1	51003	MED31	S
10084	PQBP1	51729	WBP11	L
10084	PQBP1	55791	C1orf103	S
10087	COL4A3BP	10313	RTN3	R
10087	COL4A3BP	23421	ITGB3BP	R
10087	COL4A3BP	57142	RTN4	R
10093	ARPC4	10094	ARPC3	L
10093	ARPC4	10097	ACTR2	L
10093	ARPC4	10109	ARPC2	L
10093	ARPC4	51497	TH1L	S
10093	ARPC4	55819	RNF130	S
10093	ARPC4	81873	ARPC5L	S
10094	ARPC3	10095	ARPC1B	L
10094	ARPC3	10096	ACTR3	L
10094	ARPC3	10097	ACTR2	L
10094	ARPC3	10109	ARPC2	L
10094	ARPC3	55258	FLJ10916	S
10094	ARPC3	55593	OTUD5	S
10094	ARPC3	116985	CENTD2	S
10095	ARPC1B	10097	ACTR2	L

10095	ARPC1B	10109	ARPC2	L
10096	ACTR3	10109	ARPC2	L
10096	ACTR3	10163	WASF2	L
10096	ACTR3	10810	WASF3	L
10097	ACTR2	10109	ARPC2	L
10097	ACTR2	10163	WASF2	L
10097	ACTR2	10788	IQGAP2	L
10111	RAD50	54386	TERF2IP	L
10112	KIF20A	51560	RAB6B	L
10114	HIPK3	26508	HEYL	L
10114	HIPK3	51427	ZNF588	L
10114	HIPK3	55679	LIMS2	L
10114	HIPK3	64689	GORASP1	L
10126	DNAL4	140735	Dlc2	R
10127	ZNF263	29922	NME7	R
10127	ZNF263	30008	EFEMP2	R
10127	ZNF263	51282	SCAND1	R
10127	ZNF263	51324	SPG21	R
10127	ZNF263	51684	SUFU	R
10127	ZNF263	55663	ZNF446	R
10127	ZNF263	79666	PLEKHF2	R
10127	ZNF263	90933	TRIM41	R
10128	LRPPRC	23593	HEBP2	L
10128	LRPPRC	27443	CECR2	L
10128	LRPPRC	55201	BPY2IP1	L
10133	OPTN	26994	RNF11	L
10133	OPTN	51019	CGI-116	R
10133	OPTN	79735	TBC1D17	R
10140	TOB1	22955	SCMH1	S
10142	AKAP9	10426	TUBGCP3	L
10142	AKAP9	10460	TACC3	L
10142	AKAP9	23048	FNBP1	L
10152	ABI2	11086	ADAM29	L
10152	ABI2	30011	SH3KBP1	L
10152	ABI2	51019	CGI-116	R
10152	ABI2	53616	ADAM22	L
10152	ABI2	54474	KRT20	R
10152	ABI2	90410	IFT20	R
10155	TRIM28	10168	ZNF197	L
10155	TRIM28	10951	CBX1	L
10155	TRIM28	23468	CBX5	L
10156	RASA4	57136	C20orf3	S
10156	RASA4	90861	C16orf34	S
10158	PDZK1IP1	10813	UTP14A	S
10158	PDZK1IP1	10980	COPS6	S
10163	WASF2	10458	BAIAP2	L
10163	WASF2	29993	PACSIN1	L
10169	SERF2	10197	PSME3	R
10169	SERF2	11030	RBPMS	R
10169	SERF2	51497	TH1L	S
10169	SERF2	84528	PEPP-2	R
10174	SORBS3	10278	EFS	R
10174	SORBS3	10521	DDX17	R
10174	SORBS3	27316	RBMX	R
10174	SORBS3	54507	TSRC1	R
10174	SORBS3	56243	KIAA1217	R
10174	SORBS3	63948	DMRTB1	R
10174	SORBS3	79869	FLJ12529	R
10179	RBM7	10363	HMG20A	R
10179	RBM7	10656	KHDRBS3	R
10179	RBM7	11007	DIPA	R
10179	RBM7	27316	RBMX	R
10181	RBM5	55791	C1orf103	S
10188	TNK2	10490	VTI1B	S
10188	TNK2	55846	MDS028	S
10188	TNK2	124925	SEZ6	S
10188	TNK2	255426	RASGEF1C	S

10189	THOC4	10212	DDX39	L
10189	THOC4	57187	THOC2	L
10189	THOC4	65110	UPF3A	L
10189	THOC4	84321	THOC3	L
10190	TXNDC9	10989	IMMT	S
10190	TXNDC9	28964	GIT1	S
10190	TXNDC9	57562	KIAA1377	S
10197	PSME3	11033	CENTA1	S
10197	PSME3	54819	ZCCHC10	R
10197	PSME3	79446	WDR25	R
10197	PSME3	79873	NUDT18	R
10197	PSME3	284058	LOC284058	R
10199	MPHOSPH10	92856	IMP4	L
10200	MPHOSPH6	11161	C14orf1	S
10200	MPHOSPH6	11244	ZHX1	S
10200	MPHOSPH6	26574	AATF	L
10200	MPHOSPH6	51429	SNX9	L
10200	MPHOSPH6	55791	C1orf103	S
10200	MPHOSPH6	64965	MRPS9	L
10200	MPHOSPH6	83658	DNCL2A	L
10200	MPHOSPH6	84060	DKFZP564O0523	S
10200	MPHOSPH6	93663	ARHGAP18	L
10204	NUTF2	51631	LUC7L2	S
10204	NUTF2	79904	FLJ11710	S
10207	INADL	57555	NLGN2	L
10209	EIF1	93145	OLFM2	S
10210	TOPORS	79753	SNIP1	L
10211	FLOT1	10580	SORBS1	L
10211	FLOT1	51280	GOLPH2	S
10211	FLOT1	58157	NGB	L
10212	DDX39	84324	CIP29	R
10214	SSX3	117178	SSX2IP	L
10219	KLRG1	23484	LEPROTL1	R
10228	STX6	57120	GOPC	L
10235	RASGRP2	57540	PTCHD2	S
10235	RASGRP2	79607	FLJ21103	S
10241	NDP52	10922	FASTK	R
10241	NDP52	11143	MYST2	R
10241	NDP52	11170	TU3A	R
10241	NDP52	11201	POLI	R
10241	NDP52	11345	GABARAPL2	R
10241	NDP52	23578	(null)	R
10241	NDP52	23710	GABARAPL1	R
10241	NDP52	25804	LSM4	R
10241	NDP52	26036	ZNF451	R
10241	NDP52	26994	RNF11	L
10241	NDP52	27132	CPNE7	R
10241	NDP52	27301	APEX2	R
10241	NDP52	27332	ZNF638	R
10241	NDP52	50628	GEMIN4	L
10241	NDP52	51224	TCEB3B	R
10241	NDP52	51588	PIAS4	R
10241	NDP52	55388	MCM10	R
10241	NDP52	55684	C9orf86	R
10241	NDP52	55861	C20orf35	R
10241	NDP52	58155	PTBP2	R
10241	NDP52	79025	MGC5356	R
10241	NDP52	79088	ZNF426	R
10241	NDP52	79696	C14orf140	R
10241	NDP52	79797	ZNF408	R
10241	NDP52	80028	FBXL18	R
10241	NDP52	80125	FLJ32855	R
10241	NDP52	84080	C16orf48	R
10241	NDP52	84708	LNX	R
10241	NDP52	84759	PCGF1	R
10241	NDP52	85302	FBF1	R
10241	NDP52	91056	DKFZp761E198	R

10241	NDP52	94039	ZNF101	R
10241	NDP52	112858	TP53RK	R
10241	NDP52	114822	RHPN1	R
10241	NDP52	164127	C1orf65	R
10241	NDP52	284058	LOC284058	R
10243	GPHN	11337	GABARAP	L
10243	GPHN	23229	ARHGEF9	L
10243	GPHN	23766	GABARAPL3	L
10243	GPHN	140735	Dlc2	L
10248	POP7	10556	RPP30	L
10248	POP7	10557	RPP38	L
10248	POP7	10799	RPP40	L
10248	POP7	54913	RPP25	L
10249	GLYAT	84060	DKFZP564O0523	S
10250	SRRM1	10482	NXF1	L
10250	SRRM1	10921	RNPS1	L
10250	SRRM1	23524	SRRM2	L
10250	SRRM1	26019	UPF2	L
10250	SRRM1	65109	UPF3B	L
10253	SPRY2	23624	CBLC	L
10253	SPRY2	54507	TSRC1	R
10253	SPRY2	83755	KRTAP4-12	R
10253	SPRY2	84767	TRIM51	R
10254	STAM2	10617	STAMBP	RL
10254	STAM2	26994	RNF11	L
10254	STAM2	54464	XRN1	L
10254	STAM2	83746	L3MBTL2	R
10256	CNKSR1	114822	RHPN1	L
10262	SF3B4	10992	SF3B2	R
10262	SF3B4	26039	SS18L1	R
10266	RAMP2	11318	ADMR	L
10266	RAMP2	79924	ADM2	L
10267	RAMP1	79924	ADM2	L
10268	RAMP3	11318	ADMR	L
10268	RAMP3	79924	ADM2	L
10273	STUB1	10657	KHDRBS1	S
10278	EFS	79090	TRAPPC6A	R
10282	BET1	83878	USHBP1	R
10284	SAP18	10320	ZNFN1A1	L
10284	SAP18	10474	TADA3L	S
10284	SAP18	51684	SUFU	L
10284	SAP18	79159	MGC3731	S
10285	SMNDC1	23020	ASCC3L1	L
10287	RGS19	10755	GIPC1	L
10287	RGS19	28962	OSTM1	L
10291	SF3A1	10915	TCERG1	L
10291	SF3A1	10946	SF3A3	L
10297	APC2	22924	MAPRE3	L
10298	PAK4	54815	GATAD2A	S
10300	KATNB1	11104	KATNA1	L
10301	DLEU1	10383	TUBB2	S
10301	DLEU1	10524	HTATIP	S
10301	DLEU1	10813	UTP14A	S
10301	DLEU1	10980	COPS6	S
10301	DLEU1	51003	MED31	S
10301	DLEU1	55207	ARL10C	S
10301	DLEU1	55324	ABCF3	S
10301	DLEU1	57562	KIAA1377	S
10301	DLEU1	60492	MDS025	S
10301	DLEU1	197131	UBR1	S
10302	SNAPC5	10538	BATF	R
10302	SNAPC5	79184	CXorf53	R
10313	RTN3	57142	RTN4	R
10313	RTN3	79666	PLEKHF2	R
10313	RTN3	84067	DKFZP566M1046	R
10318	TNIP1	26994	RNF11	L
10318	TNIP1	286514	MAGEB18	R

10320	ZNFN1A1	22807	ZNFN1A2	L
10320	ZNFN1A1	23309	SIN3B	L
10320	ZNFN1A1	25942	SIN3A	L
10320	ZNFN1A1	64375	ZNFN1A4	L
10327	AKR1A1	54512	EXOSC4	L
10342	TFG	11161	C14orf1	S
10342	TFG	54622	ARFRP2	S
10342	TFG	57562	KIAA1377	S
10360	NPM3	57562	KIAA1377	S
10362	HMG20B	10579	TACC2	S
10362	HMG20B	11007	DIPA	R
10362	HMG20B	24137	KIF4A	L
10363	HMG20A	54997	TSC	R
10363	HMG20A	55110	FLJ10292	R
10365	KLF2	11059	WWP1	L
10381	TUBB3	10573	MRPL28	S
10381	TUBB3	10657	KHDRBS1	S
10381	TUBB3	11337	GABARAP	S
10381	TUBB3	23231	KIAA0746	S
10381	TUBB3	55023	PHIP	S
10381	TUBB3	57662	KIAA1543	S
10381	TUBB3	91266	(null)	S
10381	TUBB3	171546	C14orf147	S
10381	TUBB3	196383	MGC7036	S
10381	TUBB3	284004	FLJ23825	S
10381	TUBB3	284169	(null)	S
10391	CORO2B	162952	(null)	S
10392	CARD4	84674	CARD6	L
10399	GNB2L1	11269	DDX19B	S
10399	GNB2L1	22821	RASA3	L
10399	GNB2L1	26986	PABPC1	L
10399	GNB2L1	28965	SLC27A6	S
10399	GNB2L1	51280	GOLPH2	S
10399	GNB2L1	81628	TSC22D4	R
10401	PIAS3	55660	FNBP3	L
10401	PIAS3	55729	ATF7IP	L
10403	KNTC2	26258	PLDN	R
10403	KNTC2	51019	CGI-116	R
10403	KNTC2	51421	AMOTL2	R
10403	KNTC2	57658	CALCOCO1	R
10403	KNTC2	59349	KLHL12	R
10403	KNTC2	83878	USHBP1	R
10411	RAPGEF3	22800	RRAS2	L
10413	YAP1	10971	YWHAQ	L
10413	YAP1	23558	WBP2	L
10413	YAP1	23559	WBP1	L
10419	SKB1	29789	PTD004	S
10422	UBADC1	11052	CPSF6	R
10425	ARIH2	10524	HTATIP	S
10425	ARIH2	10813	UTP14A	S
10425	ARIH2	27436	EML4	S
10425	ARIH2	29062	HSPC049	S
10425	ARIH2	57562	KIAA1377	S
10425	ARIH2	116985	CENTD2	S
10425	ARIH2	147791	LOC147791	S
10426	TUBGCP3	27175	TUBG2	L
10427	SEC24B	10484	SEC23A	L
10430	NIFIE14	51225	ABI3	R
10432	RBM14	23054	NCOA6	L
10435	CDC42EP2	23433	RHOQ	L
10436	C2F	10657	KHDRBS1	S
10436	C2F	24142	NAT6	S
10436	C2F	54977	FLJ20551	S
10440	TIMM17A	10469	TIMM44	L
10445	MCRS1	11007	DIPA	R
10445	MCRS1	11157	LSM6	L
10445	MCRS1	29079	MED4	R

10445	MCRS1	51019	CGI-116	R
10445	MCRS1	51729	WBP11	R
10445	MCRS1	54984	PINX1	L
10445	MCRS1	65109	UPF3B	L
10445	MCRS1	79036	MGC2749	R
10445	MCRS1	80817	KIAA1712	R
10445	MCRS1	138046	LOC138046	R
10450	PPIE	56949	XAB2	R
10454	MAP3K7IP1	257397	TAB3	L
10456	HAX1	10788	IQGAP2	L
10456	HAX1	10971	YWHAQ	L
10458	BAIAP2	11161	C14orf1	S
10458	BAIAP2	22941	SHANK2	L
10458	BAIAP2	50944	SHANK1	L
10458	BAIAP2	51517	NCKIPSD	R
10458	BAIAP2	64130	LIN7B	L
10459	MAD2L2	51455	REV1L	L
10466	COG5	25839	COG4	L
10468	FST	83729	INHBE	L
10474	TADA3L	83440	ADPGK	S
10474	TADA3L	83641	C10orf45	S
10474	TADA3L	112869	LOC112869	R
10476	ATP5H	51608	C7orf20	S
10482	NXF1	29107	NXT1	RL
10482	NXF1	30000	TNPO2	L
10482	NXF1	55916	NXT2	L
10482	NXF1	55998	NXF5	L
10482	NXF1	65110	UPF3A	L
10486	CAP2	10487	CAP1	L
10486	CAP2	55660	FNBP3	L
10488	CREB3	10513	APPBP2	R
10488	CREB3	55509	SNFT	L
10488	CREB3	84699	CREB3L3	L
10488	CREB3	90993	CREB3L1	L
10488	CREB3	148327	CREB3L4	L
10489	LRRC41	11030	RBPMS	R
10492	SYNCRIP	29974	ACF	L
10492	SYNCRIP	127833	SYT2	L
10494	STK25	11235	PDCD10	R
10495	COVA1	55068	FLJ10094	R
10497	UNC13B	114034	TOE1	S
10513	APPBP2	10607	TBL3	R
10513	APPBP2	23208	SYT11	R
10513	APPBP2	23212	RRS1	R
10513	APPBP2	51510	CHMP5	R
10513	APPBP2	79594	C1orf166	R
10513	APPBP2	81029	WNT5B	R
10513	APPBP2	84219	WDR24	R
10513	APPBP2	113655	MFSD3	R
10513	APPBP2	170261	ZCCHC12	R
10513	APPBP2	220686	LOC220686	R
10513	APPBP2	221458	C6orf102	R
10513	APPBP2	493861	EID3	R
10519	CIB1	10769	PLK2	L
10519	CIB1	51366	EDD1	L
10521	DDX17	51729	WBP11	R
10521	DDX17	84708	LNX	R
10522	DEAF1	26173	DKFZP586J0619	S
10522	DEAF1	84164	ASCC2	S
10524	HTATIP	10574	CCT7	S
10524	HTATIP	10621	POLR3F	S
10524	HTATIP	23557	SNAPAP	S
10524	HTATIP	29903	HSU79303	S
10524	HTATIP	51059	LOC51059	S
10524	HTATIP	51608	C7orf20	S
10524	HTATIP	55755	CDK5RAP2	S
10524	HTATIP	56901	LOC56901	S

10524	HTATIP	57332	CBX8	S
10524	HTATIP	57664	PLEKHA4	S
10524	HTATIP	57761	TRIB3	S
10524	HTATIP	65990	C16orf24	S
10524	HTATIP	78987	CRELD1	S
10524	HTATIP	79676	FLJ13491	S
10524	HTATIP	79760	GEMIN7	S
10524	HTATIP	266812	NAP1L5	S
10524	HTATIP	284169	(null)	S
10524	HTATIP	339448	LOC339448	S
10524	HTATIP	359845	MGC45871	S
10529	NEBL	84665	MYPN	L
10534	SSSCA1	22948	CCT5	R
10534	SSSCA1	51534	C6orf55	R
10534	SSSCA1	79025	MGC5356	R
10534	SSSCA1	79050	NOC4L	R
10534	SSSCA1	79090	TRAPPC6A	R
10534	SSSCA1	80022	MYO15B	R
10534	SSSCA1	80125	FLJ32855	R
10534	SSSCA1	151254	ALS2CR11	R
10537	UBD	51667	NYREN18	L
10538	BATF	22809	ATF5	L
10538	BATF	55509	SNFT	L
10539	TXNL2	25865	PRKD2	L
10539	TXNL2	30008	EFEMP2	R
10539	TXNL2	54507	TSRC1	R
10539	TXNL2	57019	CIAPIN1	R
10539	TXNL2	57473	GM632	L
10539	TXNL2	65220	NADK	R
10539	TXNL2	83755	KRTAP4-12	R
10539	TXNL2	118924	C10orf4	S
10539	TXNL2	284004	FLJ23825	S
10540	DCTN2	23299	BICD2	L
10540	DCTN2	51280	GOLPH2	S
10540	DCTN2	65108	MARCKSL1	L
10541	ANP32B	25885	POLR1A	L
10542	HBXIP	10813	UTP14A	S
10542	HBXIP	28964	GIT1	S
10542	HBXIP	55791	C1orf103	S
10542	HBXIP	57562	KIAA1377	S
10542	HBXIP	84232	MAF1	S
10550	ARL6IP5	84100	ARL6	L
10551	AGR2	29117	BRD7	S
10551	AGR2	51003	MED31	S
10551	AGR2	60492	MDS025	S
10556	RPP30	10557	RPP38	L
10556	RPP30	10775	POP4	L
10556	RPP30	10799	RPP40	L
10556	RPP30	10940	POP1	L
10556	RPP30	11102	RPP14	L
10557	RPP38	10775	POP4	L
10557	RPP38	10799	RPP40	L
10557	RPP38	10940	POP1	L
10563	CXCL13	51554	CCRL1	L
10564	ARFGEF2	10565	ARFGEF1	L
10564	ARFGEF2	55660	FNBP3	L
10566	AKAP3	10672	GNA13	L
10567	RABAC1	11266	DUSP12	R
10567	RABAC1	22800	RRAS2	L
10567	RABAC1	29907	SNX15	R
10567	RABAC1	51324	SPG21	R
10567	RABAC1	51534	C6orf55	R
10567	RABAC1	53916	RAB4B	L
10567	RABAC1	55093	C8orf32	R
10567	RABAC1	56997	CABC1	R
10567	RABAC1	57403	RAB22A	L
10567	RABAC1	60491	NIF3L1	R

10567	RABAC1	79666	PLEKHF2	R
10567	RABAC1	79873	NUDT18	R
10567	RABAC1	84067	DKFZP566M1046	R
10567	RABAC1	84708	LNX	R
10567	RABAC1	125170	SMCR7	R
10569	SLU7	11007	DIPA	R
10569	SLU7	53938	PPIL3	R
10570	DPYSL4	56896	DPYSL5	L
10571	SMA3	222019	(null)	S
10572	SIVA	81488	GRINL1A	S
10574	CCT7	51003	MED31	S
10577	NPC2	79947	DHDDS	L
10580	SORBS1	57556	SEMA6A	L
10581	IFITM2	55037	FLJ20758	S
10581	IFITM2	65110	UPF3A	L
10585	POMT1	29954	POMT2	L
10588	MTHFS	81628	TSC22D4	R
10589	DRAP1	51616	TAF9L	R
10589	DRAP1	54107	POLE3	R
10589	DRAP1	55160	ARHGEF10L	S
10594	PRPF8	24148	C20orf14	L
10602	CDC42EP3	23433	RHOQ	L
10605	PAIP1	26986	PABPC1	L
10606	PAICS	25843	PREI3	S
10606	PAICS	79873	NUDT18	R
10606	PAICS	79959	C18orf9	R
10606	PAICS	84708	LNX	R
10607	TBL3	50618	ITSN2	S
10607	TBL3	81605	C9orf74	S
10608	MXD4	140290	TCP10L	L
10611	PDLIM5	56658	TRIM39	R
10615	SPAG5	23557	SNAPAP	S
10618	TGOLN2	25865	PRKD2	L
10618	TGOLN2	84687	PPP1R9B	L
10621	POLR3F	11161	C14orf1	S
10621	POLR3F	55791	C1orf103	S
10621	POLR3F	112840	C14orf150	S
10628	TXNIP	64750	SMURF2	L
10640	SEC10L1	149371	EXOC8	L
10656	KHDRBS3	10657	KHDRBS1	L
10656	KHDRBS3	22893	BAHD1	R
10656	KHDRBS3	27316	RBMX	R
10656	KHDRBS3	79797	ZNF408	R
10656	KHDRBS3	79873	NUDT18	R
10656	KHDRBS3	80125	FLJ32855	R
10656	KHDRBS3	84708	LNX	R
10656	KHDRBS3	202559	KHDRBS2	R
10657	KHDRBS1	23360	FNBP4	L
10657	KHDRBS1	91746	YT521	L
10657	KHDRBS1	284169	(null)	S
10659	CUGBP2	29974	ACF	L
10670	RRAGA	55035	NOL8	L
10670	RRAGA	58528	RRAGD	L
10670	RRAGA	64121	RRAGC	RL
10672	GNA13	23365	ARHGEF12	L
10673	TNFSF13B	23495	TNFRSF13B	L
10673	TNFSF13B	115650	TNFRSF13C	L
10673	TNFSF13B	407977	TNFSF12-TNFSF13	L
10675	CSPG5	57120	GOPC	L
10681	GNB5	93145	OLFM2	S
10691	GMEB1	55729	ATF7IP	L
10691	GMEB1	79753	SNIP1	L
10728	PTGES3	22820	COPG	L
10728	PTGES3	26958	COPG2	L
10733	PLK4	23281	KIAA0774	R
10733	PLK4	54855	FAM46C	R
10734	STAG3	27127	SMC1L2	L

10742	RAI2	54557	SGTB	R
10743	RAI1	54997	TSC	R
10749	KIF1C	11099	PTPN21	L
10750	GRAP	27040	LAT	L
10755	GIPC1	23095	KIF1B	L
10755	GIPC1	54910	SEMA4C	L
10755	GIPC1	79797	ZNF408	L
10766	TOB2	29883	CNOT7	L
10771	ZMYND11	56946	C11orf30	L
10772	FUSIP1	29896	TRA2A	L
10773	ZNF482	55729	ATF7IP	L
10775	POP4	10940	POP1	L
10775	POP4	51367	POP5	L
10775	POP4	54913	RPP25	L
10783	NEK6	11007	DIPA	R
10783	NEK6	54550	EFCBP2	R
10783	NEK6	91754	NEK9	L
10787	NCKAP1	23268	DNMBP	L
10801	SEPT9	10890	RAB10	S
10801	SEPT9	23157	SEPT6	L
10807	SDCCAG3	28964	GIT1	S
10813	UTP14A	11007	DIPA	R
10813	UTP14A	22981	KIAA0980	R
10813	UTP14A	23641	LDOC1	R
10813	UTP14A	27258	LSM3	S
10813	UTP14A	29903	HSU79303	S
10813	UTP14A	29911	HOOK2	R
10813	UTP14A	51319	RSRC1	S
10813	UTP14A	55274	PHF10	S
10813	UTP14A	55339	WDR33	S
10813	UTP14A	64129	TINAGL1	S
10813	UTP14A	64400	FTS	S
10813	UTP14A	80321	Cep70	R
10846	PDE10A	10885	WDR3	S
10847	SRCAP	79065	ATG9A	S
10856	RUVBL2	25911	RP11-529I10.4	R
10881	ACTL7A	26136	TES	L
10898	CPSF4	56996	SLC12A9	L
10898	CPSF4	81608	FIP1L1	R
10900	RPIP8	29844	TFPT	R
10907	TXNL4A	121268	RHEBL1	R
10912	GADD45G	90480	GADD45GIP1	L
10913	EDAR	128178	EDARADD	L
10915	TCERG1	10946	SF3A3	L
10915	TCERG1	10992	SF3B2	L
10915	TCERG1	11338	U2AF2	L
10915	TCERG1	23451	SF3B1	L
10919	EHMT2	11278	KLF12	R
10919	EHMT2	26148	C10orf12	R
10919	EHMT2	57473	GM632	L
10919	EHMT2	80125	FLJ32855	R
10919	EHMT2	80764	THAP7	R
10919	EHMT2	84708	LNX	R
10919	EHMT2	84726	KIAA0515	R
10922	FASTK	11030	RBPMS	R
10923	SUB1	11033	CENTA1	L
10923	SUB1	11036	ALF	L
10926	ASK	11200	CHEK2	L
10926	ASK	51691	LSM8	L
10928	RALBP1	29911	HOOK2	R
10933	MORF4L1	114932	MRFAP1L1	R
10940	POP1	54913	RPP25	L
10945	KDELR1	55738	ARFGAP1	L
10946	SF3A3	11007	DIPA	R
10946	SF3A3	11033	CENTA1	L
10951	CBX1	11335	CBX3	L
10951	CBX1	23468	CBX5	L

10951	CBX1	55791	C1orf103	S
10951	CBX1	56946	C11orf30	L
10952	SEC61B	11231	SEC63	L
10952	SEC61B	84100	ARL6	L
10953	TOMM34	55929	DMAP1	L
10956	OS9	57473	GM632	L
10963	STIP1	11140	CDC37	L
10963	STIP1	51182	HSPA14	L
10970	CKAP4	84164	ASCC2	S
10971	YWHAQ	60491	NIF3L1	L
10979	PLEKHC1	54751	FBLIM1	L
10980	COPS6	11243	PMF1	S
10980	COPS6	26100	WIPI-2	S
10980	COPS6	26292	MYCBP	S
10980	COPS6	29903	HSU79303	S
10980	COPS6	55643	BTBD2	S
10980	COPS6	55700	RPRC1	S
10980	COPS6	57761	TRIB3	S
10980	COPS6	78987	CRELD1	S
10980	COPS6	79641	FLJ22386	S
10980	COPS6	79756	(null)	S
10980	COPS6	80228	C7orf19	S
10980	COPS6	81890	QTRT1	S
10980	COPS6	83931	STK40	S
10980	COPS6	84103	C4orf17	S
10980	COPS6	129563	MGC42174	S
10980	COPS6	339448	LOC339448	S
10980	COPS6	375078	(null)	S
10982	MAPRE2	22924	MAPRE3	R
10982	MAPRE2	60491	NIF3L1	R
10987	COPS5	11236	RNF139	L
10989	IMMT	11079	RER1	S
10989	IMMT	22948	CCT5	S
10989	IMMT	23028	AOF2	S
10989	IMMT	23557	SNAPAP	S
10989	IMMT	23659	LYPLA3	S
10989	IMMT	25934	NIPSNAP3A	S
10989	IMMT	29070	HSPC065	S
10989	IMMT	51295	SITPEC	S
10989	IMMT	51566	ARMCX3	S
10989	IMMT	51593	ARS2	S
10989	IMMT	54949	FLJ20487	S
10989	IMMT	55355	DKFZp762E1312	S
10989	IMMT	64400	FTS	S
10989	IMMT	65080	MRPL44	S
10989	IMMT	65990	C16orf24	S
10989	IMMT	80007	C10orf88	S
10989	IMMT	81551	STMN4	S
10989	IMMT	84164	ASCC2	S
10992	SF3B2	23451	SF3B1	L
11007	DIPA	11067	C10orf10	R
11007	DIPA	11170	TU3A	R
11007	DIPA	23265	EXOC7	R
11007	DIPA	23270	TSPYL4	R
11007	DIPA	23641	LDOC1	R
11007	DIPA	25843	PREI3	R
11007	DIPA	26150	RIBC2	R
11007	DIPA	26152	ZNF337	R
11007	DIPA	26240	FAM50B	R
11007	DIPA	27018	NGFRAP1	R
11007	DIPA	27229	76P	R
11007	DIPA	27301	APEX2	R
11007	DIPA	27332	ZNF638	R
11007	DIPA	51138	COPS4	R
11007	DIPA	51207	DUSP13	R
11007	DIPA	51562	MBIP	R
11007	DIPA	51760	SYT17	R

11007	DIPA	53371	NUP54	R
11007	DIPA	54149	C21orf91	R
11007	DIPA	54474	KRT20	R
11007	DIPA	54883	FLJ20291	R
11007	DIPA	54906	C10orf18	R
11007	DIPA	54927	CHCHD3	R
11007	DIPA	55109	AGGF1	R
11007	DIPA	55122	C6orf166	R
11007	DIPA	55209	FLJ10707	R
11007	DIPA	55233	MOBK1B	R
11007	DIPA	55285	FLJ11016	R
11007	DIPA	55367	LRDD	R
11007	DIPA	55388	MCM10	R
11007	DIPA	55565	LOC55565	R
11007	DIPA	55813	C17orf40	R
11007	DIPA	55816	DOK5	R
11007	DIPA	55885	LMO3	R
11007	DIPA	57326	PBXIP1	R
11007	DIPA	58500	ZNF250	R
11007	DIPA	60491	NIF3L1	R
11007	DIPA	60493	FLJ13149	R
11007	DIPA	64112	MOAP1	R
11007	DIPA	64170	CARD9	R
11007	DIPA	64376	ZNFN1A5	R
11007	DIPA	64769	C1orf149	R
11007	DIPA	79005	SCNM1	R
11007	DIPA	79025	MGC5356	R
11007	DIPA	79088	ZNF426	R
11007	DIPA	79571	GCC1	R
11007	DIPA	79666	PLEKHF2	R
11007	DIPA	79696	C14orf140	R
11007	DIPA	79843	FLJ22746	R
11007	DIPA	80125	FLJ32855	R
11007	DIPA	80256	KIAA1539	R
11007	DIPA	80321	Cep70	R
11007	DIPA	80764	THAP7	R
11007	DIPA	84080	C16orf48	R
11007	DIPA	84260	MGC10854	R
11007	DIPA	84310	MGC11257	R
11007	DIPA	84445	LZTS2	R
11007	DIPA	84707	BEX2	R
11007	DIPA	84708	LNX	R
11007	DIPA	85302	FBF1	R
11007	DIPA	90060	JM11	R
11007	DIPA	92595	MGC13138	R
11007	DIPA	94121	SYTL4	R
11007	DIPA	138046	LOC138046	R
11007	DIPA	147687	ZNF417	R
11007	DIPA	148223	C19orf25	R
11007	DIPA	149371	EXOC8	R
11007	DIPA	151254	ALS2CR11	R
11007	DIPA	151613	TTC14	R
11007	DIPA	153733	MGC39633	R
11007	DIPA	157773	C8orf48	R
11007	DIPA	159989	FLJ25393	R
11007	DIPA	164127	C1orf65	R
11007	DIPA	164592	FLJ36046	R
11007	DIPA	170082	MGC17403	R
11007	DIPA	196441	MGC23401	R
11007	DIPA	220136	CCDC11	R
11007	DIPA	220965	FAM13C1	R
11007	DIPA	284058	LOC284058	R
11007	DIPA	284680	C1orf111	R
11007	DIPA	286301	MGC42630	R
11009	IL24	53832	IL20RA	L
11016	ATF7	55509	SNFT	L
11016	ATF7	60468	BACH2	L

11020	RABL4	51668	C1orf41	R
11021	RAB35	80304	FLJ21945	S
11030	RBPMS	11135	CDC42EP1	R
11030	RBPMS	23199	KIAA0182	R
11030	RBPMS	23543	RBM9	R
11030	RBPMS	23583	SMUG1	R
11030	RBPMS	26505	CNNM3	R
11030	RBPMS	26508	HEYL	R
11030	RBPMS	51545	ZNF581	R
11030	RBPMS	54472	TOLLIP	R
11030	RBPMS	55342	STRBP	R
11030	RBPMS	55684	C9orf86	R
11030	RBPMS	64333	ARHGAP9	R
11030	RBPMS	83640	MGC2560	R
11030	RBPMS	84080	C16orf48	R
11030	RBPMS	84445	LZTS2	R
11030	RBPMS	84528	PEPP-2	R
11030	RBPMS	84872	ZC3H10	R
11030	RBPMS	84904	C9orf100	R
11030	RBPMS	84970	C1orf94	R
11030	RBPMS	113878	DTX2	R
11030	RBPMS	129807	NEU4	R
11030	RBPMS	196477	C12orf12	R
11030	RBPMS	200523	FLJ25369	R
11035	RIPK3	148022	TICAM1	L
11040	PIM2	51076	CUTC	R
11040	PIM2	84893	FBXO18	S
11043	MID2	143241	DYDC1	R
11051	NUDT21	11052	CPSF6	R
11051	NUDT21	57562	KIAA1377	S
11051	NUDT21	60491	NIF3L1	R
11051	NUDT21	79869	FLJ12529	R
11051	NUDT21	84060	DKFZP564O0523	S
11051	NUDT21	118460	EXOSC6	L
11052	CPSF6	11059	WWP1	R
11052	CPSF6	11060	WWP2	R
11052	CPSF6	51585	PCF11	L
11052	CPSF6	54826	FLJ20125	R
11052	CPSF6	59349	KLHL12	R
11052	CPSF6	79637	ARMC7	R
11059	WWP1	23559	WBP1	L
11059	WWP1	26994	RNF11	L
11059	WWP1	27332	ZNF638	R
11059	WWP1	85362	(null)	R
11060	WWP2	23559	WBP1	L
11060	WWP2	26994	RNF11	L
11060	WWP2	85362	(null)	R
11063	SOX30	11165	NUDT3	R
11063	SOX30	25805	BAMBI	R
11065	UBE2C	29882	ANAPC2	L
11067	C10orf10	83878	USHBP1	R
11069	RAPGEF4	22800	RRAS2	L
11075	STMN2	56159	TEX11	R
11091	WDR5	51562	MBIP	R
11092	C9orf9	22929	SEPHS1	S
11092	C9orf9	57062	DDX24	S
11098	PRSS23	11261	CHP	S
11098	PRSS23	23310	hCAP-D3	S
11098	PRSS23	23542	MAPK8IP2	S
11098	PRSS23	25836	NIPBL	S
11098	PRSS23	29127	RACGAP1	S
11098	PRSS23	51399	TRAPPC4	S
11098	PRSS23	57489	ODF2L	S
11098	PRSS23	79050	NOC4L	S
11098	PRSS23	79142	PHF23	S
11098	PRSS23	84065	C1orf160	S
11098	PRSS23	158345	LOC158345	S

11098	PRSS23	347862	FLJ34283	S
11100	HNRPUL1	11161	C14orf1	S
11100	HNRPUL1	51003	MED31	S
11100	HNRPUL1	55660	FNBP3	SL
11102	RPP14	51367	POP5	L
11102	RPP14	84966	IGSF21	S
11113	CIT	27185	DISC1	L
11117	EMILIN1	66036	MTMR9	R
11117	EMILIN1	84034	EMILIN2	L
11124	FAF1	79753	SNIP1	L
11124	FAF1	84164	ASCC2	S
11127	KIF3A	23645	PPP1R15A	L
11129	SFRS16	84528	PEPP-2	R
11135	CDC42EP1	23433	RHOQ	L
11135	CDC42EP1	79109	MAPKAP1	R
11135	CDC42EP1	83755	KRTAP4-12	R
11141	IL1RAPL1	23413	FREQ	L
11143	MYST2	22981	KIAA0980	R
11143	MYST2	23557	SNAPAP	S
11143	MYST2	29911	HOOK2	R
11143	MYST2	29993	PACSIN1	S
11143	MYST2	55339	WDR33	S
11143	MYST2	57332	CBX8	S
11143	MYST2	79768	C15orf29	S
11143	MYST2	79886	C9orf82	S
11143	MYST2	80321	Cep70	R
11143	MYST2	127557	ZBTB8	R
11143	MYST2	253980	KCTD13	R
11143	MYST2	374923	(null)	S
11144	DMC1	25788	RAD54B	L
11145	HRASLS3	29979	UBQLN1	R
11146	GLMN	55968	NSFL1C	S
11157	LSM6	23658	LSM5	L
11157	LSM6	25804	LSM4	L
11157	LSM6	27257	LSM1	L
11157	LSM6	27258	LSM3	L
11157	LSM6	51690	LSM7	L
11157	LSM6	51691	LSM8	L
11157	LSM6	57819	LSM2	L
11158	RABL2B	84984	MGC14126	R
11161	C14orf1	11189	TNRC4	S
11161	C14orf1	22929	SEPHS1	S
11161	C14orf1	26151	NAT9	S
11161	C14orf1	27252	KLHL20	S
11161	C14orf1	29903	HSU79303	S
11161	C14orf1	55643	BTBD2	S
11161	C14orf1	55734	ZFP64	S
11161	C14orf1	55755	CDK5RAP2	S
11161	C14orf1	56144	PCDHA4	S
11161	C14orf1	56901	LOC56901	S
11161	C14orf1	57819	LSM2	S
11161	C14orf1	64978	MRPL38	S
11161	C14orf1	219844	HYLS1	S
11165	NUDT3	64284	RAB17	S
11165	NUDT3	79754	ASB13	S
11170	TU3A	22911	WDR47	S
11170	TU3A	22981	KIAA0980	R
11170	TU3A	23641	LDOC1	R
11170	TU3A	29911	HOOK2	R
11170	TU3A	30008	EFEMP2	R
11170	TU3A	57596	KIAA1446	R
11170	TU3A	83755	KRTAP4-12	R
11170	TU3A	83878	USHBP1	R
11171	STRAP	51250	C6orf203	S
11180	WDR6	23580	CDC42EP4	R
11180	WDR6	55632	KIAA1333	R
11184	MAP4K1	28988	DBNL	L

11184	MAP4K1	29760	BLNK	L
11186	RASSF1	11340	EXOSC8	L
11186	RASSF1	83593	RASSF5	L
11186	RASSF1	170685	NUDT10	S
11189	TNRC4	55084	FLJ10159	S
11190	CEP2	55729	ATF7IP	L
11194	ABCB8	84273	C4orf14	S
11200	CHEK2	80198	MUS81	L
11200	CHEK2	83942	TSSK1	L
11201	POLI	26994	RNF11	L
11201	POLI	51455	REV1L	L
11218	DDX20	27161	EIF2C2	L
11228	RASSF8	122786	FRMD6	R
11243	PMF1	28964	GIT1	S
11243	PMF1	51003	MED31	S
11243	PMF1	57562	KIAA1377	S
11244	ZHX1	23051	ZHX3	L
11244	ZHX1	23435	TARDBP	S
11244	ZHX1	54472	TOLLIP	S
11244	ZHX1	55339	WDR33	S
11244	ZHX1	55646	LYAR	S
11244	ZHX1	57050	SAS10	S
11252	PACSIN2	29763	PACSIN3	L
11252	PACSIN2	29993	PACSIN1	R
11266	DUSP12	57562	KIAA1377	S
11266	DUSP12	114785	MBD6	S
11267	SNF8	60491	NIF3L1	R
11267	SNF8	84313	VPS25	R
11269	DDX19B	23039	XPO7	S
11275	KLHL2	59349	KLHL12	R
11276	AP1GBP1	23062	GGA2	L
11276	AP1GBP1	23163	GGA3	L
11277	TREX1	26150	RIBC2	R
11277	TREX1	90410	IFT20	R
11282	MGAT4B	90678	LRSAM1	S
11284	PNKP	58529	MYOZ1	R
11284	PNKP	83755	KRTAP4-12	R
11313	LYPLA2	22955	SCMH1	S
11313	LYPLA2	51003	MED31	S
11316	COPE	22820	COPG	L
11316	COPE	26958	COPG2	L
11331	PHB2	26019	UPF2	L
11335	CBX3	23468	CBX5	L
11336	SEC6L1	55770	SEC5L1	L
11336	SEC6L1	149371	EXOC8	L
11337	GABARAP	23192	ATG4B	S
11337	GABARAP	51160	VPS28	S
11337	GABARAP	51660	BRP44L	S
11338	U2AF2	22827	SIAHBP1	R
11338	U2AF2	22889	KIAA0907	R
11338	U2AF2	23451	SF3B1	L
11338	U2AF2	26511	CHIC2	R
11338	U2AF2	55145	THAP1	R
11338	U2AF2	55660	FNBP3	L
11338	U2AF2	151871	DPPA2	R
11338	U2AF2	222389	C10orf30	R
11338	U2AF2	541468	C1orf190	R
11340	EXOSC8	22803	XRN2	L
11340	EXOSC8	23608	MKRN1	L
11340	EXOSC8	26019	UPF2	L
11340	EXOSC8	27257	LSM1	L
11340	EXOSC8	29109	FHOD1	L
11340	EXOSC8	51013	EXOSC1	L
11340	EXOSC8	51690	LSM7	L
11340	EXOSC8	54464	XRN1	L
11340	EXOSC8	56915	EXOSC5	L
11340	EXOSC8	118460	EXOSC6	L

11345	GABARAPL2	23192	ATG4B	S
11345	GABARAPL2	23786	BCL2L13	R
11345	GABARAPL2	79876	UBE1DC1	R
11345	GABARAPL2	90678	LRSAM1	S
13682	(null)	57062	DDX24	S
19241	(null)	55791	C1orf103	S
19241	(null)	84966	IGSF21	S
20924	(null)	29115	HCNGP	S
20924	(null)	51003	MED31	S
20924	(null)	51759	C9orf78	S
20924	(null)	52432	(null)	S
20924	(null)	55827	IQWD1	S
20924	(null)	56902	LOC56902	S
20924	(null)	57562	KIAA1377	S
22796	COG2	25839	COG4	L
22796	COG2	83548	COG3	L
22800	RRAS2	83593	RASSF5	L
22803	XRN2	23256	SCFD1	L
22803	XRN2	23435	TARDBP	L
22803	XRN2	25976	TIPARP	L
22803	XRN2	26019	UPF2	L
22803	XRN2	27258	LSM3	L
22803	XRN2	27304	MOCS3	L
22803	XRN2	51386	EIF3S6IP	L
22803	XRN2	54472	TOLLIP	L
22806	ZNFN1A3	25942	SIN3A	L
22806	ZNFN1A3	64375	ZNFN1A4	L
22806	ZNFN1A3	64376	ZNFN1A5	L
22807	ZNFN1A2	64375	ZNFN1A4	L
22807	ZNFN1A2	64376	ZNFN1A5	L
22808	MRAS	51735	RAPGEF6	L
22808	MRAS	83593	RASSF5	L
22809	ATF5	27185	DISC1	L
22809	ATF5	55509	SNFT	L
22820	COPG	23433	RHOQ	L
22820	COPG	26958	COPG2	L
22822	PHLDA1	83755	KRTAP4-12	R
22823	MTF2	25865	PRKD2	L
22827	SIAHBP1	29115	HCNGP	R
22827	SIAHBP1	84988	PPP1R16A	S
22827	SIAHBP1	118426	LOH12CR1	R
22839	DLGAP4	84152	PPP1R1B	S
22841	RAB11FIP2	57111	RAB25	L
22841	RAB11FIP2	84440	RAB11FIP4	L
22841	RAB11FIP2	85021	REPS1	L
22859	LPHN1	50944	SHANK1	L
22861	NALP1	58484	CARD12	L
22882	ZHX2	23051	ZHX3	L
22893	BAHD1	57596	KIAA1446	R
22893	BAHD1	83755	KRTAP4-12	R
22894	KIAA1008	28989	AD-003	L
22899	ARHGEF15	25843	PREI3	R
22899	ARHGEF15	79096	MGC4707	R
22905	EPN2	26994	RNF11	L
22911	WDR47	55743	CHFR	S
22913	RALY	284403	WDR62	S
22914	KLRK1	79465	ULBP3	L
22926	ATF6	58487	ZF	L
22927	HABP4	118924	C10orf4	S
22929	SEPHS1	54978	C2orf18	S
22929	SEPHS1	84966	IGSF21	S
22934	RPIA	51534	C6orf55	R
22934	RPIA	55093	C8orf32	R
22934	RPIA	60491	NIF3L1	R
22934	RPIA	84708	LNX	R
22938	SNW1	55805	LRP2BP	L
22938	SNW1	84164	ASCC2	S

22941	SHANK2	23266	LPHN2	L
22943	DKK1	83999	KREMEN1	L
22948	CCT5	54464	XRN1	L
22948	CCT5	79735	TBC1D17	S
22954	TRIM32	29979	UBQLN1	R
22955	SCMH1	25843	PREI3	S
22955	SCMH1	81488	GRINL1A	S
22974	TPX2	284169	(null)	S
22976	PAXIP1	127557	ZBTB8	R
22978	NT5C2	29922	NME7	R
22978	NT5C2	79050	NOC4L	R
22978	NT5C2	79817	MOBKL2B	R
22978	NT5C2	79873	NUDT18	R
22981	KIAA0980	23270	TSPYL4	R
22981	KIAA0980	26150	RIBC2	R
22981	KIAA0980	27238	GPKOW	R
22981	KIAA0980	27301	APEX2	R
22981	KIAA0980	51266	CLEC1B	R
22981	KIAA0980	51562	MBIP	R
22981	KIAA0980	51760	SYT17	R
22981	KIAA0980	55388	MCM10	R
22981	KIAA0980	55758	RCOR3	R
22981	KIAA0980	58500	ZNF250	R
22981	KIAA0980	79088	ZNF426	R
22981	KIAA0980	79571	GCC1	R
22981	KIAA0980	80125	FLJ32855	R
22981	KIAA0980	80851	SH3BP5L	R
22981	KIAA0980	81576	MGC10471	R
22981	KIAA0980	84445	LZTS2	R
22981	KIAA0980	84516	DCTN5	R
22981	KIAA0980	90678	LRSAM1	S
22981	KIAA0980	170082	MGC17403	R
22981	KIAA0980	196441	MGC23401	R
22981	KIAA0980	220082	NURIT	R
22981	KIAA0980	284058	LOC284058	R
22985	ACIN1	55295	FLJ11078	S
22985	ACIN1	55324	ABCF3	S
22985	ACIN1	84280	BTBD10	S
22992	FBXL11	57473	GM632	L
22995	Cep152	23136	EPB41L3	L
22999	RIMS1	25837	RAB26	L
22999	RIMS1	26059	CAST1	L
23002	DAAM1	55660	FNBP3	L
23013	SPEN	53615	MBD3	L
23014	FBXO21	85445	CNTNAP4	L
23016	EXOSC7	23404	EXOSC2	L
23016	EXOSC7	51013	EXOSC1	L
23016	EXOSC7	54512	EXOSC4	L
23016	EXOSC7	118460	EXOSC6	L
23020	ASCC3L1	84466	MEGF10	L
23025	UNC13A	23136	EPB41L3	L
23028	AOF2	51317	PHF21A	L
23028	AOF2	60492	MDS025	S
23028	AOF2	84164	ASCC2	S
23030	JMJD2B	84246	TRG20	S
23031	MAST3	85445	CNTNAP4	L
23032	USP33	54606	DDX56	S
23054	NCOA6	63925	ZNF335	L
23059	CLUAP1	51550	CINP	R
23062	GGA2	23621	BACE1	L
23062	GGA2	51324	SPG21	R
23062	GGA2	54812	AFTIPHILIN	L
23063	KIAA0261	54464	XRN1	L
23085	RAB6IP2	51560	RAB6B	L
23089	PEG10	57473	GM632	L
23095	KIF1B	90627	STARD13	L
23099	ZNF297B	51224	TCEB3B	R

23099	ZNF297B	55388	MCM10	R
23099	ZNF297B	55885	LMO3	R
23099	ZNF297B	84708	LNX	R
23099	ZNF297B	147687	ZNF417	R
23111	SPG20	64750	SMURF2	L
23136	EPB41L3	23705	IGSF4	L
23136	EPB41L3	26047	CNTNAP2	L
23136	EPB41L3	51562	MBIP	R
23136	EPB41L3	84966	IGSF21	S
23139	MAST2	27148	STK36	L
23141	KIAA0692	57473	GM632	L
23145	KIAA0543	23331	KIAA1043	L
23145	KIAA0543	57485	ATXN7L1	L
23154	NCDN	54910	SEMA4C	L
23162	MAPK8IP3	60626	RIC8A	S
23163	GGA3	26994	RNF11	L
23163	GGA3	54812	AFTIPHILIN	L
23172	KIAA0157	64750	SMURF2	L
23192	ATG4B	79686	C14orf139	S
23192	ATG4B	81631	MAP1LC3B	S
23199	KIAA0182	55758	RCOR3	R
23199	KIAA0182	79873	NUDT18	R
23199	KIAA0182	84060	DKFZP564O0523	S
23199	KIAA0182	118460	EXOSC6	L
23204	ARL6IP	51763	SKIP	R
23204	ARL6IP	55294	FBXW7	S
23204	ARL6IP	84100	ARL6	L
23207	PLEKHM2	27173	SLC39A1	S
23209	MLC1	23604	DAPK2	L
23214	XPO6	23636	NUP62	R
23225	NUP210	56915	EXOSC5	L
23228	PLCL2	57453	DSCAML1	L
23236	PLCB1	54822	TRPM7	L
23243	ANKRD28	57473	GM632	L
23256	SCFD1	23326	USP22	S
23265	EXOC7	27339	PRPF19	R
23265	EXOC7	64400	FTS	S
23265	EXOC7	79036	MGC2749	R
23265	EXOC7	79882	FLJ11806	R
23265	EXOC7	83878	USHBP1	R
23265	EXOC7	84816	RTN4IP1	R
23265	EXOC7	90410	IFT20	R
23268	DNMBP	26999	CYFIP2	L
23268	DNMBP	51466	EVL	L
23281	KIAA0774	26150	RIBC2	R
23281	KIAA0774	55734	ZFP64	R
23281	KIAA0774	79027	ZNF655	R
23281	KIAA0774	127703	FLJ38984	R
23283	CSTF2T	29979	UBQLN1	R
23286	KIBRA	55791	C1orf103	S
23286	KIBRA	79577	CDC73	S
23286	KIBRA	203259	C9orf25	S
23299	BICD2	91754	NEK9	L
23301	EHBP1	30846	EHD2	L
23308	ICOSLG	29851	ICOS	L
23309	SIN3B	64375	ZNFN1A4	L
23321	TRIM2	140885	PTPNS1	R
23326	USP22	124995	MRPL10	S
23327	NEDD4L	26994	RNF11	L
23345	SYNE1	27185	DISC1	L
23352	RBAF600	55660	FNBP3	L
23360	FNBP4	55660	FNBP3	L
23385	NCSTN	23621	BACE1	L
23385	NCSTN	51107	APH1A	L
23385	NCSTN	55851	PSENEN	L
23385	NCSTN	83464	APH1B	L
23396	PIP5K1C	83660	TLN2	L

23396	PIP5K1C	307255	(null)	S
23404	EXOSC2	54512	EXOSC4	L
23404	EXOSC2	79797	ZNF408	L
23405	DICER1	26523	EIF2C1	L
23405	DICER1	27161	EIF2C2	L
23405	DICER1	55124	PIWIL2	L
23411	SIRT1	23493	HEY2	L
23412	COMMD3	26152	ZNF337	S
23413	FREQ	113878	DTX2	R
23420	NOMO1	56926	NCLN	L
23421	ITGB3BP	23647	ARFIP2	R
23421	ITGB3BP	57062	DDX24	S
23426	GRIP1	25865	PRKD2	L
23433	RHOQ	23580	CDC42EP4	L
23433	RHOQ	50855	PARD6A	L
23433	RHOQ	57120	GOPC	L
23433	RHOQ	81704	DOCK8	L
23435	TARDBP	55968	NSFL1C	S
23450	SF3B3	79159	MGC3731	S
23451	SF3B1	51639	SF3B14	L
23462	HEY1	25865	PRKD2	L
23468	CBX5	51224	TCEB3B	R
23468	CBX5	78994	MGC3121	R
23474	ETHE1	51606	ATP6V1H	S
23474	ETHE1	55791	C1orf103	S
23474	ETHE1	84966	IGSF21	S
23475	QPRT	51684	SUFU	R
23475	QPRT	83755	KRTAP4-12	R
23476	BRD4	55660	FNBP3	L
23476	BRD4	55743	CHFR	S
23476	BRD4	79020	C7orf25	S
23478	SEC11L1	54978	C2orf18	S
23493	HEY2	25942	SIN3A	L
23495	TNFRSF13B	407977	TNFSF12-TNFSF13	L
23499	MACF1	55729	ATF7IP	L
23499	MACF1	79613	FLJ12688	L
23506	KIAA0240	57685	CACHD1	L
23517	SKIV2L2	26019	UPF2	L
23517	SKIV2L2	54464	XRN1	L
23517	SKIV2L2	118460	EXOSC6	L
23521	RPL13A	51280	GOLPH2	S
23521	RPL13A	84893	FBXO18	S
23523	CABIN1	25942	SIN3A	L
23534	TNPO3	64750	SMURF2	L
23542	MAPK8IP2	80824	DUSP16	L
23543	RBM9	63948	DMRTB1	R
23543	RBM9	84528	PEPP-2	R
23549	DNPEP	54507	TSRC1	R
23558	WBP2	55964	SEPT3	S
23569	PADI4	121504	HIST4H4	L
23578	(null)	59349	KLHL12	R
23578	(null)	79173	MGC11271	R
23578	(null)	85365	ALG2	L
23582	CCNDBP1	55713	ZNF334	R
23582	CCNDBP1	64965	MRPS9	S
23585	TMEM50A	55262	FLJ10925	S
23588	KLHDC2	29888	STRN4	S
23594	ORC6L	23595	ORC3L	L
23595	ORC3L	55388	MCM10	L
23598	ZNF278	83990	BRIP1	L
23613	PRKCBP1	29109	FHOD1	L
23617	TSSK2	60385	TSKS	L
23635	SSBP2	26525	IL1F5	R
23636	NUP62	26003	GORASP2	R
23636	NUP62	51019	CGI-116	R
23636	NUP62	53371	NUP54	R
23636	NUP62	55145	THAP1	R

23640	HSPBP1	55791	C1orf103	S
23641	LDOC1	26574	AATF	R
23641	LDOC1	27343	POLL	R
23641	LDOC1	54540	FLJ10404	R
23641	LDOC1	54552	GNL3L	R
23641	LDOC1	54906	C10orf18	R
23641	LDOC1	55211	DPPA4	R
23641	LDOC1	56242	ZNF253	L
23641	LDOC1	58500	ZNF250	R
23641	LDOC1	64376	ZNFN1A5	R
23641	LDOC1	79797	ZNF408	R
23641	LDOC1	84708	LNX	R
23641	LDOC1	121536	AEBP2	R
23644	RCD-8	167227	DCP2	L
23645	PPP1R15A	57473	GM632	L
23647	ARFIP2	84062	DTNBP1	R
23649	POLA2	51236	C8orf30A	S
23649	POLA2	55147	RBM23	S
23649	POLA2	57062	DDX24	S
23649	POLA2	64400	FTS	S
23649	POLA2	78987	CRELD1	S
23649	POLA2	83931	STK40	S
23649	POLA2	84164	ASCC2	S
23649	POLA2	84950	PRPF38A	S
23649	POLA2	92797	HELB	L
23649	POLA2	167227	DCP2	L
23649	POLA2	203259	C9orf25	S
23650	TRIM29	79571	GCC1	R
23650	TRIM29	80022	MYO15B	R
23650	TRIM29	80321	Cep70	R
23650	TRIM29	80705	TSGA10	R
23650	TRIM29	84445	LZTS2	R
23650	TRIM29	84766	MGC4266	R
23650	TRIM29	85302	FBF1	R
23658	LSM5	25804	LSM4	L
23658	LSM5	27257	LSM1	L
23658	LSM5	27258	LSM3	L
23658	LSM5	51690	LSM7	L
23658	LSM5	51691	LSM8	L
23658	LSM5	56915	EXOSC5	L
23658	LSM5	57819	LSM2	L
23673	STX12	27065	D4S234E	L
23705	IGSF4	55729	ATF7IP	L
23708	GSPT2	26986	PABPC1	L
23746	AIPL1	51667	NYREN18	L
23761	PISD	54505	DHX29	S
23761	PISD	221955	LOC221955	S
23774	BRD1	57473	GM632	L
23774	BRD1	57562	KIAA1377	S
24138	IFIT5	51669	TMEM66	S
24142	NAT6	375078	(null)	S
25782	RAB3GAP2	118460	EXOSC6	L
25788	RAD54B	26003	GORASP2	R
25788	RAD54B	26150	RIBC2	R
25788	RAD54B	51157	ZNF580	R
25788	RAD54B	79090	TRAPPC6A	R
25788	RAD54B	80022	MYO15B	R
25788	RAD54B	80125	FLJ32855	R
25788	RAD54B	84708	LNX	R
25788	RAD54B	170082	MGC17403	R
25804	LSM4	27257	LSM1	L
25804	LSM4	27258	LSM3	L
25804	LSM4	51690	LSM7	L
25804	LSM4	51691	LSM8	L
25804	LSM4	54464	XRN1	L
25804	LSM4	54477	PLEKHA5	L
25804	LSM4	57819	LSM2	L

25804	LSM4	84528	PEPP-2	L
25804	LSM4	201895	LOC201895	L
25816	TNFAIP8	29079	MED4	R
25824	PRDX5	60492	MDS025	S
25839	COG4	91949	COG7	L
25842	ASF1A	51160	VPS28	S
25843	PREI3	51003	MED31	S
25843	PREI3	51078	THAP4	S
25843	PREI3	55791	C1orf103	S
25843	PREI3	57498	KIDINS220	S
25843	PREI3	84246	TRG20	S
25843	PREI3	112398	EGLN2	S
25844	YIPF3	84272	YIPF4	R
25855	BRMS1	55791	C1orf103	S
25865	PRKD2	64689	GORASP1	L
25870	SUMF2	55294	FBXW7	S
25876	C20orf28	79666	PLEKHF2	R
25888	ZNF473	90933	TRIM41	R
25888	ZNF473	134353	LSM11	L
25890	ABI3BP	51225	ABI3	L
25897	RNF19	27175	TUBG2	L
25897	RNF19	51684	SUFU	L
25900	HOM-TES-103	138065	RNF183	R
25913	POT1	65057	ACD	RL
25915	DKFZP564J0123	27257	LSM1	L
25917	THUMPD3	51691	LSM8	L
25930	PTPN23	57062	DDX24	S
25934	NIPSNAP3A	51280	GOLPH2	S
25942	SIN3A	51564	HDAC7A	L
25942	SIN3A	51742	ARID4B	L
25942	SIN3A	64375	ZNFN1A4	L
25945	PVRL3	56288	PARD3	L
25979	DKFZp566O084	219541	MED19	S
25980	C20orf4	55837	C14orf11	R
26003	GORASP2	81628	TSC22D4	R
26017	FAM32A	55968	NSFL1C	S
26019	UPF2	27257	LSM1	L
26019	UPF2	28987	NOB1P	L
26019	UPF2	51013	EXOSC1	L
26019	UPF2	54464	XRN1	L
26019	UPF2	55802	DCP1A	L
26019	UPF2	65109	UPF3B	L
26019	UPF2	65110	UPF3A	L
26019	UPF2	79797	ZNF408	L
26019	UPF2	81631	MAP1LC3B	L
26019	UPF2	118460	EXOSC6	L
26019	UPF2	167227	DCP2	L
26019	UPF2	196513	DCP1B	L
26036	ZNF451	55660	FNBP3	L
26036	ZNF451	79753	SNIP1	L
26039	SS18L1	222546	RFXDC1	R
26059	CAST1	28964	GIT1	L
26060	APPL	55198	DIP13B	R
26061	HPCL2	116225	ZMYND19	R
26071	DKFZP564B147	29979	UBQLN1	R
26073	POLDIP2	84164	ASCC2	S
26086	GPSM1	83878	USHBP1	R
26086	GPSM1	339965	FLJ25770	R
26088	GGA1	26994	RNF11	L
26100	WIPI-2	29888	STRN4	S
26128	KIAA1279	27332	ZNF638	R
26128	KIAA1279	55264	C21orf77	R
26128	KIAA1279	79156	PLEKHF1	R
26128	KIAA1279	79959	C18orf9	R
26128	KIAA1279	93474	ZNF670	R
26136	TES	55740	ENAH	L
26146	TRAF3IP1	27185	DISC1	L

26150	RIBC2	29911	HOOK2	R
26150	RIBC2	29959	NRBP	R
26150	RIBC2	30008	EFEMP2	R
26150	RIBC2	51669	TMEM66	S
26150	RIBC2	56159	TEX11	R
26150	RIBC2	57596	KIAA1446	R
26150	RIBC2	64219	PJA1	S
26150	RIBC2	83878	USHBP1	R
26150	RIBC2	84705	GTPBP3	R
26151	NAT9	51631	LUC7L2	S
26151	NAT9	57562	KIAA1377	S
26152	ZNF337	374923	(null)	S
26155	NOC2L	55791	C1orf103	R
26160	SLB	89884	LHX4	L
26168	SENP3	55729	ATF7IP	L
26207	PITPNC1	57085	AGTRAP	R
26254	OPTC	55644	OSGEP	L
26258	PLDN	51019	CGI-116	R
26258	PLDN	55093	C8orf32	R
26258	PLDN	55109	AGGF1	R
26258	PLDN	79666	PLEKHF2	R
26258	PLDN	149371	EXOC8	R
26258	PLDN	220134	C18orf24	R
26258	PLDN	541468	C1orf190	R
26271	FBXO5	51343	FZR1	L
26276	VPS33B	63894	C14orf133	R
26277	TINF2	65057	ACD	L
26289	AK5	29888	STRN4	S
26289	AK5	55905	ZNF313	S
26289	AK5	64710	NUCKS1	S
26289	AK5	79034	C7orf26	S
26289	AK5	80128	TRIM46	S
26292	MYCBP	55701	FLJ10357	S
26292	MYCBP	57540	PTCHD2	S
26292	MYCBP	84073	MYCBPAP	L
26292	MYCBP	89876	C3orf15	L
26292	MYCBP	131034	CPNE4	L
26292	MYCBP	221184	CPNE2	L
26297	DELGEF	55770	SEC5L1	L
26353	HSPB8	27129	HSPB7	R
26354	GNL3	84164	ASCC2	S
26505	CNNM3	83755	KRTAP4-12	R
26508	HEYL	55729	ATF7IP	L
26508	HEYL	57473	GM632	L
26511	CHIC2	79666	PLEKHF2	R
26511	CHIC2	83755	KRTAP4-12	R
26511	CHIC2	117144	CATSPER1	R
26519	TIMM10	26520	TIMM9	L
26525	IL1F5	57473	GM632	L
26525	IL1F5	170463	SSBP4	R
26575	RGS17	28962	OSTM1	L
26580	BSCL2	55266	TMEM19	R
26580	BSCL2	55850	MDS032	R
26580	BSCL2	85027	NID67	R
26610	ELP4	55140	ELP3	L
26749	GAGE8	64396	GMCL1L	R
26762	HAVCR1	64218	SEMA4A	L
26960	NBEA	29888	STRN4	S
26986	PABPC1	51247	PAIP2	L
26986	PABPC1	51433	ANAPC5	L
26994	RNF11	27342	RABGEF1	L
26994	RNF11	29924	EPN1	L
26994	RNF11	29978	UBQLN2	L
26994	RNF11	51619	UBE2D4	L
26994	RNF11	54165	DCUN1D1	L
26994	RNF11	54476	TRIAD3	L
26994	RNF11	55040	EPN3	L

26994	RNF11	56893	UBQLN4	L
26994	RNF11	57154	SMURF1	L
26994	RNF11	64750	SMURF2	L
26994	RNF11	83932	C1orf124	L
26994	RNF11	84164	ASCC2	L
26994	RNF11	133957	LOC133957	L
26994	RNF11	146691	TOM1L2	L
26994	RNF11	165918	RNF168	L
27033	ZBTB32	84528	PEPP-2	R
27043	PELP1	222019	(null)	S
27063	ANKRD1	84665	MYPN	L
27067	STAU2	57562	KIAA1377	S
27072	VPS41	57473	GM632	L
27089	QP-C	81488	GRINL1A	S
27095	TRAPPC3	51693	HSPC176	R
27095	TRAPPC3	79090	TRAPPC6A	R
27111	SDCBP2	51538	PS1D	R
27111	SDCBP2	54458	DKFZp564J157	R
27111	SDCBP2	79169	C1orf35	R
27111	SDCBP2	92610	TIFA	R
27111	SDCBP2	151871	DPPA2	R
27111	SDCBP2	222389	C10orf30	R
27122	DKK3	162952	(null)	S
27127	SMC1L2	50511	SYCP3	L
27130	INVS	55662	HIF1AN	R
27130	INVS	57473	GM632	L
27148	STK36	51684	SUFU	L
27148	STK36	55755	CDK5RAP2	L
27158	NDOR1	54205	CYCS	L
27165	GLS2	30851	TAX1BP3	L
27185	DISC1	57731	SPTBN4	L
27185	DISC1	81565	NDEL1	L
27190	IL17B	55540	IL17RB	L
27229	76P	57144	PAK7	R
27229	76P	58490	C20orf77	R
27229	76P	79734	KCTD17	R
27229	76P	79991	OBFC1	R
27229	76P	83878	USHBP1	R
27229	76P	85302	FBF1	R
27229	76P	113675	SDSL	R
27229	76P	220082	NURIT	R
27232	GNMT	60491	NIF3L1	R
27232	GNMT	79666	PLEKHF2	R
27232	GNMT	79873	NUDT18	R
27247	HIRIP5	84273	C4orf14	S
27252	KLHL20	51631	LUC7L2	S
27252	KLHL20	55791	C1orf103	S
27252	KLHL20	57562	KIAA1377	S
27257	LSM1	27258	LSM3	L
27257	LSM1	51690	LSM7	L
27257	LSM1	54867	FLJ20254	L
27257	LSM1	55823	VPS11	L
27257	LSM1	57819	LSM2	L
27257	LSM1	79602	ADIPOR2	L
27257	LSM1	84908	FLJ14668	L
27257	LSM1	118460	EXOSC6	L
27258	LSM3	51690	LSM7	L
27258	LSM3	51691	LSM8	L
27258	LSM3	57819	LSM2	RSL
27258	LSM3	84967	LSM10	RL
27258	LSM3	90799	LOC90799	L
27301	APEX2	29911	HOOK2	R
27301	APEX2	30008	EFEMP2	R
27304	MOCS3	118460	EXOSC6	L
27309	ZNF330	79797	ZNF408	L
27316	RBMX	80125	FLJ32855	R
27316	RBMX	83640	MGC2560	R

27316	RBMX	84708	LNX	R
27316	RBMX	202559	KHDRBS2	R
27332	ZNF638	29911	HOOK2	R
27332	ZNF638	30008	EFEMP2	R
27332	ZNF638	83755	KRTAP4-12	R
27335	EIF3S12	51386	EIF3S6IP	R
27336	HTATSF1	57473	GM632	L
27342	RABGEF1	79036	MGC2749	R
27429	HTRA2	56616	DIABLO	L
27429	HTRA2	57448	BIRC6	L
28620	TRBV2	55791	C1orf103	S
28620	TRBV2	84966	IGSF21	S
28952	CCDC22	131034	CPNE4	L
28955	DEXI	51280	GOLPH2	S
28964	GIT1	29070	HSPC065	S
28964	GIT1	51593	ARS2	S
28964	GIT1	55339	WDR33	S
28964	GIT1	57062	DDX24	S
28964	GIT1	57761	TRIB3	S
28964	GIT1	65265	C8orf33	S
28964	GIT1	374923	(null)	S
28965	SLC27A6	51076	CUTC	S
28965	SLC27A6	80021	TMEM62	S
28986	MAGEH1	55755	CDK5RAP2	S
28986	MAGEH1	64112	MOAP1	R
28986	MAGEH1	266812	NAP1L5	S
28988	DBNL	63898	SH2D4A	R
28996	HIPK2	94241	TP53INP1	L
29058	C20orf30	252839	TMEM9	S
29068	BTBD15	64750	SMURF2	L
29079	MED4	55729	ATF7IP	L
29082	CHMP4A	51760	SYT17	R
29085	PHPT1	29947	DNMT3L	R
29085	PHPT1	84988	PPP1R16A	S
29102	RNASEN	57473	GM632	L
29107	NXT1	56000	NXF3	R
29108	PYCARD	58484	CARD12	L
29108	PYCARD	114548	CIAS1	L
29117	BRD7	55643	BTBD2	S
29760	BLNK	30011	SH3KBP1	L
29763	PACSIN3	29993	PACSIN1	L
29789	PTD004	84164	ASCC2	S
29789	PTD004	162952	(null)	S
29888	STRN4	51260	CXorf26	S
29888	STRN4	51295	SITPEC	S
29888	STRN4	79684	FLJ23342	S
29888	STRN4	79948	PRG2	S
29888	STRN4	92170	GTPBP7	S
29890	RBM15B	380423	(null)	S
29903	HSU79303	55791	C1orf103	S
29903	HSU79303	84060	DKFZP564O0523	S
29907	SNX15	51669	TMEM66	S
29911	HOOK2	55388	MCM10	R
29911	HOOK2	58500	ZNF250	R
29911	HOOK2	64400	FTS	R
29911	HOOK2	80125	FLJ32855	R
29922	NME7	84260	MGC10854	R
29924	EPN1	51003	MED31	S
29924	EPN1	57562	KIAA1377	S
29925	GMPPB	29926	GMPPA	R
29941	PKN3	79658	ARHGAP10	L
29946	SERTAD3	83878	USHBP1	R
29947	DNMT3L	51187	C15orf15	R
29949	IL19	53832	IL20RA	L
29950	SERTAD1	57542	KLHDC5	R
29952	DPP7	54464	XRN1	L
29959	NRBP	55791	C1orf103	S

29959	NRBP	81628	TSC22D4	R
29974	ACF	30000	TNPO2	L
29978	UBQLN2	55660	FNBP3	L
29979	UBQLN1	30008	EFEMP2	R
29979	UBQLN1	55374	PRO1580	R
29979	UBQLN1	55660	FNBP3	L
29979	UBQLN1	57542	KLHDC5	R
29979	UBQLN1	60626	RIC8A	R
29979	UBQLN1	125170	SMCR7	R
29990	PILRB	64092	SAMSN1	L
30008	EFEMP2	54557	SGTB	R
30008	EFEMP2	55367	LRDD	R
30008	EFEMP2	57088	PLSCR4	R
30008	EFEMP2	79088	ZNF426	R
30008	EFEMP2	79843	FLJ22746	R
30008	EFEMP2	84528	PEPP-2	R
30008	EFEMP2	84894	LRRN6A	R
30008	EFEMP2	114822	RHPN1	R
30008	EFEMP2	117144	CATSPER1	R
30061	SLC40A1	51280	GOLPH2	S
30818	CSEN	57126	CD177	R
50604	IL20	53832	IL20RA	L
50615	IL21R	59067	IL21	L
50616	IL22	116379	IL22RA2	L
50618	ITSN2	51691	LSM8	L
50618	ITSN2	56647	BCCIP	S
50618	ITSN2	57556	SEMA6A	L
50619	DEF6	57596	KIAA1446	R
50717	WDR42A	84705	GTPBP3	R
50855	PARD6A	56288	PARD3	L
51002	CGI-121	112858	TP53RK	R
51003	MED31	51236	C8orf30A	S
51003	MED31	55147	RBM23	S
51003	MED31	64129	TINAGL1	S
51003	MED31	79756	(null)	S
51003	MED31	80228	C7orf19	S
51003	MED31	80304	FLJ21945	S
51003	MED31	84164	ASCC2	S
51003	MED31	84878	ZNF499	S
51010	EXOSC3	51654	CDK5RAP1	L
51010	EXOSC3	54512	EXOSC4	L
51010	EXOSC3	56915	EXOSC5	L
51013	EXOSC1	54464	XRN1	L
51013	EXOSC1	54512	EXOSC4	L
51013	EXOSC1	56915	EXOSC5	L
51013	EXOSC1	118460	EXOSC6	L
51019	CGI-116	57326	PBXIP1	R
51053	GMNN	81620	CDT1	L
51064	(null)	55081	ESRRBL1	S
51073	MRPL4	57062	DDX24	S
51073	MRPL4	83755	KRTAP4-12	R
51074	MMRP19	79873	NUDT18	R
51074	MMRP19	84313	VPS25	R
51074	MMRP19	84708	LNX	R
51076	CUTC	51324	SPG21	R
51076	CUTC	55191	NADSYN1	R
51076	CUTC	60491	NIF3L1	R
51076	CUTC	79873	NUDT18	R
51076	CUTC	84164	ASCC2	S
51076	CUTC	84708	LNX	R
51079	NDUFA13	54464	XRN1	L
51079	NDUFA13	118460	EXOSC6	L
51107	APH1A	55851	PSENEN	L
51124	IER3IP1	284615	ANKRD34	S
51127	TRIM17	56658	TRIM39	R
51133	KCTD3	51691	LSM8	L
51138	COPS4	51562	MBIP	R

51138	COPS4	79173	MGC11271	R
51138	COPS4	83878	USHBP1	R
51143	DNCLI1	79902	PCNT1	L
51150	SDF4	57473	GM632	L
51157	ZNF580	81628	TSC22D4	R
51171	DHRS10	55093	C8orf32	R
51171	DHRS10	79873	NUDT18	R
51176	LEF1	51588	PIAS4	L
51176	LEF1	60529	ALX4	L
51194	IPO11	84812	PLCD4	R
51199	NIN	51637	C14orf166	L
51205	ACP6	54978	C2orf18	S
51222	ZNF219	51684	SUFU	L
51224	TCEB3B	54937	FLJ20449	R
51224	TCEB3B	79036	MGC2749	R
51224	TCEB3B	80321	Cep70	R
51224	TCEB3B	83755	KRTAP4-12	R
51225	ABI3	80817	KIAA1712	R
51225	ABI3	84062	DTNBP1	R
51225	ABI3	220766	KIAA0470L	R
51236	C8orf30A	54802	TRIT1	S
51236	C8orf30A	55937	APOM	S
51236	C8orf30A	254863	MGC40107	S
51252	LOC51252	90678	LRSAM1	S
51260	CXorf26	84988	PPP1R16A	S
51268	PIPOX	57489	ODF2L	S
51280	GOLPH2	60528	ELAC2	S
51280	GOLPH2	60685	TEX27	S
51280	GOLPH2	79369	B3GNT4	S
51280	GOLPH2	79760	GEMIN7	S
51280	GOLPH2	80023	C20orf98	S
51280	GOLPH2	268490	(null)	S
51280	GOLPH2	339448	LOC339448	S
51282	SCAND1	54925	ZNF434	R
51282	SCAND1	55888	ZNF167	R
51319	RSRC1	57180	ACTR3B	S
51319	RSRC1	57819	LSM2	S
51324	SPG21	55122	C6orf166	R
51324	SPG21	56474	CTPS2	R
51324	SPG21	57142	RTN4	R
51324	SPG21	66036	MTMR9	R
51327	ERAF	80149	ZC3H12A	R
51327	ERAF	81488	GRINL1A	S
51329	ARL6IP4	84100	ARL6	L
51343	FZR1	79020	C7orf25	S
51361	HOOK1	58500	ZNF250	R
51364	ZMYND10	81628	TSC22D4	R
51375	SNX7	56159	TEX11	R
51388	CGI-37	55035	NOL8	L
51389	RWDD1	79873	NUDT18	R
51412	ACTL6B	57017	C16orf49	S
51421	AMOTL2	54474	KRT20	R
51421	AMOTL2	55110	FLJ10292	R
51421	AMOTL2	79571	GCC1	R
51426	POLK	51455	REV1L	L
51440	HPCAL4	113878	DTX2	R
51444	RNF138	154313	C6orf165	R
51466	EVL	57556	SEMA6A	L
51497	TH1L	79885	HDAC11	S
51497	TH1L	84978	FRMD5	S
51497	TH1L	284131	FLJ35220	S
51517	NCKIPSD	63948	DMRTB1	R
51534	C6orf55	51562	MBIP	R
51534	C6orf55	54550	EFCBP2	R
51534	C6orf55	59349	KLHL12	R
51534	C6orf55	151871	DPPA2	R
51534	C6orf55	253980	KCTD13	R

51545	ZNF581	83755	KRTAP4-12	R
51545	ZNF581	84445	LZTS2	R
51562	MBIP	55885	LMO3	R
51562	MBIP	57325	CSRP2BP	R
51562	MBIP	79666	PLEKHF2	R
51562	MBIP	80254	Cep63	R
51562	MBIP	81565	NDEL1	R
51562	MBIP	85359	DGCR6L	R
51585	PCF11	53981	CPSF2	L
51588	PIAS4	57473	GM632	L
51588	PIAS4	79753	SNIP1	L
51593	ARS2	222019	(null)	S
51594	NAG	93145	OLFM2	S
51604	PIGT	65110	UPF3A	S
51608	C7orf20	57562	KIAA1377	S
51608	C7orf20	90990	KIFC2	S
51608	C7orf20	254863	MGC40107	S
51608	C7orf20	337867	PHGDHL1	S
51617	HMP19	53407	STX18	S
51617	HMP19	54978	C2orf18	S
51617	HMP19	54985	HCFC1R1	S
51619	UBE2D4	55658	RNF126	R
51619	UBE2D4	56658	TRIM39	R
51619	UBE2D4	113878	DTX2	R
51631	LUC7L2	54819	ZCCHC10	S
51631	LUC7L2	55037	FLJ20758	S
51631	LUC7L2	55729	ATF7IP	L
51631	LUC7L2	55755	CDK5RAP2	S
51631	LUC7L2	56901	LOC56901	S
51631	LUC7L2	57562	KIAA1377	S
51631	LUC7L2	65990	C16orf24	S
51631	LUC7L2	79576	NKAP	S
51631	LUC7L2	79686	C14orf139	S
51631	LUC7L2	81631	MAP1LC3B	S
51631	LUC7L2	266812	NAP1L5	S
51631	LUC7L2	307255	(null)	S
51654	CDK5RAP1	56915	EXOSC5	L
51659	Pfs2	84296	SLD5	R
51669	TMEM66	230991	(null)	S
51678	MPP6	83658	DNCL2A	L
51684	SUFU	55663	ZNF446	R
51684	SUFU	55670	PEX26	R
51684	SUFU	57333	RCN3	R
51684	SUFU	58526	MID1IP1	R
51684	SUFU	92595	MGC13138	R
51684	SUFU	169792	GLIS3	R
51690	LSM7	51691	LSM8	L
51690	LSM7	57819	LSM2	L
51690	LSM7	118460	EXOSC6	L
51691	LSM8	55577	NAGK	L
51691	LSM8	55793	FAM63A	L
51691	LSM8	55802	DCP1A	L
51691	LSM8	57819	LSM2	L
51691	LSM8	79763	ISOC2	L
51691	LSM8	83706	URP2	L
51691	LSM8	91522	COL23A1	L
51691	LSM8	118460	EXOSC6	L
51691	LSM8	163702	IL28RA	L
51699	VPS29	118924	C10orf4	S
51699	VPS29	162952	(null)	S
51706	CYB5R1	54205	CYCS	L
51720	RAP80	83444	ZNHIT4	S
51726	DNAJB11	197131	UBR1	S
51729	WBP11	55322	FLJ11193	R
51729	WBP11	84816	RTN4IP1	R
51751	HIGD1B	81488	GRINL1A	S
51755	CRK7	55660	FNBP3	L

51760	SYT17	81628	TSC22D4	R
51762	RAB8B	117177	RAB3IP	L
51776	ZAK	163081	ZNF567	R
51780	JMJD1B	57473	GM632	L
53615	MBD3	54815	GATAD2A	L
53826	FXYD6	55142	C15orf25	S
53826	FXYD6	56927	GPR108	S
53826	FXYD6	60492	MDS025	S
53826	FXYD6	79939	SLC35E1	S
53826	FXYD6	84060	DKFZP564O0523	S
53904	MYO3A	81488	GRINL1A	S
54033	RBM11	84528	PEPP-2	R
54107	POLE3	54108	CHRAC1	L
54165	DCUN1D1	56658	TRIM39	R
54458	DKFZp564J157	57142	RTN4	S
54458	DKFZp564J157	59349	KLHL12	R
54458	DKFZp564J157	83755	KRTAP4-12	R
54461	FBXW5	83755	KRTAP4-12	R
54464	XRN1	55802	DCP1A	L
54464	XRN1	64847	SPATA20	L
54464	XRN1	65109	UPF3B	L
54464	XRN1	90113	LOC90113	L
54464	XRN1	118460	EXOSC6	L
54464	XRN1	196513	DCP1B	L
54472	TOLLIP	84528	PEPP-2	R
54474	KRT20	79095	C9orf16	R
54474	KRT20	79696	C14orf140	R
54474	KRT20	79882	FLJ11806	R
54474	KRT20	80347	COASY	R
54474	KRT20	84832	MGC12538	R
54474	KRT20	149371	EXOC8	R
54505	DHX29	79735	TBC1D17	S
54505	DHX29	80152	FLJ13111	S
54507	TSRC1	59277	NTN4	R
54507	TSRC1	65989	EGFL9	R
54507	TSRC1	83755	KRTAP4-12	R
54507	TSRC1	117144	CATSPER1	R
54512	EXOSC4	55144	LRRC8D	L
54512	EXOSC4	55627	FLJ20297	L
54512	EXOSC4	81889	FAHD1	L
54512	EXOSC4	90480	GADD45GIP1	L
54512	EXOSC4	116461	C1orf19	L
54541	DDIT4	55791	C1orf103	S
54544	C1orf42	55791	C1orf103	S
54544	C1orf42	57562	KIAA1377	S
54544	C1orf42	84966	IGSF21	S
54550	EFCBP2	55093	C8orf32	R
54550	EFCBP2	55758	RCOR3	R
54550	EFCBP2	56159	TEX11	R
54550	EFCBP2	79050	NOC4L	R
54550	EFCBP2	79172	MGC11266	R
54550	EFCBP2	80125	FLJ32855	R
54550	EFCBP2	84708	LNX	R
54550	EFCBP2	85359	DGCR6L	R
54550	EFCBP2	85865	LOC85865	R
54550	EFCBP2	284058	LOC284058	R
54596	ECAT11	57473	GM632	L
54606	DDX56	79797	ZNF408	L
54622	ARFRP2	56850	GRIPAP1	S
54622	ARFRP2	60492	MDS025	S
54622	ARFRP2	65991	FUNDC2	S
54622	ARFRP2	197131	UBR1	S
54778	RNF111	64750	SMURF2	L
54819	ZCCHC10	55145	THAP1	R
54819	ZCCHC10	151871	DPPA2	R
54819	ZCCHC10	246329	STAC3	R
54822	TRPM7	140803	TRPM6	L

54857	GDPD2	118924	C10orf4	S
54857	GDPD2	284004	FLJ23825	S
54870	FLJ20259	55729	ATF7IP	L
54880	BCOR	131034	CPNE4	L
54880	BCOR	221184	CPNE2	L
54882	ANKHD1	81488	GRINL1A	S
54902	TTC19	65109	UPF3B	L
54903	FLJ20345	57062	DDX24	S
54908	FLJ20364	57562	KIAA1377	S
54925	ZNF434	55663	ZNF446	R
54925	ZNF434	55888	ZNF167	R
54927	CHCHD3	83755	KRTAP4-12	R
54936	ADPRHL2	118924	C10orf4	S
54936	ADPRHL2	162952	(null)	S
54936	ADPRHL2	284004	FLJ23825	S
54949	FLJ20487	60492	MDS025	S
54951	COMMD8	56901	LOC56901	S
54974	ICF45	55531	ELMOD1	R
54976	C20orf27	138046	LOC138046	R
54977	FLJ20551	79159	MGC3731	S
54977	FLJ20551	80345	ZNF435	S
54978	C2orf18	56901	LOC56901	S
54978	C2orf18	56984	TNFSF5IP1	S
54978	C2orf18	58475	MS4A7	S
54997	TSC	55297	FLJ11088	R
55004	FLJ20625	55324	ABCF3	S
55004	FLJ20625	60492	MDS025	S
55011	FLJ20643	81628	TSC22D4	R
55017	C14orf119	85444	LRRCC1	S
55023	PHIP	81551	STMN4	S
55035	NOL8	64121	RRAGC	L
55041	PLEKHB2	55729	ATF7IP	L
55041	PLEKHB2	380423	(null)	S
55062	WIPI49	79047	KCTD15	S
55068	FLJ10094	60491	NIF3L1	R
55068	FLJ10094	84708	LNX	R
55093	C8orf32	79077	XTP3TPA	R
55116	TMEM39B	162417	NAGS	S
55122	C6orf166	84708	LNX	R
55139	FLJ10415	80023	C20orf98	S
55145	THAP1	55342	STRBP	R
55145	THAP1	79169	C1orf35	R
55145	THAP1	79576	NKAP	R
55145	THAP1	79797	ZNF408	R
55145	THAP1	81488	GRINL1A	R
55145	THAP1	138046	LOC138046	R
55147	RBM23	57562	KIAA1377	S
55160	ARHGEF10L	362598	(null)	S
55191	NADSYN1	80022	MYO15B	R
55193	PB1	57473	GM632	L
55198	DIP13B	57403	RAB22A	R
55209	FLJ10707	151871	DPPA2	R
55211	DPPA4	151871	DPPA2	R
55227	LRRC1	55914	ERBB2IP	L
55227	LRRC1	57562	KIAA1377	S
55231	FLJ10786	147872	FLJ32658	R
55233	MOBK1B	79036	MGC2749	R
55252	ASXL2	55660	FNBP3	L
55269	PSPC1	55791	C1orf103	S
55274	PHF10	83746	L3MBTL2	R
55285	FLJ11016	138046	LOC138046	R
55294	FBXW7	73121	(null)	S
55294	FBXW7	84894	LRRN6A	S
55294	FBXW7	253714	C6orf167	S
55294	FBXW7	257218	SHPRH	S
55294	FBXW7	340390	KIAA1875	S
55308	DDX19A	57409	AD023	R

55322	FLJ11193	84337	ELOF1	R
55324	ABCF3	79939	SLC35E1	S
55324	ABCF3	84273	C4orf14	S
55324	ABCF3	114034	TOE1	S
55339	WDR33	84060	DKFZP564O0523	S
55388	MCM10	55722	Cep72	R
55388	MCM10	80321	Cep70	R
55388	MCM10	115106	CCDC5	L
55388	MCM10	127557	ZBTB8	R
55388	MCM10	151871	DPPA2	R
55509	SNFT	84699	CREB3L3	L
55509	SNFT	90993	CREB3L1	L
55509	SNFT	148327	CREB3L4	L
55540	IL17RB	64806	IL17E	L
55565	LOC55565	541468	C1orf190	R
55577	NAGK	84708	LNX	R
55577	NAGK	167227	DCP2	L
55577	NAGK	339965	FLJ25770	R
55596	ZCCHC8	55660	FNBP3	L
55603	FAM46A	56647	BCCIP	L
55603	FAM46A	112398	EGLN2	L
55611	OTUB1	79589	RNF128	L
55613	MTMR8	66036	MTMR9	R
55619	DOCK10	541468	C1orf190	R
55643	BTBD2	57473	GM632	L
55643	BTBD2	60492	MDS025	S
55643	BTBD2	84060	DKFZP564O0523	S
55643	BTBD2	84966	IGSF21	S
55643	BTBD2	197131	UBR1	S
55660	FNBP3	56893	UBQLN4	L
55660	FNBP3	57620	STIM2	L
55660	FNBP3	91010	FMNL3	L
55660	FNBP3	114793	FMNL2	L
55660	FNBP3	204851	HIPK1	L
55660	FNBP3	221935	SDK1	L
55661	DDX27	57473	GM632	L
55661	DDX27	84988	PPP1R16A	S
55662	HIF1AN	79754	ASB13	R
55662	HIF1AN	85302	FBF1	R
55662	HIF1AN	140462	ASB9	R
55663	ZNF446	80345	ZNF435	R
55663	ZNF446	84838	ZNF496	R
55663	ZNF446	85359	DGCR6L	R
55684	C9orf86	79173	MGC11271	R
55692	LUC7L	65990	C16orf24	S
55698	FLJ10324	84164	ASCC2	S
55698	FLJ10324	84528	PEPP-2	R
55698	FLJ10324	219541	MED19	S
55698	FLJ10324	380423	(null)	S
55700	RPRC1	84060	DKFZP564O0523	S
55722	Cep72	84708	LNX	R
55722	Cep72	147687	ZNF417	R
55726	C12orf11	79027	ZNF655	R
55729	ATF7IP	57724	KIAA1632	L
55729	ATF7IP	59348	ZNF350	L
55729	ATF7IP	60676	PAPPA2	L
55729	ATF7IP	63971	KIF13A	L
55729	ATF7IP	64420	SUSD1	L
55729	ATF7IP	79987	SVEP1	L
55729	ATF7IP	84245	MGC3207	L
55734	ZFP64	57596	KIAA1446	R
55737	VPS35	57473	GM632	L
55746	NUP133	57122	NUP107	L
55755	CDK5RAP2	57519	STARD9	S
55755	CDK5RAP2	59343	SENP2	S
55755	CDK5RAP2	84060	DKFZP564O0523	S
55758	RCOR3	80321	Cep70	R

55770	SEC5L1	149371	EXOC8	L
55791	C1orf103	56144	PCDHA4	S
55791	C1orf103	57664	PLEKHA4	S
55791	C1orf103	64968	MRPS6	S
55791	C1orf103	79756	(null)	S
55791	C1orf103	91653	BOC	S
55791	C1orf103	170961	ANKRD24	S
55791	C1orf103	284403	WDR62	S
55802	DCP1A	167227	DCP2	L
55813	C17orf40	79036	MGC2749	R
55813	C17orf40	84528	PEPP-2	R
55855	FAM45B	254863	MGC40107	S
55872	PBK	57562	KIAA1377	S
55885	LMO3	79036	MGC2749	R
55885	LMO3	79800	ALS2CR8	R
55885	LMO3	127557	ZBTB8	R
55885	LMO3	138046	LOC138046	R
55885	LMO3	220766	KIAA0470L	R
55885	LMO3	222546	RFXDC1	R
55888	ZNF167	170082	MGC17403	R
55906	KIAA1166	79036	MGC2749	R
55916	NXT2	56000	NXF3	RL
55916	NXT2	56001	NXF2	L
55957	F25965	56159	TEX11	R
56144	PCDHA4	60492	MDS025	S
56144	PCDHA4	84060	DKFZP564O0523	S
56144	PCDHA4	84966	IGSF21	S
56159	TEX11	56243	KIAA1217	R
56159	TEX11	57642	COL20A1	R
56159	TEX11	81628	TSC22D4	R
56159	TEX11	81888	HYI	R
56159	TEX11	84260	MGC10854	R
56159	TEX11	84330	ZNF414	R
56159	TEX11	114327	EFHC1	R
56159	TEX11	143379	C10orf82	R
56159	TEX11	151254	ALS2CR11	R
56159	TEX11	220136	CCDC11	R
56243	KIAA1217	56915	EXOSC5	R
56243	KIAA1217	79571	GCC1	R
56616	DIABLO	57448	BIRC6	L
56652	PEO1	64400	FTS	S
56652	PEO1	222019	(null)	S
56654	NPDC1	83755	KRTAP4-12	R
56658	TRIM39	80019	UBTD1	R
56658	TRIM39	84812	PLCD4	R
56674	TMEM9B	57062	DDX24	S
56901	LOC56901	79555	(null)	S
56901	LOC56901	81890	QTRT1	S
56901	LOC56901	197131	UBR1	S
56901	LOC56901	222019	(null)	S
56904	SH3GLB2	339965	FLJ25770	R
56906	THAP10	83755	KRTAP4-12	R
56906	THAP10	140735	Dlc2	R
56911	C21orf7	257397	TAB3	R
56915	EXOSC5	148156	ZNF558	L
56927	GPR108	90678	LRSAM1	S
56949	XAB2	57685	CACHD1	L
56952	PRTFDC1	60491	NIF3L1	R
56952	PRTFDC1	80308	FLAD1	R
56952	PRTFDC1	196483	FAM86A	R
56963	RGMA	84988	PPP1R16A	S
56992	KIF15	57562	KIAA1377	S
56992	KIF15	84557	MAP1LC3A	S
56998	CTNNBIP1	79656	C1orf165	R
57002	C7orf36	57562	KIAA1377	S
57017	C16orf49	57719	TMEM16H	S
57062	DDX24	374923	(null)	S

57088	PLSCR4	83755	KRTAP4-12	R
57095	C1orf128	79577	CDC73	S
57097	PARP11	84705	GTPBP3	R
57136	C20orf3	84695	LOXL3	S
57142	RTN4	79666	PLEKHF2	R
57144	PAK7	84445	LZTS2	R
57159	TRIM54	84675	TRIM55	L
57159	TRIM54	84676	TRIM63	L
57179	KIAA1191	79159	MGC3731	S
57192	MCOLN1	79939	SLC35E1	S
57326	PBXIP1	151871	DPPA2	R
57333	RCN3	57542	KLHDC5	R
57333	RCN3	158471	C9orf65	R
57333	RCN3	283987	C17orf28	R
57336	ZNF287	80021	TMEM62	S
57381	RHOJ	81704	DOCK8	L
57402	S100A14	140576	S100A16	R
57409	AD023	118460	EXOSC6	L
57418	WDR18	84273	C4orf14	S
57453	DSCAML1	260425	MAGI3	L
57473	GM632	58487	ZF	L
57473	GM632	60676	PAPPA2	L
57473	GM632	64855	C9orf88	L
57473	GM632	80351	TNKS2	L
57473	GM632	84445	LZTS2	L
57489	ODF2L	57562	KIAA1377	S
57498	KIDINS220	79577	CDC73	S
57542	KLHDC5	83878	USHBP1	R
57549	IGSF9	84164	ASCC2	S
57556	SEMA6A	57630	SH3MD2	L
57562	KIAA1377	64400	FTS	S
57562	KIAA1377	64968	MRPS6	S
57562	KIAA1377	79137	C2orf17	S
57562	KIAA1377	79641	FLJ22386	S
57562	KIAA1377	81488	GRINL1A	S
57562	KIAA1377	266812	NAP1L5	S
57591	MKL1	93649	MYOCD	L
57596	KIAA1446	58500	ZNF250	R
57596	KIAA1446	84080	C16orf48	R
57596	KIAA1446	117144	CATSPER1	R
57596	KIAA1446	147687	ZNF417	R
57596	KIAA1446	283987	C17orf28	R
57605	PITPNM2	131034	CPNE4	L
57610	RANBP10	57685	CACHD1	L
57610	RANBP10	80731	KIAA1679	L
57610	RANBP10	84466	MEGF10	L
57610	RANBP10	85445	CNTNAP4	L
57658	CALCOCO1	79735	TBC1D17	S
57670	KIAA1549	79577	CDC73	S
57761	TRIB3	84060	DKFZP564O0523	S
57787	MARK4	79803	HPS6	S
57799	RAB40C	114034	TOE1	S
57819	LSM2	79797	ZNF408	L
57862	ZNF410	81488	GRINL1A	S
58190	CTDSP1	83461	CDCA3	R
58477	SRPRB	80279	CDK5RAP3	S
58484	CARD12	64127	CARD15	L
58484	CARD12	147945	NALP4	L
58494	JAM2	83700	JAM3	L
58500	ZNF250	80817	KIAA1712	R
58500	ZNF250	83755	KRTAP4-12	R
58500	ZNF250	127557	ZBTB8	R
58500	ZNF250	151871	DPPA2	R
58513	EPS15L1	85439	STN2	L
58516	FAM60A	84705	GTPBP3	R
59349	KLHL12	80306	MED28	R
59349	KLHL12	84708	LNX	R

59349	KLHL12	124460	SLIC1	R
59350	LGR7	117579	RLN3	L
60313	GPBP1L1	79666	PLEKHF2	R
60490	PPCDC	80152	FLJ13111	S
60491	NIF3L1	63948	DMRTB1	R
60491	NIF3L1	79036	MGC2749	R
60491	NIF3L1	79077	XTP3TPA	R
60491	NIF3L1	79734	KCTD17	R
60491	NIF3L1	81628	TSC22D4	R
60491	NIF3L1	92610	TIFA	R
60491	NIF3L1	222389	C10orf30	R
60528	ELAC2	84164	ASCC2	S
60626	RIC8A	92285	ZNF585B	S
60684	FLJ12716	307255	(null)	S
64109	CRLF2	85480	TSLP	L
64112	MOAP1	151871	DPPA2	R
64219	PJA1	84164	ASCC2	S
64219	PJA1	126070	ZNF440	S
64225	ARL6IP2	84100	ARL6	L
64240	ABCG5	64241	ABCG8	L
64375	ZNFN1A4	64376	ZNFN1A5	L
64403	CDH24	84988	PPP1R16A	S
64746	ACBD3	64750	SMURF2	L
64750	SMURF2	135932	FLJ90586	L
64750	SMURF2	404093	CUEDC1	L
64753	NAG6	79797	ZNF408	L
64769	C1orf149	83746	L3MBTL2	R
64965	MRPS9	83759	RBM30	S
65220	NADK	79873	NUDT18	R
65220	NADK	84708	LNX	R
65264	FLJ13855	79666	PLEKHF2	R
65989	EGFL9	83755	KRTAP4-12	R
65991	FUNDC2	84164	ASCC2	S
73710	(null)	79020	C7orf25	S
78987	CRELD1	222019	(null)	S
78992	YIPF2	286451	YIPF6	R
79020	C7orf25	118924	C10orf4	S
79020	C7orf25	162952	(null)	S
79020	C7orf25	284004	FLJ23825	S
79027	ZNF655	83755	KRTAP4-12	R
79036	MGC2749	79873	NUDT18	R
79036	MGC2749	80125	FLJ32855	R
79036	MGC2749	80254	Cep63	R
79036	MGC2749	81631	MAP1LC3B	R
79036	MGC2749	84289	ING5	R
79036	MGC2749	84708	LNX	R
79036	MGC2749	84984	MGC14126	R
79036	MGC2749	90410	IFT20	R
79036	MGC2749	138065	RNF183	R
79036	MGC2749	164127	C1orf65	R
79036	MGC2749	220766	KIAA0470L	R
79050	NOC4L	81628	TSC22D4	R
79050	NOC4L	83878	USHBP1	R
79077	XTP3TPA	84273	C4orf14	S
79088	ZNF426	80321	Cep70	R
79088	ZNF426	83755	KRTAP4-12	R
79094	MGC4504	84528	PEPP-2	R
79096	MGC4707	84060	DKFZP564O0523	S
79142	PHF23	90678	LRSAM1	S
79159	MGC3731	150421	(null)	S
79172	MGC11266	220766	KIAA0470L	R
79173	MGC11271	148223	C19orf25	R
79187	FSD1	84988	PPP1R16A	S
79363	C1orf89	80199	FLJ22688	R
79434	(null)	93145	OLFM2	S
79571	GCC1	79869	FLJ12529	R
79571	GCC1	83878	USHBP1	R

79571	GCC1	85302	FBF1	R
79576	NKAP	80321	Cep70	R
79576	NKAP	220108	FLJ30707	R
79586	CHPF	118460	EXOSC6	L
79637	ARMC7	253980	KCTD13	R
79679	VTCN1	151888	BTLA	L
79686	C14orf139	84078	KBTBD7	S
79723	SUV39H2	288353	(null)	S
79734	KCTD17	79873	NUDT18	R
79734	KCTD17	84708	LNX	R
79734	KCTD17	201965	RWDD4A	R
79734	KCTD17	474354	LRRC18	R
79735	TBC1D17	84164	ASCC2	S
79753	SNIP1	84186	ZCCHC7	L
79753	SNIP1	204851	HIPK1	L
79756	(null)	84060	DKFZP564O0523	S
79760	GEMIN7	79833	GEMIN6	RL
79797	ZNF408	80321	Cep70	R
79797	ZNF408	83755	KRTAP4-12	R
79797	ZNF408	127557	ZBTB8	R
79797	ZNF408	138046	LOC138046	R
79801	SHCBP1	221302	C6orf113	R
79873	NUDT18	83755	KRTAP4-12	R
79873	NUDT18	92610	TIFA	R
79873	NUDT18	115704	EVI5L	R
79873	NUDT18	253980	KCTD13	R
79912	FLJ22028	139596	RP11-311P8.3	R
80022	MYO15B	127557	ZBTB8	R
80028	FBXL18	83755	KRTAP4-12	R
80125	FLJ32855	81628	TSC22D4	R
80125	FLJ32855	83878	USHBP1	R
80125	FLJ32855	127557	ZBTB8	R
80174	DRF1	83755	KRTAP4-12	R
80198	MUS81	146956	EME1	L
80254	Cep63	83878	USHBP1	R
80306	MED28	83878	USHBP1	R
80321	Cep70	84080	C16orf48	R
80321	Cep70	127557	ZBTB8	R
80321	Cep70	284058	LOC284058	R
80351	TNKS2	85456	TNKS1BP1	L
80723	TMEM22	116983	CENTB5	S
80764	THAP7	83755	KRTAP4-12	R
80764	THAP7	541468	C1orf190	R
80817	KIAA1712	220082	NURIT	R
81488	GRINL1A	83759	RBM30	S
81488	GRINL1A	112840	C14orf150	S
81605	C9orf74	84164	ASCC2	S
81620	CDT1	115106	CCDC5	L
81628	TSC22D4	84080	C16orf48	R
81628	TSC22D4	84708	LNX	R
81628	TSC22D4	122786	FRMD6	R
81628	TSC22D4	134510	UBLCP1	R
81628	TSC22D4	146849	FLJ32734	R
81631	MAP1LC3B	84078	KBTBD7	S
83552	MFRP	114902	C1QTNF5	L
83640	MGC2560	84528	PEPP-2	R
83755	KRTAP4-12	83897	KRTAP3-2	R
83755	KRTAP4-12	84707	BEX2	R
83755	KRTAP4-12	84708	LNX	R
83755	KRTAP4-12	84733	CBX2	R
83755	KRTAP4-12	84894	LRRN6A	R
83755	KRTAP4-12	90594	ZNF439	R
83755	KRTAP4-12	92595	MGC13138	R
83755	KRTAP4-12	117144	CATSPER1	R
83755	KRTAP4-12	126070	ZNF440	R
83755	KRTAP4-12	143684	FAM76B	R
83755	KRTAP4-12	147687	ZNF417	R

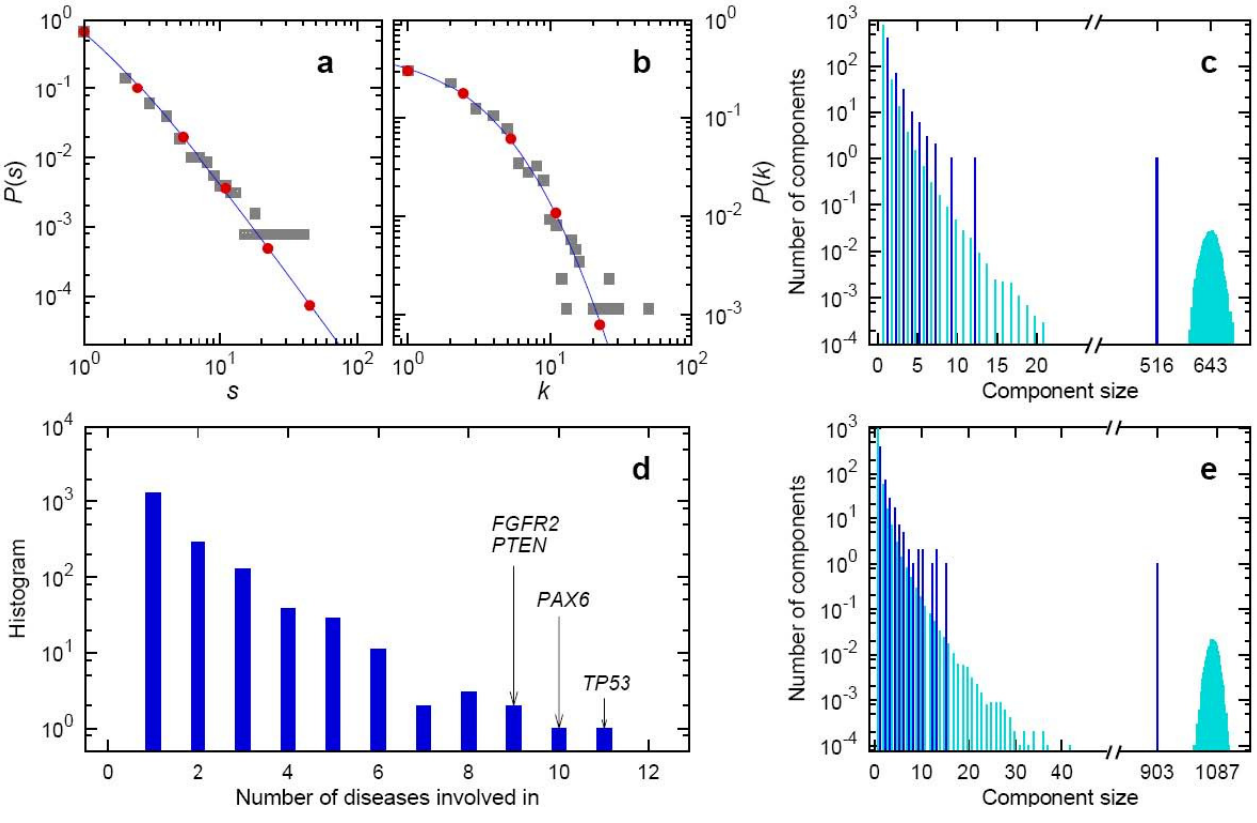
83755	KRTAP4-12	164127	C1orf65	R
83755	KRTAP4-12	164592	FLJ36046	R
83755	KRTAP4-12	286301	MGC42630	R
83755	KRTAP4-12	414157	C10orf62	R
83878	USHBP1	85302	FBF1	R
83878	USHBP1	89885	FATE1	R
83878	USHBP1	90060	JM11	R
83878	USHBP1	127703	FLJ38984	R
83878	USHBP1	143241	DYDC1	R
83878	USHBP1	149371	EXOC8	R
83878	USHBP1	284058	LOC284058	R
83988	NCALD	113878	DTX2	R
84026	(null)	114034	TOE1	S
84062	DTNBP1	85359	DGCR6L	R
84067	DKFZP566M1046	92840	C19orf32	R
84141	FLJ13391	222019	(null)	S
84224	AE2	116461	C1orf19	R
84277	WBSCR18	118460	EXOSC6	L
84289	ING5	89797	NAV2	R
84313	VPS25	84528	PEPP-2	R
84445	LZTS2	84528	PEPP-2	R
84528	PEPP-2	85302	FBF1	R
84528	PEPP-2	113878	DTX2	R
84528	PEPP-2	114823	LENG8	R
84528	PEPP-2	115572	FAM46B	R
84528	PEPP-2	129807	NEU4	R
84528	PEPP-2	169966	FAM46D	R
84661	LOC84661	143241	DYDC1	R
84675	TRIM55	84676	TRIM63	L
84680	PHACS	85302	FBF1	R
84699	CREB3L3	90993	CREB3L1	L
84699	CREB3L3	148327	CREB3L4	L
84708	LNX	92610	TIFA	R
84708	LNX	127557	ZBTB8	R
84708	LNX	253980	KCTD13	R
84708	LNX	286514	MAGEB18	R
84888	SPPL2A	92856	IMP4	L
84970	C1orf94	93487	C14orf32	R
84978	FRMD5	284169	(null)	S
84988	PPP1R16A	359845	MGC45871	S
85302	FBF1	90410	IFT20	R
85359	DGCR6L	283518	KCNRG	R
85439	STN2	127833	SYT2	L
89885	FATE1	138065	RNF183	R
90060	JM11	220766	KIAA0470L	R
90427	BMF	140735	Dlc2	L
90933	TRIM41	127557	ZBTB8	R
90993	CREB3L1	148327	CREB3L4	L
91056	DKFZp761E198	283518	KCNRG	R
91544	UBXD5	154313	C6orf165	R
91754	NEK9	140609	NEK7	L
92822	ZFP276	127557	ZBTB8	R
93986	FOXP2	116113	FOXP4	L
112869	LOC112869	339965	FLJ25770	R
112950	MED8	124402	LOC124402	S
113878	DTX2	222546	RFXDC1	R
114088	TRIM9	158345	LOC158345	S
116225	ZMYND19	253980	KCTD13	R
116225	ZMYND19	284352	LOC284352	R
118460	EXOSC6	196513	DCP1B	L
121536	AEBP2	138046	LOC138046	R
127703	FLJ38984	220766	KIAA0470L	R
128240	APOA1BP	284169	(null)	S
138046	LOC138046	220766	KIAA0470L	R
148223	C19orf25	220766	KIAA0470L	R
153733	MGC39633	374618	TEX9	R
153733	MGC39633	541468	C1orf190	R

162952	(null)	196383	MGC7036	S
162952	(null)	234729	(null)	S
163702	IL28RA	282616	IL28A	L
163702	IL28RA	282617	IL28B	L
163702	IL28RA	282618	IL29	L
164127	C1orf65	541468	C1orf190	R
167227	DCP2	196513	DCP1B	L
170082	MGC17403	541468	C1orf190	R
196383	MGC7036	284004	FLJ23825	S
220134	C18orf24	256369	C14orf48	R
222389	C10orf30	284352	LOC284352	R

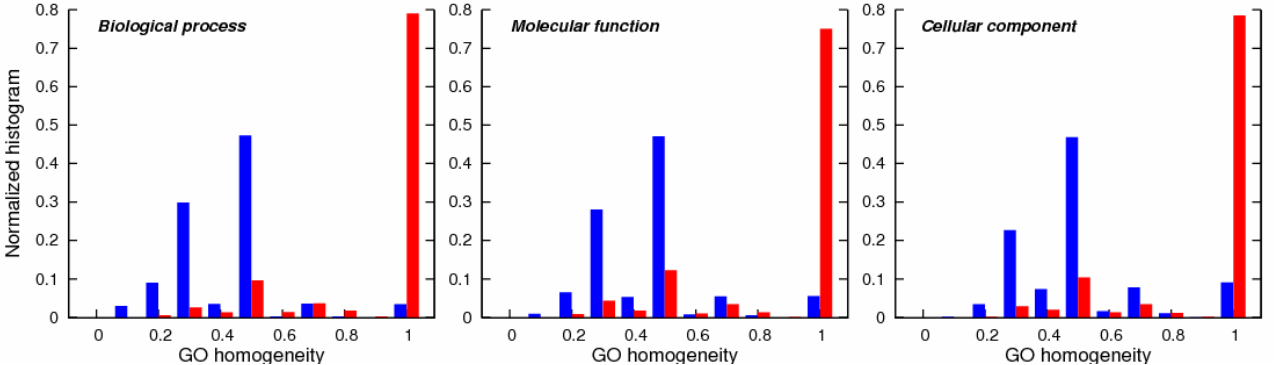
Table 5. **Summary of the significance analysis for Fig. 4*a, c-h*** Fields in red denote significant positive trends, and those in blue do significant negative trends.

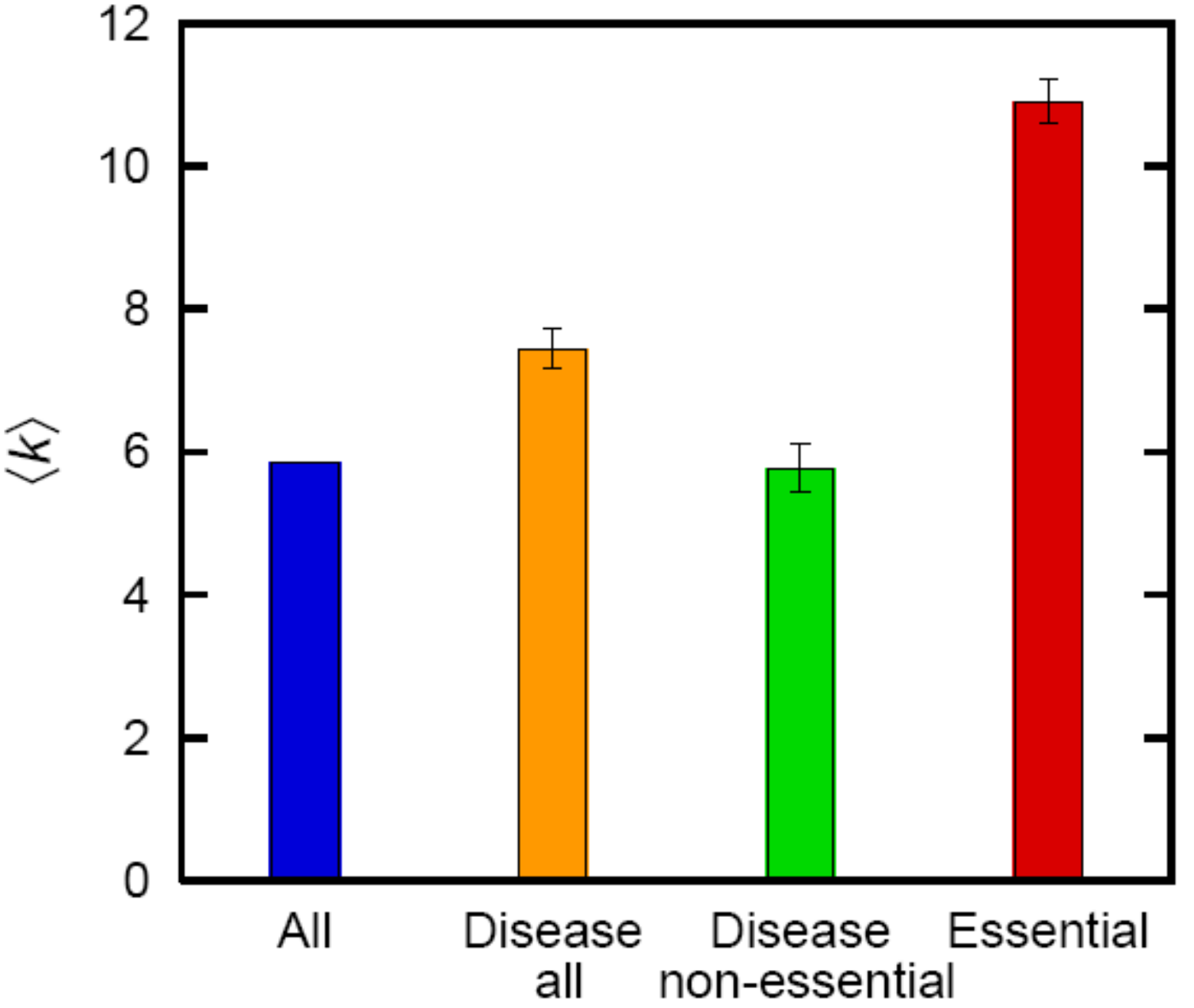
Panel	A_O	*Z*-score	*P*-value
4a	0.040	8.4	1.6×10^{-17}
4c	0.092	8.6	1.3×10^{-17}
4d	0.0088	2.1	0.015
4e	0.49	3.6	1.7×10^{-4}
4f	-0.23	-5.4	2.6×10^{-8}
4g	0.0064	8.1	2.8×10^{-16}
4h	-0.0010	-4.7	1.4×10^{-6}

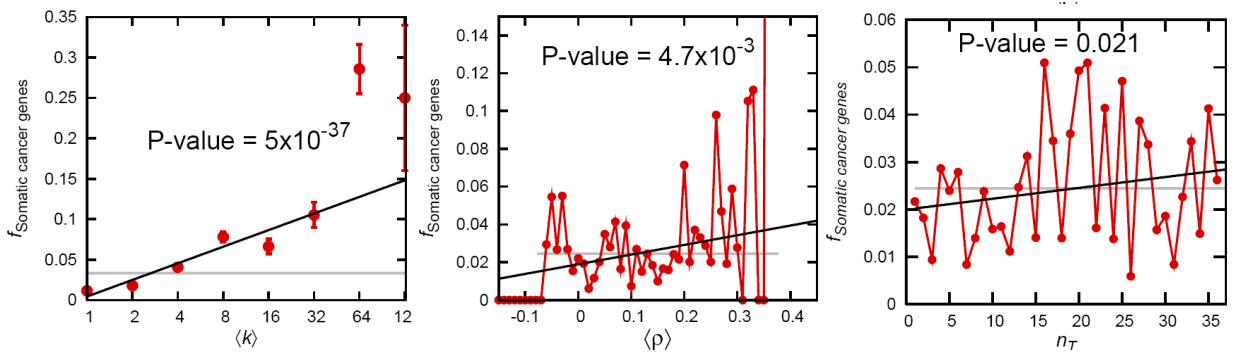
518	Fabry disease (3)	GLA	301500	Xq22	Metabolic	
519	Facioscapulohumeral muscular dystrophy-1A (3)	FSHMD1A, FSHD1A	158900	4q35	Muscular	
520	Factor H and factor H-like 1 (3)	HF1, CFH, HUS	134370	1q32	Hematological	
520	Factor V and factor VIII, combined deficiency of, 227300 (3)	MCFD2	607788	2p21-p16.3	Hematological	
520	Factor VII deficiency (3)	F7	227500	13q34	Hematological	
520	Factor X deficiency (3)	F10	227600	13q34	Hematological	
520	Factor XI deficiency, autosomal dominant (3)	F11	264900	4q35	Hematological	
520	Factor XI deficiency, autosomal recessive (3)	F11	264900	4q35	Hematological	
520	Factor XII deficiency (3)	F12, HAF	234000	5q33-qter	Hematological	
520	Factor XIIIA deficiency (3)	F13A1, F13A	134570	6p25-p24	Hematological	
520	Factor XIIIB deficiency (3)	F13B	134580	1q31-q32.1	Hematological	
522	Familial Mediterranean fever, 249100 (3)	MEFV, MEF, FMF	608107	16p13	Immunological	
523	Fanconi anemia, complementation group A, 227650 (3)	FANCA, FACA, FA1, FA, FAA	607139	16q24.3	multiple	
523	Fanconi anemia, complementation group B, 300514 (3)	FAAP95, FAAP90, FLJ34064, FAN	300515	Xp22.31	multiple	
523	Fanconi anemia, complementation group C (3)	FANCC, FACC	227645	9q22.3	multiple	
523	Fanconi anemia, complementation group D1, 605724 (3)	BRCA2, FANCD1	600185	13q12.3	multiple	
523	Fanconi anemia, complementation group D2 (3)	FANCD2, FANCD, FACD, FAD	227646	3p25.3	multiple	
523	Fanconi anemia, complementation group E (3)	FANCE, FACE	600901	6p22-p21	multiple	
523	Fanconi anemia, complementation group F (3)	FANCF	603467	11p15	multiple	
523	Fanconi anemia, complementation group G (3)	XRCC9, FANCG	602956	9p13	multiple	
523	Fanconi anemia, complementation group J, 609054 (3)	BRIP1, BACH1, FANCJ	605882	17q22	multiple	
523	Fanconi anemia, complementation group L (3)	PHF9, FANCL	608111	2p16.1	multiple	
523	Fanconi anemia, complementation group M (3)	FANCM, KIAA1596	609644	14q21.3	multiple	
524	Fanconi-Bickel syndrome, 227810 (3)	SLC2A2, GLUT2	138160	3q26.1-q26.3	Metabolic	
526	Farber lipogranulomatosis (3)	ASAH, AC	228000	8p22-p21.3	Metabolic	
527	Fatty liver, acute, of pregnancy (3)	HADHA, MTPA	600890	2p23	Metabolic	
528	Favism (3)	G6PD, G6PD1	305900	Xq28	Metabolic	
530	Fechtner syndrome, 153640 (3)	MYH9, MHA, FTNS, DFNA17	160775	22q11.2	multiple	
531	Feingold syndrome, 164280 (3)	MYCN, NMYC, ODED, MODED	164840	2p24.1	multiple	
532	Fertile eunuch syndrome, 228300 (3)	GNRHR, LHRHR	138850	4q21.2	Endocrine	
535	Fibrocalculous pancreatic diabetes, susceptibility to (3)	SPINK1, PSTI, PCTT, TATI	167790	5q32	Gastrointestinal	
537	Fibromatosis, gingival, 135300 (3)	SOS1, GINGF, GF1, HGF	182530	2p22-p21	Connective tissue disorder	
537	Fibromatosis, juvenile hyaline, 228600 (3)	ANTXR2, CMG2, JHF, ISH	608041	4q21	Connective tissue disorder	

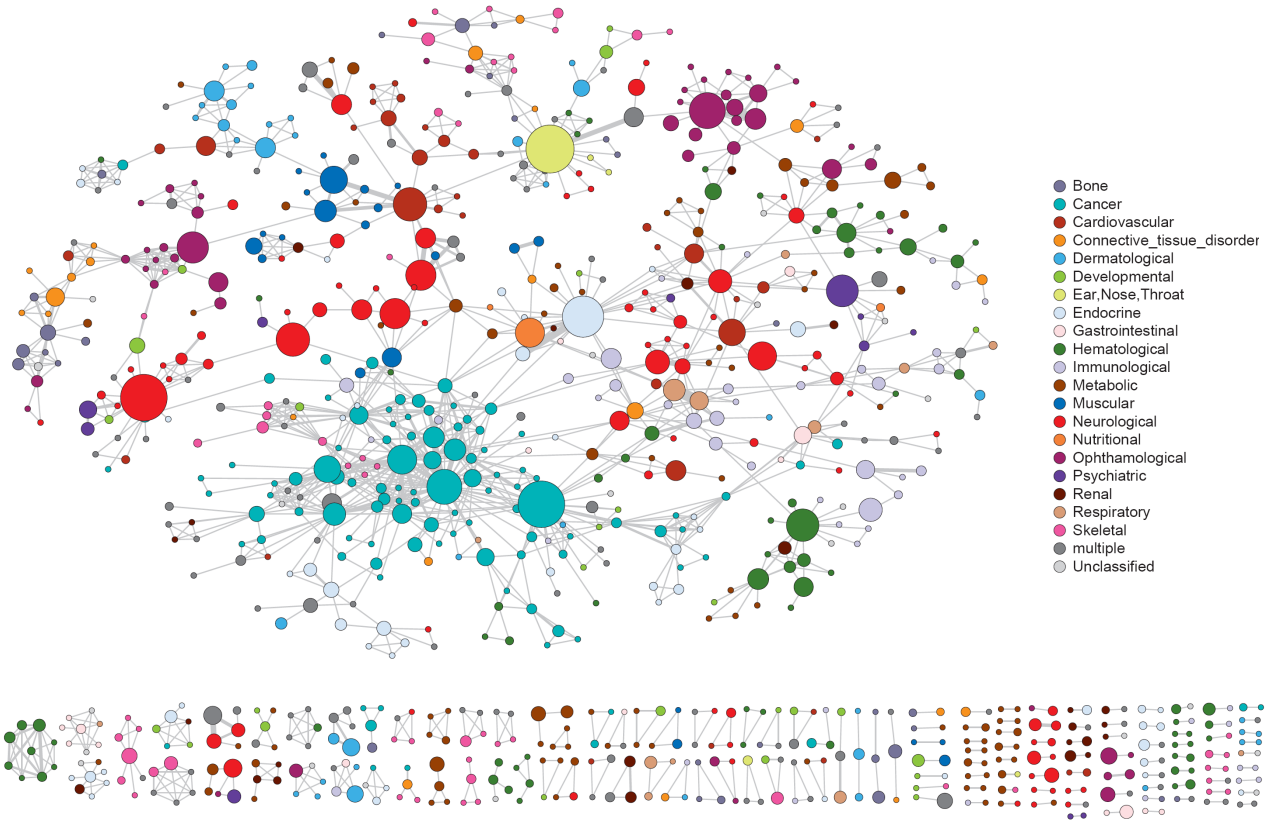

a
b
c
d
e
P(s)
s
P(k)
k
Number of components
Component size
Histogram
Number of diseases involved in
FGFR2
PTEN
PAX6
TP53

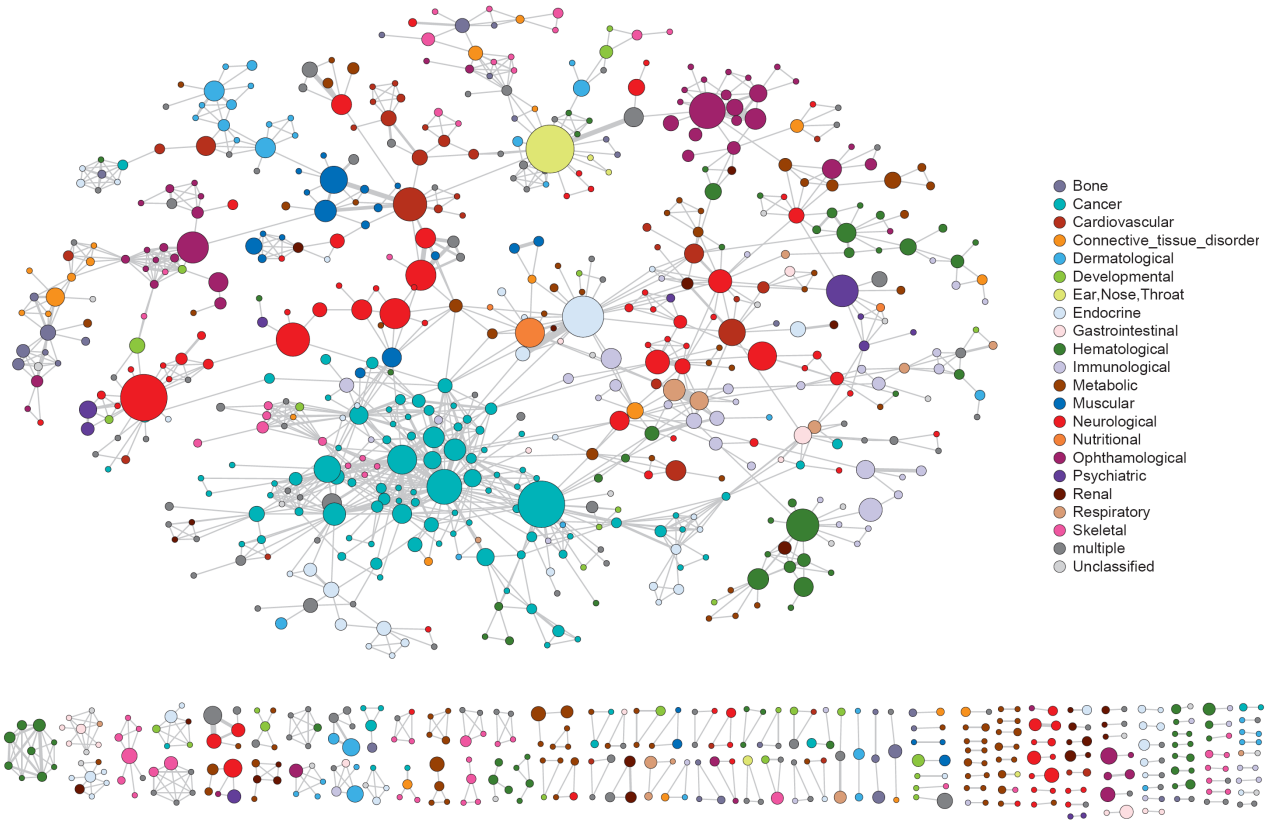
CLASS	Average number of genes	Percentage of disorders in the HDN	Percentage of disorders in giant component
Bone	1.8	80	63
Cancer	3.1	88	89
Cardiovascular	2.8	80	82
Connective tissue	2.1	71	75
Dermatological	2.2	77	57
Developmental	1.5	63	35
Ear,Nose,Throat	7.7	83	60
Endocrine	2.2	71	68
Gastrointestinal	1.7	61	29
Hematological	2.2	76	51
Immunological	1.9	57	62
Metabolic	1.5	43	34
Muscular	2.8	71	68
Neurological	2.6	67	71
Nutritional	6.0	75	100
Ophthamological	2.7	77	81
Psychiatric	2.1	53	89
Renal	1.8	61	36
Respiratory	2.8	92	33
Skeletal	1.3	83	43
Multiple	1.6	71	49


Biological process
Molecular function
Cellular component
Normalized histogram
GO homogeneity
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0
0.2
0.4
0.6
0.8
1


12
10
8
6
4
2
0
⟨k⟩
All
Disease all
Disease non-essential
Essential

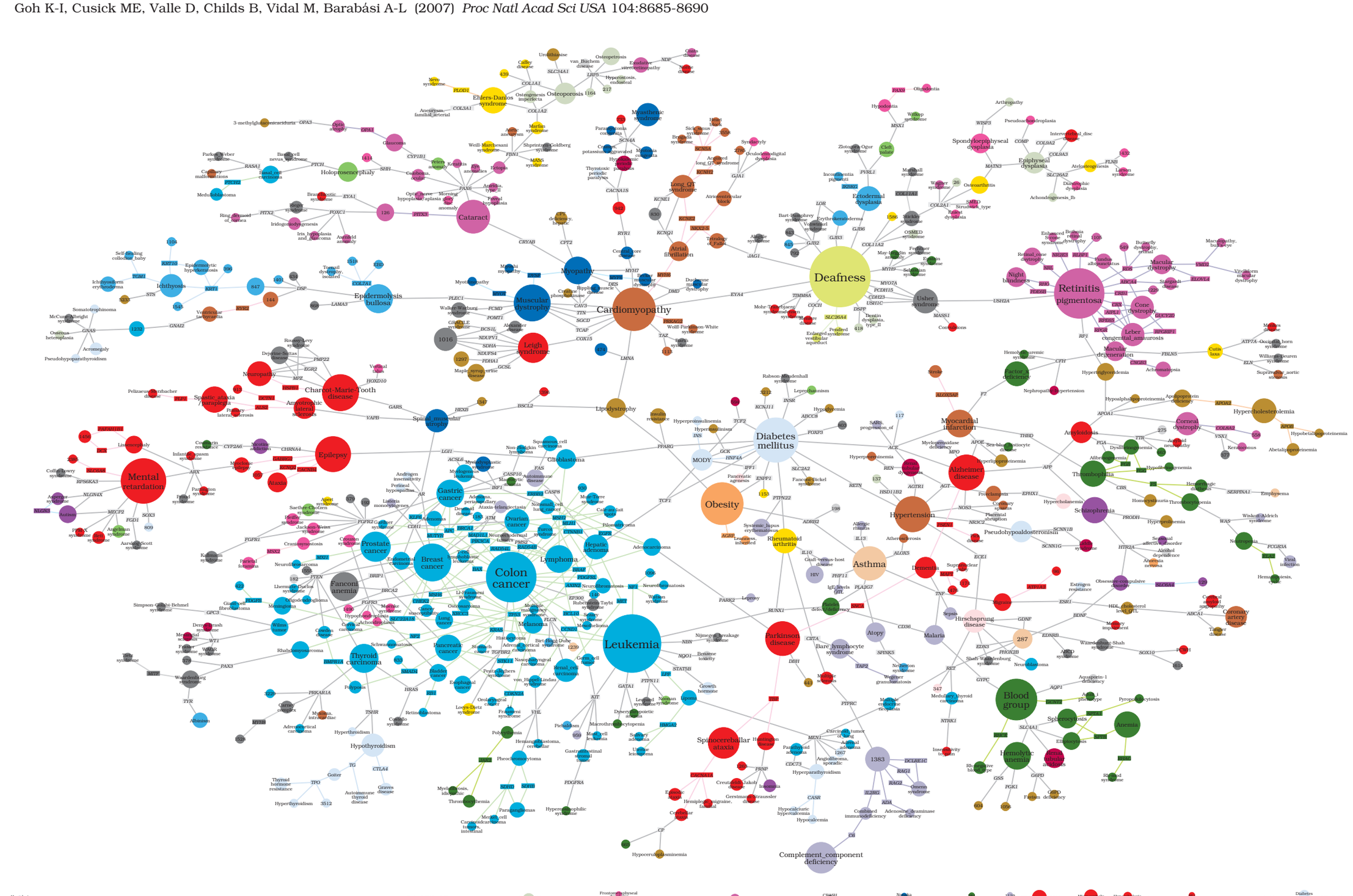

P-value = 5x10^-37
f_Somatic cancer genes
⟨k⟩
P-value = 4.7x10^-3
f_Somatic cancer genes
⟨ρ⟩
P-value = 0.021
f_Somatic cancer genes
n_T


Bone
Cancer
Cardiovascular
Connective_tissue_disorder
Dermatological
Developmental
Ear,Nose,Throat
Endocrine
Gastrointestinal
Hematological
Immunological
Metabolic
Muscular
Neurological
Nutritional
Ophthamological
Psychiatric
Renal
Respiratory
Skeletal
multiple
Unclassified


Bone
Cancer
Cardiovascular
Connective_tissue_disorder
Dermatological
Developmental
Ear,Nose,Throat
Endocrine
Gastrointestinal
Hematological
Immunological
Metabolic
Muscular
Neurological
Nutritional
Ophthamological
Psychiatric
Renal
Respiratory
Skeletal
multiple
Unclassified

The human disease network

Goh K-I, Cusick ME, Valle D, Childs B, Vidal M, Barabási A-L (2007) *Proc Natl Acad Sci USA* 104:8685-8690



Disorder Class

- Bone
- Cancer
- Cardiovascular
- Connective tissue disorder
- Dermatological
- Developmental
- Ear, Nose, Throat
- Endocrine
- Gastrointestinal
- Hematological
- Immunological
- Metabolic
- Muscular
- Neurological
- Nutritional
- Ophthamological
- Psychiatric
- Renal
- Respiratory
- Skeletal
- multiple
- Unclassified

Disorder Name

18 Acampomelic campoleic dysplasia
26 Achondrogenesis-hypochondrogenesis, type II
53 Adrenal hyperplasia, congenital
77 Aldosterone to renin ratio raised
87 Alpha-1-antichymotrypsin deficiency
92 Alpha-thalassemia/mental retardation syndrome
96 Alternating hemiplegia of childhood
107 Analgesia from kappa-opioid receptor agonist, female-specific
117 Angiotensin I-converting enzyme
126 Anterior segment anomalies and cataract
129 Anxiety-related personality traits
137 Apparent mineralocorticoid excess, hypertension due to
144 Arrhythmogenic right ventricular dysplasia
162 Athabaskan brainstem dysgenesis syndrome
171 Attention-deficit hyperactivity disorder
182 Bannayan-Riley-Ruvalcaba syndrome
192 Beare-Stevenson cutis gyrata syndrome
198 Beta-2-adrenoreceptor agonist, reduced response to
210 Blepharophimosis, epicanthus inversus, and ptosis
217 Bone mineral density variability
275 Carpal tunnel syndrome, familial
279 Cavernous malformations of CNS and retina
287 Central hypoventilation syndrome
292 Cerebrooculofacioskeletal syndrome
294 Cerebrovascular disease, occlusive
313 Cholesteryl ester storage disease
320 Chorea/athetosis, hypophyloidism, and respiratory distress
329 Chylomicronemia syndrome, familial
344 Cold-induced autoinflammatory syndrome
347 Colonic aganglionosis, total, with small bowel involvement
357 Conotruncal anomaly face syndrome
377 Craniofacial anomalies, empty sella turcica, corneal endothelial changes
378 Craniofacial-deafness-hand syndrome
379 Craniofacial-skeletal-dermatologic dysplasia
396 Cyclic ichthyosis with epidermolytic hyperkeratosis
418 Dentinogenesis imperfecta, Shields type
422 Dermatofibrosarcoma protuberans
434 Dilated cardiomyopathy with woolly hair and keratoderma
438 Disordered steroidogenesis, isolated
439 Dissection of cervical arteries
441 Dopamine beta-hydroxylase deficiency
452 Dyggve-Melchior-Clausen disease
453 Dyssilmimemic hyperthyroxinemia
461 Dysseguinid dysplasia, Silverman-Handmaker type
463 Dystransthyretinemic hyperthyroxinemia
471 Elite sprint athletic performance
474 Emery-Dreifuss muscular dystrophy
527 Fatty liver, acute, of pregnancy
535 Fibrocaculous pancreatic diabetes
539 Fibular hypoplasia and complex brachydactyly
544 Fluorouracil toxicity, sensitivity to
545 Focal cortical dysplasia, Taylor balloon cell type
549 Foveomacular dystrophy, adult-onset, with choroidal neovascularization
558 Fuchs endothelial corneal dystrophy
584 Giant platelet disorder, isolated
594 Glomerulocystic kidney disease, hypoplastic
604 Glutathione synthetase deficiency
626 Greig cephalopolysyndactyly syndrome
646 Hearing loss, low-frequency sensorineural
665 Hemosiderosis, systemic, due to aceruloplasminemia
679 High-molecular-weight kininogen deficiency
699 Homocystinuria-megaloblastic anemia, cbl E type
701 Homozygous 2p16 deletion syndrome
727 Hyperferritinemia-cataract syndrome
733 Hyperkalemic periodic paralysis
734 Hyperkeratotic cutaneous capillary-venous malformations
780 Hypoparathyroidism-retardation-dysmorphism syndrome
785 Hypoplastic enamel pitting, localized
792 Hystrix-like ichthyosis with deafness
803 Immunodysregulation, polyendocrinopathy, and enteropathy, X-linked
809 Infundibular hypoplasia and hypopituitarism
830 Jervell and Lange-Nielsen syndrome
833 Juvenile polyposis/hereditary hemorrhagic telangiectasia syndrome
843 Keratitis-ichthyosis-deafness syndrome
845 Keratoderma, palmoplantar, with deafness
847 Keratosis palmoplantaris striata
868 Laryngonychocutaneous syndrome
891 Leukoencephalopathy with vanishing white matter
913 Lower motor neuron disease, progressive, without sensory symptoms
930 Lynch cancer family syndrome II
942 Malignant hyperthermia susceptibility
945 Mandibuloacral dysplasia with type B lipodystrophy
959 Mastocytosis with associated hematologic disorder
969 Medullary cystic kidney disease
982 Melorheostosis with osteopoikilosis
1001 Methionine adenosyltransferase deficiency, autosomal recessive
1002 Methylcobalamin deficiency, cblG type
1016 Mitochondrial complex deficiency
1050 Myelomonocytic leukemia, chronic
1056 Myoglobinuria/hemolysis due to PGK deficiency
1057 Myokymia with neonatal epilepsy
1080 Nephrogenic syndrome of inappropriate antidiuresis
1090 Neural tube defects, maternal risk of
1096 Neurofibromatosis-Noonan syndrome
1104 Nevus, epidermal, epidermolytic hyperkeratotic type
1105 Newfoundland rod-cone dystrophy
1111 Noncompaction of left ventricular myocardium
1119 Norwalk virus infection, resistance to
1133 Oculodaucocerebrorenal syndrome
1140 Oligodontia-colorectal cancer syndrome
1153 Ossification of the posterior longitudinal spinal ligaments
1164 Osteoporosis-pseudoglioma syndrome
1174 Palldopontonigral degeneration
1183 Papillary serous carcinoma of the peritoneum
1227 Pigmentation of hair, skin, and eyes, variation in
1229 Pigmented paravenous chorioretinal atrophy
1232 Pituitary ACTH-secreting adenoma
1238 Pneumonitis, desquamative interstitial
1239 Pneumothorax, primary spontaneous
1265 Prion disease with protracted course
1265 Progressive external ophthalmoplegia with mitochondrial DNA deletions
1267 Prolactinoma, hyperparathyroidism, carcinoid syndrome
1297 Pyruvate dehydrogenase deficiency
1325 Rhizomelic chondrodysplasia punctata
1335 Robinow syndrome, autosomal recessive
1347 Sandhoff disease, infantile, juvenile, and adult forms
1361 Schwartz-Jampel syndrome, type 1
1376 Sensory ataxic neuropathy, dysarthria, and ophthalmoparesis
1383 Severe combined immunodeficiency
1396 Silver spastic paraplegia syndrome
1401 Skin fragility-woolly hair syndrome
1414 Solitary median maxillary central incisor
1432 Spondylocarpotarsal synostosis syndrome
1438 Stages ankylosis syndrome without symphalangismen
1446 Stevens-Johnson syndrome, carbamazepine-induced
1456 Subcortical laminar heterotopia
1466 Sweat chloride elevation without CF
1475 Tarsal-carpal coalition syndrome
1476 Tauopathy and respiratory failure
1490 Thanatophoric dysplasia, types I and II
1518 Transient bullous of the newborn
1519 Transposition of great arteries, dextro-looped
1526 Trifunctional protein deficiency
1528 Trismus-pseudocomptodactyly syndrome
1542 Ullrich congenital muscular dystrophy
1545 Unna-Thost disease, nonepidermolytic
1555 VATER association with hydrocephalus
1565 Vitamin K dependent coagulation defect
1580 Warfarin resistance/sensitivity
1586 Weissenbacher-Zweymüller syndrome
1611 XLA and isolated growth hormone deficiency
1614 Vernadoe deaf-blind hypogenitalism syndrome
2327 Chronic infections, due to opsonin defect
2354 Congenital bilateral absence of vas deferens
2385 Creatine deficiency syndrome, X-linked
2785 Hypoplastic left heart syndrome
3037 Multiple cutaneous and uterine leiomyomata
3144 Optic nerve coloboma with renal disease
3212 Persistent hyperinsulinemic hypoglycemia of infancy
3229 Pigmented adrenocortical disease, primary isolated
3260 Premature chromosome condensation w/ microcephaly, mental retardation
3512 Total iodide organification defect
3558 Ventricular fibrillation, idiopathic
4291 Cerebral cavernous malformations
5170 Ovarian hyperstimulation syndrome
5233 Placental steroid sulfatase deficiency

Supporting Information Figure 13 | Bipartite-graph representation of the diseasome. A disorder (circle) and a gene (rectangle) are connected if the gene is implicated in the disorder. The size of the circle represents the number of distinct genes associated with the disorder. Isolated disorders (disorders having no links to other disorders) are not shown. Also, only genes connecting disorders are shown.