

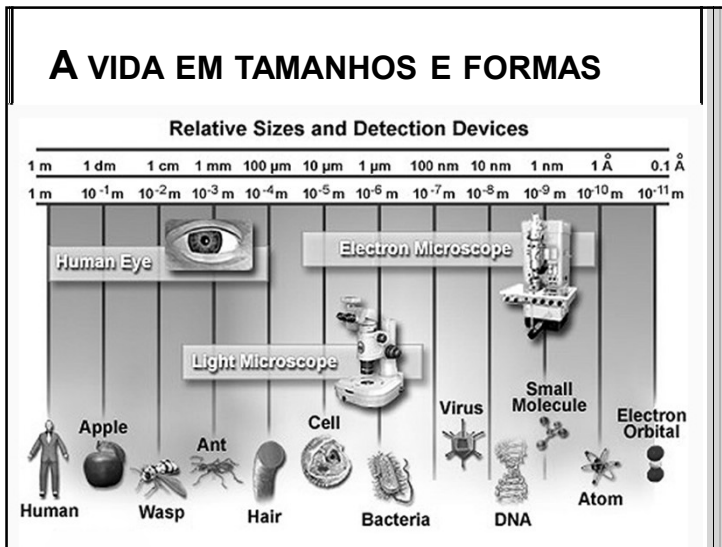
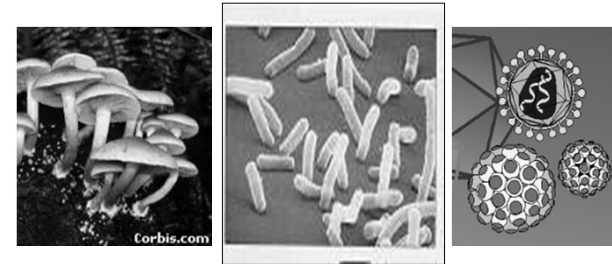
BACTERIOLOGIA

BMM 0584

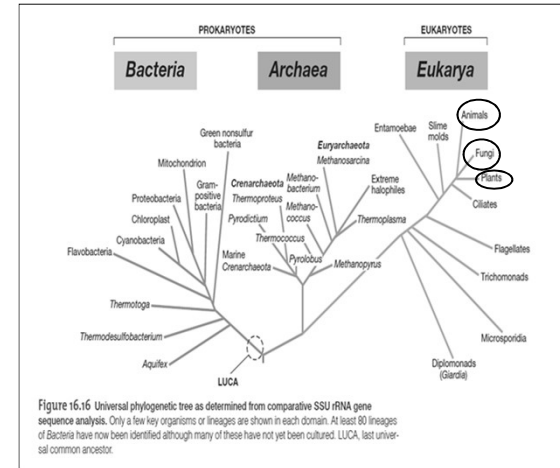
LUÍS CARLOS DE SOUZA FERREIRA

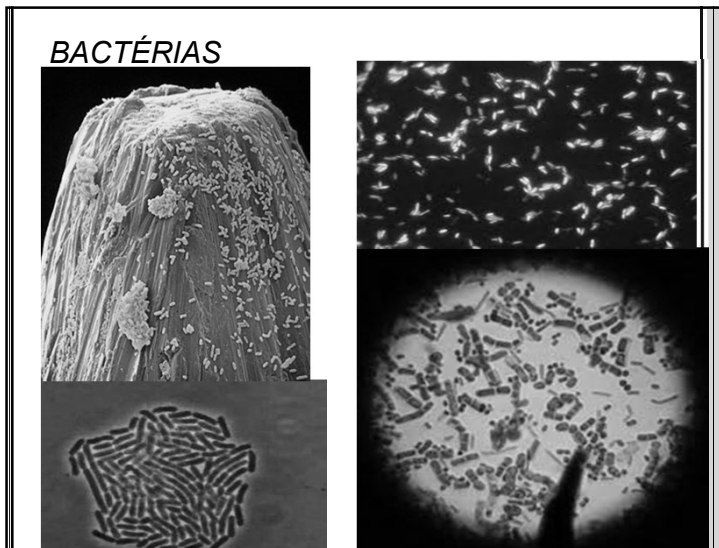
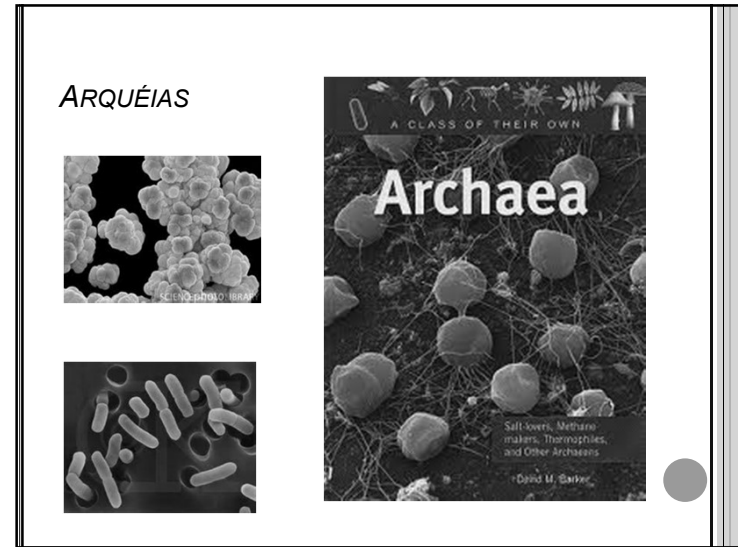
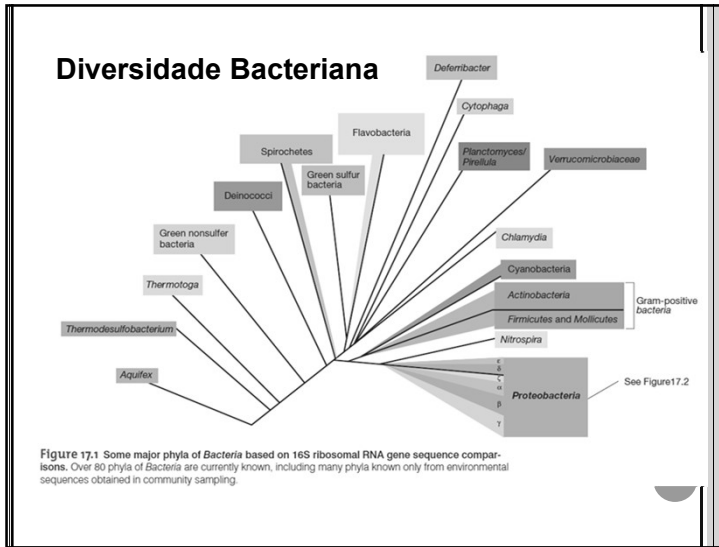
MICROORGANISMOS - DEFINIÇÃO

- Organismos vivos de vida livre (ou intracelulares) que, em geral, têm tamanho igual ou menor que 100 micrômetros. Podem ser procaríotos ou eucariotos (vírus) e são encontrados nos três domínios da vida na terra (Bacteria, Archaea e Eukaria). Podem ser benéficos ou maléficos ao ser humano mas essenciais para a manutenção da vida na Terra.



A origem da vida e a filogenia dos seres vivos

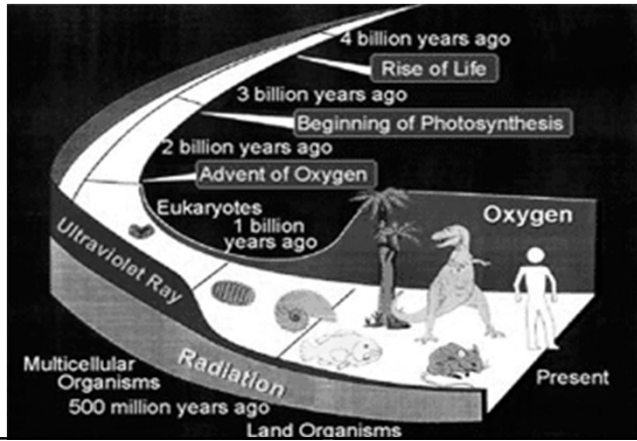




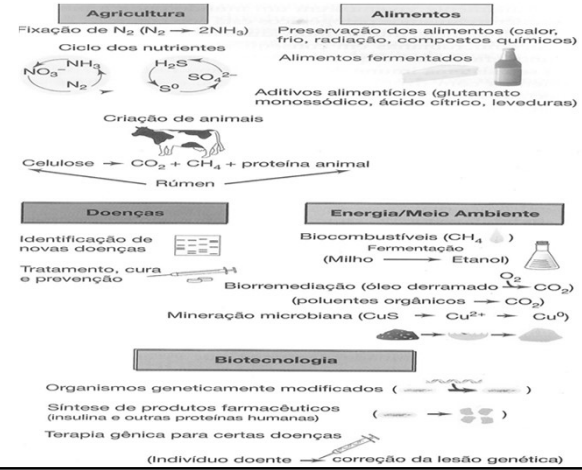
NOMENCLATURA MICROBIANA

- o *Classificação binomial baseada em gênero e espécie;*
- o *Escherichia coli K12*
- o *Mycobacterium tuberculosis*
- o *Paracoccidioides brasiliensis*

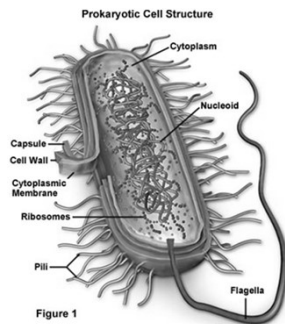
MICROGANISMOS E A VIDA NA TERRA



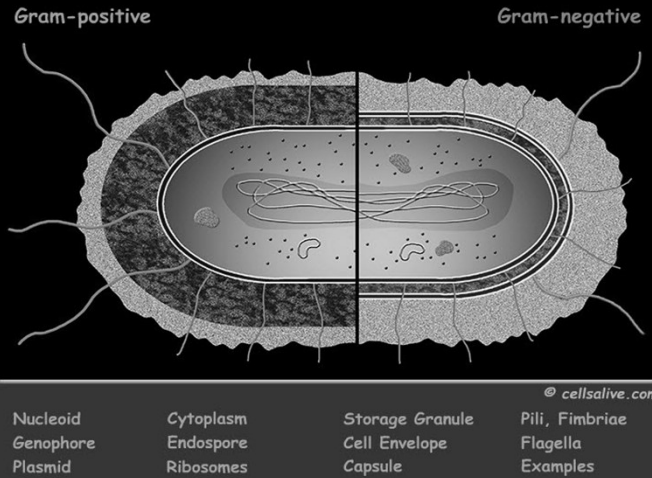
A IMPORTÂNCIA DOS MICRORGANISMOS



TIPO CELULAR PROCARÍOTICO

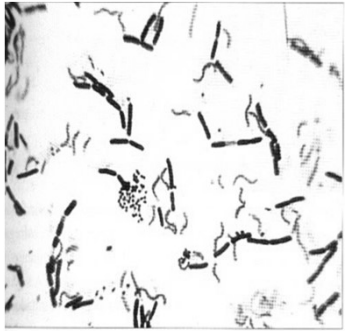


CELLS alive! Interactive Bacteria Cell

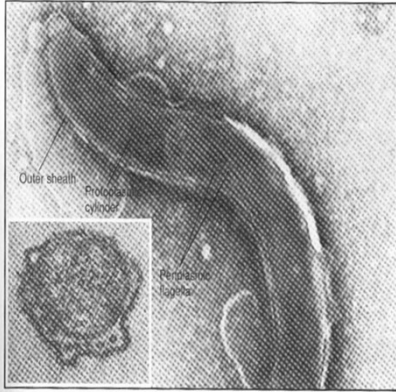


Coloração de Gram

Gram ⁺	Gram ⁻
Cells on slide	Cells on slide
Primary stain, crystal violet Stain purple	Primary stain, crystal violet Stain purple
Mordant, Gram's iodine (increases affinity of primary stain for cell) Remain purple	Mordant, Gram's iodine (increases affinity of primary stain for cell) Remain purple
Decolorizer, alcohol and/or acetone Remain purple	Decolorizer, alcohol and/or acetone Become colorless
Counterstain, safranin Remain purple	Counterstain, safranin Stain pink



ESPIROQUETAS



Outer sheath
Protoplasmic cylinder
Periplasmic space


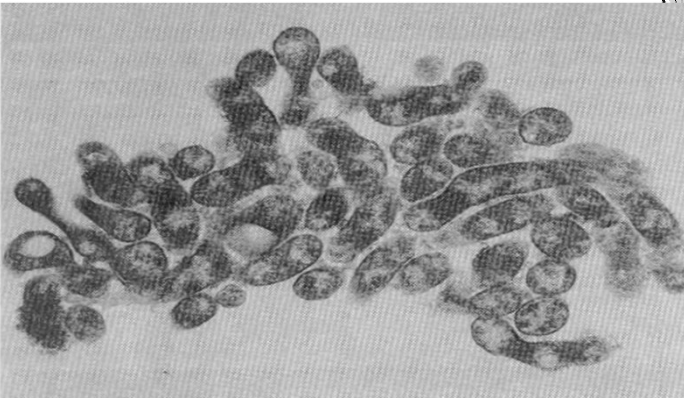
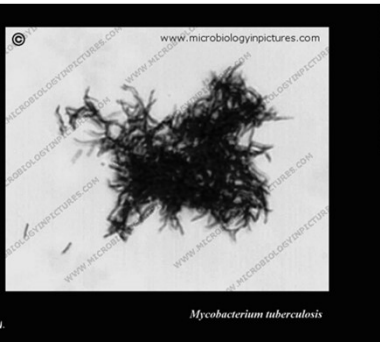


figure 11.9
Fluorescent Micrograph of the Spirochete *Treponema carateum*

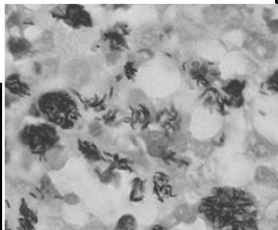

CLAMÍDEAS E MICOPLASMAS



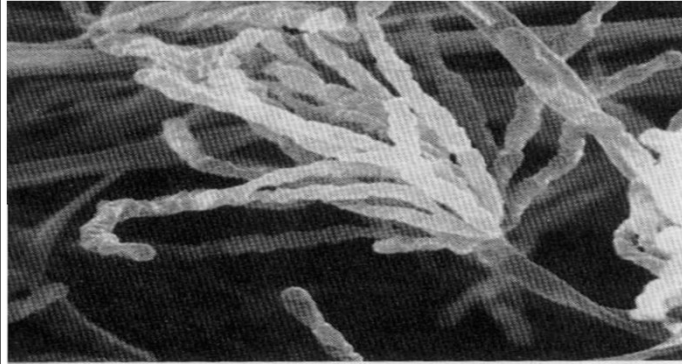
MICOBATÉRIAS



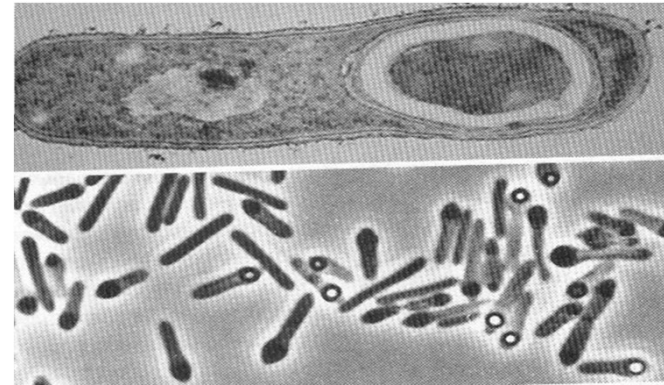
Mycobacterium tuberculosis

STREPTOMYCES



BACILLUS SUBTILIS (ESPOROS)



A História da Microbiologia

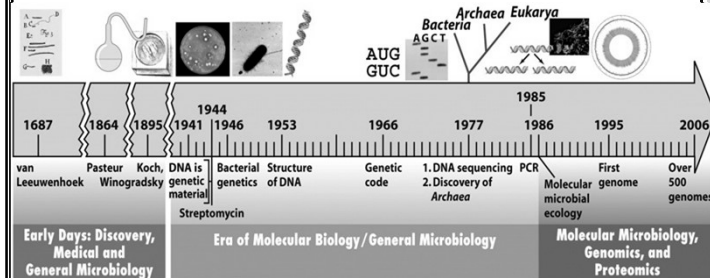
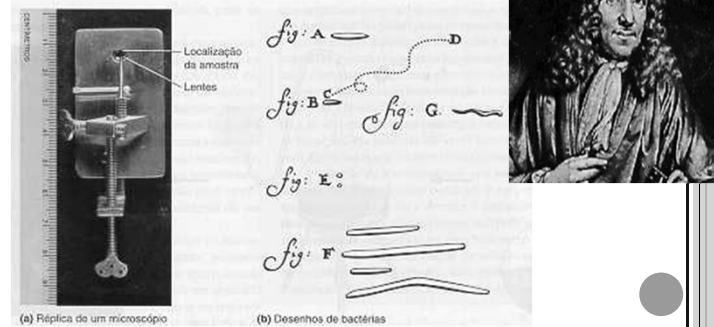


Figure 1-17 Brock Biology of Microorganisms 11/e
© 2006 Pearson Prentice Hall, Inc.

A. van Leeuwenhoek (1632 - 1723)

1684 – primeiro registro publicado sobre bactérias



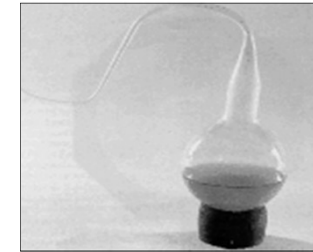
Louis Pasteur (1822-1895)



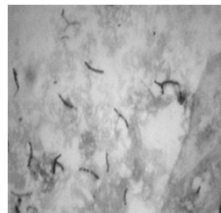
- o Químico, inovador e empreendedor;
- o Estudos sobre fermentação microbiana,
- o Derrubou a teoria da geração espontânea,
- o Desenvolvimento de vacinas.



Meio de cultura após fervura



ROBERT KOCH (1843-1910) – FUNDADOR DA MICROBIOLOGIA MÉDICA



Postulados de Koch (1843-1910)

A bactéria, ou seus produtos, deve ser encontrada em todas as pessoas infectadas que apresentem os sintomas da doença no tecido ou local afetado

A bactéria deve ser isolada da lesão apresentada pela pessoa infectada e mantida como cultura em forma pura

A mesma bactéria deve ser isolada de forma pura a partir dos pacientes infectados experimentalmente

A cultura pura do patógeno deve ser capaz de gerar a doença com sintomas característicos quando reinoculada em pacientes sensíveis



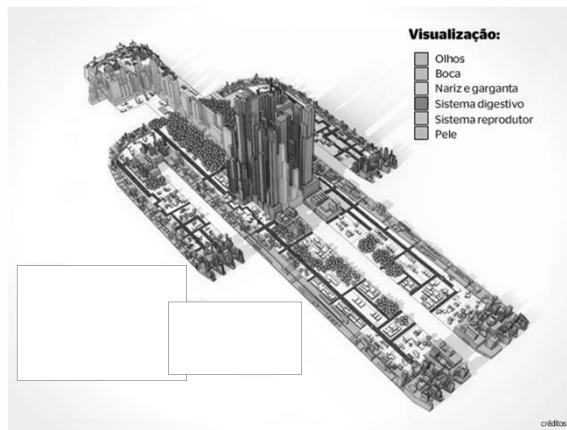
Bacteriologia Médica



PRINCIPAIS GRUPOS DE BACTÉRIAS DE INTERESSE MÉDICO

- o Cocos gram-positivos – *Streptococcus* e *Staphylococcus*;
- o Cocos gram-negativos – *Neisserias*;
- o Bacilos gram-negativos – *enterobactérias*, *Pseudomonas*, *Haemophilus*, *Bordetella*, *Legionella*, *Yersinia*, *Brucella*;
- o Bacilos gram-positivos – *Corynebacterium*, *Bacillus anthracis*, *Listeria monocytogenes*, *Clostridium tetani*, *C. botulinum*;
- o Vibriões – *Vibrio cholerae*; *Helicobacter pylori*;
- o Filamentosas – *Mycobacterium tuberculosis*, *M. leprae*;
- o Pleomorfos – *Mycoplasma*;
- o Espiroquetas – *Leptospira*, *Treponema pallidum*, *Borrelia*;
- o Diverso – *Chlamydia pneumoniae*; *C. trachomatis*, *Rickettsia sp.*;

Microbiota humana (papel na saúde e na doença)



PANSPERMIA?

