



Universidade de São Paulo
Escola de Engenharia de Lorena
Departamento de Biotecnologia

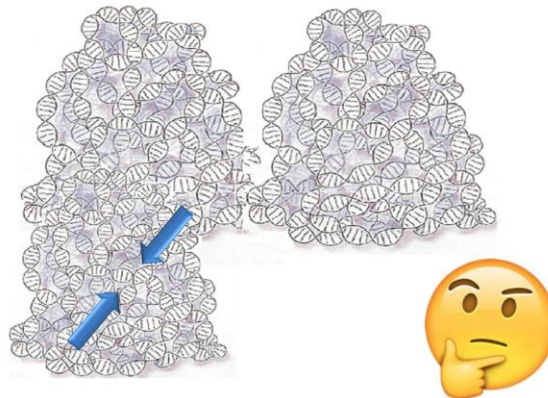


Ácidos Nucleicos e Tecnologias - PCR

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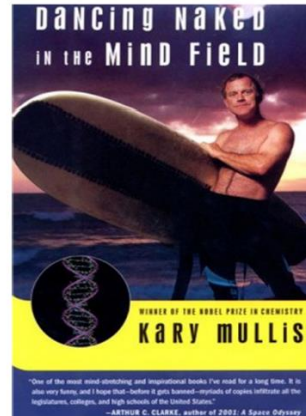
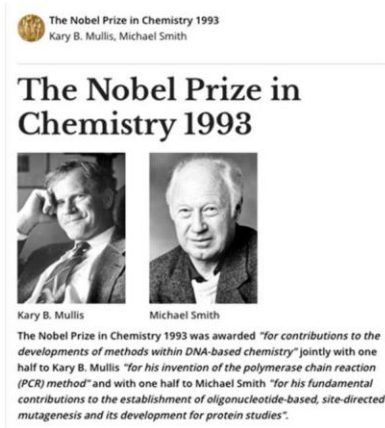
**Amplificação *in vitro* de sequências
ESPECÍFICAS de DNA**



2

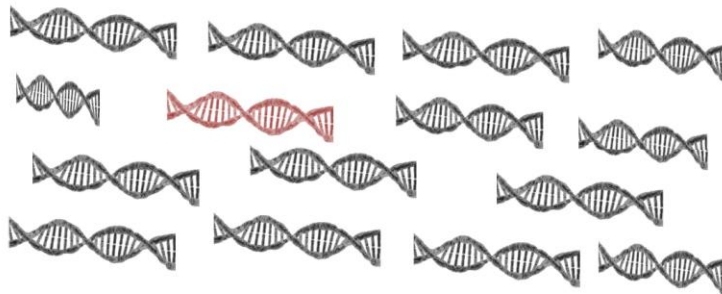
PCR

PCR – Reação em cadeia da polimerase (*Polymerase chain reaction*) - 1983



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Fundamentos

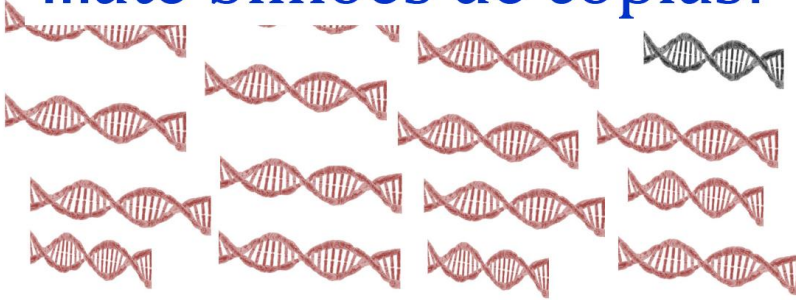


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Fundamentos



...até bilhões de cópias!



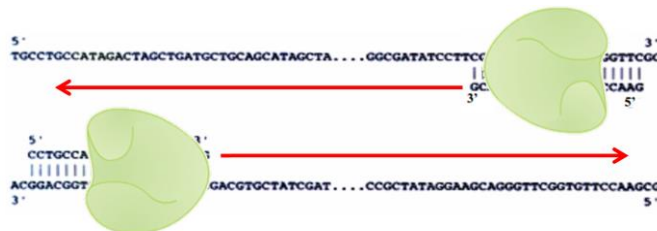
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Fundamentos

Utilização de pares de iniciadores (um complementar para cada fita)

Iniciador Senso (*Forward*): se liga na fita 3'-5'

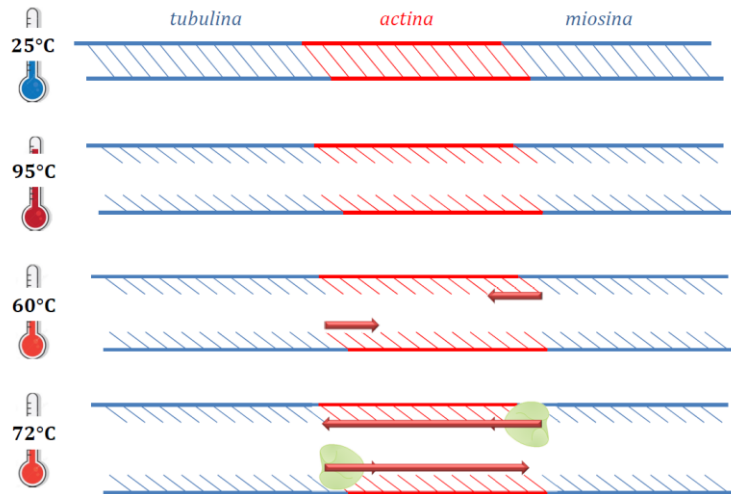
Iniciador Antissenso (*Reverse*): se liga na fita 5'-3'



6

Fundamentos

Amplificação do gene da **Actina**



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As principais etapas:



Desnaturalização

(90-96°C)

Hibridização

(45-60°C)

Extensão

(68-72°C)

DNA Polimerase
(**termoestável**)

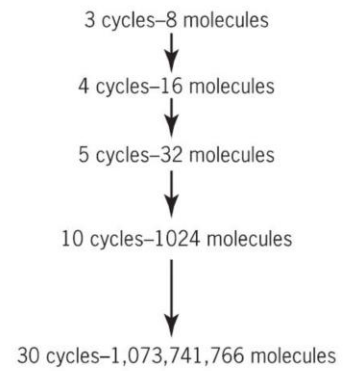
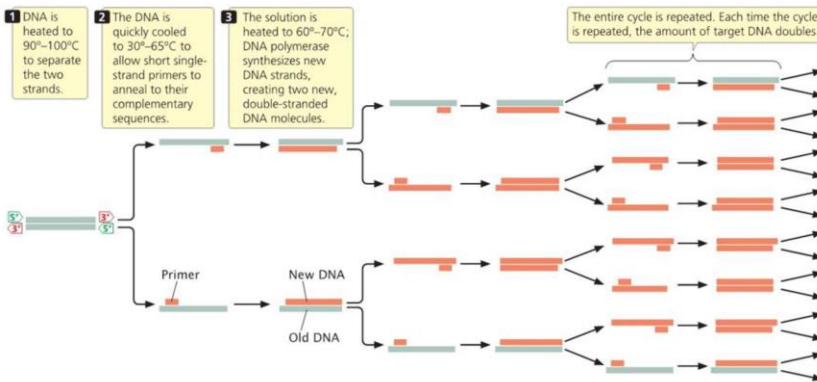
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- Taq polimerase (*Thermus aquaticus*)

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Fundamentos



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Reação Cíclica

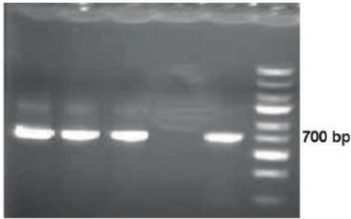
Termocicladores

11

(d)

6 DNA fragments appear orange under UV light.

Presença ou ausência



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