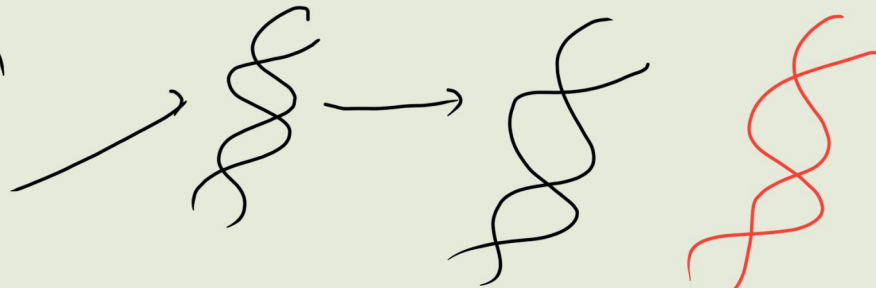


DNA is a genetic materials

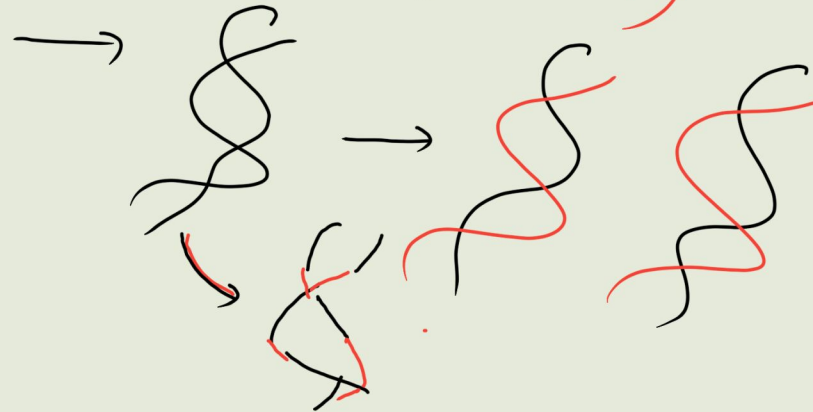
- 1) Replication/Duplication faithful
- 2) Coding capacity to generate protein.

Models of Replication

1) Conservative



2) Semiconservative



3) Dispersive

Meselson & Stahl Experiment

* Semiconservative

* Bidirectional

↳ Define media

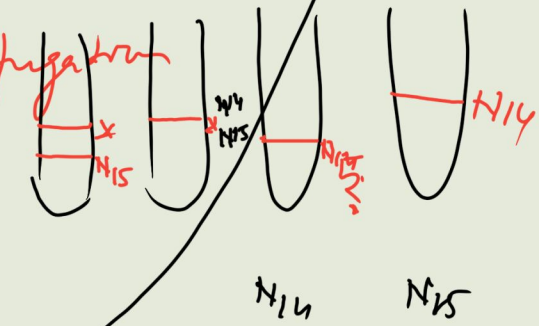
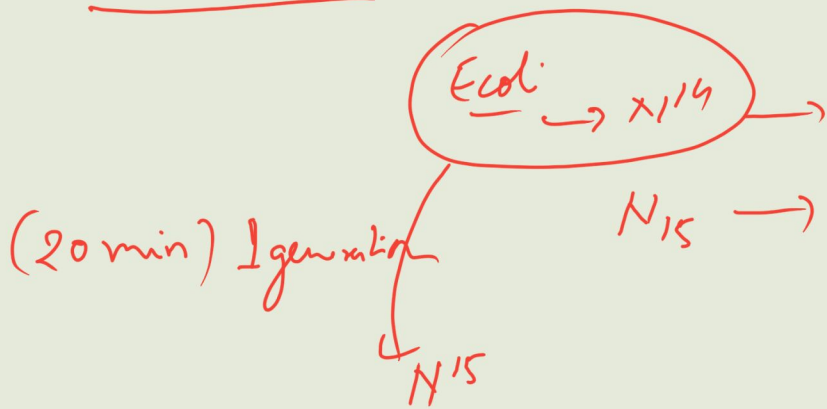
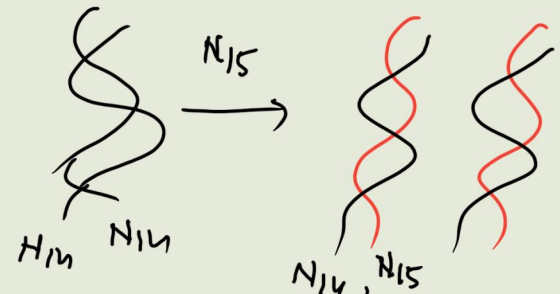
N_2 source \rightarrow N^{14} cell

N^{14}

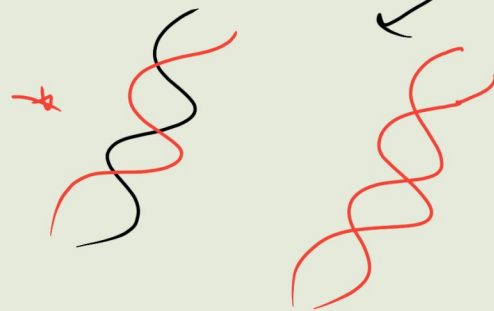
N^{15}

density gradient centrifugation

($CaCl_2$)



2nd generation



DNA polymerase

Arthur Kornberg

↳ DNA polymerase I

dNTPs

Mg²⁺

Template DNA

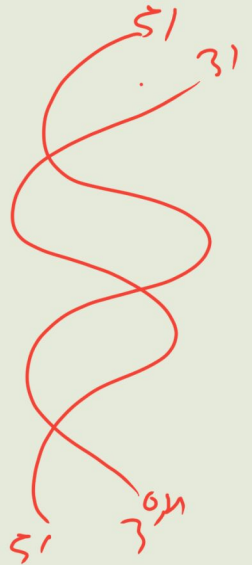
primer.

↳ DNA pol. enzyme

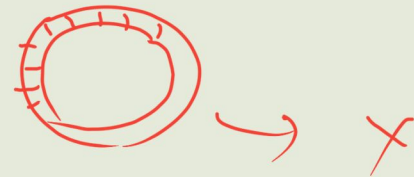
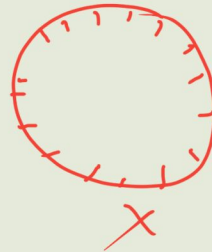
* 5' → 3' exonuclease activity.

* 3' → 5' exonuclease activity

* 5' → 3' polymerase activity.



5' → 3' → Polymerase



DNA pol II

DNA pol I

* DNA repair

* $5' \rightarrow 3'$ polymerization

* $3' \rightarrow 5'$ exonuclease activity

