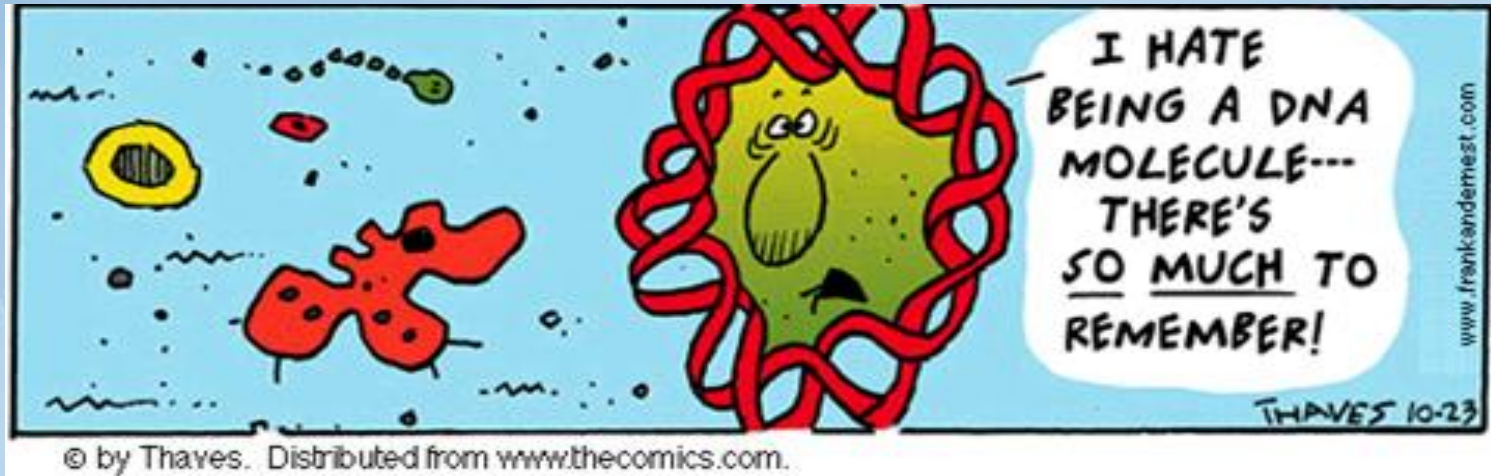


DNA Structure & Function

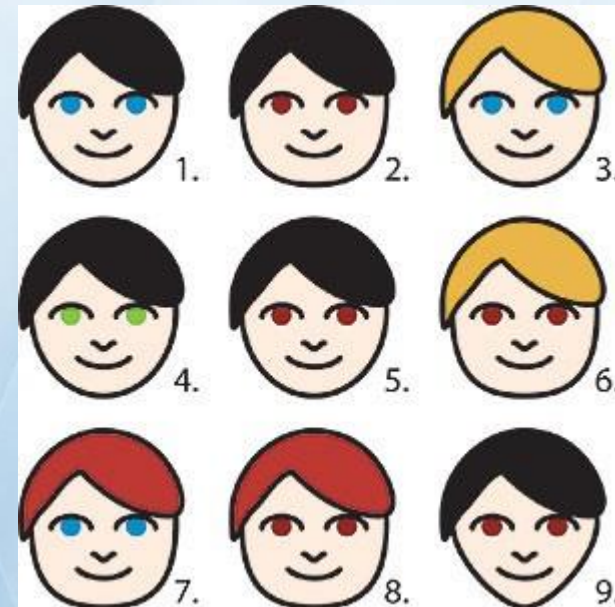
Ameer Effat M. Elfarash

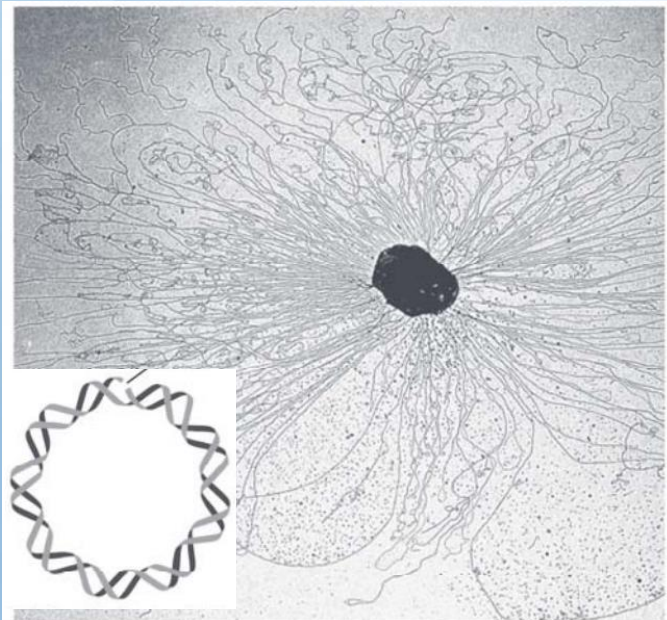
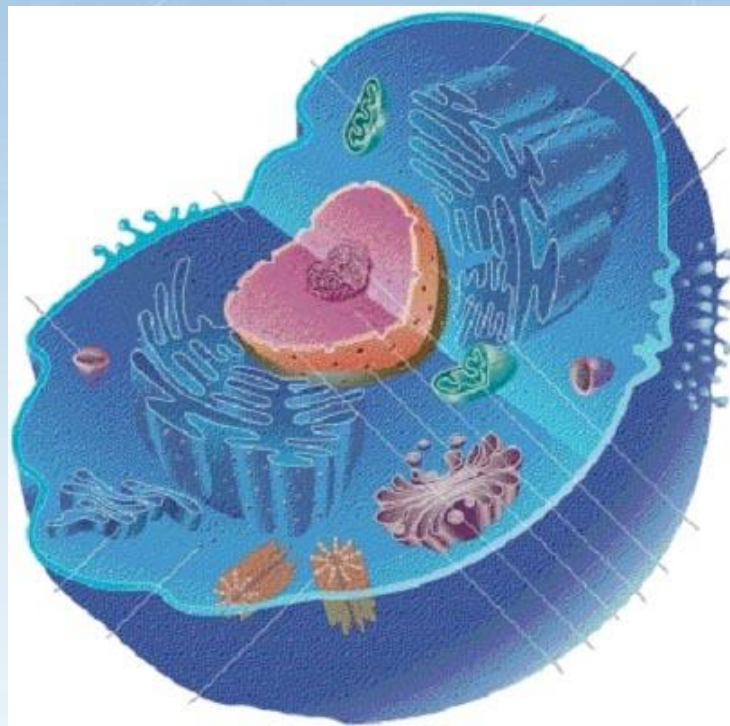
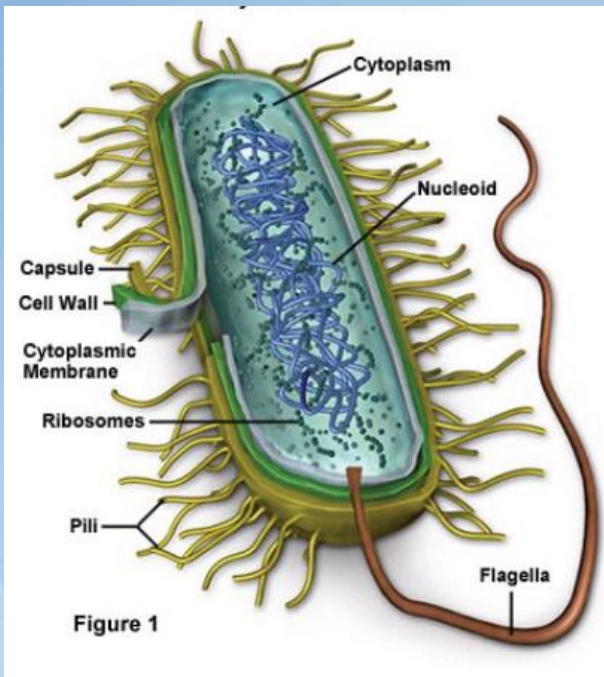
Dept. of Genetics
Fac. of Agriculture, Assiut Univ.
aelfarash@aun.edu.eg

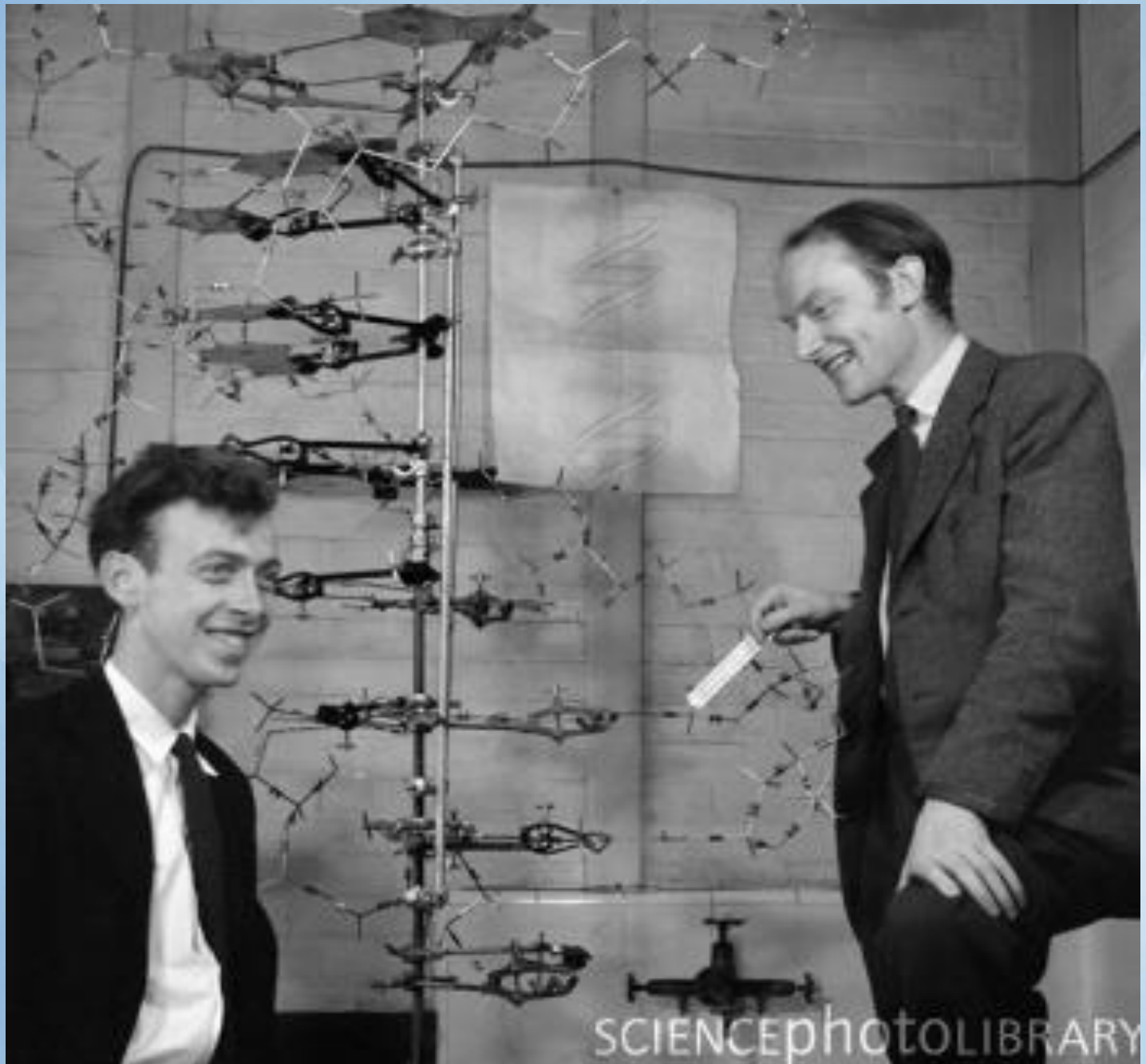
What is DNA?



In simple terms, DNA contains the instructions for making proteins within the cell.





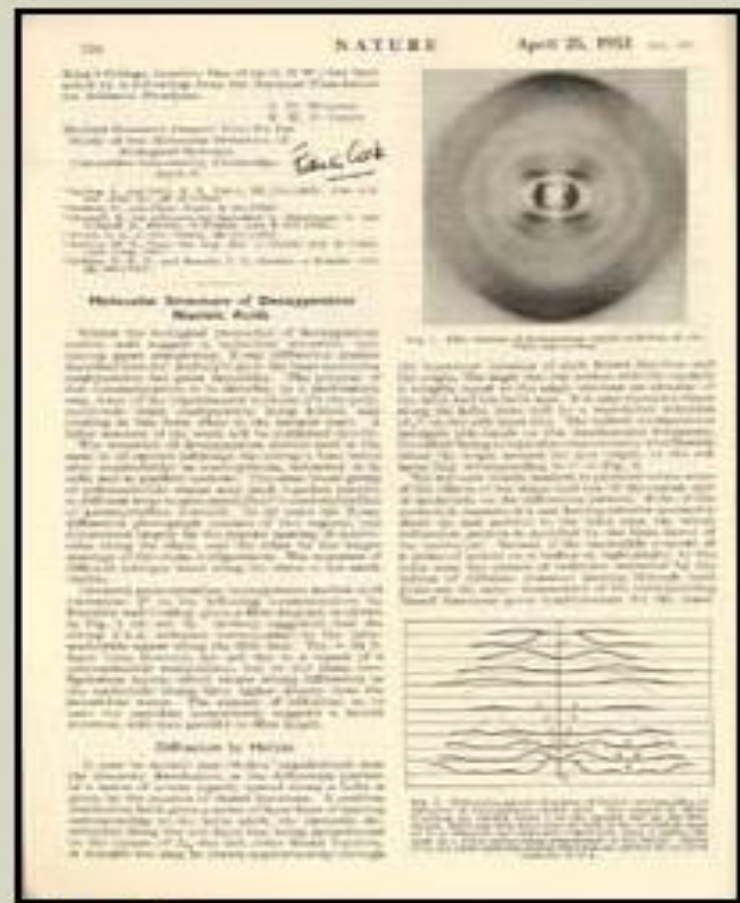


SCIENCEPHOTOLIBRARY

Molecular Structure of Nucleic Acids. April 25, 1953

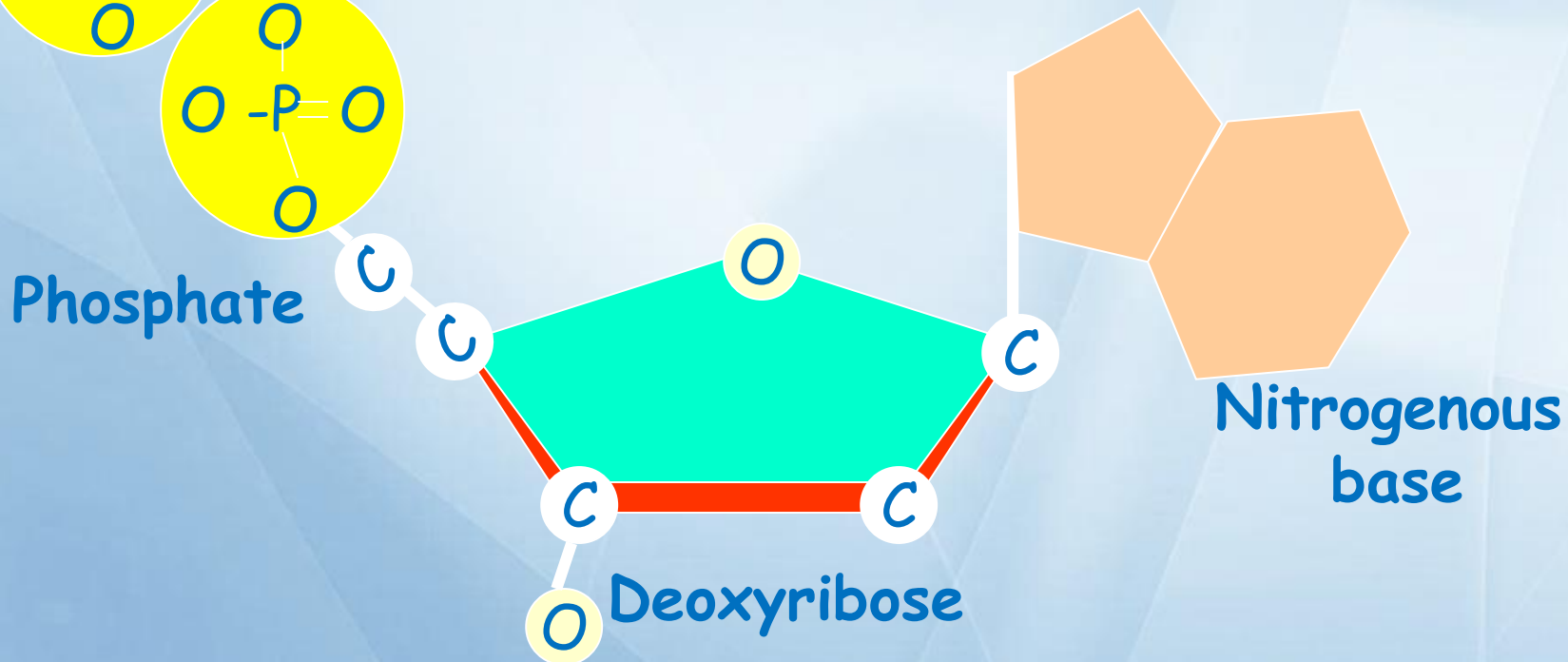
Authors: Francis Crick, James Watson

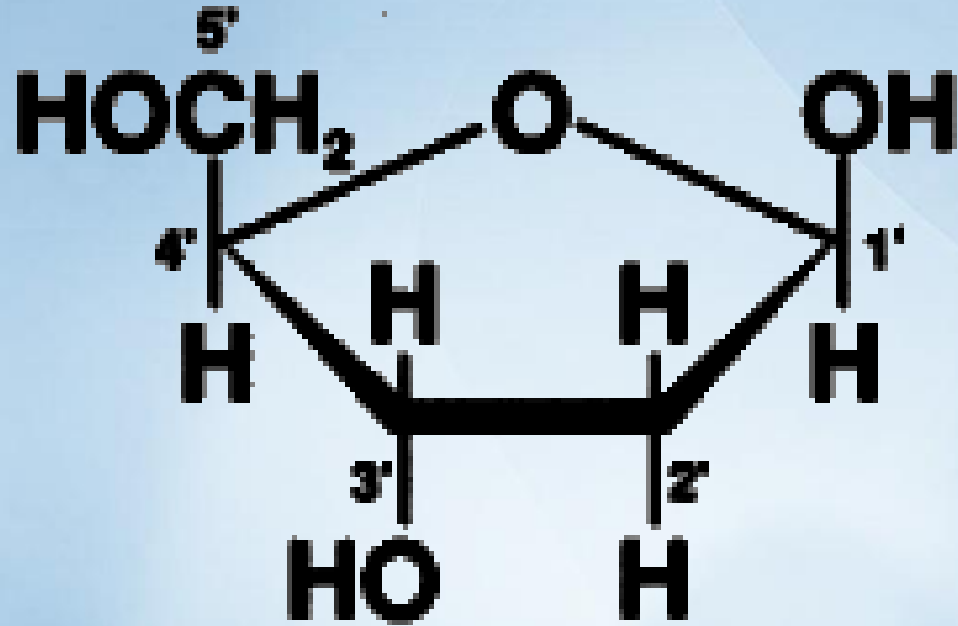
Click pages to view larger image and full text, if available.



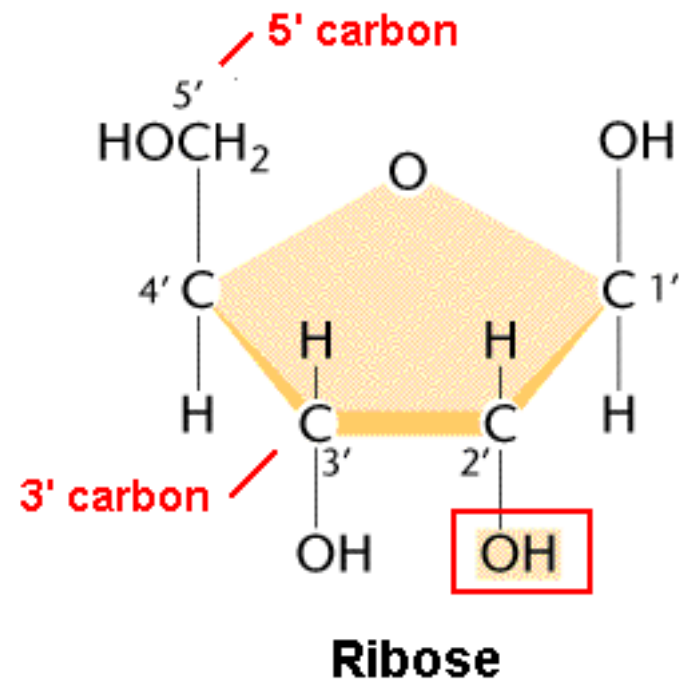
Nucleotides

One deoxyribose together with its phosphate and base make a ***nucleotide***.

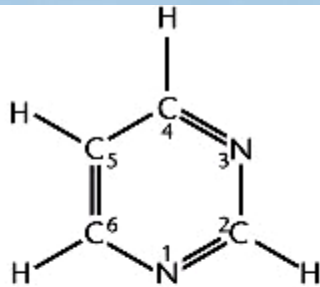




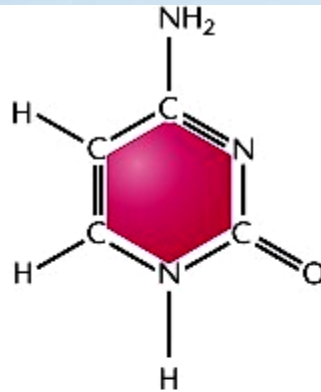
De-oxyribose



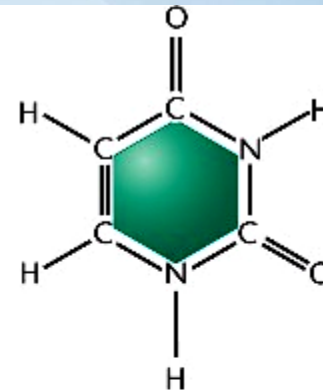
Nitrogenous bases



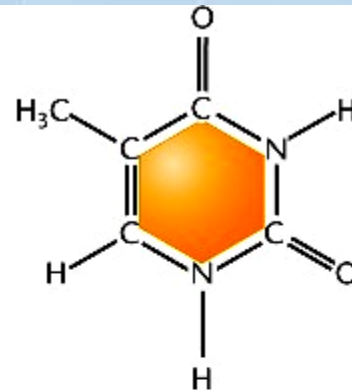
Pyrimidine ring



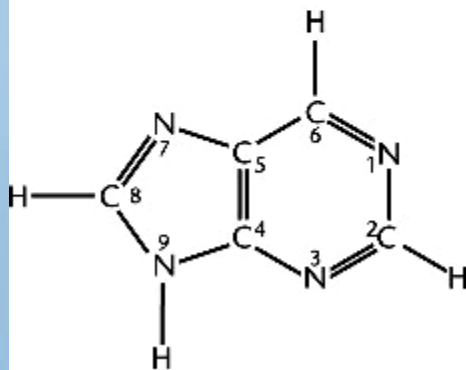
Cytosine



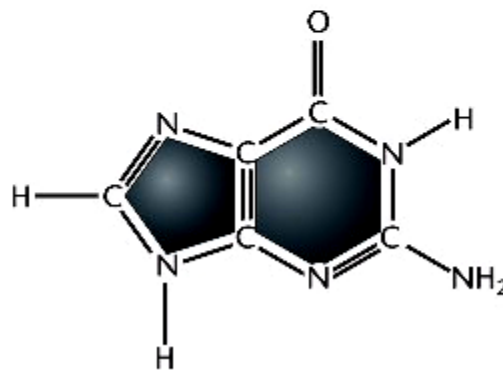
Uracil



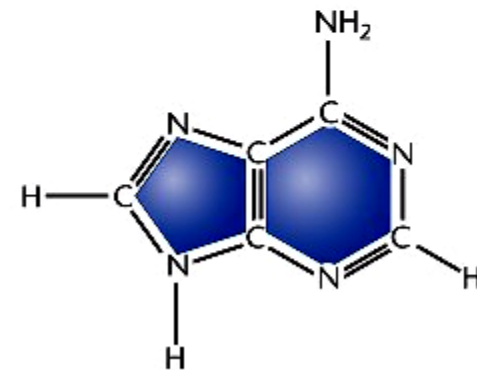
Thymine



Purine ring

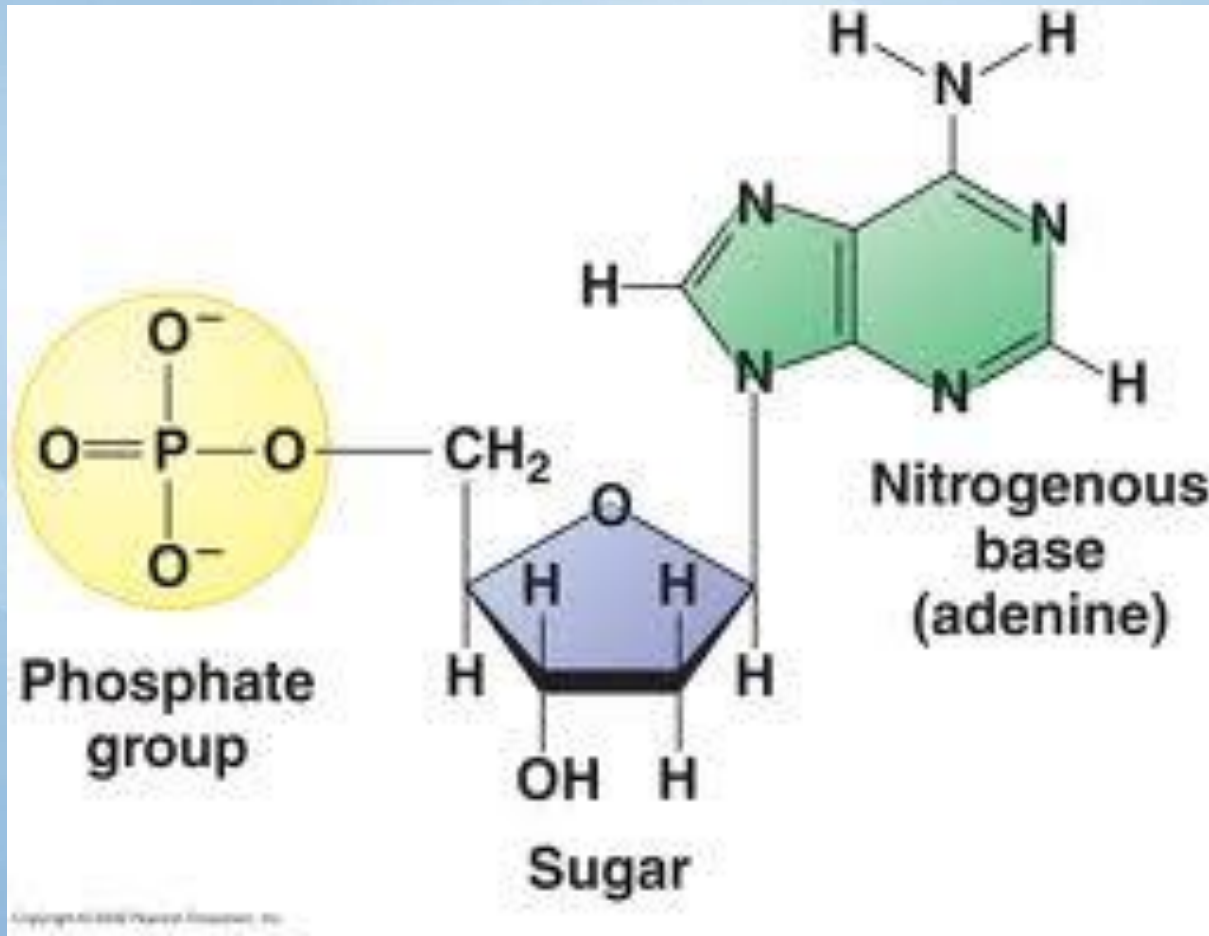


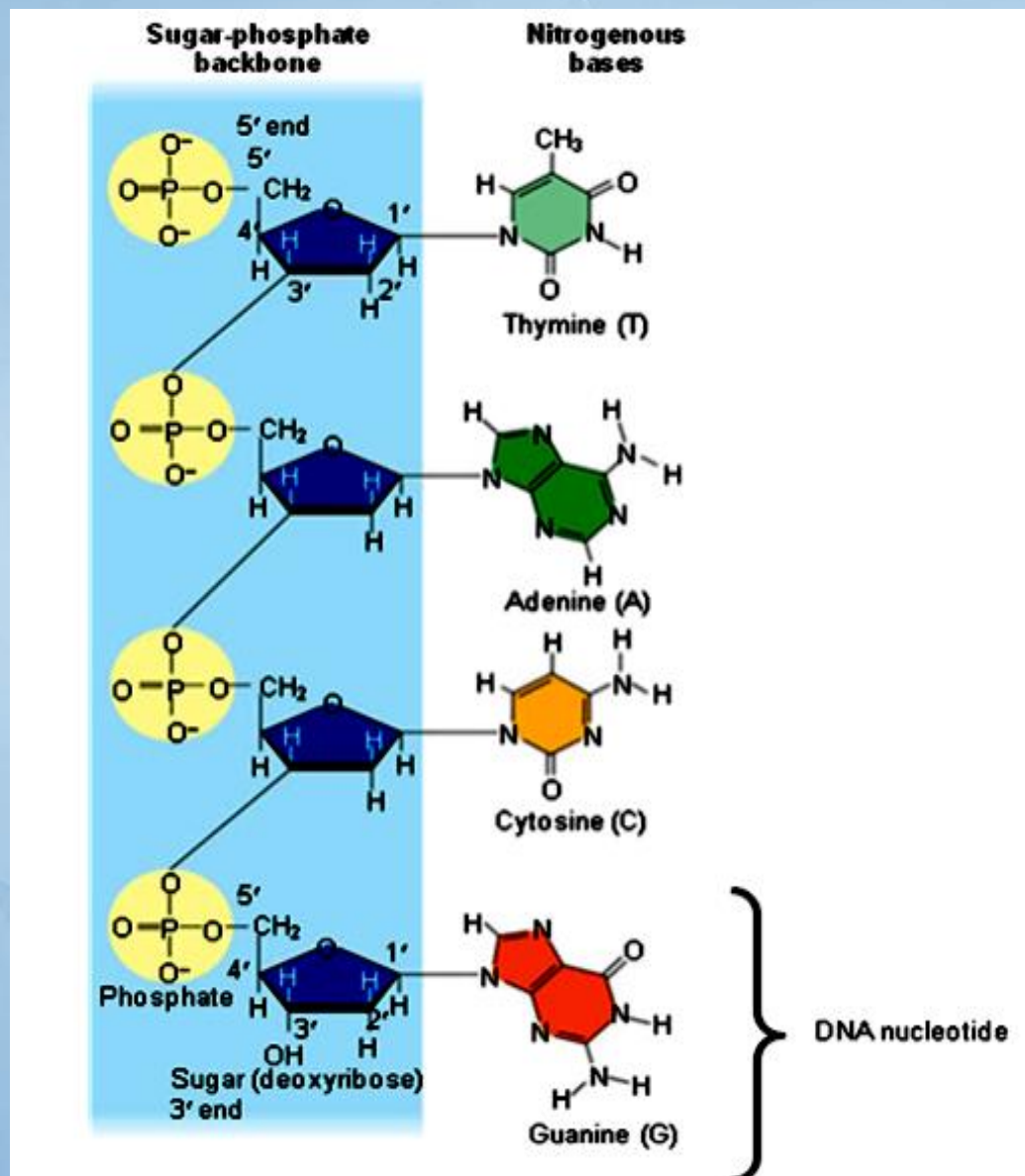
Guanine

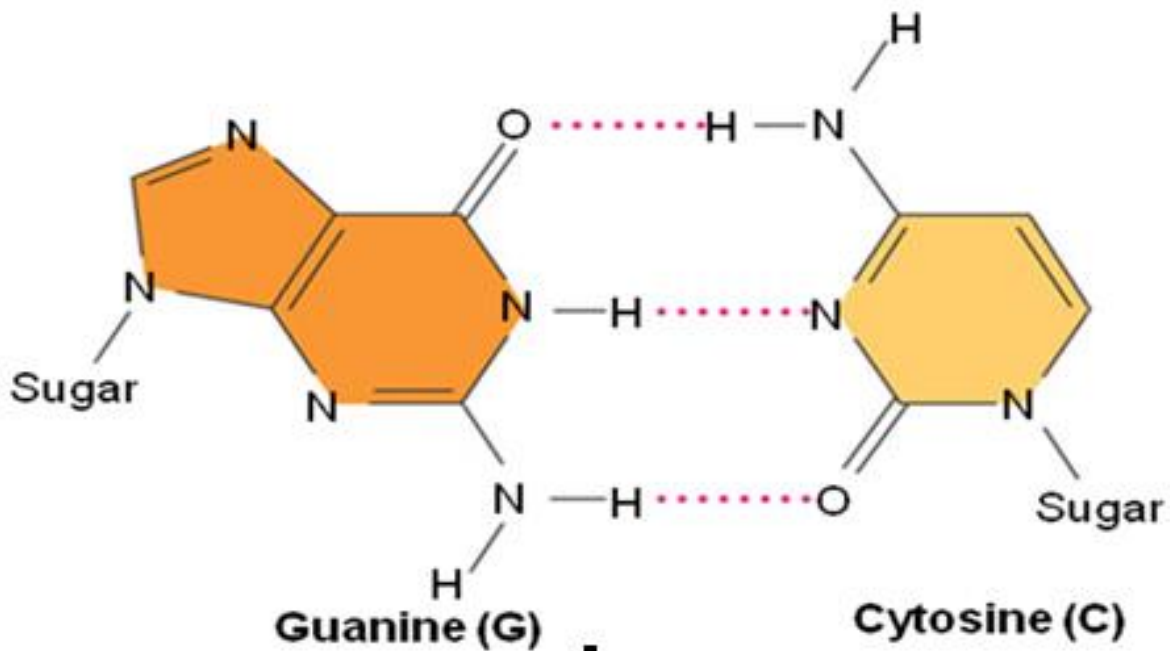
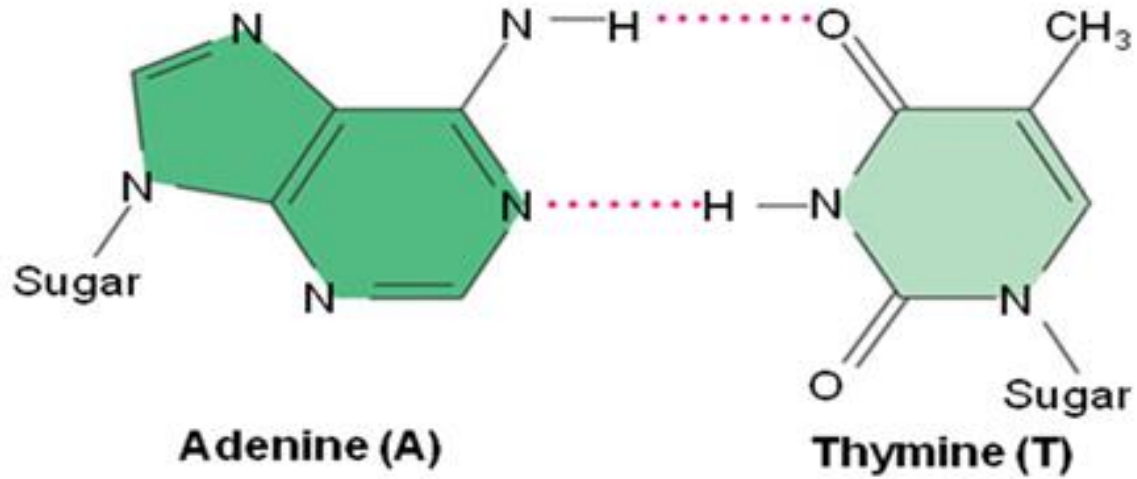


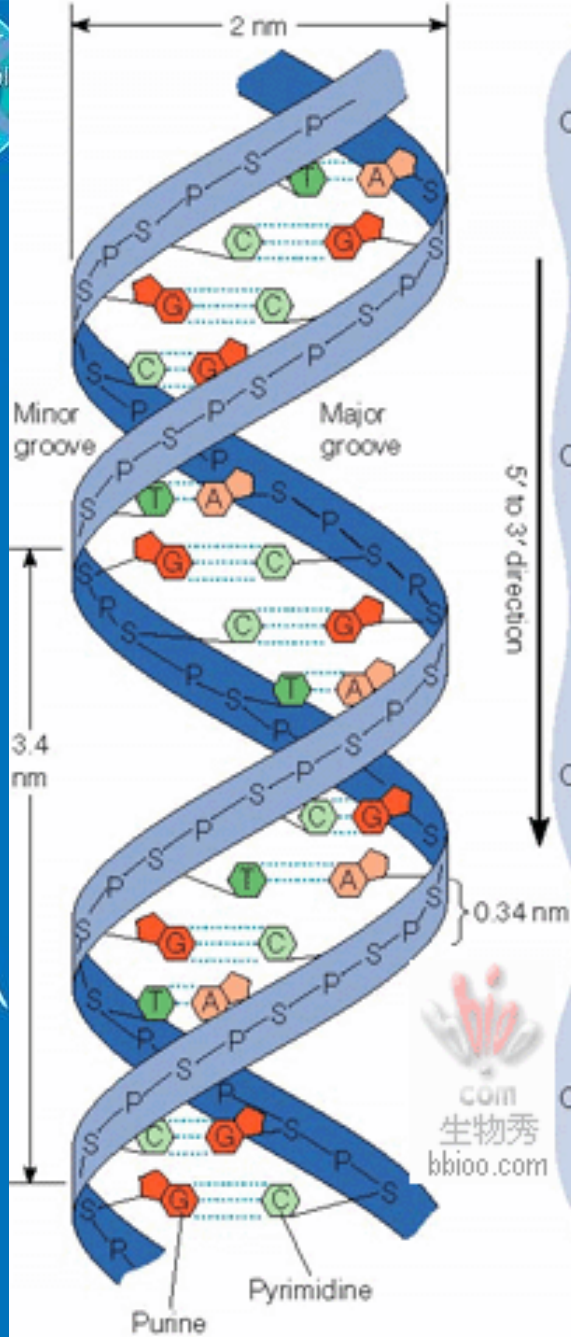
Adenine

Nucleotide structure

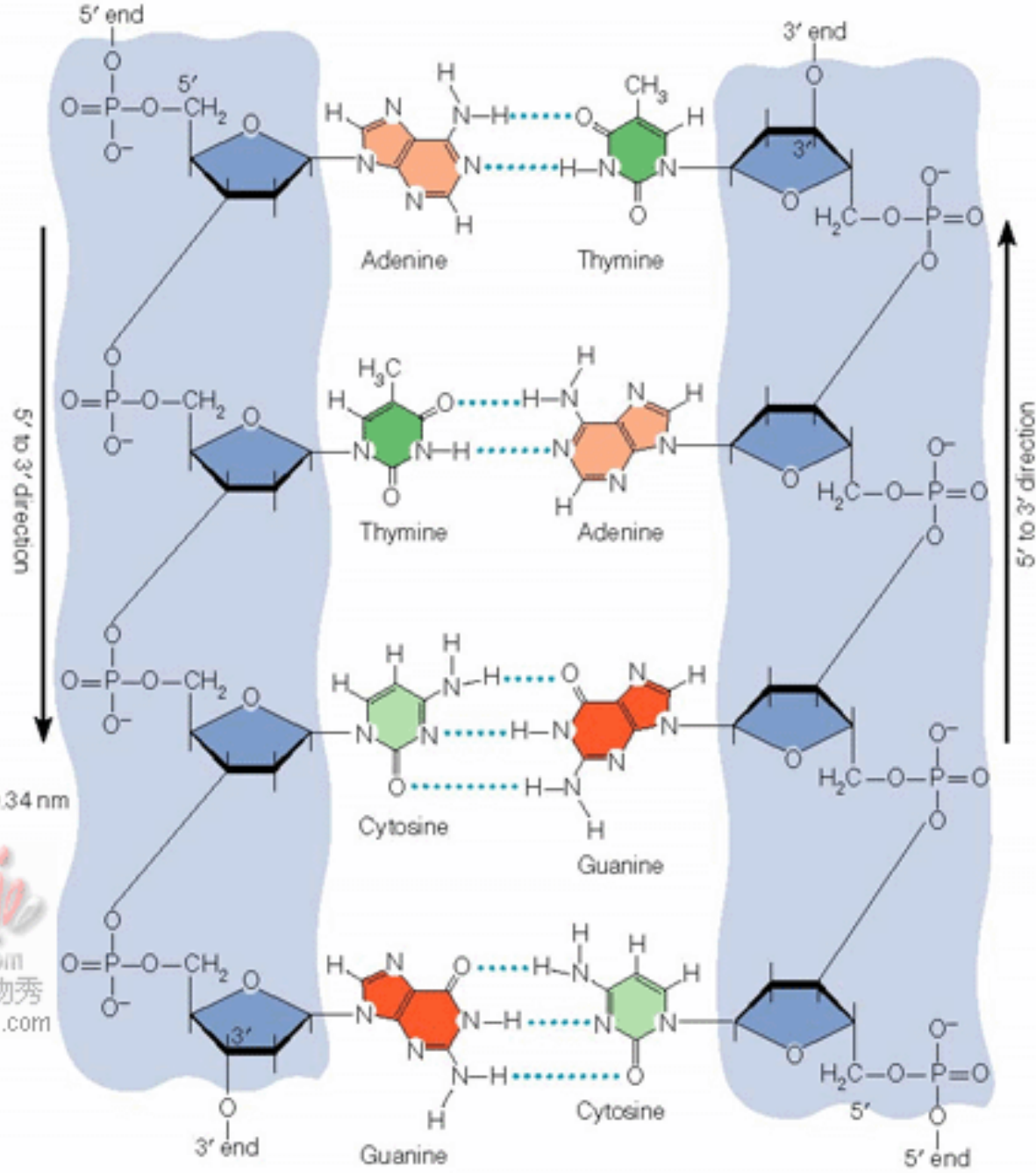




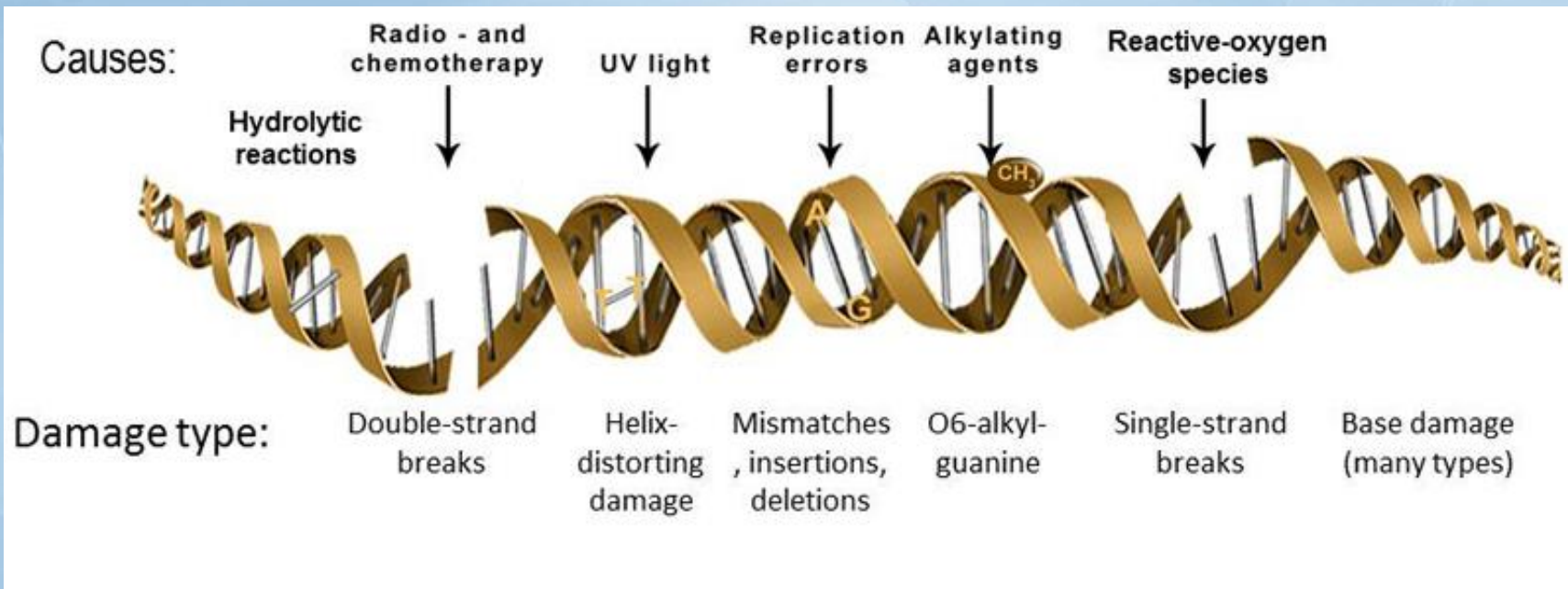


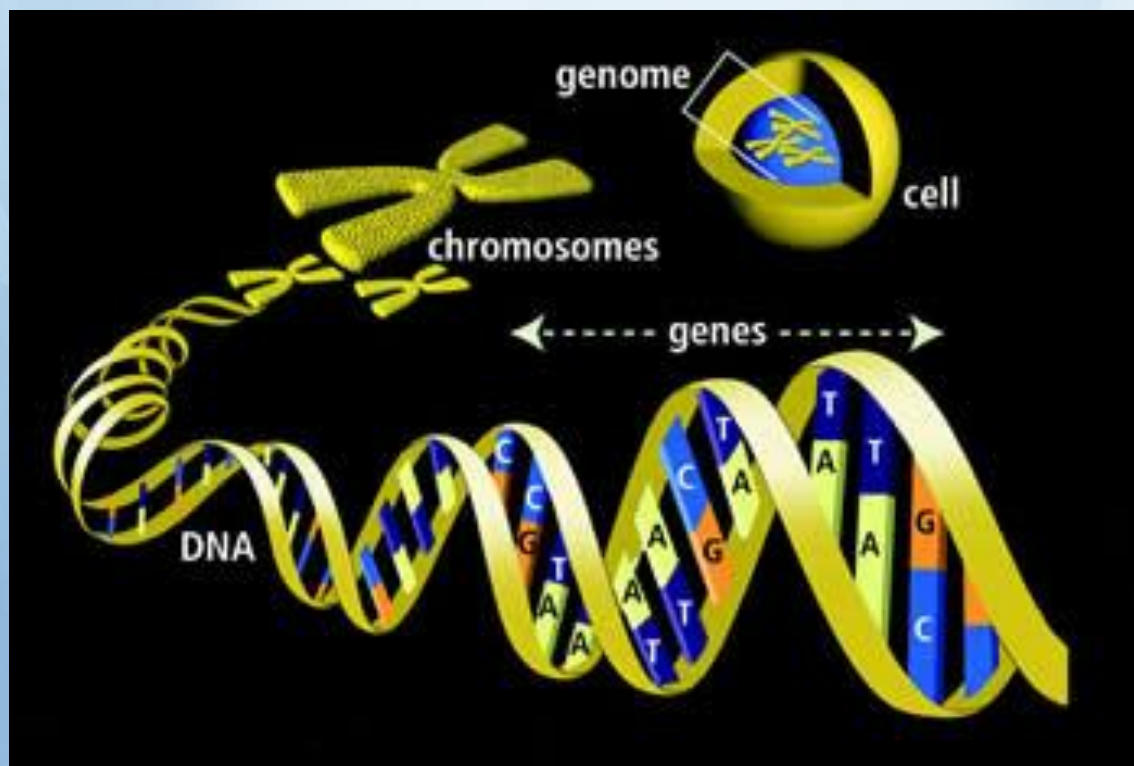


(a) Double helix

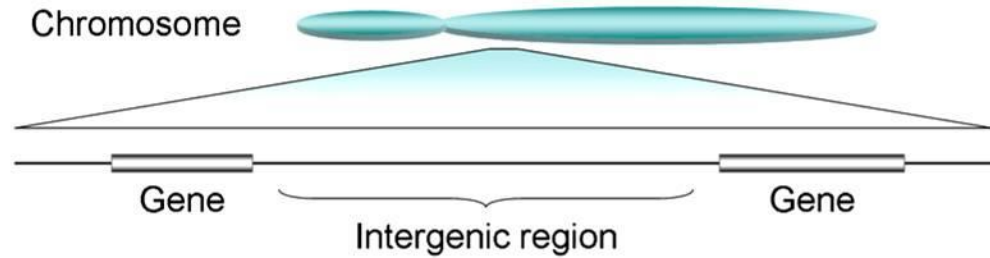


(b) Antiparallel orientation of strands

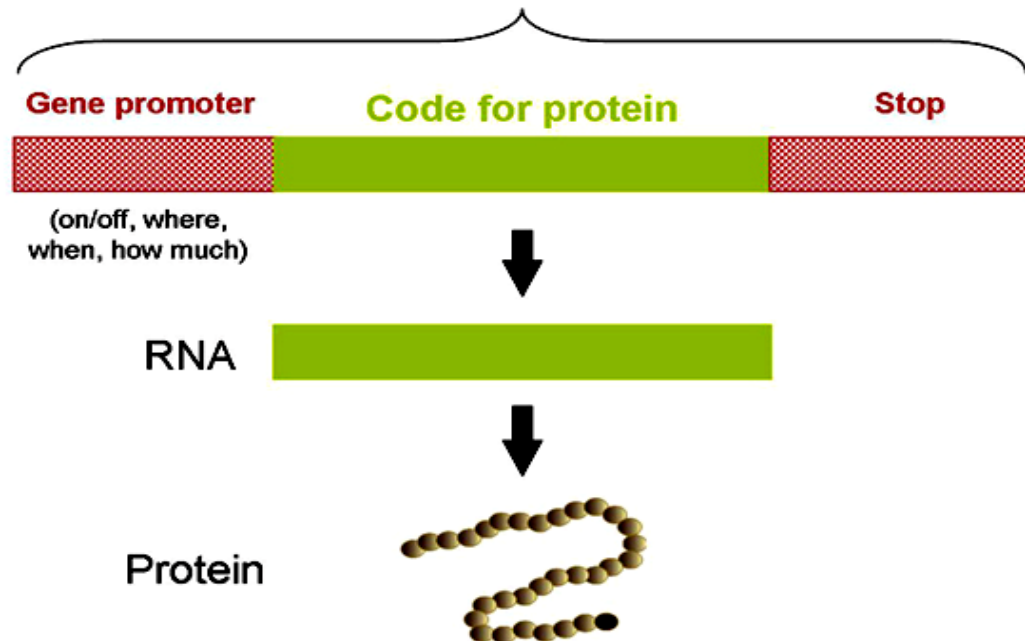




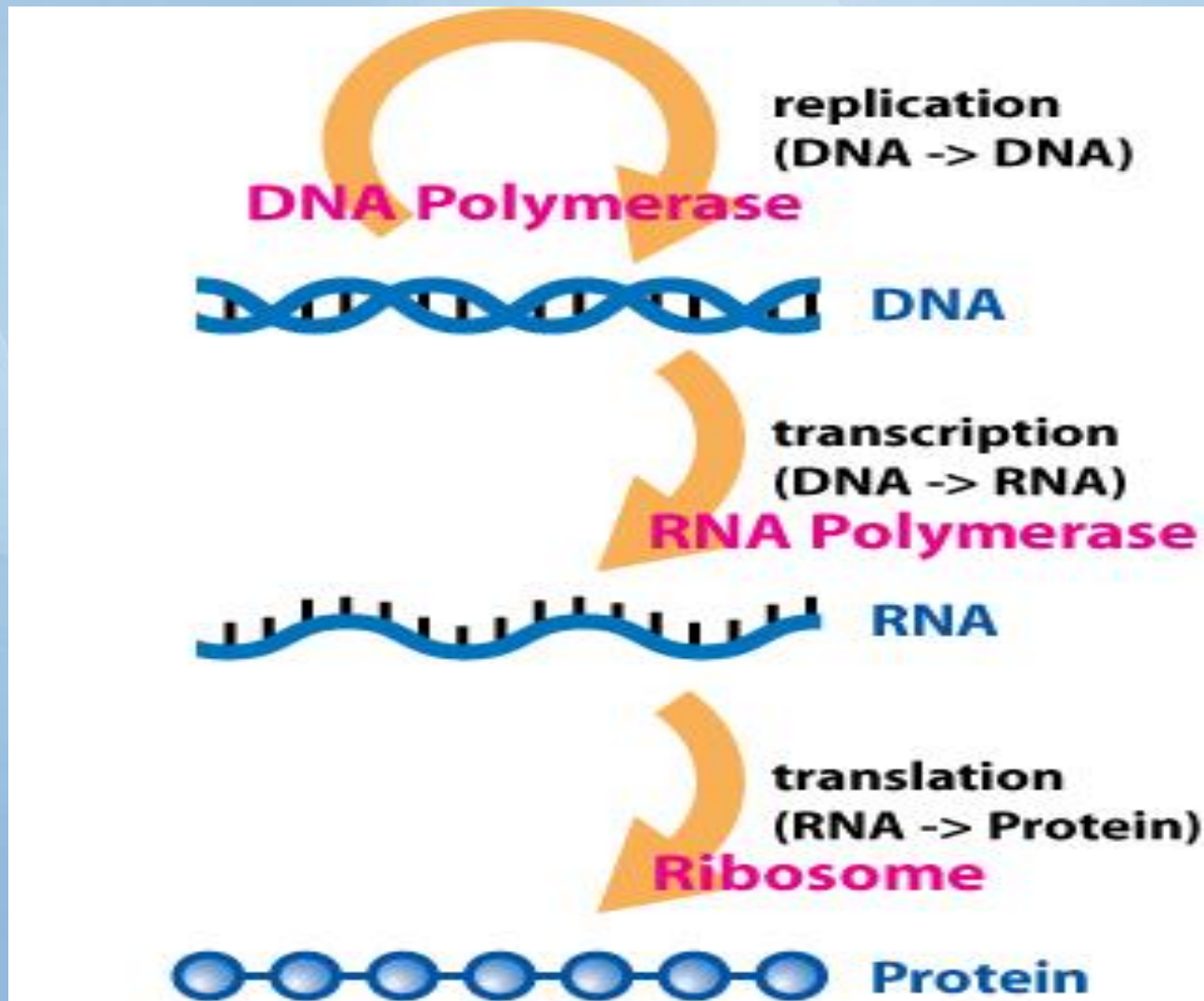
What is the gene



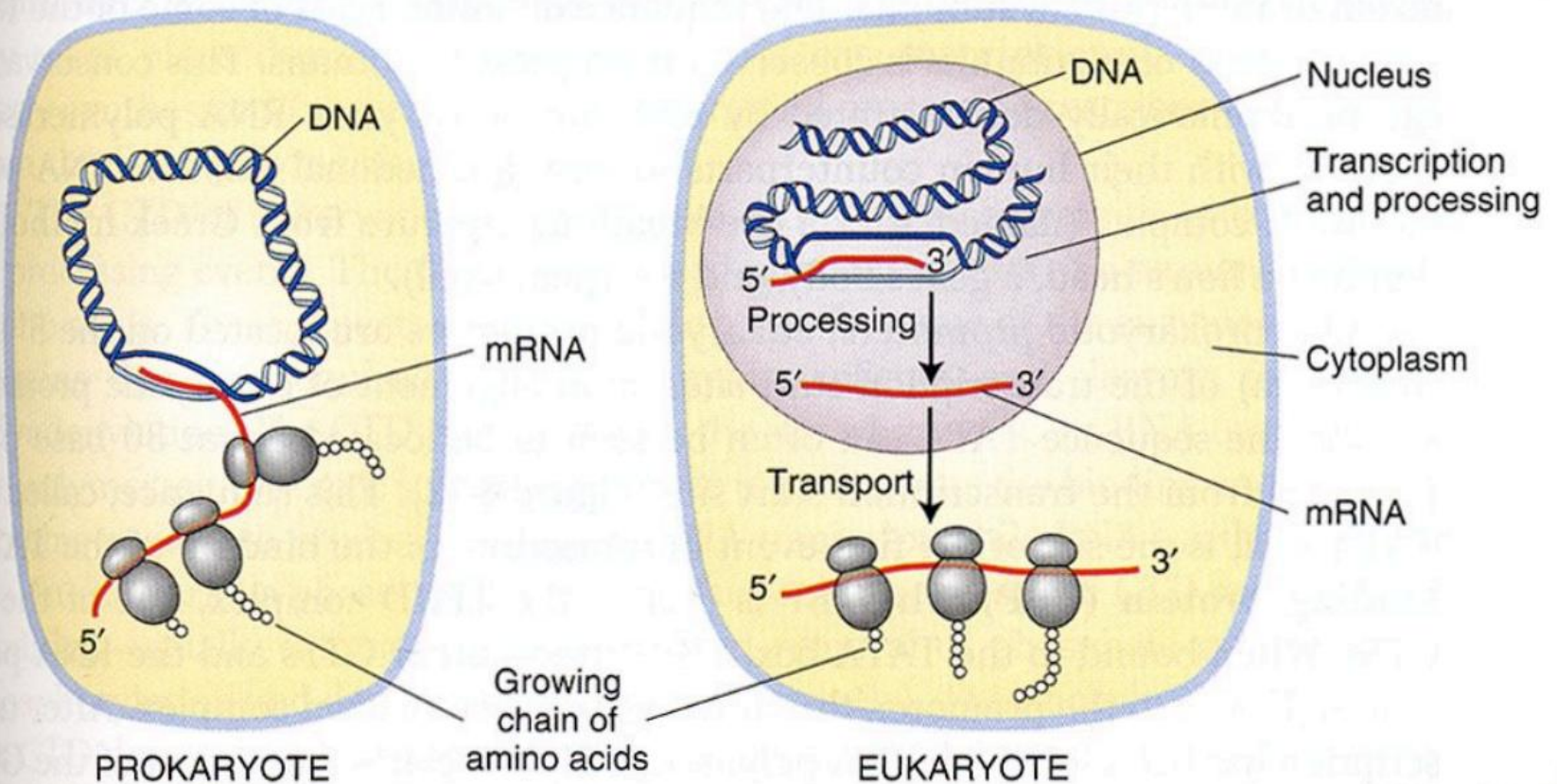
A gene is a piece of DNA that codes for a protein.

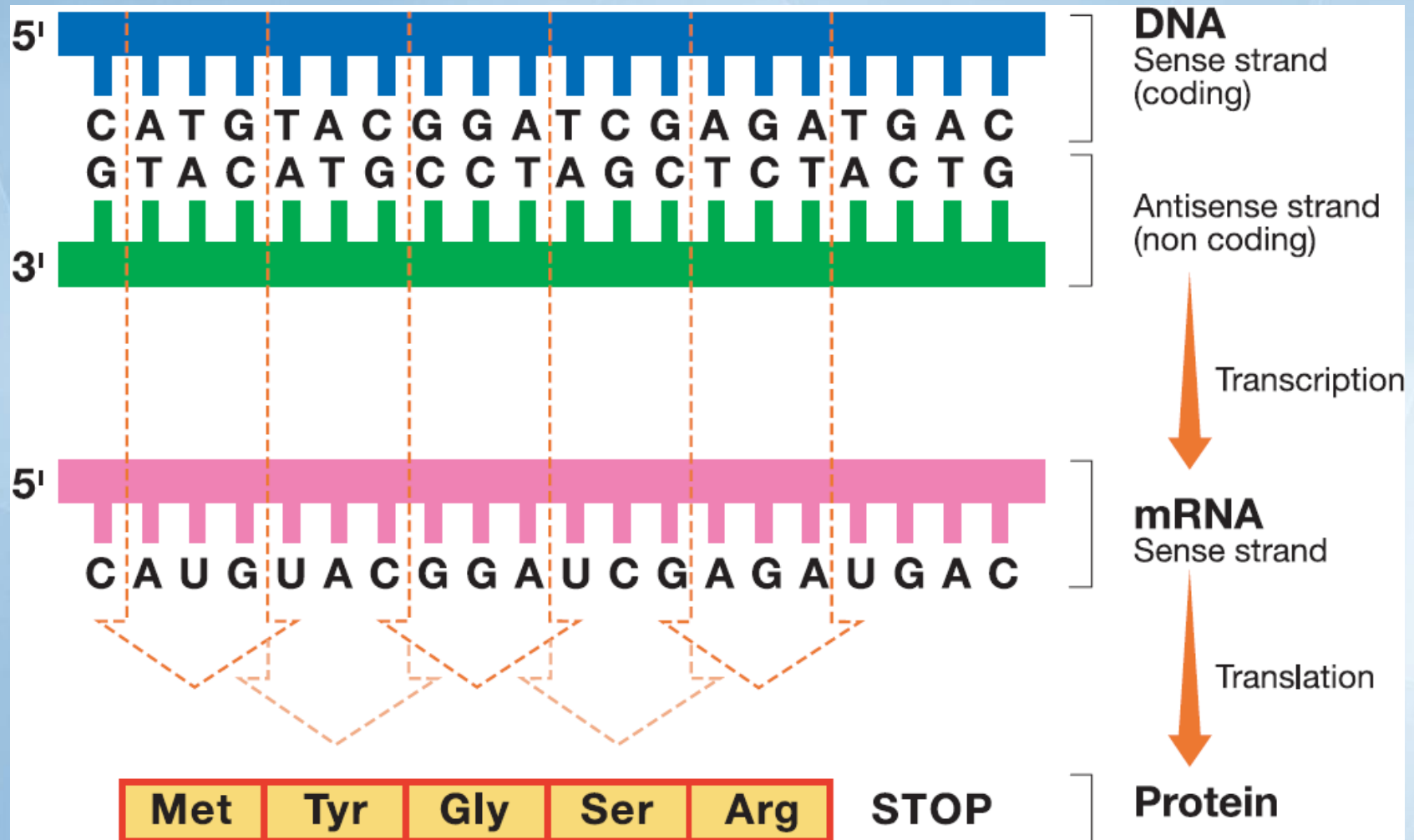


Central Dogma of Molecular Biology

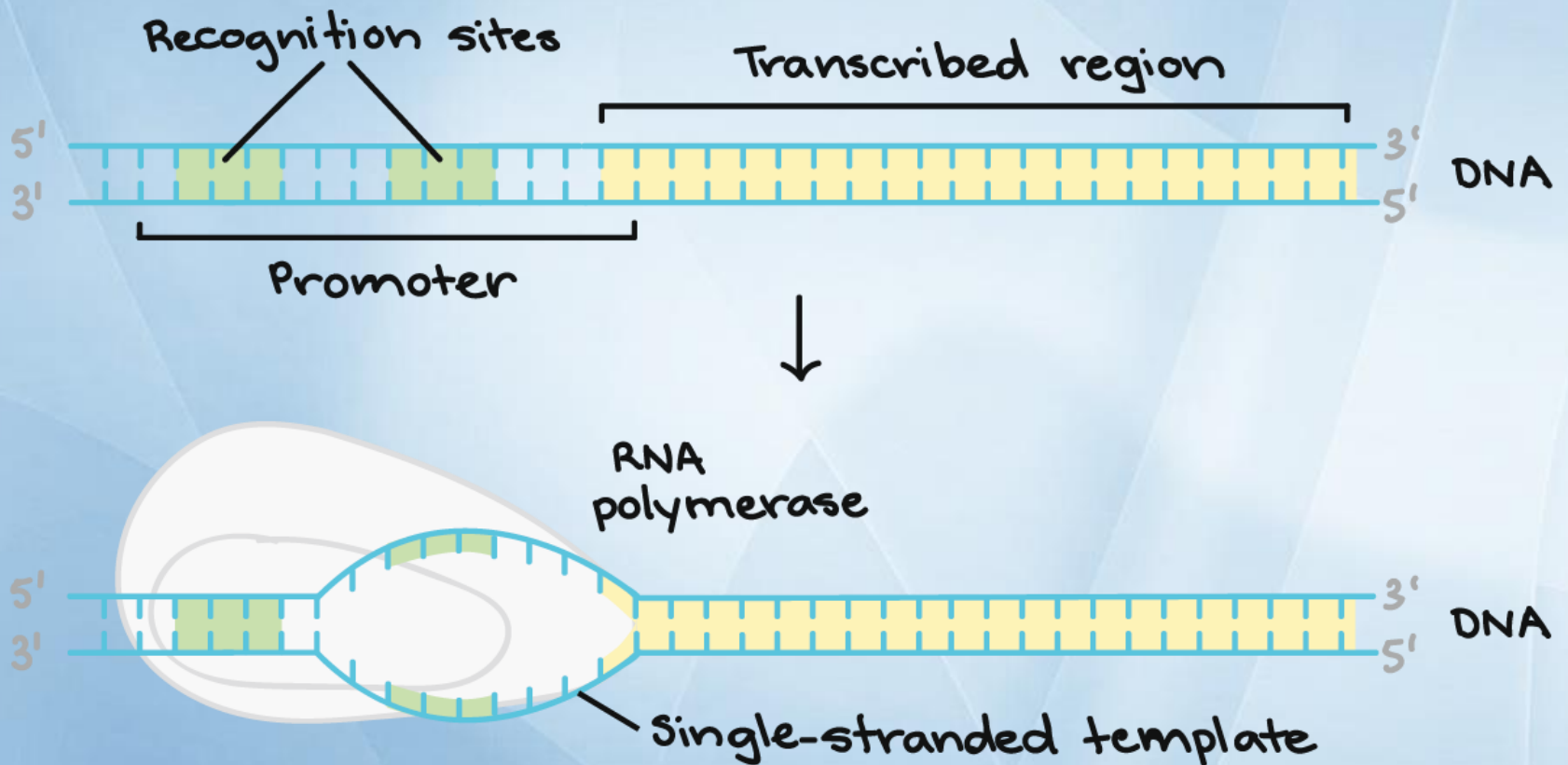


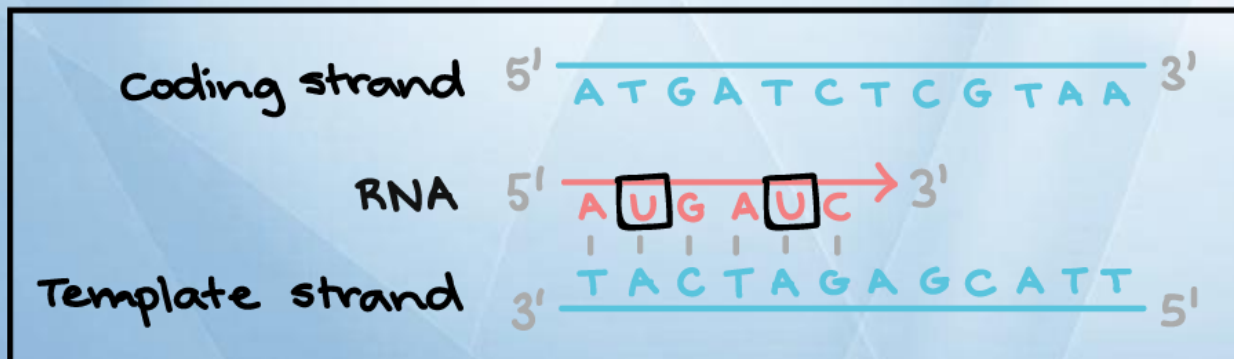
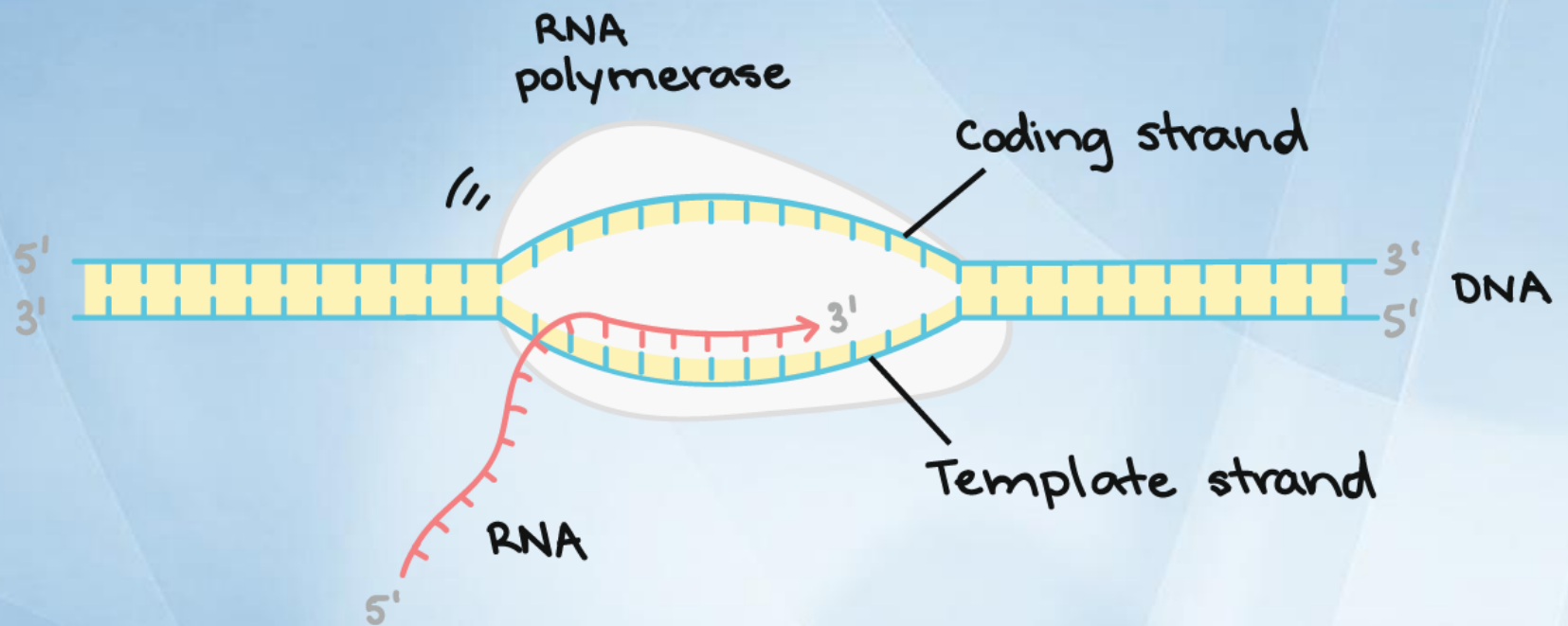
Prokaryotic and eukaryotic transcription and translation compared

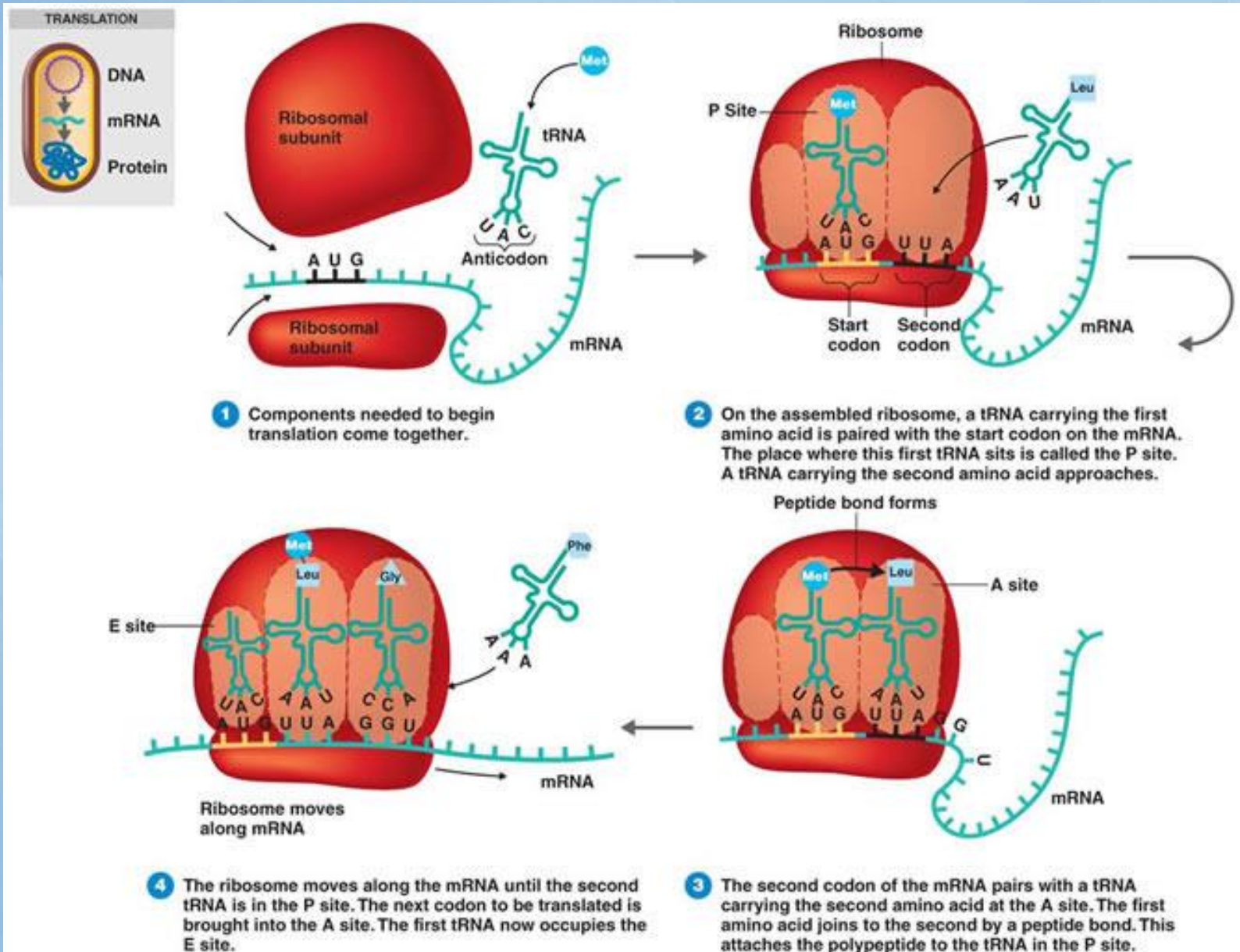


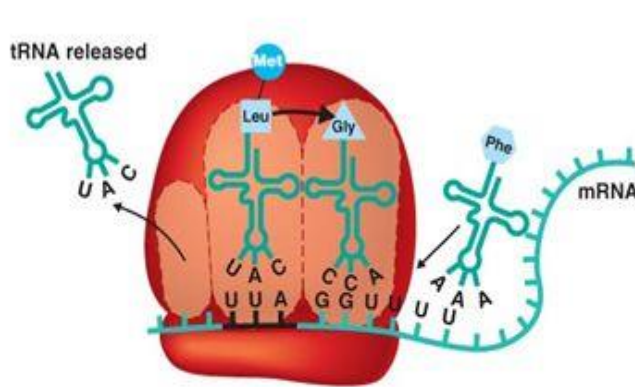
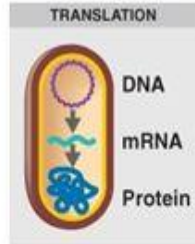


Transcription

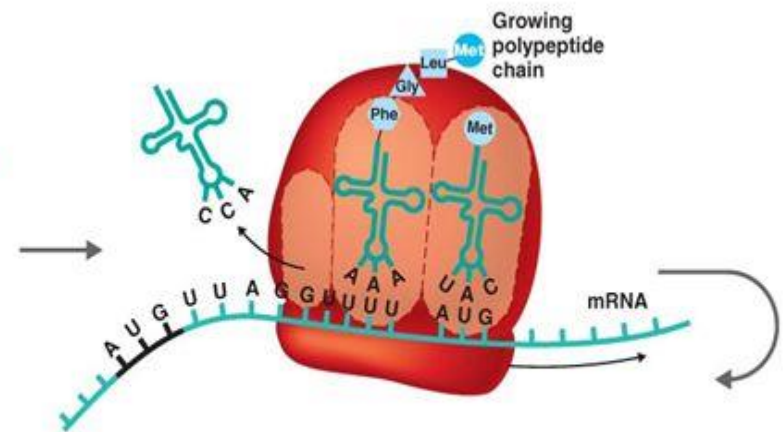




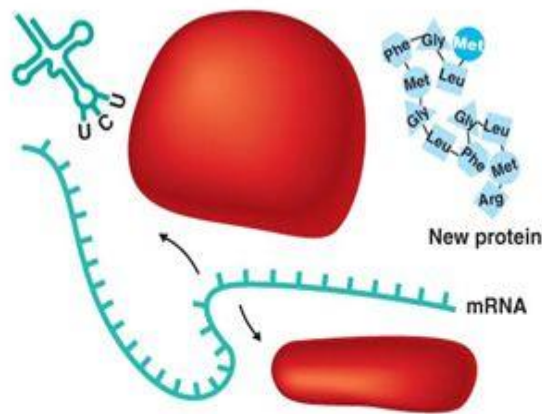




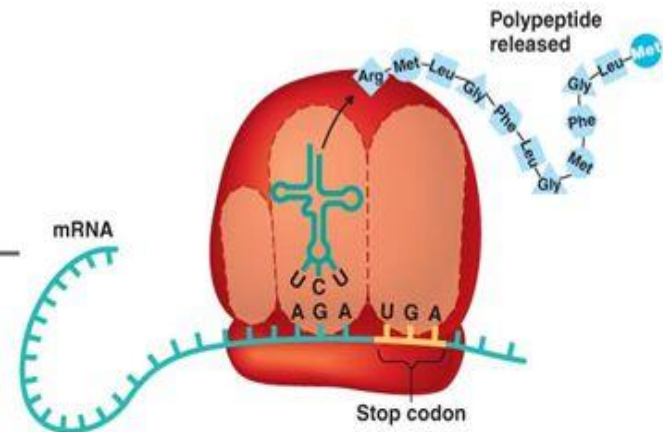
- 5 The second amino acid joins to the third by another peptide bond, and the first tRNA is released from the E site.



- 6 The ribosome continues to move along the mRNA, and new amino acids are added to the polypeptide.



- 8 Finally, the last tRNA is released, and the ribosome comes apart. The released polypeptide forms a new protein.



- 7 When the ribosome reaches a stop codon, the polypeptide is released.

