

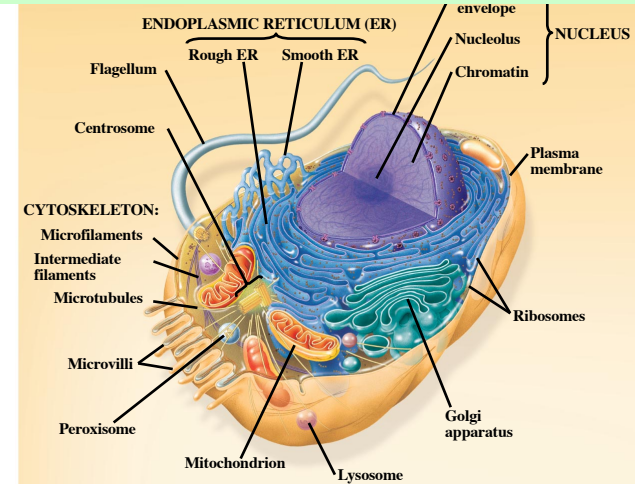
Molecular and Cellular Biology

3. The Cell – From Genes to Proteins

key processes

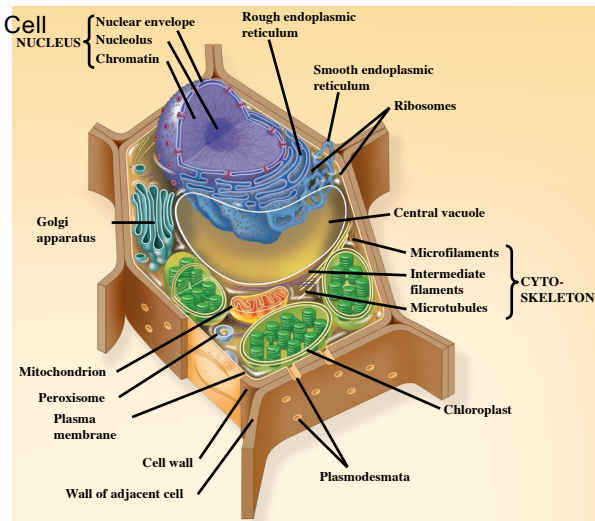
Prof. Dr. Klaus Heese

Animal Cell ((eukaryotic cell) -----> compare with prokaryotic cell)



Copyright © 2008 Pearson Education, Inc., publishing as Pearson Benjamin Cummings.

Plant Cell



Copyright © 2008 Pearson Education, Inc., publishing as Pearson Benjamin Cummings.

Monomers

vs

Polymers:

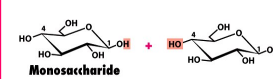
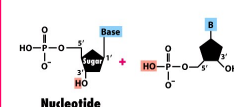
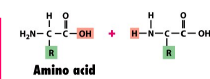
defines

cell feature

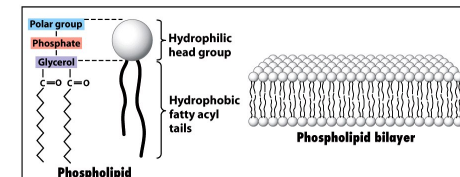
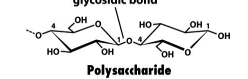
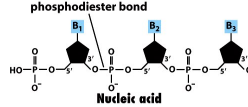
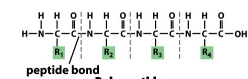
&

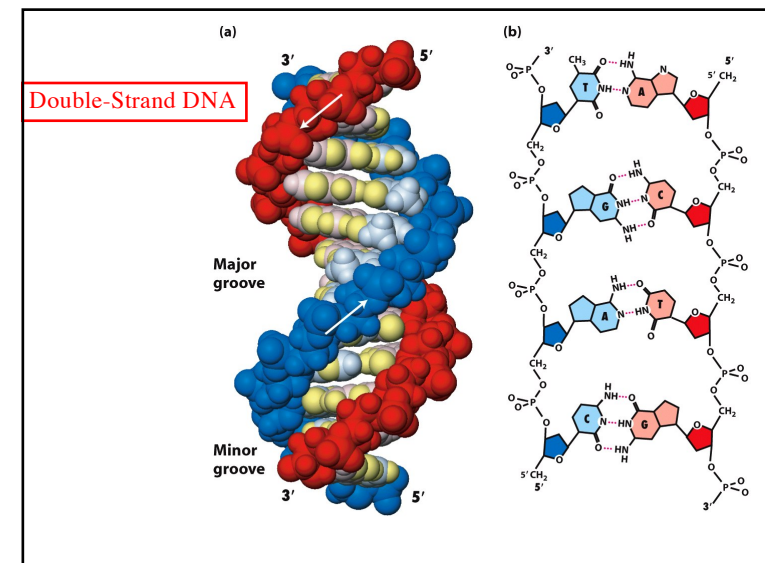
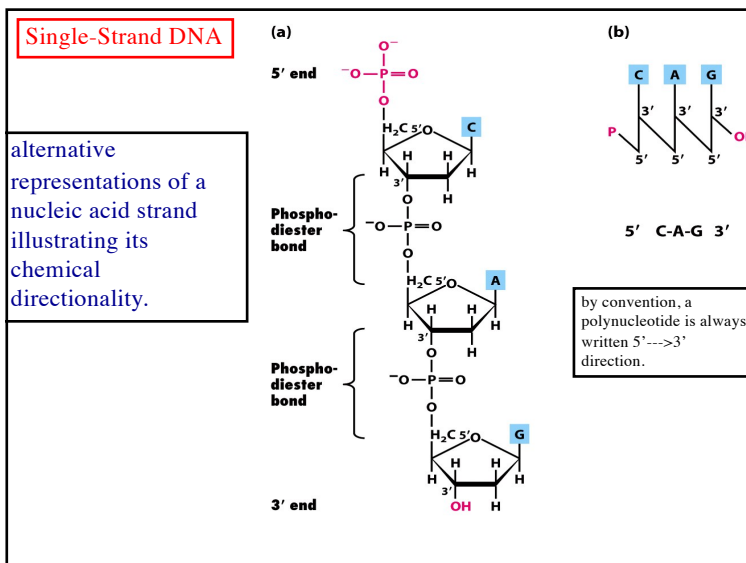
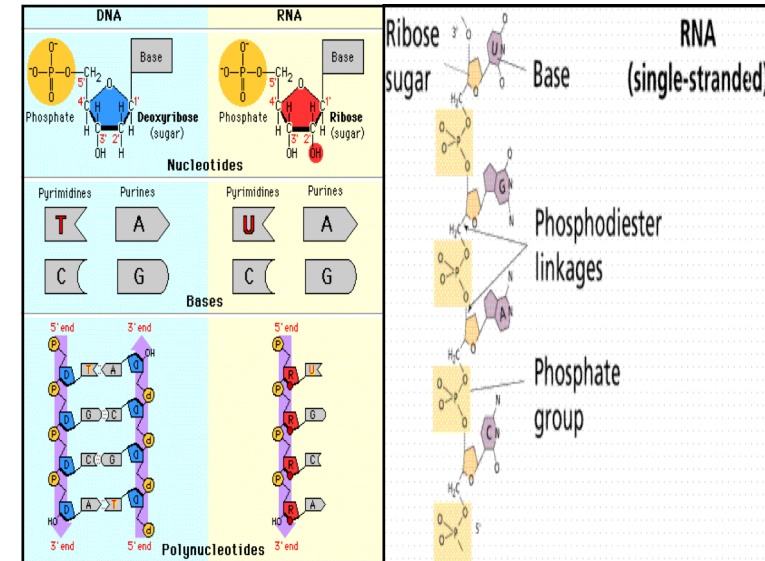
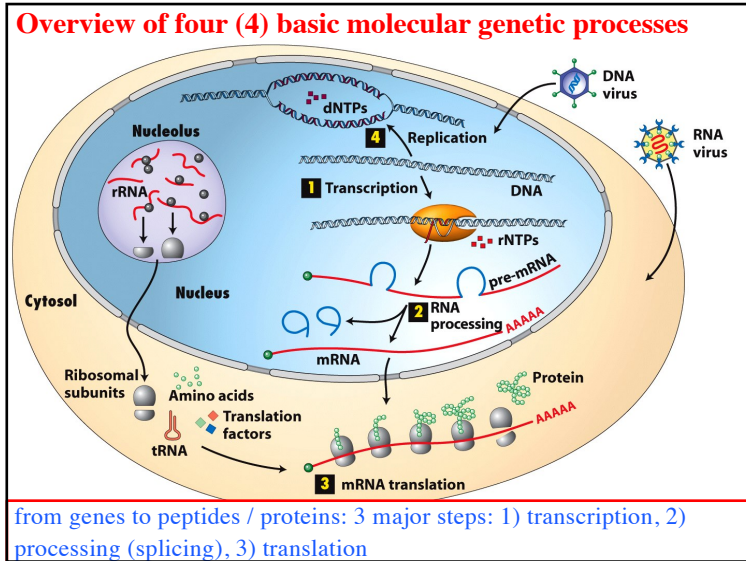
cell metabolism

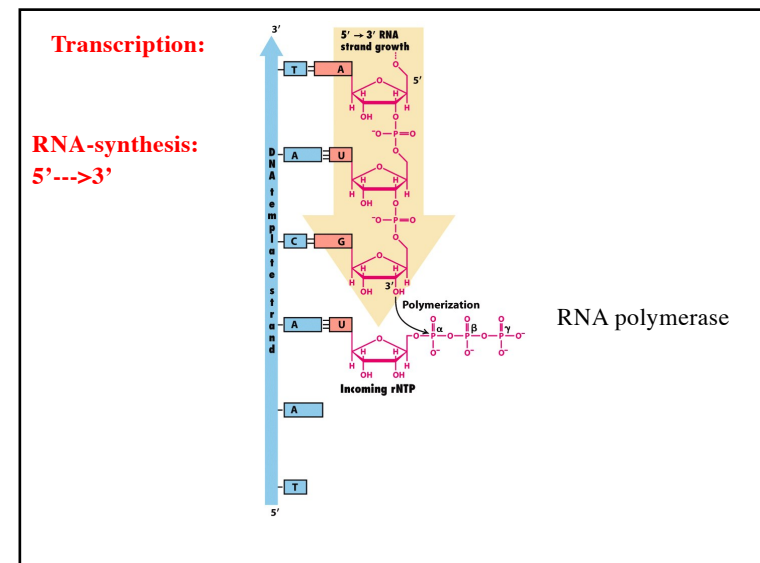
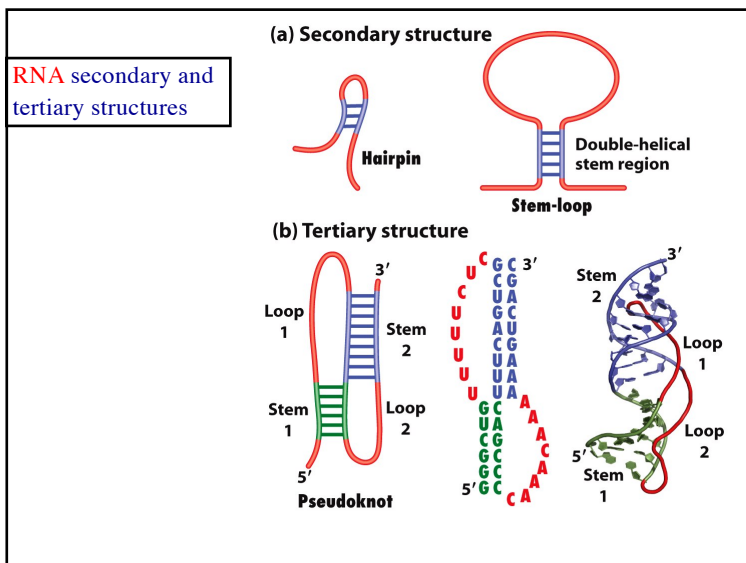
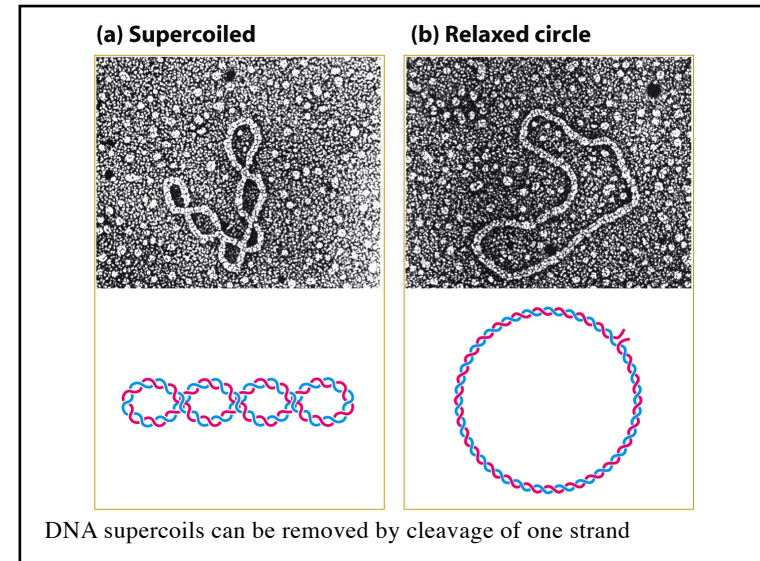
MONOMERS



POLYMERS

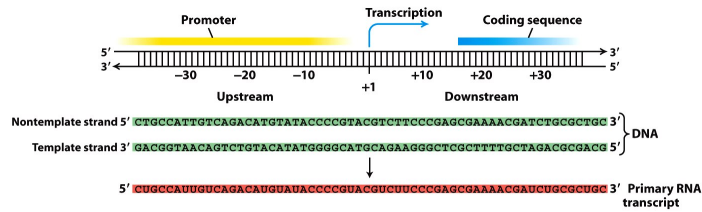
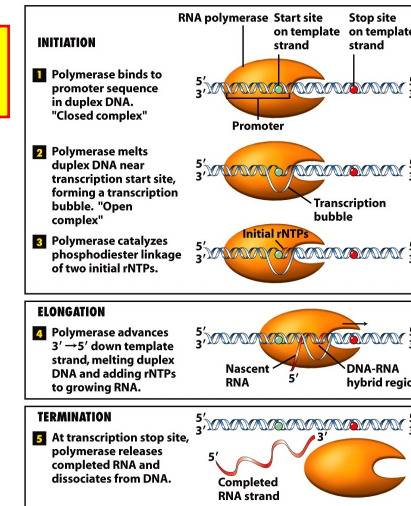
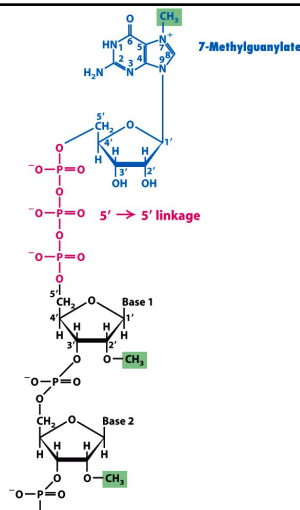
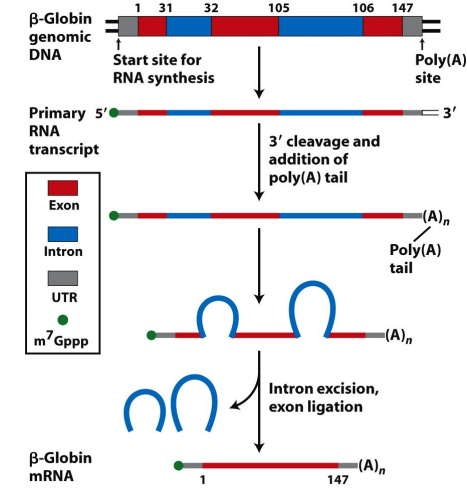


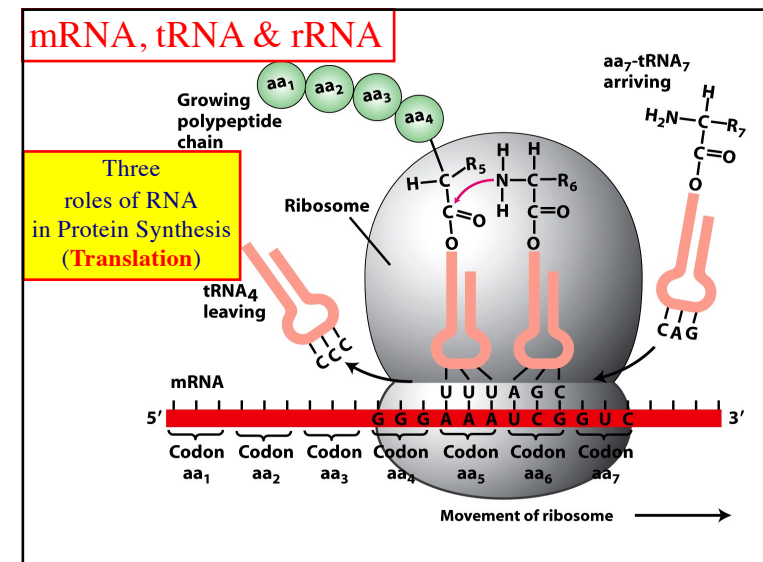
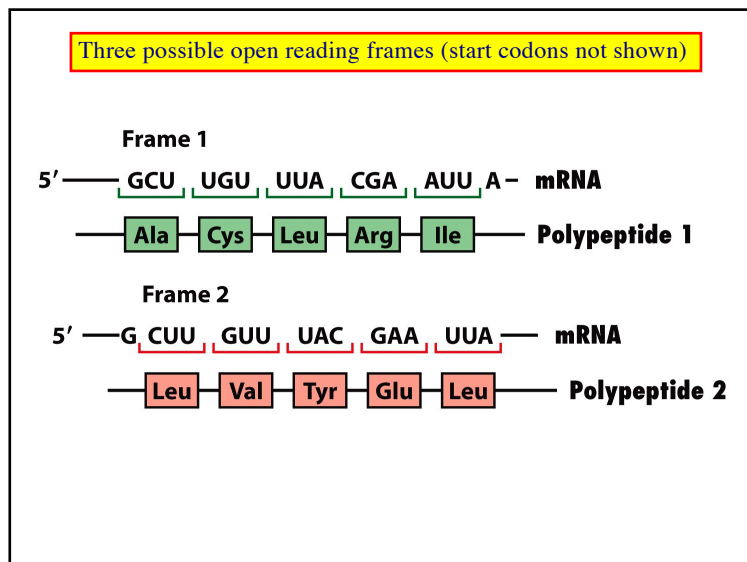
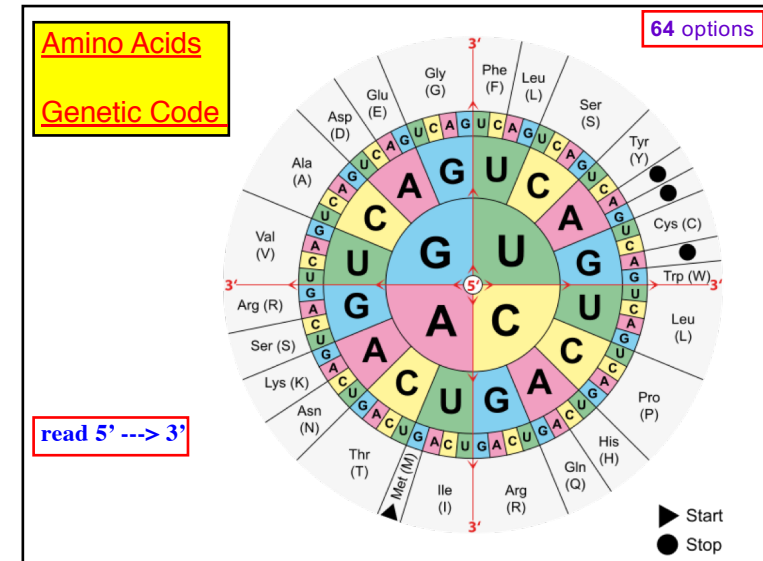
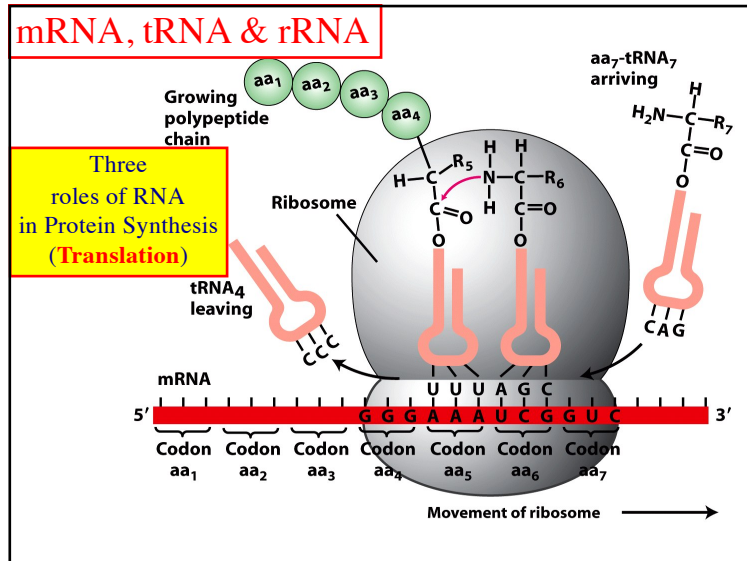




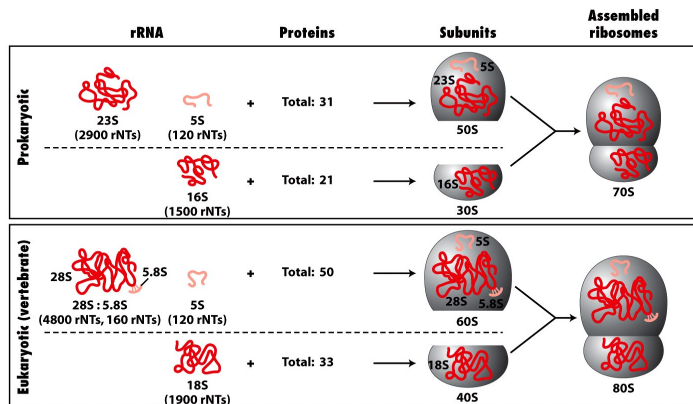
Transcription:

DNA --> RNA

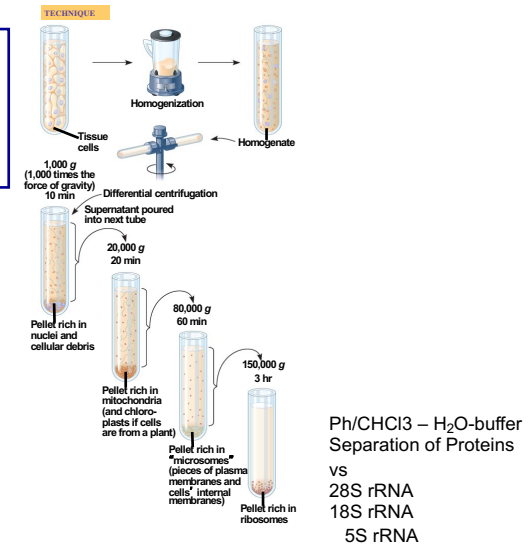
**Three stages in Transcription****Structure of the 5' methylated cap of eukaryotic mRNA****Processing:****Splicing: RNA processing to produce functional mRNA in eukaryotes**



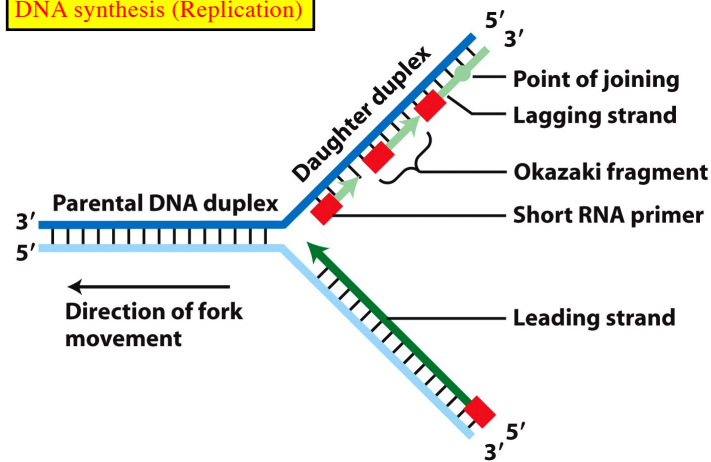
The general structure of ribosomes in prokaryotes and eukaryotes



Lab methods for Ribosome isolation



DNA synthesis (Replication)



What is a gene? revisiting the question

- A gene is a region of DNA whose final product is either a polypeptide or an RNA molecule –
- A gene is the molecular unit of heredity (= DNA // or RNA) of a living organism that codes for a protein or a (functional) RNA.

A summary of transcription and translation in a eukaryotic cell

