

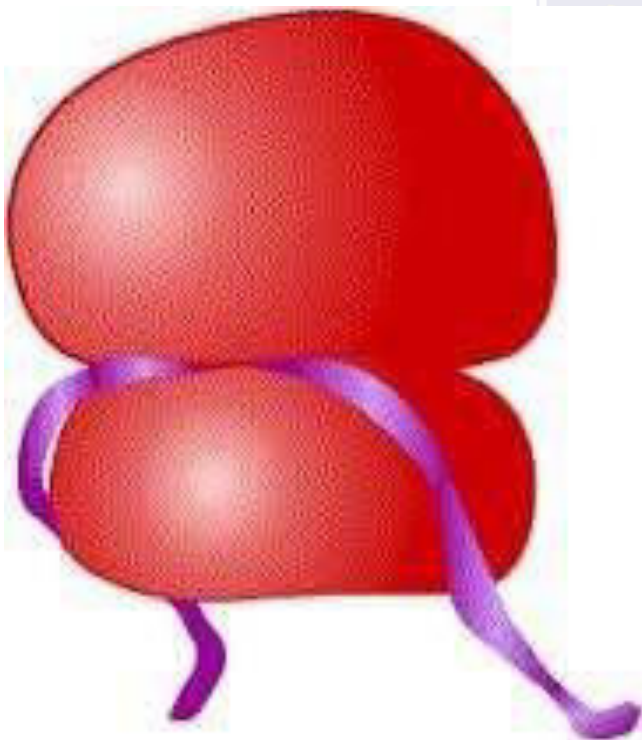


FACULTY OF ENGINEERING & TECHNOLOGY  
DEPARTMENT OF BIOTECHNOLOGY

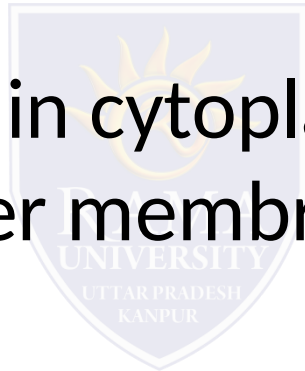
- It is a large & complex molecule.
- Found in all living cells prokaryote & eukaryote.
- That serves as the primary site of biological protein synthesis.
- Ribosome was first observed in 1950s by romanian cell biologist george emil palade using an electron microscope.



# george emil palade (1953)



- In prokaryote free form in cytoplasm & protoplasm
- In eukaryote free in cytoplasm inside the cell attach to the outer membrane in endoplasmic reticulum

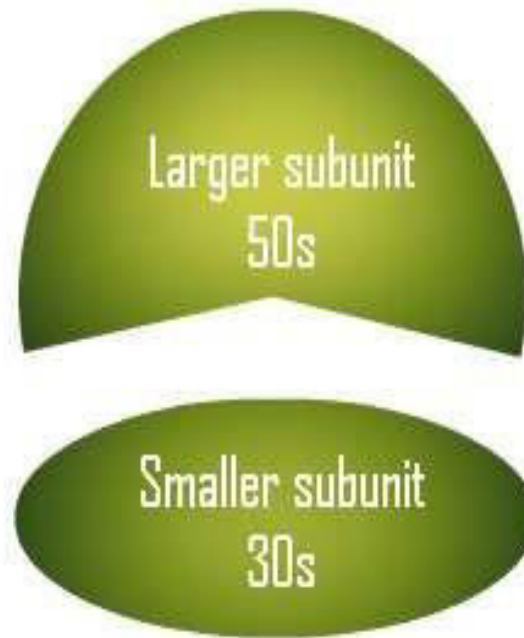


# STRUCTURE

- It is without cell membrane.
- Two subunits are attached by different angles.
  - Large subunit
  - Small subunit

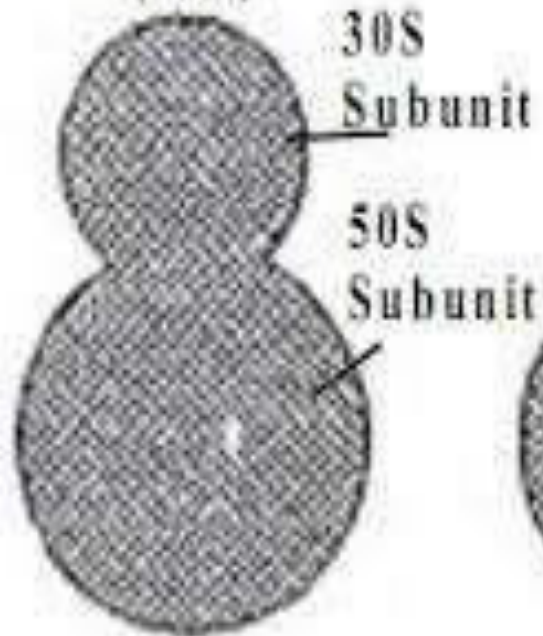


The subunits of the ribosome are synthesized by the nucleolus.

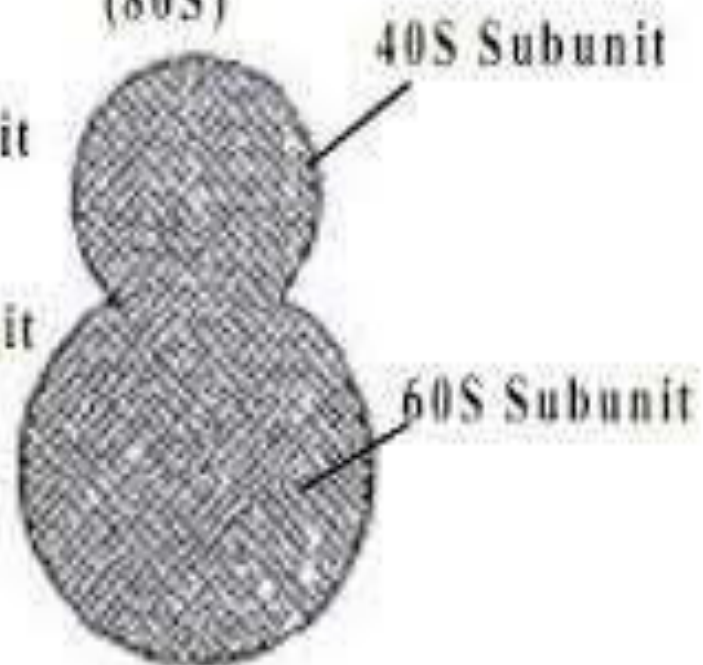


Structure of ribosomal subunit

Prokaryotic  
Ribosome  
(70S)



Eukaryotic  
Ribosome  
(80S)



- The subunits of ribosomes join together when the ribosomes attaches to the messenger RNA during the process of protein synthesis.
- Ribosomes along with a transfer RNA molecule (tRNA), helps to translate the protein-coding genes in mRNA to proteins.





# Ribosome Function

- Ribosome basically a protein factory. Subunits each have role in making of proteins
- To understand exactly what each subunit does, it's necessary to walk through protein synthesis step by step