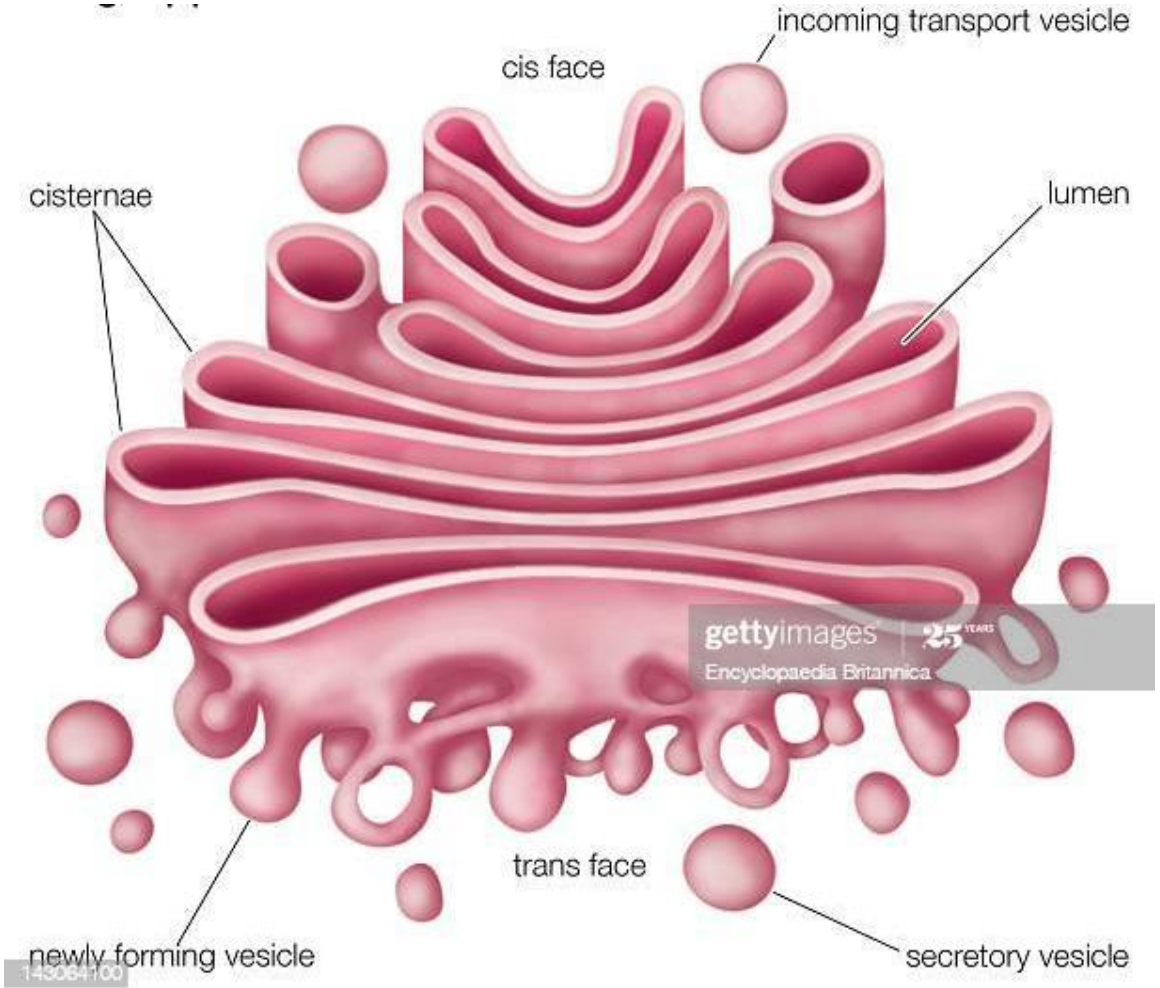
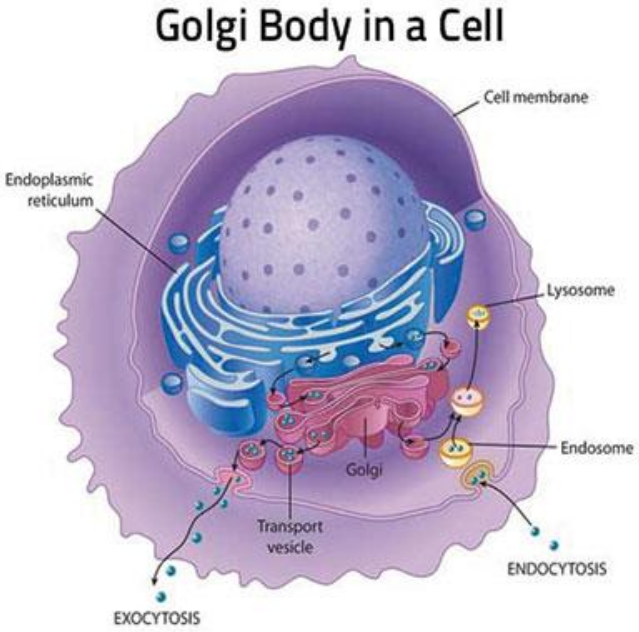
Golgi complex



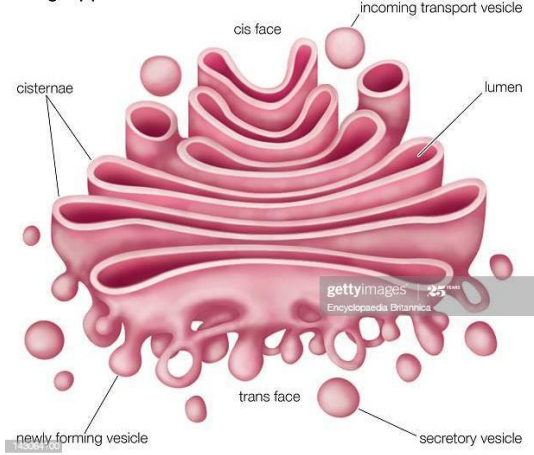


Dr. Rupesh B. Yadav

Asst. Prof.

TCSC, Mumbai.

Golgi complex



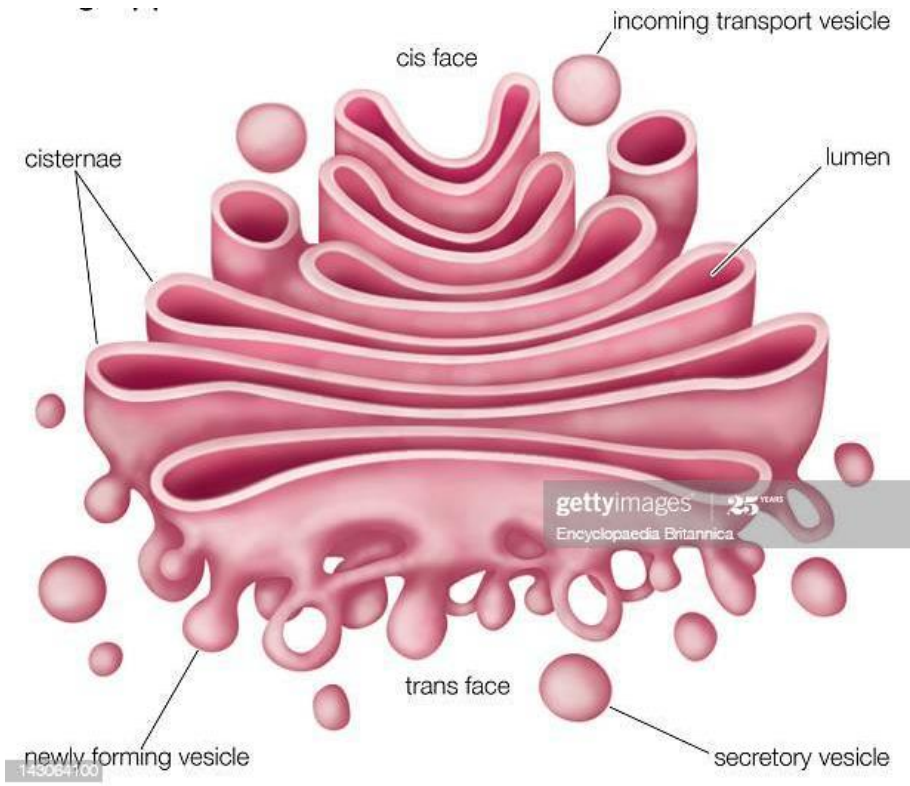
Introduction

- Golgi complex, also called Golgi apparatus or Golgi body, membrane-bound organelle of eukaryotic cells (cells with clearly defined nuclei) that is made up of a series of flattened, stacked pouches called cisternae.
- The Golgi apparatus is responsible for transporting, modifying, and packaging proteins and lipids into vesicles for delivery to targeted destinations.
- It is located in the cytoplasm next to the endoplasmic reticulum and near the cell nucleus.

Golgi complex

Introduction

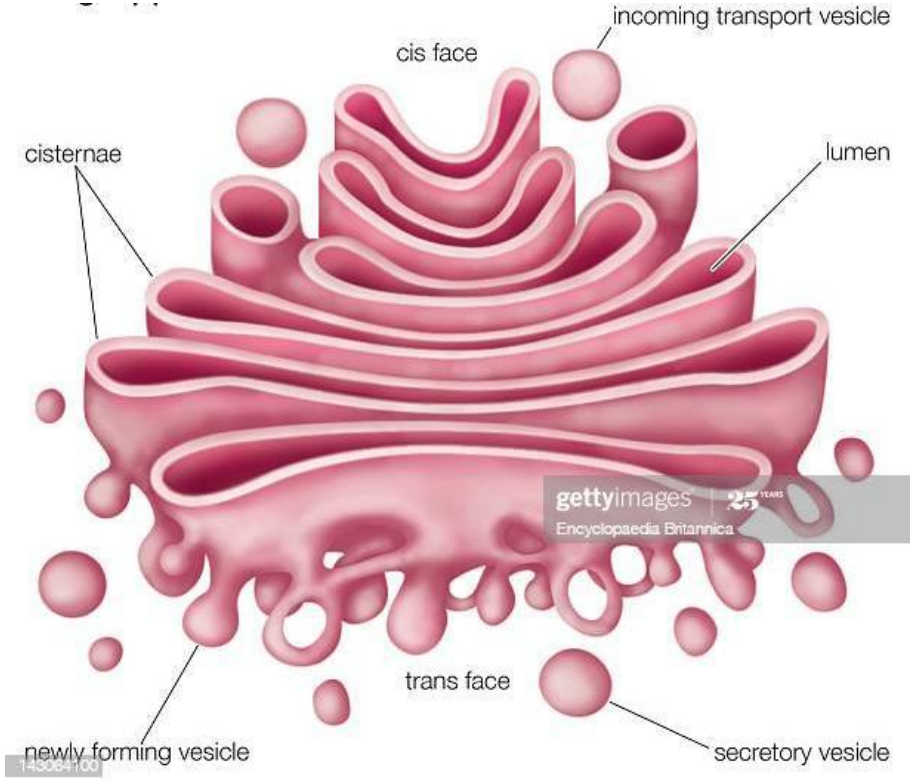
- In general, the Golgi apparatus is made up of approximately four to eight cisternae, although in some single-celled organisms it may consist of as many as 60 cisternae.
- The apparatus has three primary compartments, known generally as “cis” (cisternae nearest the endoplasmic reticulum), “medial” (central layers of cisternae), and “trans” (cisternae outermost from the endoplasmic reticulum).



Golgi complex

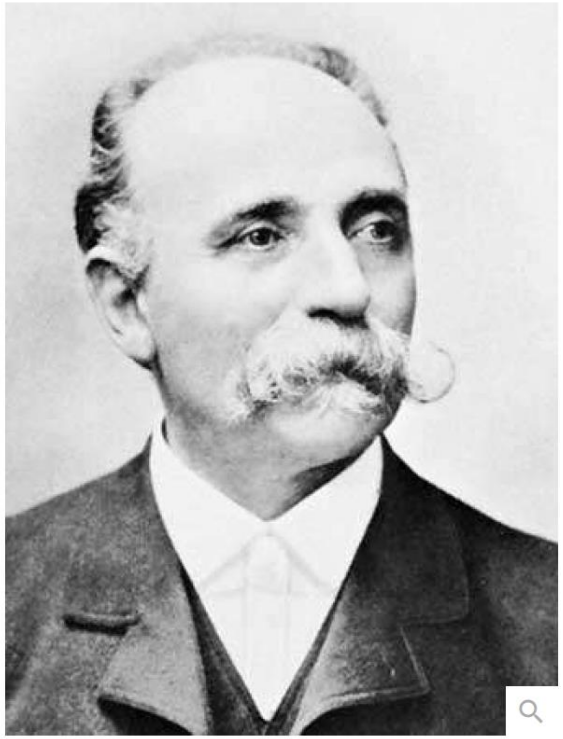
Introduction

- The cis and trans faces, are responsible for the essential task of sorting proteins and lipids that are received (at the cis face) or released (at the trans face) by the organelle.



Golgi complex

History

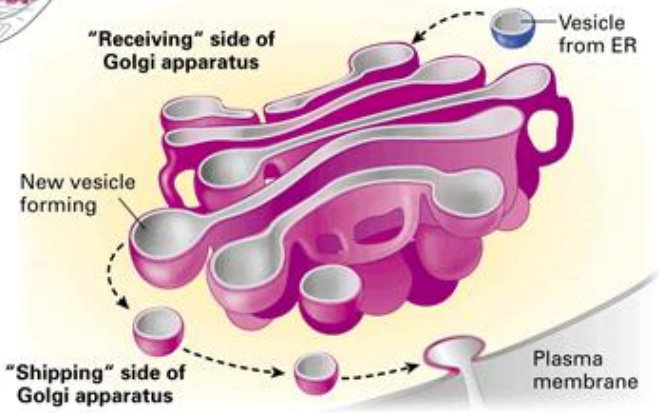


Camillo Golgi

- George (1867) first time observed the Golgi body.
- Camillo Golgi (1898) first time preposed the morphology of GB
- Camillo Golgi first time observed the structure of GB of nerve cell of cat & Barn owl
- Electron microscopic structure first time given by Dalton
- Golgi body / Complex also termed as Lipochondria. In plant its termed as Dictyosome

Golgi complex

Occurrence



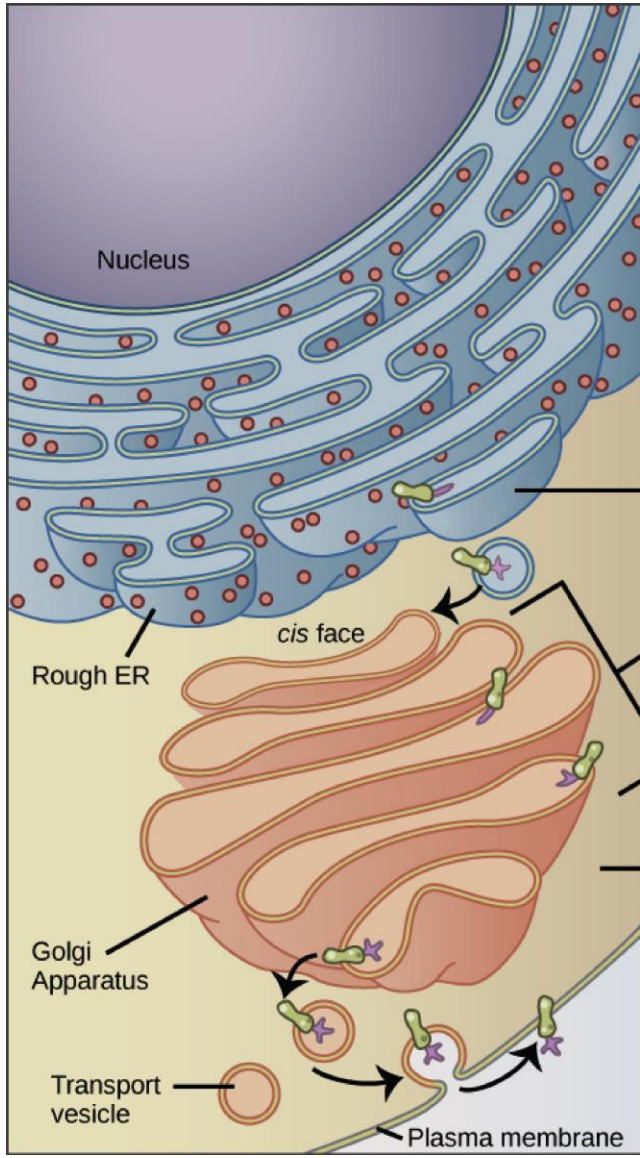
- Golgi apparatus or complex is absent in prokaryotic cells (bacteria and blue green algae).

- It is present in all eukaryotic cells except sieve tubes of plants, sperms of bryophytes and pteridophytes and red blood corpuscles of mammals.

Golgi complex

Position

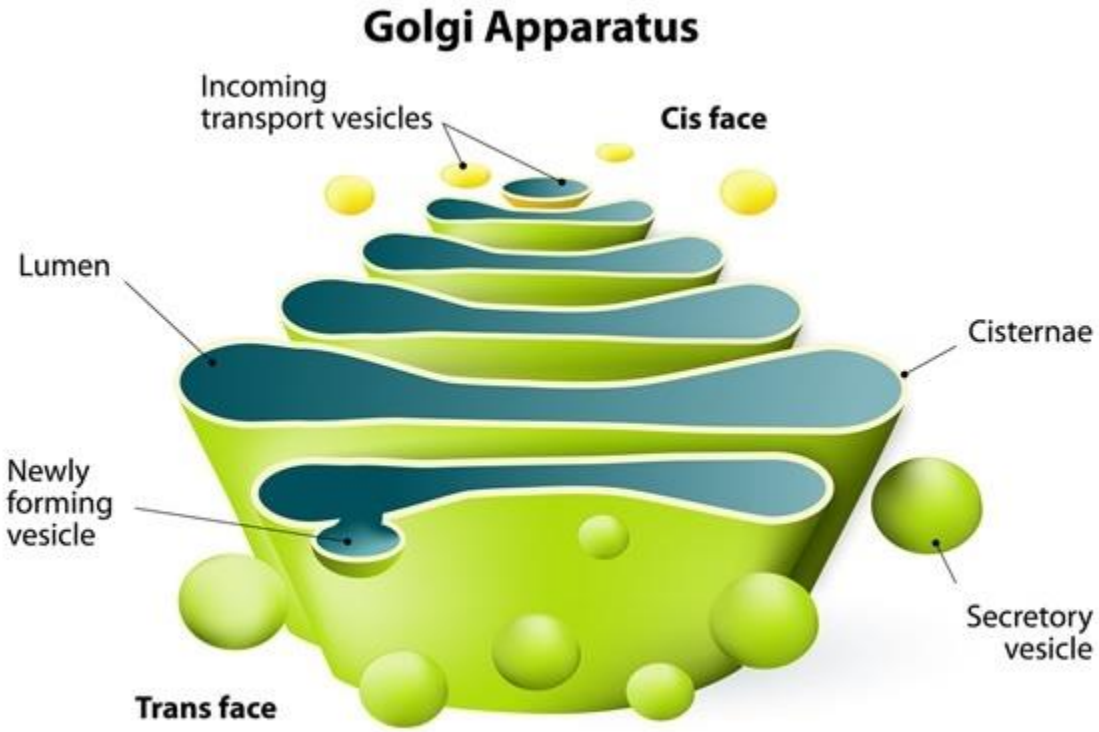
- In case of Vertebrate cell, the position of GB is perinuclear (Closer to nucleus).
- In case of Invertebrate & plants, as the no. of GB is more, so they scattered in cytoplasm (Found all over the cytoplasm, no specific area)
- Zone of exclusion- Clear cytoplasmic area around Golgi body.



Golgi complex

Size

- Size varies according to the function.
  - ✓ It is bigger in secretory cell eg. Liver cell, Pancreatic cell.
  - ✓ It is Smaller in non- secretory cell eg. Muscle cell.



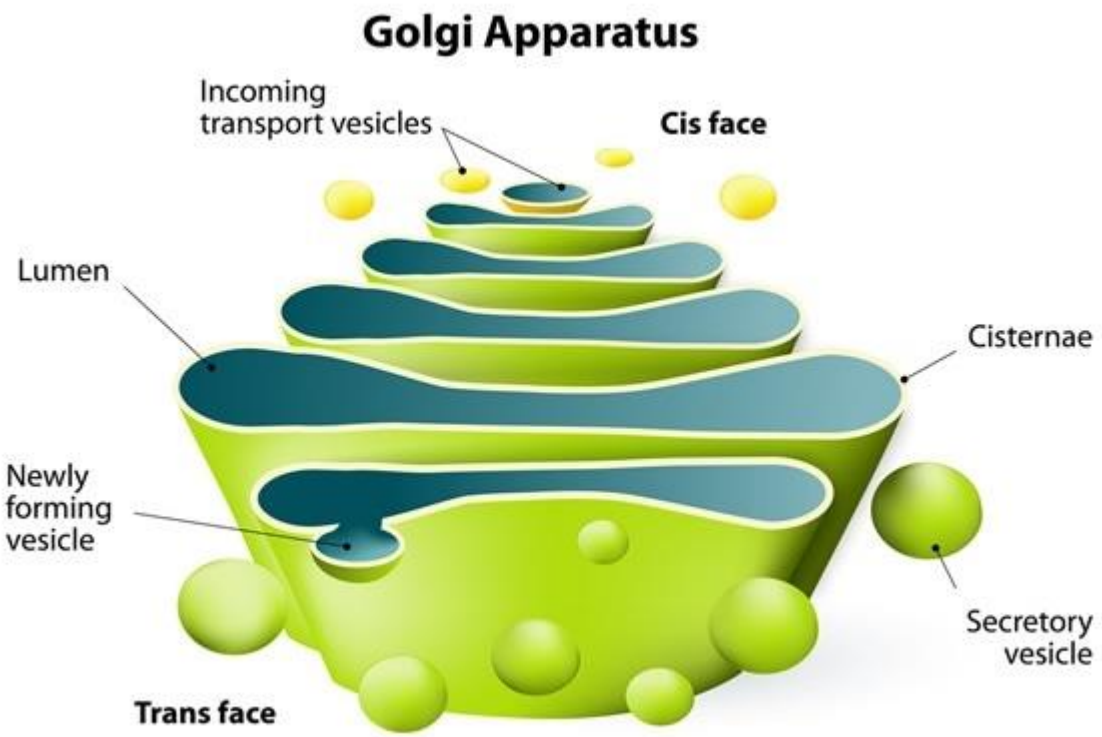
Golgi complex

Number

- In animal cell, there is only one Golgi body.
- In plant cell, the no. of Golgi body is vary
  - ✓ 6-12 in plant
  - ✓ Lower green algae – 1
  - ✓ Rhizoidal cell- Few hundreds

Shape

- Golgi body is pleomorphic (Shape changes according to the function) organelle.



Thank You