

DISCOVERY

- **Camillo Golgi** was an Italian biologist who discovered this organelle with a light microscope in 1898.

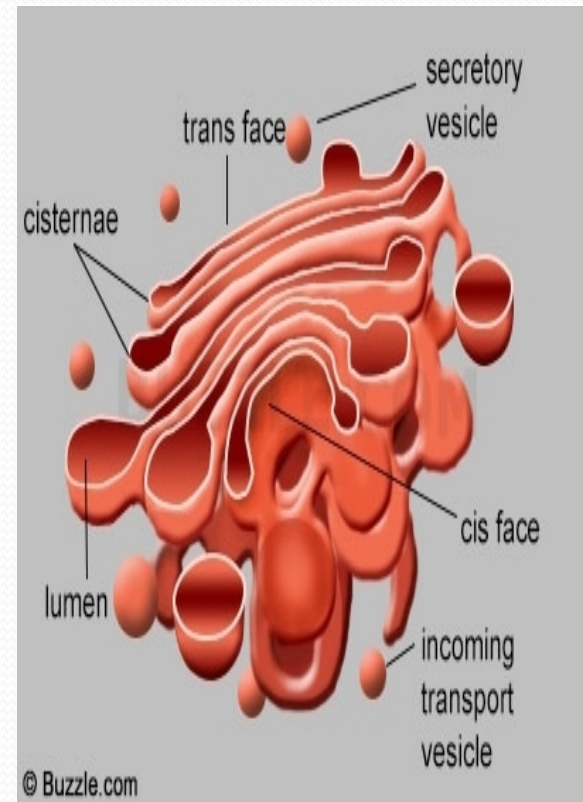
GOLGI COMPLEX

- A membranous complex of vesicles, vacuoles and flattened sacs in the cytoplasm of most cells involved in intracellular secretion and transport.
- Found in most eukaryotic cells.
- Golgi complex sometimes also called as Golgi body or Golgi apparatus.



MORPHOLOGY

- The Golgi is composed of stacks of membrane-bound structures known as **Cisternae** .
- A **cisternae** comprises a flattened membrane disk that makes up Golgi apparatus.
- A complex network of tubules and vesicles located at the edges of cisternae.

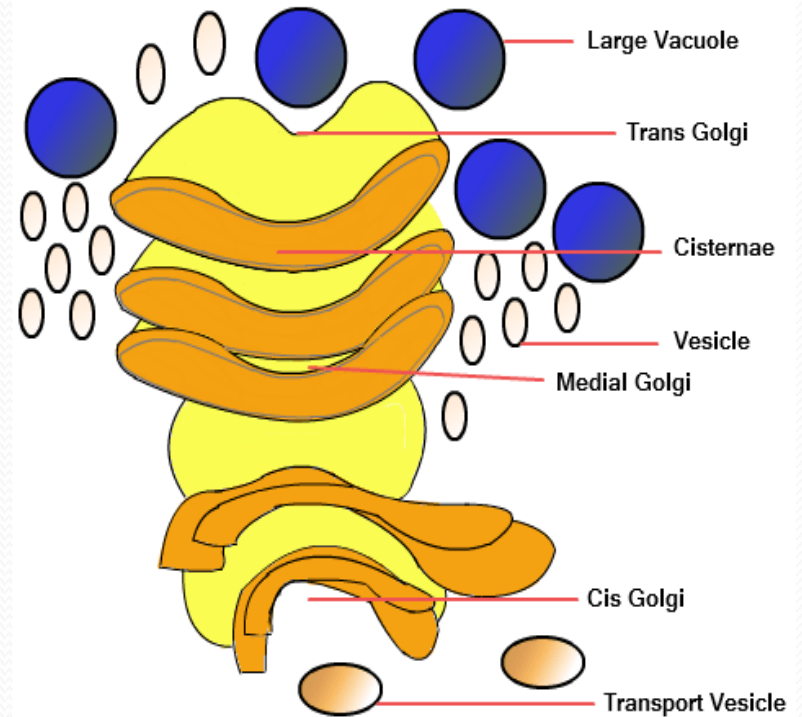


MORPHOLOGY

- The cisternae stack has two faces :

Cis-Golgi

Trans-Golgi



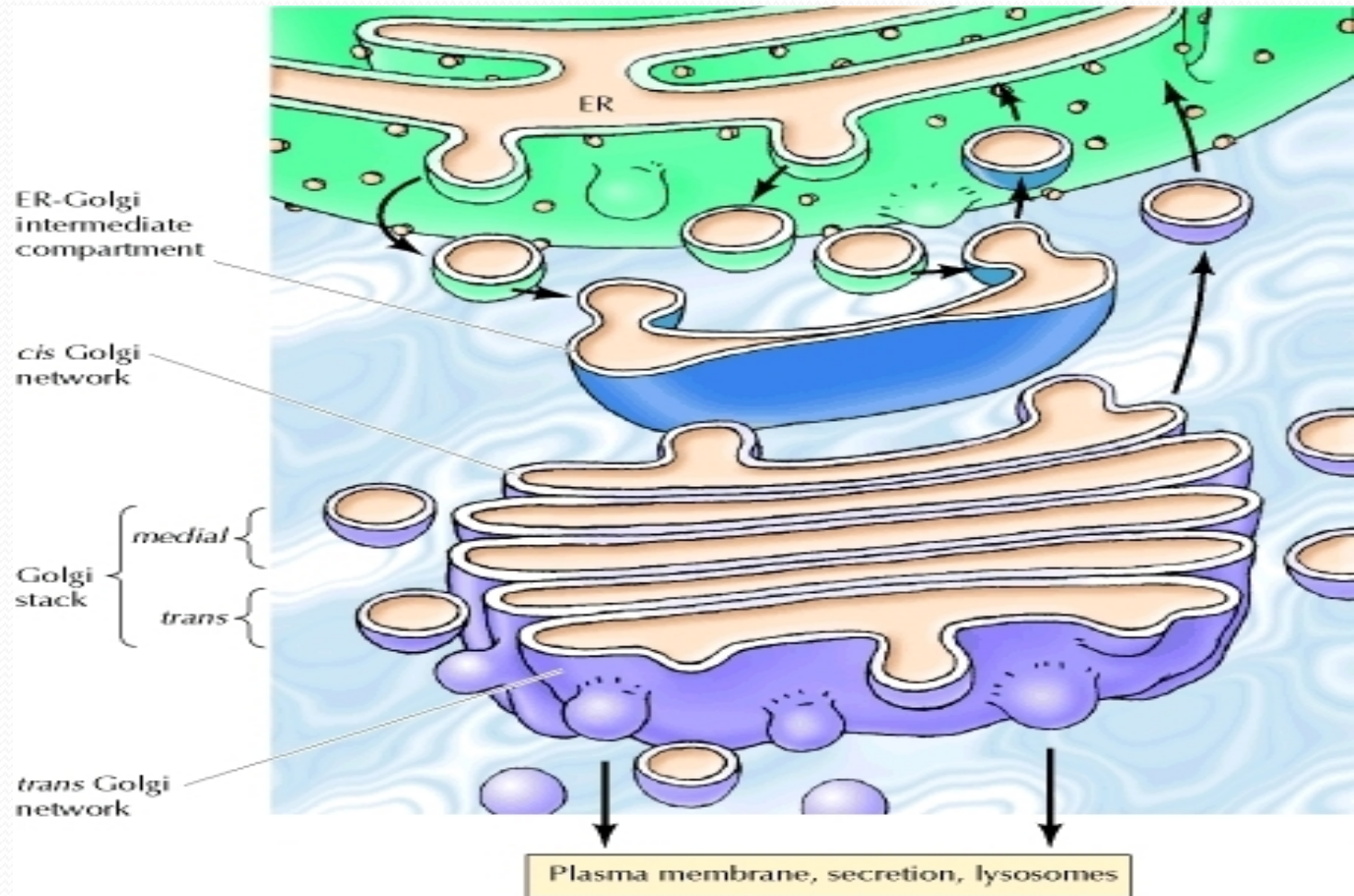
CIS-GOLGI

- The side that faces the Endoplasmic reticulum is Cis Face and entry face that receives small membrane vesicles from ER.
- Vesicles from ER fuse with cis-Golgi network and progress through stack to the Golgi network.
- The cis is the site at which transport vesicles bringing newly synthesized products from ER with and add their contents to Golgi cisternae.
- Each region contains different enzymes which selectively modify the contents depending on where they are destined to reside.

TRANS-GOLGI

- The side faces cell membrane is Trans face and is exit face where vesicles leave the Golgi and move to their targets including exterior of cells.
- The trans-Golgi network plays a vital role in directing proteins in secretory pathway to appropriate cellular destinations.
- Proteins synthesized on membrane bound ribosomes are transported through Golgi apparatus and sorted for delivery to various cellular destinations.

CIS-TRANS GOLGI



FUNCTIONS

- The Golgi apparatus is integration modifying, sorting and packaging macromolecules for cell secretion.
- It modifies proteins delivered from rough endoplasmic reticulum ,then sends to different parts of cell.
- Involved in transport of lipids around the cell, and creation of lysosomes.

CONTINUING...

- It is major site for carbohydrate synthesis.
- It plays an important role in synthesis of proteoglycans which are molecules present in extracellular matrix of animals.
- Golgi complex has mechanism for trapping proteins and sending them back to rough endoplasmic reticulum.

