GOLGI APPARATUS:STRUCTURE AND FUNCTIONS

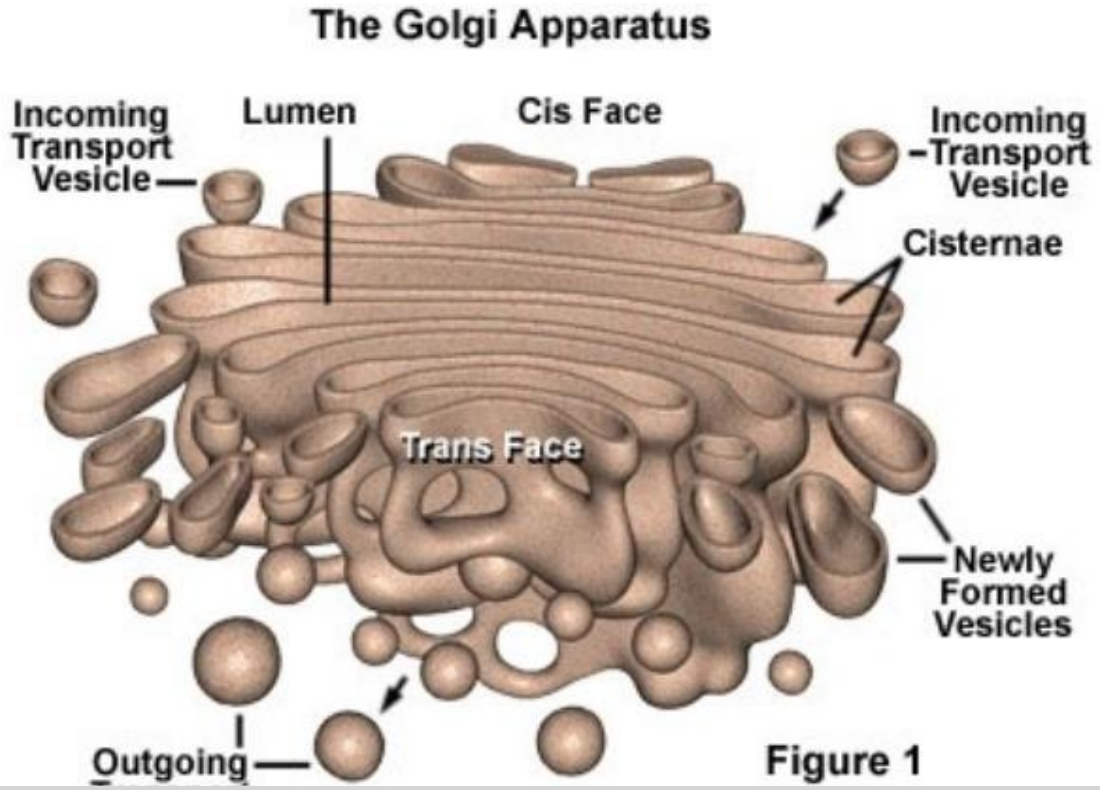
Discovery

- The Golgi apparatus is noticeable with both light and electron microscope. It is also called **Golgi complex**.
- The Golgi complex was discovered by an Italian physician and Noble Laureate **Camillo Golgi** in 1898 during an investigation of the nervous system.
- Its electron microscopic structure was described by **Dalton** and **Felix** in 1954.

Camilo Golgi
Nobel Prize For the " Black Stain"

Location

- The Golgi apparatus is present in all Eukaryotic cells and absent in Prokaryotes.
- The Golgi apparatus is specially extensive in the secretory cells.
- It is absent in few cell types, such as the mammalian RBCs, sperm cells of Bryophytes and Pteridophytes and sieve tubes of plants.



Structure of Golgi Complex

- It varies in size and form in different cell types but usually has similar organization for any one kind of cells.
- Electron microscope shows it as a central stack (pile) of parallel, flattened, intercommunicating sacs or cisternae and many peripheral tubules and vesicles.
- Consists of 4 functionally distinct region- cis face (entry face), middle cisterna, trans cisterna, trans face(exit face).
- Each region contain different enzymes which selectively modify the contents depending on where they reside.

Cisternae:

- Golgi complex consists of a stack of generally 4-8 (range 3-20) membrane bound saccules or cisternae. Unicistemal dictyosomes are found in fungi.
- The membranes of the saccules or cisternae are smooth but of variable thickness they enclose a lumen of 60-90 A.
- Lumen contains a fluid substance or matrix. In a stack, the adjacent cisternae are separated by a distance of 100-300 A.
- The intercisternal space contains thin layer of cytoplasm having parallel fibrils.