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. Golgi Apparatus

It was first discovered by Camillo Golgi (1898), when he was observing the densely stained reticular structures being present near the nucleus of the cell. These structures were named Golgi bodies after his discovery.

Golgi complex or Golgi apparatus is a major complex protoplasmic structure being made up of many flat, disc-shaped sacs or cisternae (0.5-1.0 μ m) in diameter.

Occurrence

Golgi complex, occurs in all cells except prokaryotes (i.e., PLO, bacteria, cyanobacteria) and some eukaryotes such as human RBCs, sieve tubes of plants, etc.

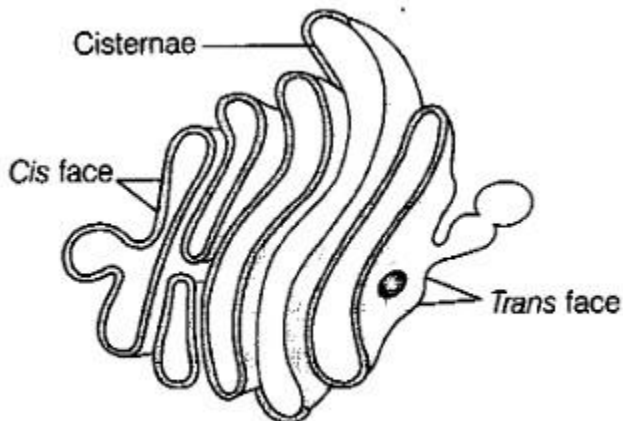


Fig.8.8 Golgi apparatus

Cisternae of Golgi apparatus are found stacked parallel to each other. They vary in number in a Cell. They are often curved-like a shallow bowls to give Golgi complex a definite polarity.

They are concentrically arranged near the nucleus with two distinct faces

(i) Cis face (forming face) This is convex in shape that lies towards the cell membrane and is responsible for receiving secretory materials through the transitional vesicles, which are pinched off from the SER.

(ii) Trans face (maturing face) This is concave in shape that lies towards the nucleus and is responsible for releasing the material, which is being secreted by cis face and modified in the cisternae.

Note:

* Although, the cis and the trans faces of the organelle are entirely different in origin, but they inter connect each other.

* Proteins that are synthesised by ribosomes on ER are first modified in cisternae before they released from its trans face.

The Golgi apparatus acts as a site where the material to be released is being packaged in the

form of vesicles delivered either to the intracellular targets or secreted outside the cell.

Functions

Golgi apparatus possess the following functions

- (i) The Golgi apparatus is involved in the formation of lysosomes, vesicles that contain proteins and remains within the cell.
- (ii) It performs the function of packaging material.
- (iii) It acts as an important site for the formation of glycoproteins and glycolipids.
- (iv) It helps in the production of complex carbohydrates other than glycogen and starch.
- (d) It helps in the formation of cell wall.