

- Reticular structure consisting of many disc-shaped sacs (cisternae), stacked parallel to each other



- Cisternae have 2 distinct faces –
Convex (*cis*) – forming face
Concave (*trans*) – maturing face
Cis and *trans* faces are interconnected.
- Function – packaging of materials, either to be delivered to the intracellular targets or to be secreted outside the cell
- Materials to be packaged in the form of vesicles from ER fuse with the *cis* face of the golgi apparatus and move towards the *trans* face.
- Glycolipids and glycoproteins are also synthesised in the Golgi apparatus.
- Lysosomes:
- Lysosomes are vesicles formed as a result of the packaging in the Golgi apparatus.
- These are rich in all types of hydrolytic enzymes (optimally active at acidic pH), and are capable of digesting all types of molecules, such as carbohydrates, lipids, proteins and nucleic acid.
- Vacuole:
- Membrane-bound space in cells; containing water, sap, excretory products and other waste materials
- Vacuole membrane – Tonoplast

- Importance: Mitochondria are called the 'power houses of cells' since they are the site for aerobic respiration, and form ATP (source of cellular energy).
- Matrix contains components like the single circular DNA, RNA, ribosomes (70s) and the components needed for protein synthesis.
- Mitochondria divide by fission.

Plastids

- Found in plant cells and euglenoids
- Bear pigments and impart colours to plants
- Large-sized, and hence, easily observable

Plastids (based on type of pigment)



Chloroplast

- Location: Mesophyll cells in leaves
- Can be variable in shape (oval/spherical/discoid/ribbon-like), variable in length and in number (1 per cell in *Chlamydomonas* to 20–40 per cell in green algae)
- Have *double membrane*: Outer membrane and Inner membrane (less permeable)