Note
- GB receives materials to be packaged from ER at cis face
↓ ∴
GB cis face is close to ER.
- Materials after packaging are released from GB at trans face.
- GB is a polarized organelle.

Functions of GB
1. packaging of materials
↳ main function of GB
↳ packaged materials are transported to both intracellular targets or outside the cell.
2. Helps in PM formation
3. cytokinesis in plant cells.
4. acrosome of sperm is modified GB.
5. mucilage (lubricating substance) secreted by root cap is due to GB.
6. Site of formation of glycoprotein and glycolipid
↓ ↓
• protein + carbohydrate • lipid + carbohydrate
• O-glycosilation • glycosidation

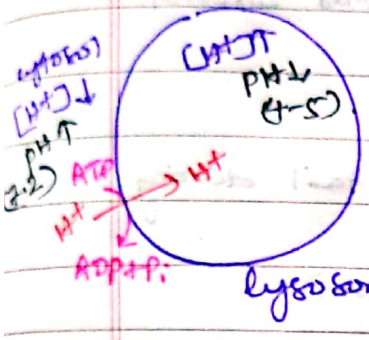
Note → RER → N-glycosylation
GB → O-glycosylation

cell wall materials
↙ ↘
cellulose, hemicellulose, pectin, lignin
↓ synthesized by
GB
Suberin, cutin
↓ synthesized by
Spherosome

• lipochondria → lipid rich GB.

© Lysosome

- Single membrane bound tiny vesicular organelle.
- formed by packaging in GB.
- Released from GB at trans face.
- has acid hydrolases
  - ↳ hydrolytic enzymes working at acidic pH (optimum pH → 4-5)



- ↳ pH is maintained by pumping H^+ from cytoplasm into lysosome. ↳ active process.
- ↳ about 50 different types have been reported so far.
- ↳ almost all types of acid hydrolases → true
- ↳ can digest lipid, protein, carbohydrate, nucleic acid
- ↳ e.g. - lipase, protease, carbohydrase, nuclease)

Note! · Acid phosphatase → marker enzyme of lysosome.

· lysosome → polymorphic organelle.

↓ ∴

Shape and size of lysosome vary during its functioning..

Types of lysosome

(I) Primary lysosome

- newly formed lysosome at trans face of GB.
- its enzymes → inactive.

(II) Secondary lysosome

- K/a heterophagosome, digestive vacuole.
- enzymes → active ∴ enzymes digest the ingested particles.
- The digested particles diffuse into the cytoplasm and get used by the cell.

(III) tertiary lysosome

- K/a residual body
- secondary lysosome with remains of undigested

- moves towards PM and gets fused with PM to release the undigested particle by the process of ephagy
  - ↳ also K/a cell vomiting, exocytosis.

(iv) Autophagic lysosome

- K/a suicidal bag.
- formed by fusion of primary lysosomes around old or dead organelles.
- Significances (of autophagic lysosome)
  - ↳ disappearance of larval tail during metamorphosis.
  - ↳ osteogenesis (bone formation)
  - ↳ digestion of old or dead organelles by autolysis (or autodigestion)

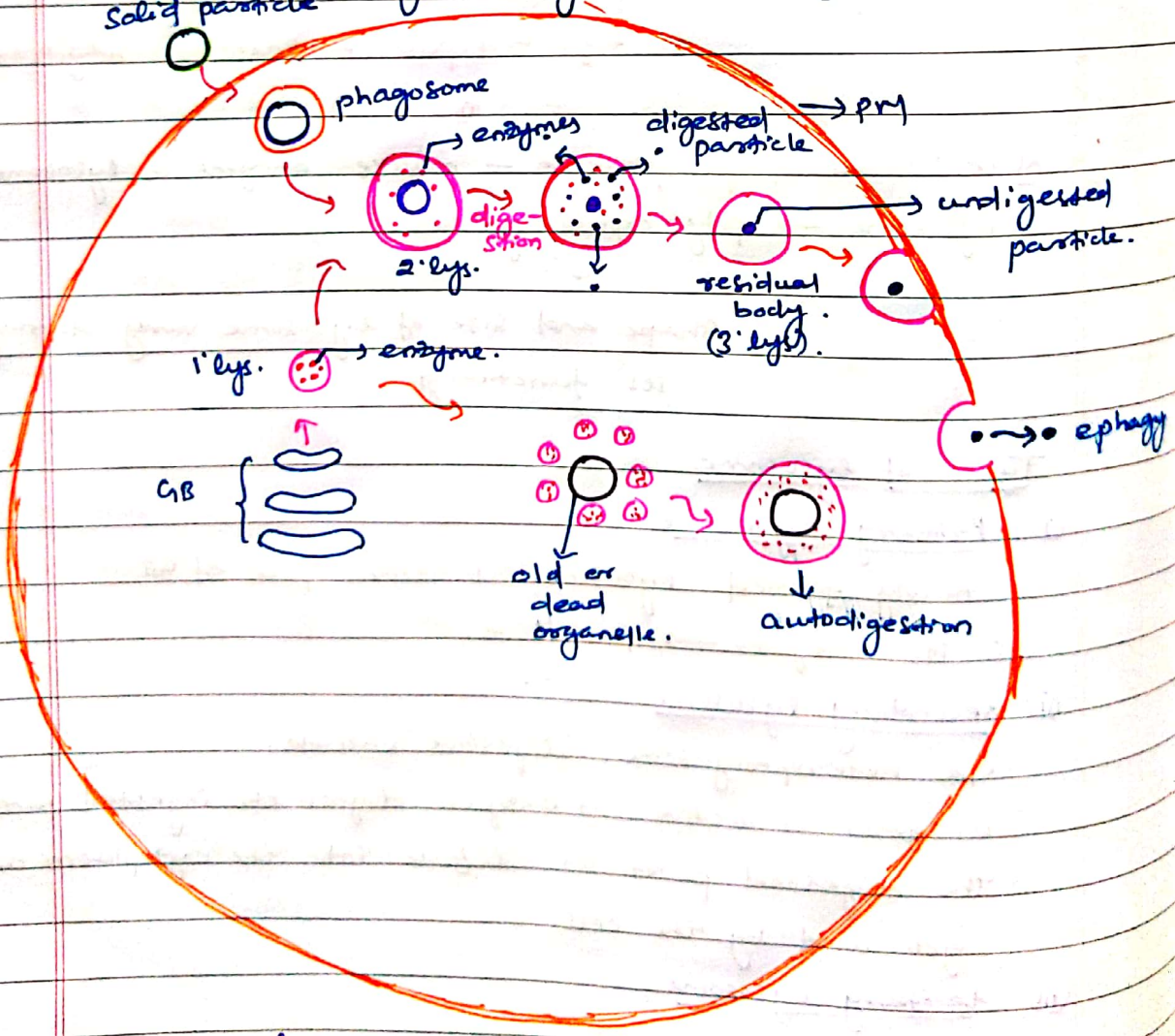


fig: various types of lysosome.