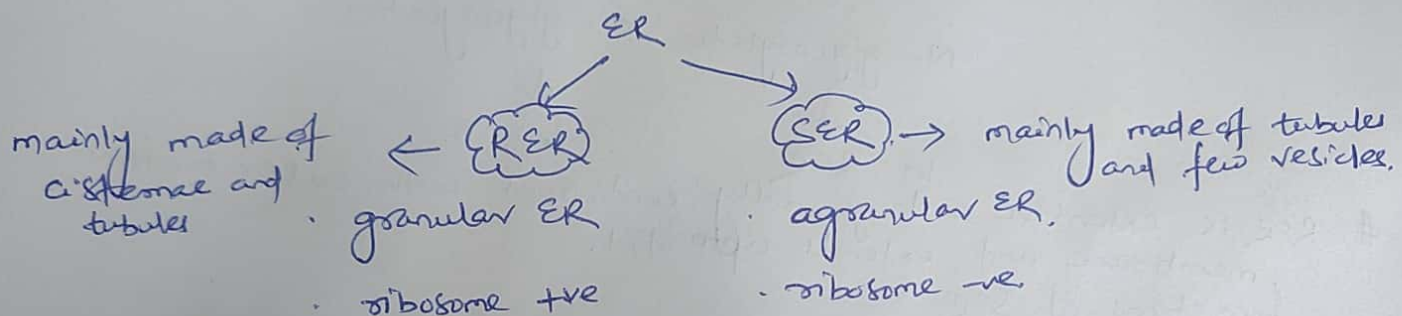
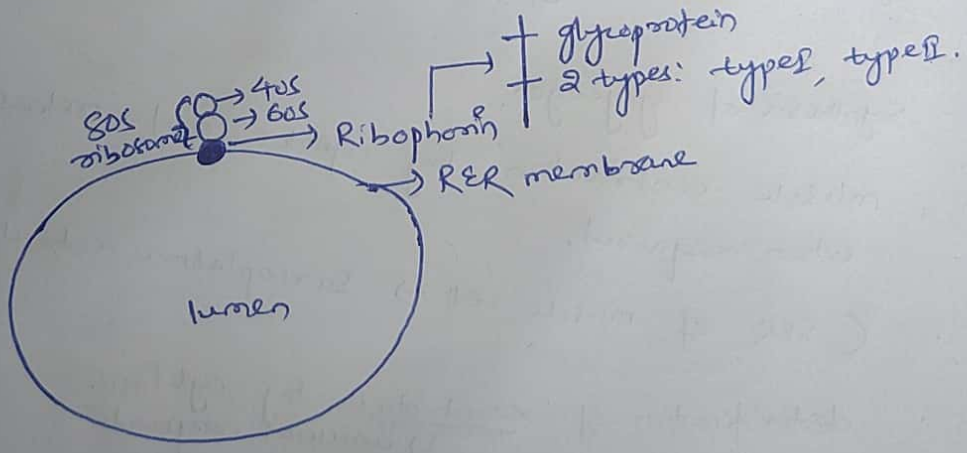
Classification of ER

(Basis – presence of ribosome)



Attachment of ribosome to RER



Functions of RER

- protein
  - ↳ synthesis → by attached ribosome.
    - ↳ folding → by chaperone protein in lumen.
      - ↳ N- glycosylation. (protein modification)
- cleavage of signal peptide → by signal peptidase in lumen.
- provides precursor of lysosomal enzymes ar GB.
- provides membrane to nucleus.
- forms SER

  RER —(Ribosome)→ SER.
- Nissls granules made of RER + ribosome

protein glycosylation

N- glycosylation → in RER

O- glycosylation → in GB.

RER is extensive and generally continuous with outer nuclear membrane and extends upto PM.

functions of SER

- major site of lipid synthesis.
- Synthesis of steroidal hormones in animal cells.
  - ↳ sex hormones. → testosterone, estrogen, etc.
- Synthesis of glycogen.
- muscle contraction by uptake and release of Ca^{2+} when required.
- (SER of muscle cell → Sarcoplasmic reticulum)
- detoxification of xenobiotics by cyt P_{450}.
  - ↳ unusual compounds
- myeloid body
  - ↳ SER of epithelial cells of retina
  - ↳ light sensitive.

Common function of SER + RER

- Act as cytoskeleton.
- desmotubule of plasmodesmata

Golgi Apparatus

- called golgi complex, golgi body,
- Discovery: By Camilo Golgi in 1898.
- occurence:

  PK → -ve

  EK → +ve except- mature sieve tube cell and mammalian RBC, sperm of bryophyte and pteridophyte.

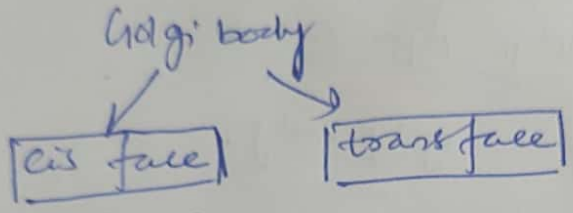
- Zone of exclusion:
  organelle free area around golgi body.

- present near nucleus
  ∴ ↳ GB is a localised organelle.

Structure of GB

- under e⁻ microscope GB appears to be densely stained reticular structure.
- consists of cisternae
  - ↳ Number → many, variable
  - ↳ flat, membrane bound disc shaped sacs.
  - ↳ diameter → 0.5 μm – 1.0 μm.
  - ↳ stacked parallel to each other.
  - ↳ concentrically arranged near nucleus.
  - ↳ Resemble cisternae of SER.

* Fungal GB → 1 cisterna → unicisternal ~~GB~~. GB.



- Known as forming face, convex face.
- close to nucleus or ER.

- Known as maturing face, concave face.
- away from nucleus or ER.

- Two faces of GB are entirely different but interconnected.
  ↓ hence
  GB is considered as polarised organelle.