

Molecular Trafficking

**(protein traffic, vesicular
traffic, secretion and endocytosis**

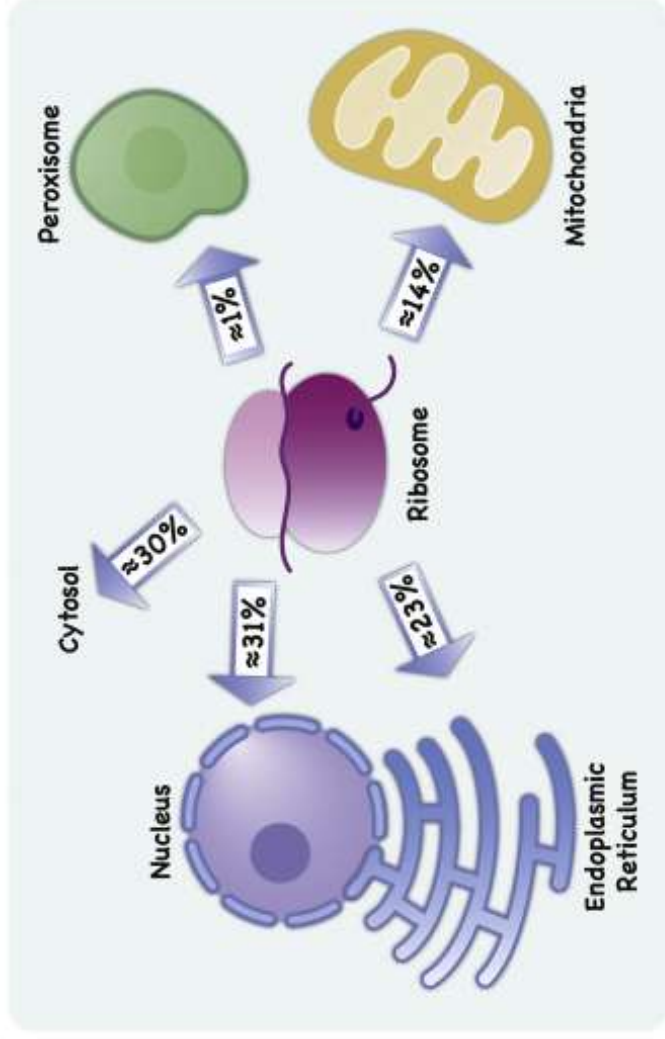
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OBJECTIVE

To understand and elucidate the mechanisms and regulatory pathways involved in molecular trafficking, specifically focusing on protein traffic, vesicular traffic, secretion, and endocytosis, in order to gain insights into cellular organization, function, and disease processes.

Protein Targeting

How intracellular protein transport to the appropriate position within the cell or outside of it?



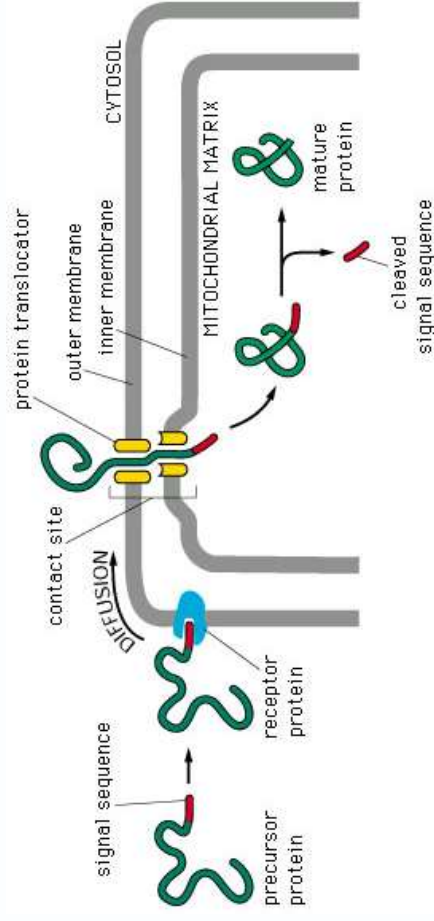
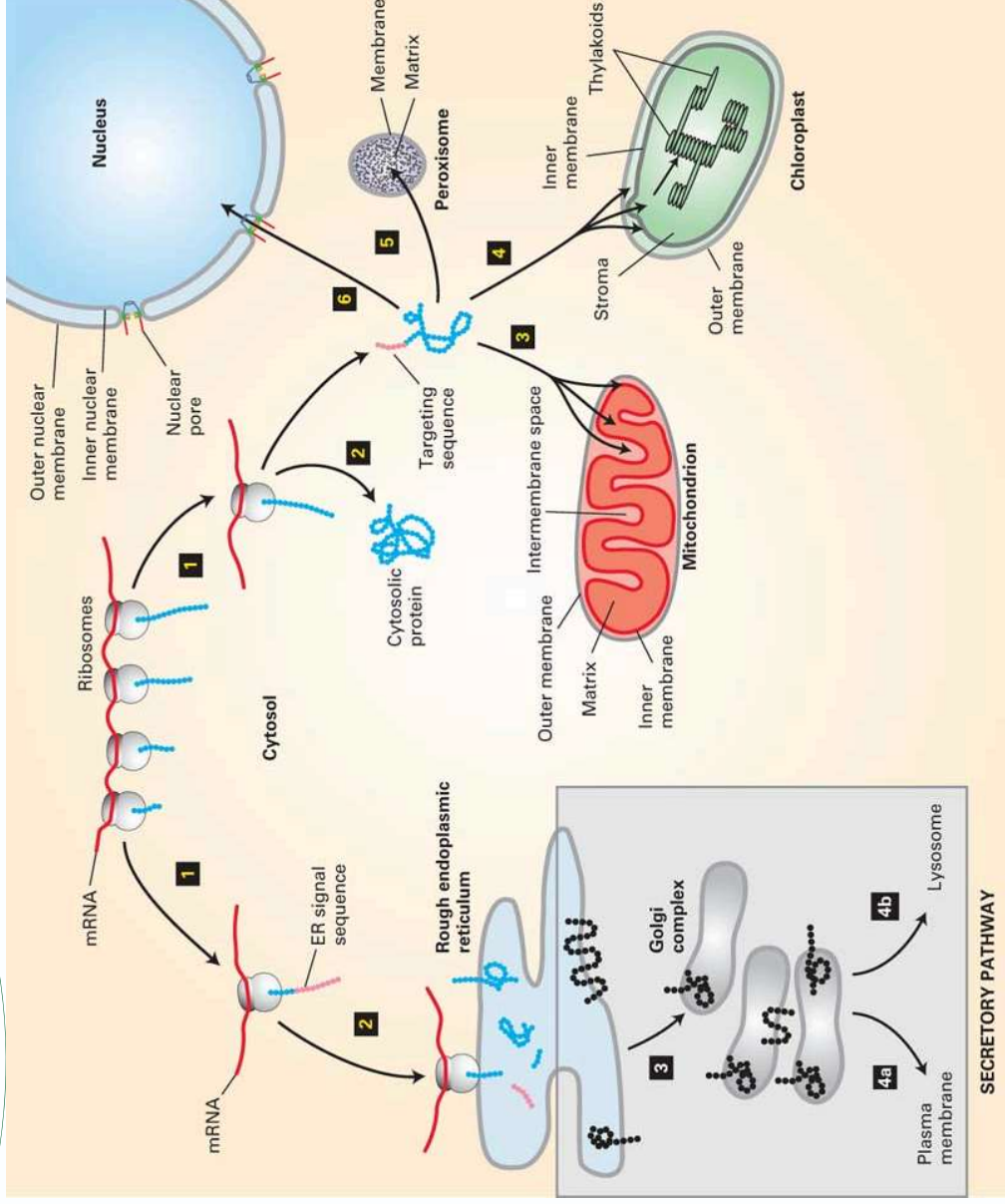
Current Opinion in Cell Biology

How are postal mails correctly delivered to specific recipients?

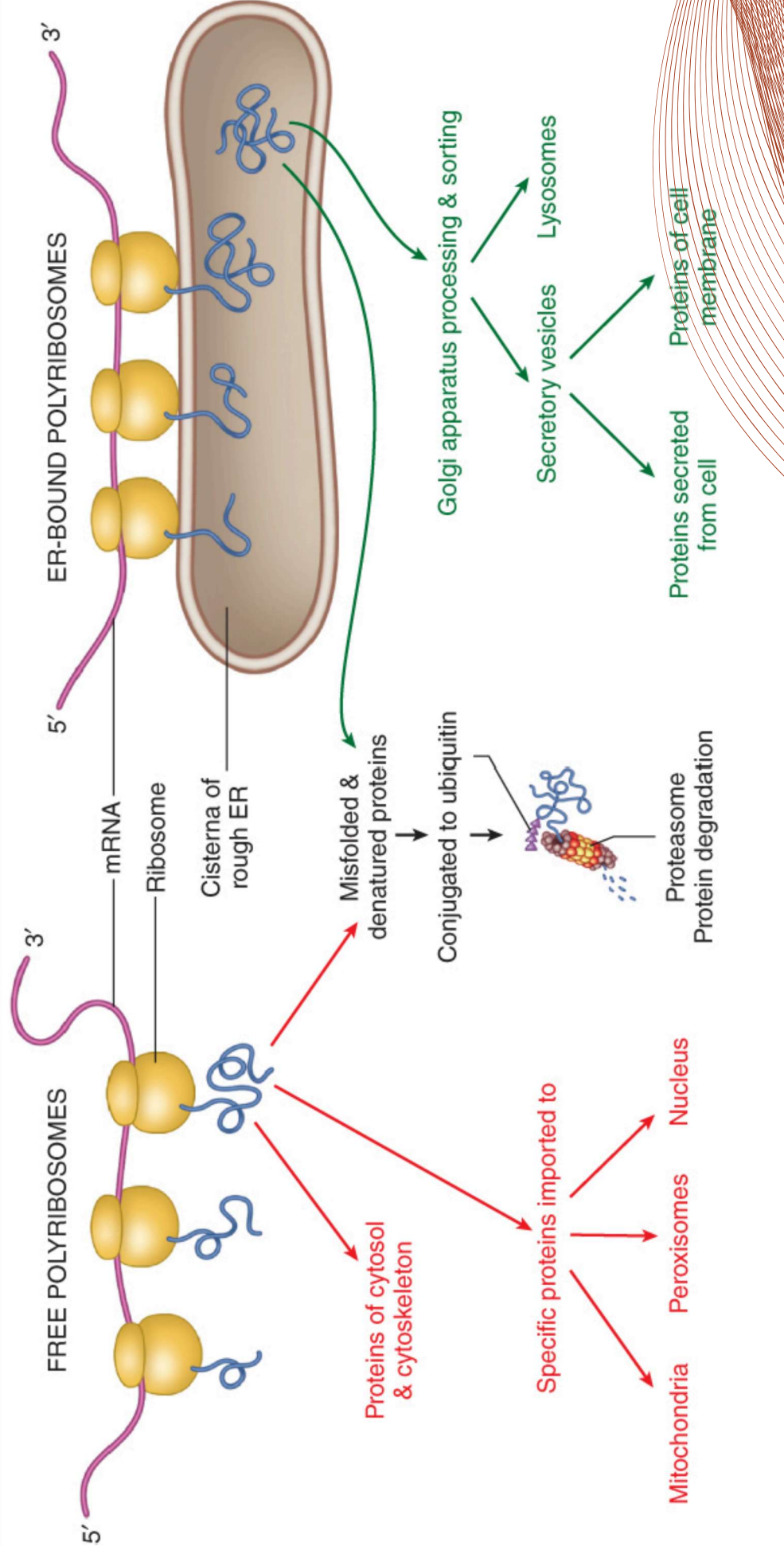


Protein targeting

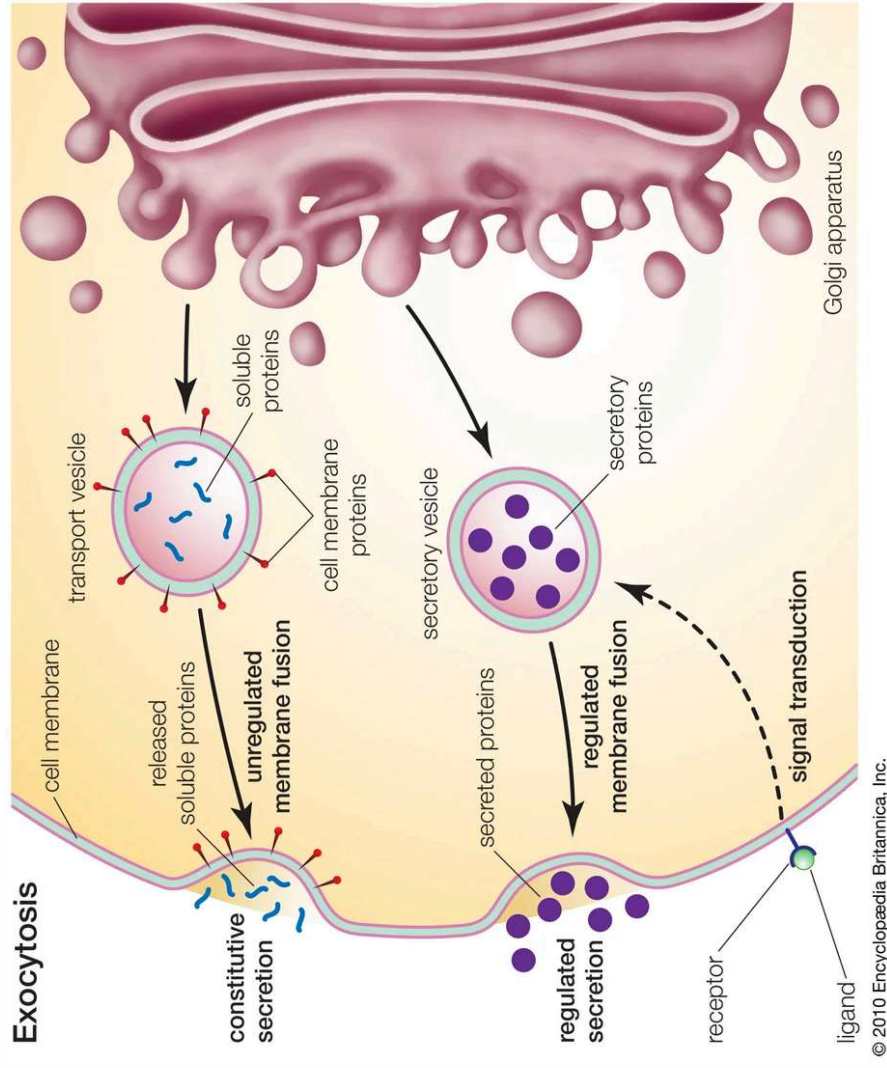
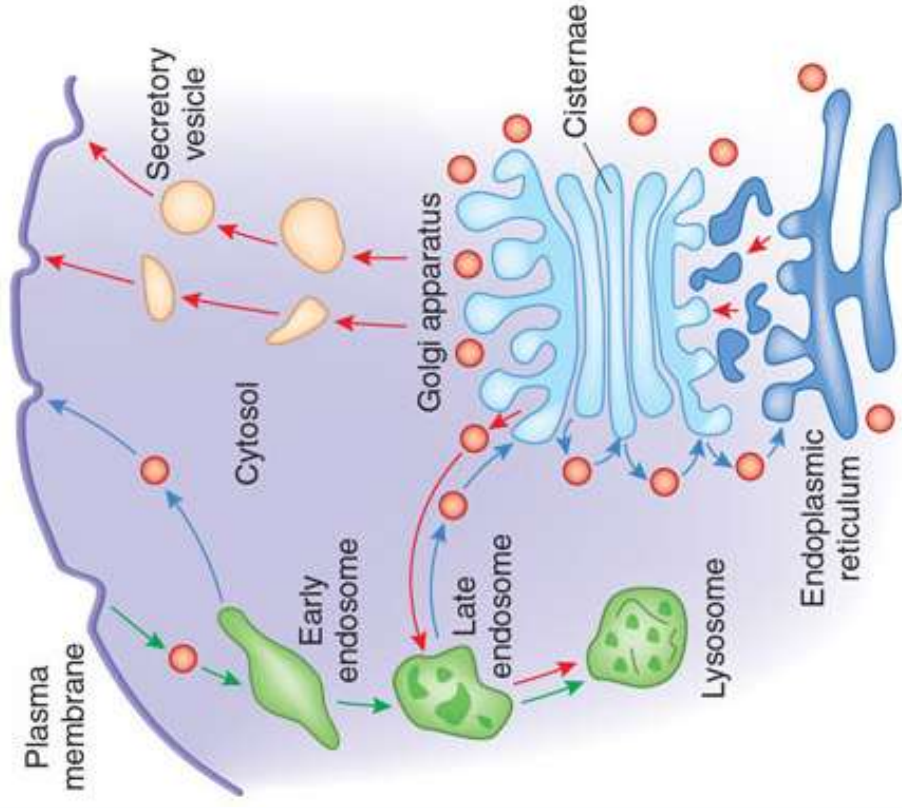
- **Signal- based targeting**
 - To ER, mitochondria, peroxisomes, and nucleus
 - **“Signal Sequence or Signal Peptides”** direct protein to their correct location
- **Signal Sequence Receptor**
- **Protein Translocation**



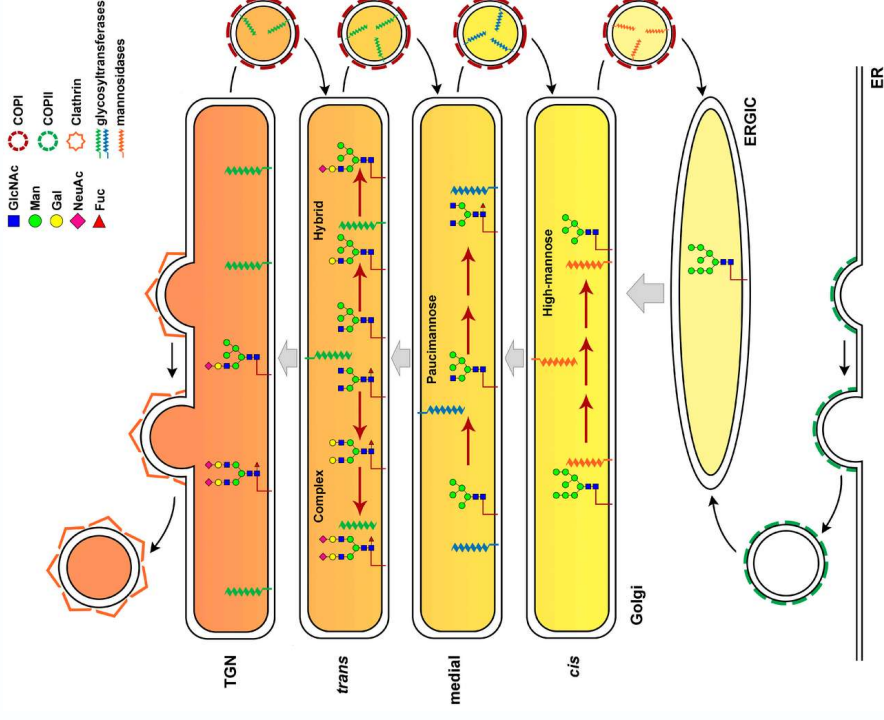
Protein Targeting



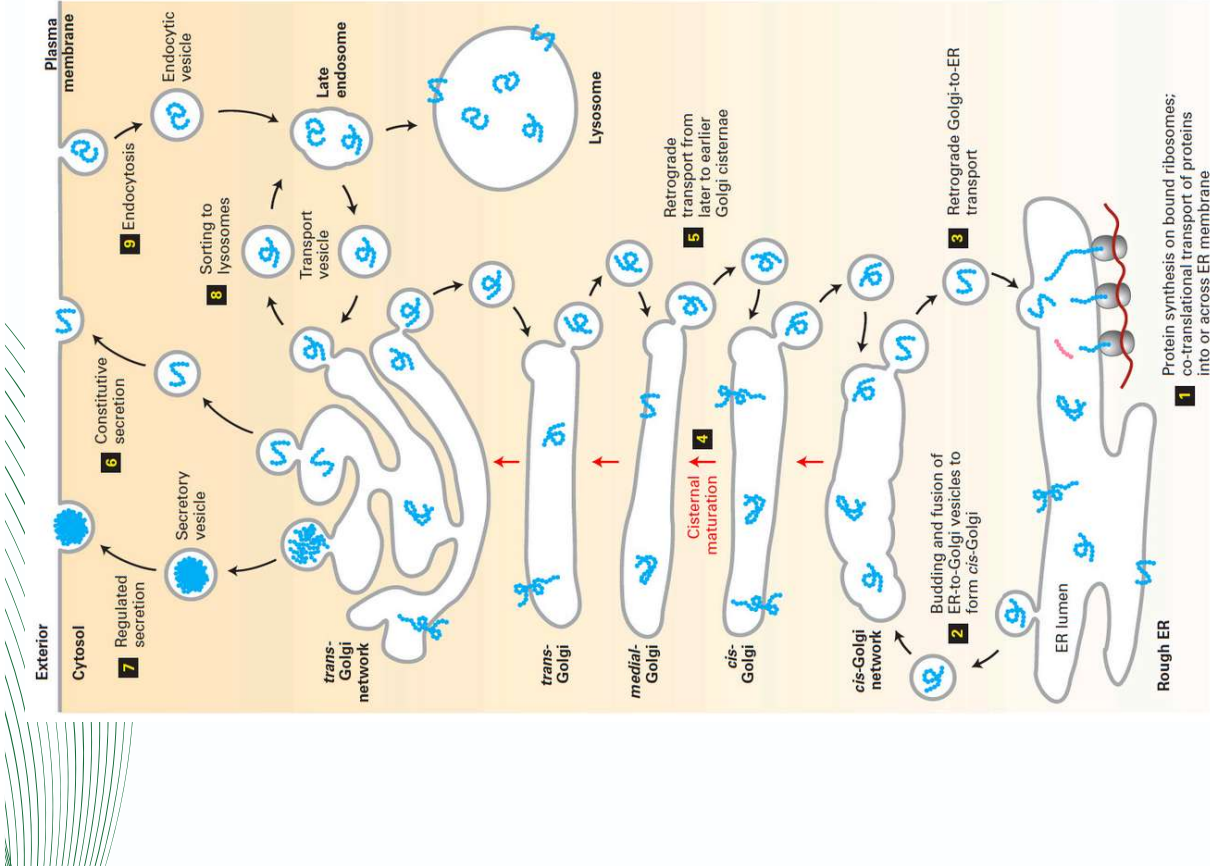
Secretory and endocytic pathways of protein sorting



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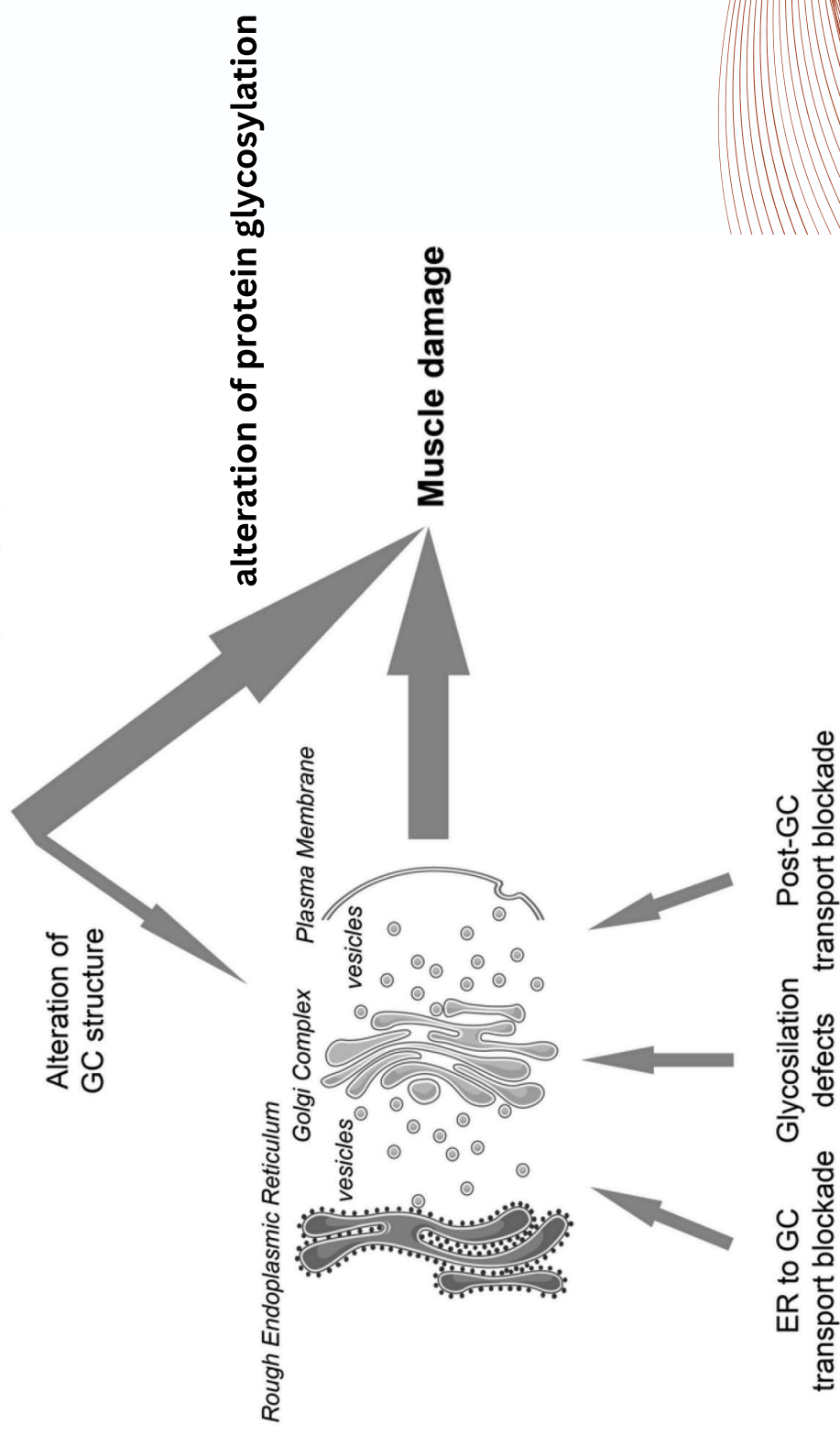


Some Golgi-mediated modifications act as signals to direct the proteins to their final destinations within cells, including the lysosome and the plasma membrane



Muscular dystrophies

Duchenne Muscular Dystrophy



CONCLUSION