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Golgi Apparatus

Exam — Cell Organelles

Pre-Med practice questions about Golgi structure, function, and protein sorting

6 items — Printable Exam

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1 **Which of the following is a primary function of the Golgi apparatus?**

A Synthesis of ribosomal RNA.

B ATP production via oxidative phosphorylation.

C Modification, sorting, and packaging of proteins received from the rough ER.

D Replication of mitochondrial DNA.

E Degradation of macromolecules at low pH.

2 **A protein moves from the rough ER to the Golgi apparatus. Which face of the Golgi does it enter first?**

A Trans face.

B Medial face.

C Cis face.

D Trans-Golgi network.

E Lysosomal face.

3 **Lysosomal enzymes are tagged in the Golgi apparatus to ensure their delivery to lysosomes. Which modification is crucial for this targeting?**

A Addition of mannose-6-phosphate to their oligosaccharide chains.

B Phosphorylation of serine residues in their polypeptide backbone.

C Attachment of ubiquitin molecules.

D N-terminal acetylation.

E Removal of all carbohydrate side chains.

4 **A drug specifically disrupts vesicle formation at the trans face of the Golgi. Which process is most directly impaired?**

A Entry of newly synthesized proteins from the rough ER.

B Synthesis of rRNA.

C Sorting of proteins into secretory vesicles headed for the plasma membrane.

D Replication of nuclear DNA.

E Formation of peroxisomes from pre-existing peroxisomes.

5 **A secreted glycoprotein is produced at normal levels in the rough ER but is released from the cell with abnormally truncated oligosaccharide chains. Which site is most likely defective?**

A The nucleus, where the glycoprotein should be glycosylated before export.

B The smooth ER, which normally adds all complex sugars to glycoproteins.

C Glycosyltransferase enzymes in the Golgi apparatus that extend and modify core oligosaccharides.

D Peroxisomes, which normally attach mannose-6-phosphate to secreted glycoproteins.

E Lysosomes, which normally trim glycoproteins before secretion.

6 **A newly synthesized lysosomal membrane protein has a cytosolic tail with a specific sorting signal and a luminal domain heavily glycosylated in the Golgi. Once it reaches the lysosome, how is the protein oriented in the lysosomal membrane?**

A The glycosylated domain faces the cytosol and the sorting signal faces the lysosomal lumen.

B Both the glycosylated domain and the sorting signal face the lysosomal lumen.

C Both the glycosylated domain and the sorting signal face the cytosol.

D The glycosylated domain faces the lysosomal lumen and the sorting signal faces the cytosol.

E Orientation is random because vesicle fusion inverts membrane topology.

Answer Key

#	Ans	Answer Text
1	C	Modification, sorting, and packaging of proteins received from the rough...
2	C	Cis face.
3	A	Addition of mannose-6-phosphate to their oligosaccharide chains.
4	C	Sorting of proteins into secretory vesicles headed for the plasma membra...
5	C	Glycosyltransferase enzymes in the Golgi apparatus that extend and modif...
6	D	The glycosylated domain faces the lysosomal lumen and the sorting signal...