What Is the Golgi Apparatus?

Worksheet

The Golgi apparatus modifies, sorts, and packages proteins and lipids received from the ER, then ships them in vesicles to their correct destination inside or outside the cell.

Questions

1. What does the Golgi apparatus primarily do?

A) Produce ATP
B) Modify and package proteins
C) Store DNA
D) Break down waste

2. Which face of the Golgi receives vesicles from the ER?

A) Trans face
B) Cis face
C) Nuclear face
D) Lateral face

3. What is glycosylation?

A) Adding sugar groups to a protein
B) Breaking down a protein
C) Copying DNA
D) Producing lipids

4. Where do finished vesicles leave the Golgi from?

A) Cis face
B) Nucleus
C) Trans face
D) Cell wall

5. A protein destined for secretion outside the cell passes through the Golgi. What happens to it there?

6. How does the Golgi apparatus know where to send each protein?

7. Why do cells that secrete a lot of hormones or enzymes, like pancreas cells, have an especially large Golgi apparatus?

8. Define: What is the main function of the Golgi apparatus?

9. Define: What is the cis face of the Golgi?

10. Define: What is the trans face of the Golgi?

Answer Key

1. B) Modify and package proteins - The Golgi modifies, sorts, and packages proteins and lipids for transport.

2. B) Cis face - The cis face is the receiving side facing the ER.

3. A) Adding sugar groups to a protein - Glycosylation is the addition of sugar chains to proteins, one of the Golgi's key modifications.

4. C) Trans face - Finished vesicles bud off from the trans (shipping) face.

5. The protein arrives at the Golgi's cis face inside a vesicle from the ER. As it moves through the cisternae, enzymes add sugar groups (glycosylation) and tag it for secretion. At the trans face, it's packaged into a secretory vesicle. The vesicle travels to the cell membrane and releases the protein via exocytosis.

6. Proteins carry molecular 'address tags' - specific sugar or peptide sequences added during processing. Golgi membrane receptors recognize these tags and sort proteins into different vesicle types. Each vesicle type buds toward its correct destination: lysosome, cell membrane, or other organelles.

7. High secretory activity means large volumes of protein must be modified and packaged continuously. A larger Golgi provides more cisternae surface area to process this volume quickly. This matches secretory cells' need for constant vesicle output.

8. To modify, sort, and package proteins and lipids for transport to their destination.

9. The receiving side, facing the ER, where vesicles enter.

10. The shipping side, where finished vesicles bud off and leave.