

Name: _____

Organelles of Protein Synthesis

READ THE FOLLOWING! Underline or highlight all information related to proteins.

How do the functions of ribosomes, the Golgi body, and the endoplasmic reticulum relate to one another?

Ribosomes, the endoplasmic reticulum and the Golgi apparatus are related to each other through their involvement in protein synthesis and transport.

Ribosomes are the sites of protein synthesis and carry out this work by assembling the amino acids in the appropriate sequence, as dictated by the mRNA (messenger RNA). Ribosomes are most commonly found embedded in the endoplasmic reticulum. When ribosomes are attached it is called Rough ER. Large scale protein synthesis is possible due to the very large surface area offered by the endoplasmic reticulum to the ribosomes. The main function of the endoplasmic reticulum is to transport the newly made proteins over to the Golgi apparatus. The primary role of the Golgi apparatus is to modify the proteins and encase them into vesicles. From here they are transported to the various parts of the cell

The Golgi apparatus gathers simple molecules and combines them to make molecules that are more complex. It then takes those big molecules, packages them in vesicles, and either stores them for later use or sends them out of the cell. The vesicles are pinched off the membranes and float through the cell. Some are transported out of the cell if proteins are needed elsewhere.

Questions:

1. What 3 organelles are involved in protein production?
2. What do ribosomes making proteins attach to?
3. What is the main function of the endoplasmic reticulum?
4. What is the main function of the Golgi?
5. Put the following in the correct order for protein synthesis and transport:

_____ endoplasmic reticulum
_____ ribosome
_____ Golgi

6. What does the Golgi use to store and deliver proteins?

7. Explain what is occurring in the image to the right.

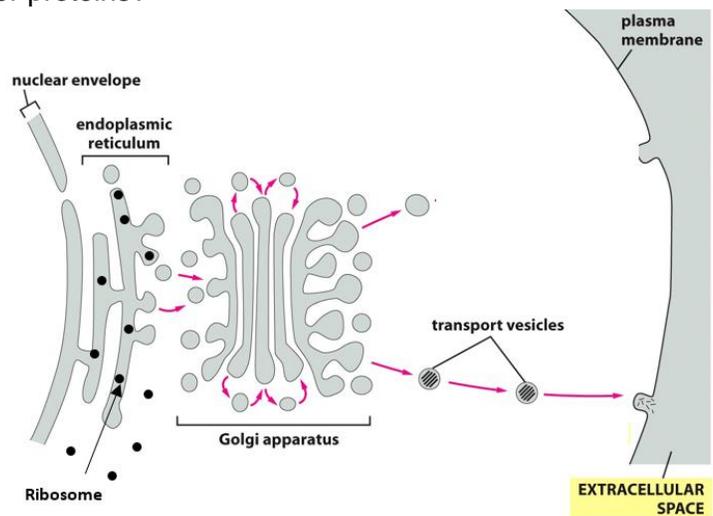


Figure 15-18 Essential Cell Biology 3/e (© Garland Science 2010)