Proteins made in Cytoplasm on ribosomes

Proteins that mistakenly got sent to the Golgi are recognized by their C-terminal sequences and are returned to the ER.

Endoplasmic Reticulum

The ribosome is sent to the ER if the protein has an N-terminal ________________

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In the ER the protein undergoes ________________ and ________________

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Golgi apparatus

In the Golgi, proteins undergo changes in the pattern of ________________ and also have phosphates added on to specific ________________

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Proteins lacking the lysosomal address label are sent to the cell surface.

Proteins that carry a ________________ are sent to the lysosome

Cell surface

Lysosomes

Protein sorting pathways

Nucleus

• Protein is made by____________________________________
• The "address label" is____________________________________
• This is recognized and bound by ____________________________
• In the nucleus, the importin-cargo is recognized and bound by ______________________
• Importin is released from its complex following the hydrolysis of ________________.

ER

• Protein is made by____________________________________
• The "address label" is____________________________________
• The address label is recognized and bound by _____________________________
• The ribosome is docked on the ER membrane by binding of the ________________ to ________________.
• The enzyme that removes the address label after the protein is delivered to the ER is________________________.
• ER membrane proteins are anchored by a portion of their amino acid sequence called a_______________________________.

**Golgi**
• Proteins travel from the ER to the Golgi in___________________________.
• ER lumen proteins have a return-to-sender sequence called_________________________.

**Lysosome**
• The lysosomal "address label" is_____________________________ which is added onto the protein in the Golgi.
• Proteins with this address label are collected in transport vesicles that have____________________________ receptors.
• Transport vesicles are formed by the interaction of the cytosolic tails of the receptors with_________________________ and_________________________.
• Transport vesicles "know" they have reached the right destination if their_________________________ match the_________________________ on the membrane of the target.
• Transport vesicles that fuse with the plasma membrane can release molecules to the exterior of the cell in a process called___________________________.
• Transport vesicles can form from the plasma membrane to bring in molecules from outside the cell, through a process called___________________________.