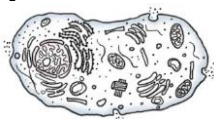


Eukaryotic Cell Structure



Write the name of the structure next to its description.

- | | | | |
|--|--|--|---|
| <input type="checkbox"/> mitochondria | <input type="checkbox"/> nucleus | <input type="checkbox"/> lysosomes | <input type="checkbox"/> cilia and flagella |
| <input type="checkbox"/> ribosomes | <input type="checkbox"/> cell membrane | <input type="checkbox"/> endoplasmic reticulum | <input type="checkbox"/> vesicle |
| <input type="checkbox"/> cytoskeleton | <input type="checkbox"/> chloroplasts | <input type="checkbox"/> cell wall | |
| <input type="checkbox"/> Golgi apparatus | <input type="checkbox"/> vacuole | <input type="checkbox"/> peroxisomes | |

Table 1. Cellular structures

Cell structure	Description
	<ul style="list-style-type: none"> provides a semi-permeable barrier for the passage of substances in and out of the cell composed of a double layer of phospholipids contains proteins that act as channels for substances
	<ul style="list-style-type: none"> rigid layer that provides support and protection for cells composed of proteins and polysaccharides, including cellulose found only in plants
	<ul style="list-style-type: none"> organelle bound in a double-membrane of lipids (the nuclear envelope) contains the cell's DNA proteins form openings to allow substances to pass through the envelope
	<ul style="list-style-type: none"> network of flattened membrane, which is continuous with the nuclear envelope contains a smooth portion and a rough portion (which is studded with ribosomes) packages materials for transport to destinations both within and outside of the cell also plays a role in elimination of toxins from the body
	<ul style="list-style-type: none"> organelles composed of two RNA subunits perform the function of protein synthesis may be found bound to endoplasmic reticulum, or free-floating in the cytoplasm
	<ul style="list-style-type: none"> organelle bound in a double-membrane site of cellular respiration: $\text{C}_6\text{H}_{12}\text{O}_6 + 6 \text{O}_2 \rightarrow 6 \text{CO}_2 + 6 \text{H}_2\text{O}$
	<ul style="list-style-type: none"> organelle bound by a double-membrane site of photosynthesis in plants: $6 \text{CO}_2 + 6 \text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6 \text{O}_2$
	<ul style="list-style-type: none"> membrane-bound organelles contain <i>hydrolytic</i> enzymes that catalyze <i>hydrolysis</i> reactions break down waste materials, cellular debris, and foreign particles
	<ul style="list-style-type: none"> membrane-bound organelles contain <i>oxidative</i> enzymes that catalyze <i>redox</i> reactions detoxify substances in the cell also contain the enzyme catalase, which breaks down the toxic metabolic by-product hydrogen peroxide, H_2O_2
	<ul style="list-style-type: none"> stacks of membrane receive substances from the ER and further processes them for export from the cell
	<ul style="list-style-type: none"> bubble-like organelle enclosed by a membrane diverse storage-related functions
	<ul style="list-style-type: none"> essentially a large vesicle in plants, a large central vacuole maintains turgor pressure and makes the cell rigid
	<ul style="list-style-type: none"> network of internal scaffolding within the cell composed of proteins arranged into filaments and tubules provides support to cells and organelles important role in cell division
	<ul style="list-style-type: none"> appendages on the outside of eukaryotic cells allow cells to move

Animal cell structure

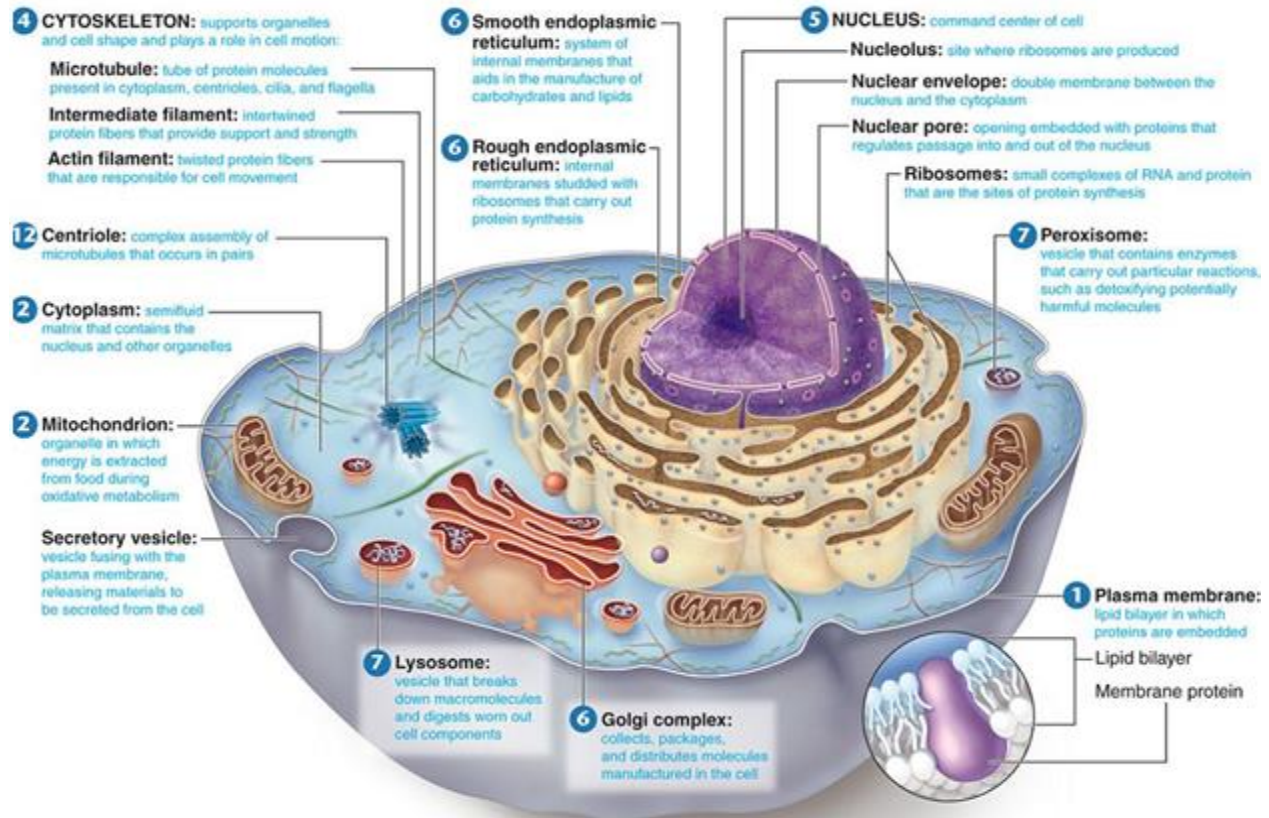


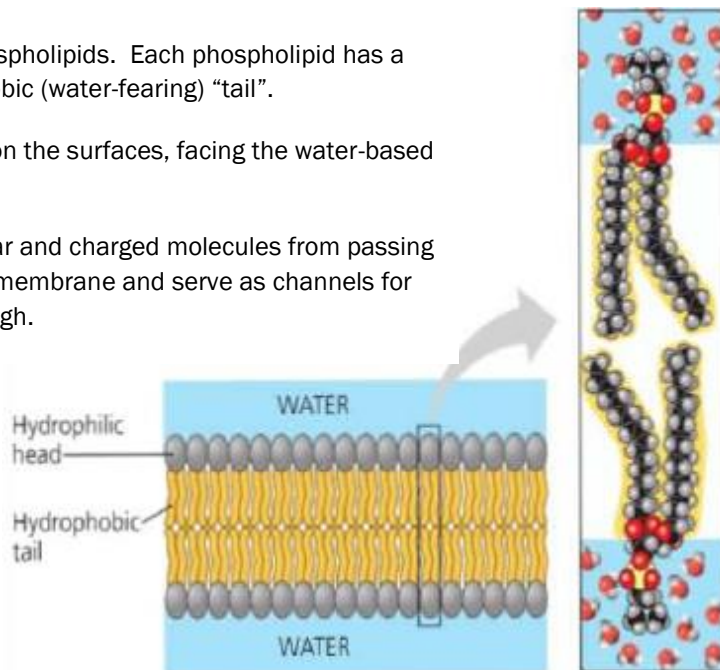
Figure 1. General structure of an animal cell. The plasma membrane separates the cell contents from the extracellular fluid (ECF). The inside of the cell contains organelles that are held within the gel-like cytoplasm/cytosol.

Cell membrane structure

Figure 2. The cell membrane is a bi-layer of phospholipids. Each phospholipid has a hydrophilic (water-loving) “head” and a hydrophobic (water-fearing) “tail”.

They are arranged with the hydrophilic portions on the surfaces, facing the water-based intra- and extracellular regions.

The hydrophobic interior of the cell prevents polar and charged molecules from passing through freely. Proteins (not pictured) span the membrane and serve as channels for large, polar or charged substances to pass through.



The Endomembrane System

