

### Plant cells structures

**Plant and animal cells** have several differences and similarities. For example, animal cells do not have a cell wall or chloroplasts but plant cells do. Animal cells are round and irregular in shape while plant cells have fixed, rectangular shapes.

Plant and animal cells are both eukaryotic cells, so they have several features in common, such as the presence of a cell membrane, and cell organelles, like the nucleus, mitochondria and endoplasmic reticulum.

**(Compare between animal and plant cell)**

Animal Cell versus Plant Cell comparison chart

Structures	Animal Cell	Plant Cell
Cell wall	Absent	Present (formed of cellulose)
Shape	Round (irregular shape)	Rectangular (fixed shape)
Vacuole	One or more small vacuoles (much smaller than plant cells).	One, large central vacuole taking up 90% of cell volume.
Centrioles	Present in all animal cells	Only present in lower plant forms.
Chloroplast	Animal cells don't have chloroplasts.	Plant cells have chloroplasts because they make their own food.
Cytoplasm	Present	Present

Animal Cell versus Plant Cell comparison chart

<b>Structures</b>	<b>Animal Cell</b>	<b>Plant Cell</b>
<b>Ribosomes</b>	Present	Present
<b>Mitochondria</b>	Present	Present
<b>Plastids</b>	Absent	Present
<b>Endoplasmic Reticulum (Smooth and Rough)</b>	Present	Present
<b>Golgi Apparatus</b>	Present	Present
<b>Plasma Membrane</b>	Only cell membrane	Cell wall and a cell membrane
<b>Microtubules/ Microfilaments</b>	Present	Present
<b>Flagella</b>	May be found in some cells	May be found in some cells
<b>Lysosomes</b>	Lysosomes occur in cytoplasm.	Lysosomes usually not evident.
<b>Nucleus</b>	Present	Present
<b>Cilia</b>	Present	Most plant cells do not contain cilia.

## **Contents: Plant Cell vs Animal Cell**

### **Chloroplasts**

Plants are autotrophs; they produce energy from sunlight through the process of photosynthesis, for which they use cell organelles called chloroplasts. Animal cells do not have chloroplasts. In animal cells, energy is produced from food (glucose) via the process of cellular respiration. Cellular respiration occurs in mitochondria on animal cells, which are structurally somewhat analogous to chloroplasts, and also perform the function of producing energy. However, plant cells also contain mitochondria.

### **Shape**

- Another difference between plant cells and animal cells is that animal cells are round whereas plant cells are rectangular.
- Further, all animal cells have centrioles whereas only some lower plant forms have centrioles in their cells.

### **Cell Wall**

Plant cells have a rigid cell wall that surrounds the cell membrane. Animal cells do not have a cell wall. When looking under a microscope, the cell wall is an easy way to distinguish plant cells.

### **Vacuoles**

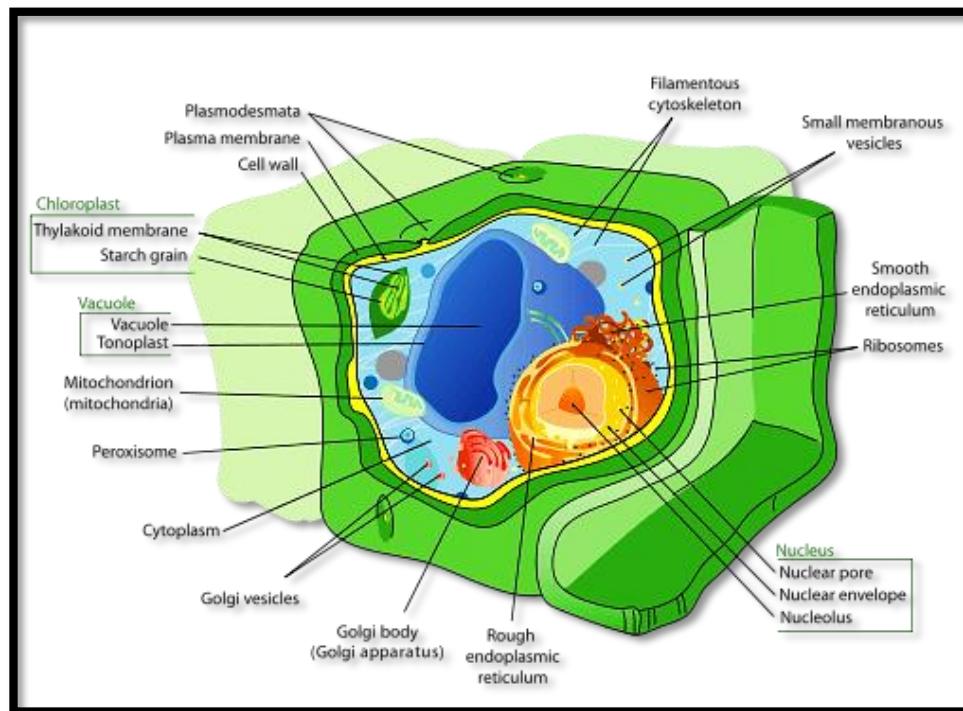
#### **Shape and size of vacuoles**

Animal cells have one or more small vacuoles whereas plant cells have one large central vacuole that can take up to 90% of cell volume.

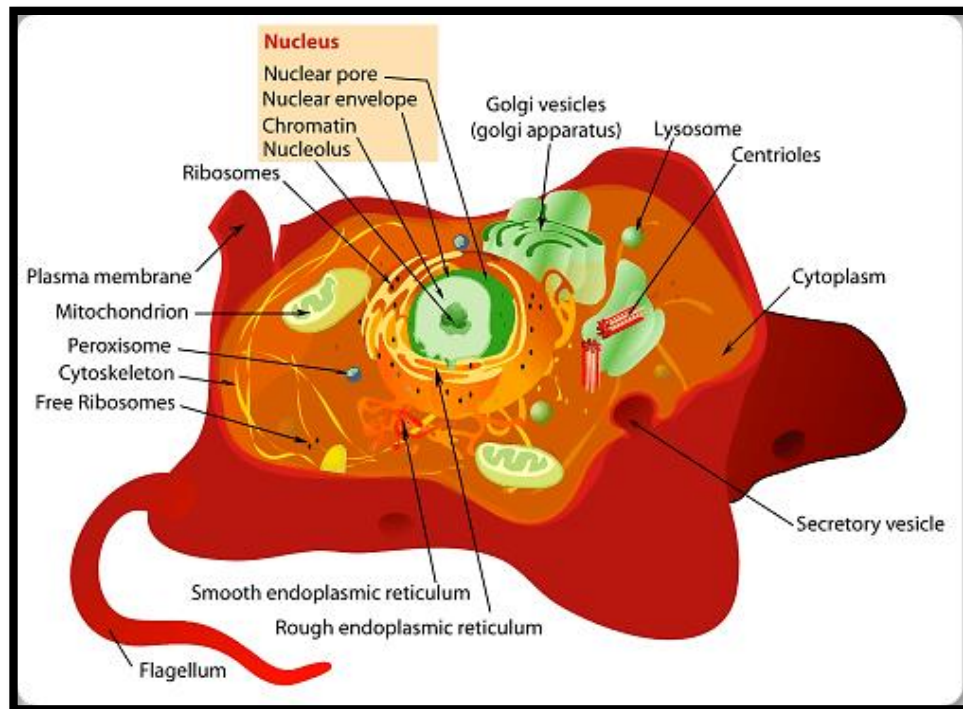
### **Difference in function of vacuoles**

In plant cells, the function of vacuoles is to store water and maintain turgidity of the cell. Vacuoles in animal cells store water, ions and waste.

### **Pictures of plant and animal cells**



### **Structure of a Typical Plant Cell**



*Structure of a Typical Animal Cell*