



ملتقى طلبة و خريجي
كلية الصيدلة
بمصراته

KaReeM SaSi

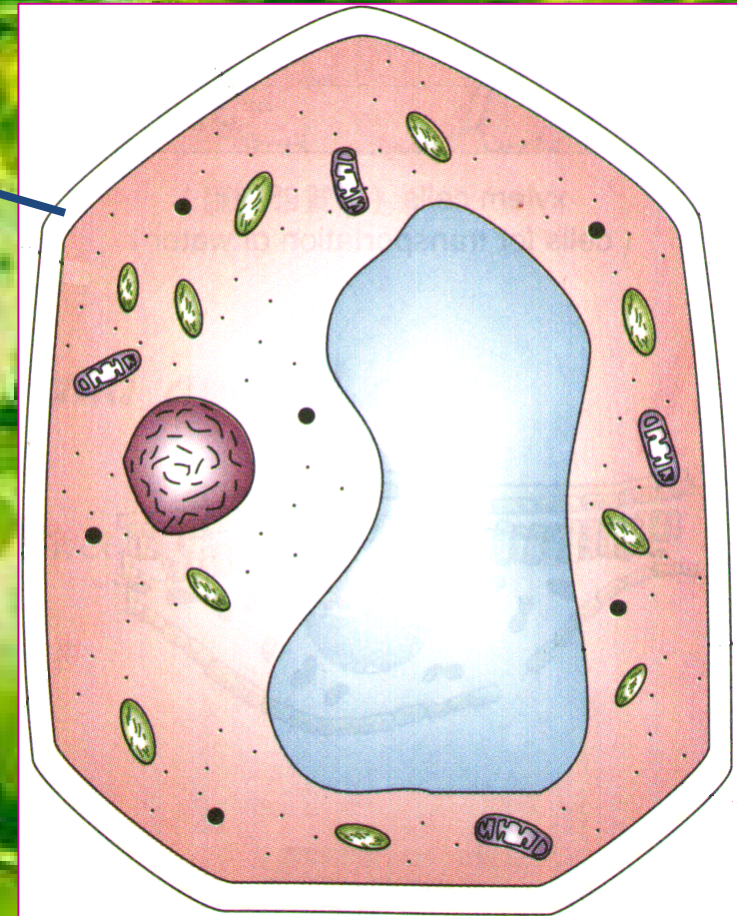
تابعونا علي صفحة الملتقي للمزيد من الكتب الطبية
<https://www.facebook.com/libyan.pharmacist>

A microscopic view of plant cells, likely from an onion skin, showing a network of rectangular cells with thick, yellowish-green cell walls. The cells are arranged in a brick-like pattern. The interior of the cells is filled with a lighter green, granular substance, and there are numerous small, dark green, oval-shaped structures (chloroplasts) scattered throughout. The text "Plant Cell" is overlaid in a large, green, sans-serif font, and "Lagu" is overlaid in a smaller, green, sans-serif font below it.

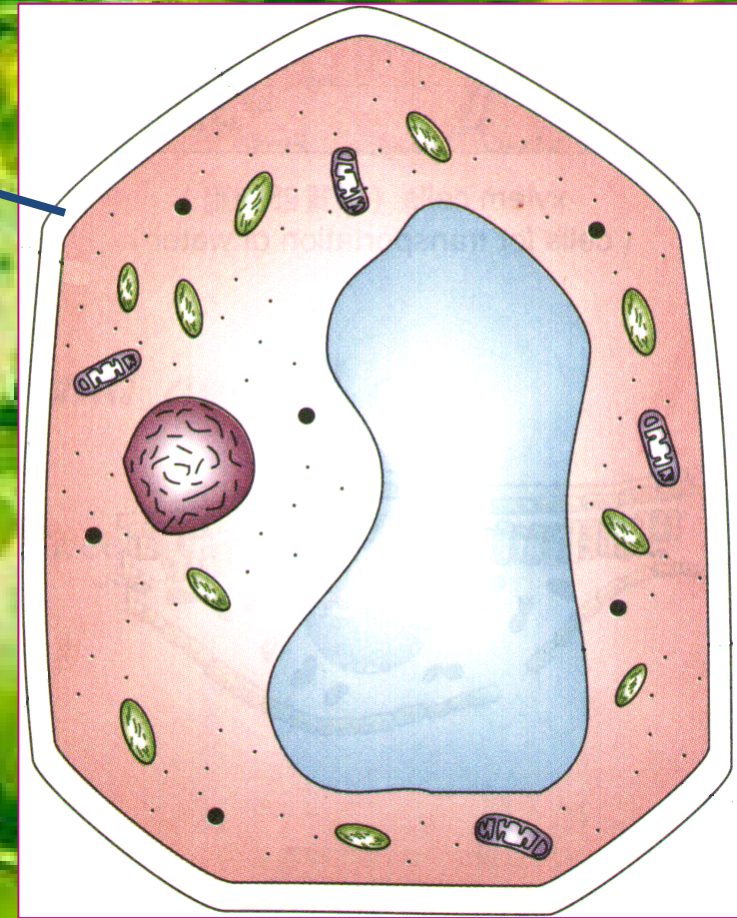
Plant Cell

Lagu

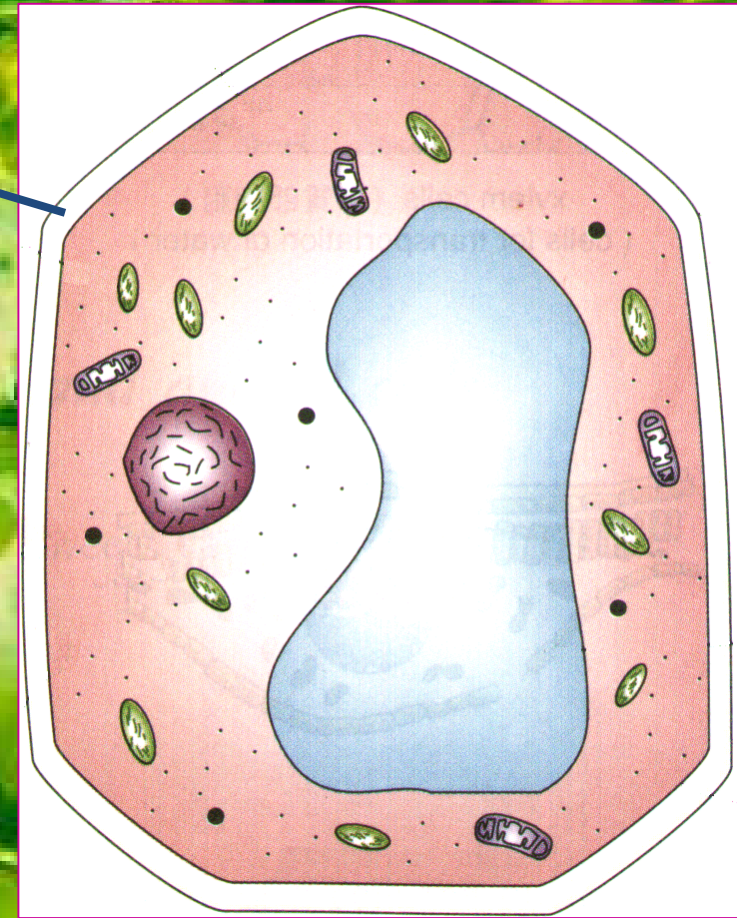
- **Cell wall**
 - **Made of cellulose which forms very thin fibres**
 - **Strong and rigid**
 - **In plant cells only**



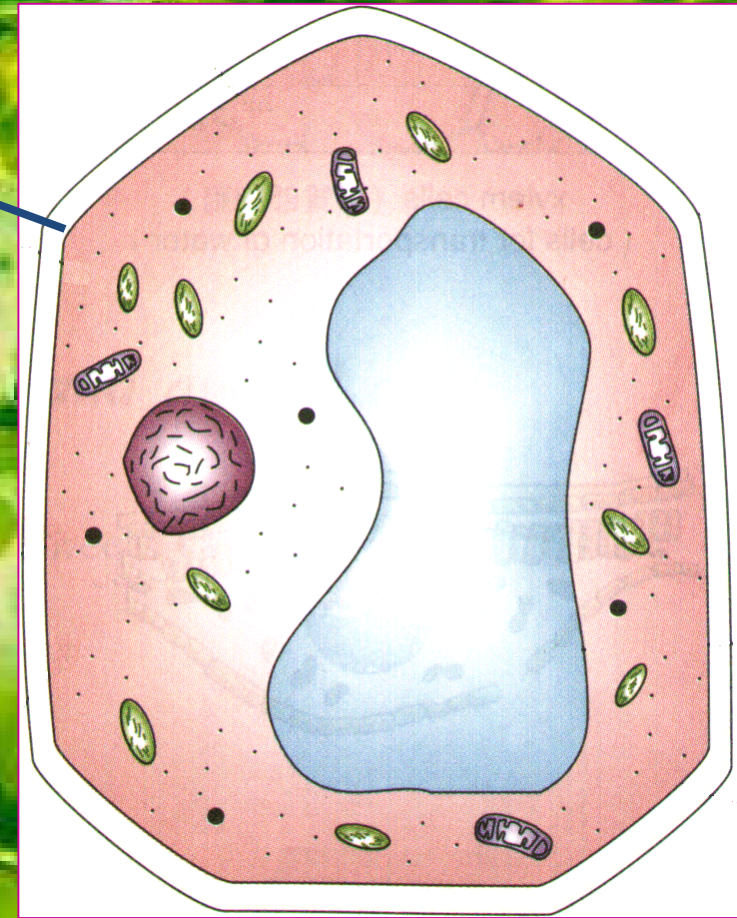
- **Cell wall**
- **Protect and support the enclosed substances (protoplasm)**
- **Resist entry of excess water into the cell**
- **Give shape to the cell**



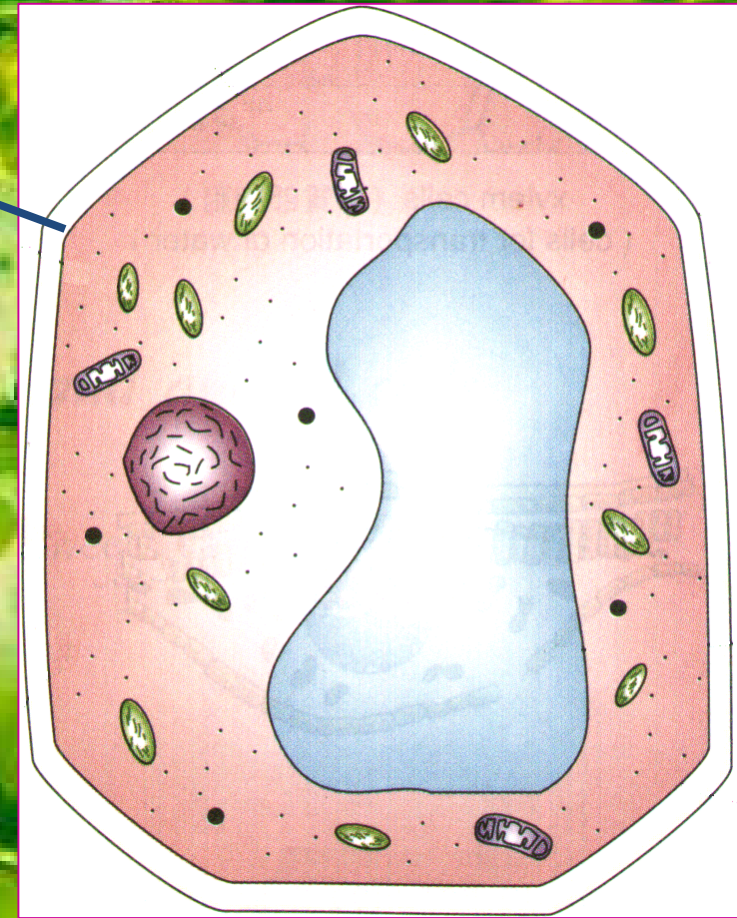
- **Cell wall**
- **A dead layer**
- **Large empty spaces present between cellulose fibres**
- ∴ **freely permeable**



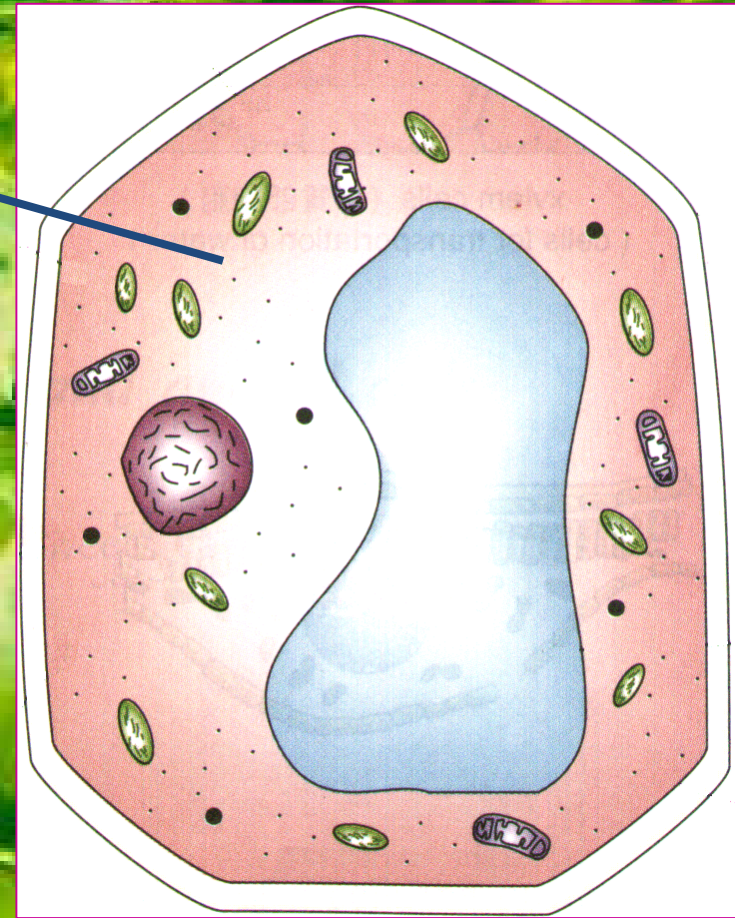
- **Cell membrane**
 - **Lies immediately against the cell wall**
 - **Made of protein and lipid ∴ **Selectively permeable****



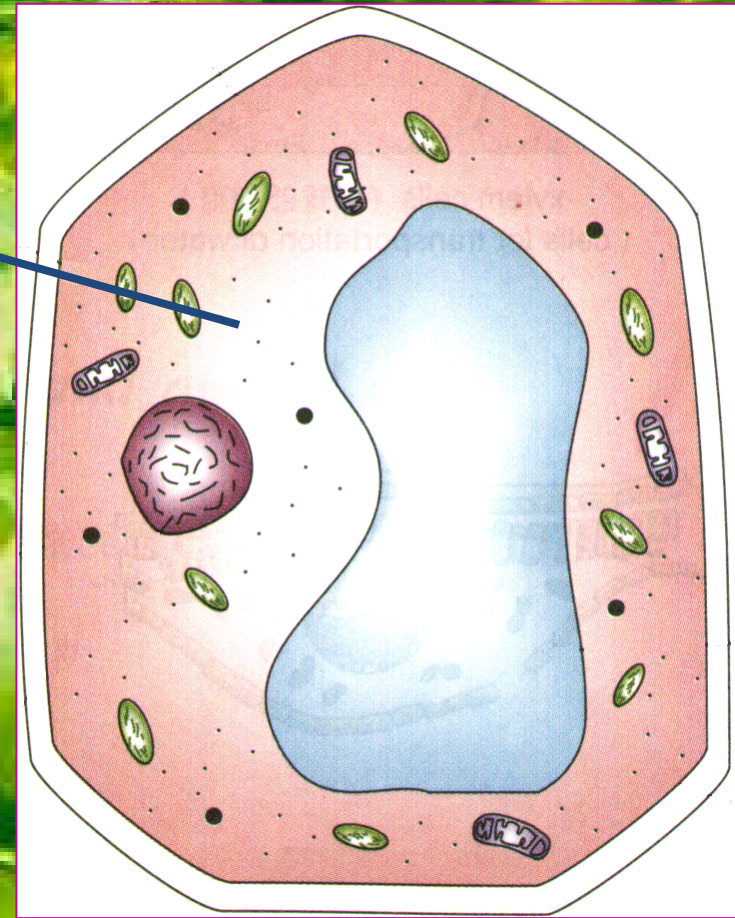
- **Cell membrane**
 - **A living layer**
 - **Can control the movement of materials into and out of the cell**



- **Cytoplasm**
 - **Jelly-like substance enclosed by cell membrane**
 - **Provide a medium for chemical reactions to take place**



- **Cytoplasm**
 - **Contains organelles and granules :**
 - **e.g. chloroplast**
 - **e.g. mitochondrion**



A light micrograph of plant cells, likely from an onion skin, showing large, rectangular cells with thick, yellowish cell walls. The cells are filled with a greenish-yellow cytoplasm and contain numerous small, dark green, oval-shaped organelles, which are chloroplasts. The text 'Organelles' is overlaid in blue, and three bullet points with arrows are overlaid in black. The copyright notice '© Dwight Kuhn' is in the bottom left corner.

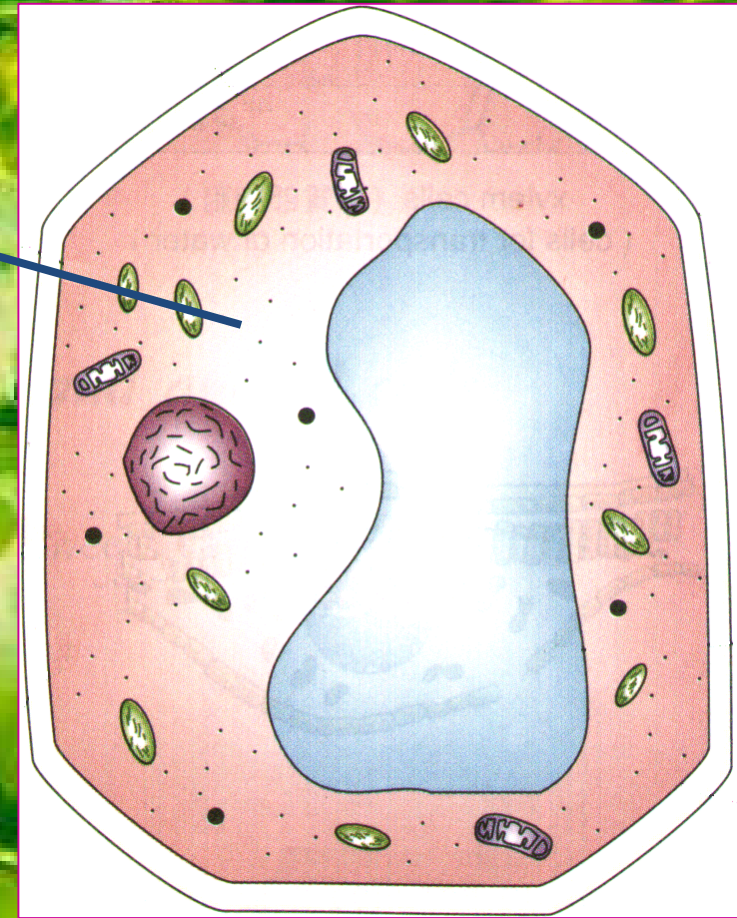
Organelles

✂ **very small size – can only be observed under electron microscope**

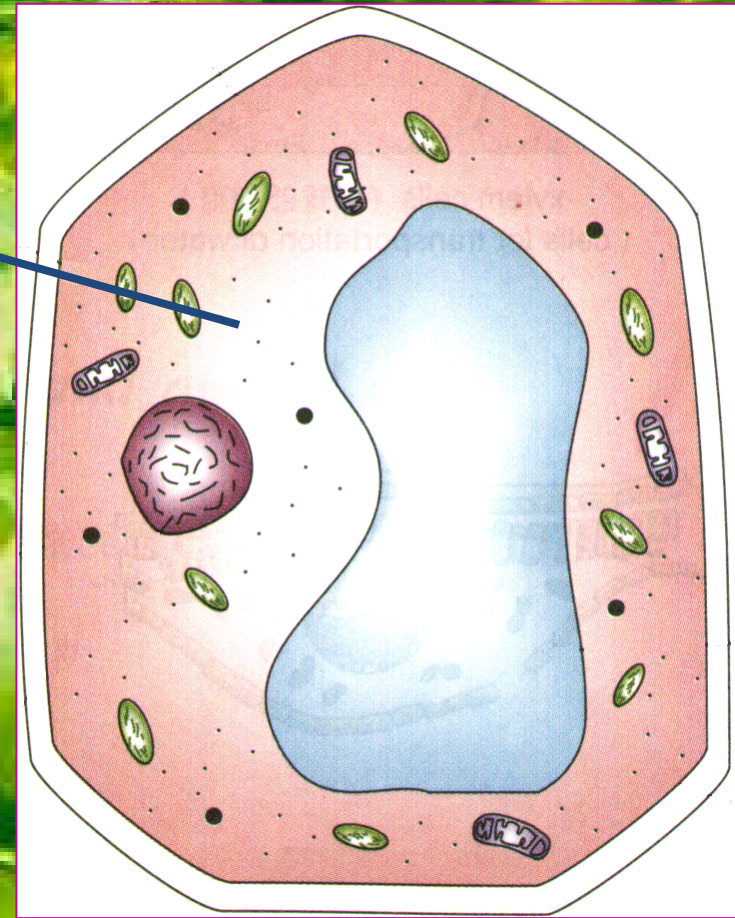
✂ **has specific functions**

✂ **in cytoplasm**

- **Chloroplast**
 - **Contain the green pigment chlorophyll**
 - **To trap light energy, to make food by photosynthesis**

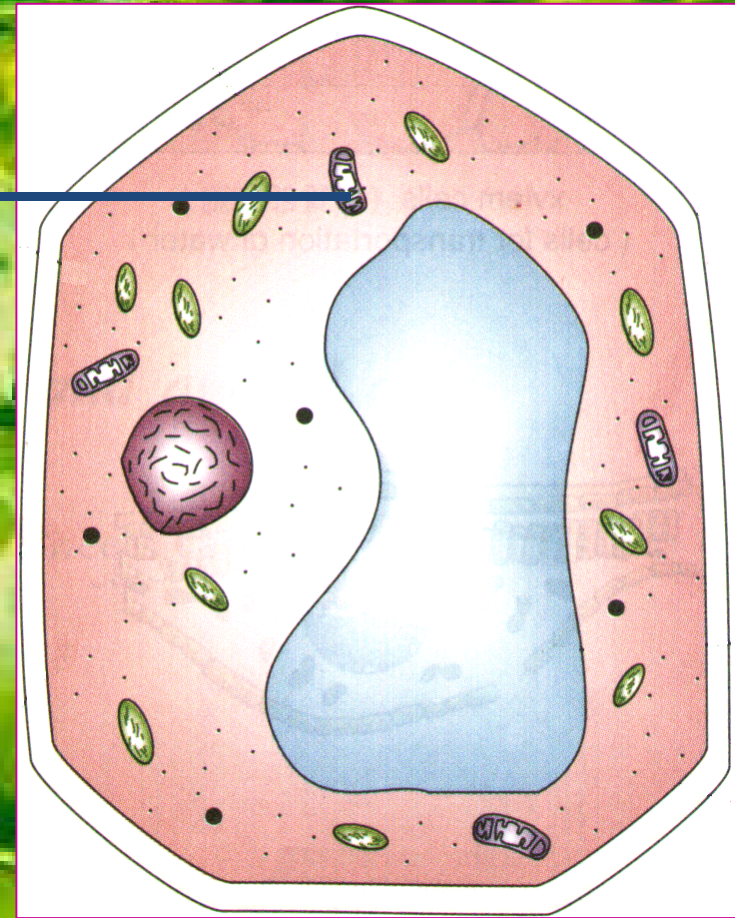
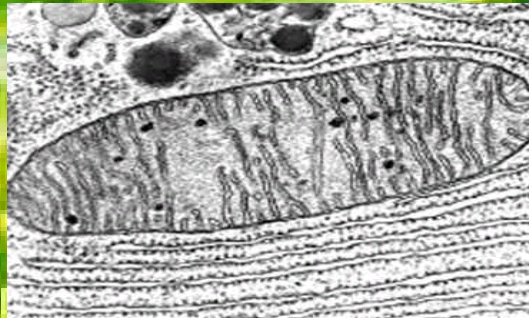
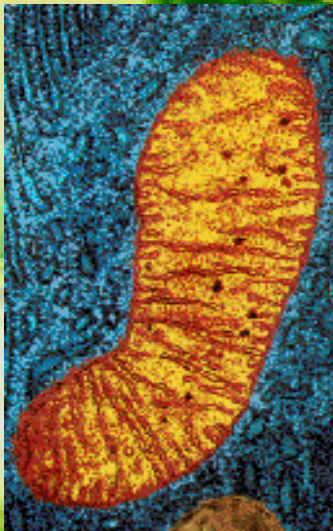


- **Chloroplast**
 - **Contain starch grains**
(products of photosynthesis)



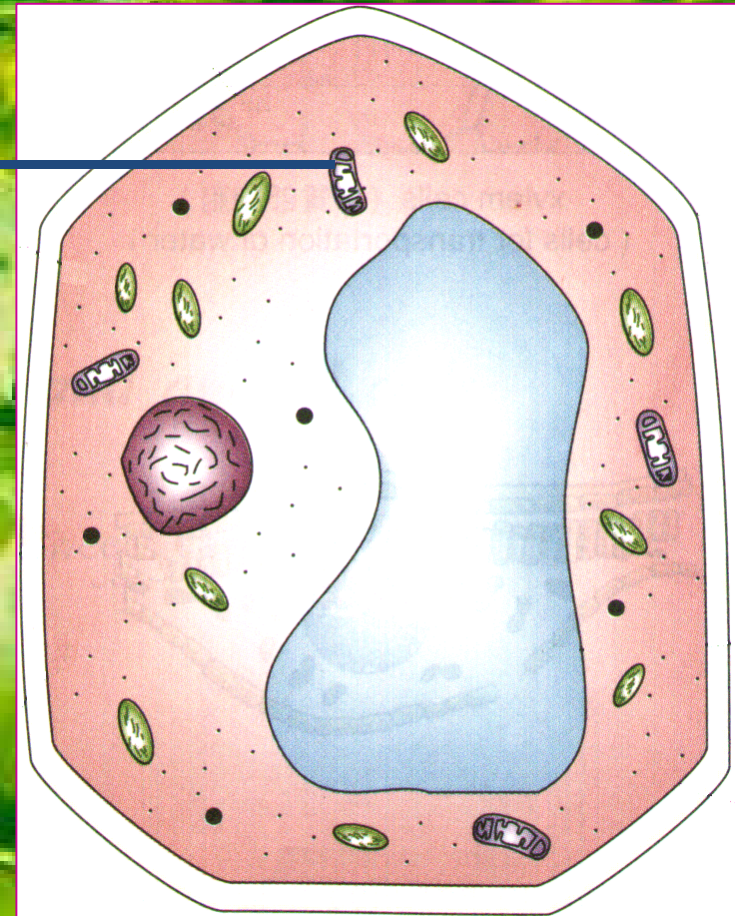
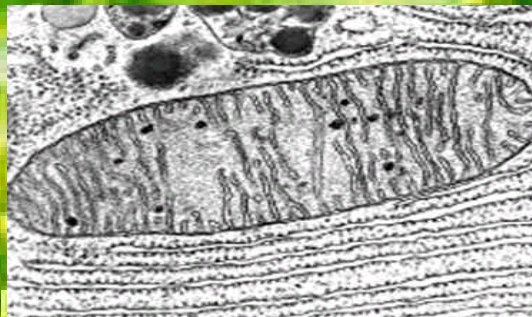
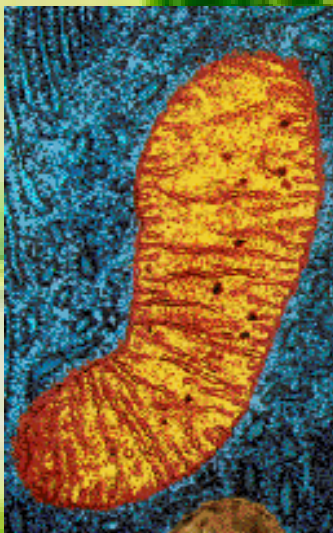
- **Mitochondrion
(mitochondria)**

- **Rod shape**
- **For respiration**

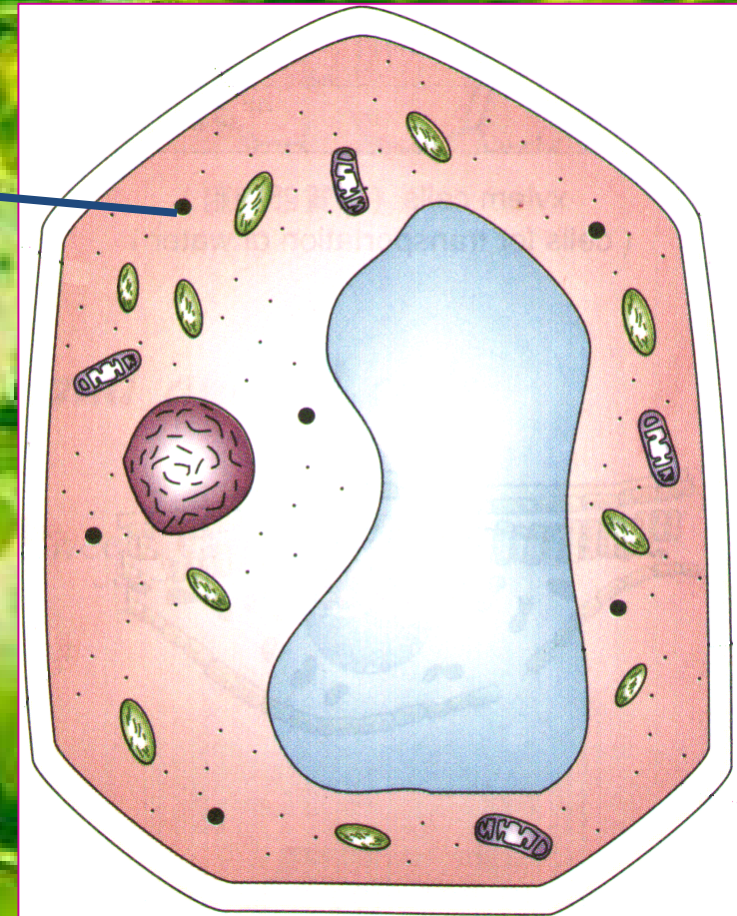


- **Mitochondrion
(mitochondria)**

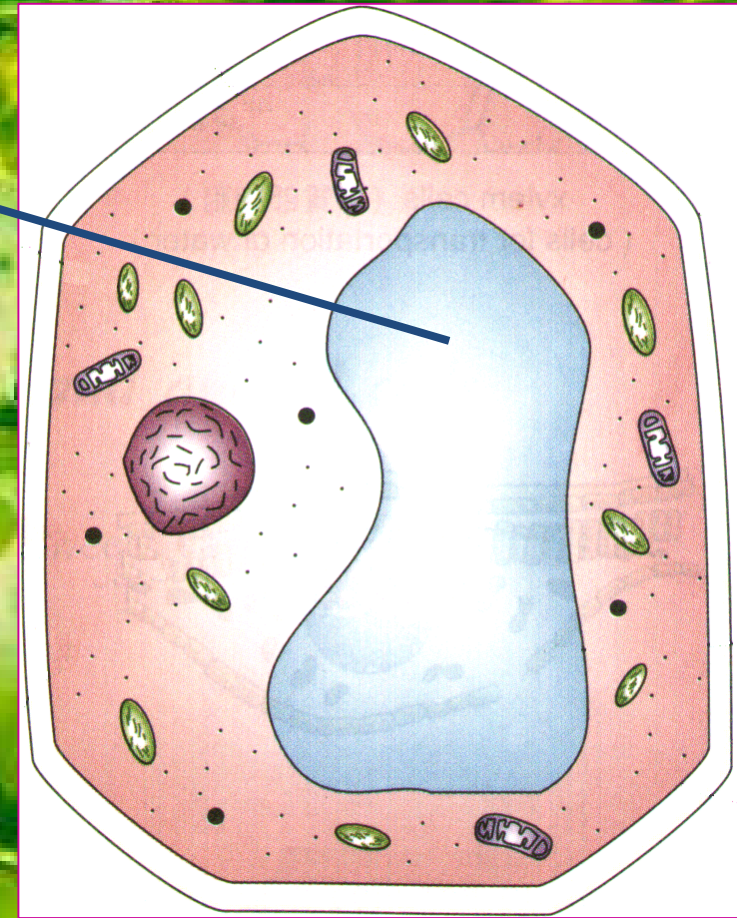
- **Active cells (eg.
sperms, liver cells)
have more
mitochondria**

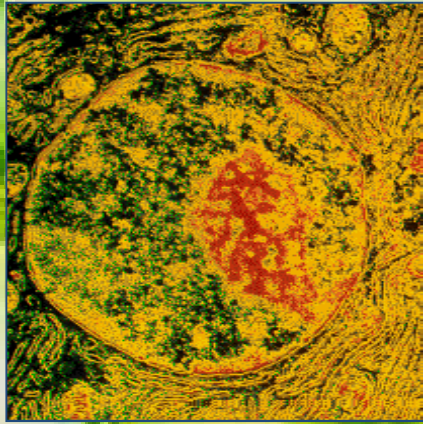


- **Non-living granules**
 - **Starch granules**
 - **Oil droplets**
 - **Crystals of insoluble wastes**

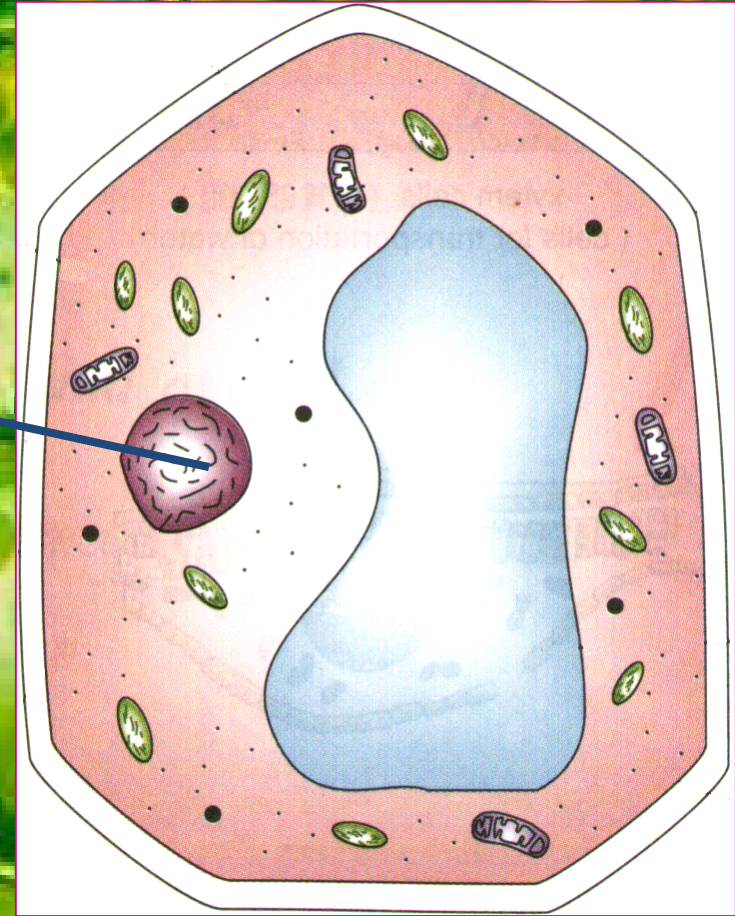


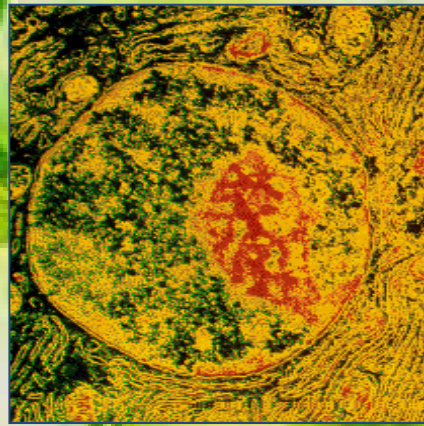
- **Vacuole**
 - **large central vacuole**
 - **Surrounded by tonoplast**
 - **Contains cell sap**
 - **a solution of chemicals (sugars, proteins, mineral salts, wastes, pigments)**



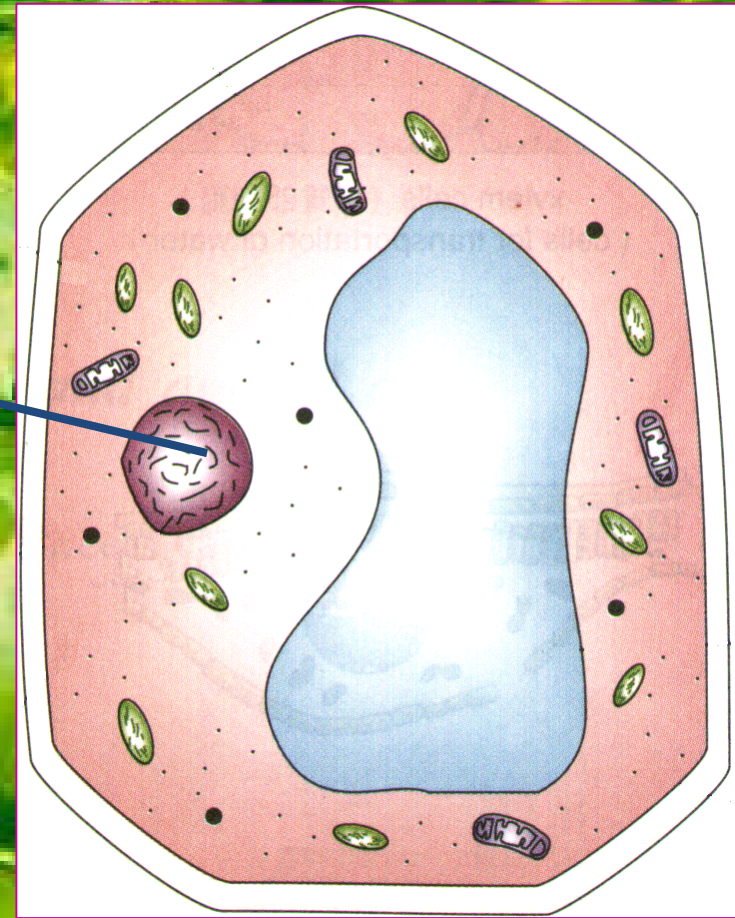


- **Nucleus**
- **Control the normal activities of the cell**
- **Bounded by a nuclear membrane**
- **Contains thread-like chromosomes**

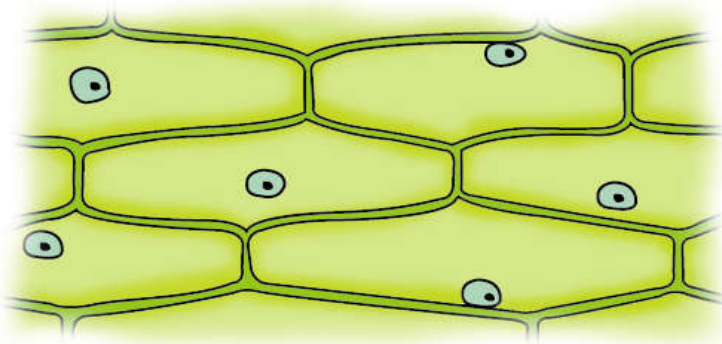




- **Nucleus**
- Each cell has fixed number of chromosomes
- **Chromosomes carry genes**
- genes control cell characteristics



Different kinds of plant cells



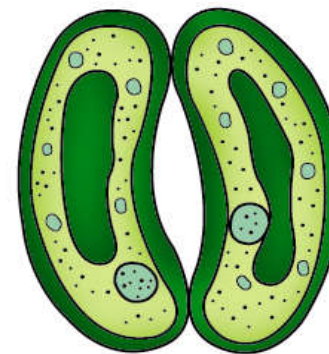
Onion Epidermal Cells

root hair



Root Hair Cell

Guard Cells



A microscopic image of plant cells, showing a grid-like structure of cell walls and green cytoplasm. The cells are roughly rectangular and arranged in a brick-like pattern.

Similarities between plant cells and animal cells

☆ **Both have a cell membrane surrounding the cytoplasm**

☆ **Both have a nucleus**

☆ **Both contain mitochondria**

A microscopic image of plant cells, showing a grid-like structure of cells with thick, green cell walls. The cells are roughly rectangular and arranged in a brick-like pattern. The background is a soft, out-of-focus green.

Differences between plant cells and animal cells

Animal cells

Relatively smaller in size

Irregular shape

No cell wall

Plant cells

Relatively larger in size

Regular shape

Cell wall present

A microscopic image of plant cells, showing a grid-like structure of cell walls and large central vacuoles. The cells are stained, with some appearing green and others more yellowish. The overall texture is granular and fibrous.

Differences between plant cells and animal cells

Animal cells

Vacuole small or absent

Glycogen granules as food store

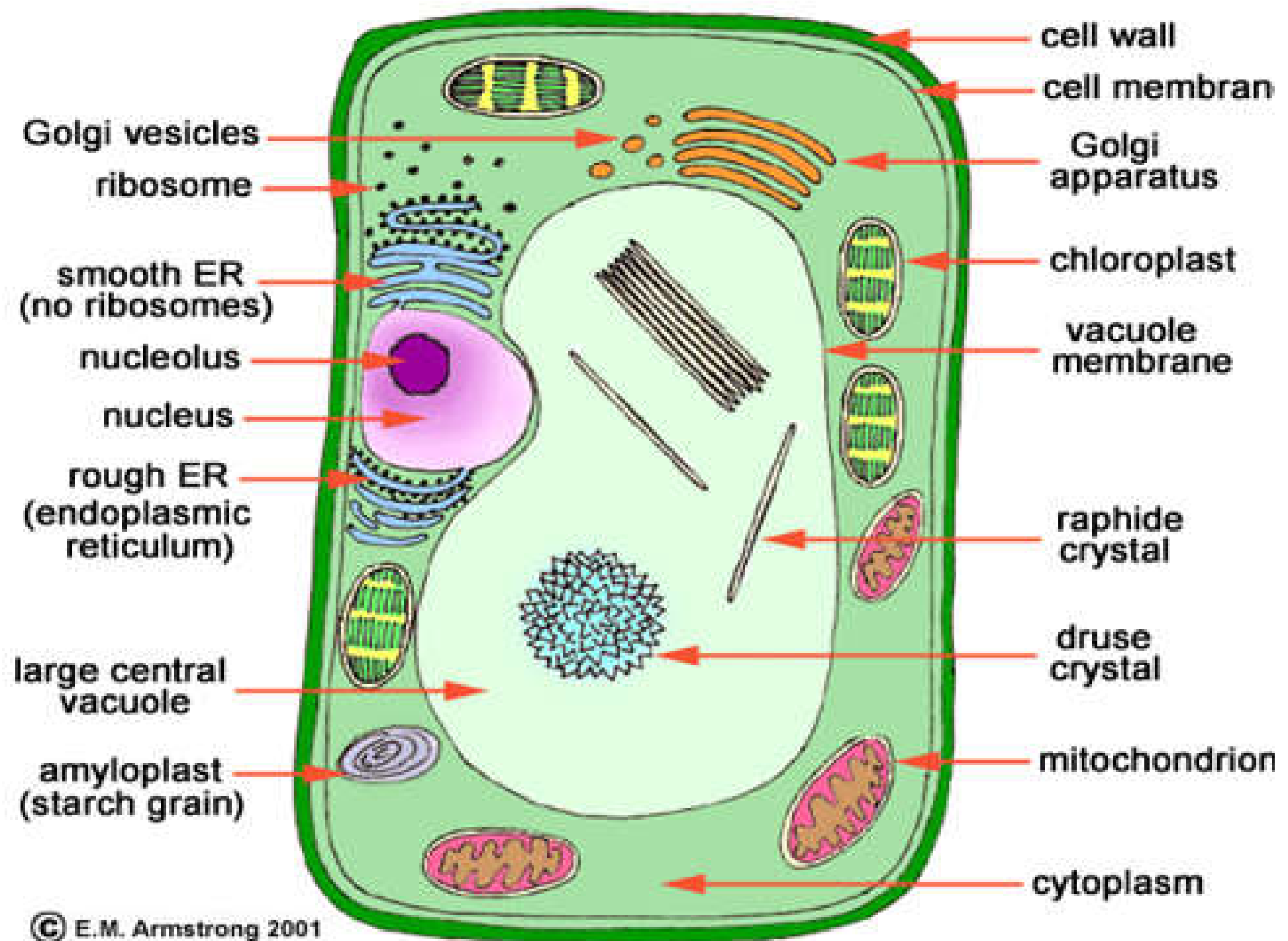
Nucleus at the centre

Plant cells

Large central vacuole

Starch granules as food store

Nucleus near cell wall



A microscopic image of plant cells, likely from an onion skin, showing a grid-like pattern of rectangular cells with thick cell walls. The cells are filled with a light green cytoplasm and contain numerous small, dark green, oval-shaped chloroplasts. The text "Thank you" is overlaid in a large, white, sans-serif font with a black outline, slanted upwards from left to right.

Thank you

**Made by-Manvendra Singh
Naruka**

Class-IX-B