

Living component (cell organelles)

Lab:6

3- plastids:

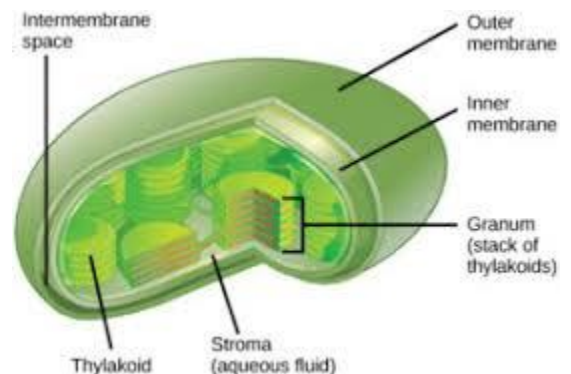
The plastids are double membrane 'sac-like' organelles, generally involved in both photosynthesis and storage of food, like starch, proteins and fat. It's found in all plant cells and algae and cyanobacteria.

Initiation of plastids:

The plastids initiated from small vesicular structures present in meristematic cells are called **proplastids**. They are colorless and undeveloped. As cells mature into different cell types, depending upon the organs and presence or absence of light.

Structure:

All green plastids, for that matter every kind of plastids are bounded by two units membranes, i.e. **outer and inner membrane**. Chloroplast is filled with a liquid called **stroma**, in which highly organized membrane structures are found they are called **grana**.



Number and shapes:

In lower plants, such as *Chlamydomonas spirogyra*, etc. the number of plastids present in each cell is always constant and characteristic. **In higher land plants**, the number of chloroplasts varies from cell to cell and from organ to organ i.e. 30-200 per cell and most of them are nearly spherical or ovoid in shape. Large in number small in size.

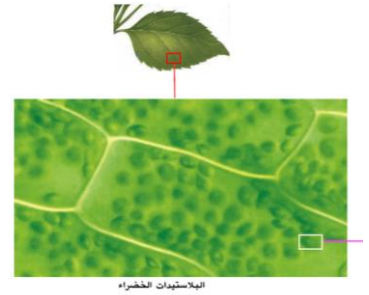
Classification:

On the basis of presence or absence of pigments, and the stage of development, plastids have been classified into:

1. chloroplasts
2. chromoplasts
3. leucoplasts

Chloroplasts

Chloroplasts are **green colored** plastid for they contain greater amounts of **chlorophyll pigments**. They are present in green plants and they are mainly responsible for providing food for themselves and to other animals in the world . these structure are mostly restricted to photosynthetic parts of the plants.



Photosynthesis is the process used by plants, algae and certain bacteria to energy from sunlight into chemical energy.

There are two types of photosynthetic processes: **oxygenic photosynthesis** and **anoxygenic photosynthesis**. Oxygenic photosynthesis is the most common and is seen in plants, algae and cyanobacteria.

During oxygenic photosynthesis, light energy transfers electrons from water (H₂O) to carbon dioxide (CO₂), which produces carbohydrates. In this transfer, the CO₂ is "reduced," or receives electrons, and the water becomes "oxidized," or loses electrons, oxygen is produced along with carbohydrates.

