



Lecture No.: 14

Date: 18th April, 2020

CORE CONCEPT OF
Group C - Cell Biology

SUBSIDIARY PART 1
Paper - 1

ULTRASTRUCTURE OF PLANT CELL [PART - 2]

Mitochondria - Benda (1892) introduced the term mitochondria at first. These are filament like or Rod like bodies. Generally a plant cell contains 500 - 1000 mitochondria : Each mitochondrion has a matrix surrounded by a a double membrane. The inner membrane is folded to form numerous *Cristae* containing small particles called oxysomes. Mitochondria is known as power house of the cell.

Endoplasmic reticulum - E.R was first used by Porter (1948). The E.R can be rough when provided with ribosomes or smooth when devoid of ribosomes. It provides a particular shape of the cell. Synthesis of protein by rough E.R and lipids by smooth E.R.

Ribosomes - These are the smallest cell organell. Ribosomes are particles of ribonucleoproteins (RNP). They are of two basic types, 70s (in prokaryotes) and 80s (in eukaryotes). The ribosomes are the sites of assemblage of different kinds of RNAs.

Golgi complex - It was discovered by camillo Golgi (1898). These are also known as dictyosomes, lipochondria or idiosomes. A Golgi complex consists of three parts - a stalk of parallel double membrane bound sacs called cisternae or saccules, a tubular network and several small vesicles. The closely Golgi bodies form a a Golgi complex. The main function is cellular secretion.

Lysosomes - They are single membrane bound bodies containing digestive enzymes like lipases, phosphatases etc. The main function of lysosomes is digestion of intracellular and extracellular.

Spherosomes - Their structure is similar to lysosomes. Their function is thought to be digestion of fatty and other complex cell contents.



Microbodies - The cytoplasm also contains tiny vesicles called microbodies. They are of two types :

1. Peroxisomes and
2. Glyoxysomes

Transosomes - These are shortly single membrane spherical bodies.

Lomosomes - These are the vasicular and membranous structure of various shapes.

Centrosome - Each centrosome is composed of two granules surrounded by a common matrix. It is found only in a few lower plants. Some cell inclusions are present in cytoplasm such as Reserve food materials, Secretory products, Waste products - Nitrogenous and Non-Nitrogenous.

Vacuoles - These are the typical non - protoplasmic cavities usually found in the older cells of plants. Which cavities called vacuoles are filled with watery solution known as cell-sap.

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