Ashur university collage

Dept. of Biology

First-year

lab 2

Zoology

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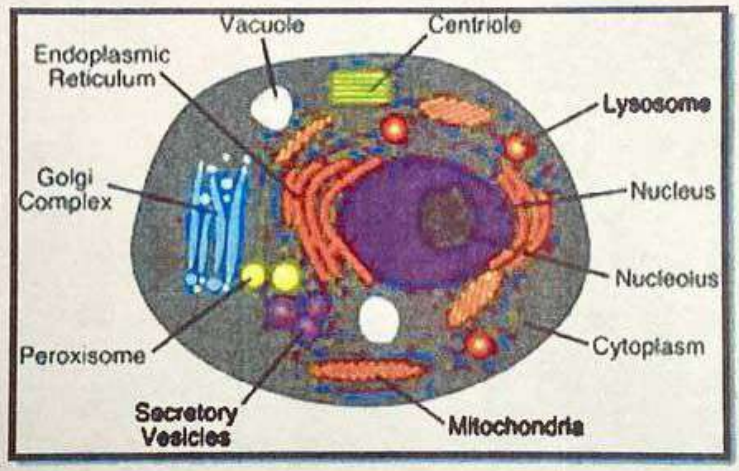
Lab: 2

The animal cell

Cell: It is the basic unit of **structure** & **function** in an organism.

Cell theory: Every living organism is composed of cell and every cell in an organism produced by another cell.

The main parts of cell (cell structure):



Living &non-living component in cell

A- Living component

1- **Cell membrane**: surrounds the part of a cell together, it controls the movement of material into and out of a cell.

2- **Nucleus**: It controls cell activities, it is often in or near the center of a cell material .That nucleus is separated from the cytoplasm by a thin membrane is called (**nuclear membrane**).

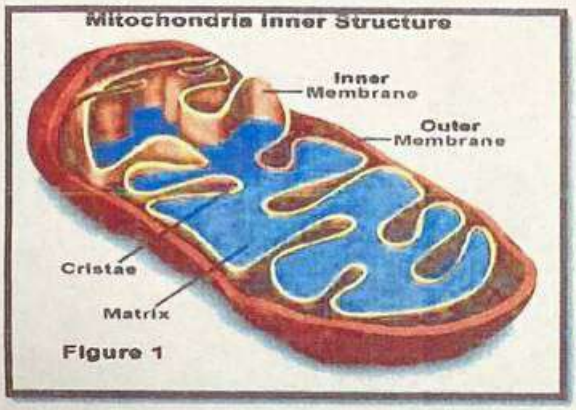
Function: Controls cell activities.

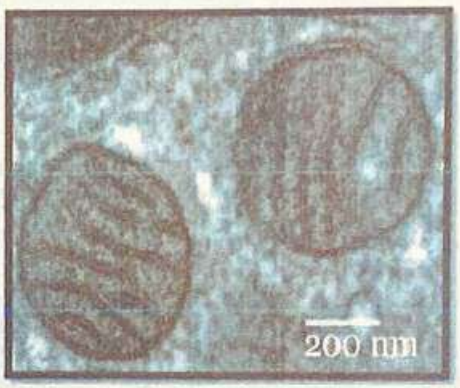
3- **Cytoplasm**: Its cell substance between the cell membrane and the nucleus, which contains cytosol and organelles, it makes up most of the mass of many cells.

Function: produces variety of cell materials.

4- **Mitochondria**: Are rod- shaped in the cytoplasm.

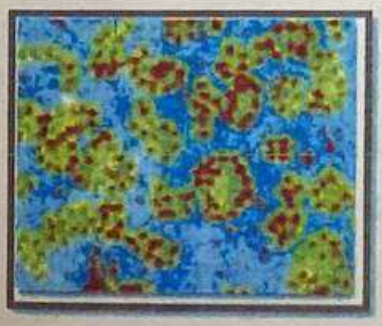
Function: Release energy & it is called (power house of cell)





5- **Ribosomes**: Are tiny- particles, so small. They can see only with an electron microscope.

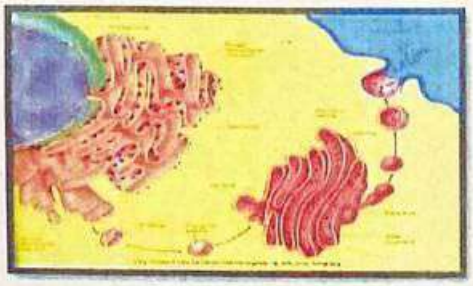
Function: it is site of protein synthesis because it consisting of RNA and protein.



6-Lysosome: round organelles surrounded by a membrane and containing digestive enzymes.

7- **Endoplasmic reticulum**: Structures like tubes in the cytoplasm of the cell.

Function: Moves materials within cells.



B- Non Living component

Vacuoles: is a liquid- filled sphere surrounded by a membrane.

Function: stores water &dissolved materials.

Note: You can see these types of structures in Amoeba or Paramecium

- **Organisms are divided according to number of cells:**

1- **Unicellular Organisms**: some Organisms are single cells are called unicellular e.x.: Bacteria, Amoeba and Euglena.

2- **Multicellular Organisms**: some Organisms have many cells are called multicellular e.x.: Animal tissue & Plant tissue.

We can divide the organisms to:

1-Eukaryotic

2-Prokaryotic

	Eukaryotic	**Prokaryotic**
1-nucleus	present	absent
2-nucleous membrane	present	absent
3-mitochondria	present	absent
4-ribosomes	larger	smaller
5-number of chromosomes	More than one	one
6-number of cells	multicellular	unicellular
7-ex:	Animal, plant	Bacteria