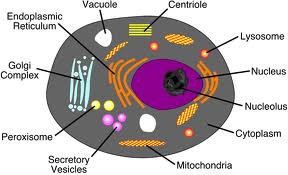
**Lab :2**

**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**

1. **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- **Cytoplasm** : is protoplasm inside the (cell membrane ). It makes

up most of the mass of many cells, different cell materials are

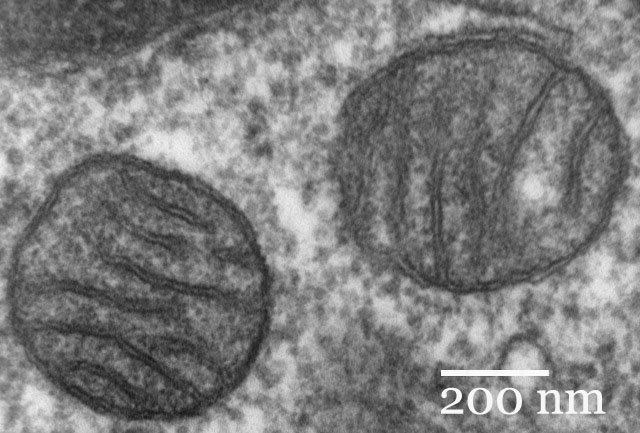
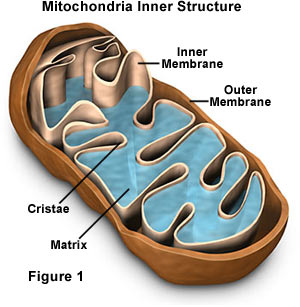
produced in the cytoplasm.

**Function** : produces variety of cell materials.

3- **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).

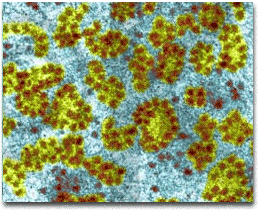
**Function** : Controls cell activities.

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

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

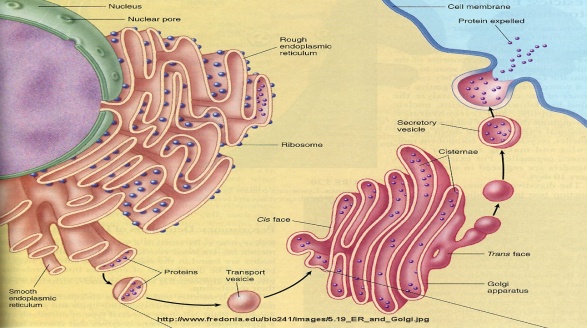
5- **Ribosomes** : Are tiny- particles, so small . They can see only with an electron microscope.

**Function :** Parts of cells where proteins are made.



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

**Function** : Moves materials within cells.



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

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