

CELL COMPONENTS

De Zaid O Ibraheem / PhD

Cellular components

main parts of the cell are :

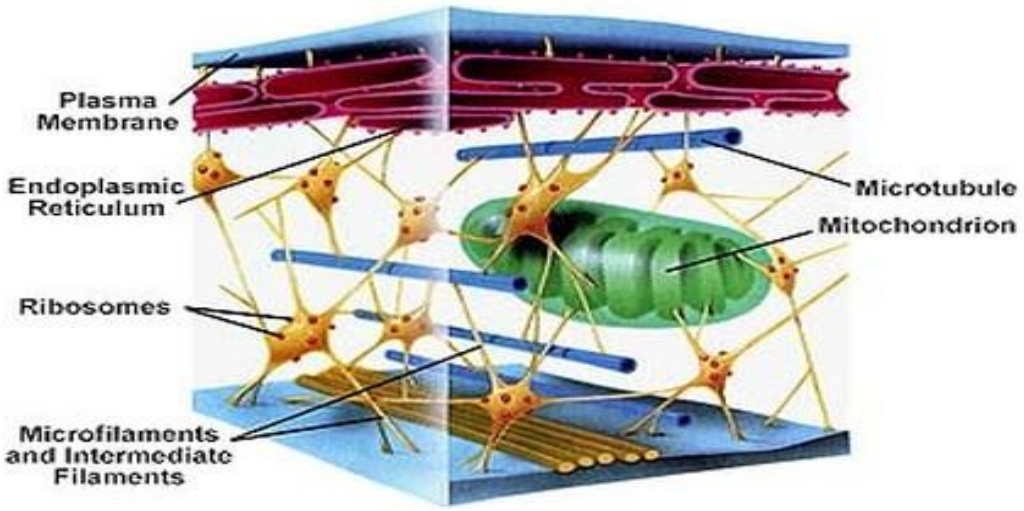
1-Cytoplasm

Cytoplasm is a gel like semifluid material located between the cell membrane and nucleus. It is made up of

* An intricate arrangement of fine **cytoskeleton fibers**

* Multitude minuscule and distinctive structures called **organelles.**

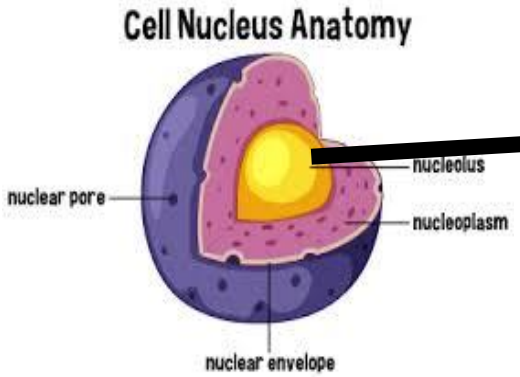
* The fluid in which the cytoskeleton fibers and organelles suspend, called **cytosol.**

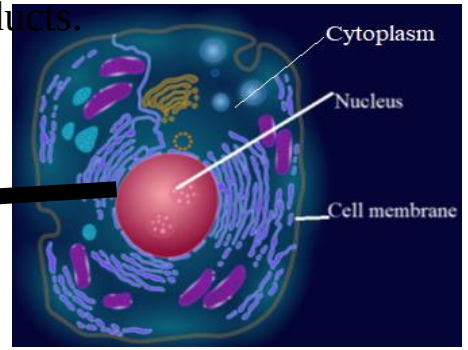


2-Cell membrane

Cell membrane is a thin double layered semi-selective permeable membrane.

It surrounds and protects the cell and regulates entry of nutrients and expulsion of waste products.

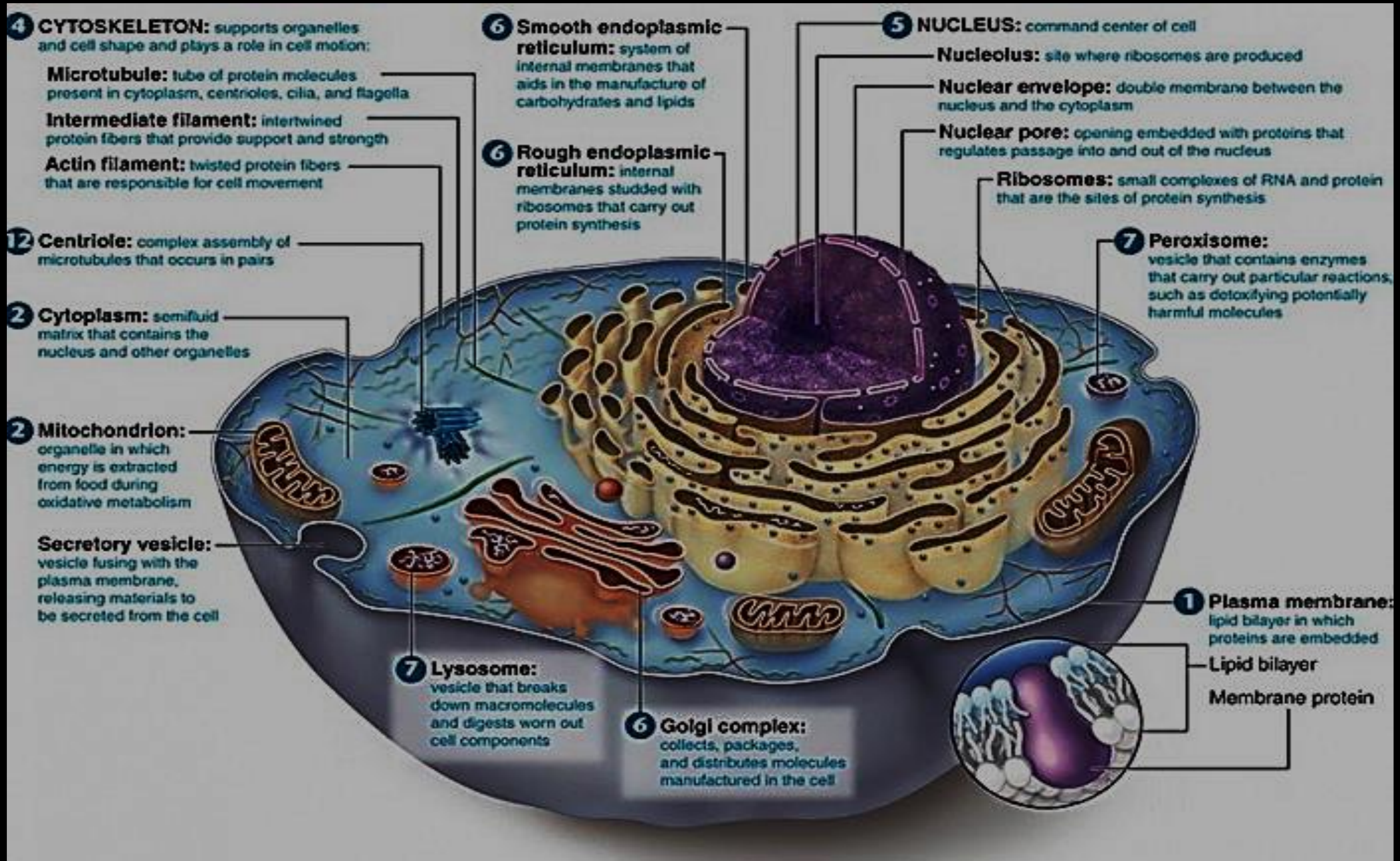




3-Nucleus

The core of the cell wherein all genetic information are stored.

It is surrounded by a membrane called nuclear membrane which encloses the nuclear living material. (nucleoplasm).


4 CYTOSKELETON: supports organelles and cell shape and plays a role in cell motion:
Microtubule: tube of protein molecules present in cytoplasm, centrioles, cilia, and flagella
Intermediate filament: intertwined protein fibers that provide support and strength
Actin filament: twisted protein fibers that are responsible for cell movement
12 Centriole: complex assembly of microtubules that occurs in pairs
2 Cytoplasm: semifluid matrix that contains the nucleus and other organelles
2 Mitochondrion: organelle in which energy is extracted from food during oxidative metabolism
Secretory vesicle: vesicle fusing with the plasma membrane, releasing materials to be secreted from the cell
6 Smooth endoplasmic reticulum: system of internal membranes that aids in the manufacture of carbohydrates and lipids
6 Rough endoplasmic reticulum: internal membranes studded with ribosomes that carry out protein synthesis
5 NUCLEUS: command center of cell
Nucleolus: site where ribosomes are produced
Nuclear envelope: double membrane between the nucleus and the cytoplasm
Nuclear pore: opening embedded with proteins that regulates passage into and out of the nucleus
Ribosomes: small complexes of RNA and protein that are the sites of protein synthesis
7 Peroxisome: vesicle that contains enzymes that carry out particular reactions, such as detoxifying potentially harmful molecules
7 Lysosome: vesicle that breaks down macromolecules and digests worn out cell components
6 Golgi complex: collects, packages, and distributes molecules manufactured in the cell
1 Plasma membrane: lipid bilayer in which proteins are embedded
Lipid bilayer
Membrane protein