

CELL-dictate our structure

I. BASIC CELL COMPOSITION

A. Plasma membrane = Cell membrane – surrounds cell & gives it form.

1. Structure: 2 layers of phospholipids with proteins scattered throughout (bilayer).
 - a. Proteins: In membrane or “float” on surface.
 - b. Glycoproteins: Proteins with carbohydrate attached.
2. It is selectively permeable. Determined primarily by size, charge, and solubility.
3. Functions
 - a. Passive Transport (no energy)
 - i. Diffusion: Some SMALL materials may diffuse/pass through the cell membrane
 - b. Active Transport (energy required) LARGE particles must be transported actively:
 - i. Exocytosis: process by which cellular materials EXIT the cell
 - Materials are packed within vesicles (small sacs)
 - vesicles fuse w/cell membrane and release contents outside of cell
 - ii. Endocytosis: process by which materials are brought INTO the cell. (3 types)
 - Phagocytosis: “cell eating”; ingestion of large particles.
 - Pinocytosis: “cell drinking”; ingestion of fluid & small particles.
 - Receptor-mediated endocytosis: substances bind

to receptors where the membrane is indented = coated pit, & a clathrin (protein) – coated vesicle is formed.

4. Specializations of plasma membrane:
 - a. Microvilli: non-motile, help increase surface rea.

- b. Cilia: motile, move substances over the surface of stationary cells.
- c. Flagellum: motile, whip-like structure that moves cells.

B. Cytoplasmic Organelles

- 1. Mitochondrion