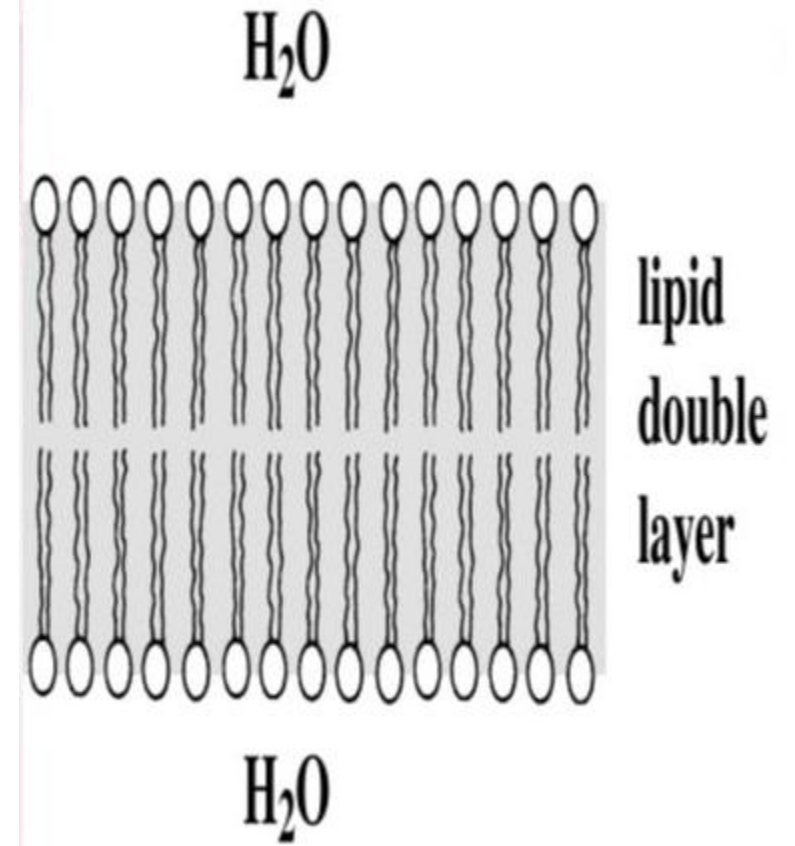
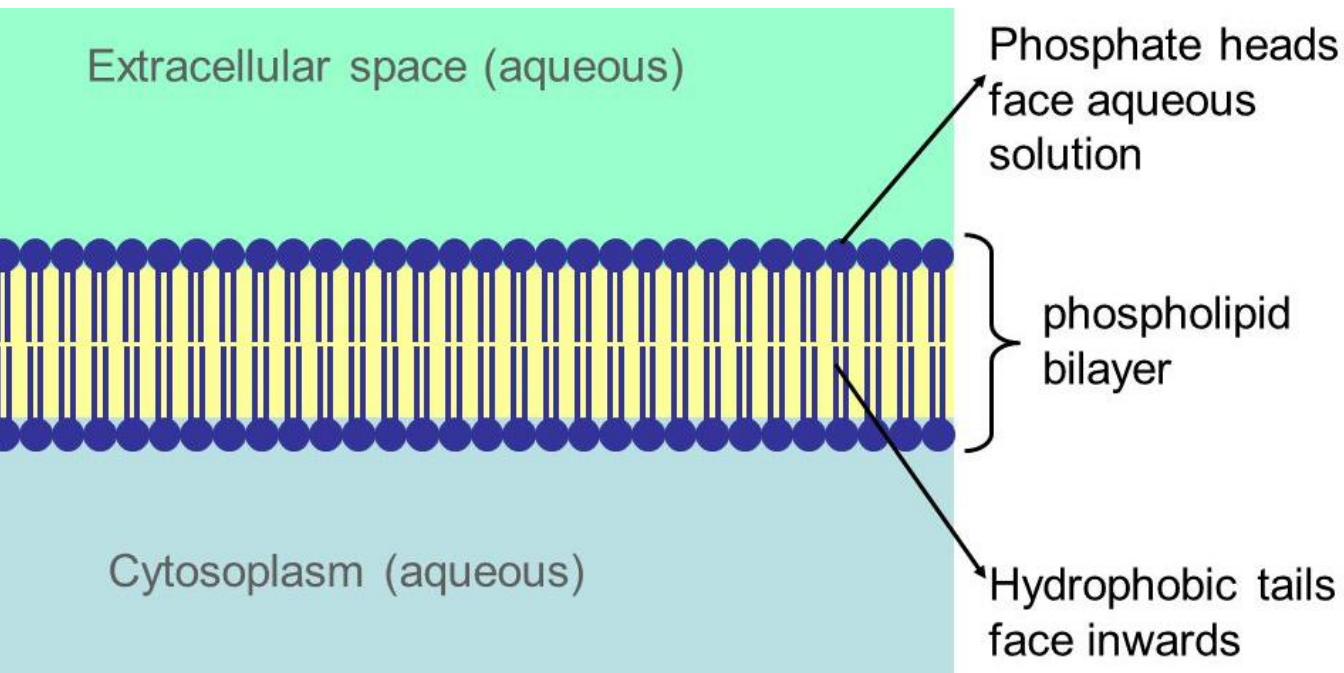


Plasma Membrane

(Lipid Membrane)



Dr. Rupesh B. Yadav

Asst. Prof.

TC College, Baramati.

Lipid Membrane

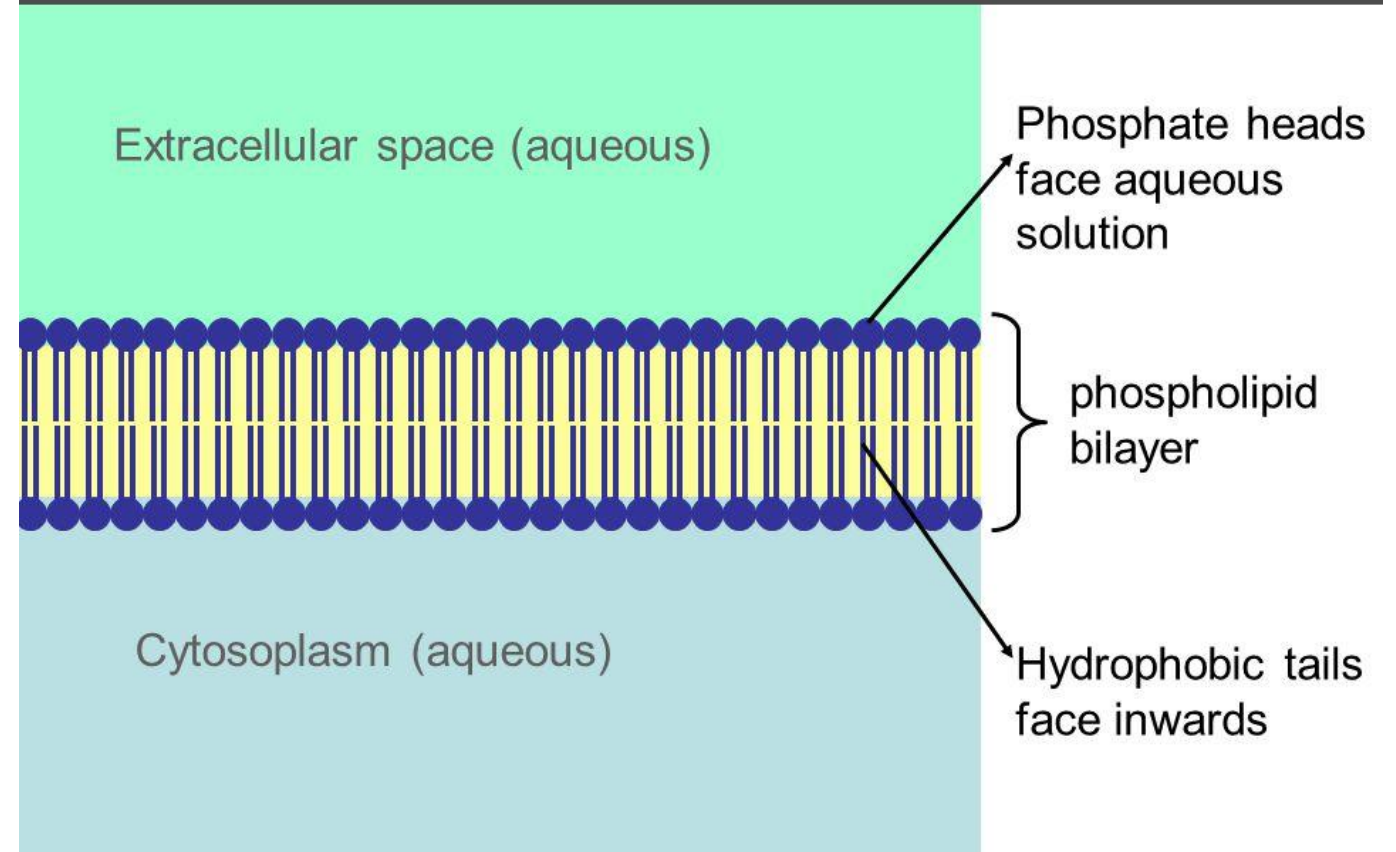
- **Overton 1895** found that, fat soluble substances passes easily through the cell membrane
- He concluded by this observation that **cell membrane made-up of lipid.**
- Plasma membrane shows presence of **lipid layer was confirmed.**
- When **oil drop comes in contact with cell, it spread over & adheres to the cell surface.**

Lipid Membrane

Gorter & Grendel 1925

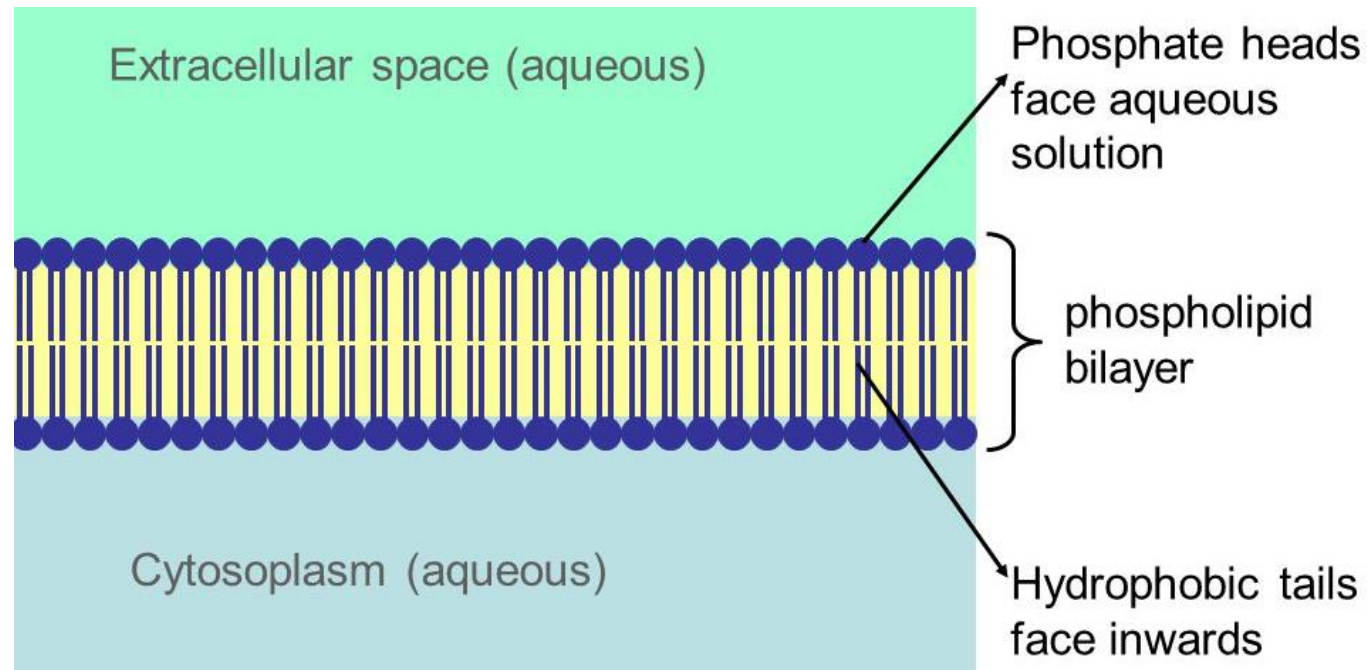


In 1925 Gorter and Grendel proposed that the unit membrane is formed from a phospholipid bilayer



Lipid Membrane

- The possible structure of plasma membrane was **first time proposed by Gorter and Grendel (1925) in erythrocytes.**
- They found that the surface membrane was composed of a **double layer of lipid molecule**

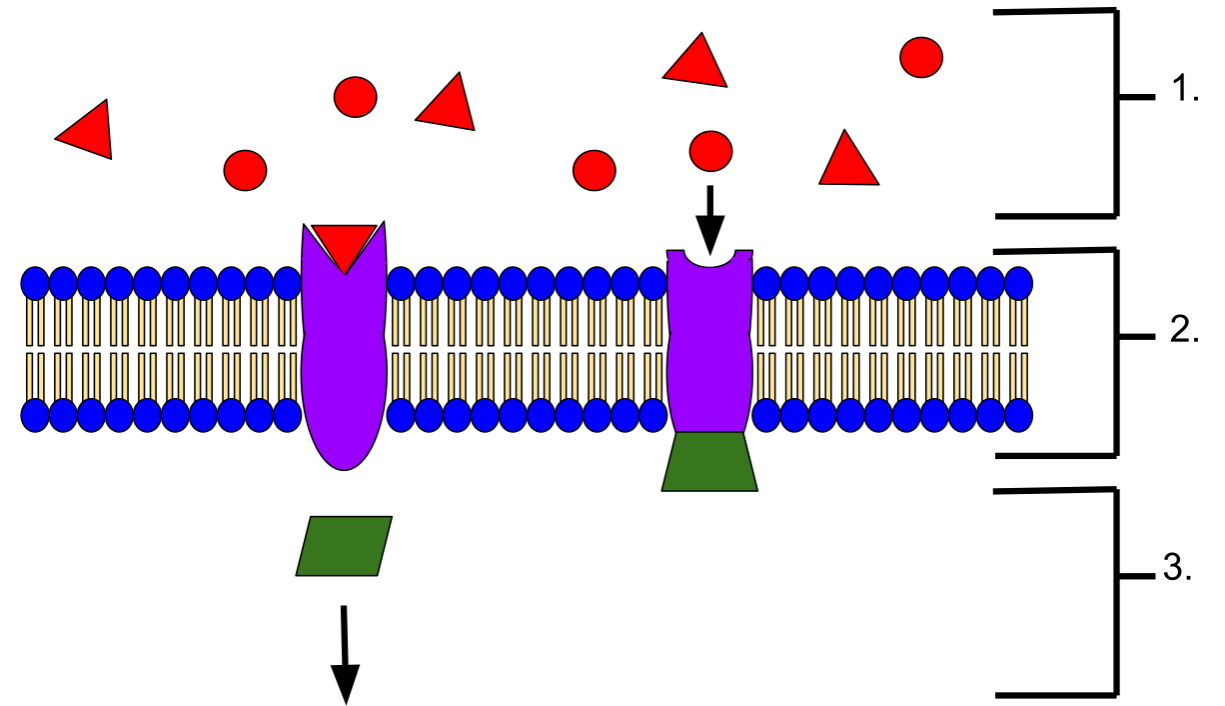
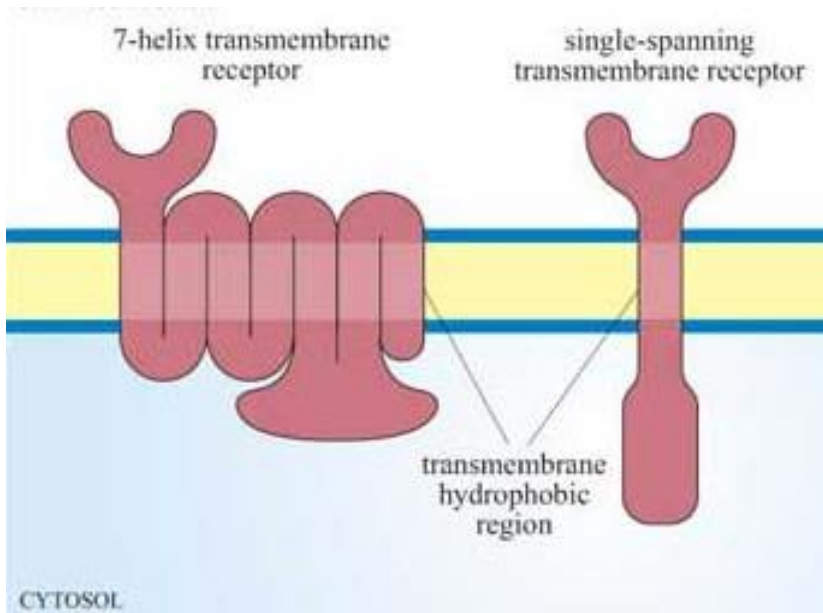


Models of Plasma membrane

1. **Overton (1895)**- Confirmed plasma membrane made-up of lipid bilayer.
2. **Gorter and Grendel (1925)**- Lipid Membrane concept
3. **Danielli and Davson (1935)**- Sandwich Model
4. **David Robertson in (1959)**- Unit Membrane Concept
5. **Singer and Nicolson (1972)**- Fluid Mosaic Model

Plasma Membrane

(Membrane Receptor)



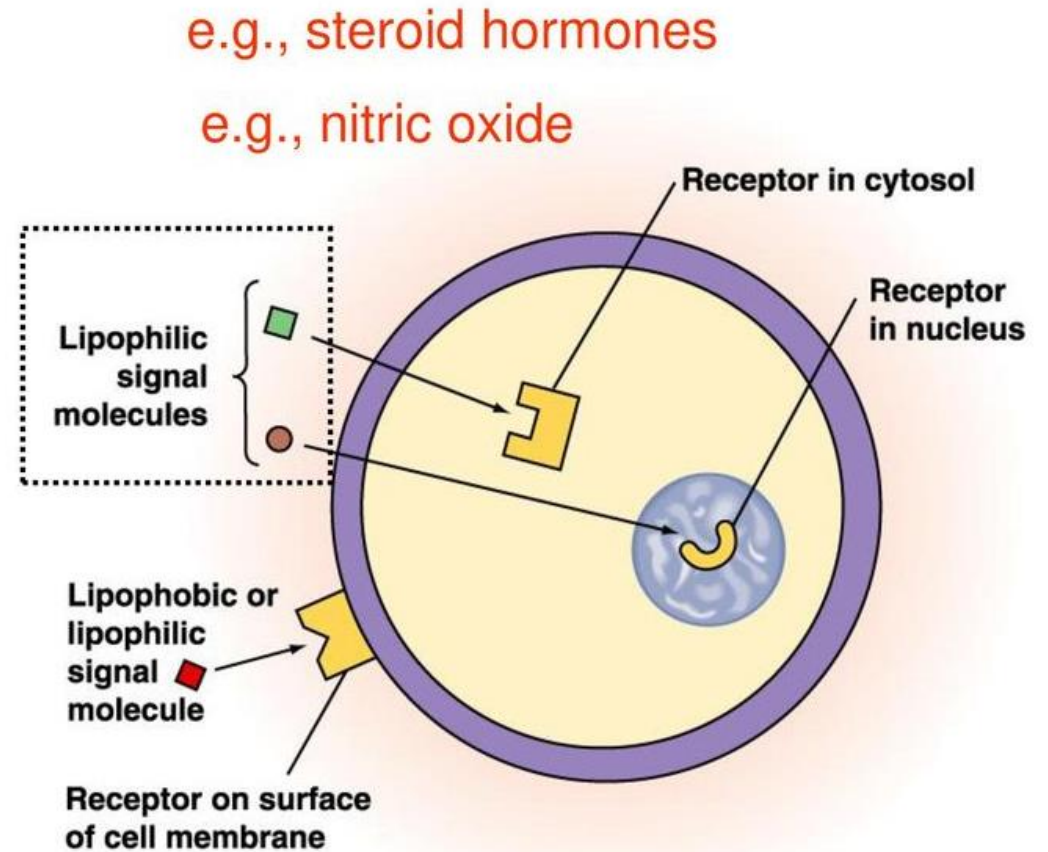
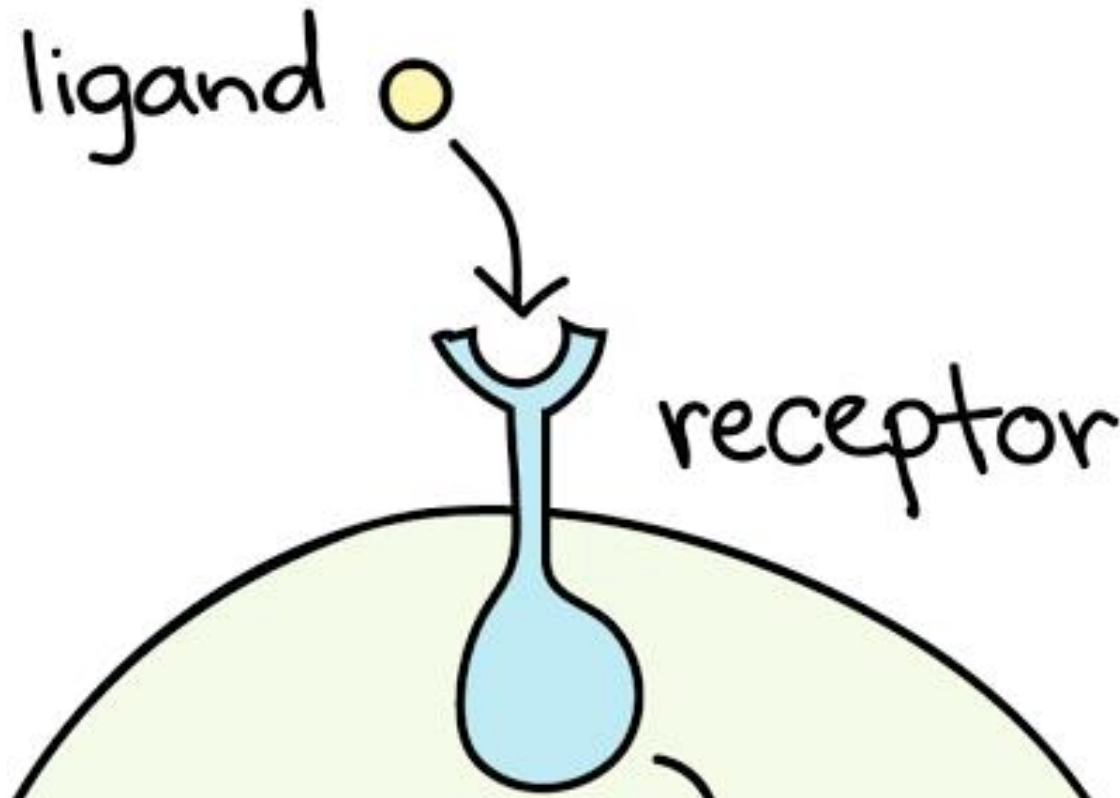
Dr. Rupesh B. Yadav

Asst. Prof.

TC College, Baramati.

What is Receptor???

- Receptor is a **macromolecule present on the surface of cell or inside the cell.**



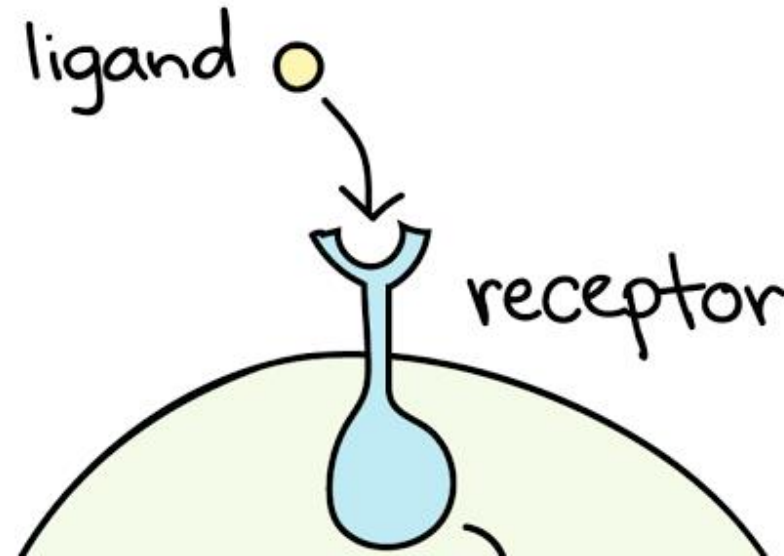
Membrane Receptor

- Cell surface **receptors** (membrane receptors, transmembrane receptors) are receptors that are **embedded in the plasma membrane** of cells.
- They **act in cell signaling** by receiving (binding to) extracellular molecules.
- They are specialized integral membrane proteins that **allow communication between the cell and the extracellular space.**
- The **extracellular molecules** may be **hormones, neurotransmitters, cytokines, growth factors, cell adhesion molecules, or nutrients**; they react with the receptor to induce changes in the metabolism and activity of a cell.

Membrane Receptor

➤ Ligand

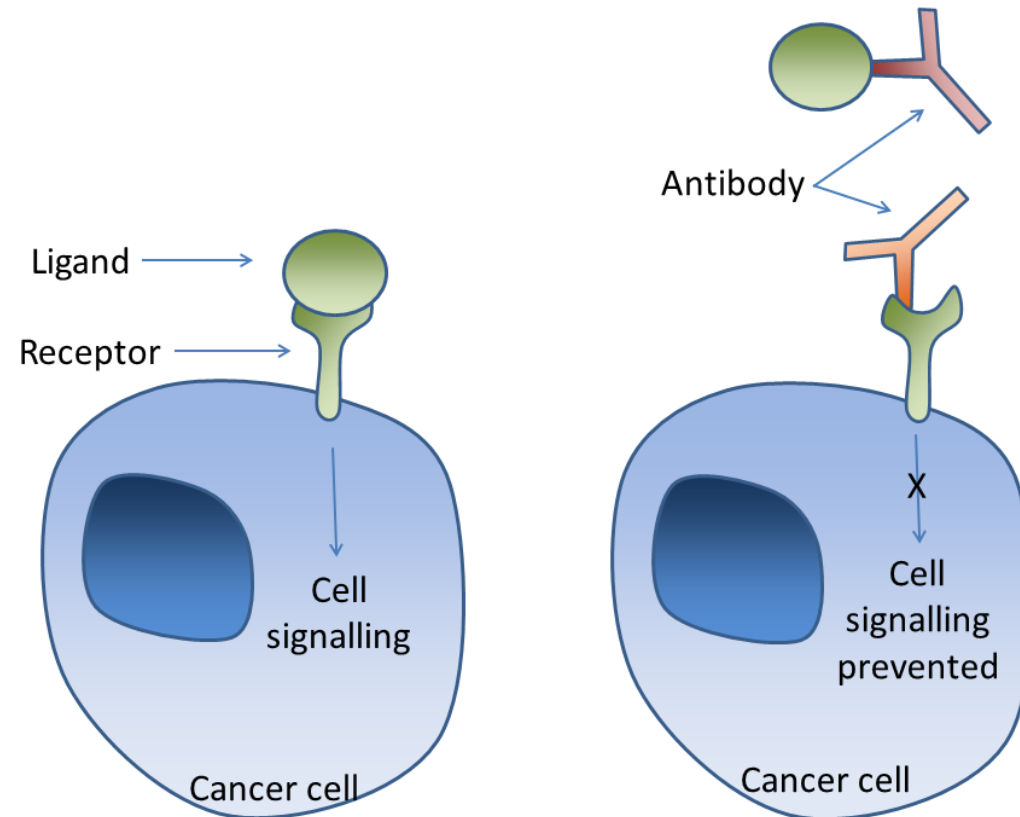
1. Hormon
2. Neurotransmitter
3. Drug
4. Toxins



- Ligand **binds a receptors** to produce their **effect**.
- Receptor has a one point through which ligand binds & it is also **call ligand binding domain**.

Membrane Receptor

- Once the **ligand binds** to a receptor, it produces some **biological action** or **activities**.

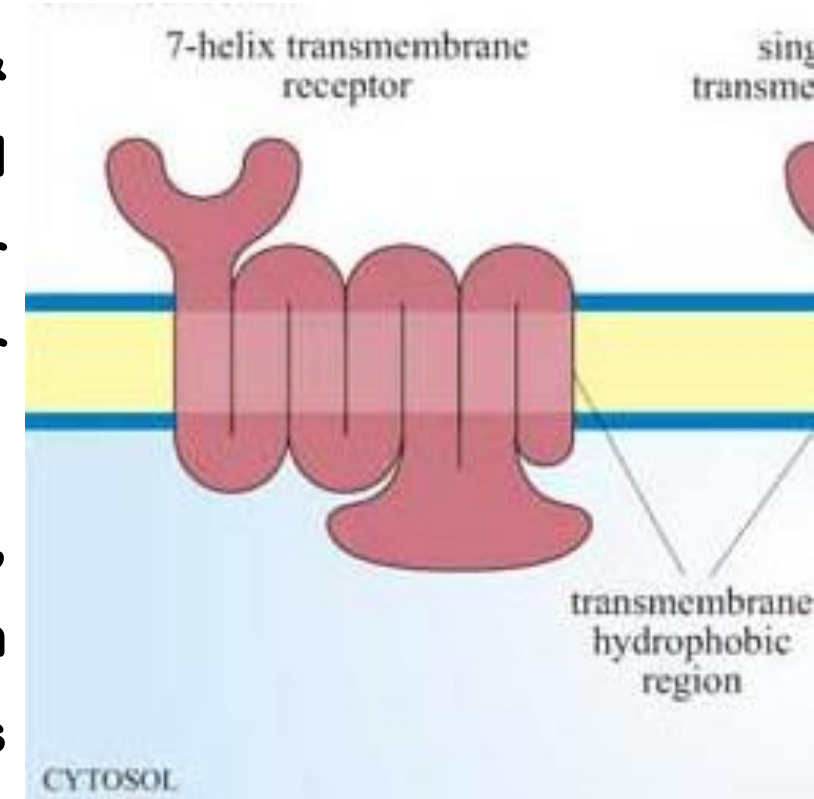


Types of Membrane Receptor

1. Serpentine receptor Or 7 pass receptor

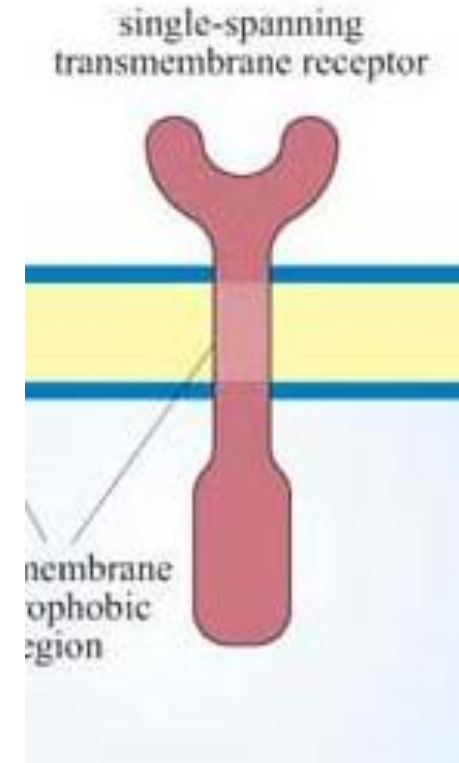
It has **two domain** one is out side of the cell & second inside of the cell. **Extracellular domain** is ligand binding domain, Once the ligand binds to the extracellular domain it will start to give signal **intracellular domain** Or effector for the activity.

For eg. Catecholamine, Epinephrine, Non epinephrine, acetylcholine, PG, TSH, all these components coupled with special protein & it's call G coupled protein. G protein is trimeric protein (Alpha, Beta, Gama)



Types of Membrane Receptor

2. Single pass receptor or enzyme linked receptor



*Thank
You*

