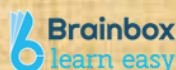


Chapter 11

TRANSPORT IN PLANTS

Means of transport:



Transport

Passive

- Ions/Molecules move from area of higher concentration to area of lower concentration.
- Down hill process no energy is need (ATP) along concentration gradient.

Active

- Ions/Molecules move from area of lower concentration to area of higher concentration.
- Up hill transport energy is needed (ATP) against to concentration gradient.

Different types of passive transport:

Passive transport is two types.

Simple diffusion

Facilitated diffusion

Simple diffusion:

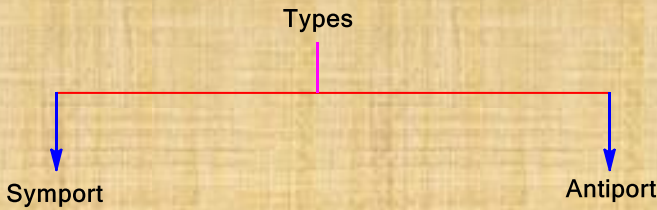
- It occurs freely in nature and also in living organisms.
- In this, Ions/Molecules move from the area of higher concentration to area of lower concentration.
- It doesn't require energy and carrier proteins.

Ex. Fragrance of rose flower reaches to our nose because of simple diffusion.

Facilitated diffusion:

- It occurs in living organisms across plasma – membrane.
- It also occurs from higher concentration to lower concentration.
- It requires carrier proteins.
- Transport proteins helps in the transport of Ions across the plasma membrane.

Some protein carriers they allow transport of two molecules at a time. These are again two types.



It allows passage of two molecules at the same direction either inside or outside but two molecules must pass in the same direction.

One molecule enters into cell at the same time another molecule exit the cell. So this kind of carrier proteins allow the two molecules at the same time but in opposite direction.

Uniport:

They allow passage of only one molecule either outside or inside. So, these kind of carrier proteins are called uniport.

Transport saturation:

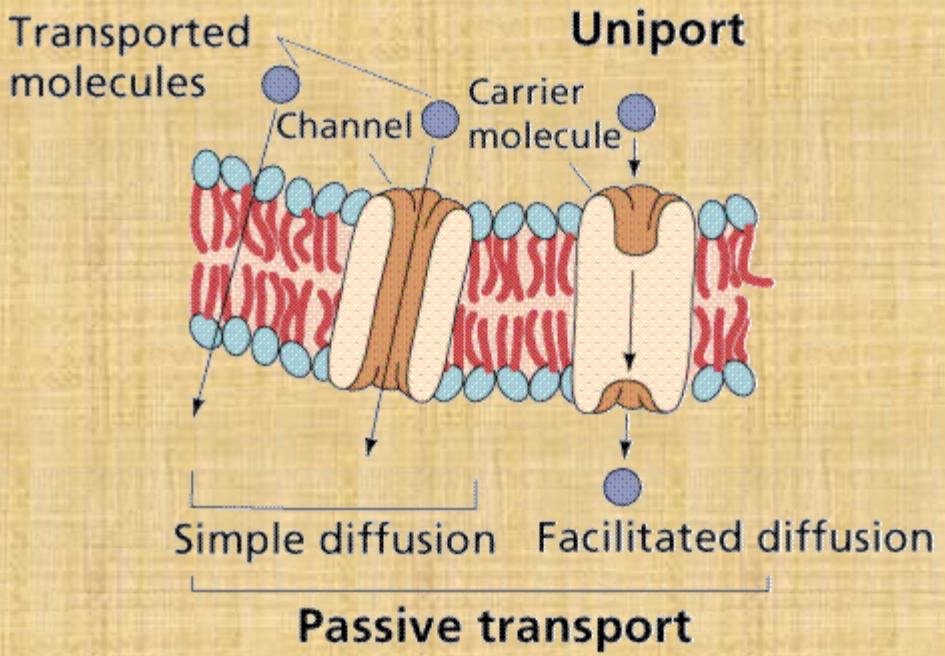
When all the protein carriers are used up in the transport process then the transport reaches to its maximum. So, this maximum transport is called Transport saturation.

- Transport saturation occurs in facilitated diffusion and active transport. Because in facilitated diffusion and active transport proteins are involved.
- It does not take place in simple diffusion because there are no transport proteins that's why simple diffusion will not reach transport saturation.

Mechanism of facilitated diffusion:

The ions/molecules when they need to cross the membrane they will bind to carrier protein present on the plasma membrane.

When molecule binds to carrier protein that leads to conformational change in the carrier protein. Because of conformational change carrier protein leaves the molecule inside the cell.



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