

Facilitated Diffusion

- the movement of non-polar / intermediately sized molecules through a semi-permeable membrane through the assistance of channel or carrier proteins. Often, these molecules attach to the channel/carrier protein that undergo a conformational change → pushing the molecule through the membrane

Osmosis

[HIGH YIELD]

- osmosis is the passive, net movement of free H₂O molecules through a semi-permeable membrane, with the natural concentration gradient from regions of Hypotonic (low solute = high solvent) concentrations to Hypertonic (high solute = low solvent) concentrations.
- in hypotonic, low solute outside cell → high solvent, therefore H₂O moves in to cause cell to swell
- In hypertonic, high solute outside cell → low solvent, water moves out causing cell lysis

Active transport

General

- this is the movement of polar/large molecules from regions of low concentration to that of high concentrations → this occurs against the natural concentration gradient and hence requires energy through ATP

Protein channels

- when a target molecule binds to the surface of the channel protein, a conformational change in the structure of the channel protein occurs through the release of ATP → this change actively pushes the target molecule through the membrane to the intra- or extra- cellular environments

Bulk Transport

Endocytosis

- the engulfment of cellular items or molecules → the target molecule typically arrives in a vesicle that fuses to the membrane → this ensures that