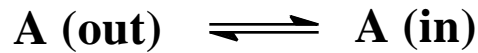


MEMBRANE TRANSPORT

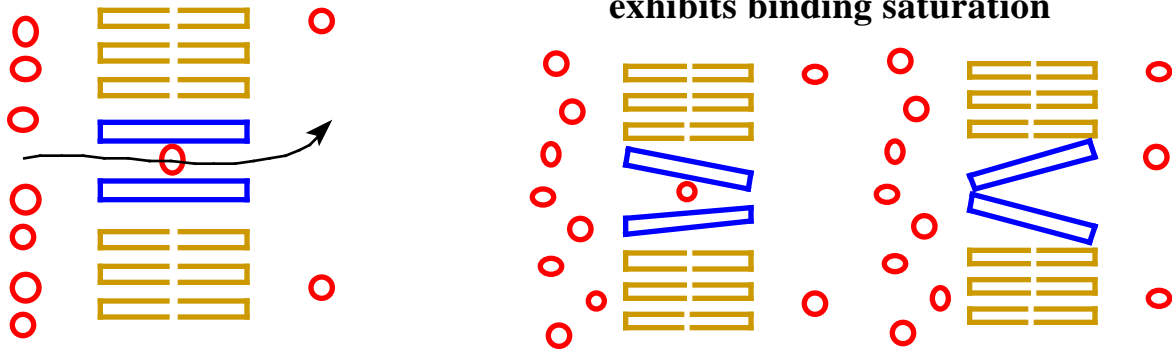


$$G = RT \ln \frac{[A]_{\text{in}}}{[A]_{\text{out}}} + Z_i F$$

Passive Transport ("with" concentration gradient)

1) Simple diffusion of small uncharged molecules; depends on the solubility in membrane; Ions cannot freely diffuse; (**nonmediated**)

2) Facilitated diffusion; channels; (**mediated**) 3) Facilitated diffusion; gates; (**mediated**), exhibits binding saturation



Active Transport ("against" concentration gradient)

- 1) Primary - energy supplied by ATP; pumps
- 2) Secondary - energy from concentration gradient of another species
- 3) Uniport, symport or antiport
- 4) Electroneutral or electrogenic

