

Cell Transport

CH 3.4 & 3.5

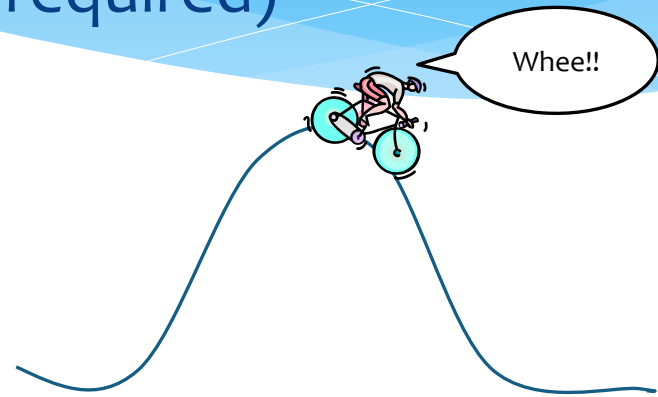
Homeostasis

- * To maintain homeostasis, cell must move materials in and out of the cell
 - * Waste
 - * Nutrients
 - * Gases (carbon dioxide, oxygen, nitrogen)

Types of Transport

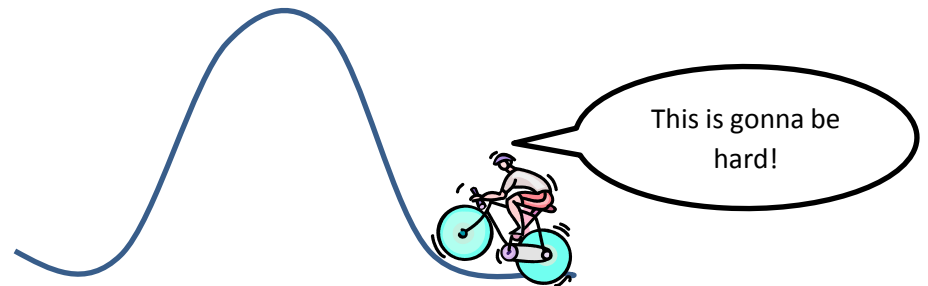
- * Passive Transport (no energy required)

- * Diffusion
- * Osmosis
- * Facilitated Diffusion



- * Active Transport (energy required)

- * Protein Channels (pumps)
- * Exocytosis
- * Endocytosis

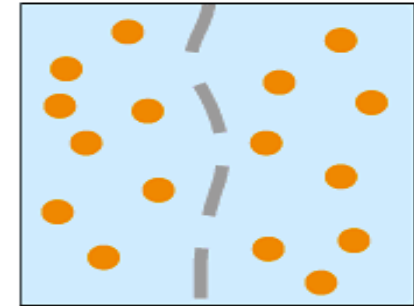
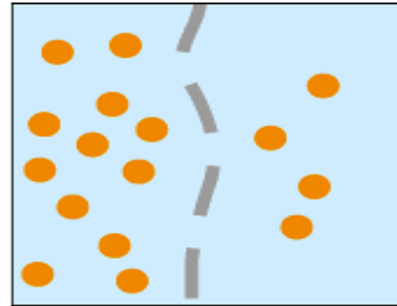
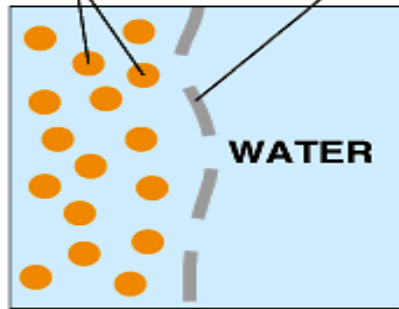


Passive Transport

- * Molecules move from HIGH concentration to LOW concentration
- * No energy required
 - * With concentration gradient (downhill)
- * Diffusion = movement of any molecule
- * Facilitated Diffusion = movement through a channel
- * Osmosis = diffusion of only water

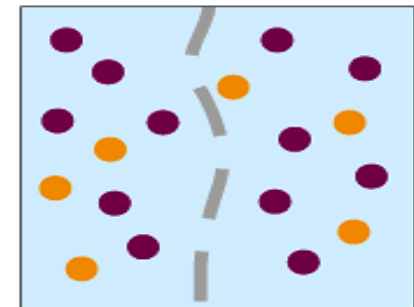
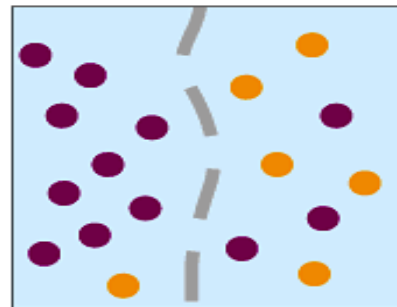
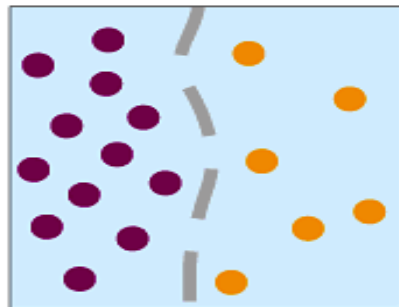
Passive Transport

Molecules of dye Membrane (cross section)



Equilibrium

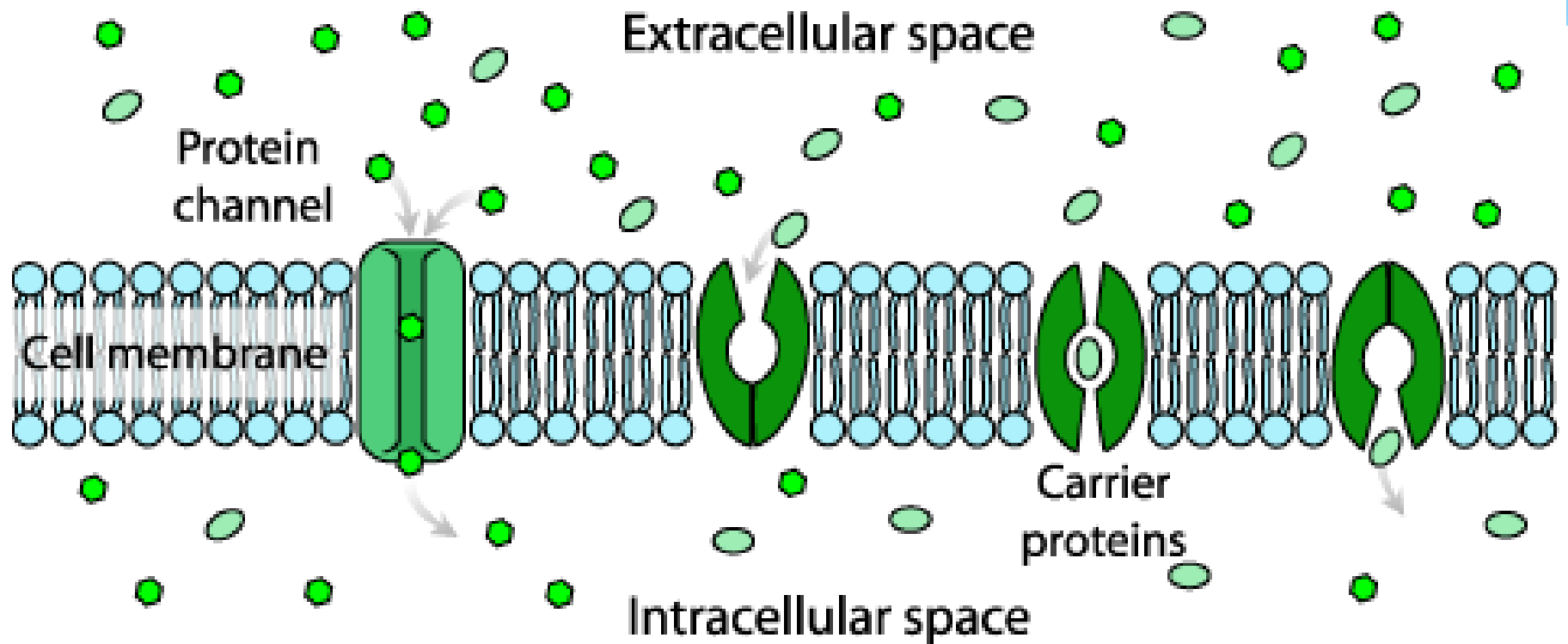
(a) Diffusion of one solute



Equilibrium

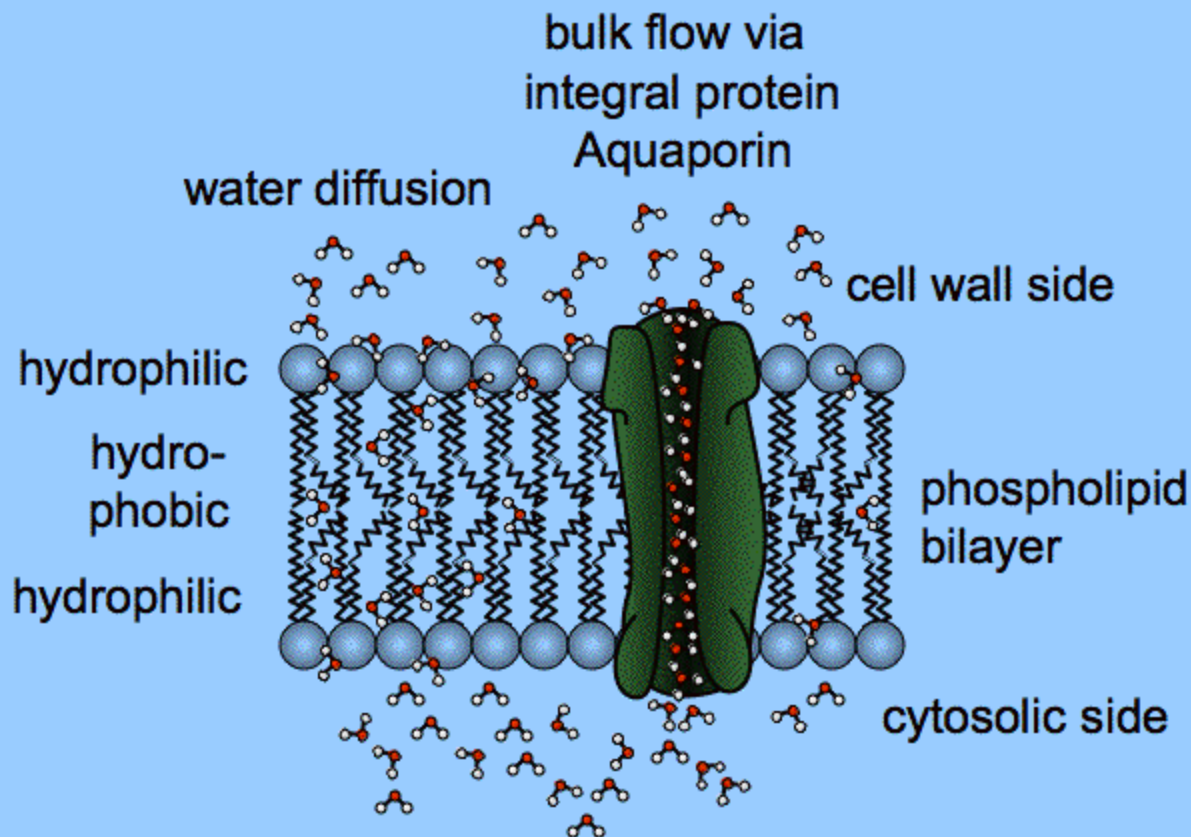
(b) Diffusion of two solutes

Passive Transport



Passive Transport

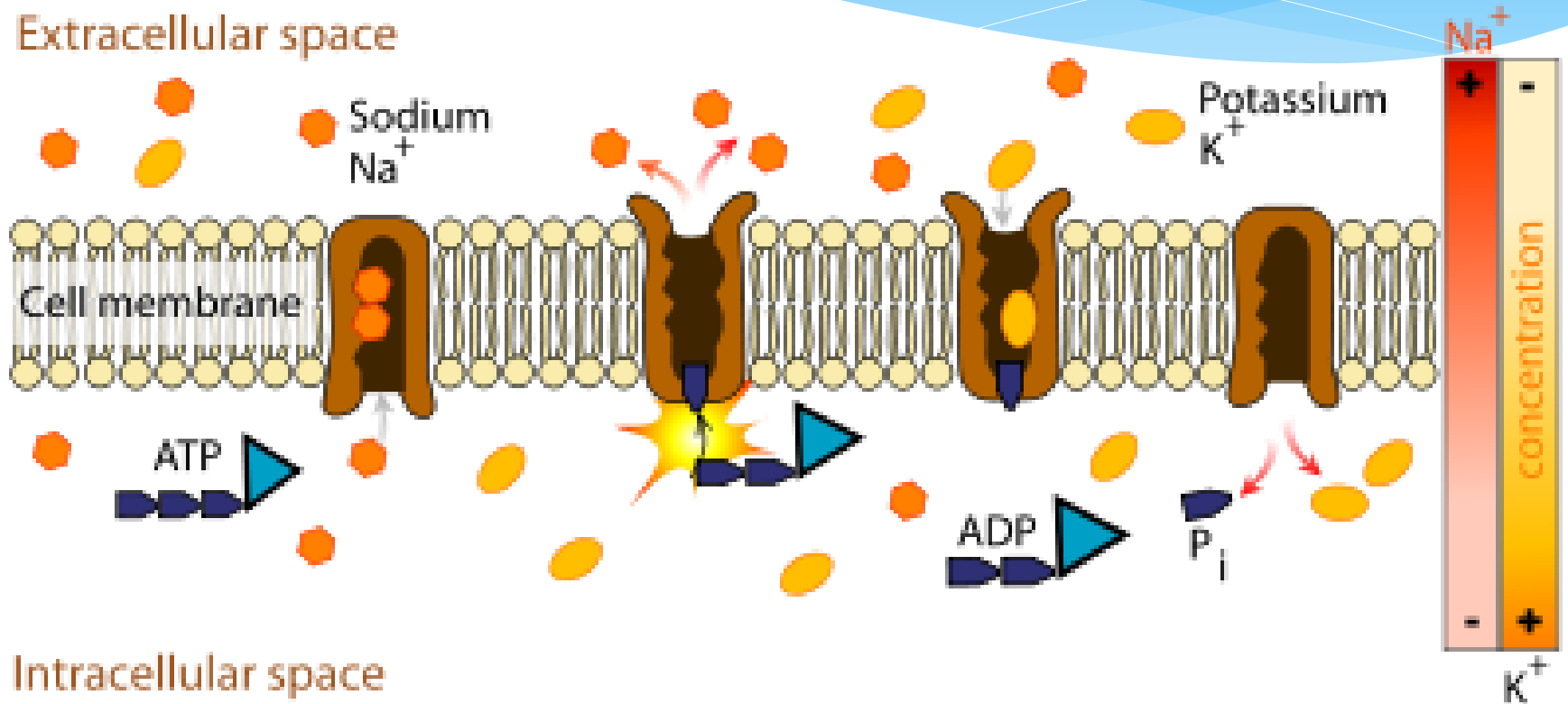
Osmosis: water movement across membrane



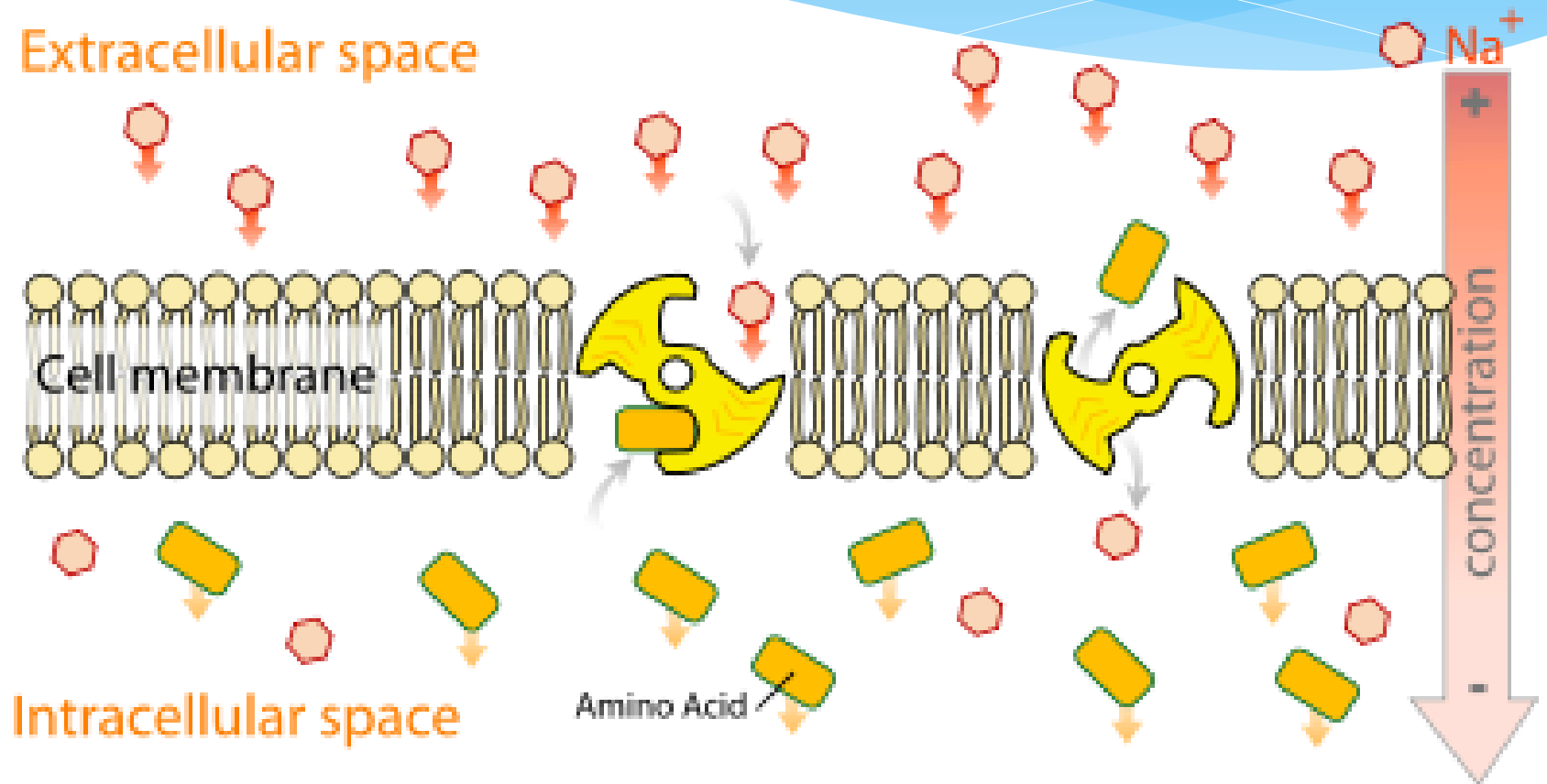
Active Transport

- * Molecules move from LOW concentration to HIGH concentration
- * Energy is required (ATP)
 - * Against concentration gradient (uphill)
- * Protein pumps
- * Exocytosis
- * Endocytosis

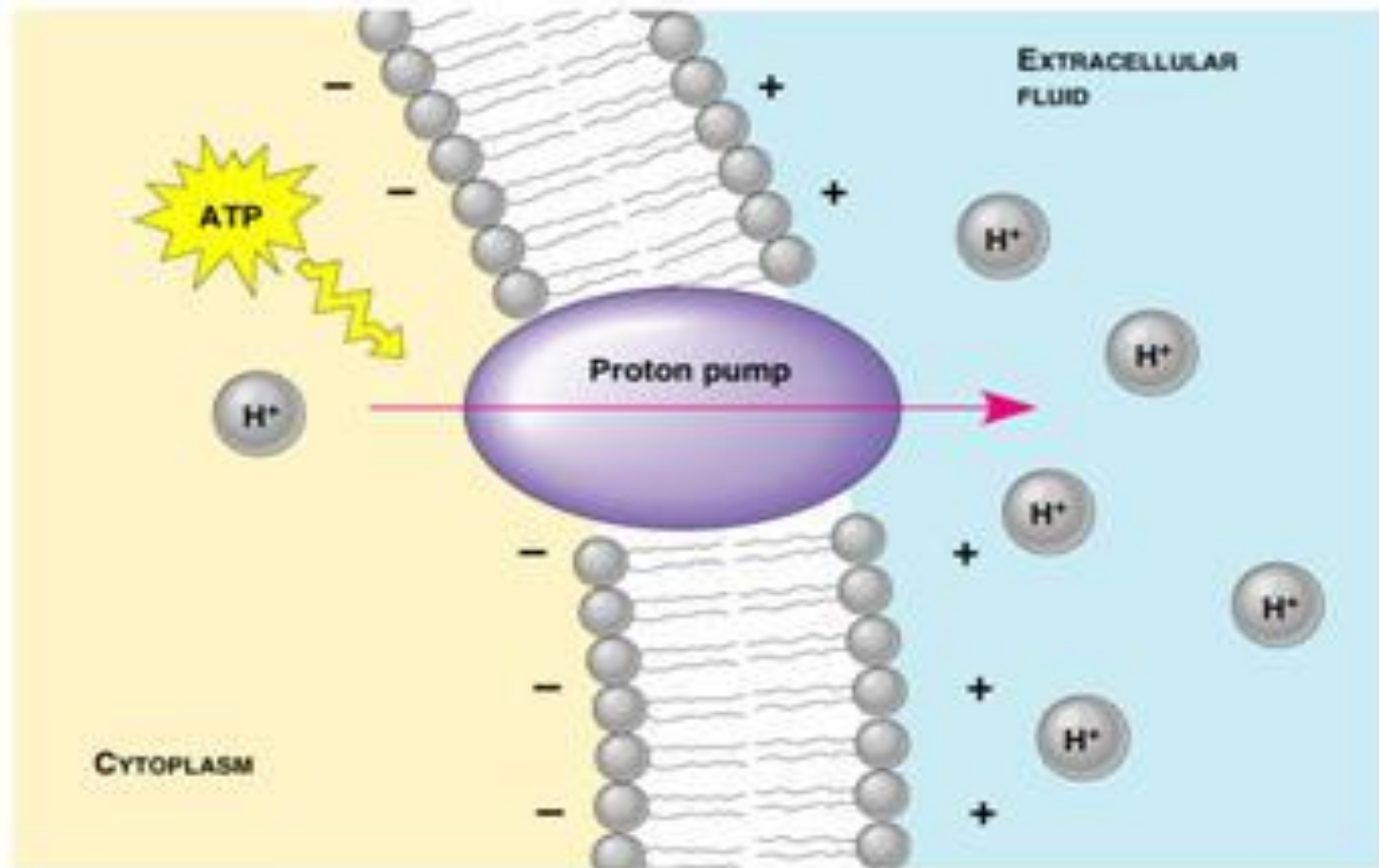
Active Transport



Active Transport

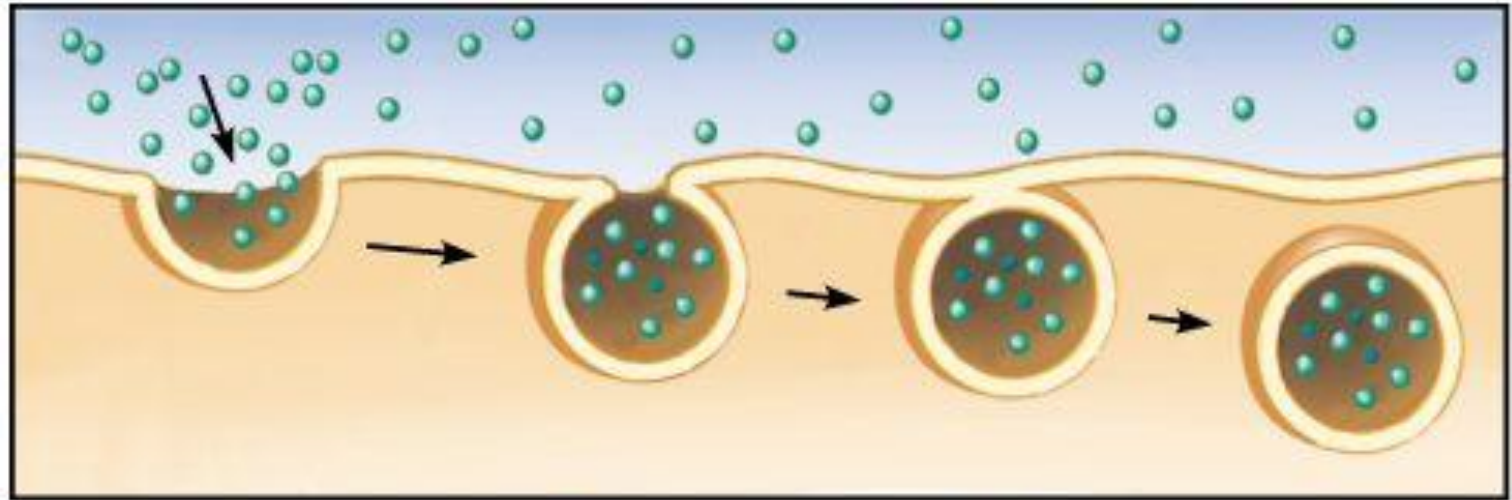


Active Transport

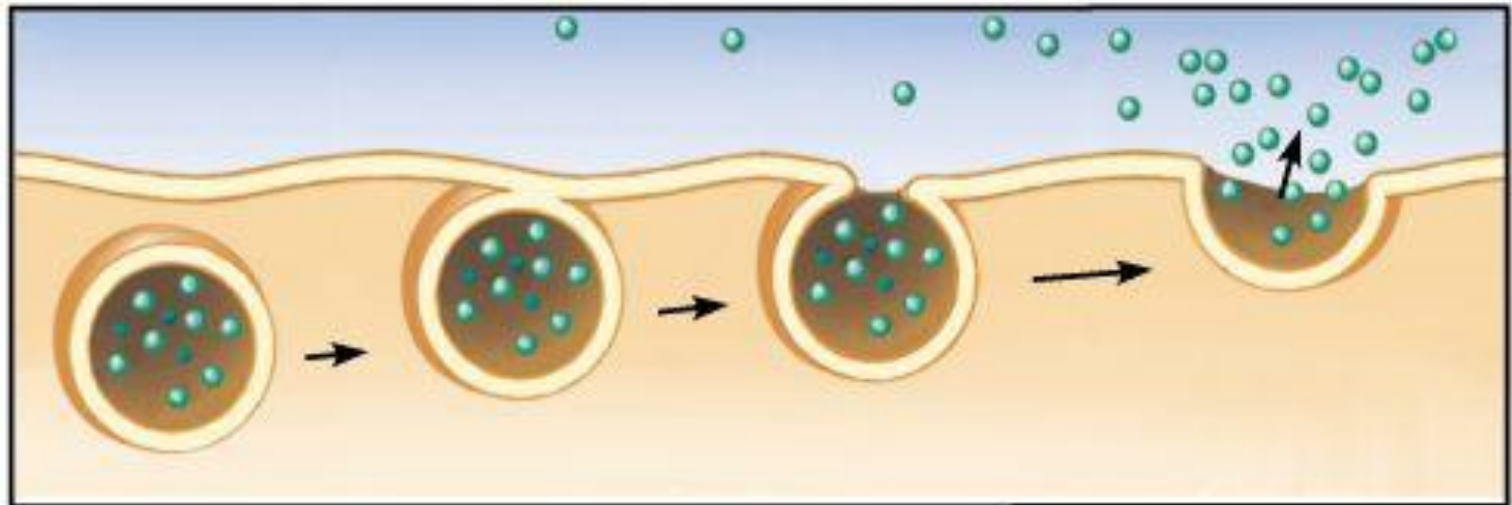


Active Transport

Endocytosis



Exocytosis



Transport animation

- * http://www.wiley.com/college/boyer/0470003790/animations/membrane_transport/membrane_transport.htm