Active Transport vs. Passive Transport

both processes move things in & out of cells

both processes occur in living things

requires E to move subst	no E required to move subst
moves against concent gradient	moves down concentration gradient
moves from low-->high	moves from high-->low concent
moves against natural flow	moves with the natural flow
must be able to make E to move substances	passage is due to inherent E present w/in substances (e-)
can ONLY occur w/in living systems	can occur in living, nonliving, & artificial systems
examples: endocytosis, exocytosis, protein pumps	ex: diffusion, osmosis, facilitated diffusion

Passive Transport

already discussed 2 examples: diffusion & osmosis

facilitated diffusion: molecules move down concentration gradient w/help of transport proteins in cell membrane

- helps diffusion proceed faster
- transport proteins can form channel to help ferry substance across membrane

examples of Active Transport:

Exocytosis: moves things out of cells by
putting substance into vesicle
the vesicle moves to cell membrane, fuses with cell membrane, is released to outside of cell
these items are moved by bulk transport because they are too large to get in and out of the cell by diffusion
examples are proteins, hormones, polysaccharides

Endocytosis: moves things inside cells
again, these substances are too large to move in by diffusion
substance comes to cell membrane, membr pinches inward around substance, closes around it forming vesicle, then vesicle moves inside cell

both of these require E due to movement of cell membrane

Protein pumps: proteins embedded in cell membrane actively move ions either inside or outside of cell
ex. Na+ and K+ pump in nerve cells

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