

WHAT TO KNOW ABOUT HOMEOSTASIS & TRANSPORT

What are the reasons why molecules can't move across membranes without help?

TOO BIG, HAVE AN ELECTRIC CHARGE, NEED TO MOVE LOW TO HIGH, NEED TO MOVE FASTER

when molecules move from a high to low concentration it is called moving DOWN the concentration gradient.

When molecules move from a low to high concentration it is called moving AGAINST the concentration gradient.

When the concentration of a solute is the same throughout a system, the system is at EQUILIBRIUM.

What kind of transport DOES NOT require energy? PASSIVE

what kind of transport requires energy? ACTIVE |

Which CELL PART provides the energy for active transport? MITOCHONDRIA

Which MOLECULE is produced by mitochondria and provides energy for transport? ATP

Movement of molecules FROM a region of HIGH concentration TO a region of LOW concentration = DIFFUSION

Which MOLECULE is produced by mitochondria and provides energy for active transport? = ATP

The movement of molecules FROM a region of HIGH concentration TO a region of LOW concentration with the HELP of carrier proteins or channels = FACILITATED DIFFUSION

Membrane proteins that move molecules across membranes by attaching, changing shape, and flipping to the other side like a

revolving door = CARRIER PROTEINS

Membrane proteins that help molecules across membranes by providing a tunnel = CHANNELS

The movement of WATER molecules from HIGH concentration to LOW concentration across a cell membrane = OSMOSIS

Membrane proteins that help water molecules move across membranes = AQUAPORINS

Facilitated diffusion with aquaporins is also called OSMOSIS

Small membrane sacs used for transport = VESICLES

Which kinds of transport are passive? DIFFUSION & FACILITATED DIFFUSION

Which kinds of transport are active?

PROTON PUMP, Na⁺-K⁺ PUMP, ENDOCYTOSIS (Phagocytosis & Pinocytosis) EXOCYTOSIS

Which kind of transport doesn't use any energy or need any helper? DIFFUSION

Which kinds of transport use MEMBRANE PROTEINS to help molecules across membranes?

FACILITATED DIFFUSION (with CARRIERS, ION CHANNELS, or AQUAPORINS)

PUMPS (PROTON, or SODIUM-POTASSIUM)

Which kinds of transport use VESICLES to help molecules across membranes?

ENDOCYTOSIS (PHAGOCYTOSIS & PINOCYTOSIS)

EXOCYTOSIS

Tell a molecule that moves across membranes using diffusion = OXYGEN & CARBON DIOXIDE

Tell a molecule that moves across membranes using FACILITATED DIFFUSION WITH A CARRIER = GLUCOSE

Tell a molecule that moves across membranes using ION CHANNELS = Na⁺, K⁺, Ca⁺⁺, Cl⁻

Tell a molecule that moves across membrane using OSMOSIS = WATER

Tell a molecule that moves across membranes using PROTON PUMPS = H⁺

Tell a molecule that moves Na^+ out of cells and K^+ into cells = Na^+ - K^+ PUMP

Tell a molecule that moves across membranes using PHAGOCYTOSIS = LARGE MOLECULES & WHOLE CELLS

Tell a molecule that moves across membranes using PINOCYTOSIS = SMALL MOLECULES & FLUIDS

Tell the kind of transport used by Golgi bodies for export = EXOCYTOSIS

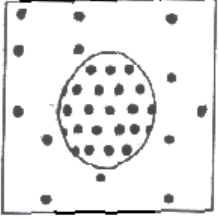
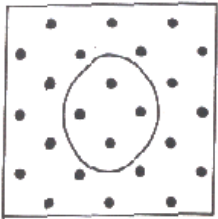
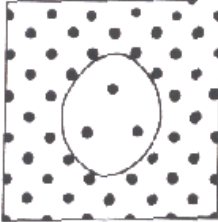
Tell the kind of transport used by white blood cells to digest bacteria = ENDOCYTOSIS (PHAGOCYTOSIS)

Pressure caused by water moving across cell membranes = OSMOTIC PRESSURE

The substance that is dissolved in liquid to make a solution = SOLUTE

The liquid a substance is dissolved in to make a solution = SOLVENT

EX: When making Kool-Aid, water is the solvent and the Kool-Aid and sugar are the solutes

		
HYPOTONIC	ISOTONIC	HYPERTONIC
Solute concentration OUTSIDE is LOWER THAN inside	Solute concentration OUTSIDE is EQUAL to inside	Solute concentration OUTSIDE is GREATER THAN inside
Water will ENTER cell	Water in = water out	Water will LEAVE cell
ANIMAL CELLS- will swell and burst	ANIMAL and PLANT cells will STAY THE SAME SIZE	ANIMAL CELLS- will shrink smaller
PLANT CELLS- osmotic pressure will INCREASE CELL WALL keeps it from bursting		PLANT CELLS- osmotic pressure will DECREASE Cell membrane pulls away from cell wall