CSUSM
STEM Success Center

Osmosis and Tonicity

Definitions

Solvent: A fluid in which a substance is dissolved
Solute: A substance dissolved in solvent
Solution: The combination of solute and solvent
Semipermeable membrane: A membrane that only allows some particles to move through it.
Osmosis: The movement of water across a semipermeable membrane from a higher solute concertation to an area of lower solute concentration.
Tonicity: Is the ability of an extracellular solution to allow water in and out of the cell via osmosis. It is used to explain how one solution compares to another solution, related to osmolarity.
Osmolarity: The total concentration of the solutes in the solution.

Visual of Osmosis

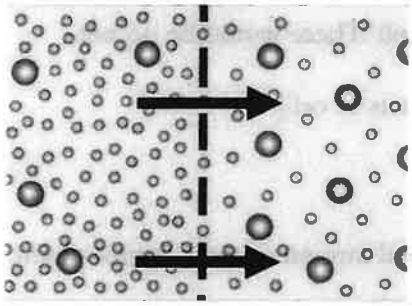


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The dotted black line represents the semi-permeable membrane and as shown the blue circles represent the solvent and the red circles represent the solute. The blue circles move from low solute concentration to an area of higher solute concentration.

Visual of Tonicity

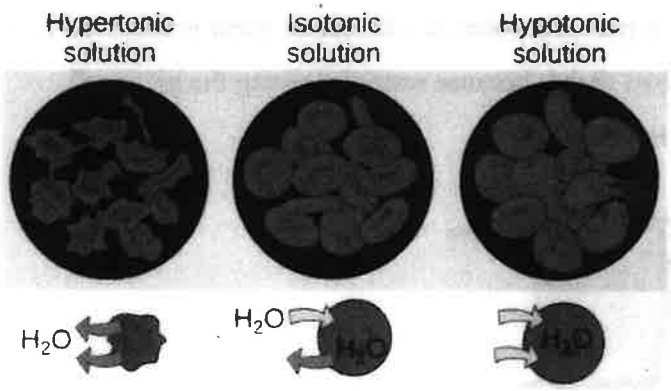


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