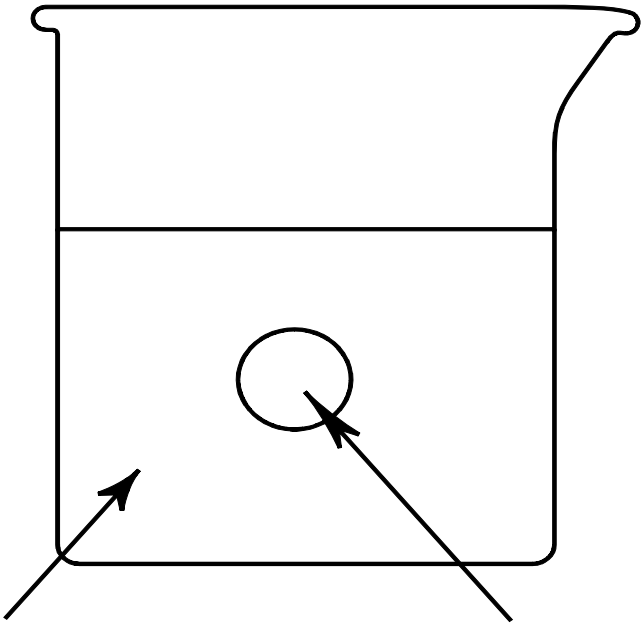
Hypotonic Solution



Solution:

Salt concentration that is less than that of the cell (ie. 0.1% or 0.0% salt)
Water concentration that is greater than that of the cell (ie. 99.9% or 100%)

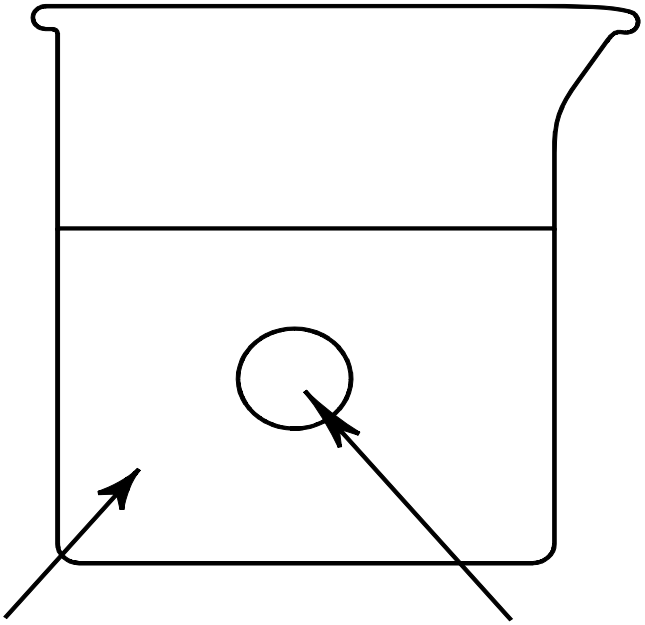
Cell:

Salt concentration is usually 1.0%
Water concentration is usually 99.0%

What happens and why...

Since the water concentration outside of the cell is greater than the water concentration inside the cell, water will enter the cell by simple diffusion. The cell will expand and possibly burst generally called cytolysis or hemolysis for red blood cells.

Isotonic Solution



Solution:

Salt concentration that is exactly equal to that of the cell (ie. 1.0 % salt)

Water concentration that is exactly equal to that of the cell (ie. 99.0%)

Cell:

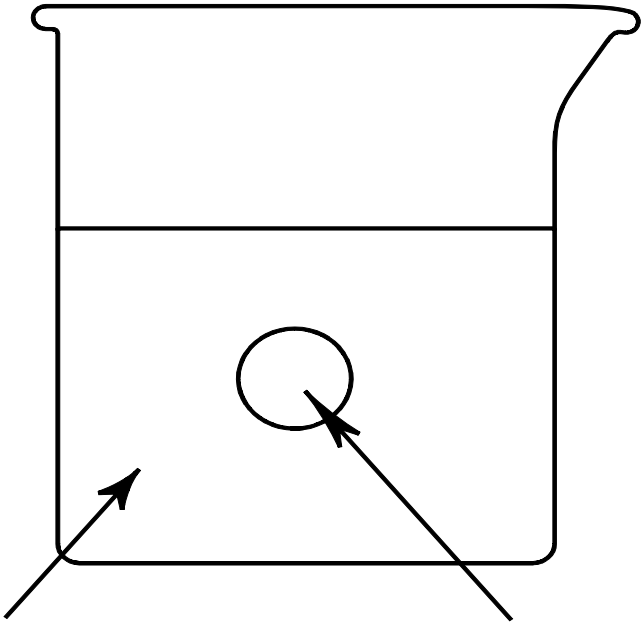
Salt concentration is usually 1.0%

Water concentration is usually 99.0%

What happens and why...

Since the water concentration outside of the cell is exactly equal to the water concentration inside the cell, water will move in and out WITHOUT ANY NET CHANGE in the cell by simple diffusion. The cell will not change in size and is said to be in equilibrium.

Hypertonic Solution



Solution:

Salt concentration that is greater than that of the cell
(ie. 2.0% or 10.0% salt)
Water concentration that is less than that of the cell
(ie. 98.0% or 90%)

Cell:

Salt concentration is usually 1.0%
Water concentration is usually 99.0%

What happens and why...

Since the water concentration outside of the cell is less than the water concentration inside the cell, water will leave the cell by simple diffusion. The cell will shrink and distort generally called plasmolysis or for red blood cells - crenation.