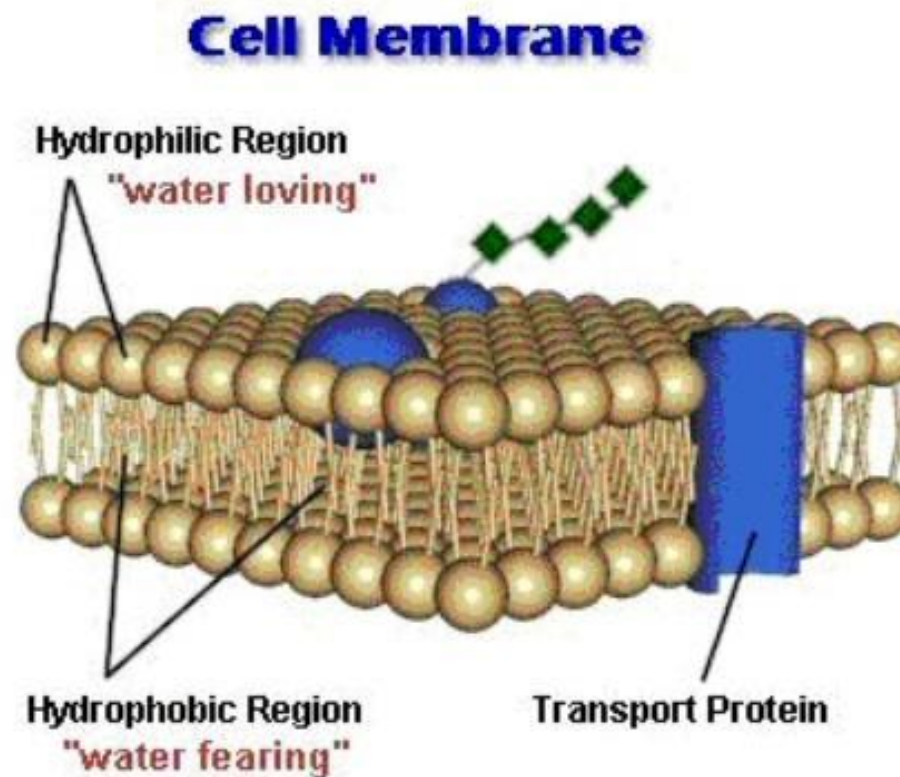


Chapter 7-3

The Cell Membrane; Active & Passive Transport

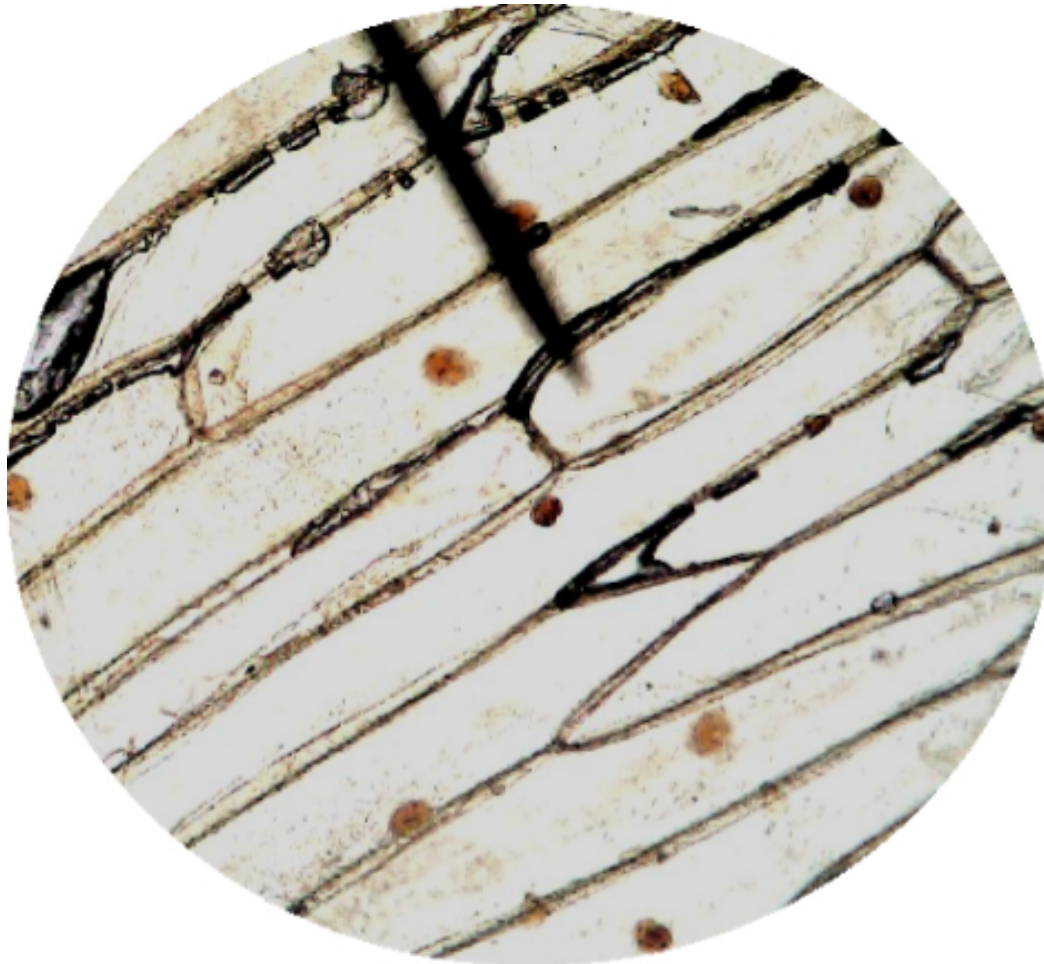


The Cell Membrane

- Gatekeeper
- Regulates what comes in and out of the cell
- Main components: proteins and phospholipids

Cell Wall

- Found only in plant cells and bacteria cells
- Main function is support



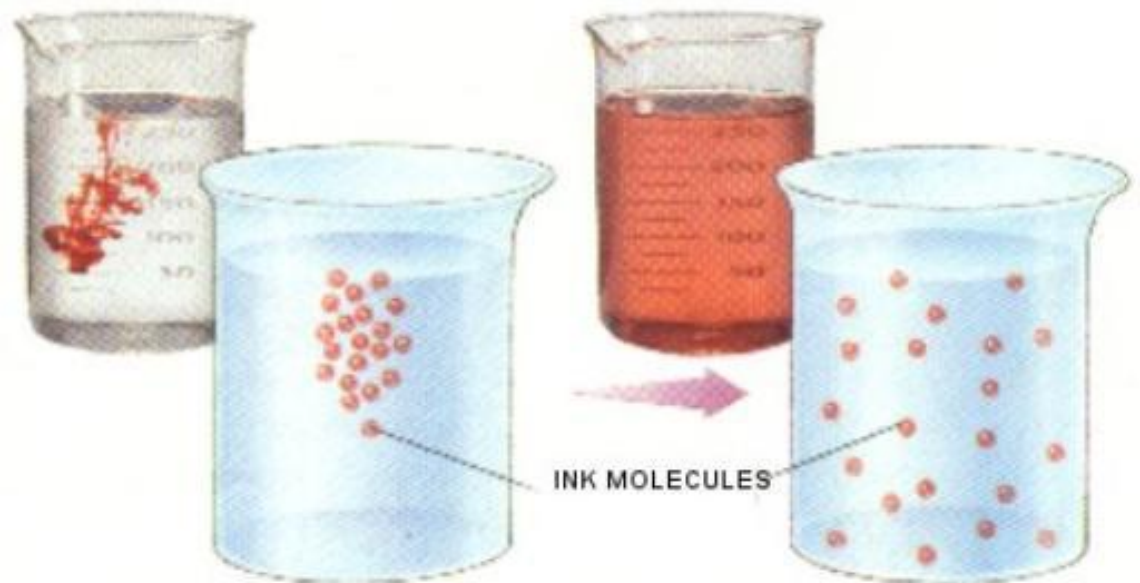
Solutions

- Mixtures of substances
- Ex. Salt + water; sugar + water



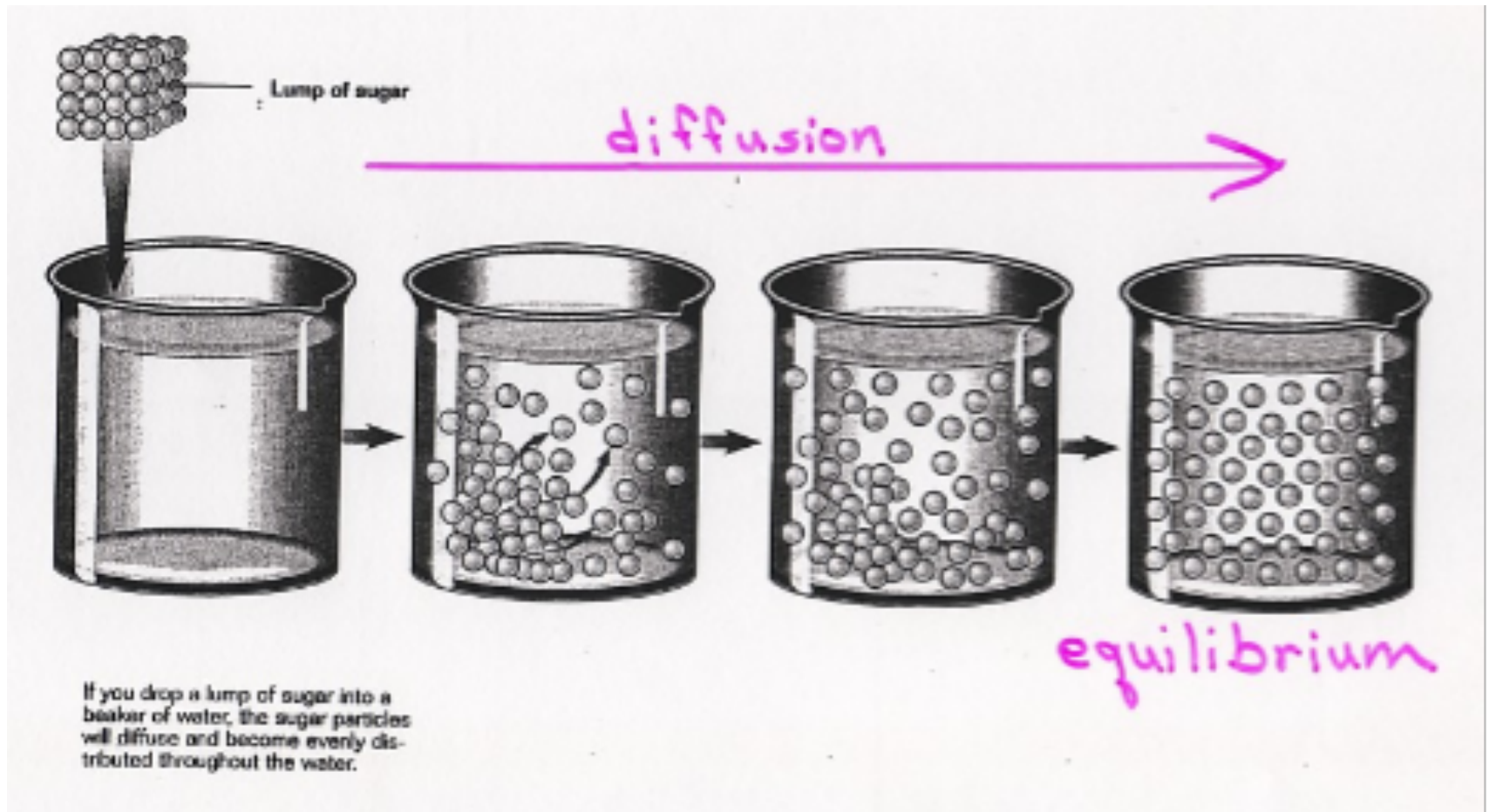
Diffusion

- The movement of molecules from an area of high concentration to an area of low concentration
- Molecules tend to “spread out”
- Requires no energy



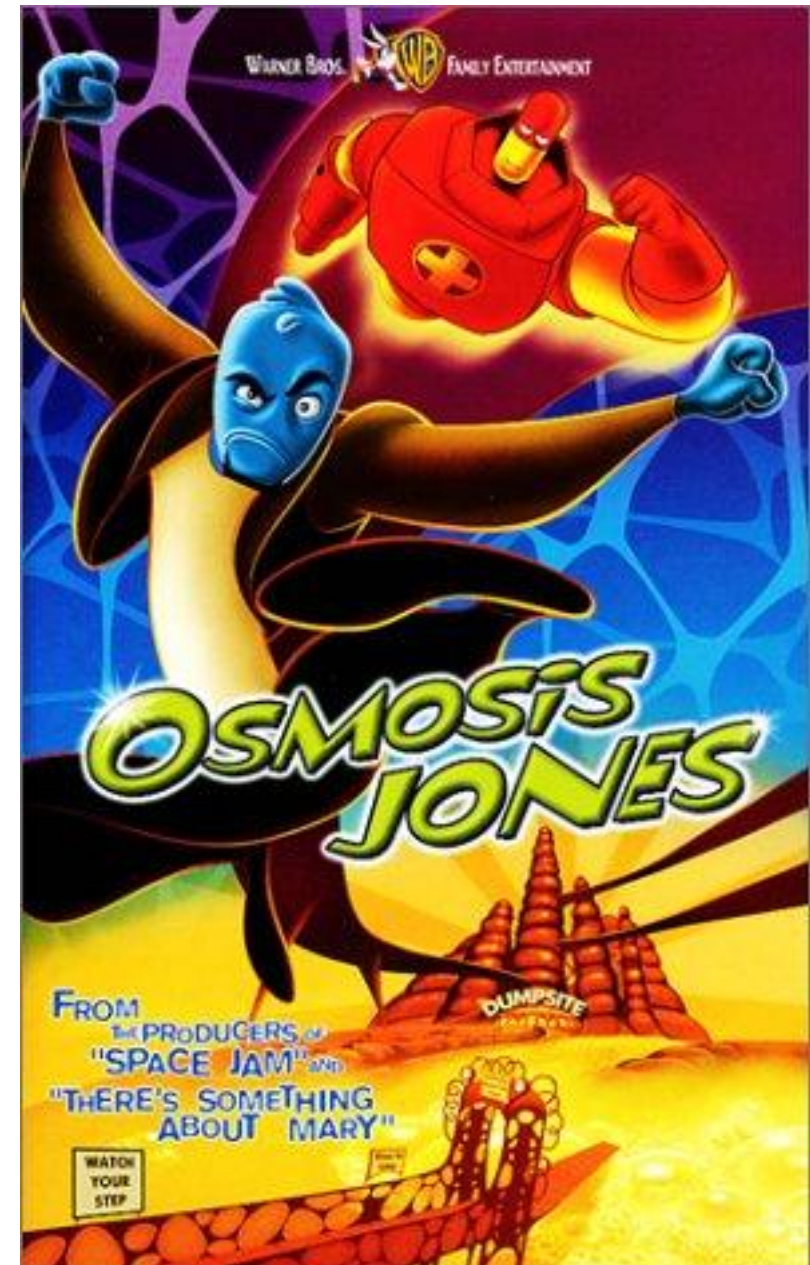
Equilibrium

When molecules are evenly spread throughout a space



Osmosis

- The diffusion of water across a membrane
- The cell membrane is selectively permeable
- Watch the [animation](#)

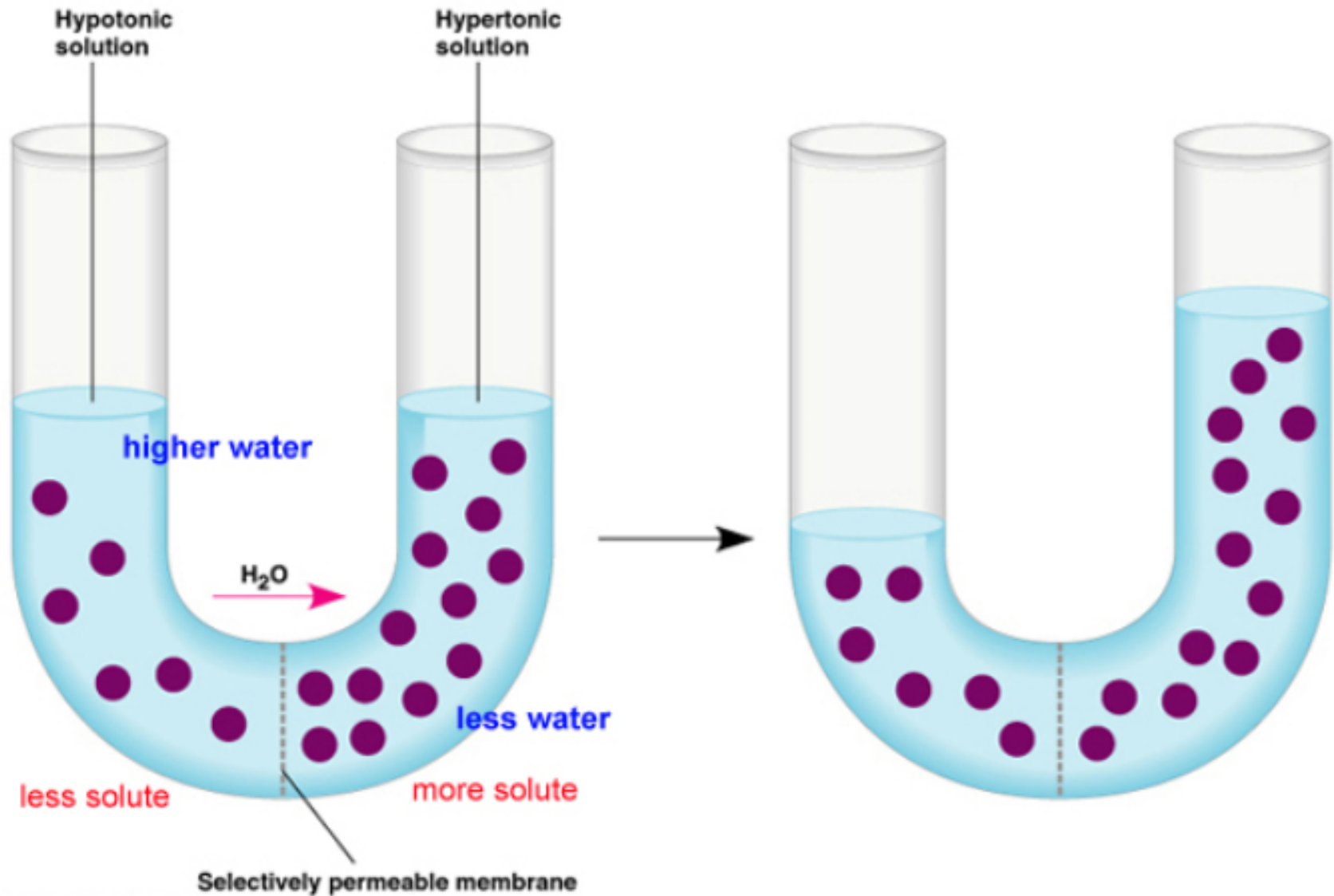


Rule for Osmosis

SALT SUCKS

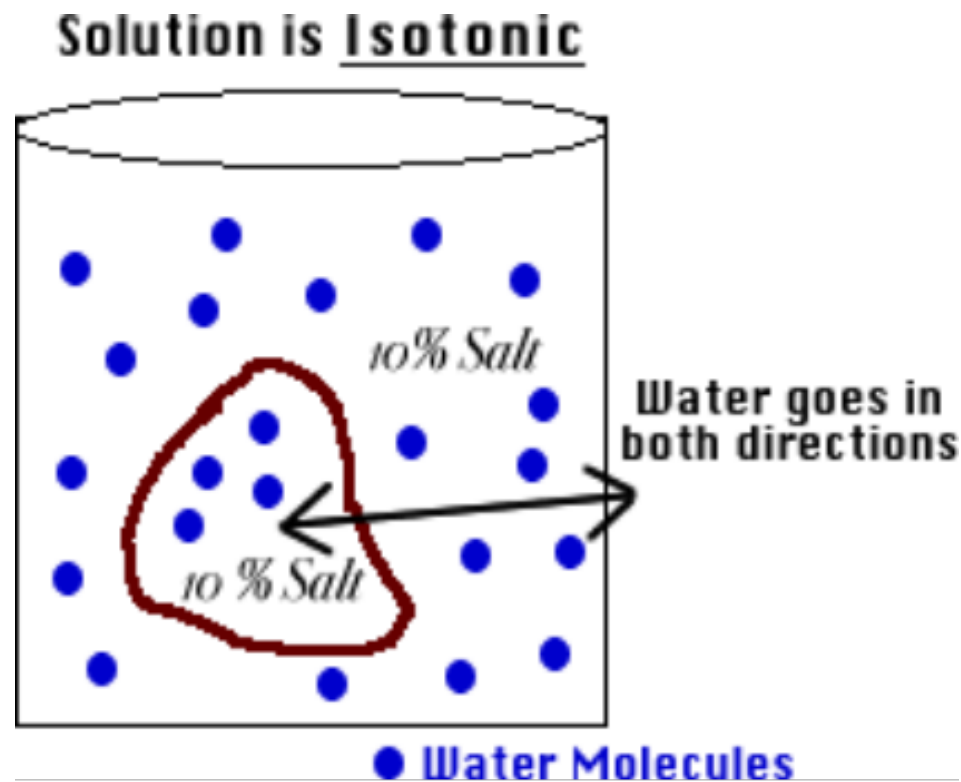
If the area outside the cell has more salt
– then water will be sucked out of the
cell

U - Tubes



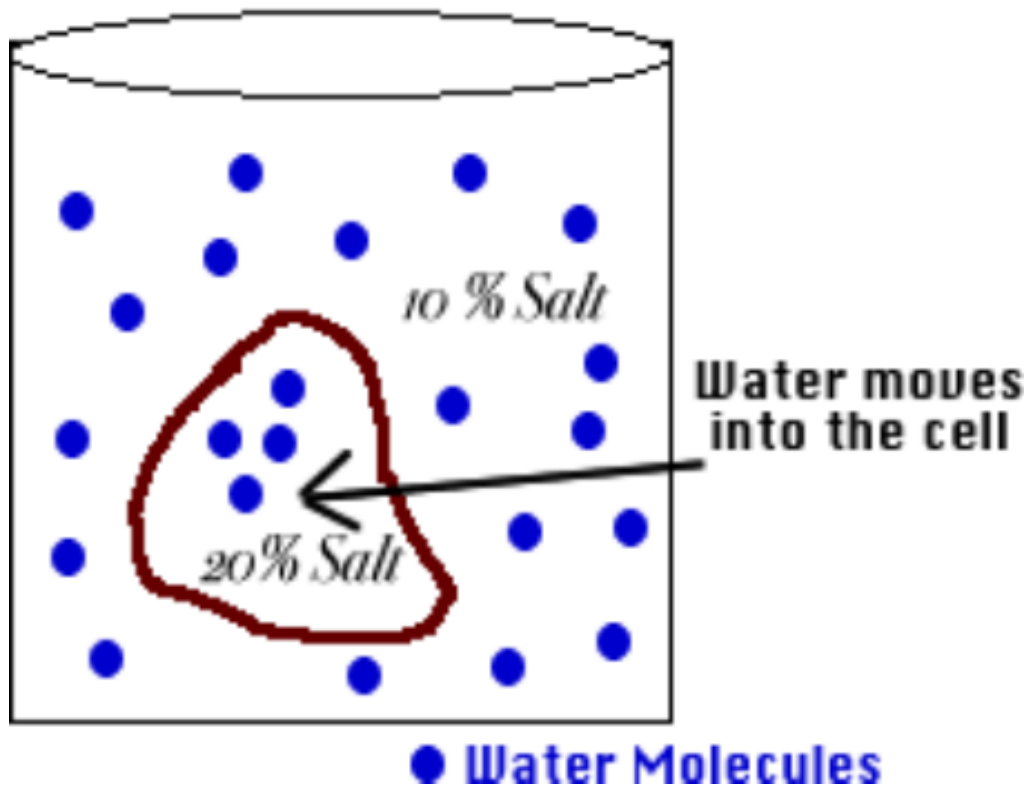
Cells In Different Solutions

"ISO" means the same

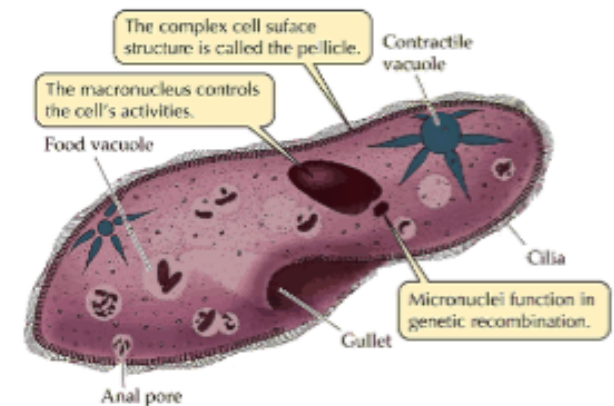


Hypo = less

Solution is Hypotonic



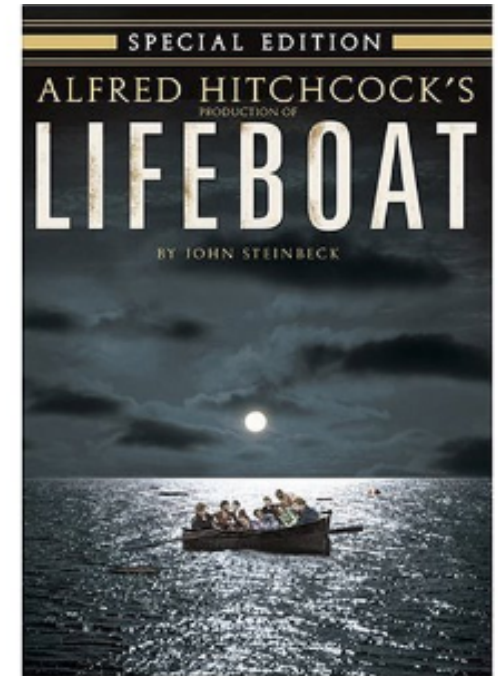
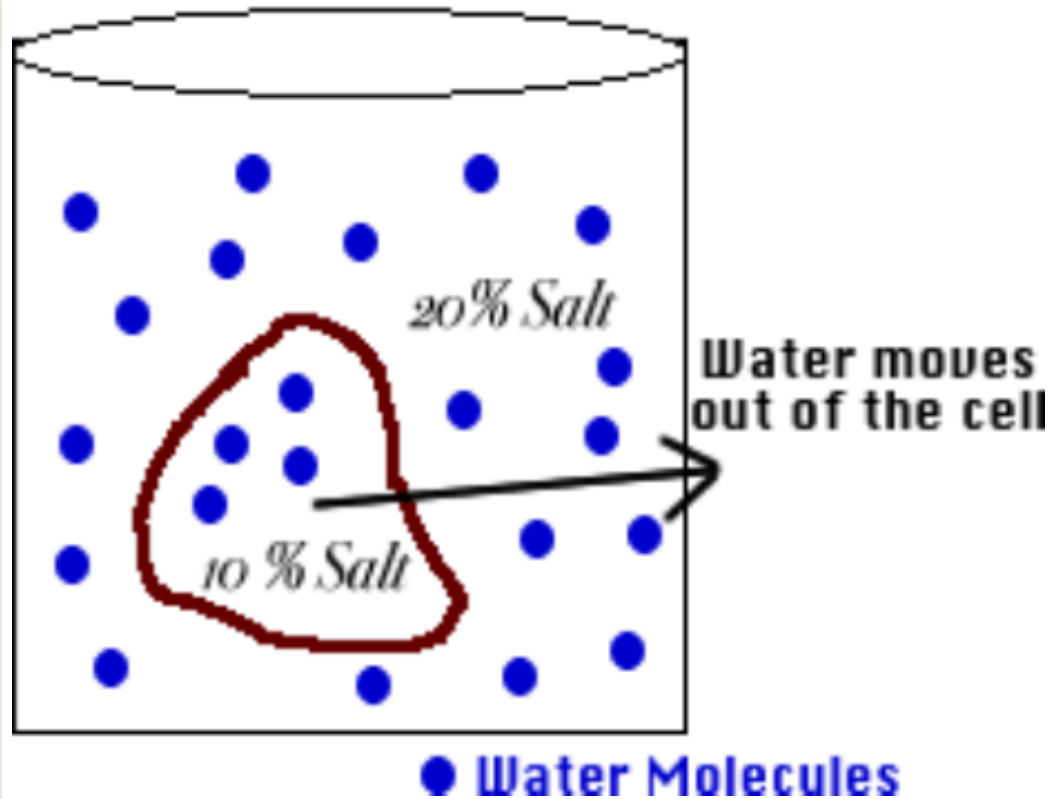
Cell may burst,
or organelles
called
“contractile
vacuoles”
remove excess



Hyper = more

Cell will shrink or die,
plants wilt

Solution is Hypertonic

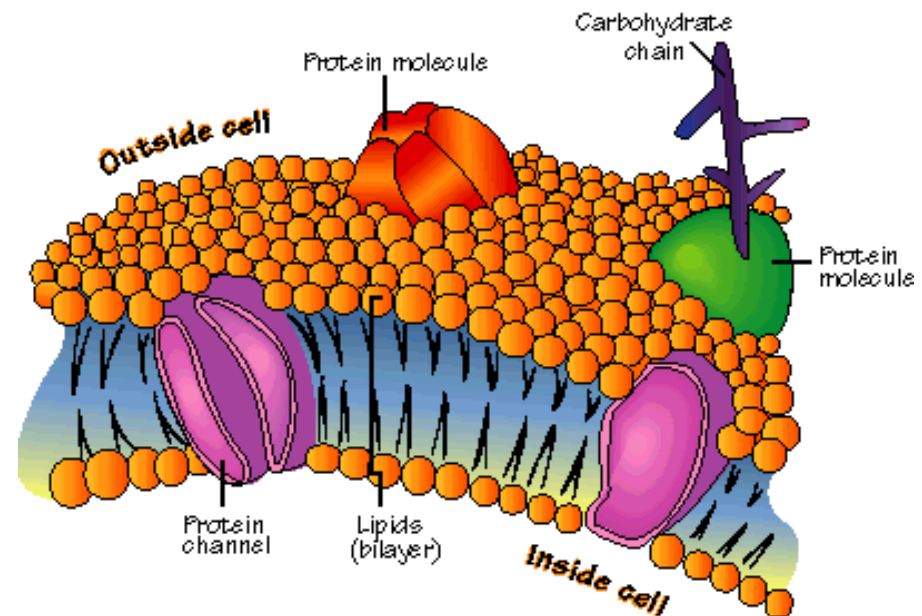


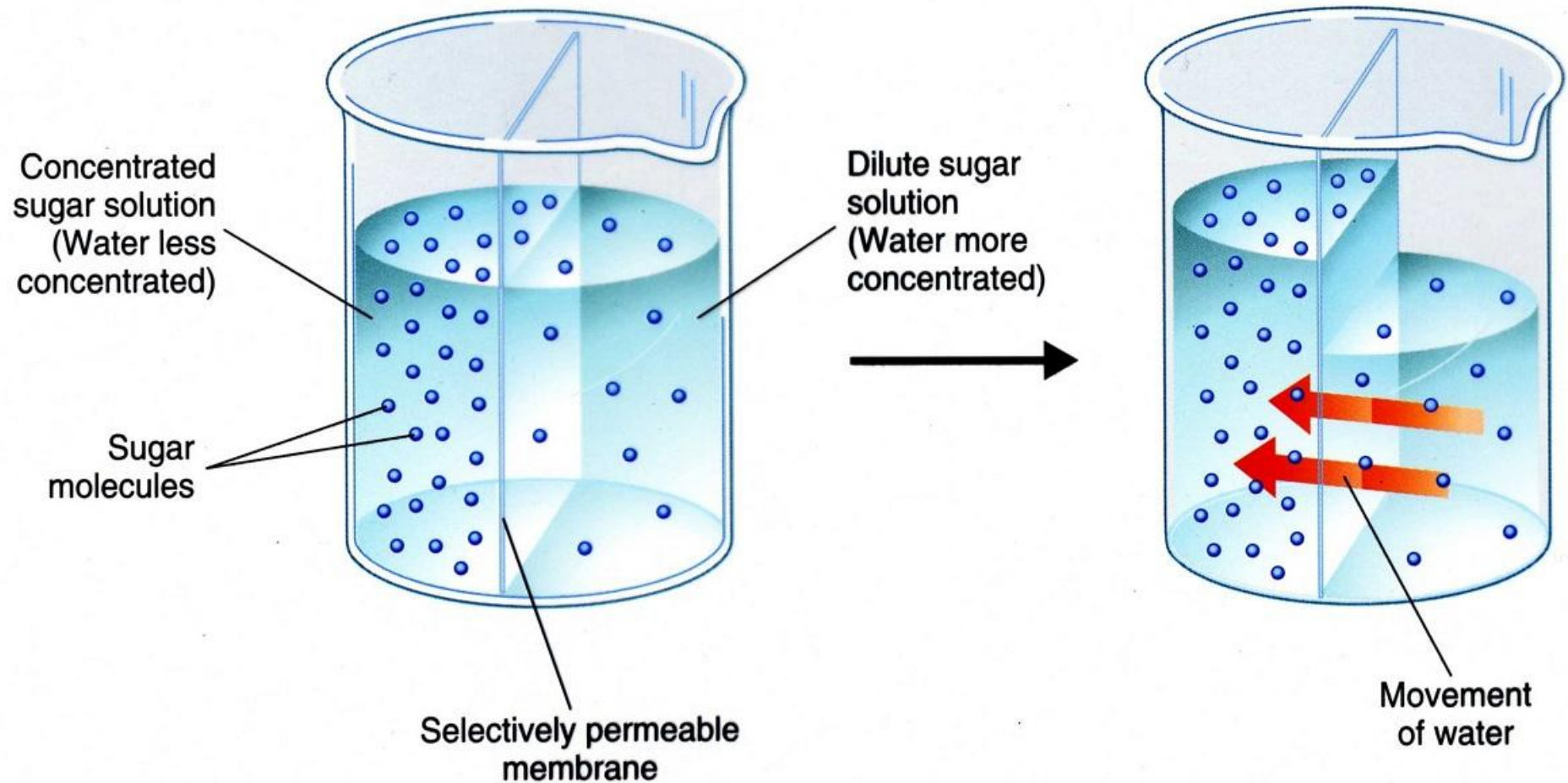
Why is it dangerous
to drink sea water?

Why does pouring
salt on a slug kill it?

Passive Transport

- Requires no energy
- Diffusion & Osmosis
- Facilitated Diffusion – carrier proteins “help” molecules across the membrane





1. Why is the water moving toward the left side of the beaker?
2. Which side of the beaker is hypertonic?
3. What is the solute?

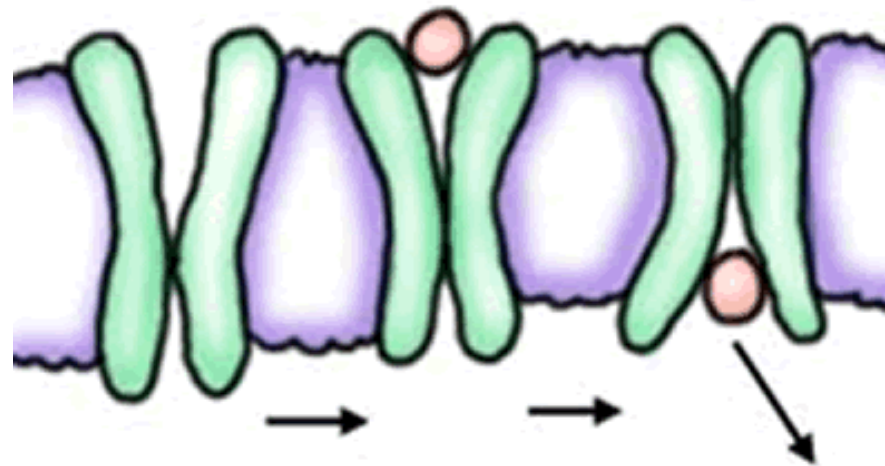
WORD LIST

- Diffusion
- Osmosis
- Selectively permeable
- Equilibrium
- Solution
- Facilitated Diffusion
- Hypertonic
- Hypotonic
- Isotonic
- Contractile Vacuole
- Passive Transport

Know all of these
words for the test

ACTIVE TRANSPORT

- Requires the cell to use energy
- Proteins or Pumps found in the membrane move materials across



ONE METHOD OF TRANSPORT
THROUGH THE MEMBRANE

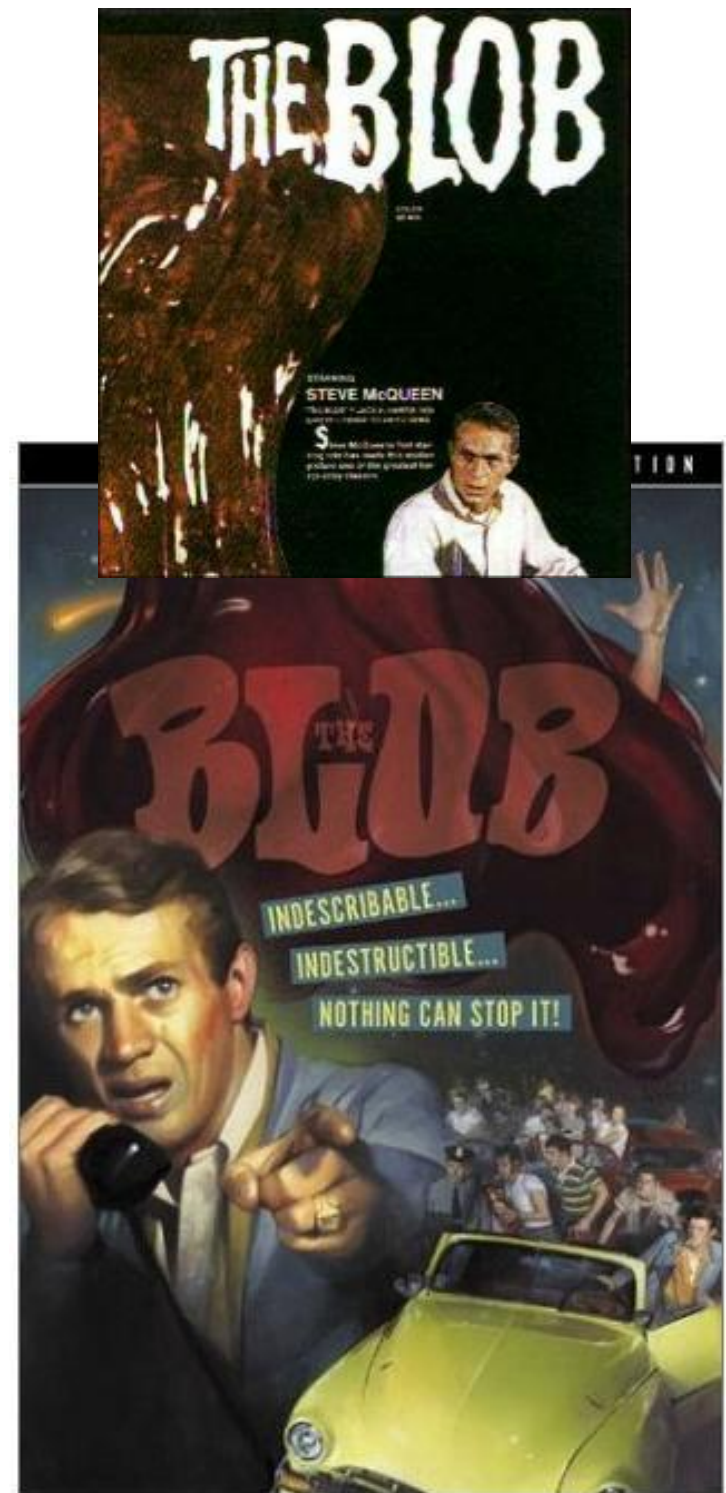
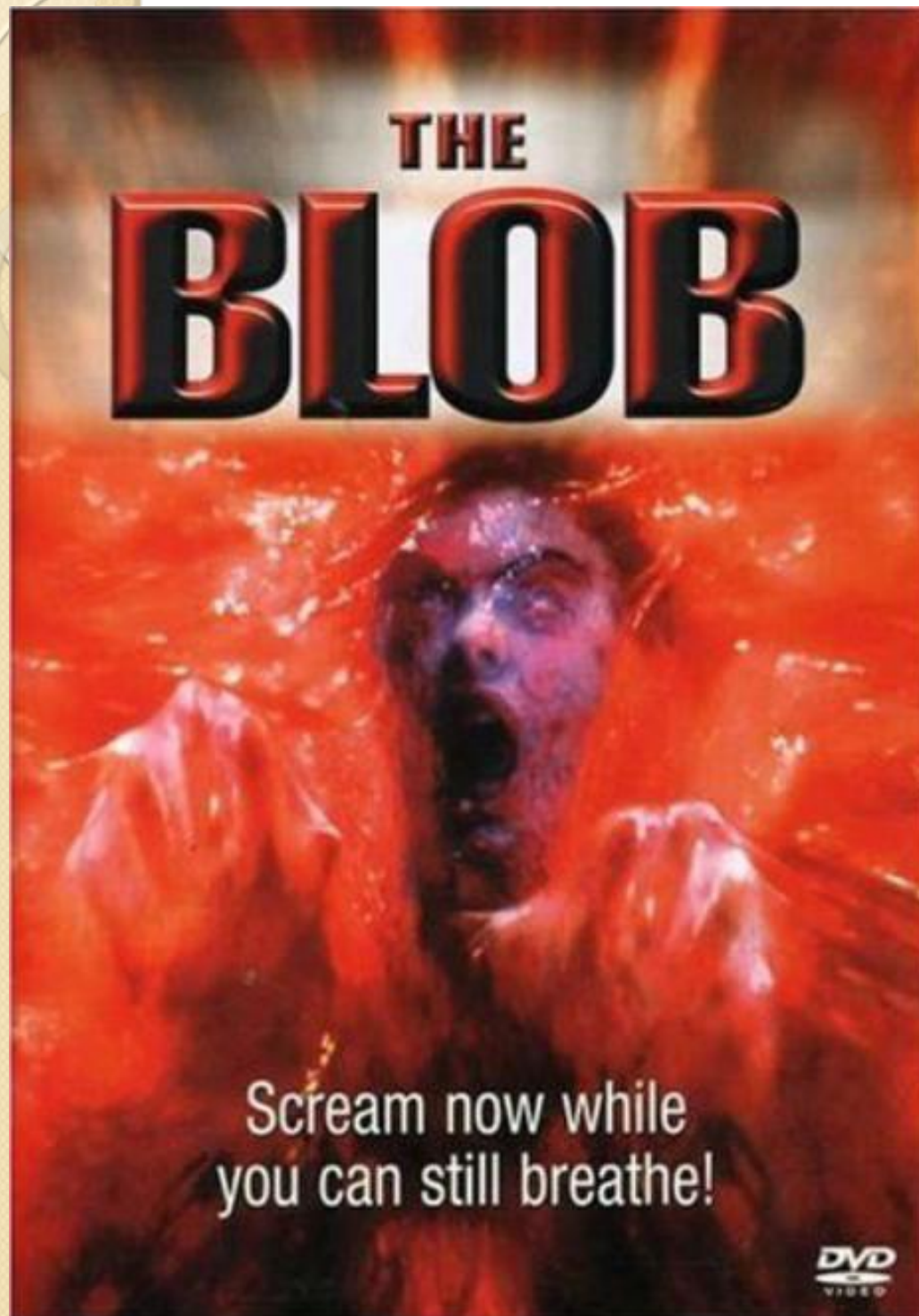
Endocytosis

- Taking “in” large molecules by the cell

Endocytosis

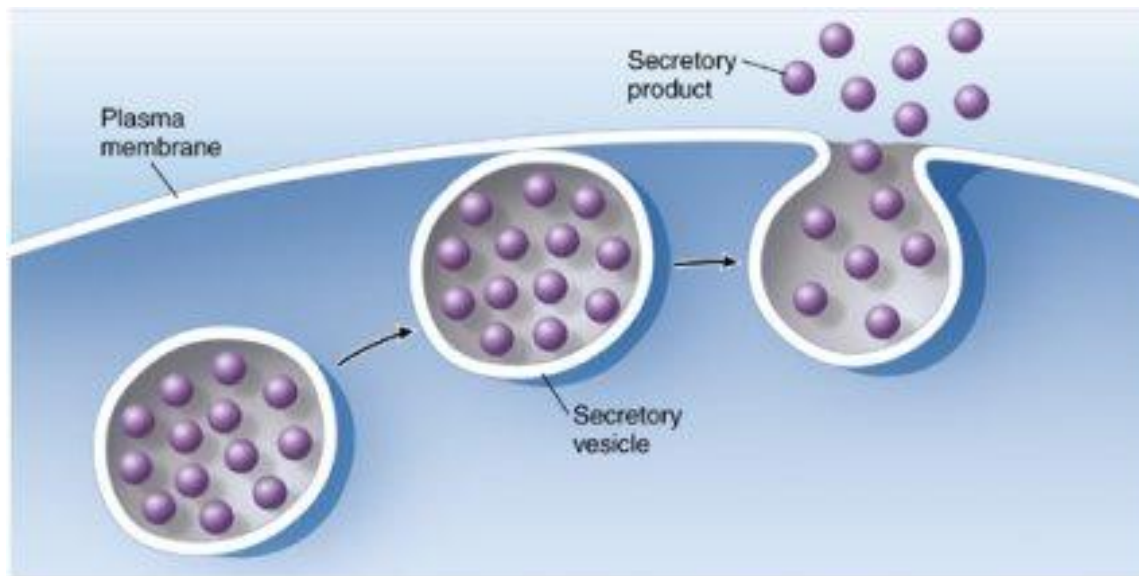


- Phagocytosis = “phood”, taking in food particles
- Pinocytosis = liquid substances



EXOCYTOSIS

Removing large particles (waste) from the cell
Stuff “exits” the cell



(a)



(b)

Add to Word List

- Active Transport
- Endocytosis
- Phagocytosis
- Pinocytosis
- Exocytosis
- Protein Pump