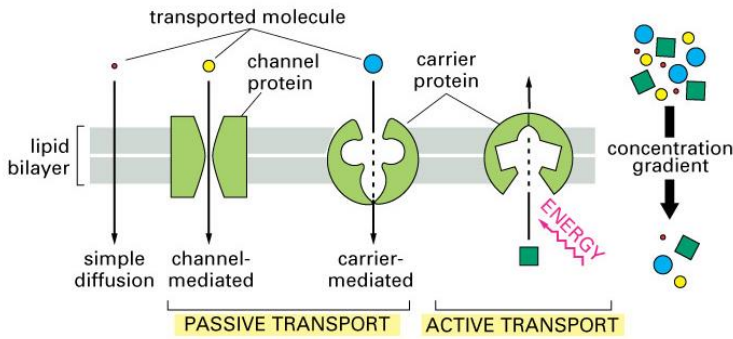


# HOW DO SUBSTANCES MOVE IN AND OUT OF CELLS?



Selectively Permeable:

Passive Transport:

Active Transport:

## MECHANISMS FOR TRANSPORT ACROSS CELL MEMBRANES

Process	Diagram	How It Works	Example(s)
<b>PASSIVE PROCESSES</b>			
<b>DIFFUSION</b>			
Simple Diffusion		Random molecular motion produces net migration of molecules toward region of lower concentration	
<b>FACILITATED DIFFUSION</b>			
Protein channel (uniporter)			
Protein carrier (uniporter)			
<b>OSMOSIS</b>			
Aquaporins (uniporter)			

## OSMOSIS & TYPES OF SOLUTIONS

**Hypotonic**



cell expands

**Isotonic**



cell normal

**Hypertonic**



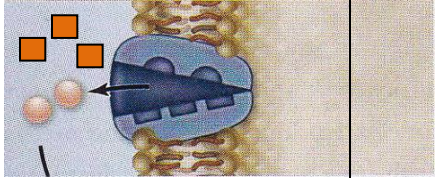
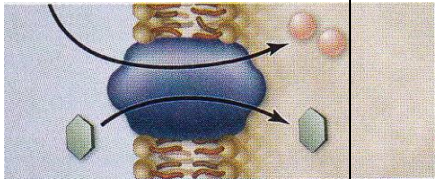
cell shrinks

# HOW DO SUBSTANCES MOVE IN AND OUT OF CELLS?

## ACTIVE PROCESSES

### ACTIVE TRANSPORT

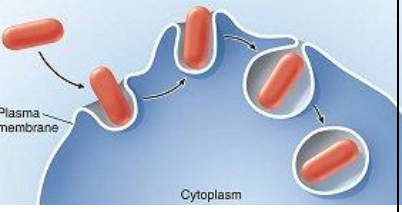
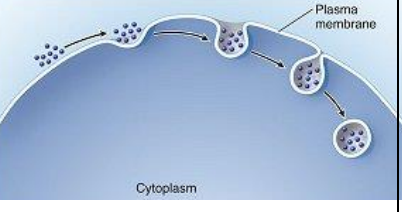
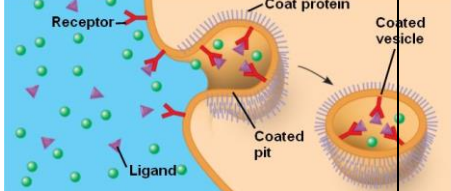
#### Protein carrier

<p>Na<sup>+</sup>/K<sup>+</sup> pump (antiporter)</p>			
<p>Coupled transport (symporter)</p>			

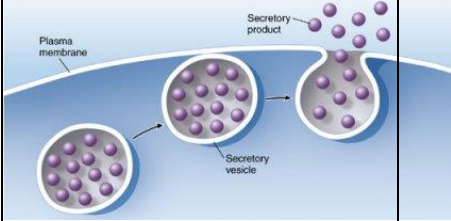
## BULK TRANSPORT

### ENDOCYTOSIS

#### Membrane vesicle

<p>Phagocytosis</p>			
<p>Pinocytosis</p>			
<p>Receptor-mediated endocytosis</p>			

### EXOCYTOSIS

<p>Exocytosis</p>			
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