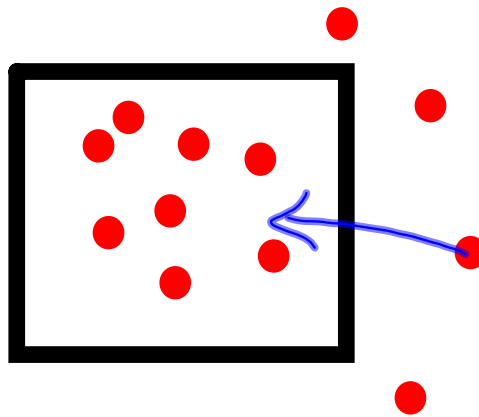


Chapter 4-2

Sometimes things need to be transported into the cell which might be against the concentration gradient.



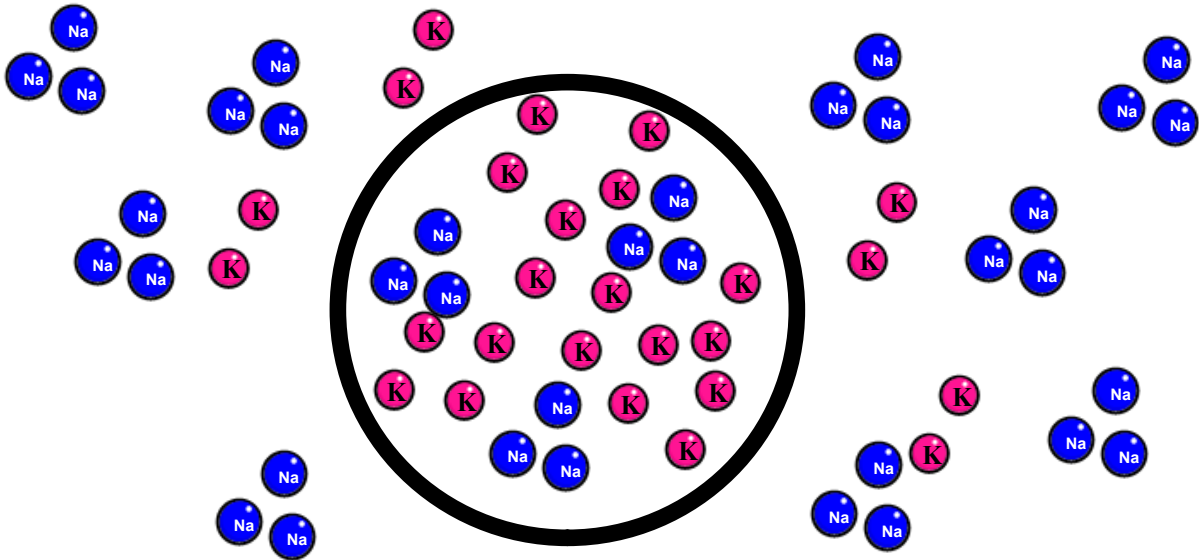
**Transporting against
the concentration
gradient is called**

active
transport.

**This requires
the cell to
use ATP
(energy)**



Sodium-Potassium Pump



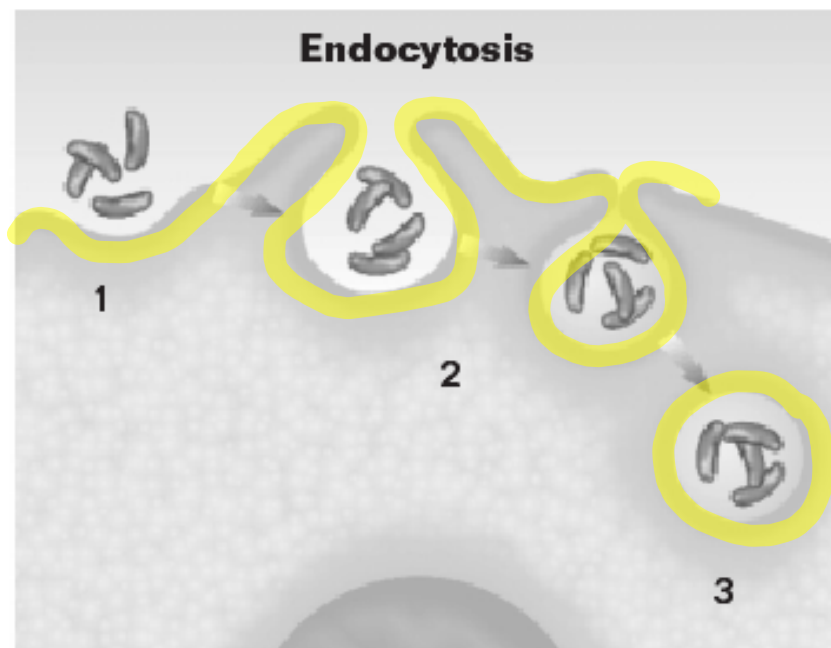
The sodium-potassium pump does two things:

1. Prevents sodium from accumulating inside the cell. Sodium diffuses into the cell.

2. Maintains the sodium and potassium gradients.

Many substances are too large to be transported by carrier protein.

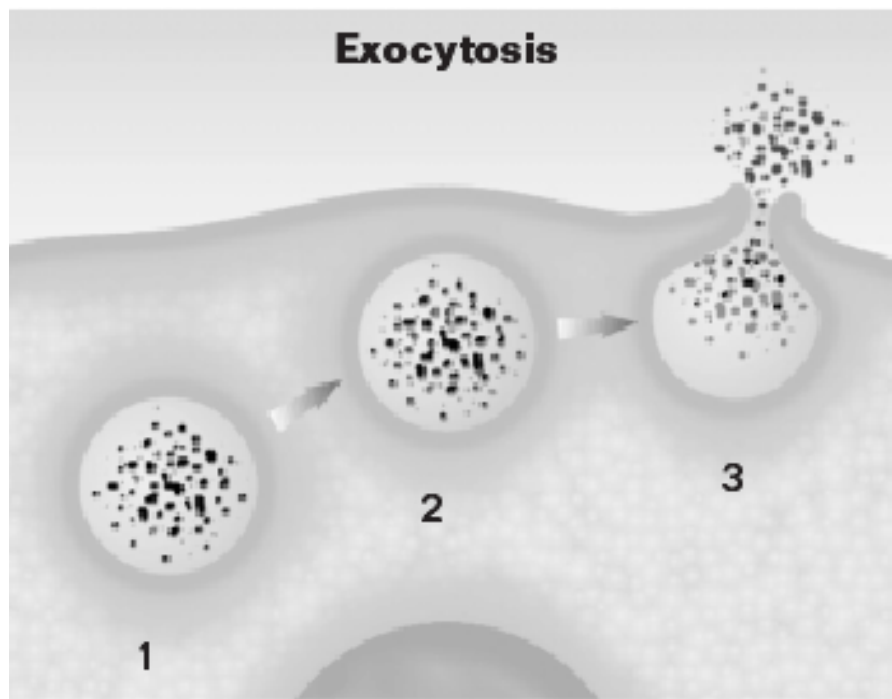
Endocytosis-
movement of a
Substance into a
cell by a vesicle.



BIO SOURCES
TRANSPARENCY MASTER

Exocytosis-
movement.
of a substance
by a vesicle to
the outside of
a cell

EXO = exit



BIO SOURCES
TRANSPARENCY MASTER

Receptor proteins do three things

**1. Can change
Permeability
making an ion
channel stay
open.**

**2. It can make Second
messengers that act as a
signal molecule in the
cytoplasm.**

**3. It can
activate
enzymes in cells
or trigger
other chemical
reactions.**