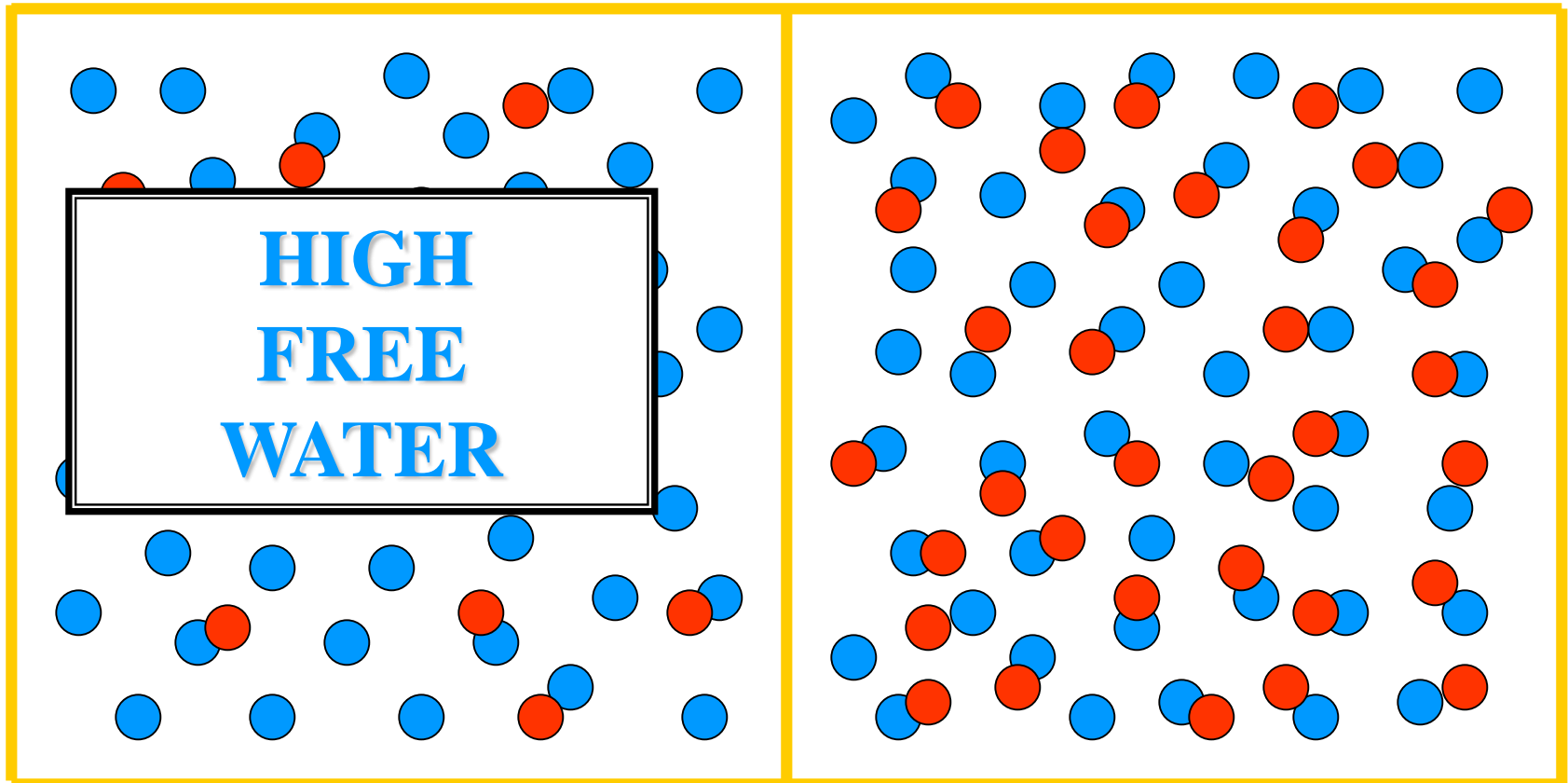


# OSMOSIS

**CELL A**

**CELL B**



● = WATER MOLECULE

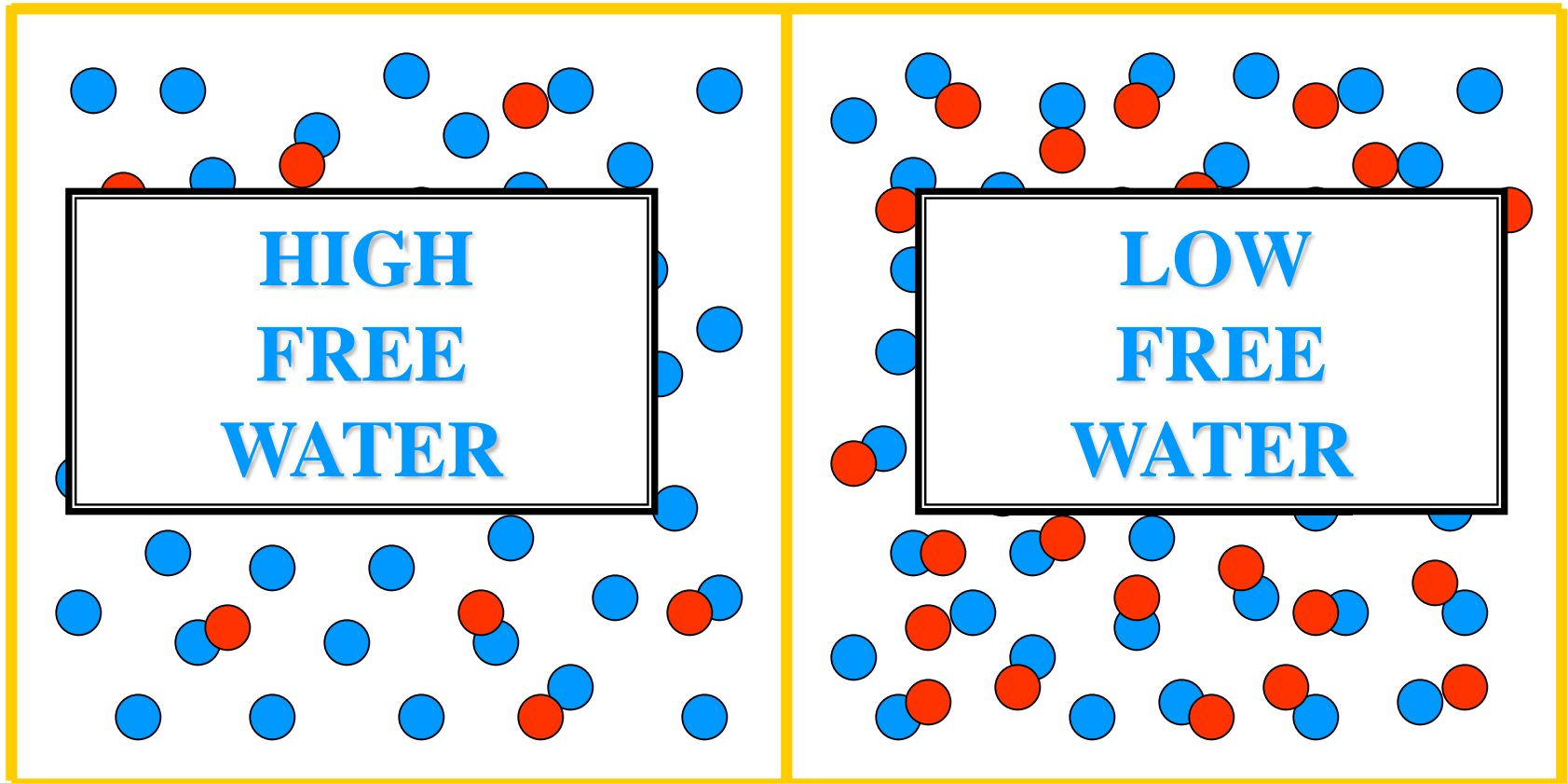
● = POLAR SOLUTE MOLECULE

— = MEMBRANE

# OSMOSIS

**CELL A**

**CELL B**



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

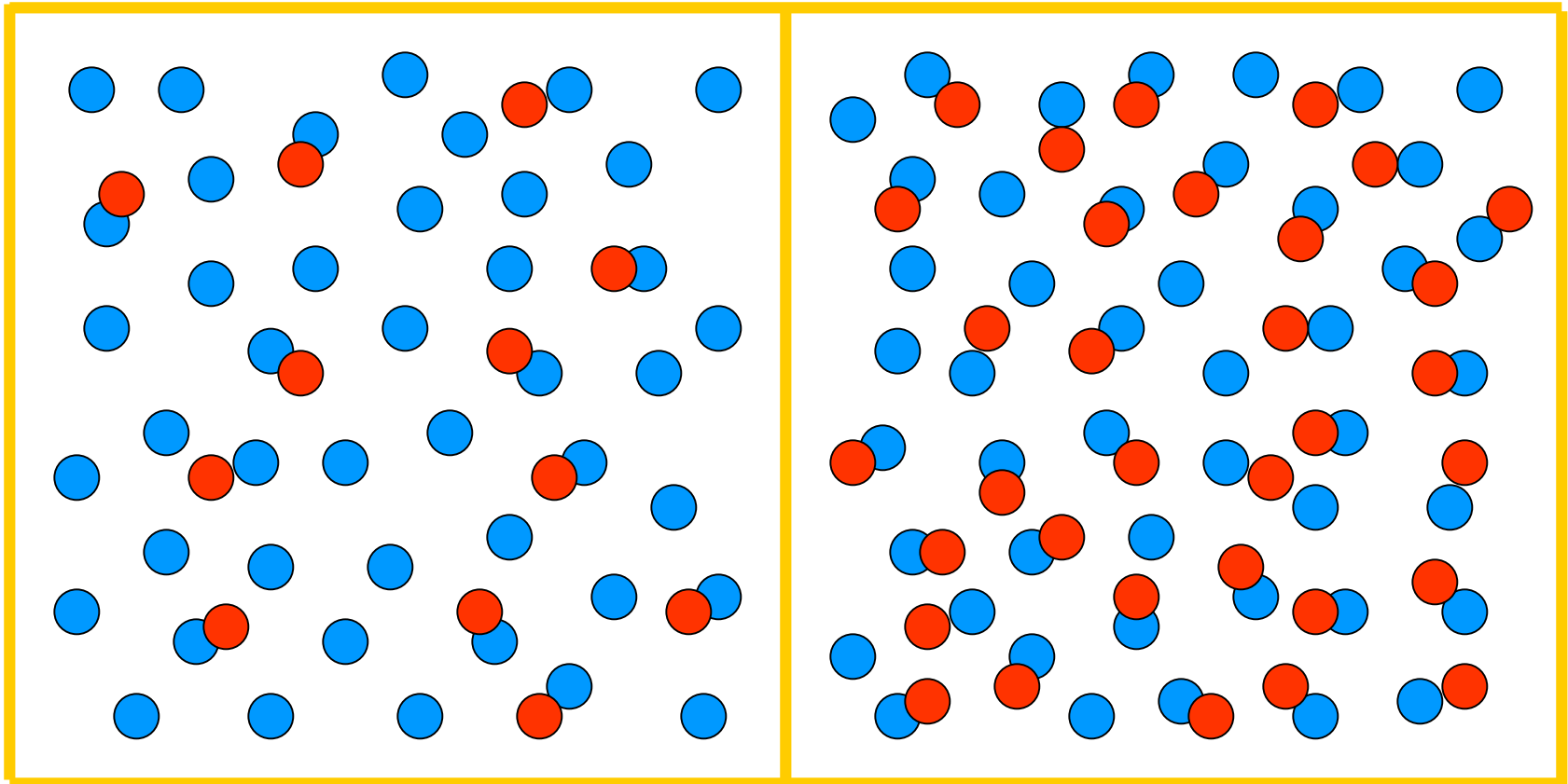
— = MEMBRANE

# OSMOSIS

CELL A

OSMOSIS

CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

— = MEMBRANE

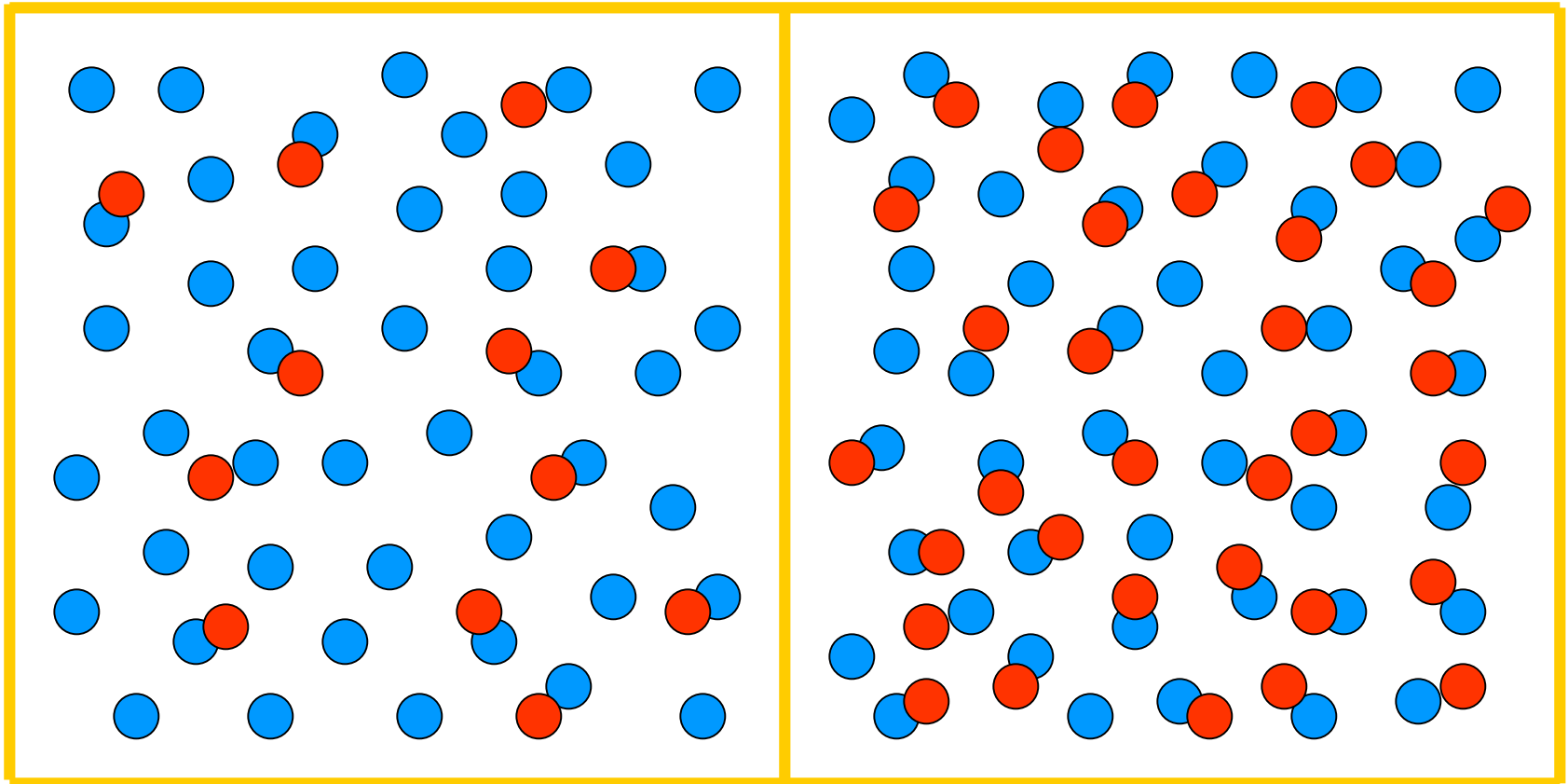


# OSMOSIS

CELL A

WATER VIA OSMOSIS

CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

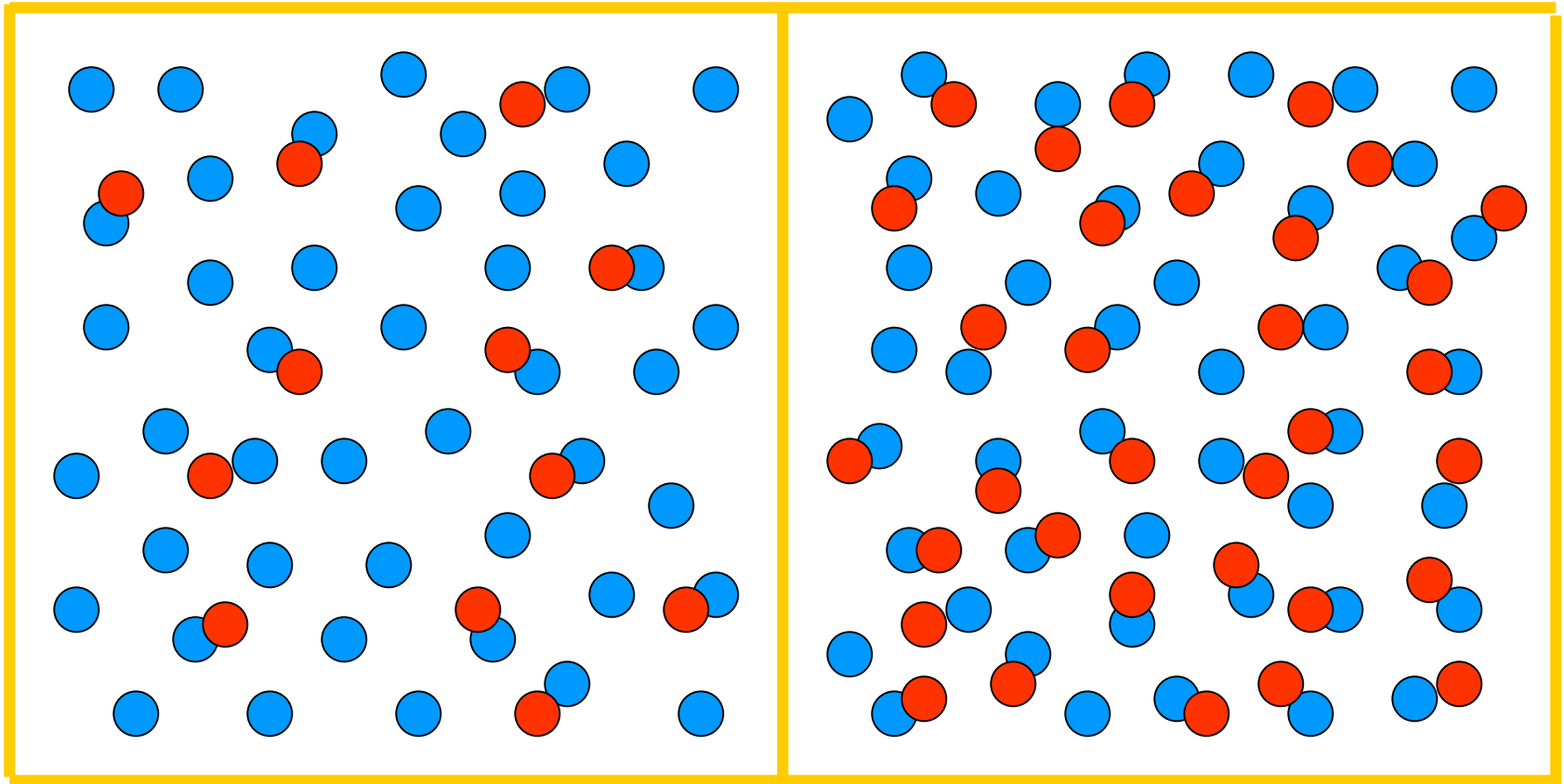
— = MEMBRANE

# OSMOSIS

CELL A

WATER VIA OSMOSIS

CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

— = MEMBRANE

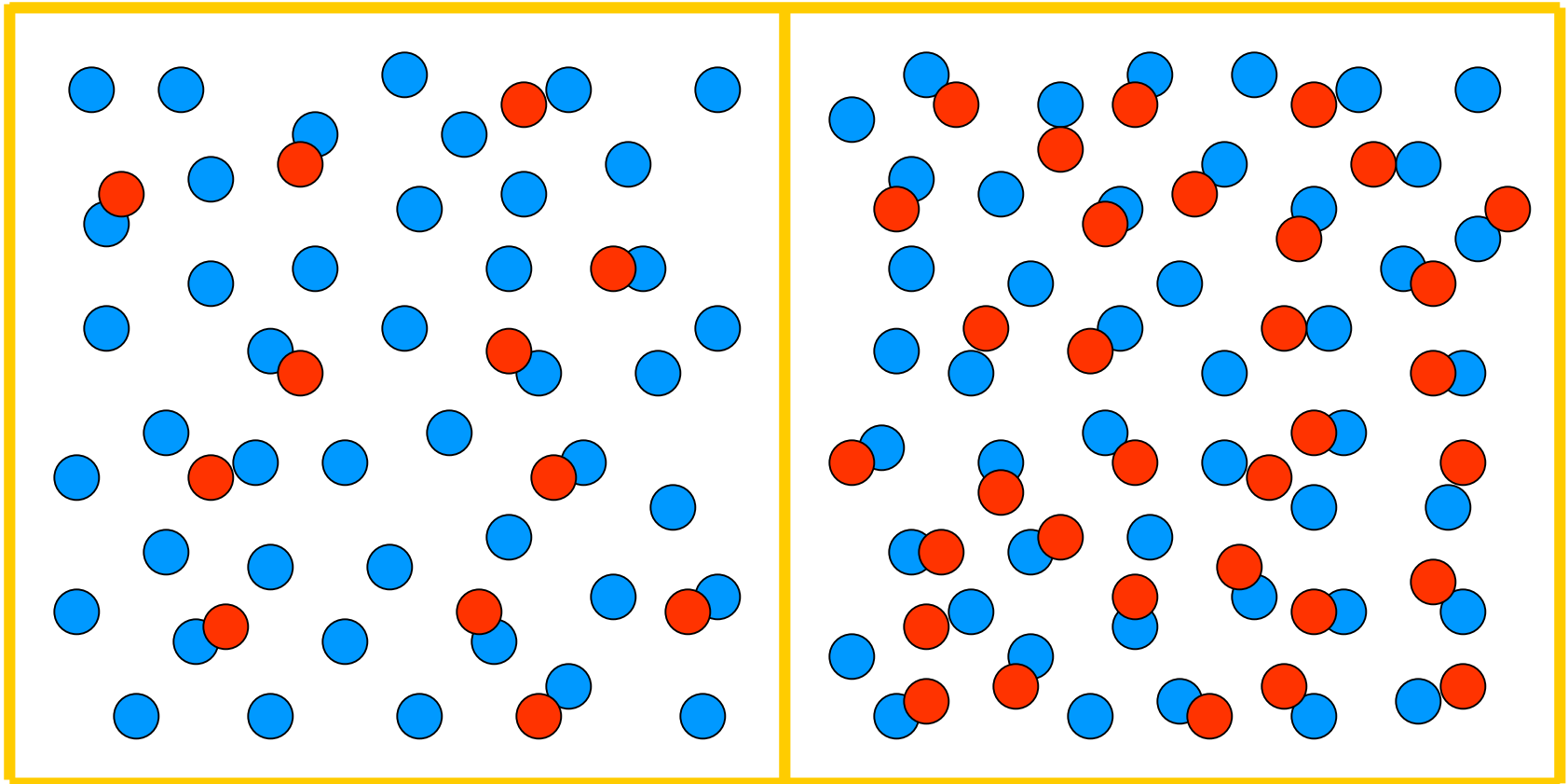


# OSMOSIS

CELL A

WATER VIA OSMOSIS

CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

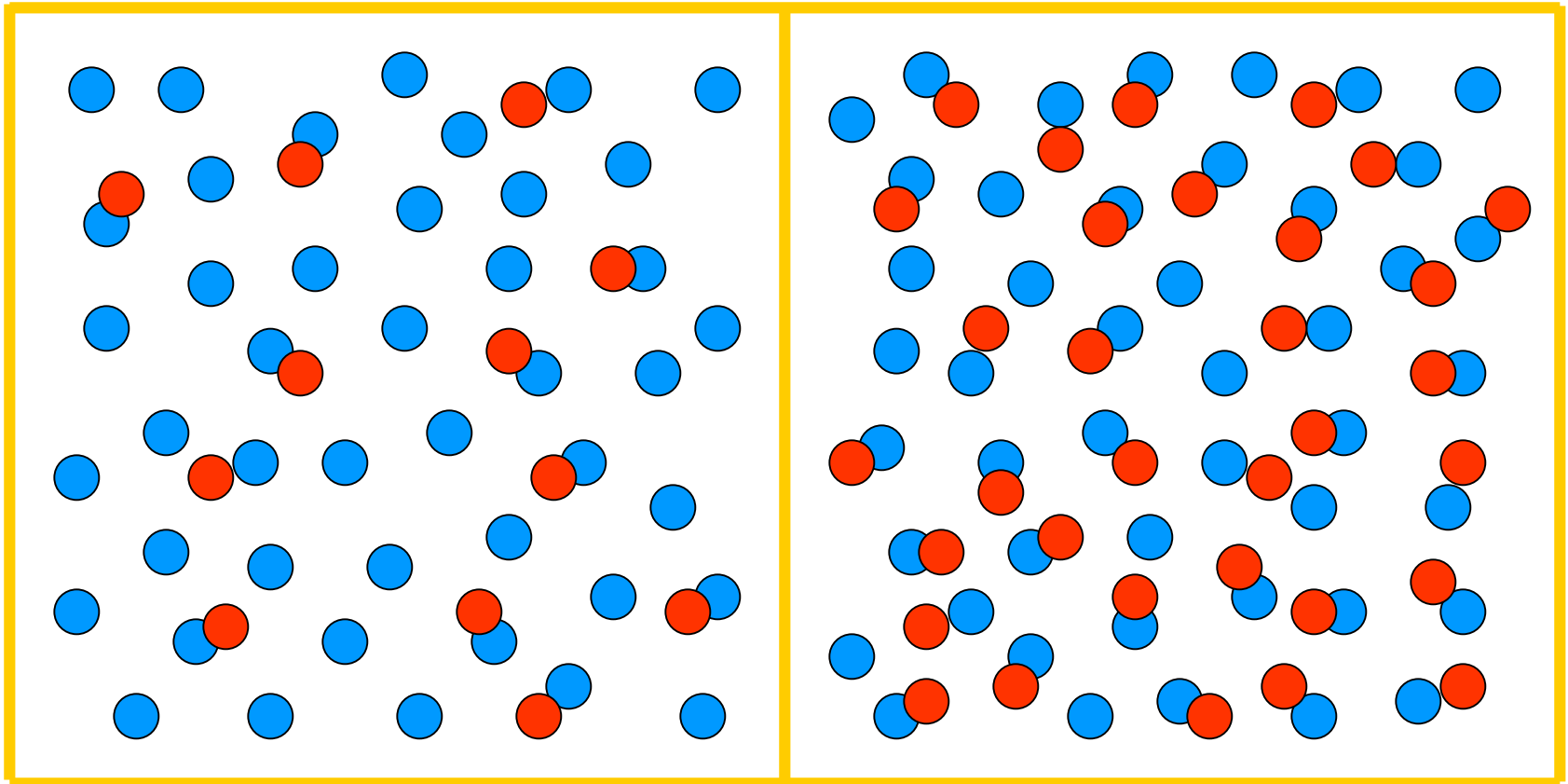
— = MEMBRANE

# OSMOSIS

CELL A

WATER VIA OSMOSIS

CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

— = MEMBRANE

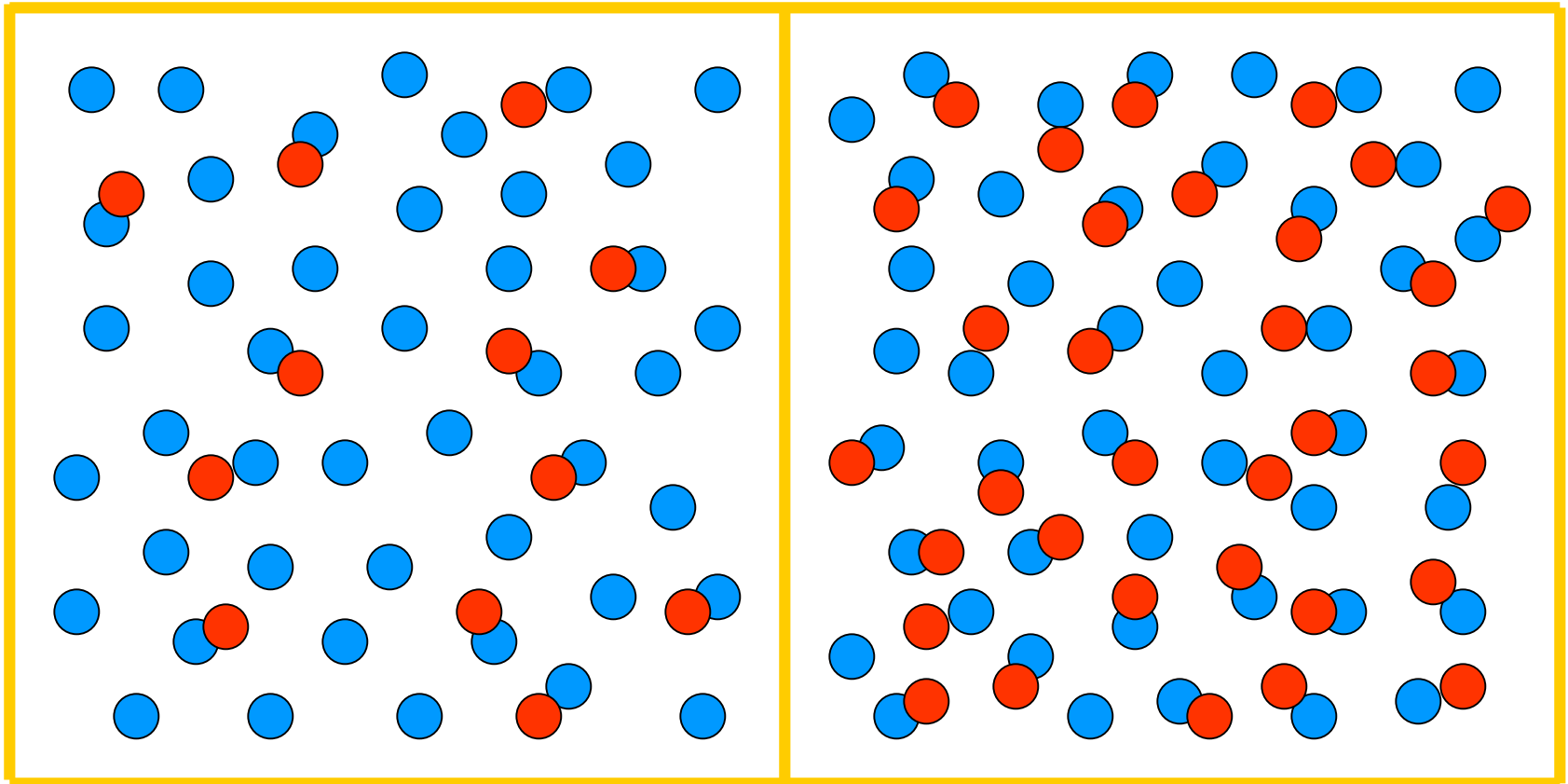


# OSMOSIS

CELL A

WATER VIA OSMOSIS

CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

— = MEMBRANE



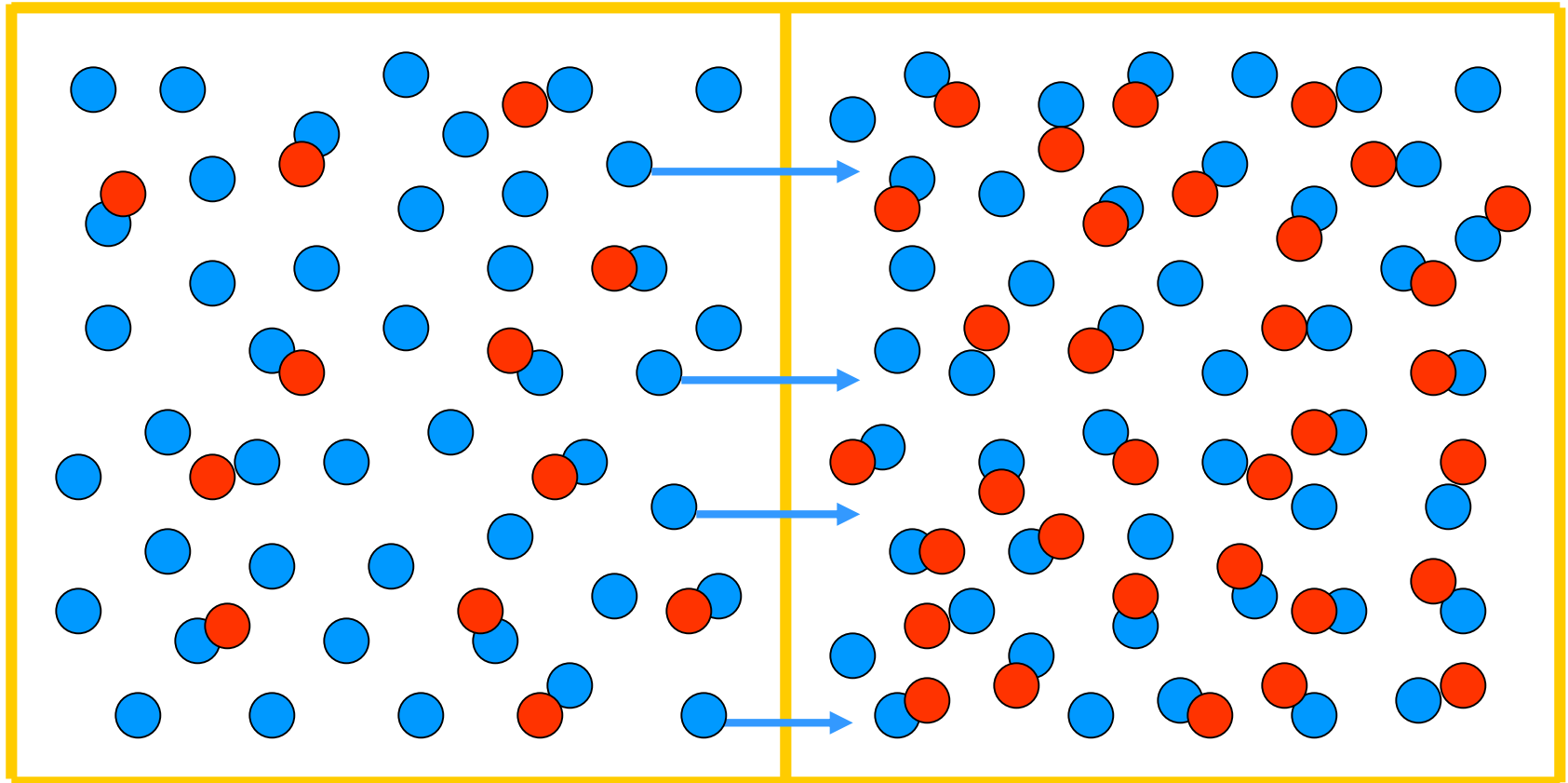


# OSMOSIS

CELL A

WATER VIA OSMOSIS

CELL B



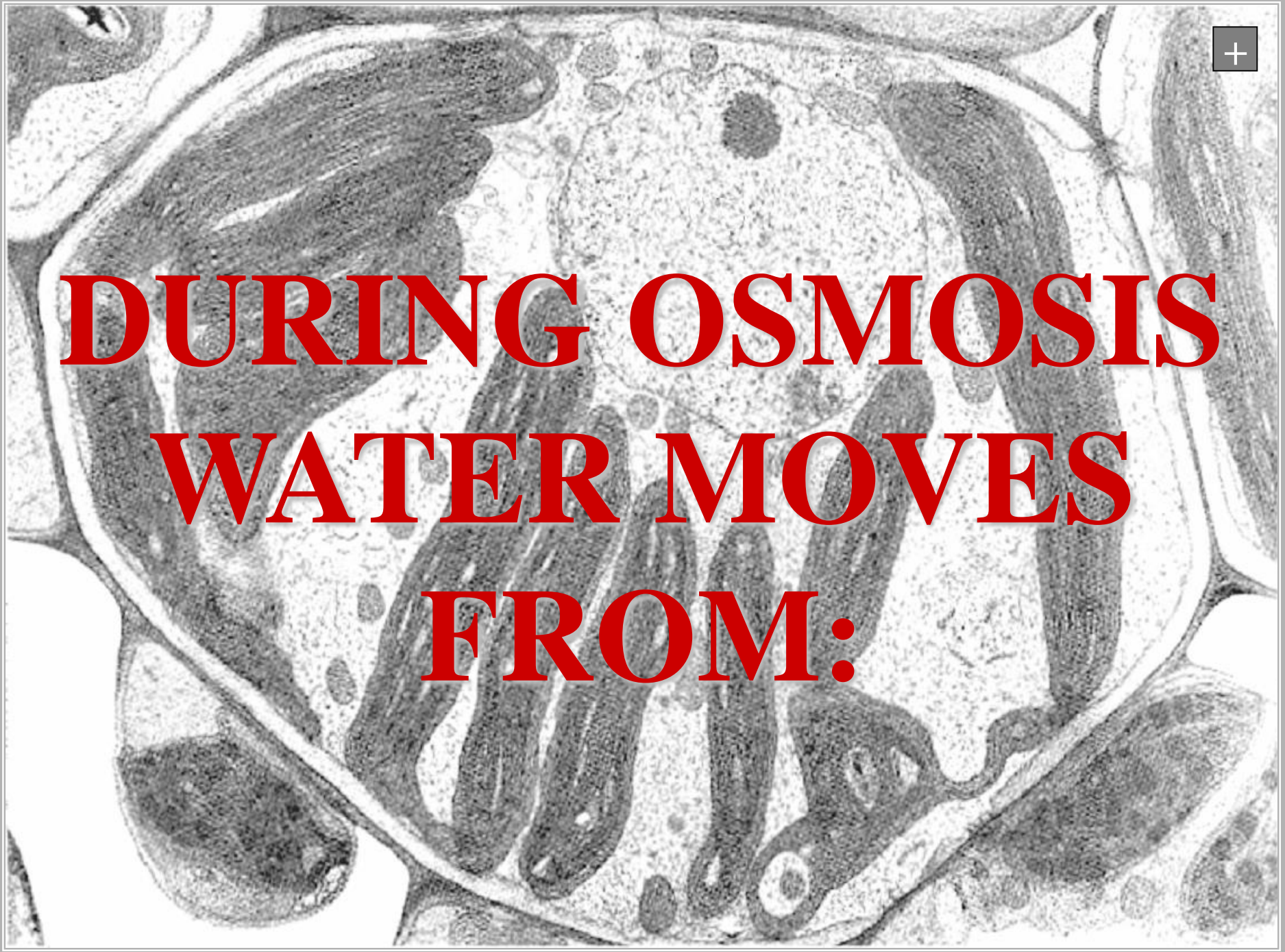
● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

— = MEMBRANE



**DURING OSMOSIS  
WATER MOVES  
FROM:**

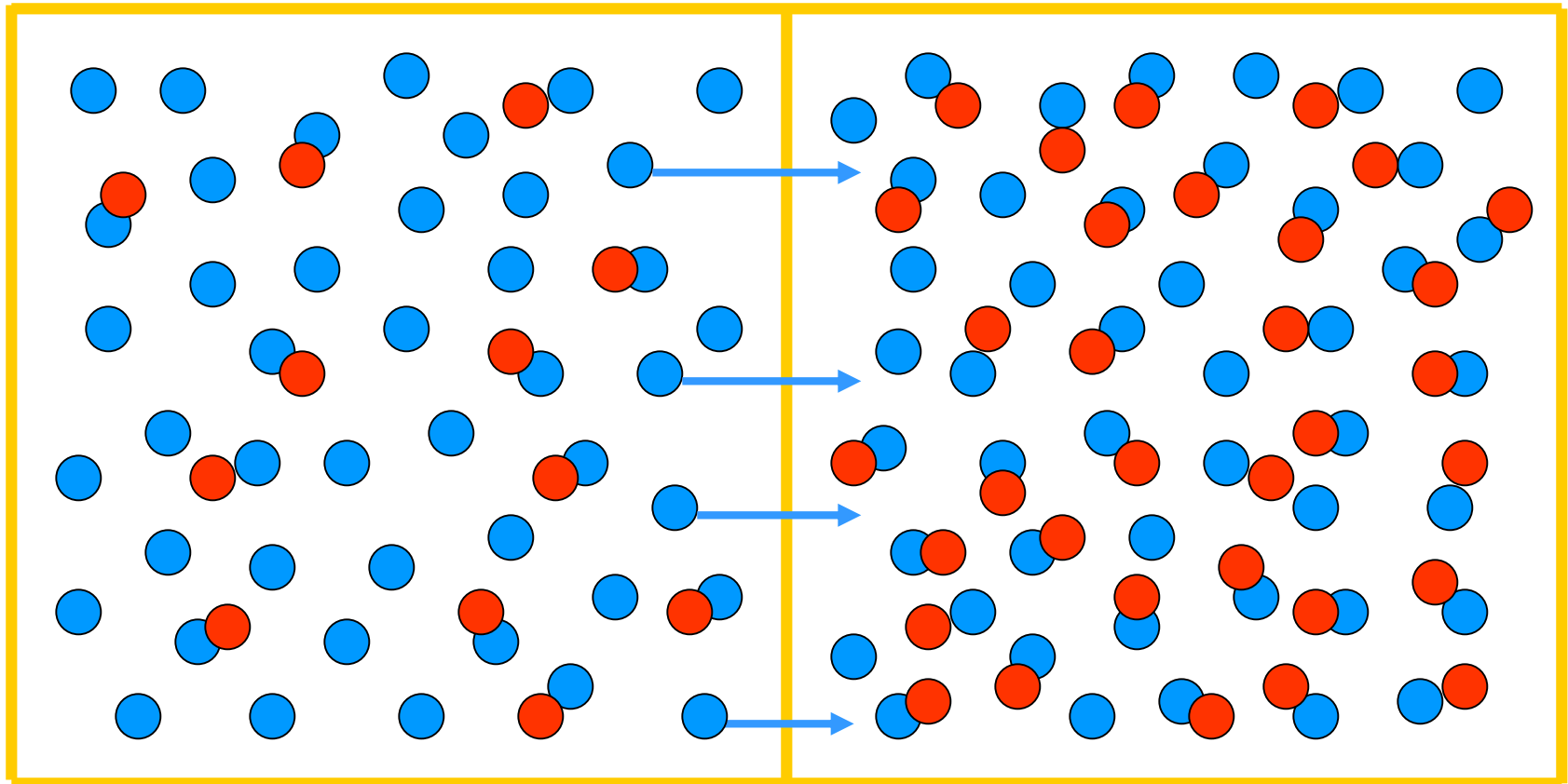


# OSMOSIS

CELL A

WATER VIA OSMOSIS

CELL B



 = WATER MOLECULE

 = POLAR SOLUTE MOLECULE

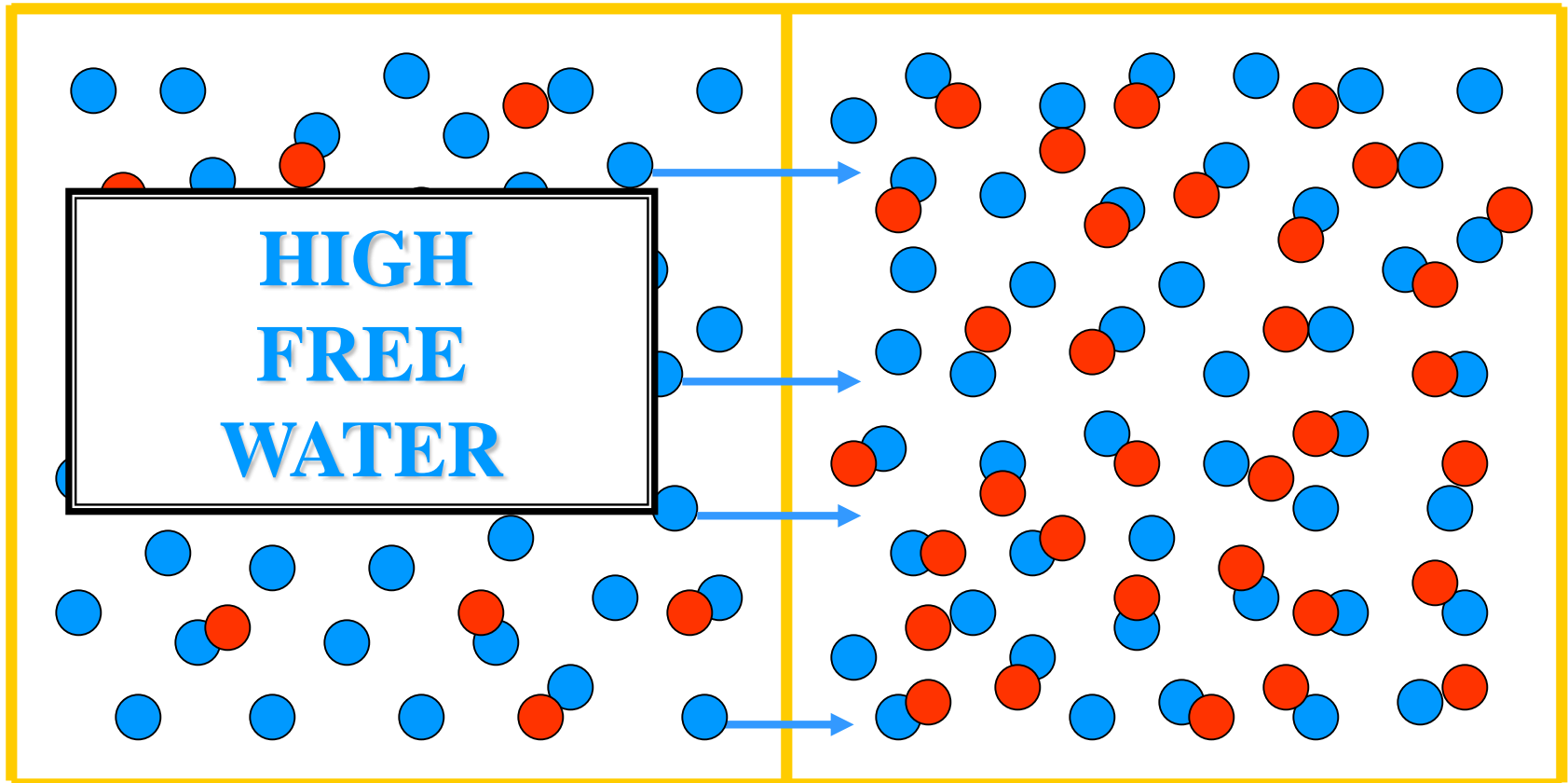
 = MEMBRANE

# OSMOSIS

CELL A

WATER VIA OSMOSIS

CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

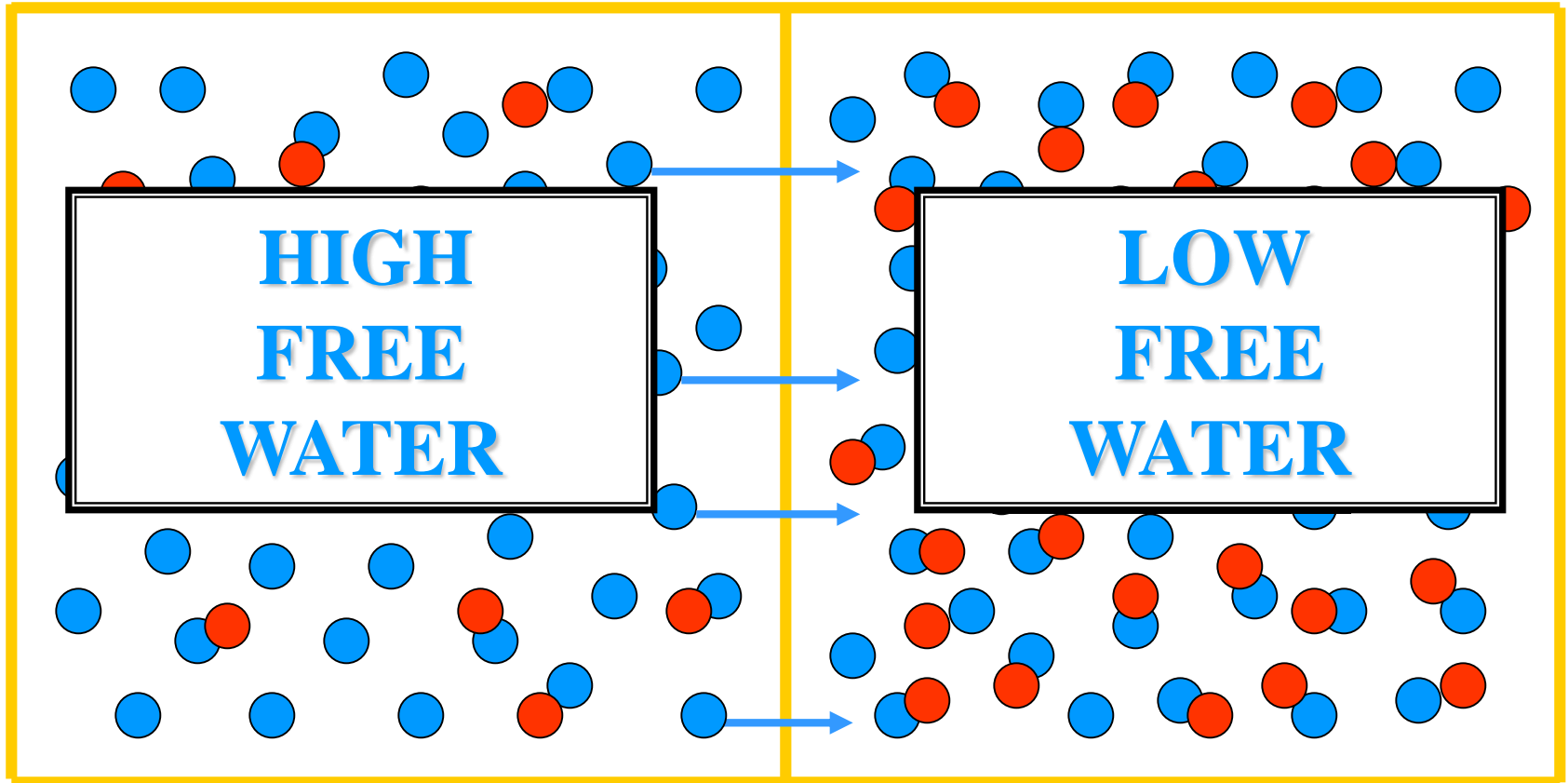
— = MEMBRANE

# OSMOSIS

CELL A

WATER VIA OSMOSIS

CELL B



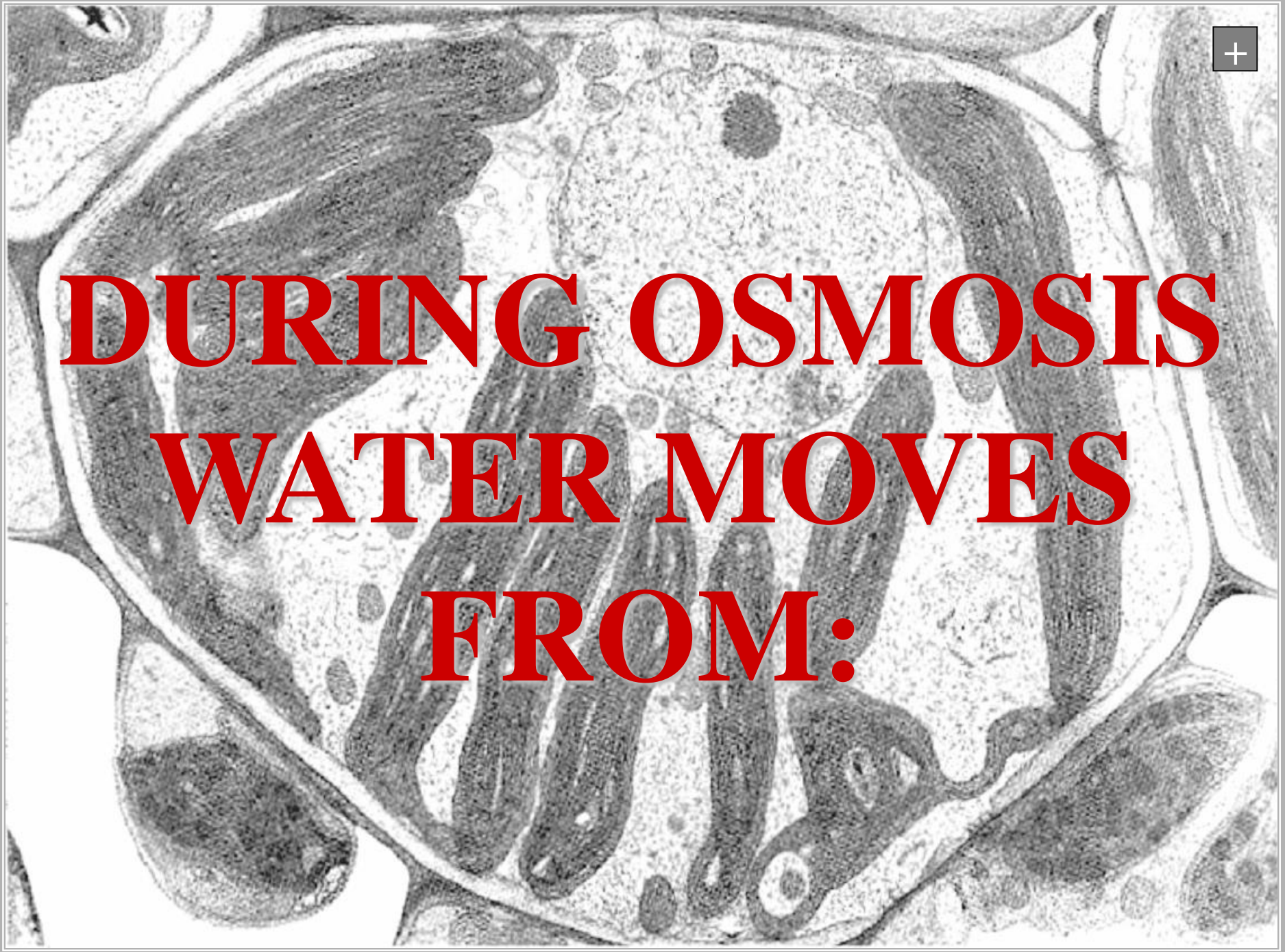
● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

— = MEMBRANE



**DURING OSMOSIS  
WATER MOVES  
FROM:**

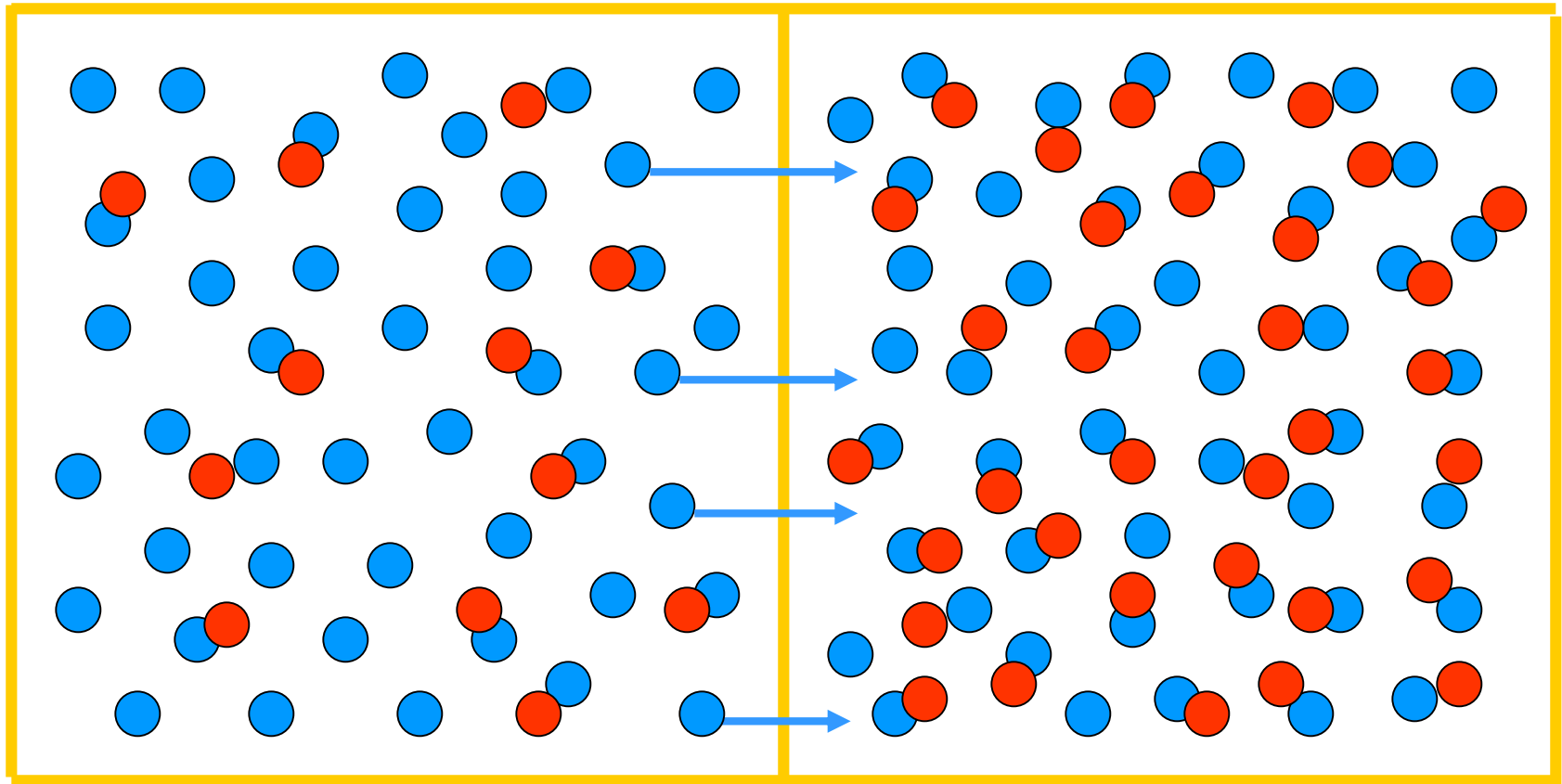


# OSMOSIS

CELL A

WATER VIA OSMOSIS

CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

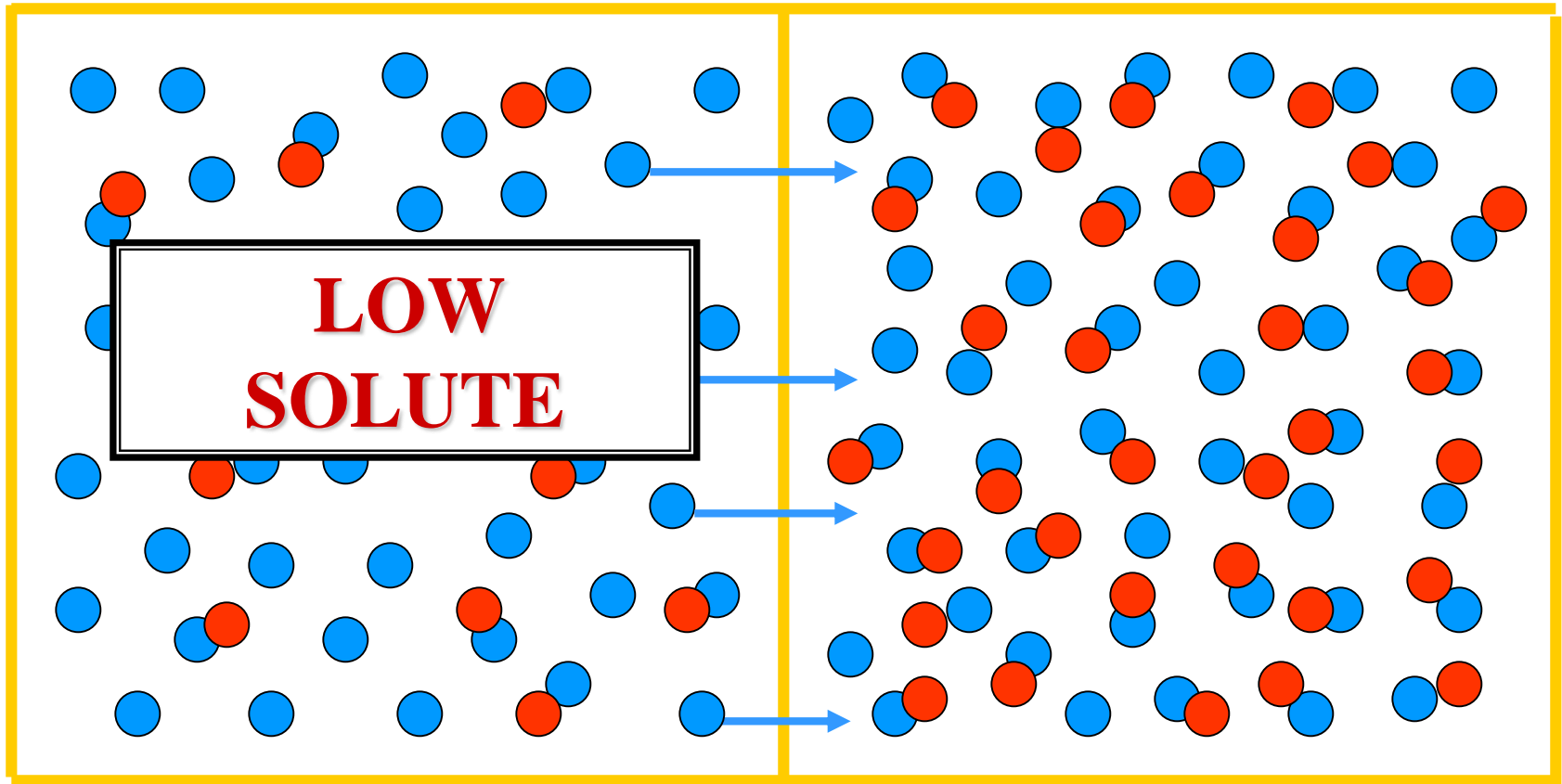
— = MEMBRANE

# OSMOSIS

CELL A

WATER VIA OSMOSIS

CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

— = MEMBRANE

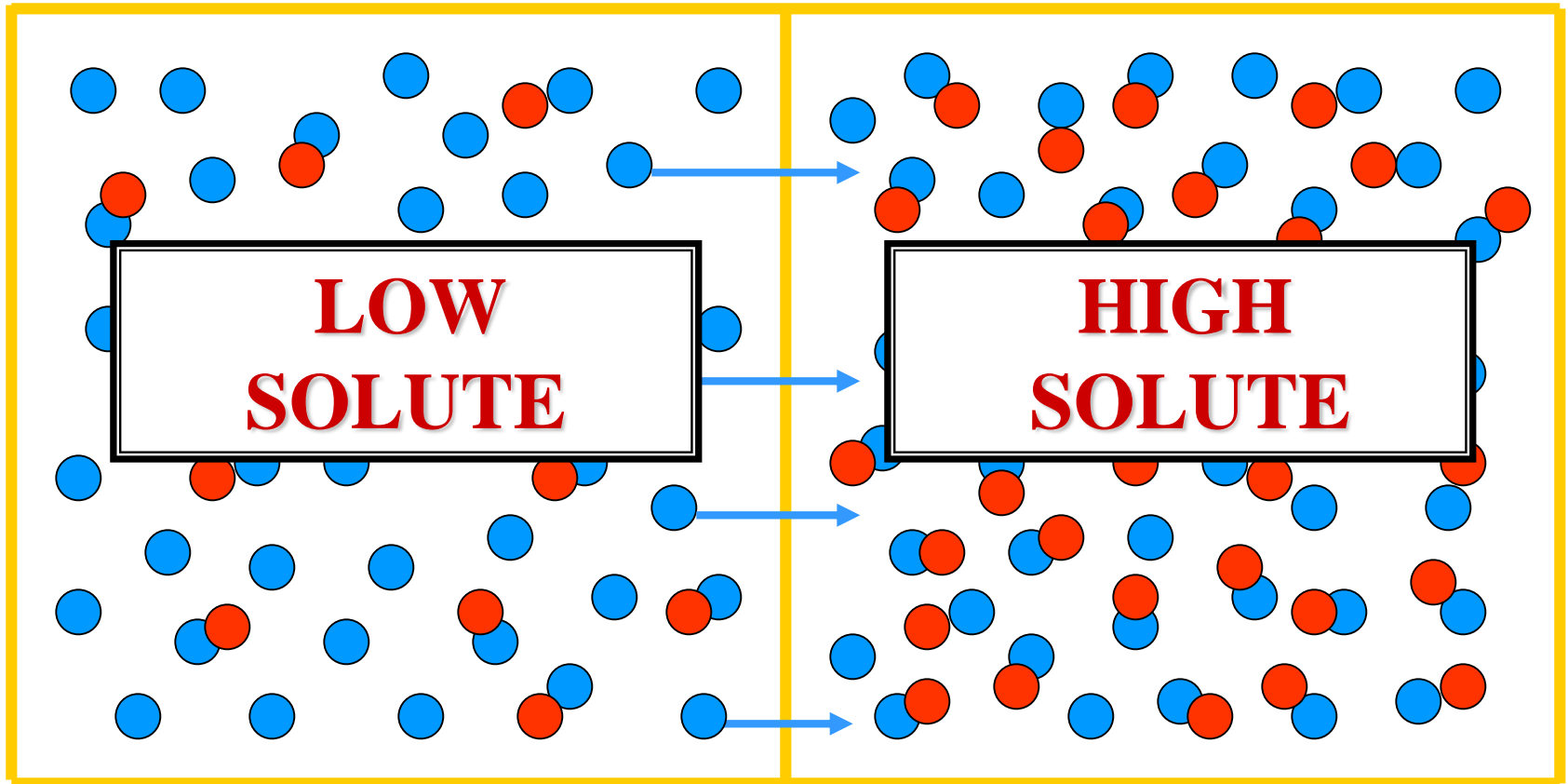


# OSMOSIS

CELL A

WATER VIA OSMOSIS

CELL B



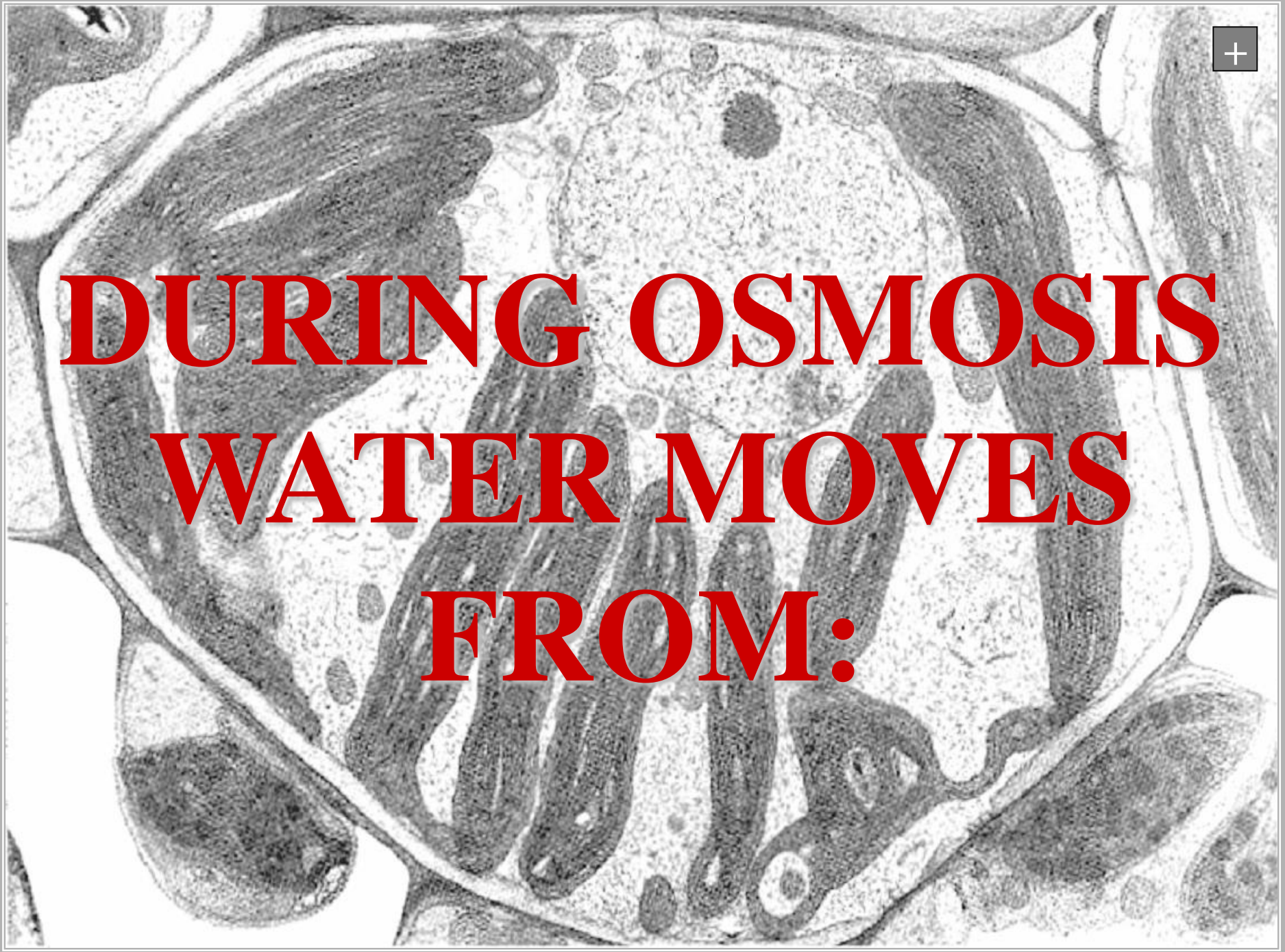
● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

— = MEMBRANE

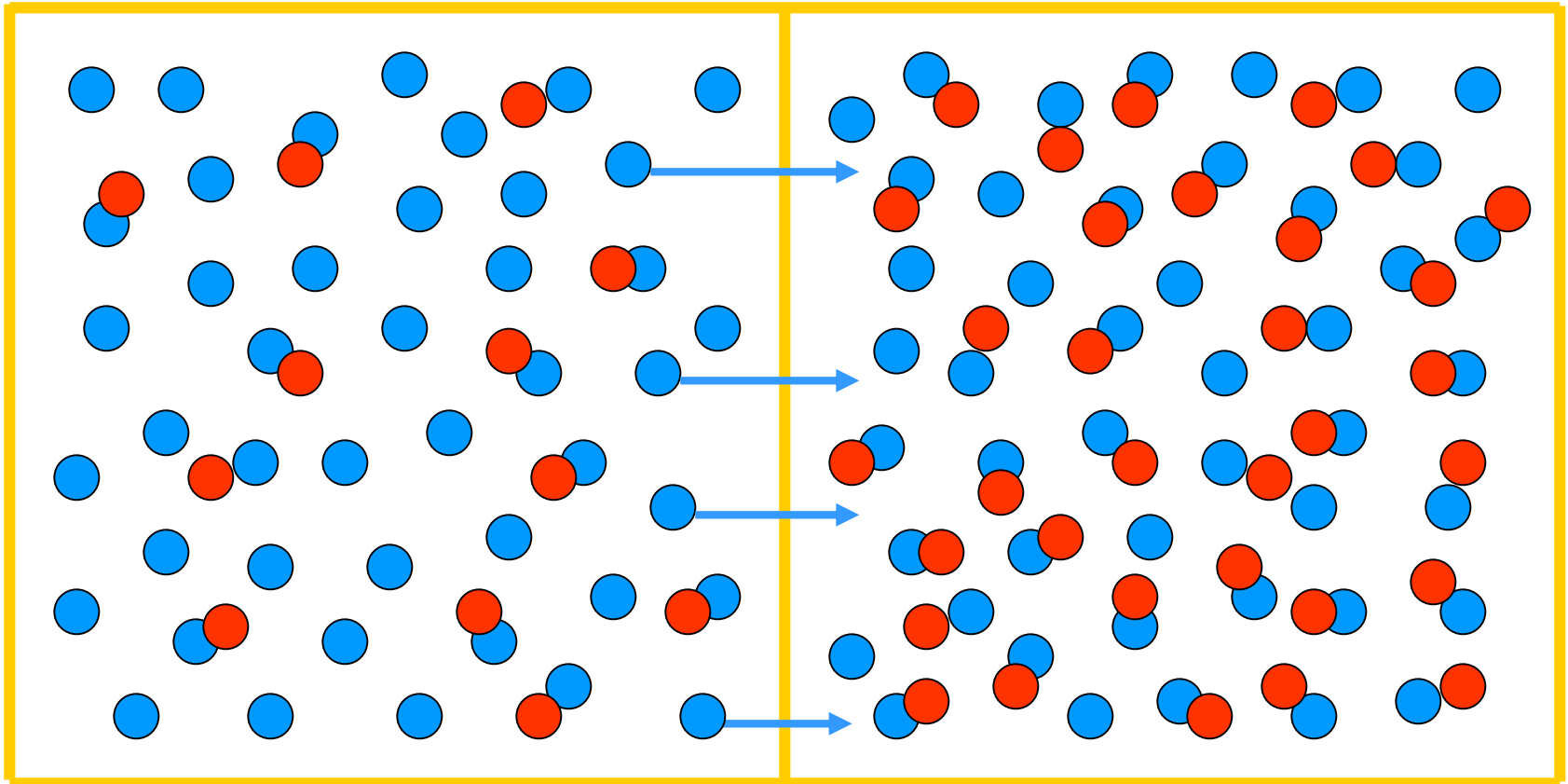


**DURING OSMOSIS  
WATER MOVES  
FROM:**



# OSMOSIS

CELL A WATER VIA OSMOSIS → CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

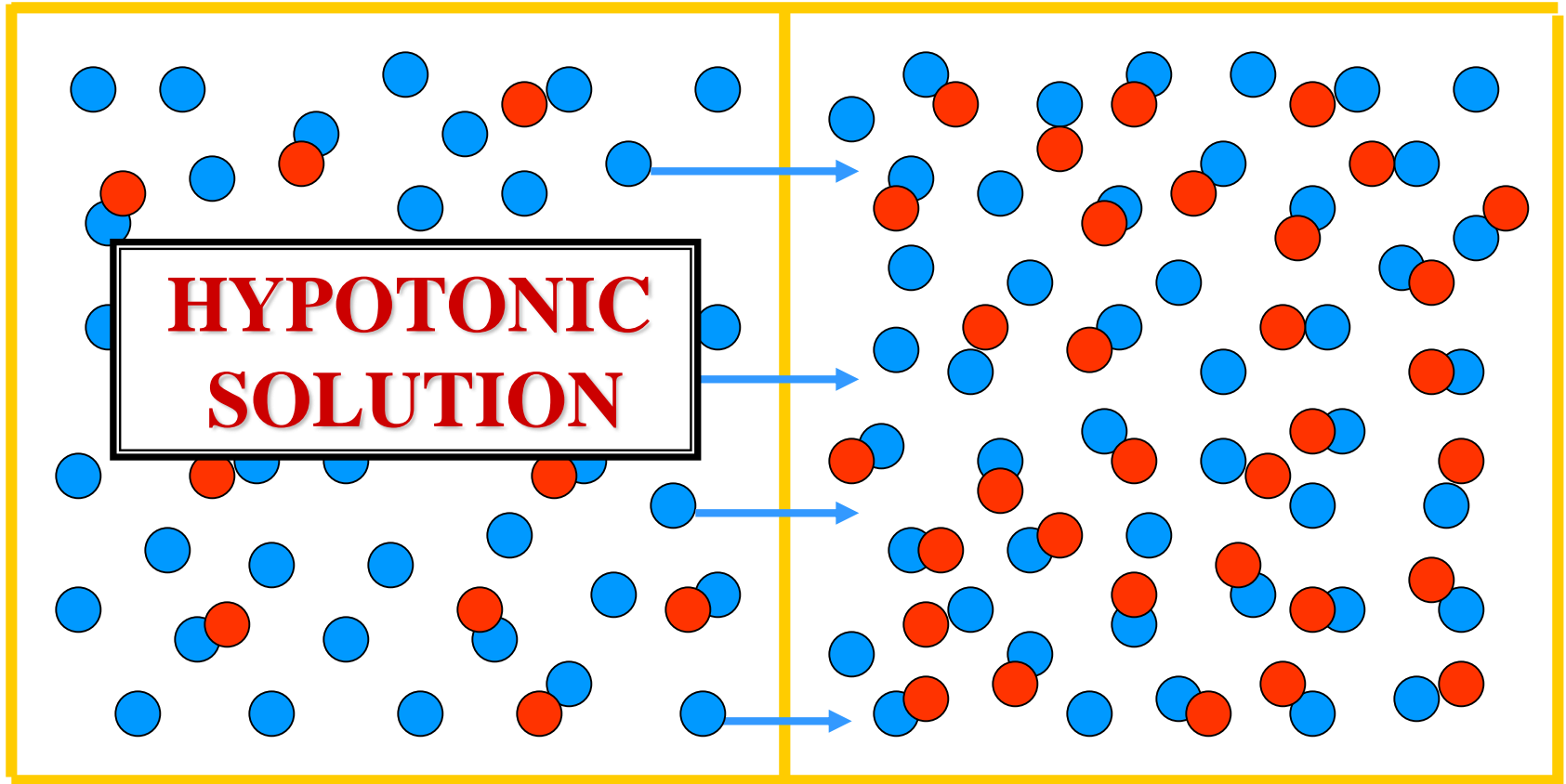
— = MEMBRANE

# OSMOSIS

CELL A

WATER VIA OSMOSIS

CELL B



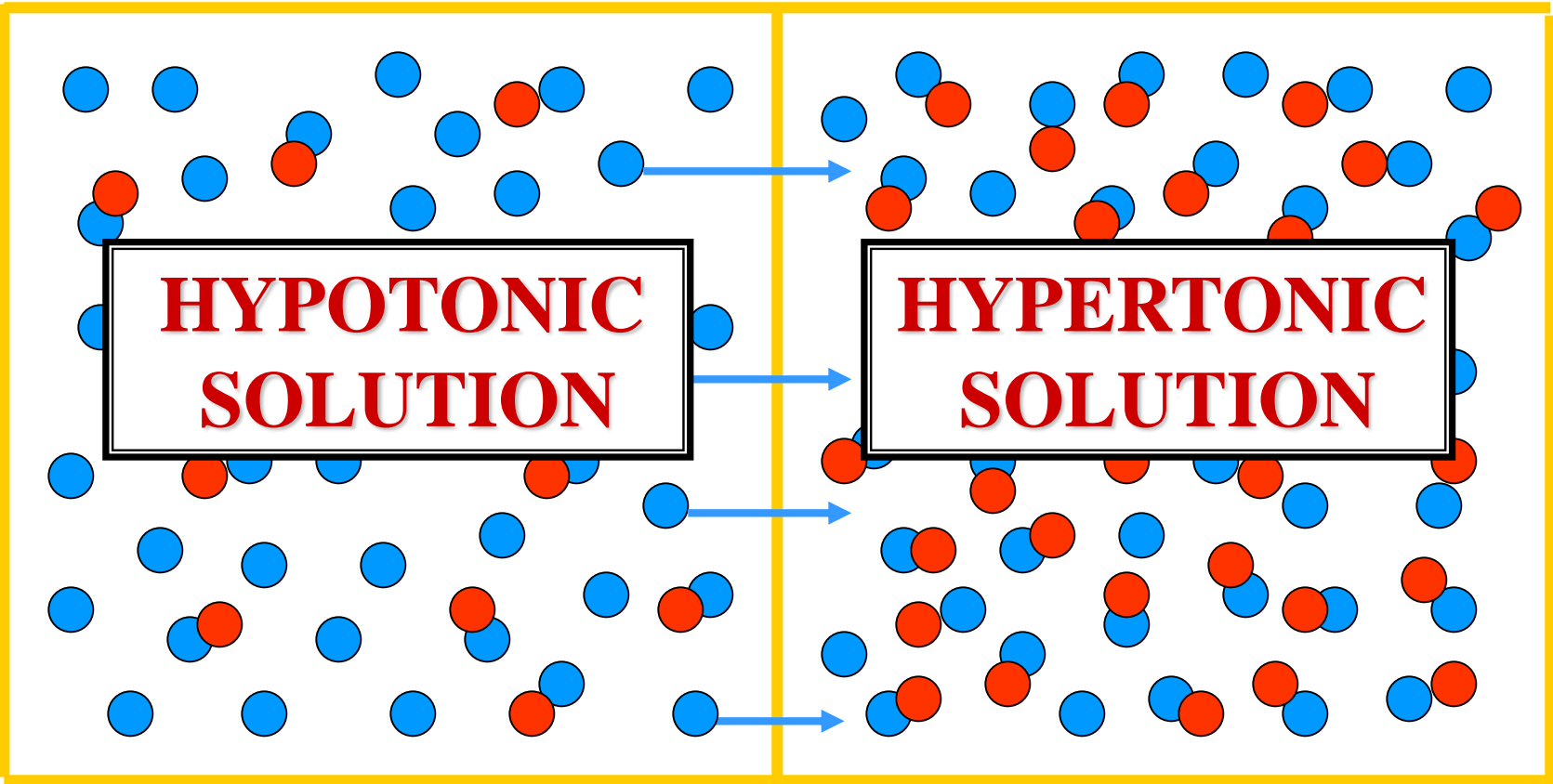
● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

— = MEMBRANE

# OSMOSIS

CELL A — **WATER VIA OSMOSIS** —> CELL B

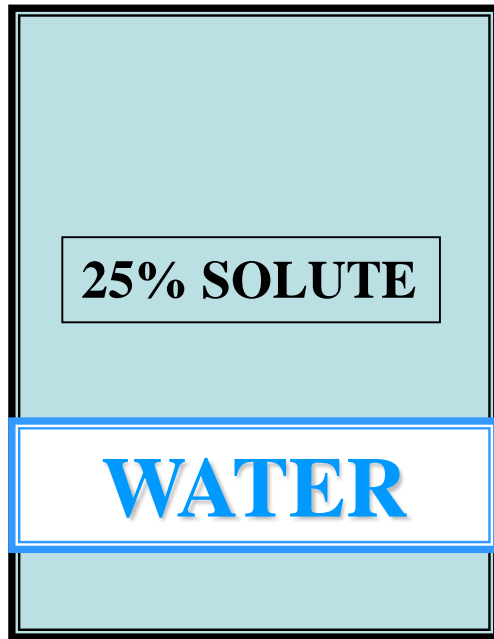


- = WATER MOLECULE
- = POLAR SOLUTE MOLECULE
- = MEMBRANE

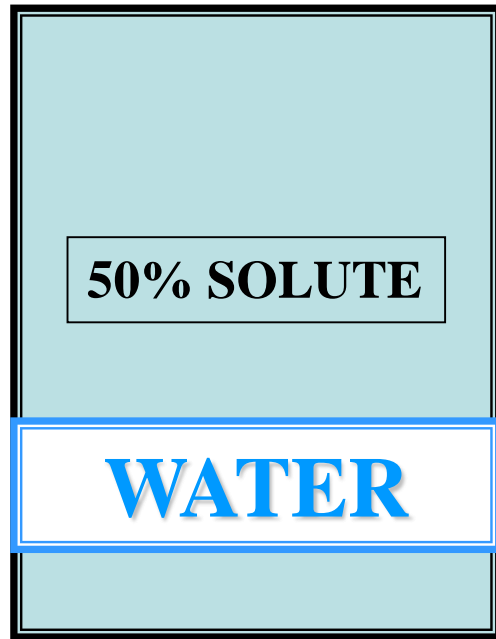


# OSMOSIS SUMMARY

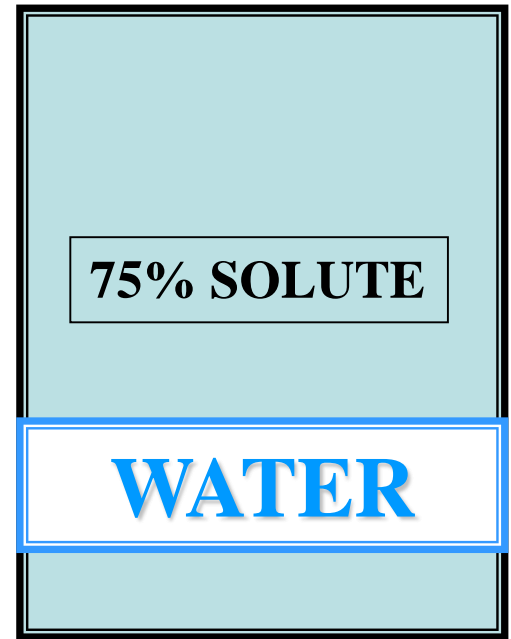
# OSMOSIS



**CELL A**



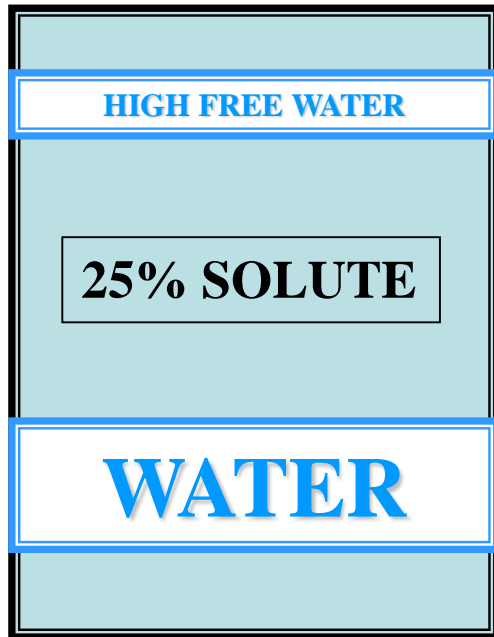
**CELL B**



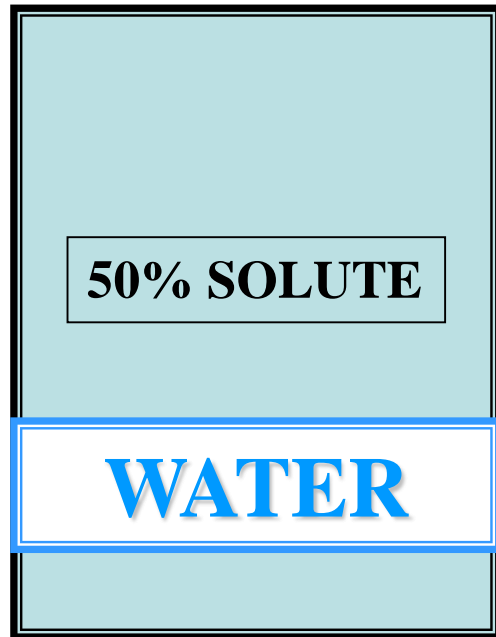
**CELL C**



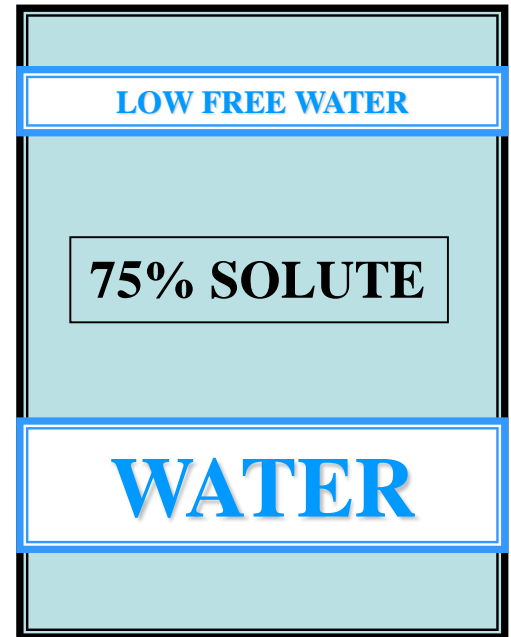
# OSMOSIS



**CELL A**



**CELL B**

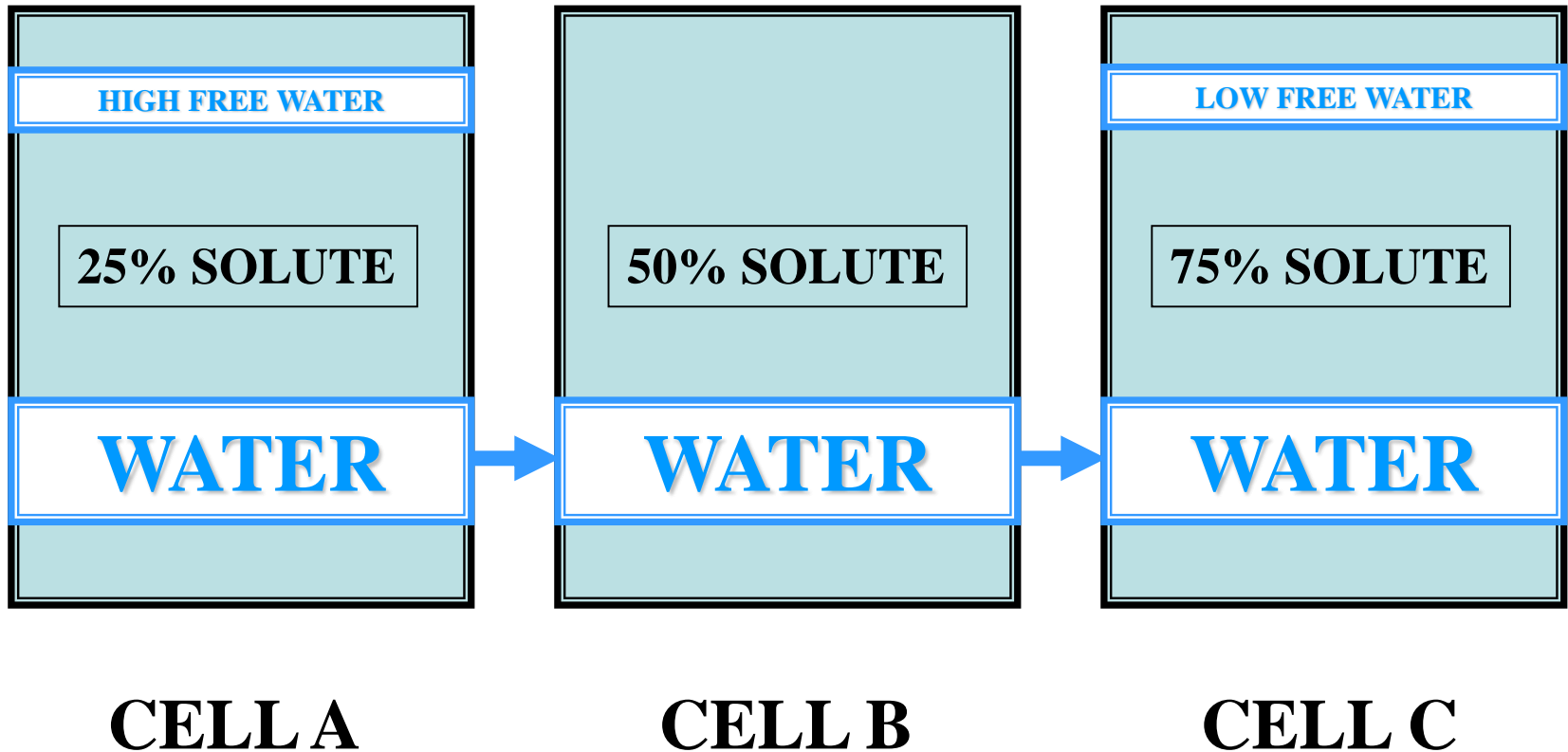


**CELL C**



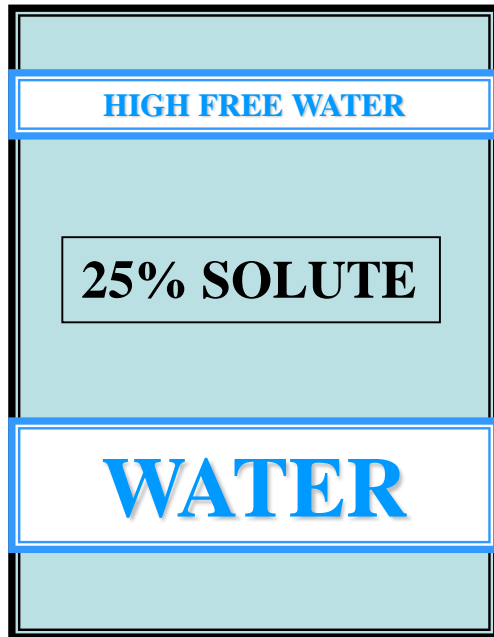


# OSMOSIS

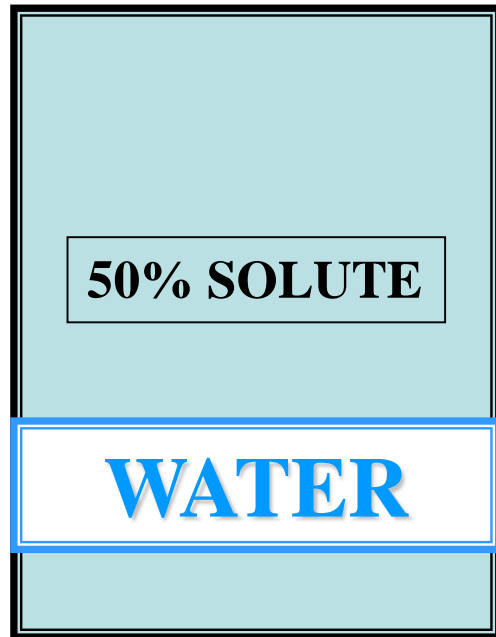




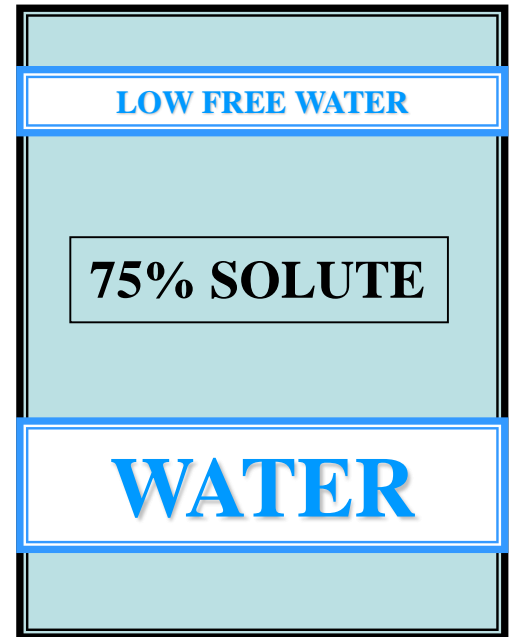
# OSMOSIS



**CELL A**



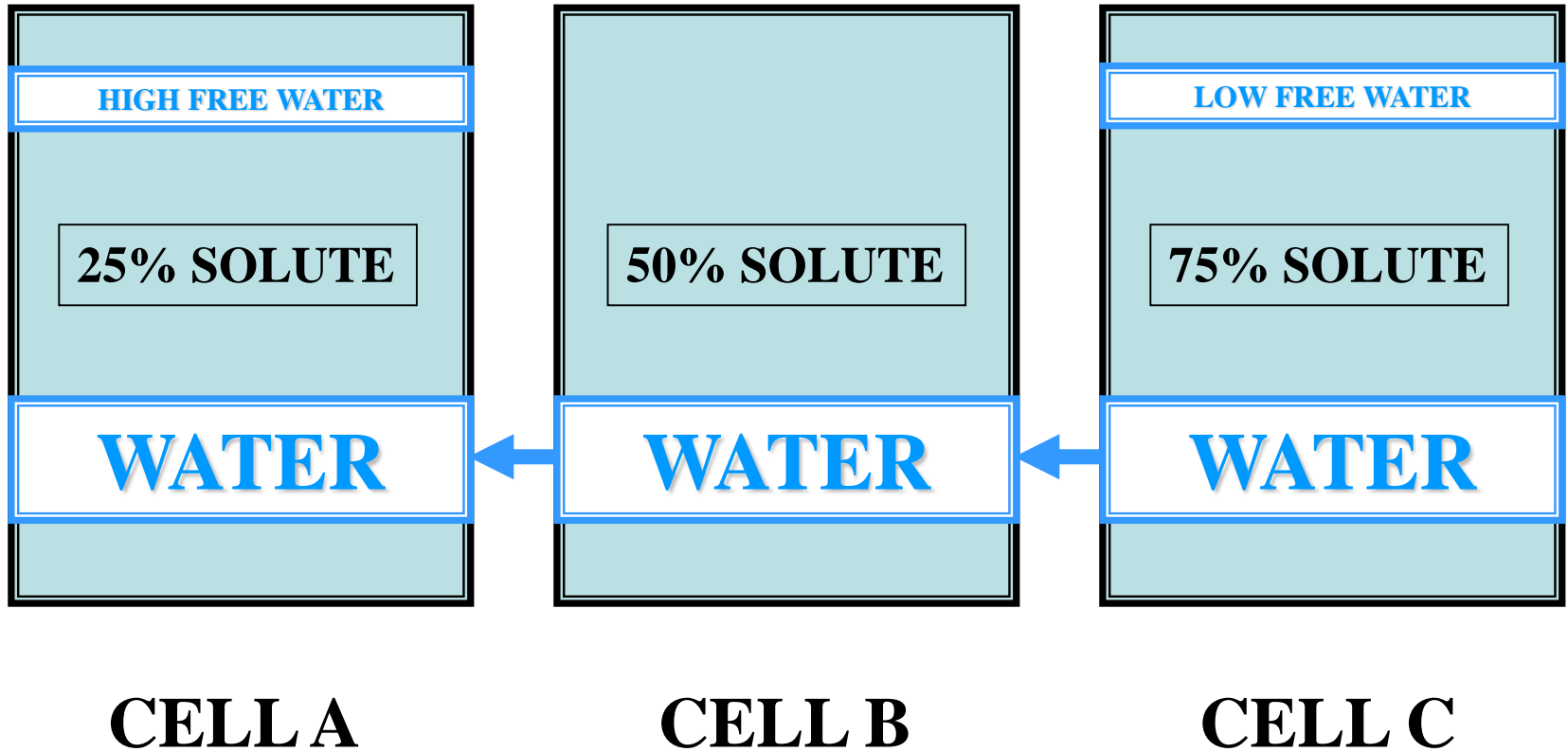
**CELL B**



**CELL C**

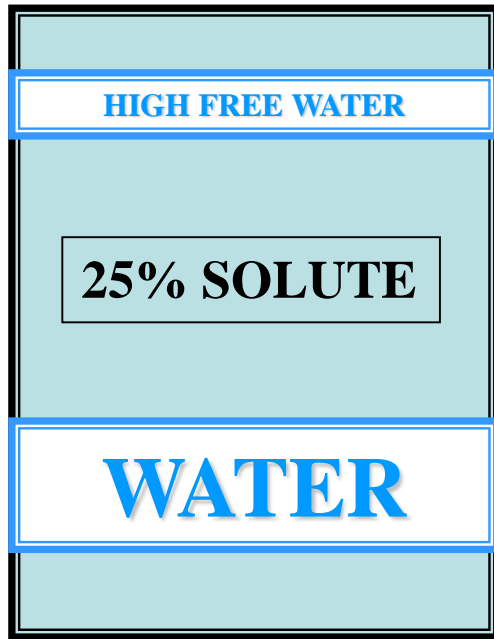


# OSMOSIS

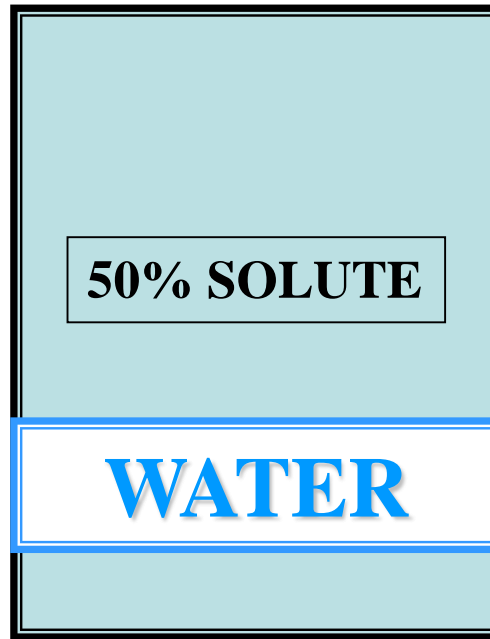




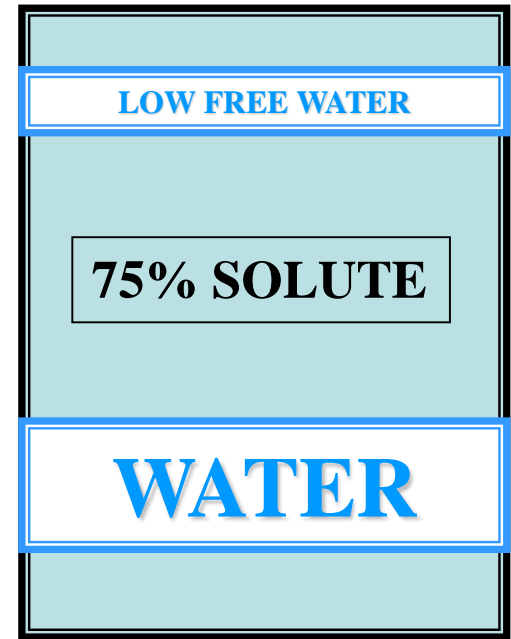
# OSMOSIS



**CELL A**

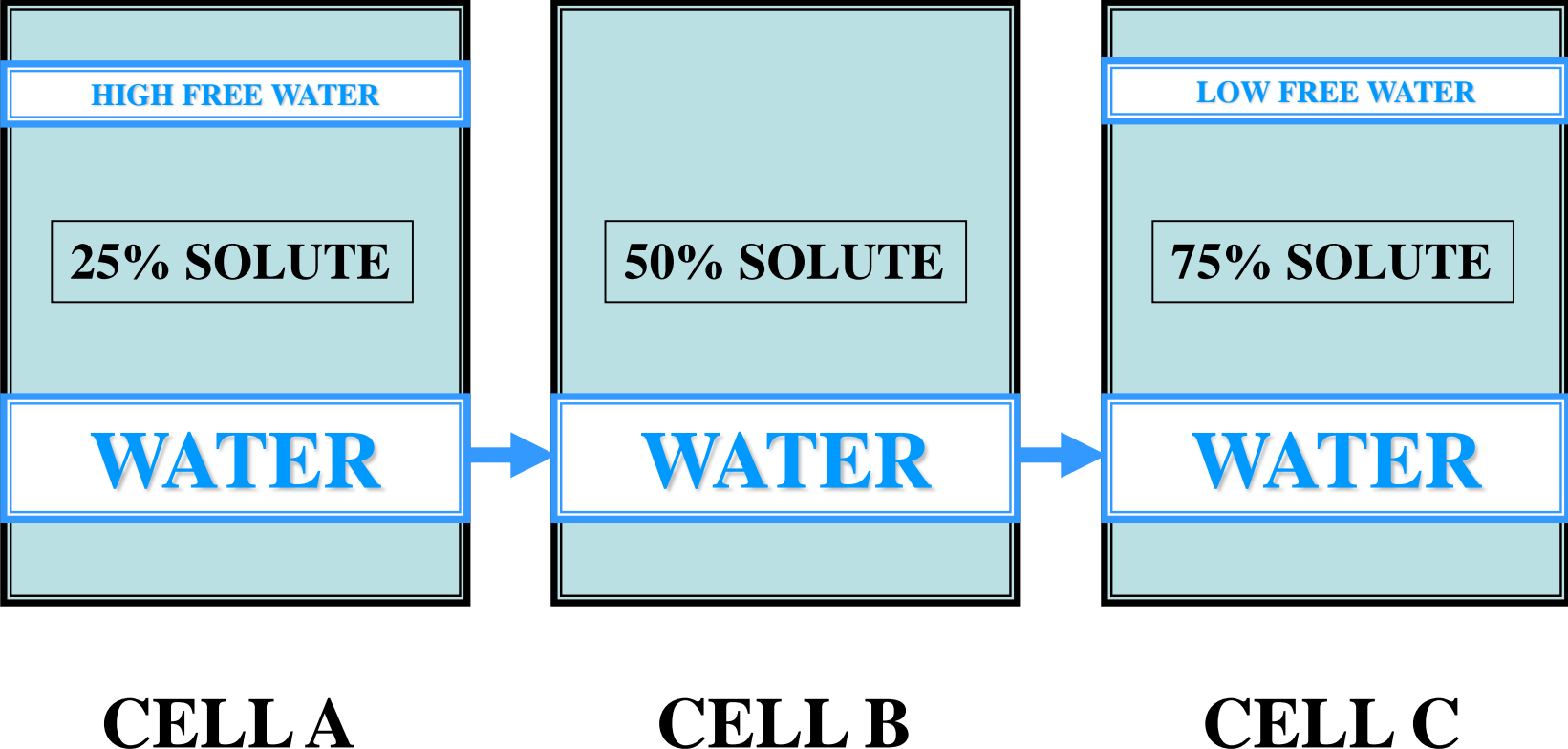


**CELL B**



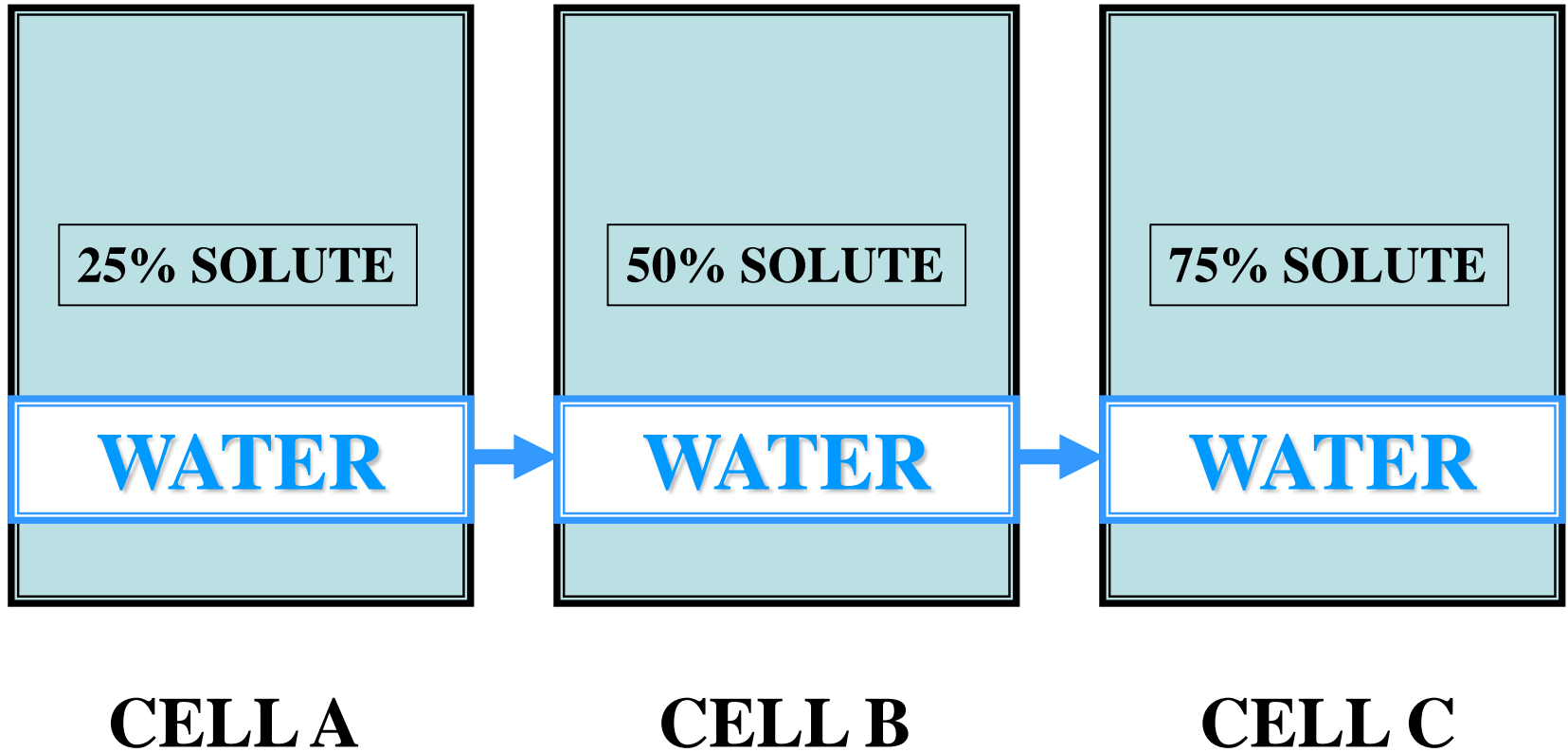
**CELL C**

# OSMOSIS



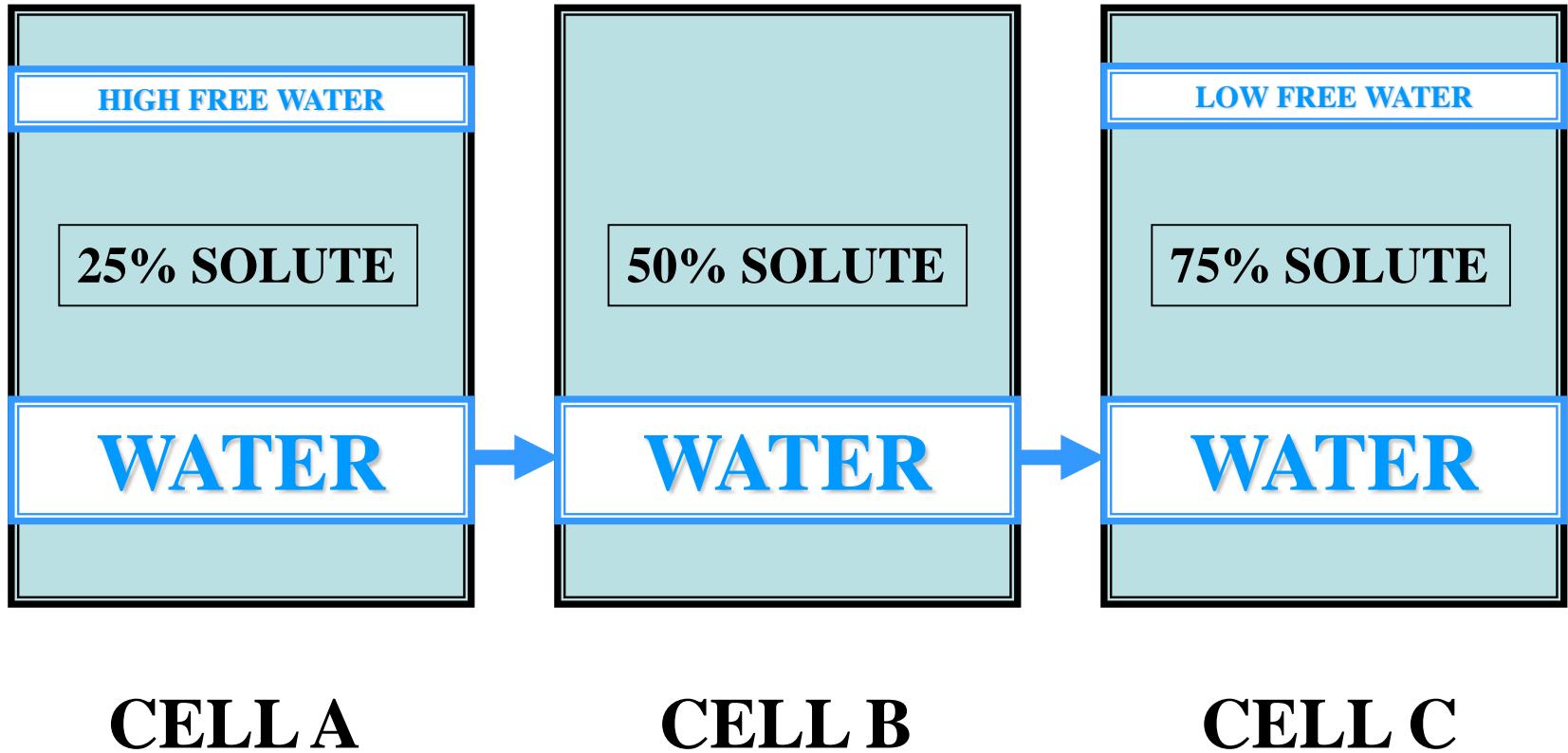
# OSMOSIS

**DURING OSMOSIS**



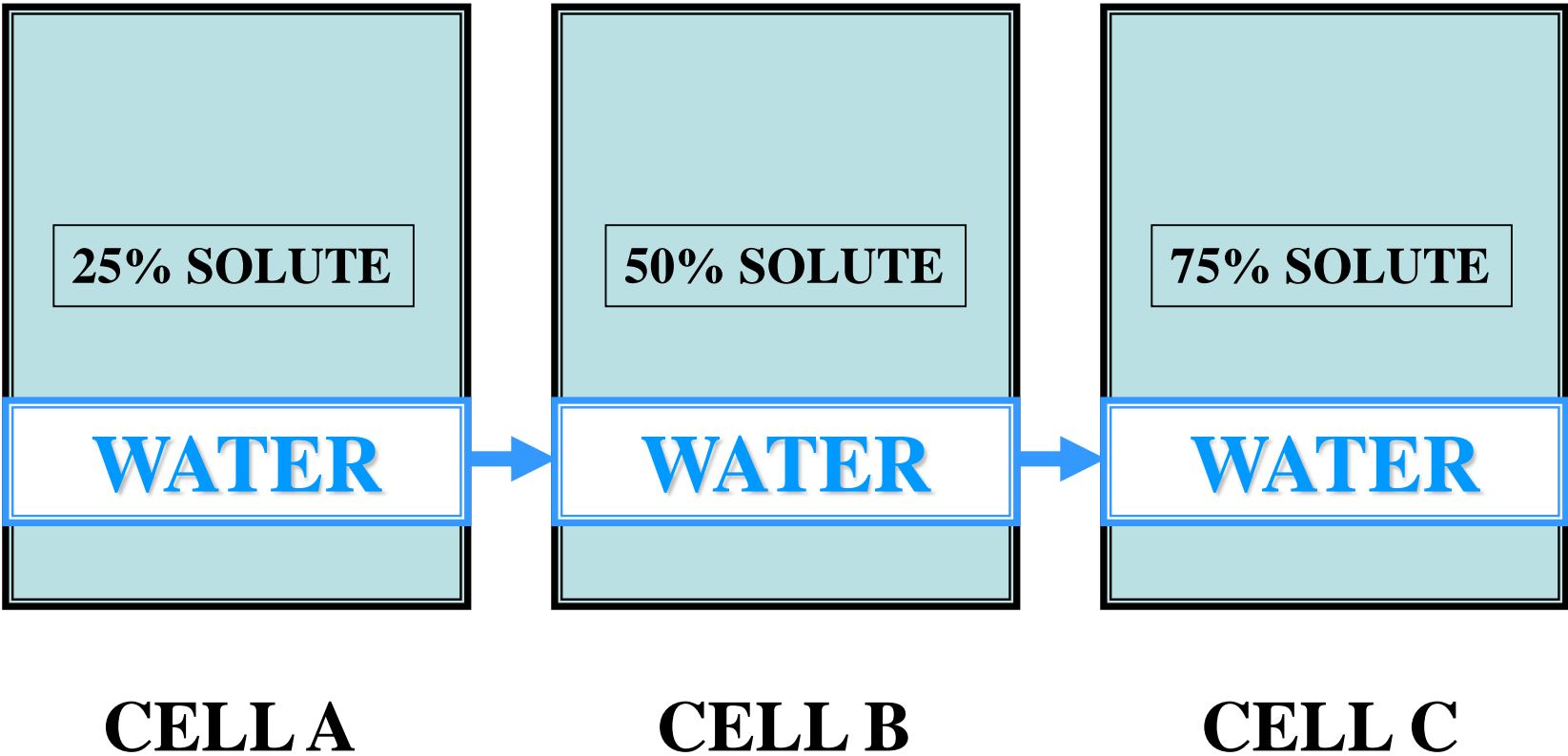
# OSMOSIS

## DURING OSMOSIS



# OSMOSIS

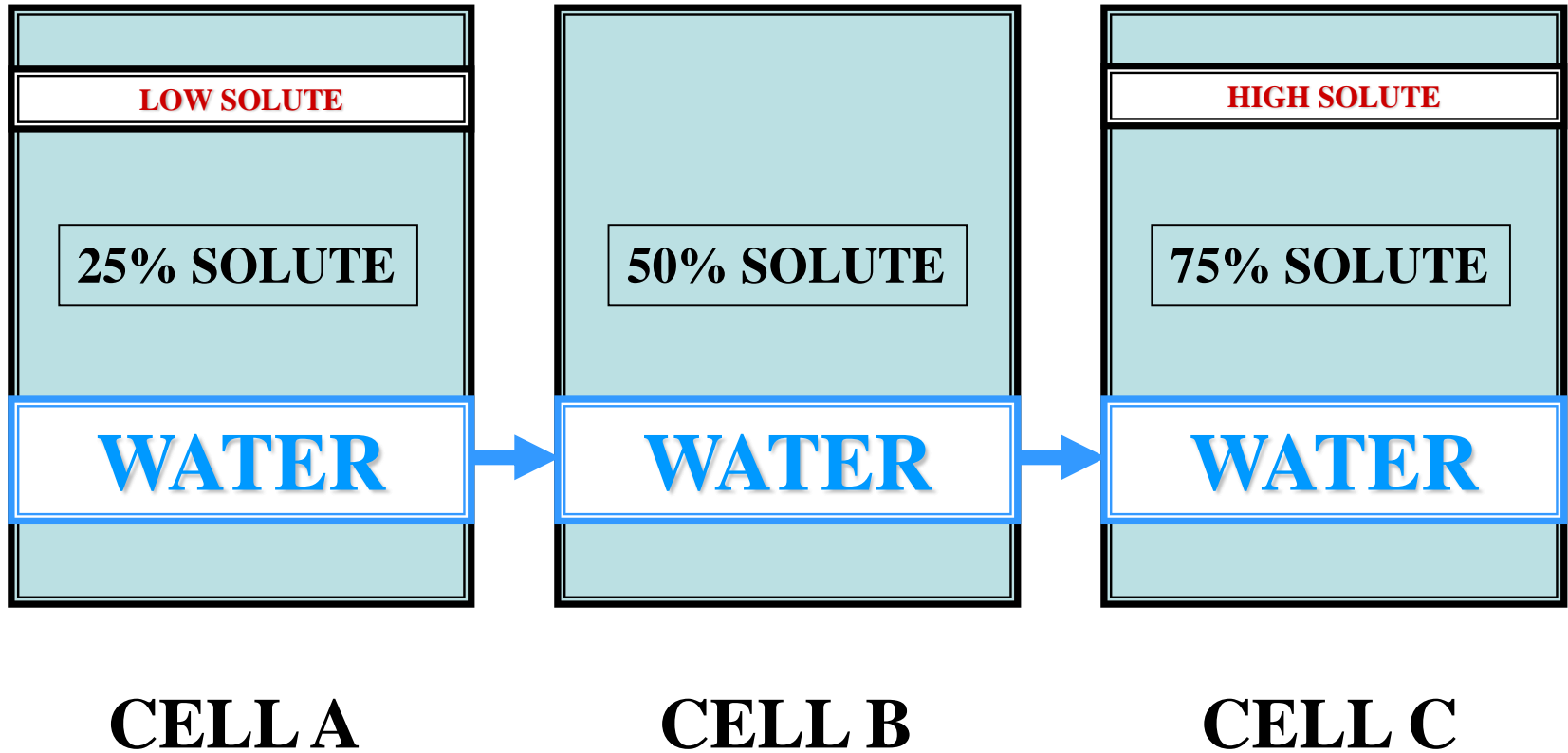
**DURING OSMOSIS**





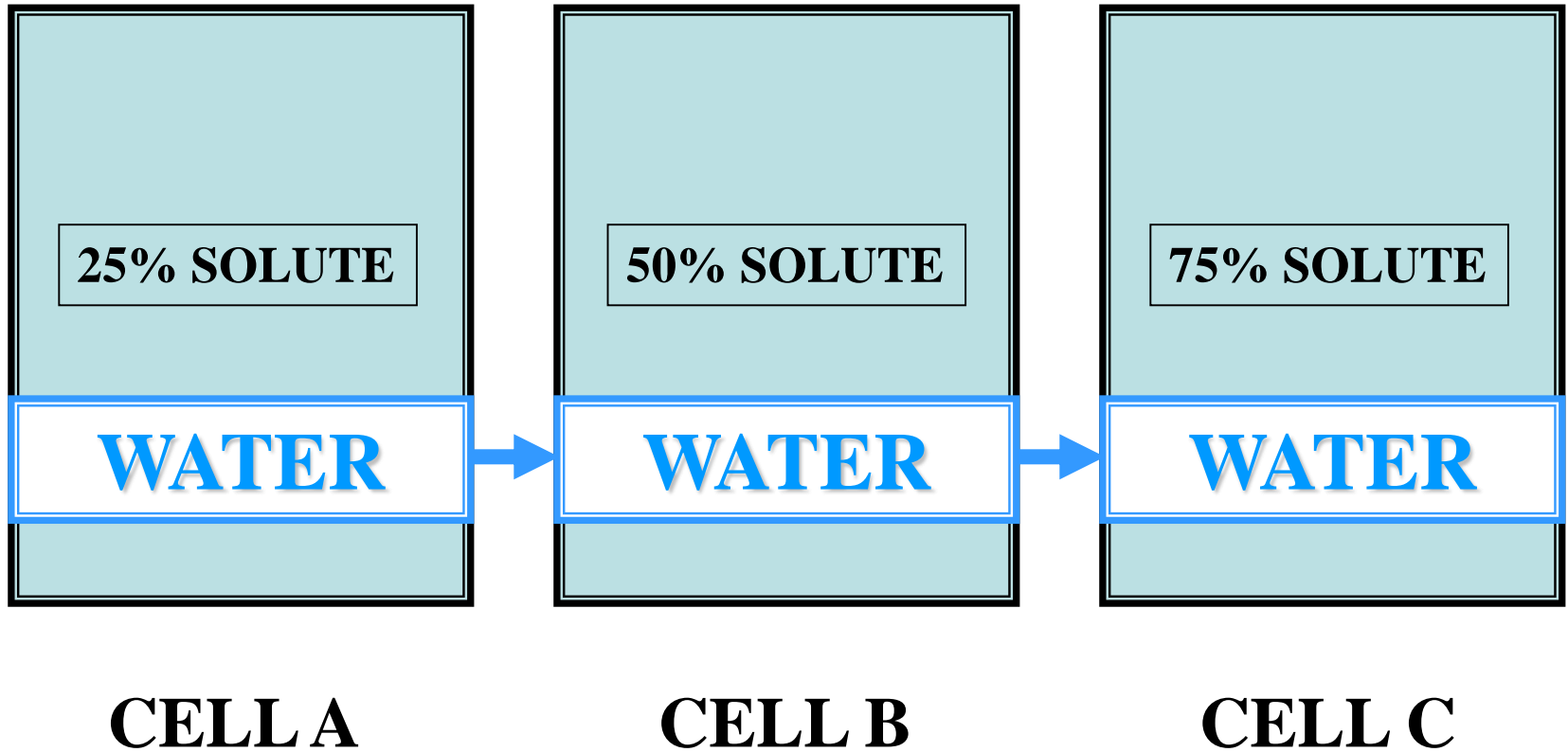
# OSMOSIS

## DURING OSMOSIS



# OSMOSIS

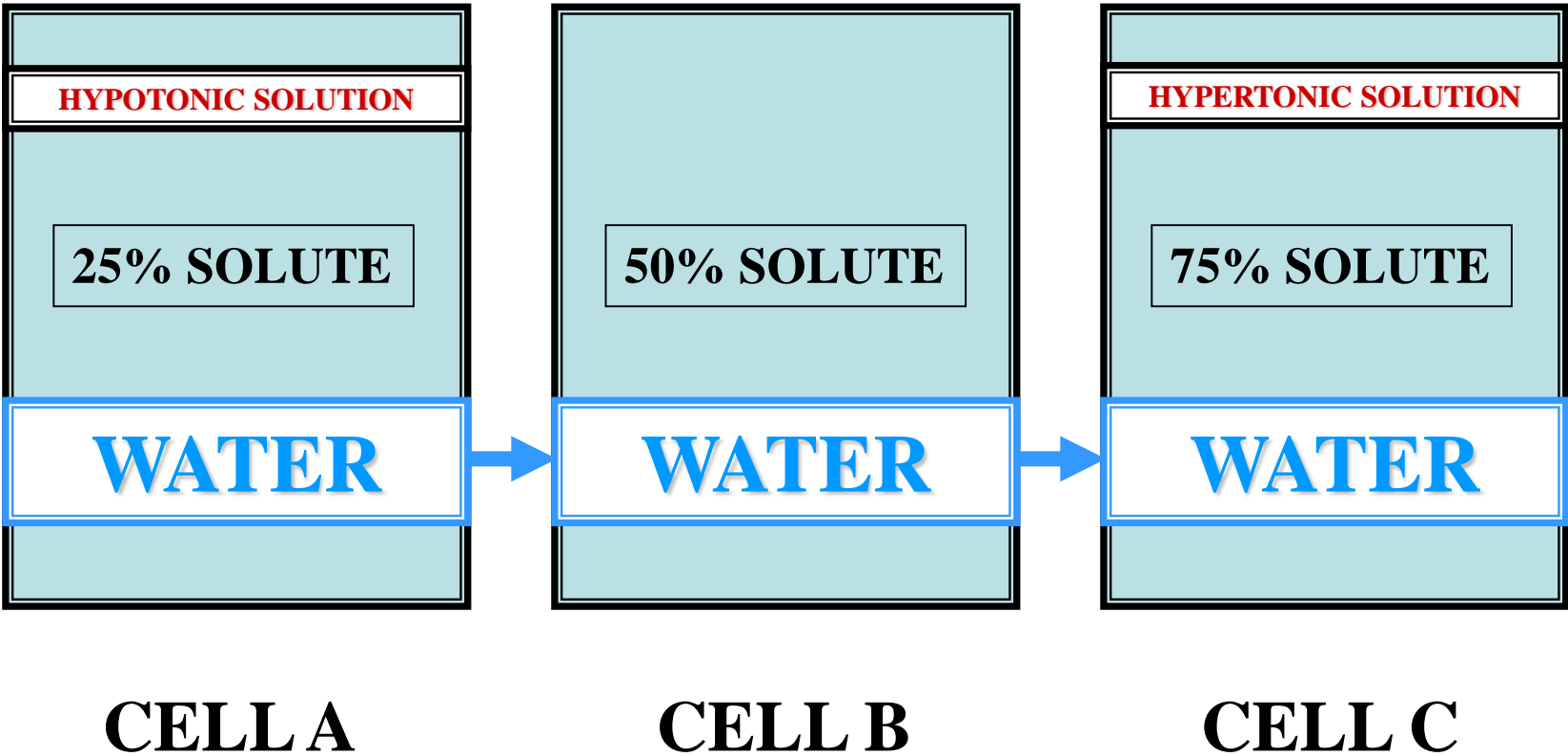
## DURING OSMOSIS





# OSMOSIS

## DURING OSMOSIS





**OSMOTIC  
PRESSURE  
VS  
TURGOR  
PRESSURE**

# OSMOTIC PRESSURE

# **OSMOTIC PRESSURE**

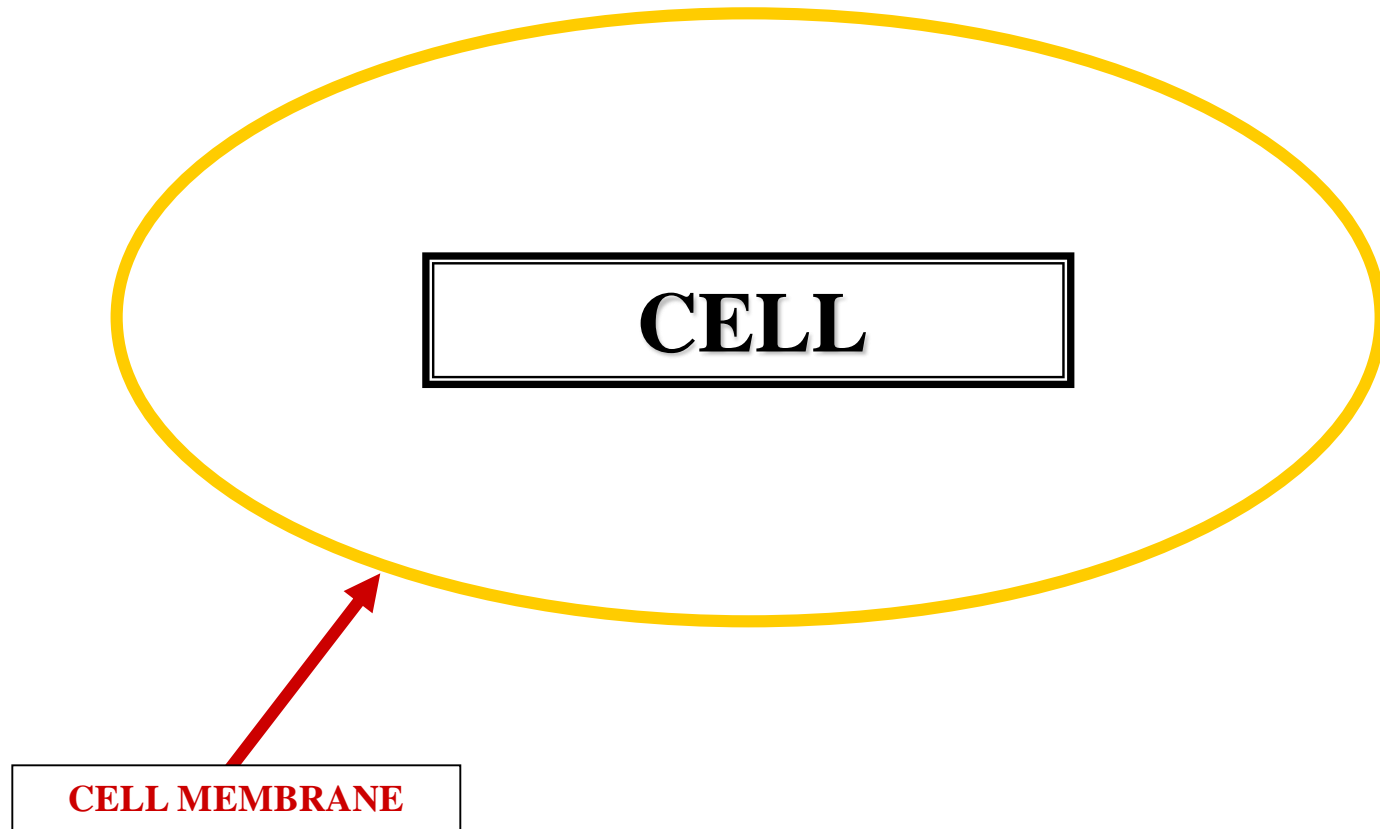
# OSMOTIC PRESSURE



CELL TENDENCY TO  
TAKE UP WATER

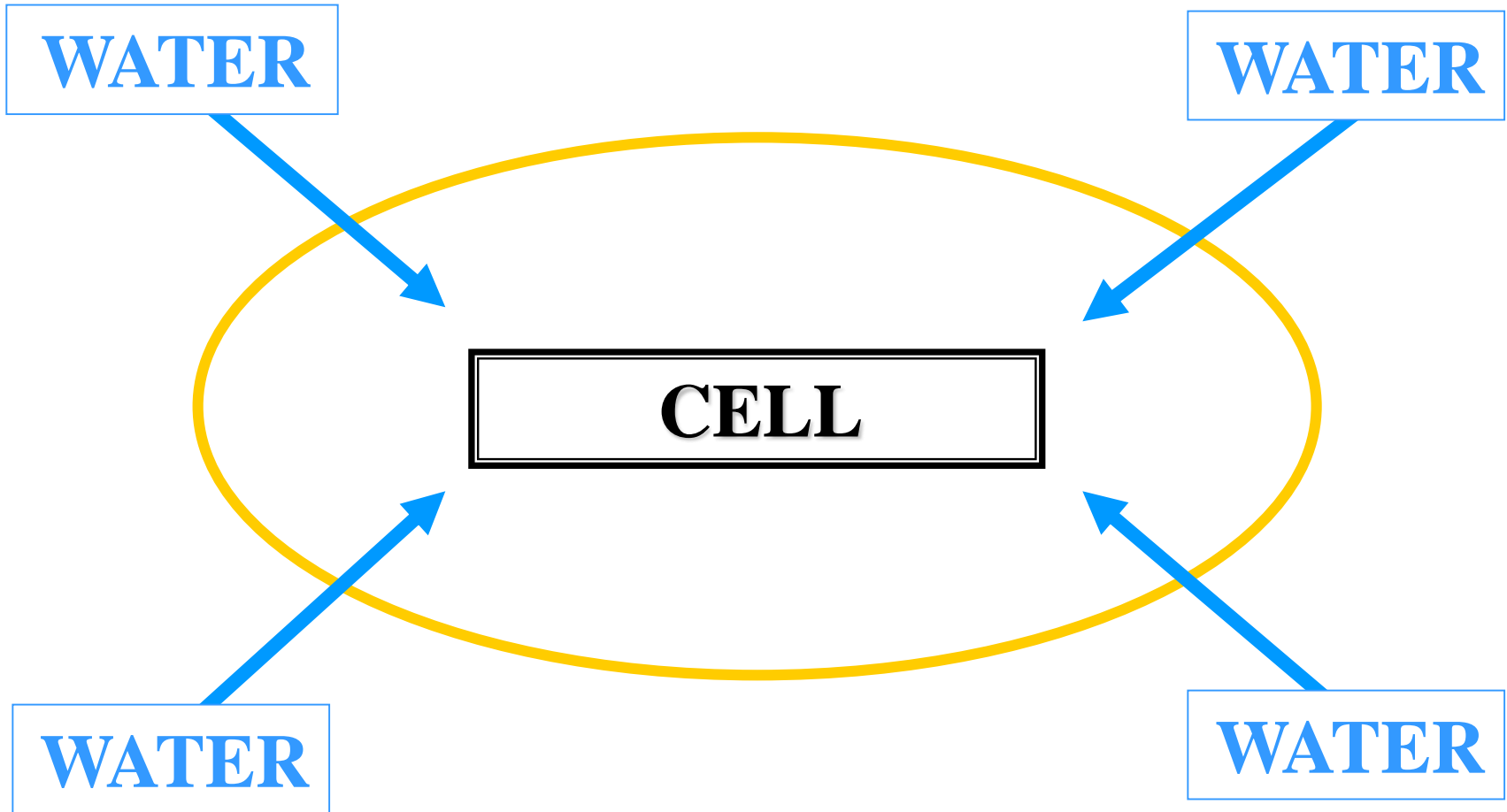
OSMOTIC PRESSURE

# OSMOTIC PRESSURE





# OSMOTIC PRESSURE



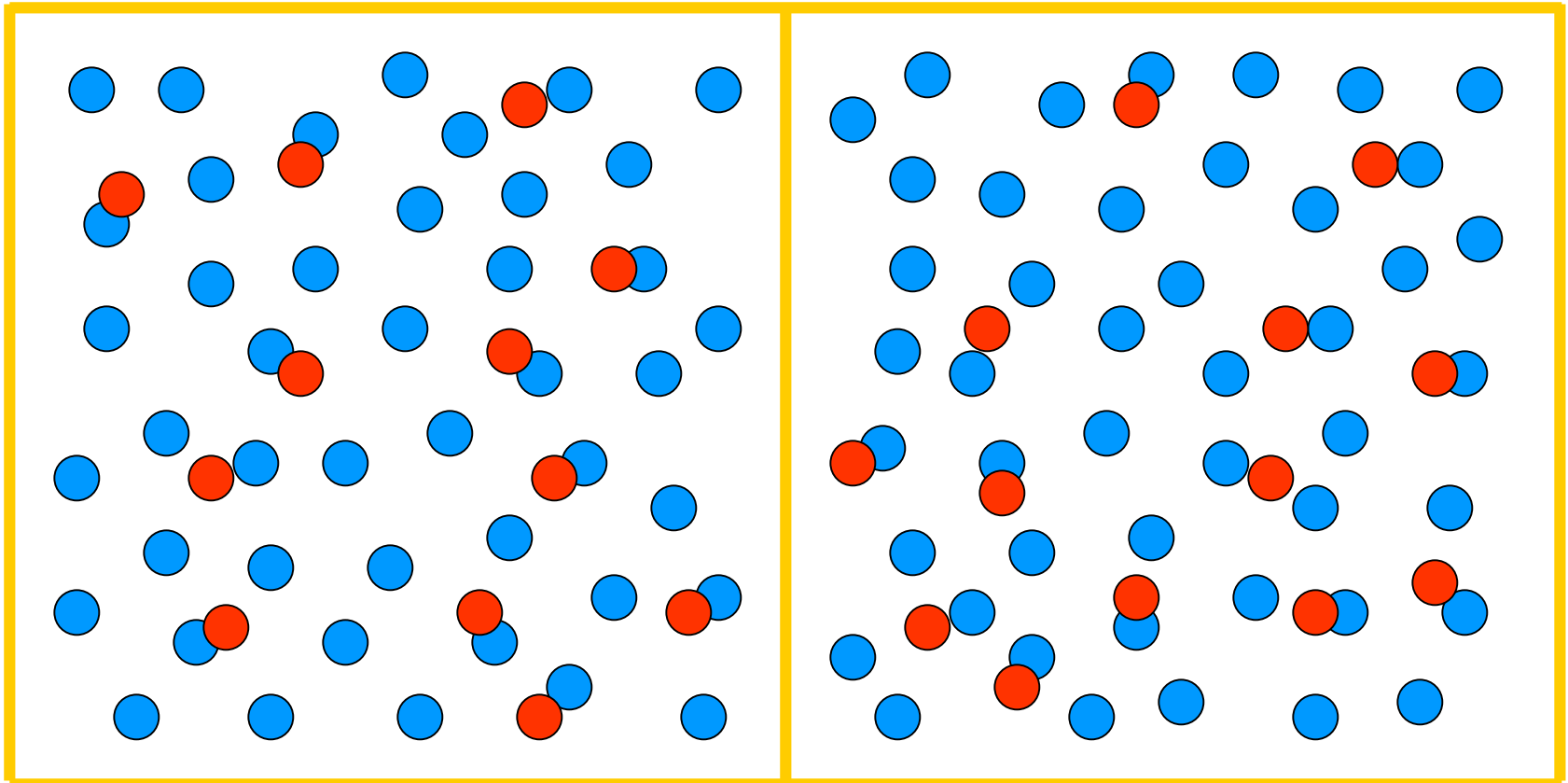
**CELL TENDENCY TO TAKE UP WATER**

# OSMOTIC PRESSURE



**CELL A**

**CELL B**



 = WATER MOLECULE

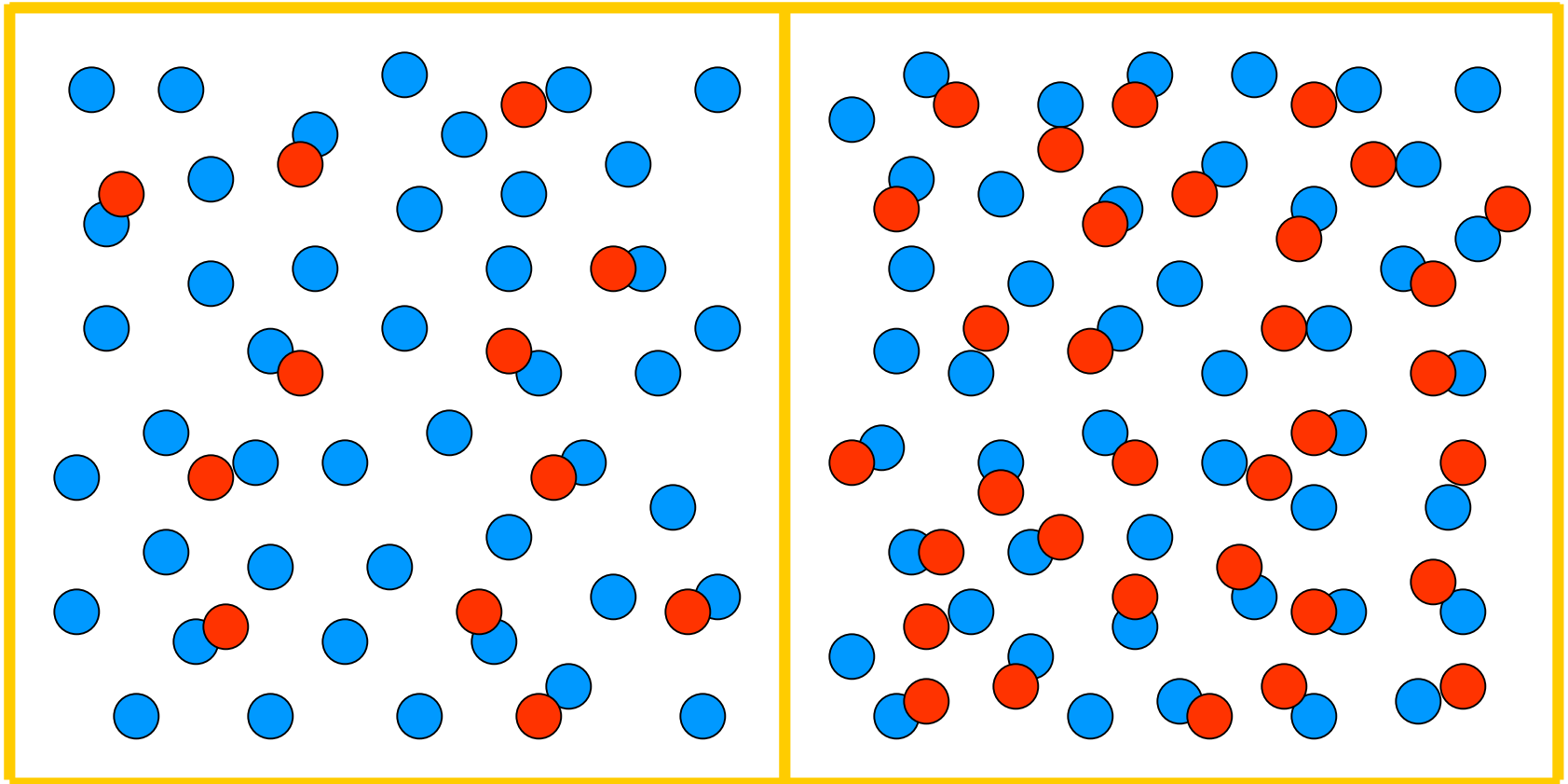
 = POLAR SOLUTE MOLECULE

 = MEMBRANE

# OSMOTIC PRESSURE

CELL A

CELL B



● = WATER MOLECULE

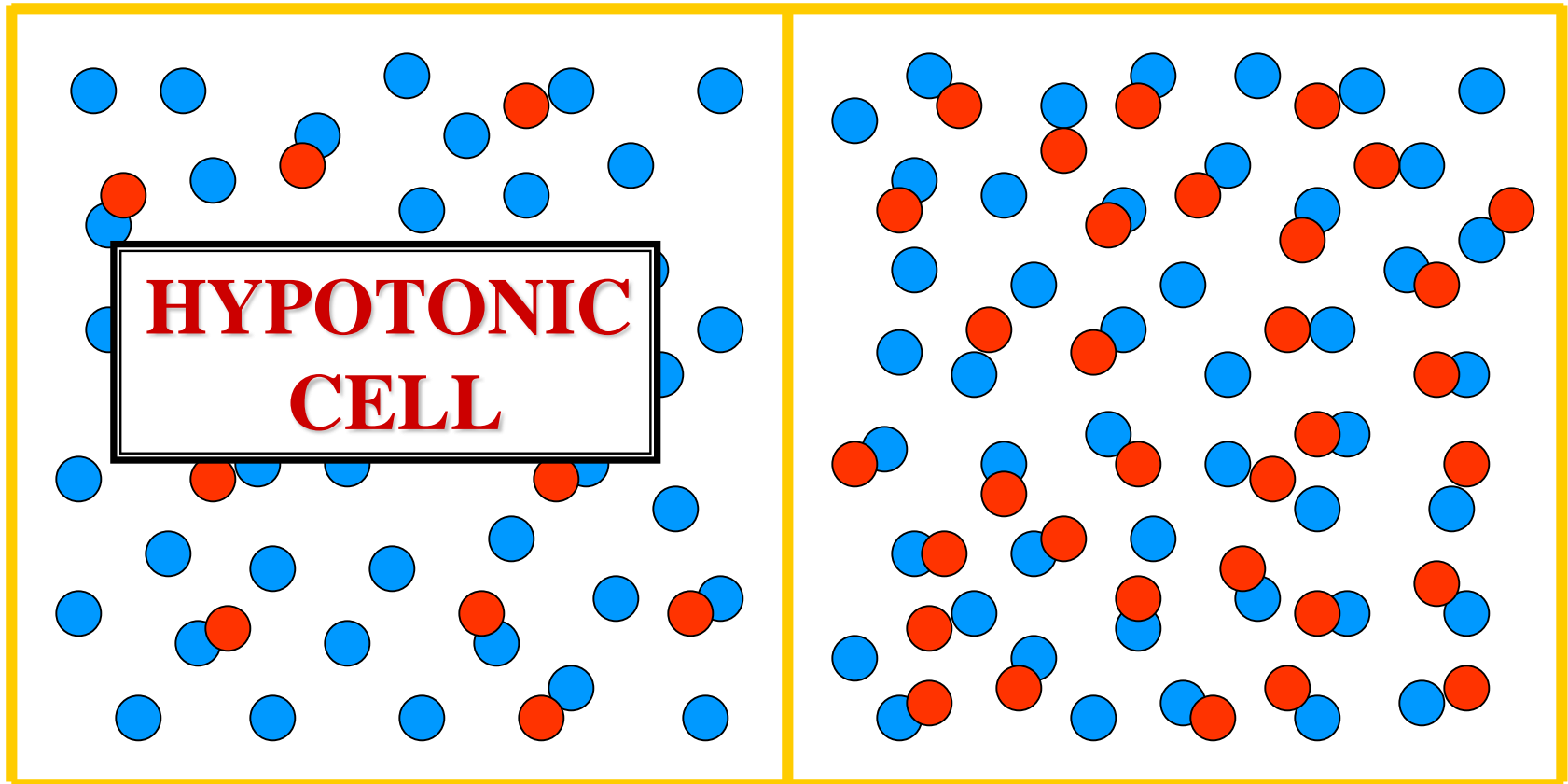
● = POLAR SOLUTE MOLECULE

— = MEMBRANE

# OSMOTIC PRESSURE

CELL A

CELL B



● = WATER MOLECULE

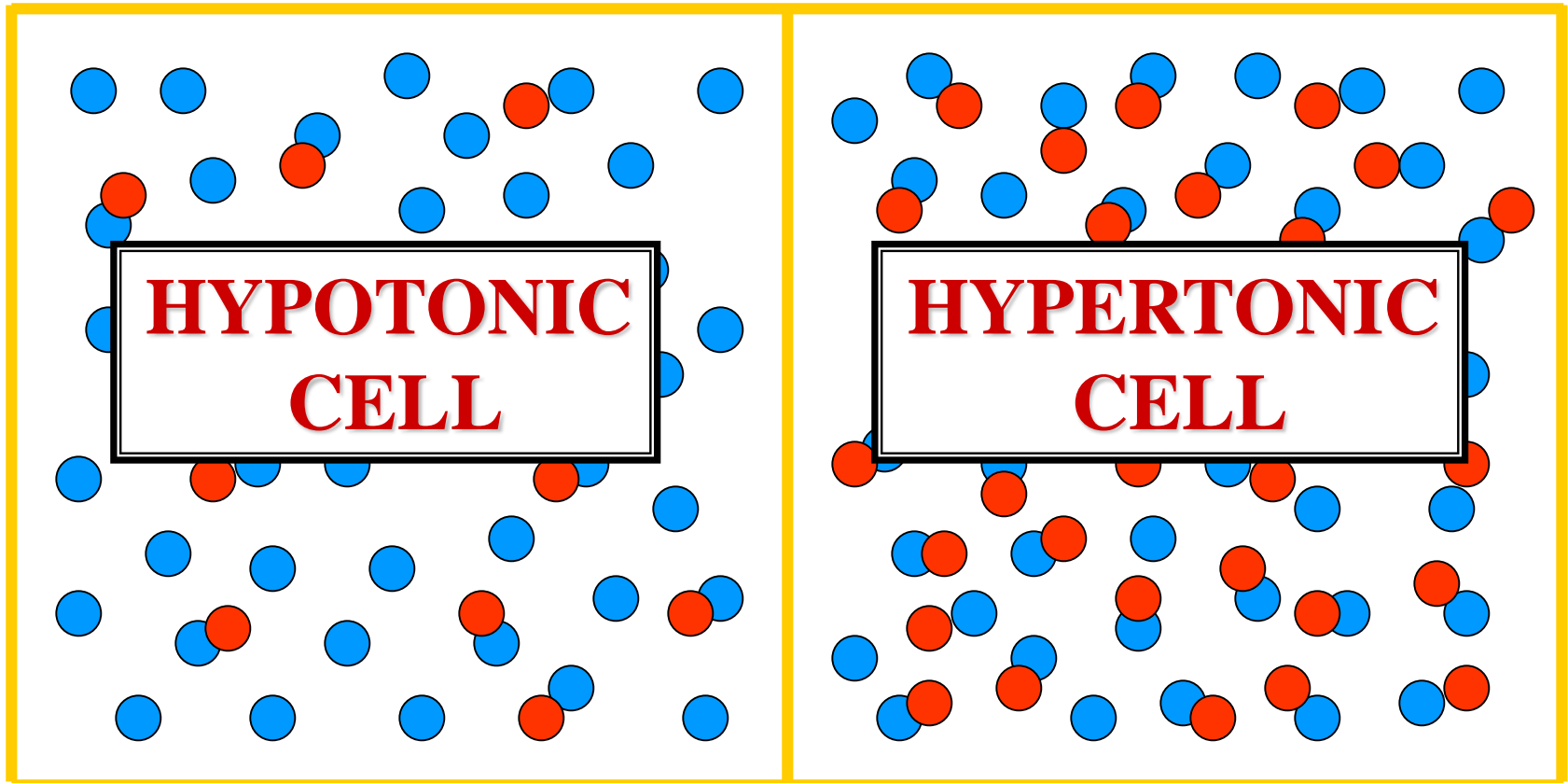
● = POLAR SOLUTE MOLECULE

— = MEMBRANE

# OSMOTIC PRESSURE

CELL A

CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

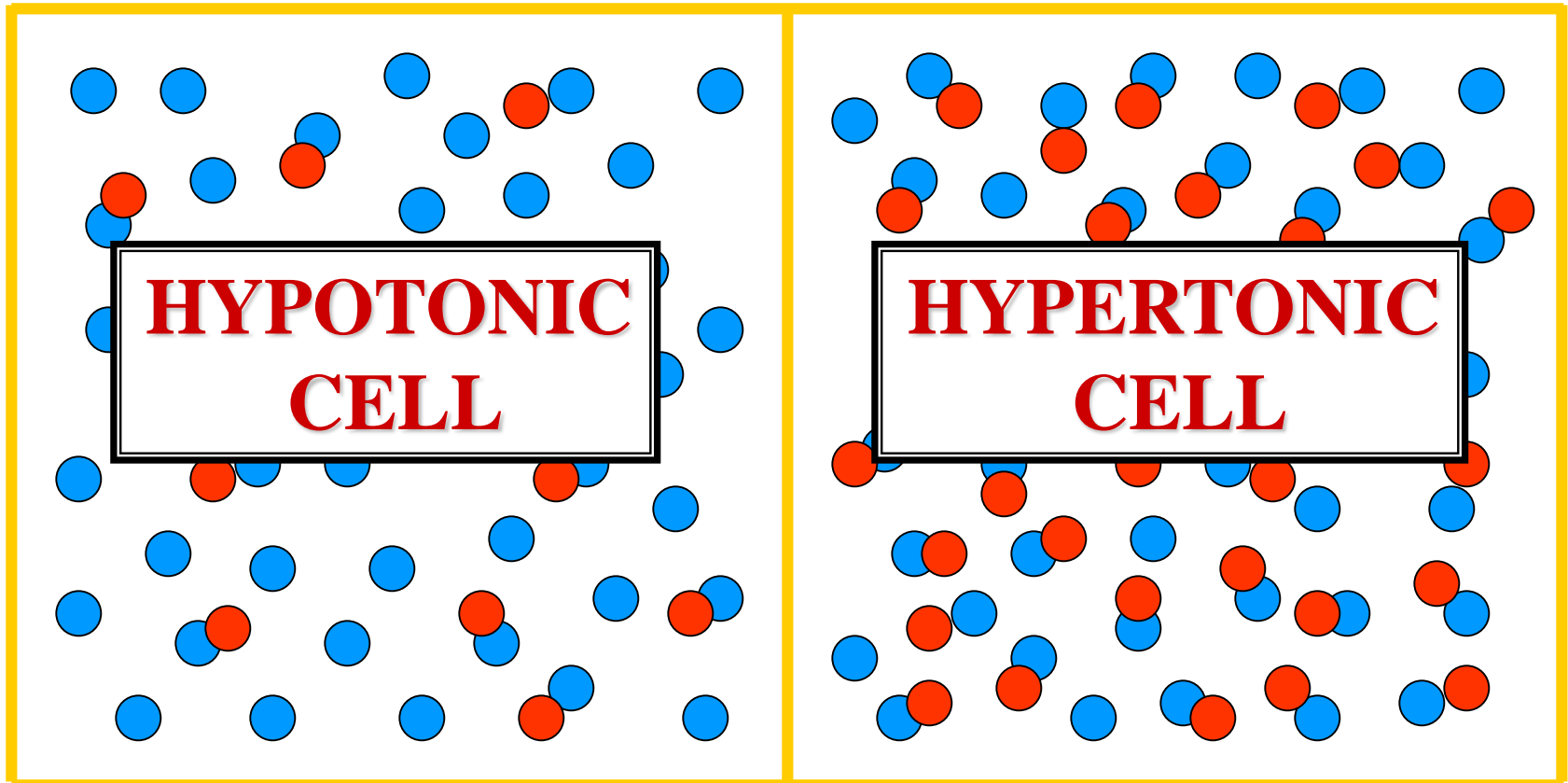
— = MEMBRANE

# OSMOTIC PRESSURE

CELL A

OSMOSIS

CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

— = MEMBRANE

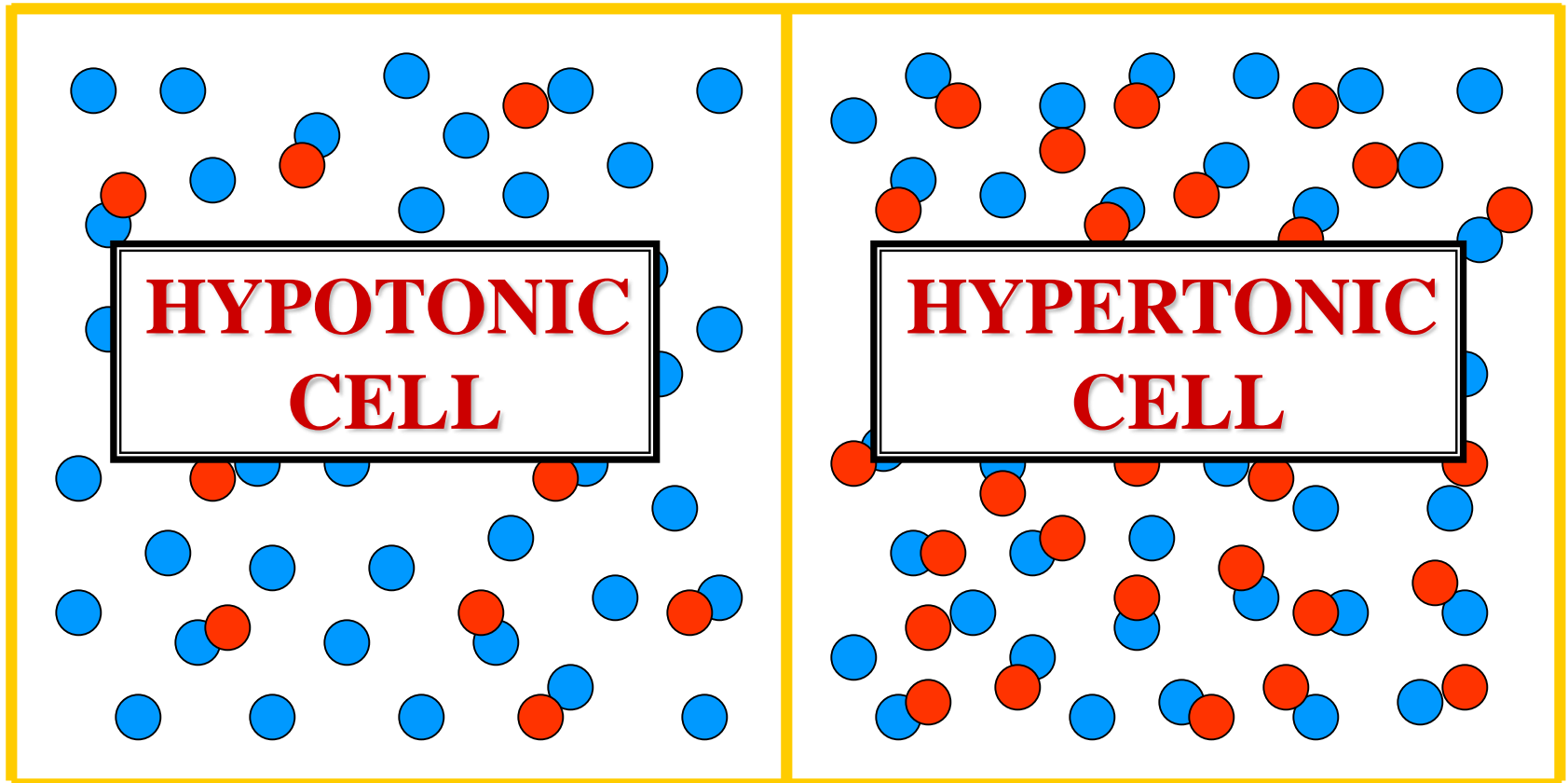


# OSMOTIC PRESSURE

CELL A

WATER VIA OSMOSIS

CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

— = MEMBRANE

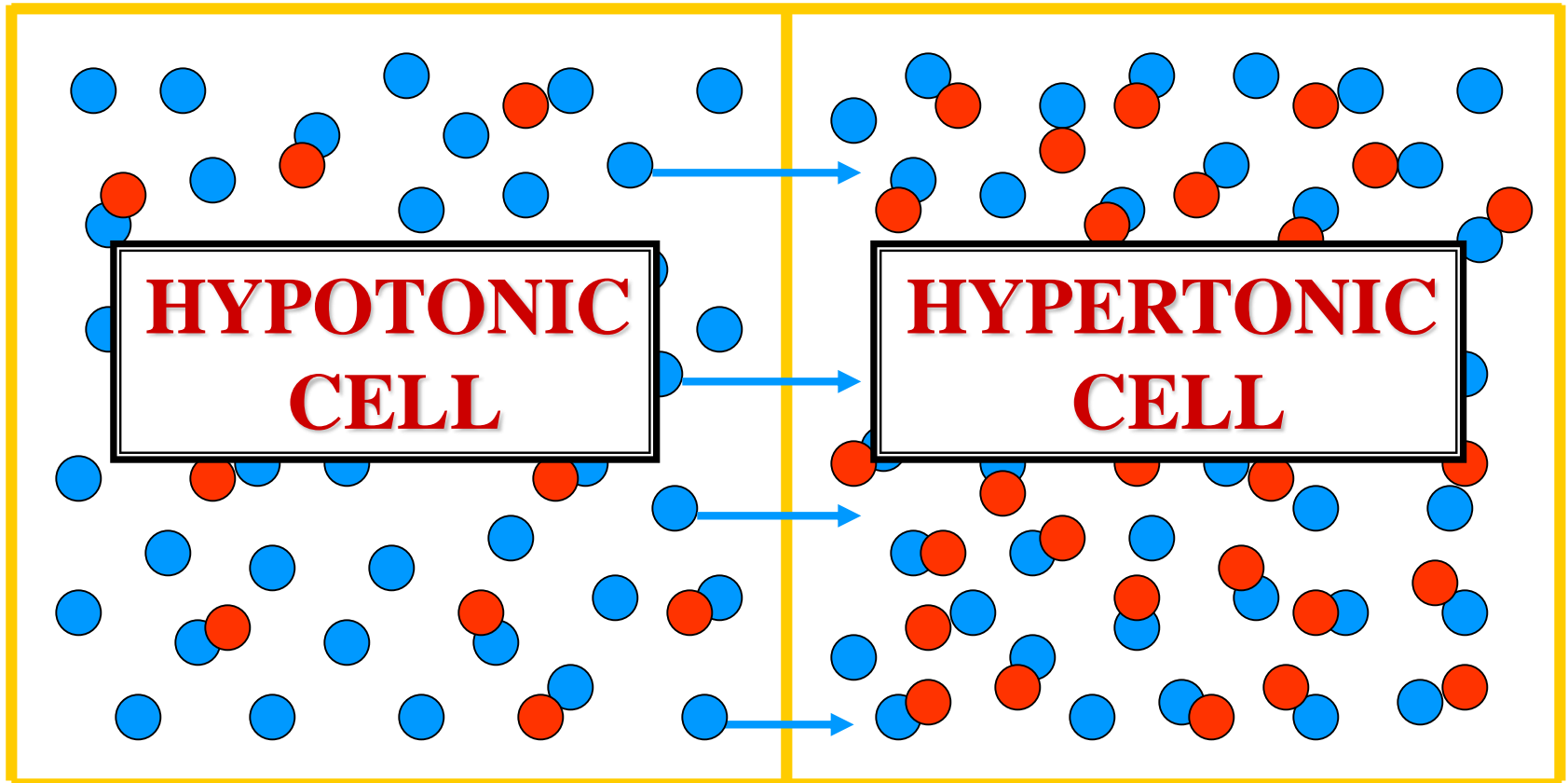
# OSMOTIC PRESSURE



CELL A

WATER VIA OSMOSIS

CELL B



● = WATER MOLECULE

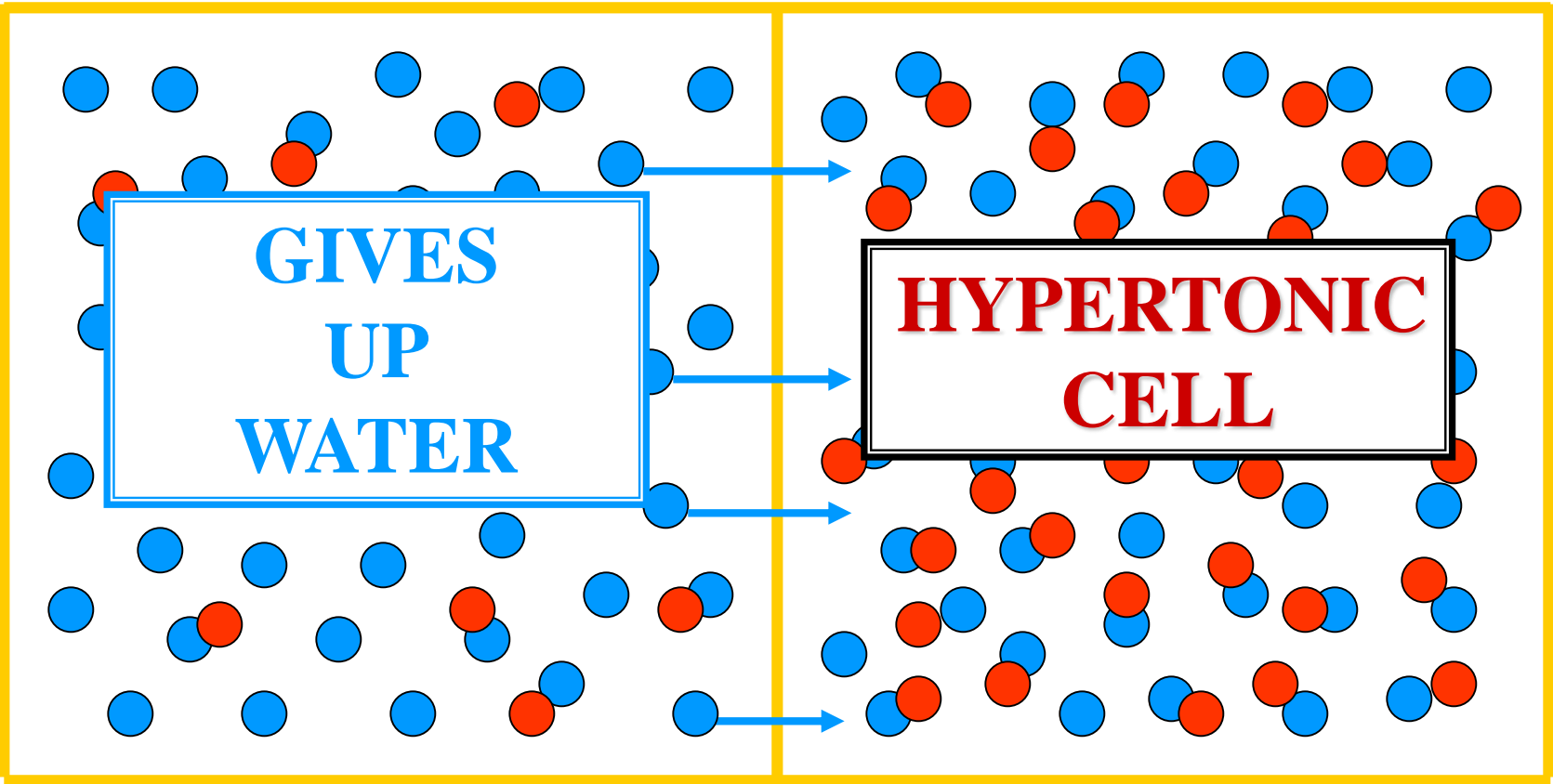
● = POLAR SOLUTE MOLECULE

— = MEMBRANE



# OSMOTIC PRESSURE

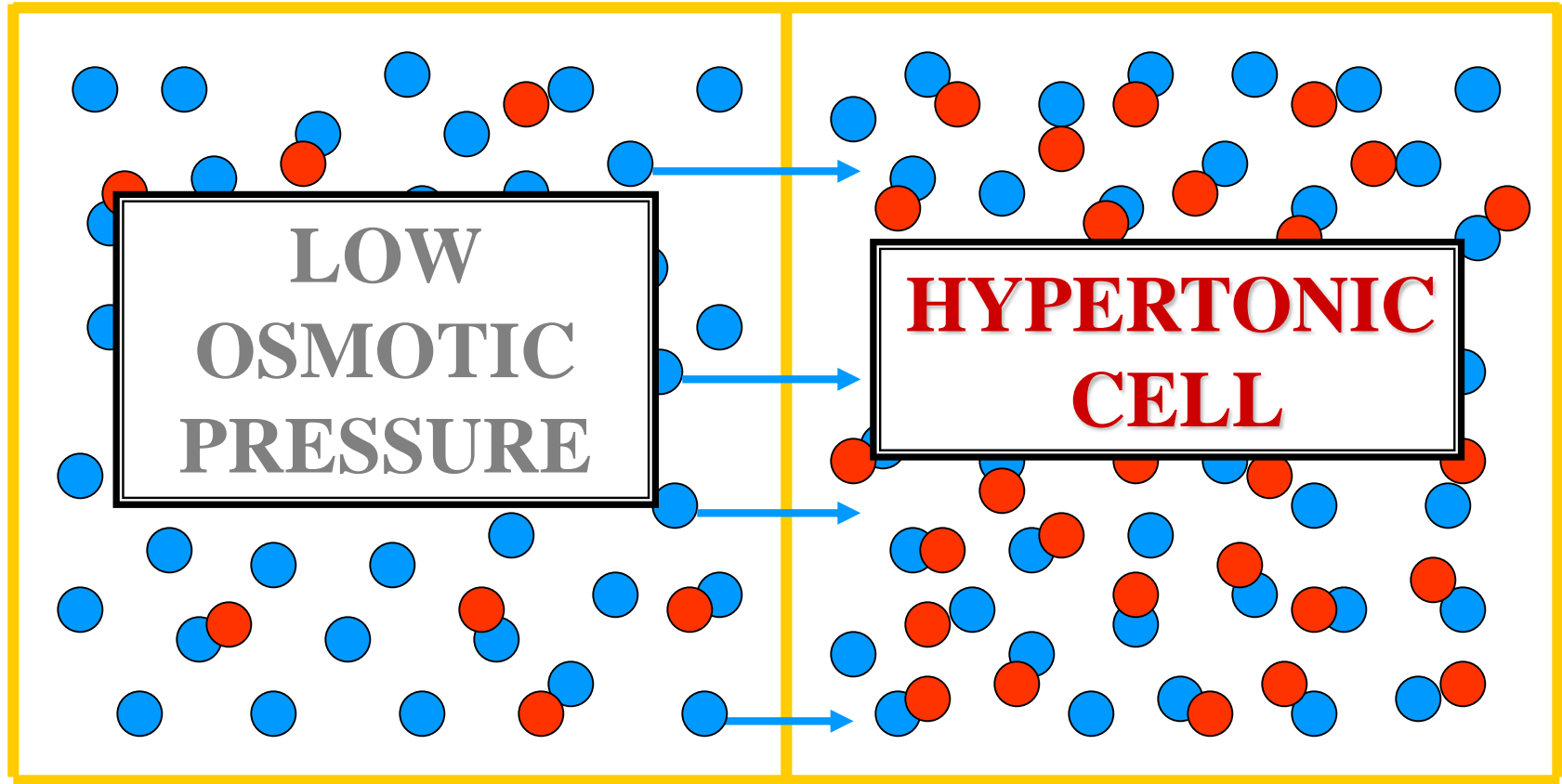
CELL A ——— **WATER VIA OSMOSIS** ———> CELL B



- = WATER MOLECULE
- = POLAR SOLUTE MOLECULE
- = MEMBRANE

# OSMOTIC PRESSURE

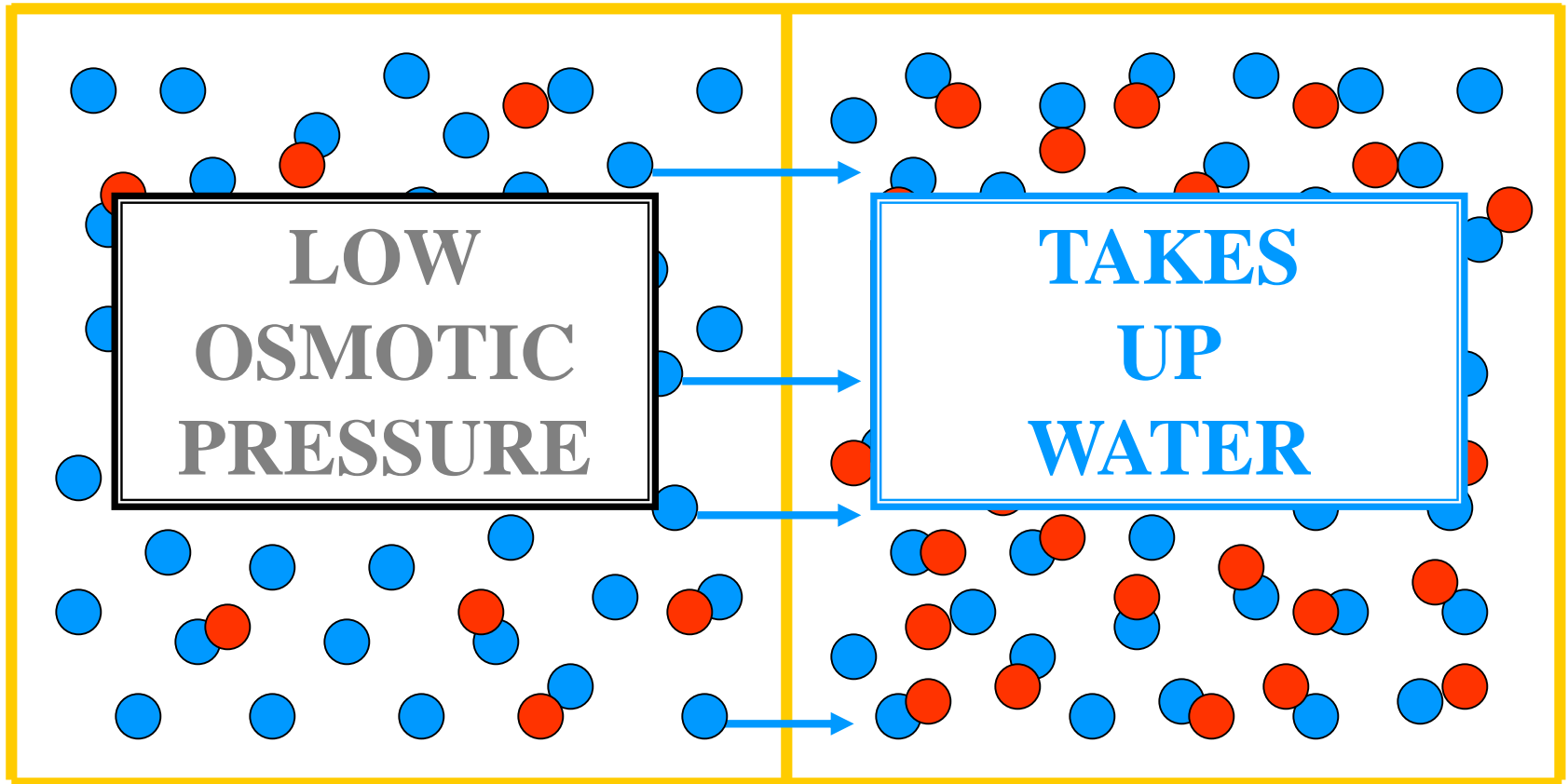
CELL A — **WATER VIA OSMOSIS** —> CELL B



- = WATER MOLECULE
- = POLAR SOLUTE MOLECULE
- = MEMBRANE

# OSMOTIC PRESSURE

CELL A WATER VIA OSMOSIS → CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

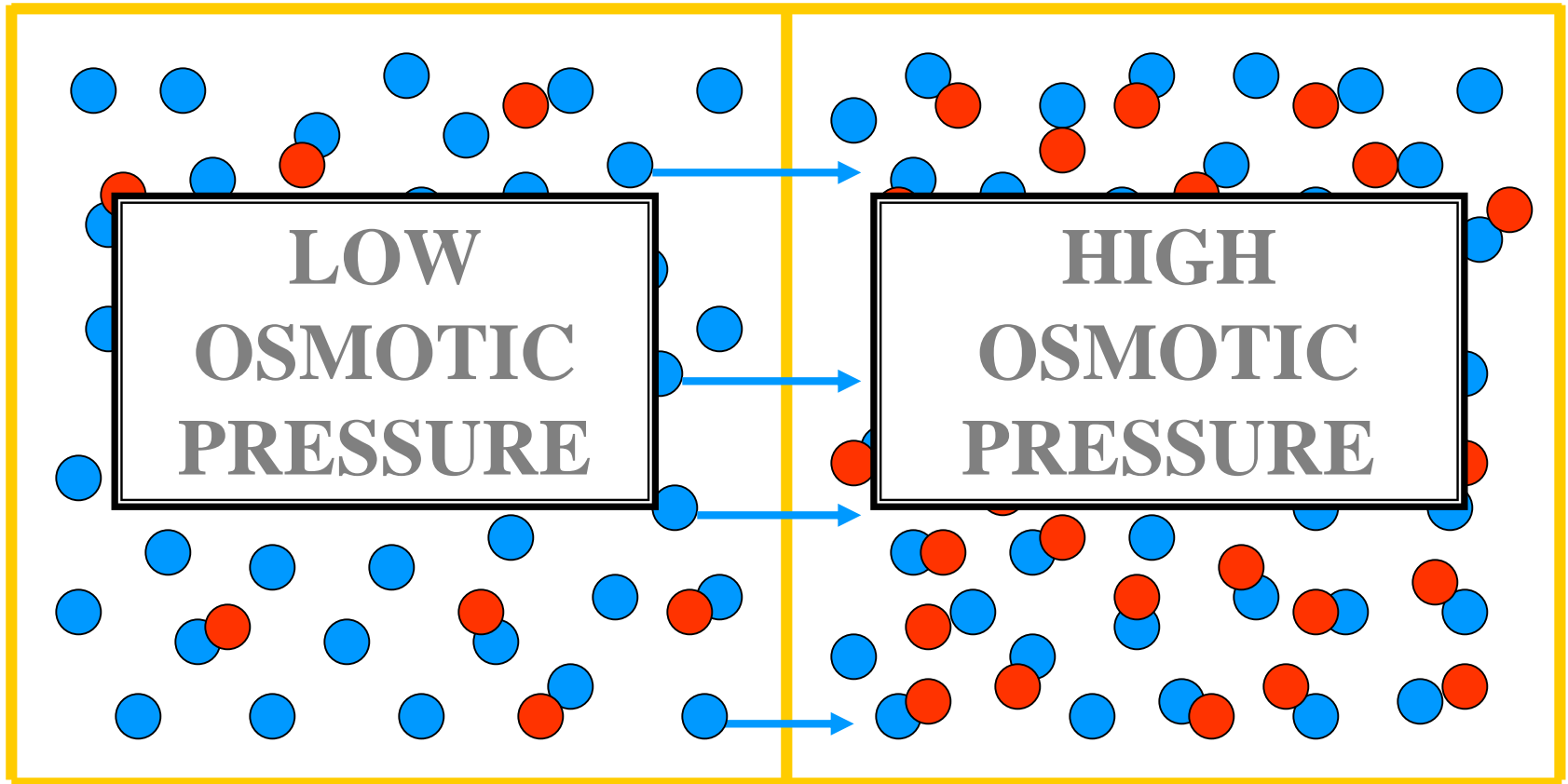
— = MEMBRANE

# OSMOTIC PRESSURE

CELL A

WATER VIA OSMOSIS

CELL B



● = WATER MOLECULE

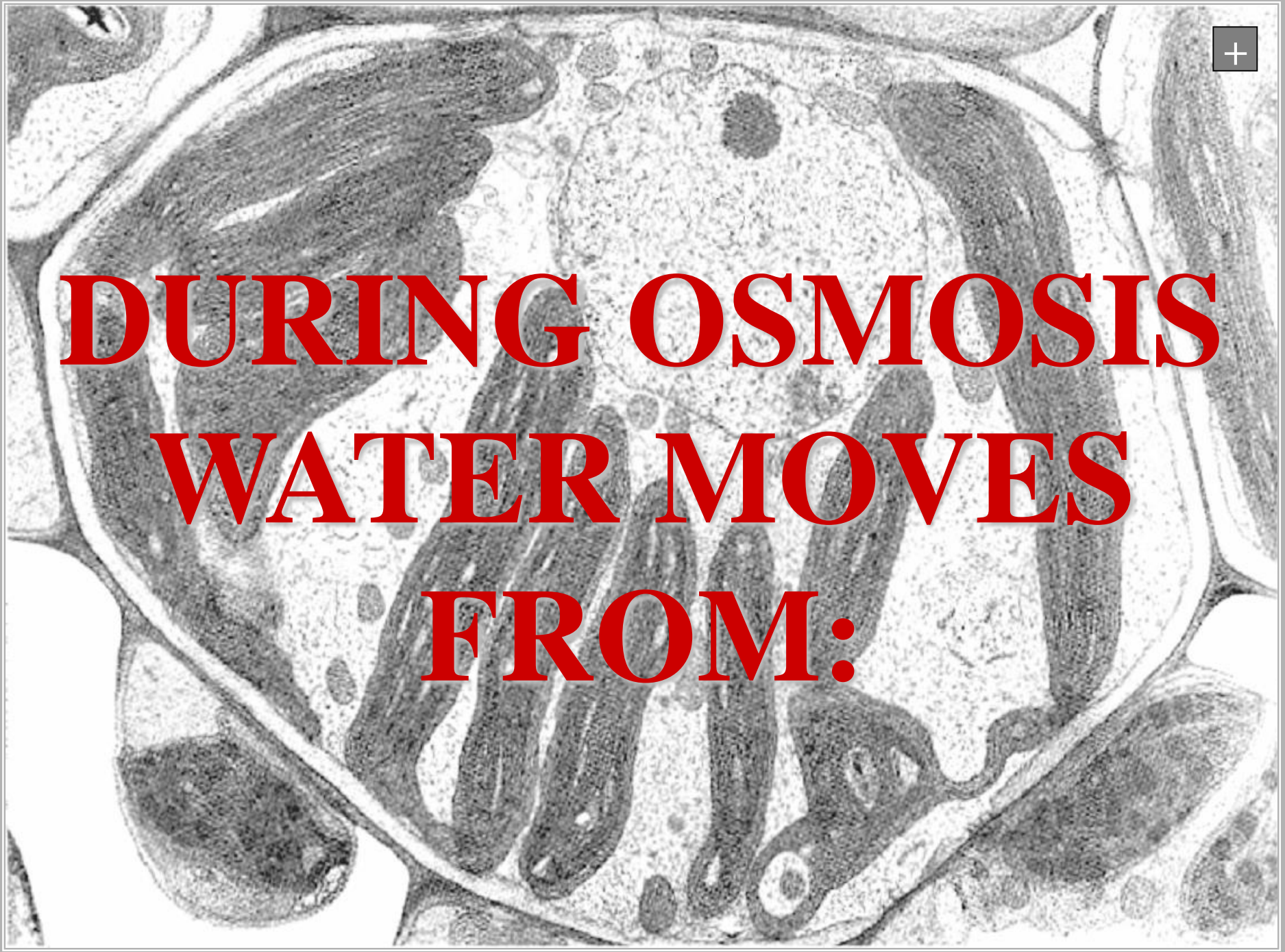
● = POLAR SOLUTE MOLECULE

— = MEMBRANE



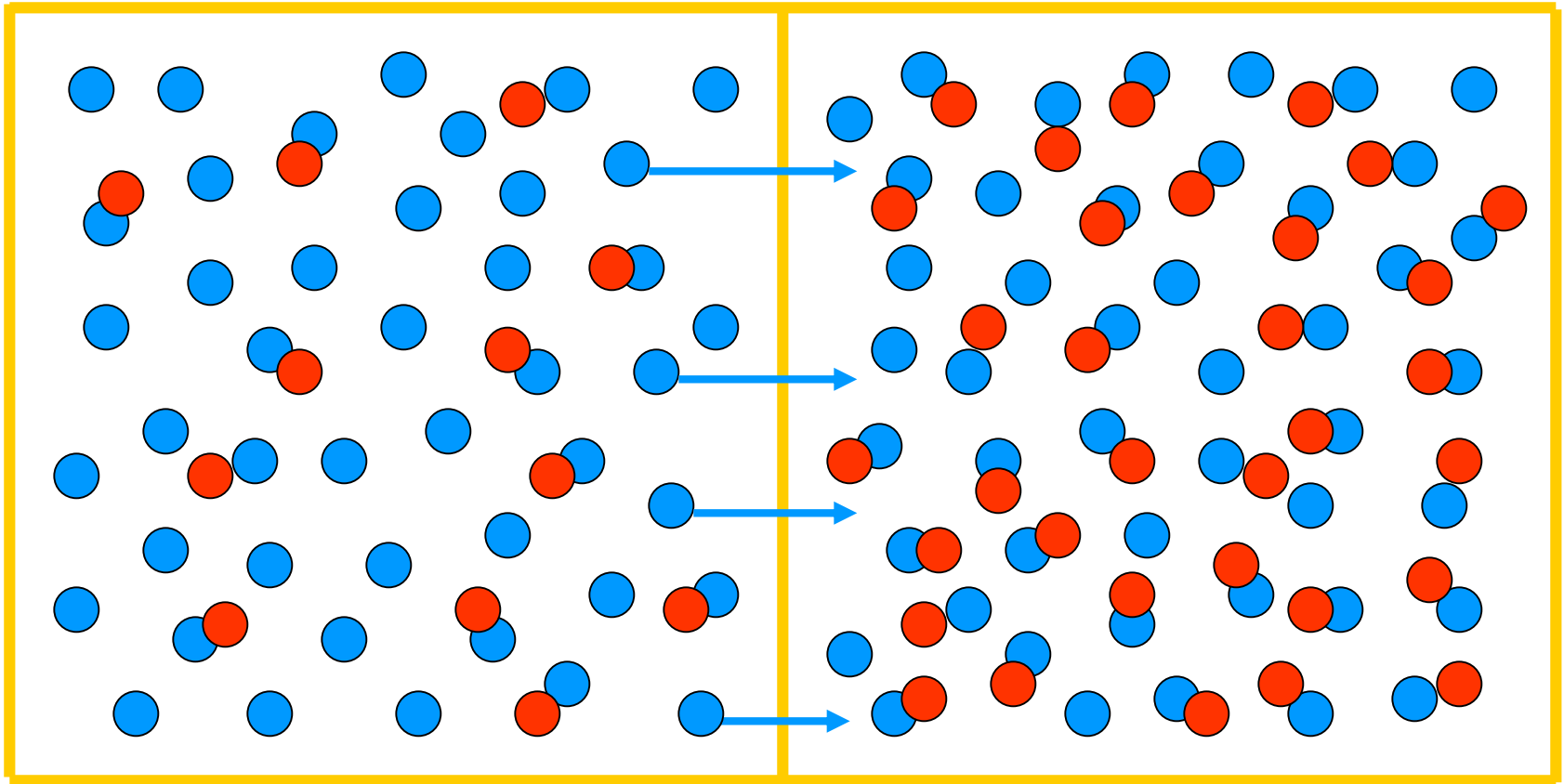


**DURING OSMOSIS  
WATER MOVES  
FROM:**



# OSMOTIC PRESSURE

CELL A WATER VIA OSMOSIS → CELL B



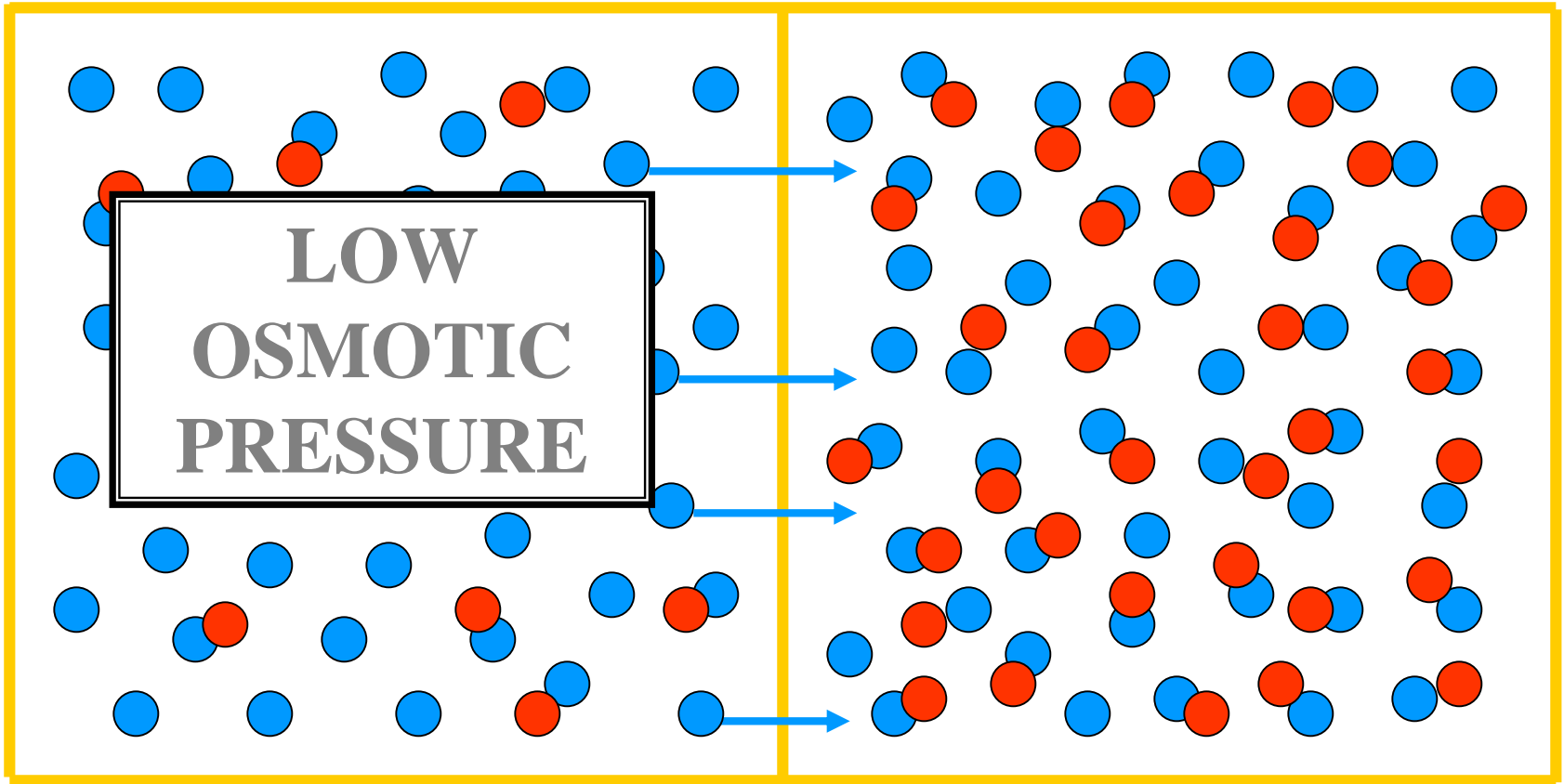
● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

— = MEMBRANE

# OSMOTIC PRESSURE

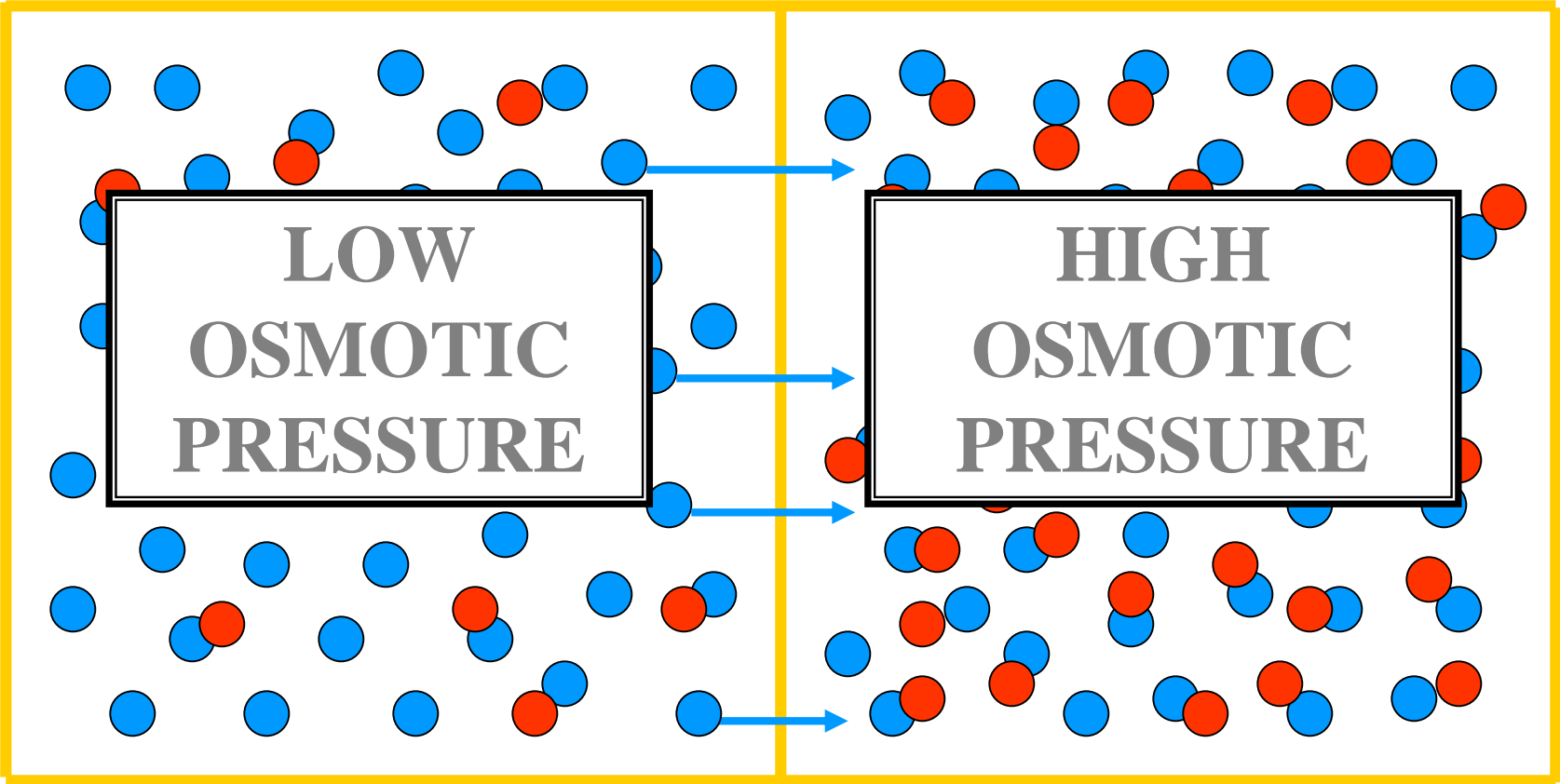
CELL A  **WATER VIA OSMOSIS**  CELL B



-  = WATER MOLECULE
-  = POLAR SOLUTE MOLECULE
-  = MEMBRANE

# OSMOTIC PRESSURE

CELL A — **WATER VIA OSMOSIS** —> CELL B



● = WATER MOLECULE

● = POLAR SOLUTE MOLECULE

— = MEMBRANE



# **TURGOR PRESSURE**

# **TURGOR PRESSURE**

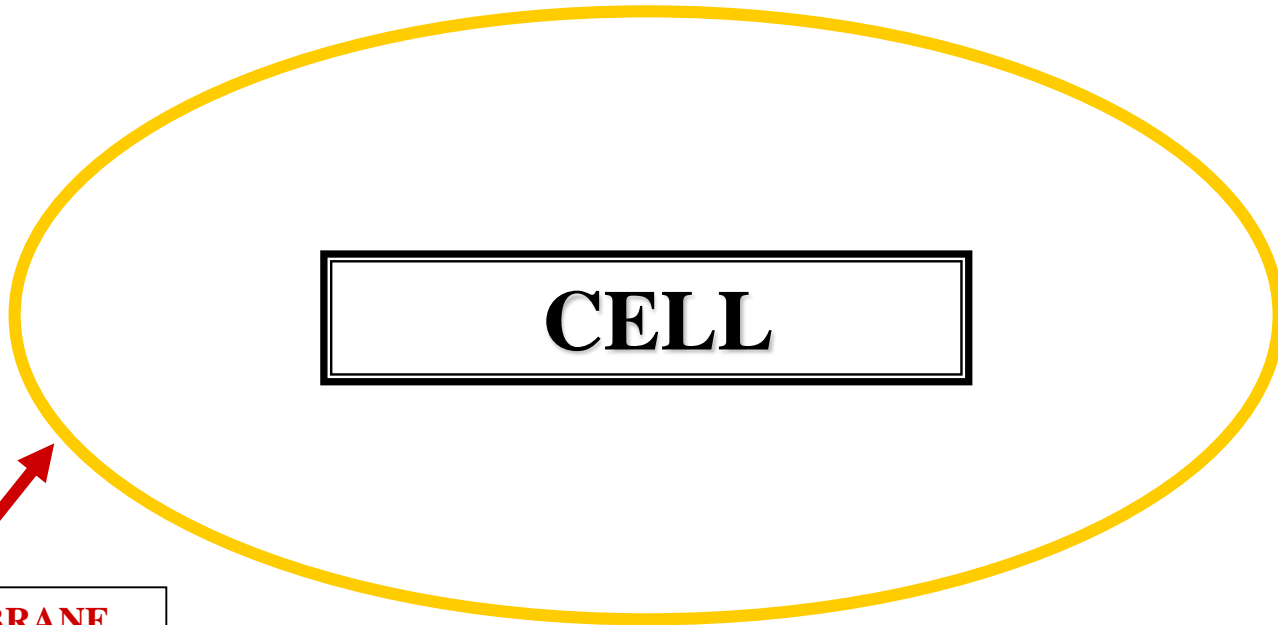
**TURGOR PRESSURE**



**CELL INTERNAL  
WATER PRESSURE**

**TURGOR PRESSURE**

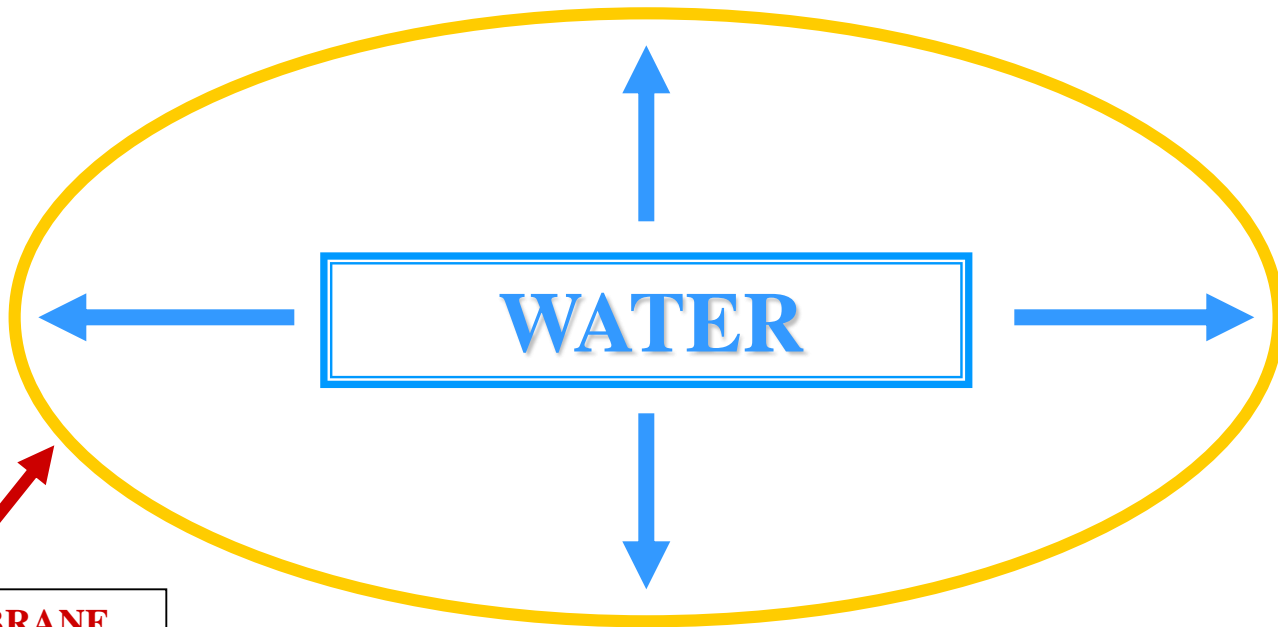
# TURGOR PRESSURE



**CELL MEMBRANE**



# TURGOR PRESSURE



**CELL MEMBRANE**

**CELL INTERNAL WATER PRESSURE**



**TURGID CELL**  
**VS**  
**FLACCID CELL**

# **TURGID CELL**

**TURGID CELL**



**TURGID CELL**

**HIGH  
TURGOR PRESSURE**

**TURGID CELL**



# TURGOR PRESSURE

# TURGID CELL

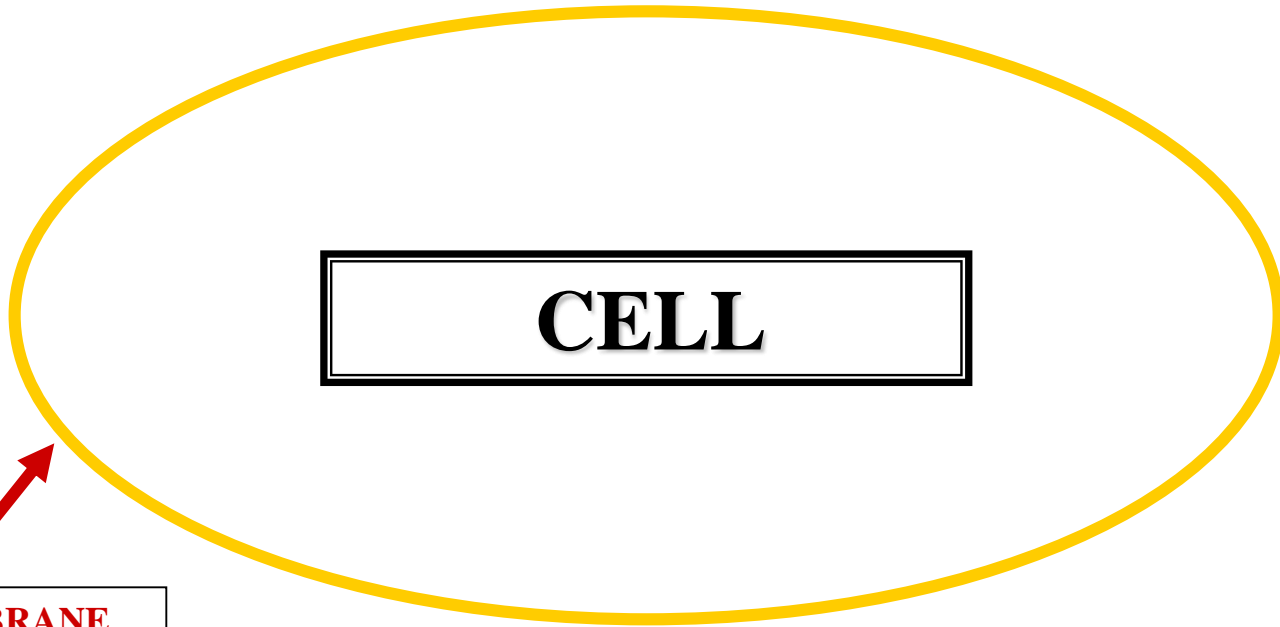
# APPLIED



# ANIMAL CELL



# ANIMAL CELL



CELL MEMBRANE

# ANIMAL CELL

**HYPOTONIC**

**HYPERTONIC**

**HYPOTONIC**

**CELL MEMBRANE**



# ANIMAL CELL



**HYPOTONIC**

OSMOSIS

OSMOSIS

**HYPERTONIC**

OSMOSIS

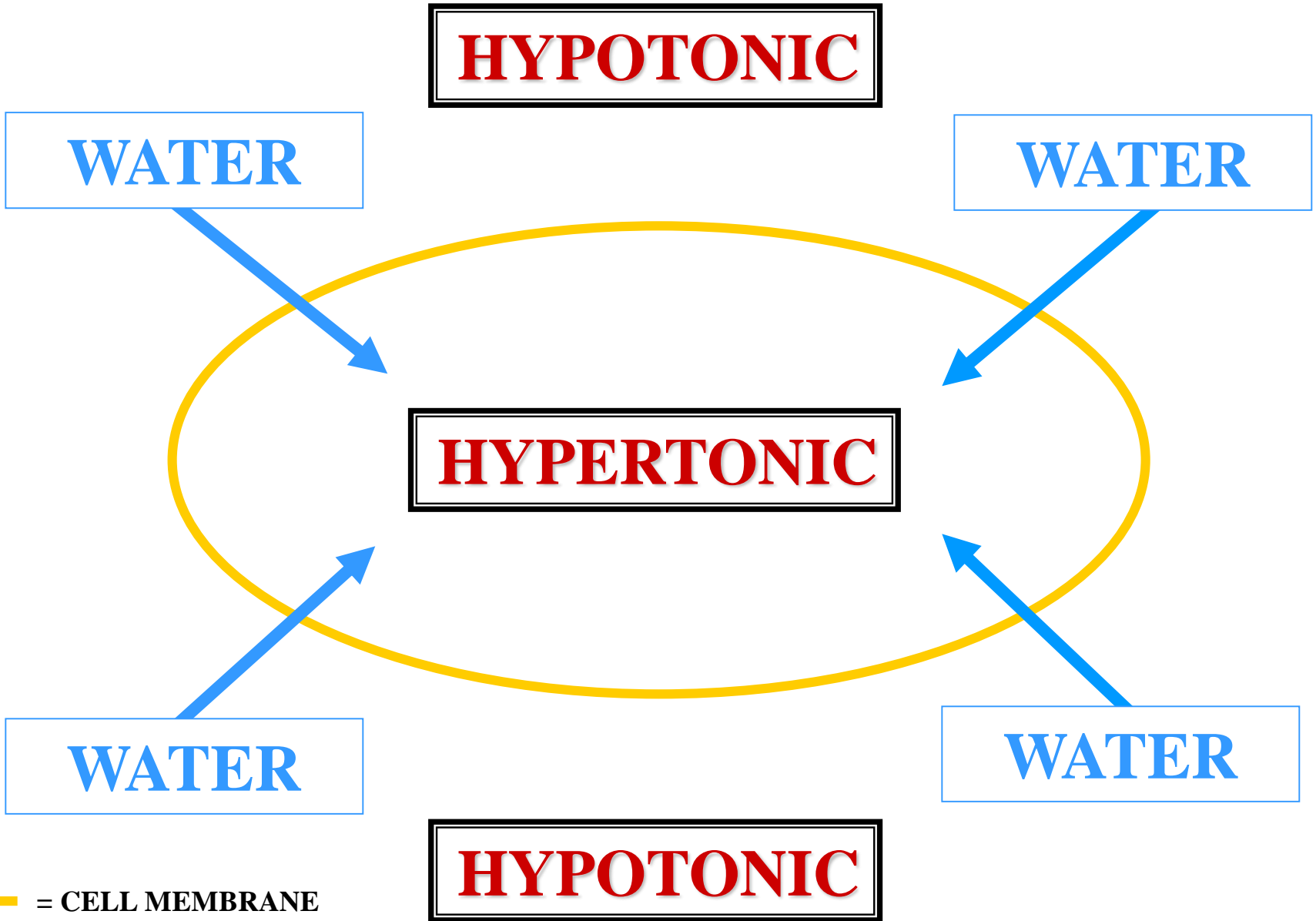
OSMOSIS

**HYPOTONIC**

 = CELL MEMBRANE



# ANIMAL CELL



# ANIMAL CELL



TC

**HYPOTONIC**

**WATER**

**WATER**

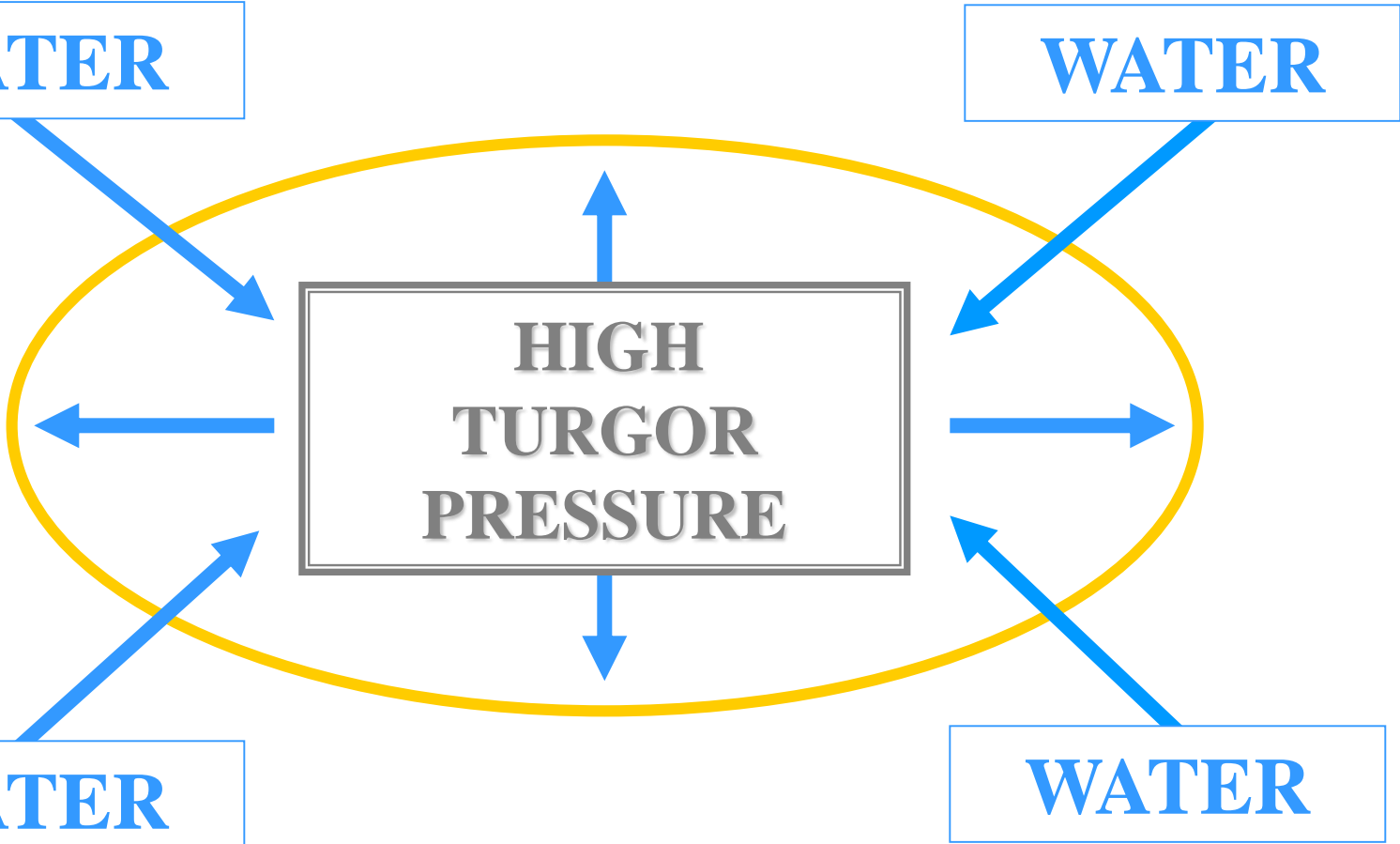
**HIGH  
TURGOR  
PRESSURE**

**WATER**

**WATER**

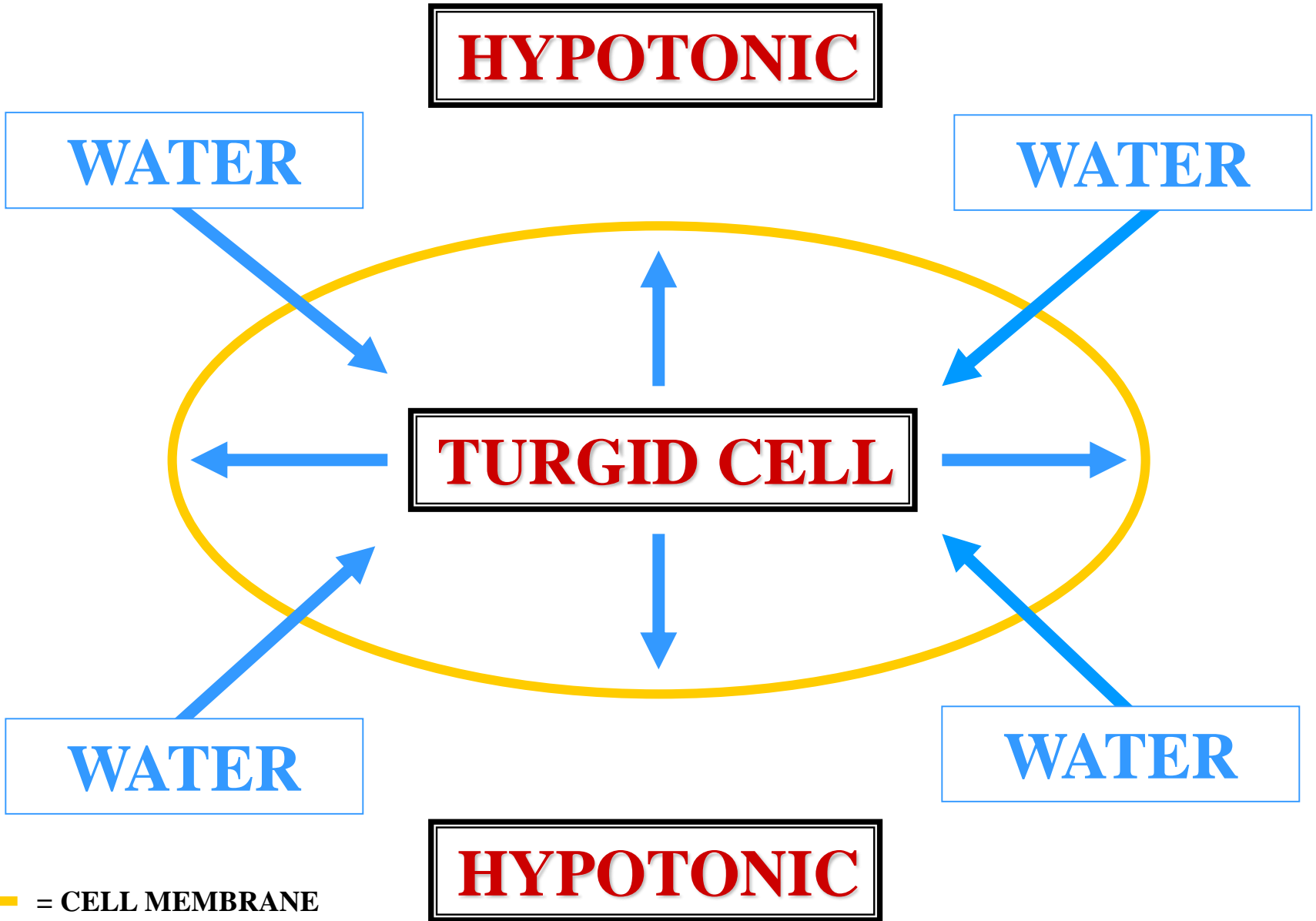
**HYPOTONIC**

 = CELL MEMBRANE

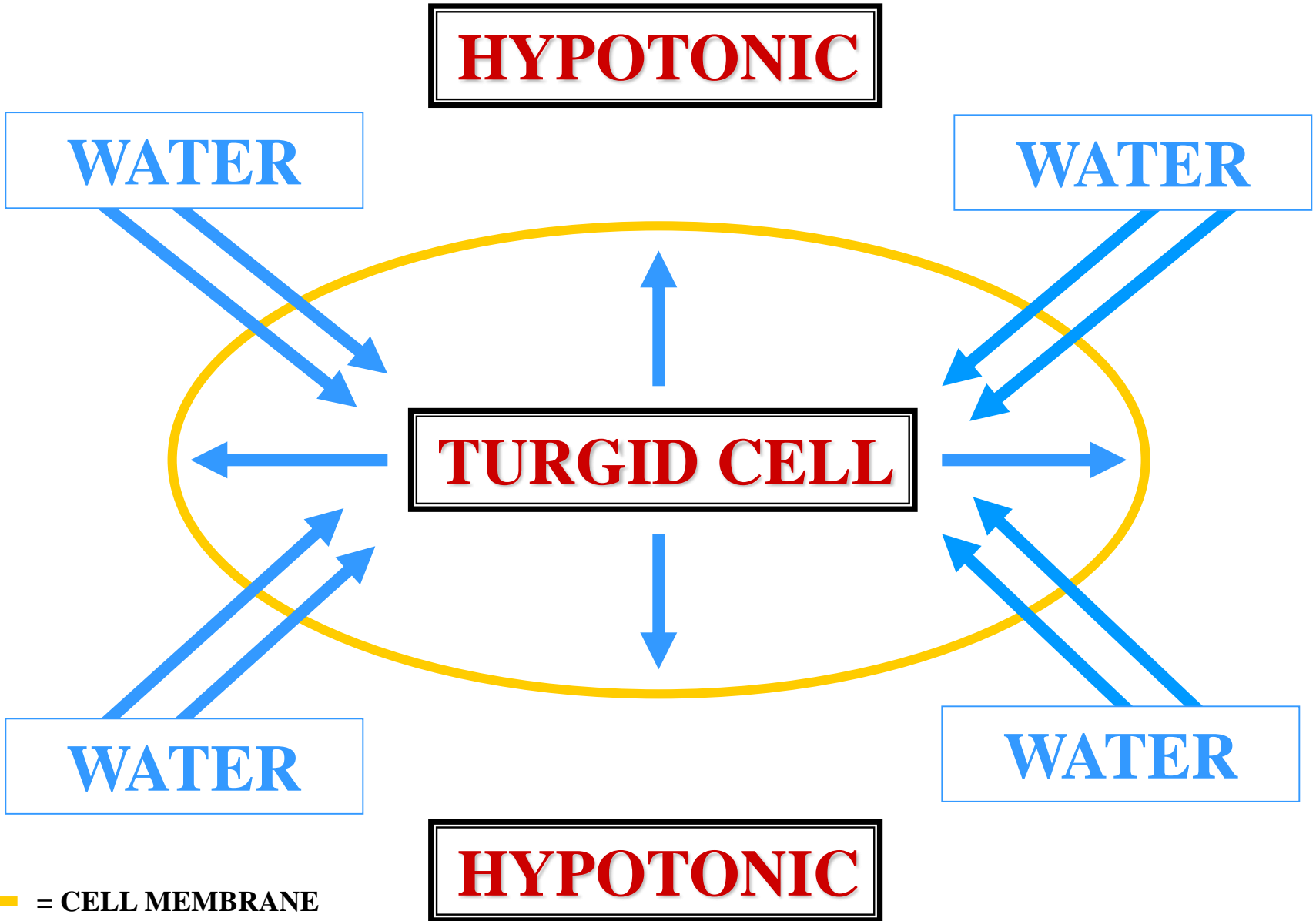




# ANIMAL CELL

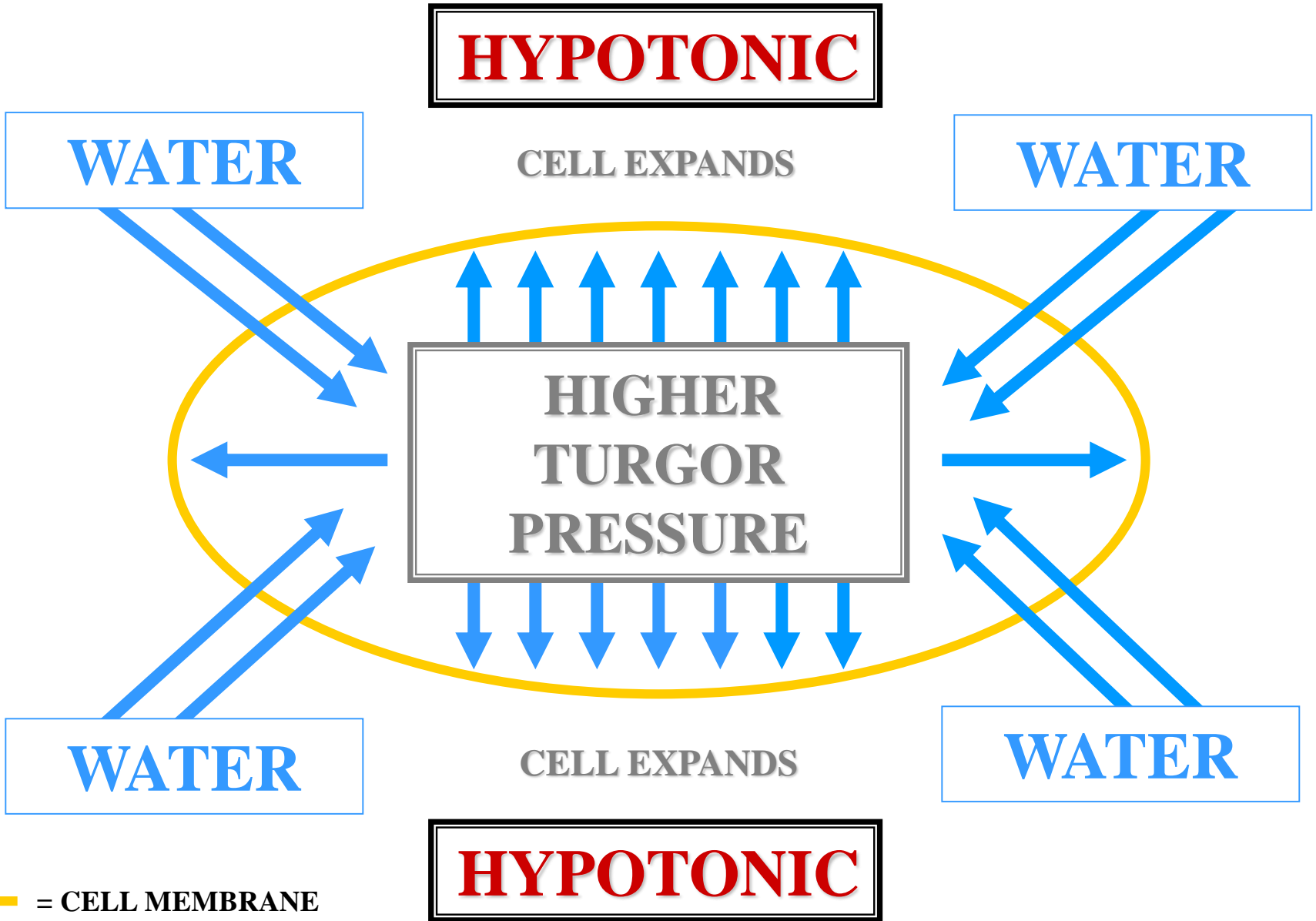


# ANIMAL CELL

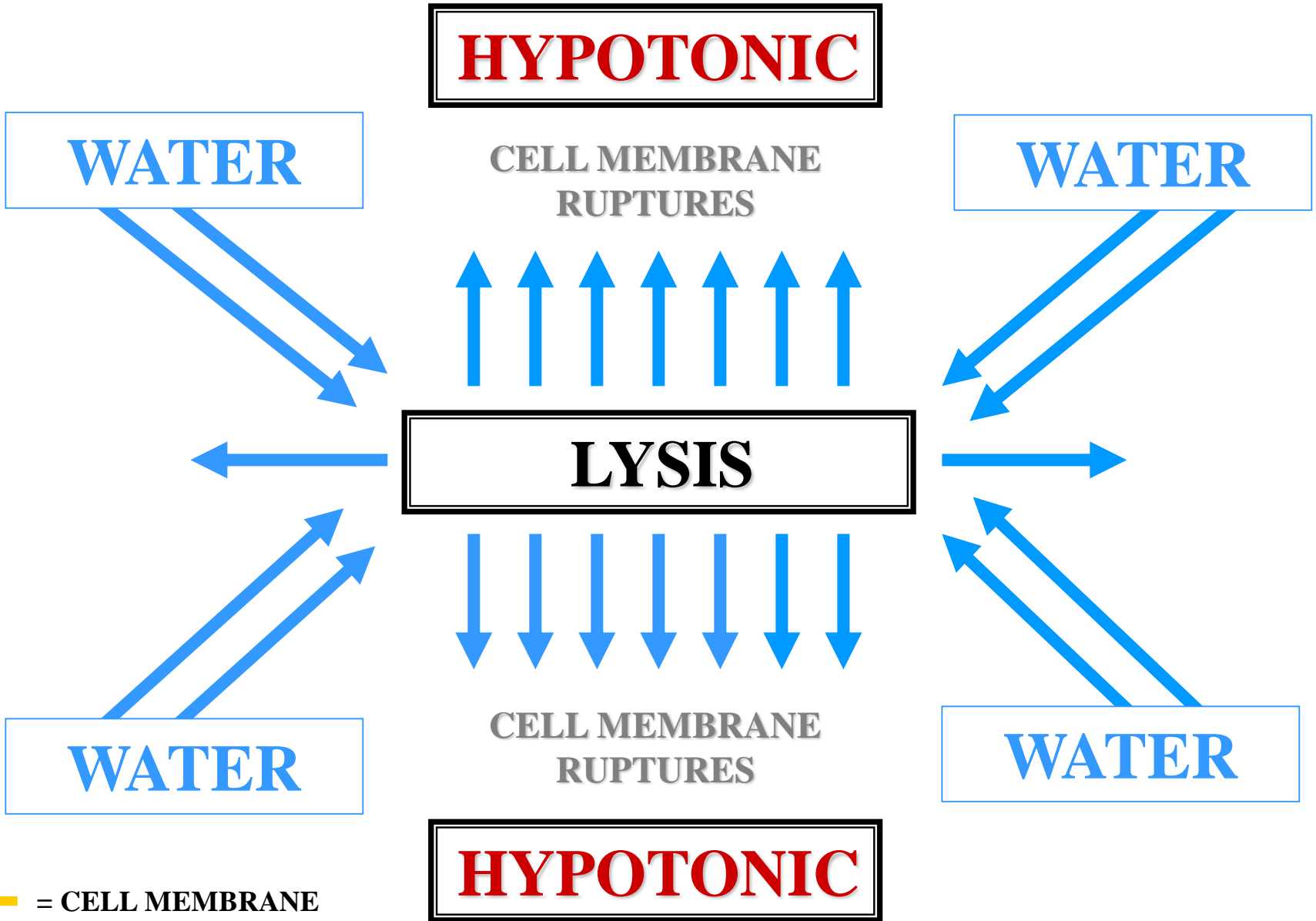


— = CELL MEMBRANE

# ANIMAL CELL



# ANIMAL CELL



**LYSIS**

**LYSIS**

**CELL MEMBRANE  
RUPTURES**

**LYSIS**



**EXAMPLE**

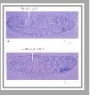
**TURGOR**

**PRESSURE**

**LYSIS**

**PARAMECIUM**

# ALABAMA LAKE OR ALABAMA POND



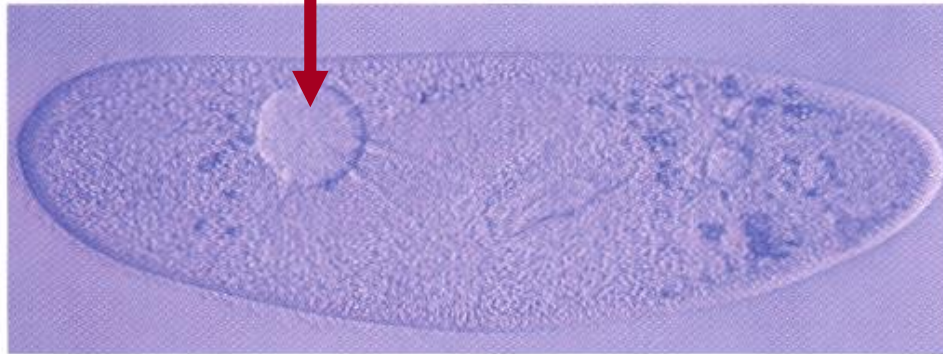
PARAMECIUM



# PARAMECIUM

# TUGOR PRESSURE

CONTRACTILE  
VACUOLE



PARAMECIUM

ALABAMA LAKE OR ALABAMA POND

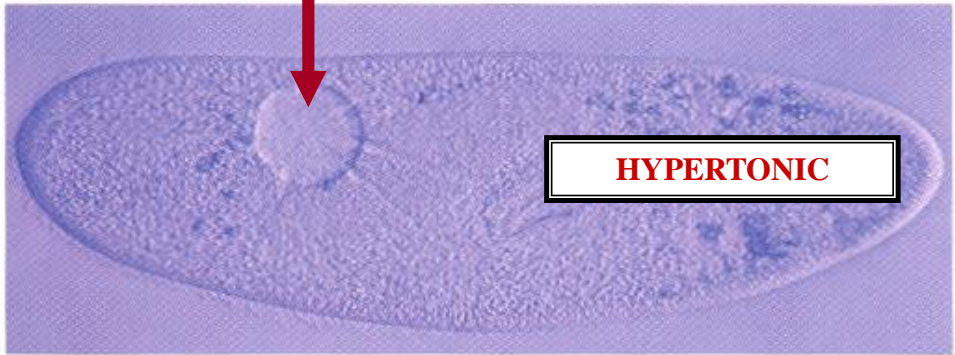


ALABAMA LAKE OR ALABAMA POND



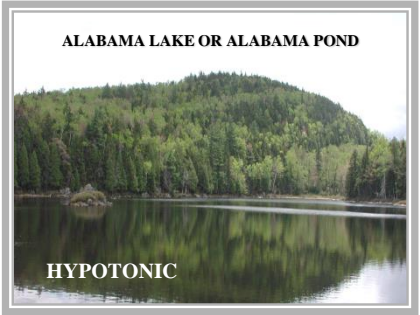
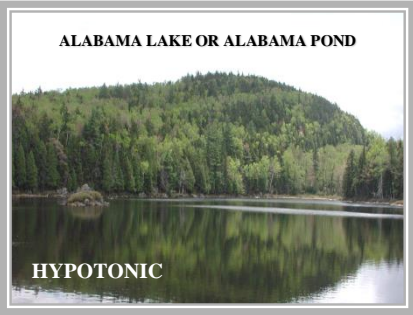
# PARAMECIUM TUGOR PRESSURE

**CONTRACTILE  
VACUOLE**



**HYPOTONIC**

## PARAMECIUM



# PARAMECIUM TUGOR PRESSURE



**CONTRACTILE  
VACUOLE**

OSMOSIS

PARAMECIUM



**HYPOTONIC**

ALABAMA LAKE OR ALABAMA POND



HYPOTONIC

ALABAMA LAKE OR ALABAMA POND



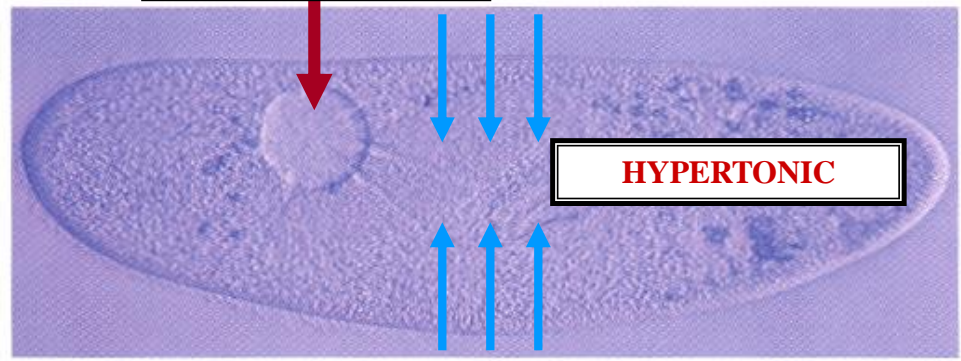
HYPOTONIC

# PARAMECIUM

## TUGOR PRESSURE

WATER →

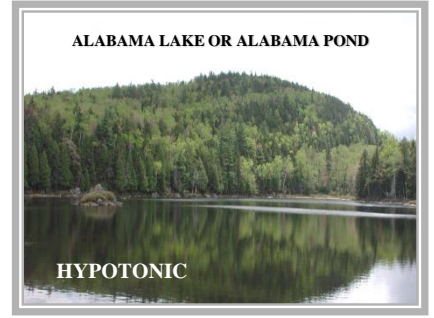
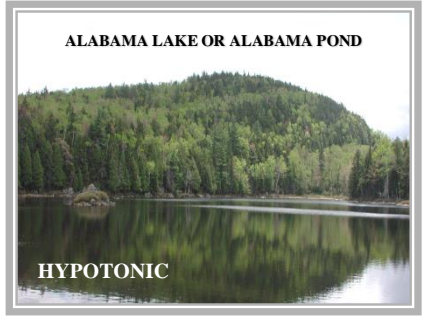
CONTRACTILE VACUOLE



HYPERTONIC

HYPOTONIC

PARAMECIUM

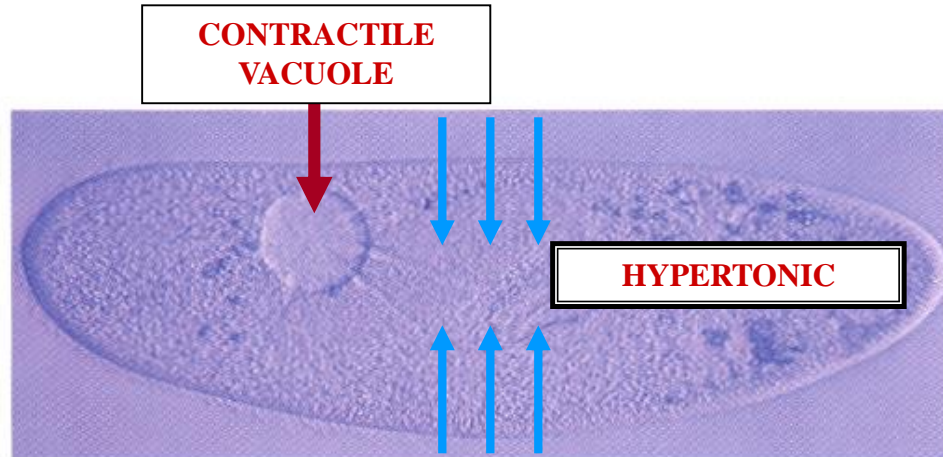
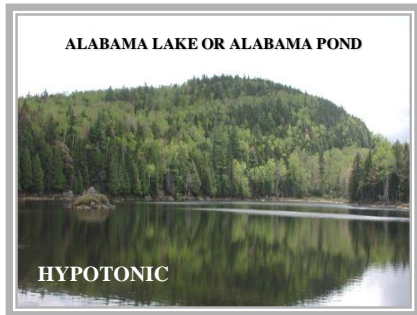


# PARAMECIUM

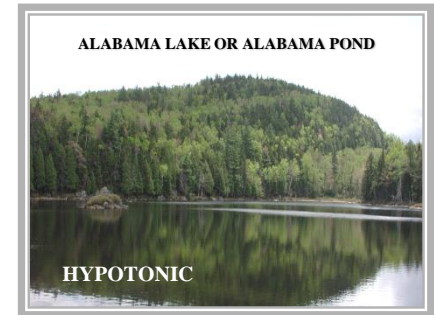
# TUGOR PRESSURE



## PARAMECIUM



**TURGOR PRESSURE INCREASES**



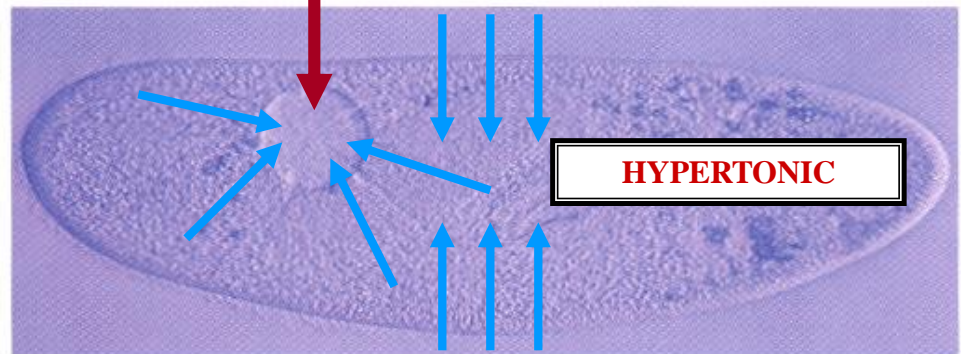
# PARAMECIUM

## TUGOR PRESSURE



WATER →

FILLING VACUOLE

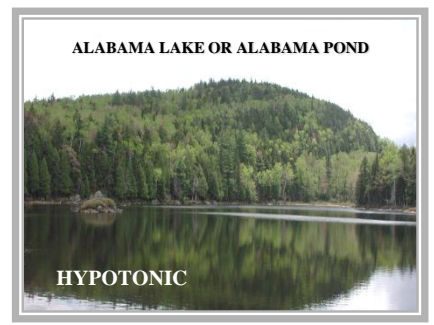
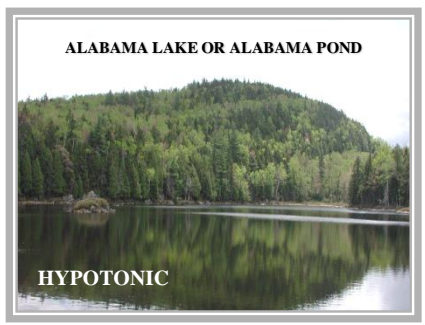


HYPERTONIC

HYPOTONIC

PARAMECIUM

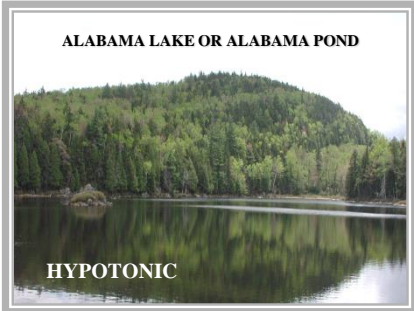
TURGOR PRESSURE INCREASES



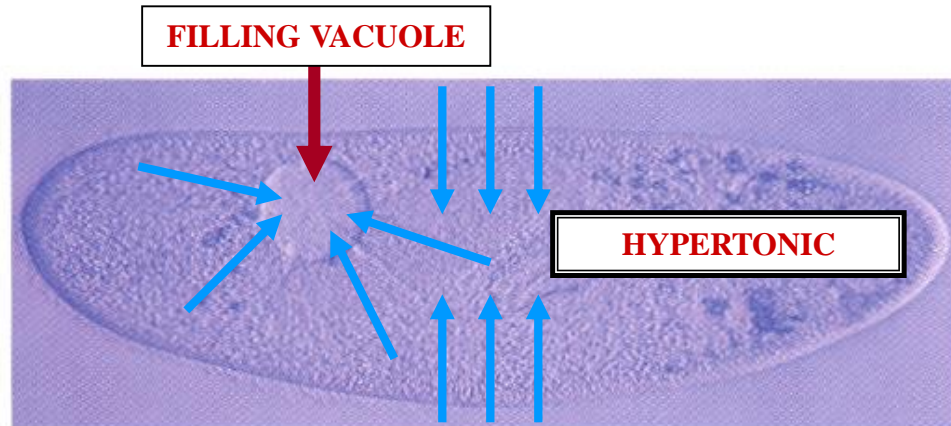
# PARAMECIUM TUGOR PRESSURE



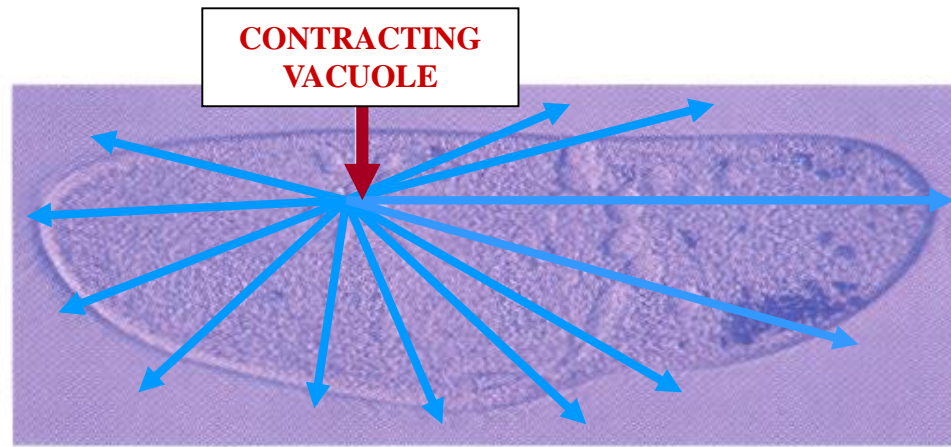
**HYPOTONIC**



**HYPOTONIC**



**TURGOR PRESSURE INCREASES**



PARAMECIUM

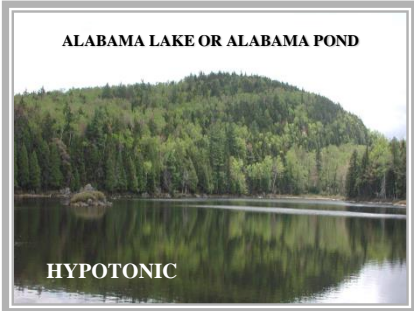


PARAMECIUM

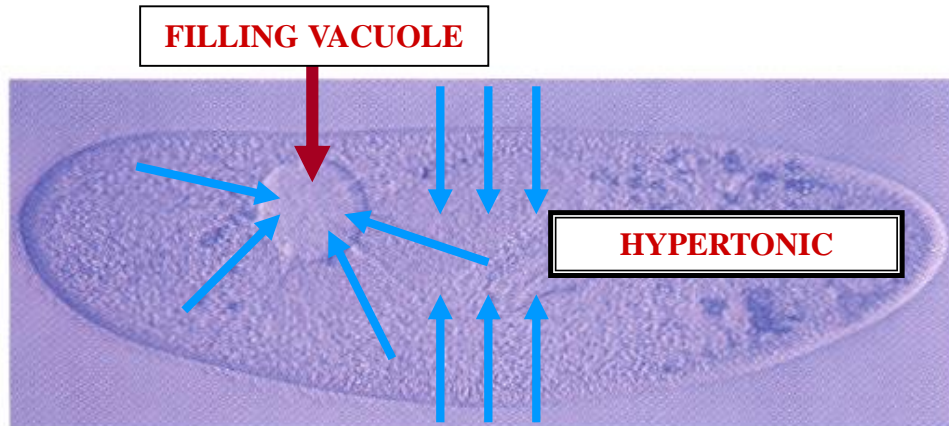
# PARAMECIUM TUGOR PRESSURE

WATER →

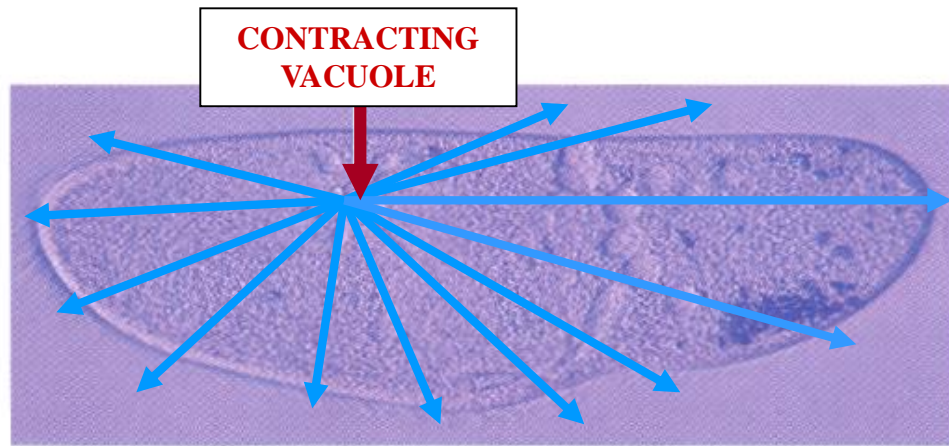
HYPOTONIC



HYPOTONIC

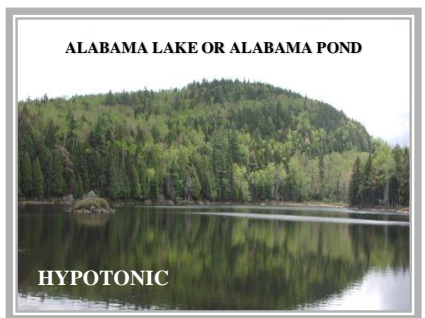


TUGOR PRESSURE INCREASES



TUGOR PRESSURE DECREASES

PARAMECIUM



PARAMECIUM

ALABAMA LAKE OR ALABAMA POND

HYPOTONIC

ALABAMA LAKE OR ALABAMA POND

HYPOTONIC





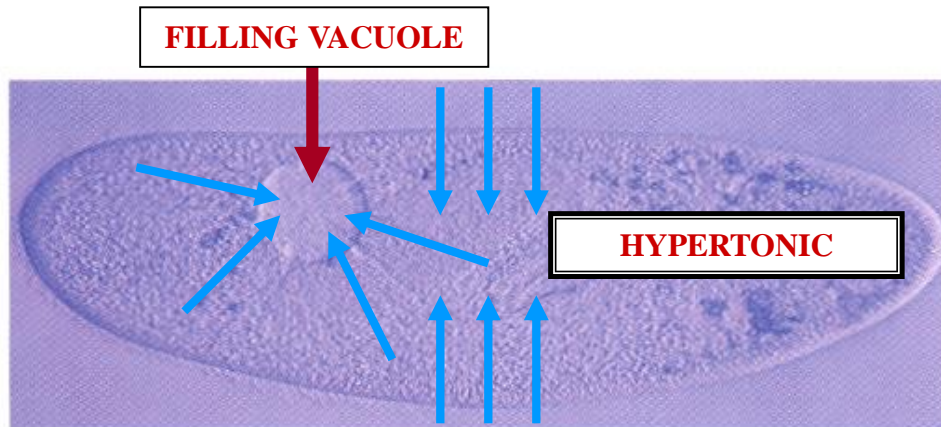
# PARAMECIUM TUGOR PRESSURE

WATER →

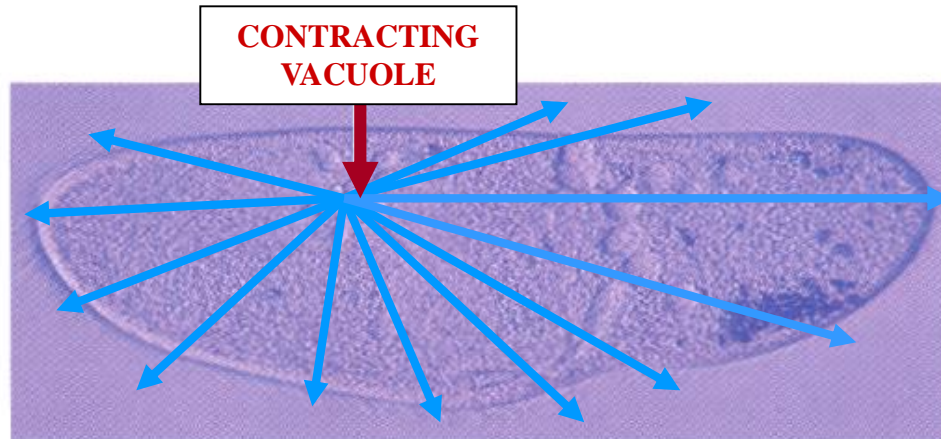
HYPOTONIC



HYPOTONIC

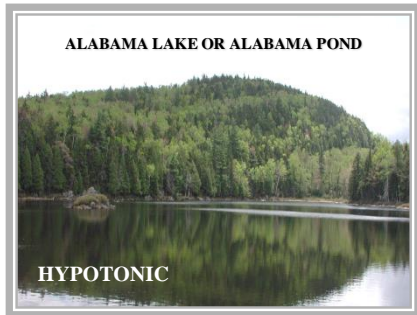


TURGOR PRESSURE INCREASES



PARAMECIUM AVOIDS LYSIS

PARAMECIUM



PARAMECIUM

ALABAMA LAKE OR ALABAMA POND

HYPOTONIC

ALABAMA LAKE OR ALABAMA POND

HYPOTONIC

# FLACCID CELL

**FLACCID CELL**

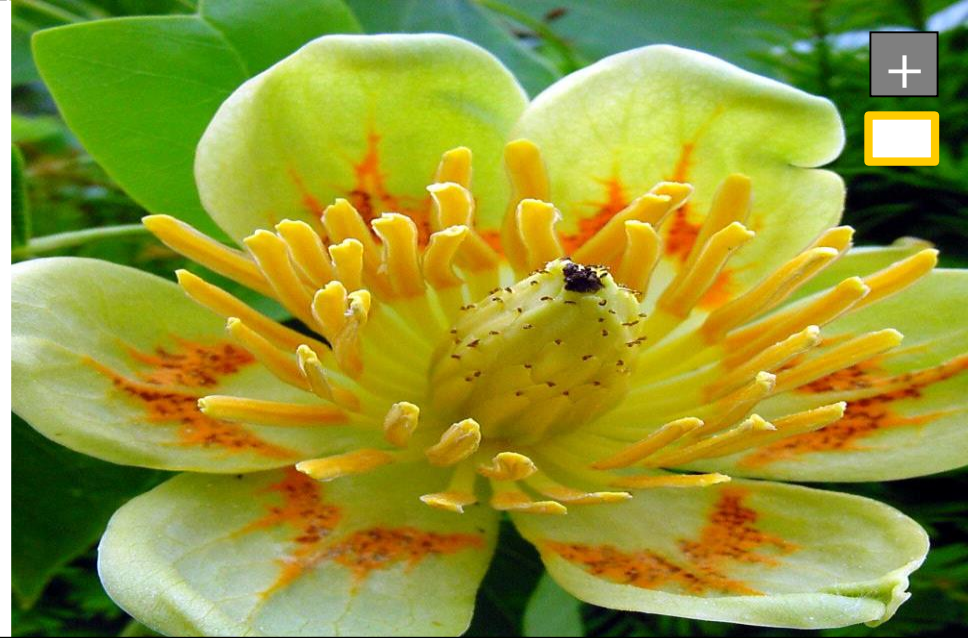
**FLACCID CELL**

**LOW  
TURGOR PRESSURE**

**FLACCID CELL**



**TURGOR PRESSURE**  
**FLACCID CELL**  
**APPLIED**



# PLANT CELL





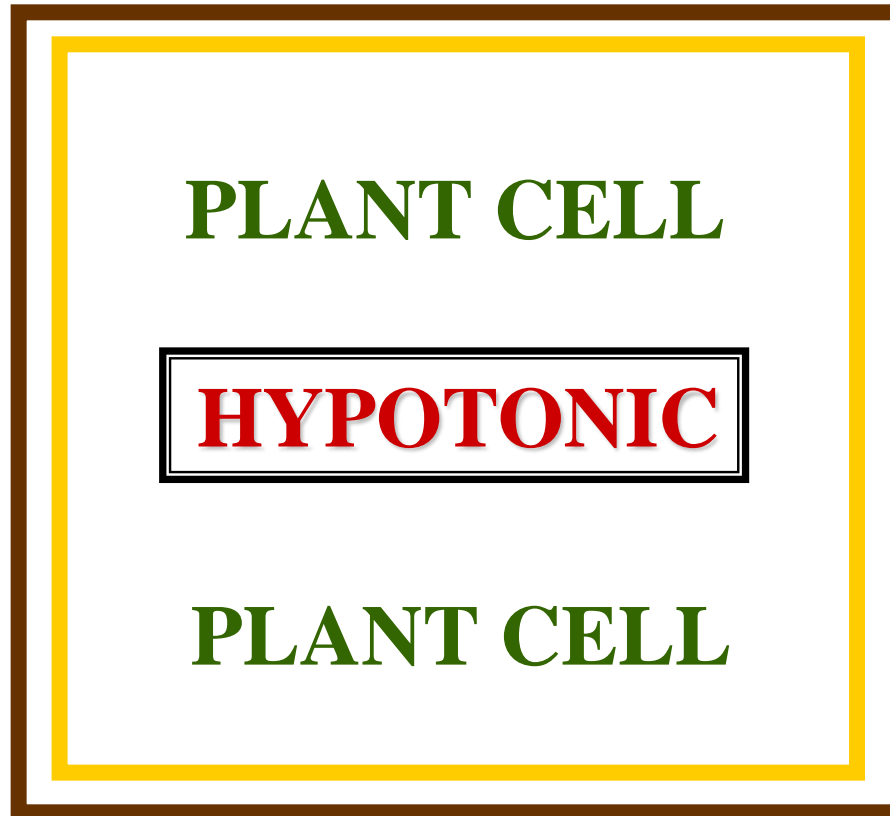
CELL WALL

CELL  
MEMBRANE

**HYPERTONIC**

**HYPERTONIC**

0



**PLANT CELL**

**HYPOTONIC**

**PLANT CELL**

**= CELL WALL**

**= CELL MEMBRANE**

**HYPERTONIC**

**HYPERTONIC**



**HYPERTONIC**

**HYPERTONIC**

W



OSMOSIS

**PLANT CELL**

OSMOSIS

**HYPOTONIC**

OSMOSIS

**PLANT CELL**

OSMOSIS

 = CELL WALL

 = CELL MEMBRANE

**HYPERTONIC**

**HYPERTONIC**

**HYPERTONIC**

**WATER**

**HYPERTONIC**

LTP

**WATER**

**WATER**

**WATER**

**PLANT CELL**

**HYPOTONIC**

**PLANT CELL**

**WATER**

**WATER**

**WATER**

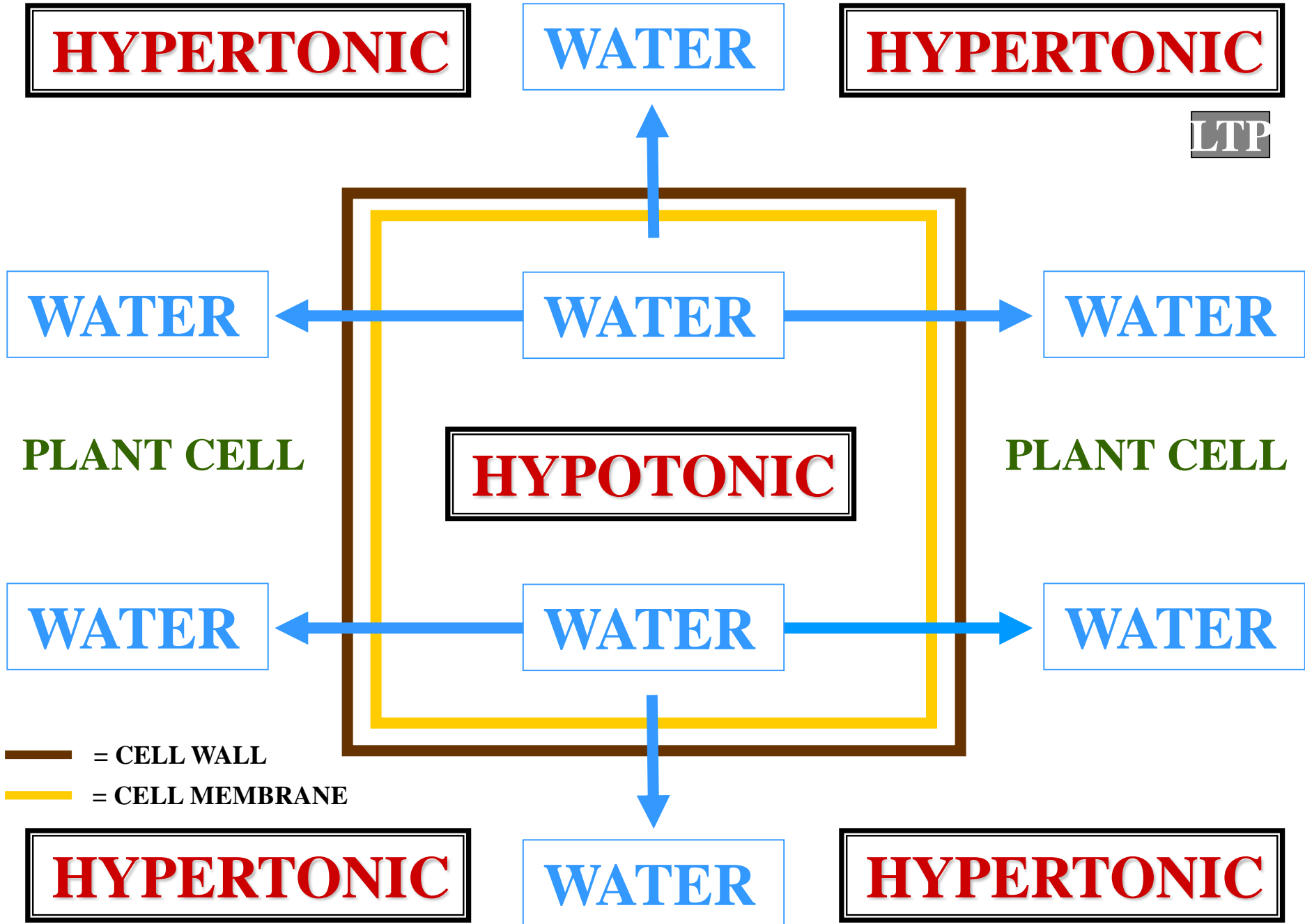
**= CELL WALL**

**= CELL MEMBRANE**

**HYPERTONIC**

**WATER**

**HYPERTONIC**



**HYPERTONIC**

**WATER**

**HYPERTONIC**

?

**FC**

**WATER**

**WATER**

**WATER**

**PLANT CELL**

**LOW  
TURGOR  
PRESSURE**

**PLANT CELL**

**WATER**

**WATER**

**WATER**

**= CELL WALL**

**= CELL MEMBRANE**

**HYPERTONIC**

**WATER**

**HYPERTONIC**

**HYPERTONIC**

**WATER**

**HYPERTONIC**

W



**WATER**

**WATER**

**WATER**

**PLANT CELL**

**FLACCID CELL**

**PLANT CELL**

**WATER**

**WATER**

**WATER**

= CELL WALL

= CELL MEMBRANE

**HYPERTONIC**

**WATER**

**HYPERTONIC**