D2.3 Water potential

Checklist

What you should know

After studying this subtopic you should be able to:

- Explain how water is able to dissolve many substances.
- Explain the movement of water from less concentrated to more concentrated solutions.
- Predict the net movement of water based on the environment of a cell.
- Outline the changes that occur to plant tissues bathed in hypotonic and hypertonic solutions.
- Explain the effects of water movement into and out of cells on cells that lack a cell wall.
- Explain the effects of water movement into and out of cells on cells that have a cell wall.
- Outline medical applications of isotonic solutions.

Higher level (HL)

- Define the term water potential.
- Explain the direction that water moves in terms of water potential.
- Explain how solute potential and pressure potential affect the water potential within cells.
- Explain the changes that occur when a plant tissue is bathed in either a hypotonic or hypertonic solution in terms of solute and pressure potentials.

Practical skills

Once you have completed this subtopic, go to Practical 2: Investigating the osmolarity of plant tissues (https://app.kognity.com/study/app/bio/sid-422-cid-755105/book/investigating-the-osmolarity-of-plant-tissues-id-46693/) in which you will determine the effects of different solute concentrations on osmosis.