Cell membranes and transport

A-Level Biology · Vocabulary in context

Word	Example
cell surface membrane /sel ˈsɜːfɪs ˈmembreɪn/	The **cell surface membrane** controls what goes into and out of the cell.
fluid mosaic model /ˈfluːɪd məˈseɪɪk ˈmɒdl/	The **fluid mosaic model** shows a membrane as moving lipids with proteins dotted through it.
phospholipid /ˈfɒsfəlɪpɪd/	A **phospholipid** has a head that likes water and two tails that do not.
hydrophilic /ˌhaɪdrəˈfɪlɪk/	Sugar is **hydrophilic**, so it dissolves easily in water.
hydrophobic /ˌhaɪdrəˈfəʊbɪk/	Oil is **hydrophobic** and forms droplets in water.
bilayer /ˈbɪleɪə/	A membrane is a **bilayer**: two layers of phospholipids, tail to tail.
protein /ˈprəʊtiːn/	Meat, eggs and beans are rich in **protein**.
carrier protein /ˈkærɪə ˈprəʊtiːn/	A **carrier protein** changes shape to move a molecule across the membrane.
channel protein /ˈtʃænl ˈprəʊtiːn/	A **channel protein** is a tiny tunnel that lets ions pass through the membrane.
cholesterol /kəˈlestərɒl/	**Cholesterol** in the membrane keeps it from becoming too runny or too stiff.
fluidity /fluːˈɪdɪti/	Higher temperatures increase the **fluidity** of a membrane.
glycolipid /ˈglaɪkəlɪpɪd/	A **glycolipid** is a lipid with a sugar chain attached.

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glycoprotein /ˈglaɪkəprəʊtiːn/	A **glycoprotein** is a protein with a sugar chain, which helps cells recognise each other.
antigen /ˈæntɪdʒen/	White blood cells recognise the **antigen** on the surface of a virus.
stability /stəˈbɪlɪti/	Cholesterol gives the membrane **stability**, so it does not break easily.
permeability /ˌpɜːməˈbɪlɪti/	Heat increases the **permeability** of a membrane, so more pigment leaks out of beetroot.
partially permeable membrane /ˈpɑːʃəli ˈpɜːməbl ˈmembreɪn/	A **partially permeable membrane** lets water through but not sugar.
colorimeter /ˌkʌləˈrɪmɪtə/	A **colorimeter** measures how much light a coloured solution absorbs.
cell signalling /sel ˈsɪgnəlɪŋ/	Hormones are one kind of **cell signalling**: one cell sends a message to another.
ligand /ˈlɪgænd/	A hormone is a **ligand**: it fits into a receptor on the cell.
hormone /ˈhɔːməʊn/	Insulin is a **hormone**.
target cell /ˈtɑːgɪt sel/	Insulin only affects a **target cell** that has the right receptor.
receptor /rɪˈseptə/	A hormone fits into a **receptor** on the cell surface.
passive /ˈpæsɪv/	Diffusion is **passive**: it does not need energy from the cell.

Word	Example
energy /ˈenədʒi/	Food gives your body the **energy** it needs to move.
diffusion /dɪˈfjuːʒn/	The smell of perfume spreads across a room by **diffusion**.
concentration /ˌkɒnsənˈtreɪʃn/	The **concentration** of the acid is 2 mol/dm^3. 2 mol/dm^3
simple diffusion /ˈsɪmpl dɪˈfjuːʒn/	Oxygen crosses the membrane by **simple diffusion**.
concentration gradient /ˌkɒnsənˈtreɪʃn ˈgreɪdɪənt/	Oxygen moves down a **concentration gradient**, from high to low.
oxygen /ˈɒksɪdʒn/	Your cells need **oxygen** to release energy.
carbon dioxide /ˈkɑːbən daɪˈɒksaɪd/	We breathe out **carbon dioxide**.
ion /ˈaɪɒn/	An **ion** is an atom that has gained or lost electrons.
glucose /ˈgluːkəʊs/	Cells use **glucose** for energy.
facilitated diffusion /fəˈsɪlɪteɪtɪd dɪˈfjuːʒn/	Glucose enters red blood cells by **facilitated diffusion** through carrier proteins.
osmosis /ɒzˈməʊsɪs/	Water enters the root by **osmosis**.
water potential /ˈwɔːtə pəˈtenʃl/	Water moves from high **water potential** to low water potential.
active transport /ˈæktɪv ˈtrænspɔːt/	**Active transport** uses energy to move ions into root cells.
sodium–potassium pump	The **sodium–potassium pump** uses ATP to move sodium out and potassium into the cell. ATP

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endocytosis /ˌendəʊsɪˈtəʊsɪs/	In **endocytosis**, the membrane folds around something and takes it into the cell.
vesicle /ˈvesɪkl/	A **vesicle** is a tiny sac that carries proteins around the cell.
exocytosis /eg,zɒsɪˈtəʊsɪs/	In **exocytosis**, a vesicle joins the membrane and empties its contents outside.
phagocytosis /ˌfægəsɪˈtəʊsɪs/	In **phagocytosis**, a white blood cell swallows a germ.
pinocytosis	In **pinocytosis**, the cell takes in small drops of liquid.
volume /ˈvɒljuːm/	The **volume** of the box is 2 m × 1 m × 1 m = 2 m^3. 2 m × 1 m × 1 m = 2 m^3
surface area /ˈsɜːfɪs ˈeərɪə/	Smaller solid pieces provide more **surface area** for reaction.
agar /ˈeɪgɑː/	We grow bacteria on **agar** in a Petri dish.
dialysis tubing /daɪˈæləsɪs ˈtjuːbɪŋ/	**Dialysis tubing** lets small molecules like glucose through, but not starch.
solute /ˈsɒljuːt/	Salt is the **solute** in salt water.
distilled water /dɪˈstɪld ˈwɔːtə/	We use **distilled water** because it has nothing dissolved in it.
turgid /ˈtɜːdʒɪd/	A **turgid** plant cell is firm and full of water.
plasmolysis /plæzˈmɒləsɪs/	In salty water, **plasmolysis** pulls the membrane away from the cell wall.

Word	Example
haemolysis /hiːˈmɒləsɪs/	In pure water, red blood cells swell and burst: this is **haemolysis**.

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