



# Glossary

<b>Term</b>	<b>Meaning</b>
<b>Acetylcholinesterase</b>	The specific enzyme used to lower the levels of the neurotransmitter acetylcholine
<b>ADP (adenosine diphosphate)</b>	It is a nucleotide that has the base (adenine) attached to a 5-carbon sugar (ribose) and two phosphate groups. It is important for the flow of energy in living cells.
<b>Amino acid</b>	The building blocks of proteins. They have two functional groups: Amino acid ( $\text{NH}_2$ ), carboxyl acid ( $\text{COOH}$ ). The centre has a specific side chain and hydrogen atom. All four are surrounded by a carbon.
<b>Anion</b>	An ion that has a negative charge.
<b>Atom</b>	The smallest part of an element and cannot be broken down by physical or chemical method.
<b>ATP (adenosine triphosphate)</b>	a nucleotide that is an energy source.
<b>Autophosphorylation</b>	A phosphate group is added to a protein kinase by the action of another protein kinase.
<b>Catalyst:</b>	It speeds up the rate of the chemical reaction without being used up.
<b>Cation</b>	An ion that has a positive charge.
<b>Cell membrane</b>	It surrounds an animal cell and controls what enters and leaves the cell.
<b>Conformational change</b>	The change in the shape of a protein caused by the binding of a ligand to a receptor, change in the environment e.g. temperature or binding of substrate to an enzyme.
<b>Cytoplasm</b>	It is also known as the cytosol and is where chemical reactions take place.



## Glossary

<b>Dimer</b>	A chemical compound formed when two molecules (e.g., receptor proteins) join together to form a functional complex. The process known as dimerization.
<b>Dissociate</b>	Split/divide
<b>DNA (deoxyribonucleic acid)</b>	It is one of the two nucleic acids and consists of two polynucleotides coiled together to form a double helix.
<b>Domain</b>	A defined structure or region of a protein.
<b>Electron</b>	A negatively charged sub-atomic particle that orbits the nucleus (not organelle) in the atom.
<b>Element</b>	A substance that cannot be broken down into any other substance. It consists of one type of atom.
<b>Enzyme</b>	A type of protein responsible for speeding a chemical reaction.
<b>Enzyme-linked receptor</b>	A receptor that is found in all living species that has two domain: extracellular domain which bind to signalling molecule and intracellular domain for catalytic domain.
<b>Equilibrium</b>	The same or equivalent in a chemical reaction between the rate of the forward reaction and the rate of the backward reaction
<b>GDP (guanosine diphosphate)</b>	It is a nucleotide that has the base (guanine) attached to a 5-carbon sugar (ribose) and two phosphate groups. It is needed in intracellular signalling, production of glucose (gluconeogenesis), insulin signalling and other processes.
<b>G-protein</b>	intracellular protein that binds to guanosine triphosphate (GTP) and guanosine diphosphate (GDP) that participate in signalling pathways.
<b>GTP (guanosine triphosphate)</b>	An energy source found in the cytoplasm. It has a similar role to ATP to provide energy. GTP facilitate signal transduction with G protein and helps synthesise RNA



# Glossary

<b>Hormone:</b>	A chemical messenger that is produced in a structure called a gland and travels via blood to initiate response on target cell.
<b>Hydrophilic</b>	A substance that can dissolve in water and 'water-loving'.
<b>Hydrophobic</b>	Water-hating or not attracted to water.
<b>Ion</b>	An atom that gains or loses electrons. Electrons are negatively charged particles.
<b>Kinase</b>	An enzyme that catalyzes the transfer of a phosphate group from ATP to another molecule by a process called phosphorylation.
<b>Ligand</b>	An agent or molecule that affects the properties of the cell.
<b>Ligand-gated</b>	Ligand dependent channels e.g. neurotransmitter and hormone cells.
<b>Lipid</b>	insoluble molecule made of hydrogen + carbon atoms.
<b>Motor neurone</b>	A type of neurone that sends impulses (messages) from the central nervous system to the effector (muscle/gland) to elicit a response.
<b>Muscle</b>	A group of specialised cells that together form a tissue and are involved in support and movement.
<b>Neuromuscular junction</b>	The area between the axon terminal and muscle fibre
<b>Neuron</b>	Also known as nerve and transmits signals as electrical impulses
<b>Neurotransmitter</b>	Signalling molecules that are produced and stored in neurons
<b>Neutron</b>	A neutral sub-atomic particle found in the nucleus (not organelle) in the atom.
<b>Nucleus</b>	Organelle that contains genetic information to control cell



## Glossary

<b>Nucleoside</b>	A molecule that has five-carbon sugar, base but no phosphate group,
<b>Nucleotide</b>	A molecule that has a phosphate group, five-carbon sugar and base.
<b>Orientation</b>	position
<b>Periodic table</b>	A table of the chemical elements and arranges the elements into rows (periods) and columns (groups) based on physical and chemical properties.
<b>Phosphorylate</b>	A phosphate group into (a molecule or compound):
<b>Protein</b>	A large molecule containing amino acids and functions for growth and repair.
<b>Proton</b>	A positive sub-atomic particle found in the nucleus (not organelle) in the atom.
<b>Receptor</b>	A receptor that recognises the signal
<b>Signal transduction/cascade</b>	The process that happens within the cell for that signal to reach its target and start a response.
<b>Signalling molecule</b>	Also known as ligand that binds to its specific receptor.
<b>Steroid</b>	A lipid/fat molecule with a chemical structure containing four carbon rings containing. Its main role is a hormone.
<b>Steroid receptor</b>	It recognises hormone and binds complementary.