Enzymes

A-Level Biology · Vocabulary in context

Word	Example
enzyme /'enzaɪm/	The **enzyme** speeds up the reaction.
globular protein /'glɒbjʊlə 'prəʊti:n/	An enzyme is a **globular protein**: it is round and dissolves in water.
protein /'prəʊti:n/	Meat, eggs and beans are rich in **protein**.
catalyse /'kætəlaɪz/	Enzymes **catalyse** reactions, which means they make them go faster.
intracellular /ˌɪntrə'seljʊlə/	Some enzymes are **intracellular**: they work inside the cell.
cell /sel/	Every living thing is made of at least one **cell**.
catalase /'kætəleɪz/	**Catalase** breaks down hydrogen peroxide into water and oxygen.
extracellular /ˌekstrə'seljʊlə/	Digestive enzymes are **extracellular**: they work outside the cells that make them.
secrete /sɪ'kri:t/	The pancreas cells **secrete** enzymes into the gut.
amylase /'æmɪleɪz/	**Amylase** digests starch.
digest /'daɪdʒest/	We **digest** starch into sugar so the body can take it in.
starch /stɑ:tʃ/	Potatoes contain a lot of **starch**.
active site /'æktɪv saɪt/	The substrate fits into the **active site** of the enzyme.

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substrate /'sʌbstreɪt/	Starch is the **substrate** of amylase.
enzyme–substrate complex /'enzaɪm 'sʌbstreɪt 'kɒmpleks/	When the substrate fits into the active site, an **enzyme–substrate complex** forms.
product /'prɒdʌkt/	Maltose is the **product** when amylase breaks down starch.
complementary /ˌkɒmplɪ'mentəri/	The active site has a **complementary** shape to the substrate.
specificity /ˌspesɪ'fɪsɪti/	Each enzyme has **specificity**: it works on only one kind of substrate.
lock-and-key hypothesis /lɒk ænd ki: haɪ'pɒθəsɪs/	The **lock-and-key hypothesis** says the substrate fits the active site exactly, like a key in a lock.
induced-fit hypothesis /ɪn'dju:st fɪt haɪ'pɒθəsɪs/	The **induced-fit hypothesis** says the active site changes shape a little when the substrate binds.
activation energy /ˌæktɪ'veɪʃn 'enədʒi/	A match gives the **activation energy** to start the fire.
temperature /'temprɪtʃə/	The thermometer shows the water's **temperature**.
colorimeter /ˌkʌlə'rɪmɪtə/	A **colorimeter** measures how much light a coloured solution absorbs.
rate of reaction /reɪt ɒv rɪ'ækʃn/	The **rate of reaction** is faster at higher temperature.
kinetic energy /kɪ'netɪk 'enədʒi/	A fast car has a lot of **kinetic energy**.
collide /kə'laɪd/	Particles must **collide** to react.

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optimum temperature /ˈɒptɪməm ˈtemprɪtʃə/	Human enzymes have an **optimum temperature** of about 37 °C. 37 °C
denature /ˈdenətʃə/	High heat can **denature** an enzyme, so its active site loses its shape.
buffer solution /ˈbʌfə səˈluːʃn/	We use a **buffer solution** to keep the pH the same during the experiment. pH
inhibitor /ɪnˈhɪbɪtə/	An **inhibitor** slows an enzyme down.
Michaelis–Menten constant /ˈmaɪkəliz ˈmentn ˈkɒnstənt/	A low **Michaelis–Menten constant** means the enzyme works fast even when there is little substrate.
affinity /əˈfɪnɪti/	Haemoglobin has a high **affinity** for oxygen in the lungs, so it holds oxygen tightly.
reversible /rɪˈvɜːsɪbl/	Most inhibitors are **reversible**: they can come off the enzyme again.
competitive inhibitor /kəmˈpetɪtɪv ɪnˈhɪbɪtə/	A **competitive inhibitor** has a similar shape to the substrate and blocks the active site.
non-competitive inhibitor /nɒn kəmˈpetɪtɪv ɪnˈhɪbɪtə/	A **non-competitive inhibitor** binds to another part of the enzyme and changes its shape.
immobilised enzyme /ɪˈməʊbəlaɪzd ˈenzaɪm/	An **immobilised enzyme** is held in beads, so it can be used again and again.
alginate /ˈældʒɪneɪt/	We trap the enzyme in small balls of **alginate** gel.

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Word	Example
tertiary structure /ˈtɜːʃəri ˈstrʌktʃə/	The **tertiary structure** is the final 3D shape of one folded chain. 3D