Immunity

A-Level Biology · Vocabulary in context

Word	Example
immune system /ɪˈmjuːn ˈsɪstəm/	HIV attacks the **immune system**, so the body cannot fight other infections. HIV
pathogen /ˈpæθədʒn/	A virus that causes flu is a **pathogen**.
phagocyte /ˈfægəsaɪt/	A **phagocyte** is a white blood cell that swallows bacteria.
macrophage /ˈmækrəfɪdʒ/	A **macrophage** is a large phagocyte that shows bits of the bacteria to other cells.
neutrophil /ˈnjuːtrəfɪl/	A **neutrophil** is a white blood cell that eats bacteria.
phagocytosis /ˌfægəsɪˈtəʊsɪs/	In **phagocytosis**, a white blood cell swallows a germ.
antigen /ˈæntɪdʒen/	White blood cells recognise the **antigen** on the surface of a virus.
antigen presentation	In **antigen presentation**, a macrophage shows pieces of a bacterium on its surface to T cells. T
receptors	A drug works when its shape fits **receptors** in the body.
endocytosis /ˌendəʊsɪˈtəʊsɪs/	In **endocytosis**, the membrane folds around something and takes it into the cell.
phagocytic vacuole	The bacterium ends up inside a **phagocytic vacuole** in the phagocyte.
lysosomes /ˈlaɪsəsəʊmz/	**Lysosomes** fuse with the vacuole and release hydrolytic enzymes, which digest the pathogen.

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hydrolytic enzymes /ˌhaɪdrəˈlɪtɪk ˈenzaɪmz/	Lysosomes fuse with the vacuole and release **hydrolytic enzymes**, which digest the pathogen.
self antigen /self ˈæntɪdʒen/	A **self antigen** is a marker on your own cells, so your body does not attack it.
non-self antigen /nɒn self ˈæntɪdʒen/	A **non-self antigen** is a foreign marker, such as one on a bacterium.
immune response /ɪˈmjuːn rɪˈspɒns/	A fever is part of the body's **immune response** to infection.
T-helper cell /tiː ˈhelpə sel/	A **T-helper cell** sends signals that switch on other white blood cells.
lymphocyte /ˈlɪmfəsaɪt/	A **lymphocyte** is a white blood cell that makes antibodies or kills infected cells.
plasma cell /ˈplæzmə sel/	A **plasma cell** makes thousands of antibodies every second.
antibody /ˈæntɪbɒdi/	An **antibody** sticks to a matching antigen on a germ.
memory cell /ˈmeməri sel/	A **memory cell** remembers a germ, so the body reacts faster next time.
T-killer cell /tiː ˈkɪlə sel/	A **T-killer cell** kills body cells that are infected with a virus.
thymus	T cells grow up in the **thymus**, a small organ in the chest. T
clonal selection /ˈkləʊnl sɪˈlekʃn/	**Clonal selection**: only the lymphocytes whose receptors are complementary to the antigen are activated.

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complementary /ˌkɒmplɪ'mentəri/	The active site has a **complementary** shape to the substrate.
clonal expansion	**Clonal expansion**: the selected lymphocyte divides many times by mitosis, making a clone of identical cells.
cytokines	T-helper cells release **cytokines**, small signal molecules that switch on other cells.
antigen-binding site /'æntɪdʒen 'baɪndɪŋ saɪt/	The **antigen-binding site** has a shape that fits only one antigen.
variable region /'veərɪəbl 'riːdʒn/	The **variable region** is different in every kind of antibody.
polypeptide /ˌpɒlɪ'peptaɪd/	A **polypeptide** is a long chain of amino acids.
heavy chains	Each antibody has two long **heavy chains** and two short light chains held together by disulfide bonds.
light chains	The two **light chains** of an antibody form part of each antigen-binding site.
disulfide bonds	**Disulfide bonds** between cysteine residues hold the four polypeptide chains of an antibody together.
hinge region	The **hinge region** lets the two arms of an antibody bend.
constant region	The **constant region** is the same in all antibodies of one class and binds to receptors on phagocytes.

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agglutination	In **agglutination**, antibodies make bacteria stick together in clumps.
neutralisation /ˌnjuːtrəlaɪˈzeɪʃn/	**Neutralisation** of an acid with a base gives a salt and water.
opsonisation	In **opsonisation**, antibodies cover a bacterium so phagocytes find and eat it faster.
monoclonal antibody /ˈmɒnəʊklɒnl ˈæntɪbɒdi/	A **monoclonal antibody** is one of many identical antibodies made from one cell.
hybridoma /ˌhaɪbrɪˈdəʊmə/	A **hybridoma** cell keeps dividing and makes one kind of antibody.
spleen	The **spleen** is an organ that filters blood and holds many white blood cells.
myeloma	A **myeloma** cell is a cancer cell that never stops dividing.
diagnosis /ˌdaɪəgˈnəʊsɪs/	A blood test helps the doctor make a **diagnosis**.
mobile /ˈməʊbaɪl/	**Mobile** antibodies near the bottom are attached to a coloured marker (often tiny gold particles). ( )
immobilised	**Immobilised** antibodies are fixed in a line further up.
humanised	Mouse antibodies are **humanised**, so a patient's body will not attack them.
active immunity /ˈæktɪv ɪˈmjuːnɪti/	A vaccine gives **active immunity**.

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passive immunity /ˈpæsɪv ɪˈmjuːnɪti/	Antibodies from a mother's milk give **passive immunity**.
natural immunity /ˈnætʃərəl ɪˈmjuːnɪti/	A baby gets **natural immunity** from antibodies in its mother's milk.
artificial immunity /ˌɑːtɪˈfɪʃl ɪˈmjuːnɪti/	A vaccine gives **artificial immunity**.
vaccine /væksiːn/	A **vaccine** teaches the body to fight a disease before you catch it.
vaccination /ˌvæksɪˈneɪʃn/	**Vaccination** protects children from measles.
herd immunity /hɜːd ɪˈmjuːnɪti/	When most people are vaccinated, **herd immunity** protects the rest.
boosters	Vaccine **boosters** are later doses that raise the number of memory cells and keep immunity high.
cold chain	In a **cold chain**, vaccines are kept cold all the way from the factory to the clinic.
surveillance /səˈveɪləns/	Disease **surveillance** means tracking new cases so that health workers can respond quickly to an outbreak.
ring vaccination	In **ring vaccination**, everyone around a new case is vaccinated to stop the disease spreading.
smallpox	**Smallpox** was eradicated in 1980 after a worldwide vaccination programme. 1980

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Word	Example
antigenic variation	Because of **antigenic variation**, the flu virus keeps changing, so last year's vaccine may not work.

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