Cell Structure and Function

AP Biology · Vocabulary in context

Word	Example
organelles /ˌɔːgəˈnelz/	**Organelles** are small structures inside a cell.
endomembrane system /ˈendəʊmembreɪn ˈsɪstəm/	The **endomembrane system** makes and moves proteins.
nucleus /ˈnjuːklɪəs/	The **nucleus** holds the cell's DNA.
endoplasmic reticulum /ˌendəʊˈplæzmɪk reˈtɪkjʊləm/	The **endoplasmic reticulum** makes proteins and lipids.
Golgi /ˈgɒlgɪ/	The **Golgi** packs proteins and sends them where they are needed.
lysosomes /ˈlaɪsəsəʊmz/	**Lysosomes** fuse with the vacuole and release hydrolytic enzymes, which digest the pathogen.
Mitochondria /ˌmaɪtəˈkɒndrɪə/	**Mitochondria** release energy from food.
chloroplasts /ˈklɔːrəʊplæsts/	**Chloroplasts** make the leaf green.
Ribosomes /ˈrɪbəsəʊmz/	**Ribosomes** make proteins.
ribosomal RNA /ˈrɪbəsɒml ˌɑːr en ˈeɪ/	Ribosomes are made of protein and **ribosomal RNA**.
messenger RNA /ˈmesɪndʒə ˌɑːr en ˈeɪ/	**Messenger RNA** carries the gene's message to the ribosome.
Rough ER	**Rough ER** has ribosomes on its surface.
smooth ER	The **smooth ER** makes lipids and has no ribosomes.

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The Golgi complex /ðə ˈgɒlgɪ ˈkɒmpleks/	**The Golgi complex** packs proteins and sends them out.
glycosylation /ˌglaɪkəsɪˈleɪʃn/	**Glycosylation** adds sugar chains to a protein.
hydrolytic enzymes /ˌhaɪdrəˈlɪtɪk ˈenzaɪmz/	Lysosomes fuse with the vacuole and release **hydrolytic enzymes**, which digest the pathogen.
apoptosis /əpəpˈtəʊsɪs/	**Apoptosis** is planned cell death.
Vacuoles /ˈvækjuːəʊlz/	**Vacuoles** store water and other substances.
cell wall /sel wɔːl/	A **cell wall** gives a plant cell its shape.
cristae /ˈkrɪsti:/	The **cristae** are folds of the inner membrane that give more space for making ATP.
surface-area-to-volume ratio /ˈsɜːfɪs ˈeərɪə tə ˈvɒljuːm ˈreɪʃɪəʊ/	Small cells have a large **surface-area-to-volume ratio**.
microvilli /ˈmaɪkrəʊvɪlaɪ/	**Microvilli** make the surface area even larger.
phospholipid bilayer /ˈfɒsfəlɪpɪd ˈbɪleɪə/	The cell membrane is a **phospholipid bilayer**: two layers of lipids.
fluid mosaic model /ˈfluːɪd məˈseɪɪk ˈmɒdl/	The **fluid mosaic model** shows a membrane as moving lipids with proteins dotted through it.
selectively permeable /sɪˈlektɪvli ˈpɜːməbl/	The membrane is **selectively permeable**: it lets only some things through.
aquaporins	**Aquaporins** let water move quickly through the membrane.

Word	Example
Channel proteins	**Channel proteins** form tunnels for ions.
Passive transport /ˈpæsɪv ˈtrænspɔːt/	**Passive transport** needs no energy.
diffusion /dɪˈfjuːʒn/	The smell of perfume spreads across a room by **diffusion**.
Active transport /ˈæktɪv ˈtrænspɔːt/	**Active transport** uses energy to move things against a gradient.
sodium-potassium pump /ˈsəʊdɪəm pəˈtæsɪəm pʌmp/	The **sodium-potassium pump** uses ATP to move ions. ATP
Facilitated diffusion /fəˈsɪlɪteɪtɪd dɪˈfjuːʒn/	**Facilitated diffusion** uses proteins to help molecules cross.
carrier /ˈkærɪə/	A **carrier** protein changes shape to move a molecule.
Osmosis /ɒzˈməʊsɪs/	**Osmosis** is the movement of water across a membrane.
Tonicity /təˈnɪsɪti/	**Tonicity** compares the solute levels inside and outside a cell.
hypotonic /ˌhaɪpəʊˈtɒnɪk/	In a **hypotonic** solution, water enters the cell.
hypertonic /ˌhaɪpəˈtɒnɪk/	In a **hypertonic** solution, water leaves the cell.
isotonic /ˌaɪsəˈtɒnɪk/	In an **isotonic** solution, there is no net water movement.
Water potential /ˈwɔːtə pəˈtenʃl/	Water moves from high to low **water potential**.

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Word	Example
Osmoregulation /ˌɒzmɔːgjʊˈleɪʃn/	**Osmoregulation** keeps the water balance steady.
contractile vacuole	A **contractile vacuole** pumps extra water out of a protist.
endocytosis /ˌendəʊsɪˈtəʊsɪs/	In **endocytosis**, the cell takes in material by wrapping it in membrane.
exocytosis /ˌeg,zɒsɪˈtəʊsɪs/	In **exocytosis**, the cell releases material from a vesicle.
compartments /kəmˈpɑːtmənts/	Membranes divide the cell into **compartments**.
endosymbiotic theory /ˌendəʊˌsɪmbaɪˈɒtɪk ˈθɪəri/	The **endosymbiotic theory** says mitochondria were once free bacteria.
prokaryotes /ˈprɒkərɪəʊts/	Bacteria are **prokaryotes**: they have no nucleus.