Cell Communication and Cell Cycle

AP Biology · Vocabulary in context

Word	Example
adrenaline /əˈdrenəlɪn/	**Adrenaline** makes your heart beat faster when you are scared.
glucose /ˈgluːkəʊs/	Cells use **glucose** for energy.
signals /ˈsɪgnlz/	Cells send **signals** to each other.
ligand /ˈlɪgænd/	A **ligand** binds to a receptor and starts a signal.
receptor /rɪˈseptə/	A hormone fits into a **receptor** on the cell surface.
target cell /ˈtɑːgɪt sel/	Insulin only affects a **target cell** that has the right receptor.
cell junctions	**Cell junctions** connect neighbouring cells.
neurotransmitters /ˈnjuːrətrænsmɪtəz/	**Neurotransmitters** carry messages between nerve cells.
hormones /ˈhɔːməʊnz/	Insulin and adrenaline are **hormones**.
Signal transduction /ˈsɪgnl trænsˈdʌkʃn/	**Signal transduction** passes a message from the surface into the cell.
reception /rɪˈsepʃn/	In **reception**, a signal molecule binds to a receptor.
transduction /trænsˈdʌkʃn/	In **transduction**, the signal is passed along inside the cell.
response /rɪˈspɒns/	The **response** is what the cell does in the end.

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pathway	A signal **pathway** is a chain of steps.
cascade	A signal **cascade** passes the message along a chain of proteins.
amplifying	Each step is **amplifying** the signal, making it stronger.
Second messengers	**Second messengers** carry the signal inside the cell.
cyclic AMP /ˈsaɪklɪk ˌeɪ em ˈpiː/	**Cyclic AMP** is a common second messenger.
apoptosis /əpəpˈtəʊsɪs/	**Apoptosis** is planned cell death.
pheromone	A moth uses a **pheromone** to attract a mate.
morphogen	A **morphogen** tells cells where they are in an embryo.
Feedback /ˈfiːdbæk/	**Feedback** uses the result to control the process.
Negative feedback /ˈnegətɪv ˈfiːdbæk/	**Negative feedback** brings conditions back to normal.
set point /set pɔɪnt/	The body keeps its temperature near a **set point** of 37 °C. 37 °C
thermostat	A **thermostat** keeps a room at a steady temperature.
homeostasis /ˌhəʊmiːəˈstɑːsɪs/	Sweating is part of **homeostasis**: it keeps body temperature steady.
Positive feedback /ˈpɒzɪtɪv ˈfiːdbæk/	**Positive feedback** makes a change bigger.

Word	Example
contractions /kən'trækʃnz/	During birth, **contractions** get stronger and stronger.
blood clotting	**Blood clotting** uses positive feedback.
insulin /'ɪnsju:lɪn/	**Insulin** lowers the level of sugar in the blood.
cell cycle /sel 'saɪkl/	The **cell cycle** has three stages: growth, copying DNA, and division. 、 DNA
interphase /ˌɪntə'feɪz/	A cell spends most of its time in **interphase**, growing and copying its DNA.
DNA replication	**DNA replication** copies DNA before the cell divides. DNA
mitosis /maɪ'təʊsɪs/	**Mitosis** makes two identical cells.
cytokinesis /ˌsaɪtəkə'ni:sɪs/	In **cytokinesis**, the cytoplasm splits and two new cells form.
daughter cells /'dɔ:tə selz/	One cell splits into two **daughter cells**.
chromosome /'krəʊməsəʊm/	Each **chromosome** is one long DNA molecule with many genes. DNA
prophase /'prɒfeɪz/	In **prophase**, the chromosomes become short and thick, and the nuclear envelope breaks down.
anaphase /'ænəfeɪz/	In **anaphase**, the chromatids are pulled to opposite ends of the cell.
telophase /'teləfeɪz/	In **telophase**, a new nuclear envelope forms around each set of chromosomes.
checkpoints /'tʃekpɔɪnts/	**Checkpoints** stop the cell cycle if something is wrong.

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cyclins /'saɪklɪnz/	**Cyclins** rise and fall during the cell cycle.
kinases	**Kinases** add phosphate groups to proteins.
mutation /mju:'teɪʃn/	A **mutation** is a change in the DNA. DNA
cancer /'kænsə/	Smoking can cause **cancer**.
mitotic index /maɪ'tɒtɪk 'ɪndeks/	If 20 of 100 cells are dividing, the **mitotic index** is 0.2. 100 20 0.2
Metaphase /ˌmetə'feɪz/	**Metaphase** lines the chromosomes up in the middle.