

# CAIE Biology IGCSE

15: Drugs

Notes

(Content in **bold** is for Extended students only)

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A drug is a substance that, when taken into the body, has an **effect on the chemical reactions** that take place. There are a variety of different drugs which treat different diseases.

### Antibiotics:

Antibiotic drugs are used to treat **bacterial infections**. Some antibiotics kill bacteria by **destroying their cell wall**, leading to the cell bursting, whilst others **inhibit the growth** of the bacteria. **Viruses** cannot be killed by antibiotics as they do not grow and reproduce in the same way as bacteria, and do not have the same structure.

Some bacterial strains become **resistant** to antibiotics as a result of **natural selection**:

1. A **mutation** occurs in a bacterial cell which makes it resistant to an antibiotic.
2. When that antibiotic is administered, this **cell is not killed**, whereas cells which have not become resistant are killed.
3. The resistant cell can therefore survive and **reproduce**, producing more resistant bacteria.

**Resistance to antibiotics results in antibiotic resistant bacterial infections in hospitals such as MRSA (methicillin-resistant Staphylococcus aureus). It is therefore important to try and slow the development of resistant bacterial strains. This can be done by only using antibiotics for serious infections, and always completing the full course of antibiotics to make sure that all the bacteria is killed.**

