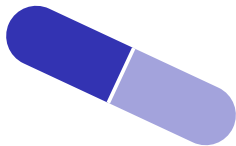


Drugs

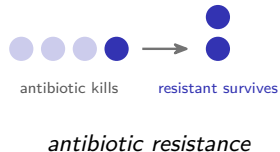
IGCSE Biology ■ Topic 15

IGCSE Biology

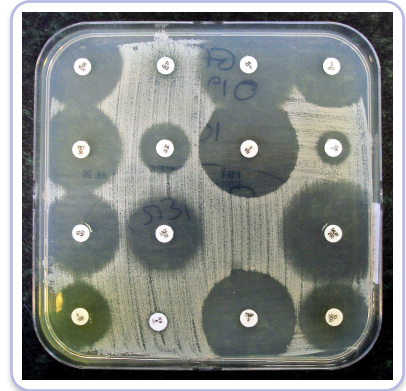


What we will cover

- 1 What a drug is
- 2 Antibiotics
- 3 Testing antibiotics
- 4 Antibiotic resistance



What a drug is



Antibiotics target bacterial growth

Antibiotics



Antibiotics 抗生素 treat
bacterial 细菌 infections.

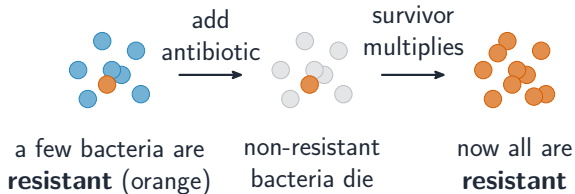
They kill **bacteria** but have
no effect on **viruses** 病毒 –
so they cannot cure a cold or
flu.

Testing antibiotics



Paper discs of different antibiotics sit on a lawn of bacteria. A **clear ring** of no growth shows the antibiotic works; a **bigger** ring means it is more effective.

Antibiotic resistance



Resistant 耐药 bacteria survive & multiply, so the antibiotic stops working.

Use antibiotics **only when needed** & finish the course, or resistant strains like **MRSA** 耐甲氧西林金黄色葡萄球菌 spread.

Worked example – antibiotic resistance

Explain how a population of bacteria becomes resistant to an antibiotic.

- **Random mutation** makes a few bacteria resistant – this happens **before** the antibiotic is used.
- The antibiotic kills the non-resistant bacteria; the resistant ones **survive**.
- They reproduce, passing the resistance gene on.
- Soon **most of the population is resistant** – natural selection.

The antibiotic **selects**, it does not **cause** – the mutation came first, by chance. Antibiotics do nothing to **viruses**, so taking them for a cold only speeds this up.

Topic 15 – key takeaways

1

Drug

any substance that changes body reactions

2

Antibiotics

kill bacteria, not viruses

3

Testing

clear ring = the antibiotic works

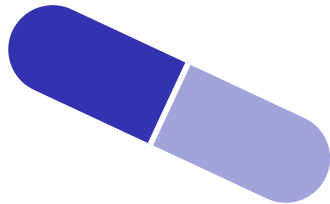
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Resistance

use only when needed; finish the course

Check yourself

- 1 What does a drug do to the body?
- 2 Do antibiotics work on viruses?
- 3 What shows an antibiotic worked on a plate?
- 4 How can we slow antibiotic resistance?



Answers 1. changes its chemical reactions 2. no, only bacteria 3. a clear ring of no growth 4. use only when needed; finish the course