

Antibiotics and infection control

What does bactericidal mean?

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What does bacteriostatic mean?

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How does penicillin kill bacteria?

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Why do antibiotics not work on viruses?

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Core practical 14: how is the effect of antibiotics compared?

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Why is a control disc without antibiotic used?

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How is the area of a zone of inhibition calculated?

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Give two safety precautions when culturing bacteria in school.

Stops bacteria growing and dividing without killing them.

Kills bacteria.

Viruses have no cell wall or ribosomes of their own and replicate inside host cells.

It prevents cross-links forming in the peptidoglycan wall, so the cell bursts by osmosis.

To show that the disc and solvent do not affect bacterial growth.

Measure the zones of inhibition around discs on a bacterial lawn. A bigger zone means more effective.

Non-pathogenic strain; incubate at 25 °C; tape lids and do not open after incubation; autoclave.

Area = πr^2 , with r half the measured diameter.

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What is a hospital-acquired infection?

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Why does overuse of antibiotics cause resistance?

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Give three codes of practice that reduce hospital infection.

It selects for bacteria with resistance mutations, which survive and reproduce.

An infection acquired in hospital, for example MRSA or C. difficile.

Hand washing, isolation of infected patients, sterilising equipment, screening, careful antibiotic prescribing.