

The effectiveness of different antibiotics can be investigated using ANTIBIOTIC SENSITIVITY TESTING. The bacterium being tested is inoculated onto a nutrient agar plate and spread evenly to cover the whole plate. Small discs (about 5 mm in diameter) soaked in different antibiotics are then placed on the plate, which is then incubated, normally at 37°C, for 24 hours. The plate is examined, and the size of the “clear zone” around each antibiotic disc is measured. The clear zone is where no bacteria have grown because they have been killed or immobilised by the antibiotic.

The larger the diameter of the clear zone, the more effective the antibiotic is at killing that strain of bacterium. The results of an antibiotic sensitivity test on 5 new antibiotics are shown below.



- Label the 2 discs which are the most effective at killing this strain of bacterium.
- Label the disc which is least effective at killing this bacterium.
- What precautions must be taken before the best antibiotics can be produced commercially?

6. A dilemma for parents – Internet research.

Since Edward Jenner successfully vaccinated James Phipps against Smallpox in 1796,