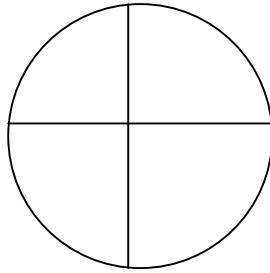


ZONE OF INHIBITION

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Antibiotic discs are often used to determine if a particular bacterium is susceptible to a type of antibiotic. The bacteria are grown on a dish and discs saturated with different antibiotics are placed on top of the growing bacteria. If the antibiotic works successfully, a clear ring will appear around the disc in 24/48 hours. The ring is called the zone of inhibition. It is measured in mm to see how wide it is. The larger this zone of inhibition, the more effective that antibiotic is against that particular type of bacteria. In this exercise, you will design an experiment to determine if a certain chemical will prevent or inhibit bacterial growth on a petri dish.



You and your partner will be testing different antibiotics against a known bacterium to see which antibiotic kills it the best

Procedure:

1. Swab the plate with the bacteria given to your group.
2. Label the bottom of your dish A, B, C, D
3. D will be your control
4. Choose 3 types of antibiotics to put on your dish.
5. Put the antibiotic disc in the middle of the section on top of the bacteria
6. Put the plate upside down in the incubator
7. Measure the zone of inhibition around each disk and record in your notebook after 48 hours.

Questions:

1. What is the medium on which the bacteria are growing?
2. What is each spot of bacteria on the plates called?

3. What is the clear area around each disc called?
4. What does it mean about the disc if there is a clear area around it?
5. What was the control in your experiment and why was it important to have?
6. What do you conclude about the effectiveness of these different substances against the bacteria you were testing?
7. What would you do differently, if you could do this experiment again? How might you expand (continue) this experiment? What might work better?
8. What else might you like to test? How would you do that?
9. Keeping this experiment in mind, how do you think a doctor chooses which antibiotic to prescribe for a particular bacterial infection (example: strep throat)
10. How might a particular bacterium become resistant to an antibiotic like penicillin?
Give two ways
11. Devise an experiment to show if a bacterium has gained resistance.