

SBI3C: Bacteria in the Classroom Lab Activity

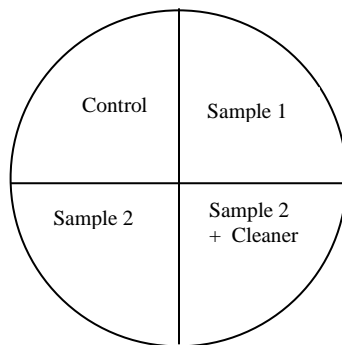
All around the classroom are billions of bacteria. As we have learned many of these bacteria are harmless, but some of these bacteria have a negative impact on our health. So how can we get rid of these bacteria and reclaim our classroom? In this lab you will look at common household cleaning products and the effect these products have on bacteria growth. Bacteria will be grown in agar plates (a nutrient rich medium that provides bacteria with an ideal medium to grow) in the presence of different household cleaners to see which product is best at stopping bacteria growth.

Materials:

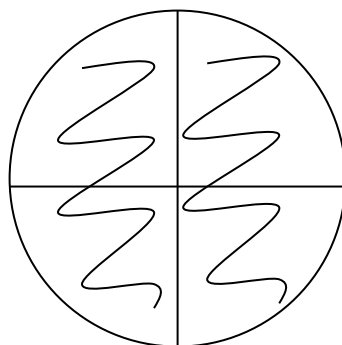
- Petri Dishes with agar
- Permanent Marker
- Tape
- Sterile Cotton Swabs
- Distilled Water
- Filter paper soaked in Cleaner
- Forceps

Procedure:

1. Obtain a Petri Dish with agar, and 2 sterile cotton swabs. With a permanent marker, mark 2 equal sections on the bottom of the Petri Dish and label them as shown in the diagram below.



2. Wet the sterile cotton swab in distilled water and run it over your first sample.
3. Lift the upper lid of the Petri Dish and run the swab in a zig zag pattern across one section of the nutrient agar surface. Repeat step 2 and 3 on 'Sample 2' section of your plate using a different sample site.



4. Repeat step 2 and 3 on 'Sample 2' section of your plate using a different sample site.
5. Repeat step 2 and 3 on the 'Sample 2 + Cleaner' section of your plate. Use the same site you did for Step 2. In this quarter also place a piece of filter paper that has been soaked in cleaner (use the forceps to place filter paper onto your Petri Dish
6. Close the Petri dish and seal the top and the bottom lids in the form of an "X".
7. Label your plate with your name and place it on the cart. Allow bacteria to grow for 2 days.
8. After the 2 days observe the bacteria colonies that have grown. **DO NOT TAKE THE TAPE OFF OF YOUR PLATE AND DO NOT OPEN YOUR PLATE.** Record your observations in the table provided and answer the discussion questions.
9. Dispose of Petri Dish in the Chemical Waste Container.

Pre-Lab Questions (8 Marks)

1. What is the purpose of this experiment? (1 mark)
2. What did you place in the control quarter? What is the purpose of this quarter? (2 marks)
3. List two variables kept constant during this experiment. (2 marks)
4. State three safety precautions that should be followed for this lab. (3 marks)

Observations: (8 Marks)

Petri Dish Quarter	Effect on Bacterial Growth	Sketch
Control		
Sample 1		
Sample 2		
Sample 2 + Cleaner		

Discussion Questions: (7 Marks)

1. Which quadrant showed the most growth? Which quadrant showed the least? (2 marks)
2. Did you see any bacterial growth in the control quadrant? Why might this be? (2 marks)
3. Why did you swab the same sample site in quadrant 3 and quadrant 4? (2 marks)
4. Write a conclusion for this experiment. (1 mark)

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