

STUDENT LAB SHEET: COLIFORM COUNTS

PREPARE TEST TUBES AND PETRI DISHES

1. Label 5 Petri dishes: "10," "100," "1,000," "10,000," and "control."
2. Label 3 test tubes: "100," "1,000," and "10,000." Place in test-tube rack.
3. Add 9 ml of sterile saline solution to each of the 3 test tubes.

INOCULATE PETRI DISHES

1-in-10 Dilution

- Pipette 1 ml of the 1-in-10 hamburger solution (from classroom demonstration) directly into the Petri dish marked "10." Carefully swirl the dish to cover the surface. Cover the Petri dish.

1-in-100 Dilution

- Pipette 1 ml of the 1-in-10 hamburger solution (from classroom demonstration) into the test tube marked "100." Now the concentration of the hamburger is 1 in "100."
- Thoroughly mix the solution by holding the test tube by the top and gently striking the bottom with the finger on the other hand for about 5 strikes.
- Pipette 1 ml of this solution into the Petri dish marked "100." Cover the dish.

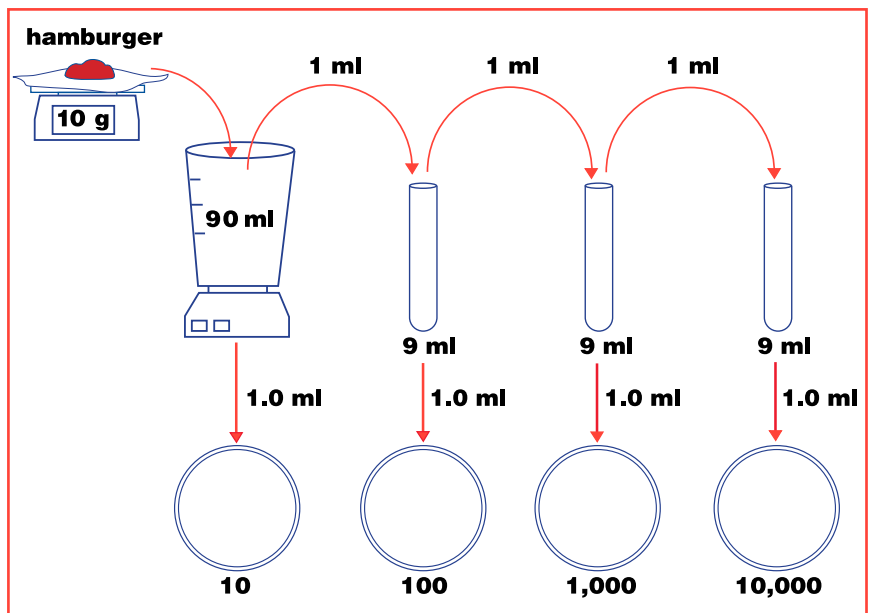
1-in-1,000 Dilution

- Pipette 1 ml of the 1-in-100 hamburger solution into the test tube marked "1,000." Now, the concentration of the hamburger is 1-in-1,000.
- Pipette 1 ml of this solution into the Petri dish marked "1,000." Cover the dish.

1-in-10,000 Dilution

- Pipette 1 ml of the 1-in-1,000 hamburger solution into the test tube marked "10,000." Now the concentration of the hamburger is 1-in-10,000.
- Pipette 1 ml of this solution into the Petri dish marked "10,000." Cover the dish.

NOTE: Dilutions are made in case the bacterial colonies on the agar dishes from the 1-in-10 and 1-in-100 dilutions are too numerous to count.



ADDING THE AGAR

1. Pour about 10 ml of agar into each Petri dish containing the hamburger solution. Swirl the dish to mix and evenly cover the bottom of the dish.
2. As soon as the agar is solidified, pour in another 4 to 6 ml of agar and swirl again to spread evenly.
3. Pour a control dish to make sure the agar is not contaminated.
4. Store the dishes upright until the agar is solid. Then invert the dishes, seal them with Parafilm, and place in the incubator at 95° F (35° C) or let them sit at room temperature (away from the sun) overnight.
5. Examine the Petri dishes for growth the next day and record your observations.