

Spread Plate Technique- Principle, Procedure and Uses

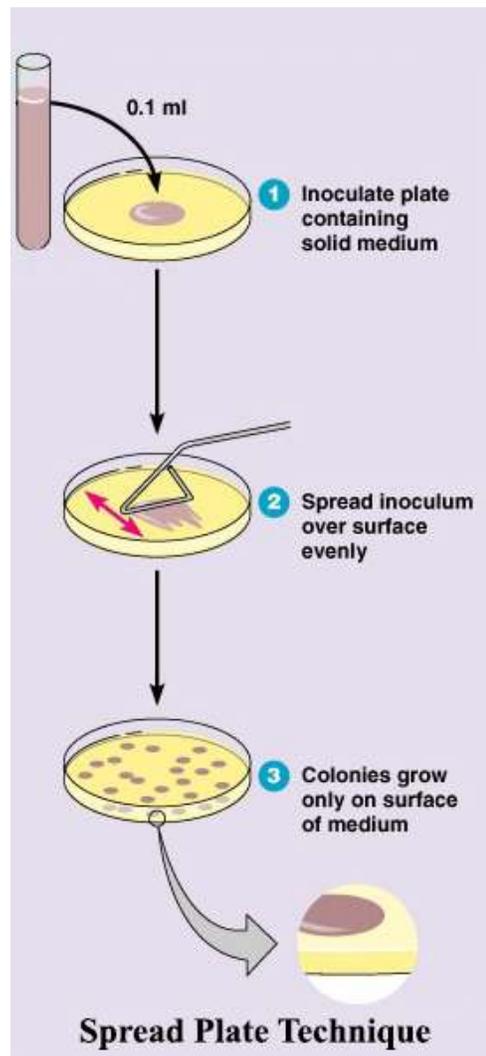
Spread plate technique is the method of isolation and enumeration of microorganisms in a mixed culture and distributing it evenly. The technique makes it easier to quantify bacteria in a solution.

Principle of Spread Plate Technique

The spread plate technique involves using a sterilized spreader with a smooth surface made of metal or glass to apply a small amount of bacteria suspended in a solution over a plate. The plate needs to be dry and at room temperature so that the agar can absorb the bacteria more readily. A successful spread plate will have a countable number of isolated bacterial colonies evenly distributed on the plate.

Procedure of Spread Plate Technique

1. Make a dilution series from a sample.
2. Pipette out 0.1 ml from the appropriate desired dilution series onto the center of the surface of an agar plate.
3. Dip the L-shaped glass spreader into alcohol.
4. Flame the glass spreader (hockey stick) over a Bunsen burner.
5. Spread the sample evenly over the surface of agar using the sterile glass spreader, carefully rotating the Petridish underneath at the same time.
6. Incubate the plate at 37°C for 24 hours.
7. Calculate the CFU value of the sample. Once you count the colonies, multiply by the appropriate dilution factor to determine the number of CFU/mL in the original sample.



Uses of Spread Plate Technique

1. It is used for viable plate counts, in which the total number of colony forming units on a single plate is enumerated.
2. It is used to calculate the concentration of cells in the tube from which the sample was plated.
3. Spread plating is routinely used in enrichment, selection, and screening experiments.

Limitations of Spread Plate Technique

1. Strick aerobes are favored while microaerophilic tends to glow slower.
2. Crowding of the colonies makes the enumeration difficult.

References

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