Culture media

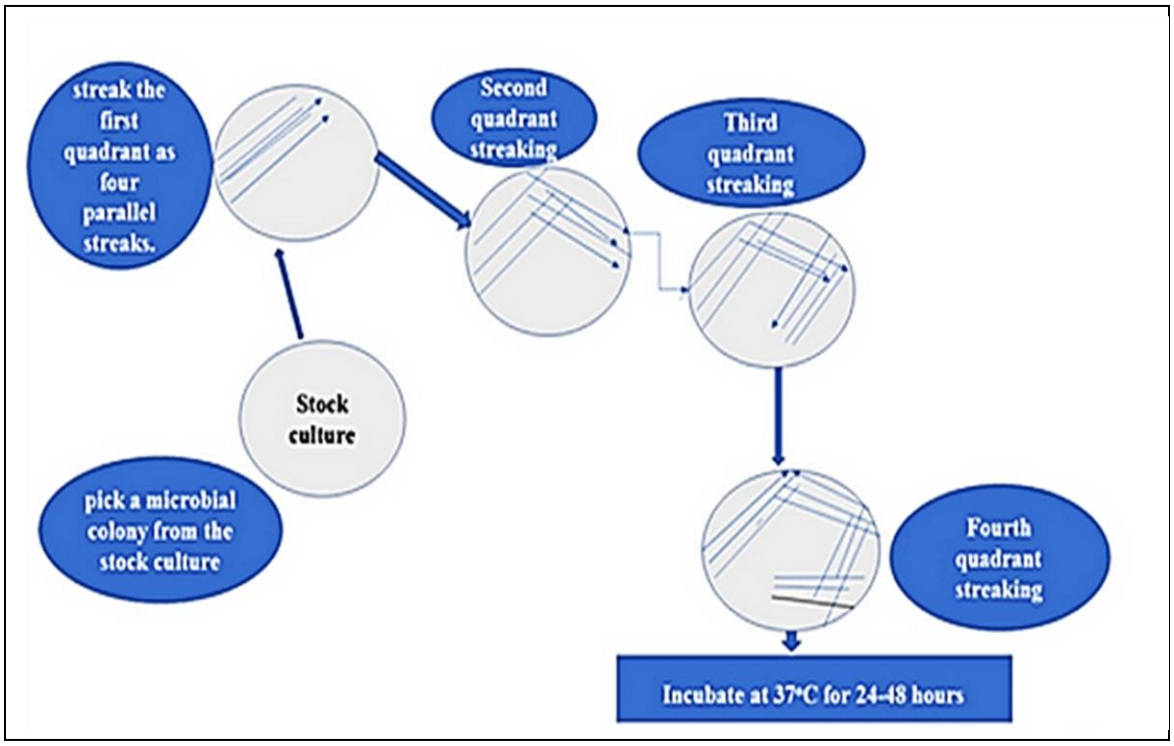
Culture media, also known as growth media, are specific mixtures of nutrients and other substances that support the growth of microorganisms such as bacteria and fungi (yeasts and molds).

Preparation of culture media formulations, including liquid growth media and culture media based on nutrient agar, is a common procedure in any microbiology laboratory. The culture media formulation process involves many steps and must be carried out with care to avoid cross contamination and ultimately protect the health of consumers:

- Select culture media recipe from database.
- Recalculate ingredient quantities according to the required culture media volume.
- Weigh main ingredients into the container.
- Weigh trace ingredients on a high accuracy balance and add to the container.
- Pour in deionized water up to around 80% of the required volume.
- Mix to dissolve the ingredients, gentle heating may be required.
- Check the pH using a pH meter and adjust if necessary.
- Sterilize in autoclave.
- Pour the culture medium after sterilization into Petri dishes or tubes.
- Store dishes/tubes until use in the refrigerator.

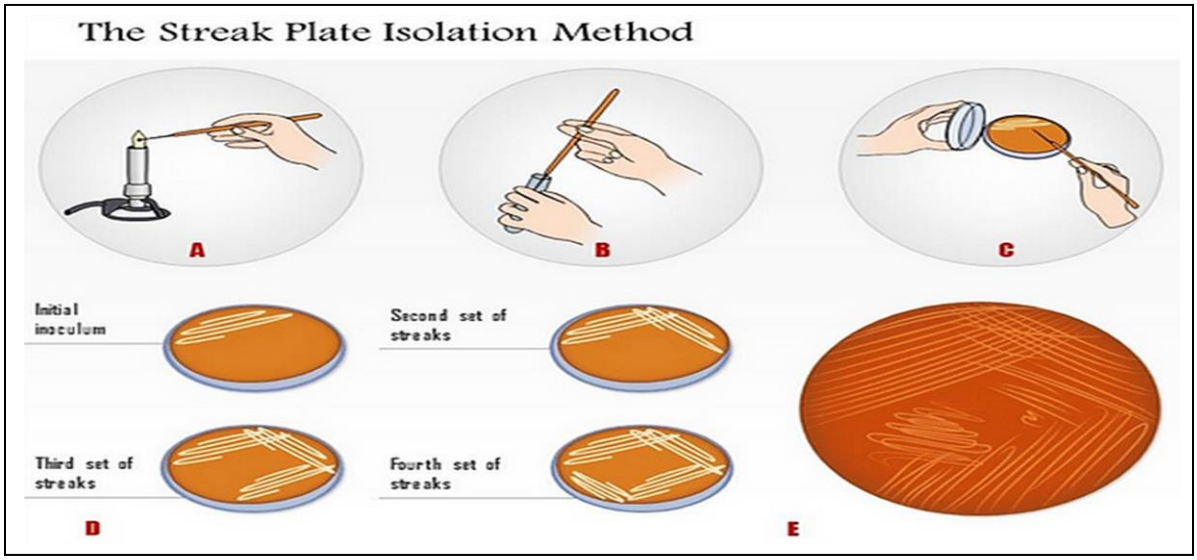
Streak Plate Method:

Streaking is a technique used in microbiology for the isolation of single colonies of microorganisms, either from a mixed species or from the same species. This technique is mostly applicable to bacteria but is also used for some yeasts.



Types of Streak Plate Method:

- **Quadrant Streaking:** This is the most common method of streaking, where the petri dish is divided into four quadrants and then inoculated. It is also known as a four-quadrant streak. A loopful of inoculum is taken and streaked such that the first quadrant contains the highest concentration of the inoculum, followed by the second quadrant, third quadrant, and fourth quadrant.
- **T-Streaking:** In this method, the petri dish is divided into three quadrants by drawing the letter ‘T’. Similar to four-quadrant streaking, it is a

discontinuous method where each quadrant is streaked after loop sterilization, and the quadrant that is streaked last gives isolated colonies.

- **Continuous Streaking:** In this type of streaking, the inoculum is spread from one edge to the center of the plate. The plate is rotated 180°, and the remaining portion is streaked without sterilizing the loop.
- **Radiant Streaking:** In this streaking method, the inoculum is spread on one edge of the petri dish. From the edge, vertical lines are streaked in the upward direction. Next, the vertical lines are streaked horizontally to obtain pure isolated cultures.