

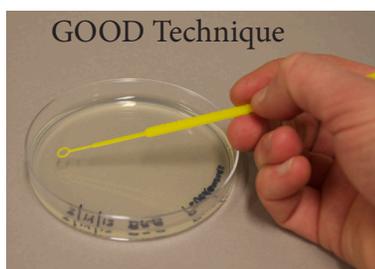
ASSET: How to Make a Bacterial Streak Plate

CAUTION: When working with any form of bacteria, even nonpathogenic bacteria like *Pseudomonas fluorescens*, take extreme caution. Use sterile technique and seal all containers that bacteria are stored in. Make sure you always clean your work area before and after handling bacterial cultures. Wash your hands when finished.

A streak plate made with the ancestral bacteria will allow students to see individual colonies of the original population. These individual colonies are the ones you want to use to ensure that you have genetically identical cells (clones).

1. Using a marker, label the **BOTTOM** of your streak plate with the date, your initials and the species of bacteria you are plating. **ALWAYS KEEP THE LID ON** your agar plate until you are ready to complete your streak. This minimizes the risk of contamination.

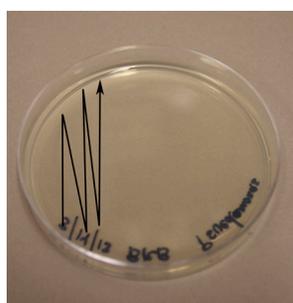
2. When streaking a plate, it is important to use sterile loops. Open the sealed loops at the pointed end. The loop end should NOT be handled or come in contact with anything but the bacteria and the agar. Since you are using disposable plastic loops, you will need four sterile loops for one streak plate.



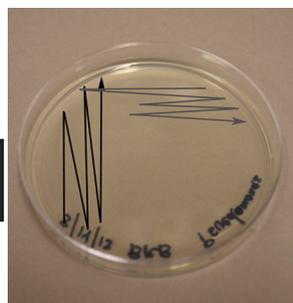
3. When streaking a plate, hold the loop horizontally, relative to the plate. This helps to minimize the risk of digging into the agar.

4. Use the loop to pick up a very small amount of bacteria from your source. Broth cultures or plate cultures can be used as source material for making a streak plate. You may only see a small amount of “stuff” on the loop, but there are millions of bacteria present and more than enough to spread your plate.

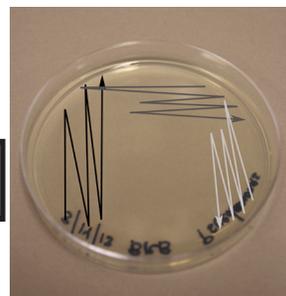
5. Spread the bacteria on the plate in a zigzag pattern, as shown in Streak One below. Holding the plate cover at an angle over the plate while you streak will help eliminate possible contamination. Place the cover back on the plate while you prepare for the next streak. Keep it covered whenever you're not actually streaking. Notice the color is “darker” in the first streak because the bacteria are more concentrated. With each streak the bacteria should become less and less concentrated until you eventually have individual cells that will grow up into individual colonies.



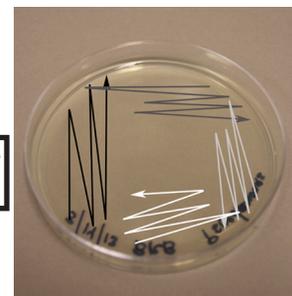
Change Loop



Change Loop



Change Loop



Streak ONE

Streak TWO

Streak THREE

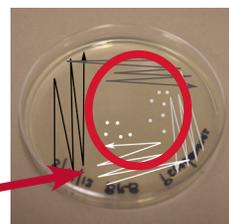
Streak FOUR

6. Look at the agar each time to see where you've already streaked. Streak back into the end of the the previous section once or twice and continue to streak into the next section.

7. Dip the loops in alcohol or bleach to decontaminate and dispose of the loops in the waste beaker. Make sure the plate is covered and sealed around the perimeter with either Parafilm or tape. Place the cultured plate upside down. Condensation may form during incubation. If it drips onto the agar, all of your colonies will run together. If it stays in the lid, no harm will be done. Store the plate at room temperature.



8. Check the plate for bacterial growth after 2-3 days. Your plate should have individual colonies around the third and fourth streaks, see the image to the right. You can now use samples from these individual colonies to perform the next step in your lab protocol.



Bacterial colonies