

Oct 24, 2024

Version 2

Plate Streaking V.2

DOI

<https://dx.doi.org/10.17504/protocols.io.dm6gpjw1jgzp/v2>



Carlos Goller¹, Carly Sjogren²

¹Biotechnology Teaching Program (BIT), North Carolina State University; ²[North Carolina State University]

BIT-Protocols

Tech. support phone: +9195134-135 email: ccgoller@ncsu.edu



Carlos Carlos Goller

Biotechnology Teaching Program (BIT), North Carolina State U...

Create & collaborate more with a free account

Edit and publish protocols, collaborate in communities, share insights through comments, and track progress with run records.

Create free account

OPEN  ACCESS



DOI: <https://dx.doi.org/10.17504/protocols.io.dm6gpjw1jgzp/v2>

Protocol Citation: Carlos Goller, Carly Sjogren 2024. Plate Streaking. **protocols.io**

<https://dx.doi.org/10.17504/protocols.io.dm6gpjw1jgzp/v2> Version created by **Carlos Carlos Goller**



License: This is an open access protocol distributed under the terms of the **[Creative Commons Attribution License](#)**, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

Protocol status: Working

We use this protocol and it's working

Created: January 28, 2023

Last Modified: October 24, 2024

Protocol Integer ID: 76001

Keywords: goals streaking bacteria on agar plate, bacterial cell culture incubator bacterial plate, goals streaking bacteria, plate streaking overview, isolated colonies of bacteria, bacteria cell, bacterium, bacteria, agar plate, clone, plate, following lab skill, tryptic soy agar, lab safety, isolated colony, prolific organismal growth

Abstract

Overview and Goals

Streaking bacteria on agar plates allows scientists to obtain isolated colonies of bacteria. An isolated colony provides up to 10^8 bacteria cells that are genetically identical. This is why we call them clones or refer to them as colonies. The medium we chose to streak out bacteria must provide the nutrients required for prolific organismal growth, and not all bacteria require the same nutrients. There are a variety of types of media and we will use Tryptic Soy Agar (TSA) plates to grow your bacteria, which may or may not support your bacterium's growth.

After completing this lab you will gain the following lab skills:

- Lab safety and proper personal protective equipment (PPE)
- Proper use of equipment: bacterial cell culture incubator
- Bacterial plate streaking
- Bacterial plate incubation

Materials

- Sharpie pen
- Chem wipes
- Sterile inoculation loops
- Pens and lab markers
- Bacterial culture source
- Inoculate plate with TSA media

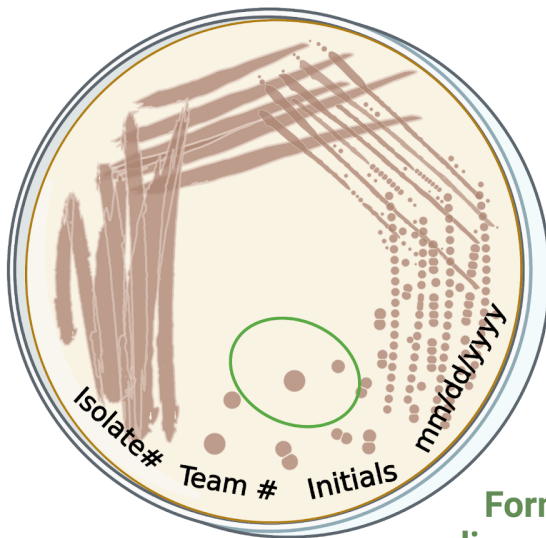
Before start

Preparation

Learn how to perform bacterial plate streaking to obtain isolated colonies.

1. Watch **Streaking for Isolation** (3:38 min)
 2. Read this article to learn about ways to streak a plate to obtain isolated colonies: **Streak Plate Method- Principle, Types, Methods, Uses** (15 min)
- Practice with a pen and paper the "Quadrant Streaking Method."

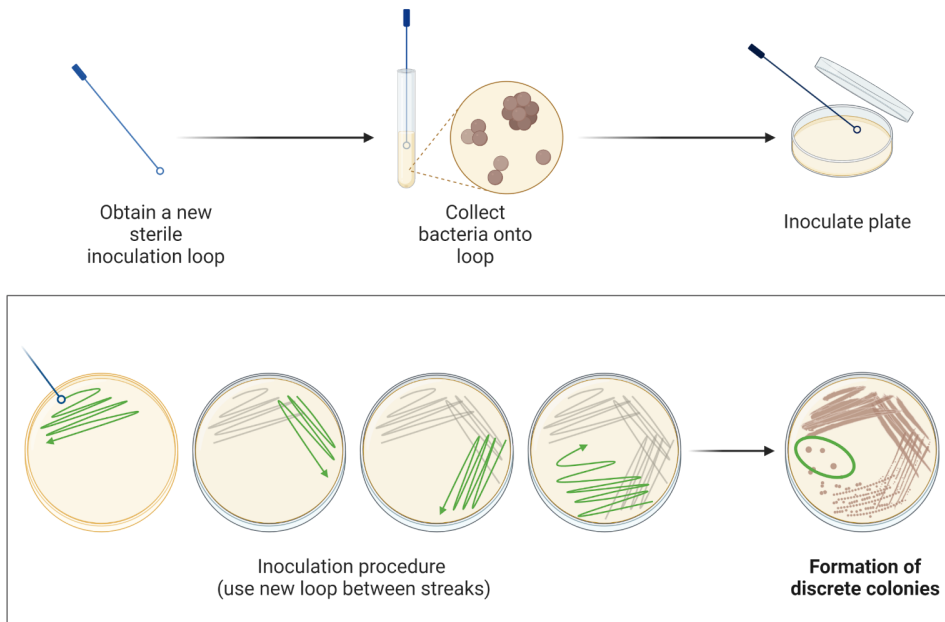
Labeling a Plate



Formation of discrete colonies

F1

Plate Streaking Method

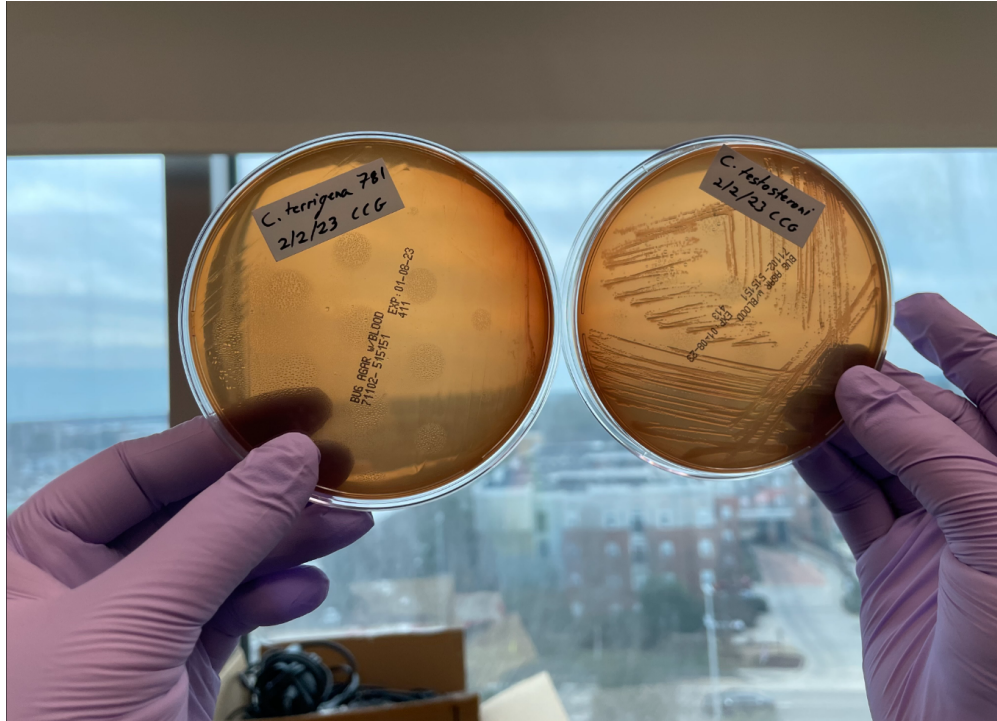


F2

Procedure for plate streaking

- 1 Obtain a fresh petri dish containing TSA media.
- 2 Label the bottom of the plate (the side containing TSA media) keeping to the circumference (write on the edge, not in the center) with your bacterial isolate#, your Team#, your initials and today's date. See the diagram below for a visual example. If the surface of the plate is wet, dry it off using a chemical wipe.
- 3 Obtain a sterile plastic loop.
- 4 Inspect the plate with the bacterial isolate you will characterize.
- 5 Using the sterile plastic loop, touch the loop to a single colony on your bacterial source plate.
- 6 Streak the bacteria on the loop onto your labeled inoculate plate following the inoculation procedure illustrated above.
- 7 Put your lid back on your plate, turn it upside down (lid facing the benchtop) and bring it to the incubation chamber.
- 8 Incubate your bacterial plate overnight with the goal of obtaining single isolated colonies. This would be the result





Note

Critical thinking questions

1. When plating bacteria, why do you think the last of the successive streaking turns will result in individual colonies as opposed to thick lines of bacteria seen at the beginning?
2. Why do you think researchers put plates into an incubator upside down (lids on the bottom)?