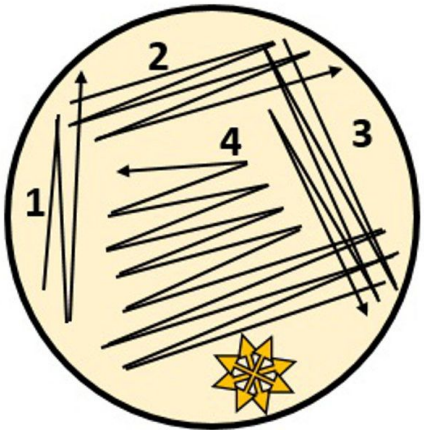
Streaking out phage

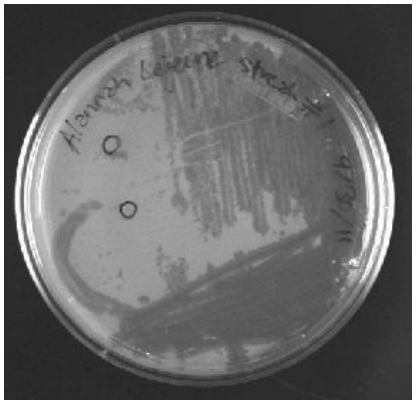
Streaking out phage is a way of taking a sample of phage and spreading them across a top agar lawn of host bacteria so that individual plaques can be isolated from a high titer sample. It is exactly the same principle as bacterial colony purification, which you may have done before.

The principle is very simple: imagine that you had an inoculating loop full of bacteria, perhaps a million or more, and a Petri dish that was meters long so that you could just touch the loop to one side of the agar and drag it in a straight line across the plate. After incubation you would see that the line you made with the loop starts with confluent growth then begins to break apart until there are individual colonies, and then no more growth once the bacteria had all been scraped off of the loop. Unfortunately, we only have Petri dishes that are 100mm across, so instead of drawing a straight line with your loop you need to zig-zag it across the agar and use a clean loop a few times to achieve the same effect.

When streaking out phage, the phage sample is struck out onto the agar, then the bacterial lawn is poured over the streak and the phages diffuse into the lawn from below. The phage sample can be anything from a pure lysate or pickate, an environmental sample to a plaque.



Label the plate(s) to be struck with phage. Take a sterile inoculating loop and streak a loopful of your phage sample and lay down your first streak, drawing the loop backwards and forwards a couple of times as shown here (Zone 1). Using a sterile loop, carry out a second streak, running through the far end of your previous streak a couple of times before zig-zagging a few times (zone 2). Repeat once more (zone 3). Keep zones 1-3 towards the edge of your plate, leaving a large empty area for the final streak, which should fill all of the remaining area of your plate (zone 4).



Allow the streaks to dry with the Petri dish lid open in your working zone, then pour a lawn (as described in the protocol above). After incubation you plate should look something like the image here, with confluent lysis where you began your streaks and separate plaques later on.