Picking plaques

To plaque purify a phage, we select one plaque, “extract” the phage from it, then do a plaque assay or use it to grow up lots more phage. The number of phage per plaque will vary with the strain and the growth state of *E. coli* as well as the phage.

Selecting plaques has another important function. All the phages in the plaque are identical, since they grew from one initial phage. If you study the genetics of the phage, it is best to plaque purify your virus before doing experiments to ensure identical phage and reproducible results.

Materials

Media for *E. coli*: NPB or lambda/tryptone broth
Sterile polypropylene tubes
Chloroform
Agar plates

Methods

Picking plaques

*Note:* If you have both clear and cloudy plaques, do the following procedure with one plaque of each. Also, if you have plaques with unusual morphology, do the procedure with them. Be sure to label them with their plaque type as well as your name and the date.

1) Add 1 ml of media to a sterile polypropylene tube.

2) Flame a glass Pasteur pipette to sterilize it.

3) Poke the sterile pipette through a plaque.

4) Transfer the plaque to the tube and let it sit for several days in the refrigerator. The phage will slowly diffuse out of the agar plug.

*Note:* In the unlikely situation that bacteria grow in the sample, add one drop of chloroform (found in the hood: it kills bacteria).

4) If you have a cloudy plaque, there are lysogenic *E. coli* present. Try streaking a colony (containing phage in *E. coli*) onto a lambda/tryptone agar plate to see if it will grow.