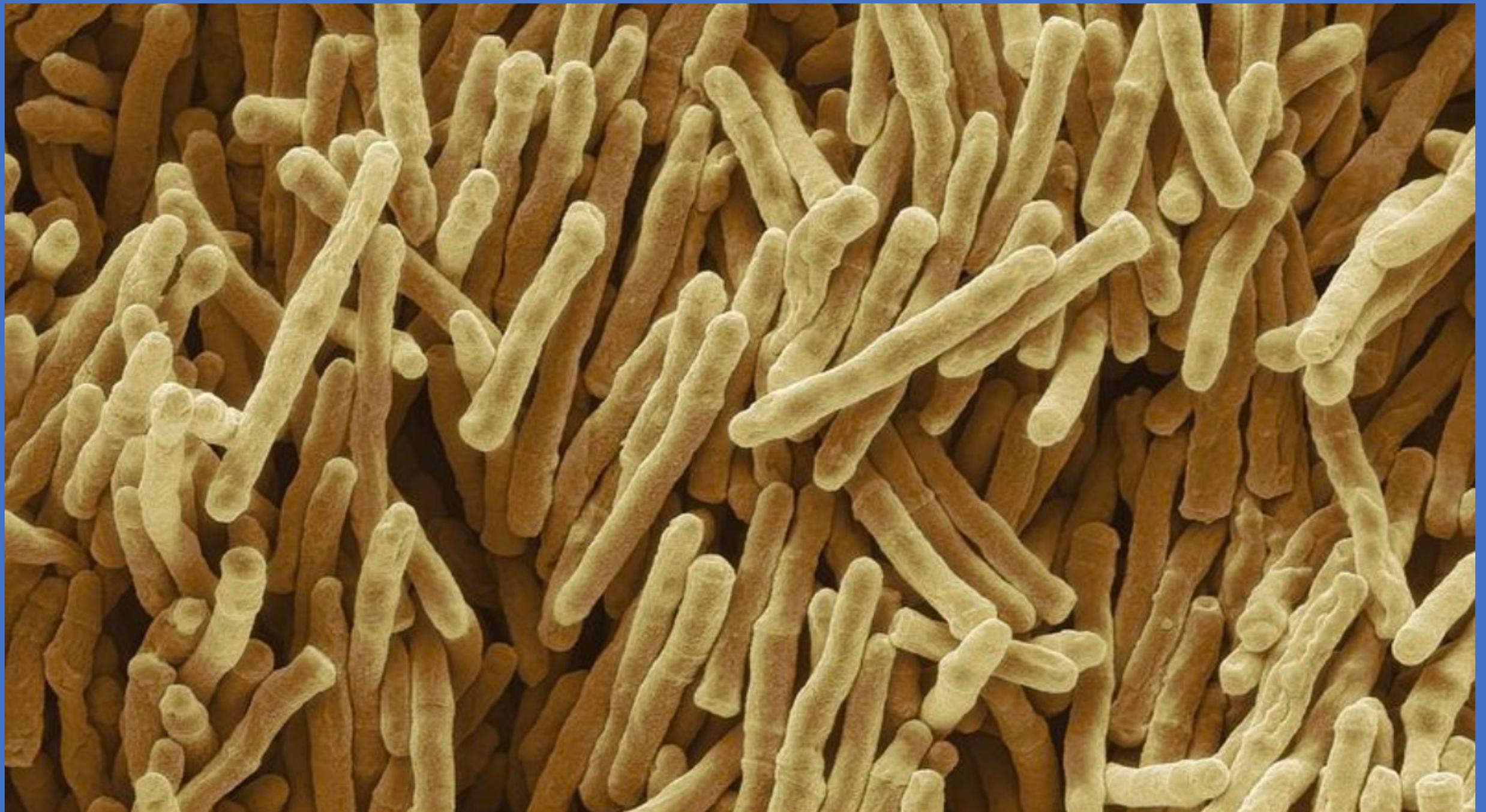
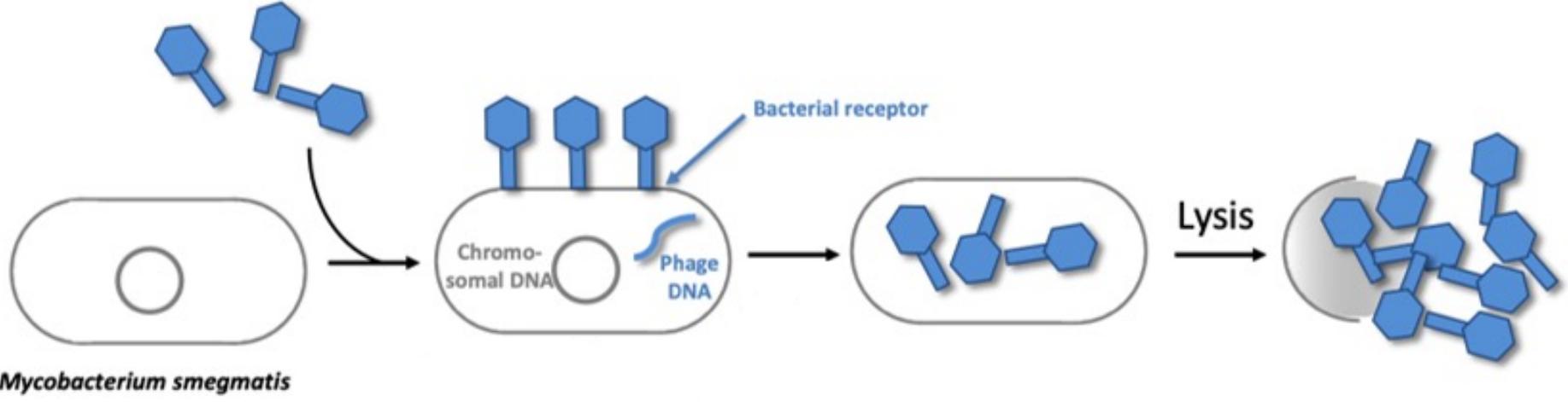
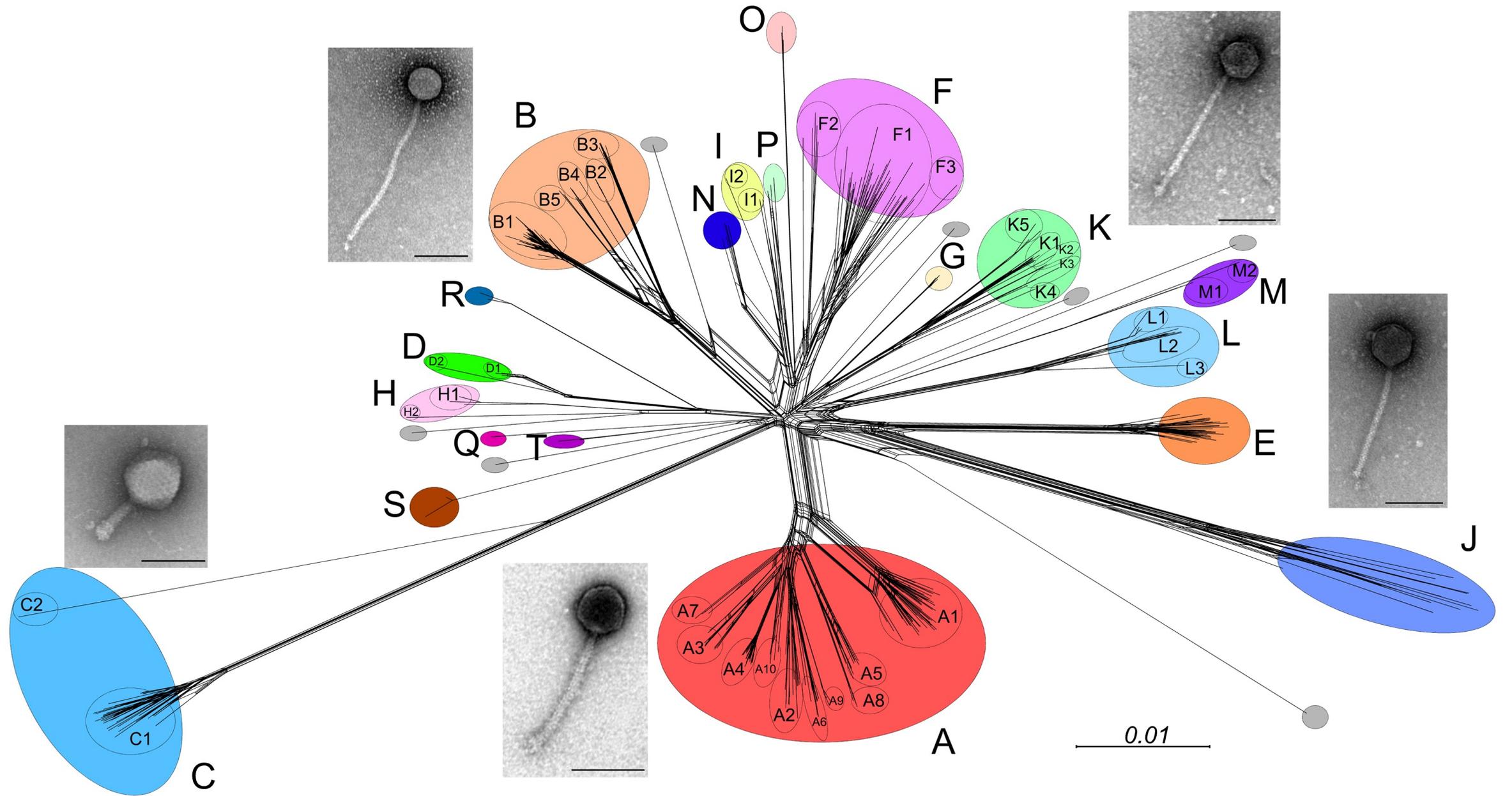
A blue-tinted background image of a petri dish containing a bacterial culture. The dish is tilted, and the culture is visible as a dark, textured surface. The text is overlaid on this image.

THE DISCOVERY AND ANALYSIS OF MYCOBACTERIOPHAGE "RITA"

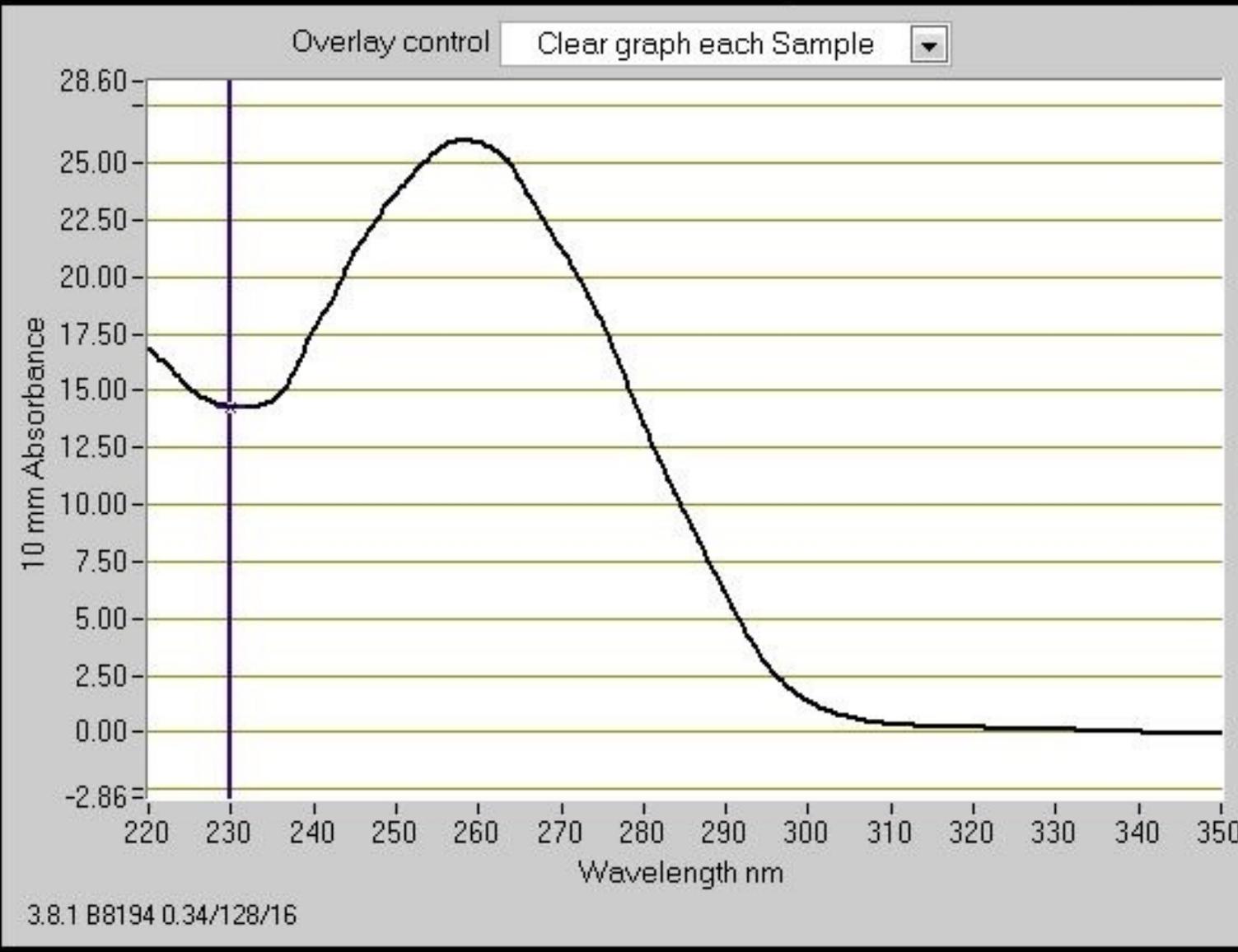
Anna Fakhri





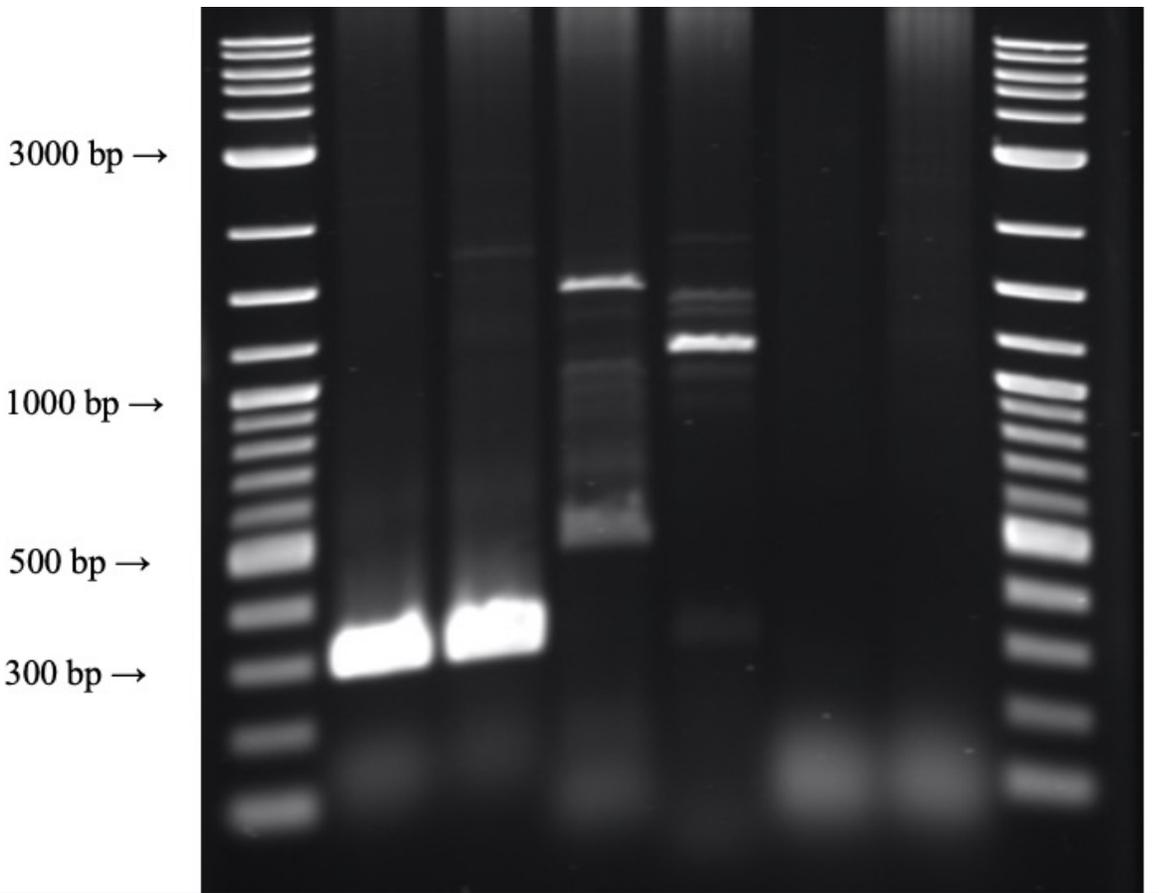


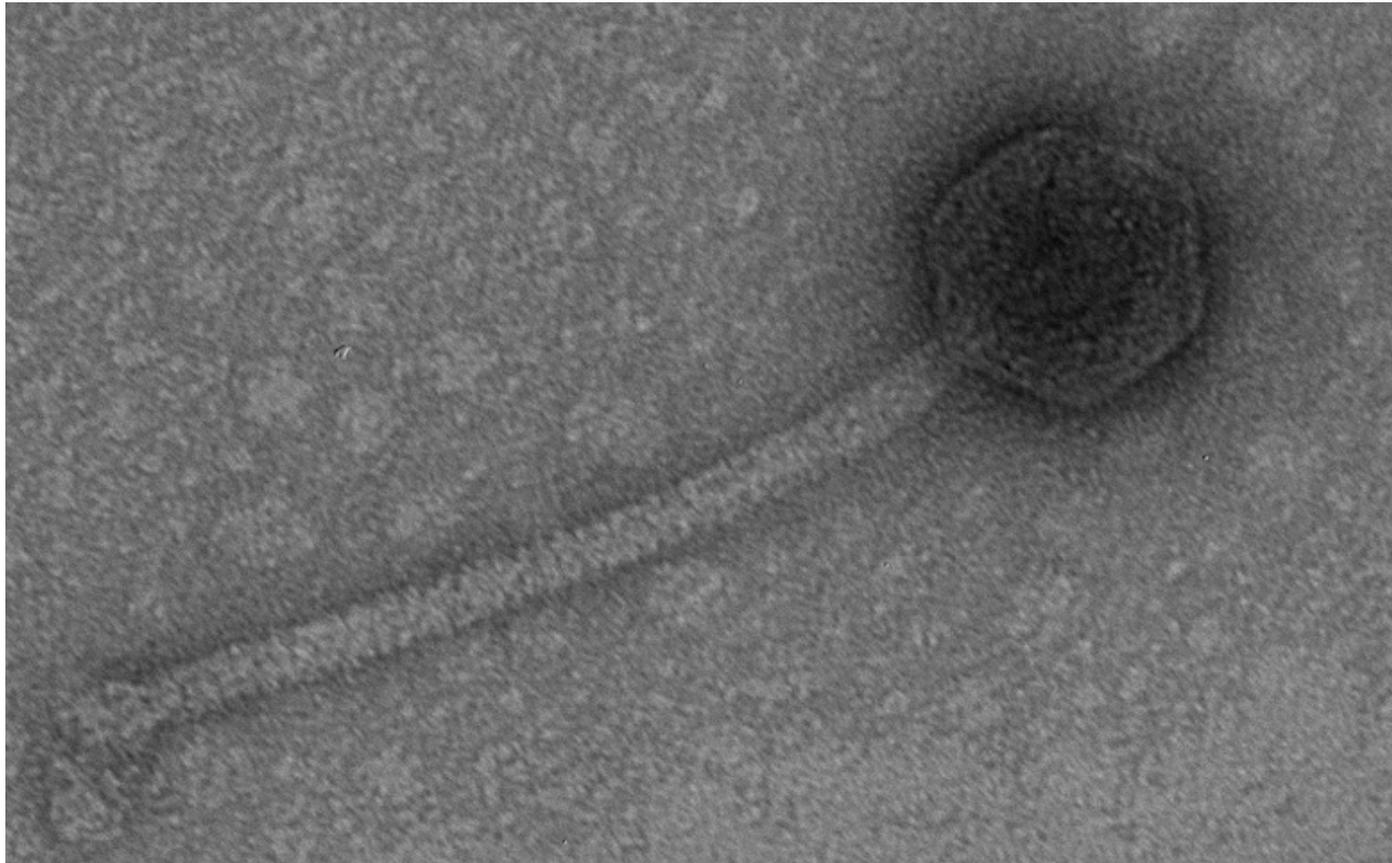
Measure Re-blank Print Screen Recording Measurement complete 3/8/2022 10:16 PM Exit
 Blank Print Report Show Report User Default



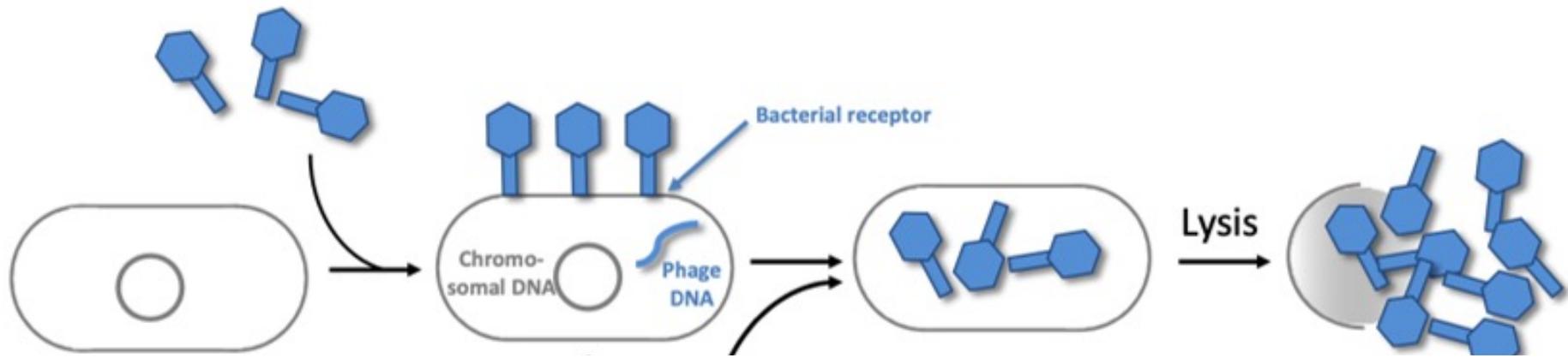
Sample Type **DNA-50** ▾
 Sample ID AF 3/23/2022 Rita
 Phage DNA Extraction
 Sample # 1
 λ 230 nm Abs. 14.252
 A-260 10 mm path 25.895
 A-280 10 mm path 13.489
 260/280 1.92
 260/230 1.82
 ng/uL **1294.7**

1 KB Ladder
K1 Primers + Rita
K1 Control
H Primers + Rita
G Primers + Rita
F1 Primers + Rita
F1 Control
1 KB Ladder

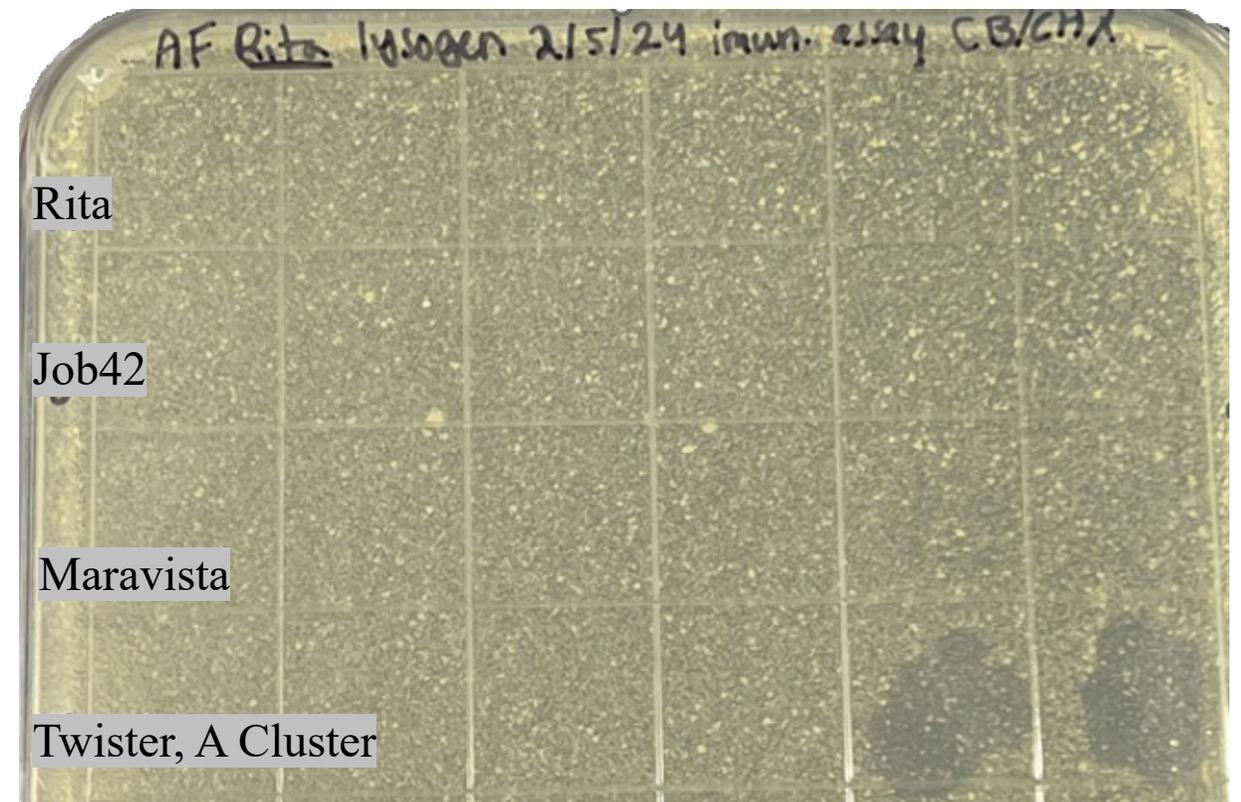
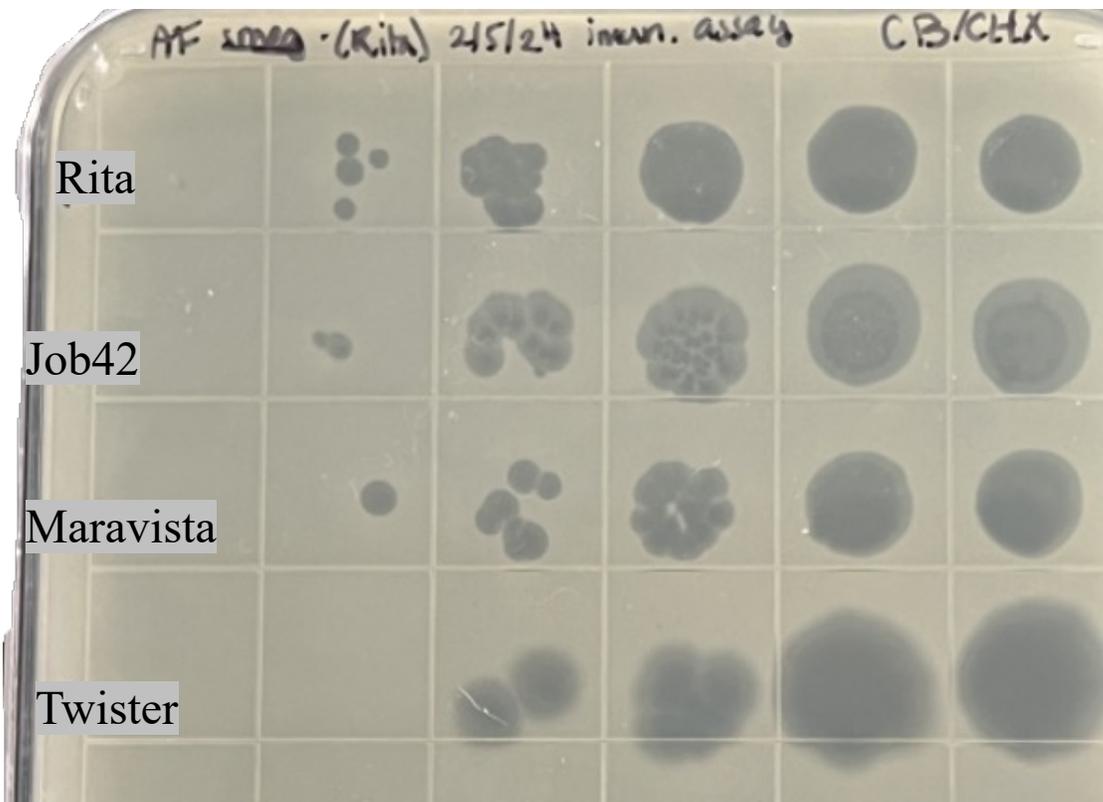




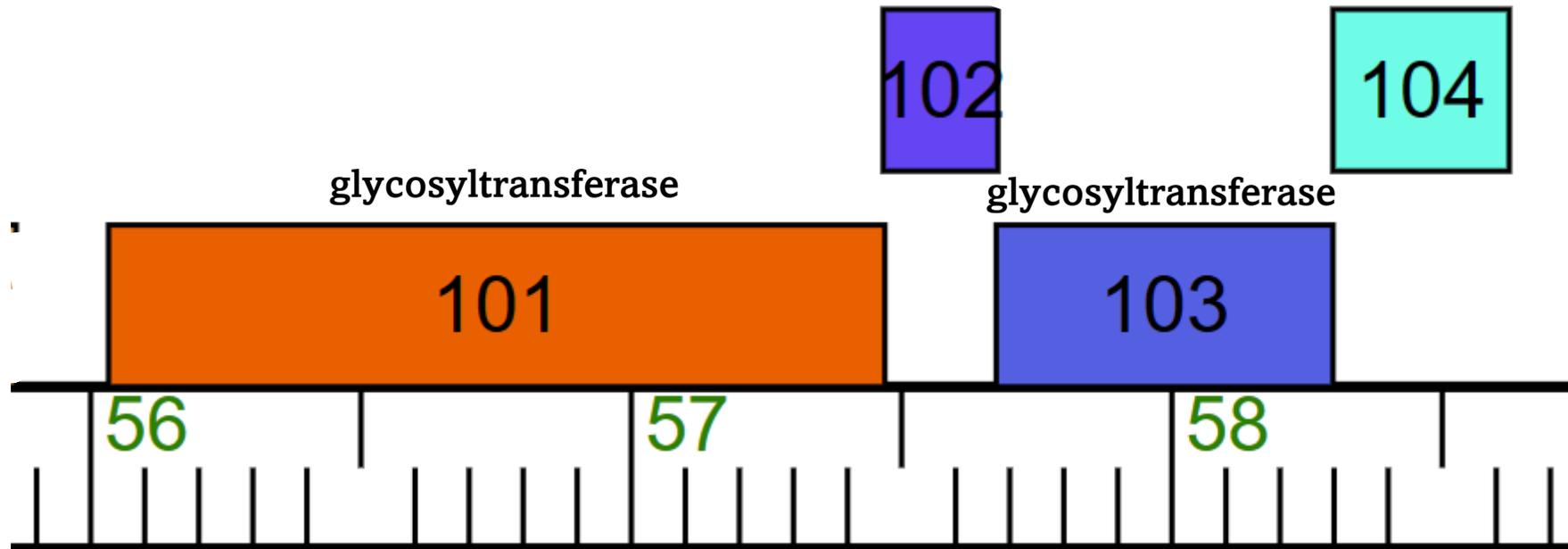
Electron microscope image taken by DeGiorgis, Joseph, 2021, Phamerator map from phamerator.com



Immunity Assays reveal the susceptibility of phages to infection

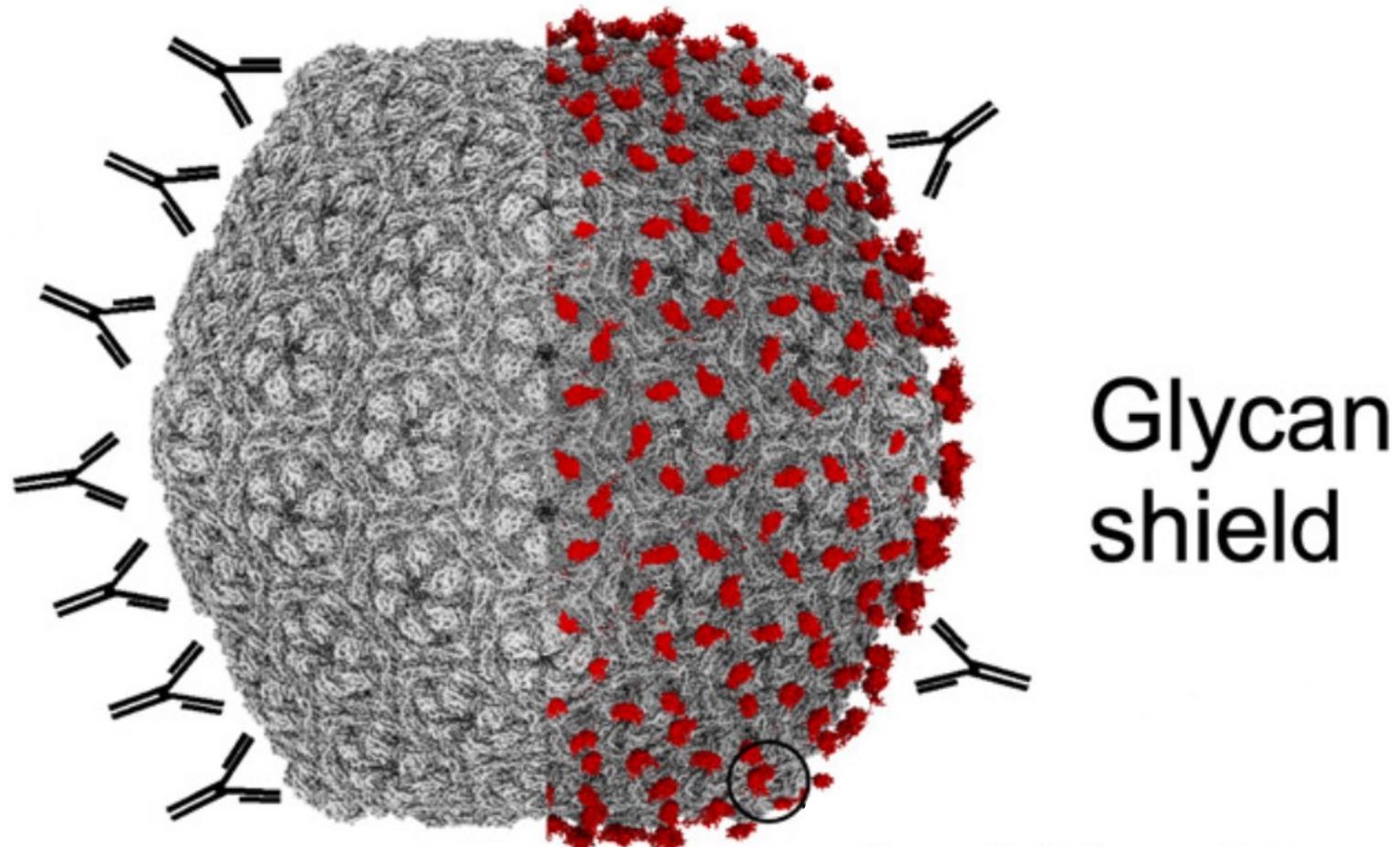


Glycosyltransferases are enzymes that attach sugars to proteins

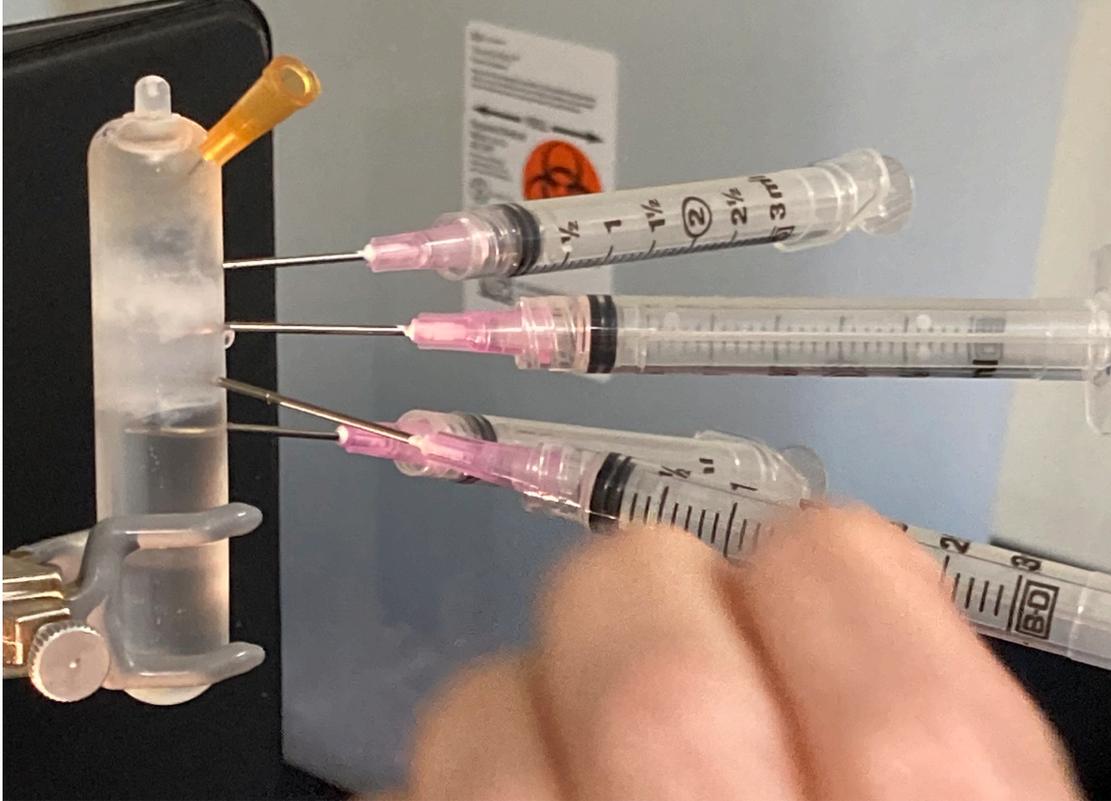


The major capsid proteins on phage Che8 are glycosylated

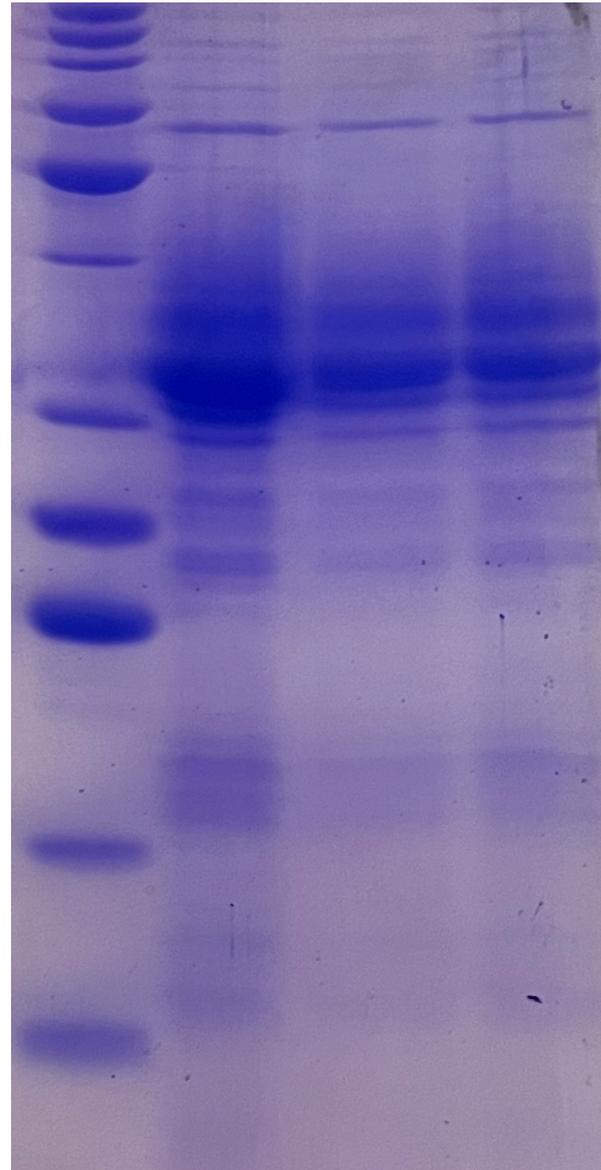
Phage Capsid



Purification of phage Rita by CsCl gradient ultracentrifugation produces several bands



Ladder Rita 2 Rita 3 Rita 4

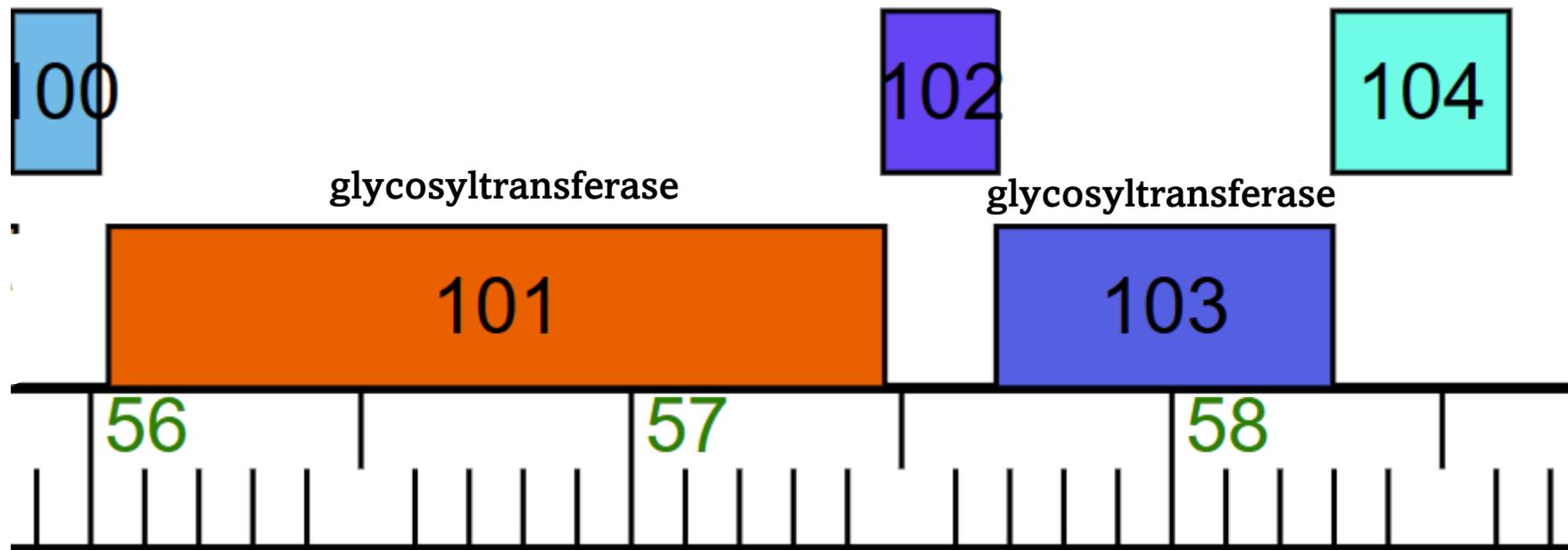


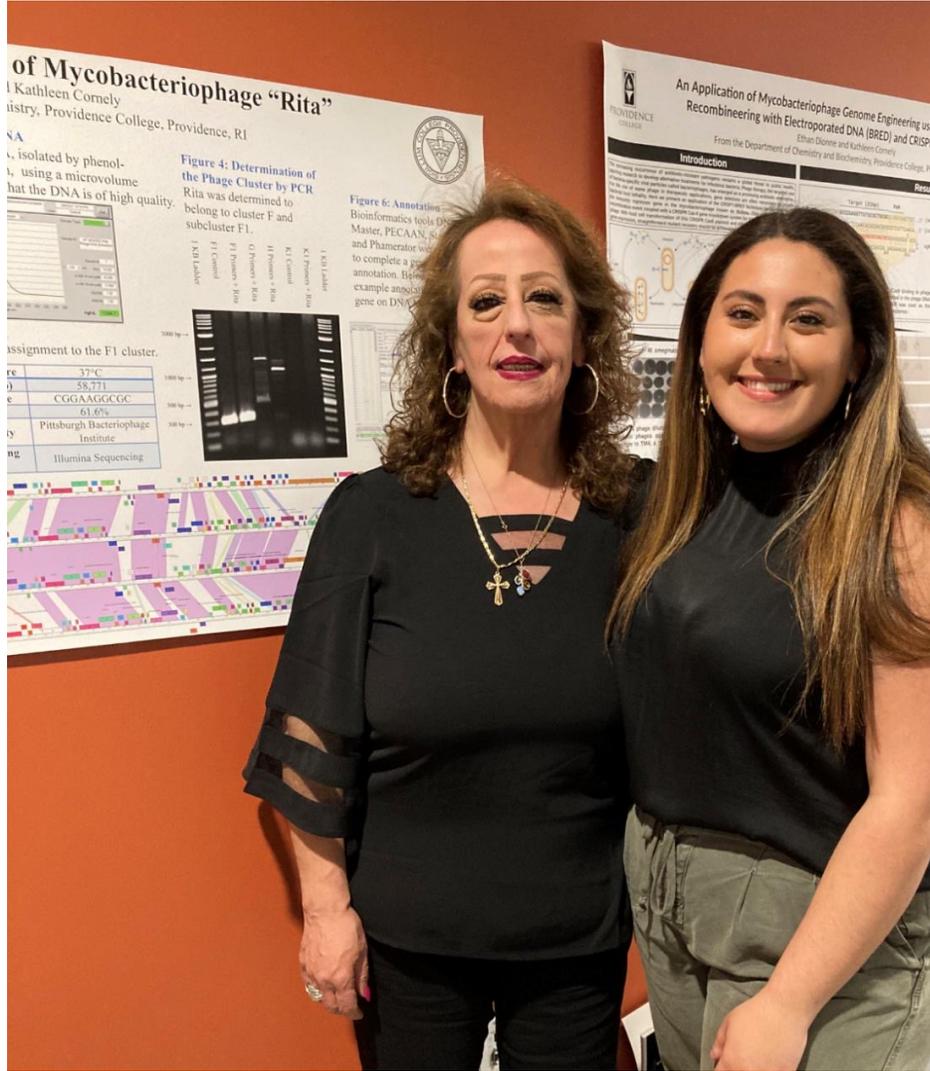
Rita 2 Rita 3 Rita 4



The Future of “Rita”

- Knockout gp103, the gene responsible for glycosylation





Acknowledgements

- Dr. Kathleen Cornely, Ph.D.
- Department of Biochemistry & Chemistry
- Center for Engaged Learning
- Aunt Rita