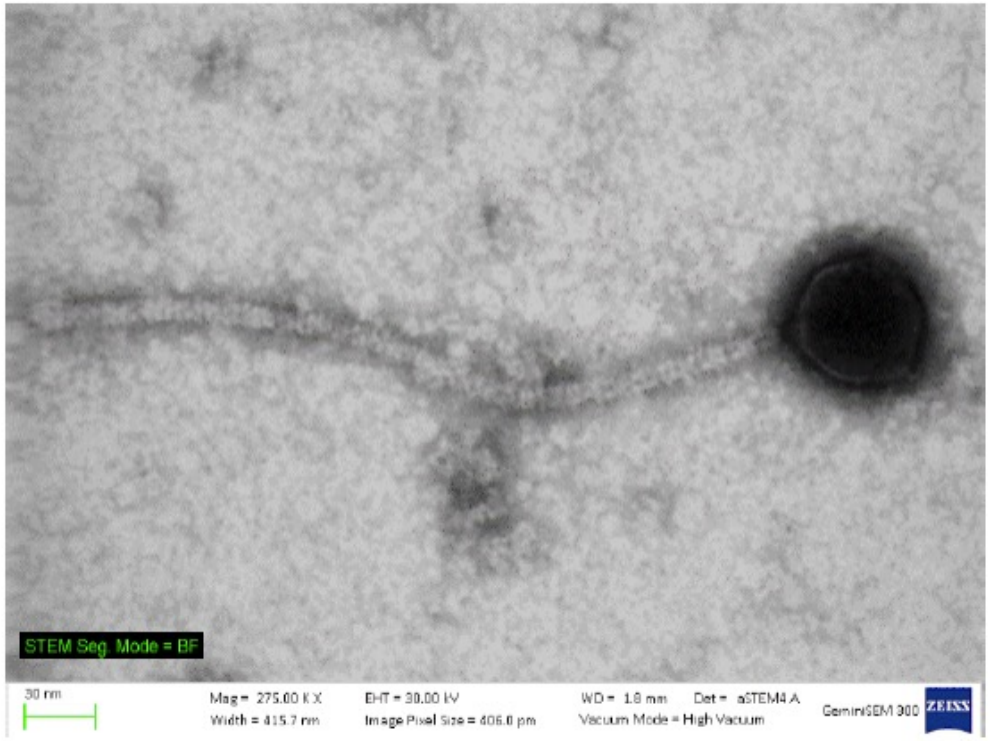
ZEISS GeminiSEM 300
Western Carolina University

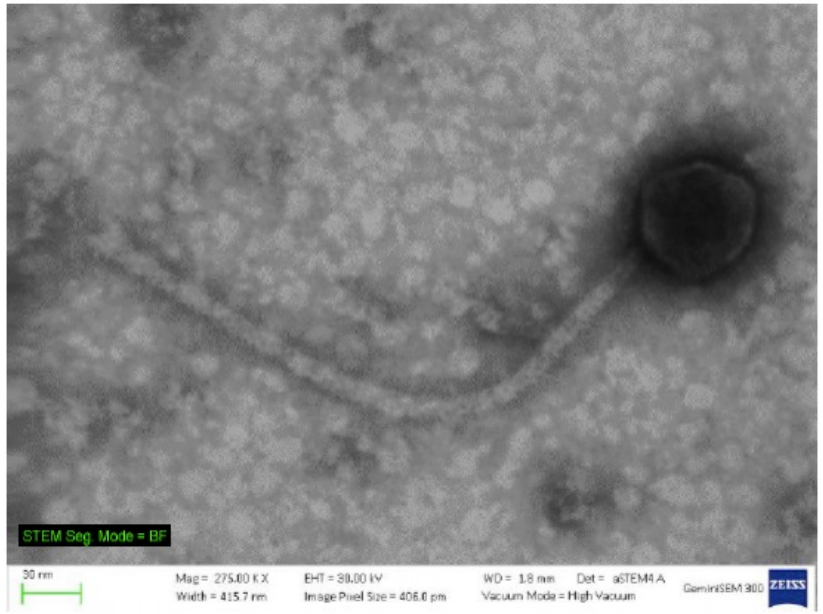
Joe Favata, Ph.D., Luyang Han, Ph.D, and Magdalena Eder, Ph.D.
Carl Zeiss Research Microscopy Solutions
joseph.favata@zeiss.com, luyang.han@zeiss.com, magdalena.eder@zeiss.com

Sample “M” - Bacteriophages

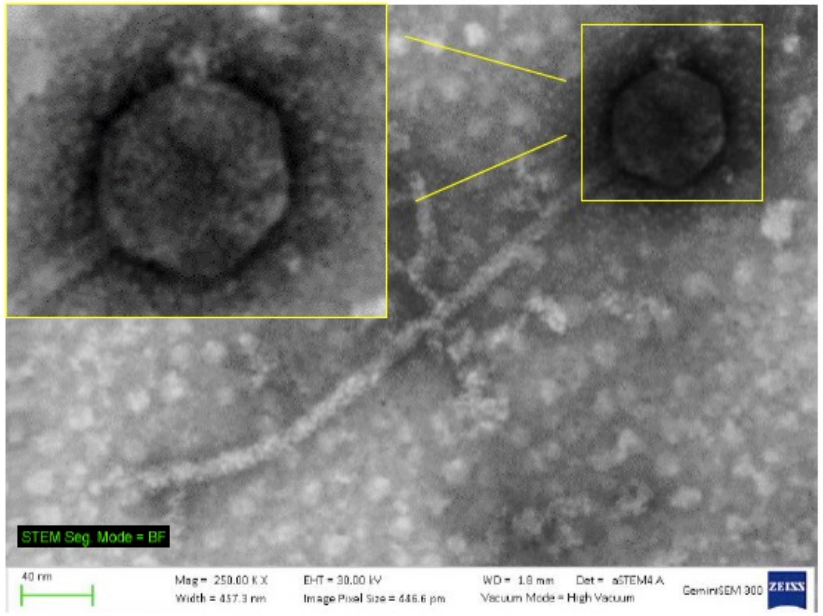


Clearly rendered bacteriophage strains for classification based on shape and size with strong contrast in bright-field (BF) STEM imaging

Sample “M” - Bacteriophages

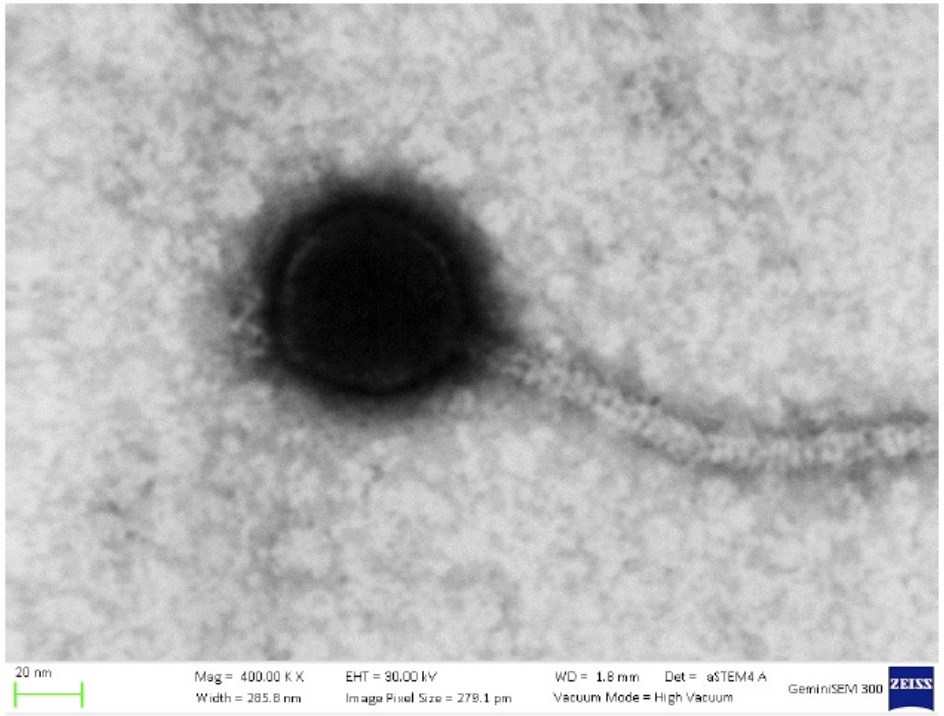


Navigate to multiple sites to capture different strains



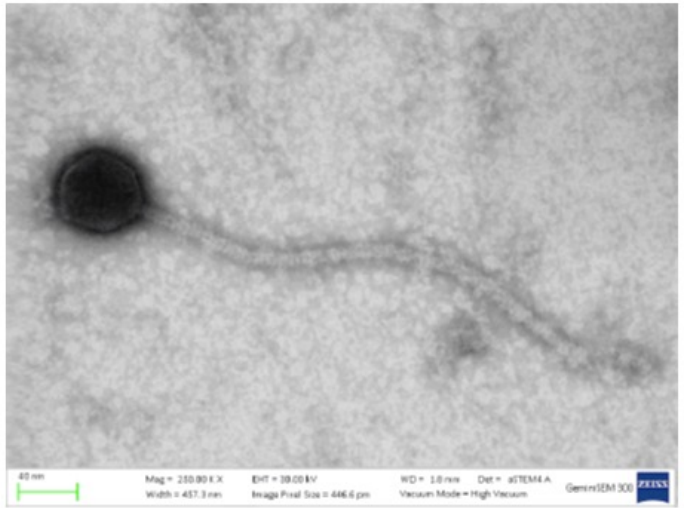
Magnify to 400kX to examine head shape and potential lysing

Sample “M” - Bacteriophages

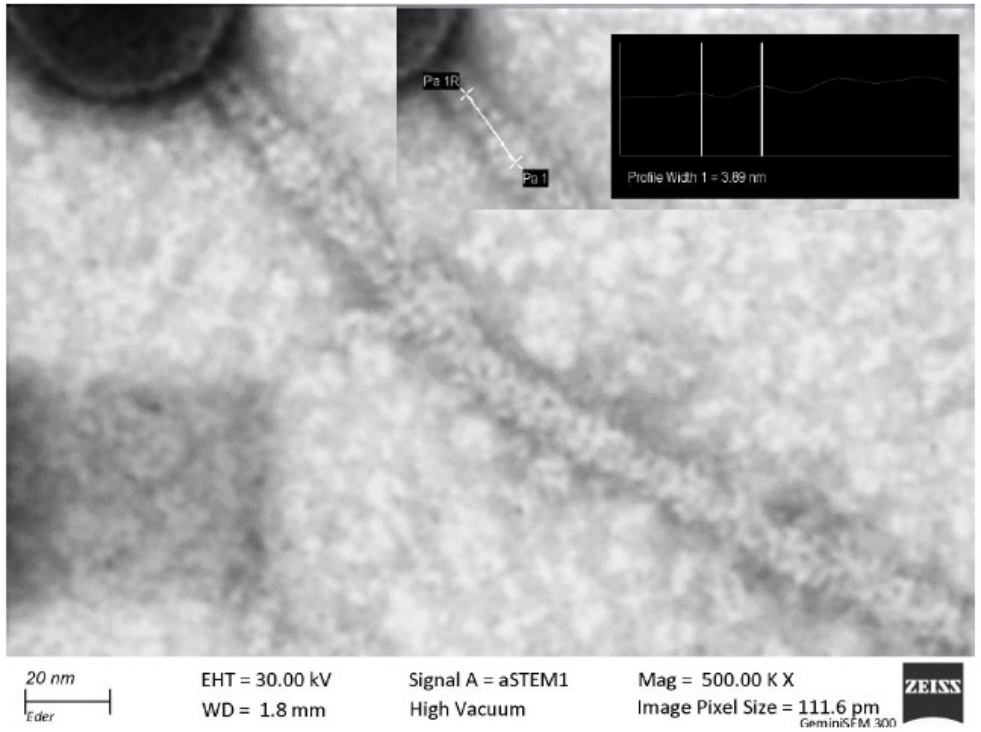


Mag = 400,000x

Examine your specimen even deeper to see distinct tail protein structure

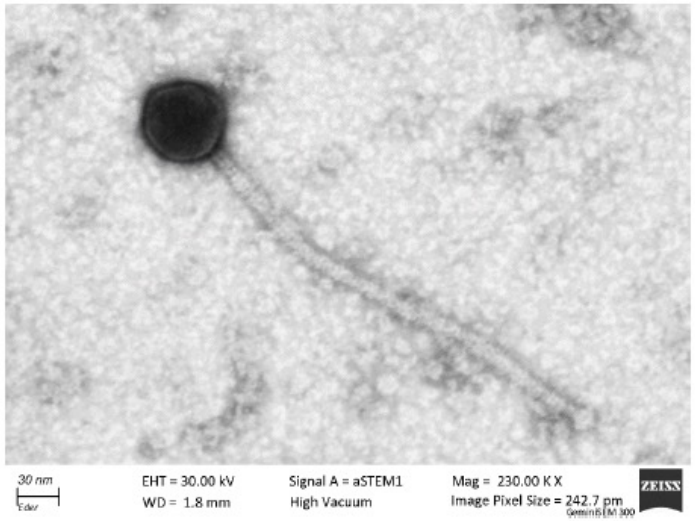


Sample “M” - Bacteriophages

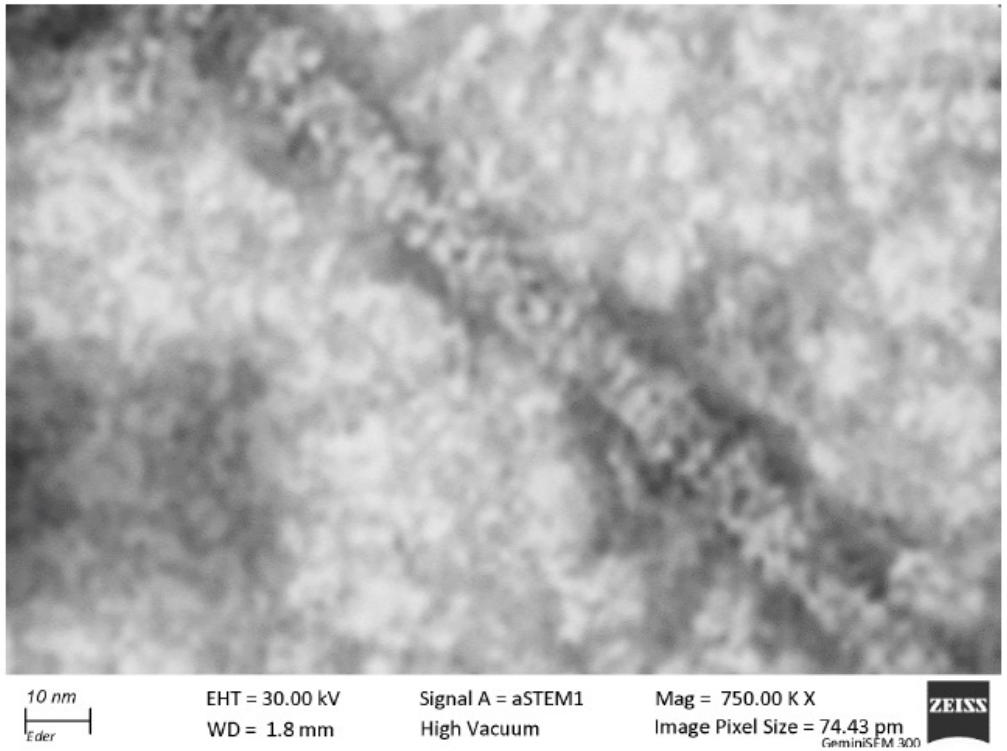


Mag = 500,000x

The distance between the helical rings is about 3.9nm as measured in SmartSEM.

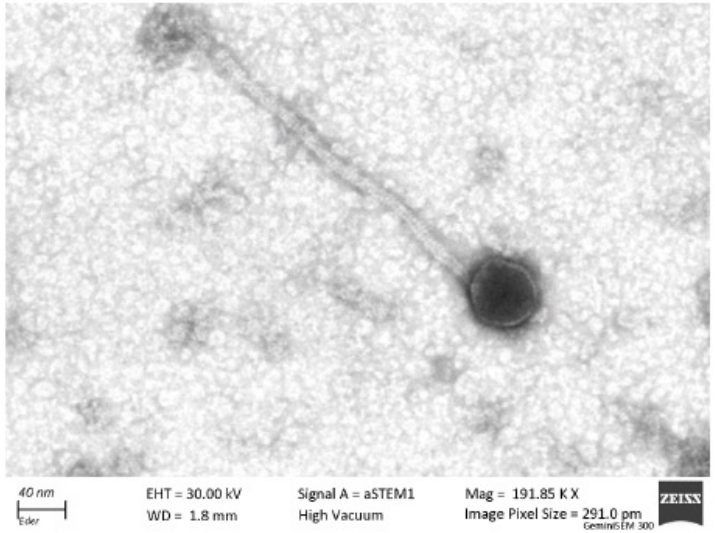


Sample “M” - Bacteriophages



Mag = 750,000x

Possibly, the protein self-assembly into tubes is seen at the tail.



ThermoFisher SCIENTIFIC

Apreo 2

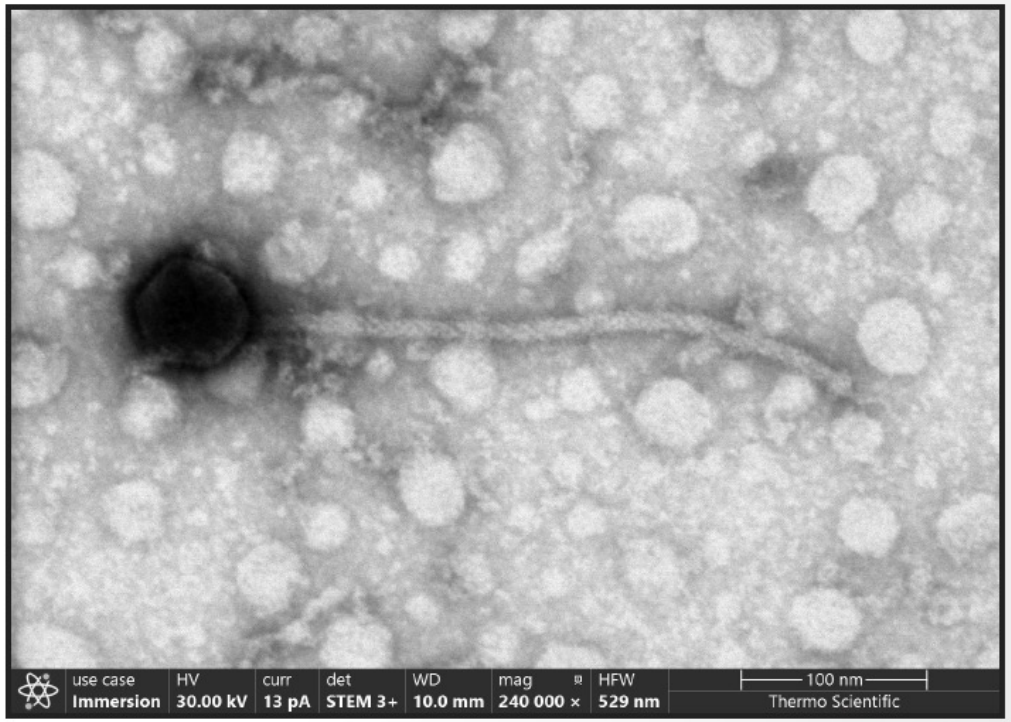
Western Carolina University
March 2021

Prepared by Hillsboro NanoPort

The world leader in serving science

Lens Mode: Immersion

Detector: STEM 3+

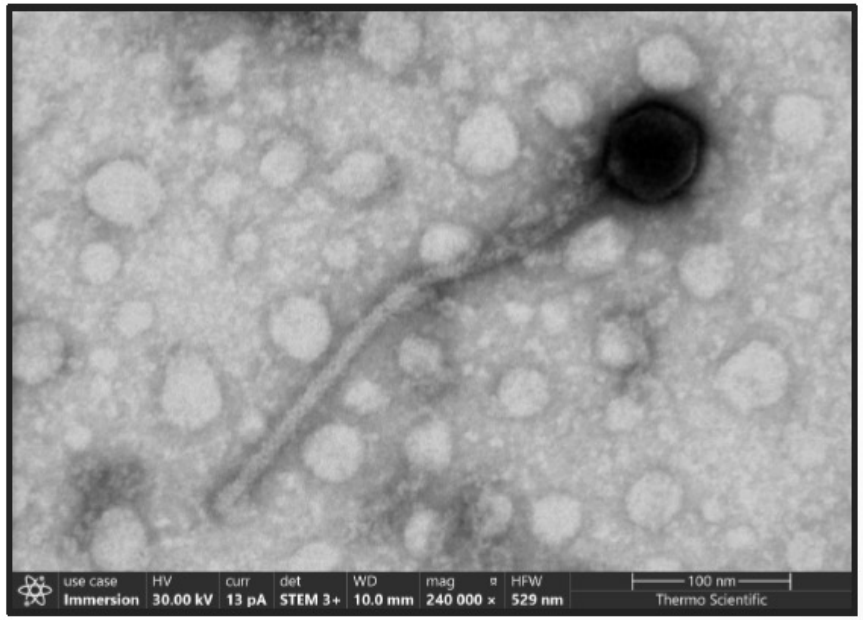


Bright Field

Bacteriophage

Lens Mode: Immersion

Detector: STEM 3+



Bright Field

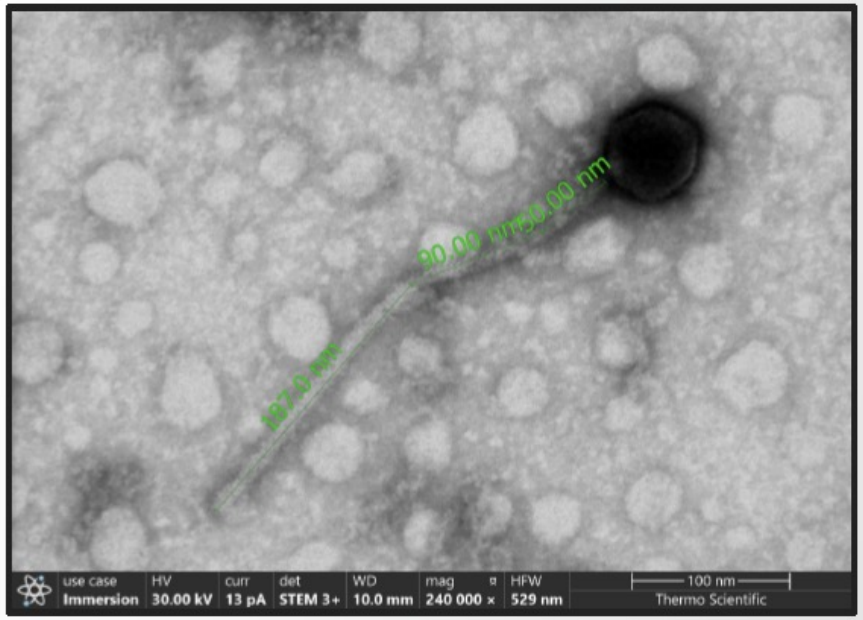
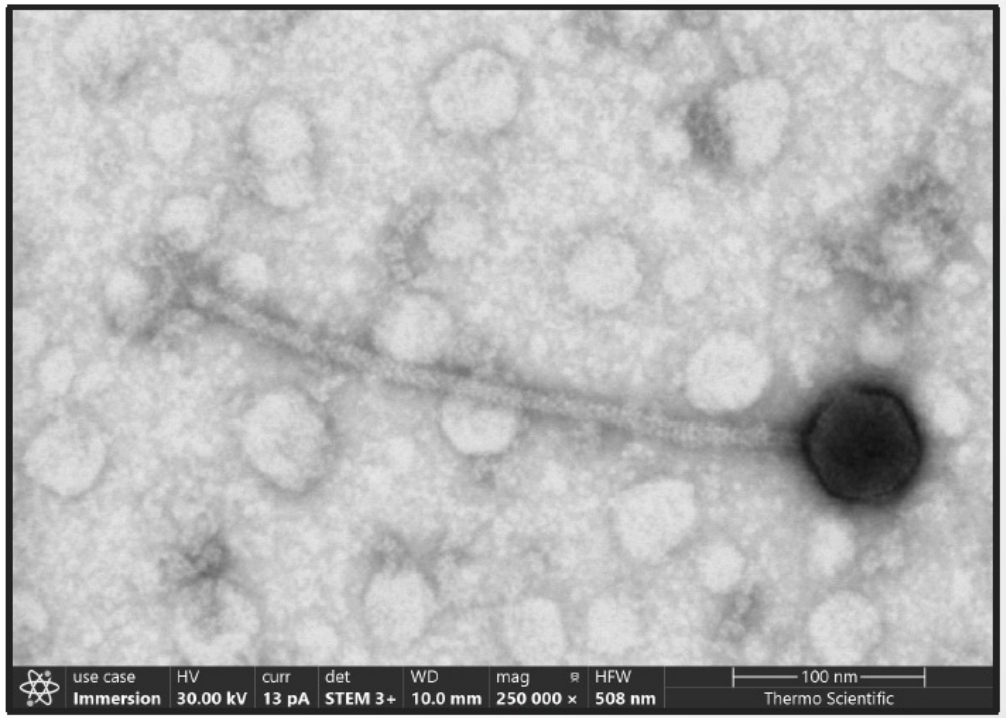


Image with overlaid measurements

Lens Mode: Immersion

Detector: STEM 3+

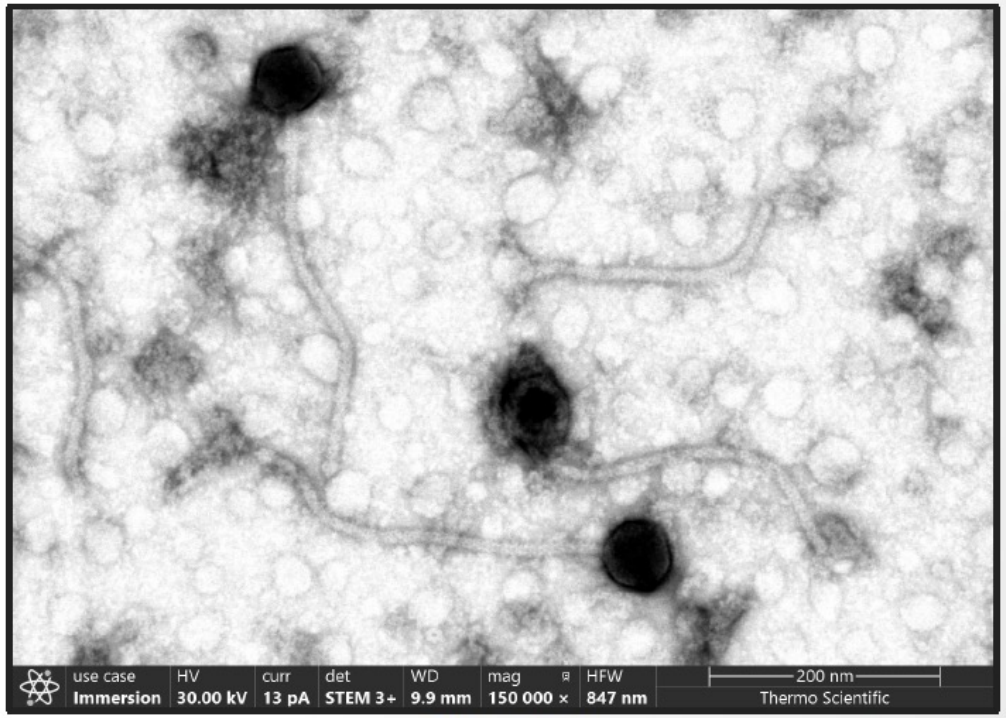


Bright Field

Bacteriophage

Lens Mode: Immersion

Detector: STEM 3+



Bright Field

Bacteriophage