

Experiment Report of the proposal MX-2565
Cryo-electron tomography study of bacterial wall perforation by bacteriophage T5
26 July 2023 / 28 July 2023

We requested and obtained a 6 shifts slot to be able to acquire many tomograms as we need a lot of events to be able to reach our goal with the sub-tomogram averaging, *i.e* to get a structure of the phage channel perforating the whole cell wall at reasonable resolution.

Four grids have been loaded on the Krios electron microscope (CM01). They all had been screened preliminary on the Glacios microscope at the IBS.

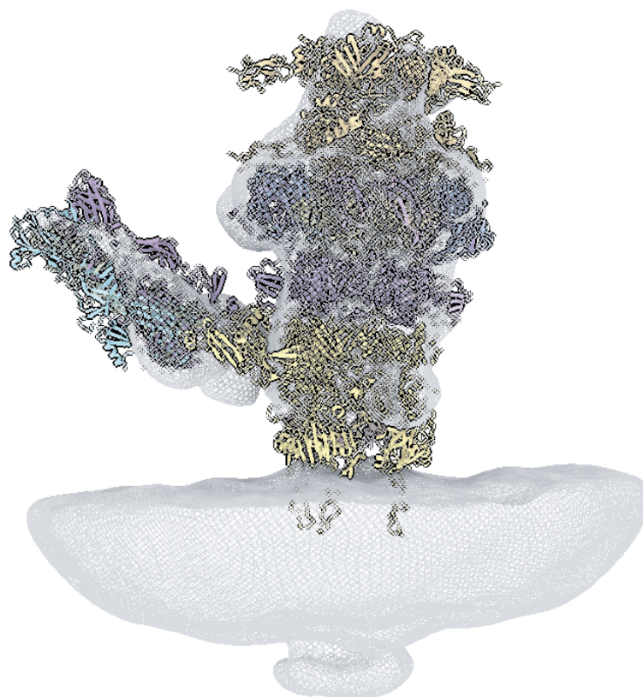
All tilted-series recorded during the experiment have been collected from one single grid.

120 positions have been selected and 114 have been collected.

Acquisition has been done in super resolution mode at a x33K magnification.

From this data set, the best 61 tilted-series (eye criterion) have been processed and reconstructed, allowing in a second step to pick 97 events of interest for sub-tomogram averaging.

An initial very low resolution model has been obtained which is quite promising to reach our goal with many more tomograms. It shows that the project is definitely feasible but also that one need more data. As the first user in tomography at CM01 we consider this session as a success and want to really thanks the Local Contact for his excellent work.



Fit of the atomic model determined by single particle analysis of the tail tip of phage T5 inside our low resolution initial model obtained of phage T5 perforating the mini-cell wall after sub-tomogram averaging.