Figures/Preliminary Results

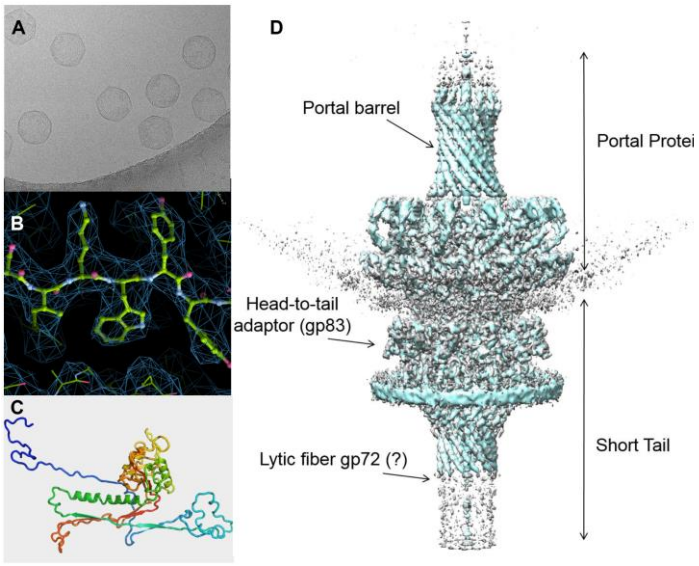

Figure 1. Preliminary cryo-EM analysis of phage DEV provided by Dr. Briani (Univ. of Milan, IT). (**A**) Representative cryo-micrograph of vitrified DEV collected on our Glacios 200 kV. (**B**) Representative electron density for the DEV coat protein at 3.7 Å resolution. (**C**) Ribbon diagram of the DEV coat protein reveals a classical HK-97 fold. (**D**) Localized reconstruction of DEV unique vertex after applying C12 symmtry visualized at 3.9 Å resolution. The Lytic fiber gp72 is also dodecameric, like the portal protein. An additional factor, possibly the head-to-tail adaptor gp83 bridges the portal to the tail fiber.

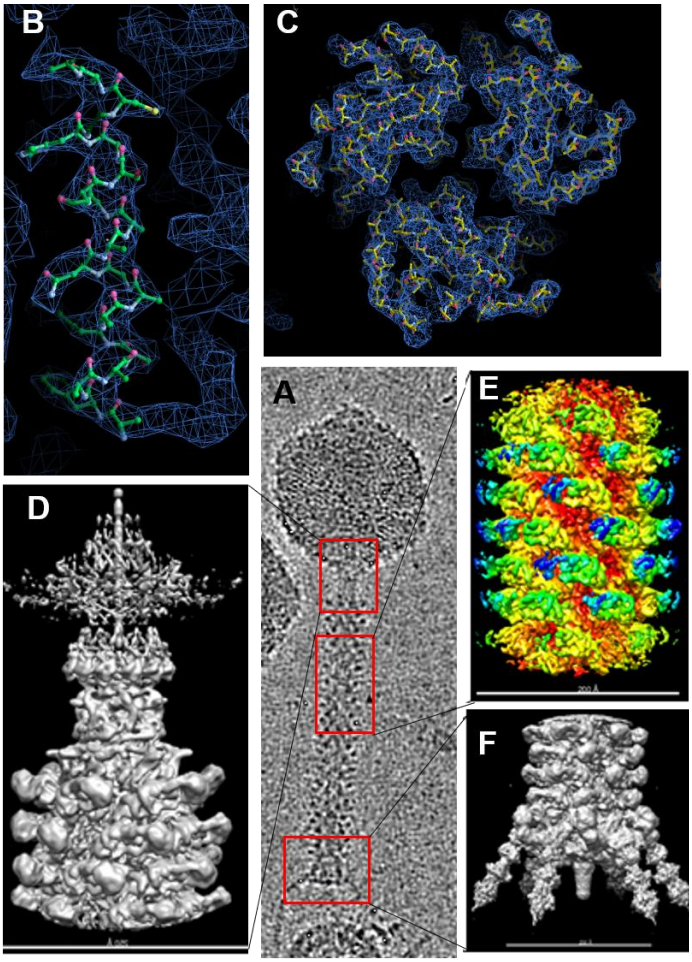

Figure 2. Preliminary cryo-EM analysis of the Myoviridae E217. (**A**) Cryo-micrograph of phage E217 imaged on a Glacios 200 kV equipped with a Falcon 4. Icosahedrally averaged electron density for E217 (**B**) coat protein and (**C**) cementing protein at 3.7 Å resolution. (**D**) Focused reconstruction of the portal vertex. (**E**) 6-fold averaged density for the tail (4.6 Å) and (**F**) baseplate (5.7 Å).

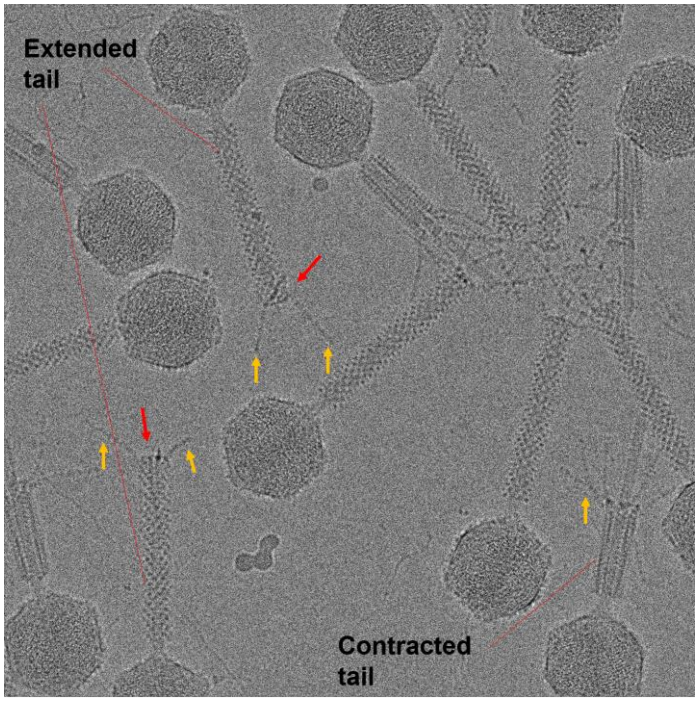

Figure 3. Preliminary cryo-EM analysis of Pseudomonas-phage ARPA023 (provided by Armata Pharmaceuticals) used in clinical trial NCT03004365. Representative cryo-micrograph of ARPA023 collected on our Glacios 200 kV. The concentration of this sampe is too high for data collection. Two conformations of the tail are visible: extended and contracted. Red arrows point to the flat baseplate. Yellow arrows point to the baseplate fibers that are unusually straight in this phage.

References

1. Forti F, Roach DR, Cafora M, Pasini ME, Horner DS, Fiscarelli EV, Rossitto M, Cariani L, Briani F, Debarbieux L, Ghisotti D. Design of a Broad-Range Bacteriophage Cocktail That Reduces Pseudomonas aeruginosa Biofilms and Treats Acute Infections in Two Animal Models. Antimicrob Agents Chemother. 2018;62(6). Epub 2018/03/21. PubMed PMID: 29555626; PMCID: PMC5971607.

2. Cafora M, Deflorian G, Forti F, Ferrari L, Binelli G, Briani F, Ghisotti D, Pistocchi A. Phage therapy against Pseudomonas aeruginosa infections in a cystic fibrosis zebrafish model. Sci Rep. 2019;9(1):1527. PubMed PMID: 30728389; PMCID: PMC6365511.