Contribution ID: **47** Type: **Poster only**

Poster #47: Phage-encoded ribosome-targeting factors in bacterial takeover

Monday, 5 October 2026 21:00 (1 minute)

Bacteria employ a variety of strategies to defend themselves against bacteriophage infections. Bypassing these strategies is crucial for determining the fate of the bacteriophage replication and efficiency in therapeutic setups. Through co-fractionation in gradients, we identified the ΦKZ-encoded factor ΦKZ014 as a novel interaction partner with the protein production machinery [1]. This factor is unique in that it binds to the 5S rRNA of the large ribosomal subunit, and it is one of the earliest phage proteins expressed upon infection. In a clinical *Pseudomonas aeruginosa* isolate, ΦKZ014 is essential for phage replication. The relationship between translation and host takeover remains largely unexplored in general. We hypothesise that the role of ΦKZ014 in the host's translation machinery may be connected to the circumvention of bacterial defence or stress response and surveillance mechanisms. Elucidating the relevant host factors and determining how they are affected by ΦKZ014 is essential to understanding its broader role in orchestrating host takeover.

Reference #1

1. Gerovac, M. et al. Phage proteins target and co-opt host ribosomes immediately upon infection. Nat.A N

Reference #2

Reference #3

Author: SOW, Fatoumata (Complexes in Phage-infected Cells (CPIC), Helmholtz Centre for Infection Research, Brunswick, Germany)

Co-authors: Prof. VOGEL, Jörg (RNA Biology of Bacterial Infections (RABI), Helmholtz Institute for RNA-based Infection Research, Würzburg, Germany); Dr GEROVAC, Milan (Complexes in Phage-infected Cells (CPIC), Helmholtz Centre for Infection Research, Brunswick, Germany); Mr RECH, Valentin (Institute for Molecular Infection Biology (IMIB), Julius-Maximilians-Universität Würzburg (JMU), Würzburg, Germany)

Presenter: SOW, Fatoumata (Complexes in Phage-infected Cells (CPIC), Helmholtz Centre for Infection Research, Brunswick, Germany)

Session Classification: Poster-Session