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## From stress to success: how actinobacteria exploit life without a cell wall

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Propositions accompanying the thesis entitled:

**“From stress to success: how actinobacteria exploit life without a cell wall”**

1. Characterizing and sequencing new *Streptomyces* phages is a promising strategy to learn more about the infection cycle in multicellular micro-organisms. (This thesis: Chapters 3 and 4)
2. Bacteria can shed their cell wall in response to phage infection. (This thesis: Chapters 2 and 5)
3. Bacteria without a cell wall can still be infected by phages if the receptor proteins are attached to the cell membrane. (This thesis: Chapter 5)
4. Bacteria treated with phage therapy should also be tested in osmoprotective environments for possible cell wall-deficient cell formation. (J. Wohlfarth, *et al. Nat Microbiol* 8, 387–399 (2023).)
5. Phages hijack proteins of their host to complete a successful infection cycle. (This thesis: Chapter 6)
6. Cryo-electron microscopy is an important tool to have a closer look at the interaction of phages and bacteria. (R. Ouyang, *et al. Curr Opin Microbiol* 77, 102429 (2024).)
7. The many morphological stages of *Streptomyces* provide a transient resistance to bacteriophage infection. (This thesis: Chapter 5; T. Luthe, *et al. Microlife* 4, uqad002 (2023).)
8. *Streptomyces* produce several natural products, of which many could be undiscovered chemical anti-phage defenses. (H. Shomar, *et al. Biorxiv*, (2024); L. Kever, *et al. mBio* 13(3) (2022).)
9. Science is based on experiments but rooted in conversations. - Werner Heisenberg (Adam, Chiara and Bas)
10. Having a healthy work-life balance is important and easily achievable if your family is from Twente, reflected in the saying: “moak je nie druk, 't löpt wa los”.

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11 March 2025