LS05-018 - Function of Clp-mediated proteolysis in bacterial pathogenesis

Abstract

Clp proteolytic complexes are essential for virulence and stress tolerance in many pathogenic bacteria. They are involved in both general and regulatory proteolysis and are controlled by specific adaptor proteins. In particular, they determine the lifetime of regulatory proteins involved in pathogenicity.

Using Bacillus subtilis as a model system, we would like to address the molecular basis of the interplay between protein substrate, adaptor and Clp proteolytic machine and expand this approach to related pathogenic bacteria like Streptococcus pneumoniae and Staphylococcus aureus. Due to their fundamental role in virulence and survival in the host, Clp proteins and their adaptors constitute perfect targets for the design of novel therapeutics. Our combined structural and cellular approach will provide the first insights how to follow this road.

Keywords:
bacterial pathogenesis, Clp proteins, adaptors, regulatory proteolysis,structural biology

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Further links to the persons involved and to the project can be found under
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