Universität Basel

Research Project

Structure and mechanism of the cell wall biogenesis machinery from Gram-positive pathogenic bacteria

Third-party funded project

Project title Structure and mechanism of the cell wall biogenesis machinery from Gram-positive pathogenic bacteria
Principal Investigator(s) Perez, Camilo ;
Organisation / Research unit
Departement Biozentrum / Structural Biology & Biophysics
Departement Biozentrum / Structural Biology (Perez)
Department
Departement Biozentrum / Structural Biology (Perez)
Project Website https://www.biozentrum.unibas.ch/research/researchgroups/overview/unit/pere z/
Project start 01.07.2016
Probable end 30.06.2021
Status Completed

Bacterial infections represent a major public health problem of broad concern, augmented by increasing occurrence of strains resistant to antibacterial agents. In order to develop new chemotherapeutic strategies to overcome infections, it is necessary to understand fundamental processes relevant for bacterial survival in detail.

The cell wall is an antibacterial target The bacterial cell wall exerts important protective functions against host defenses and antibiotics; its biogenesis is a preferred target for the development of antibacterial agents because it includes several essential pathways for virulence and survival. Despite its great importance, structural, mechanistic and fundamental biochemical aspects of many proteins participating in its biosynthesis are scarce.

Mechanistic basis of cell wall biogenesis Our research combines in vitro and in vivo activity assays, together with high-resolution structures of membrane proteins important for several cell wall biochemical pathways, with the aim to provide an understanding of their molecular mechanisms and describe potential modes of activity modulation and inhibition.ă ă

Financed by
Swiss National Science Foundation (SNSF)