RND proteins in Staphylococcus aureus: Their function and their impact for fitness, resistance and virulence.

Original title / Originaltitel
Funktion und Bedeutung der Staphylococcus aureus RND Proteine für Fitness, Resistenz und Virulenz

Summary / Zusammenfassung
The opportunistic human pathogen S. aureus is an important cause for a variety of nosocomial and community-acquired infections. Its success is based on the acquisition and expression of a multitude of virulence factors as well as resistance determinants. In addition, intrinsic resistance can be mediated by unspecific export via endogenous multidrug-efflux pumps such as the widely distributed RND (resistance-nodulation-cell division) family of transmembrane transporters. S. aureus possesses three yet uncharacterised RND proteins: Sa1463, Sa2056 and Sa2339. Sa1463 has homology with SecDF, a protein shown to form part of the conserved Sec secretory system in Escherichia coli and Bacillus subtilis. sa2056 lies downstream of femX and is partially co-transcribed with this essential gene encoding a transpeptidase required for peptidoglycan synthesis and methicillin resistance. Sa2339 has homology with MmpL family proteins, which in Mycobacterium tuberculosis were found to be involved in fatty acid/polyketide metabolism. Markerless deletion mutants were constructed of all three RND genes and are currently analysed for their contribution to S. aureus virulence, fitness and resistance.


Publications / Publikationen

Keywords / Suchbegriffe
Staphylococcus aureus, multidrug, resistance, virulence, fitness, RND

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