

Molecular Biotechnology Programme

Uppsala University School of Engineering

UPTEC X 12 009 Date of iss

Date of issue 2012-06

Caroline Larsson

Title (English)

Author

Bacterial Sortase A as a drug target

Title (Swedish)

Abstract

Sortase A is a housekeeping enzyme of Gram-positive bacteria that catalyses the anchoring of surface proteins to the bacterial peptidoglycan. The enzyme works to establish an interaction between bacteria and host cells and is essential for pathogenesis. This makes Sortase A a potential suitable target for inhibition, in order to treat bacterial infections. In this degree project Sortase A from *Staphylococcus aureus* was explored and potential inhibitors were investigated by performing enzyme activity and bacterial binding assays. A robust FRET assay was developed and optimized for a recombinant version of the enzyme and serves as a good starting point for studying inhibition.

Keywords

Antibiotic resistance, Sortase A, *Staphylococcus aureus*, Gram-positive bacteria, inhibition, FRET assay, fibronectin-binding

Supervisors

Ian Henderson Medivir AB

Scientific reviewer

Helena Danielsson Uppsala University			
Project name		Sponsors	
Language English		Security	
ISSN 1401-2138		Classification	
Supplementary bibliographical information		Pages	49
Biology Education Centre	Biomedie	cal Center	Husargatan 3 Uppsala
Box 592 S-75124 Uppsala	Tel +46 (()18 4710000	Fax +46 (0)18 471 4687