Master Thesis

Research on a key component of a novel bacterial protein *O*-glycosylation pathway

Universität für Bodenkultur Wien
University of Natural Resources and Life Sciences, Vienna

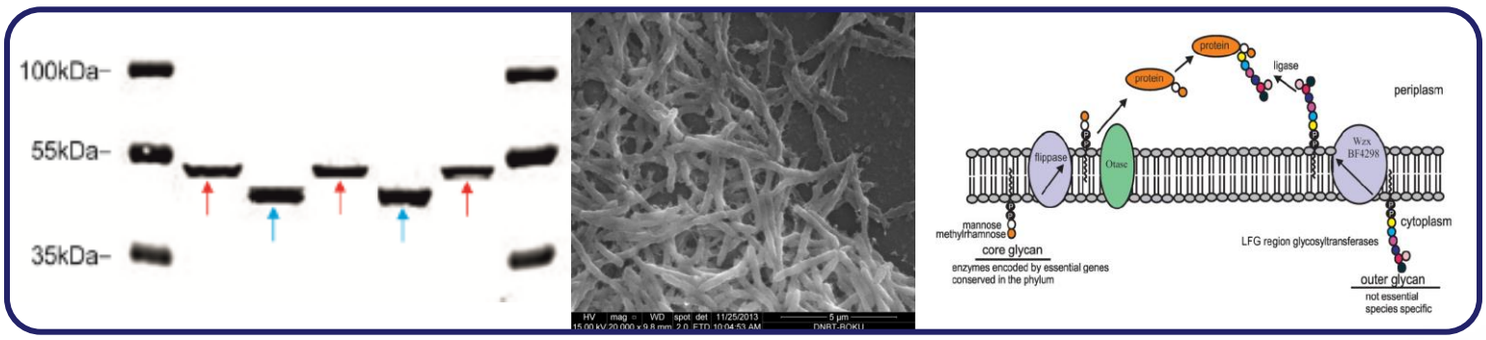
Department für Nanobiotechnologie (DNBT)
Department of Nanobiotechnology

Scientific Background...

Protein glycosylation in bacterial systems has been known since 40 years. Still, knowledge of biosynthesis and biological implications of glycans is limited.
This Master Thesis intends to unravel the mechanism governing a putative novel glycan biosynthesis process based on recent findings in our laboratory.

Most bacterial glycosylation systems rely on a dedicated oligosaccharyltransferase that ligates the completed glycan chain to distinct glycosylation sites of target proteins. In contrast, for the phylum *Bacteroidetes* we have evidence for a so far novel two−step process where a rather conserved core glycan and a species-specific outer glycan are built up separately. This model is supported at the genome level, where the information for the outer glycan is encoded by a distinct locus for glycosylation (*lfg*), while the information for the core seems to be encoded elsewhere on the bacterial genome.

The focus of this study is on a conserved glycosyltransferase (named cGT).



We will work on cross−complementation experiments targeted at the cGT of *Tannerella forsythia*, *Bacteroides fragilis* and *Pedobacter heparinus* to verify that the enzyme is active at the intersection between the converging pathways of core and outer glycan biosynthesis.

Your Background...

You have knowledge and interest in molecular and microbiology work, you are not afraid of working with a L2 oral pathogen and want to gain experience within these research fields? You are enrolled as a Master student in the field of biotechnology or equivalent?

→ Join our international research group dedicated to bacterial glycobiology!

Contact...

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Duration ~6-8 months