

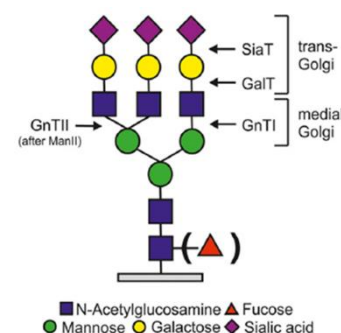
Master's thesis projects in the group of Sakari Kellokumpu and Tuomo Glumoff

Project title:

Molecular Mechanisms of Glycosylation and Glycosylation-Associated Human Diseases

We are interested in motivated Master's thesis students to join our project. We can take up to two students per year. Background information of the project can be found on the faculty web:

<http://www.oulu.fi/fbmm/node/20603>. Shortly: We are studying the formation of glycosyltransferase complexes and the role of such complexes in efficient protein and lipid glycosylation in the Golgi. The correct functioning of the glycosylation machinery has implications to various diseases like cancer.



We use cell biological and protein structural approaches, i.e. we aim to solve structures of such complexes as well as study them in live cells, and combine the information in their roles in glycan synthesis and cell behavior such as metastasis.

Methods we currently use and/or are planning to use (also with collaborators) include:

- molecular biology (making constructs and mutants for purification, expression, and cell biology experiments, like FRET)
- protein expression in eukaryotic/mammalian cell cultures (also in bioreactor)
- protein structure determination (crystallography, computational methods, SAXS, EM)
- *in vivo* and *in vitro* methods to characterize protein complexes, cell morphology and behavior, i.e. FRET / fluorescence microscopy, SPR (Biacore), lectin microarray, *in vitro* metastasis approaches, etc.

It is possible to plan Master's thesis projects which include both cell biology and structural biology aspects.

We have currently funding for the project from the Academy of Finland for 2015-2019.

Group members and supervision of Master's thesis projects:

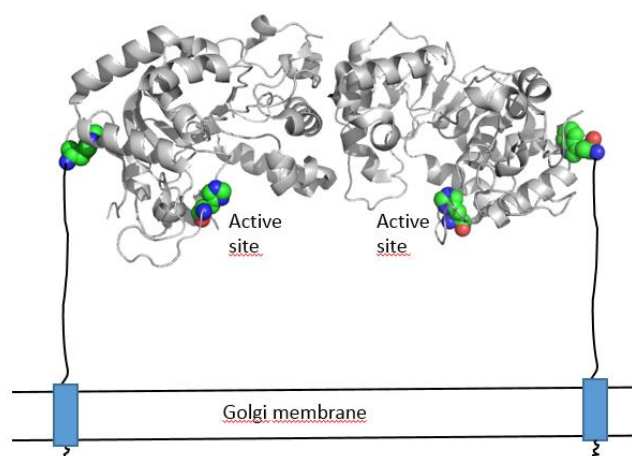
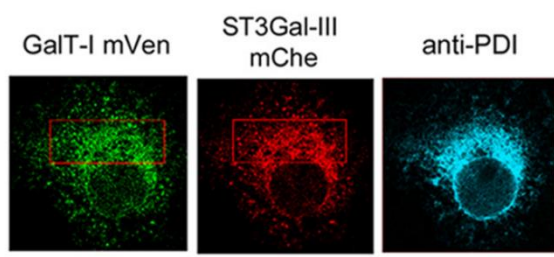
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Tuomo Glumoff, Ph.D., docent

Antti Hassinen, Ph.D., post doctoral fellow

Deborah Harrus, Ph.D., post doctoral fellow

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