

Three positions available in the Faculty of Biochemistry and Molecular Medicine, University of Oulu

We are seeking one postgraduate student (Academy of Finland funded until August 2017) and two postdoctoral scientists (one Academy of Finland funded until August 2017 and one funded by Biocenter Oulu until December 2015) to join the group of Prof. Lloyd Ruddock working on mechanisms and applications of disulfide bond formation in the cytoplasm.

The project focuses on the application of knowledge of protein folding in the eukaryotic endoplasmic reticulum for the efficient production of disulfide bond containing proteins in the cytoplasm of *E.coli*, in yields that can exceed 1 g/L of purified homogenously folded recombinant human protein from fermentation. Proteins already successfully made in shake flask scale include growth factors, interferons, interleukins, scFv and Fab antibody fragments, N-glycosyltransferases, proteases and enzymes involved in post translational modifications.

One postdoctoral position will focus on using this system to produce and undertake structural and functional characterization of human proteins involved in protein post translational modification and/or protein folding quality control mechanisms in the secretory pathway. For this position experience in protein structural work, especially crystallography, and molecular enzymology would be advantageous.

The other postdoctoral position will be focused on scale-up of the system as well as integration of collaborative projects on cytoplasmic N-glycosylation and secretion to the media of the folded, disulfide bond containing proteins. Experience in synthetic biology, microbial protein production, especially microbial fermentation, and/or protein purification techniques would be advantageous.

The PhD position will focus on the use of this system to produce and undertake structural and functional characterization of human secreted proteins, including proteins involved in stem cell differentiation. For this position previous experience of working with proteins would be beneficial, but applicants with any relevant background will be considered and the research potential of the candidate will be the primary selection criteria. The successful candidate will be encouraged to join to the Biocenter Oulu Doctoral Programme

The Faculty of Biochemistry and Molecular Medicine has been formed by the merger of the departments of Biochemistry (Faculty of Science) and Medical Biochemistry and Molecular Biology (Faculty of Medicine) and exists as an independent entity from the 1st of January 2014, bringing together expertise in *in vitro*, *in vivo* and *in silico* analysis of protein structure and function.

Salary is dictated by experience (demand levels 2-4 for the PhD student; 5-6 for the postdoctoral researchers) and personal performance salary element according to the salary system of Finnish Universities. The positions have a 4 month trial period. **The start date for all positions is 1st January 2014 or soon after.**

An application letter and CV, including contact details for two references, should be submitted to Lloyd Ruddock (lloyd.ruddock@oulu.fi). The deadline for applications is Friday 13th December 2013.

Details of some recent work by the group can be found at Biocenter Oulu webpages (<http://www.oulu.fi/biocenter/groups/ruddock/details#1>).