



**THE SAHLGRENKA ACADEMY
INSTITUTE OF MEDICINE**

Department of Molecular and Clinical Medicine
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Announcement - scholarship at postdoctoral level

The Department of Molecular and Clinical medicine at the Institute of Medicine hereby announces a scholarship at postdoctoral level in microbiome research.

Plan for advancement

Subject

Investigating how the gut microbiota responds to oxygen and subsequent effects on redox potential.

Background

Up to 90% of the cells in the human body are of microbial origin. We have demonstrated that the gut microbiota may have profound effects on the host. Our working hypothesis is that the anaerobic bacteria in the human gut is continuously exposed to oxygen from the host and that there are mechanisms by which the microbiota can restore anaerobicity. It would also be important to investigate the mechanisms by which some anaerobic bacteria has developed tolerance to oxygen.

Purpose

The purpose with this plan is to provide opportunity for a successful candidate to promote his/her career by exploring how anaerobic bacteria are affected by, and deal with, molecular oxygen in the gut.

Method

The successful candidate will 1) work with bioreactors to investigate how different bacteria in the human gut responds to increasing amount of oxygen using RNAseq. Genes that are potential mediators of oxygen responses/tolerance will be deleted using genetic tools to validate the hypothesis. He/she will also mechanisms by which *Faecalibacterium prausnitzii* can be modified to tolerate oxygen.

Time plan

The first year we will be working on developing all the methodologies and knowhow that is required and the second year we will complete the experiments.

Outcome

Increased knowledge for how the gut microbiota responds to oxygen and maintain an anerobic environment. Identify potential consequences if such regulation is flawed. Furthermore, if successful the candidate should be well-prepared for a future career in academia and/or industry.

Period

2024-09-01 – 2026-08-31

Financing

A total of 644 000 SEK will be paid for the whole period.

If you require any further information, please contact Professor Fredrik Bäckhed, fredrik@wlab.gu.se, supervisor.

Application

To apply please fill out the form "Application for a scholarship at postdoctoral level" and send it to professor Fredrik Bäckhed, fredrik@wlab.gu.se, supervisor.

Please attach a copy of your PhD certificate with the application. PhD must be completed within three years of the application deadline.

Closing date is 2024-05-09.