



**SAHLGRENKA ACADEMY
INSTITUTE OF BIOMEDICINE**

Diariennr: GU 2026/508

Institute of biomedicine

2026-02-13

Announcement of scholarship – postdoctoral fellow

Project Title: Role of DNA Damage–Induced Signaling in Innate Immunity

Project duration and dates: 12 months, 13.04.2026–12.04.2027

Application deadline: 2026-03-06

Supervisor: Anetta Härtlova

Contact: anetta.hartlova@gu.se

Background

The innate immune system requires stringent regulation to ensure effective defense against pathogens without causing self-harm. Ubiquitination is a key post-translation modification that controls different cellular processes including innate immune signaling pathways. Ubiquitination involves the conjugation of ubiquitin peptides onto target proteins by E3 Ubiquitin ligases. The E3 ubiquitin ligases involved in innate immune regulation are not fully understood. Recently we have identified the E3 ligase HUWE1 as an essential regulator of innate immunity and that ablation of this enzyme in mice results in protecting age-related inflammation.

Purpose

The goal of this project is to investigate how DNA damage signaling regulates innate immune activation and to define the molecular mechanisms linking genotoxic stress to inflammatory responses. The project aims to identify key signaling pathways and regulatory nodes that connect DNA damage responses to innate immune activation and to determine their relevance for age-related inflammation and immune dysfunction.

Method

We will use a combination of genetic, biochemical, and cell biological approaches. DNA damage will be induced using defined stressors, and genome integrity will be assessed using COMET assays and complementary readouts. Innate immune activation will be analyzed by measuring cytokine production, signaling pathway activation, and transcriptional responses. CRISPR–Cas9–mediated gene editing will be employed to manipulate key regulators of DNA damage signaling and innate immunity. Experiments will be performed in primary immune cells and relevant cell models to dissect cell-intrinsic mechanisms linking DNA damage to innate immune activation.

Applications should be emailed to: anetta.hartlova@gu.se

The application should include:

- motivation letter
- CV including contact info.
- Proof of completed PhD