

## Training Plan

### Background

We have a special interest in NK cell immunity in ovarian cancer (OC) and endometriosis (EN), two gynecological diseases in which the immune response are prosed as key player for disease outcome. NK cells are cytotoxic cells that can kill aberrant cells without sensitization, and we hypothesize that NK cell-mediated eradication of OC tumor cells or EN cells leads to favorable disease progression, and that an immunotherapy targeting NK cell in these diseases might be a conceivable treatment option.

### Purpose

The project aims to characterize phenotype and function of NK cells subsets present at the disease site of OC and EN, to generate a deeper understanding of NK cell biology in the diseases.

### Method and Work Plan/Schedule

We will receive samples from patients with OC and EN, which we will process to use for further analysis of the immune environment at the site of disease. High-dimensional flow cytometry will be applied to identify and characterize disease-specific NK cell subsets. Based on the results, we will isolate NK cells from patient samples to use in co-culture assays with OC or EN cells. These experiments will evaluate the function of different disease-specific NK cell subsets. OC cell lines will be used as OC target cells and kept in culture over this time period.

To evaluate the impact of reactive oxygen species (ROS) on NK cell subsets, an isoluminol-enhanced chemoluminescence technique will be applied. This will evaluate if the presence of ROS impacts the function of disease-specific NK cells.

### Learning outcome

During the project, the student will learn techniques to handle and process patient samples. The student will be introduced to high-dimensional flow cytometry, with the goal to independently run experiments with pre-designed antibody panels. The student will also be introduced to the isoluminol-enhanced chemoluminescence technique, co-culture assays and cell culture techniques of adherent and suspension cell lines.

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Scholar (printed name)

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Supervisor Elin Bernson

A copy of this plan is to be handed to the scholar after his/her signature.