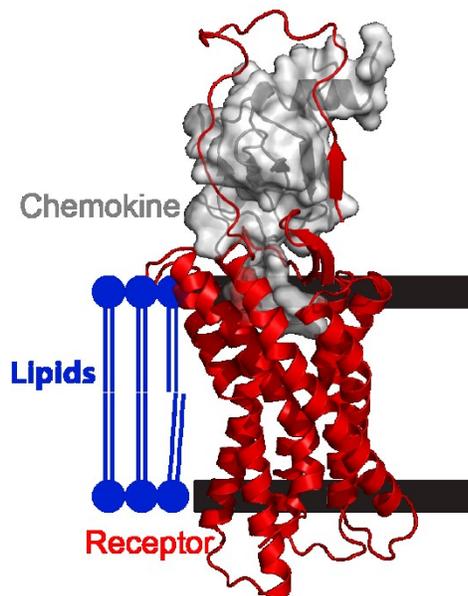


## Lipid regulation of chemokine receptor structure and function

### *Background*

GPCRs are membrane proteins present in the cell membrane and initiate intracellular signaling by binding extracellular ligands. Over 30% of the currently available drugs bind GPCRs and they are key targets for further drug development. GPCRs and other membrane proteins are at all times surrounded by lipids and it is widely accepted in the field that GPCR function is highly dependent on the composition of the lipid bilayer. However, the mechanism of this regulation is not well understood, in part due to a lack of experimental systems for studying lipid interactions with receptors at a molecular level. Chemokine receptors are a group of GPCRs and bind chemokines to control a number of physiological processes from development to immune system function. Chemokines are small signaling proteins that, in addition to receptors, bind a number of extracellular components including, other proteins, glycosaminoglycans (GAGs) and lipids. These interactions are known to affect the affinity of the receptor for the chemokine, however the mechanism of this is largely unknown.



### *The project*

The Gustavsson group studies chemokine receptors using structural biology and biophysical methods in combination with binding and signaling experiments. The project would cover part of an ongoing effort to characterize lipid regulation of chemokine receptors. The project goal is to determine how lipids interact with receptors and chemokines what effect interactions have on ligand binding and activation. Methods used for this project involve receptor and chemokine expression (eukaryotic and prokaryotic), purification, reconstitution into membrane mimicking systems, binding kinetics and potentially nuclear magnetic resonance (NMR).

### *The team*

The Gustavsson group is part of the Section of Molecular Pharmacology, located in building 18.5 of Panum. You will be surrounded by an international group of staff and students studying different aspects of GPCR function.

### *Your profile*

We are looking for a highly motivated master student in i.e. Human biology, Molecular Pharmacology, Pharmaceutical Science, Biochemistry, Biology or similar. You have a keen interest in learning new techniques and to understand the molecular details of receptor function. Start date is flexible.

For more information contact Tenure-track Assistant Professor Martin Gustavsson ([martin@sund.ku.dk](mailto:martin@sund.ku.dk))