Master degree project at Karolinska Institutet – Interferon regulated genes in autoimmune disease

Type I interferons (IFNs) are potent inducers of the first-line defense against pathogens. Their activity leads to the up- and downregulation of a large number of genes with various effects on the immune system, including direct effects on the pathogens. Due to the strong response evoked by IFN signaling, the IFN pathway is tightly regulated by IFN stimulated genes to avoid detrimental effects of long-term exposure. If the IFN signaling pathway is not regulated properly, or for other reasons constantly activated, it can lead to interferonopathies and autoimmune diseases such as systemic lupus erythematosus (SLE) and Sjögren's syndrome (SS). Indeed, many therapeutics targeting the IFN pathway are currently in clinical trials. In contrast, type I IFNs are used to treat certain types of cancer, virus infections and multiple sclerosis. The complex role of type I IFN signaling in disease is not well understood and need further characterization for better therapeutic inventions.

This project will focus on INF-regulated genes and how they are important for the development of autoimmune disease. The student will use both molecular biology techniques and immunological methods. The student should preferably have a background in biomedicine, molecular biology or similar.

If interested, please send your CV and a short description of your background and research interests to maria.sjostrand@ki.se.

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