
Abstract

Single cell RNA sequencing of salivary gland biopsies of patients with primary Sjögren's Syndrome

Primary Sjögren's Syndrome (pSS) is a rare chronic autoimmune disease affecting the body's moisture-producing glands. The etiology of pSS is thought to be multifactorial, and genome wide association studies implicate an underlying dysfunction of the immune system subsequently leading to glandular pathology.

In order to improve our understanding on the pathogenesis of the disease the proposed project aims to investigate the cellular players involved in inflammatory processes at the target site. For this purpose, we aim to apply recently developed technologies to perform an in-depth analysis of the molecular and cellular events shaping the emerging autoimmune response during the newly diagnosed pSS. In particular, we aim to gain new insights into transcriptional events that drive autoimmunity at the level of the single lymphocyte via single cell RNA sequencing (scRNAseq). Additionally, we plan to complement conventional scRNAseq by a global sequencing-based T/B cell receptor repertoire analysis of the individual cells.

We anticipate that the conclusions drawn from this study significantly improve the current understanding on the disease pathogenesis of pSS and help to improve therapeutic options for the treatment of pSS patients.