



2025 High Impact Research Grant

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Project Title: A cytokine dictionary for understanding Sjögren's disease pathophysiology

Sjögren's disease (SjD) is a chronic autoimmune disorder in which the immune system attacks the salivary glands, leading to severe dryness and systemic symptoms. Current treatments primarily focus on alleviating symptoms and do not fully address the underlying causes of the disease. One key aspect of SjD is the involvement of cytokines – signaling molecules of the immune system that drive inflammation in SjD. However, we do not yet fully understand how each cytokine impacts different cell types in salivary glands, making it difficult to develop targeted therapies. This research aims to create a cytokine dictionary for salivary glands, providing detailed genomic information on how different cell types respond to key cytokines involved in SjD. Using single-cell sequencing technology, we will examine the cytokine-activated biological pathways in a variety of immune and non-immune cell types in the salivary glands, shedding light on their role in SjD. The work will generate precise insights that could lead to more effective treatments for SjD, helping restore gland function and improve the lives of patients suffering from this debilitating condition.