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Sjögren's Syndrome Foundation Research Grant

LAY ABSTRACT

The Lay Abstract is for publicity purposes and should use simple language summarizing the proposed research and its significance.

Sjögren's syndrome (SS) is an autoimmune disease in which the body's defense system attacks moisture-producing glands, causing dry eyes and dry mouth. Many factors contribute to the development of SS, including genetics. In some patients with SS the immune-system attacks blood vessels (vasculitis) and lymphomas (cancer of the immune-system) are more frequent. Stem cells are unique unspecialized cells that can become several different cell types. When stem cells are created artificially from adult cells, it's called Induced Pluripotent Stem Cells (iPSC). The goal of this proposal is to analyze the immune-system and to generate iPSC from SS patients. We will characterize the iPSC and use these cells to generate SS specific endothelial (blood vessel) cells, to study the relationship between the immune-system and vasculature. Explaining if SS vascular cells are genetically more vulnerable to immune cells. This will help understand the disease and may lead to new therapies and cure.

SCIENTIFIC ABSTRACT

The Scientific Abstract is written for SSF reviewers and a professional audience.

Sjögren's syndrome (SS) is an autoimmune exocrinopathy affecting the lacrimal and salivary glands. Although the etiology is unknown a genetic component is implicated. Vascular manifestations are common and correlate with higher morbidity and mortality. The pathogenesis and the molecular signaling pathways affected in vascular cells are unknown. The goal of this proposal is a comprehensive immune-cell and cytokine/chemokine-phenotyping in a well clinical characterized, homogeneous Sjögren's Syndrome population. In addition, we will generate induced pluripotent stem cell (iPSC) technology to study interactions between the immune-system and patient-specific vascular cells. This proposal will provide an in depth characterization of the immune status and will identify molecular signaling alterations in vascular cells of SS patients in response to the immune system. This could lead to new therapeutic strategies in SS patients. The cell lines generated through this study will be made available to the research community to further advance the understanding of the disease.