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**Project Title:** *A New Generation of Eye Drops to Treat the Ocular Manifestations of Sjögren's Syndrome*

**Abstract:** Dry eye is an onerous manifestation of Sjögren's Syndrome (SS), and there is a great unmet need to develop effective therapies. The short residence time on the ocular surface significantly limits or eliminates the efficacy of the majority of potential topical ophthalmic therapeutics. We are developing a novel drug delivery system by fusing an anchor domain that binds to abundant extracellular molecules to therapeutic proteins so they are retained at the corneal surface. Preliminary data demonstrate that a protein containing an anchor domain remains attached and active at the ocular surface for at least 16 hours. We propose to deliver an anti-inflammatory protein, anakinra, to the ocular surface of a mouse model for dry eye in SS. The system is very versatile and can be used to deliver other bioactive proteins for instance to enhance innervation, to counter corneal opacification, and to study pathological processes in SS.