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STATEMENT OF THE PROBLEM

Work at our lab has shown that there are about 10 000 retinal stem cells (RSCs) present in the ciliary marginal zone of the human eye at any given age. They are capable of differentiating to all seven retinal cell types. Though they are quiescent *in vivo*, they become active *in vitro* and proliferate extensively.

HYPOTHESIS

Understanding the regulation of RSC proliferation and quiescence throughout development will aid in regenerative medicine efforts to activate RSCs in damaged eyes.

PART I: DISSECTION & SPHERES



Developmental timeline of RSCs (Tropepe, et al Science, 2000). The clonal sphere forming assay was performed at different developmental stages and plotted as the # of SCs/animal. The eye is morphologically adult like by postnatal day 10, however the expansion of the sphere forming RSCs occurs after the majority of the cells in the eye are post-mitotic.

Characterizing activation states of retinal stem cells for endogenous repair

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