

Title: Examining Adult Human Retinal Pigmented Epithelium Plasticity for Developing Regenerative Therapies

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Retinal Pigment Epithelium is at the heart of many blinding diseases, including Age-related Macular Degeneration, Proliferative Vitreoretinopathy and others. In early vertebrates, RPE are capable of regenerating the retina when damaged. In mammals, RPE have also shown regenerative capabilities, albeit at a reduced capacity. We have recently demonstrated adult human RPE exhibit regenerative capacity, including self-renewal properties and ability to differentiate into multiple lineages upon appropriate stimuli. We are exploiting state of the art sequencing technologies to understand both at the transcriptional and epigenetic levels what endows RPE with this regenerative capacity. We hypothesize the epigenetic flexibility naturally embodied by RPE allows their plasticity and as a result, confer regenerative potential. We are developing strategies to exploit this plasticity potential, and nudge RPE towards regenerative rather than pathological outcomes, with the final goal to develop therapies to restore lost retinal function.

Biography

Dr. Blenkinsop has completed his PhD at the age of 30 years from New York University and postdoctoral studies with Dr. Sally Temple at the Neural Stem Cell Institute. He is an Assistant Professor at Icahn School of Medicine at Mount Sinai, a leader in stem cell research. He has published more than 20 papers in reputed journals which have been highlighted in Nature and Cell.

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