

Project Name: Development of stem cell-derived RPE to treat retina degeneration

Principal Investigator: Guoping Fan PhD

Technology

1. Biomedical engineering of clinical-grade induced pluripotent stem cells (iPSCs) to differentiate into retinal pigment epithelial cells (RPE) cells;
2. High efficiency of *in vitro* differentiation of iPSCs into RPE;
3. Proof-of-concept study of iPSC-RPE cell transplantation in animal models of retina degeneration

Stage of Development

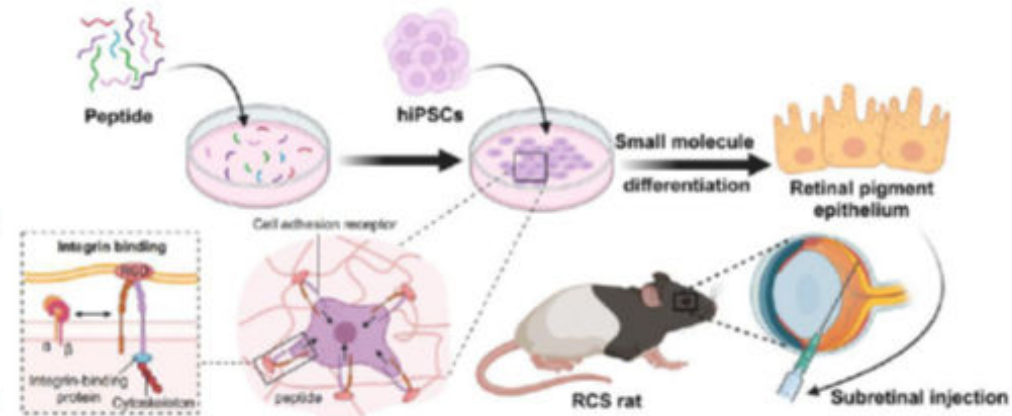
- Year 1. GMP-grade iPSC differentiation into RPE cells
- Year 2. Preclinical animal study for drug efficacy and toxicity
- Year 3. Investigator-initiated clinical study to treat AMD patients

Key Advantages

1. Novel extra-cellular matrix promotes high-efficient RPE differentiation *in vitro*
2. Scalable to large-scale production of therapeutic cell product for thousands of patients with retina degeneration

Opportunities

1. Established a collaboration with industry partner in the USA;
2. Plan to set up a biotech in Hong Kong to apply for grants and VC fund for tech transfer



Intellectual Property

1. Mao... Fan G. (2019) *Stem Cell Reports* 13:747-760
2. Liu, ..Fan, G.et al. *Regenerative Biomaterials* (2025) rba035

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