

## ABSTRACT

Human induced pluripotent stem cells (iPSCs) originate from human somatic cells by introducing certain transcription factors. They can then divide indefinitely being able to differentiate into every cell type. Recently, various ocular cells, including corneal epithelial-like cells, retinal pigment epithelium (RPE) cells, photoreceptors, and retinal ganglion cells, have all been successfully derived from iPSCs. Transplanting the iPSCs in animals is very promising. The first clinical trial on humans started in 2013. More work and research has to be done to ideally promote iPSCs integration into the host tissue, to prevent tumor growth, and to develop functionality of the transplanted cells.

*Key words:* Stem Cells, RPE Cells, iPSCs, Photoreceptors, Retinal Ganglion Cells.