

## Stem Cell-Based Gene Therapy For Ocular Disorders

### TECHNOLOGY DESCRIPTION

This technology focuses on cell-based gene therapy for ophthalmic diseases.

### TECHNOLOGY FEATURES

This technology is suitable to be used for treatment to reverse neurodegeneration especially in ocular or audiology processing disease and spinal cord injury. It can also facilitate cell renewal in hair regeneration and myocardial infarction. Ocular disorders are pathological condition occurring on the outer surface, middle and inner eye Wharton's jelly-extracellular matrix covering vessels in the chord. Erythropoietin is to correct anaemia. Exosomes which are harvested from the culture of mesenchymal stem cells (MSC) expressing erythropoietin. These cells were then transplanted to prevent retinal neuron degeneration in patients with retinis pigmentosa.

### ADVANTAGES

- Reduced immunogenicity
- Improved viability of transplanted MSCs
- Improved efficiency in tissue function restoration
- Permanent therapeutic mode of action

### INDUSTRY OVERVIEW

#### Prospect: Stem cell Therapy Providers

The stem cell therapy market is projected to grow at a CAGR of 39.5% from 2015 to 2020, to reach \$330 million by 2020. The global stem cell therapy market on the basis of mode of treatment is segmented into allogeneic and autologous stem cell therapy. In addition, based on therapeutic applications, the global stem cell therapy market is segmented into eye diseases, metabolic diseases, GIT diseases, musculoskeletal disorders, immune system diseases, CNS diseases, CVS diseases, wounds and injuries, and others. North America hold the largest share of the global stem cell therapy market followed by Europe. Extensive government funding and increasing fast-track approval for stem cell therapeutics by FDA, methods for stem cell analysis and high number of ongoing research activities are factors fueling the growth of stem cell therapy market in North America. However, the Asia-Pacific stem cell therapy market is expected to grow due to factors such as increasing regulatory support through favorable government policies, strong product pipelines, and increasing licensing activities in this region. Some of the key players in this market and potential customers for this product are Aastrom Biosciences, Inc. Advanced Cell Technology, Cryo Cell International, Athersys among many others.



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