Macular degeneration treatment using embryonic stem cells

Technology #m10-028

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Stem Cell treatment of early to intermediate stage macular degeneration: Age-related macular degeneration (AMD) is the leading cause of blindness for people over 60. Some AMD patients experience the trauma of severe vision loss in a matter of weeks. Others experience the frustration of maintaining functional yet deteriorating vision over the course of many years. Since nearly all currently approved AMD therapies address only the advanced stage of the disease, few treatment options exist for the AMD patient population who experience gradual disease progression, year after year. This technology describes a therapy for treating AMD at the early to intermediate stage.

Applications of embryonic stem cells reduce susceptibility to age-related macular degeneration: This technology consists of 3 applications of embryonic stem cells for the purpose of reducing AMD susceptibility by reversing complemen dysregulation in the eye. These 3 applications are: 1) differentiation and delivery via portal vein infusion, 2) differentiation and delivery directly to the eye via an implantable device and 3) fusion with retinal pigment epithelial (RPE) cells for reprogramming of the protective complement factor H gene.

Applications: • Therapy for early to intermediate stage AMD • Could also be of therapeutic relevance for dense deposit disease and atypical haemolytic uraemic syndrome

Advantages: • Provides a remedy for reversing progression of intermediate stage AMD. Currently, the only approved therapy available for intermediate stage AMD is a specific high-dose formulation of antioxidants and zinc called the AREDS formulation. The AREDS formulation can reduce, but does not reverse, AMD progression from intermediate to advanced. • Provides a first-in-class remedy for treating early stage AMD. The benefits of the AREDS formulation for early stage AMD are unproven.

Patent Status: Patent Pending

Licensing Status: Available for Licensing and Sponsored Research Support”

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