

An Effective, Non-Surgical, Long-Term Treatment for Glaucoma

Published date: March 5, 2020

Technology description

Invention:

This is a method to screen for drugs that target VE-cadherin protein adhesion to between Schlemm's canal cells for treating glaucoma.

Background:

In glaucoma, there is a gradual increase in outflow resistance in the eyes, which results in elevated intraocular pressure. More than 70% of the resistance to outflow of fluid from the eye occurs in the Schlemm's canal endothelial cells, specifically at the edges where there are many intercellular junctions with neighboring trabecular meshwork cells. A protein, cadherin-5 is specifically localized to these cell junctions and mediates cell permeability. Proteins targeted to these intercellular junctions can cause relocation of cadherin-5, and thus adjust the permeability of the cells, allowing regulation of intra-ocular pressure. Cell permeability and adhesion can be affected by targeting of anti-cadherin 5 antibodies to cause relocation of cadherin-5 and/or use of cadherin-5 inhibitors. The inventors have developed a method to measure the effectiveness of these antibodies or inhibitors.

Application area

Drug screening for glaucoma

Advantages

- (1) Directly measure permeability and adhesion affected by inhibition of VE-cadherin protein adhesion in Schlemm's canal cells.
- (2) Schlemm's canal is the direct site of pathology for glaucoma.

Institution

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