Method for Treating Glaucoma with C3 Transferase

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a method of treating glaucoma.

OVERVIEW

Glaucoma is the second leading cause of visual impairment and fourth leading cause of blindness in the United States. It is often characterized by increased intraocular pressure in the eye, which damages the optic nerve. In the type of glaucoma most prevalent in the West, increased intraocular pressure results from an obstruction in the normal outflow of the aqueous humor through the eye’s trabecular meshwork.

THE INVENTION

UW-Madison researchers have developed a method for reducing intraocular pressure and increasing outflow facility from the eyes to treat glaucoma. The method involves administering exoenzyme C3 transferase to the trabecular meshwork of the eye. Alternatively, a genetic construct comprising the nucleic acid for C3 linked to a promoter may be delivered to the trabecular meshwork cells so that C3 protein is expressed in the eye.

C3 is an ADP ribosyltransferase that inhibits cellular contractility, leading to changes in cell shape and secondary changes in the actin cytoskeleton and cellular adhesions. To treat glaucoma, C3 reduces intraocular pressure by disrupting actin- and myosin-containing stress fibers and the system of focal adhesions, reducing the resistance of the trabecular meshwork to fluid flow and enhancing outflow from the aqueous humor.

APPLICATIONS

• Provides a promising new therapy for glaucoma

KEY BENEFITS

• C3 can be administered along with other agents that reduce intraocular pressure
• Other ADP ribosyltransferases may also be used

ADDITIONAL INFORMATION

Tech Fields
Pharmaceuticals & Vitamin D - Ocular
Drug Discovery - Gene therapy

CONTACT INFORMATION

For current licensing status, please contact John Nagel at jnagel@warf.org or (608) 265-7956.