Novel Pharmaceutical Target for Glaucoma

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Technology description

Glaucoma is an age-associated disease and one of the leading causes of permanent blindness. Intraocular pressure (IOP) is the major risk factor for glaucoma, and reducing IOP is the primary method of treatment. There is no cure for glaucoma, and loss of vision due to the disease cannot be restored. Effective therapies against glaucoma exist, but they rely on early diagnosis of the disease and some patients remain unresponsive to treatment. As the aging demographic continues to grow, the population of glaucoma patients will likely increase.

USC Solution

Researchers at USC have found that GPR158, a newly characterized GPCR linked to glucocorticoid-associated glaucoma, regulates IOP in response to stress. They have shown that glucocorticoids stimulate GPR158 expression in human trabecular meshwork cells in vitro, and that overexpression of GPR158 provides protection against ocular hypertension-related oxidative stress. Screenings of pharmaceutical compounds that target and are capable of modulating GPR158 are underway. Select compounds targeting GPR158 can potentially prevent and treat elevated IOP and/or glaucoma, and enhance the response to existing and novel glaucoma drugs and treatments.

Key Publication:

ARVO 2018 (Abstract no. 4724-B0148); Publication in press

Application area

Treatment and prevention of elevated intraocular pressure (IOP) and/or glaucoma
Companion treatment to existing drugs and treatments to glaucoma and IOP

Advantages

New pharmacological target to treat and/or prevent IOP and glaucoma
Potential to enhance effect of existing and novel drugs and treatments to glaucoma and IOP

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