

Non-Confidential Description - PSU No. 3987 "Diabetic Retinopathy Treatment"

Field of Invention/Keywords:

diabetes, diabetic retinopathy, proprietary PEDF derived peptides

Inventors:

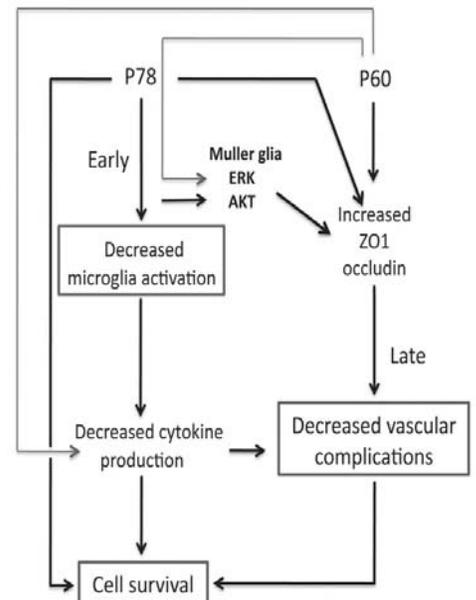
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Background

Of the 25.8 million Americans who have diabetes, about 12 percent develop retinopathy, (CDC-2011), the leading cause of blindness and visual impairment in adults. The severity of diabetic retinopathy depends on the duration of the individual's diabetes and the extent of his or her glycemic control. In diabetic retinopathy, the patient's vision is compromised due to complications with blood vessels and macular edema, which is the thickening of the part of the retina that is responsible for central vision. Most available drugs like Lucentis tackle the blood vessel complications observed in the late stage of the diabetic retinopathy, but ignore the events that occur earlier and lead to these complications.

Invention Description

The leading contributing factors to diabetic retinopathy are cell death and inflammation during the early stages of the disease and blood vessel complications occurring during advanced stages. Researchers at Penn State College of Medicine designed proprietary PEDF derived peptides to address these factors. The proprietary peptides have been demonstrated to decrease activation of microglial cells in the brain, decrease leakage of blood vessels, and increase cell survival in a diabetic retinopathy mouse model.



Advantages

- Can be formulated as an eye drop or injection
- Targets all three cellular phenomena that occur in diabetic retinopathy: blood vessel complications, cell death, and inflammation
- Can be used earlier in the development of the disease than other available drugs
- Is applicable not only to diabetic retinopathy but also to other ophthalmic degenerative diseases, including glaucoma, retinitis pigmentosa, or age-related macular degeneration

Status of the Invention

Available for licensing – U.S. Patent application filed September 12, 2014

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Updated 2015-11-30