

## Role of ECM in the pathogenesis of diabetic retinopathy and POAG

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Diabetic retinopathy and glaucoma are major ocular diseases that cause significant vision loss and subsequent blindness. However, the precise mechanisms involved in the onset and the progression of these diseases are still not completely understood. While clinical reports have indicated a higher incidence of diabetic retinopathy and glaucoma in the diabetic population compared to the general population, it is unclear whether an association exists between these two disease processes. The extracellular matrix (ECM) is an important determinant of functional properties for retinal blood vessels and trabecular meshwork (TMW). Since retinal blood vessels and TMW are major targets of diabetes, studies have focused on understanding how hyperglycemia affects these tissues. While increased ECM deposition in the outflow pathway may cause resistance to aqueous outflow and contribute to the development of primary open angle glaucoma (POAG), increased ECM can compromise vascular function in the retina. This presentation will focus on understanding a common pathological link between the two ocular diseases, in particular, how overexpression of ECM may contribute to the development of diabetic retinopathy and POAG.

### Biography

Sayon Roy received his PhD from Boston University and completed his postdoctoral training at Schepens Eye Research Institute, Harvard Medical School, Harvard University. Dr. Roy is currently a professor of Medicine, Section of Diabetes, Endocrinology and Nutrition, and a professor of Ophthalmology at Boston University School of Medicine. Recognized as an expert in retinal vascular biology, Dr. Roy's seminal work has identified several genes in the retina that are abnormally expressed in diabetic retinopathy. His pioneering work has led to novel gene modulatory techniques in retinal vascular cells using antisense oligonucleotides via intravitreal injection. Dr. Roy has received numerous awards including the American Diabetes Association Research Award for the commitment and dedication towards the fight against diabetes, the 2006 Mentor of the Year Award from Boston University, and the 2008 Innovative Award from the Juvenile Diabetes Research Foundation. Research in Dr. Roy's laboratory has been funded by several organizations including the National Eye Institute, NIH, National Medical Technology Testbed, American Diabetes Association, Juvenile Diabetes Research Foundation International, Fight for Sight, Research to Prevent Blindness, and the Lions Organization. Dr. Roy currently serves as a chartered member of the NEI Study Section of the National Institutes of Health.

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