Glaucoma

- Association of Dipeptidyl Peptidase-4 Inhibitors with Glaucoma Risk in Patients with Type 2 Diabetes: A Nationwide Cohort Study
- Ophthalmic Image Synthesis and Analysis with Generative Adversarial Network Artificial Intelligence
- Survival and Axonal Regeneration of Retinal Ganglion Cells in a Mouse Optic Nerve Crush Model After a Cell-Based Intravitreal Co-Administration of Ciliary Neurotrophic Factor and Glial Cell Line-Derived Neurotrophic Factor at Different Post-Lesion Time Points
- Analysis of quality of life and outcomes of vestibular schwannoma patients after resection and radiosurgery in an interdisciplinary treatment concept
- Inhibition of cGMP-Signalling Rescues Retinal Ganglion Cells From Axotomy-Induced Degeneration
- Retina-Targeted 17β-Estradiol by the DHED Prodrug Rescues Visual Function and Actuates Neuroprotective Protein Networks After Optic Nerve Crush in a Rat Model of Surgical Menopause
- Open-Angle Glaucoma in Idiopathic Normal Pressure Hydrocephalus Before and After Ventriculo-Peritoneal Shunt Surgery: An Interventional Prospective Study
- Urrets-Zavalia syndrome and secondary acute-angle closure glaucoma induced by implantable collamer lens

The increased pressure, called intraocular pressure, can damage the optic nerve, which transmits images to your brain. If the damage continues, glaucoma can lead to permanent vision loss. Without treatment, glaucoma can cause total permanent blindness within a few years

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Retinal ganglion cell damage serves as a key indicator of various retinal degenerative diseases, including diabetic retinopathy (DR), glaucoma, retinal arterial and retinal vein occlusions, as well as inflammatory and traumatic optic neuropathies. Despite the growing body of data on the RGC proteomics associated with these conditions, there has been no dedicated study conducted to compare the molecular signaling pathways involved in the mechanism of neuronal cell death. Therefore, Starr et al. launched the study using two different insults leading to RGC death: glutamate excitotoxicity and optic nerve crush (ONC). C57BL/6 mice were used for the study and underwent NMDA- and ONC-induced damage. Twenty-four hours after ONC and 1 hour after NMDA injection, they collected RGCs using CD90.2 coupled magnetic beads, prepared protein extracts, and employed LC-MS for the global proteomic analysis of RGCs. Statistically significant changes in proteins were analyzed to identify changes to cellular signaling resulting from the treatment. They identified unique and common alterations in protein profiles in RGCs undergoing different types of cellular stresses. The study not only identified both unique and shared proteomic changes but also laid the groundwork for the future development of a therapeutic platform for testing gene candidates for DR and glaucoma [1)].

1)

Starr CR, Mobley JA, Gorbatyuk MS. Comparative Proteomic Study of Retinal Ganglion Cells Undergoing Various Types of Cellular Stressors. Exp Eye Res. 2024 Aug 8:110032. doi: 10.1016/j.exer.2024.110032. Epub ahead of print. PMID: 39127235.