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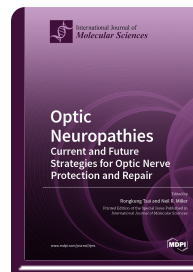
Special Issue Reprint

Optic Neuropathies: Current and Future Strategies for Optic Nerve Protection and Repair

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Optic neuropathies are conditions in which there is damage to the optic nerve (ON) caused by a variety of causes, including glaucoma, inflammation, gene abnormalities, ischemia, trauma, and toxicity. ON damage triggers a process of axon degeneration, inflammatory cytokine upregulation, breakdown of the blood–optic nerve barrier, and, eventually, the induction of apoptosis of retinal ganglion cells (RGCs), resulting in optic atrophy. To date, there is no effective treatment for most optic neuropathies; however, because the damage initially is axogenic, there may exist a window of therapeutic opportunity before the death of RGCs. Thus, the search for effective treatments for various optic neuropathies before there is permanent damage to prevent or limit visual dysfunction and the development of methods to stimulate axon and/or RGC regeneration to restore vision after damage has occurred is pivotal.

This reprint collected 19 articles published in this Special Issue of *IJMS* which covers the molecular mechanisms to protect RGCs and/or axonal damage, translational research, gene therapy, regenerative medicine, and neuroprotection for glaucoma.



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