

Special Issue

Mechanistic Insights of Retinal Diseases and Directions for New Therapeutics

Message from the Guest Editors

Retinal diseases are major global health burdens and the leading cause of vision loss worldwide, yet effective therapies remain limited for many conditions. These include age-related macular degeneration, diabetic retinopathy, glaucoma, and inherited retinal degeneration. Progress in the development of new therapeutics depends on mechanistic insights into disease pathogenesis and research on cellular and molecular basis of retinal metabolic homeostasis, neurovascular interaction, and ocular immune responses that are often dysregulated during retinal disease processes. Signaling pathways involving cellular lipid and glucose metabolism, oxidative stress, inflammation, complement, and neuronal protection are central to the pathogenesis of major retinal disorders. Translating these mechanistic insights into clinically effective treatments remains a critical challenge. By integrating mechanistic insights with emerging therapeutic perspectives, this Special Issue seeks to advance our understanding of the pathogenesis of retinal diseases and promote the development of more effective and targeted mechanism-based therapies to ultimately prevent vision loss in children and adults.

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Deadline for manuscript submissions

31 August 2026



Biomolecules

an Open Access Journal
by MDPI

Impact Factor 5.6
CiteScore 9.3
Indexed in PubMed



mdpi.com/si/267840

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Message from the Editor-in-Chief

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