Review of: "[Review Article] Melatonin, ATP, and Cataracts: The Two Faces of Crystallin Phase Separation"

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Potential competing interests: No potential competing interests to declare.

This review elaborates on the molecular mechanisms underlying cataract development, which involves the condensation of alpha-crystallin proteins. It also discusses the roles of melatonin and ATP in combating these events, thus delaying cataract formation and progression. However, the levels of melatonin and ATP decrease with aging, diminishing their efficacy in interfering with lens opacification. Furthermore, melatonin is implicated in controlling intraocular pressure (IOP), glaucoma development, and neuroprotection.

To give practical and medical significance to the manuscript, it could be valuable to mention research papers exploring the possibility of administering melatonin as nanomicellar eye drops. This approach aims to increase melatonin concentration in eye tissues, with positive outcomes observed in glaucoma progression (see doi: 10.3390/ijms24032863; doi: 10.3390/ijms21239267; doi: 10.3390/diagnostics10030138) and potentially in other eye pathologies (refer to the forthcoming paper in Pharmaceuticals titled: 'The Therapeutic Trip of Melatonin Eye Drops: From the Ocular Surface to the Retina').

Overall, the work is very intriguing, although the formulation and length of sentences occasionally complicate reading and understanding. I encourage the authors to revise the manuscript, aiming to shorten long sentences and provide clearer and more direct explanations of the molecular events here described.