Special Issue

Advances in the Delivery of DNA and RNA Therapeutics to the Eye

Message from the Guest Editors

The eye is an appealing target organ for DNA- and RNA-based therapies. The eye is enclosed and relatively immune privileged due to an efficient blood–retina barrier and little lymphatic drainage. Viral-based vectors are currently the most promising option for gene replacement in the treatment of inherited retinal diseases. Viral vectors, however, require invasive subretinal injections, and concerns related to their safety, repeated dosing, and large-scale production have been only partially addressed. For this reason, non-viral alternatives should be considered and explored. Research in this field has expanded to find solutions for prolonged expression of therapeutic proteins or gene silencing in the treatment of more common non-genetic retinal diseases. Other research efforts include the development of delivery strategies that allow the retinal administration of DNA and RNA therapeutics via less invasive routes, such as intravitreal, periocular, or systemic delivery.

This Special Issue aims to highlight the current progress in ocular delivery of DNA and RNA therapeutics.

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