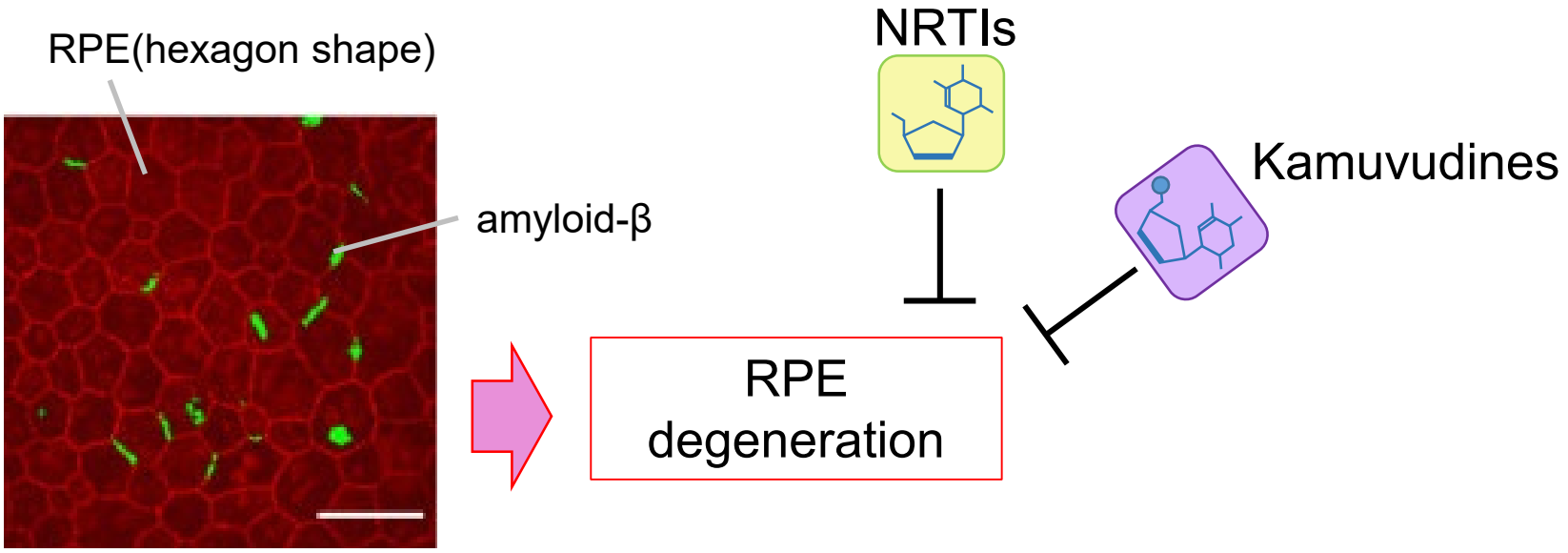
From Laboratory of Advanced Vision Science
From Laboratory of Ophthalmology

Nucleoside reverse transcriptase inhibitors and Kamuvudines inhibit amyloid-β induced retinal pigmented epithelium degeneration



Nonfibrillar amyloid-β oligomers (AβOs) are a major component of drusen, the sub-retinal pigmented epithelium (RPE) extracellular deposits characteristic of age-related macular degeneration (AMD), a common cause of blindness. AβOs induce activation of the NLRP3 inflammasome in the RPE and that RPE expression of the purinergic ATP receptor P2RX7, an upstream mediator of NLRP3 inflammasome activation, is required for AβO-induced RPE degeneration. Two classes of small molecule inflammasome inhibitors—nucleoside reverse transcriptase inhibitors (NRTIs) and their antiretrovirally inert modified analog Kamuvudines—both inhibit AβOs-induced RPE degeneration.

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