

# Tetracosapentaenoic acid (24:5 n-3) treatment for AMD, Diabetic retinopathy and glaucoma

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## BRIEF DESCRIPTION

Researchers at UC Irvine have identified Tetracosapentaenoic acid (24:5 n-3) for treatment of age-related eye disorders such as age-related macular degeneration (AMD), diabetic retinopathy and glaucoma. Lipids such as very long chain polyunsaturated acids (VLC-PUFAs) and docosahexaenoic acid (DHA) play a critical role in the eye during the human lifespan. Aging causes decrease in these lipids leading to age related eye disorders. Increased lipids or lipid precursors in the eye may improve retina function and overall vision health.

## SUGGESTED USES

Treatment of:

- Age-related macular degeneration
- Diabetic retinopathy
- Glaucoma

## FEATURES/BENEFITS

- Tetracosapentaenoic acid (24:5 n-3) will serve as the substrate to directly increase production of VLC-PUFA and DHA which plays a critical role in healthy retina.
- Direct delivery of this active compound in more effective than oral medications.

## FULL DESCRIPTION

It has been reported that regulatory elements of ELOVL2 gene are increasingly methylated with age thereby decreasing VLC-PUFA and DHA synthesis. Mouse models have shown reduced ELOVL2 activity with deficiencies in PUFA production and visual impairment. Oral medication ingesting lipids have been shown to be inefficient. Intravitreal injections of Tetracosapentaenoic acid (24:5 n-3) will serve as a substrate to increase production of VLC-PUFAs and DHA which play a critical role in retina health. Animal models using aged (18-month-old) showed improved electrical response of various cell types in the retina (ERG) with treatment. This method offers a direct, specific and reproducible way to deliver exact amount of active compound of the place of need. Previous methods of lipid supplementation are not sufficient to provide substrates for VLC-PUFA in aged retinas, where ELOVL2 gene has decreased function.

## STATE OF DEVELOPMENT

In vitro and in vivo studies

## PATENT STATUS

## CONTACT

Patricia H. Chan  
patricia.chan@uci.edu  
tel: 949-824-6821.



## INVENTORS

» Skowronska-Krawczyk, Dorota

## OTHER INFORMATION

## CATEGORIZED AS

- » **Medical**
- » Disease: Ophthalmology and Optometry
- » Therapeutics

## RELATED CASES

2023-786-0

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5270 California Avenue / Irvine, CA  
92697-7700 / Tel: 949.824.2683

