Genetic Polymorphisms Linked to Age-Related Eye Disorders and Drug Response

Tech ID: 33836 / UC Case 2024-9AS-0

BRIEF DESCRIPTION

Researchers at UC Irvine have identified genetic polymorphisms associated with disease progression and responsiveness to treatment with Tetracosapentaenoic acid (24:5 n-3) for age-related eye disorders such as age-related macular degeneration (AMD), diabetic retinopathy and glaucoma. These variations found in the ELOVL2 gene are associated with AMD progression and the varying responses individuals have to AMD treatments, including preventative measures. Additionally, these genetic variations have applications in human identification.

SUGGESTED USES

Diagnostic tool, Disease monitoring, Drug response for:

·Age-related macular degeneration (AMD)

·Diabetic retinopathy

·Glaucoma

FEATURES/BENEFITS

·The identified panel of single nucleotide polymorphisms (SNPs) can serve as targets for diagnostic tools and therapeutic agents. They are also valuable for predicting AMD occurrence, severity, and recovery, as well as for assessing individual responses to AMD treatments.

·This invention encompasses a comprehensive array of methods and applications.

FULL DESCRIPTION

This invention pertains to age-related macular degeneration (AMD) and its treatment, focusing on the effects of specific genetic variations in the human genome. Specifically, the invention presents novel SNPs within genetic sequences implicated in AMD and/or the response to AMD treatment. These SNPs are identified within isolated nucleic acid molecules, encompassing both DNA and RNA, which harbor these genetic variations. Furthermore, it includes variant proteins encoded by these nucleic acid molecules, as well as antibodies targeting these variant proteins. Methods are provided for the precise detection of these SNPs within test samples, facilitating personalized risk assessment for AMD occurrence and prognosis of its severity. Additionally, it presents potential methods for tailored treatment strategies based on individual SNP profiles, predicting responsiveness to AMD treatments such as statin therapy.

PATENT STATUS

Patent Pending

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OTHER INFORMATION

CATEGORIZED AS

» **Medical**
  » Diagnostics
  » Disease: Central Nervous System
  » Disease: Ophthalmology and Optometry
  » Research Tools
  » Therapeutics
» **Research Tools**
  » Animal Models

STATE OF DEVELOPMENT

In vitro and in vivo studies

RELATED CASES

2024-9AS-0

RELATED MATERIALS

» Polyunsaturated Fatty Acid - mediated Cellular Rejuvenation for Reversing Age-related Vision Decline - 07/02/2024

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