



TECHNOLOGY

Method of Visualizing Drusen in the Eye

OVERVIEW

Drusen are yellow fatty protein deposits under the retina. The formation of drusen increases the risk of a person developing “dry” age-related macular degeneration (dry AMD). The inventor has previously disclosed in published work the surprising finding that these deposits contained tiny hydroxyapatite (HAP) spherules. It has been hypothesized that these HAP spherules are an important in initiating the formation of drusen. Because the HAP spherules develop many years prior to the visibility of drusen, this finding may provide an attractive new approach for early identification and treatment of AMD. Detecting the HAP spherules and preventing their further growth could also be a possible treatment for AMD.

The disclosed inventions identify compounds (labels) that bind to HAP and whose fluorescence is characteristics differ in the unbound and bound state. The disclosed labels show binding specificity to HAP. The labels will permit early and accurate detection of HAP deposits which are associated with the formation of drusen. The labels will allow the one to diagnosis and monitor the progression of age-related macular degeneration using a non-invasive method like fluorescence ophthalmoscopy. It has been shown that drusen formation is an indicator for the development of age-related macular degeneration (AMD). The disclosed invention also discloses a method for using the labels to diagnosis and monitor the progression of age-related macular degeneration.

APPLICATIONS

AMD affects 1 in 5 people over 75, causing their vision to slowly deteriorate. The ability to spot the disease early and reliably halt its progression would improve the lives of millions. AMD is one of the leading causes of blindness worldwide. A Lancet Global Health study estimates that nearly 196 million patients will be diagnosed with AMD by 2020 and that by 2040 that number will increase to nearly 288 million. AMD is ranked third by the WHO as a priority eye disease, eclipsed only by cataracts and glaucoma in importance. It has been estimated that AMD represents a \$35.4 billion economic burden in the US alone.

ADVANTAGES

Early detection of drusen a key indicator for AMD

STAGE OF DEVELOPMENT

Technology demonstrated using cadaver eyes.

LICENSING POTENTIAL

UMB seeks partners for advancing this technology via sponsored research and licensing.

CONTACT INFO

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Additional Information

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PATENT STATUS

For tech ref RT-2012-010, US Patent No.9,801,955, issued date 10/31/2017 For RT-2016-112, Issued Patent | U.S.11,253,614

LICENSE STATUS

Available for licensing (co-owned with another institution)

CATEGORIES

- Diagnostics
- Imaging

INVESTIGATOR(S)

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ATTACHMENTS

-  [Download RT-2012-010 - Technology Summary.pdf](#)

EXTERNAL RESOURCES

- [Drusen associated with aging and age-related macular degeneration contain proteins common to extracellular deposits associated w](#)

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