Monitoring Atherosclerosis Regression, Plaque Stabilization, and Cardiovascular Risk Using a Novel Method to Quantify Oxidized Phospholipids

Tech ID: 19200 / UC Case 2009-236-0

BACKGROUND

It is known that oxidized phospholipids are pre-inflammatory and pro-atherogenic and that high-density lipoproteins (HDL)—or its lipoprotein also called apolipoprotein-A—is involved in mediating reverse cholesterol transport. Currently there is no accepted method for high-throughput measurement of reverse cholesterol transport or reverse-oxidized phospholipid transport.

TECHNOLOGY DESCRIPTION

This invention provides a high-throughput in vitro assay [enzyme linked immunoassay] to measure oxidized phospholipds on HDL, HDL-related lipoproteins, and mimetics as a method of estimating reverse oxidized phospholipid transport or plaque stabilization and regression. This technology has been optimized to quantitatively estimate reverse oxidized phospholipid transport and monitor plaque stabilization and regression in studies of rabbits, non-human primates, and human populations.

APPLICATIONS

Offers a high-throughput method to monitor atherosclerosis regression, plaque stabilization, and cardiovascular risk.

ADVANTAGES

- Fully developed technology, having been demonstrated in multiple studies.
- Technology can be adopted to use other antibodies of high affinity to oxidized phospholipids.
- Suitable for monitoring the effect of therapeutic intervention studies of patient or model populations.

RELATED MATERIALS

Arai K, Luke MM, Koschinsky ML, Miller ER, Pullinger CR, Witztum JL, Kane JP, Tsimikas S. The I4399M variant of apolipoprotein(a) is associated with increased oxidized phospholipids on apolipoprotein B-100 particles. Atherosclerosis. 2010 Apr;209(2):498-503.
Ahmadi N, Tsimikas S, Hajsadeghi F, Saeed A, Nabavi V, Bevinal MA, Kadakia J, Flores F, Ebrahimi R, Budoff MJ. Relation of oxidative biomarkers, vascular dysfunction, and progression of coronary artery calcium. Am J Cardiol. 2010 Feb 15;105(4):459-66.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,883,428	11/11/2014	2009-236

CONTACT
University of California, San Diego
Office of Innovation and Commercialization
innovation@ucsd.edu
tel: 858.534.5815.

OTHER INFORMATION

CATEGORIZED AS

- **Medical**
  - Disease: Cardiovascular and Circulatory System
  - Therapeutics

RELATED CASES

2009-236-0, 2005-037-1, 2005-037-2