

**Technology**

Method of diagnosis and/or therapy of Alzheimer's disease

Inventor

Donald Schmechel, M.D.
Durham VA Medical Center

Key Features

- Genetic regulation of neurodegenerative disease
- Multiple applications including Alzheimer's diagnosis, Alzheimer's therapy, and drug screening

Stage of Development

Reduced to practice with successful demonstration in both *in vitro* and animal models

Keywords

- Diagnostic
- Alzheimer's disease
 - Neurodegenerative disease
 - Apolipoprotein E (ApoE)
 - TNF- β
 - Genetic regulation

Patent Status

None

Contact

Ken Levin, Ph.D.
Technology Transfer Program
Department of Veterans Affairs
Office of Research & Development (12TT)
810 Vermont Avenue, NW
Washington, DC 20420
Phone: 202-461-1713
Fax: 202-254-0460
E-mail: Ken.levin@va.gov

Apolipoprotein E and Regulation of Response to Cell Injury and Inflammation

(VA Reference No. 99-014)

Unique technology that could lead to a diagnostic method or therapeutic drug for Alzheimer's disease and other neurodegenerative diseases

Technology

The Department of Veterans Affairs has discovered that expression of apolipoprotein E (ApoE, a protein strongly implicated in the development of Alzheimer's disease) in animal models controls the expression of TNF- β , a cytokine involved in inflammation. The unique technology could lead to a therapeutic drug for the treatment of Alzheimer's disease and possible secondary applications in other neuron-degenerative disorders and dementias.

Description

The VA invention represents an important discovery in Alzheimer's disease with research findings implicating TNF- β in Alzheimer's, since the gene encoding this protein is located in the same region of chromosome 6 that was demonstrated to have linkage with Alzheimer's. The invention could provide a means to differentiate between those patients who would respond to TNF- β antagonists, and those who would not, according to the individual ApoE and TNF- β genotypes. Furthermore, the current invention could provide alternative drug targets to the AchE inhibitors.

Competitive Advantage

The VA has demonstrated that specific regulation of an important cytokine by human apolipoprotein E in the nervous system results in genetic regulation of differential gene expression in the central nervous system.

This invention:

- Could also provide treatments for many other neurological disorders and dementias that have a microglial involvement and inflammation.
- Represents the first investigation in humans to show an association between ApoE levels and TNF- β levels.

Status

The Department of Veterans Affairs is looking for a partner for further development and commercialization of this technology through a license, and the VA inventors are available to collaborate with interested companies through a Cooperative Research and Development Agreement (CRADA).