

**Technology**

Use of alpha-7 nicotinic acetylcholine receptor for diagnosis of schizophrenia

Inventor

Robert Freedman, M.D.
Sherry Leonard, Ph.D.
Denver VA Medical Center

Key Features

- Facilitates objective differential diagnosis or predictive diagnosis of schizophrenia
- Valuable tool for drug discovery programs focused on schizophrenia

Stage of Development

Reduced to practice with successful demonstration in animal models

Keywords

Diagnostic

- Drug screening
- Schizophrenia
- CNS

Patent Status

[US Pat. No. 7,572,580](#)
[US Pat. No. 6,875,606](#)

Contact

Lee Sylvers, Ph.D.
Technology Transfer Program
Department of Veterans Affairs
Office of Research & Development (12TT)
810 Vermont Avenue, NW
Washington, DC 20420
Phone: 202-461-1714
Fax: 202-254-0460
E-mail: lee.sylvers@va.gov

Human Alpha-7 Nicotinic Acetylcholine Receptor: Expression Levels and Promoter Polymorphisms as Predictors / Indicators of Schizophrenia

(VA Reference No. 03-102)

Novel method of using alpha-7 nicotinic acetylcholine receptor for diagnosis of schizophrenia

Technology

The Department of Veterans Affairs has developed a technology that consists of a gene sequence of the human alpha-7 nicotinic acetylcholine receptor and promoter sequence variants that impart reduced expression of the receptor. Decreased expression levels of the receptor's mRNA and detection of certain promoter DNA sequence polymorphisms are characteristic of schizophrenia.

Description

The VA has developed a method related to the human alpha-7 acetylcholine receptor genes. The neuronal alpha-7 nicotinic acetylcholine receptor has been associated with several aspects of schizophrenia, and decreased levels of this receptor in postmortem brains of schizophrenic patients have been reported. This invention provides a means to screen populations for abnormal alpha-7, as well as for the development of potential therapeutics for schizophrenia.

Competitive Advantage

The principle value of the technology developed by the VA comes from its potential to facilitate an objective differential diagnosis or predictive diagnosis of schizophrenia when a patient presents with a psychiatric disorder.

This invention:

- Could provide an opportunity for early intervention for family members of diagnosed patients since schizophrenia has a genetic component
- Could prove valuable to a drug discovery program focused on schizophrenia

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).