Targeting 3-Repeat TAU for the Treatment of Neurodegenerative Tauopathy Disorders

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BACKGROUND

Neurodegenerative disorders with Tau accumulation are a common cause of dementia in the aging population. Alzheimer’s Disease (AD), Pick’s Disease (PiD) and Fronto-temporal lobar degeneration (FTLD) are examples of neurodegenerative disorders with Tau accumulation and are also jointly referred as “taupathies”. Taupathies are a group of neurodegenerative disorders with accumulation of three-repeat (3R) or four-repeat (4R) Tau. While 3R tau is found in Pick’s disease and Alzheimer’s disease (AD), 4R tau is more abundant in corticobasal degeneration, progressive supranuclear palsy, and AD.

TECHNOLOGY DESCRIPTION

Researchers at UC San Diego have taken the approach to selectively target 3R Tau aggregates for treatment of AD, PiD and other neurodegenerative disorders with 3R Tau accumulation. Single chain antibodies were developed that were shown to specifically recognize 3R Tau in tissue from patients with AD and PiD and designed to be capable of penetrating the brain for therapeutic use in humans. In addition, having gained access to the CNS the single chain antibodies were shown to reduce the accumulation of 3R Tau and related deficits in transgenic mouse models of taupathy and Pick’s disease.

APPLICATIONS

Data based upon animal model studies suggest that these single chain antibodies can potentially be used for the treatment, amelioration, prevention or reduction of symptoms of neurodegenerative disorders and conditions characterized with 3R Tau accumulations.

STATE OF DEVELOPMENT

A transgenic mouse model (3R Tau is overexpressed) was developed to characterize single chain antibodies and validate that they specifically recognize 3R Tau and could penetrate the blood-brain barrier.

INTELLECTUAL PROPERTY INFO

A PCT patent has been submitted and the technology is available for licensing.

RELATED MATERIALS


PATENT STATUS

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