

New Target for Diagnosing, Treating Neurodegenerative Diseases



INVENTORS • Su-Chun Zhang, Hong Chen

WARF: P140125US02

[View U.S. Patent No. 10,024,870 in PDF format.](#)

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in exploring neurofilament regulation as a therapeutic target for ALS, Alzheimer's disease and other neurodegenerative conditions.

OVERVIEW

Amyotrophic lateral sclerosis (ALS) is a devastating disease with no effective treatment. In patients with ALS, the neurons in their brains degenerate, leading to cognitive and physical breakdown. Other neurodegenerative afflictions include Alzheimer's disease, Parkinson's disease and Huntington's disease.

All these diseases share a common feature – structural proteins called neurofilaments (which provide support to neurons) clump up or tangle. The common view is that these tangles are the result of the disease, not the cause. That view is now being challenged.

THE INVENTION

UW-Madison researchers have demonstrated that neurofilament tangles lead to subsequent degeneration and death of motor neurons in ALS patients. They also discovered that these tangles are caused by the reduced expression of a type of neurofilament mRNA. Thus, neurofilament regulation appears to be a promising target for drug screening and gene therapy.

The researchers conducted their studies using motor neurons derived from ALS patients.

APPLICATIONS

- Research models, drugs and gene therapies targeting neurofilament regulation

KEY BENEFITS

- New avenue for treating ALS and potentially other neurodegenerative diseases
- May lead to earlier diagnosis

THE WARF ADVANTAGE

WARF: A Leader in Technology Transfer Since 1925

Since its founding as a private, nonprofit affiliate of the University of Wisconsin-Madison, WARF has provided patent and licensing services to UW-Madison and worked with commercial partners to transform university research into products that benefit society. WARF intellectual property managers and licensing staff members are leaders in the field of university-based technology transfer. They are familiar with the intricacies of patenting, have worked with researchers in relevant disciplines, understand industries and markets, and have negotiated innovative licensing strategies to meet the individual needs of business clients.

The University of Wisconsin and WARF – A Single Location to Accelerate Translational Development of New Drugs

UW-Madison has the integrative capabilities to complete many key components of the drug development cycle, from discovery through clinical trials. As one of the top research universities in the world, and one of the two best-funded universities for research in the country, UW-Madison offers state-of-the-art facilities unmatched by most public universities.

These include the Small Molecule Screening Facility at the UW Comprehensive Cancer Center; the Zeeh Pharmaceutical Experiment Station, which provides consulting and laboratory services for developing formulations and studying solubility, stability and more; the Waisman Clinical Biomanufacturing Facility; the Wisconsin Institute for Medical Research, which provides UW-Madison with a complete translational research facility; and the innovative, interdisciplinary Wisconsin Institutes for Discovery, home to the private, nonprofit Morgridge Institute for Research and its public twin, WID, part of the university's graduate school. The highly qualified experts at these facilities are ready to work with you to create a library of candidates for drug development.

STAGE OF DEVELOPMENT

In vitro testing.

ADDITIONAL INFORMATION

Publications

Chen et al. 2014. Modeling ALS with iPSCs Reveals that Mutant SOD1 Misregulates Neurofilament Balance in Motor Neurons. Cell Stem Cell. 14, 796-809.

Tech Fields

Drug Discovery - Targets

Drug Discovery - Stem cells

CONTACT INFORMATION

For current licensing status, please contact Andy DeTienne at adetienne@warf.org or 608-960-9857.

