

Epilepsy Treatment and Prevention

Anti-CD40L Antibody for the Treatment, Prevention, and Diagnosis of Epilepsy and Other Neurological Diseases

Intellectual Property

ID Number

257

Contact

EVMS Technology Transfer
757-446-7112
techtransfer@evms.edu

Inventors

Alberto Musto, MD, PhD

Field

Epilepsy Treatment and
Diagnosis

Technology

Method to disrupt cellular
processes activated by
inflammation that lead to
epileptic inducing changes in
the brain

Key Benefits

- Interference with disease inducing process following trauma
- Treatment and prevention
- Diagnostic in pre-disease
- Expandable to additional treatment arenas

Stage of Development

Positive early stage results in ongoing studies in mouse models

Status

Seeking licensing partner and/or sponsored research

Patent Status

Patent Application

Epilepsy Treatment, Prevention, and Diagnosis

Inflammatory processes precede the development of epileptic seizures. In neural tissue, CD40L, a member of the TNF family that interacts with CD40 receptor proteins, has been shown to increase after a seizure. This method uses an anti-CD40L antibody immunotherapy to prevent the onset of temporal lobe epilepsy (TLE) by blocking CD40L-CD40 interactions. It is suitable to develop as a pharmaceutical treatment/preventative for Epilepsy and other neurological disorders with disruptive networks such as Alzheimer's disease and Post Traumatic Stress Disorder.

The antibody can also be developed into an Imaging Diagnostic for TLE or to predict developing epilepsy after traumatic injury or as a biomarker to diagnosis epilepsy.

Market

There is currently no preventative or permanent cure for Epilepsy. There is also no diagnostic tool available to predict the onset of Epilepsy. The Epilepsy Market for therapy, Drugs, Treatment and Management is expected to grow to \$9.5 Billion by 2023. The Diagnosis and Treatment segment is expected to take about 65% of that market with an almost 8% compound annual growth rate. The Drug Resistant epilepsy segment is projected to reach 3.9 billion by 2023. Traumatic Injury is known to be linked to 40% of epileptic patients. Only 70% of epileptic patients respond to current treatments.

There is a growing trend of multiple drug treatments for epilepsy, giving an opportunity where this immunotherapy could be added to existing pharmaceuticals. It is also possible it may be preventative with the development of the diagnostic test. This antibody may also be appropriate for development as a treatment for other neurological diseases.

Opportunity

EVMS is seeking sponsored research and/or licensing partners to commercialize this technology.