

## Alzheimer's Disease Antibody

**Passive Immunization Treatment for AD. A monoclonal antibody that is highly selective for a particular form of the protein that is the primary trigger for AD onset.**

Alzheimer's Disease (AD) is the number one cause of dementia and the sixth leading cause of death. Currently, there are 5.8 million cases in the U.S. at a cost of \$290 billion. Estimates anticipate 14 million cases by 2050 with a cost of \$1.1 trillion. There are 50 million AD and related dementia cases globally.

**THE PROBLEM.** Alzheimer's Disease (AD) is 100% fatal; there are no approved disease-modifying treatments. Current drugs treat only the symptoms of dementia.

**THE SOLUTION.** The accumulation of aggregated amyloid-beta protein (A $\beta$ ) - senile plaques, oligomers, and protofibrils - is at the core of AD. Researchers have characterized the monoclonal antibody, mAbSL, which is highly selective for a particular form of the protein that is the primary trigger for AD onset. The mAbSL monoclonal antibody shows promise for development of a passive immunization treatment to be given at the early stage of AD. The mAbSL therapy may stop or even reverse AD progression.

**DEVELOPMENT STAGE.** Researchers have obtained, cloned, sequenced, expressed, purified, and characterized the monoclonal antibody (mAbSL). Next steps include production scale-up, animal studies in AD transgenic mice, and humanization of the mAbSL antibody.

**APPLICATIONS.** This technology has application in the diagnosis and treatment of Alzheimer's Disease.

**BENEFITS.** The mAbSL monoclonal antibody shows higher selectivity to the main trigger of AD over other drugs in development. A therapeutic based on this technology could be used to prevent the onset of AD and reverse the disease, treating AD itself rather than just the symptoms or just slowing progression.

**IP PROTECTION.** U.S. patent application serial no. 17/636,923 was filed 02/21/2022. A patent application in Canada is also pending.

**BUSINESS OPPORTUNITY.** The University is seeking a commercial collaborator to further develop and bring this technology to market.

**ADDITIONAL OPPORTUNITY.** Polyclonal antibodies are available for research purposes as well.

**LEAD INVENTOR.** Dr. Michael R. Nichols, Professor, Department of Chemistry & Biochemistry  
<https://www.umsl.edu/chemistry/Faculty/nichols.html>

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