

## USE OF ACYLATED AMINOACIDS AS NUTRACEUTICAL APPROACH TO PREVENT MILD COGNITIVE IMPAIRMENT

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### Executive Summary

Dementia is not part of the natural ageing process. It is caused by a worsening of age-related mild cognitive impairment (MCI) or a pathological condition of the brain. It leads to a critical independence loss, affecting the familiar, social and working aspects of patients. The most prevalent form of dementia is Alzheimer's disease (AD, 60-70% of cases), affecting around 7-12% of people aged 75-84 in Spain, 55 million people worldwide and an estimation of 139 millions of patients by 2050 (World Alzheimer's Report 2025).

In addition to medicines, several nutraceuticals and functional ingredients aimed to improve mental health are currently in the market. However, the efficacy of these active ingredients in preventing cognitive decline has not been sufficiently demonstrated in clinical trials, or they fail to modify the course of the disease. Microglia and inflammation have been shown to play a crucial role in aging and the progression of neurodegenerative diseases.

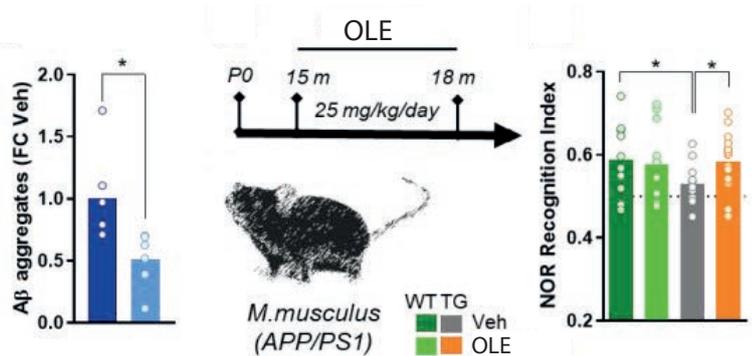
We have recently discovered that consumption of the modified amino acid N-oleoyl-leucine (called OLE) instructs microglia to eliminate toxic aggregates that accumulate in the brain during aging and neurodegeneration, and reverses the cognitive impairments observed in experimental models of AD.

### Main innovation and advantages

OLE has a natural origin, is concentrated in high-consumption foods and its administration does not cause changes in the behavior, weight, or appearance of treated subjects. OLE's value proposal is superior to other nutraceuticals-nootropics because:

- Can be administrated orally and shows easy intestine absorption
- Crosses the blood-brain barrier (BBB)
- Instructs the immune system (microglia) to encapsulate and eliminate toxic protein aggregates
- Promotes neuroprotection against oxidative stress
- Improves the cognitive abilities of administrated subjects

OLE's strategic positioning as premium nootropic and functional food aligns with market dynamics, which favors proactive and preventive approaches to consumer's health. OLE's value proposition represents a disruptive innovation in this expanding market, positioning as the first nutraceutical with proven ability to modify the course of cognitive decline and AD.



### Intellectual property

Patent title: "PM20D1-derived N-oleoyl-L-Leucine for the treatment and prevention of neurodegenerative diseases" (WO/2025/219147)

Applicant: Consejo Superior de Investigaciones Científicas (CSIC)

### For more information

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