

Defeating Dementia: Drug Development for Cognitive Enhancement (Carmel)

Researcher: Prof. Edi Barkai

Discovering a new drug treatment approach to inhibit the onset of dementia.

Background : Dementia, most commonly Alzheimer's disease, is a devastating chronic brain condition that disrupts thinking, orientation, behavior, and memory processes. Individuals suffering from dementia are faced with challenges performing everyday activities and engaging in social interaction. As the condition deteriorates, functional dependence on family, caregivers and society increases.

To date no effective long-term cure or prevention has been found for the disease.

According to a World Health Organization report, dementia is affecting some 47 million people worldwide. This number is likely to increase with 9.9 million new cases every year, the report states, making it one of the world's greatest health challenges.

Dementia is normally preceded by a period of mild cognitive impairments (MCI). Studies have shown a positive link between higher education and lower prevalence of MCI, indicating that the learning process has a protective role.

Prof. Edi Barkai of the University of Haifa's Sagol Department of Neurobiology and Head of the Laboratory for Neurobiology of Learning and Memory is on the path to developing a cognitive/learning-enhancing drug that could counter cognitive deficits suffered by dementia patients.

Research Status :

Barkai's research has identified a specific receptor in the brain, of the mGluR family, that inhibits learning when its excitability is blocked and improves learning when excitability is consistently enhanced. Using a research compound which activates this receptor, Prof. Barkai's group has successfully shown that learning is significantly enhanced in a validated animal model of learning. The compound is currently being modified and tested to develop a drug that will serve as a potent cognitive enhancer to tackle the onset of dementia and other cognitive deficits.

A pioneer approach developing a drug candidate to prevent the devastating deterioration of cognitive functioning associated with dementia.

Market potential

Carmel established [MemoBoost Ltd](#) to advance and commercialize this technology, with a seed investment from the [Carmel Innovations Fund](#).

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