

MEMTIN, A NOVEL PREVENTATIVE AND THERAPEUTIC FOR ALZHEIMER'S DISEASE

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Our research is focused on the identification and characterization of factors relevant to obesity and/or the metabolic syndrome that modulates brain aging or can manipulate the conversion of normal brain aging to that hampered with Alzheimer's disease (AD). To achieve that, we have used biochemical, molecular, cell biology and *in vivo* models to screen, identify and characterize our lead product under development, Memtin (a leptin product). Leptin is an adipocyte hormone, thought to control energy homeostasis and known to have pleiotropic activities. Data suggest that leptin can modulate memory and cognition through receptors in the hippocampus, where it is expressed at high density, following transport from the periphery via a natural saturable transporter in the blood-brain-barrier. We further have accumulated data in support of leptin's disease modifying potential utilizing cell-based and animal models. Further, epidemiological studies in humans involving thousands of subjects demonstrated an association of low leptin and a high risk for Alzheimer's disease and a positive correlation between leptin levels and hippocampal volume. Interventional studies are also in agreement. Thus, our approach involving repurposing an approved drug as a replacement therapy for MCI/prodromal AD characterized by hypoleptinemia represents a novel solution for a huge unmet medical need.

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