

Looking for the anti-Alzheimer's molecule: A new approach to treating a devastating disease

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Researchers at Dalhousie University have discovered a new technique using "computer-aided" drug design that may lead to an entirely new approach in the treatment of Alzheimer's disease (AD).

"Alzheimer's is a devastating disease for which no truly disease-modifying drugs are available. Our approach is completely novel. We explore how the human body attempts to protect itself from Alzheimer's, and then we exploit this to develop an entirely new approach to therapeutics," explained Dr. Weaver, a professor at Dalhousie University, clinical neurologist at Capital Health and IWK Health Centre, Canada Research Chair in Clinical Neuroscience, and the DMRF Irene MacDonald Sobey Chair in Curative Approaches to Alzheimer's Disease. "We are extremely excited about the results presented in this paper and believe that this may represent a new approach to the treatment of AD."

Weaver says that he and his fellow researchers have successfully identified [molecules](#) that are able to prevent the disease-producing aggregation of both [beta-amyloid](#) and tau – the two proteins whose misfolding is implicated in the causation of Alzheimer's.

"Using 'in silico' (i.e. computer-aided) drug design, we have discovered new lead molecules that may aid in the future development of disease-modifying drugs for Alzheimer's disease," said Dr. Autumn Meek whose

research into Alzheimer's has been funded by the Dalhousie Medical Research Foundation's "Gunn Family Graduate Studentship in Alzheimer's Disease". She works with co-authors Dr. Weaver and Mr. Gordon Simms in the Department of Chemistry at Dalhousie.

According to the Alzheimer's Society publication "Rising Tide: The Impact of Dementia on Canadian Society", Alzheimer's disease is an ever-growing concern in Canadian society, and as the [population trends](#) toward the aged it will place an increased strain on healthcare and families alike. It is believed that within a generation, the numbers of Canadians with Alzheimer's disease will more than double, and the cost of caring for individuals afflicted with dementia will increase from \$15 billion annually to \$153 billion annually.

More information: The paper "In silico search for an endogenous anti-Alzheimer's molecule – Screening amino acid metabolic pathways", published in the *Canadian Journal of Chemistry*.

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