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Modulation of Incretins as a Novel Treatment for Alzheimer's Disease

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Incretins are a class of drugs that are coming into widespread use for treatment of type 2 diabetes mellitus. Type 2 diabetes is a known risk factor for Alzheimer's disease, and there is some evidence that effective treatment of type 2 diabetes may reduce that risk. There is also evidence that incretins may have direct effects on the brain. For these reasons, incretins are of interest as potential treatments to reduce the risk of Alzheimer's disease or to slow disease progression.

Ling Li, D.V.M., Ph.D. and colleagues are studying the possible benefits of incretins in Alzheimer's disease. Using a strain of mice that had been genetically altered to express Alzheimer-like pathology, Dr. Li and colleagues found preliminary evidence that an incretin drug preserved memory function and reduced amyloid plaque formation, one of the characteristic features of Alzheimer pathology.

D. Li's team plans to perform detailed studies of the effects of incretin treatment on brain function and biochemistry in Alzheimer-like mice. They will also study the effects of another drug, sitagliptin, which interacts with the same biochemical pathways as incretins and is expected to have similar effects. The researchers also plan to study whether incretins or sitagliptin can counteract the detrimental effects on the brain of a diet that causes diabetes. The goal of these studies is to determine if incretin-based therapies are worth further study as possible treatments to reduce the risk of Alzheimer's disease.