



A Potential Cure for Alzheimer's and Other Cognitive Disorders

In the case of cognitive disorders, the brain becomes its own worst enemy.

Cognitive disorders are mental health conditions that affect learning, memory, perception and problem solving. These disorders include Alzheimer's, dementia, stroke, schizophrenia and a series of more rare diseases, including Angelman syndrome and Fragile X syndrome.

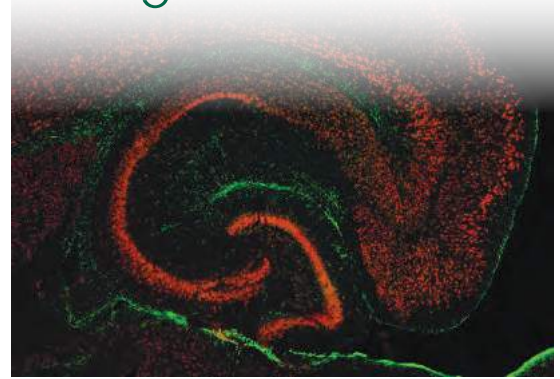
Scientists are still trying to pinpoint changes in the brain that lead to cognitive disorders and pinpoint which genes, cells, proteins and other important elements of proper body function could be a culprit. One protein in particular, called Reelin, could be a source of problems with memory and learning, but more importantly could offer a potential solution.

For 15 years, Dr. Edwin Weeber, University of South Florida (USF) Molecular Pharmacology and Physiology professor, has studied Reelin, a protein made in the brain. Through his research, he has seen a reduction in Reelin negatively impact learning and memory. In the past five years, he has worked to study the effects of increasing levels of the protein in the brain.

"When we inject Reelin into the brains of mice that are genetically unaltered, we can significantly enhance their learning and memory – to a point that was somewhat shocking to us," said Weeber. "Tests that we use for evaluating learning and memory in a mouse model usually take eight to 10 days to perform. [The treated mice] can learn before the first day is over."

To advance his research, Weeber collaborated with Agilis Biotherapeutics, a DNA therapeutics company, on a Corridor Matching Grants Research Program to explore the potential for Reelin as a gene-based therapy for patients with cognitive disorders. Gene-based therapies deliver good copies of a gene into appropriate cells in order to correct the patient's disease at the root cause.

"This is incredibly cutting-edge science," said Mark Pykett, Agilis president and CEO. "This is a frontier of medicine and biology that



has not really been explored to-date, and the idea that we are at the threshold of translating basic science into potentially innovative approaches to therapy is always very exciting. We are thrilled to be working with Dr. Weeber and his outstanding team, and with USF, an institution we have found entirely supportive of advancing innovation and very receptive to interacting with industry to bring new technologies to market."

Weeber shares in the excitement.

"As a scientist, I never thought I would have the opportunity to do this," he said. "I thought that my work would be more along the lines of scientific discovery, publishing papers and writing grants, but Agilis and The Corridor have given me the opportunity to do something that could actually go into the patient population." ■