

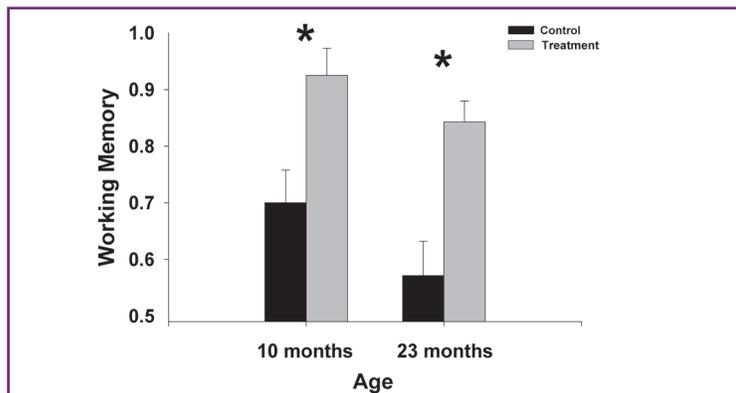


Product Description

Loss of memory, cognition, and motor function are effects of aging and neurodegenerative disease. These functional losses often severely impact quality of life. To address these effects, Cogniceutic Solutions, LLC has developed a therapeutic treatment, isolated from the Alaskan Bog Blueberry, which dramatically improves memory and reduces cognitive deficits of aging-associated dementia and neurodegeneration.

Advantages

- **Compound derived from blueberries.**
- **Improves and maintains working memory** (short term memory).
- Works on both the mild cognitive decline experienced with normal aging and more severe decline seen in neurodegenerative diseases such as dementia.
- Testing using lab animals that are NIH gold standard in aging and cognition studies showed that the product **dramatically improved memory** - from having no functional working memory (severe dementia) to the proficient memory of a juvenile in research subjects.
- This testing also showed that the product improved working memory in both middle aged and elderly lab animals.
- **Outperforms** alternative products
- This nutritional therapeutic is **more effective** than memory enhancers on the market.
- Provides the **first commercially available usage** as a therapeutic.



Working memory scores as a function of age (10 month vs. 23 month old F344 rats) and supplementation group (control solution vs. treatment). Working memory was assessed with a t-maze. A score of 1.0 indicates the rats remembered where they previously received food on every trial. A score of .50 indicates no memory for where the food was previously located. The results are statistically significant - they are true with a confidence level of 95%.



The wild Alaskan blueberry.
Photo credit Thomas Kircher



An F344 rat used in testing.
Photo credit Philip Hall/UAA

Technology

Alaska Natives have known for decades that consumption of the Alaska bog blueberry improved memory, but the compound responsible for this was not known, until UAA Professor McGill isolated it. This compound combined with other compounds for absorption was tested in aged rats, by Professor McGill and Professor Murphy, and yielded statistically significant results in memory improvement.

Neurodegenerative diseases and loss of cognitive functions such as memory, attention span, problem solving, and decision making are prevalent problems in today's society. Age is the one common risk factor among the myriad of neurodegenerative conditions, and as people age, their chances of developing these conditions increases. Additionally, while the cognitive difficulties that are associated with dementia are more severe in individuals with neurodegenerative conditions like Alzheimer's disease (ALZ), Parkinson's disease, Huntington's disease or Amyotrophic lateral sclerosis, otherwise healthy people often experience some degree of these symptoms as they age.

Cogniceutic Solutions' therapy has been tested in human neuroblasts and aged F344 rats, the NIH gold-standard in aging and cognition studies. These studies demonstrate the therapy significantly improves working memory in aged subjects, significantly reduces neuronal redox stress and neurodegeneration by increasing endogenous redox defenses, reduces pro-apoptotic (programmed cell death) signaling, and increases levels of cell energy. Cogniceutic Solutions is performing further tests to determine minimum effective dosages and effects on other organs.

Marketing & Applications

- Every individual experiences cognitive decline with aging. In the US there are over 68.2 million people over the age of 40, the age when cognitive function begins to decline. This population regularly experiences the more severe cognitive decline as a symptom of neurodegenerative diseases such as dementia. According to the World Health Organization, 35.6 million people worldwide have dementia, and 7.7 million new cases occur each year.
- With both normal aging-associated cognitive decline and neuro-degenerative diseases effecting a growing segment of the world population, the demand for memory supplements and nutritional therapies will continue to grow.
- In 2013, the memory health supplement market sold \$1.5 billion worldwide, and is expected to accelerate in the years to come.
- *This product will be sold on the global market to the general consumer, and through physician recommended usage.*

About Cogniceutic Solutions

Cogniceutic Solutions, LLC is a Seawolf Holdings Company and was formed in December 2014 by the Vice Provost of Research and Graduate Studies at UAA, Dr. Helena Wisniewski, with the faculty inventors Dr. Colin McGill, Assistant Professor of Chemistry, and Dr. Eric Murphy, Professor of Psychology.

Business Model: Licensing product for development, packaging, and marketing

The business infrastructure for the commercialization of faculty and student research resides in the Office of Research and Graduate Studies under the oversight of the Vice Provost. This infrastructure includes Seawolf Holdings and Seawolf Venture Fund, which provides seed money for start-ups and has a world class Board of Directors consisting of CEOs, venture firm partners and entrepreneurs. Seawolf Venture Fund provides early stage investment in start-ups and is managed by a seasoned team of investment professionals.

Management Team

To achieve its mission, Cogniceutic Solutions, LLC is assembling a team of experienced senior executives, leaders in technology industries and entrepreneurs.

Dr. Colin M. McGill is Assistant Professor in the Department of Chemistry at the University of Alaska Anchorage and a Co-founder and President of Cogniceutic Solutions. He holds a doctorate in Biochemistry and Molecular Biology, specializing in neuroscience, from the University of Alaska Fairbanks, and has postdoctoral training in inflammation and immune response. His research primarily addresses the discovery of biologically relevant natural products in native Alaskan ethnobotanicals and the elucidation of their functional mechanisms.

Dr. Eric S. Murphy is Professor in the Department of Psychology at the University of Alaska Anchorage, USA, and a Co-founder and Chief Technology Officer of Cogniceutic Solutions. He holds a doctorate in experimental psychology from Washington State University. His research has assessed the learning and memory abilities of nonhuman animals, including rats, pigeons, and hamsters. These projects include identifying the brain mechanism(s) responsible for reflexive habituation and determining the extent that habituation is involved in modulating the effectiveness of repeatedly presented food and drug reinforcers in an operant conditioning paradigm. He has published research in the journals *Brain Research*, *Neuroscience Letters*, and *Neurobiology of Learning & Memory*, and recently co-edited (with F. K. McSweeney) the book *Wiley-Blackwell Handbook of Operant and Classical Conditioning*. He is the past recipient of UAA's Faculty Exemplar Award.

Dr. Helena S. Wisniewski, FNAI, is the Vice Provost for University Research and Graduate Studies at the University of Alaska Anchorage. President of Seawolf Holdings, LLC - part of the commercialization infrastructure she created, and Founding Director of the Arctic Domain Awareness Center, a DHS Center of Excellence. Executive and leadership positions in industry, academia, and the federal government. A technological entrepreneur who has successfully launched and sold start-up companies, and raised their investment. Served as Vice President for University Research at Stevens Institute of Technology prior to UAA. Corporate experience includes CEO/ Chairman of Aurora Biometrics, a company that she founded, built the business, and sold; Vice President of the Titan Corporation; senior executive at the Lockheed Corporation. At DARPA created the first mathematics program, and prior to that served at the CIA. Served on public and private boards of directors including the Board of Greatbatch Inc., (GB:NYSE) that provides implantable medical devices and on its Audit and Technology Committees, and currently the Advisory Board of Landmark Ventures. In 2007, the Secretary of the Navy appointed her to the Naval Research Advisory Committee (NRAC). She earned a PhD in mathematics from the Graduate Center of CUNY. Received awards for outstanding leadership, entrepreneurship, and significant scientific contributions. Recently she was inducted as a Fellow of National Academy of Inventors, FNAI.

Investment Strategy: Initial investment of \$250,000 to complete pre clinical work, and \$1.2M to complete clinical trials and finalize product.

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