



Technology Overview



New Drugs for Enhancement of Memory Formation

OTT#1392

APPLICATION

Novel HDACis for testing in the formation of memory.

TARGET PROBLEM

Memory deficits are common to aging and neurodegenerative diseases like Alzheimer's disease. Because the U.S. population is rapidly aging, the incidence of memory dysfunction will increase exponentially.

KEY BENEFITS

- **Specific** – The lead compounds specifically target HDAC4 or HDAC6
- **Safer** – Lead compounds are less toxic than the parental natural products they were derived from
- **Cheaper** – Synthesis of the small molecules is easy and inexpensive
- **Druggable** – The lead compounds are more soluble than related FDA approved HDACis

TECHNOLOGY

Small molecule HDAC inhibitors (HDACis) have previously been approved for the treatment of certain cancers, but their effectiveness is limited by unwanted toxicity and/or poor solubility – key aspects to making a drug work in humans. A small library of potent HDACi molecules that show good solubility and low toxicity animal models. Initial studies show that the compounds are crossing the blood brain barrier and are present in the brain.

It has been found that HDACis enhance learning and memory in mouse models of Alzheimer's disease. A promising avenue for treatment of memory impairment is the use of histone deacetylase inhibitor drugs (HDACis). Histone deacetylase enzymes are intimately involved in the organization of DNA structure and in reducing the activity of many genes. HDACis would thus lead to the increased activity of numerous genes.

INTELLECTUAL PROPERTY

A US Patent was filed in October 2015, [US20180258135](#).

This technology is part of an active and ongoing research program and is seeking partners for development of the final product. It is available for developmental research support/licensing under either exclusive or non-exclusive terms.

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