Intranasal Delivery of Peptide Drugs to the Brain

https://www.neurodegenerationresearch.eu/survey/intranasal-delivery-of-peptide-drugs-to-the-brain/

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Country

USA

Title of project or programme

Intranasal Delivery of Peptide Drugs to the Brain

Source of funding information

NIH (NIA)

Total sum awarded (Euro)

€ 1,373,301.83

Start date of award

01/08/2012

Total duration of award in years

3

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords

Acquired Cognitive Impairment... Aging... Alzheimer's Disease... Alzheimer's Disease including Alzheimer's Disease Related Dementias (AD/ADRD)... Biotechnology... Brain Disorders... Dementia... Neurodegenerative... Neurosciences... Translational Research

Research Abstract

DESCRIPTION (provided by applicant): Alzheimer’s disease (AD) is a progressive and fatal

neurological disorder that affects approximately one-tenth of the population over the age of 65. There is currently no cure for the disease. The pathological hallmarks of the disease include the formation and accumulation in the brain of ß-amyloid (Aß), widely recognized to be the major neurotoxic agent in AD. Earlier therapeutic attempts at lowering total Aß production were unsatisfactory as they directly targeted the catalytic activities of ß- or ?-secretase, enzymes known to hydrolyze other substrates as well as APP, many with critical cellular functions. New therapeutic approaches that can inhibit total Aß production without targeting the activities of th ß- or the ?-secretase are therefore of great interest. We have a novel technology that does not target the secretases, which has yielded a potential peptide drug candidate, P8, with the ability to inhibit the production of Aß in vitro and in a Tg mouse model of AD, which is stable and which can be delivered to the brain. We are now developing P8 as a new peptide drug for the treatment of AD. Importantly, Cenna’s peptide-induced reductions of total Aß and Aß40 and 42, do not modify or inhibit either ß- or ?-secretase activities. Studies carried out in the Phase SBIR project showed that P8 can be delivered to the brain both, by intranasal and intravenous administration. In this Phase 2 application we propose to carry out studies for the pre-clinical development of P8. Studies will include the characterization of P8, the development of a pre-formulation to support intranasal delivery of P8 in pre-clinical studies, the pharmacokinetic ADME evaluation of P8 and the development of pre-clinical pharmacology/efficacy of P8.

Lay Summary
PUBLIC HEALTH RELEVANCE: Alzheimer’s disease (AD) is a devastating degenerative neurological disorder that affects one-tenth of the population over the age of 65. There is no cure for the disease. Our overall goal is to further develop a small peptide, P8, that is active in vitro and in vivo in reducing the toxic species, Aß, into a new disease-modifying drug for the treatment of Alzheimer’s Disease. In this application we will carry out the pre-clinical development of P8 as a potential disease-modifying drug for AD.

Further information available at:

Types:
Investments > €500k

Member States:
United States of America

Diseases:
Alzheimer's disease & other dementias

Years:
2016

Database Categories:
N/A

Database Tags:
N/A