

Oligopeptidase inhibitors in brain function and dysfunction: towards new therapeutic strategies for neuroprotection (NEUROPRO)

<https://www.neurodegenerationresearch.eu/survey/oligopeptidase-inhibitors-in-brain-function-and-dysfunction-towards-new-therapeutic-strategies-for-neuroprotection-neuropro/>

Title of project or programme

Oligopeptidase inhibitors in brain function and dysfunction: towards new therapeutic strategies for neuroprotection (NEUROPRO)

Principal Investigators of project/programme grant

Title	Forname	Surname	Institution	Country
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Source of funding information

European Commission

Total sum awarded (Euro)

4788220

Start date of award

01-10-2008

Total duration of award in months

48

The project/programme is most relevant to

- Alzheimer's disease and other dementias
- Neurodegenerative disease in general

Keywords

inhibitor,neuroprotection,PREP,prolyl-oligopeptidase,memory cognition,neuropeptides inhibitor,PREP prolyl-oligopeptidase neuropeptides

Research abstract in English

At present more than 5 million people in the EU suffer from dementia and other neurodegenerative diseases and that number will grow as the average age of the population continues to increase. The efficacy of current medicines is limited and new therapeutic targets are sorely needed. Several independent lines of evidence have established an important role of prolyl oligopeptidase (PREP) in brain function and dysfunction. Aberrant PREP activity is involved in the progression of neurodegenerative disorders and PREP inhibitors are being developed for the treatment of memory and cognition deficits. Now a consortium of expert scientists from 8 academic institutes and 3 SME's come together for 4 years in this NEUROPRO project to boost European research aimed at 1) unravelling the biological role of PREP and PREP-like proteins in neuropathology, 2) determining the mode of action of PREP inhibitors and 3) firmly establishing their therapeutic potential. Specialists from different disciplines cell and molecular biology, enzymology, chemistry, crystallography, biology and pharmacology will work in a concerted and focussed way to achieve the goals using 6 work packages concentrating on PREP-regulated pathways in health and disease, PREP substrates, inhibitor target identification, drug development and validation, and generation of specific cell lines and animal models of neurodegenerative diseases. The SME s involved are leaders in PREP inhibitor development and peptide analysis, and have in the past already brought novel therapeutics on the market. By the end of the project we expect to have proof of concept that PREP inhibition is a valid therapeutic target which will ultimately lead to new methods for the early detection, prevention or restoration of PREP-related neurodegeneration. The project also comprises instruments to translate basic research into clinical applications and will thus broaden the scope of treatments available to Europe's ageing population.

Lay summary