Neurobiological Mechanisms of Memory Loss in Alzheimer's Disease

From 2008-02-01 to 2013-07-31, closed project | MEMOLOAD Website

Objective

The MEMOLOAD project will focus on the molecular and biological mechanisms underlying memory loss that occurs in Alzheimer’s disease, the leading cause of dementia and an enormous medical, social and economic challenge to Europe. Several lines of evidence point to accumulation of beta-amyloid peptide (Aβ) in the brain as the key pathologic event in the disease. There is growing evidence that Aβ causes memory loss by directly or indirectly interacting with the known key signalling pathways involved in memory consolidation. However, at present the data is fragmentary and consists mainly of single observations in particular models (cell culture, brain slice, in vivo). In most cases, we still lack the evidence that a clear molecular level interaction translates into memory impairment in vivo. The objective of this proposal is to elucidate the molecular level mechanisms by which accumulation of Aβ in the brain results in impaired synaptic plasticity and memory loss. The MEMOLOAD consortium consists of a well-balanced mixture of the seven best available European research groups in terms of research experience on both the mechanisms of memory consolidation and the pathophysiology of Alzheimer’s disease. The current research topic is thus the primary research interest of all partners. MEMOLOAD will significantly contribute to a better understanding of brain memory mechanisms at the behavioural, network, synaptic and molecular levels and of dysfunction at all these levels in Alzheimer’s disease (AD). The knowledge acquired during the course of MEMOLOAD will translate into new validated in vitro and in vivo models for the memory impairing effect of Aβ and will feed into industrial development leading to new therapies. The output of MEMOLOAD will include both identification of new drug targets and development of novel peptidomimetic compounds that neutralize the deleterious effects of most harmful Aβ species.

Related information

| Result In Brief | Studying the underlying causes of memory loss |
| Report Summaries | Final Report Summary - MEMOLOAD (Neurobiological Mechanisms of Memory Loss in Alzheimer's Disease) |
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**Subjects**

Life Sciences - Medicine and Health

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