

Protection against Abeta toxicity by lithium: investigation of the role of non-canonical, wnt-mediated changes in neurogenesis’.

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Funder

Alzheimer's Society

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Country

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Title of project/programme

Protection against Abeta toxicity by lithium: investigation of the role of non-canonical, wnt-mediated changes in neurogenesis’.

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3.0

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords

Research Abstract

Alzheimer’s disease is a disease of ageing, suggesting that the ageing nervous system is more

susceptible to protein toxicity, possibly in part because of decreased adult neurogenesis (production of new neurons). Alterations in neurogenesis occur before the plaques and tangles are present in AD; therefore, understanding the mechanisms involved could be key for early, preventative therapeutic intervention.

As well as lithium, neurogenesis is affected by the wnt pathway, an important signaling pathway; the non-canonical wnt pathway modulates A β neurotoxicity (unpublished work). The question addressed in this project is whether lithium ameliorates A β toxicity through changes in neurogenesis mediated by the non-canonical wnt signaling:

- 1) We shall assess effects of lithium on gliogenesis in a fruit fly *Drosophila* model of AD. Also, we shall express A β peptide in human hippocampal cell lines and test for effects of lithium on cell toxicity, neurogenesis and gliogenesis.
- 2) We shall determine whether components of the non-canonical wnt pathway affect A β toxicity, by assessing survival, behaviour and gliogenesis in the *Drosophila* AD model; and cell toxicity, gliogenesis and neurogenesis in the cell lines.
- 3) We shall determine if the effects of lithium and the non-canonical wnt pathway are synergistic, additive or antagonistic through epistatic interactions.

Types:

Fellowships

Member States:

United Kingdom

Diseases:

Alzheimer's disease & other dementias

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