

PSK kinases and tau pathology in Alzheimer's disease

<https://neurodegenerationresearch.eu/survey/psk-kinases-and-tau-pathology-in-alzheimers-disease/>

Principal Investigators

Jonathan Morris

Institution

King's College London

Contact information of lead PI

Country

United Kingdom

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PSK kinases and tau pathology in Alzheimer's disease

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3.3

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Research Abstract

In nerve cells, tau protein stabilises microtubules, scaffold-like structures which maintain cell shape and function. In Alzheimer's disease, tau is abnormal because it is chemically modified by the addition of phosphate. Phosphorylated tau cannot stabilise microtubules and instead it becomes tangled and forms clumps in the brain. Tau tangles cause microtubules to be lost from nerve cells, severing their connections to other nerve cells which then die, leading to the onset of dementia.

We have identified a family of enzyme catalysts called PSKs, which can add chemical phosphate to tau and which are associated with tangles in Alzheimer's brains. Unregulated PSK

activity could therefore contribute to tangle development, microtubule breakdown and nerve cell death, which would bring on the clinical symptoms of dementia.

Our objective is to find out what causes PSKs to add abnormal amounts of phosphate to tau and causes nerve cell death. We have made a new drug that inhibits PSK activity and we will try this out to see if it can reduce or prevent PSK phosphorylation of tau and nerve cell death. Our intention is to aid the development of drugs targeting tau and to ultimately slow or stop the progress of dementia.

Further information available at:

Types:

Investments < €500k

Member States:

United Kingdom

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N/A

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