Identifying functional molecular pathways that underlie the earliest changes associated with Alzheimer's Disease

https://neurodegenerationresearch.eu/survey/identifying-functional-molecular-pathways-that-underlie-the-earliest-changes-associated-with-alzheimer%c2%92s-disease/

Name of Fellow

Dervis Salih

Institution
Funder

Alzheimer's Research UK

Contact information of fellow
Country

United Kingdom

Title of project/programme

Identifying functional molecular pathways that underlie the earliest changes associated with Alzheimer's Disease

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Alzheimer's Research UK

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€ 330,000

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3.0

The project/programme is most relevant to:

Alzheimer's disease & other dementias

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Genetics | Disease Pathway Identification

Research Abstract

The already enormous economic and personal burden of Alzheimer's disease will continue multiplying until we find interventions for the earliest stages of the disease. Current treatments come too late to tackle the irreversible changes that have already occurred when memory loss is first detected.

I recently returned from Stanford University to set up a research programme using the cutting-edge techniques that I learnt there. I aim to identify the earliest molecular changes in brain cells that lead to this devastating condition. UCL provides an environment, unparalleled in Europe, for approaching this problem. UCL scientists are finding that communication between brain cells starts to fail long before we can detect the memory loss to which they eventually lead. The techniques that I bring to this major collaborative effort are essential to take the next step. By combining mouse genetics, genome-wide approaches, software-based predictions, molecular biology, electrical recordings and behavioural studies, and using the latest molecular and viral technologies, we can control the activity of specific genes, aiming to identify and correct the aberrations in intracellular pathways causing the identified early changes. These insights will be critical for finally identifying novel tools that delay or even prevent the progression of Alzheimer's disease.

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