

# The role of neuronal intracellular traffic in Alzheimer's disease

<https://neurodegenerationresearch.eu/survey/the-role-of-neuronal-intracellular-traffic-in-alzheimers-disease/>

**Name of Fellow**

**Institution**

**Funder**

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**Contact information of fellow**

**Country**

EC

**Title of project/programme**

The role of neuronal intracellular traffic in Alzheimer's disease

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Alzheimer's disease & other dementias

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L302 Cell biology and molecular transport mechanisms | L502 Molecular and cellular neuroscience | | L404 Ageing |

**Research Abstract**

In neurons of Alzheimer's disease (AD) there is an aberrant accumulation of beta-amyloid (A $\beta$ ) at synapses that renders difficult the formation of new memories for AD patients. Intracellular trafficking abnormalities have been implicated in A $\beta$  accumulation. This research project aims to

define how neuronal intracellular trafficking is mechanistically involved in A $\beta$  accumulation that leads to AD. We will determine how the intracellular itinerary of the amyloid precursor protein in neurons influences the generation of A $\beta$ . We will determine the intracellular trafficking of lysosomal hydrolases in neurons and their contribution to the lysosomal clearance of A $\beta$ . Furthermore, we will investigate the mechanism whereby regulators of intracellular trafficking identified as risk-factors for AD contribute to A $\beta$  accumulation. Finally, because aging is the most important risk factor for AD, we will determine if alterations in intracellular trafficking occur in aging, identifying a new mechanism of vulnerability to neurodegeneration in AD. Thus, we will demonstrate how intracellular trafficking is implicated in AD and unravel an important disease mechanism.

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