Molecular studies of synaptic vescicle recycling in health and disease (SYNAPSEFUNCTION)

https://neurodegenerationresearch.eu/survey/molecular-studies-of-synaptic-vescicle-recycling-in-health-and-disease-synapsefunction/

Title of project or programme

Molecular studies of synaptic vescicle recycling in health and disease (SYNAPSEFUNCTION)

Principal Investigators of project/programme grant

Title	Forname	Surname	Institution	Country
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Country

Belgium

Source of funding information

European Research Council

Total sum awarded (Euro)

1500000

Start date of award

01-01-2011

Total duration of award in months

60

The project/programme is most relevant to

- Parkinson’s disease

Keywords

Research abstract in English

Synaptic transmission is of paramount importance for neuronal circuit integrity; if synapses fail, circuits fail. Transmission of electrical pulses in our brain is critical for normal but also higher brain functions such as learning, memory formation and thought, and understanding the regulatory processes of synaptic transmission may provide insight into neurological and psychiatric disorders, such as Parkinson’s disease, bipolar disorder and drug addiction that arise from defects in specific neuronal circuits in the brain. Here, we propose to study novel regulatory mechanisms that operate at the synapse and have the capacity to be major regulators of synaptic plasticity. Our work will include studies of novel synaptic organelles and alternative pathways of synaptic vesicle endocytosis (e.g. clathrin-dependent or kiss-and-run), with a clear link to human disease (e.g. Parkinson’s Disease). We will use innovative genetic screen approaches in flies and bacteria and study processes that regulate synaptic vesicle trafficking employing imaging, electrophysiology and electron microscopy with the ultimate hope of elucidating mechanisms of normal but also diseased brain function.

Lay summary