How dendritic mRNA and protein distributions shape synaptic plasticity

Fact Sheet

Project Information

MolDynForSyn

Grant agreement ID: 945700

DOI
10.3030/945700

EC signature date
29 October 2020

Start date
1 October 2021

End date
30 September 2026

Funded under
EXCELLENT SCIENCE - European Research Council (ERC)

Total cost
€ 1 469 625,00

EU contribution
€ 1 469 625,00

Coordinated by
UNIVERSITATSKLINIKUM BONN
Germany

Project description

Solving the puzzle of synaptic protein numbers regulation

Neurons regulate dendritic protein numbers and redistribute proteins in response to synaptic changes. However, the way the available pool of proteins is redistributed via diffusion or active trafficking and how synaptic protein numbers are modified by increased translation of local mRNAs is a mystery. The EU-funded MolDynForSyn project aims to develop a data-driven theory describing the dendritic mRNA and protein distributions and use it to study the synaptic plasticity dynamics in dendrites and their impact on memory storage. The unique combination of theoretical and experimental data will result in a better understanding of long-term memory mechanisms and many neurological diseases associated with neuronal trafficking pathologies or protein synthesis dysfunction.

Fields of science (EuroSciVoc)

natural sciences > biological sciences > biochemistry > biomolecules > **proteins**

medical and health sciences > basic medicine > **pathology**

Keywords

neural circuits | protein dynamics | synaptic dynamics | neural network models | computational neuroscience

Programme(s)

H2020-EU.1.1. - EXCELLENT SCIENCE - European Research Council (ERC) MAIN PROGRAMME

Topic(s)

ERC-2020-STG - ERC STARTING GRANTS

Call for proposal

ERC-2020-STG

See other projects for this call

Funding Scheme

ERC-STG - Starting Grant

Host institution

UNIVERSITATSKLINIKUM BONN

Net EU contribution

€ 1 207 285,16

Total cost

€ 1 207 285,16

Address

VENUSBERG-CAMPUS 1
53127 Bonn
Germany

Region

Nordrhein-Westfalen > Köln > Bonn, Kreisfreie Stadt

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Beneficiaries (1)

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