



How dendritic mRNA and protein distributions shape synaptic plasticity

Fact Sheet

Project Information

MolDynForSyn

Grant agreement ID: 945700

DOI

[10.3030/945700](https://doi.org/10.3030/945700)

EC signature date

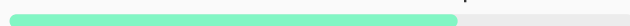
29 October 2020

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

UNIVERSITÄTSKLINIKUM 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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Last update: 25 February 2025

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European Union, 2025

