Prolyl isomerases in neural development and aging

https://neurodegenerationresearch.eu/survey/prolyl-isomerases-in-neural-development-and-aging/

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Country

Czech Republic

Title of project or programme

Prolyl isomerases in neural development and aging

Source of funding information

Czech Science Foundation

Total sum awarded (Euro)

€ 212,704

Start date of award

01/01/2016

Total duration of award in years

3

Keywords
Research Abstract
Prolyl isomerases are important regulators of many cellular processes as they allow rapid change of protein activity, stability, or intracellular localization. Their defects have been linked to increasing number of human diseases like cancer, Alzheimer’s disease (AD), Parkinson’s disease or Amyotrophic lateral sclerosis. Prolyl isomerases Pin1 and FKBP12 have been shown to regulate several important AD-related proteins like APP or tau. Our data indicate that another AD associated protein, CRMP2, is their other common substrate. Since the levels of Pin1 and FKBP12 are reduced in AD, the resulting conformational stress is considered to significantly contribute to protein misfolding and aggregation characteristic for AD, which would particularly affect their common substrates. The result of combinatorial Pin1/FKBP12 downregulation has,

though, so far not been analyzed. By using in vitro and in vivo techniques, this project will characterize the combined downregulation of Pin1 and FKBP12 and its effect on neural development, aging, and their common substrates tau and CRMP2.

Further information available at:

Types:
Investments < €500k

Member States:
Czech Republic

Diseases:
N/A

Years:
2016

Database Categories:
N/A

Database Tags:
N/A