

Project 1.6 Influence on inhibition of ribosome biogenesis on oligodendrocyte differentiation and myelination process

Supervisor: prof. dr hab. Anna Filipek

Laboratory: Laboratory of Calcium Binding Proteins

www: <http://en.nencki.gov.pl/laboratory-of-calcium-binding-proteins>

Background:

Preliminary, unpublished results indicate that the adapter protein CacyBP/SIP interacts with the ribosomal protein RPL6. Therefore, the aim of the project is to characterize this interaction, to identify other RPL proteins interacting with CacyBP/SIP and to determine the effect of CacyBP/SIP interaction with RPL proteins on nucleolar stress and differentiation of MO3.13 cells (oligodendrocyte differentiation model) and rat oligodendrocytes in primary culture. The following methods will be used in the research: cell culture and transfection, preparation of protein lysates, purification of RNA, multiplication and purification of plasmids, immunoprecipitation, purification of recombinant proteins, ELISA, chemical cross-linking, affinity chromatography, SDS-PAGE, Western blot, analysis of results from mass spectrometry and RNA-seq.

Aim:

The aim of the project is to: characterize the interaction of CacyBP/SIP with ribosomal protein RPL6, identify other RPL proteins interacting with CacyBP/SIP and, determine the effect of CacyBP/SIP-RPL interactions on nucleolar stress and differentiation of MO3.13 cells (oligodendrocyte differentiation model) and rat oligodendrocytes in primary culture

Requirements:

- knowledge of techniques covering: biochemistry, molecular biology and cell biology,
- basic knowledge concerning work with animals,
- reliability, availability, ability to work in a group,
- very good knowledge of English