

Title: Mechanistic studies of the U12-dependent pre-mRNA splicing (NCN/SONATA BIS)

Supervisor: Wojciech Galej, PhD

Institute: International Institute of Molecular and Cell Biology in Warsaw

Laboratory: Laboratory of RNA Splicing

www: <https://www.iimcb.gov.pl/en/>

Project description:

The project focuses on the molecular mechanisms involved in the U12-dependent pre-mRNA splicing pathway in human cells. In this context, the successful candidate will perform genetic engineering of human cell lines, followed by purification and biochemical characterization of large RNA-protein complexes involved in pre-mRNA splicing. These splicing complexes will be subjected to quantitative proteomics analysis as well as structural characterization by single-particle cryo-EM. This project combines cell biology, protein biochemistry, AI-base modelling and integrative structural biology approach in addressing fundamental questions in pre-mRNA splicing mechanism.

Aim:

To understand the molecular mechanism of the U12-dependent pre-mRNA splicing through integrative structural biology approach.

Requirements:

- Master's degree in biology, biotechnology, biochemistry or related field
- Good knowledge of basics of molecular and cell biology
- Basic hands-on experience in at least one of the fields: molecular biology, protein biochemistry, cell culture, structural biology methods
- Written and spoken fluency in English
- Willingness to learn and take new challenges, ability to work independently, analytical thinking
- Good interpersonal skills and a collaborative attitude

Number of positions available: 1

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