 

**PhD student position**

in the PRELUDIUM BIS 2022/47/O/NZ1/00390 entitled: "The role of RH11/RH37/RH52 DEAD-box helicases in microRNA biogenesis".

Prof. dr hab. Artur Jarmołowski is looking for an associate for the position of a PhD student. The selected candidate will have the opportunity to take part in an interesting project aimed at understanding the role of DEAD-box helicases in microRNA biogenesis. The research will be conducted in a successful team in a very nice scientific atmosphere at the Faculty of Biology of the Adam Mickiewicz University in Poznań.

**About the project:** MicroRNAs (miRNAs) are a class of small non-coding RNAs that regulate gene expression in eukaryotes. MiRNAs are key regulators of plant development, as well as a very important element of plant response to biotic and abiotic stresses. In plants, complete blockage of miRNA biogenesis is lethal. A significant disruption of miRNA biogenesis leads to strong pleiotropic defects. Primary miRNA precursors (pri-miRNAs) contain a hairpin loop structure in which the miRNA sequence is embedded. In the first step of the biogenesis of these molecules, hairpin structures are excised from the pri-miRNAs, creating shorter precursors called pre-miRNAs. In the second step, 21 nucleotide double-stranded RNA containing miRNA and miRNA\* sequences are excised from the pre-miRNA. Then, these duplexes are unwound and short miRNA molecules are incorporated into the silencing complex (RISC), where they perform their functions as negative regulators of gene expression by binding to the target mRNA, which leads to its degradation. In this project, we will investigate the role of three proteins: DEAD-box helicases from the DDX3/DED1 subfamily in the remodeling of the hairpin loop structure and its impact on the efficiency of miRNA formation. For this purpose, advanced techniques of molecular biology, cell biology and biotechnology will be used, such as construction of transgenic lines, genome editing using the CRISP-CAS9 method, next-generation sequencing, co-immunoprecipitation of proteins combined with their identification using mass spectrometry, confocal microscopy (protein-protein interactions using the FRET-FLIM method).

**Requirements:**

Essential: master's degree: biology, biotechnology, bioinformatics, and similar, good understanding of molecular biology techniques, scientific curiosity, high motivation, enthusiasm and independence, fluency in English, ability to work in a team

Desirable: practical experience in molecular biology

Additional skills an advantage - experience in working with plants, basics of programming in the R language

**We offer:**

Scholarship for 48 months (PLN 5,000/gross per month (until the month in which the mid-term evaluation of the doctoral student will be carried out at the doctoral school), PLN 6,000/gross per month (after the month in which the mid-term evaluation of the doctoral student will be carried out at the doctoral school)

**How to apply?**

Please send your applications or informal inquiries to Mateusz Bajczyk (mateusz.bajczyk@amu.edu.pl) until **30th August 2023**. Selected applicants will be invited for an interview. The successful candidate will participate in the recruitment to AMU Doctoral School (https://amu.edu.pl/kandydaci/doktoranckie). The application should be prepared as a single PDF file in English and contain a one-page cover letter describing the candidate's motivation, CV Curriculum Vitae including contact detail of two academic referees.

*Please add a signed consent clause to your application: In accordance with Article 6(1)(a) of the General Regulation on the Protection of Personal Data of 27 April 2016 (OJ L 119/1, 4.5.2016) I give my consent to the processing of personal data other than: first name(s) and surname; parents’ names; date of birth; place of birth; residence address (correspondence address); education; previous employment history, included in my job offer for the purpose of current recruitment.*