

RECRUITMENT FOR A STUDENT (SCHOLARSHIP) POSITION no. 1/2025/S

INSTITUTION: Institute of Bioorganic Chemistry, PAS
CITY: Poznań
POSITION: student/trainee (scholarship)
POSITIONS AVAILABLE: 1
SCIENTIFIC DISCIPLINE: biological sciences and related
PUBLICATION DATE: 08.01.2025 r.
APPLICATION DEADLINE: 23.01.2025 r.
IBCH PAS WEBSITE: <https://portal.ibch.poznan.pl>

KEYWORDS: DNA methylation, structural variation, oxidosqualene cyclases, plant adaptation, metabolites, *Arabidopsis thaliana*, population genomics

Research topic: Studies of genes encoding oxidosqualene cyclases in *Arabidopsis thaliana*, based on the assessment of natural genetic variability and functional studies

Principal Investigator: Assoc. Prof. Agnieszka Żmienko

Description of the project:

Specialized metabolites constitute an exceptionally diverse group of molecules with a wide range of biological activities. They play a crucial role in the communication between plants and their environment and may also be involved in the developmental processes. Based on the analyses of the *Arabidopsis* reference genome, 13 different genes encoding oxidosqualene cyclase family proteins were previously identified in this plant and showed to be involved, among other functions, in the biosynthesis of specialized secondary metabolites, namely triterpenoids. In our research, we detected the presence of an additional gene from this family in one-third of over 1,000 analyzed accessions. It originated from the duplication of the *BARS1* gene, therefore we named it *BARS2*. We know that *BARS1* encodes a low-specificity enzyme involved in the biosynthesis of baruol - a tetracyclic triterpenoid with an as-yet-undetermined biological role. Through the association studies, we demonstrated that the presence of this gene duplication is associated with the altered expression of neighboring genes, changes in the root growth rates, and the differences in the geographic distribution of plants carrying one or both gene copies. The aim of this project is to understand the biological roles of both genes and to verify the hypothesis that these differences may be adaptive.

Additional information:

Zenczak M, Sobieszczanska P, Brzezinski K, Iefimenko T, Figlerowicz M, Zmienko A. Analysis of *Arabidopsis* non-reference accessions reveals high diversity of metabolic gene clusters and discovers new candidate cluster members. *Front Plant Sci.* 2023 Jan 26;14:1104303. doi: 10.3389/fpls.2023.1104303.

The research will be conducted as part of the OPUS 27 project no. 2024/53/B/NZ2/02784, entitled *Evaluation of the role of genes BARS1 and BARS2, which encodes novel oxidosqualene synthase, in the natural diversity of Arabidopsis growth and adaptation to environmental conditions*, financed by the National Science Center.

The obtained results may be included in the scholarship recipient's master's thesis, which would then be completed under the supervision of the project leader. There is also an opportunity for the scholarship

recipient to participate in a national scientific conference to present the results.

Requirements for the candidates:

1. Status as a student of first- or second-cycle studies or uniform master's studies in the field of biological sciences (preferably bioinformatics).
2. Good knowledge of fundamental topics in the molecular biology, genetics, genomics, and epigenomics.
3. Basic skills in conducting bioinformatics analyses and database searches, including writing simple scripts in Python or another programming language.
4. Proficiency in English sufficient to read professional literature in the field of biological sciences.
5. High motivation to engage oneself in the research work and pursue self-development.
6. Availability for a minimum of 6 hours per week, in blocks of at least 2 hours.
7. Previous experience from working in a research team on related topics will be considered an additional advantage.

Duties in the project:

1. Comparative analyses of selected genomic sequence regions of Arabidopsis accessions in relation to other "omics" data.
2. Data interpretation.
3. Review of the relevant literature.
4. Preparation of reports forming the basis for publications.

Required documents:

1. Application to the Director of the Institute of Bioorganic Chemistry, Polish Academy of Sciences (ICHB PAN) for acceptance to the position of scholarship holder, along with consent for the processing of personal data for recruitment purposes.
2. CV and cover letter.
3. Contact information for references (optional).
4. Information on completed subject-specific courses during studies and the grades obtained.
5. Details of scientific, teaching, and organizational achievements, including participation in scientific conferences, co-authorship of publications, involvement in scientific workshops and student research groups, awards and distinctions, and other activities deemed relevant by the candidate.
6. Certificates or other documents confirming the level of English proficiency, if available.

Applications should be submitted via the eRecruiter portal at:

<https://system.erecruiter.pl/FormTemplates/RecruitmentForm.aspx?WebID=8f2e8d4cd2aa4b9bb612edaaaf0942e9>

Submission deadline is: 23.01.2025 r.

Selected candidates may be additionally invited for an interview.
The recruitment procedure shall be concluded no later than 28.01.2025 r.

The position is available up to 6 months. Preferred starting date is: 01.02.2025 r. The stipend is PLN 1000 per month.

For additional information please contact the Principal Investigator
Assoc. Prof. Agnieszka Żmieńko
Department of Plant Genomics
e-mail: akisiel@ibch.poznan.pl

Information clause:

Pursuant to the stipulations of the regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), further referred to as GDPR, we hereby inform that:

- *The Institute of Bioorganic Chemistry, Polish Academy of Sciences, seated in Noskowskiego St. 12/14, 61-704 Poznań; REGON 000849327, NIP 777-00-02-062 is the administrator of the collected personal data (further referred to as the Institute).*
- *The Administrator appointed a Data Protection Officer, who can be contacted in writing, via traditional mail, by sending a letter to the following address: Z. Noskowskiego St. 12/14, 61-704 Poznań, or by sending an e-mail to: dpo@ibch.poznan.pl.*
- *The personal data of the candidates is processed for the purposes of fulfilling the tasks of the administrator, associated with conducting the recruitment procedure for a vacant position.*
- *The legal basis for processing personal data is the Act of 26 June 1974 – The Labor Code, Act of 30 April 2010 on the Polish Academy of Sciences or the consent of the person whose data shall be subjected to processing.*
- *Your personal data shall be subjected to processing for period of 3 months upon the date of decision of the recruitment committee. Following this period, the data will be irretrievably and effectively destroyed.*
- *The personal data of the candidates shall not be transferred to any third country.*
- *The person whose data shall be subjected to processing has the right to:*
 - *request access to his/her personal data, and to amend it or delete it, pursuant to articles 15-17 of GDPR;*
 - *limit data processing, in the events stipulated in article 18 of GDPR;*
 - *data transferring, pursuant to article 20 of GDPR;*
 - *withdraw consent at any moment, without influencing compliance with the law of the processing that was executed prior to consent withdrawal;*
 - *file a complaint to the Inspector General for Personal Data Protection.*

Providing personal data in the scope stipulated in article 22 (1) of the Act of 26 June 1974 – The Labor Code is mandatory, whereas providing data in a broader scope is voluntary and requires consent for its processing.

Protection for whistleblowers

In the case of reporting violations using a dedicated system for whistleblowers, the reporting person's data will be processed in accordance with applicable provisions on the protection of personal data, including the above-mentioned Regulation (EU 2016/679 of 27 April 2016). We ensure confidentiality and protection of the identity of reporting persons, and that their data will not be disclosed without their consent, unless the law provides otherwise.

Detailed rules regarding the protection of personal data and procedures for reporting violations of the law can be found in our Regulations on internal reporting at the Institute of Bioorganic Chemistry, Polish Academy of Sciences, available at the link: <https://portal.ichb.pl/wp-content/uploads/2024/10/INTERNALREPORTINGREGULATIONS.pdf>