

**Recruitment for the Poznań Doctoral School of the Institutes of the Polish Academy of Sciences
at the Institute of Bioorganic Chemistry, PAS in Poznan
Procedure no. 17/2020/ICHB/PSD**

INSTITUTION: Institute of Bioorganic Chemistry, PAS
CITY: Poznan
POSITION: PhD student
POSITIONS AVAILABLE: 1
SCIENTIFIC DISCIPLINE: biological sciences
PUBLICATION DATE: 11.08.2020
APPLICATION DEADLINE: 08.09.2020
IBCH PAS WEBSITE: <http://www.ibch.poznan.pl>
PDS IPAS WEBSITE: <http://www.psd-ipan.ibch.poznan.pl/>

KEY WORDS: Specialized metabolites, plant immunity, metabolic engineering, oilseed rape, *Arabidopsis thaliana*

Principal Investigator: Prof. Paweł Bednarek

I. Project description

Plant specialized metabolites constitute an unusually large group of structurally diversified compounds that contribute to the interactions of plants with the environment, including plant immunity. Of note, the phylogenetic occurrence of particular plant secondary products is frequently restricted to particular lineages, such as a family or genus. It has been shown that particular specialized metabolites restrict pathogen growth at clearly defined infection stages. Some of them control entry (penetration) of pathogens into plant tissue while some others can restrict spread of the pathogen from initially colonized cells. However, it is not clear to which extent this is defined by temporal and spatial expression patterns of genes encoding respective biosynthetic enzymes, and to which extent by unique properties of particular metabolites.

In this project we would like to investigate to which extent spatial and temporal production patterns, and host genetic background determines function of particular specialized metabolites that are derived from the aromatic amino acid tryptophan. The investigated compounds will include indole-type phytoalexins produced by plants representing cabbage family (Brassicaceae). To check functions of these compounds we will use defined mutants of the model plant *Arabidopsis* that are depleted from their native defensive metabolites and consequently are highly susceptible to infection. We will engineer the mentioned above biosynthetic pathways in these mutants using specific regulatory sequences supporting production of respective enzymes at strictly defined stages of infection. Subsequent analysis of susceptibility of obtained transgenic lines will answer the questions (i) to which extent “foreign” metabolites can overtake the function of native compounds in plant immunity and (ii) to which extent precise function of particular compounds depends on their spatial and temporal production patterns.

Additional information:

1. Research and doctoral theses shall be carried out within the **OPUS 18 project no. 2019/35/B/NZ1/03731**, entitled “ **Interspecies metabolic engineering as a tool to investigate immune functions of plant specialized metabolites**”, funded by National Science Centre.
2. PhD students shall receive a stipend in the gross amount of ca 4300 PLN (3800 PLN net), for the period of 48 months with possible extension
3. PhD students shall be subject to social insurance, pursuant to article. 6 section 1 passage 7b of the act of October 13th, 1998 on the social insurance system (Journal of Laws of 2019, item 300, 303 and 730).

II. Requirements for the candidates:

1. MSc degree in biology, molecular biology, biochemistry, chemistry or related field, or fulfilling the conditions stipulated in article 186, section 2 of the act of July 20th, 2018 Law on Higher Education and Science (Journal of Laws of 2018, item 1668, as amended); BSc degree holders can also apply but will need to obtain their MSc title before they start working in the project.
2. Basic experience in laboratory techniques used in molecular biology and/or biochemistry.
3. Interest in developing own skills and teamwork ability.
4. Proficiency in spoken and written English.
5. Knowledge of plant biology would be an asset.

III. Duties in project:

1. Engineering of metabolic pathways including plasmid preparation, generation and selection of respective transgenic lines
2. Initial characterization of obtained transgenic lines (gene expression, protein levels and metabolite production).
3. Investigation of immune responses of selected lines.
4. Tight collaboration with the remaining team members.
5. Processing of the obtained results, data management, internal reporting, dissemination of results and manuscript draft preparation.

IV. Required documents:

1. Application for admission to PDS IPAS along with the consent for processing personal data upon the recruitment procedure and a statement on having acknowledged the regulations of recruitment for PDS IPAS, using form downloaded from [https://www.ibch.poznan.pl/uploads/studium%20doktoranckie/2019/ICHB%20-%20Application%20for%20admission%20\(2019-09\).docx](https://www.ibch.poznan.pl/uploads/studium%20doktoranckie/2019/ICHB%20-%20Application%20for%20admission%20(2019-09).docx)
2. Certified copy of the diploma confirming graduation or a certificate confirming graduation (in the case of diplomas issued by foreign higher education schools, diploma stipulated in article 326, section 2, passage 2 or article 327, passage 2 of the act of July 20th, 2018 – Law on Higher Education and Science (Journal of Laws of 2018, item 1668, as amended), entitling to apply for conferment of a doctoral degree in the state in where such a certificate was issued by the relevant higher education school. In the event when the candidate is not in possession of the aforementioned documents, he/she is obliged to submit them prior to admission to PDS IPAS. Additional information on foreign school diplomas are available at: <https://nawa.gov.pl/en/recognition/recognition-for-academic-purposes/applying-for-admission-to-doctoral-studies>
3. Scientific CV encompassing track record of previous education and employment, information on involvement in scientific activities (participation in student research groups, attendance at scientific conferences, accomplished internships and training, awarded prizes and distinction) and list of publications.
4. Cover letter featuring a short description of research interests, achievements and justification for the intention to commence education at the doctoral school.
5. Certificates or other documents confirming the degree of proficiency in English, if the candidate is in possession of such materials.
6. Contact details of at least one, previous scientific supervisor or another researcher who is entitled to issue an opinion on the candidate.

V. Applications should be submitted via the eRecruiter portal at

<https://system.erecruiter.pl/FormTemplates/RecruitmentForm.aspx?WebID=d129e7444fa248b1a1b4e4cb9ba3f170>

VI. Submission deadline is **08.09.2020**

VII. Criteria for evaluation of candidates:

1. Candidate's research achievements, pursuant to the grades obtained in the course of studies, scientific publications, awarded scholarships and distinctions resulting from conducting scientific research or student activities or other achievements.
2. Candidate's scientific and professional experience, pursuant to participation in conferences, workshops, training sessions and internships, implementation of research and commercial projects, involvement in scientific trusts and societies, international and professional mobility, experience in other sectors, including industry.
3. Candidate's knowledge on the following discipline: biological sciences.
4. Knowledge of the subject matter described in the recruitment advertisement.

VIII. The recruitment procedure shall be concluded no later than **06.10.2020**

IX. The description of the recruitment process is stipulated in the Regulations of Recruitment for PDS IPAS. Following the recruitment procedure, the unadmitted candidates shall be informed on the number of points obtained at both stages.

For additional information please contact the Principal Investigator:

Prof. Paweł Bednarek

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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 Poznan; 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 Poznan, 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.