

**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. 21/2023/ICHB/PSD**

INSTITUTION: Institute of Bioorganic Chemistry, PAS
CITY: Poznan
POSITION: PhD student
POSITIONS AVAILABLE: 1
SCIENTIFIC DISCIPLINE: Biological sciences
PUBLICATION DATE: 10.07.2023
APPLICATION DEADLINE: 09.08.2023
IBCH PAS WEBSITE: <https://portal.ichb.pl/homepage/>
PDS IPAS WEBSITE: <https://psd-ipan.ichb.pl/index.php/en/home/>

KEY WORDS: exosomes, non-invasive monitoring, transplanted kidney, rejection

Research topic: Exosomes as a potential biomarker for monitoring and predicting kidney allograft rejection

Principal Investigator: Anna Wojakowska

The project is carried out in cooperation with the Medical University of Gdansk (Dr. Justyna Gołębiewska) and the National Institute of Oncology, Gliwice Branch (Dr. Monika Pietrowska, Prof. NIO-PIB).

I. Project description

Despite progress made in immunosuppressive treatment, rejection of the transplanted kidney remains a significant clinical problem. Confirmation of a patient's graft rejection is determined by histopathological changes in the transplanted kidney, which requires the patient to undergo a core needle biopsy and is associated with the possibility of complications. Avoiding this invasive examination and the possibility of monitoring markers of rejection of a transplanted kidney in the blood or urine would be an obvious benefit to a patient. The main cause of transplant rejection is an alloimmune response initiated in the recipient's secondary lymphoid organs by T cells that recognize the donor's MHC antigens. In our study, we hypothesize that exosomes released by allogeneic transplants that transfer the donor's MHC to the lymphoid organs of the recipient may therefore contribute to the enhancement of the immune response of the recipient against the transplanted organ, leading to its rejection. The quantitative assessment of donor-specific exosomes and their components in the recipient's blood may coin a principle for a non-invasive method of monitoring the risk of a rejection of a transplanted organ. The proposed project aims at the identification and functional evaluation of specific components of exosomes released by a transplanted organ and present in the blood of a recipient after transplantation. Using liquid chromatography coupled with high-resolution mass spectrometry methods, we will perform a quantitative and qualitative analysis of the protein components of exosomes released by the transplanted organ and present in the recipient's bloodstream. During the realization of the proposed project, we will also monitor the immunological parameters of patients, inter alia: subpopulations of T lymphocytes, the profile of interleukins, and the presence of anti-HLA antibodies.

Additional information:

1. Research and doctoral theses shall be carried out within the 2021/43/B/NZ7/02221 project, entitled "Exosomes as a potential biomarker for monitoring and predicting kidney allograft rejection", funded by National Science Centre, Poland.
2. PhD students shall receive a stipend in the gross amount of ca 4300 PLN (3 800 PLN net), for the period of 34 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. Master's degree in the field of biology or related, or the statement from the promoter about the defense date of the thesis.
2. Experience in laboratory work with exosome biology (isolation and molecular characterization of small extracellular vesicles), knowledge of basic molecular biology and immunodetection techniques, and basics of working with immune system cell lines.
3. Basic knowledge of chromatographic and mass spectrometry techniques.
4. Basic knowledge of R/Python programming languages and willingness to expand one's knowledge and skills in data analysis.
5. Knowledge of microscopy and flow cytometry techniques will be an added advantage.
6. Commitment to assigned tasks and ability to work independently and in a team.
7. High motivation and enthusiasm for scientific work.
8. Willingness to travel on business.
9. Fluency in spoken and written English.

III. Duties in project:

1. Actively and reliably perform tasks in the project.
2. Performing molecular analysis of exosomes as well as profiling and targeted proteomic and metabolomic MS-based analysis.
3. Chemometric, bioinformatics, and functional analyses of the obtained multi-omics data.
4. Interpretation and reporting of the results of the performed analyses.
5. Continuous expansion of knowledge in the project area from scientific literature.
6. Preparation of scientific reports in the form of publications and active participation in training courses, seminars, and scientific conferences.

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://psd-ipan.ichb.pl/wp-content/uploads/2023/05/ICHBApplication_for_admission_10_05_23.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=2051ca50e6a44c34ab610bcd89f6d342>

VI. Submission deadline is **09.08.2023**

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 **11.09.2023**

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.

Incomplete applications will not be considered.

For additional information please contact the Principal Investigator:

Anna Wojakowska

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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.