

**Recruitment for the Poznań Doctoral School of the Institutes of the Polish Academy of Sciences
at the Institute of Bioorganic Chemistry, PAS in Poznań
Procedure no. 6/2024/ICHB/PSD**

INSTITUTION: Institute of Bioorganic Chemistry, PAS
CITY: Poznań
POSITION: Ph.D. student
POSITIONS AVAILABLE: 2
SCIENTIFIC DISCIPLINE: Biological sciences
PUBLICATION DATE: **24.04.2024**
APPLICATION DEADLINE: **23.05.2024**
IBCH PAS WEBSITE: <https://portal.ibch.poznan.pl/homepage/>
PDS IPAS WEBSITE: http://www.psd-ipan.ibch.poznan.pl/?page_id=355&lang=en

KEYWORDS: neurodegenerative disease, nutrition, neurodegeneration, mechanisms, autophagy, multiomics, proteomics, transcriptomics, spinocerebellar ataxia 3, mutant protein, PolyQ, therapy.

Principal Investigator: Maciej Figiel

Research topic: Investigation of molecular mechanisms of dietary intervention on neurodegeneration in SCA3 / MJD

I. Project description

Despite significant advances in the field of neurodegenerative disorders, there is currently no cure available. However, a non-pharmacological intervention that induces a ketogenic metabolism in patients has shown great promise in ameliorating various neurological conditions such as Alzheimer's, and PolyQ diseases without posing any risk to patients. This approach involves a diet that consists of 90% fat as the necessary calorie source and is currently being utilized for patients suffering from genetic neurodegenerative PolyQ disease and spinocerebellar ataxia 3 (SCA3) where it is the only implemented treatment that improves the disorder. Our research project aims to understand better the beneficial molecular mechanisms and pathways modulated by effective dietary interventions, specifically caloric restriction and ketogenic diet, using SCA3 as a model of neurodegenerative disease. We hypothesize that these dietary regimens modulate distinct pathways, such as cellular proteolytic systems and autophagy, and that this knowledge can be translated into new therapy targets that can help fight neurodegeneration. We will investigate the molecular mechanisms behind the beneficial effects of these dietary regimes by utilizing relevant knock-in mouse models for SCA3 and cutting-edge multi-omic, molecular, epigenetic, and behavioral methodologies. Our goal is to provide evidence-based targeted interventions, including small molecular drugs in neurodegenerative and related disorders, such as Alzheimer's, based on our findings.

Additional information

1. Research and doctoral theses shall be carried out within the 2022/04/Y/NZ2/00119 project, entitled "Molecular Mechanisms of Dietary Intervention on Neurodegeneration", funded by the EU Joint Programme – Neurodegenerative Disease Research (JPND), National Science Centre, Poland.
2. Ph.D. students shall receive a stipend in the gross amount of ca 4300 PLN (3800 PLN net) for the period of 23 months with a possible extension.
3. Ph.D. students shall be subject to social insurance, pursuant to the article. 6 section 1 passage 7b of the act of October 13th, 1998, on the social insurance system (Journal of Laws of 2019, items 300, 303, and 730).

II. Requirements for the candidates

1. Master's degree in one of the following: cell biology, molecular biology, or neurobiology, stem cell biology or similar or the statement from the promoter about the defense date of thesis in the above topics
2. Excellent grades from graduated studies.
3. Excellent manual skills in performing experiments.
4. Very high motivation for further development, ability to work in a team.
5. Above-average self-organization and the ability to manage time pressure in a 4-year project.
6. Knowledge of basic molecular biology techniques and human and animal cell culture techniques.
7. Fluency in English (both in speech and in writing).
8. A positive attitude of the applicant to working with lab animals.

Selected skills, knowledge of which may be helpful

1. Experience in working with primary cell lines (neurons, glial cells).
2. Experience in the transfection of eukaryotic cells.
3. Immunofluorescent staining techniques.
4. Chromatographic and mass spectrometry techniques.
5. Protein and nucleic acid preparation.
6. Working with a spinning disc microscope and flow cytometry.
7. Ability to work with transgenic animals (mice), animal courses absolved (certificates).
8. Metabolomic, lipidomic, proteomic, transcriptomic, nutriepigenomic, and bioinformatics techniques.
9. English language scientific publication writing skills.

III. Duties in the project

1. Creative implementation of the research project,
2. Carrying out experiments in the field of molecular biology, neurobiology, *in vitro* on cell lines and *in vivo* on animal models,
3. Interpretation and reporting of the results of the conducted analyzes,
4. Continuous broadening of knowledge in the field of the project from scientific literature,
5. Preparation of scientific reports in the form of publications and participation in 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 the form downloaded from:
https://portal.ichb.pl/wp-content/uploads/2021/10/ICHBApplication_for_admission_202110.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 that 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 is 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), 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=db0e4f6c1e6b48ffbf300e2e32e40062>

VI. Submission deadline is **23.05.2024**

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, and experience in other sectors, including industry.
3. Candidate's knowledge of 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 **28.06.2024 r.**

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 of the number of points obtained at both stages.

Incomplete applications will not be considered.

For additional information, please contact the Principal Investigator:

Maciej Figiel

e-mail: mfigiel@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 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 a period of 3 months upon the date of the 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.