INSTITUTE
OF HUMAN GENETICS
POLISH ACADEMY OF SCIENCES

"OPEN PHD POSITION"

[15/2025/IGC/PSD] Announcement concerning recruitment to the Poznań Doctoral School of the Institutes of the Polish Academy of Sciences (PDS IPAS) as part of a research project

Director of the Institute of Human Genetics,
Polish Academy of Sciences (IHG PAS),
and leader of the current research project, **Monika Frączek, PhD, DSc**
gives notice of an open competition to be held for the position of
PhD student-scholarship holder at the Poznan Doctoral School of Institutes PAS,
Department of Reproductive Biology and Stem Cells IHG PAS
Number of vacancies: **1**

I. General information

1. Department in which candidate will work: Department of Reproductive Biology and Stem Cells
2. Discipline: **Medical Science**
3. Planned remuneration: scholarship to the value of **4300 PLN gross/per month (3800 PLN net/per month)** before the mid-term evaluation and **5500 PLN gross/per month (4900 PLN net/per month)** after the mid-term evaluation
4. Period of involvement in research project: **48 months**
5. Deadline for submission of documents: **17.08.2025**
6. Date of announcement: **04.07.2025**

The proposed study will be carried out within the **OPUS 2024/55/B/NZ7/03175**
PI –Monika Frączek, PhD, DSc
Project title: ***The role of oral vitamin C supplementation in the epigenetic regulation of male infertility – finding the missing puzzles***

7. **Description of research:**

Recent studies have indicated that vitamin C, in addition to its role in cell redox potential, is also involved in epigenetic regulation within the cell nucleus by influencing the activity of enzymes involved in active DNA demethylation. The steps undertaken in this project will help elucidate the molecular phenomena underlying the contribution of vitamin C to human spermatozoa and male fertility. The study will be conducted in two experimental models: i/ *ex vivo*, where selected spermatozoa with correct and incorrect semen parameters from fertile and infertile men, respectively will be incubated with vitamin C at different concentrations; ii/ *in vivo*, where patients with fertility disorders and oxidative stress will be supplemented with vitamin C for three months.

During the project, we aim to address the following questions:

1. Does sperm exposure to exogenous vitamin C limit alterations in sperm chromatin structure, reduce DNA strand breakage, and normalize methylation/demethylation processes?
2. To what extent do molecular changes in sperm rely on the level of oxidative stress and the concentration of ascorbate within spermatozoa?

The research will be conducted at the Institute of Human Genetics of the Polish Academy of Sciences in Poznań and Ludwik Rydygier Collegium Medicum in Bydgoszcz. The research will involve cytometric, microscopic, and high-throughput chromatographic analyses.
The results of this groundbreaking research may be useful for developing new treatments for male infertility using low-molecular-weight antioxidants.

Keywords:

male infertility, vitamin C, oxidative stress, sperm DNA demethylation

Predicted tasks in the project:

- active participation in the realization of project goals and analysis of obtained results
- presenting at seminars and conferences, participation in writing scientific papers
- supervision of students

Opportunities:

- getting familiar with a rich palette of molecular and instrumental techniques
- working with a team engaged and enthusiastic about science
- participation in national and international trainings, conferences and workshops

II. Requirements for candidates

- master's degree in molecular biology, medical analytics, biotechnology or a related field
- experience in molecular/cellular biology techniques: PCR, RT-qPCR, preferably flow cytometry; practical experience in working with semen is also welcome
- experience in handling DNA and RNA, extraction of nucleic acids
- very good written and oral communication in English
- motivation and enthusiasm about working in science
- creativity and responsibility
- good collaborative and team work skills

III. Required documents

1. CV, including research achievements.
2. Cover letter.
3. A copy of the diploma confirming completion of a Master's Studies Programme, or a certificate of their completion (in the case of diplomas issued by foreign institutions , the diploma referred to in article 326 para.2 point 2 or article 327 para. 2 of the Act of 20 July 2018 – Law on Higher Education

and Science (Journal of Laws of 2018, item 1668 as amended), giving the right to apply for a doctoral degree in the country in which the University of Higher Education issuing the diploma operates. If the candidate does not have the above-mentioned documents, s/he is obliged to provide them before being admitted to Poznań Doctoral School IPAS. More information about foreign diplomas is available at: **https://nawa.gov.pl/en/recognition/recognition-for-academic-purposes/applying-for-admission-to-doctoral-studies**.

4. Contact details of at least one current supervisor or other researcher who has previously agreed to issue an opinion about the candidate. The opinion should not be included in the application.
5. Application for admission to the Poznań Doctoral School IPAS, together with a consent to the processing of personal data for the purposes of the recruitment procedure plus a statement on his/her familiarity with recruitment regulations for the Poznań Doctoral School (Application is available on: http://igcz.poznan.pl/en/phd-studies/poznan-doctoral-school-of-institutes-of-pas/recruitment-regulations-for-psd-ipan/)
6. Certificates or other documents indicating level of English language proficiency, if the candidate possesses any.

IV. Criteria for the evaluation of candidates

1. Candidate's scientific and professional experience based on his/her participation in conferences, workshops, training courses and internships; participation in research and commercial projects; involvement in scientific societies and associations; international and professional mobility; experience in other sectors, including industry.
2. Background in molecular biology.
3. Candidate's scientific achievements, based on study grades, scientific and popular science publications, scholarships; prizes and awards resulting from research carried out; student activity or other achievements.
4. Communication skills in English.

V. Announcement of results

Up to 45 days after the deadline of documents submission.

VI. Additional conditions

1. A condition of involvement in the project is participation in the Institutes of PAS (after passing the recruitment procedure). Details of the studies are available on https://igcz.poznan.pl/en/phd-studies/poznan-doctoral-school-of-institutes-of-pas/Fulfillment of requirements as set out in the Regulations for Granting Scholarships in Research Grants Financed by the National Research Center are available on (https://www.ncn.gov.pl/sites/default/files/pliki/uchwaly-rady/2019/uchwala25_2019-zal1_ang.pdf).

VII. Additional information

Address to which documents should be submitted:

- by e-mail to the Secretary for Scientific Purposes: **phdstudies@igcz.poznan.pl**. Please, include the number of the announcement: 15/2025/IGC/PSD in the title of your e-mail.

Additional information is available from:

- Leader of the project: Monika Frączek, PhD, DSc: monika.fraczek@igcz.poznan.pl
- Secretary for Scientific purposes: phdstudies@igcz.poznan.pl

Application sent after the deadline will not be considered.

Once the recruitment process is finished, unsuccessful candidates will be informed about the scores they have obtained at each step of evaluation.

Refusal of admission to PDS IPAS takes place by way of an administrative decision. The candidate is entitled to submit a request for reconsideration of the decision to the director of the institute concerned.

Project Leader

Monika Frączek

Director of the Institute

DIRECTOR
Institute of Human Genetics
Polish Academy of Sciences
Prof. Maciej Giefing, PhD