INSTITUTE OF BIOORGANIC CHEMISTRY
Polish Academy of Sciences

Noskowskiego 12/14, 61-704 Poznań
tel.: +48 61 852 85 03, secretariat +48 61 852 89 19
fax: +48 61 852 05 32, e-mail: ibch@ibch.poznan.pl
REGON 000849327 VAT no. PL 7770002062
http://www.ibch.poznan.pl

IBCH PAS RECRUITMENT PROCEDURE NO. 6/2025/SN
FOR THE POSITION OF A POSTDOCTORAL RESEARCH ASSISTANT

INSTITUTION:	Institute of Bioorganic Chemistry, Polish Academy of Sciences, Department of Ribonucleoprotein Biochemistry
CITY:	Poznan
POSITION:	assistant professor (post-doc)
POSITIONS AVAILABLE:	1
SCIENTIFIC DISCIPLINE:	Biological sciences
PUBLICATION DATE:	**26 May 2025**
APPLICATION DEADLINE:	**26 June 2025**
WEBSITE:	https://portal.ichb.pl/homepage/

KEY WORDS: nucleic acid binding proteins, protein-nucleic acid interactions, Dicer ribonuclease, G-quadruplexes, regulatory RNAs, regulation of gene expression

Principal Investigator: Assoc. Prof. Anna Kurzynska-Kokorniak, PhD, DSc

Research topic: functional implications of interactions between the ribonuclease Dicer and DNA/RNA molecules adopting the G-quadruplex structures

I. Project description

Accumulating evidence indicates that DNA/RNA G-quadruplexes (helical structures containing guanine tetrads) serve important regulatory roles in fundamental biological processes such as DNA replication, transcription and translation, while aberrant G-quadruplex formation is linked to genome instability and cancer. Understanding the biological functions played by G-quadruplexes requires detailed knowledge of their protein interactome. Our newest finding indicates that ribonuclease Dicer – the enzyme known for its important role in the miRNA/siRNA biogenesis pathways, apart from its canonical substrates (pre-microRNAs and double-stranded RNAs), may also bind G-quadruplex structures present within RNA and DNA molecules (doi: 10.1007/s00018-021-03795-w). Planned research focuses mainly on the human Dicer (hDicer). During the project implementation, we would like to answer the following questions:

- What are the potential functional implications of interactions between hDicer and RNA molecules adopting the G-quadruplex structures?

- Whether nuclear hDicer can bind to the telomeric G-quadruplexes, and other G-quadruplex structures formed within chromatin? If yes, what are the potential biological implications of these interactions?

Using the developed cell models, immunoprecipitation techniques and next-generation sequencing (NGS), we plan to identify and then characterize the pool of cellular DNAs and RNAs adopting G-quadruplex structures bound by hDicer. To confirm the interactions between hDicer and G-quadruplexes in the cell, we will use advanced imaging techniques, including confocal microscopy. Moreover, imaging co-localization experiments will be performed with the MINFLUX nanoscope, a new technology which enables not only the identification of the interaction and the distance between the two targets, but also allows for unambiguous verification whether the two targets are next to each other, and hence whether they indeed interact. Based on all the collected data, the potential functional implications of Dicer's interactions with the DNA and RNA molecules adopting G-quadruplex structures will be inferred.

Research shall be carried out within the project 2021/41/B/NZ2/03781, entitled *"Close Encounters of the Third Kind: what happens when ribonuclease Dicer encounters in the cell RNA and DNA adopting G-quadruplex structures"*, funded by the National Science Centre.

IBCH PAS is one of the leading scientific units in Poland and conducts research activities in the field of chemistry, molecular biology and biomedicine. The Institute provides access to technologically advanced research equipment.

II. Requirements for the candidates:

1. A PhD degree in Molecular Biology, Biochemistry, Biotechnology, Bioinformatics or a related discipline.*
2. Well-documented research output in the form of research papers (Web of Science).
3. Experience in molecular biology techniques, especially in the field of protein and nucleic acid biochemistry, human cell culture techniques (experience in microscope imaging will be an asset).
4. Experience in bioinformatics and NGS data analysis.
5. Capacity to work effectively - both independently and as part of a team, strong commitment to the project, proactive initiative, and alignment of individual development plans with collective goals.
6. Good command of English, enabling efficient communication and preparation of research papers.

*According to NCN requirements, only individuals who obtained a doctoral degree no earlier than 7 years before the year of employment in the project may be admitted. This period may be extended by the time spent on long-term (over 90 days) documented sickness benefits or rehabilitation benefits due to incapacity for work. Additionally, the period may be extended by the number of months spent on leave for the care and upbringing of children, as specified under the Labor Code. For women, this period may also be increased by 18 months for each born or adopted child if this method of accounting for breaks in the scientific career is more advantageous.
Furthermore, according to NCN requirements, individuals who obtained a doctoral degree at an institution other than the Institute of Bioorganic Chemistry of the Polish Academy of Sciences, or those who earned the degree at ICHB PAN but completed a continuous, documented postdoctoral internship of at least 10 months at an institution other than the project-implementing entity and in a country different from where the doctoral degree was obtained, may be admitted.

III. Duties in the project:

1. Planning and conducting experiments. Data analysis and interpretation.
2. Preparation and assistance in the preparation of manuscripts.
3. Critical reading of literature.
4. Presentation of the results at seminars and scientific meetings.
5. Individual and team work; day-to-day supervision of PhD students and graduate students.

IV. Required documents:

1. Cover letter of application to the Director of IBCH PAS featuring contact details to at least two referees.
2. Copy of the doctoral diploma.
3. CV featuring information on the candidate's scientific track record, including:
   - the list of papers published in journals listed in the Web of Science (WoS) database, stating the IF in accordance with WoS, number of citations and the H-index;
   - list of patents;
   - information on the previously managed projects or participation in project implementation;
   - information on the accomplished research internships;
   - information on the awarded prizes and distinctions.

V. Applications should be submitted via the eRecruiter portal at:

https://system.erecruiter.pl/FormTemplates/RecruitmentForm.aspx?WebID=7b9d96d1d0434142b32b73f45bf92c2d

VI. The submission deadline is **June 26, 2025.**

VII. Selection of candidates:

Following preliminary verification, on the basis of the application documents, selected candidates will be invited to an interview, as a result of which a candidate recommended for employment shall be appointed. The main criteria, taken into consideration during the selection of the candidates, will be: (i) research output (research papers published), (ii) compliance of the previous experience with the tasks planned within the framework of the project, (iii) experience gained during internships.

VIII. The recruitment procedure shall be concluded no later than on **July 15, 2025.**

IX. Additional Information:

Employment is available instantly (depending on the result of the recruitment procedure). The position is available for the period of 6 months (with the possible extension). The estimated gross salary is ca. 8 150 PLN/month. Employment will be in accordance with the provisions of the Labor Code.

For additional information please contact the Principal Investigator:
Assoc. Prof. Anna Kurzynska-Kokorniak, PhD, DSc
e-mail: akurzyns@man.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 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