

FORM FOR EMPLOYERS

INSTITUTION: Institute of Organic Chemistry of the Polish Academy of Sciences

CITY: Warsaw

POSITION: Post-doc

DISCIPLINE: Chemistry

POSTED: 25.05.2026

EXPIRES: 30.06.2026

WEBSITE: <https://www.icho.edu.pl/>

KEY WORDS: *organic chemistry; artificial intelligence; drug design; medicinal chemistry; organic synthesis*

Grant title: "Targeting MMP-9 in Cancer Treatment: Computational Design and Experimental Validation of Potent, Safe Antitumor Agents"

Number of positions available: 1

Researcher profile: R2

Job description:

Aim:

The aim of this project is to accelerate the discovery of safe and effective matrix metalloproteinase 9 (MMP 9) inhibitors through advanced AI assisted drug design. We anticipate that the use of state of the art medicinal chemistry software, incorporating both retrosynthetic and forward synthetic algorithms, will enable the generation of novel yet synthetically accessible chemical entities. The workflow will begin with computational modeling to generate hundreds to thousands of candidate molecules, followed by rapid prediction of their binding affinity to the MMP 9 enzyme, as well as evaluation of key pharmacokinetic properties. The most promising compounds will be further assessed using molecular docking to evaluate binding modes and selectivity, and molecular dynamics simulations to estimate the stability of ligand protein interactions. This approach will allow us to prioritize compounds with the highest likelihood of success, namely those combining strong inhibitory activity against MMP 9, selectivity over other MMP isoforms, and favorable drug like and safety profiles. The top candidates will be synthesized in the laboratory and evaluated in cell based assays to confirm their anticancer potential.

The main tasks will involve:

- Computer aided design of active, safe, and selective compounds with potential anticancer activity
- Molecular docking of designed compounds to the active site of selected biological targets (enzymes or proteins)
- Performing molecular dynamics simulations
- Organic synthesis of the most promising compounds, as well as their purification and analysis (e.g., NMR, MS, HPLC)
- In vitro studies of biological activity, in particular inhibitory activity against selected enzymes or cell lines

Envisaged job starting date: 01.09.2026

Offer:

Terms of employment: Full-time employment for 12 months with the possibility of extension up to 24 months, with salary funded by the NCN grant, 11666,66 PLN (gross gross) (~9700 PLN gross)

The offered remuneration is in line with salaries for comparable postdoctoral positions in projects funded by the Polish National Science Centre (NCN).

Benefits: *private medical care package, co-financing of sports cards*

Career development opportunities: *work in a dynamically developing team, access to research infrastructure, professional development in the field of organic synthesis, computational drug design, work with outstanding specialists in the field of organic and computational chemistry, the possibility of cooperation with foreign research centers (e.g. UNIST South Korea), the possibility of further professional development at the IOC PAS, participation in national and international conferences*

Requirements:

PhD degree in chemistry (specialization: organic chemistry), awarded no earlier than 12 years before employment in the project (this period is extended by the duration of maternity/paternity leaves), or expected date of obtaining the PhD degree prior to commencement of work.

required competencies

- PhD in Organic Chemistry
- Practical experience in organic synthesis
- Excellent knowledge of organic chemistry
- Scientific achievements documented by publications in recognized journals
- Ability to analyse and interpret experimental data
- Knowledge of NMR, MS, GC, and HPLC techniques
- Knowledge of spoken and written English to the extent necessary for independent scientific work
- Ability to solve scientific problems
- Ability to work both independently and as part of a team
- Strong motivation and commitment to scientific research

desirable competences

- Knowledge of computational chemistry and/or medicinal chemistry

Candidate evaluation criteria:

- scientific achievements measured by the quality and quantity of scientific publications or granted/pending patents
- knowledge of organic chemistry
- Candidate's professional experience
- career mobility (research internships, work in industry, change of scientific profile)
- ability to work in a team/ability to transfer knowledge
- awards or distinctions
- opinions about the Candidate contained in the letters of recommendation
- good knowledge of English enabling independent scientific work

List of required documents:

- Candidate's *Curriculum Vitae*
- description of scientific achievements, including a list of publications, ongoing projects, etc.
- diplomas and certificates confirming qualifications, completed courses, completed training, etc.
- cover letter
- letters of recommendation and references from previous employers/supervisors
- consent to the processing of the Candidate's personal data for the purposes of the competition

Along with the required documents, please submit (or send a scan) a signed consent to the processing of personal data available at: <https://www.icho.edu.pl/en/cooperations/career/>

Competition settlement date: 31.07.2026

Additional information:

Project manager: Dr Anna Żądło-Dobrowolska
Head of Research Group: Prof. Bartosz Grzybowski
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Applications must be sent to e-mail address: rekrecja@icho.edu.pl

ATTENTION! In the title of the e-mail, please enter “Recruitment – POST-DOC – Anna Żądło-Dobrowolska”

We are an open and inclusive employer – we encourage applications from all individuals, regardless of gender, origin, nationality, or minority background.

