

Postdoctoral Research Associate position

The Laboratory of Metalloprotein Biology, newly located at the Institute of Biochemistry and Biophysics Polish Academy of Sciences and headed by Dr. Kevin Waldron, seeks a productive, creative, and highly motivated Postdoctoral Research Associate. The successful candidate will join a collaborative, interdisciplinary team studying the structure, function and evolution of the family of copper storage proteins (Csp) and their role at the host-pathogen interface. This position is funded by an NCN OPUS grant.

Copper is an essential micronutrient for all organisms, but is highly toxic to cells when it is present in excess. The toxicity of copper is used as by the immune system as one of its weapons with which to fight invading pathogens ([Focarelli et al., 2022, PLoS Pathogens](#)). All cells have evolved complex homeostasis systems that carefully regulate copper abundance to avoid toxicity while ensuring sufficient supply of copper cofactors to copper-dependent enzymes ([Giachino & Waldron, 2020, Molecular Microbiology](#)). In bacteria, these homeostasis systems are known to involve well-characterised proteins that function as copper-sensing transcriptional regulators, membrane transporters that import or export copper ions to/from the cell, and copper-carrier proteins termed metallochaperones, which deliver copper to their targets through protein-protein interactions. A new class of copper homeostasis proteins was described in 2015 ([Vita et al., 2015, Nature](#)), the Csp proteins, which are hypothesized to function in either cytosolic or periplasmic copper storage. However, although they are widely distributed among bacterial genomes ([Vita et al., 2016, Scientific Reports](#)), their specific molecular functions have remained elusive.

Building on our recent work that described the first Csp from a pathogenic bacterium, *Neisseria gonorrhoeae* ([Roe et al., 2025, PLoS Pathogens](#)), in this project we will determine the structure, molecular mechanisms, and biochemical function of a pair of Csp proteins from unrelated pathogenic bacteria. We will perform in-depth biochemical and microbiological studies of the role of the periplasmic Csp from *N. gonorrhoeae* and of the cytoplasmic Csp from *Salmonella enterica* in their respective copper homeostasis systems. We will study each protein at atomic resolution to determine how they are loaded and unloaded of their copper cargo, and identify mechanistic and structural differences between them. We will then use this knowledge to perform a detailed evolutionary study on the Csp protein family to determine how these intriguing proteins have diversified across the tree-of-life.

Job description:

The successful applicant will be responsible for executing laboratory-based research within the project. They will express, purify and characterise Csp proteins biochemically, perform mutagenesis, and apply structural methods to assess their molecular structure. They will create mutant strains of *Salmonella* and perform microbiological and multi-omic analyses to study the role of Csp in *Salmonella* physiology, including performing experiments to test their importance during host-pathogen interactions. They will work with international collaborators to assess the role of Csp in *Neisseria* physiology. Training will be provided in necessary protocols and techniques.

Requirements for the candidate:

- A PhD in a biological subject. There is no limit of years post PhD completion.
- Experience in microbiological methods for the study of the effects of metals on bacterial physiology, including the construction of mutant strains of bacteria.

- Experience in the analysis of transcriptomic and proteomic datasets.
- Solid knowledge of molecular biology methods and experience in bacterial construct design and assembly.
- Previous experience in the expression, purification and *in vitro* characterisation of metalloproteins, particularly of copper-proteins, and the study of their protein-protein interactions.
- Previous experience with the use of methods for determination of elemental composition of biological samples, including the operation of an inductively coupled plasma optical emission spectrometer, would be an advantage but is not essential.
- A proven track record in publishing high quality research.
- A demonstrable passion for, and a motivation for a long-term career in science and research.
- Ability to work both independently (under appropriate supervision) and as part of a collaborative and interdisciplinary team, including training junior researchers in lab methods and collaborating in team goals.
- Proficiency in spoken and written English.

We offer:

- A full-time employment contract for 2 years, starting from 27th April 2026 or as soon as possible thereafter, with an option to extend for a further 2 years.
- Gross salary of about 9000 PLN/month (with an additional 13th salary after meeting the requirements specified in the regulations). Amount including seniority allowance and other. Net salary depends on individual circumstances influencing tax.
- A position with 100% focus on research (no teaching obligations) in a leading, well-equipped, recently refurbished laboratory and within a dynamic and interdisciplinary team.
- Extensive opportunities for training, including potentially visits to collaborating laboratories to work with leading experts in related fields and technologies.
- Good culture of work-life balance, working in a multidisciplinary team of microbiologists, biochemists and biophysicists.

Informal inquiries:

Informal inquiries are very welcome. Please send an email to kwaldron@ibb.waw.pl including any questions, a brief description of your motivation and other relevant information.

How to apply:

Applications should be sent in English via recruitment platform:

<https://system.erecruiter.pl/FormTemplates/RecruitmentForm.aspx?WebID=479a04e4b5f24567a95f6f7c905e1da0>

Applications should contain a scientific CV (no more than 3 pages), a cover letter with a description of the applicant's key achievements and motivation (up to 2 pages), and contact details for 2 potential academic referees, including your PhD supervisor. All documents should be merged in a single pdf file.

In case of any difficulties please contact: recruitment@ibb.waw.pl

Selected candidates will be invited for an interview (possibly on-line). Applications submitted after the deadline will be still considered if the position is not filled.

Please include the following statement in your application: "I hereby give my consent for the processing of my personal data by the Institute of Biochemistry and Biophysics PAS with its seat in Warsaw Pawińskiego 5a, 02-106 hereinafter referred to as the Institute for the purpose of the recruitment process and for future recruitment processes conducted by the Institute under Art. 23 ust 1 pkt 1 of the Personal Data Protection Act dated on 29 August 1997, consolidated text: Journal of Laws 2016, item 922 with further amendments and under Art. 6 ust.1 lit. a of 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 GDPR (Dz. U. UE. L. z 2016 r. Nr 119)".

Closing date: April 23th, 2026

The evaluation process will start immediately upon receipt of the applications. Selected candidates will be invited for interview. The competition may be extended until the finding of a suitable candidate.