

Job offer

**Institute of Biochemistry and Biophysics Polish Academy of Sciences,
Laboratory of Genome Stability Mechanisms is opening a call
for a post-doc position in the project funded by the Polish National Science Centre
entitled “Tracing the aging phenotype at the cellular level”**

Keywords: aging, stress, autophagy, genome instability, yeast

Field of science: Biology

Project title: Tracing the aging phenotype at the cellular level

Project leader: dr hab. Adrianna Skoneczna, prof. IBB PAS

Position: post-doc (full-time contract)

Maximum duration of the project: 3 years

Position starts on: right away

Salary: 9050 PLN/mth (brutto)

Project description:

Aging is a universal process that, at the cellular level, occurs similarly in both single- and multicellular organisms. Aging cells accumulate damage to DNA, proteins, and lipids because their repair systems are not as efficient as those in young cells. Aging cells respond more slowly or inappropriately to signals from their environment. They respond more slowly or incorrectly to signals from the environment. They stop dividing, and the only thing they can do is to live, although it must be admitted that individual cells deal with it differently - some live longer, others shorter. Already collected data indicate high inter-species similarity of the mechanisms that determine aging. However, in this case, we should rather think of the mechanisms that begin to fail, resulting in aging. Since these mechanisms are similar, it is convenient to study them in rapidly growing and well-characterized cells. Therefore, the yeast *Saccharomyces cerevisiae* is a frequently used model in aging studies. Two experimental approaches are used to follow yeast aging: replicative lifespan analysis, which tells us how many divisions a given cell can undergo, and chronological lifespan, answering how long a given cell survives when nutrients are limited, still being able to recover when conditions improve [doi: 10.1093/bfpg/elab011].

While examining DNA content of chronological aging cells, we found that initially diploid cells gradually lose their DNA, reaching the level typical for haploid cells [doi: 10.1016/j.bbamcr.2023.119621]. The limiting for growth amount of DNA was the DNA content - $1c$ - i.e., exactly one copy of the parental DNA, which was surprising because diploid cells usually have at least two such copies, one from each parent, i.e., $2c$. However, before the next division and after the round of DNA synthesis is finished, they have four such copies, $4c$. We also found that if they remained viable, aging cells with a DNA content of $1c$ regenerated a population of diploid cells containing DNA from $2c$ to $4c$ when provided access to an abundance of nutrients [doi: 10.18632/aging.205102].

Project results would allow answering following questions:

1. What are the mechanisms of the ploidy shifts accompanying chronological aging, responsible for DNA loss and ploidy reduction?
2. What are the mechanisms of the ploidy shifts accompanying the regrowth of near-haploid cells that survived the aging experiment allowing genome duplication?
3. Do the cells that restored the diploid genome contain the original unchanged genome or are some changes in genetic information detectable during the shift to the haploid and back to the diploid state?

We will isolate viable cells from the chronologically aging yeast population by FACS sorting and characterize their phenotypes using biochemical, cytometric, fluorescence microscopy assays, and whole genome sequencing to uncover the mechanisms responsible for ploidy change accompanying chronological aging and regrowth potential.

The project needs involvement of the person highly skilled in the fluorescence microscopy and analysis of the microscopic data. The post-doc will be responsible for the colocalization studies and phenotypic analysis of aging cell populations, especially in the fluorescence microscopy part of it. She/He will be also involved in data analysis and maintenance of all the data obtained during the project implementation, as well as in manuscripts preparation.

Requirements:

- Passion for scientific work.
- PhD in biochemistry, biology, or a similar field. To be eligible for the competition, you must have obtained a doctoral degree in the year of employment on the project or within the 12 years preceding 1 January of that year.
- Experience in molecular biology, fluorescence microscopy, and microscopic data analysis, preferably documented with publications. Knowledge of yeast genetics techniques. Flow cytometry experience will be an advantage.
- Fluent communication in English (required for collaboration with other group members and co-workers from cooperating institutions and for publication preparation).

Required documents:

- copy of PhD diploma
- CV including scientific achievements and list of methods known/used by the applicant
- list of publications
- cover letter (max 1 page, 12 pts) - containing information why you are interested in this project?
- contact or letter of recommendation from the previous employer or doctorate supervisor
- Signed “Information clause on the processing of personal data for IBB PAS recruitment” available at the web site [<https://ibb.edu.pl/en/career/career/>]
- Signed and filled out “Application form for IBB PAS recruitment” available at the web site [<https://ibb.edu.pl/en/career/career/>]

The recruitment process consists of two stages:

1. **Initial evaluation** – Applications will be reviewed by the Recruitment Committee, composed of the Project Leader and independent researchers from IBB PAS. Based on this evaluation, shortlisted candidates will be invited to the interview stage. Please note that only shortlisted candidates will be contacted.
2. **Interview** – Shortlisted candidates will be interviewed by the Recruitment Committee. During the interview, candidates will be asked to give a brief presentation of their main research project, followed by a scientific discussion with the Committee. Candidates will also have the opportunity to ask questions about the project and the research environment.

For project-related inquiries contact: ada@ibb.waw.pl

Applications should be sent in English or Polish via recruitment platform:

<https://system.erecruiter.pl/FormTemplates/RecruitmentForm.aspx?WebID=55f5e28cd9d84f94bc49438ba d1410d9>

Deadline for submitting applications: 15.09.2026.

Interview date: 28.09.2026

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

To allow processing of personal data during the recruitment process, please include the following consent in the sent documents. Applications not including this statement will not be further processed, for legal reasons: „*Wyrażam zgodę na przetwarzanie moich danych osobowych dla potrzeb niezbędnych do realizacji procesu rekrutacji zgodnie z Ustawą z dnia 29 sierpnia 1997 r. o ochronie danych osobowych (Dz. U. z 2016 r. poz. 922 z późn. zm.)*”