



Institute of Biochemistry and Biophysics PAS, Genetic Department
is opening a call for PhD student position who will be involved in a project funded by
the Polish Science Foundation entitled: "Regulation of cell death and OXPHOS activity by Fmp40
ampylase in yeast *S. cerevisiae*"

Project director: **dr hab. Róża Kucharczyk**

Duration of the project: 36 months

Nr of positions: 1 (full-time contract)

Position: PhD

Start of the work: 09/10/2019, after signing the contract with the Funder NCN

Salary: 4000,00 PLN brut / month

Project description:

Project aims to decipher the role of newly discovered yeast ampylase Fmp40p, the only identified ampylase in yeast. This protein is involved in cell response to reactive oxygen species, ROS. The preliminary data indicate that it can be involved in regulation of OXPHOS activity, the mitochondrial permeability transition and the programmed cell death pathway through ampylation of proteins being a direct line of defense against ROS: glutaredoxins, thioredoxins or peroxiredoxins. The results of research will be significant not only for fundamental science but also medicine, as ROS signaling is involved in many diseases in humans, including cancer.

In the frame of this project we plan following experiments aiming to define the mechanism of action of yeast SelO (Fmp40p): 1) determination of the AMPylation by Fmp40 of potential substrates *in vivo* and *in vitro*: subunits of ATP synthase, complex IV, peroxiredoxin and porin components; 2) studies on the PCD in *fmp40Δ* cells and the role of Fmp40p in PCD induction by oxidized thioredoxin Trx3, which role in PCD is documented in the literature; 3) study of the permeability transition pore function in yeast dependently on ampylation of its components (ATP synthase) or modulators (porin complex). Independently, thanks' to our expertise in the modification of mitochondrial genome in yeast, one of the task aim to construct a reporter strain expressing the non-fluorescent part of GFP (first 10 of 11 GFP β -strands) from mitochondrial genome and localize it in the intermembrane space of mitochondria. Such a GFP protein become fluorescent only when assembled with the 11-th β -strand of GFP provided by any protein localized in the intermembrane space of mitochondria. This tool will be commonly used not only by yeast community.

The methods include:

- expression of potential substrate in bacteria for ampylation reaction *in vitro*, ampylation verification *in vivo*,
- construction of the mutants, their genetic and phenotypic analysis,
- on isolated mitochondria: measurement of oxygen consumption, ATP synthesis and hydrolysis, stability of inner membrane potential, ATP-driven translocation of protons across mitochondrial inner membrane, assembly and stability of ATP synthase, measurement of mitochondrial swelling and calcium retention capacity informative about induction of permeability transition pore,
- introduction of DNA bearing GFP $_{\beta 1-10}$ into mitochondria of yeast by biolistic transformation and integration of this gene into mitochondrial genome.

Requirements

- Master degree in biology, medicine, pharmacy, or related fields in biochemistry or life science.
- Knowledge of microbiology (culturing of yeast), molecular biology methods (mutagenesis *in vitro*, plasmid construction, work with proteins, protein expression in bacteria, in biochemical methods (in mitochondrial biochemistry). Experience in any of these areas will be an asset.

- Passionate about scientific, sometimes hard work, highly motivated.
- Creative and an analytical thinker, initiative in experimental design.
- Ability to communicate fluently in English.

We offer:

- An environment fostering your creativity, autonomy, and pushing your personal development.
- Mentoring that will help you develop into a mature and well-rounded scientist.
- Access to state-of-the-art equipment.
- Opportunities for interdisciplinary and international collaborations.
- Competitive salary.

The candidates should send the following documents (pdf):

- copy of diploma, or information about the date of defense,
- information about the notes from the master studies,
- scientific CV, with the list of publications or oral presentations during conferences,
- (with the phrase added at the bottom: Wyrażam zgodę na przetwarzanie moich danych osobowych zawartych w niniejszym formularzu rekrutacyjnym przez Instytut Biochemii i Biofizyki PAN z siedzibą w Warszawie przy ulicy Pawińskiego 5A (administrator danych), na potrzeby rekrutacji na stanowisko określone w ogłoszeniu, zgodnie z Rozporządzeniem Parlamentu Europejskiego i Rady UE 2016/679 z dnia 27 kwietnia 2016 r. w sprawie ochrony osób fizycznych w związku z przetwarzaniem danych osobowych i w sprawie swobodnego przepływu takich danych oraz uchylenia dyrektywy 95/46/WE w ramach realizacji obowiązku prawnego ciążącego na administratorze danych (art.6 ust.1 lit. a) oraz ustawą z dnia 10 maja 2018 r. o ochronie danych osobowych (Dz.U.2018 poz.1000),
- cover letter describing personal motivation to apply for this position,
- 2 references letters and contact to persons able to recommend your candidature.

Please send the documents to:

roza@ibb.waw.pl till 30.07.2019r. with the subject „REKRUTACJA SeIO”

Information clause

In accordance with the general regulation of 27 April 2016 on the protection of personal data, hereinafter referred to as GDPR, we wish to inform you that:

1. The Administrator of your personal data is the Institute of Biochemistry and Biophysics PAS, with its seat at (02-106) Warsaw, Pawińskiego 5a.
2. The Administrator has appointed a Data Protection Officer who may be contacted on the following telephone number: (22)5922140.
3. Your personal data shall be processed for the purposes of the recruitment process for the position of Post-doc.
4. The legal basis for processing your personal data for the purposes of recruitment shall be Article 6 Section 1 Point c of the GDPR, with processing being necessary for the fulfilment of a legal obligation to which the Administrator is subject, particularly Article 118a of the Law on Higher Education as well as Article 221 of the Labour Code. The condition legalising the processing of personal data provided voluntarily by the candidate, which is beyond the scope of data referred to in Article 221 of the Labour Code, shall be Article 6 Section 1 Point a of the GDPR – consent by the data subject.
5. Providing your personal data, subsequent to the decision to enter the recruitment process, is obligatory within the scope defined by Article 221 of the Labour Code and the Law on Higher Education and determines the possibility of applying for work as well as possible further employment. In the case of personal data which is beyond the scope of the aforementioned legal regulations, providing your data is voluntary but it does determine the possibility of participating in the recruitment process.
6. Your personal data shall be processed on behalf of the data administrator by authorised personnel purely for the purposes referred to in Point 3.
7. Your personal data shall be stored for a period of time necessary for the fulfilment of the aims referred to in Point 3. Should the recruitment outcome prove negative, your data shall be removed immediately at the completion of recruitment, unless otherwise provided by the record-keeping regulations – then for a period of time specified in these regulations.

8. Your personal data shall not be shared with external entities with the exception of cases provided for by legal regulations. Should you submit your application documents in electronic form, the recipient of your data may be an entity acting on behalf of the administrator i.e. a mail service operator.

9. Under the terms of the GDPR, you shall be entitled to:

- a. the right to access your data,
- b. the right to rectify it if factually incorrect,
- c. the right to remove or restrict the processing of the data as well as the right to data portability – in cases prescribed by the law,
- d. the right to object to the processing of the data,
- e. the right to file a complaint with the supervisory authority – the President of the Personal Data Protection Office, should you consider that the processing of your personal data violates personal data protection regulations.