



A post-doc position is available in National Science Centre funded project to study involvement of selective autophagy in dynamic reprogramming of the cellular metabolism in plants exposed to ABA-inducing stress conditions and after stress alleviation.

Institution: Institute of Biochemistry and Biophysics of the Polish Academy of Sciences, Laboratory of Plant Protein Homeostasis (head: Prof. dr. hab. Agnieszka Sirko)

The title of the project: Role of selective autophagy in activity control of ABA-responsive transcription factors in Arabidopsis

Keywords: abiotic stress, Arabidopsis, autophagy, ChIPseq, posttranslational protein modification, RNAseq, ubiquitin

Type of post: post-doc / assistant

Domain: plant molecular biology

Type of contract: fixed-term full time employment

Number of job offers: 1

Gross monthly salary: ~ PLN 7,000 (depending on the length of previous employment)

Employment period: 48 months

Date of commencement of work: 03.10.2022 (negotiable)

Project description:

Plant homeostasis is coordinated via a complex regulatory network involving protein degradation systems and phytohormones. Impairments of any of them lead to reduced stress tolerance. Plants exposed to abiotic stress quickly accumulate phytohormone abscisic acid (ABA) which in turn activates stress responses. ABA induces the expression of numerous genes encoding transcription factors (TFs), working in a cascade and having partially overlapping sets of the target genes. However, abiotic stresses are often temporal and it is equally important to initiate the stress recovery phase as fast as the stress has ended. Several ABA-responsive TFs has been identified by us as NBR1 partners. They are likely targeted to NBR1-dependent degradation via autophagy, however, this hypothesis must be yet verified in the project. We will also examine the contribution of possible posttranslational protein modifications (ubiquitination, phosphorylation, etc.) to the process of their recognition as cargo by NBR1. The role of NBR1 and the contribution of both degradation systems (ubiquitin-proteasome system and autophagy) to the genome-wide binding dynamics of the investigated TFs will be assessed. We will conduct the experiments not only at the phase of stress response but also at the recovery phase. Depending on the workload the candidate will be free to propose alternative projects.

Required professional qualifications:

Experience with confocal fluorescence microscopy; Experience in high throughput sequencing data analysis, bioinformatics methods and basic statistics; Experience with protein work, gel electrophoresis, Western blot; DNA and RNA work; Practical knowledge of plant molecular biology methods including Arabidopsis transformation, genotyping and phenotyping; Well-documented



research output in the form of research papers, published in JCR research journals with cumulative IF>10 ; Good command of English, enabling efficient communication and preparation of research papers; Experience in gaining independent funding for research will be an asset.

The evaluation of candidates consists of:

- In the first stage the Selection Committee, composed of Project Manager and two independent researchers from IBB PAN) will select eligible candidates. We reserve the right to contact selected candidates.
- In the second stage the candidates will be interviewed by the Selection Committee. The candidate will be asked to briefly present his/her CV and outline one main scientific project, which will be then discussed in more detail with the Selection Committee. During the meeting the candidate will be free to inquire about details concerning the project.

How to apply:

The application in English should be sent to Prof. Agnieszka Sirko (asirko@ibb.waw.pl). It should contain:

- documentation of the doctoral degree
- CV,
- motivation letter with the description of the applicant's key achievements
- two contacts or reference letters with contact information, including previous employer or doctorate supervisor

Please include the following statement in your application: "In accordance with the personal data protection act from 29th August 1997, I hereby agree to process and to store my personal data by the Institution for recruitment purposes"

Closing date: 30.09.2022

The evaluation process will start immediately upon receipt of the applications. Due to the current situation we reserve the right to close this advertisement early if we find a suitable candidate.