



INSTITUTE OF PLANT GENETICS POLISH ACADEMY OF SCIENCES

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Recruitment for the Poznań Doctoral School of the Institutes of the Polish Academy of Sciences at the Institute of Plant Genetics, PAS in Poznań Procedure no. 15/2021/IGR/PSD

INSTITUTION: Institute of Plant Genetics, PAS
CITY: Poznań
POSITION: Ph.D. student
POSITIONS AVAILABLE: 1
SCIENTIFIC DISCIPLINE: agricultural sciences
PUBLICATION DATE: July 26, 2021
APPLICATION DEADLINE: Aug. 26, 2021

WWW: <http://www.igr.poznan.pl/en/main-en/ids-en/competitions>
IGR PAN: <http://www.igr.poznan.pl/en/home-en>
PSD IPAN: <http://www.psd-ipan.ibch.poznan.pl/index-en.html>

KEY WORDS: brassinosteroids, hormones quantification, N-acetyl-5-methoxytryptamine, next generation phenotyping, regulatory networks, system biology, transcriptomics, UHPLC-MS, water deficit

Research topic: The aim of the study is to explore the role of melatonin on: (i) phytohormone crosstalk, (ii) transcriptome reprogramming, (iii) roots development, and (iv) improvement of barley drought resistance, as a consequence. The multiple changes in gene expression caused by melatonin point to its role as a multiregulatory molecule capable of coordinating many aspects of plant development. This item, together with its role as an alleviating-stressoragent, suggests that melatonin is an excellent prospect for crop improvement. However, some aspects of melatonin in plants, including the metabolism and regulation pathway under stressful conditions, are still unclear. Research on interactions between signalosomes of phytohormones currently constitutes an important area of plant systems biology and is a source of information on molecular mechanisms of physiological processes.

Principal Investigator: dr hab. Anetta Kuczyńska, prof. IGR PAN

DESCRIPTION:

Place of employment: Cereal Phenomics Team, Institute of Plant Genetics Polish Academy of Sciences, Poznań, Poland

Supervisor: dr hab. Anetta Kuczyńska, prof. IGR PAN

Goal of employment: implementation of the OPUS18, nr 2019/35/B/NZ9/00208

Scope of research:

- a) evaluation of melatonin effects in shaping the root system under optimal conditions and drought for recognizing whether MLT determines barley response to drought,
- b) identification of expression induction of MLT- (*HvCOMT1*) and BRs-dependent (*HvBRD*, *HvBRI1*) genes for the estimation of different MLT treatments,
- c) barley root phenotyping both under field condition and by high-throughput roots imaging on platform for understanding the plant system,
- d) quality and quantity measurement of phytohormones and melatonin by chromatographic and mass spectrometric techniques for broaden the knowledge about relationship between MLT and inter-hormonal interaction in determination of barley response to drought and root organogenesis,
- e) next-generation sequencing (NGS) for the exploration of transcriptomic reprogramming of barley roots in response to water deficit and MLT treatment,
- f) employment of omics approaches targeted to roots for recognition of plant reaction to drought being the milestone in deciphering the regulatory mechanisms of barley roots development and crop plants improvement.

Duties in project: conducting of greenhouse and field experiments, samples collection, RNA extraction, Real Time PCR analysis, samples extraction and purification for hormone instrumental analysis, data interpretation, manuscript preparation.

Requirements for the candidates:

1. Experience in laboratory work in the field of molecular biology in accordance with duties in project.
2. Ability to use MS Office and search databases.
3. At least good knowledge of spoken and written English.
4. Independence and teamwork skills at the same time.
5. Additional scientific activity (publications, conference announcements and other forms of presenting results, participation in projects, research clubs, etc.) and organizational activity (eg organization of workshops, trainings, conferences) is welcome.
6. Mobility is welcome: internships, workshops, training, etc.

Additional information:

1. Research and doctoral theses shall be carried out within the OPUS 18, nr 2019/35/B/NZ9/00208, entitled "Melatonin as a pivotal mediator for shaping root architecture and drought adaptation via modulation of phytohormones crosstalk in barley (*Hordeum vulgare* L.)", funded by National Centre of Science.
2. PhD students shall receive a stipend in the gross amount of ca. 4270,00 PLN (Apr. 990€), for the period of 36 months.
3. PhD students shall be subject to social insurance, pursuant to article. 6 section 1 passage 7b of the act of October 13th, 1998 on the social insurance system (Journal of Laws of 2019, item 300, 303 and 730).

Required documents:

1. Application for admission to PDS IPAS along with the consent for processing personal data upon the recruitment procedure and a statement on having acknowledged the regulations of recruitment for PDS IPAS, using form downloaded from <http://www.igr.poznan.pl/en/main-en/ids-en/poznan-doctoral-school>
2. Certified copy of the diploma confirming graduation or a certificate confirming graduation (in the case of diplomas issued by foreign higher education schools, diploma stipulated in article 326, section 2, passage 2 or article 327, passage 2 of the act of July 20th, 2018 – Law on Higher Education and Science (Journal of Laws of 2018, item 1668, as amended), entitling to apply for conferment of a doctoral degree in the state in where such a certificate was issued by the relevant higher education school. In the event when the candidate is not in possession of the aforementioned documents, he/she is obliged to submit them prior to admission to PDS IPAS. Additional information on foreign school diplomas are available at:

<https://nawa.gov.pl/en/recognition/recognition-for-academic-purposes/applying-for-admission-to-doctoral-studies>

ATTENTION: at the stage of the recruitment process, there is no requirement to present documents certified by the apostille clause nor the requirement of nostrification of diplomas. These requirements must be met if the candidate is accepted.

3. Scientific CV encompassing track record of previous education and employment, information on involvement in scientific activities (participation in student research groups, attendance at scientific conferences, accomplished internships and training, awarded prizes and distinction) and list of publications.
4. Cover letter featuring a short description of research interests, achievements and justification for the intention to commence education at the doctoral school.
5. Certificates or other documents confirming the degree of proficiency in English, if the candidate is in possession of such materials.
6. Contact details of at least one, previous scientific supervisor or another researcher who is entitled to issue an opinion on the candidate.

Documents in electronic form (in 1 PDF file) should be sent to psd@igr.poznan.pl with a mandatory entry in the title, e.g. **PhD student – Department of Cereal Phenomics, IPG PAS_OPUS18**

Submission deadline is 26 August 2021.

Criteria for evaluation of candidates:

1. Candidate's research achievements, pursuant to the grades obtained in the course of studies, scientific publications, awarded scholarships and distinctions resulting from conducting scientific research or student activities or other achievements.
2. Candidate's scientific and professional experience, pursuant to participation in conferences, workshops, training sessions and internships, implementation of research and commercial projects, involvement in scientific trusts and societies, international and professional mobility, experience in other sectors, including industry.
3. Candidate's knowledge on the following discipline: agricultural science.
4. Knowledge of the subject matter described in the recruitment advertisement.

The description of the recruitment process is stipulated in the Regulations of Recruitment for PDS IPAS. Following the recruitment procedure, the unadmitted candidates shall be informed on the number of points obtained at both stages.

For additional information please contact the Principal Investigator:

dr hab. Anetta Kuczyńska, prof. IGR PAN

e-mail: akuc@igr.poznan.pl

Announcement of the results: Within one month from the deadline for applications.

Information clause:

Pursuant to 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 data, and repealing Directive 95/46/EC (hereinafter General Data Protection Regulation - GDPR), the Employer informs that:

- a) the administrator of personal data obtained, collected and processed as a part of the implementation of this agreement is the Institute of Plant Genetics, Polish Academy of Sciences, 34 Strzeszyńska str., 60-479 Poznań,

- b) contact with the inspector of personal data protection of the Institute of Plant Genetics, Polish Academy of Sciences in Poznan, is possible at the following e-mail address: iodo@igr.poznan.pl,
- c) the basis for data processing is art. 6 par. 1 letter b) and c) of the Regulation referred to above,
- d) all personal data provided to the Employer will be kept for the duration of the contract and for a period of 5 years after its completion,
- e) in relation to the personal data obtained, the Employer will not make decisions in an automated manner,
- f) The Employee is entitled to:
 - based on Article. 15 GDPR - access to personal data
 - based on Article. 16 GDPR - rectify personal data;
 - based on Article. 18 GDPR - request the administrator to restrict the processing of personal data, except to the cases referred to in art. 18 para. 2 GDPR;
 - the right to file a complaint to the President of the Office for Personal Data Protection, if the Employee considers that the processing of personal data by the Employer violates the provisions of the GDPR.