



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. 20/2021/IGR/PSD

INSTITUTION: Institute of Plant Genetics, PAS
CITY: Poznań
POSITION: Ph.D. student
POSITIONS AVAILABLE: 1
SCIENTIFIC DISCIPLINE: agriculture and horticulture
PUBLICATION DATE: Jul. 27, 2021
APPLICATION DEADLINE: Aug. 31, 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: Calvin cycle, chlorophyll fluorescence, de novo sequencing and assembly of *F. glaucescens* genome, enzymatic antioxidant system, gas exchange, lipidome, monocot species transformation, plant genome editing using CRISPR/Cas9 technology, RWC

Research topic: The main goal of the project is characterization of lipocalins family and recognition of chloroplastic lipocalins function in protection of photosynthetic apparatus against oxidative stress in *Festuca glaucescens*. The detailed goals are as follows: (i) identification of the genes encoding lipocalins (including true lipocalin and lipocalin-like proteins) within *F. glaucescens* genome, (ii) cellular function analysis of true lipocalins in the wild-type plants, (iii) generation of transgenic plants with CHL gene/genes knockout, (iv) analysis of photosynthesis activity in the wild-type plants and CHL/knock-out transgenic plants exposed to combined drought and high light treatment, (v) analysis of thylakoid membrane lipidome in the wild-type plants and CHL gene/genes knock-out transgenic plants exposed to combined drought and high light treatment.

Principal Investigator: dr. Izabela Pawłowicz – the leader of the whole project, implemented in the consortium IPG PAS – IP PAS – NIL and the PI of the part of the project carried out at IGR PAN

DESCRIPTION:

Place of employment: Plant Physiology Team, Institute of Plant Genetics of the Polish Academy of Sciences

Supervisor: dr. Izabela Pawłowicz

Goal of employment: implementation of the OPUS 20, no. 2020/39/B/NZ9/02488

Scope of research: Annotation of the genes encoding TIL and CHL lipocalins, identification of the ligands that bind to TIL and CHL lipocalins, generation of *F. glaucescens* transgenic plants with CHL gene/genes knock-out (gene editing with CRISPR/Cas9 use), leaf physiological parameters measurements including: relative water content (RWC); lipid peroxidation (TBARS assay); reactive oxygen species (ROS) content and abscisic acid (ABA) content in the wild-type plants and knock-out mutants in the control conditions and under simultaneous drought and high light treatment, functioning of antioxidant system analysis including: expression and activity of catalases, peroxidases and dismutases measurement in the wild-type plants and knock-out mutants in the control conditions and under simultaneous drought and high light treatment, functioning of Calvin cycle analysis including: chlorophyll fluorescence and gas exchange measurement; expression and activity of pFBA in the wild-type plants and knock-out mutants in the control conditions and under simultaneous drought and high light treatment, lipidome analysis of thylakoid membrane in the wild-type plants and knock-out mutants in the wild-type plants and knock-out mutants in the control conditions and under simultaneous drought and high light treatment.

Duties in project: Generation of transgenic plants; physiological measurements, gene expression profiling at transcript and protein (RT-qPCR and western blot), contribution in manuscript preparation. Analysis and interpretation of results. Preparation of publications and other forms of presentation of results.

Requirements for the candidates:

1. Experience in laboratory work in the field of basics molecular biology techniques.
2. Preferred additional experience in monocot species transformation and/or experience in plant tissue cultures.
3. Knowledge of the basics of plant physiology, including plant reaction to abiotic stresses.
4. Ability to use of basics software to nucleotide and protein sequences analysis like BioEdit and Primer3Plus and to search databases.
5. At least good knowledge of spoken and written English.
6. Independence and teamwork skills at the same time.
10. 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.
11. Mobility is welcome: internships, workshops, training, etc.

Additional information:

1. Research and doctoral theses shall be carried out within the OPUS 20, no. 2020/39/B/NZ9/02488, entitled "Characteristics of lipocalin family and their functioning in photosynthetic apparatus stabilizing under oxidative stress in *Festuca glaucescens*", funded by National Centre of Science.
2. PhD students shall receive a stipend in the gross amount of ca. 4270,50 PLN (3685,00 PLN net), for the period of 48 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 the electronic form (in 1 pdf file) must be sent by e-mail to: to.psd@igr.poznan.pl putting in the title: **PhD student – Plant Biotechnology Team IPG PAS**

Submission deadline is 31 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: agriculture and horticulture/biological sciences.
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. Izabela Pawłowicz

e-mail: ipaw@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.