



# 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. 47/2022/IGR/PSD

INSTITUTION: Institute of Plant Genetics, PAS  
CITY: Poznań  
POSITION: Ph.D. student  
POSITIONS AVAILABLE: 1  
SCIENTIFIC DISCIPLINE: biological sciences  
PUBLICATION DATE: Nov. 16, 2022  
APPLICATION DEADLINE: Dec. 16, 2022  
IPG PAS WEBSITE: <http://www.igr.poznan.pl/en/home-en>  
PDS IPAS WEBSITE: <http://www.psd-ipan.ibch.poznan.pl/index-en.html>

**KEY WORDS:** plant biotechnology, biopharming, plant-produced antigen, HBcAg, S-HBsAg, Virus-Like Particles (VLPs), plant-derived vaccines, injection-oral immunisation, immune response

**Research topic:** The aim of the project is to obtain a plant-derived vaccine and capable to induce Th1/Th2 immune response, i.e. of cellular-humoral type, particularly desirable for the treatment of chronic hepatitis B (CHB). Part of the project carried out at IGR PAN includes the production of key Hepatitis B Virus (HBV) antigens in various plant expression systems (transient expression in *Nicotiana benthamiana*, transgenic and transplastomic lettuce plants): core (HBcAg) and small surface (S-HBsAg) antigen, and their preparation to obtain the injection and oral components of the vaccine. Based on the analysis of antibodies, lymphocytes, etc., in subsequent animal experiments, the composition of the vaccine and the application scheme will be developed for the immune response of the highest efficiency and the above-mentioned mixed type.

**Principal Investigator:** prof. dr hab. Tomasz Pniewski – 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 Biotechnology Team, Institute of Plant Genetics of the Polish Academy of Sciences

**Supervisor:** prof. dr hab. Tomasz Pniewski

**Goal of employment:** implementation of the OPUS19, nr 2020/37/B/NZ6/02334

**Scope of research:** Obtaining of transgenic and/or transplastomic plants producing virus-like particles (VLPs) assembled by HBcAg or S-HBsAg. Generation of VLPs using the method of transient expression. Analysis of the expression of transgenes. Purification of VLPs for immunisation by injection. Preparation of plant material for oral vaccine. Analysis of the accumulation of VLPs in plants and derivative preparations. Analysis of the immune response in an animal model, among others for the purposes of adjustment of vaccine composition (HBcAg and HBsAg ratio) towards the desired Th1/Th2 (cellular-humoral) immune response.

**Duties in project:** Planning and conducting of research in the field of biopharming and participation in experiments on animals. 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 molecular biology, in particular DNA/RNA isolation from plant tissues, PCR and electrophoresis and/or protein extraction.
2. Preferred additional experience in plant transformation and/or experience in plant tissue cultures.
3. Knowledge of the basics of protein structure and analysis, including ELISA.
4. Knowledge of the basics of plant biotechnology - especially biopharming, including protein production - especially VLPs in various expression systems.
5. Basic knowledge in immunology.
6. Ability to combine molecular techniques, experimental approaches and protein analyses for the optimisation of VLPs production and processing of plant material into functional forms of vaccines.
7. Ability to use MS Office and search databases.
8. At least good knowledge of spoken and written English.
9. 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. The knowledge of the Polish language will be an additional asset due to the need of research documentation and preparation of some documents and reports in this language.

**Additional information:**

1. Research and doctoral theses shall be carried out within the OPUS 19, nr 2020/37/B/NZ6/02334, entitled "Immune response induced by injection-oral co-immunisation with plant-derived HBV antigens polarising the response to Th1 or Th2 type in the context of potential therapy for chronic hepatitis B", funded by National Science Centre .
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: [psd@igr.poznan.pl](mailto:psd@igr.poznan.pl) putting in the title: **PhD student – Plant Biotechnology Team IPG PAS**

**Submission deadline is 16 December 2022.**

**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: biological sciences, plant biotechnology.
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:**

prof. dr hab. Tomasz Pniewski

e-mail: [tpni@igr.poznan.pl](mailto:tpni@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 Poznań, is possible at the following e-mail address: [iodo@igr.poznan.pl](mailto: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.