

The Institute of Biochemistry and Biophysics PAS

is looking for a **two PhD students for 12 months** for the execution of SONATA-BIS scientific project entitled: “Bet-hedging in plants - multi level analysis of seed dormancy variability - from single cell to population”, financed by the National Science Centre.

Project description:

Since the initial observation of Charles Darwin of seeds that could germinate many years after their been buried deep in the soil – so called soil seed banks, it is clear that part of plants successful survival mechanism is entrance of some but not all of seeds produced by the mother plant into a dormant state. This is part of a plants strategy to hedge their bets on survival by spreading their offspring germination time. This partially achieved by variability of seed dormancy strength. Although initially described many years ago the phenomena have not been extensively studied. Here we will use a variety of methods, to investigate the molecular, physiological and evolutionary aspects of bet-hedging in plants. This project combines open-end approaches to look for highly variable genes between individual seed by single-seed-RNA-sequencing with single gene centered approach including single molecule RNA FISH analysis. This project aims to take advantage of my leading position in the field of DOG1 expression regulation, a number of preliminary data and offers to deliver a major breakthrough in seed dormancy research. Eventually this project by combining this multilevel analysis will contribute to future food security by testing some of the paths toward more alike seed dormancy, leading to more uniform germination in the field.

Scope of work:

A PhD student will be hired in an open call to work under my direct supervision but in close collaboration with Postdoc forming the bases of the new research team to be formed in the scope of this grant proposal. He or she will be mainly involved in the smFISH analysis using the established by us and our collaborators technics. At later stages of the project he or she will also be involved in the analysis of highly variable genes selected from the Seed_level analysis.

Keywords:

- Expression regulation
- Seed dormancy
- Non-coding RNA

Requirements for the candidate:

1. Interest in Molecular and Plant Biology
2. Experience in laboratory work
3. Ability to communicate in English

Funding and contract:

The anticipated average fellowship: 4 500 PLN/month (brutto/brutto) for 12 months with possible extension

Deadline for submitting offers: December 20, 2021, 23:59

The application in English should be sent to the project manager: dr hab. Szymon Świeżewski (sswiez@ibb.waw.pl).

NCN call for proposals type: SONATA-BIS

Required documents:

- CV
- Motivation letter with justification of the matching to the project
- Declaration of consent to the processing of personal data