



Postdoctoral POSITION

Role of NF-YB transcription factors in pea seed development

The French National Research Institute for Agriculture, Food, and the Environment (INRAE) is a public research establishment. It is a community of 12,000 people with more than 200 research units and 42 experimental units located throughout France. The institute is among the world leaders in agricultural and food sciences, in plant and animal sciences, and is 11th in the world in ecology and environment. INRAE's main goal is to be a key player in the transitions necessary to address major global challenges. In the face of the increase in population, climate change, scarcity of resources and decline in biodiversity, the institute develops solutions for multiperformance agriculture, high quality food and sustainable management of resources and ecosystems.

WORKING ENVIRONMENT AND ACTIVITIES

■ You will be welcomed in the Agroecology joint Research Unit (UMR1347) located in Dijon (France)¹. You will work in the FILEAS (seed filling & abiotic stresses) team which aims to understand the molecular processes controlling protein yield and quality of grain legumes and their plasticity in response to environmental changes by using a combination of reverse and forward genetics, molecular, omics and physiological approaches. The team has set up two TILLING populations for reverse genetics in pea, which is the most cultivated protein crop in France, and is part of the GEAPSI cluster well recognized for its expertise in legume seed biology, genetics, genomics and ecophysiology. GEAPSI hosts 40+ scientists, including international postdocs and students, with a friendly and dynamic work environment, and has access to cutting edge phenotyping and microscopy facilities within the Agroecology Joint Research Unit.

The post-doc will work in the frame of the ANR-PEAVALUE project alongside scientists of the FILEAS team, and in collaboration with the SeedDev team from IJPB (Versailles, France). The aim is to elucidate the role of NF-YB transcription factors (TF) in pea seed development, and particularly in the regulation of storage protein synthesis. Prior work in ANR-PEAVALUE has identified four NF-YB TFs that are candidates for regulating the synthesis of pea seed proteins, of which two have no clear homologs in Arabidopsis. Pea mutants for three of these genes have been obtained by TILLING (Targeting Induced Local Lesions IN Genomes) and backcrossed twice with the wild-type Caméor cultivar. You will be in charge of the phenotypic characterization of these lines, including seed protein composition, kinetics of seed development and maturation, and you will study the spatial localization of the NF-YB gene expression within the seed. You will test and validate the regulation of the storage protein genes by these TF, alone or in complex, using a *Physcomitrella patens* transient expression system, which is well established in the SeedDev team.

¹UMR1347 Agroecology is located in Dijon, an easy-going and enjoyable French city with rich cultural and tourism assets, and recognized as the capital of the gastronomy.

■ Special conditions of activity: the applicant should enjoy working with plants (greenhouse experiments) and doing lab experiments.

TRAINING AND SKILLS REQUIRED

- Recommended training: we are looking for a highly motivated candidate with a solid record of scientific accomplishment with at least one first author research paper published or in press.
- Knowledge required: an excellent working knowledge of molecular biology techniques is needed.
- Appreciated experience: one- or two-year experience after the PhD would be a plus, and prior expertise in seed biology would be appreciated.
- Skills sought: molecular biology, plant physiology.

↘ Reception modalities

- Unit : UMR1347 Agroécologie
- Postal code + city: 21065 Dijon
- Type of contract: post-doctorate
- Duration of the contract: 22 months
- Starting date: September 1th
- Remuneration: basic salary starting from 2 371 € gross per month for less than two years' experience after the PhD, full-time position.

↘ How to apply

Send a motivation letter, a CV and contact details for 2-3 persons who can provide letters of reference to:
Vanessa Vernoud, Christine Le Signor and Karine Gallardo

- By e-mail: Vanessa.vernoud@inrae.fr, Christine.le-signor@inrae.fr, karine.gallardo-guerrero@inrae.fr

- Par postal way: No

✘ Deadline for applications: July 1th, 2022