ERC-funded PhD position on inter-organelle communication during plant biotic stress responses

About the Lab/PSB

The VIB-UGent Center for Plant Systems Biology (PSB) is a world-leading plant science institute located at the heart of a renowned Plant Biotech campus in Ghent. Belgium. Its mission is to integrate genetics, genomics, and bio-computing to unravel plant biological processes and to further translate this knowledge into value for society. Please visit us at www.psb.ugent.be for more information.

Within the framework of an ERC Starting Grant, the lab of Prof. Inge De Clercq aims to understand how plant cells perceive environmental signals (e.g. from attack by pathogens) and translate this into appropriate defense responses. We focus on studying the central role of intracellular organelles (mitochondria, chloroplasts, and the ER) in stress signal transduction, and uncover the mechanisms of how these organelles communicate with each other through stress-induced contact sites. To this end, we will use interdisciplinary approaches by combining high-end cell biology (confocal and super-resolution microscopy), proteomics, proximity labeling, molecular biology, genetics, (single-cell) transcriptomics, metabolomics and bioinformatics.

Job description

An ERC Starting grant-funded Ph.D. position is available in the group of Inge De Clercq at the VIB-UGent Center for Plant Systems Biology (PSB) and Ghent University, Belgium.

You will study inter-organelle (between mitochondria, chloroplasts, and the ER) communication during the plant's interaction with fungal and bacterial pathogens. Your project is embedded within the ERC-STG Grant, entitled "COSI: Understanding organelle communication through COntact SIte in plant stress responses" which will study the direct association between organelles through stress-induced contact sites by implementing state-of-the-art cell-biology and proteomics approaches. With this exciting project, we seek to provide new mechanistic and functional insight into how stress signals are perceived and transduced between intracellular organelles and how they are translated into appropriate defense responses in the nucleus. The successful candidate will design and implement tools to detect the dynamic (or reversible) association between organelles and characterize the dynamic proteome at their contact sites.

Profile

Essential

- You are a talented and highly motivated candidate with a master's degree in Biochemistry, Biotechnology, Bioengineering, Biology, or another relevant field.
- You can plan and conduct research independently and accurately after initial training.

- You have a keen interest in intracellular signal transduction, organelle/cell biology, proteomics, and plant-pathogen interactions.
- Excellent English communication skills are required.

Desirable but not required

A background in any of the following areas: molecular plant science, (advanced confocal) microscopy, proteomics, and methods to study plant-pathogen interactions is considered an advantage.

Key personal characteristics

You should work well in a team as you will be integrated into the international research environment of the VIB-UGent Center for Plant Systems Biology and participate in international collaborations.

We offer

- A 4-year Ph.D. position, divided into 2 times 2 years.
- An exciting and innovative project embedded in the ERC-STG 2020 grant 'COSI', covering an interesting combination of state-of-the-art techniques including cell biology (confocal microscopy and super-resolution microscopy), proteomics, biochemistry (monitoring dynamic protein-protein interactions, proximity labeling), genetics, molecular biology, plant physiology and various omics approaches.
- A multidisciplinary and highly stimulating and supporting international research environment.
- Access to state-of-the-art tools and infrastructure.
- Various training opportunities are organized at VIB to broaden your expertise and skills (training.vib.be).
- Also, you will become a member of the Doctoral Schools program at Ghent University, which will provide training and guidance.

How to apply?

Motivated candidates are asked to apply online: https://jobs.vib.be/j/33432/phd-position-focussing-on-organelle-communication-during-plant-biotic-stress-responses.

Additional requirements:
- 1 –page motivation letter expressing interest in and suitability for the project
- CV (including publication list if applicable)
- Contact information of 2 referees

in 1 pdf document.

The first review of applications will start immediately. A shortlist of applicants will be selected and invited for interviews.

The position remains open until a suitable candidate is found.