Postdoctoral fellowship in Plant Molecular Biology at ESALQ-USP, Brazil

We are looking for highly motivated and skilled candidates to develop a post-doc project in the subjects of Molecular Biology and Plant Development, which are part of the main project "APC as an entry point to study small molecule regulation of the cell cycle", in straight collaboration with Max Planck Institute from Golm- Potsdam.

The anaphase-promoting complex/cyclosome (APC/C) is a multi-subunit E3 ubiquitin ligase that plays a major role in the progression of the eukaryotic cell cycle (1). This unusual protein complex targets key cell-cycle regulators, such as mitotic cyclins and securins for degradation via the 26S proteasome by ubiquitination, triggering the metaphase-to-anaphase transition and exit from mitosis. The identification of the complete set of genes encoding subunits of the APC in Arabidopsis suggests that the basic processes controlled by proteolysis mediated by ubiquitin in plants are similar to those of other organisms (2). During the last years, several molecular-biology tools have been extensively used in scientific research for identifying new function of proteins and metabolites. Still, the identification of metabolites, specially which control the cell cycle is not trivial and is characterized by piecemeal progress, especially in plants. In this project we aim to use metabolomics to identify and characterize metabolites that bind to the APC in the model plant Arabidopsis, and to potentially define their roles in plant development.

Main Responsibilities: - 1- Investigate metabolic changes during the cell cycle in plants. 2- Identify metabolites that interact with APC subunits. 3- Identify new proteins that interact with APC subunits and perform interaction studies. 4- Perform metabolomics profiling in plants overexpressing APC subunits, in order to understand changes in metabolic pathways of plants that show enhanced biomass. 5-Collaboration with partner institutions and colleagues.

Requirements

The candidates must have obtained a PhD degree in Plant Genetics or Plant Molecular Biology, or Plant Biochemistry less than seven years ago. Preference will be given to candidates whose degree has been received within the last 3 years; Background in developmental biology, genome editing, metabolomics and experience with plant genetic transformation is highly advantageous; Strong communications skills in English; Proven ability to work effectively as part of a multi-disciplinary, international team, plus the motivation and discipline to carry out autonomous research and supervise students.

Duration of the fellowship: Initially, the post-doc fellowship is for two years, renewable twice of 12 months, totalizing 48 months, depending on supervisor's recommendation and available budge. For salary details, please see http://www.fapesp.br/3162 (Pós-Doutorado PD-BR).

How to apply: Please, send the following documents to nbeloy@usp.br "Postdoctoral Fellowship" in the subject line of email application.

A single PDF that includes curriculum vitae, motivation letter (one page), and two recommendation letters.

Deadline: 10/12/2019

References:

1. Eloy NB, Lima MF, Ferreira PC, Inzé D (2015) The Role of the anaphase-promoting complex/cyclosome in plant growth. Critical Reviews in Plant Sciences 34:487-505.
2. Eloy NB, Coppens F, Beemster GT, Hemerly AS, Ferreira PC (2006) The Arabidopsis anaphase promoting complex (APC): regulation throught subunit availability in plant tissues. Cell Cycle 5:1957-1965.