Position ER3

Postdoc position in Molecular Biology/Biochemistry/Cell Biology at the group of Dr. Renate Lührs, head of dept. of Cell Biology, Phytowelt GreenTechnologies GmbH (PHY), Nattermannallee 1, D-50829 Cologne, www.phytowelt.com

Project: The role of epigenetic changes in plant regeneration potential

Somatic hybridization means the combination of nuclear and cytoplasmic genetic information by fusion of somatic cells, and is a powerful technique to develop new crop varieties with improved qualitative and quantitative traits. In Phytowelt we use electrofusion of isolated protoplasts to achieve this somatic hybridization, a process that represents one of Phytowelt's core expertise. The generation of hybrids is, however, hampered in many plant species due to the loss of regeneration potential after protoplast fusion. In monocots, loss of regeneration potential already occurs after a cell culture phase of around 6 months. In order to improve the regeneration protocols for selected hybrids, we are interested in understanding the molecular mechanisms underlying the regeneration potential of some crop species and particularly in barley. **The aim of the project** is to determine the role of epigenetic mechanisms in regeneration of the crop plant barley. To achieve this goal, the **postdoc** appointed will perform genome-wide comparative analyses of transcriptome and methylation profiles of histones and DNA in regeneration competent vs. incompetent barley cells. The compiled data analyses will identify differentially regulated genes that are candidate to be involved in mediating the regeneration potential of plant cells. **Collaborations with partners** MPIPZ, UDUS, IPG-PAS, BIOMOL and DIAG will provide the training to efficiently address these objectives.

Requirements

- PhD in Molecular Biology, Cell Biology and/or Biochemistry (or equivalent)
- Experience with molecular biology techniques
- Experience with basic plant cell culture technologies, preferentially embryogenic cell cultures
- Ability to work in a team and independently
- Highly motivated to pursue a career in science
- Background/expertise in (epigenetic) gene regulation

More information

Project information can be obtained from Dr. Peter Welters (CEO); e-mail: (contact@phytowelt.com); phone +49-(0)2162-77859.

Appointment

The appointment will be on a temporary basis for a maximum period of two years. A Personal Career Development Plan will be drafted that includes the attendance of EpiTRAITS courses and (international) meetings.

The gross monthly salary will be according to the salary scales of researchers in Germany. Besides the salary, the Postdoc will obtain a mobility allowance. Positions are aimed at being full-time, but if needed for family reasons part-time appointments are possible.

Interview Process

The 2-days interview process will take place on November 6 and 7 at the University of Amsterdam. Candidates selected for an interview will be notified 1-2 weeks in advance.

Host institution: Phytowelt GreenTechnologies GmbH

Phytowelt GreenTechnologies (GmbH) is a company in the newly developing area of industrial plant biotechnology (Green Chemistry and Green Energy) and has the objective of achieving optimized use of plants for industrial production processes. Depending on the task, plants are used as raw material (recyclable material), as production organisms or as models for process innovations (bionics and synthetic biology). We are continuously improving sustainability of production processes by converting renewable raw materials with innovative enzyme systems and fermentation processes. We also work to specifically improve plants as renewable energy carriers and suppliers of renewable resources by using state-of-the-art breeding technologies, e.g. marker-assisted protoplast fusion.