Project:

The roles of photoreceptors in root: Phytochrome-mediated shoot and root development

Light is an important environmental signal for optimal growth and survival and plants have evolved several types of photoreceptors to respond to the varying light fluence, wave length, and direction. Multiple photoreceptors, red (R) / far-red (FR) light-sensing phytochromes (PHY) and blue/UV-A light-sensing cryptochromes (CRY), and phototropins (PHOT) play central roles in photomorphogenic processes such as in seed germination and dormancy, shade avoidance, flowering time, defense against herbivory and in establishing circadian rhythms. Surprisingly, many of these photoreceptors are highly and specifically expressed in dark-grown roots which suggest these photorecptors in roots have a role in plant growth and development. However, most current studies about photoreceptors are exclusively focused in shoots, and the functions of photorecptors in roots are unknown. The main goal of this project is to uncover the functions of these root-expressed photoreceptors in *Nicotiana attenuata* plants.

We are looking for motivated Master/Diploma students (molecular biology/ biotechnology/ biochemistry/ plant physiology/ botany) having strong interests in plant-environment interactions, especially belowground communication.

Methods involved in the proposed project:

- RNA and Protein works (qRT-PCR, PCR, gel electrophoresis etc.)
- HPLC, LC-MS, LC-TOF and GC-MS based chemical analyses

Duration of the project: 6-12 month

If you are interested in this position, please send us your CV with a statement of research interests.

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