PhD fellow in Domesticating deadly carrots
Predicting the biosynthetic pathway of Thapsigargins for the treatment of solid tumors

Department of Plant and Environmental Sciences, Faculty of Science at University of Copenhagen is offering a PhD scholarship in Domesticating deadly carrots. Predicting the biosynthetic pathway of Thapsigargins for the treatment of solid tumors, commencing 1 January 2014 or as soon as possible thereafter.

This is an opening for a fully funded PhD fellowship (Early Stage Researcher) under an EU FP7 Marie Curie Initial Training Network (ITN), entitled Phylogenetic Exploration of Medicinal Plant Diversity, MedPlant (www.MedPlant.eu).

Project description
Thapsigargin, a guaianolide sesquiterpene lactone, constitutes the active part of a targeted pro-drug currently under phase 3 clinical trials for the treatment of solid tumors. Thapsigargin can only be isolated from Mediterranean Thapsia garganica or Thapsia gymnesica but the thapsigargin type of compounds is also found in other species in the genus. However, Thapsia is taxonomically highly complex with over 40 synonyms and specimens frequently misidentified. Preliminary work at the host group has shown that several species and even the genus are not monophyletic. In addition Thapsia species do not grow well out of their natural habitat and ongoing work at the host seeks to solve the potential resource problem with this new soon to be drug by transferring the biosynthetic pathway to a moss strain for efficient production.

The objectives of this PhD project is to use phylogeny and chemical profiles (sesquiterpene lactones) to (1) revise the genus and define the species and (2) identify high-level of thapsigargin producing varieties in collaboration with the industrial partner ThapsIbiza and (3) study the seasonal and geographical variation of expression of biosynthetic genes and possibly identify new genes involved in biosynthesis of thapsigargin. Other research questions may be explored depending on the development of the project and the PhD candidate background and interests.

We are seeking a candidate with an MSc degree in biology, preferably in systematic botany or related plant biology and preferably with some experience within biochemistry or molecular biology.

Principal supervisor is Associate Professor, Henrik Toft Simonsen, Department of Plant and Environmental Sciences, e-mail: hts@life.ku.dk or Direct Phone: +45 353 31131. Co-supervisor is Associate Professor, Nina Rønsted, Natural History Museum of Denmark.

Job description
Your key tasks as a PhD student at Science are:
- Manage and carry through your research project.
- Take PhD courses.
- Write scientific articles and your PhD thesis.
- Participate in congresses.
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- Stay at an external research institution for a few months, preferably abroad.
- Teach and disseminate your research.

**Key criteria for the assessment of candidates**
- A Master degree related to the subject area of the project, preferably with a strong background in systematic botany. The grade point average achieved.
- Professional qualifications relevant to the PhD programme.
- Previous publications.
- Other professional activities.
- Relevant work experience, basic knowledge and experience within biochemistry or molecular biology. Basic knowledge and experience within bioinformatics.
- Experience with botanical collections or other relevant fieldwork.
- Experience with molecular biology techniques (DNA sequencing) and phylogenetic analysis.
- Language skills, excellent English speaking, reading and writing skills are required, Arabian and/or Spanish speaking is an advantage.
- Good interpersonal skills.

**Formal requirements**
The position is available for a 3-year period for applicants holding a relevant masters degree.

**Note:**
At the time of recruitment, it is a requirement that PhD candidates have not been awarded a doctorate degree and are in the first 4 years (full-time equivalent) of their research careers.

Furthermore, at the time of selection by the host organization, researchers must not have resided or carried out their main activity (work, studies, etc.) in Denmark for more than 12 months in the 3 years immediately prior to their recruitment. Short stays, such as holidays, are not taken into account. The applicant must possess an MSc degree and be able to take up the position no later than 1 March 2014.

**Terms of employment**
The position is covered by the Memorandum on Job Structure for Academic Staff.

Terms of appointment and payment accord to the agreement between the Ministry of Finance and The Danish Confederation of Professional Associations on Academics in the State.

**Application Procedure**
The application, in English, must be submitted electronically by clicking the link below.

**Please include:**
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- Cover Letter (1 page only), stating which PhD project you are applying for and detailing your motivation and background for applying for the specific PhD project. If the candidate applies for more PhD stipends under the MedPlant, EU FP7 Marie Curie Initial Training Network (ITN), this have to be mentioned in the cover letter including the titles of the positions applied for.
- CV.
- Diploma and transcripts of records (BSc and MSc).
- Full list of scientific publications, if any.
- Other information for consideration.
- References.
- Documentation of English language qualifications, cf. general rules and guidelines, p. 5.

Only applications with a letter of motivation for the specific position will be accepted.

The applicant will be assessed according to the Ministry of Science Technology and Innovation Executive Order no 284 of 25. April 2008 PhD: http://www.science.ku.dk/english/research/phd/student/rules/

The University wishes our staff to reflect the diversity of society and thus welcomes applications from all qualified candidates regardless of personal background.

By the end of 30 January 2014, all applicants will have received information regarding the evaluation of their application.

The deadline for applications is 30 November 2013. Applications received later than this date will not be considered.

Questions
For specific information about the PhD scholarship, please contact the principal supervisor.

General information about PhD programmes at SCIENCE is available at PhD Regulations: http://www.science.ku.dk/english/research/phd/student/filer/Faculty_PhD_Rules_12-12-17.pdf/

Apply online link: https://ssl1.peoplexs.com/Peoplexs22/CandidatesPortalNoLogin/ApplicationForm.cfm?PortalID=3789&VacatureID=618397

The University of Copenhagen actively influences current and future generations through excellent research, education and co-operation. UCPH is one of the highest ranked universities in Europe and is Denmark’s oldest university, founded in 1479. Today, the University has 37,000 students and 9,000 employees affiliated across six faculties: humanities, law, natural sciences, social sciences, health sciences and theology.
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