

Marie Skłodowska Curie Ph.D. student / Early Stage Researcher (f/m)

A semi-hydroponic system associating plants and microbes for optimal SM production

- **Organisation/recruiting unit:** Université catholique de Louvain – Earth and Life Institute – Laboratory of mycology
- **Location:** Belgium, Louvain-la-Neuve
- **Research field:** Microbiology/Agronomy
- **Research profile:** First Stage Researcher (R1)

For the Innovative Training Network (ITN) project **MICROMETABOLITE** - *Research Training Network on the Microbial Enhancement of Bioactive Secondary Metabolite Production in Plants* (H2020-MSCA-ITN-201 – grant agreement number: 721635) we are looking for an early stage researcher in the field of microbiology, agronomy and biotechnology. The researcher fellow will be hosted at the laboratory of mycology for a period of 36 months.

Thesis Objectives:

The research fellow will work on the development of a semi-hydroponic system associating plants and microbes for optimal SM production. More specifically, the research fellow will

- Select model organisms from collections with known impact on metabolites production and/or plant growth promotion
- Develop a semi-hydroponic system associating the above-mentioned microorganisms with *Alkanna tinctoria* and *Lithospermum erythrorhizon*
- Extend the system to microorganisms showing plant growth promotion and/or increased/altered SM production
- Evaluate microbial combinations on SM production in semi-hydroponics systems and to optimize SM production

Expected results:

- An innovative semi-hydroponics system for plant-microbes associates and SM production
- Identifying the optimal stage of production via dynamics of colonization and SM assessment
- ESR trained in plant-microbe interactions, *in vitro* culturing/hydroponics of plants/microbes, metabolomics, transcriptomics
- 2 manuscripts in peer-reviewed journals, ≥2 international/national (oral, poster) conference presentations, a PhD thesis

Secondments

The fellow researcher will have to follow a number of secondment(s):

- In Germany (Institut für Pflanzenkultur – month 8 to 10 – 3 months – to study the *in vitro* plant production systems to evaluate the reliability of semi-hydroponics
- In Germany (Wilhelms Best) WB* – month 16 – 1 month - to receive training on the production and application of AMF
- In Austria (AIT Austrian Institute for Technology) – month 19 to 20 – 2 months – to study SM encoding gene expression of plants grown in semi-hydroponic systems
- In Greece (University of Athens) – month 28 to 30 – 3 months – be trained in metabolite extraction via eco-friendly technologies and metabolome analysis.

Additional Information

1. Specific Requirements

- **Requirement 1 (early-stage researchers):** Applicants must, at the date of recruitment by MICROMETABOLITE, be in the first four years (full-time equivalent research experience measured from the date when the researcher obtained the degree entitling him/her to embark on a doctorate) of their research careers and have not been awarded a doctoral degree.

- **Requirement 2 (mobility rule):** Applicants must not have resided or carried out their main activity (work, studies, etc.) in the country of the recruiting institution for more than 12 months in the 3 years immediately before the recruitment date. This excludes short stays such as holidays or compulsory national service.
- **Requirement 3 (specialisation):** Candidates should have a master level degree or equivalent in microbiology, agronomy or plant physiology. Experience in the research scope of MICROMETABOLITE is a vital asset.
- **Requirement 4 (English):** Proficiency in English is essential, as it is the working language of the MICROMETABOLITE Network.

2. Benefits

- Enrollment for PhD studies at the Université catholique de Louvain Doctoral School
- Individual research training trajectory, on-site supervision
- Full-time contract
- Salary according to Horizon 2020 Marie Skłodowska Curie Actions funding scheme including a monthly living allowance (3110 €) a monthly mobility allowance (600 €), a monthly family allowance (500 €). A correction factor will be applied per country, therefore the exact gross salary will be confirmed upon appointment. Please consider that the net salary may be 20-30% lower due to taxes, social benefit premiums etc.
- Conducting research in young, international and multicultural team
- For more information on MICROMETABOLITE, please visit:
[http://www.micrometabolite.eu/micrometabolite/Eligibility criteria](http://www.micrometabolite.eu/micrometabolite/Eligibility%20criteria)

3. Application procedure and selection process

Recruitment will follow the principles set out in **the European Charter for Researchers** and in **the Code of Conduct for the Recruitment of Researchers** (2005/251/EC; <http://ec.europa.eu/euraxess>), in accordance with the hosts' standard procedures and in line with their **Equal Opportunities Policies**. Recruitment will integrate the gender dimension (http://europa.eu.int/comm/employment_social/equ_opp/index_en.htm) to ensure equal employment opportunities for both sexes. The project will ensure an **open competition at international level**.

The **selection** will be made by a **Recruitment Committee**, which will be gender balanced and comprise diverse expertise and competences.

The selection process will take into consideration the whole range of experience of the candidates (**judging merit**). For instance, their creativity, curiosity, motivation, and level of independence will be considered. Similarly, **mobility experience** will be considered as a valuable contribution to the professional development of the researcher.

- A first selection will be made on CV. Each candidate will be informed about the strengths and weaknesses of his/her application.
 - A short list of potential candidates will be contacted and interviews conducted within the following two weeks by skype.
 - Final decision will be taken within one week and each candidate will be informed about the outcome.
- **Offer starting date:** 15/05/2017
 - **Application deadline:** 15/07/2017
 - **Interviews:** between 21/08/2017 and 08/09/2017
 - **Envisaged job starting date:** between 01/10/2017 and 15/10/2017
- To apply, please send your CV together with a letter of motivation and referee(s) to Stéphane Declerck (stephan.declerck@uclouvain.be)