Post Reference:P.3.D

Flux analysis Engineer

About MetaboHUB

MetaboHUB (MTH) is the national French metabolomics and fluxomics infrastructure. Launched in 2013, MTH is a leading international infrastructure serving more than 700 scientists worldwide. MetaboHUB gathers 6 **regional facilities** including more than **80 permanent staffs, 16 NMRs, 68 MS, robotic and computational platforms**. MTH aims at pushing forward the field to develop metabolomics, lipidomics and fluxomics from single cell to population. **Your contribution will serve a broad range of researchers** in the fields of biotechnologies, Human health, nutrition and plant science. **Joining MTH, you will be involved in cutting edge research within a highly skilled and motivated consortium.**

About Bordeaux Metabolome

Bordeaux Metabolome Facility, supported by three Institutes (INRAE, CNRS and Bordeaux University), gathers equipments and expertise for the study of metabolism and make them available to the scientific community. **The Facility performs adaptations and technological developments and designs and implements analytical strategies and bioinformatics tools for metabolomics, metabolic phenotyping, lipidomics and fluxomics. The Facility supports studies of plant functional genomics, genetics, pathology, ecophysiology and systems biology for regional, national and international research programs. It is also used for the study of plant-derived products and for pharmacological approaches.**

The mission

One of the objectives of the MTH infrastructure is to develop **isotopic tools throughout the whole MTH consortium.** Isotopically labeled material is used for **both metabolomics (enabling annotation and quantification) and studies of metabolism, such as fluxomics.**

The candidate's mission will be **to analyze fluxes in compartmentalized system**—specifically, an "average" tomato fruit cell. Following a **$^{13}CO_2$ pulse-chase labeling experiment, various analyses (LC-MS, GC-MS, NMR)** were conducted using MTH platforms. The objective is to **integrate all the data into the calculation software (Influx)** to identify flux solutions and to **demonstrate the added value of this isotope-based approach**. Finally, by mapping the results onto metabolic networks to **visualize flux maps, the dissemination of this work** in the form of an article is anticipated.

In parallel, another mission will be to **characterize plant ^{13}C-labelled standards,** used as internal standards for **LC-MS/GC-MS analyses**. To this end, commercially available plant-based material and ^{13}C-yeast sample (already characterized IDMS) will be analyzed by LC-MS. **MS data will be processed using both standards methods and new grouping tools** developed in MTH-consortium to exploit and cluster isotopologues. Finally, these standards will help to define the optimal strategy

Key Responsabilities

The successful candidate will be in charge to:

- Implement datasets into the software *influx* and **calculate metabolic fluxes**
- Visualize **flux maps an valorize the work showing the added value of labelling experiment for compartmented systems**
- Gather **plant ^{13}C-labelled standards for MS analyzes**
- **Process isotopic data** with available tools to establish guidelines

Profile

A background in metabolomics applied to fluxomics, computational biology (PhD level)
Experience in isotopy (^{13}C labelling experiments, IDMS, isotopic data processing) and/or mathematical software-based resolution

Skills

Flux analyses, isotopy
Plant metabolism
Metabolomics
English mandatory

Informations

CDD -Research engineer
12 months contract
Salary range (gross salary): 2815-3190 euros/month depending on experience
Place of work: Bordeaux, France
Starting from: 2027 January 1st

How to apply ?

The application should contain the following attachments:
• a motivation letter reasoning your interest for a specific research project described on our webpage (max. one page)
• a full CV (max. two pages) including contact details of two references
Application deadline: 2026 October 30

Contacts

Sophie Colombié
sophie.colombie@inrae.fr
Martine Dieuaide-Noubhani
martine.dieuaide-noubhani@inrae.fr

More information

www.metabohub.fr