



Toulouse Biotechnology Institute  
Bio & Chemical Engineering



twb  
White Biotechnology  
center of excellence

## POST DOCTORAL POSITION IN SYNTHETIC BIOLOGY

### JOB DESCRIPTION

The Toulouse Biotechnology Institute (TBI) located in Toulouse, France, is currently seeking a post-doctoral member to work on a project funded by Toulouse White Biotechnology (TWB). The project is focused on the biocatalytic transformation of methanol into high added value molecule. One-carbon compounds, such as CO<sub>2</sub> or methanol, have recently gained attention in biotechnology as substitute for conventional sugar-based feedstock. Considerable research efforts are thus currently focused on the generation of synthetic methylotrophic cell factories. In this project, the successful applicant will be in charge of the design and characterisation of the enzymes involved in the synthetic production pathway and on the construction and analysis of the synthetic methanol user expressing the production pathway. More specifically, during the first year, he/she will develop enzymatic cascades to produce a high value added molecule *in vitro*. If the pathway works, the project will continue for 12 additional months by introducing the production pathway in the synthetic methanol user strain. The project will require molecular biology, biochemistry, protein expression and purification, analytical tools such as HPLC/MS/NMR and microbial cultivation.

### LABORATORY & RESEARCH TEAM

The successful candidate will work between the TBI METASYS team lead by Stephanie Heux and the E-Carb group led by Claire Dumon in the Biocatalysis department led M. Remaud-Siméon. While METASYS has a strong expertise in synthetic methylotrophic strains and fluxomics analysis, E-Carb is specialised in biocatalysis for modification of carbohydrate or derivatives. The successful candidate will also work closely with TWB, which is located on the INSA campus, and will benefit from TBI core facilities such as METATOUL, and ICEO.

### QUALIFICATIONS

The successful candidate will hold a PhD in microbiology, biochemistry, or related subject. The candidate should have experience in DNA cloning, protein expression and purification, biocatalysis and microbial cultivation. Experience using HPLC will be required and knowledge in other analytic methods such as MS or NMR will be appreciated. Successful candidate will be able to conduct independent research, planning and executing experiments, preparing research reports, with strong communication skills, and writing scientific papers. Some knowledge of the French language (or interest to learn the rudiments), would be useful, however, non-French speakers should display a good command of English.

### CONDITIONS

The position is available from April 1 2021 for 12 month and can be extended to 24 months depending on the success of the first year. Salary will be based on the pay scales of the employer, INRAE depending on experience.

### CONTACT

To apply, please email: Stephanie Heux and Claire Dumon (stephanie.heux@insa-toulouse.fr and claire.dumon@insa-toulouse.fr); attach CV, cover letter, summary of previous research, and contact information for referees.



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