Postdoctoral fellowship available at the Fungal Biodiversity and Biotechnology lab (BBF)
(INRAE/Aix-Marseille University, Marseille, France)

A postdoctoral position in **microbiology, protein biochemistry and enzymology** is available at the BBF unit in Marseille (France), starting in January 2024, **for a duration of up to 36 months**. The project aims to investigate the post-translational oxidative modifications of plant cell wall degrading enzymes and their impact on the activity of the enzymes and their resistance to environmental stress. This research builds upon existing data and offers an exciting opportunity to contribute to the field. We are seeking a highly motivated candidate with a Ph.D. in biochemistry or a related field, and a strong background in protein chemistry and enzymology. Proficiency in microbiology, proteomics, and/or chemistry would be advantageous. Excellent written and spoken English skills are essential for effective communication within the international team of researchers, postdoctoral fellows, and Ph.D. students.

Filamentous fungi play a key role in the carbon cycle by decomposing dead organic matter in forest ecosystems. They degrade plant cell wall polymers using specialized secreted enzymes to obtain nutrients. Plant cell walls are heterologous mixtures of polysaccharides and polyaromatic lignin. This lignocellulosic biomass and fungal enzymes are invaluable resources for the biotechnological production of chemicals and energy from renewable carbon as an alternative to fossil fuels.

Depending on the type of lignocellulosic substrate and the environment, fungi are subject to constraints that affect their growth and degradation capabilities. The availability of oxygen (O_2) is critical for the growth and development of fungi and other microbes, but the importance of O_2 during the degradation of plant biomass has been overlooked. The OxyMiST project aims to unravel the role of O_2 in regulating microbial communities and their degradation capacities. OxyMiST is an international collaborative project funded by the Novo Nordisk Foundation, bringing together the Fungal Biodiversity and Biotechnology Unit (BBF) of INRAE and the University of Aix-Marseille (France), the Department of Geosciences and Natural Resource Management of the University of Copenhagen (Denmark) and the Department of Biochemistry of the University of Cambridge (UK) (https://novonordiskfonden.dk/en/news/major-research-project-will-focus-on-fungal-feeding-habits/).

Responsibilities:
- Conduct experiments to elucidate the role of post-translational oxidative modifications on the activity and stability of plant cell wall degrading enzymes.
- Utilize various biochemical and biophysical techniques to characterize enzyme properties and assess their resistance to environmental stressors.
- Publish research findings in high-quality scientific journals and present them at conferences and seminars.

Qualifications:

- Ph.D. in biochemistry or a related field, with a focus on protein chemistry or enzymology.
- Strong expertise in protein purification, enzymatic assays, and characterization techniques.
- Familiarity with microbiological techniques, proteomics, and/or chemistry would be beneficial.
- Demonstrated ability to independently design and execute experiments, analyze data, and troubleshoot technical challenges.
- Effective communication and interpersonal skills to collaborate within an international team setting.

We offer a stimulating research environment within the BBF unit, access to state-of-the-art facilities, and the opportunity to contribute to cutting-edge research in the field. The selected candidate will benefit from interactions with leading scientists and the scientific community in Marseille.

Contact:

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