



Post-doctoral opportunity at the LEMAR (Marine Environmental Sciences Laboratory), Plouzané, France

### **MARINE ALGAL BIOMOLECULES WITH PHOTOPROTECTION ACTIVITY (MABIOPA)**

The MABIOPA project is focusing on the marine algae and especially looking at the photoprotective compounds produced by those organisms against UV radiations. The distribution of marine algae in the littoral rocky or muddy zone is determined notably by their ability to resist to emersion. Species living in the upper intertidal zone face therefore long periods outside the seawater and have developed photoprotection mechanisms especially against harmful UV-radiations. To prevent the damaging effects of higher solar radiations and/or UV-radiations during emersion, they have developed various strategies such as the chemical protection studied in this project: the produced biomolecules may be different among the algal species and will decrease the radiations reaching the photosynthetic tissues and/or chloroplasts (Karsten et al. 2009). Among those compounds, the MABIOPA project will focus on the pigments and phenolic compounds including mycosporine-like amino acids (Stengel et al. 2011). The marine algae will be collected along Brittany coasts or taken from laboratory cultures and experiments to induce the synthesis of these photo-protective compounds will also be conducted in the laboratory under controlled conditions. State-of-the-art techniques (including High Pressure Liquid Chromatography, Mass Spectrometer and Nuclear Magnetic Resonance) will be used to extract, purify and identify these compounds. Once the compounds identified, purified and characterized, bioactivity tests will be performed.

This project will be hosted by the Marine Environmental Sciences Laboratory (LEMAR- CNRS, UBO, IRD, Ifremer). Founded in 1991, the LEMAR brings together biologists, chemists and physicists with the objectives of understanding and modelling the marine systems within the biosphere, defining the characteristics of the environment and organisms, and describing their interactions in detail. The unit promotes a resolutely interdisciplinary policy that is essential to address a complex area such as the interactions between the various components of the marine domain. The laboratory is part of two institutes of the National Center for Scientific Research (CNRS): the Institute of Ecology and Environment (INEE), and the National Institute of Sciences of the Universe (INSU). It is also attached to the Department of Oceans, Climate and Resources (OCEANS) of the French National Research Institute for Sustainable Development (IRD) and to the Department of Biological Resources and Environment (RBE) of Ifremer. LEMAR is part of the European University Institute of the Sea (IUEM) of the University of Western Brittany (Université de Bretagne Occidentale - UBO). On 1<sup>st</sup> January 2017, the LEMAR had 120 permanent staff including researchers, lecturers, engineers, technicians and administrative personnel, and 84 postdoctorals, PhD students and visitors.

Postdoctoral fellowship and research running costs from the MABIOPA project are secured for one year but new funding application will be submitted during 2017.

Eligibility: candidates without a French citizenship or French candidates who have been living abroad for at least 12 months during the past 3 years.

Qualifications:

- PhD in marine biology, marine botany with research on marine algae
- Experience in algal cultures under controlled conditions in the laboratory
- Knowledge on Chromatography Techniques, Mass-spectrometry as well as Nuclear Magnetic Resonance method.

Send applications, including CV and statement of interest, including expertise and the names and contact details of three referees to Solène Connan ([solene.connan@univ-brest.fr](mailto:solene.connan@univ-brest.fr)) by the 15<sup>th</sup> April 2017. Applications will be processed as received. The latest possible start for the post-doctoral contract is on the 30<sup>th</sup> May 2017.

*Literature cited:*

*Karsten et al. (2009) Bot Mar 52, 639-654.*

*Stengel et al. (2011). Biotechnol Adv, 29, 483-501.*