



EUCOR 2022 – Post-doc (2 x 6 months)



Position: Postdoctoral Position in Biological Chemistry/Biochemistry/Proteomics – Strasbourg-ECPM/IPHC/IBMC

Project title: Activity-based protein profiling of the interactome of the antiparasitic drug, plasmodione (Acronym: ROSkillers)

Summary:

A **renewable 6 month post-doctoral position** is open at the ECPM (University of Strasbourg) to use activity-based protein profiling (ABPP)-based probes to evaluate the metabolism of the antiparasitic drug plasmodione & derivatives, and to fish drug targets in living cells (*E. coli*, *S. cerevisiae*, *P. falciparum*). To circumvent the enhanced transmission of drug resistant malaria parasites to mosquitoes the team of the coordinator has developed an optimized plasmodione analogue with potent anti-gametocyte V and transmission-blocking properties. The postdoc project will use photoreactive plasmodione-derived alkynes as partners of the click reaction to fish and reveal target-protein adducts in mature *P. falciparum* rings and gametocytes upon irradiation and analyze them by mass spectrometry in chemical proteomics studies.

Description:

The “Laboratoire d’Innovation Moléculaire et Applications (LIMA)” (UMR7042 / CNRS-Unistra-UHA), located in the “European School of Chemistry, Polymers and Materials (ECPM)” in Strasbourg and in Mulhouse, is looking for a candidate interested in a renewable 6 month-postdoctoral position (funded by the campus EUCOR) to undertake research at the Biochemistry/Proteomics interface. The project will be supervised by Dr. Elisabeth Davioud-Charvet, and integrated within a French/Swiss consortium working on novel antimalarial drugs and encompassing multiple disciplines: biological chemistry of redox-active antiparasitic compounds (Dr. Elisabeth Davioud-Charvet at LIMA-Strasbourg, & Marjorie Schmitt at LIMA-Mulhouse, UMR7042), mass spectrometry analysis & proteomics (Dr. Christine Schaeffer & Jean-Marc Strub) at IPHC, LSMBO, Strasbourg, Dr. Sarah Cianferani), the biology of mosquitoes and malarial parasites (Dr. Stéphanie Blandin, MIR/M3I, IBMC, Strasbourg), and parasitology and drug screening (Prof. Pascal Maeser, University of Basel, Switzerland).

The European School of Chemistry, Physics and Materials (ECPM) offers a stimulating research environment with ~ 60 scientists. It has renowned expertise in synthesis of functional molecules for materials, (bio)organic and medicinal chemistry, protein mass spectrometry & proteomics analysis, and provides access to a wide range of state-of-the-art mass spectrometers and chromatographic systems.

For the *ROSkillers* project, new selective activity-based probes were designed for the identification of plasmodione protein targets. A first proof-of-concept has been reported *in vitro* (Cichocki B. et al., *JACS*^{Au} 2021, 1(5):669-689. doi: 10.1021/jacsau.1c00025). The postdoctoral researcher will undertake the analysis of the global interactome of this promising agent *in vivo*, first in *E. coli* and/or *S. cerevisiae* overexpressing flavoenzymes as models, and then in parasite asexual stages and in gametocytes using proteomics methodologies. Candidate targets will be then validated with genetic engineering in *Plasmodium*.

We are looking for a highly motivated and ambitious candidate with a strong background in mass spectrometry analysis of proteins (fundamental criteria). Additional expertise in click chemistry and/or photoirradiation would be appreciated. The ideal candidate will have a proven track record of scientific excellence, very good communication and writing skills as well as a strong commitment to experimental work. The candidate should be also able to perform independent research and be eager to engage in collaborations with co-workers within this project. Knowledge of the French language is not required. Thorough knowledge of English, both oral and written is mandatory.

Main research fields: Biological sciences / (bio)Chemistry / Pharmacological sciences

JOB DETAIL

Type of contract: Temporary

Status: Full-time

Company / Institute: Université de Strasbourg

Country: France

City: Strasbourg

Postal Code: 67200

Street: 25 rue Becquerel

APPLICATION DETAILS (mandatory)

Provisional start date : 01/07/2022 (at the latest)

Application deadline : 30/04/2022

Application e-mail : christine.schaeffer@unistra.fr , sblandin@unistra.fr , elisabeth.davioud@unistra.fr
