One-year Post-doctoral position

Targeted delivery of Pt(IV) conjugates of oxaliplatin and SOD mimics for anticancer activity with reduced peripheral neuropathy

Start before January 2021

Laboratory: A postdoctoral position is available at the Laboratoire des Biomolécules (LBM) - team 1 'Peptide, Glycoconjugates and Metals in Biology' (UMR7203, CNRS, Sorbonne Université, Département de chimie de l'ENS-PSL, https://www.chimie.ens.fr/recherche/laboratoire-lbm/) in the group "Metals in Biology — Inorganic Cellular and Biological Chemistry" (**supervision Dr. H. C. Bertrand**).

The project will be developed in collaboration between LBM (H. Bertrand and C. Policar), NUS Singapore (Chemistry department Prof. W. H. Ang, Pharmacy department Prof. G. Pastorin) and Institut Cochin (Profs F. Batteux and R. Coriat).

Funding: Fondation de la Maison de la Chimie

Starting date and duration: start between October 2020 and January 2021. Position available for one year.

Project: Pt anticancer drugs are efficient chemotherapeutic agents extensively used in clinics but their toxicity limits their efficacy. These compounds, such as Oxaliplatin (Ox), produce a burst of intracellular oxidative stress leading to cancer cells' death through a higher sensitivity to the increased oxidative stress. Several modulators of the redox balance have demonstrated interesting results in counteracting Ox-induced neurotoxicity. In this context, we have recently shown that the treatment of oxaliplatin (Ox) in combination with a bioinspired SOD mimic developed in our lab prevented the appearance of sensitive axonal neuropathy and neuromuscular disorders induced by Ox in mice.[1] In this project, we will develop covalent conjugates between redox modulators and Ox as Pt(IV) prodrugs. By chemical design, we will control the intracellular activity of both active components and will optimize their cellular and tumoral targeting to generate efficient anticancer agents with a reduced toxicity.

Technical aspects: This is a multidisciplinary project involving multi-step synthesis, physico-chemical characterizations, cellular biology, formulation and *in vivo* studies (in collaboration). The postdoctoral fellow will be in charge of the synthesis and cellular biology work. The candidate will have the opportunity to work for short periods in the collaborators' labs at Institut Cochin and NUS Singapore (funded mobility).

Profile of the candidate: PhD in molecular chemistry or biochemistry; skills in organic-bioorganic synthesis are required and skills in cell culture and assays will be strongly appreciated. Real motivation for interdisciplinary projects, strong autonomy, adaptability, initiative spirit and interpersonal communication skills are essential.

How to apply: Send your CV (with the contact details of, at least, two referees) and a cover letter describing your research interests (in French or English) to helene.bertrand@ens.psl.eu by **July 10th**.

Contact person: Dr. Hélène Bertrand, helene.bertrand@ens.psl.eu

1. Guillaumot M.-A., Cerles O., Bertrand H. C., Benoit E., Nicco C., Chouzenoux S, Schmitt A., Batteux F., Policar C., Coriat R., Oxaliplatin-induced neuropathy: The preventive effect of a new Super-Oxide Dismutase modulator. *Oncotarget*, **2019**, 10(60): 6418–6431