



### 3-year postdoctoral position in an interdisciplinary project involving cell biology, biochemistry and analytical chemistry

A 3-year postdoctoral position, funded by the ANR (French National Research Agency) is available in the **MATOs** team (UMRE4320 TIRO-MATOs) at Université Côte d'Azur in Nice.

The MATOs team is interested in alterations in bone tissue induced by genetic or environmental factors. Among the latter, Uranium (U) is a non-essential heavy metal widely distributed in the environment due to its natural occurrence and its use in several human activities. The main target organs on which natural U exerts chemical toxicity are the kidneys and the skeleton. To date, knowledge of the underlying toxicological mechanisms is still preliminary. As nuclear energy is presently being promoted due to global warming and society's expectations for environmental safety are increasing, the need for further investigating natural U toxicity is critical.

The aim of the ANR BioCUBK (Biochemical Cycle of Uranium in Bone and Kidney) project is to decipher the molecular and cellular mechanisms involved in response to low-dose U exposure in kidney and bone. Using an interdisciplinary strategy, we propose to characterize: i) the fate and behavior of U in different kidney and bone study models of increasing complexity (2D cell culture, biomimetic bone matrices for 3D culture, kidney organoids, and mice chronically exposed to U), and ii) the cellular pathways impacted in these two organs.

The postdoctoral researcher will be in charge of setting up different biomimetic bone cell culture models and preparing extra- and intracellular samples from these cell culture systems exposed to low doses of U. These samples will be used to characterize the behavior of U and its potential molecular targets. This work will be carried out in close interaction with chemists of the RHE group (Institut de Chimie de Nice, Université Côte d'Azur) and biochemists of the TecSep group (Institut des Sciences Analytiques, Université Lyon 1). In particular, she/he will take an important part in synchrotron experiments conducted by the RHE team after a training period with this group's members. Finally, she/he will investigate the molecular mechanisms impacted by U in bone and contribute to their study in renal tissue, in coordination with a PhD student from the LRSI team of IRSN (Institut de Radioprotection et de Sûreté Nucléaire, Fontenay-aux-Roses), LRSI members having a strong expertise in heavy metal toxicity and renal physiopathology. As such, the postdoc will have a key role in the BioCUBK project by interfacing with biologists, analytical chemists and biochemists. Within the MATOs team she/he will be surrounded by researchers from INSERM and CNRS with extensive expertise in the fields of bone biology, autophagy, cell and molecular biology and animal experimentation, and will have access to numerous technical core facilities.

The applicants must have a PhD in cell biology, should be motivated, autonomous, scientifically curious and have a creative and collaborative spirit. In addition, the candidates should enjoy working in collaboration with different partners. The project will require a wide variety of techniques and knowledge in the field of biology (3D cell culture, molecular and cell biology, bone pathophysiology, microscopy imaging, bone pathophysiology, inflammation/autophagy pathways). Moreover, the postdoctoral researcher should also be interested in acquiring and/or developing skills in various analytical chemistry techniques.

Salary (gross) :  $\approx$  € 2900.

Starting : early to mid 2023, depending on the selected candidate's availability.

Information requests and applications should be sent to Sabine Santucci, coordinator of the BioCUBK project ([sabine.santucci@univ-cotedazur.fr](mailto:sabine.santucci@univ-cotedazur.fr)). Candidates can send a cover letter, a detailed CV as well as contact informations of two or more referees.