CENTRE D'ETUDES NUCLÉAIRES DE BORDEAUX-GRADIGNAN

Vendredi 05 Septembre 2014

à

11H00

Un café sera servi à partir de 10h45

Christophe DEN AUWER

Université de Nice Sophia Antipolis/Institut de Chimie de Nice (Nice)

The role of phosphorous biochemistry in actinide human contamination

In case of accidental exposure to radioelements, internal actinide toxicity is related to both emitted radiation and to the in-vivo circulation scheme. The need for a better understanding of the actinide pathways in biological systems is of fundamental importance with regards to the assessment of nuclear risk. The use of bio-mimicking molecules or molecular building blocks (like simple aminoacids with important chelating groups, small peptides etc.) is one of the methods to better understand these chemical pathways that drive actinide incorporation into cells and organs. Our present strategy has focused on the cation coordination itself in a so-called bioactinidic approach corresponding to actinide chelation by important biological actors or building blocks of biological molecules that may be considered as simplified mimicking actors.

The phosphate chemical function is ubiquitous in biological systems. The phosphorylations of proteins are transient phenomena, which play a key role in the signalization cascades, and actinide bound to the phosphorylated groups might disturb some biochemical pathways. While it is involved in phosphorylated proteins phosphates are also the major functions of the nucleotides.

This presentation will give a background of actinide bioinorganic chemistry in the framework of nuclear toxicology. It will in particular browse examples of actinide coordination mechanisms with two distinct biological systems that involve phosphorylated biomolecules.

Salle des Séminaires du CENBG

Le Haut Vigneau - BP 120 - F-33175 Gradignan Cedex