



université  
de BORDEAUX



**Postdoctoral Position**  
**Medicinal chemistry / Chemical Biology (M / F)**  
**Univ Bordeaux-CNRS, CBMN**  
**Institut Européen de Chimie et Biologie, Bordeaux, France**

A Postdoctoral position is available in the Peptidomimetic Chemistry Lab (CBMN, UMR 5248), located in the Institut Européen de Chimie et Biologie (IECB) on the campus of the Univ. Bordeaux, France.

**Project**

Bacterial infections caused by drug-resistant pathogens represent a major threat against which effective antibiotics acting via new mechanisms and engaging new biological targets are highly needed. The sliding clamp (SC) which is an essential component of the bacterial DNA replication and repair machinery has been identified as a possible new target. This processivity factor operates through multiple protein-protein interactions with conserved peptide motifs in DNA polymerases. In previous years, efforts from our group have led to the discovery of a first generation of high affinity peptide binders for SC. The goal of the project will be to explore the possibility to convert such non-covalent SC ligands into **targeted covalent inhibitors (TCI)** to further improve their potency. In the last ten years, the development of covalent drugs has gained a momentum with the approvals of several TCIs in oncology and as antivirals. Covalent inhibition could potentially improve the inhibitory potency and/or selectivity, increase the duration of action and reduce the emergence of resistance. Although some established classes of antibiotics actually work by irreversible inhibition (e.g.  $\beta$ -lactams), the use of TCIs to target bacterial machineries through inhibition of PPI still remains overlooked. **The project will thus involve the design, synthesis and detailed characterization of the mode of action of TCIs targeting the SC of gram-negative pathogens including priority pathogens listed by WHO.**

**Work context**

This multidisciplinary project, funded by the French National Research Agency (ANR) will be carried out under the supervision of Gilles Guichard and Guillaume Compain in collaboration with D. Burnouf and J. Wagner at the Institute of Molecular and Cellular Biology in Strasbourg.

The CBMN and IECB institutes are dynamic and interdisciplinary research centers located on the campus of the University of Bordeaux (France). The laboratory is fully equipped for chemical synthesis and the institute has analytical and biophysical facilities combining state-of-the-art instrumentation (NMR, mass spectrometry and X-ray diffraction).

**Candidate**

The candidate should have a PhD in synthetic organic chemistry and a strong background in medicinal and bio-organic chemistry. We seek for talented candidates, motivated by research at the chemistry-biology interface. A very good command of English will be an asset, as will excellent writing and presentation skills. Applicants with excellent records will be given priority.

**Contract**

12 months + extension 12 months (between 2648 and 3054 € gross monthly according to experience)

<b>Contact</b>	Candidates interested should apply by connecting on the CNRS portal (deadline March 29, 2023: <a href="https://emploi.cnrs.fr/Offres/CDD/UMR5248-GILGUI-008/Default.aspx?lang=EN">https://emploi.cnrs.fr/Offres/CDD/UMR5248-GILGUI-008/Default.aspx?lang=EN</a> . Direct contact : Dr. Gilles Guichard : Institut Européen de Chimie et Biologie – CBMN, UMR 5248 - 2 rue Robert Escarpit - 33 000 Pessac – France - Email: <a href="mailto:g.guichard@iecb.u-bordeaux.fr">g.guichard@iecb.u-bordeaux.fr</a> ; Web : <a href="http://www.guichard-iecb.fr/">http://www.guichard-iecb.fr/</a>
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