



PhD thesis title: “Combating Biofilm Formation: development of *Acinetobacter baumannii* sirtuins inhibitors”

Period: 36 month, starting 1st October 2025

Location: Centre d’Etude et de Recherche sur le Médicament de Normandie (CERMN), Université de Caen Normandie

Research group : Medicinal chemistry

Context: The SUCOMB project (Sirtuins and lysine acetyltransferases: new targets for new anti-biofilm drugs), led by PBS Laboratory (University of Rouen Normandie), has been awarded €525k in funding from the ANR over a 4-year period. The aim of this project is to focus on the players involved in lysine acetylation during biofilm formation in *Acinetobacter baumannii*, a bacterium classified as a “critical priority” by the WHO. The aim is to propose new antibacterial molecules that are effective against this pathogen. The project brings together two partners: the PBS Laboratory (University of Rouen Normandie) and CERMN (University of Caen Normandie).

Objectives: As part of the ANR SUCOMB project, the candidate will be tasked with discovering inhibitors of various *Acinetobacter baumannii* sirtuins that inhibit the formation of biofilms. A list of potential hits has been previously selected from the CERMN chemical library using molecular modelling and virtual screening methods (docking, filtering on the basis of pharmacophores). In a ‘hit discovery’ approach, the candidate will have to develop a screening process involving biological (enzymatic inhibition) and physico-chemical (solubility) characterisations in order to select around fifty original compounds among the selected molecules. These will be tested directly in vivo for their antibiofilm activity in order to select a ‘hit’. In a second stage, the candidate will pursue his work through a ‘hit-to-lead optimization’ approach by pharmacomodulation of the selected hit(s) that will have shown biological activity.

Essential job requirements: Master Degree in Chemistry or Drug design by the start of the appointment (1/10/2025). Previous experience in the organic or medicinal chemistry and /or analytical chemistry.

Please send a detailed CV with at least the name of one reference and a cover letter to marc.since@unicaen.fr & christophe.rochais@unicaen.fr before the 15th July 2025.