Title of the thesis	Selection, Design and Synthesis of semi-synthetic terpenes libraries for the discovery of new antibiotics
Acronym	RE-ENFORCE
Reference number	025

Hosting institution	**Employer**
University of Lille Website: https://www.univ-lille.fr/home/	University of Lille Website: https://www.univ-lille.fr/home/
Hosting research unit 1	**Hosting research unit 2**
Name: Médicaments et Molécules pour Agir sur les Systèmes Vivants Acronym: M2SV Identification number: UMR 1177 Address: Faculté de Pharmacie Université de Lille 3, rue du Professeur Laguesse - BP 83 59006 - Lille cedex Website: https://www.deprezlab.fr/	Name: Institut De Recherche En Biotechnologie Et Agroalimentaire Charles Viollette Acronym: Institut Charles VIOLLETTE Identification number: EA 7394 Address: Université de Lille Avenue Paul Langevin 59655 Villeneuve d'Ascq Website: https://institutcharlesviollette.univ-lille.fr/
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Thesis information	
Keywords	Antimicrobial resistance, medicinal chemistry, Terpenes, bio-sourced molecules
Abstract	The past decade has seen a dramatic, worldwide increase in pathogenic bacteria that are resistant to known antibiotics. There is an urgent, unmet medical need for new therapeutic alternatives, in particular for the treatment of multi-resistant pathogens (gram-negative bacteria and mycobacterium tuberculosis). The RE-ENFORCE project will gather 2 academic partners and a Swiss SME, bringing innovative approaches, platform technologies, nimble thinking and know-how in the drug discovery process and, bringing their expertise and novel alternative strategies to address the growing problem of drug resistance. The interrogation of complex biological pathways demands diverse small molecule tool compounds, which can often lead to important therapeutics for the treatment of human diseases. Since natural products are one of the most valuable source for the discovery of therapeutics, the selection and then derivatization of natural terpenes will be extensively investigated to generate molecules with a high value for biological screenings. This library will be assembled and we will perform phenotypic and/or target-based screenings, for the discovery and optimization of new antibiotics for the *in vivo* proof of concept and further development into drug candidates.
Expected profile of the candidate	The ideal candidate for this position is a highly motivated, excellent researcher with an MSc degree in organic or medicinal chemistry with backgrounds in natural product chemistry. Knowledge and experience in plant extraction would be greatly appreciated. A strong interest in biophysical techniques and in analytical chemistry is mandatory. The candidate should enjoy the challenge of novel scientific concepts and

	have a highly motivated, persistent and result-driven attitude. The candidate should be able to work well both independently and in an interdisciplinary team, with scientific curiosity in experimentation to address the different aspects of this multidisciplinary topic. Good oral and written communication skills in English are essential.
Application procedure	The application procedure is detailed on the European programme PEARL website www.pearl-phd-lille.eu. The funding is managed by the I-SITE ULNE foundation which is a partnership foundation between the University of Lille, Engineering schools, research organisms, the Institut Pasteur de Lille and the University hospital. The application file will have to be submitted before April 15, 2020 (10h Paris Time) and emailed to the following address : international@isite-ulne.fr.
Net salary and Lump Sum	A net salary of about €1,600 + €530 per month to cover mobility, travel and family costs.