PhD position available in Organic Chemistry / Chemical Biology

Pin1 Degradation as Therapeutic Approach to Multiple Myeloma

Institution: CY Cergy Paris Université
Doctoral School: Science and Engineering (n°417)
Research Unit: BioCIS, *Equipe de Chimie Biologie* – UMR-CNRS-8076
PhD Supervisors: Dr. Chiara ZANATO, Prof. Julien PYTKOWICZ
PhD duration: 3 years – Starting between October 2025 and January 2026
Funding: CY Initiative 2025
Application Deadline: Open until filled

Context and Project Objectives: Multiple Myeloma (MM),[1] a haematological malignancy of plasma cells, remains largely incurable due to persistent drug resistance and disease relapse, highlighting the urgent need for innovative therapeutic targets and strategies. Pin1, a small protein belonging to the Peptidyl-Prolyl *cis-trans* Isomerase family, has emerged as a pivotal oncoprotein implicated in the pathogenesis of various tumours.[2] Recent studies emphasise Pin1's critical role in driving resistant MM progression.[3] Despite its compelling oncogenic role, Pin1's small and shallow enzymatic pocket pose significant challenges for conventional drug design, limiting the development of effective inhibitors. To overcome these obstacles, we propose a paradigm shift: harnessing the power of Targeted Protein Degradation (TPD).[4] This innovative approach, which has revolutionised chemical biology and drug discovery in recent years, offers a promising strategy to therapeutically target previously "undruggable" proteins such as Pin1. This project aims to develop Pin1 degraders to selectively eliminate this protein, addressing both drug resistance and disease relapse in MM. In addition, Pin1 degraders will serve as valuable tools to further investigate the role of Pin1 in MM progression and the emergence of drug resistance.

Job Description: This is an innovative and challenging interdisciplinary project in which the PhD student will be responsible for both the synthetic work and the biological evaluation of the final degraders. It represents an excellent opportunity for the successful candidate to build a strong foundation in organic chemistry applied to drug discovery, while also acquiring critical interdisciplinary skills in chemical biology and medicinal chemistry. The student will benefit from a stimulating research environment within a young and dynamic Team with diverse international backgrounds and strong expertise in the design and development of bioactive molecules and chemical biology. The PhD position will be based at the BioCIS laboratory (FR), but the project is conducted in collaboration with several European academic partners: Innsbruck Medical University (Austria), Sorbonne Université (France), Vrije Universiteit Brussel (Belgium), and Université de Strasbourg (France). The student will be expected to interact closely with these partners and follow the progress of the collaborative work.

Candidate's Requirements*:* The ideal candidate should be highly motivated to work at the interface between chemistry and biology. A Master's degree in Chemistry (or an equivalent qualification) is required, along with strong theoretical and practical knowledge in organic synthesis and in the characterisation of organic compounds. Prior experience in chemical biology will be considered an asset. A good level of English is essential for bibliographical research and interaction within our European research team.

To apply: send CV, cover letter, reference letter(s) and Master degree marks/evaluation to **chiara.zanato@cyu.fr**

References:

[1] M. Mohty, *et al. Nat Rev Dis Primers* **2024**, *10*, 45.
[2] A. Matena, *et al. Biol. Chem.* **2018**, *399*, 101 .
[3] a) Y. Meng *et al. Cancer Gene Ther* **2025**, *32*, 22; b) C. Zanato *et al., Chem. Commun.*, **2025**, *61*, 5774.
[4] B. L. Ebert *et al. Nat Rev Mol Cell Biol* **2024**, *25*, 740.