

RESEARCH TOPIC FOR THE PARISTECH/CSC PHD PROGRAM (one page maximum)

Field: Chemistry, Physical Chemistry and Chemical Engineering

Subfield: Organic chemistry

Title: Total synthesis of tularin A and analogues

ParisTech School: Chimie ParisTech

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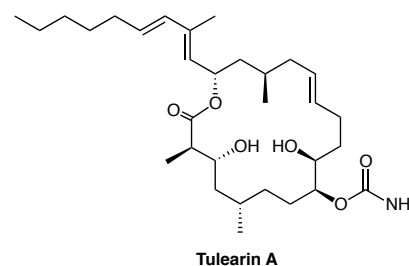
Research group/Lab: Institute of Chemistry for Life & Health Sciences (i-CLeHS), CSB2D team (Catalysis, synthesis of biomolecules and sustainable chemistry)

Lab location: i-CLeHS, Chimie ParisTech, Paris

(Lab/Advisor website): <https://www.chimieparistech.psl.eu/>

Short description of possible research topics for a PhD:

Tularins constitute a small family of macrolides isolated from a Madagascar sponge of the *Fascaplysinopsis* genus. The potent anti-proliferative activity of Tularin A against two human leukemia cell lines made it an interesting target and two total synthesis of this compound have been reported. As part of our ongoing research directed toward the synthesis of biologically relevant compounds,^[1-2] we propose in this PhD program to develop an efficient total synthesis of Tularin A and of analogues of the natural product, using new catalytic systems to introduce the various stereogenic centers.^[3-5]



Required background of the student:

Main field of study of the applicant before applying: organic chemistry.
Synthetic Organic Chemistry, Homogeneous Catalysis

A list of 5 (max.) representative publications of the group:

1. Echeverria, P.-G.; Prévost, S.; Cornil, J.; Férard, C.; Reymond, S.; Guérinot, A.; Cossy, J.; Ratovelomanana-Vidal, V.; Phansavath, P. *Org. Lett.* **2014**, *16*, 2390.
2. Perez, M.; Echeverria, P.-G.; Martinez-Arripe, E.; Ez Zoubir, M.; Touati, R.; Zhang, Z.; Genet, J.-P.; Phansavath, P.; Ayad, T.; Ratovelomanana-Vidal, V. *Eur. J. Org. Chem.* **2015**, 5949.
3. L.-S. Zheng, C. Férard, P. Phansavath, V. Ratovelomanana-Vidal *Chem. Commun.* **2018**, *54*, 283.
4. B. He, P. Phansavath, V. Ratovelomanana-Vidal *Org. Lett.* **2019**, *21*, 3276.
5. A. Westermeyer, G. Guillamot, P. Phansavath, V. Ratovelomanana-Vidal *Org. Lett.* **2020**, *22*, 3911.