

Research Topic for the ParisTech/CSC PhD Program

***Field (cf. List of fields below):** Chemistry, Physical Chemistry and Chemical Engineering

Subfield: Chemistry

Title: Total synthesis of tularin A and analogues

ParisTech School: Chimie ParisTech

Advisor(s) Name: Phannarath Phansavath

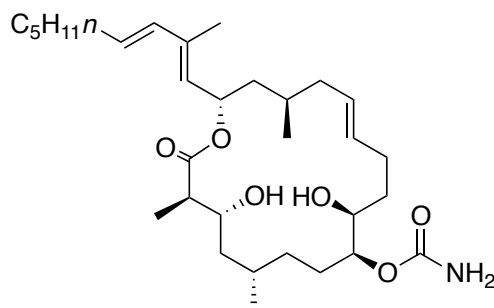
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(Lab, website): IRCP, CSB2D team

<https://www.chimie-paristech.fr/>

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]



Tularin A

Required background of the student: Synthetic Organic Chemistry, Homogeneous Catalysis

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

- [1] Echeverria, P.-G.; Prévost, S.; Cornil, J.; Féraud, 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] Echeverria, P.-G.; Ayad, T.; Phansavath, P.; Ratovelomanana-Vidal, V. *Synthesis* **2016**, *48*, 2523.
- [4] Zheng, L.-S.; Féraud, C.; Phansavath, P.; Ratovelomanana-Vidal, V. *Chem. Commun.* **2018**, *54*, 283.
- [5] Zheng, L.-S.; Féraud, C.; Phansavath, P.; Ratovelomanana-Vidal, V. *Org. Lett* **2018**, *20*, 5107.