

Einladung zum Vortrag von

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„Simplifying Complexity: A Bioinspired, non-Biomimetic Synthesis of Indole Alkaloids”

The class of monoterpene indole alkaloids, comprising nowadays over 2000 members with broad skeleton diversity and important bioactivities, has attracted attention of synthetic chemists for over a century. Remarkably, all members of this class of alkaloids are biosynthetically derived from stricotosidine, which is in turn obtained by union of two building blocks: tryptamine and secologanin. Inspired by nature's synthesis of monoterpene indole alkaloids, we initiated a research program aiming at mimicking the nature's way of synthesis at strategic level, namely couple and diverge to reach a diverse set of natural products from common starting materials. In this presentation, we'll discuss our recent synthesis featuring a key *Integrated Oxidation/Reduction/Cyclization (iORC)* process that converts simple cycloalkenes into complex polycyclic indole alkaloids.¹

(1) Xu, Z.; Wang, Q.; Zhu, J. *Angew. Chem. Int. Ed.* **2013**, *52*, 3272-3276. (b) Xu, Z.; Wang, Q.; Zhu, J. *J. Am. Chem. Soc.* **2013**, *135*, 19127-19130. (c) Gualtierotti, J.-B.; Pasche, D.; Wang, Q.; Zhu, J. *Angew. Chem. Int. Ed.* **2014**, *53*, 9926-9930. (d) Wagnières, O., Xu, Z.; Wang, Q.; Zhu, J. *J. Am. Chem. Soc.* **2014**, *136*, 15102-15108. (e) Xu, Z.; Wang, Q.; Zhu, J. *J. Am. Chem. Soc.* **2015**, *137*, 6712-6724. (f) Xu, Z.; Bao, X.; Wang, Q.; Zhu, J. *Angew. Chem. Int. Ed.* **2015**, *54*, 14937-14940. (g) Dagonneau, D.; Xu, Z.; Wang, Q.; Zhu, J. *Angew. Chem. Int. Ed.* **2016**, *55*, 760-763. (h) Piemontesi, C.; Wang, Q.; Zhu, J. *Angew. Chem. Int. Ed.* **2016**, *55*, 6556-6560.

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