

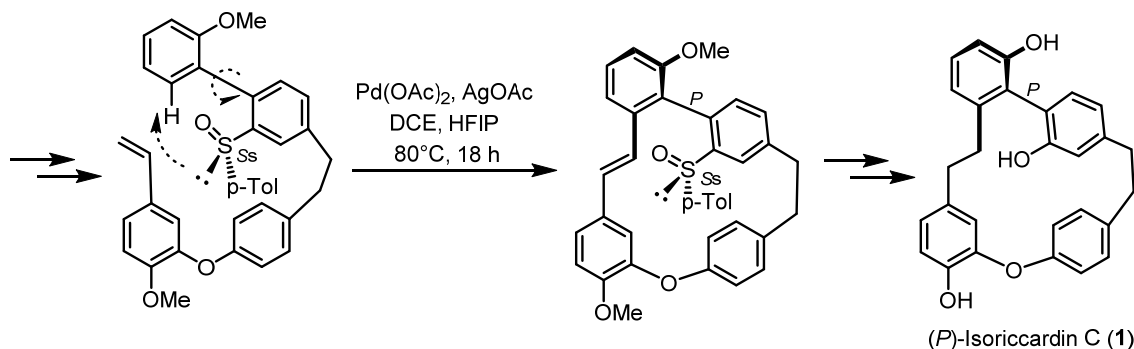
SYNTHESIS OF AXIALLY CHIRAL BIS(BIBENZYL) DERIVED FROM PERROTTETIN E VIA C–H ACTIVATED HECK TYPE CYCLIZATION

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Isoriccardin C (**1**) is one of six cyclic and axially chiral natural products isolated from liverworts and derived from the acyclic precursor Perrottetin E [1]. Regarding a variety of pharmacological interesting properties, different – but up to now not atroposelective – approaches for total syntheses were developed [2], but for **1** only in our group [3] using cyclization methods like Wittig or McMurry reactions. Atroposelective syntheses of these bis(bibenzyls), however, is a more challenging task [4]. Inspired by our promising results in the atroposelective synthesis of a structurally related isoplagiochin through Mizoroki-Heck reaction [5] we now investigated for **1** the C–H activated oxidative Fujiwara-Moritani option [6].



The sulfinyl group was used as an auxiliary with excellent metal coordination and ortho' directing properties during the C–H activation [7]. Finally, we obtained enantiopur Isoriccardin C (**1**) replacing the sulfinyl moiety by the hydroxyl group in the natural compound.

[1] Asakawa, Y.; Ludwiczuk, A.; Nagashima, F.; Toyota, M.; Hashimoto, T.; Tori, M.; Fukuyama, Y.; Harinantenaina, L. *Heterocycles* 2009, 77, 99.

[2] Harrowven, D. C.; Kostiuk, S. L. *Nat. Prod. Rep.* 2012, 29, 223.

[3] Speicher, A.; Groh, M.; Hennrich, M.; Huynh, A.-M. *Eur. J. Org. Chem.* 2010, 6760.

[4] Wencel-Delord, J.; Panossian, A.; Leroux, F. R.; Colobert, F. *Chem. Soc. Rev.* 2015, 44, 3418.

[5] Meidlinger, D.; Marx, L.; Bordeianu, C.; Choppin, S.; Colobert, F.; Speicher, A. *Angew. Chem. Int. Ed.* 2018, 57, 9160.

[6] *The Mizoroki-Heck-Reaction*; (Ed.: M. Oestreich), 1st ed., Wiley-VCH, Weinheim, 2009.

[7] Colobert, F., Dherbassy, Q., Wencel-Delord, J. *Tetrahedron* 2018, 74, 6205.