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Enantioselective Heck-Matsuda Reaction Coupled to Organotin Transmetalations

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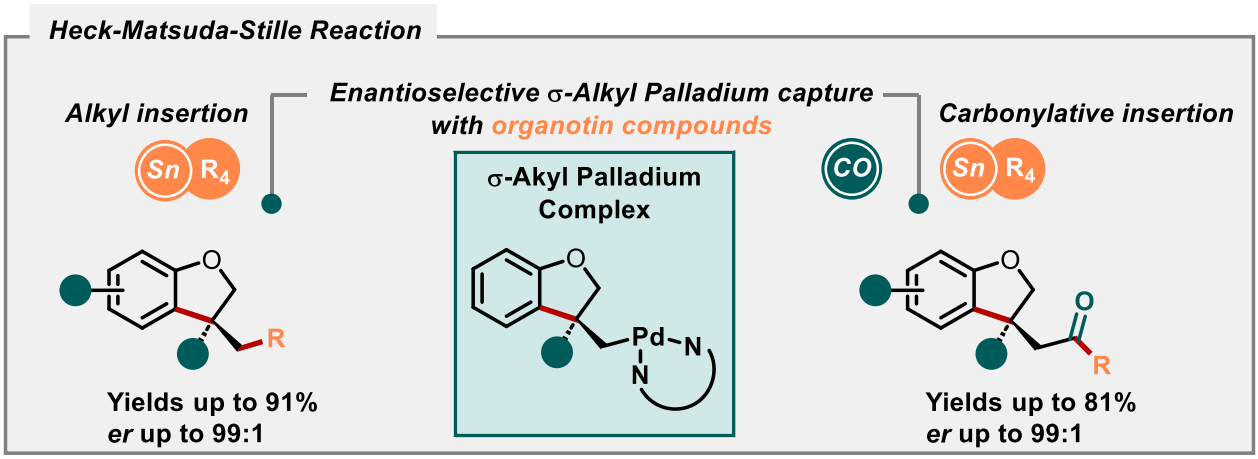
ABSTRACT

Enantioselective Heck-Matsuda Reaction is a powerful method for building high valued natural products and building blocks in organic synthesis.[1] The intramolecular version of this reaction is still underexplored and remains a challenge in the field with few examples of success in the literature.[2,3] In this work, an efficient asymmetric one-pot synthesis of 3,3-disubstituted-dihydrobenzofuran has been developed through a palladium-catalyzed Heck-Matsuda reaction, followed by subsequent carbonylation and/or organotin transmetalation employing chiral *N*,*N* ligands. The Heck-Matsuda-Stille reaction is performed under mild conditions from readily available starting materials and tolerates a wide range of functional groups. This methodology provides straightforward access to a diverse array of enantioenriched dihydrobenzofuran bearing either a carbonyl or a side alkyl chain adjacent to a quaternary stereogenic center in yields up to 81% and *er* up to 99:1.



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REFERENCES

[1] a) Correia, C. R. D., Oliveira, C. C., Salles Jr., A. G., Santos, E. A. F. *Tetrahedron*. **2012**, 53, 3325-3328; b) R. C. Carmona, O. D. Köster, C. R. D. Correia, *Angew. Chem. Int. Ed.* **2018**, 57, 12067;
[2] Grigg, R.; Sansano, J. M.; Santhakumar, V.; Sridharan, V.; Thangavelanthum, R.; Thornton-Pett, M.; Wilson, D. *Tetrahedron*. **1997**, 53, 11803-11826;
[3] Hervé, M.; Lefévre, G.; Mitchell, E. A.; Maes, B. U. W.; Jutand, A. *Chem. Eur. J*. **2015**, 21, 18401–18406.