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Cobalt-Catalyzed Asymmetric 1,6-Addition of (Triisopropylsilyl)acetylene to $\alpha,\beta,\gamma,\delta$ -Unsaturated Carbonyl Compounds

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Cobalt-Mediated Asymmetric 1,6-Alkyne Addition to Conjugated Carbonyls

Category

Metal-Catalyzed Asymmetric Synthesis and Stereoselective Reactions

Key words

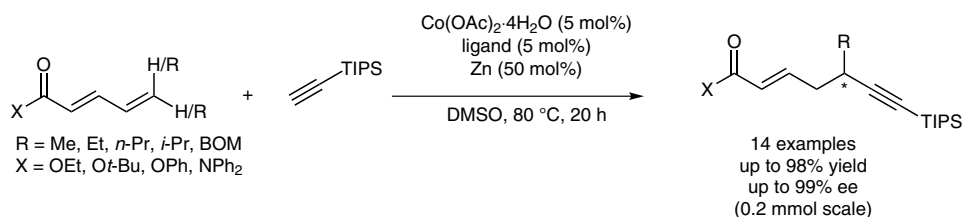
asymmetric addition

$\alpha,\beta,\gamma,\delta$ -unsaturated compounds

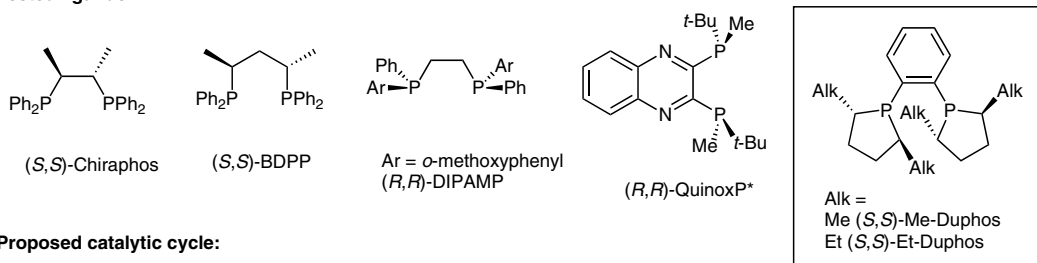
Duphos

1,6-addition

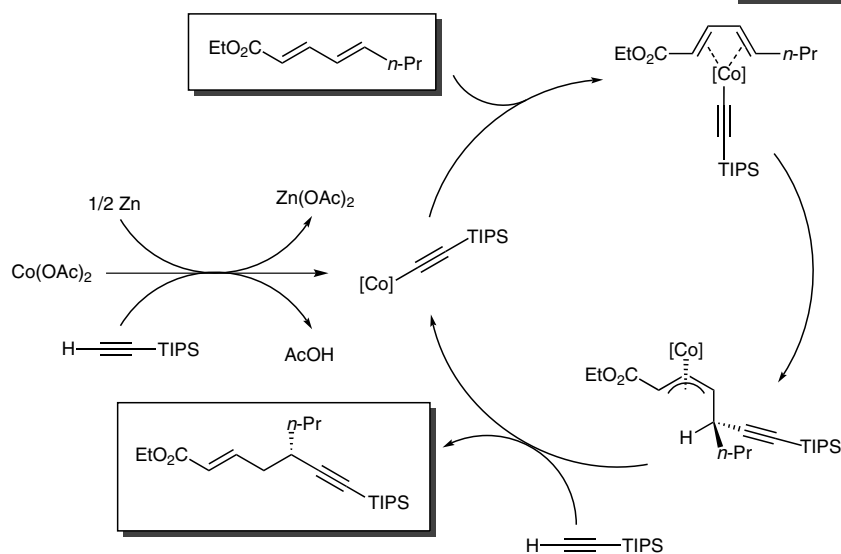
SYNFACT
of the month



Tested ligands:



Proposed catalytic cycle:



Significance: Asymmetric additions of acetylenes to conjugated π -systems have gained growing interest in recent years (Y. Watanabe et al. *J. Org. Chem.* **1985**, *50*, 565; M. Shirakura, M. Sugimoto *Angew. Chem. Int. Ed.* **2010**, *49*, 3827). Herein, a cobalt-catalyzed addition of TIPS-acetylene is described.

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Comment: The presented method allows the asymmetric addition of TIPS-acetylene to $\alpha,\beta,\gamma,\delta$ -unsaturated carbonyl compounds with high regio- and enantioselectivity.