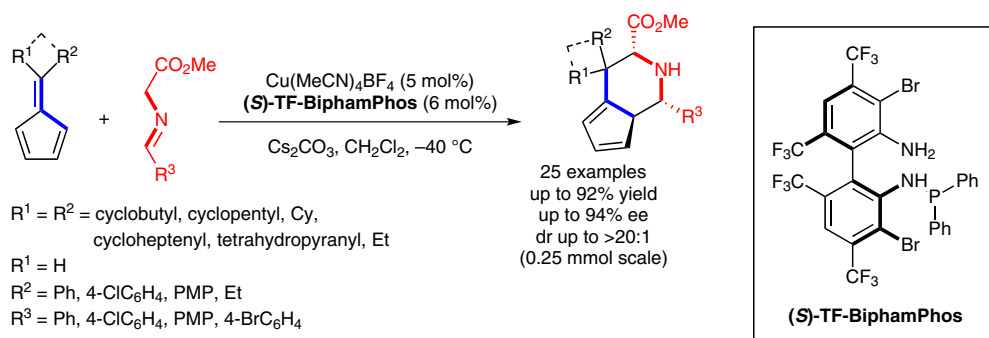


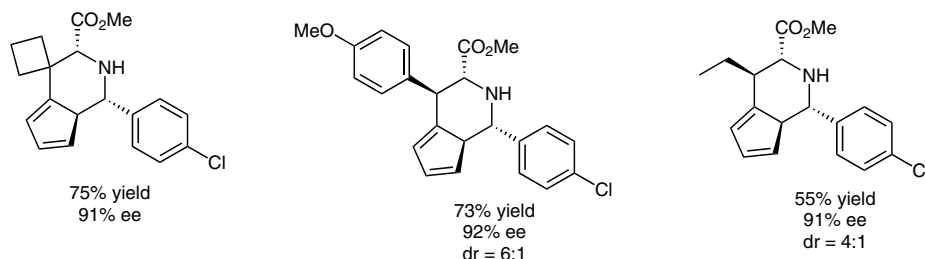
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Fulvenes as Effective Dipolarophiles in Copper(I)-Catalyzed [6+3] Cycloaddition of Azomethine Ylides: Asymmetric Construction of Piperidine Derivatives
Angew. Chem. Int. Ed. **2013**, *52*, 2934–2938.

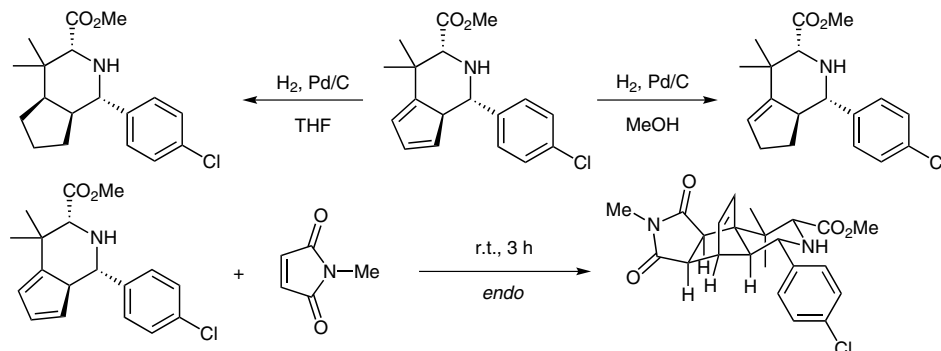
Copper-Catalyzed Asymmetric Synthesis of Piperidines by a [6+3] Cycloaddition



Selected examples:



Selected further transformations:



Significance: Hong et al. (*Org. Lett.* **2003**, *5*, 1689) reported a [6+3] cycloaddition of azomethine ylides with fulvenes, thus leading to the synthesis of racemic six-membered piperidine derivatives. However, there is a lack of catalytic asymmetric variants with high functional group tolerability.

Comment: A highly efficient asymmetric copper(I)-TF-BiphamPhos-catalyzed [6+3] cycloaddition was developed, which shows very good yields, high regioselectivity and excellent enantioselectivity. Due to its high functional group tolerance, the products can be easily modified.

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