SYNFACTS

Highlights in Current
Synthetic Organic
Chemistry

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Thieme

Category

Metal-Catalyzed Asymmetric Synthesis and Stereoselective Reactions

Key words

Mannich-type reaction

enolates

β-amino ketones

silver

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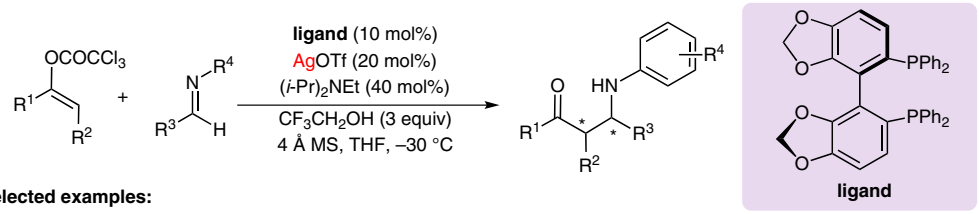
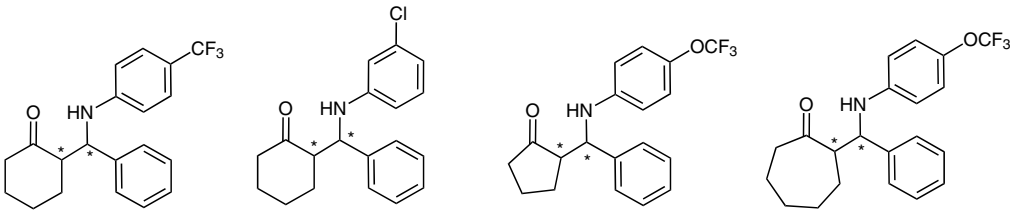
Catalytic Enantioselective Mannich-Type Reaction via a Chiral Silver Enolate
Org. Lett. **2014**, *16*, 86–89.

Silver-Catalyzed Asymmetric Mannich-Type Reaction



Selected examples:



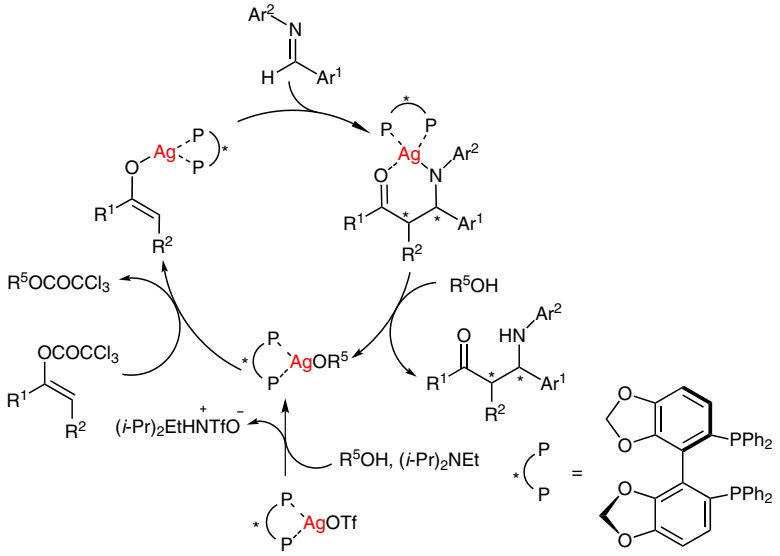
66% yield, >99% ee
syn/*anti* > 99:1

79% yield, >99% ee
syn/*anti* > 99:1

41% yield, >99% ee
syn/*anti* > 99:1

53% yield, 98% ee
syn/*anti* > 99:1

Proposed catalytic cycle:



Significance: The authors present a novel catalytic asymmetric Mannich-type reaction of alkenyl trichloroacetates with aldimines by using a mixture of SEGPHOS and AgOTf as the chiral precatalyst, leading to β-amino ketones in good yield and excellent diastereo- and enantioselectivitities.

Comment: The authors suggest that a chiral silver alkoxide generated in situ is the true chiral catalyst in the present asymmetric Mannich-type reaction. This is the first example of the generation of a chiral silver alkoxide applied in asymmetric reactions via a chiral silver enolate.

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