SYNFACTS

Highlights in Current
Synthetic Organic
Chemistry

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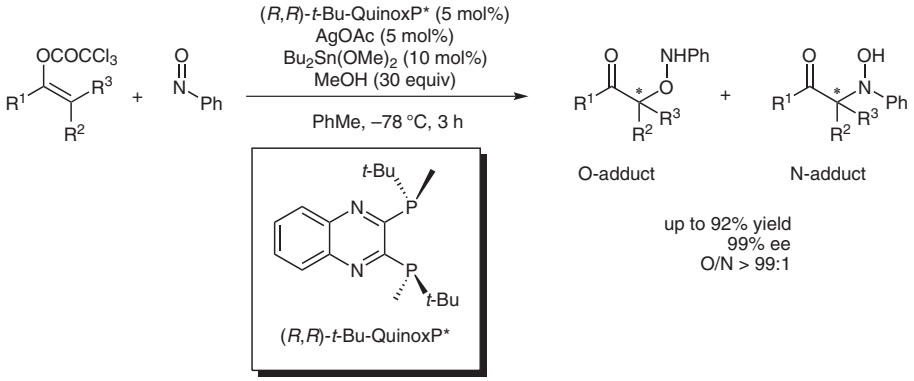
Thieme

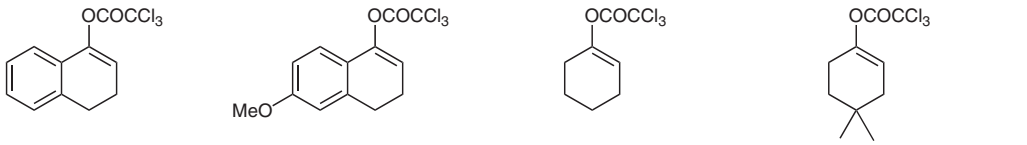
A. YANAGISAWA,* S. TAKESHITA, Y. IZUMI, K. YOSHIDA (CHIBA UNIVERSITY, JAPAN)

Enantioselective Nitroso Aldol Reaction Catalyzed by QuinoxP*·Silver(I) Complex and Tin Methoxide
J. Am. Chem. Soc. **2010**, *132*, 5328-5329.

Asymmetric QuinoxP*·Silver(I)-Catalyzed Nitroso Aldol Reaction

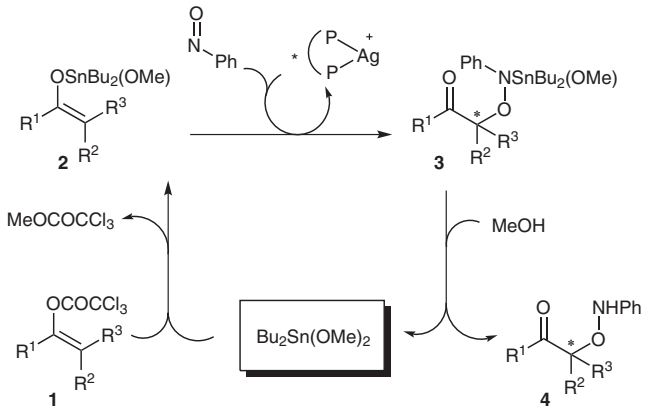


Selected examples:



92% yield, O/N > 99:1, 99% ee | 90% yield, O/N = 96:4, 97% ee | 65% yield, O/N = 89:11, 99% ee | 68% yield, O/N = 91:9, 97% ee

Proposed catalytic cycle:



Significance: The authors report a convenient method for the synthesis of α-aminooxy and α-hydroxyamino carbonyl compounds using tin and silver catalysts. The regio- and enantioselectivity is significantly higher compared to other available methods.

Comment: The catalyst system developed here nicely affords the *O*-nitroso aldol products. Cyclopentanone, cyclohexanone, and cycloheptanone derivatives all achieve similar levels of enantioselectivity, and high levels of the *O*-nitroso product. Interestingly, acyclic substrates yielded high amounts of the *N*-nitroso adduct, though with comparable enantioselectivity.

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