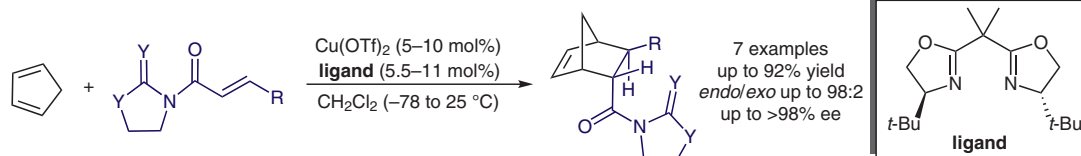
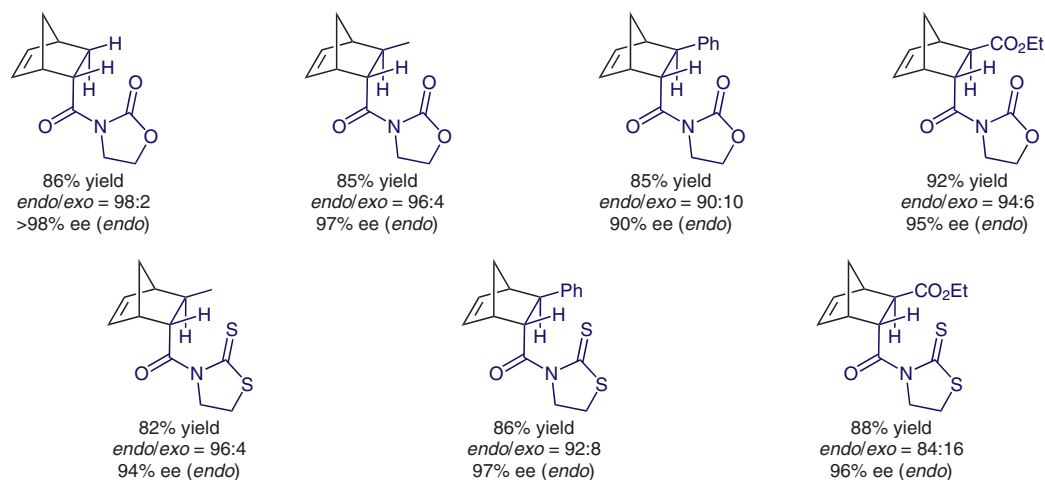


D. A. EVANS*, S. J. MILLER, T. LECTKA (HARVARD UNIVERSITY, CAMBRIDGE, USA)
 Bis(oxazoline)copper(II) Complexes as Chiral Catalysts for the Enantioselective Diels–Alder Reaction
J. Am. Chem. Soc. **1993**, *115*, 6460–6461.

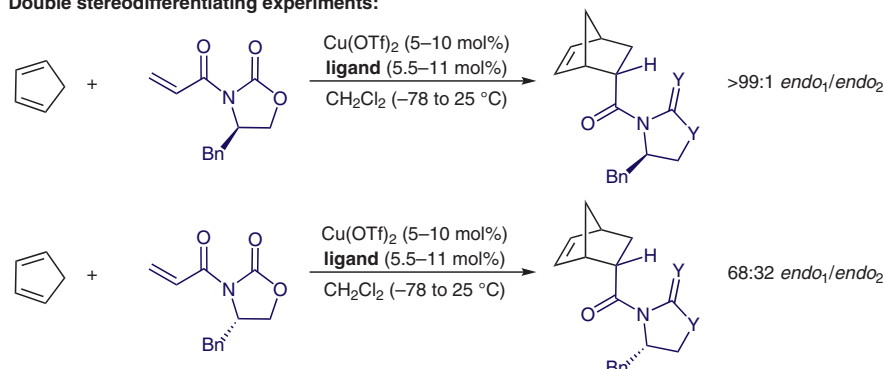
Enantioselective Copper-Catalyzed Diels–Alder Cycloaddition



Examples:



Double stereodifferentiating experiments:



Significance: Following Narasaka's report on titanium-catalyzed enantioselective Diels–Alder reactions (*J. Am. Chem. Soc.* **1989**, *111*, 5340) and Corey's variants using chiral magnesium(II) and iron(II) catalysts (*J. Am. Chem. Soc.* **1991**, *113*, 728; *Tetrahedron Lett.* **1992**, *33*, 6807), Evans disclosed a highly enantioselective Diels–Alder reaction employing copper(II)-catalysts and BOX ligands.

Comment: Products were obtained in high yields and excellent enantioselectivities. This class of chiral Lewis acid catalysts has since been applied to asymmetric aldol reactions, Michael additions, and carbonyl ene reactions by the same group (J. S. Johnson, D. A. Evans *Acc. Chem. Res.* **2000**, *33*, 325).

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