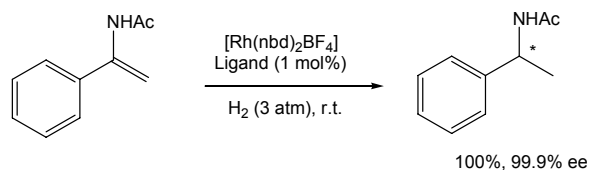


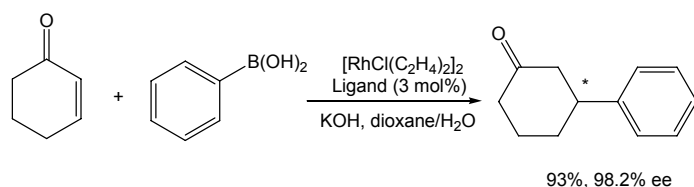
Note: Sold in collaboration with JCI for research purposes only. Patent pending.

Technical Notes:

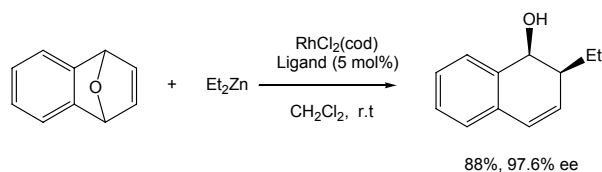
1. Ligand for the rhodium-catalyzed, asymmetric hydrogenation of dehydroamino acid esters and α -enamides.
2. Ligand for the rhodium-catalyzed, asymmetric 1,4-addition of arylboronic acids to α,β -unsaturated carbonyl compounds.
3. Ligand for the rhodium-catalyzed, asymmetric allylative ring opening reaction
4. Ligand for the palladium-catalyzed asymmetric allylic alkylation and amination of racemic substrates.
5. Ligand for the ruthenium-catalyzed asymmetric hydrogenation of ketones.
6. Ligand for the rhodium-catalyzed, asymmetric hydroacylation of 1,1-disubstituted alkenes with aldehydes.
7. Ligand for the silver-catalyzed asymmetric nitroso aldol reaction.



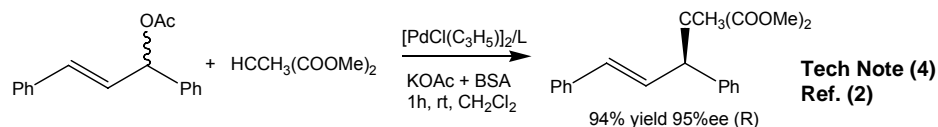
Tech Note (1)
Ref. (1)



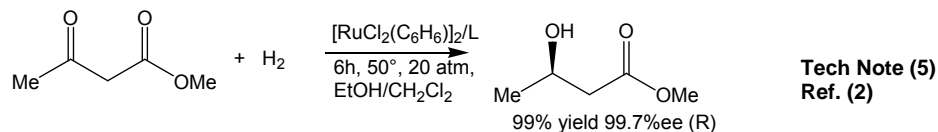
Tech Note (2)
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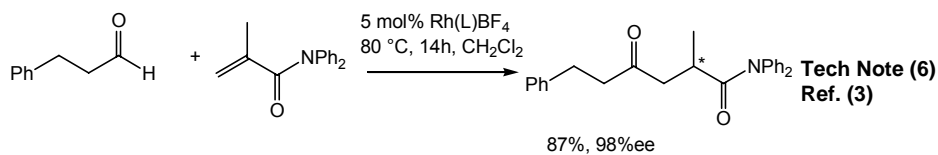
Tech Note (3)
Ref. (1)



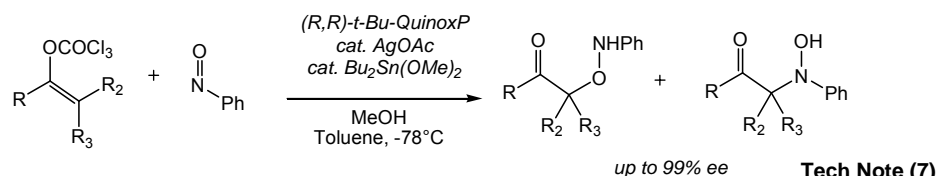
Tech Note (4)
Ref. (2)



Tech Note (5)
Ref. (2)



Tech Note (6)
Ref. (3)



Tech Note (7)
Ref. (4)

References:

1. *J. Am. Chem. Soc.*, **2005**, 127, 11934.
2. *J. Org. Chem.*, **2007**, 72, 7413.
3. *J. Am. Chem. Soc.*, **2009**, 131, 12552.
4. *J. Am. Chem. Soc.*, **2009**, 132, 5328.