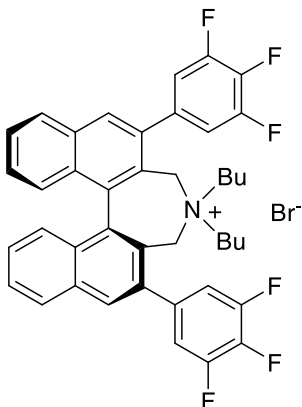


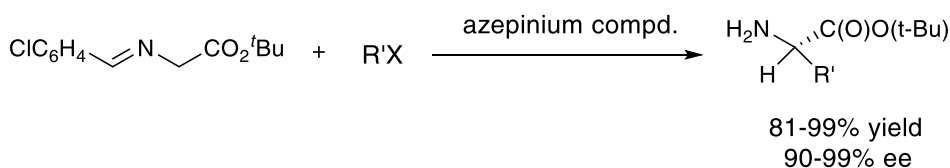
Catalog # 07-0381 (11bS)-4,4-Dibutyl-2,6-bis(3,4,5-trifluorophenyl)-4,5-dihydro-3H-dinaphtho[2,1-c:1',2'-e]azepinium bromide



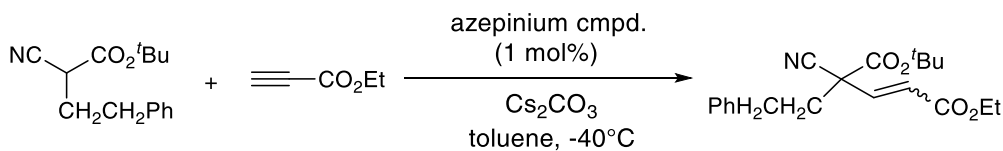
Note: Sold in collaboration with Nagase for research purposes only - US Patent 6,340,753.

Technical Notes:

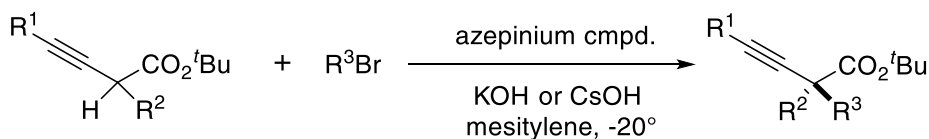
- 2nd Generation Maruoka chiral phase transfer catalyst, for enantioselective alkylation of α -amino acid derivatives, that is easily recycled by extraction with fluorous solvent.
- Catalyst for asymmetric conjugate addition of α -substituted- α -cyanoacetates to α,β -unsaturated acetylenic esters.
- Phase transfer catalyzed enantioselective α -alkylation.
- Asymmetric amination of β -keto esters.
- Diastereo- and enantioselective conjugate addition of α -substituted nitroacetates to maleimides.
- Efficient asymmetric synthesis of spiro-2(3H)-furanones via phase-transfer-catalyzed alkynylation.
- Phase-transfer catalyzed asymmetric synthesis of α,β -unsaturated γ,γ -disubstituted γ -lactams.



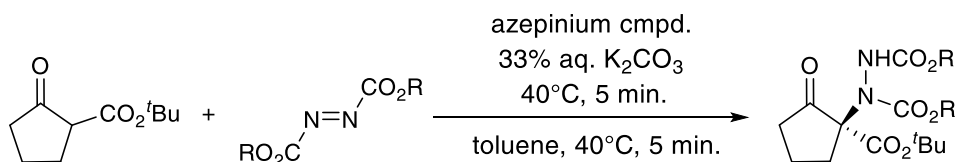
Tech Note (1)
Ref. (1)



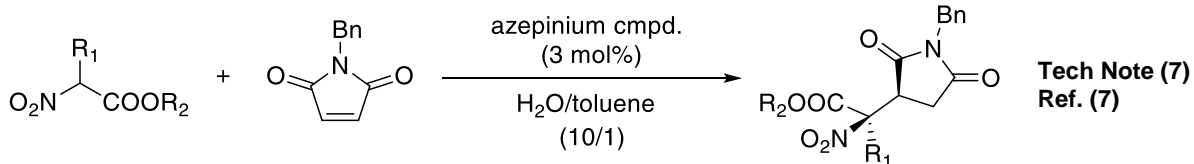
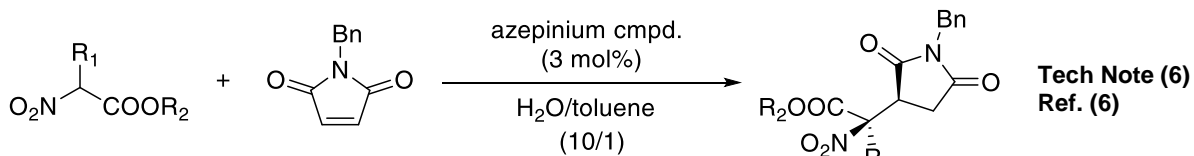
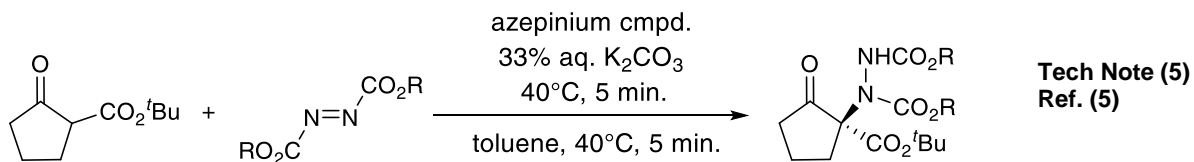
Tech Note (2)
Ref. (2)



Tech Note (3)
Ref. (3)



Tech Note (4)
Ref. (4)



References:

1. *Tetrahedron Asymm.*, **2006**, 17, 603.
2. *J. Am. Chem. Soc.*, **2007**, 129, 1038.
3. *Angew. Chem. Int. Ed.*, **2009**, 48, 5014.
4. *Tetrahedron Lett.*, **2009**, 50, 3280.
5. *Chem. Commun.*, **2011**, 47, 10557.
6. *Org. Biomol. Chem.*, **2014**, 12, 5388.
7. *Chem. Commun.*, **2017**, 53, 4779.