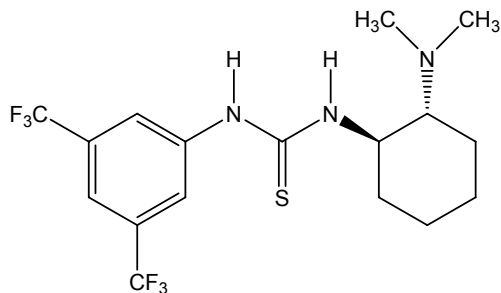


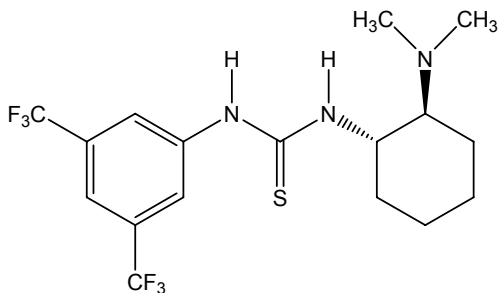


# TUC Ligands for Michael additions and hydrazination

metals · inorganics · organometallics · catalysts · ligands · custom synthesis · cGMP facilities · nanomaterials



07-0283



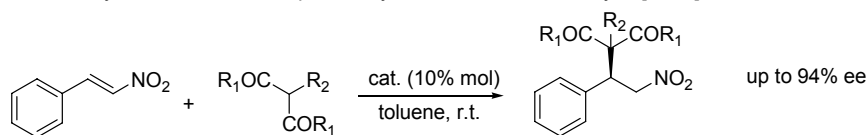
07-0284

Sold in collaboration with Sumitomo for research purposes only. Patents PCT Application No.: JP2004009350 (publication WO2005000803) US Application 10/562,579, EPC Application 04746819.4

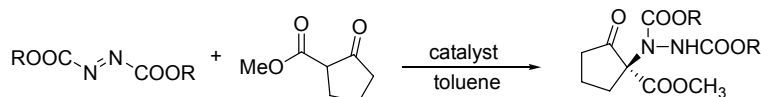
07-0283 1-[3,5-Bis(trifluoromethyl)phenyl]-3-[(1R,2R)-(-)-2-(dimethylamino)cyclohexyl]thiourea (R,R-TUC) [620960-26-1] 250mg  
C<sub>17</sub>H<sub>21</sub>F<sub>6</sub>N<sub>3</sub>S; FW: 413.42; white powdr.; m.p. 87-88°; [α]<sub>D</sub> -42° (c 1.05, CHCl<sub>3</sub>) 1g

#### Technical Notes:

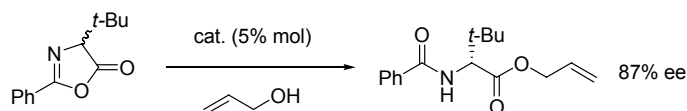
1. Thiourea catalyst used in the enantio and diastereoselective Michael addition of malonates and ketoesters to nitroolefins.
2. Catalyst used in the enantioselective hydrazination of 1,3-dicarbonyl compounds.
3. Catalyst used for the dynamic resolution of azalactones.
4. Catalyst used in Michael-Aldol reaction of 2-mercaptopbenzaldehyde with α,β-unsaturated oxazolidinone.
5. Catalyst for enantioselective synthesis of flavanones and chromanones.
6. Catalyst for the asymmetric Neber Reaction.
7. Catalyst for the three component synthesis of 2,6-diazabicyclo[2.2.2]octanones.



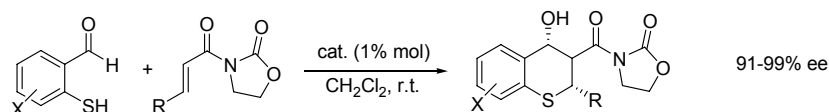
Tech. Note (1)  
Ref. (1)



Tech. Note (2)  
Ref. (2)



Tech. Note (3)  
Ref. (3)



Tech. Note (4)  
Ref. (4)

07-0283 1-[3,5-Bis(trifluoromethyl)phenyl]-3-[(1R,2R)-(-)-2-(dimethylamino)cyclohexyl]thiourea (R,R-TUC) [620960-26-1]

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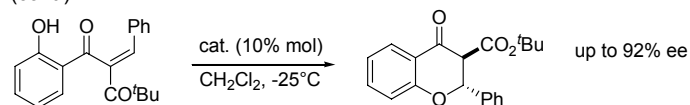
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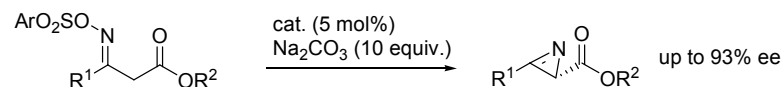
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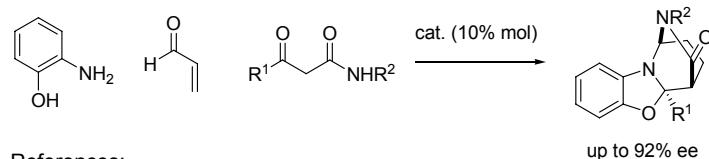
(cont.)



Tech. Note (5)  
Ref. (5)



Tech. Note (6)  
Ref. (6)



Tech Note (7)  
Ref. (7)

## References:

1. *J. Am. Chem. Soc.*, **2005**, 127, 119.
2. *Synlett*, **2006**, 1, 137.
3. *Org. Biomol. Chem.* **2006**, 4, 4319.
4. *J. Am. Chem. Soc.*, **2007**, 129, 1036.
5. *J. Am. Chem. Soc.*, **2007**, 129, 3830.
6. *Org. Lett.*, **2011**, 13, 6374.
7. *Angew. Chem. Int. Ed.* **2013**, 52, 14143.

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## Technical Note:

1. See 07-0273.

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