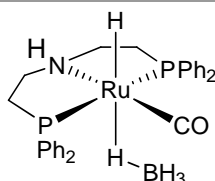


# Ru-MACHO™-BH

Ru-MACHO™-BH is a novel ruthenium catalyst for homogeneous hydrogenations of esters. This catalyst is applicable for a wide variety of ester substrates under *base free condition*. Several base-labile and chiral esters, such as  $\alpha$ -alkyl esters and  $\beta$ -amino esters, which provide corresponding optically pure alcohols without loss of optical purity.

## Ru-MACHO-BH

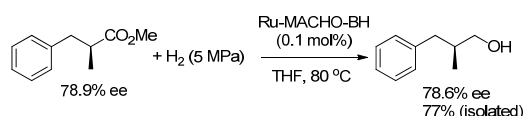
CAS No.	1295649-41-0
Formula	C <sub>29</sub> H <sub>34</sub> BNOP <sub>2</sub> Ru
M.W.	586.41



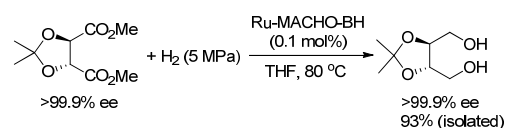
PCT Application No. PCT/JP2010-004301, Takasago International Corp. (2010).

## Tech Note

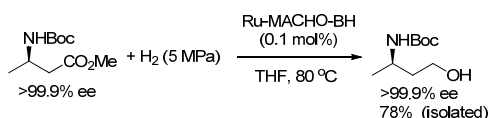
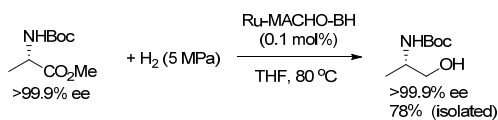
### 1. Hydrogenation of $\alpha$ -alkyl esters



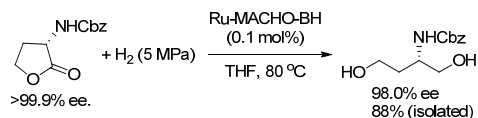
### 4. Hydrogenation of diesters



### 2. Hydrogenation of Boc-amino esters



### 3. Hydrogenation of Lactones



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