Total Synthesis of (–)-Rauvomine B via a Strain Promoted Intramolecular Cyclopropanation

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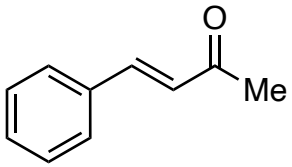
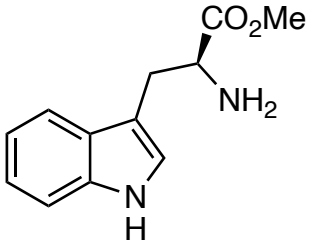


1-4

A

5-9

1) $NaBH_4$, MeOH
2) Novozyme-435, vinyl acetate (See Hint)
3) Ac_2O, NEt_3, DMAP
4) **1**, cat. $Pd(dppe)_2$, NEt_3



1

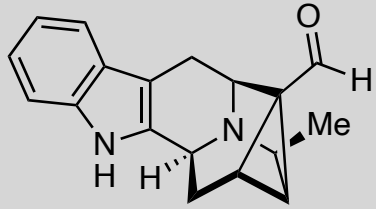
5) Ph_2Se_2, $LiAlH_4$, 120 ˚C
6) O_3S•Py, pyridine, NEt_3, DMSO
7) **A**, AcOH, 4A mol. sieves.
8) $NaIO_4$, $MeOH/H_2O$, *then* Na_2CO_3, toluene, 110˚C
9) Hoveyda-Grubbs II

2) Hint: Enzymatic kinetic resolution. *R*-enantiomer reacts and is removed. Unreacted *S*-enantiomer is carried forward

6) Name of reaction?

7) Name of reaction?

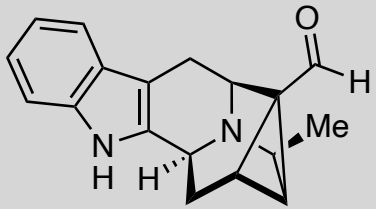
9) Structure of HG II?



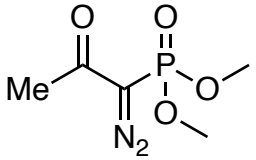
Rauvomine B

B

10-14



Rauvomine B



2

10) DIBAL-H, -78 ˚C *then*
2, NaOMe, MeOH
11) Boc_2O, DMAP
12) TsN_3, cat. CuTC
13) cat. $Rh_2(OAc)_4$, K_2CO_3, DCE, 80 ˚C
14) TFA

10) Name of reaction/reagent?

13) Provide a mechanism