The Enantioselective Total Synthesis of Exochomine

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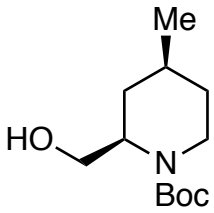
Angew. Chem. Int. Ed. **2016**, *55*, 10301-10306.

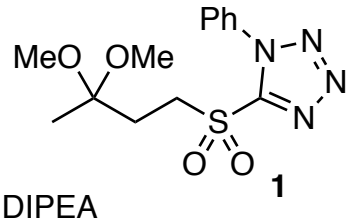


1-5

A

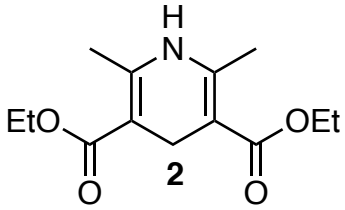
6-8

B



1

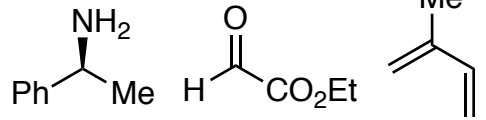
1) $(COCl)_2$, DMSO, DIPEA
2) **1**, KHMDS
3) H_2, Pt/Al_2O_3
4) *s*-BuLi, CuCN · 2LiCl, allylBr
5) OsO_4, $NaIO_4$



2

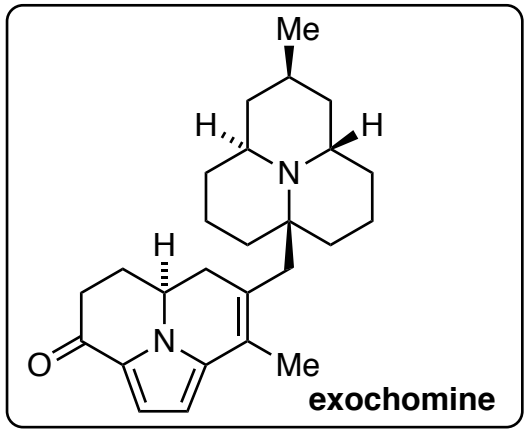
6) TFA (r.t. then 80 °C) *then* **2**
7) TFA, then KCN
8) $LiAlH_4$, H_2SO_4

1) How could you prepare the starting material from

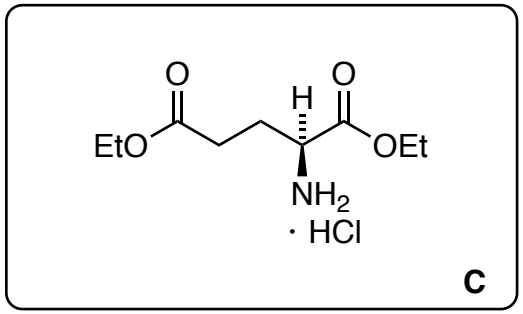


2) Please provide Name and Mechanism

6) What is the Name of 2? What is its purpose?
7) Name the reaction.



exochomine

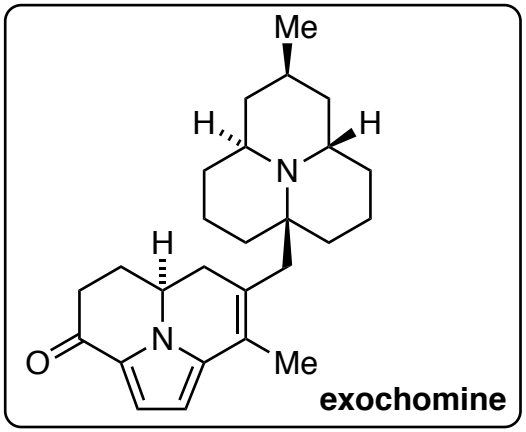


C

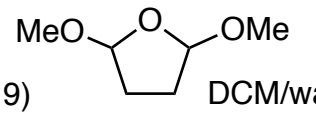
9-14

D

15-18



exochomine



9) DCM/water
10) HBr/ AcOH
11) $Zn(OTf)_2$, 1,2-ethanedithiol
12) DIBAL-H
13) Ph_3PCHCO_2Me
14) $Cu(OAc)_2 \cdot H_2O$, BDP, PMHS

15) LDA, **B**, –78 °C, then *p*-TsOH
16) $Mn(dpm)_3$, $Me(OEt)_2SiH$
17) MeLi then *p*-TsOH/H_2O
18) $PhI(OAc)_2$

9) Name of the Reaction?

BDP: 1,2-bis(diphenylphosphino) benzene
PMHS: polymethylhydrosiloxane

15) three subsequent steps (Names?). Initially, this sequence was performed in two steps, a) BBr_3 and b) $TiCl_4$, NEt_3, **B** - what is the intermediate?

18) converts the product mixture of 17 to the NP.