# Total Syntheses of Scaparvins B, C, and D Enabled by a Key C-H Functionalization

Qinda Ye, Pei Qu and Scott A. Snyder

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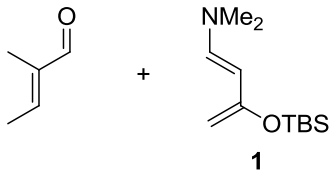



**1**

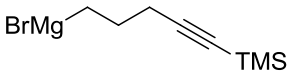
1–5

**A**

6-10

**B**

1) THF, 50 °C, then HCl
2) $HS(CH_2)_2SH$, $SOCl_2$*$SiO_2$
3)




$CuBr*Me_2S$,
then $NCCO_2Me$, HMPA
4) TBAF
5) $InCl_3$, 80 °C

6) KHMDS, then DIBAL-H
7) TIPSOTf, 2,6-lutidine,
then PIFA
8) $SmI_2$
9) oxalyl chloride, DMSO,$Et_3N$
10) Tebbe reagent

1) What is the name of **1**?

2) Explain the role of $SOCl_2$*$SiO_2$ by a mechanism.

3) Explain the stereoselectivity

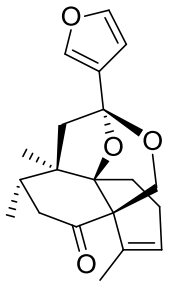
5) What is the name of this reaction?

10) What is the structure of Tebbe reagent and how can you prepare it?

11-20

**C**

21-24



scaparvin B

11) $BH_3$, then $NaBO_3$
12) DHP, PPTS
13) TBAF
14) $Ac_2O$ (1.5 eq), DMAP
15) PPTS
16) DMP
17) $NaClO_2$, $NaH_2PO_4$, 2-methyl-2-butene
18) TESOTf
19) Fe(PDP) (2 mol%), $H_2O_2$
20) Zn, $Cp_2TiCl_2$

21) TBAF, then $NaBH_4$, then PTSA, 2,2-dimethoxypropane
22) KHMDS, Comin´s reagent
23) 3-furylSn$Bu_3$, $Pd(PPh_3)_4$, CuCl, $K_2CO_3$, then HCl
24) DMP

20) Propose a mechanism:

22) What is the structure of Comins reagent?