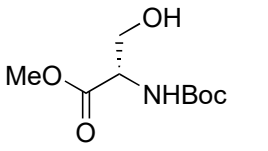
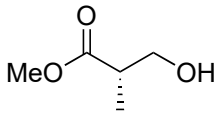
Application of Lithiation−Borylation to the Total Synthesis of (−)-Rakicidin F

Ch. P. Bold, K. Yeung, F. Pape, D. Kaiser, V. K. Aggarwal *Org. Lett.* **2022**, 24, 9398–9402.



1-5

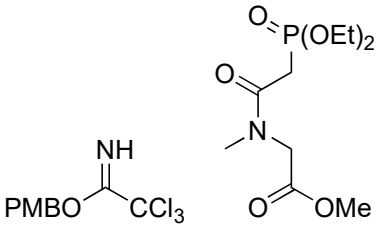
A



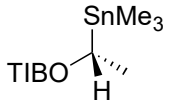
6-21

B

1) **1**, $La(OTf)_3$
2) $NaBH_4$, $CaCl_2$
3) DMP, $NaHCO_3$
4) **2**, $Ba(OH)_2 \cdot 8H_2O$
5) $LiOH \cdot H_2O$



1 **2**



3

6) TIBOH, PPh_3, DIAD
7) $LiEt_3BH$
8) TESCl, imidazole
9) *s*-BuLi, (+)-sparteine
10) $PhMe_2SiBpin$
11) **3**, *n*-BuLi
12) CH_2ClBr, *n*-BuLi
13) **3**, *n*-BuLi
14) CH_2ClBr, *n*-BuLi
15) **3**, *n*-BuLi
16) 1. vinylMgBr, 2. iodine, 3. NaOMe
17) PtO_2, H_2
18) NaH, *t*-BuOOH, TBAF
19) KBr, TEMPO, $NaOCl \cdot H_2O$
20) NaH_2PO_4, $NaClO_2$, 2-methyl-2-butene
21) allyl bromide, K_2CO_3

1) From which compound is the starting material derived?

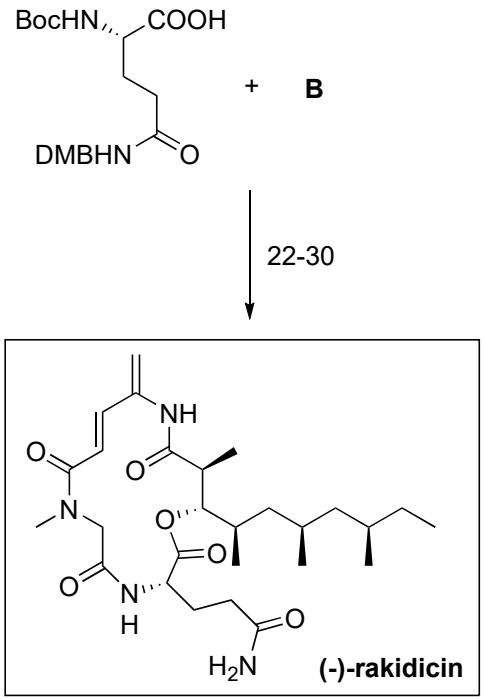
4) Name of the reaction:

6) Name of the reaction:
6) Name of the starting material:

11) Hint: via boronate complex followed by 1,2-metalate rearrangement

16) Name of the reaction:

20) Name of the reaction:



22) DIC, DMAP
23) HCL in dioxane
24) **A**, HATU, DIPEA
25) $Pd(PPh_3)_4$, $PhSiH_3$
26) HCl in dioxane
27) HATU, DIPEA
28) $EtSO_2Cl$, NEt_3
29) DDQ
30) DBU

22) Name of the reaction:
22) From which compound is the starting material derived?