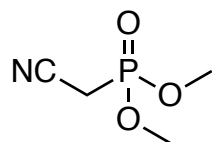


Total Synthesis of Voratin C: Formation of the [6,5]-Spiroketal Core through Acid-Mediated Epoxide Cascade Opening

Chun-Ho Ip, Sergei Ivlev, Ulrich Koert

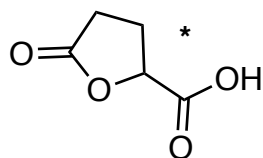
Org. Lett. **2026** 28: 8934-8938



1-6

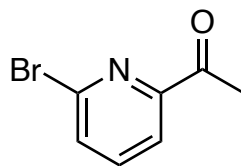
Stop here, new substrate below

A

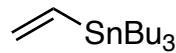


7-10

- 1) NaH, then add **1**
- 2) (*S*)-JosiPhos, Cu(OAc)₂, PHMS, *t*-BuOH
- 3) DIBAL-H (1 equiv.)
- 4) NaBH₄
- 5) TBSCl, Imidazole
- 6) Pd(PPh₃)₄, **2**

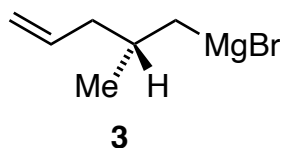


1



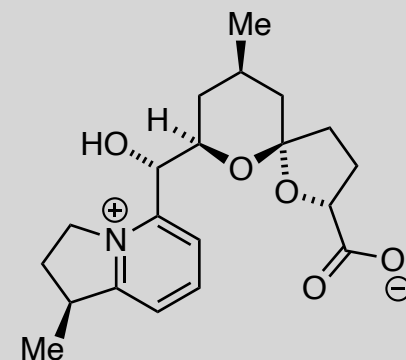
2

- 7) *t*BuOH, DCC, DMAP
- 8) AlMe₃ NH(Me)OMe · HCl
- 9) TBSCl, imidazole
- 10) **3**

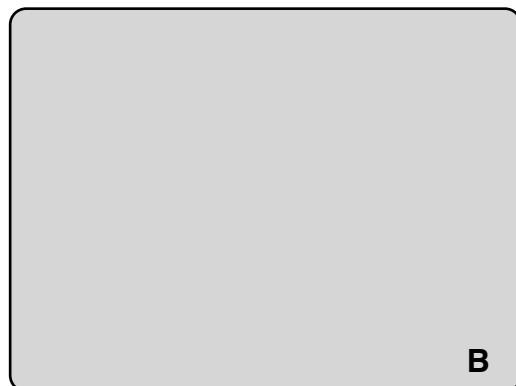


3

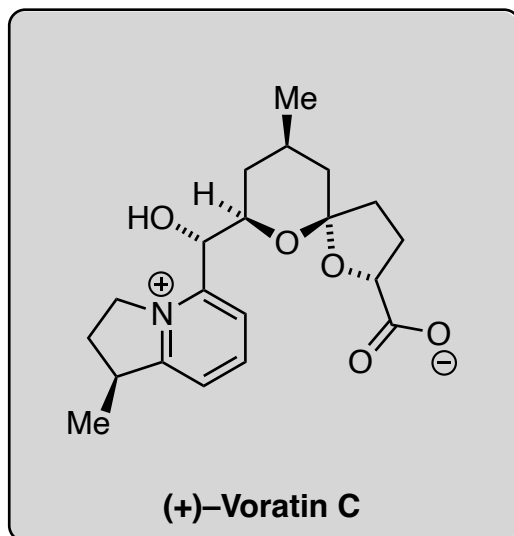
- 1) Name of reaction?
Horner-Wadsworth Emmons
- 2) Who pioneered this chemistry?
Jeffrey Stryker
- 6) Name or reaction
Stille coupling
- 8) Name of reaction?
Sonogashira Coupling



(+)-Voratin C



9-14



- 9) **A,B** Hoveyda–Grubbs II
 - 10) $K_2[OsO_2(OH)_4]$ (DHQ)₂PHAL, K_2CO_3 , 1:1 tBuOH/H₂O, $MeSO_2NH_2$
 - 11) $MeC(OMe)_3$, cat. PPTS
 - 12) TMSCl
 - 13) K_2CO_3 , MeOH
 - 14) TBAF,
 - 15) PTSA, MS 4Å
 - 16) MsCl, NEt₃
 - 17) TFA
- The following steps from here are counterion removal steps.
- 18) HCl + Lyo.
 - 19) $NH_4(HCOO)$ + Lyo.
 - 20) H₂O, + Lyo.

10) Name of reaction

Sharpless dihydroxylation

11-13) Hint: cascade does not occur in these steps, makes a strained ring that will undergo the rearrangement.