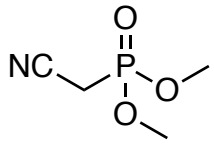
Total Synthesis of Voratin C: Formation of the [6,5]-Spiroketal Core through Acid-Mediated Epoxide Cascade Opening

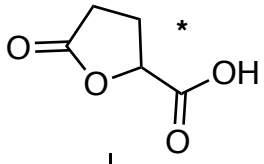
Chun-Ho Ip, Sergei Ivlev, Ulrich Koert

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



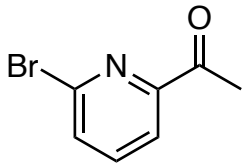
1-6

Stop here, new substrate below **A**

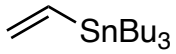


7-10

1) NaH, *then add* **1**
2) *(S)*-JosiPhos, $Cu(OAc)_2$, PHMS, t-BuOH
3) DIBAL-H (1 equiv.)
4) $NaBH_4$
5) TBSCl, Imidazole
6) $Pd(PPh_3)_4$, **2**

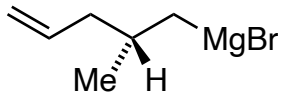


1



2

7) *t*BuOH, DCC, DMAP
8) $AlMe_3$ NH(Me)OMe · HCl
9) TBSCl, imidazole
10) **3**



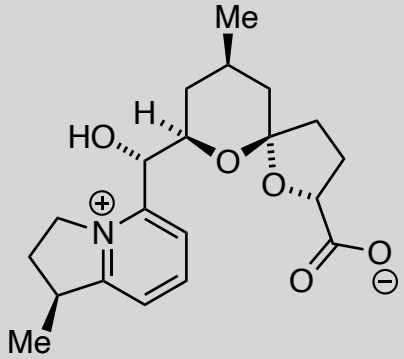
3

1) Name of reaction?

2) Who pioneered this chemistry?

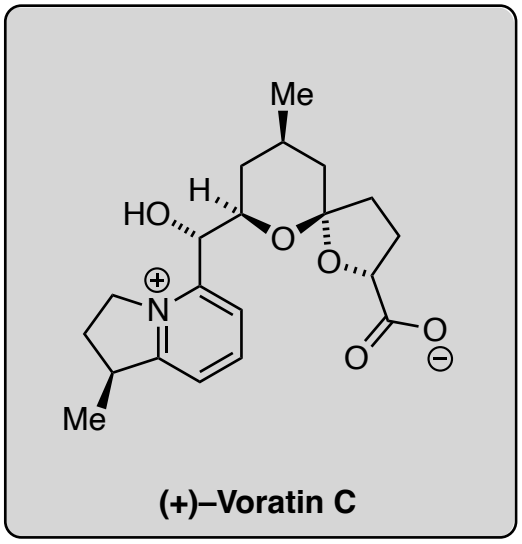
6) Name or reaction?

8) Name of reaction?



(+)–Voratin C

9-14



(+)–Voratin C

9) **A,B** Hoveyda–Grubbs II
10) $K_2[OsO_2(OH)_4]$ $(DHQ)_2PHAL$, K_2CO_3, 1:1 $tBuOH/H_2O$, $MeSO_2NH_2$
11) $MeC(OMe)_3$, cat. PPTS
12) TMSCl
13) K_2CO_3,MeOH
14) TBAF,
15) PTSA, MS 4Å
16) MsCl, NEt_3
17) TFA
The following steps from here are counterion removal steps.
18) HCl + Lyo.
19) $NH_4(HCOO)$ + Lyo.
20) H_2O, + Lyo.

10)Name of reaction

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