# Total Synthesis of (–)-Xylogranatopyridine B via Palladium-Catalyzed Oxidative Stannlyation of Enones

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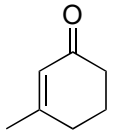
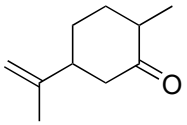


1–4

**A**



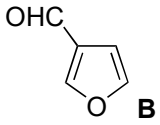
dihydrocarvone

5–10

1) MeMgBr, CuI, TMSCl
2) $AgNO_2$,TIPSCl
3) $PPh_3CH_2$
4) $Bz_2O$, $Et_3N$

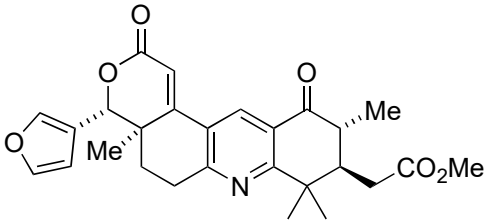
5) $O_3$, then $Cu(BF_4)_2$, $Fe(BF_4)_2$
6) $Bu_3SnLi$, $[Pd(allyl)Cl]_2$, diethyl allyl phosphate
7) LDA, then **B**
8) $Ac_2O$, DMAP, py
9) LiTMP, then Burgess reagent
10) **A**, $Cu(OAc)_2$, quinuclidine then $O_2$, 100 °C

reactive species of step 2?



**B**

Mechanism of step 10?



(–)-Xylogranatopyridine B

**C**

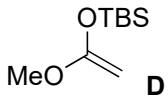
11–12

11) $Na[OCr(O_2COC(CH_3)C_2H_5)_2]$, 15-C-5
12) $Zn(TMP)_2$, $[Pd(allyl)Cl]_2$, diethyl allyl phosphate

**E**

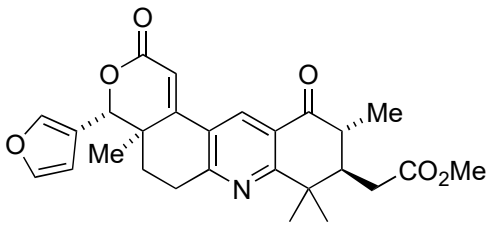
13–15

13) TBSOTf, **D**
14) $Et_2Zn$, $CH_2I_2$, then TBAT
15) $[PtCl_2(C_2H_4)]_2$

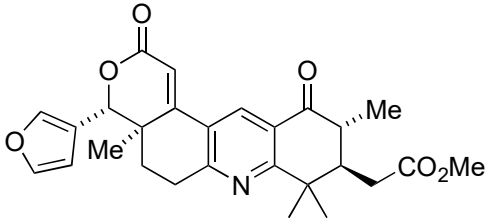



**D**

name reaction in step 14?




(–)-Xylogranatopyridine B

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