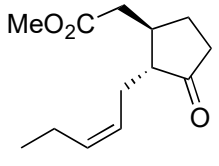
Total Synthesis of (+)-Mannolide B

Chen, P.; Chen, L.; Lin, H.; Jia, Y. *J. Am. Chem. Soc.* **2025**, *147* (1), 636–643.



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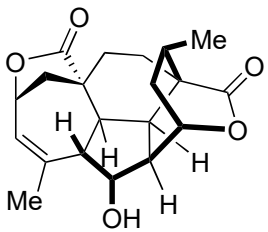
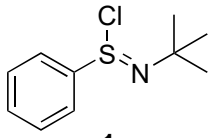


(+)-Mannolide B

1) LDA,**1**,THF
2) $NaBH_4$, $LaCl_3 \cdot 7H_2O$
3) TBSCl, Imid.
4) LiHMDS, allyl bromide
5) LDA, **2**
6) HG-II
7) TMSOTf, collidine
8)Ohira-Bestmann reagent, K_2CO_3, MeOH
9) $Co_2(CO)_8$
10) $K_2OsO_4 \cdot 2H_2O$, NMO
11) BzCl, Et_3N, DMAP
12) vinylMgBr, CuBr Me_2S
13) $Sc(OTf)_3$, $TMSCHN_2$, 4 Å MS
14) O_3 *then* Me_2S
15) $NaClO_2$, NaH_2PO_4, 2-methylbut-2-ene *then* $TMSCHN_2$
16) LDA, **1**
17) $AlMe_3$, $Ni(acac)_2$
18) $NaBH_4$
19) K_2CO_3
20) DMP
21) Ac_2O, $CH_2(NMe_2)_2$
22) $TsNHNH_2$, PPTS, AcOH
23) $NaBH_3CN$, AcCl, Et_3N, MeOH
24) TBAF



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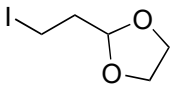

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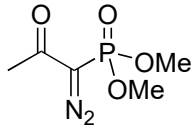
6) Name of reaction: ring closing metathesis

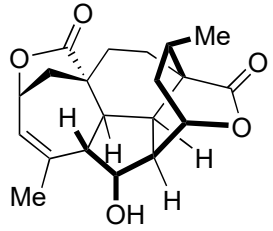
8) Structure of Ohira-Bestmann reagent



9) Hint: ring formation

12) Name of reaction: Michael addition

15) Name of reaction: Pinnick oxidation



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