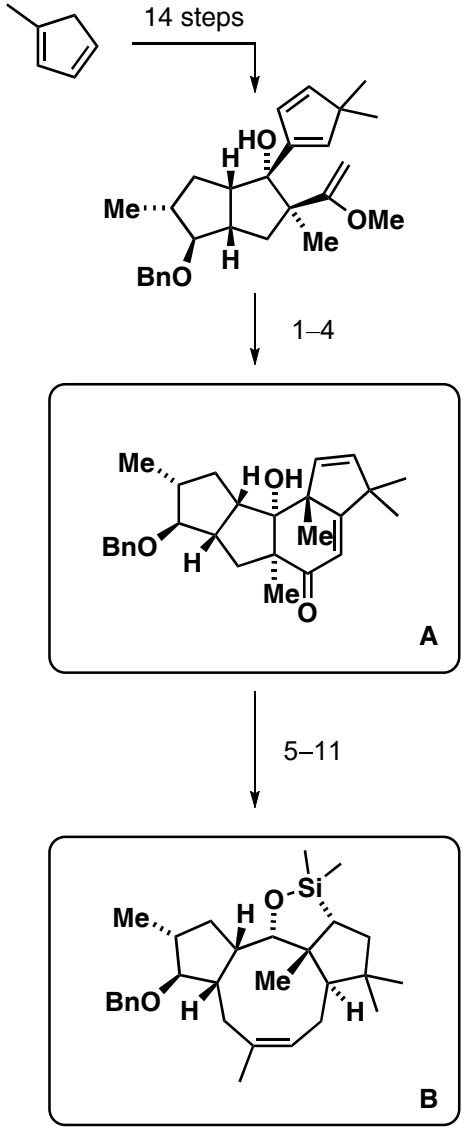
Total Synthesis of Jatrophatrione

L. A. Paquette, S. D. Edmondson, N. Monck, R. D. Rogers, 1999, 64, 3255–3265.
L. A. Paquette, S. Nakatani, T. M. Zydowsky, S. D. Edmondson, L.-Q. Sun, R. Skerlj, *J. Org. Chem.* **1999**, *64*, 3244–3254.
L. A. Paquette, J. Yang, Y. O. Long, *J. Am. Chem. Soc.* **2002**, *124*, 6542–6543.

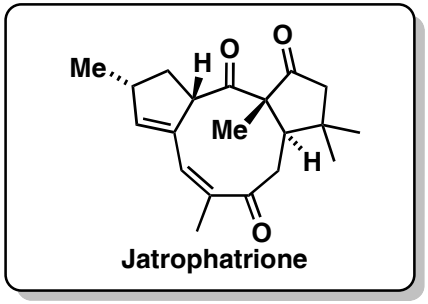


1) KO*t*-Bu, 18-C-6, *then* MeI
2) NBS
3) LiBr, Li_2CO_3
4) Zn

5) $LiAlH_4$, CuI
6) $LiAlH_4$
7) MsCl, $(i\text{-Pr})_2NEt$
8) KO*t*-Bu
9) $LiAlH_4$
10) Me_2SiHCl, NEt_3
11) H_2PtCl_6, HMDS

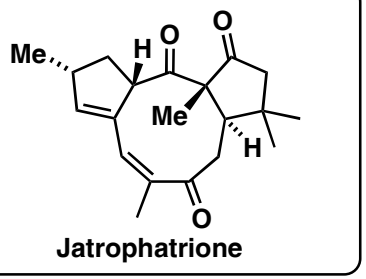
Step 1: Please name the reaction.
anionic Oxy-Cope
Hint: the product contains four rings

Step 8: Please name the reaction.
Grob fragmentation



Jatrophatrione

12–19



Jatrophatrione

12) H_2O_2, KF, $KHCO_3$
13) im_2CO
14) $Hg(O_2CCF_3)_2$
15) TPAP, NMO
16) BCl_3
17) im_2CS, Δ
18) K_2CO_3
19) IBX

Step 12: Please name the reaction.
Fleming–Tamao oxidation
Hint step 14: an oxidative transposition takes place
Step 15: Please name the reaction.
Ley oxidation