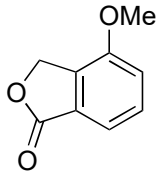
Total synthesis of the complex taxane diterpene canataxpropellane

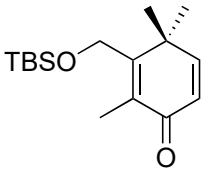
F. Schneider, K. Samarin, S. Zanella, T, Gaich, *Science **2020**, 367, 676-681*



1-2

3-10

1) NaHMDS, *then* TBSCl, *then* **1**, r.t.
2) *hv* (254 nm), r.t.

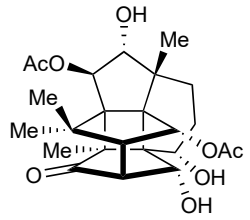


1

3) TBAF
4) $Ca(BH_4)_2$
5) MOMCl, DIPEA
6) $LiAlH_4$
7) $(COCl)_2$, DMSO, NEt_3
8) KOtBu
9) O_2, *hv* (>530 nm), Rose Bengal B
10) BHT, KOAc, *then* silica gel

9) Which reactive species is generated?

10) Give a structure of BHT and propose a mechanism



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11-18

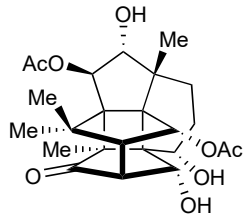
11) IBX, DMSO
12) $Me_4NBH(OAc)_3$
13) $PhCH(OMe)_2$, PTSA
14) L-Selectride
15) KHMDS, *then* Comins' reagent
16) CO, $Pd(PPh_3)_4$, NEt_3, MeOH
17) Mg, MeOH
18) KHMDS, 18-crown-6, MeI

17) Classify the reaction

19-26

19) $LiAlH_4$, *then* TBAF
20) $(COCl)_2$, DMSO, NEt_3
21) $TiCl_4$, Zn, pyr.
22) Ac_2O, DMAP, pyr.
23) BrB(catechol)
24) K_2CO_3, MeOH
25) Ac_2O, DMAP, pyr.
26) H_2, Pd/C

21) Name of the reaction?



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