Isolation, synthesis and bioactivity studies of phomactin terpenoids

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(S)-(+)-carvone

↓ 1-4

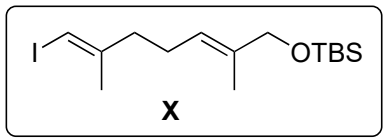
1) mCPBA
2) Cp_2TiCl_2, Zn
3) $(PhS)_2$, n-Bu_3P
4) $[Rh(cod)OH]_2$, MeOH, 60 °C

2) come up with a mechanism
4) come up with a mechanism

A

↓ 5-9

5) $(NH_4)_6Mo_7O_{24} \cdot 4\ H_2O$, H_2O_2
6) MeLi
7) Burgess reagent
8) SeO_2, 80 °C
9) **X**, *t*BuLi



X

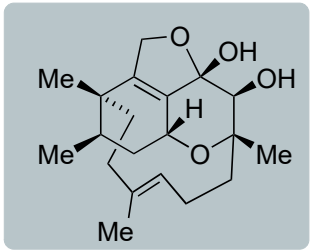
7) structure and synthesis of Burgess
name 2 further dehydrating agents

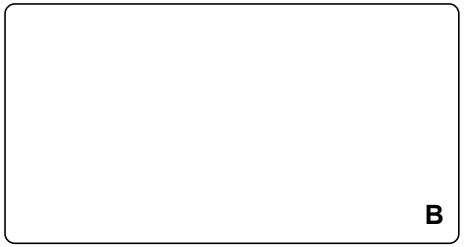
B

↓ 10-16

10) SEMCl, TBAI, DIPEA
11) TBAF
12) MsCl, Et_3N, LiBr
13) NaHMDS
14) Na(Hg), Na_2HPO_4
15) TBAF, MS 4Å
16) MnO_2, then $NaBH_4$, $CeCl_3 \cdot 7\ H_2O$

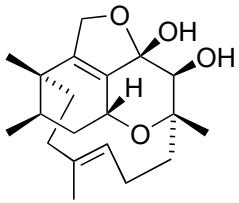
10) structure and synthesis of SEMCl?





17-20

17) $VO(OEt)_3$, TBHP
18) $Me_4NBH(OAc)_3$ CsOAc, 18-crown-6
19) DMP, $NaHCO_3$ then NaOMe
20) Red-Al®



Phomactin A