Diastereoselective Total Synthesis of (±)-Schindilactone A

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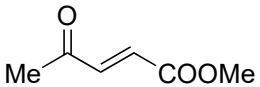


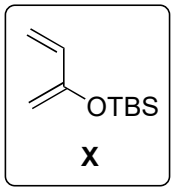
1-6

A

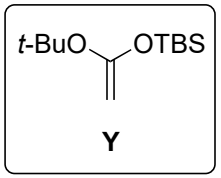
7-13

B

1) Et_2AlCl, **X**
2) CH_3MgCl
3) KHMDS, *then* O_2, $P(OMe)_3$
4) TESOTf, 2,6-lutidine
5) KO*t*-Bu, $CHBr_3$
6) $AgClO_4 \cdot H_2O$



X

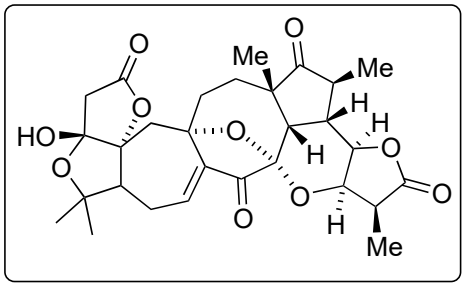


Y

7) $Pd(o\text{-}tol_3P)_2)Cl_2$, CuF_2, **Y**
8) but-3-enylmagnesium bromide
9) KHMDS, *then* MoOPh
10) benzyl 2,2,2-trichloroacetimidate, TfOH
11) vinylmagnesium bromide
12) Grubbs^{2nd} generation catalyst, $MgBr_2$
13) KHMDS, but-2-ynoic pivalic anhydride

Structure of MoOPh?

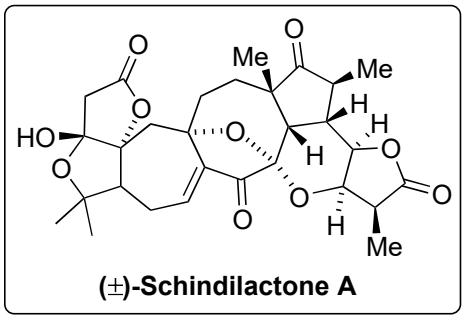
Structure of Grubbs^{2nd} generation catalyst?



14-22

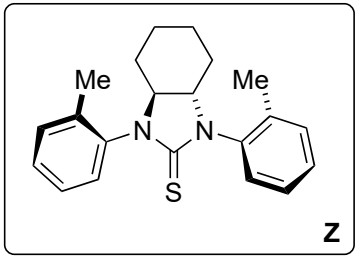
C

23-29



(±)-Schindilactone A

14) $Co_2(CO)_8$, TMTU
15) NaOMe, MeOH
16) TMS-imidazole
17) KHMDS, *then* MeI
18) DIBALH
19) DMP, $NaHCO_3$
20) vinylmagnesium bromide
21) TBAF, AcOH
22) $LiAlH_2(OMe)_2$



Z

23) $Pd(OAc)_2$, **Z**, $CuCl_2$, CO
24) LHMDS, *then* MeI
25) LiTMP
26) Ac_2O, $Sc(OTf)_3$
27) $Pd(OH)_2$, H_2
28) LHMDS
29) DMP, $NaHCO_3$

Name of step 14?

Come up with a mechanism for step 23!