Total Synthesis of (+)-Pierisketone B

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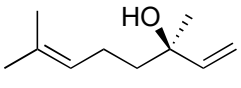

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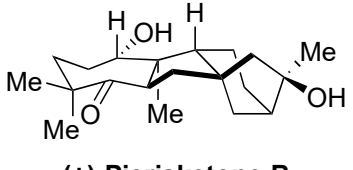
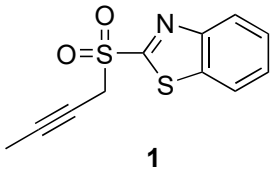


(+)-Pierisketone B

1) HG-II then NaH, TBSCl
2) $RuCl_3$, *t*-BuOOH, $Mg(OAc)_2$
3) VinylMgBr, CuBr·DMS, TMSCl
4) O_3 then PPh_3
5) NaHMDS, **1**
6) Nysted reagent, $Ti(OiPr)_2Cl_2$
7) $Co_2(CO)_8$ then *n*-BuSMe
8) L-selectride
9) (*S*)-Me-CBS, BH_3·THF
10) [Rh(NBD)DIPHOS-4]BF_4, DIPEA, H_2 (600 psi)
11) DMP



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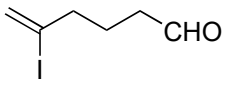
12) HMDS, TMSI, **2**, BF_3·Et_2O
13) TMSOTf, 2,6-lutidine
14) *n*-BuLi then TBAF
15) TBSOTf, 2,6-lutidine
16) O_3 then Me_2S
17) NaHMDS, Mander´s reagent
18) *tert*-BuOK, MeI
19) SmI_2
20) TBAF



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1) Name of the starting material?

5) Name of the reaction?
6) Structure of Nysted´s reagent?
7) Name of the reaction?
Describe the type of cycloaddition?
9) Name of the reaction?

11) Structure of Dess Martin´s reagent?

17) Structure of Mander´s reagent?