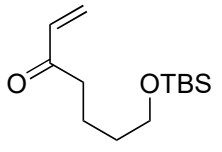
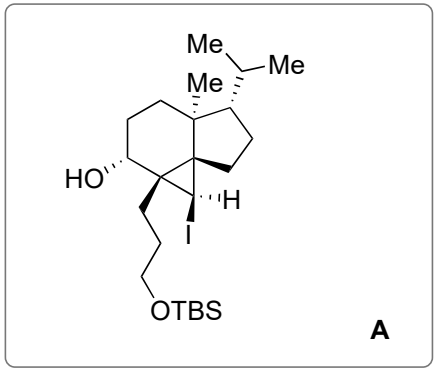
Concise Total Synthesis of Peyssonnoside A

Chesnokov, G. A.; Gademann, K. *J. Am. Chem. Soc*. **2021**, *143*, 14083-14088.



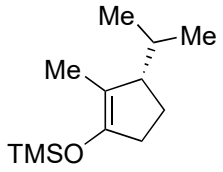
1 - 4



A

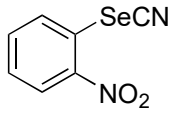
5 - 9

1) BF_3•OEt_2, *i*-PrOH, **1**
2) NaOMe *then* TBSCl, Im-H
3) $NaBH_4$, $CeCl_3$•$7H_2O$
4) $ZnEt_2$, CHI_3



1

5) TMSCl, Im-H
6) *t*-BuLi, CuCN *then* MethallylBr
7) TBAF
8) **2**, PBu_3
9) *m*-CPBA, Et_3N

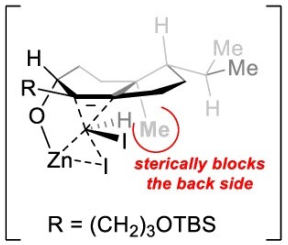


2

1-4 Name of the reactions?

1) Mukaiyama-type Michael addition
2) Robinson annulation
3) Luche reduction
4) Simmons-Smith cyclopropanation

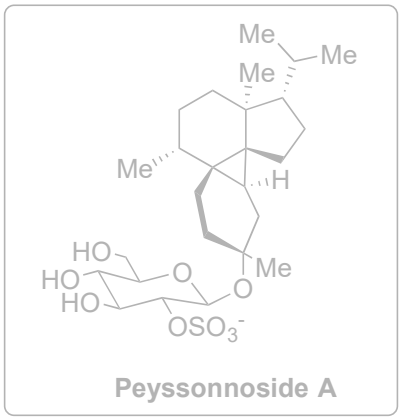
4) Selectivity of the reaction? Transition state?



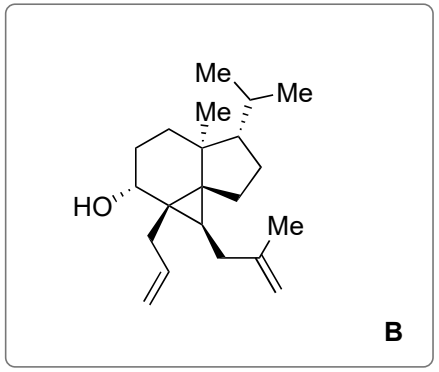
R = $(CH_2)_3$OTBS

8) + 9) Name of the reaction?

Grieco elimination

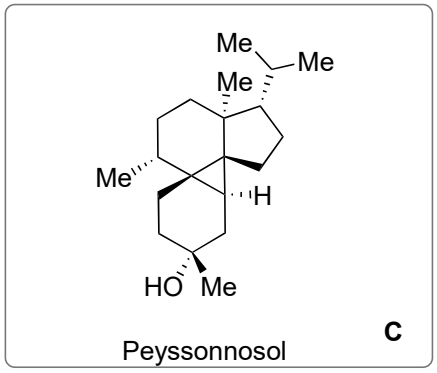


Peyssonnoside A



B

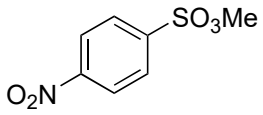
10-14



Peyssonnosol

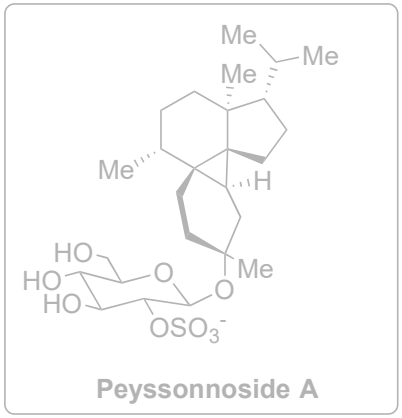
C

10) HG-II
11) TPAP, NMO
12) $PhSiH_3$, **3**, $Fe(acac)_3$, $NaHCO_3$
13) Ph_3PMeBr, KO*t*-Bu
14) H_2, Rh/Al_2O_3



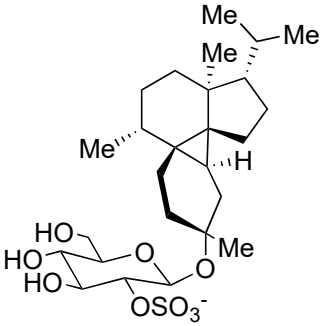
3

11) + 12) Name of the reactions?
Ley-Griffith oxidation
Mukaiyama hydration (anaerobic)



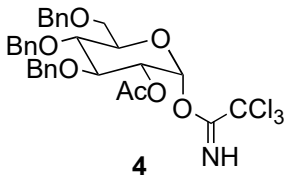
Peyssonnoside A

15-18



Peyssonnoside A

15) AgOTf, **4**
16) KOH
17) Py•SO_3, Pyridine
18) H_2, $Pd(OH)_2$/C



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