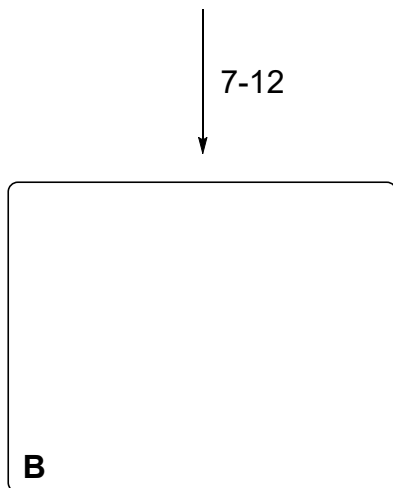
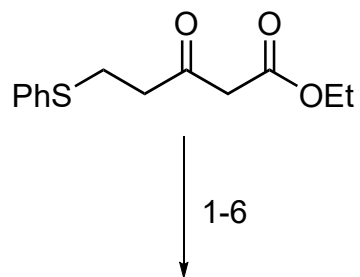
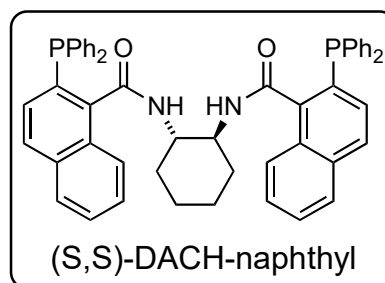
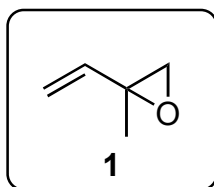


# Asymmetric Total Synthesis of (2R)-Hydroxynorneomajucin, a Norsesquiterpene from *Illicium jiadifengpi*

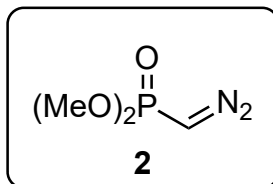
Dooley, C.; Rychnovsky, S.  
*Organic Letters* 2022



- 1) **1**, Pd<sub>2</sub>dba<sub>3</sub>•2CHCl<sub>3</sub>, (S,S)-DACH-naphthyl then DBU
- 2) Quinidine, CumyLOOH
- 3) NaBH(OAc)<sub>3</sub>
- 4) 2,2-dimethoxypropane, TsOH
- 5) H<sub>2</sub>O<sub>2</sub>
- 6) TFAA, Et<sub>3</sub>N then MeOH



- 7) **2**, KO-*t*Bu, -78 °C
- 8) LiHMDS, MeI
- 9) 6 M HCl
- 10) TBSOTf, pyr.
- 11) CO<sub>2</sub>(CO)<sub>8</sub>, PhSMc, DCE, reflux
- 12) TBAF



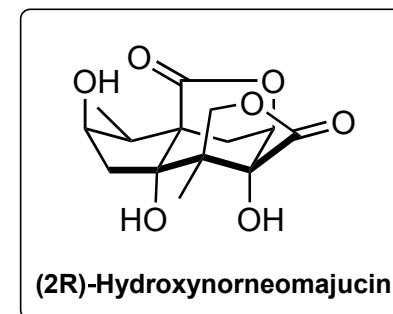
1) Reaction name? Rationalize stereochemical outcome.

5-6) Reaction name?

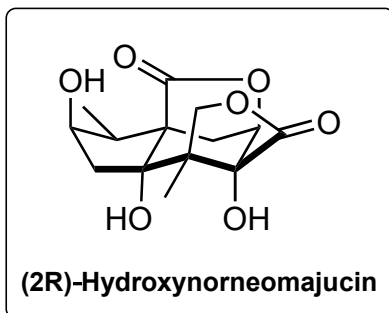
7) Reaction name?

10) hint: mono-protection

11) Reaction name?



13-17



- 13)  $\text{Et}_3\text{Al}$ , TMS-CN, THF, reflux
- 14)  $\text{O}_2$ ,  $\text{Pd}(\text{OAc})_2$ , DMSO,  $110\text{ }^\circ\text{C}$
- 15)  $\text{H}_2$ , Pd/C
- 16) K-selectride
- 17)  $\text{O}_2$ ,  $\text{Mn}(\text{dpm})_3$ ,  $\text{Ph}(\text{O}i\text{-Pr})\text{SiH}_2$

14) Reaction name? hint: it happens twice and a hydrolysis also occurs

15) hint: mono-reduction

17) Reaction name?