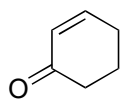


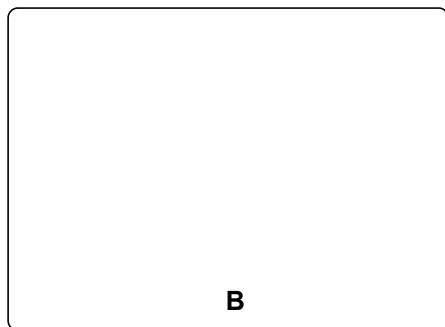
Total Synthesis of Talatisamine

D. Kamakura, H. Todoroki, D. Urabe, K. Hagiwara, M. Inoue, *Angew. Chem. Int. Ed.* **2020**, *59*, 479–486.

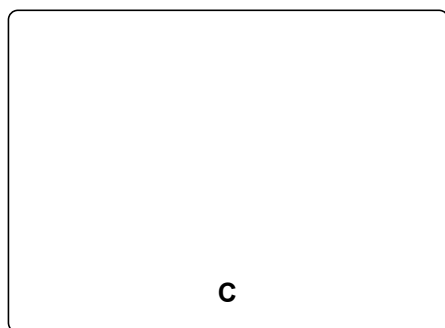


A

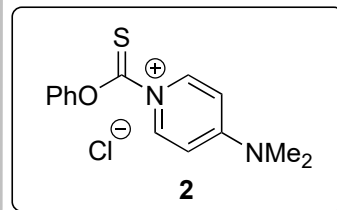
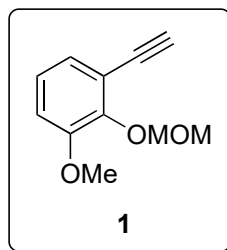
1-8



9-21



- 1) Me_2PhSiCl , Li, Et_2Zn
- 2) NaH, KH, $(\text{MeO})_2\text{CO}$
- 3) $\text{LiN}(i\text{Pr})_2$, MeOCOCN
- 4) HCHO, EtNH_2
- 5) $\text{HBF}_4 \cdot \text{Et}_2\text{O}$
- 6) $\text{CF}_3\text{CO}_2\text{H}$, AcOOH
- 7) TBSOTf
- 8) **1**, EtMgBr

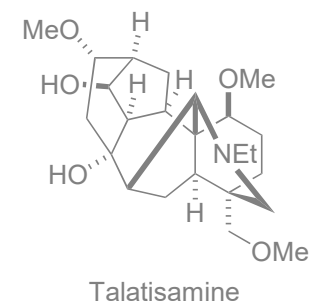


- 9) **2**, NaH
- 10) V-40, $n\text{Bu}_3\text{SnH}$
- 11) H_2 , Pd/C
- 12) DIBAL
- 13) $\text{NaN}(\text{TMS})_2$, MeI
- 14) $n\text{Bu}_4\text{NF}$
- 15) NaH, MeI
- 16) DIBAL
- 17) DMP
- 18) Tebbe's reagent
- 19) $\text{BF}_3 \cdot \text{Et}_2\text{O}$, Me_2S
- 20) HBr, DMSO
- 21) HCl, $\text{PhI}(\text{OAc})_2$, MeOH

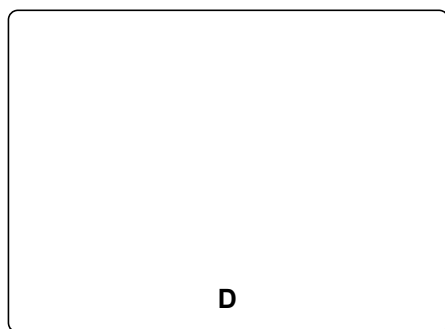
Which named reaction takes place in step 4?

Please name the reaction of steps 5 and 6

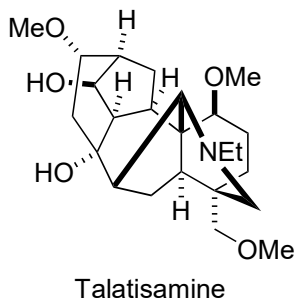
10) Structure of Tebbe's reagent?



22-28



29-35



- 22) PhMe, reflux
- 23) Ph₃SnH, AIBN
- 24) DIBAL
- 25) Tf₂O
- 26) DBU, DMSO
- 27) TIPSOTf, DMDO
- 28) (COCl)₂, DMSO

- 29) TsNHNH₂, then NaBH₄, CeCl₃·7 H₂O
- 30) catecholborane, NaOAc·3 H₂O
- 31) NaN(TMS)₂, MeI
- 32) HCl
- 33) NaHCO₃, NaBH₄
- 34) Hg(OAc)₂, AcOH
- 35) 1,4-dioxane, H₂O, 90 °C

30) Structure of catecholborane?

Which reaction takes place in step 34?