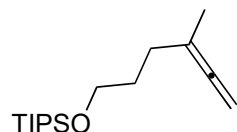


Total Syntheses of Giraldine I and Heterophyllisine

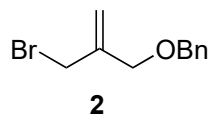
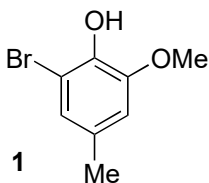
C. Li, F. Lu, N. Wang, C. Zhang, G. He, W. Lei, J. Liu, J. Wang, X.-Y. Liu, Y. Qin, "Total Syntheses of Giraldine I and Heterophyllisine" J. Am. Chem. Soc. 2025, 147, 37012–37018.



1-24

A

- 1) $\text{Ni}(\text{cod})_2$, Biphephos, TMSCHN₂, MeOH
- 2) TBAF
- 3) IBX
- 4) **1**, NaH, *n*-BuLi
- 5) $\text{PhI}(\text{OAc})_2$, NaHCO₃, MeOH
- 6) Mesitylene, 170 °C
- 7) DMP
- 8) $\text{NaBH}(\text{OMe})_3$
- 9) NaH, MeI
- 10) LiAlH_4 , 110 °C then (Boc)₂O
- 11) *p*-TsOH
- 12) Sml_2
- 13) O_3 , $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$, 4-methoxybenzenethiol
- 14) TFA then NaOH, EtI
- 15) NIS, NaHCO₃
- 16) TMSCHN_2 , *n*-BuLi
- 17) *t*-BuOK, O₂ then **2**
- 18) AllylMgBr
- 19) Mesitylene, 200 °C then Grubbs II
- 20) Raney Ni, H₂ then Pd/C, H₂
- 21) DMP
- 22) Sml_2
- 23) TCDI
- 24) AIBN, *n*-Bu₃SnH



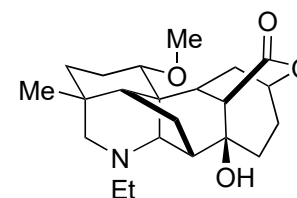
5) Hint: Diels-Alder reaction

7) Structure of Dess Martin's reagent?

14) Name of the reaction?

19) Name of the reaction?

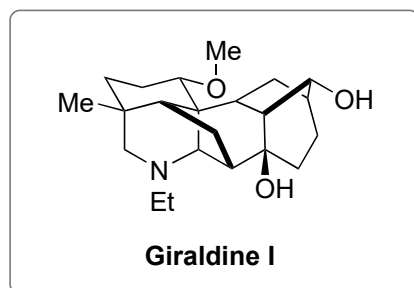
24) Name of the reaction?



Heterophyllisine

A

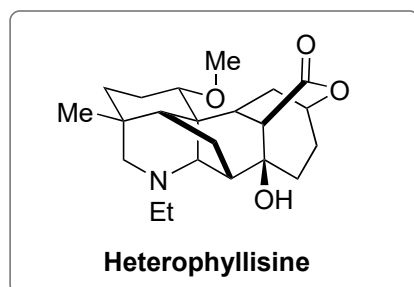
25-26



25) DMP, NaHCO_3
26) LiAlH_4

A

27-29



27) LiAlH_4
28) Jones reagent
29) H_2O_2 , HCOOH

29) Name of the reaction?