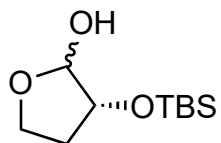


Total Synthesis of (-)-Lepadiformine A Utilizing $\text{Hg}(\text{OTf})_2$ -Catalyzed Cycloisomerization Reaction

K. Nishikawa, S. Kikuchi, S. Ezaki, T. Koyama, H. Nokubo, T. Kodama, Y. Tachi, Y. Morimoto
Org. Lett. **2015**, *17*, 5772–5775.



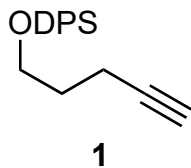
1-9



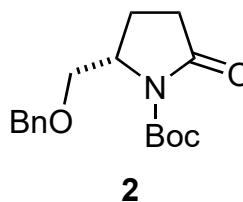
10



- 1) $n\text{-C}_5\text{H}_{11}\text{PPh}_3\text{Br}$, NaHMDS, 0°C
then substrate
- 2) H_2 , Pd/C
- 3) I_2 , PPh_3 , imidazole, 0°C
- 4) $n\text{-BuLi}$, -30°C then **1**
- 5) TBAF
- 6) I_2 , PPh_3 , imidazole, 0°C
- 7) NaSO_2Ph
- 8) $n\text{-BuLi}$, -78°C then **2**
- 9) SmI_2 , THF/MeOH, -78°C



1

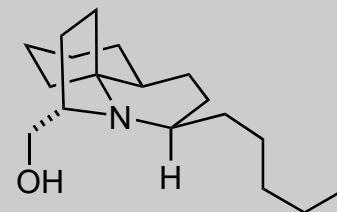


2

- 10) $\text{Hg}(\text{OTf})_2$ (0.2 eq)

1) Name of the reaction?

10) Propose a mechanism.

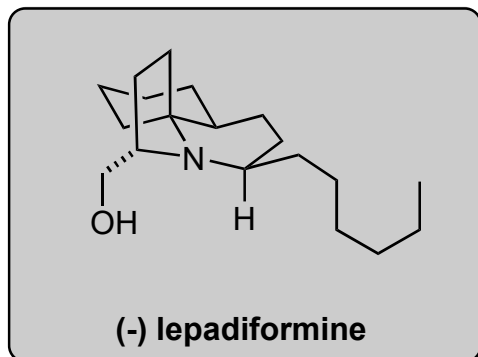


(-) lepadiformine

B



11-16



- 11) NaBH_4
- 12) NaH then CS_2 then MeI
- 13) AIBN , Bu_3SnH
- 14) TFA then H_2O
- 15) PPh_3 , CBr_4 , Et_3N , DMAP
- 16) H_2 , $\text{Pd}(\text{OH})_2/\text{C}$

13) Name the reaction.