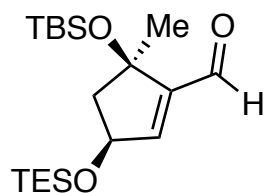
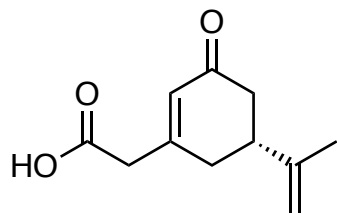
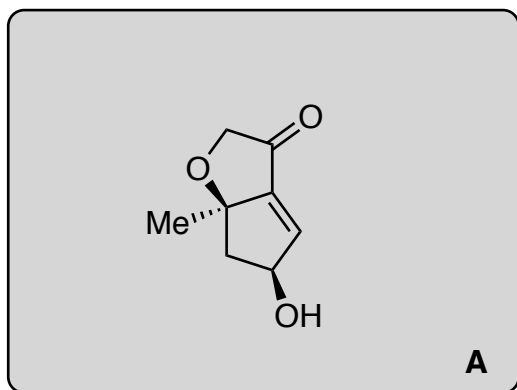


A Convergent Total Synthesis of (+)-Ineleganolide

Gross, B. M.; Han, S.; Virgil, S. C.; Stoltz, B. M.
J. Am. Chem. Soc. **2023**, *145*, 7763-7767.



1-9



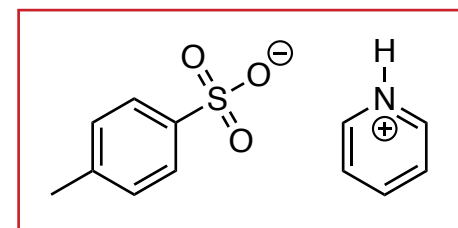
10-13

- 1) CH_2Br_2 , *n*-BuLi, THF, -78 to 23 °C
- 2) TBAF, THF, 60 °C
- 3) TBSCl, imidazole, DMAP, CH_2Cl_2
- 4) MgI_2 , THF, 40 °C
- 5) TESCl, imidazole, CH_2Cl_2
- 6) NaH, THF
- 7) PPTS, EtOH
- 8) $(\text{COCl})_2$, DMSO, CH_2Cl_2 , then Et_3N
- 9) HF (aq), THF

- 10) $\text{Ph}_3\text{P}=\text{O}$, $(\text{COCl})_2$, then **A**, then DIPEA, CH_2Cl_2
- 11) DMF, 120 °C, then DBU
- 12) TESCl, THF, 60 °C
- 13) Sml_2 , H_2O , THF, -78 °C

1) How would you make the starting material?

7) Draw the structure of PPTS

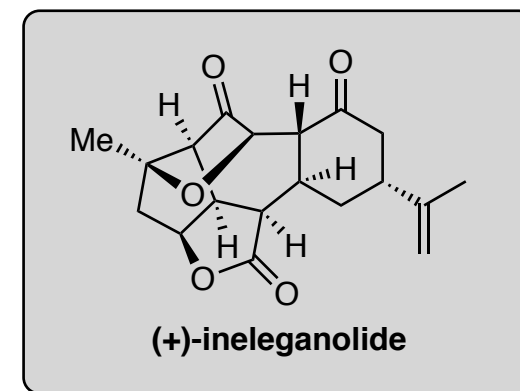


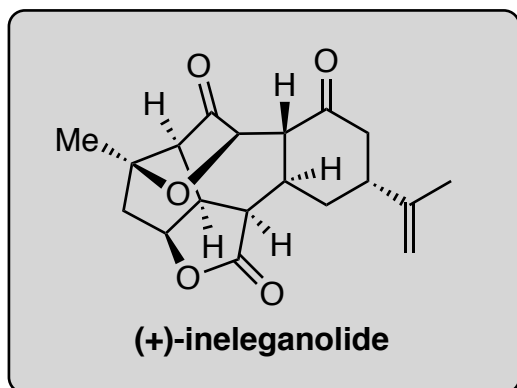
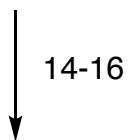
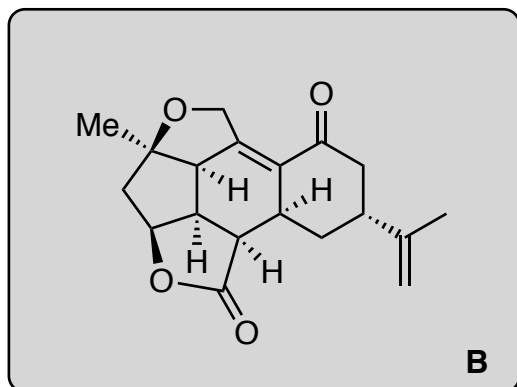
8) Name of reaction?

Swern

11) Propose mechanism.

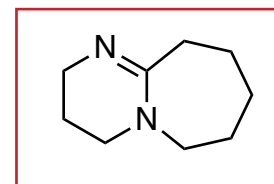
Hint: Cascade reaction to form 5/5/5/6/6 fused ring system





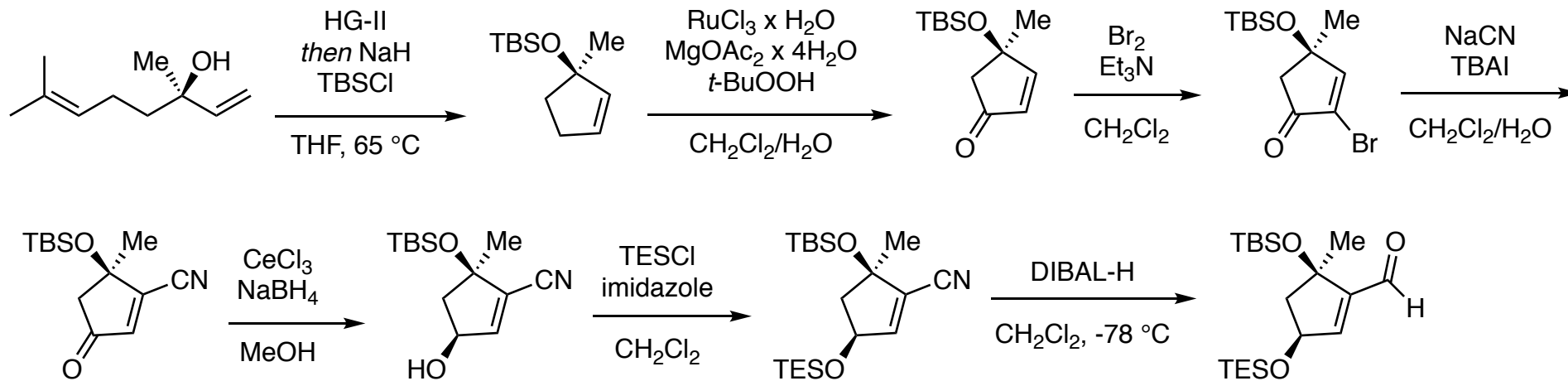
- 14) DBU, O₂, benzene, 70 °C
 15) Ac₂O, Et₃N, DMAP, CH₂Cl₂
 16) Sml₂, THF:NaOH (1M) (8:1), -78 to 23 °C

- 14) Draw the structure of DBU
Hint: Formation of endoperoxide intermediate



- 16) Name of reaction?
Semipinacol rearrangement

Starting material synthesis:



Proposed mechanism for step 11:

