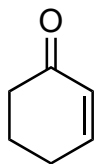
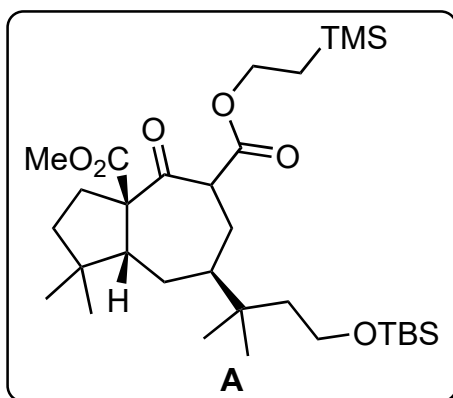


Total Synthesis of Hypersampson M

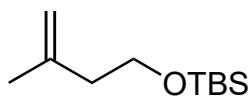
A. E. Samkian, S. C. Virgil, B. M. Stoltz, *J. Am. Chem. Soc.* **2024**, 146, 18886–18891.



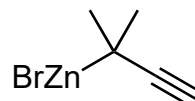
1–7



- 1) $\text{Fe}(\text{acac})_3$, PhSiH_3 , **1**
- 2) NaH , dimethyl carbonate
- 3) PhSeCl , *py*, *then* H_2O_2
- 4) **2**, $-40\text{ }^\circ\text{C}$, *then* $80\text{ }^\circ\text{C}$
- 5) Pd/C , H_2
- 6) LDA , **3**
- 7) $\text{Rh}_2(\text{TFA})_4$

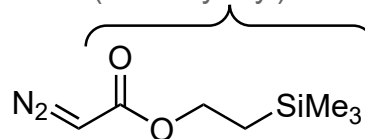


1



2

Name the abbreviation for this unit.
Teoc = 2-(trimethylsilyl)ethoxycarbonyl



3

- 4) Name alternative reactions, which generate a similar motif.

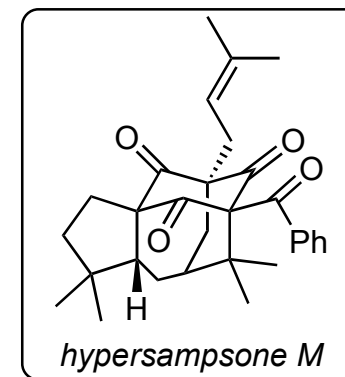
Danheiser annulation, TMM cycloaddition

Name of the 2nd transformation?

Conia–ene-type

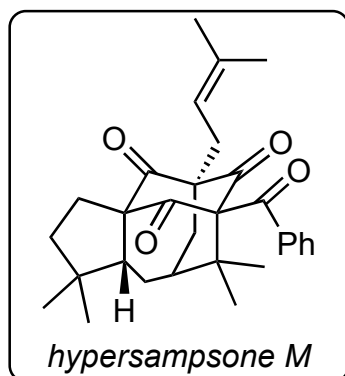
- 6 & 7) Name of the related reaction?

Büchner–Curtius–Schlotterbeck



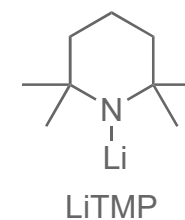
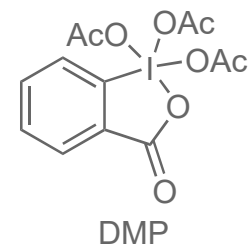
A

8–15



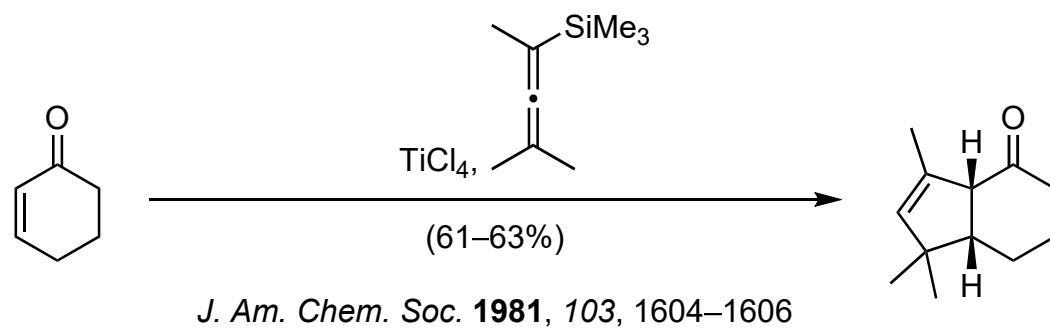
- 8) NaH, prenyl bromide
- 9) TBAF
- 10) DMP
- 11) *p*-TsOH•H₂O
- 12) PhNH₂•HCl, AlMe₃
- 13) DMP
- 14) Me₃OBF₄ (10 equiv), 2,6-(*t*-Bu)₂py
- 15) LiTMP, BzCl

- 10) Structure of DMP?
- 11) Hint: Two new rings are formed and methanol is lost in the process.
- 14) Name of the reagent?
Meerwein salt
- 15) Structure of LiTMP?



4)

Danheiser annulation:



Trimethylenemethane (TMM) reaction:

