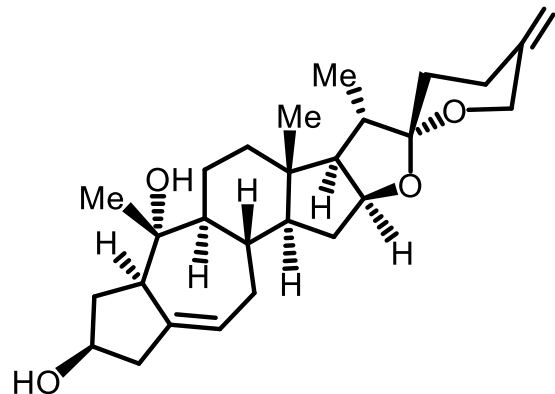


# Asymmetric Total Synthesis of Bufospirostenin A

M.-J. Cheng, L.-P. Zhong, C.-C. Gu, X.-J. Zhu, B. Chen, J.-S. Liu, L. Wang,\* W.-C. Ye,\* and C.-C. Li\*

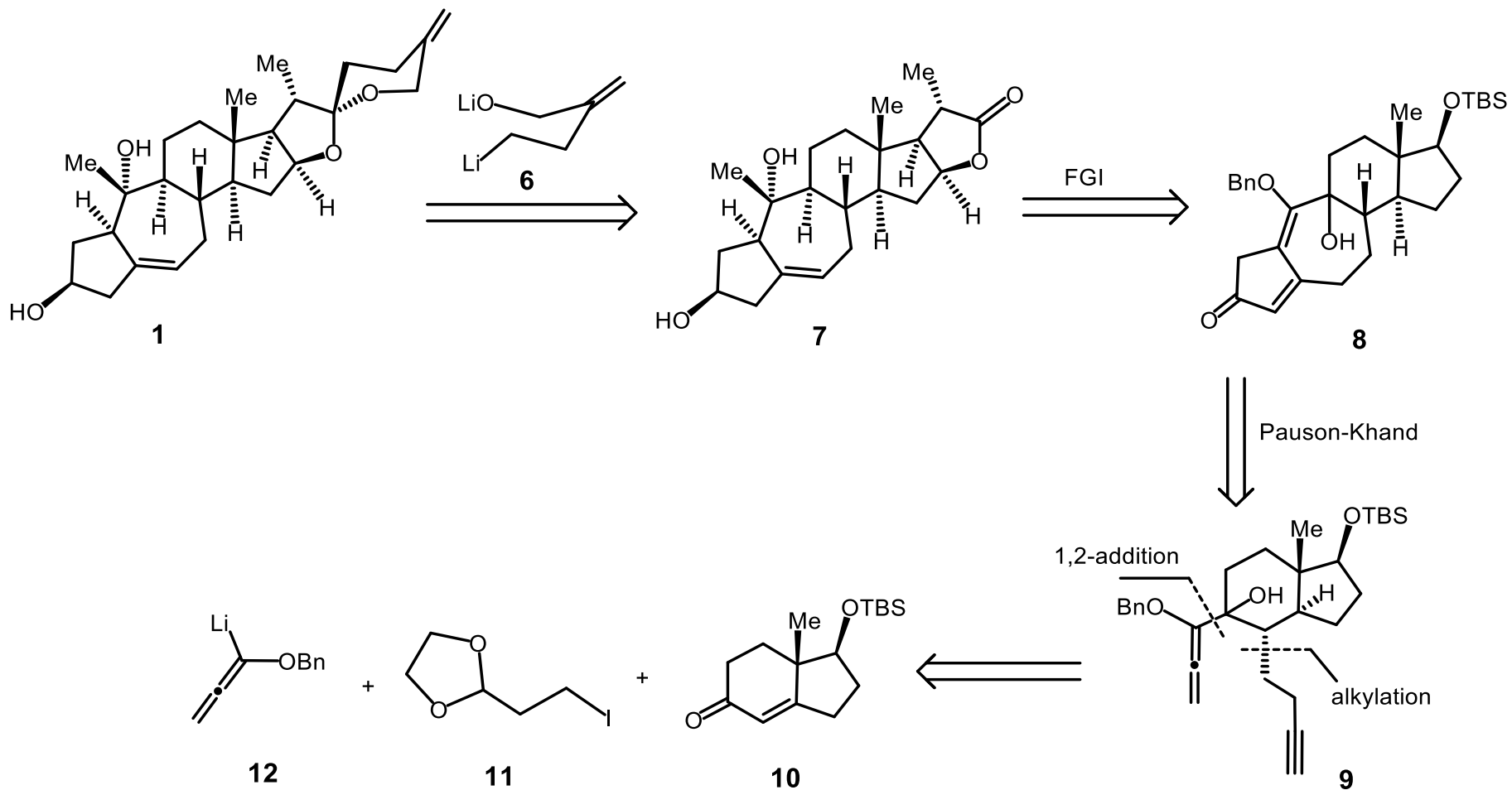


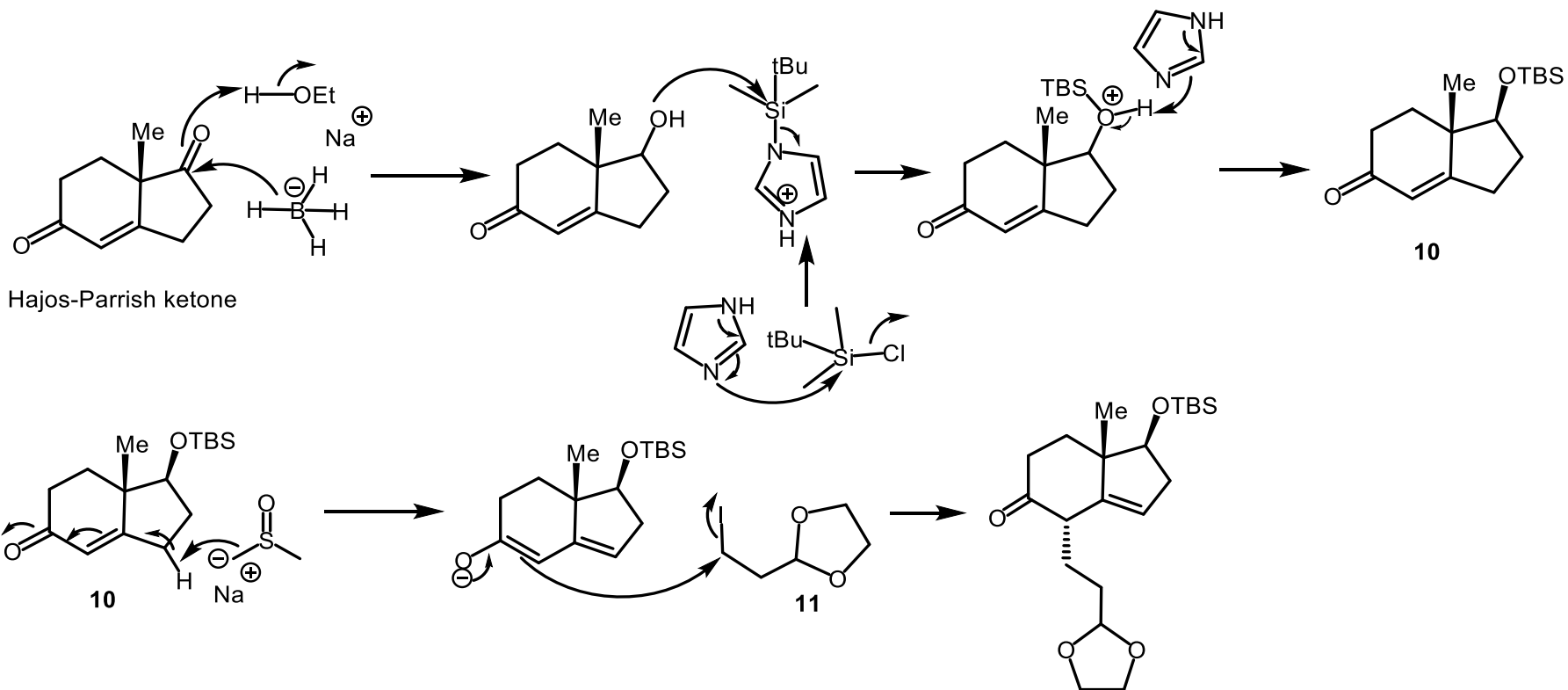
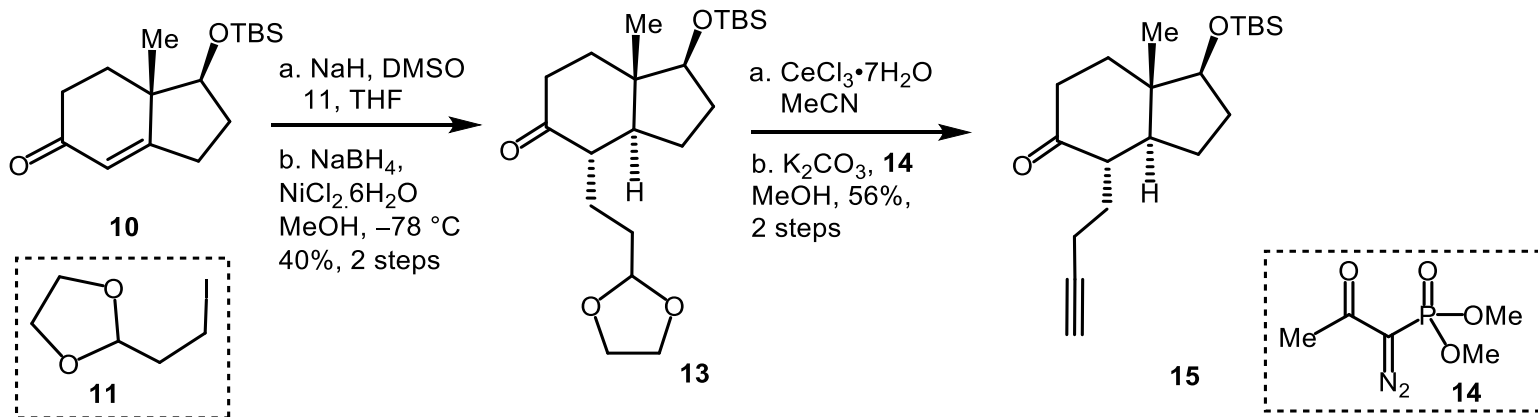
**Bufospirostenin A (1)**

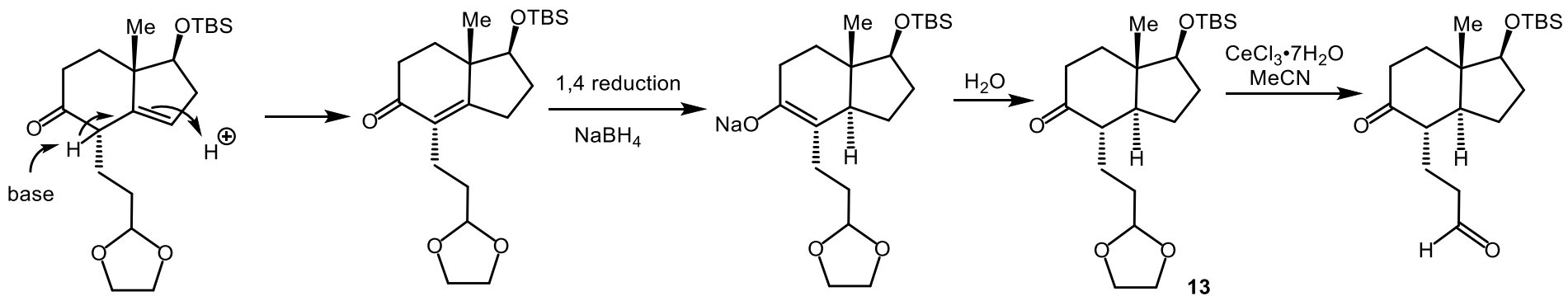
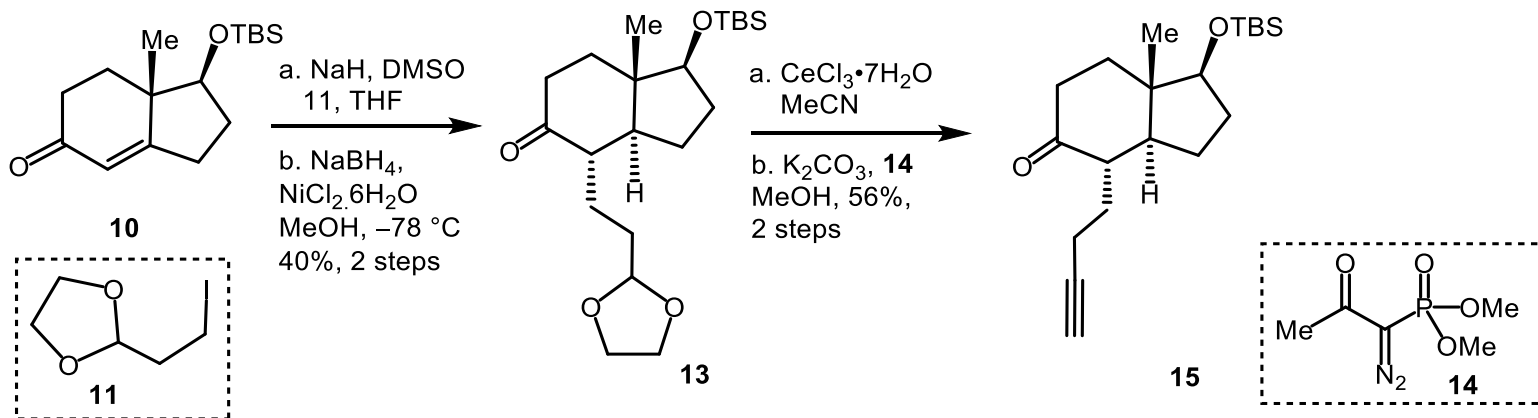
- Bufospirostenin A (1), an unusual steroid
- It is used as anti cancer agent and possess cardioactive effect
- Structurally, it contains
  - ✓ Unusual [5-7-6-5-5-6] ring system
  - ✓ First spirostanol found in animals
  - ✓ 11 Sterocenters: 10 contiguous, 2 quaternary, 1 spiroketal
  - ✓ No total synthesis reported

Lakshmi R  
Liu Research Group  
Total synthesis presentation  
12/09/2020

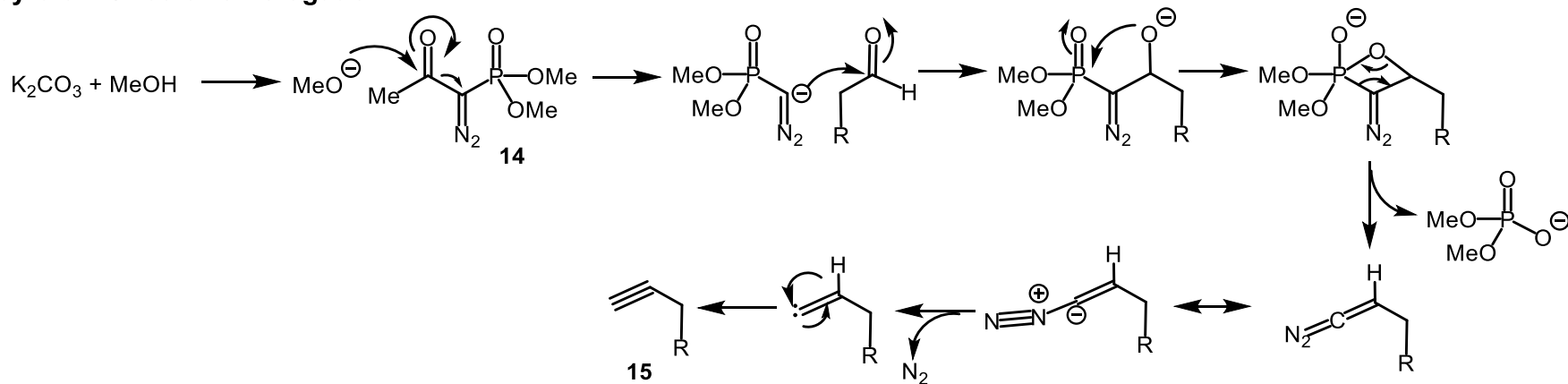
# Retrosynthetic analysis of Bufospirostenin A (1)

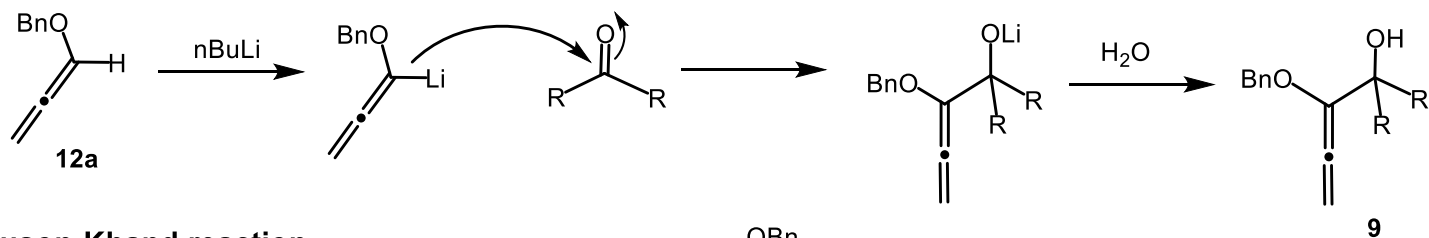
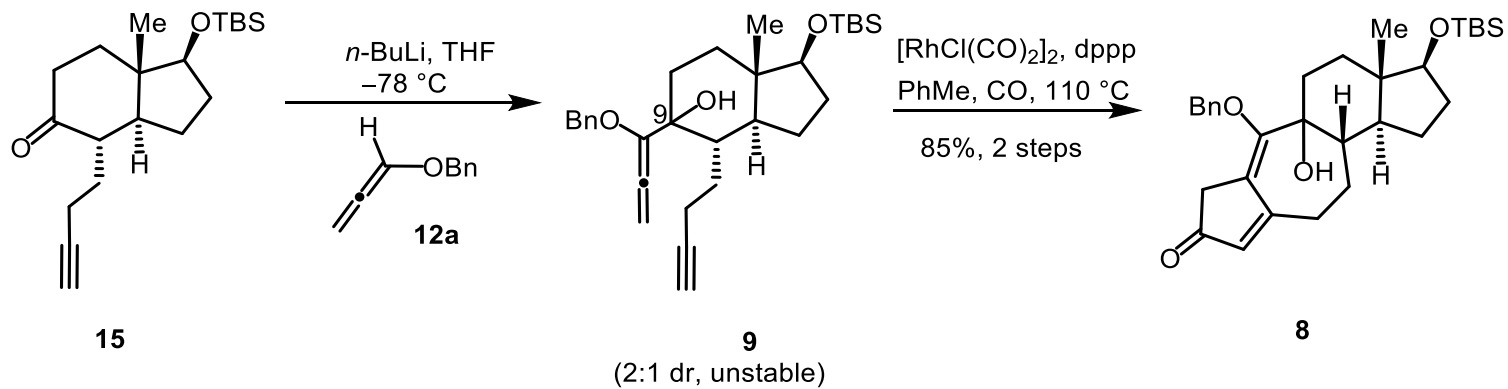




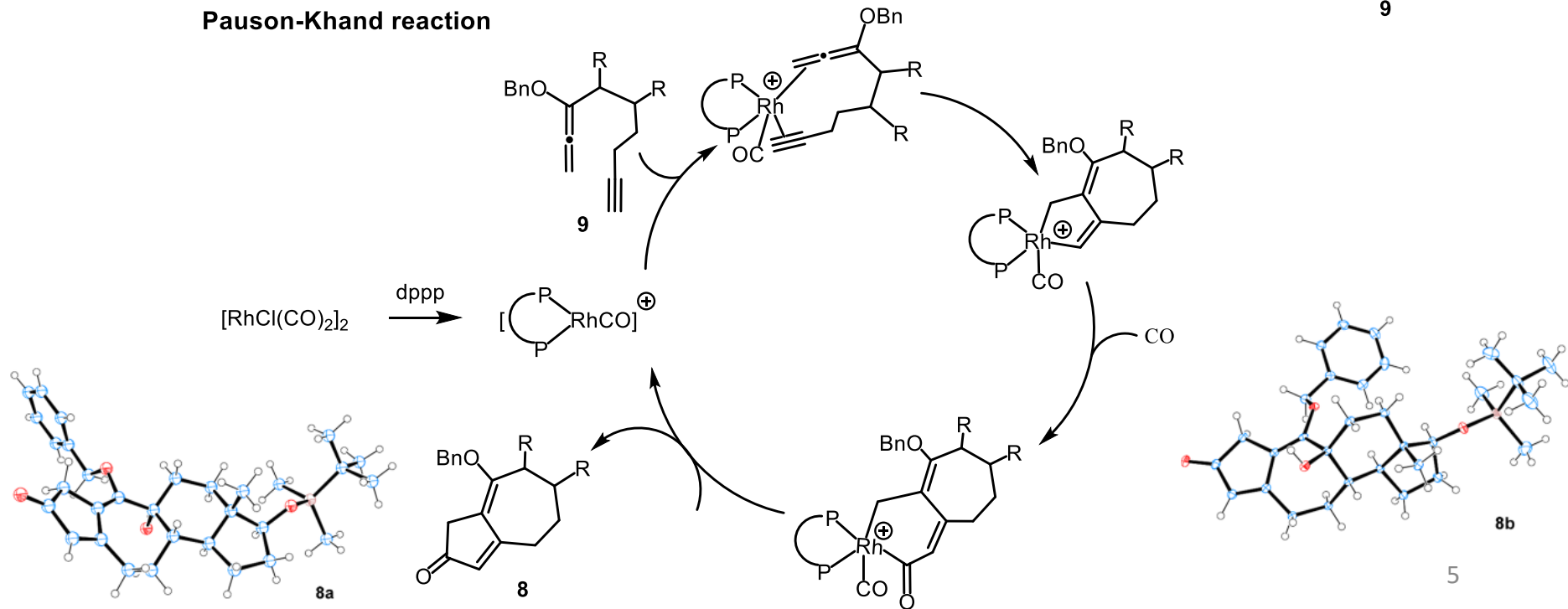


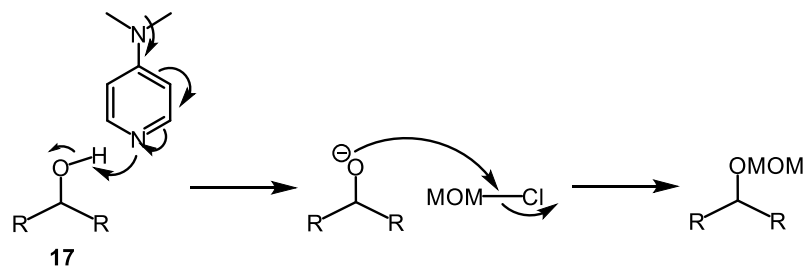
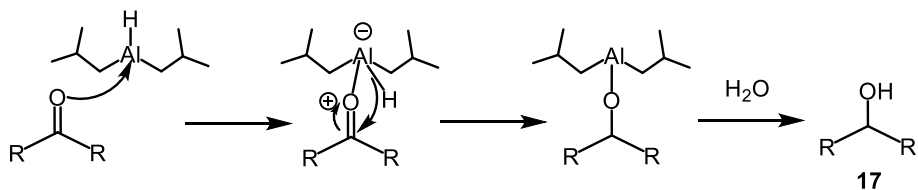
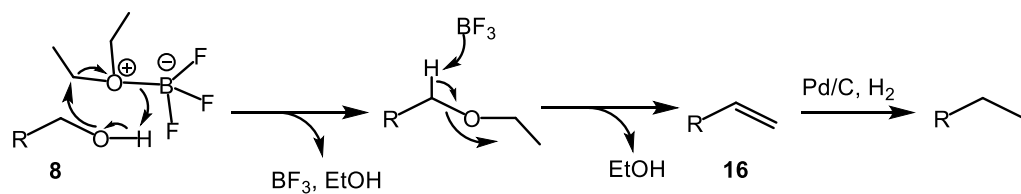
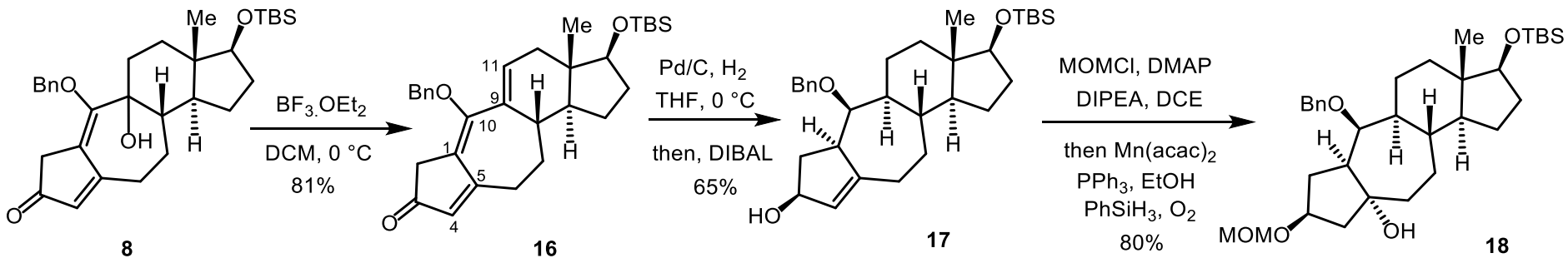
### Seyferth-Gilbert homologation



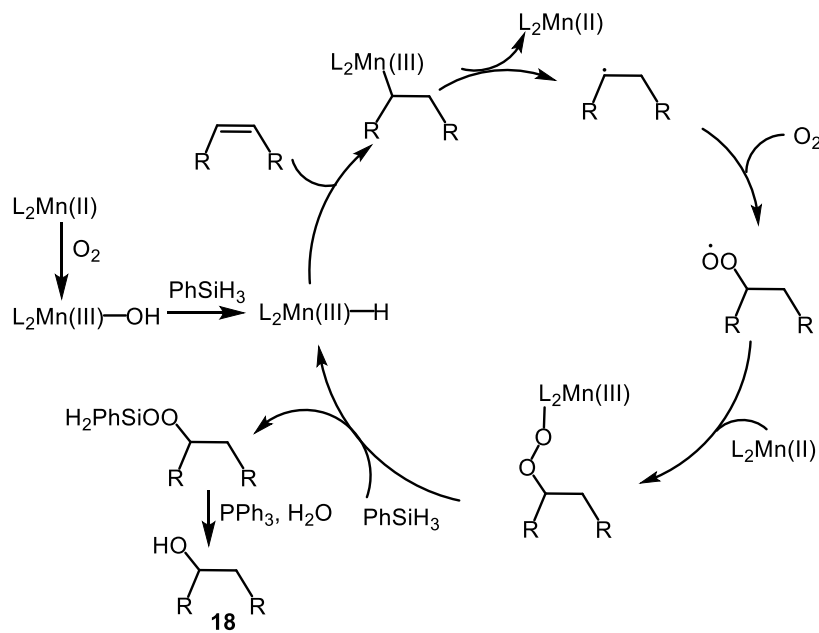


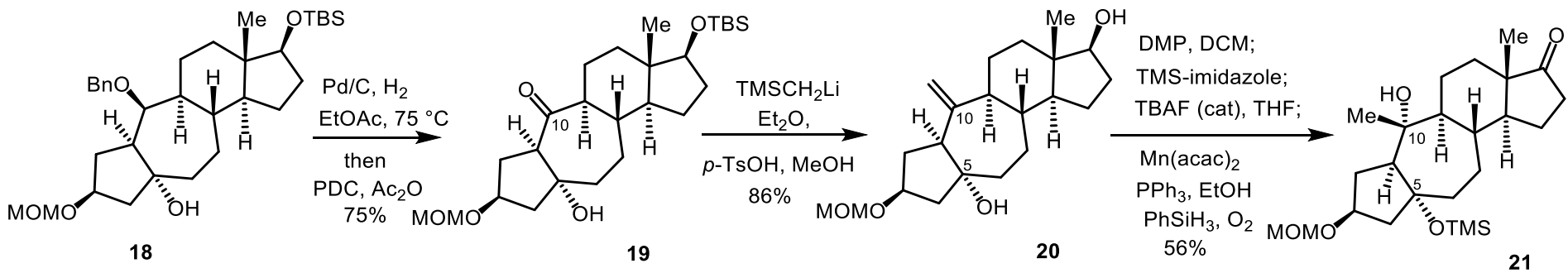
### Pauson-Khand reaction



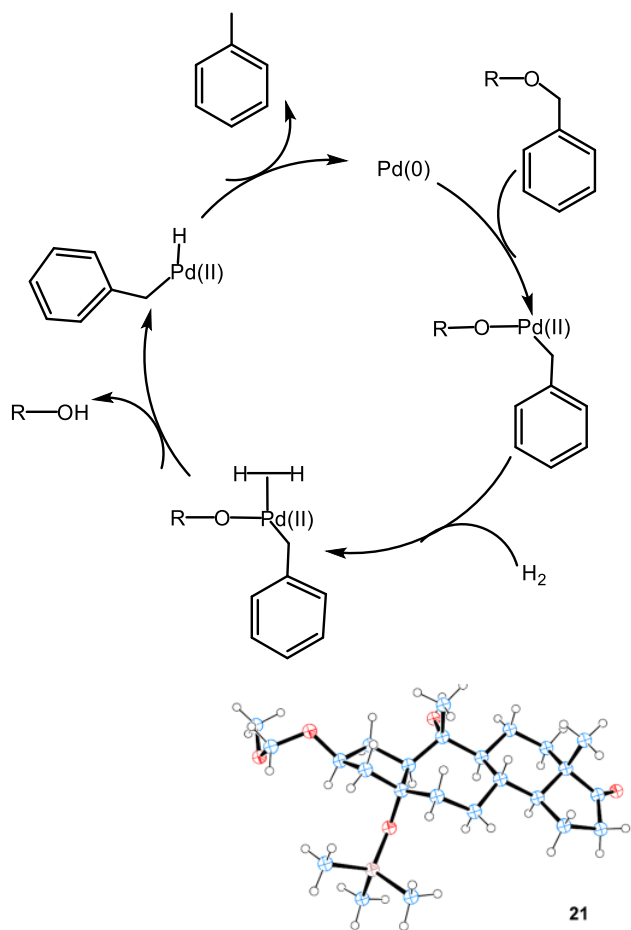


### Mukaiyama hydration

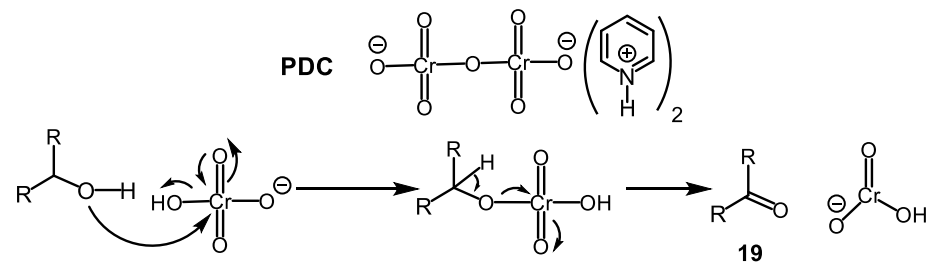




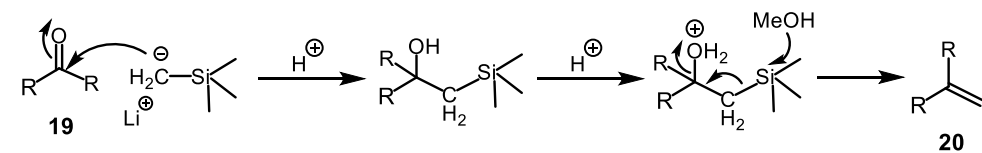
### Bn deprotection



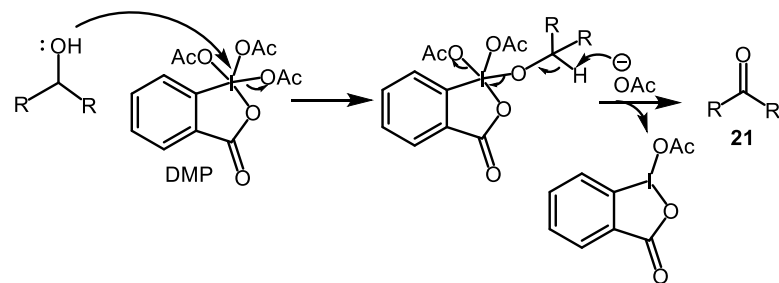
### Corey-Schmidt oxidation

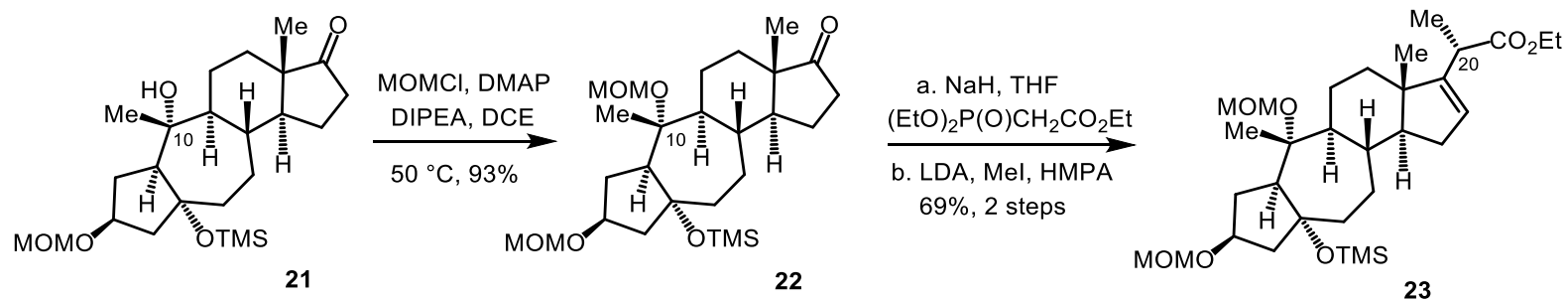


### Peterson olefination

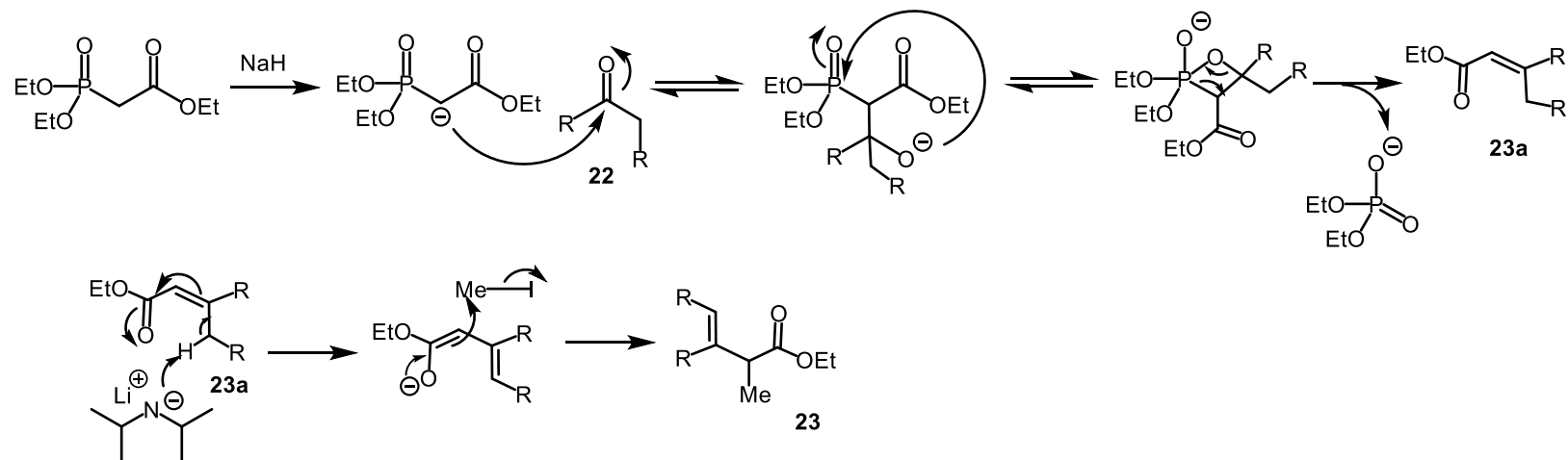


### Dess-Martin oxidation

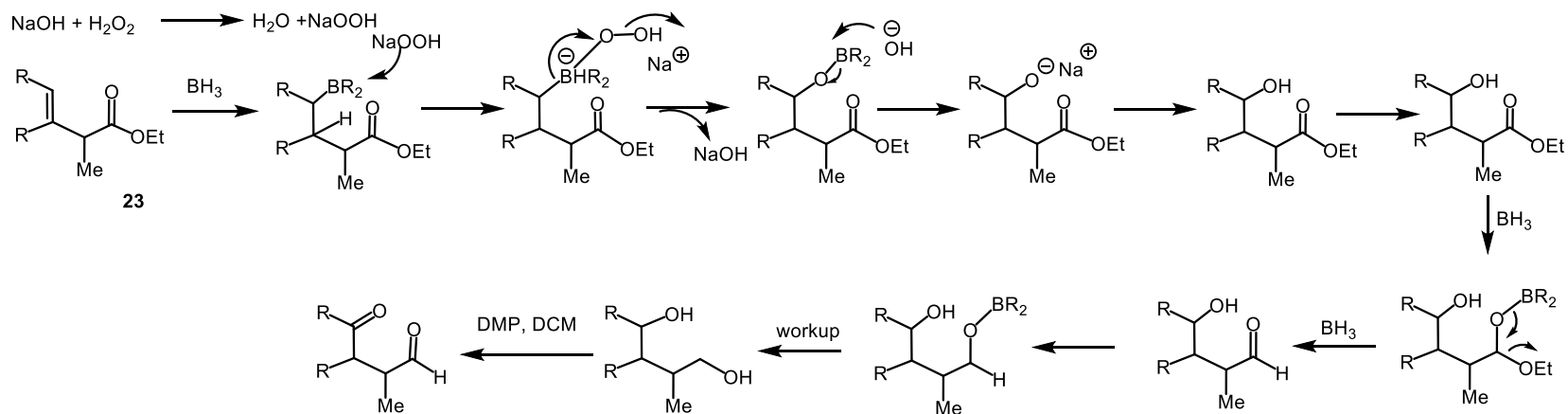
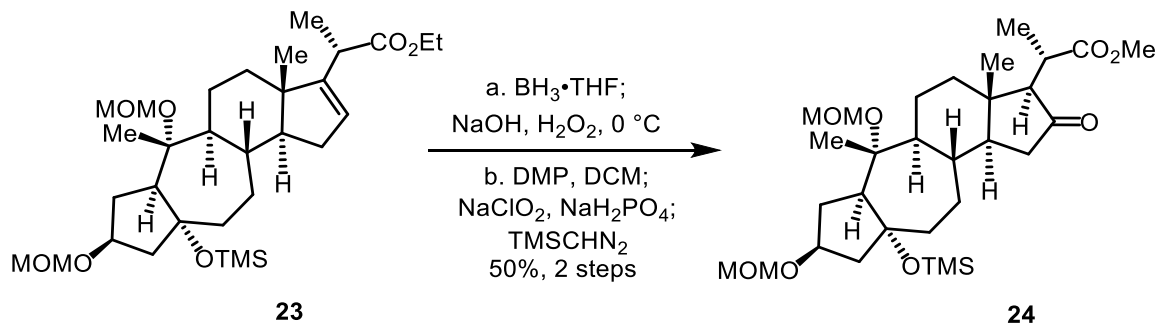




### Horner-Wadsworth-Emmons olefination







### Pinnick oxidation

