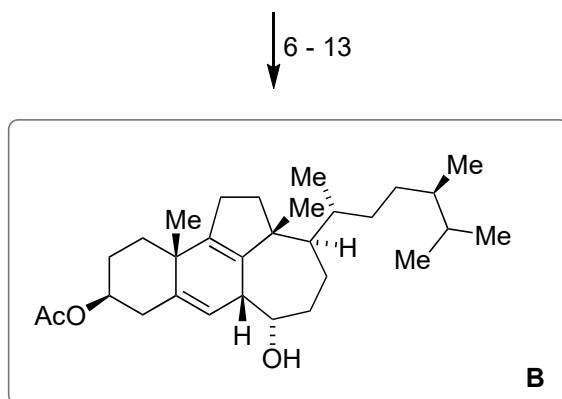
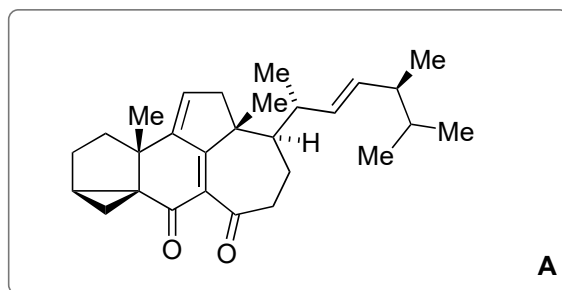
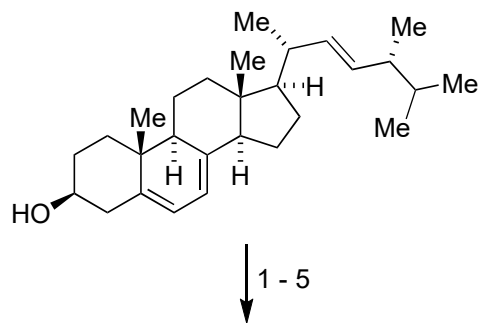


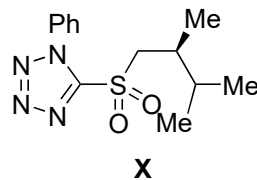
Synthesis of Swinhoeisterol A, Dankasterone A and B, and Periconiastone A by Radical Framework Reconstruction

F. L. Duecker, R. C. Heinze, P- Heretsch, *J. Am. Chem. Soc.* **2020**, *142*, 104-108.



- 1) MsCl, py
- 2) KHCO₃, acetone / H₂O
- 3) CrO₃
- 4) SeO₂, TBHP
- 5) HgO, I₂, benzene, reflux

- 6) L-Selectride *then* LiAlH₄
- 7) O₃ *then* PPh₃
- 8) **X**, LHMDS
- 9) BH₃ (excess) *then* H₂O₂, NaOH
- 10) (MeO)₂CMe₂, CSA
- 11) KHMDS, CS₂, MeI
- 12) HSnBu₃, AIBN
- 13) BF₃ · OEt₂, AcOH

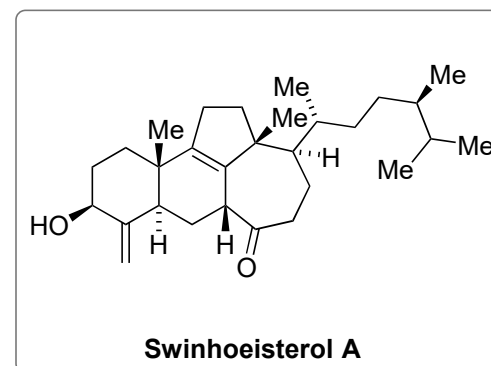
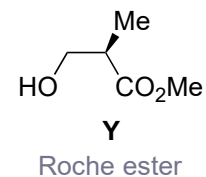


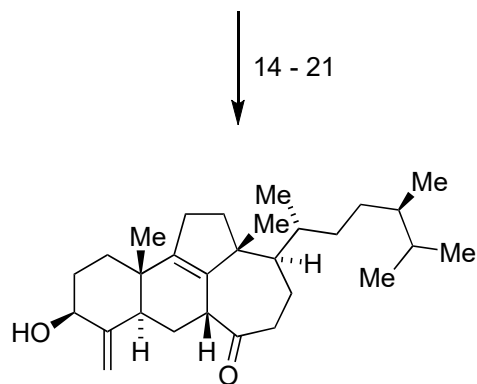
- 1) Name the starting material
Ergosterol

- 4) Name the reaction, mechanism?
Riley oxidation

- 5) Come up with a mechanism
hint: first step is generation of an alkoxy radical
hint: product has "additional degree of unsaturation"

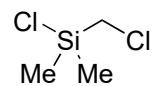
- 8) Name the reaction, mechanism?
Julia-Kocienski olefination
X is prepared starting from **Y**, what is the name of **Y**?





Swinhoeisterol A

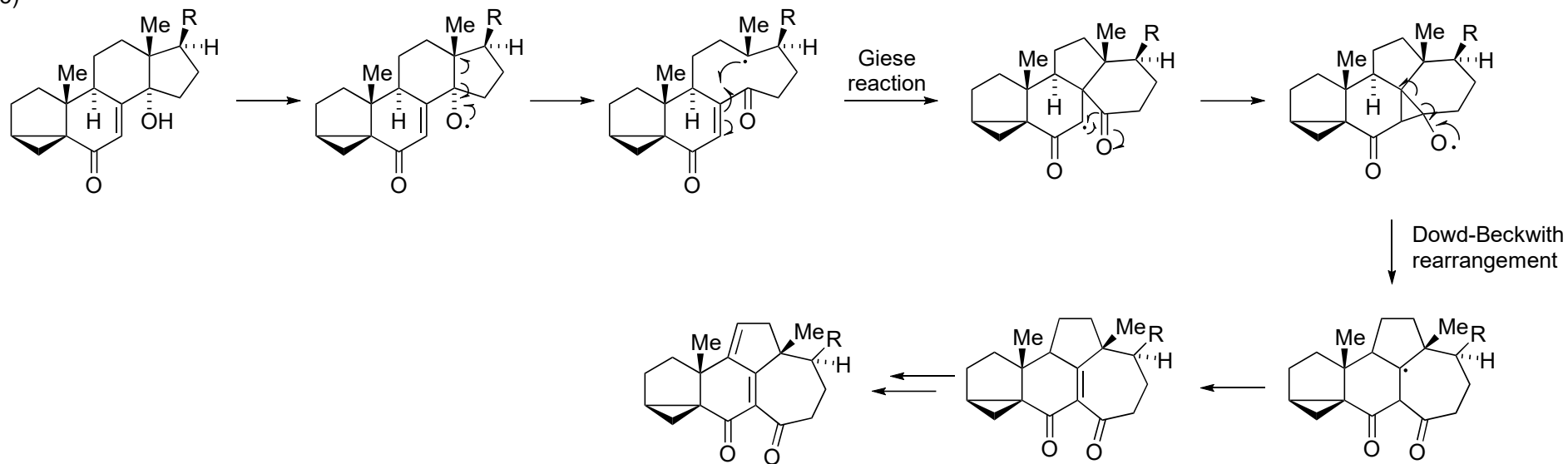
- 14) DIBAL-H
- 15) DMP, NaHCO₃
- 16) DBU
- 17) NaBH₄, CeCl₃
- 18) **Z**, NEt₃
- 19) NaI, acetone
- 20) ClSnBu₃, NaBH₃CN, AIBN
then H₂O₂, KF
- 21) Tf₂O, 2,6-*t*-Bu-4-Me-py
then DBU



Z

- 20) Why is NaBH₃CN added?
allows for catalytic amounts of Sn (which was crucial)
Name the reaction(s).
Nishiyama-Stork cyclization
Tamao oxidation

5)



8)

