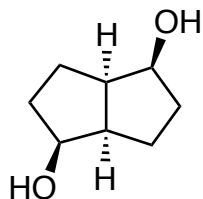


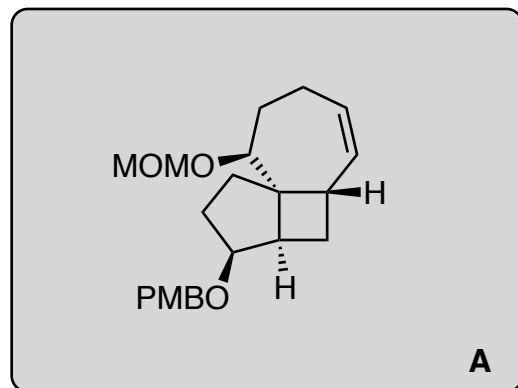
Evolutionary Efforts in the Total Synthesis of Pepluacetal

Li, H.; Liu, M.; Xie X.G.; She X.G.

J. Org. Chem. **2025**, 90 (30), 10681–10689

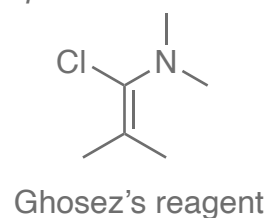
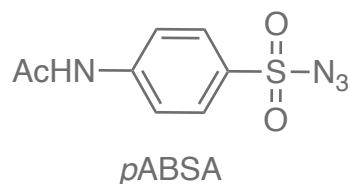
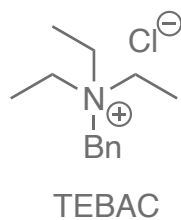
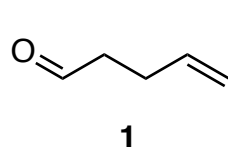


1-8



9-15

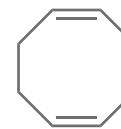
- 1) NaH, PMBCl, TBAI
- 2) (COCl)₂, DMSO, Et₃N
- 3) TBSOTf, Et₃N
- 4) **1**, TBAF (cat.)
- 5) *p*ABSA, DBU *then* *hν* (356 nm), Et₃N
- 6) DIBAL-H
- 7) Ph₃PMeI, *t*-BuOK
- 8) Grubbs II *then* MOMBr, DIPEA, TBAI



- 9) CHBr₃, TEBAC, NaOH
- 10) MeLi, CuI, MeI, Et₂O
- 11) DDQ, DCM/pH 7 buffer *then* DMP, NaHCO₃
- 12) Ph₃PMOMCl, *t*-BuOK *then* Cl₃CCO₂H
- 13) *t*-BuOK, MeI *then* NaClO₂, NaH₂PO₄, 2-methyl-2-butene
- 14) Ghosez's reagent *then* TMSCH₂N₂
- 15) Rh₂(OAc)₄ *then* *m*CPBA, NaHCO₃

1) Where does the starting material come from? How would you synthesize it?

cyclooctadiene!

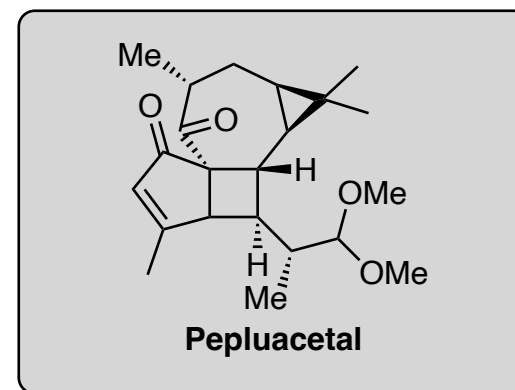


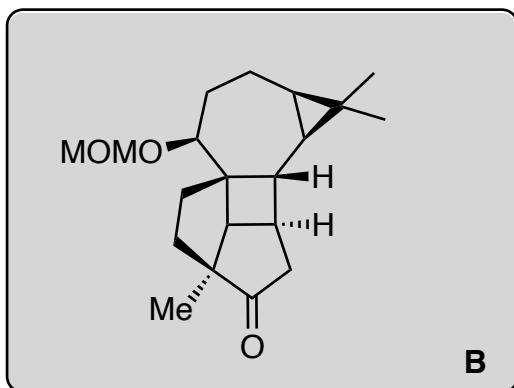
- 1) 5% Pd(OAc)₂, Pb(OAc)₄, HOAc (oxidative ring closer)
- 2) Dowex 1x8, MeOH (acetyl group deprotection)
- 3) enzymatic lipase chiral resolution

5) *hint: ring contraction*

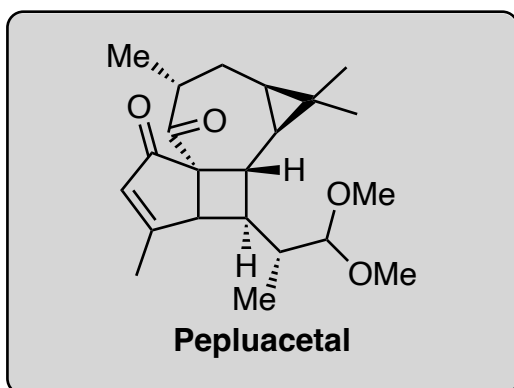
14) What is the structure of Ghosez's reagent?

15) *hint: nitrogen gas is extruded*





16-24



- 16) LiHMDS, (Me₂NCH₂)I
- 17) *m*CPBA
- 18) Pd/C, H₂ *then* H₂SO₄/MeOH
- 19) DIBAL-H
- 20) DMP, NaHCO₃
- 21) NH₄Cl, MeOH
- 22) LiHMDS, MeI
- 23) LDA *then* AcOH
- 24) CrO₃•3,5-dimethylpyrazole

For Previous Synthesis of (–)-Pepluanol B:
 Zhang, J.; Liu, M.; Wu, C.; Zhao, G.; Chen, P.;
 Zhou, L.; Xie, X.; Fang, R.; Li, H.; She, X.;
Angew. Chem. Int. Ed. **2020**, 59, 3966.

16) What is the amine containing reagent called?

23) *hint*: epimerization

She Xuegong

1. Professor @ Lanzhou University (in the western part of china)
2. Postdoced with Yian Shi (Colorado State University) who invented the “Shi Epoxidation”
3. Postdoced with James D. White (Oregon State University) who is an early pioneer in C-H activation.
4. PhD with Pan Xinfu (Lanzhou University) who made some neat natural product like (±)-Nimbiol & Mansonone P
5. Other syntheses by Prof. She: (–)-Lycospidine A Synthesis