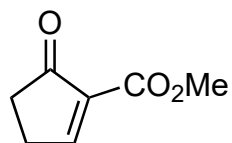


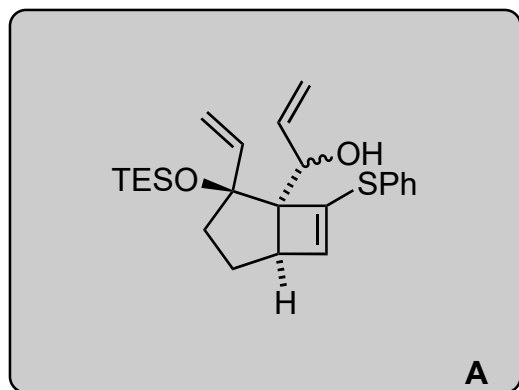
Enantioselective Total Synthesis of (+)-Tricycloclavulone

Ito, H.;* Hasegawa, M.; Takenaka, Y.; Kobayashi, T.; Iguchi, K.*

J. Am. Chem. Soc. **2004**, *126*, 4520–4521.

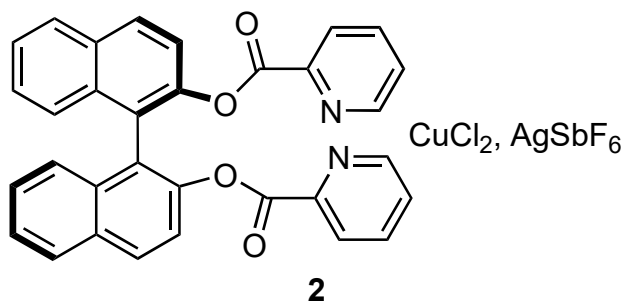


1-6



7-13

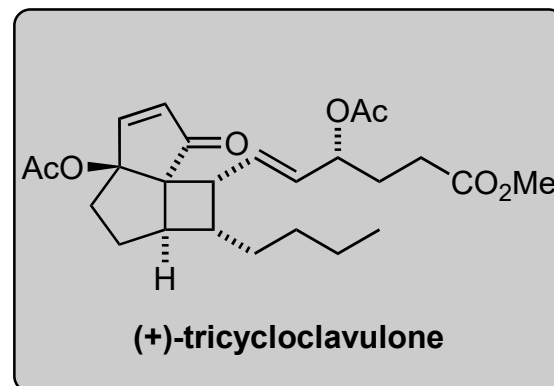
- 1) **1**, 20 mol%
- 2) vinylMgCl
- 3) TESOTf, 2,6-lutidine
- 4) LiAlH₄, THF
- 5) DMP
- 6) *n*-BuLi, tetravinyltin

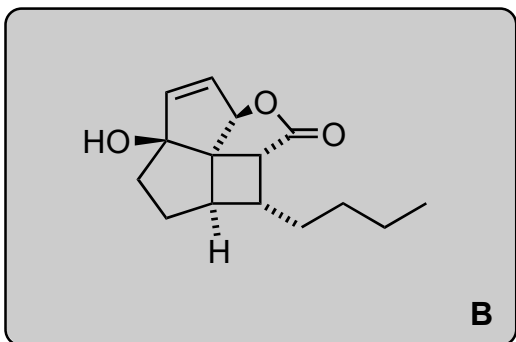


- 7) 2nd generation Grubbs catalyst
- 8) DMP
- 9) DIBAL-H
- 10) MeMgBr, ClCO₂Me
- 11) Bu₂CuLi
- 12) TBAF, THF
- 13) SmI₂, THF

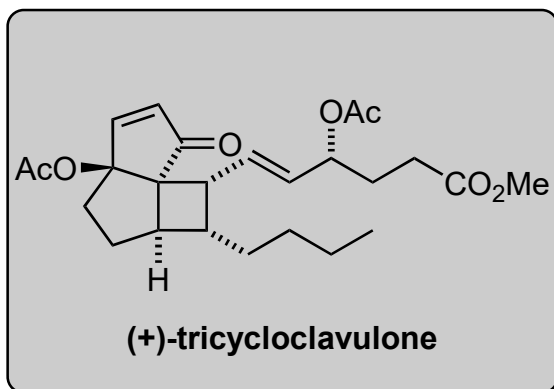
- 1) classify the reaction
[2+2]-cycloaddition

- 10) What's the function of MeMgBr?
used as a base
- 11) *hint: intramolecular ester transfer*
- 12) *hint: a cyclization occurs*

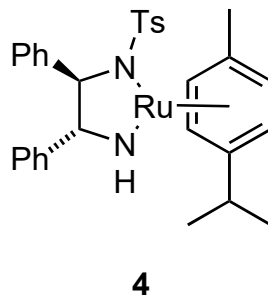
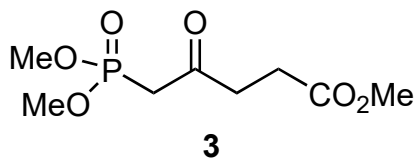




14-21



- 14) TESOTf, 2,6-lutidine
- 15) LiAlH₄
- 16) DMSO, (COCl)₂, NEt₃
- 17) **3**, NaH
- 18) **4**, *i*-PrOH
- 19) Ac₂O, Py
- 20) TBAF
- 21) Ac₂O, Py



17) Name reaction?

HWE reaction

18) Who developed the chiral catalyst?

Noyori