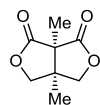
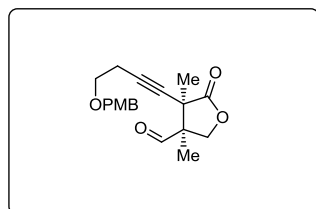
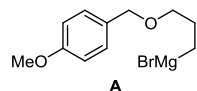


Synthesis of (±)-Merrilactone A by Desymmetrization Strategy

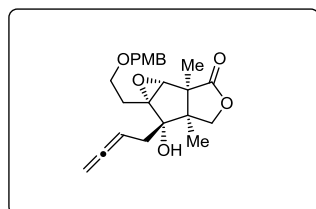
Wentan Liu and Bo Wang, *Chem. Eur. J.* **2018**, 10.1002/chem.201804195.



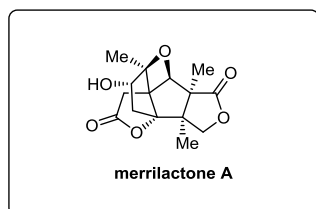
- 1) **A**, CH₂Cl₂, then TES-Cl
- 2) PhNTf₂, NaHMDS, THF then DBU
- 3) TsOH·H₂O, MeOH
- 4) PIDA, TEMPO, CH₂Cl₂



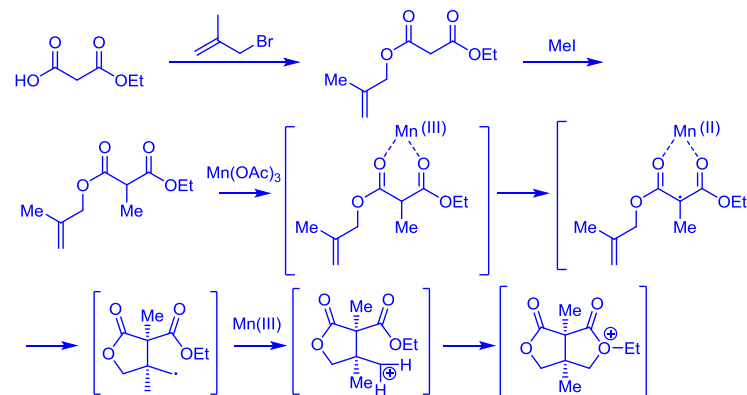
- 5) [Rh(±)BINAP]BF₄, MeCN, CH₂Cl₂, air, mw, 100 °C
- 6) TBHP, DBU, DMF
- 7) propargyl bromide, HgCl₂, Mg, THF
- 8) CuBr, (HCHO)_n, *i*-Pr₂NH, dioxane



- 9) Cp₂TiCl₂, Zn, THF
- 10) DMP, CH₂Cl₂
- 11) DDQ, CH₂Cl₂, pH 7 buffer
- 12) TPAP, NMO, 4 Å MS, CH₂Cl₂
- 13) NaBH₄, MeOH
- 14) DMDO, CH₂Cl₂, then TsOH·H₂O

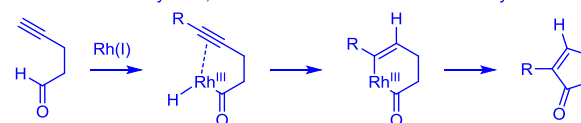


Step 1: How would you prepare the dilactone from commercially available mono-Ethyl malonate?

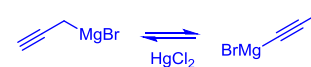


Step 5: Please come up with a Mechanism. What is a major competing side pathway?

-> decarbonylation, which in addition deactivates the catalyst via C=O coordination

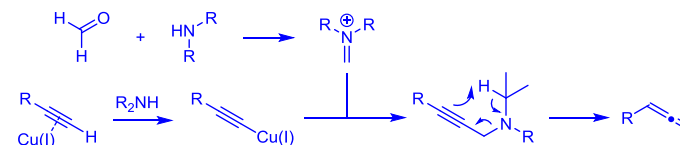


Step 7: Why is HgCl₂ added?



Step 8: Name reaction? Mechanism?

-> Crabbé Homologation



Step 9: Please come up with a mechanism.

