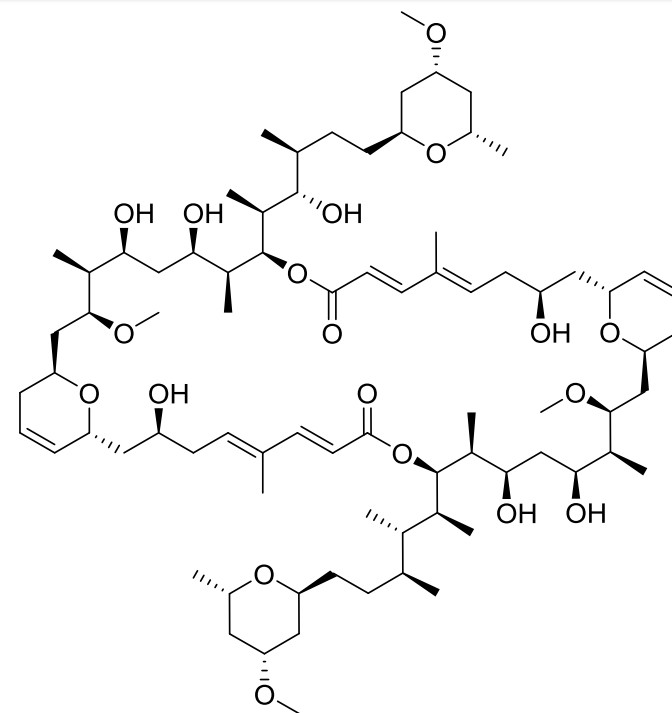


# Total Synthesis of Swinholide A: An Exposition in Hydrogen-Mediated C–C Bond Formation

Inji Shin, Suckchang Hong, and Michael J. Krische

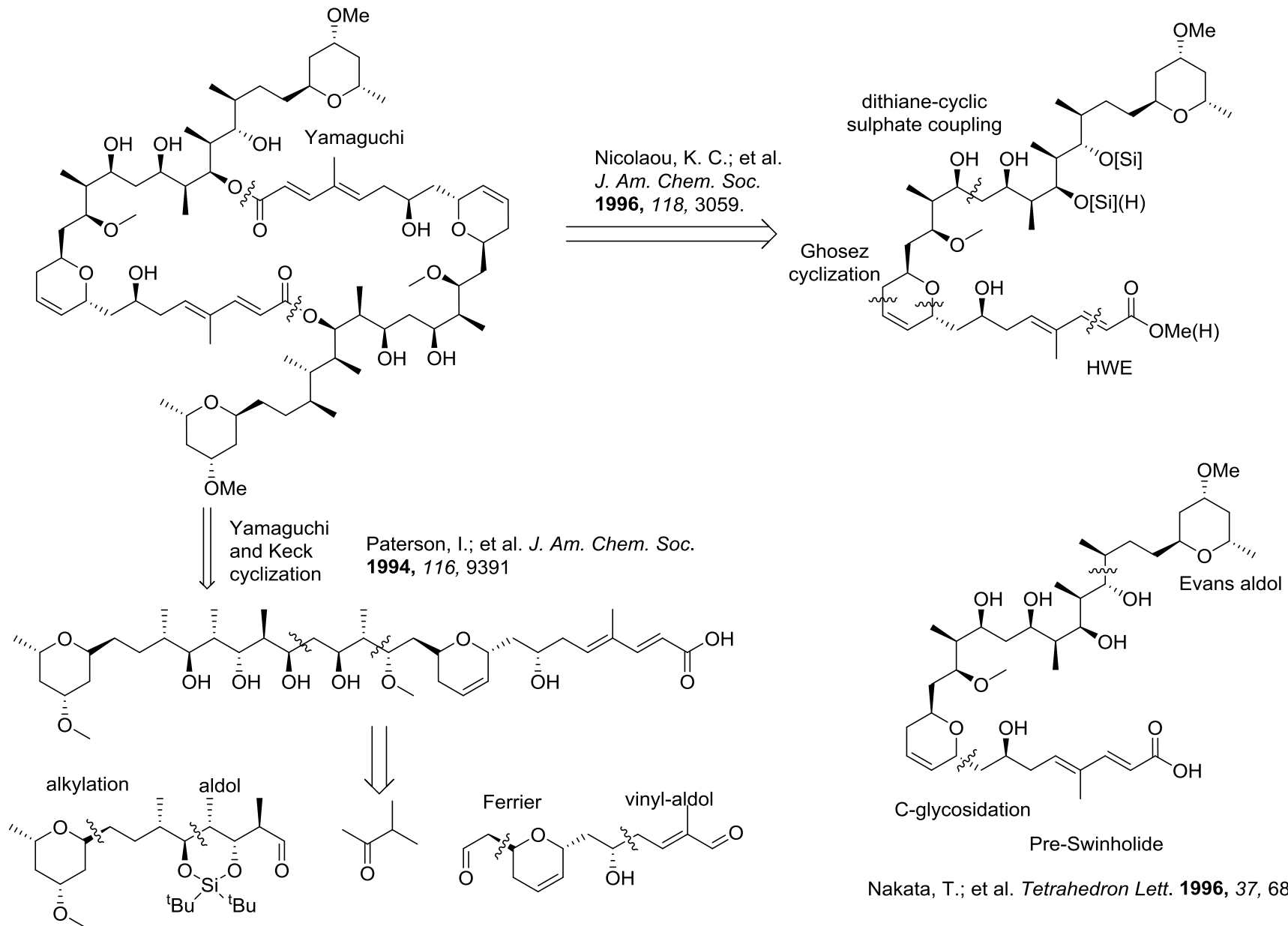
*J. Am. Chem. Soc.*, **2016**, *138*, 14246. DOI: 10.1021/jacs.6b10645

- Swinholide A, first isolated from the Okinawan marine sponge *Theonella swinhoei* in 1985, dimerizes actin ( $K_d \approx 50$  nM).
- Its ability to disrupt the actin cytoskeletal constructs confers cytotoxicity in the ng/mL range against diverse tumor cell lines, making it the most potent member of its class.
- Swinholide A contains a symmetric 44-membered macrodiolide ring.

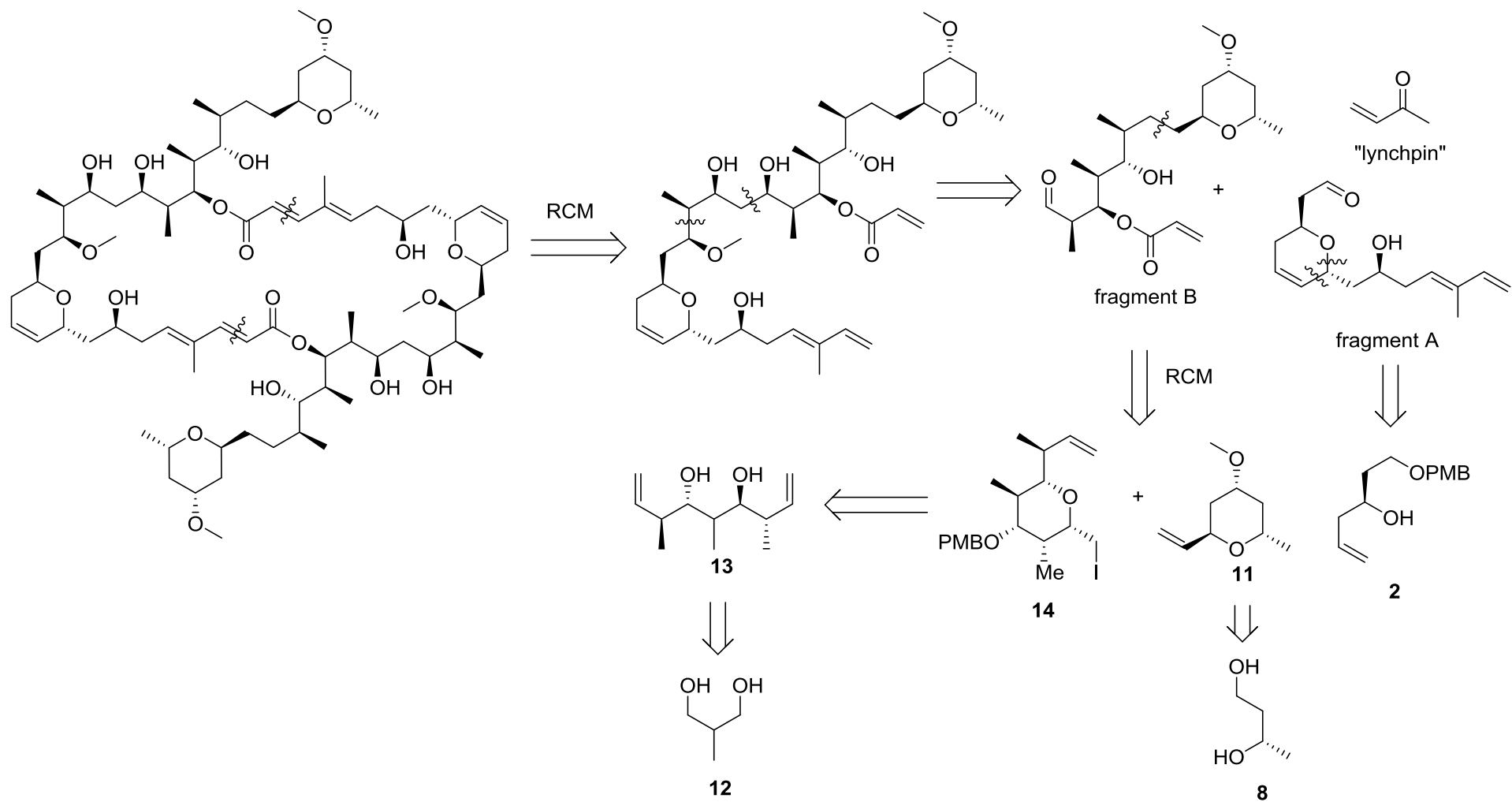


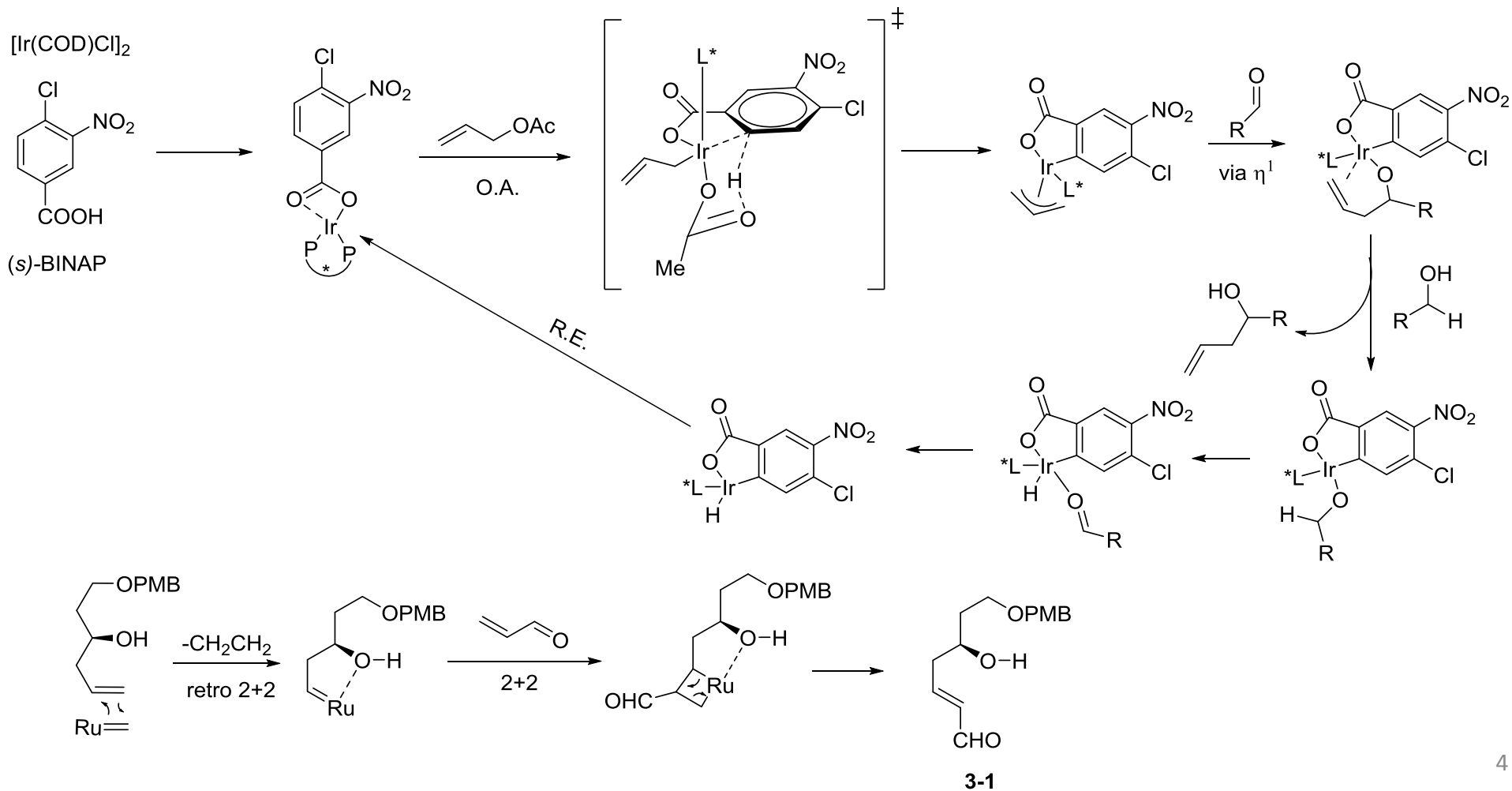
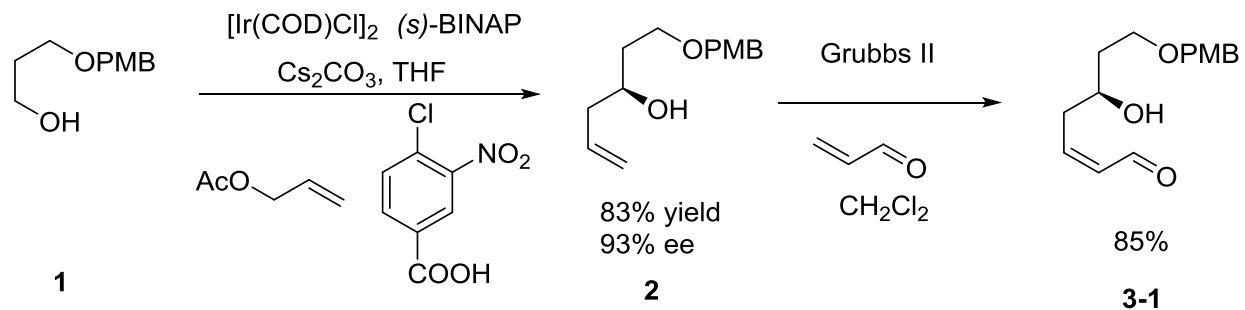
Swinholide A

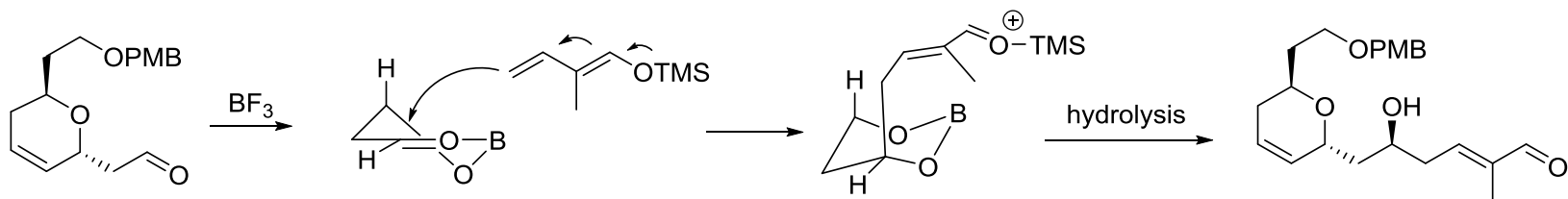
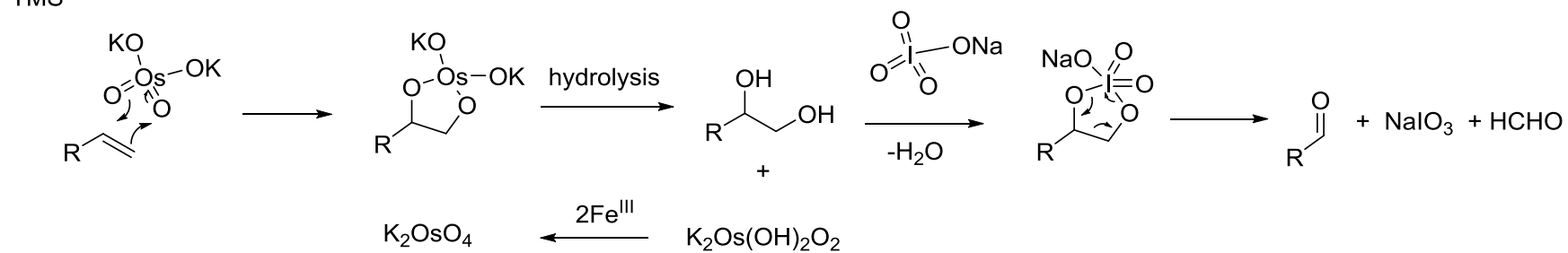
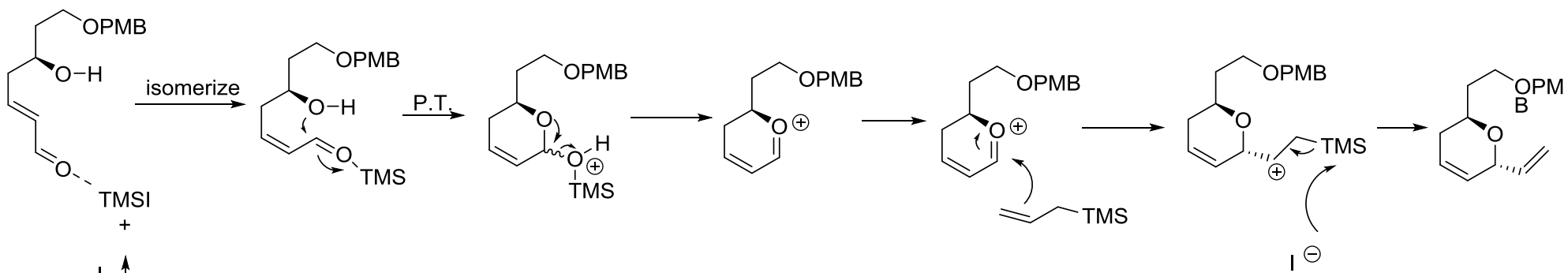
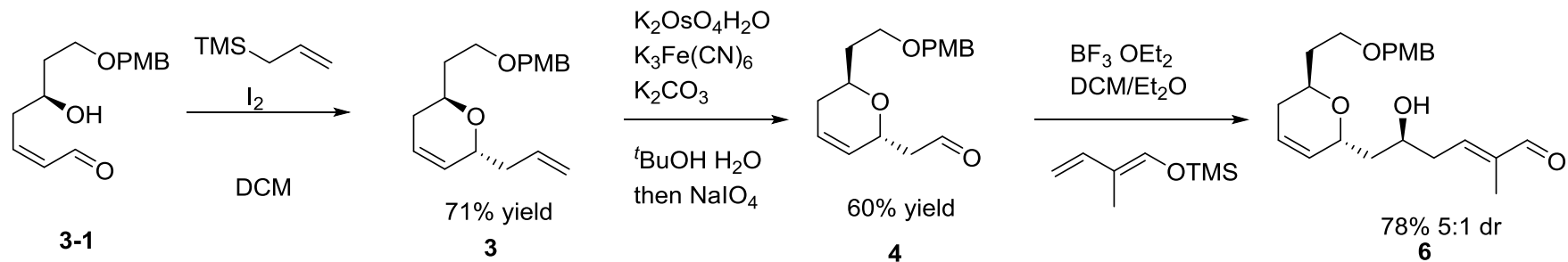
# Previous Work

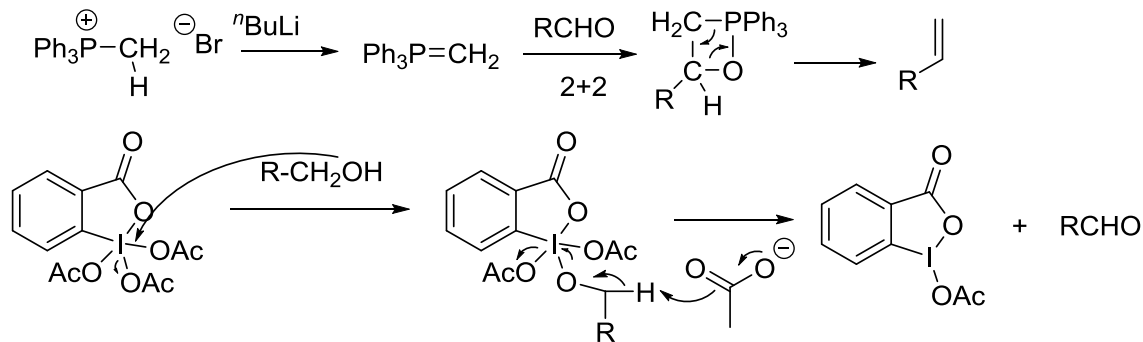
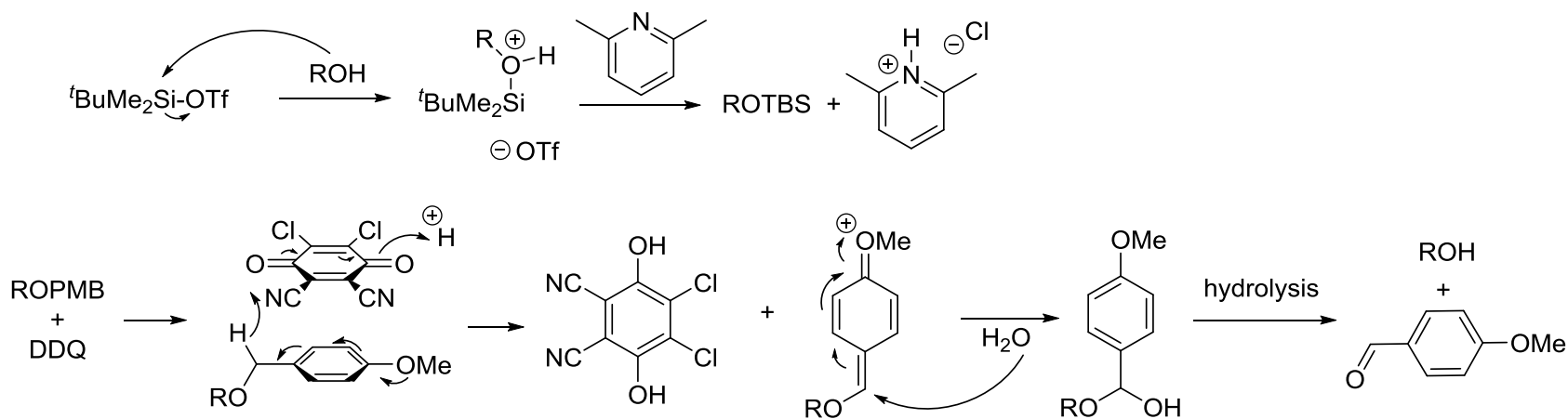
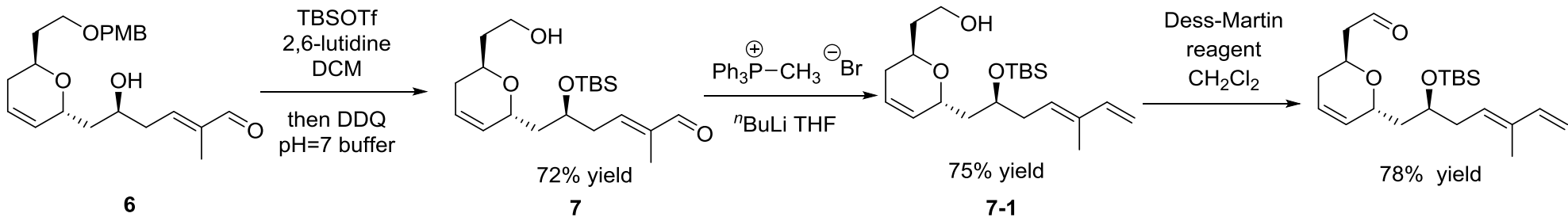


# Retro-synthetic Analysis



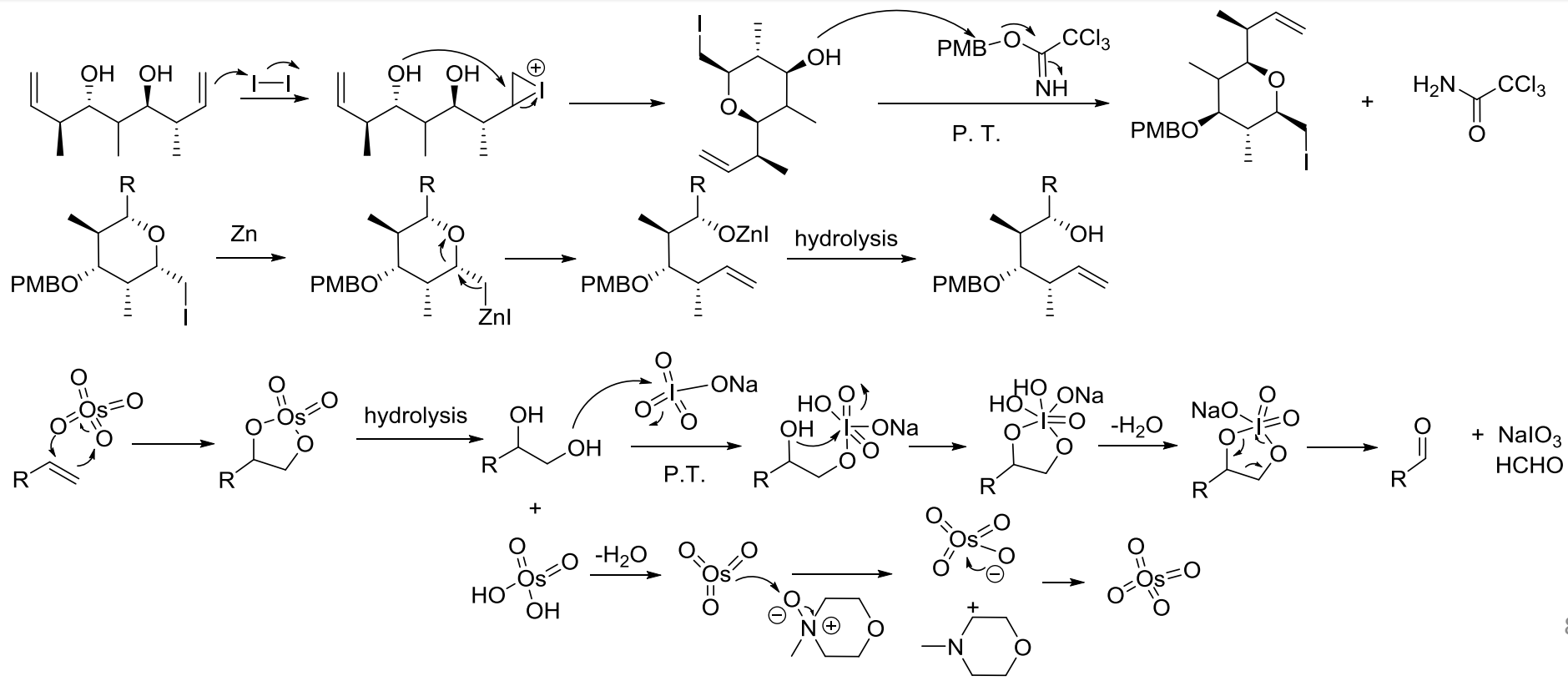
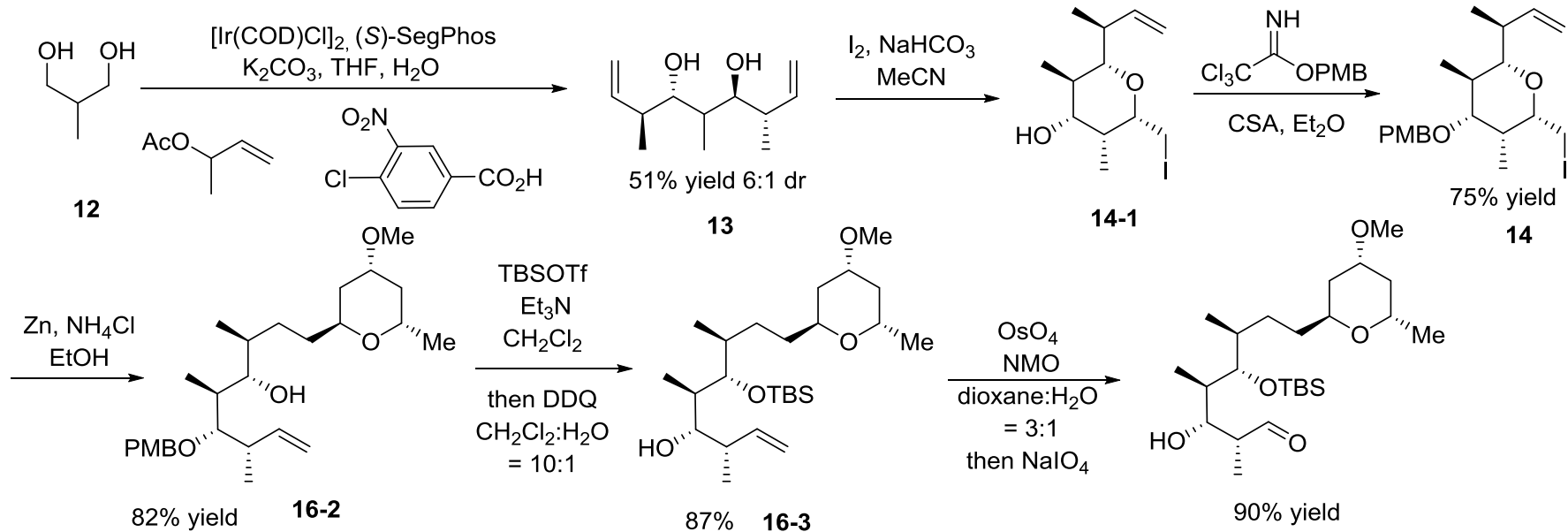




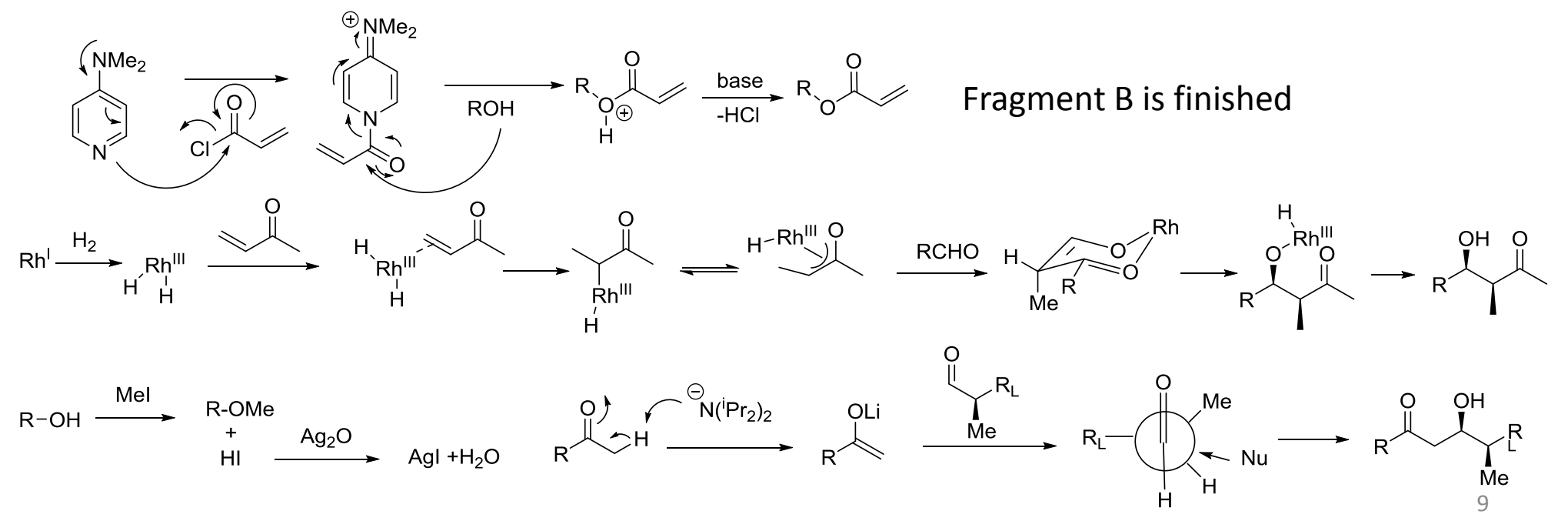
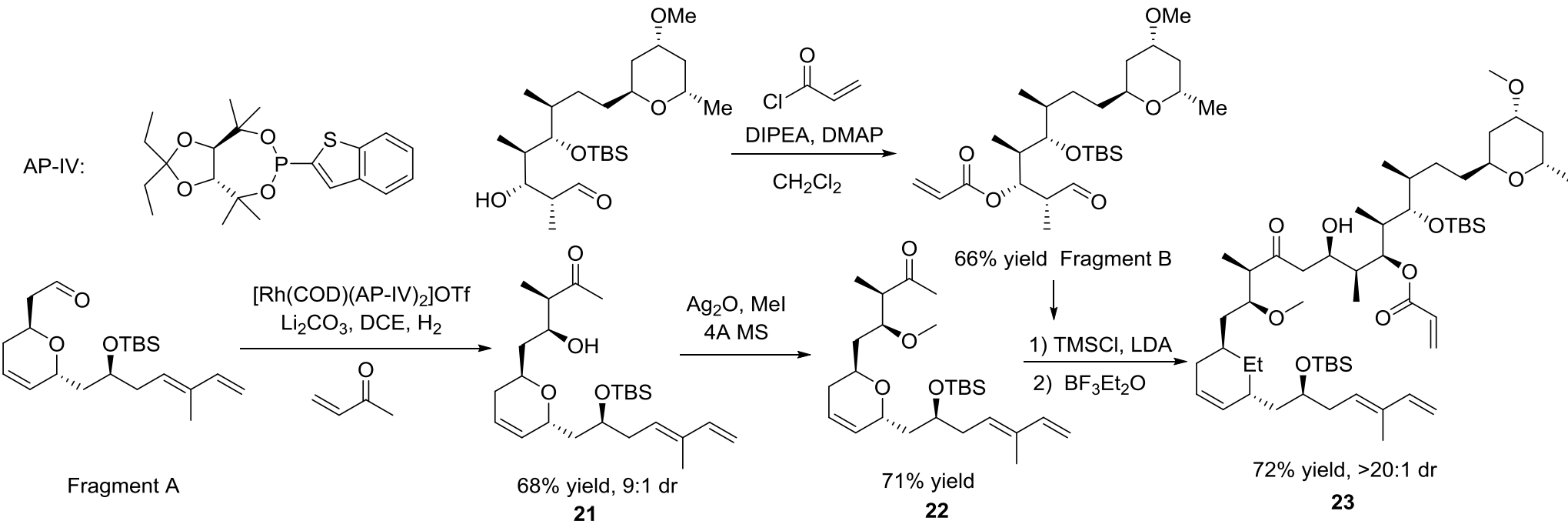


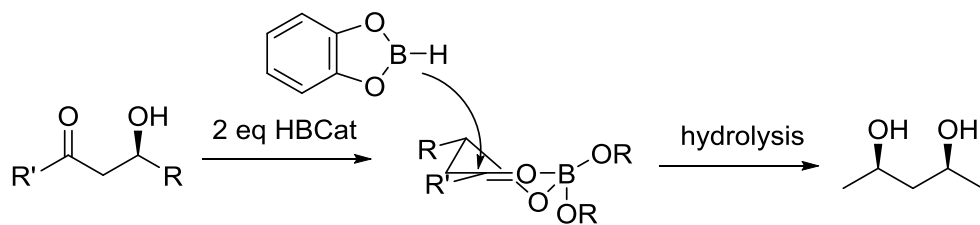
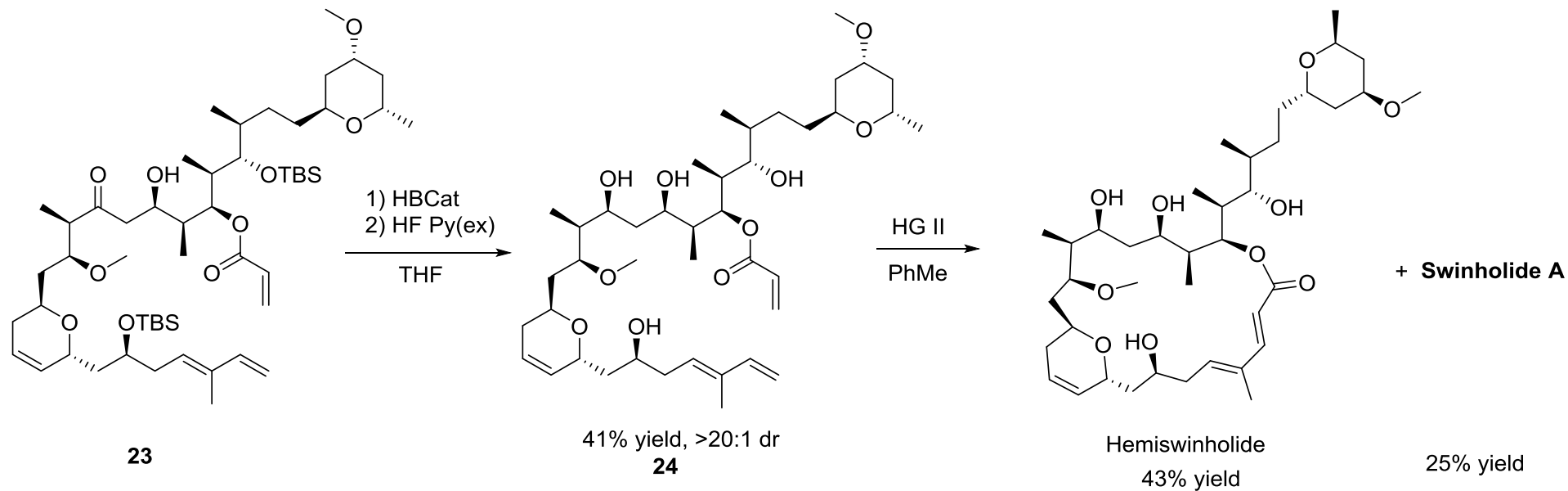
Fragment A is finished











Longest Linear Step: 15