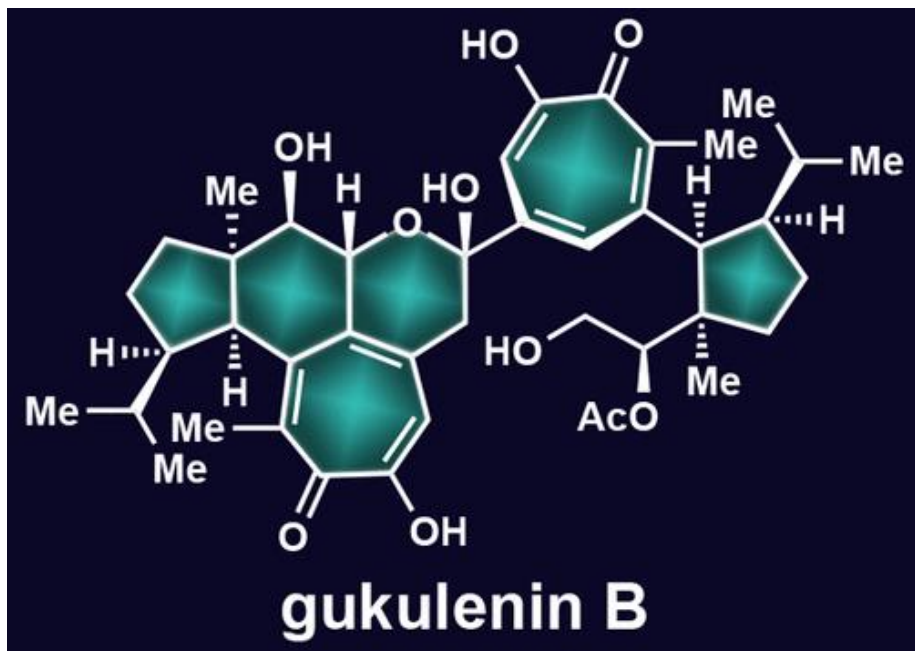


Total Synthesis of Gukulenin B via Sequential Tropolone Functionalizations

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JACS Article ASAP



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1964-1969, B.Sc., University of London

1969-1972, Ph.D., University of London (Professors F. Sondheimer and P. J. Garratt)

1972-1973, Postdoctoral Fellow, Columbia University (Prof. T.J. Katz)

1973-1976, Postdoctoral Fellow, Harvard University (Professor E. J. Corey)

1976-1989, Professor, University of Pennsylvania

1989-1996, Professor, University of California, San Diego; The Scripps Research Institute

2013- , Professor, Rice University



Zhaoyong Lu

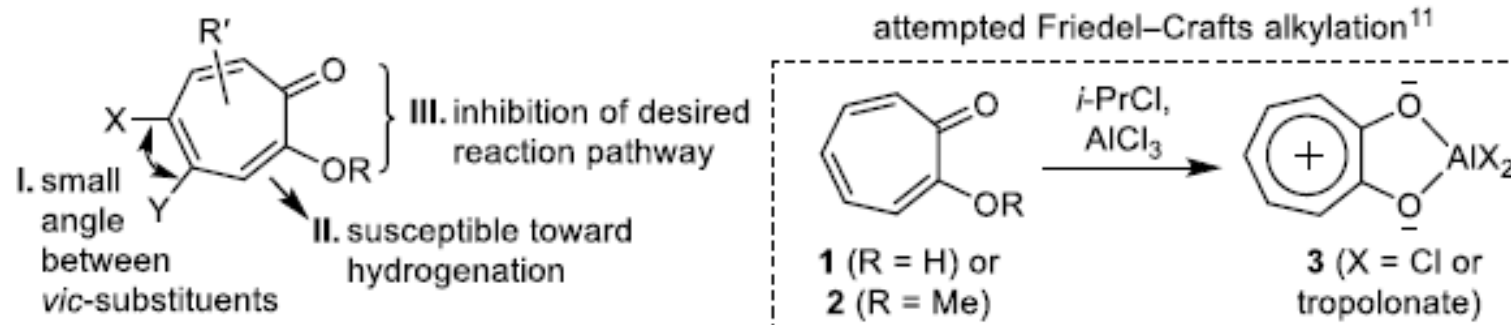
2008-2013, Ph.D., Shanghai Institute of Organic Chemistry
(Professor Ang Li)

2014-2018, Postdoctoral Fellow, Rice University
(Professor K.C. Nicolaou)

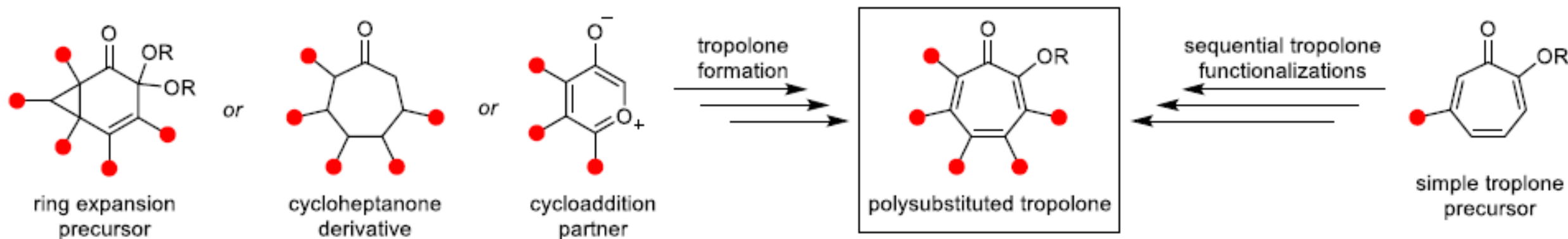
2018- , Principal Investigator, Nankai University



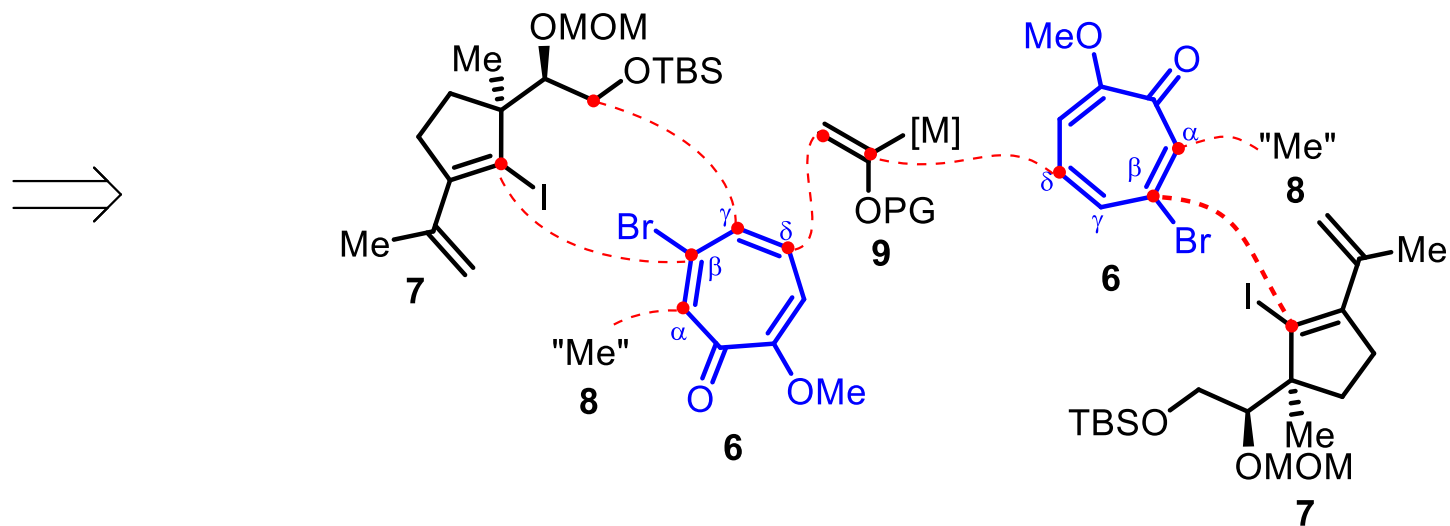
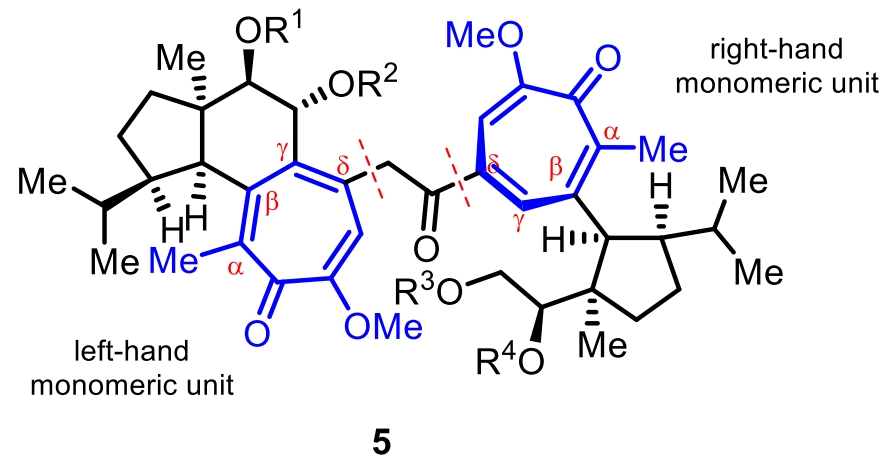
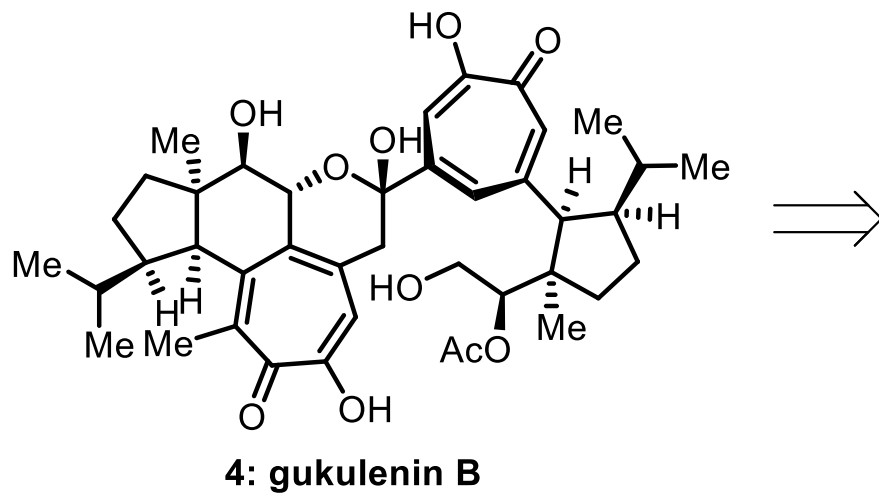
Structural and chemical properties of tropolonoids



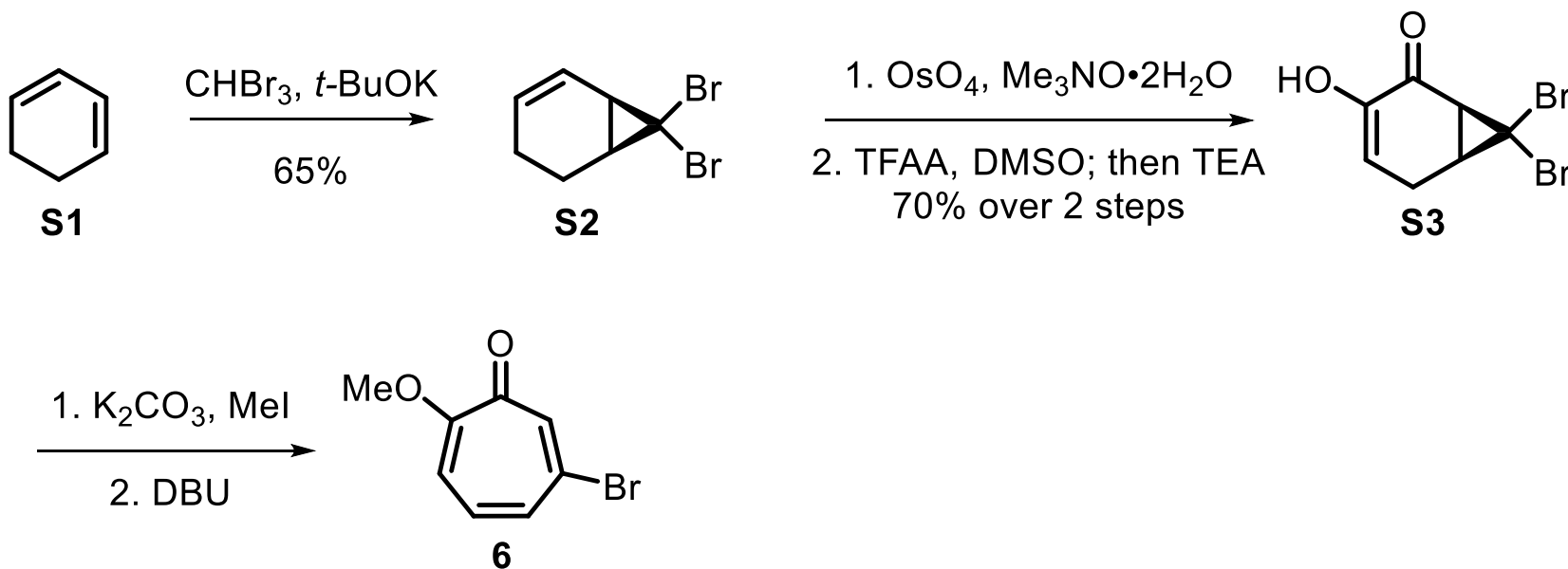
Two strategies for the synthesis of polysubstituted tropolone derivatives



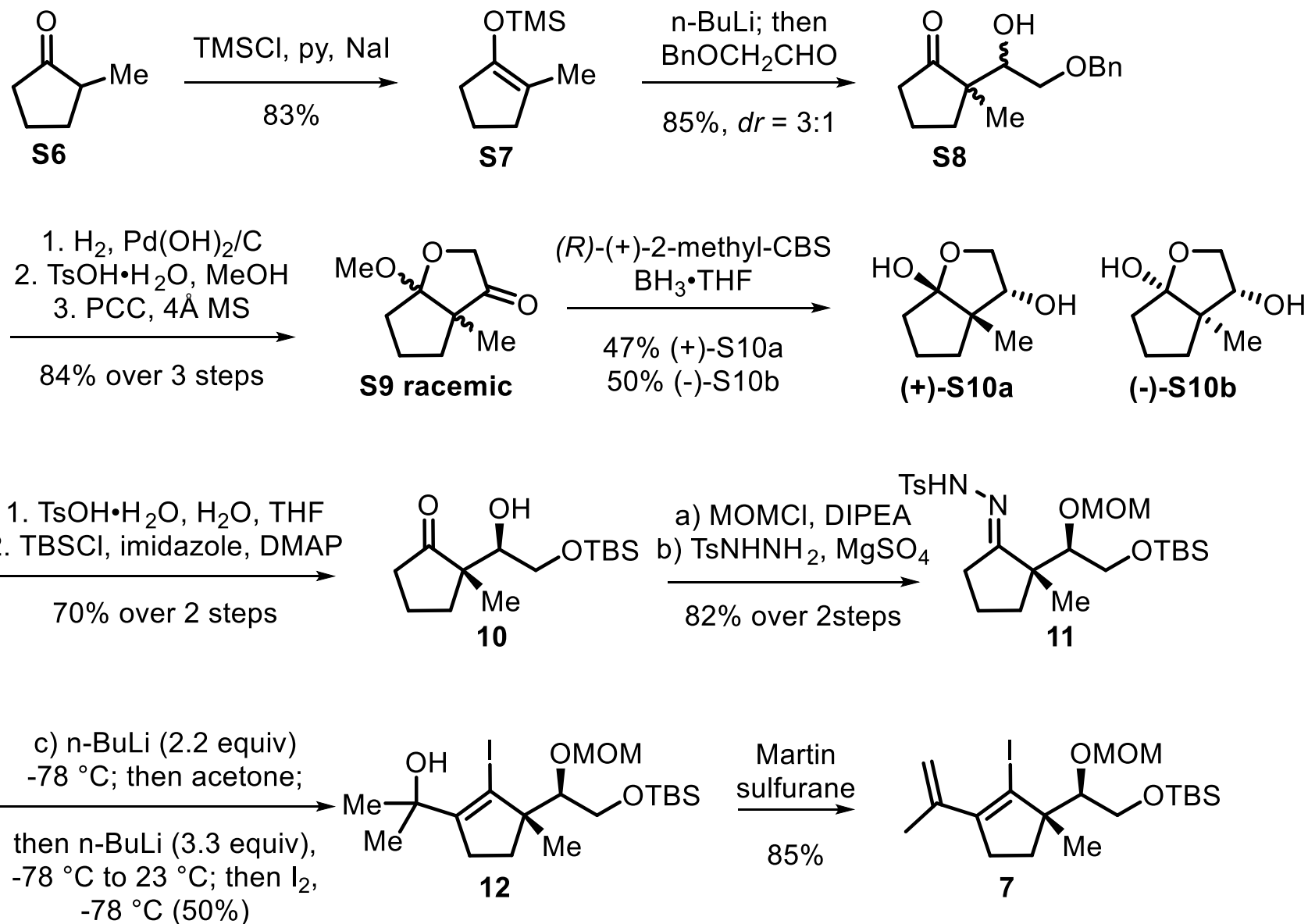
Retrosynthetic analysis of gukulenin B



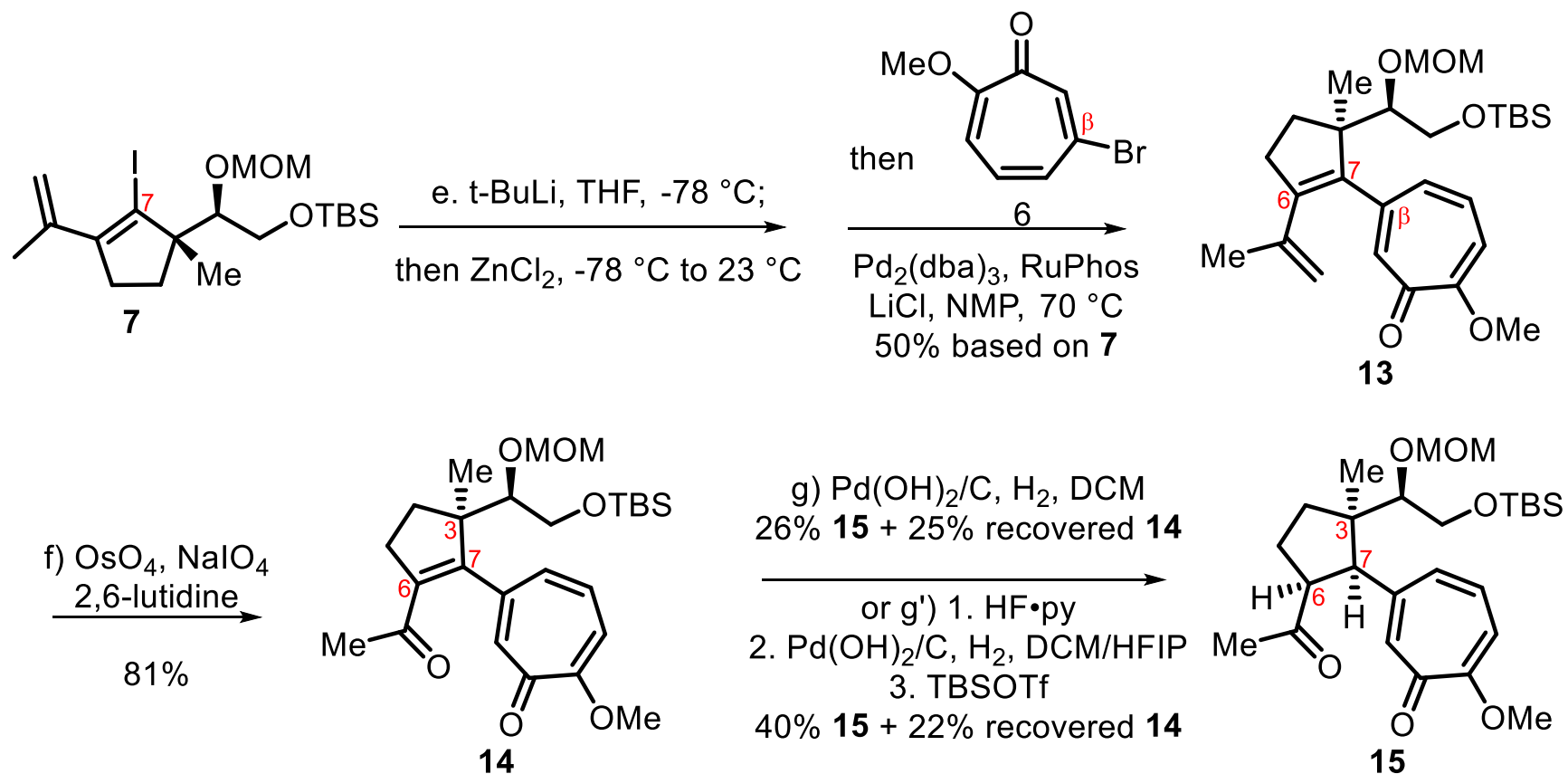
Synthesis of β -bromotropolone methyl ether 6

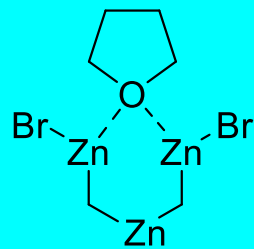
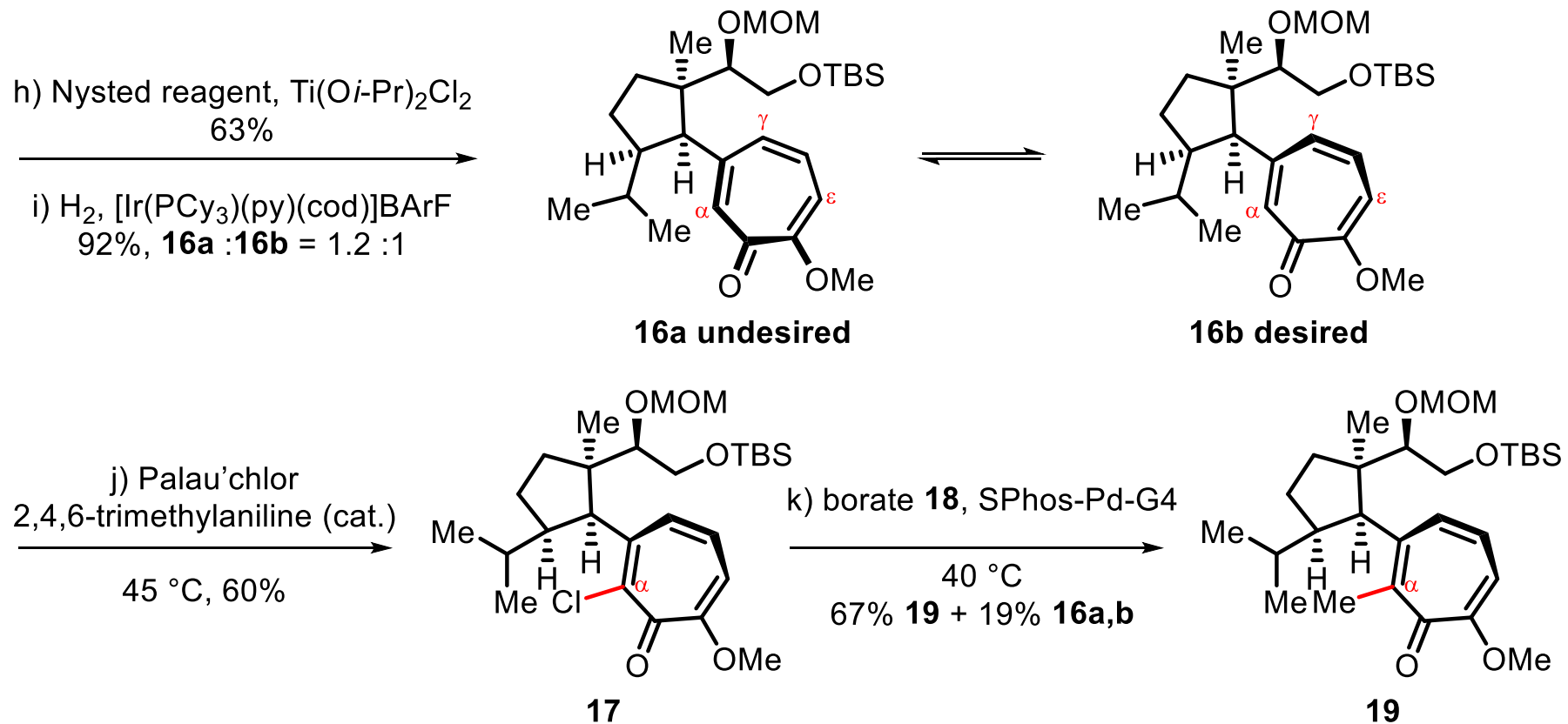


Synthesis of cyclopentenyl iodide 7

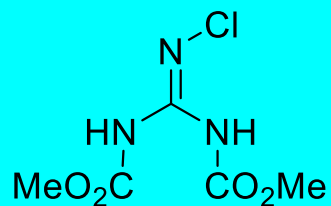


Synthesis of Methyltropolone 19

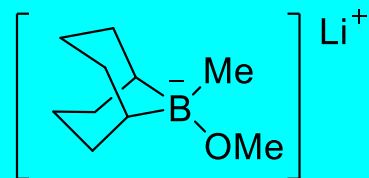




Nysted reagent

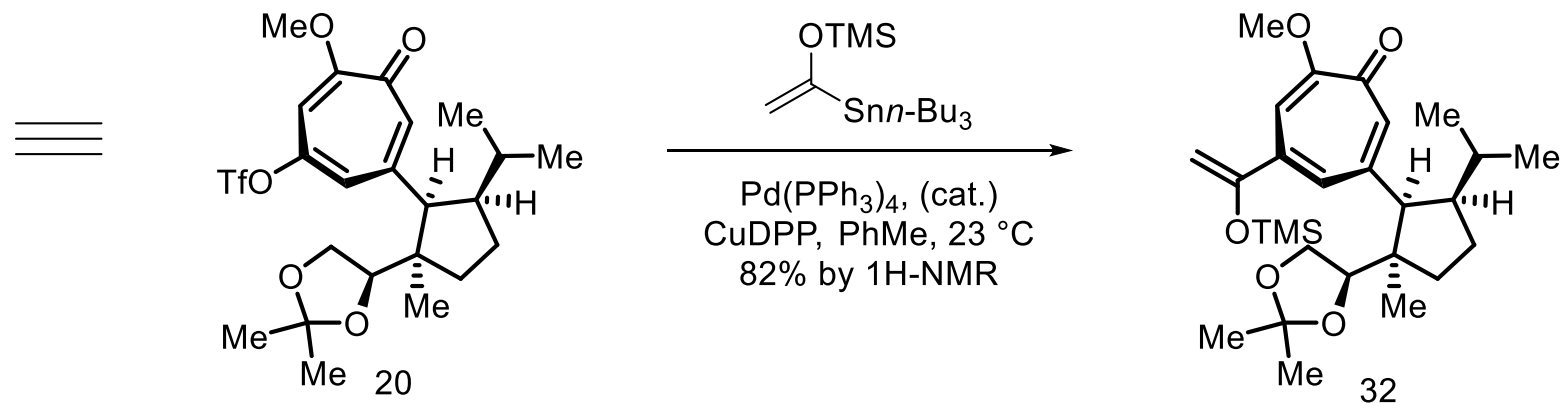
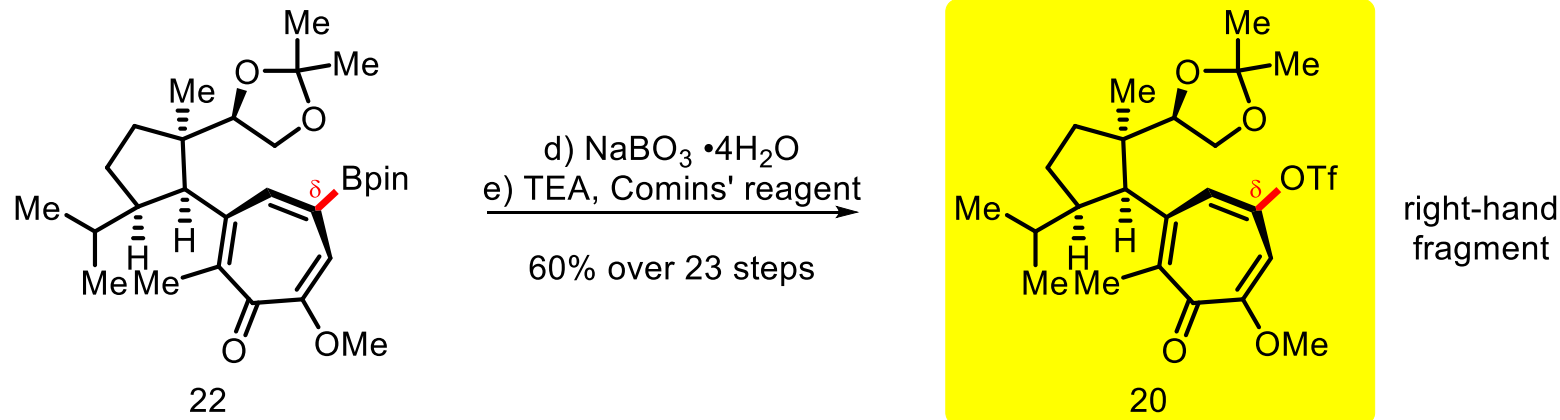
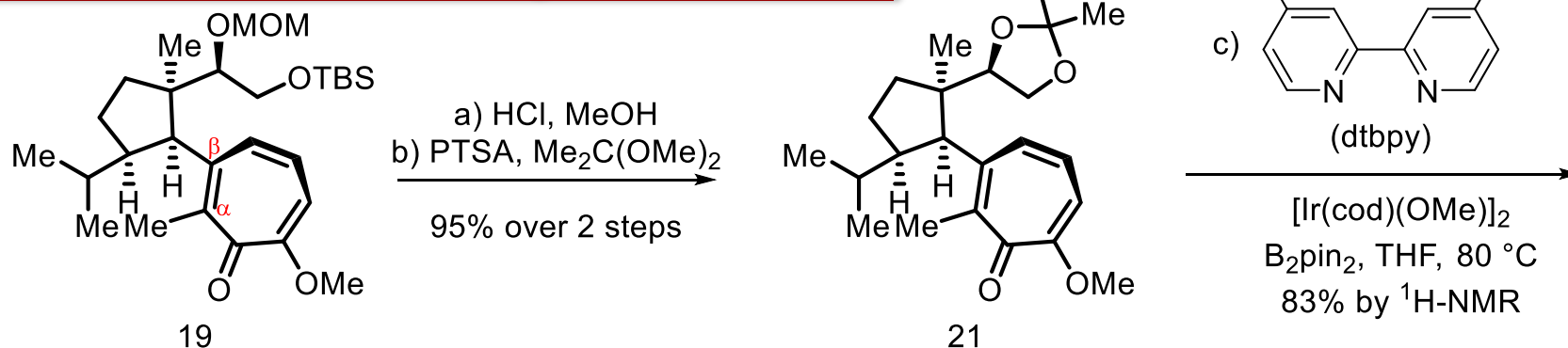


Palau'chlor

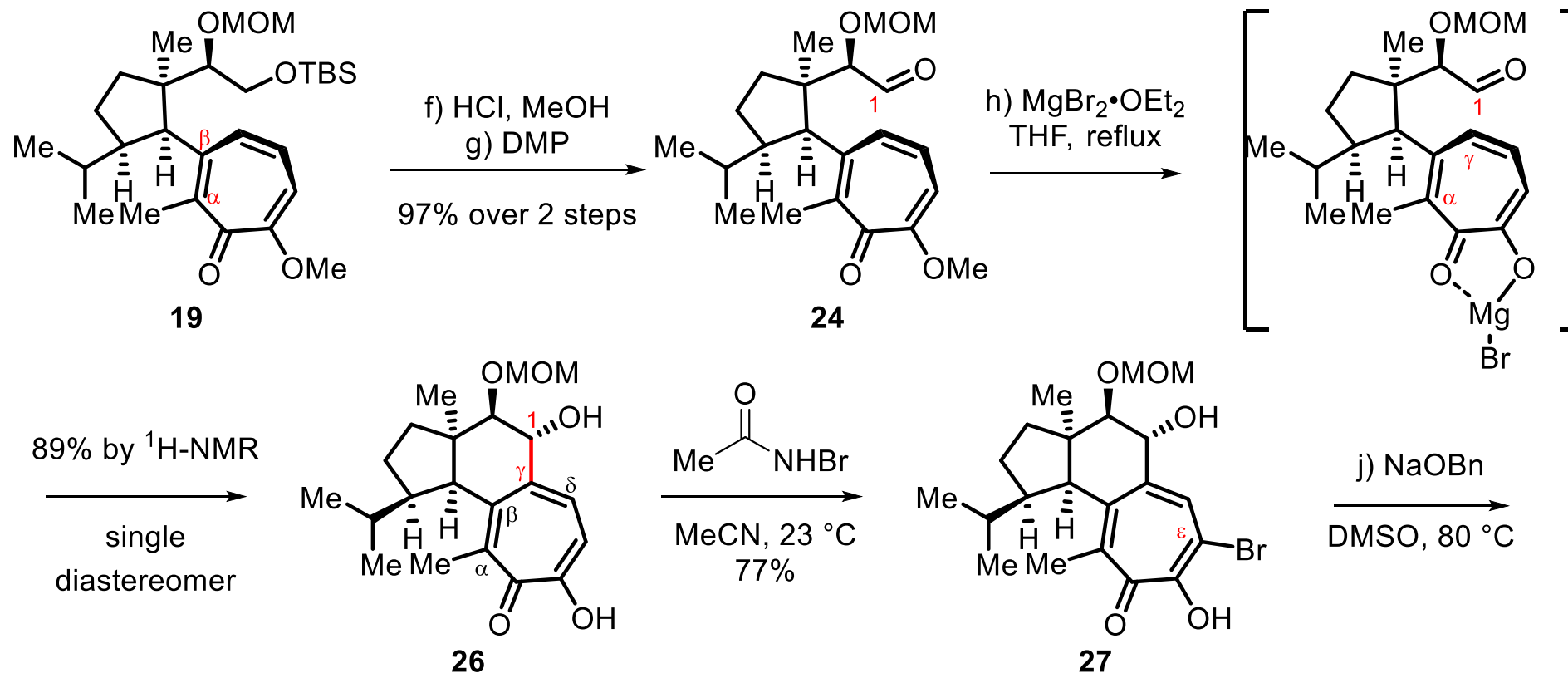


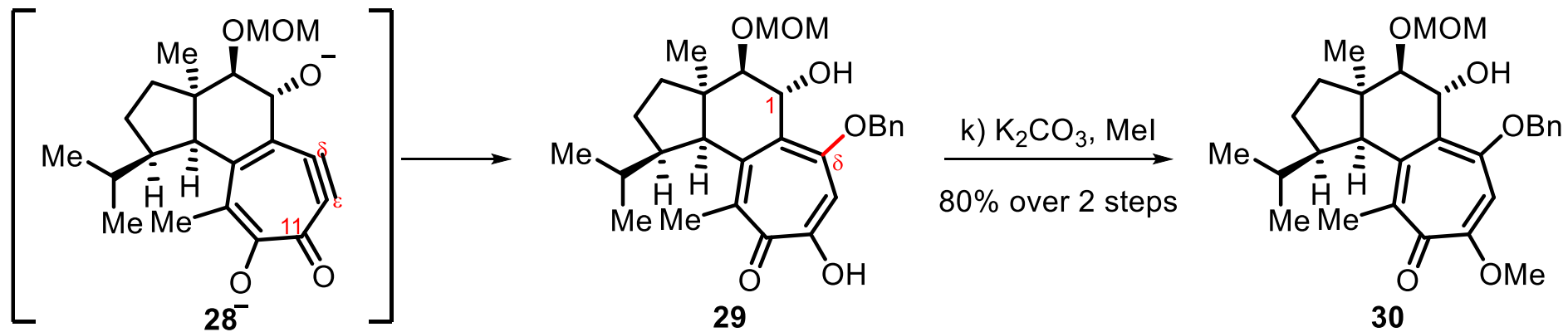
borate **18**

Syntheses of Monomeric Fragments 32

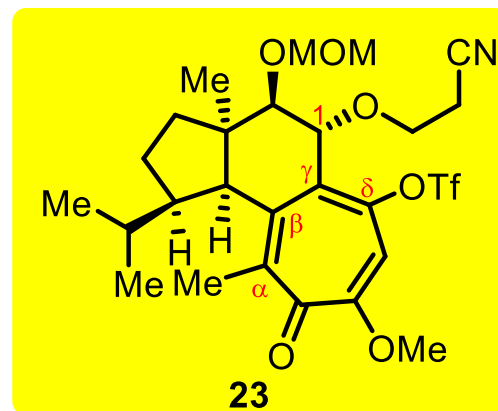


Syntheses of Monomeric Fragments 23



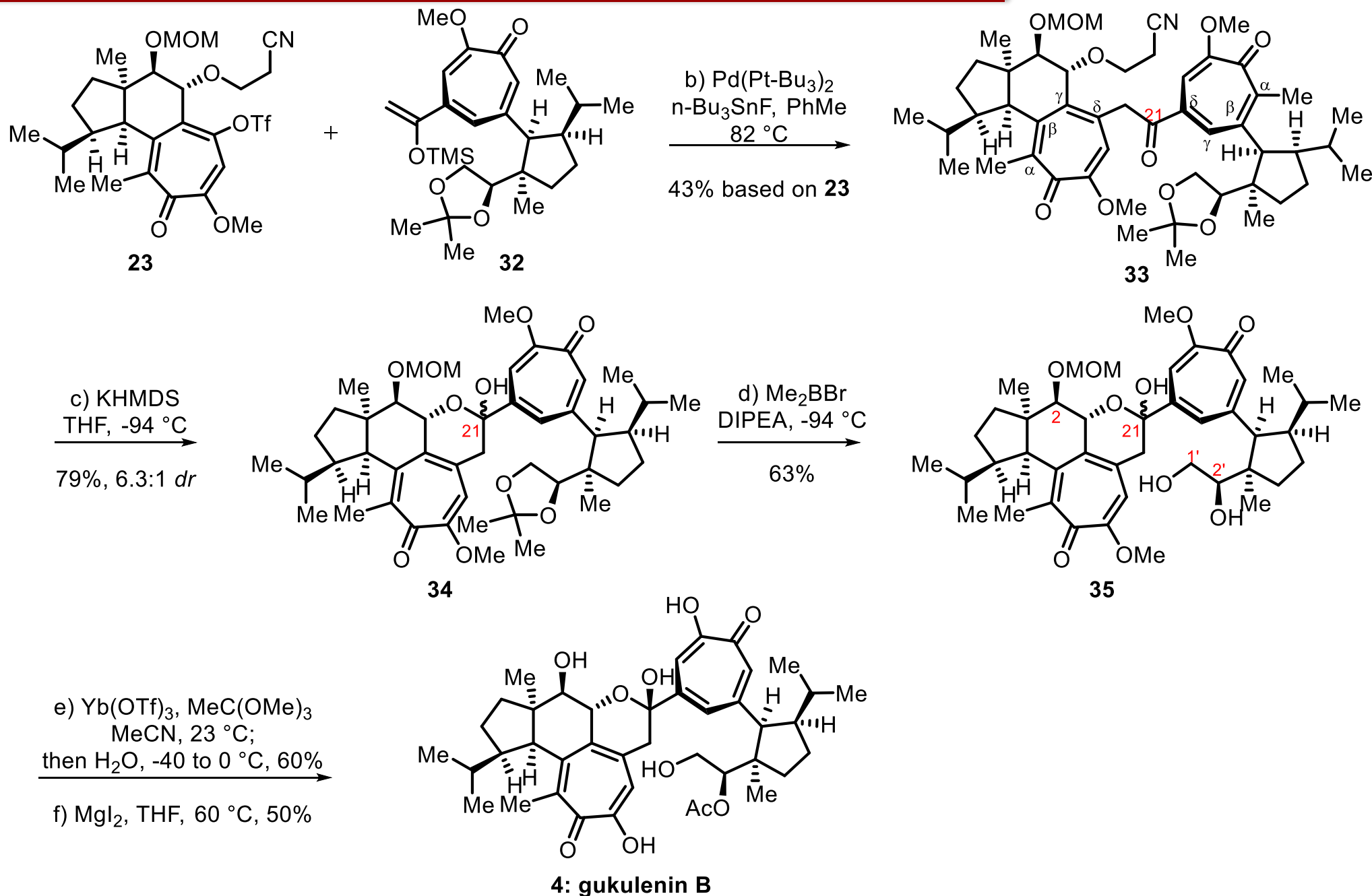


l) Cs_2CO_3 , $\text{CH}_2=\text{CHCN}$
 m) 1,4-cyclohexadiene
 Pd/C
 n) TEA, Comins' reagent

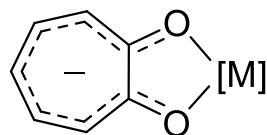
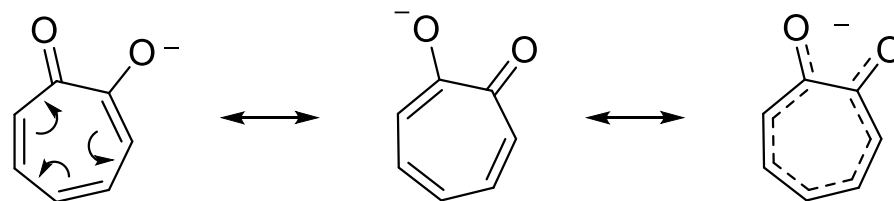


left-hand
fragment

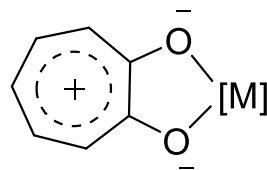
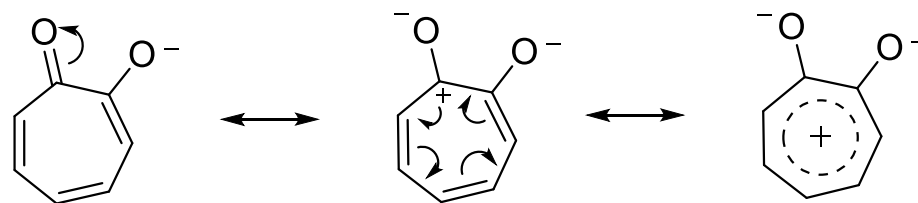
Final Stages of the Total Synthesis of Gukulenin B



Two modes of delocalization of the tropolonato ligands

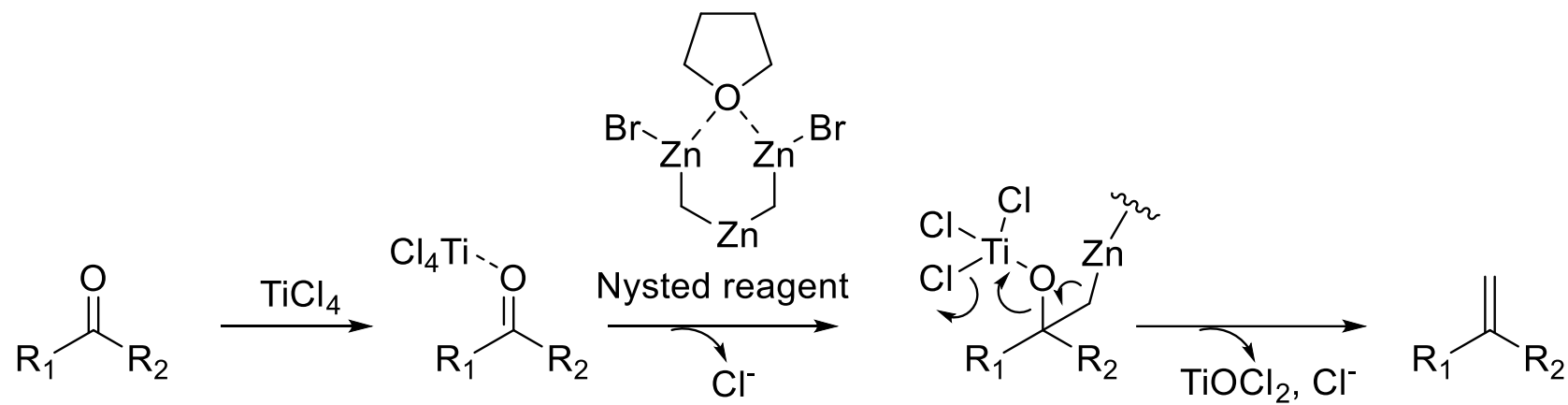


Mode A (M = Mg, Fe, etc.)

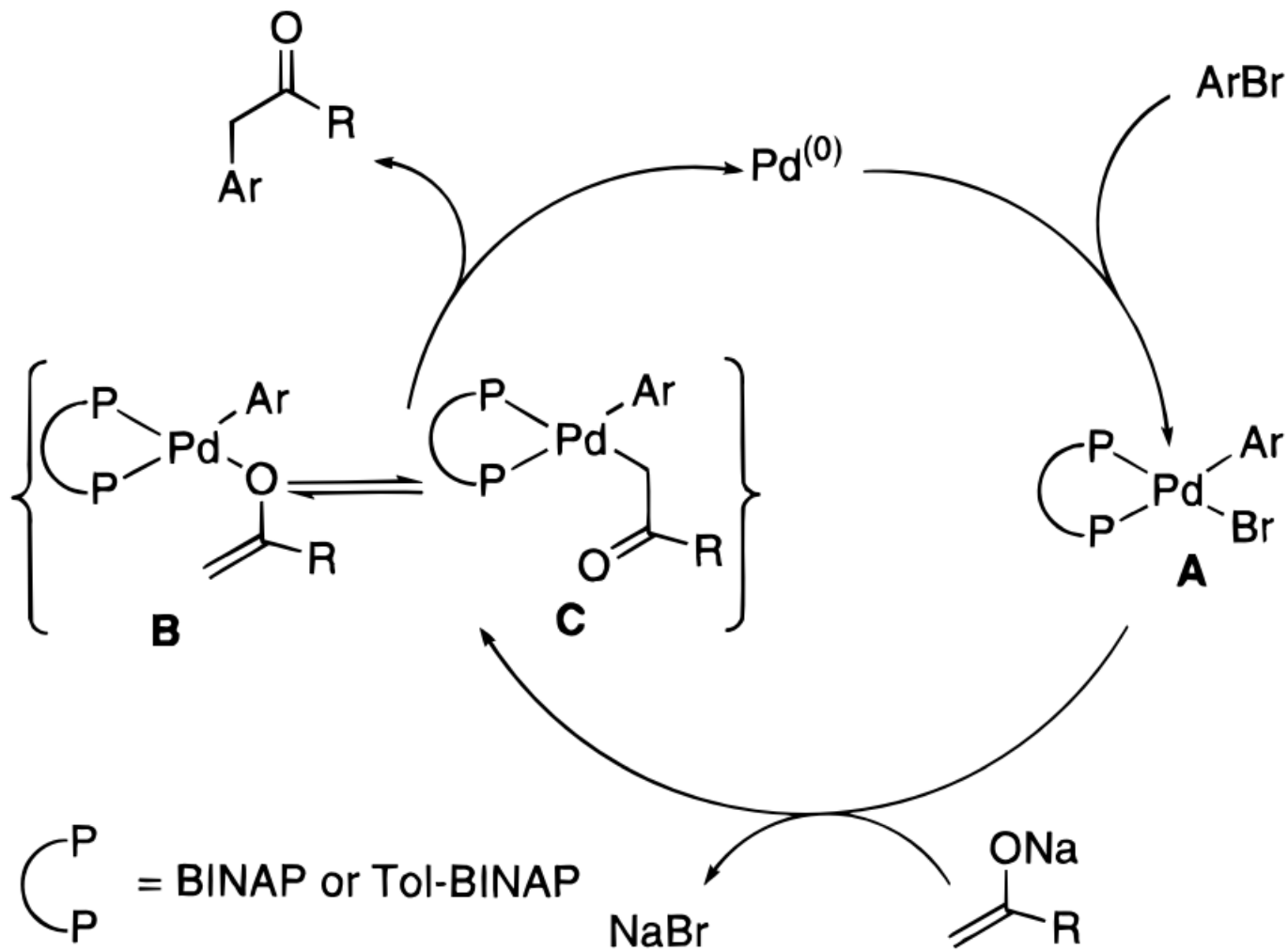


Mode B (M = B, Al)

Nysted reagent

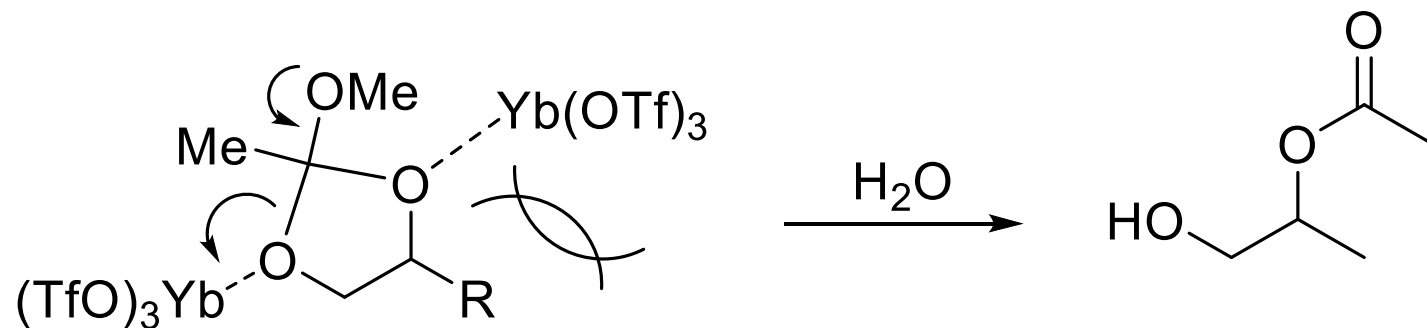


Palladium-Catalyzed α -Arylation of Ketones



J. Am. Chem. Soc. **1997**, 119, 11108-11109

Siteselective monoacetylation



Tetrahedron Lett. **2004**, 45, 1243–1246.