



Sebastian Krüger
Gaich-Group Seminar
05.02.15



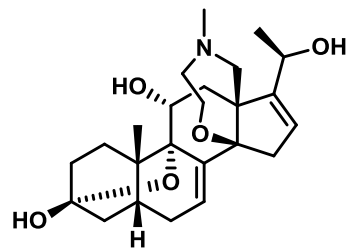
Jessie Clinton

Lake Murray Drive & Springdale Rd.

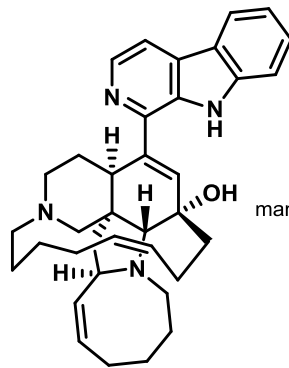
Common Life



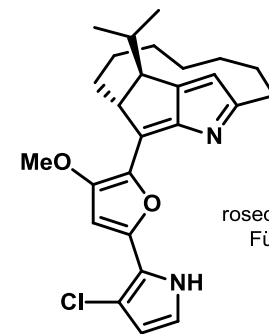
Sytheses



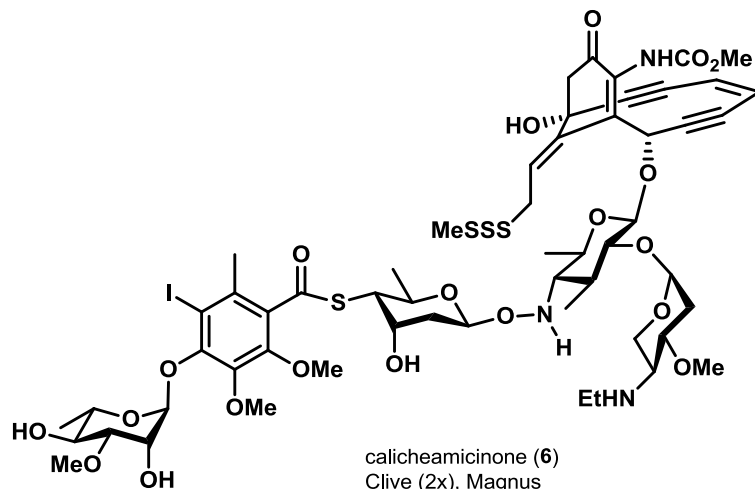
batrachotoxin A (1)
Kishi



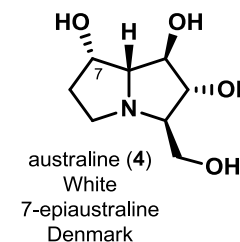
manzamine A (2)
Winkler



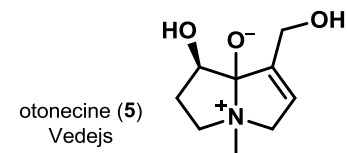
roseophilin (3)
Fürstner



calicheamicinone (6)
Clive (2x), Magnus

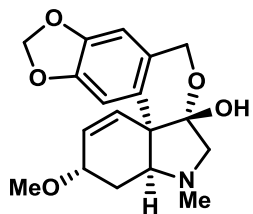


australine (4)
White
7-epiaustraline
Denmark

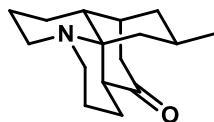


otonecine (5)
Vedejs

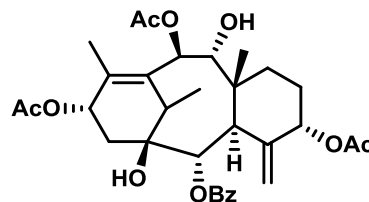
Key steps



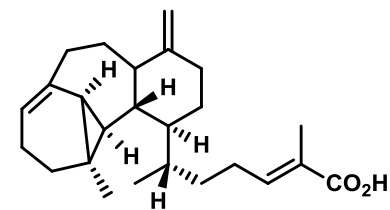
tazettine (7)
[4+1] cycloaddition of vinylisocyanates



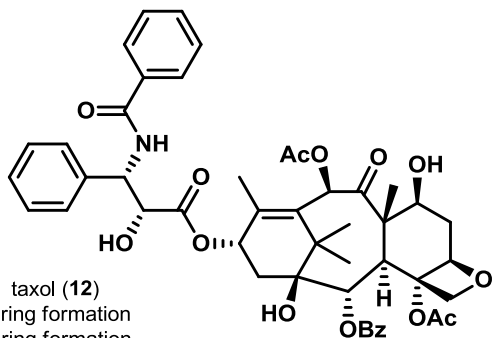
lycopodine (8)
ionic Diels alder
Beckmann rearrangement
Stieglitz rearrangement
Grieco



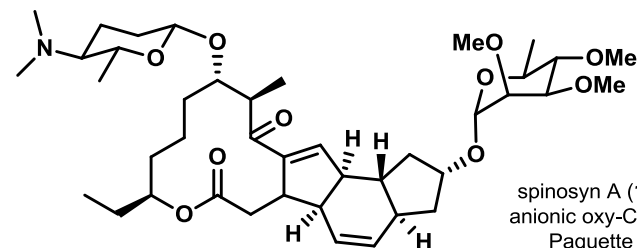
taxusin (9)
anionic oxy-Cope
Paquette



cerorubenic acid
III (10)
anionic oxy-Cope
Paquette

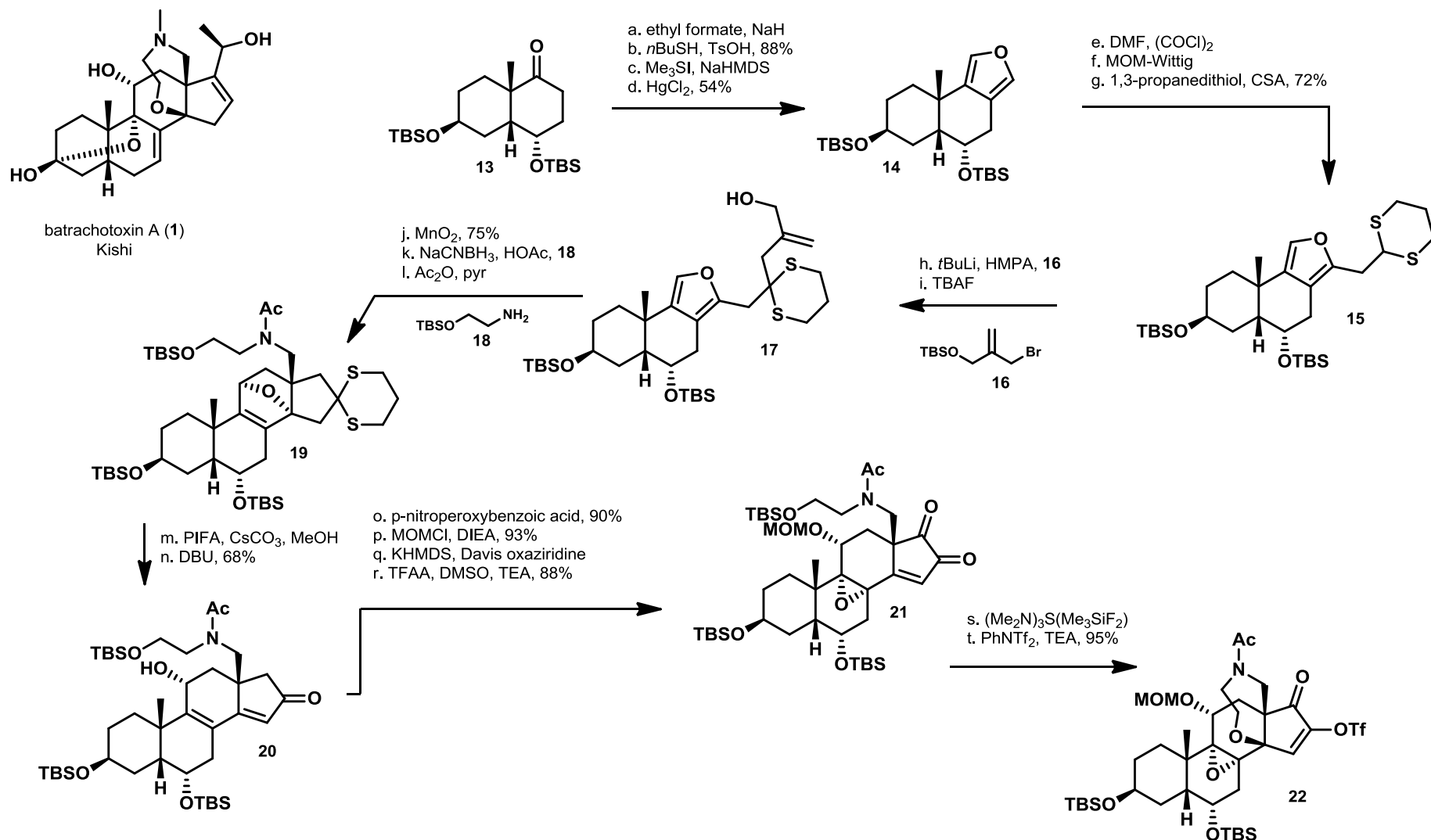


taxol (12)
B-ring formation
D-ring formation
Kuwajima

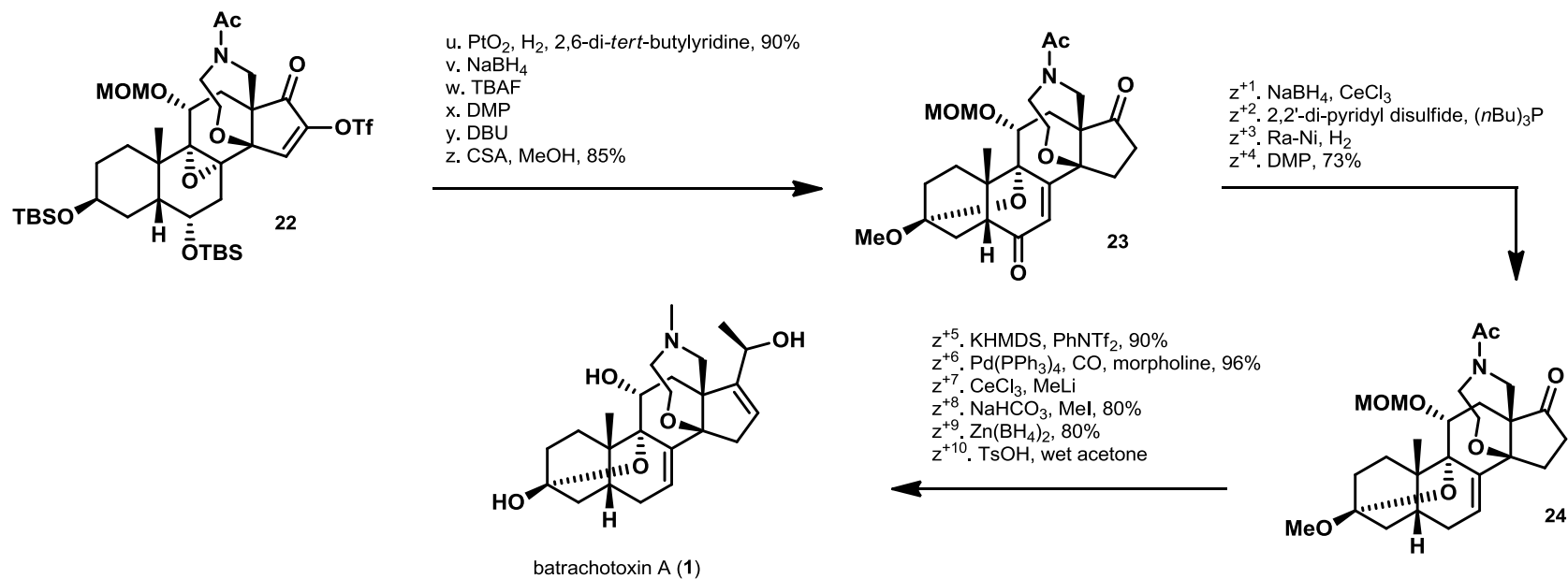


spinosyn A (11)
anionic oxy-Cope
Paquette

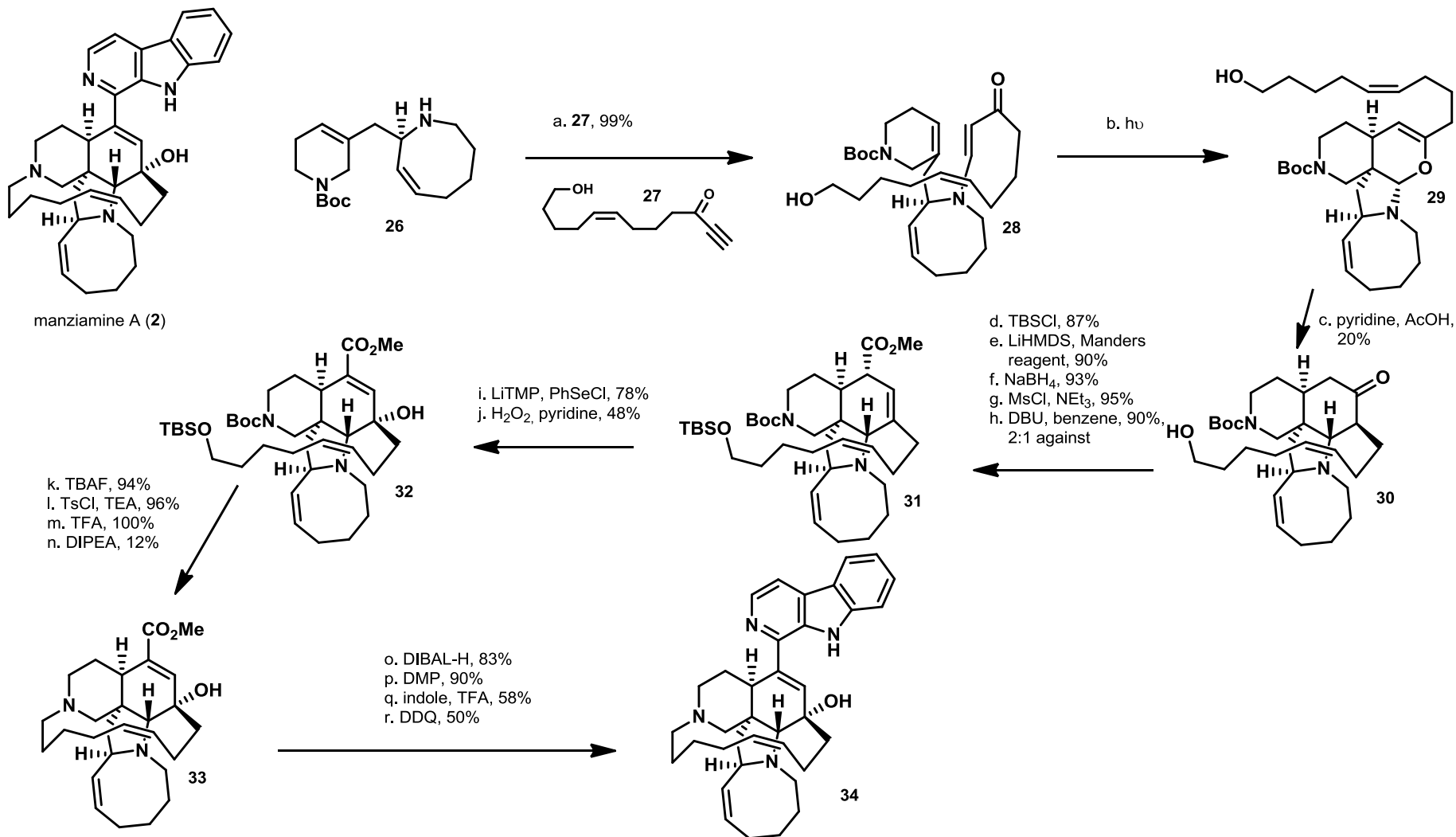
Batrachotoxin, Kishi



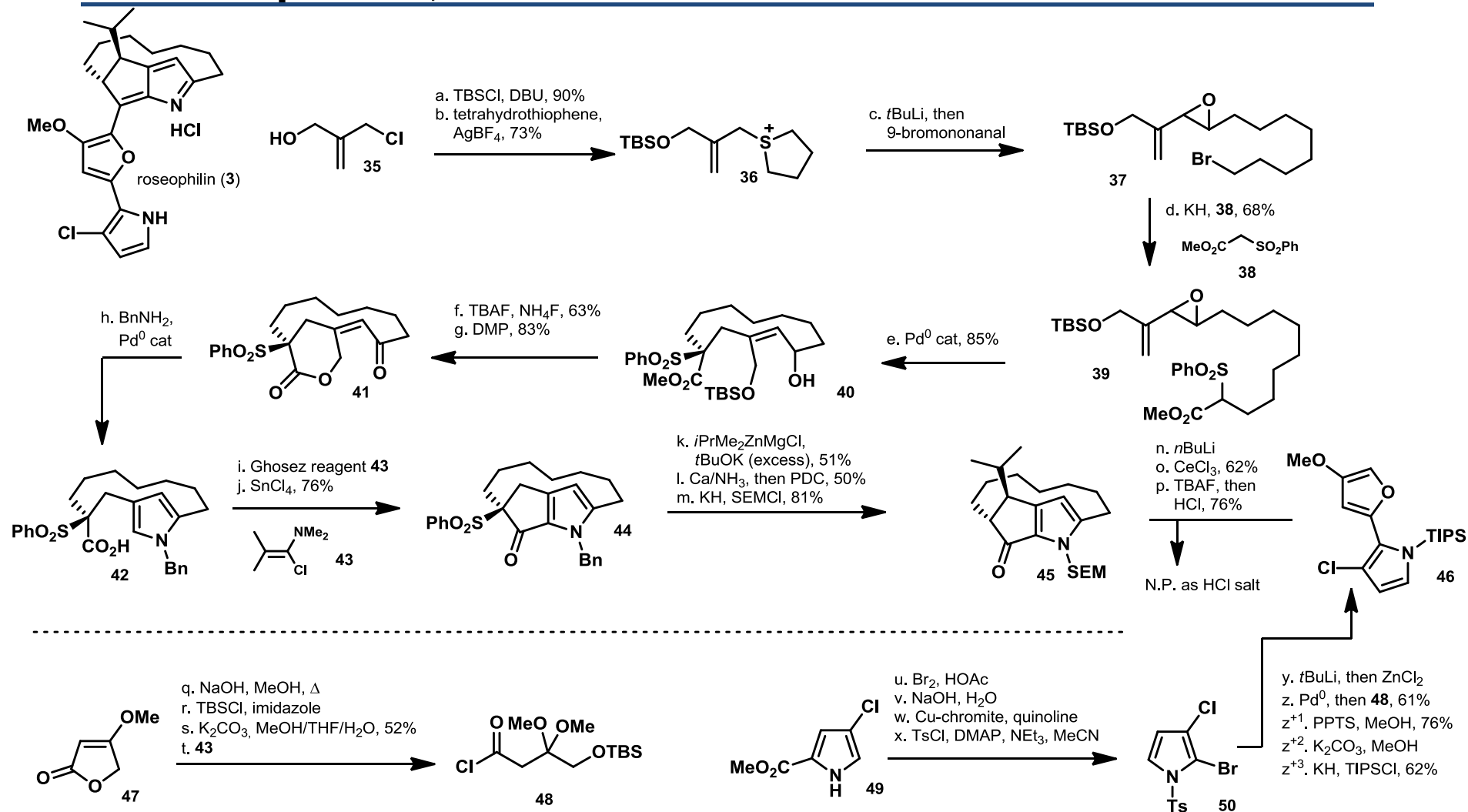
Batrachotoxin, Kishi



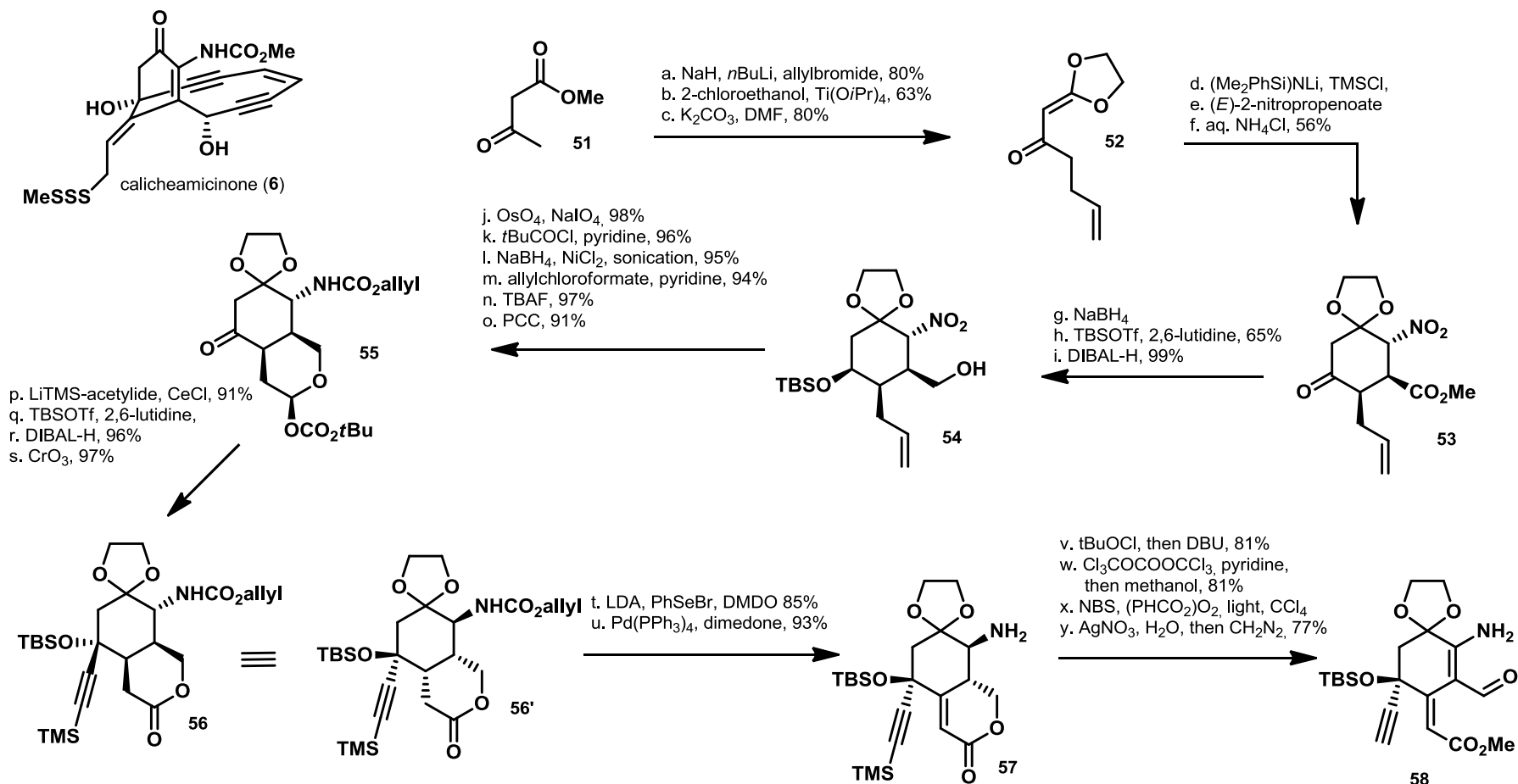
Manzamine A, Winkler



Roseophilin, Fürstner

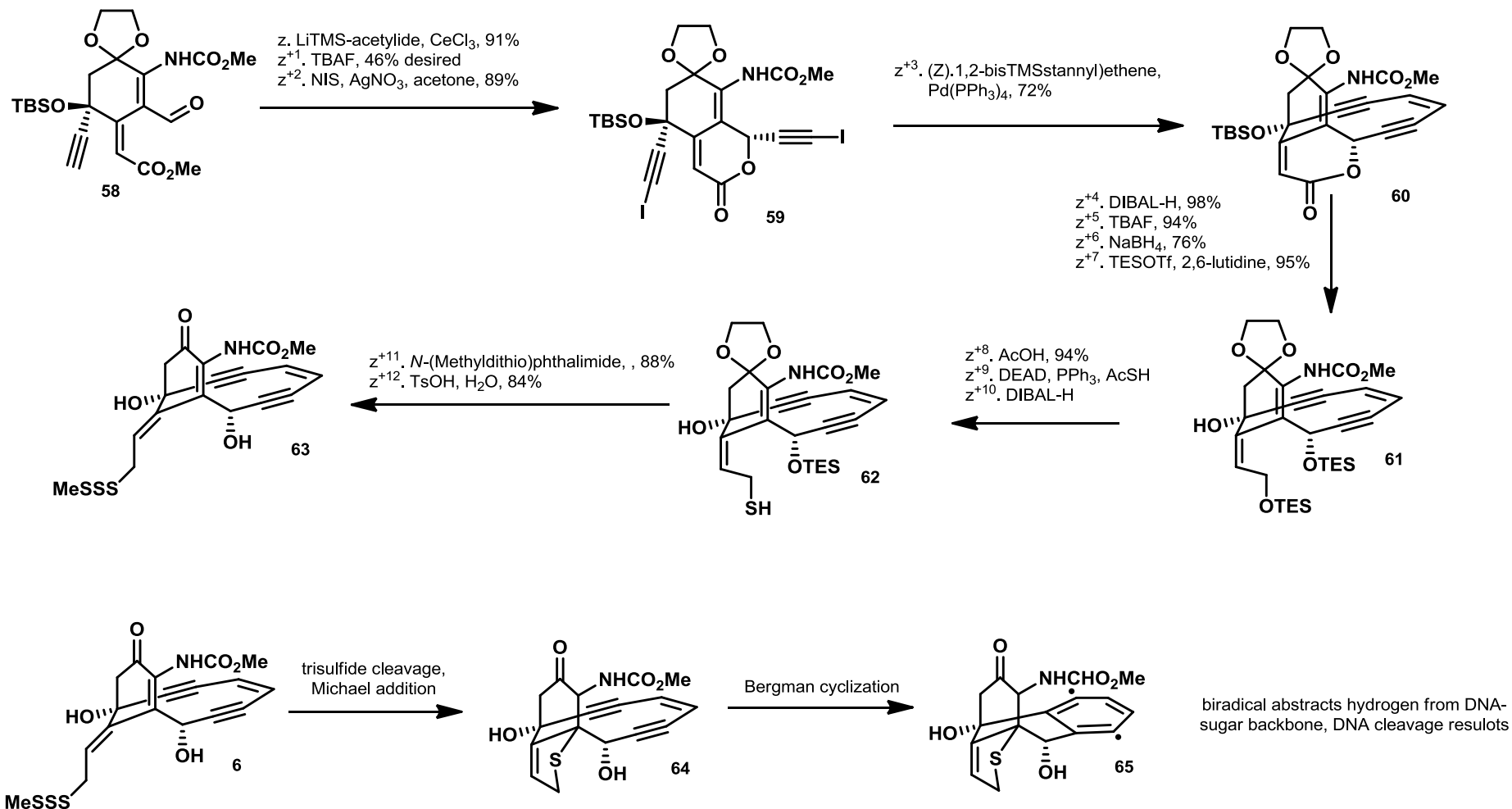


Calicheamicinone, Clive

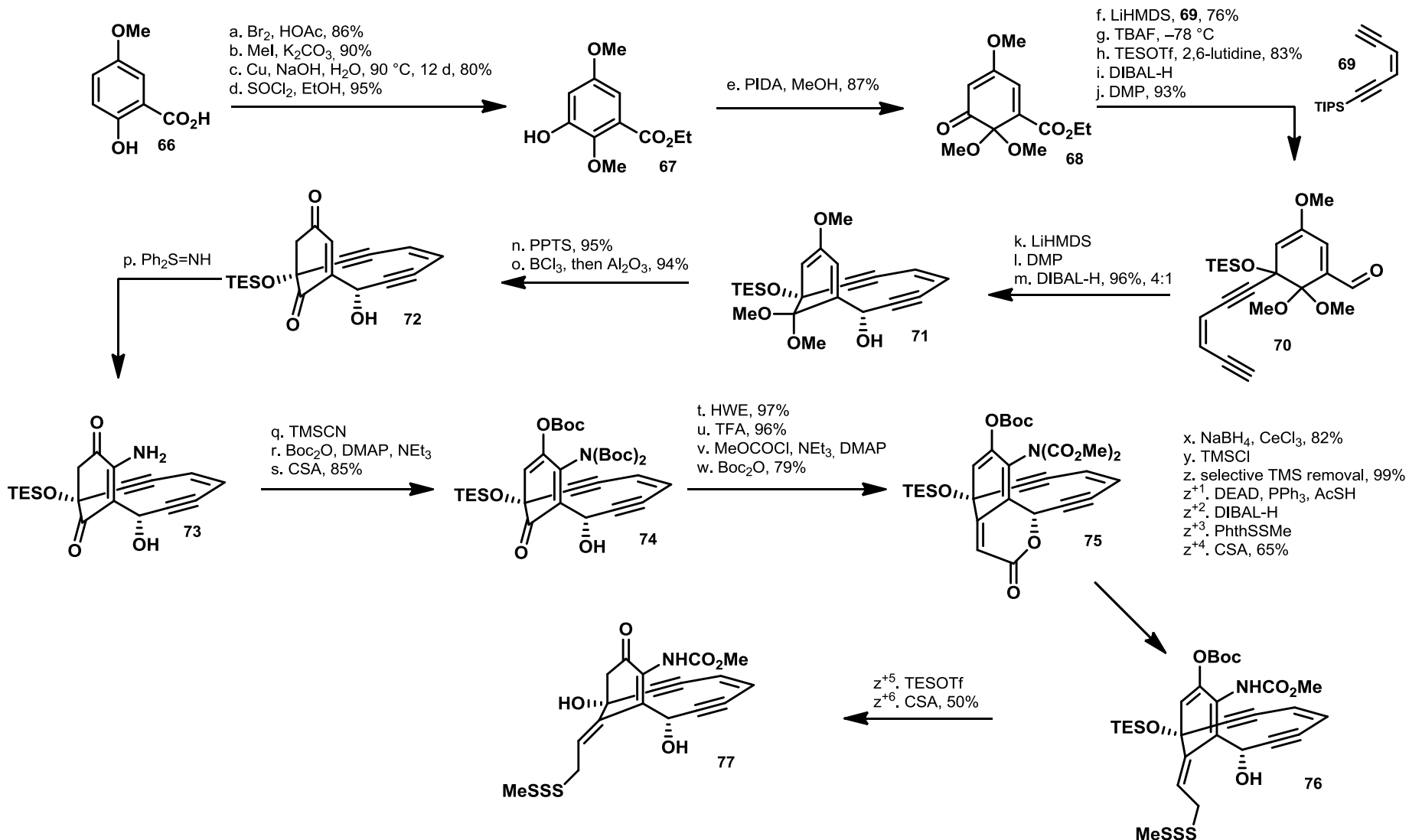


"In both routes, we deal with racemic compounds,
but represent each of them by a single enantiomer.
It is permissible, therefore, to depict compound **56** in the enantiomeric form
56'."

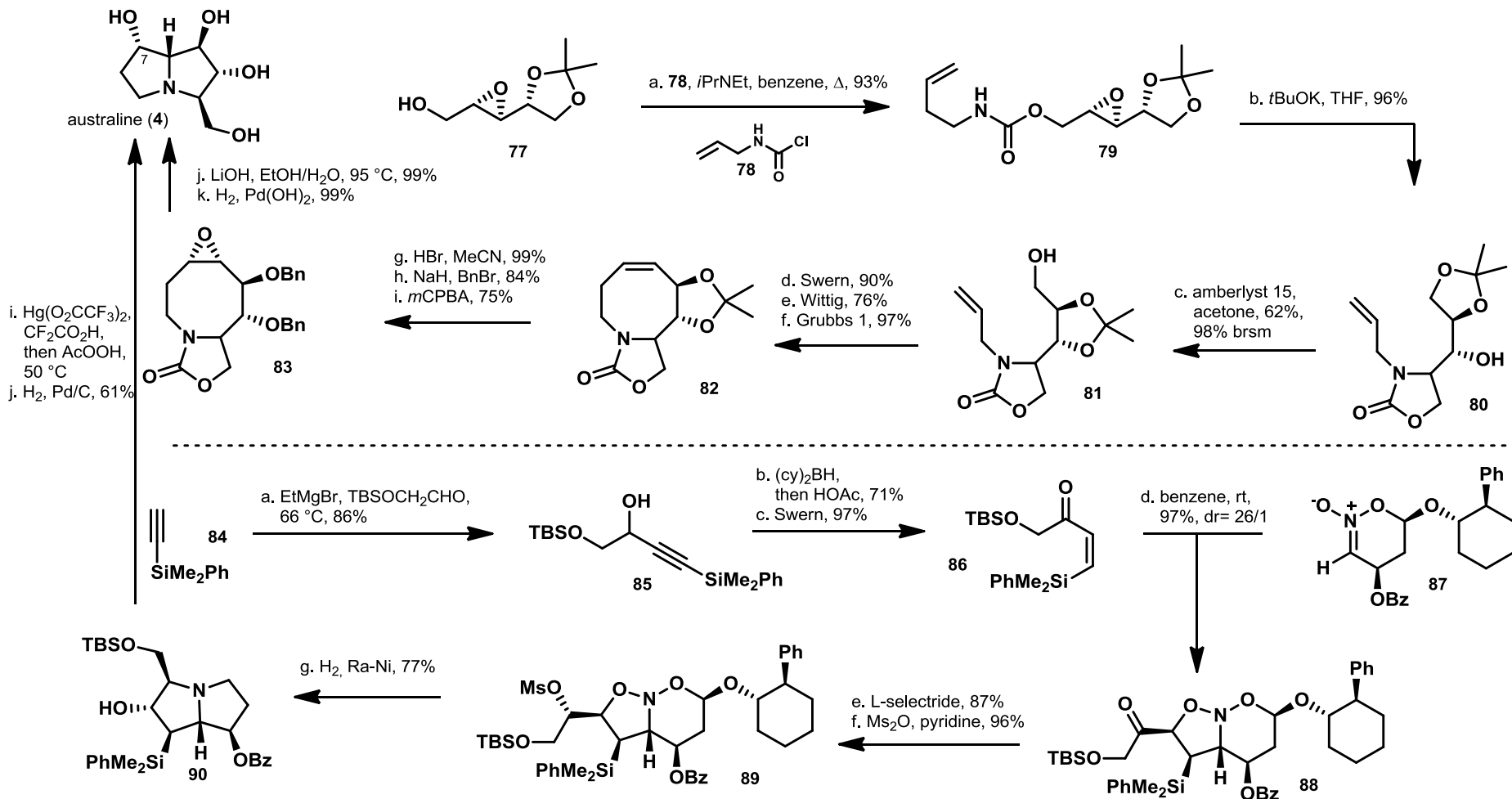
Calicheamicinone, Clive



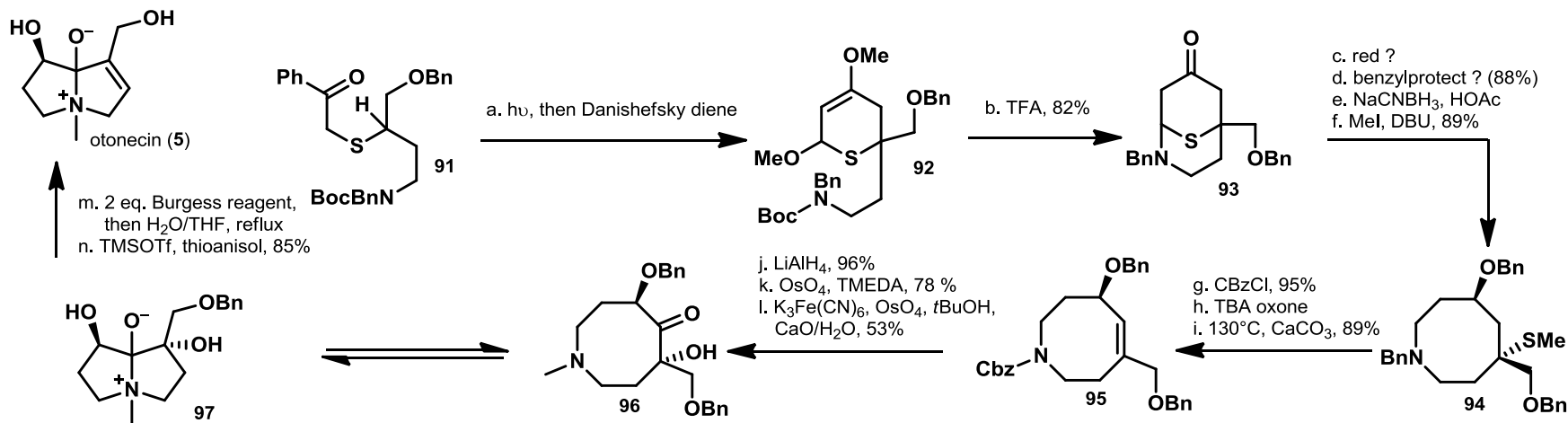
Calicheamicinone, Magnus



Australine, White and Denmark



Otonecine, Vedejs



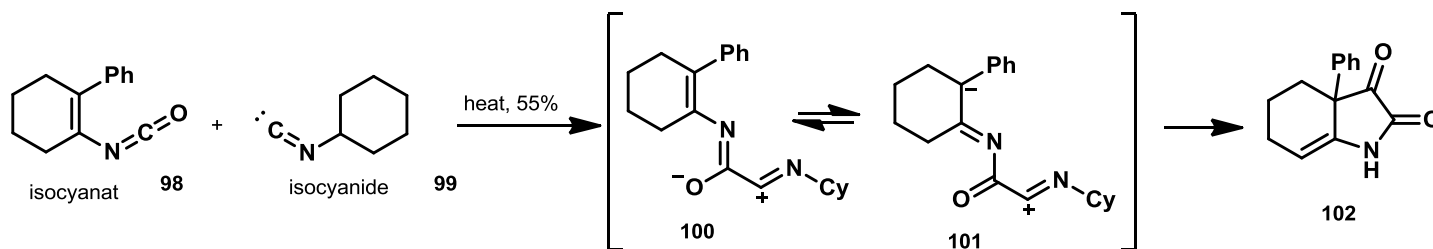
E. Vedejs, R. J. Galante, P. G. Goekjian, *JACS*, **1998**, *120*, 3613-3622

Scott Denmark Fanslide

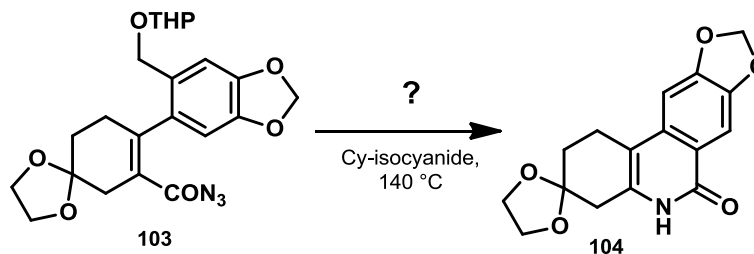


Tazettine, Rigby

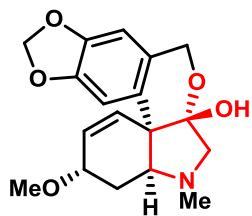
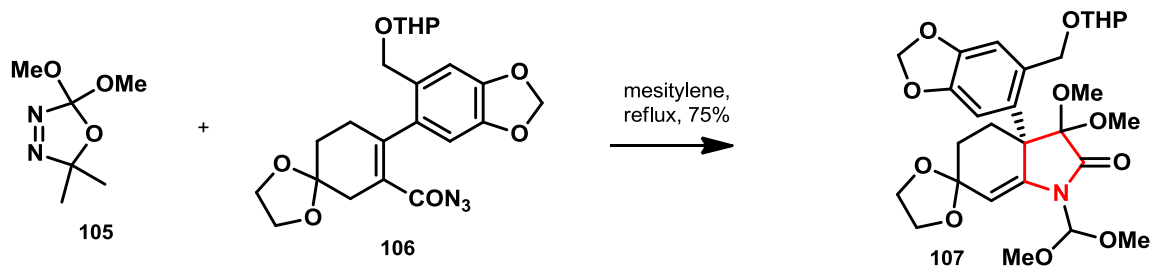
model system



real system

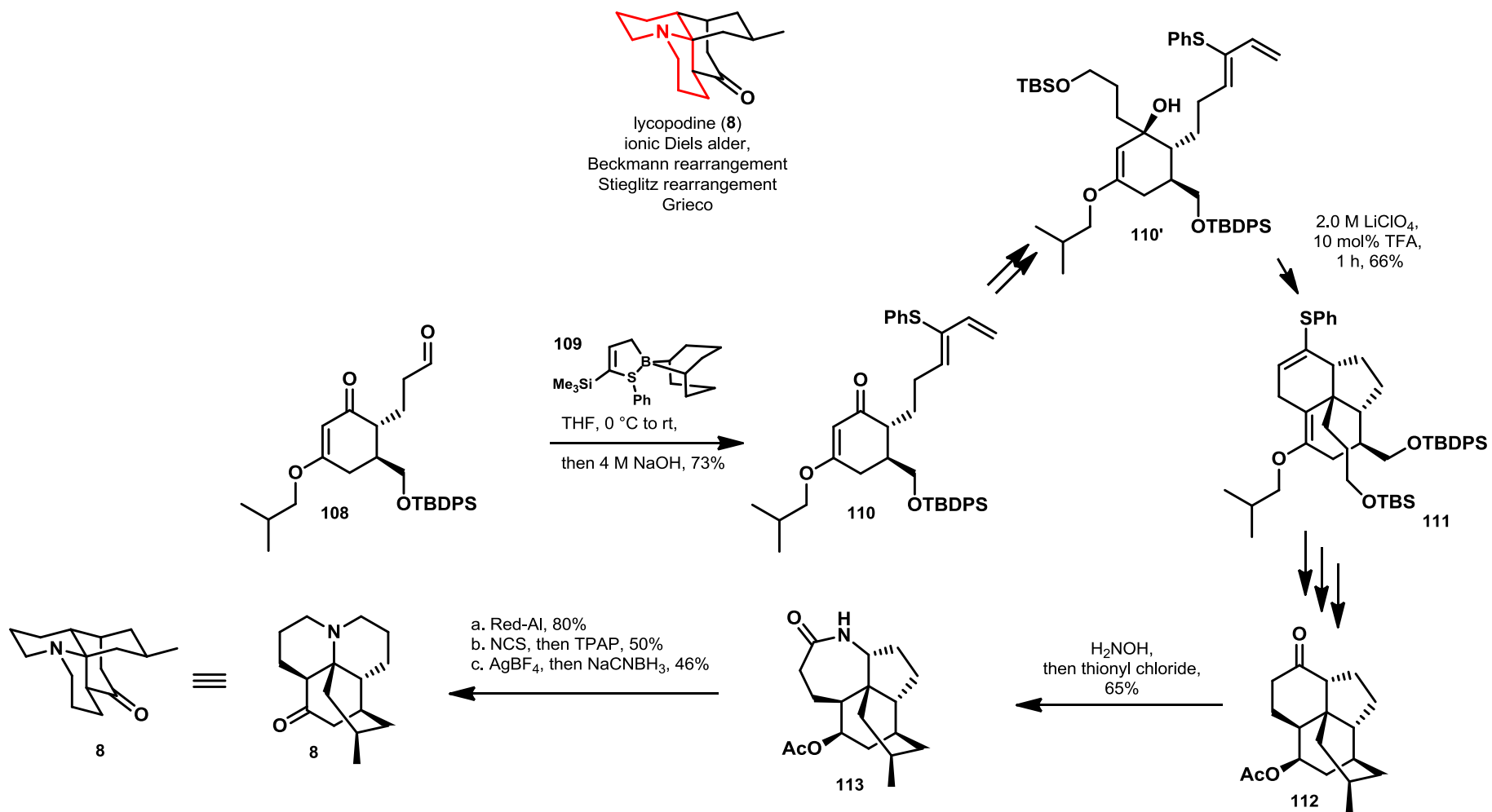


successful application

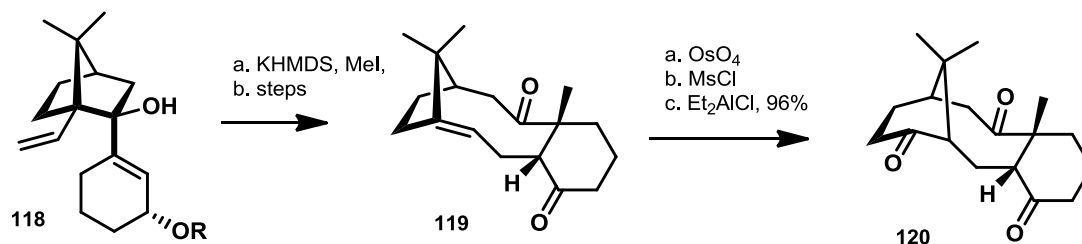
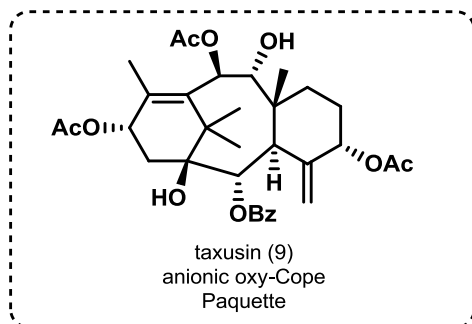
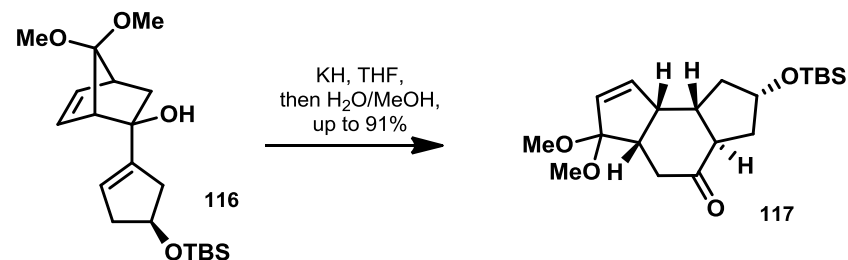
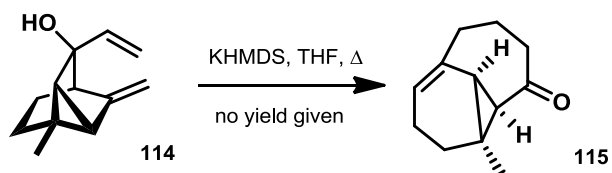
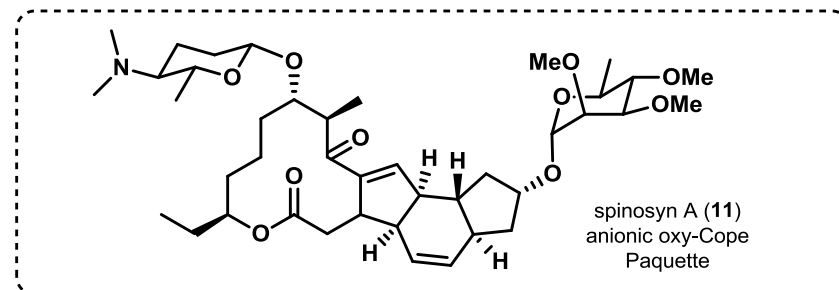
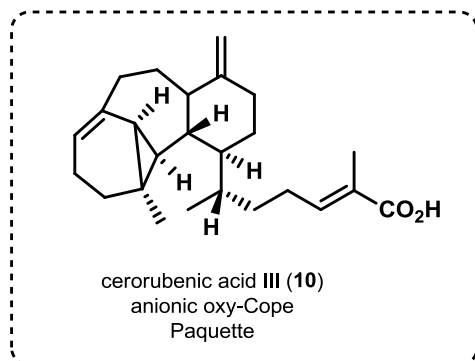


[4+1] cycloaddition of vinylisocyanates

Lycopodine, Grieco

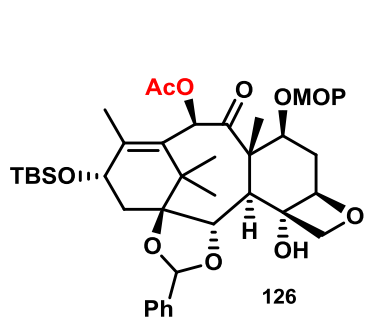
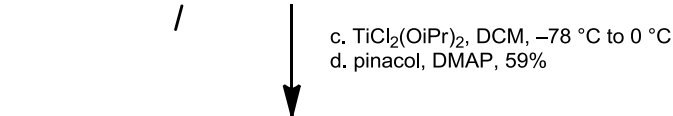
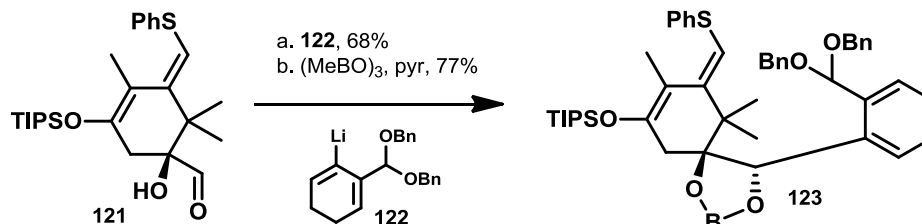
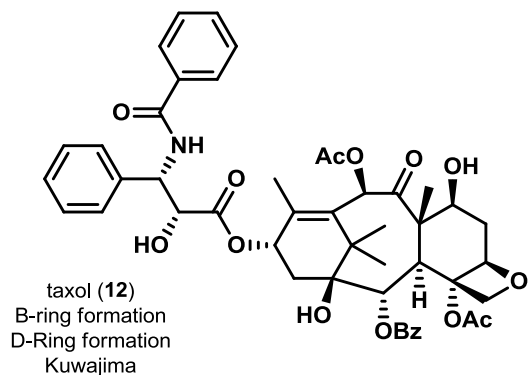


Ptilomycalin - Overman

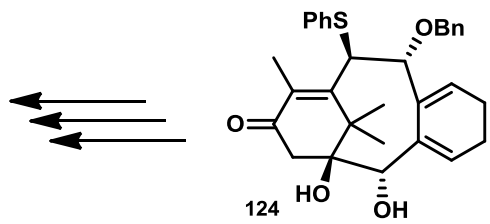
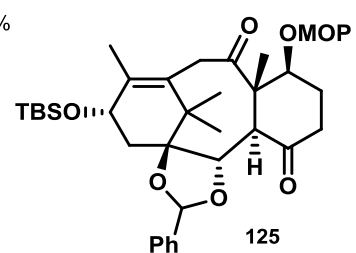


L. A. Paquette, Z. Gao, Z. Ni, G. F. Smith, *JACS*, **1998**, *120*, 2543-2552, L. A. Paquette, M. Zhao, *JACS*, **1998**, *120*, 5203-5212, L. A. Paquette, H-L. Wang, Z. Su, M. Zhao, *JACS*, **1998**, *120*, 5213-5225, L. A. Paquette, B. P. Dyck, *JACS*, **1998**, *120*, 5953-5960

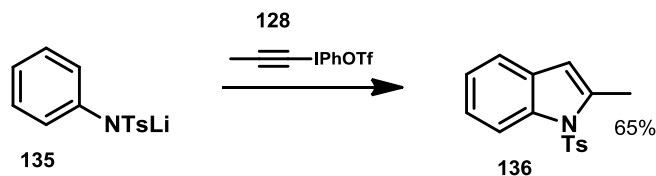
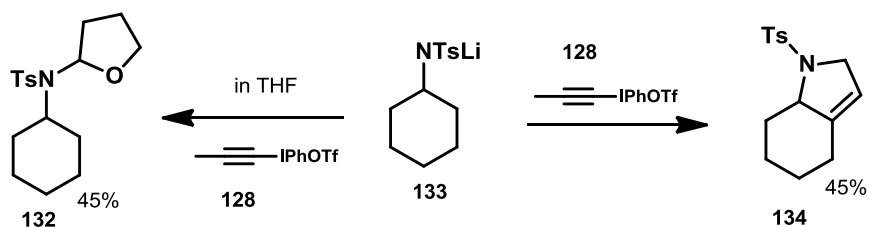
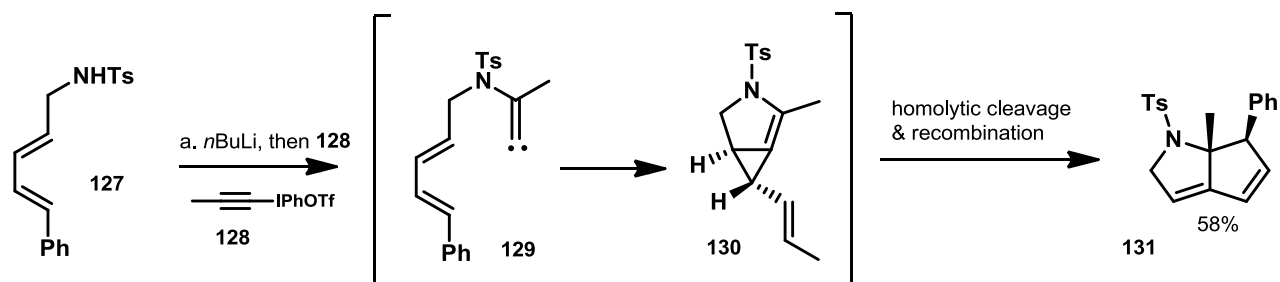
Taxol, Kuwajima



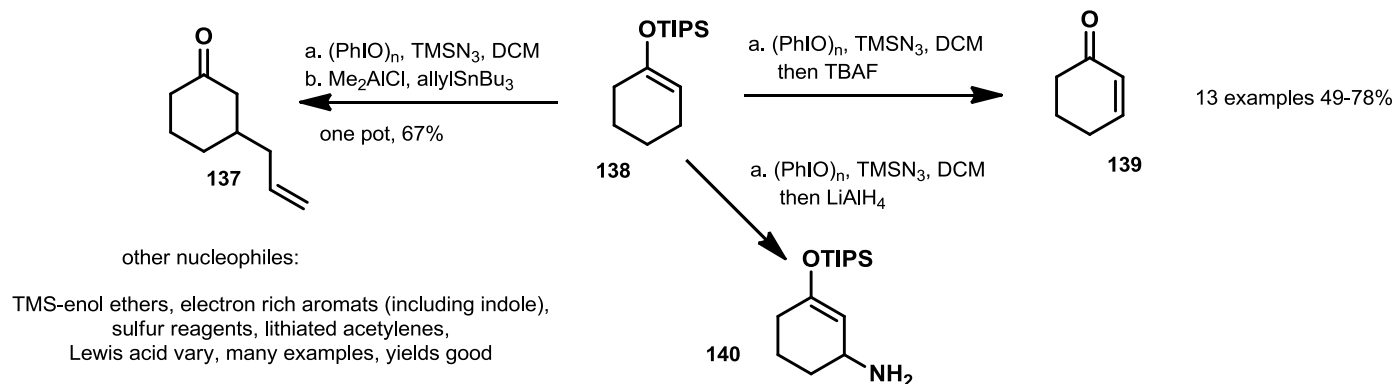
- e. KHMDS, PhNTf₂, 89%
- f. Pd(PPh₃)₄, TMSCH₂MgCl, 91%
- g. NCS, MeOH, 88%
- h. 2-methoxypropene, PPTS, 89%
- i. steps**
- j. OsO₄



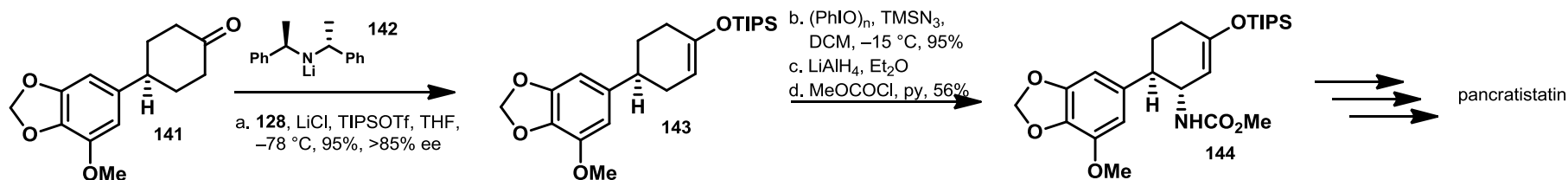
Feldman



Beta-azidridation, Magnus

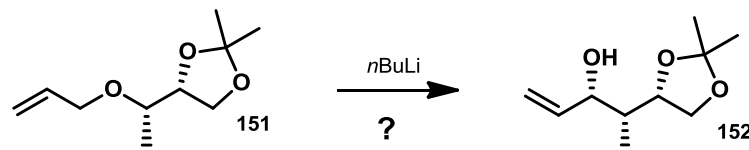
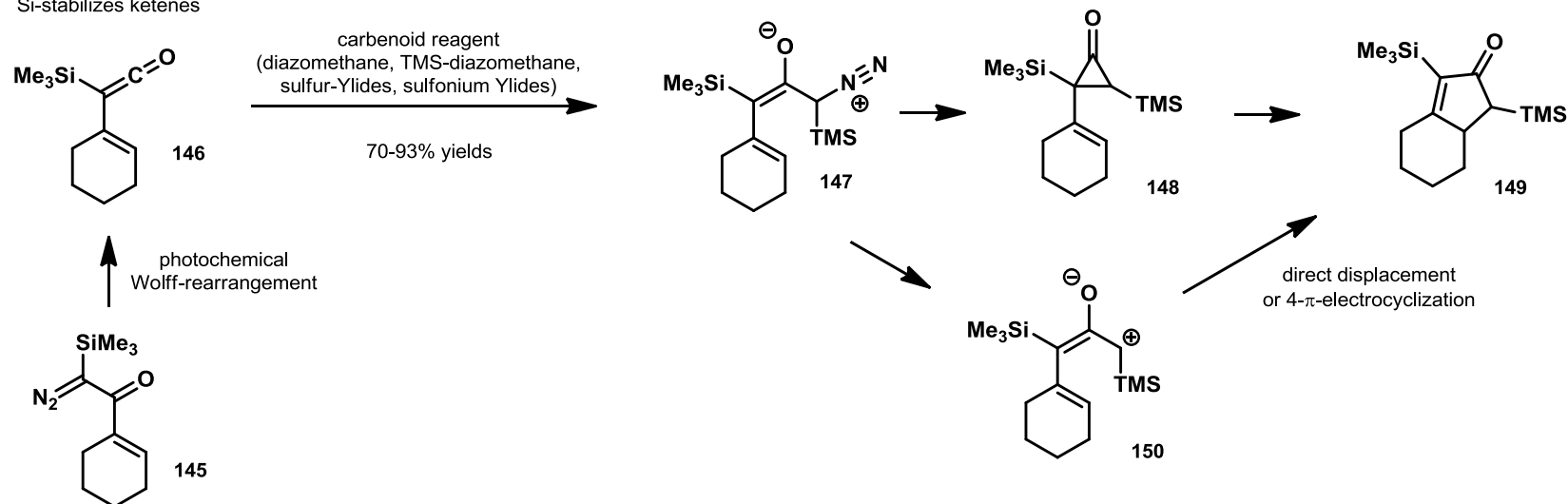


Application in synthesis



[4+1]-Annulation, Dannheiser

trialkylsilylvinylketene,
isolatable,
Si-stabilizes ketenes



Last slide

Questions?