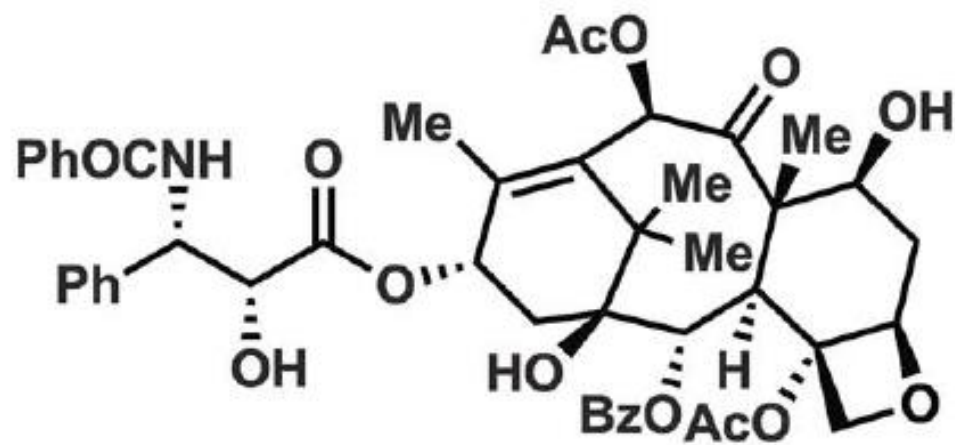


Total synthesis of the complex taxane diterpene canataxpropellane

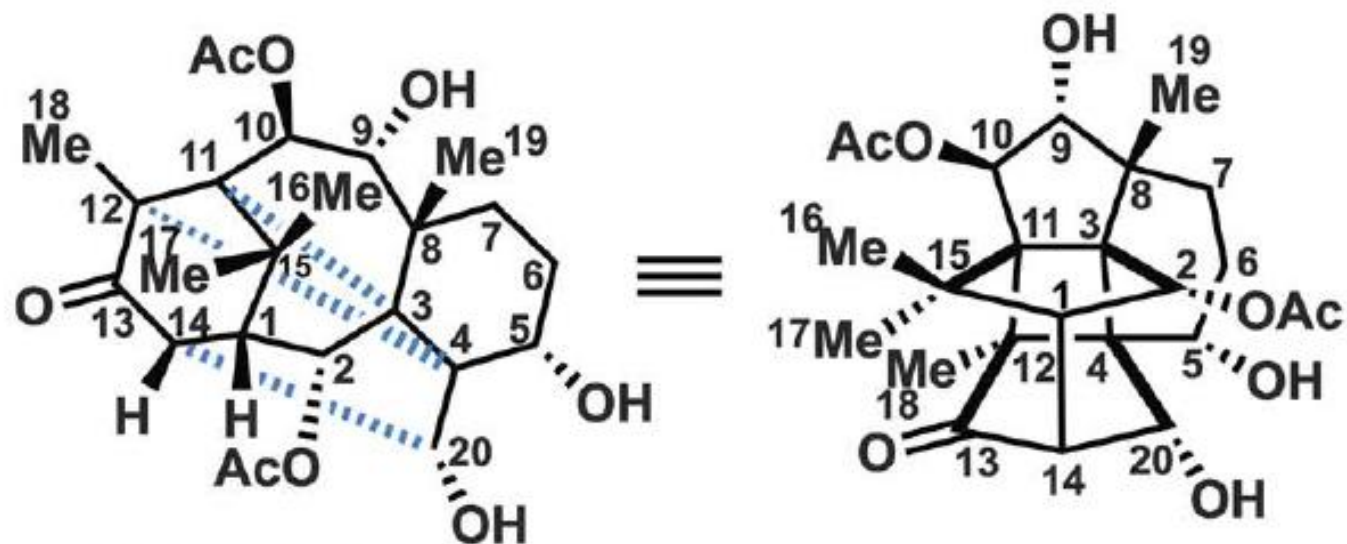
Fabian Schneider. Konstantin Samarin. Simone Zanella. Tania Gaich*

A Classic taxane core



Taxol (1)

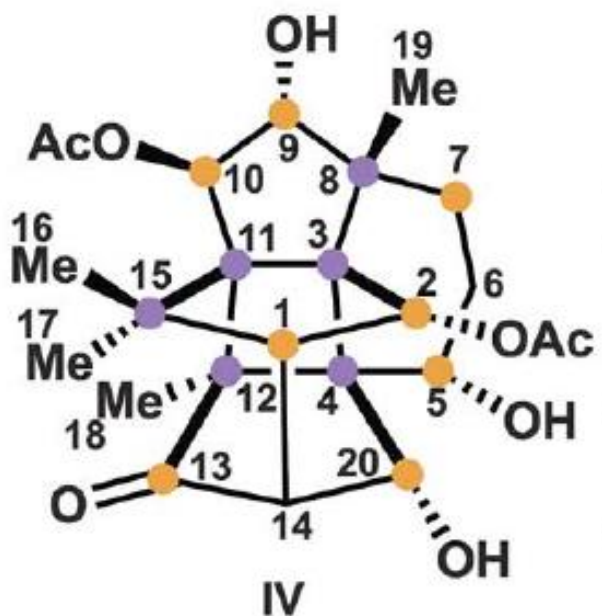
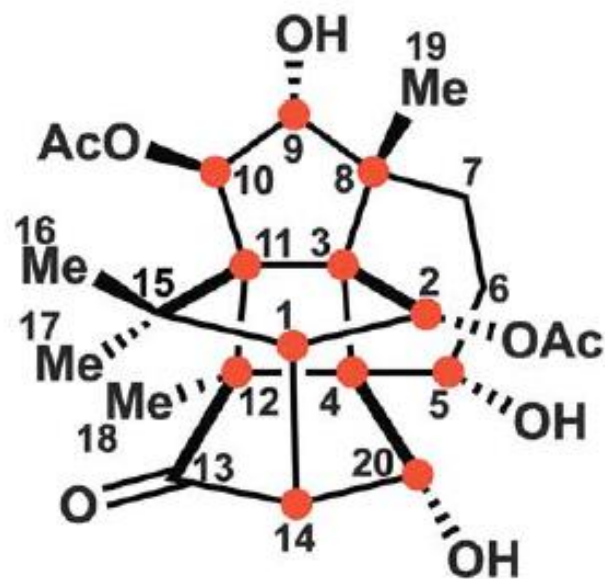
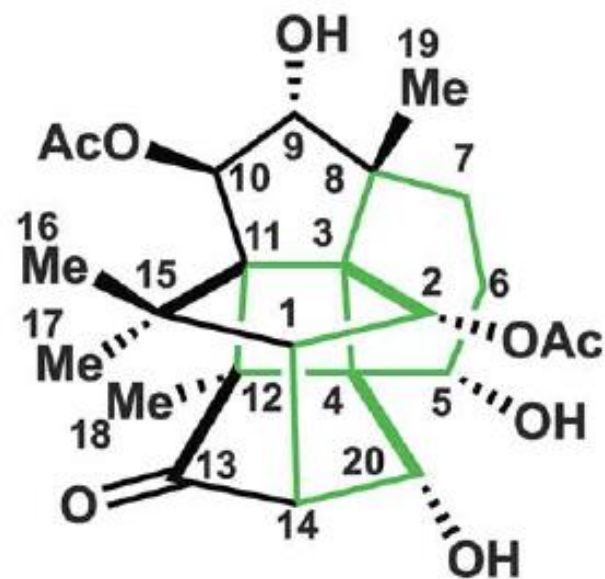
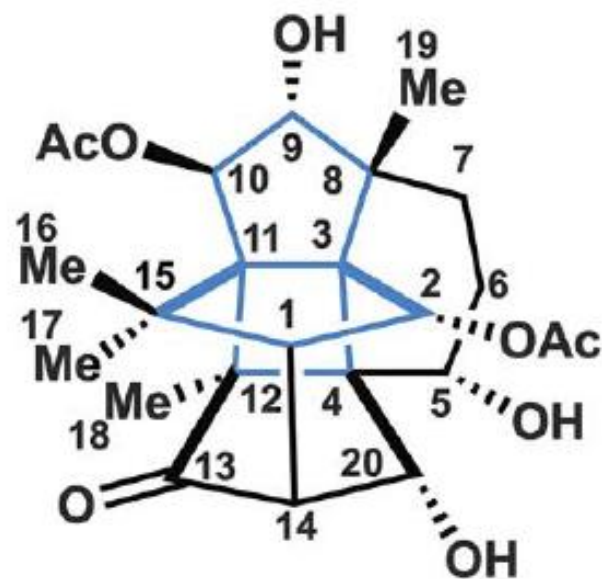
B Complex taxane core



3 additional C-C-bonds

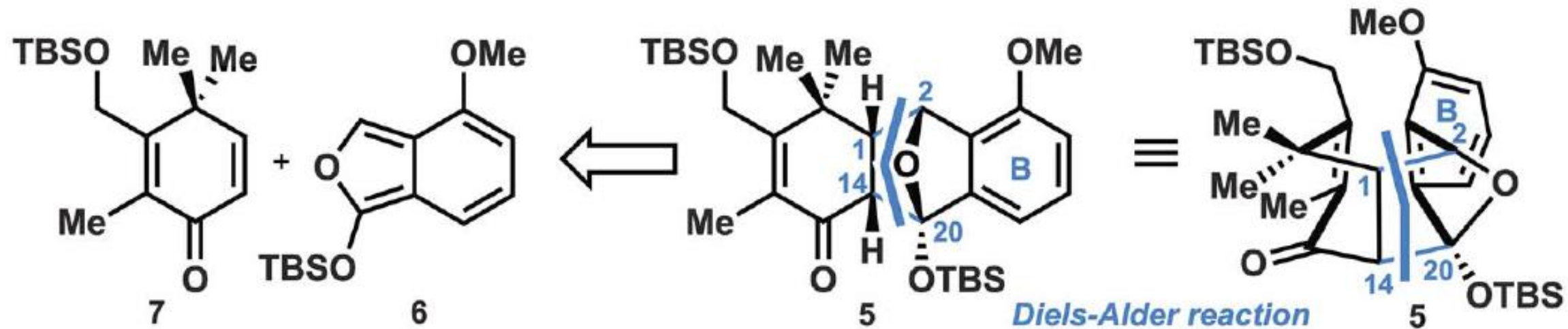
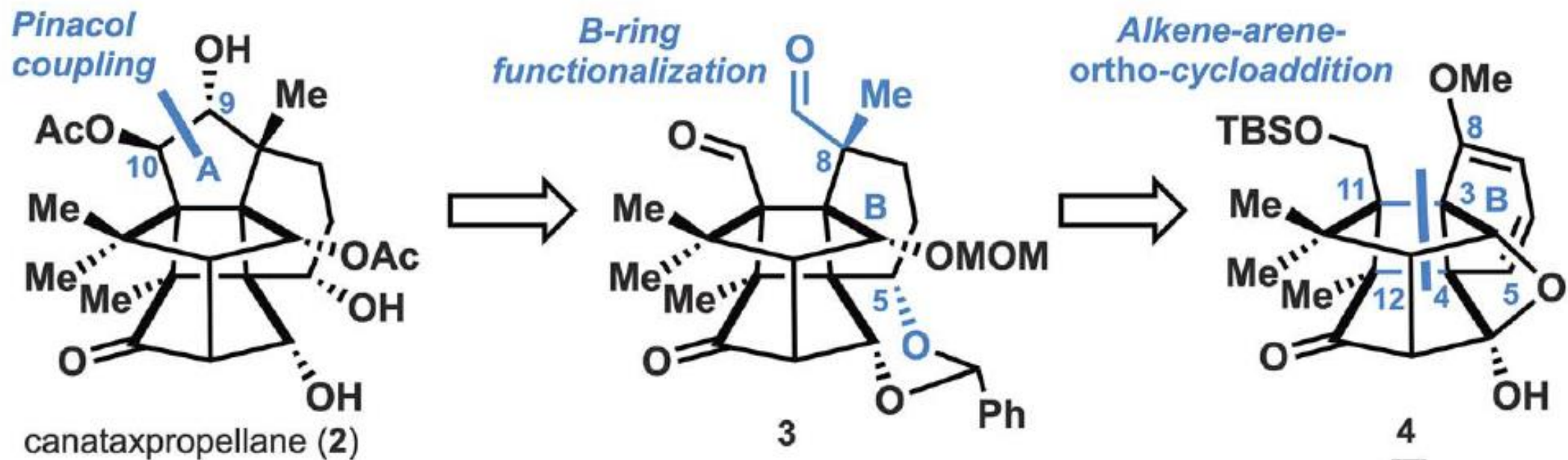
canataxpropellane (2)

C Structure analysis

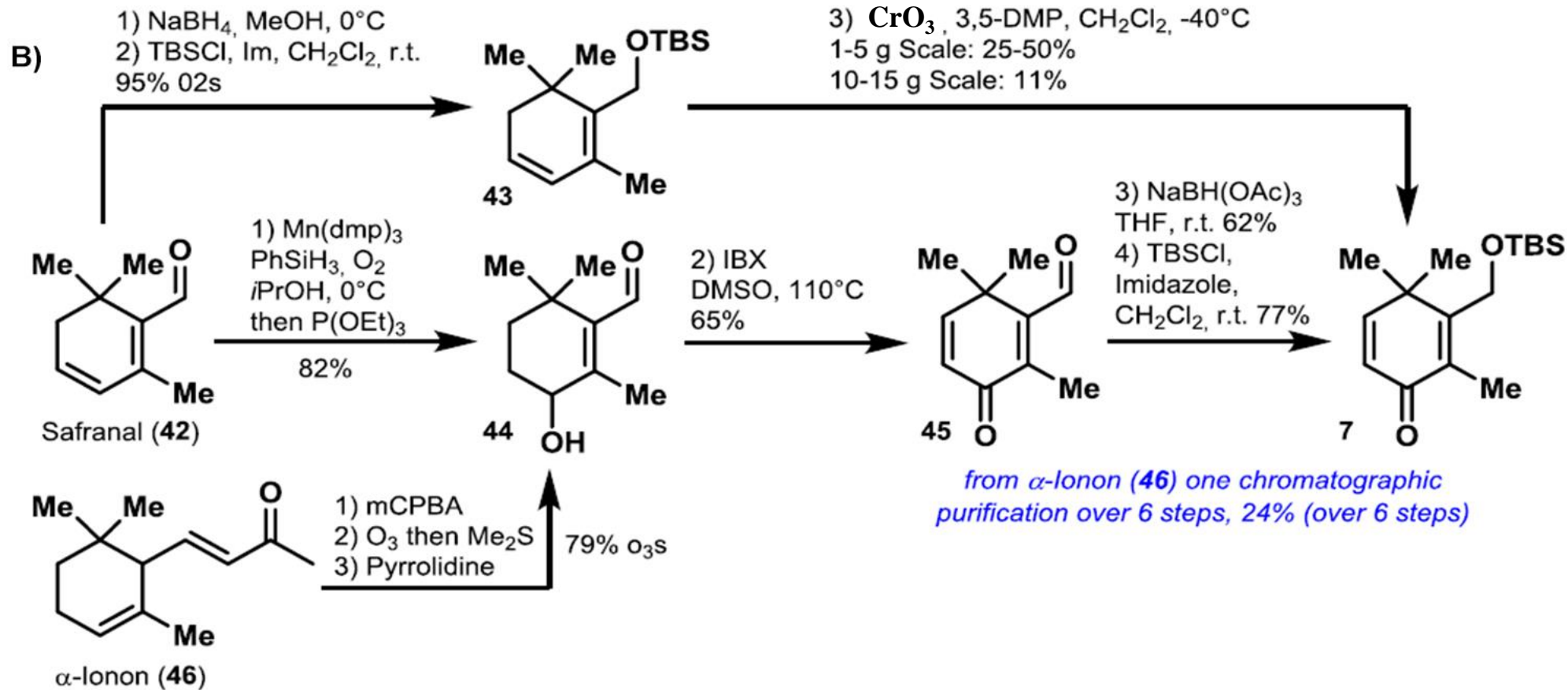
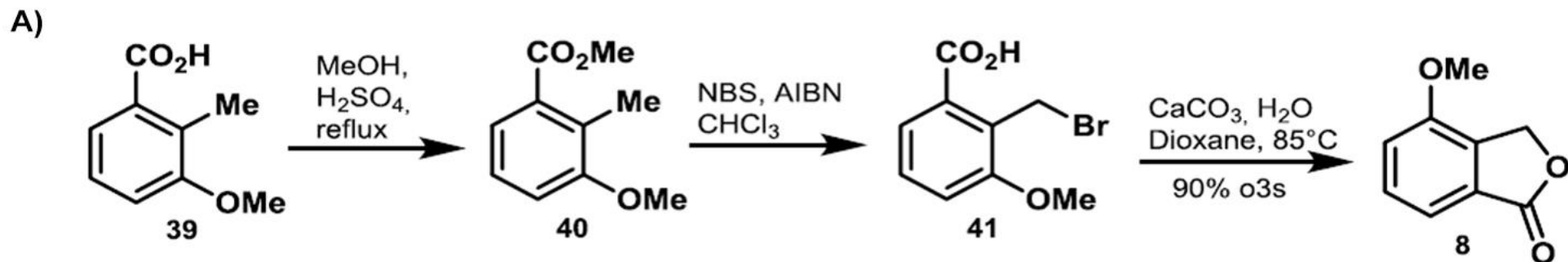


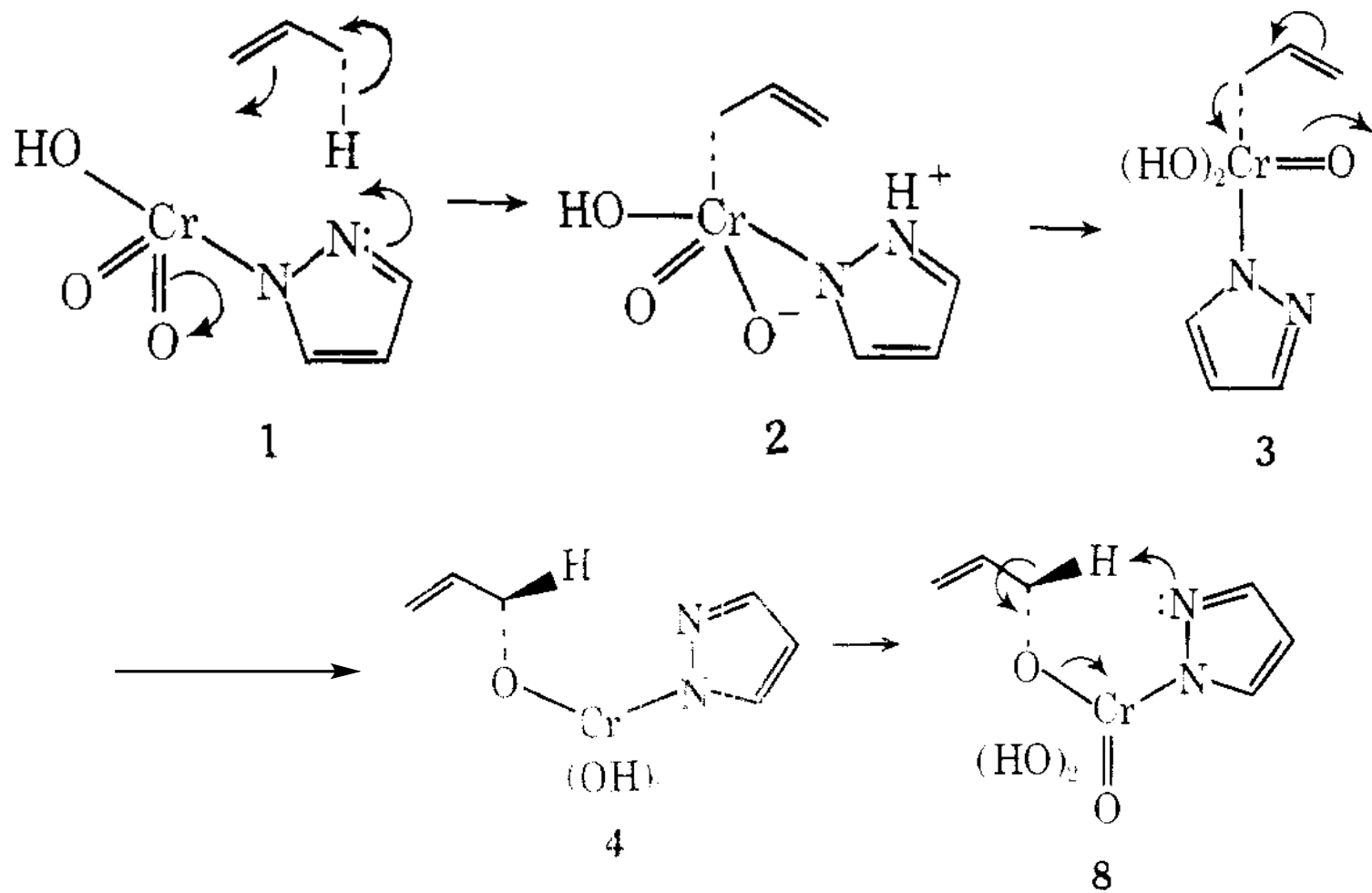
Structural features

- [3.3.2]propellane (blue I)
 - [4.4.2]propellane (green II)
 - 12 contiguous stereocenters (red III)
 - cyclobutane with all quaternary stereocenters (purple IV)
 - 6 quaternary carbons (contiguous; purple IV)
- 5 quaternary stereocenters (contiguous 3; 4; 8; 11; 12 IV)
 - 8 neopentyl positions (yellow IV)
 - only 2 non-neopentyl positions (6; 14 IV)
 - densely functionalized & highly oxidized



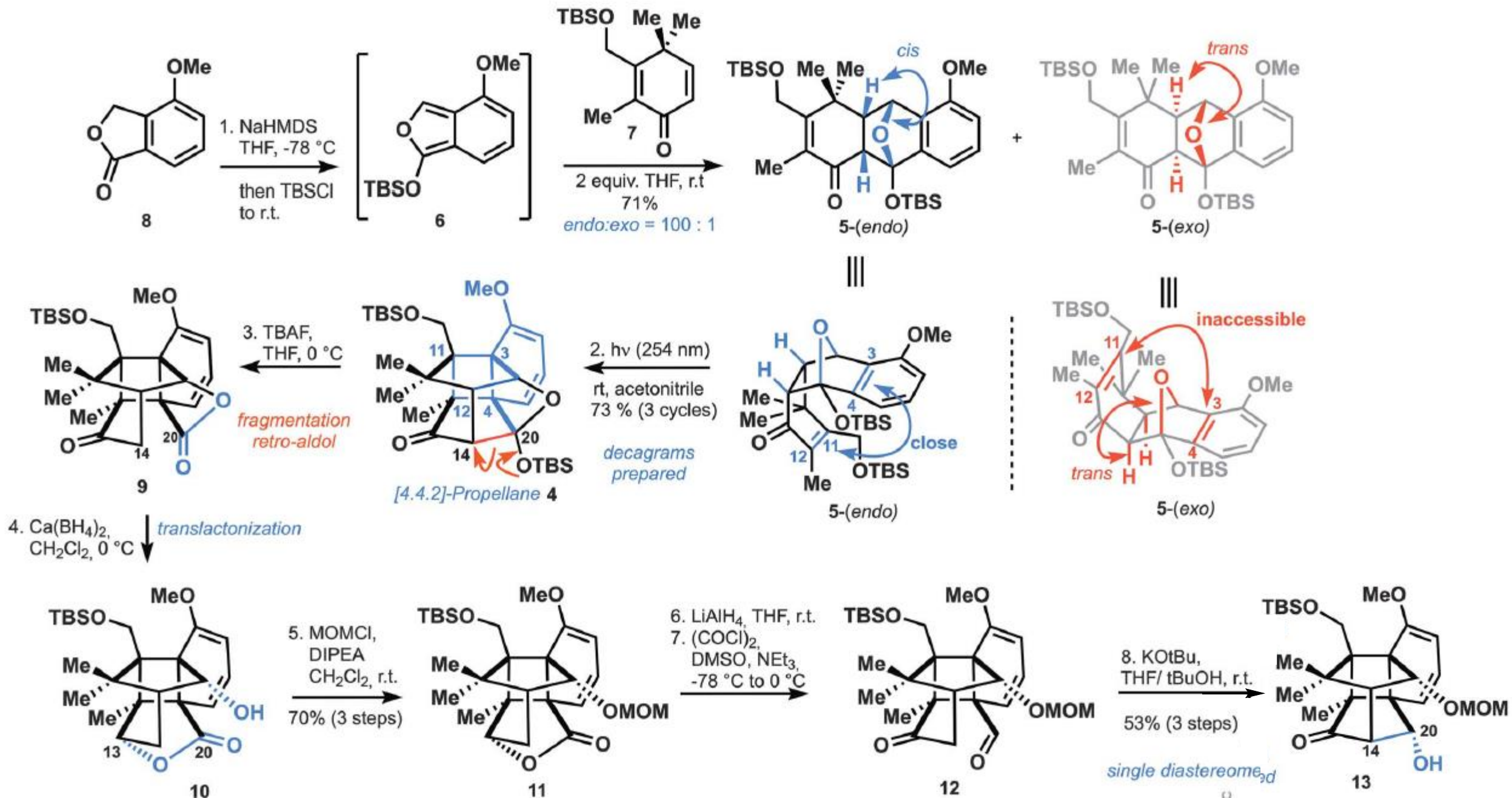
Synthesis for the starting material 8 and 9



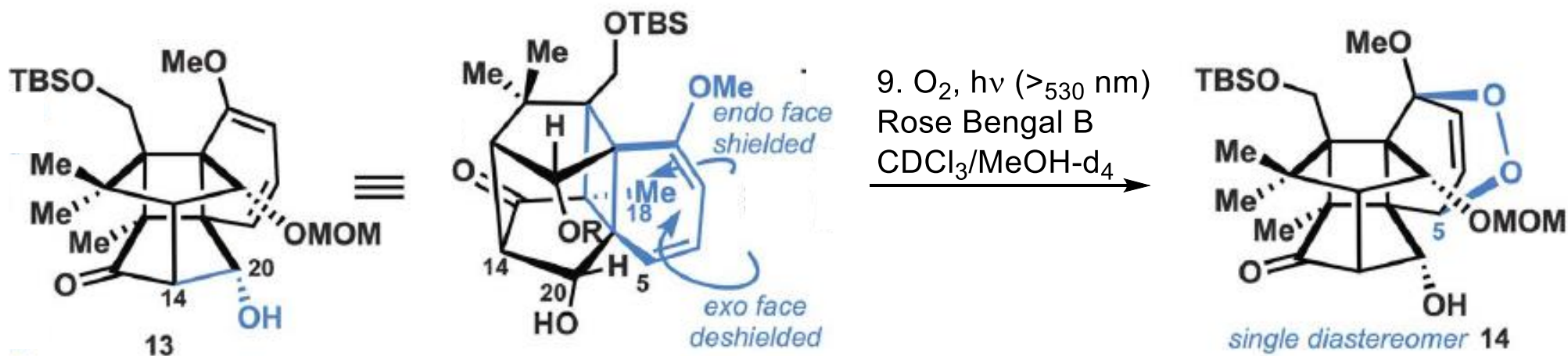


J. Org. Chem. **1978**, *43*, 2057.

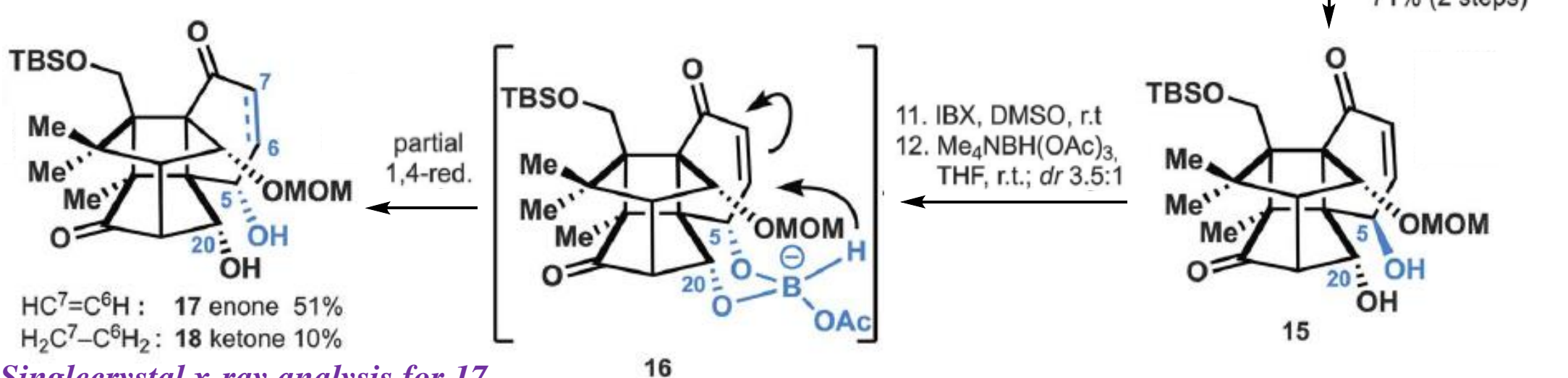
Part I: Diels-Alder/alkene-arene-ortho-photocycloaddition and photooxygenation



Part I: Diels-Alder/alkene-arene-ortho-photocycloaddition and photooxygenation

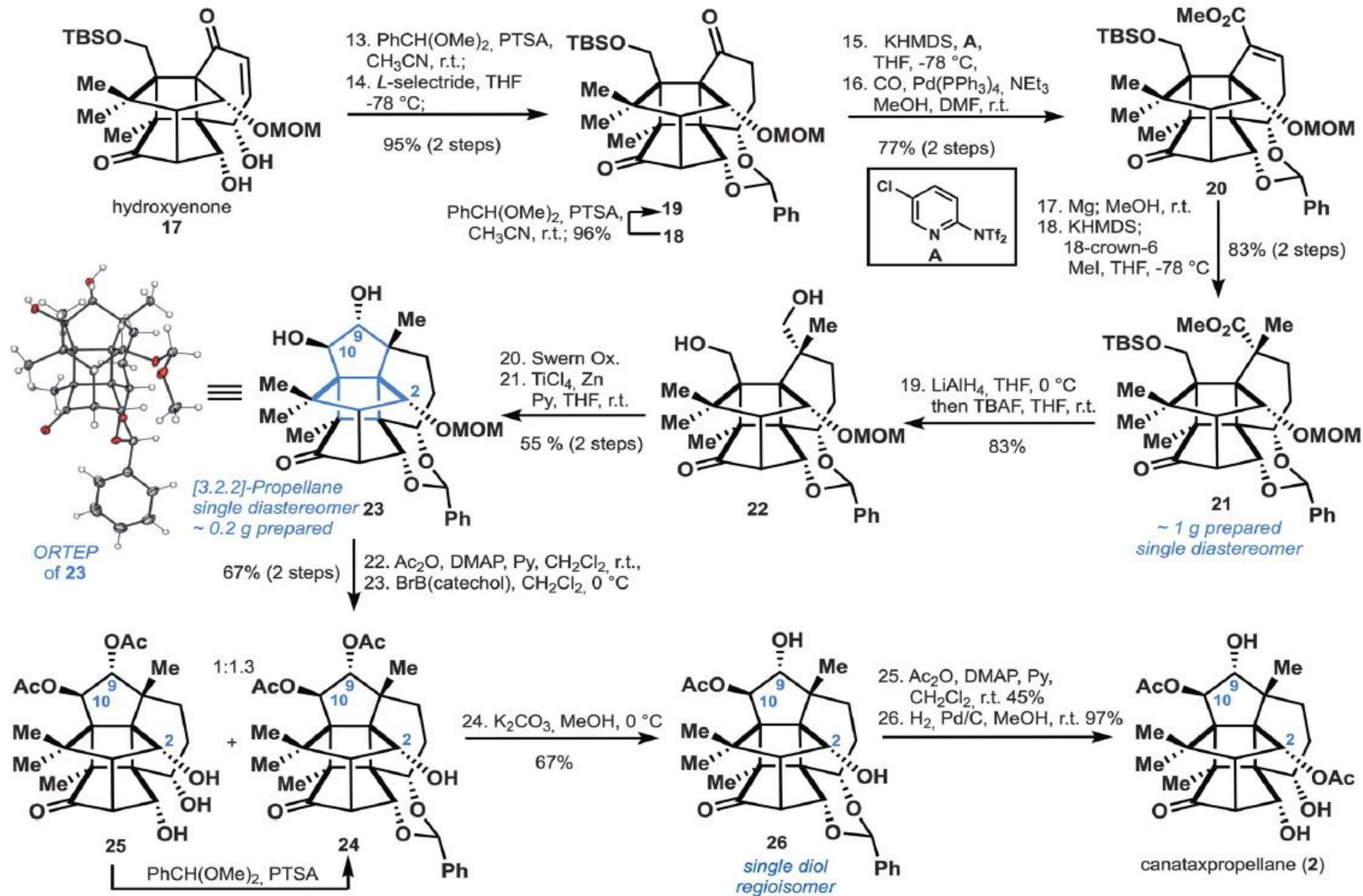


Singlecrystal x-ray analysis for 13



Singlecrystal x-ray analysis for 17

Part II: B-ring elaboration, pinacol coupling, and end to game (2)



Access to enantiopure key intermediate (-)-9 and (-)-13 for the enantiopure synthesis of (-)-2

