

Problem Session (2) -Answer

2022/11/12 Lin Yuanqi

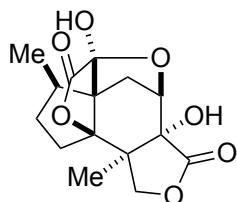
Topic: Works by Ryan A. Shenvi

Introduction

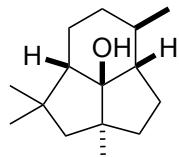
1999-2003: B.S., Pennsylvania State University (R.L. Funk)
 2003-2008: Ph.D., The Scripps Research Institute (P.S. Baran)
 2008-2010: NIH Postdoctoral Fellow, Harvard University (E.J. Corey)
 2010-2014: Assistant Professor, The Scripps Research Institute
 2014-2019: Associate Professor, The Scripps Research Institute
 2019-present: Professor, The Scripps Research Institute



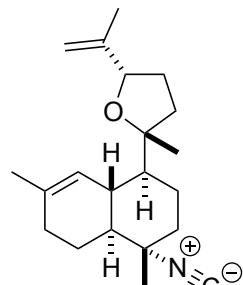
Total synthesis:



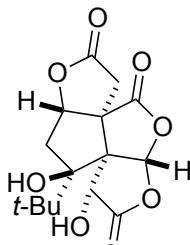
(-) -jiadifenolide
160806_PS_Koichi_Hagiwara



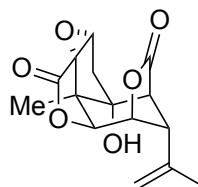
(-) -presilphiperfolan-8-ol
171125_PS_Daiki_Kuwana



kalihinol
181112_PS_Kohei_Ogino



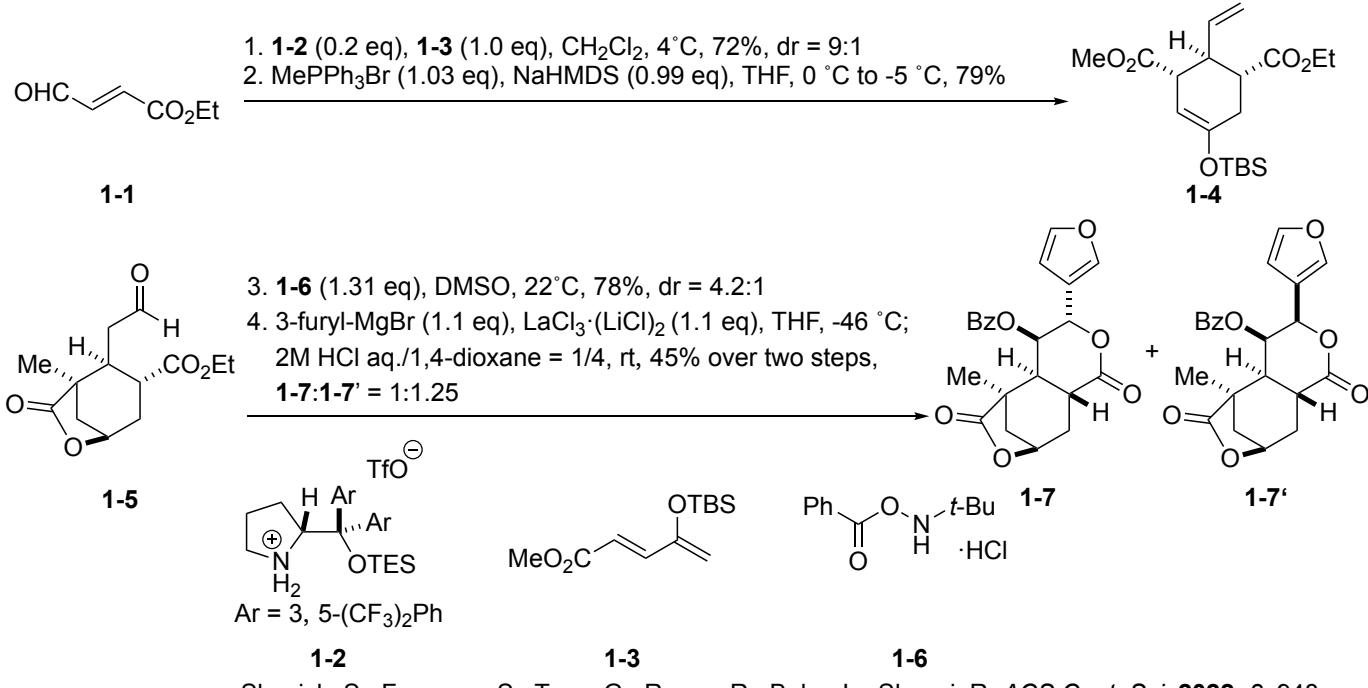
bilobalide
191102_PS_Yusuke_Imamura

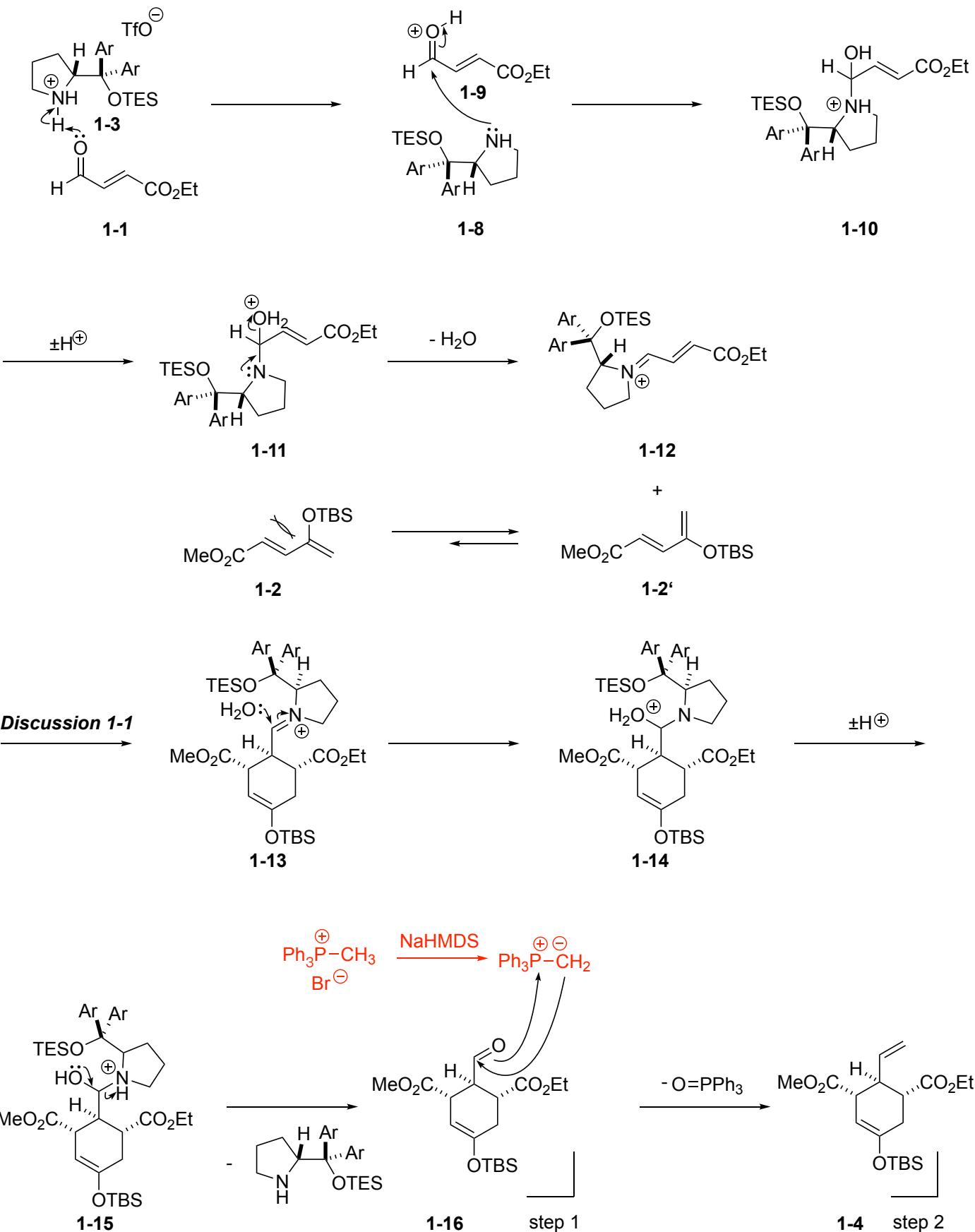


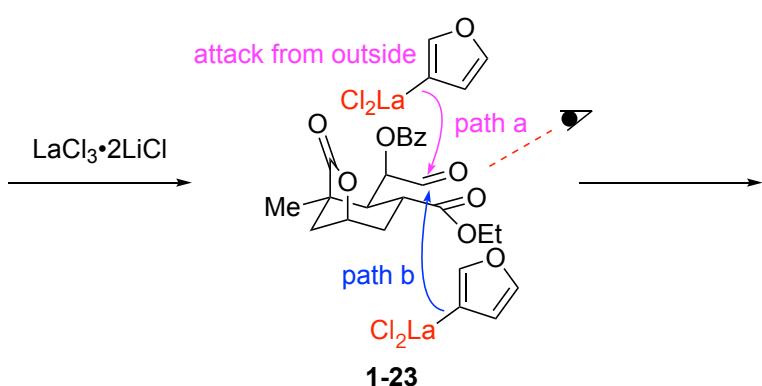
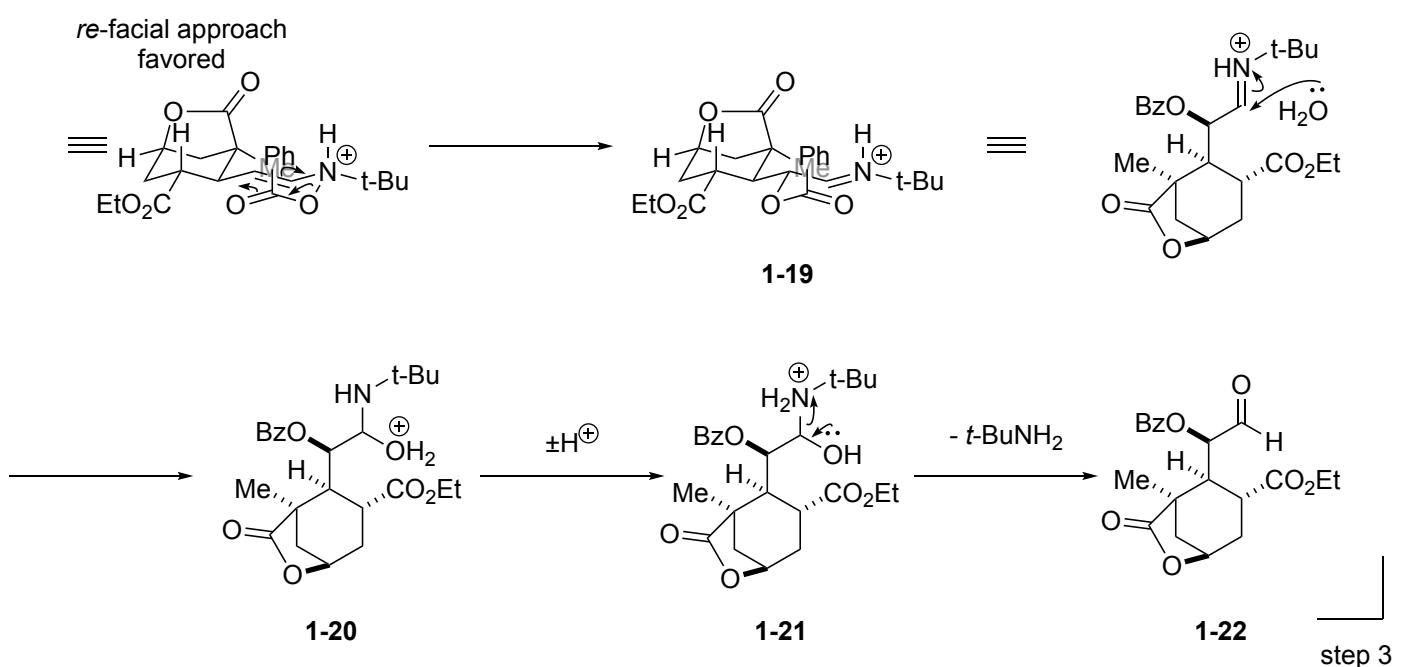
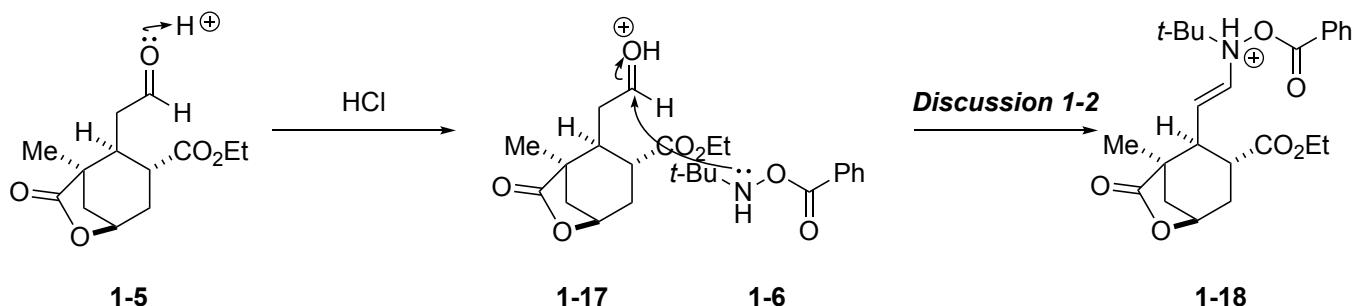
(-) -picrotoxinin
211023_LS_Kimiko_Iwashita

Ryan's lab develops new chemistry to quickly access natural product chemical space and collaborates with biological labs to explore function.

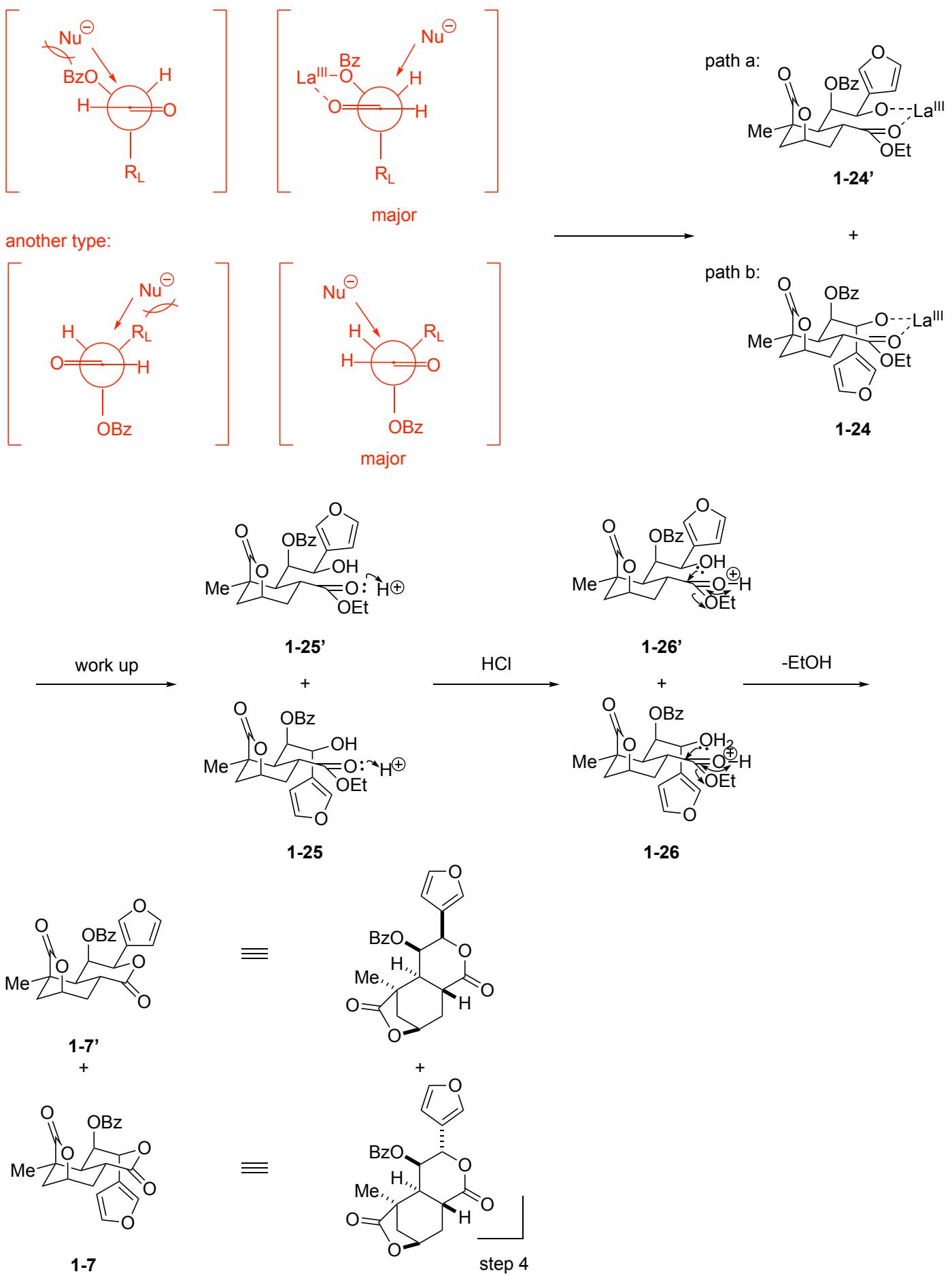
Problem 1





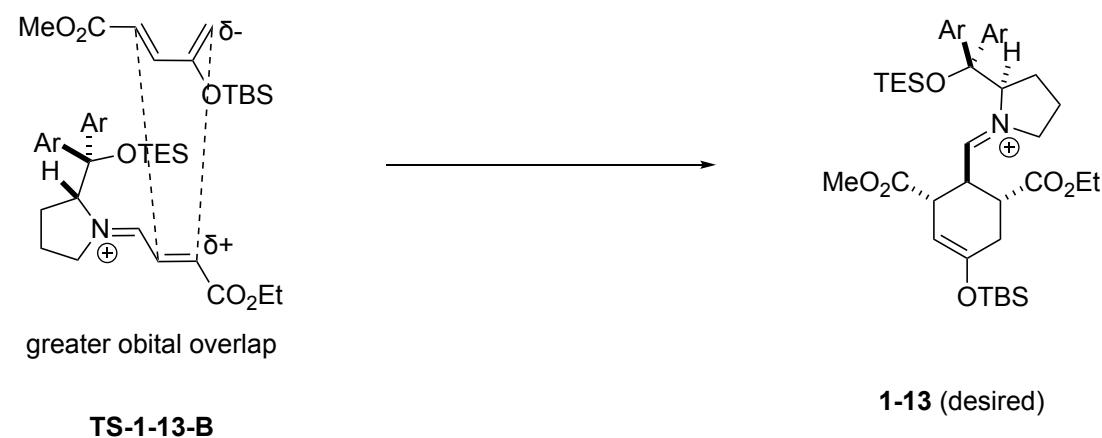
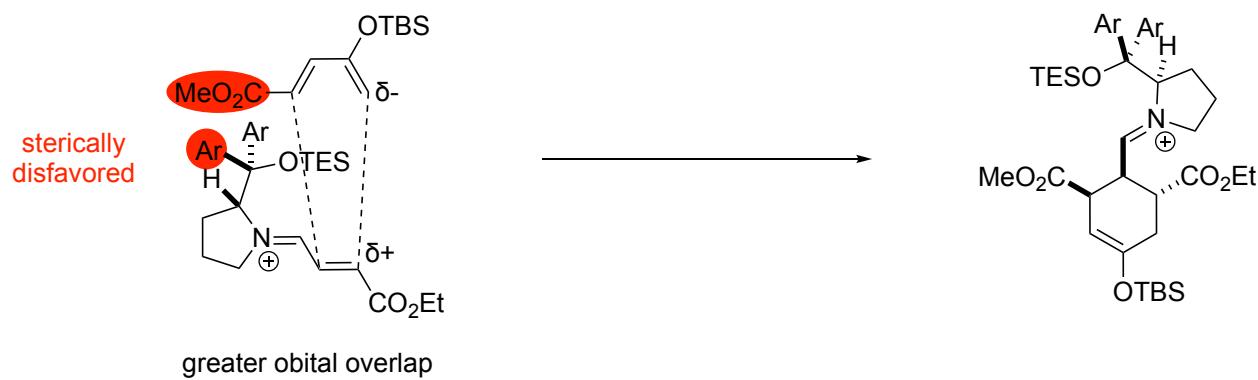
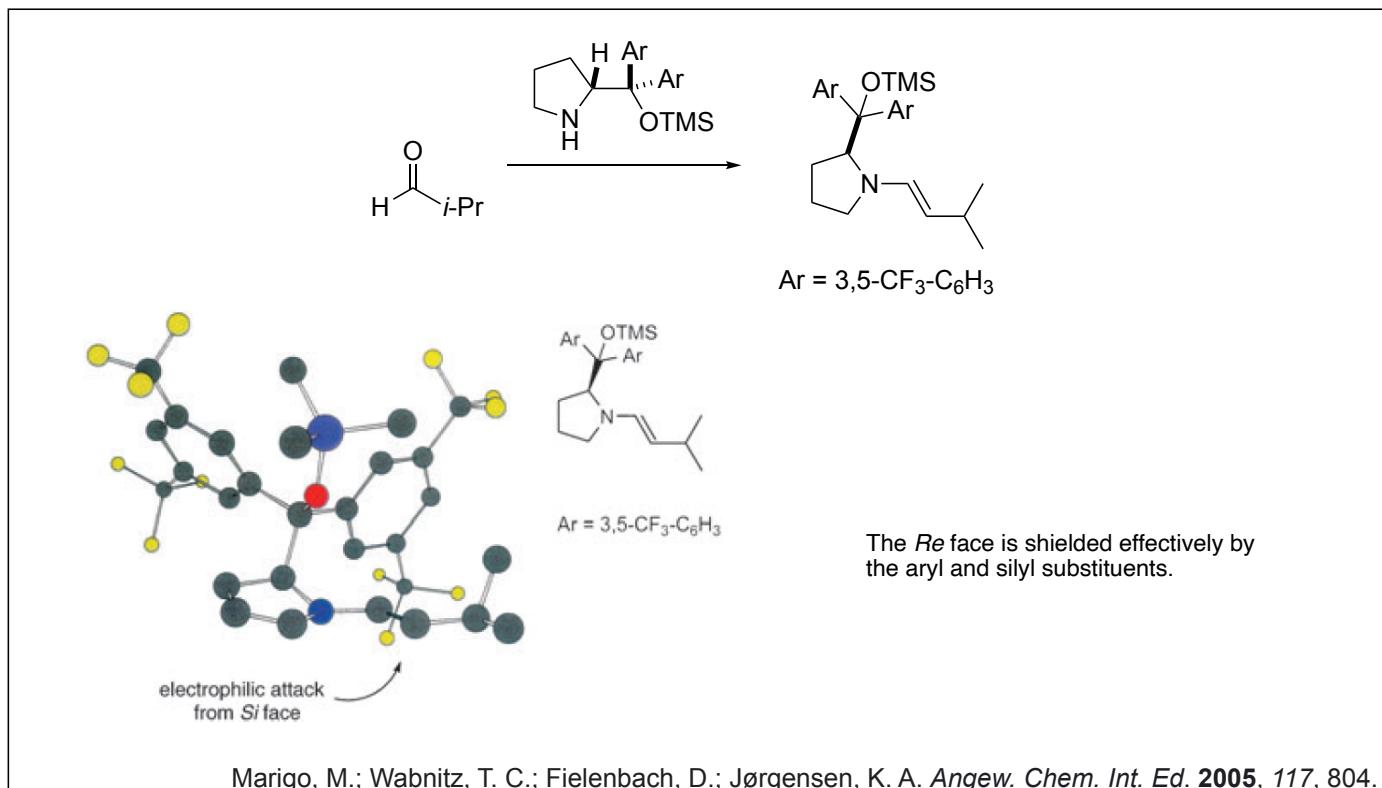


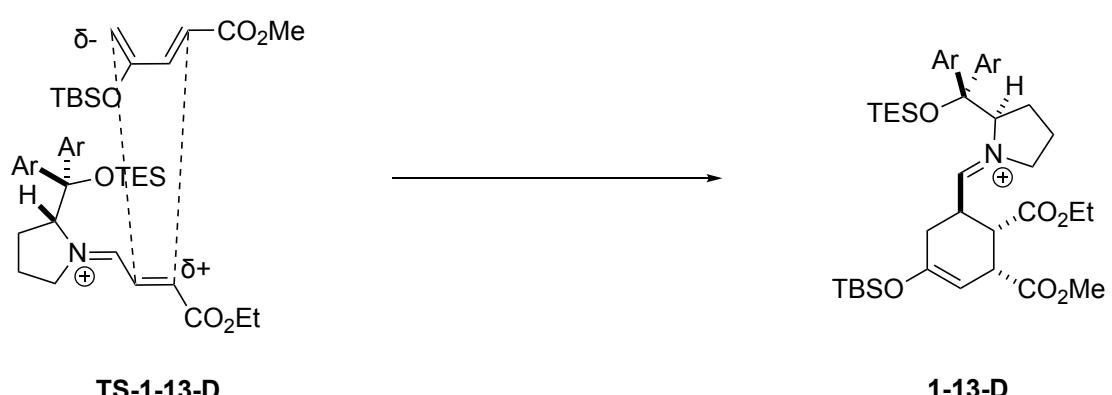
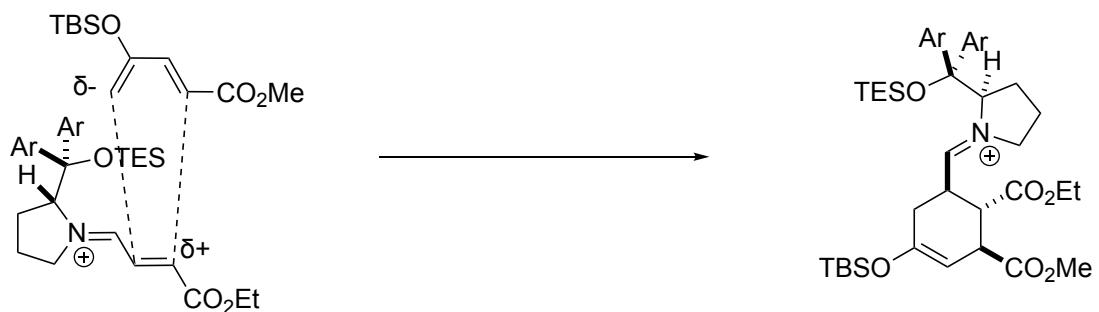
Felkin-anh model:



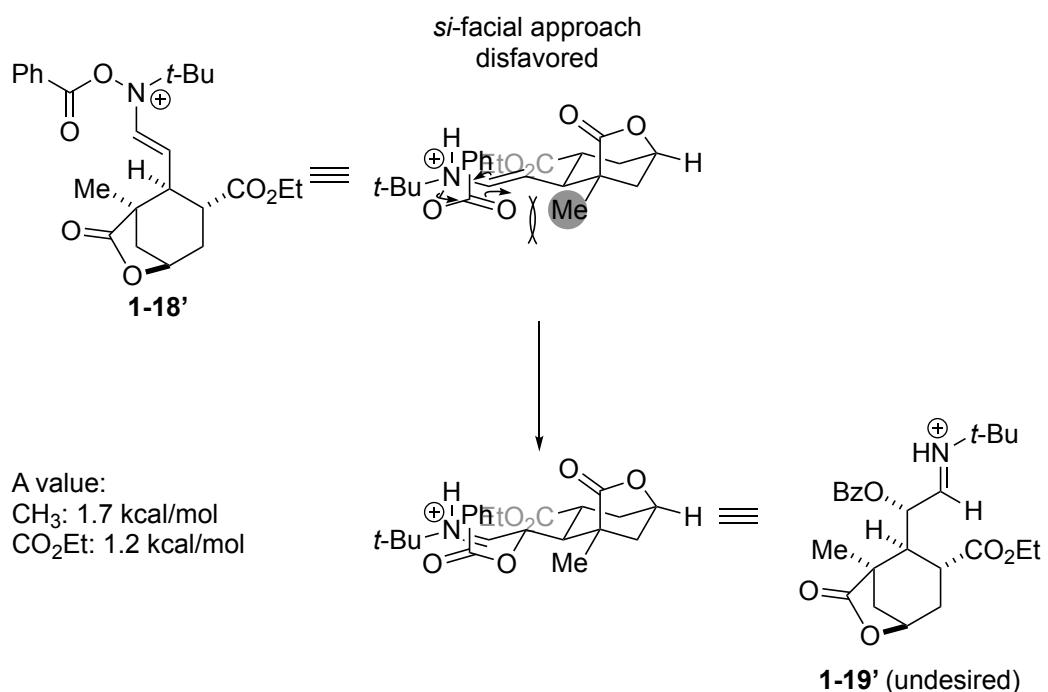
Discussion 1-1

Exo-selective, enantioselective Diels-alder reaction

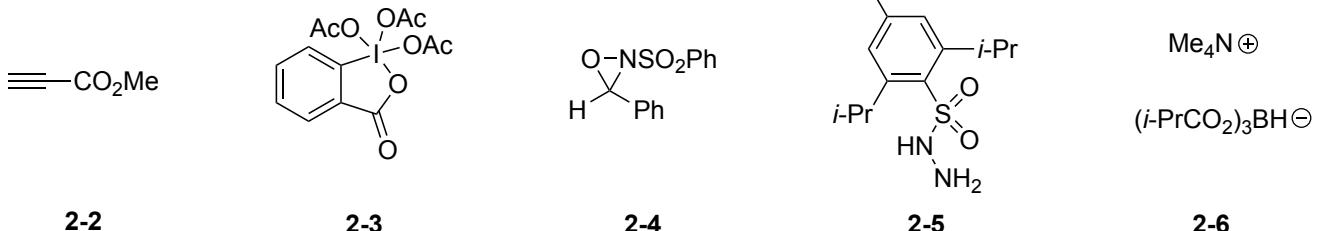
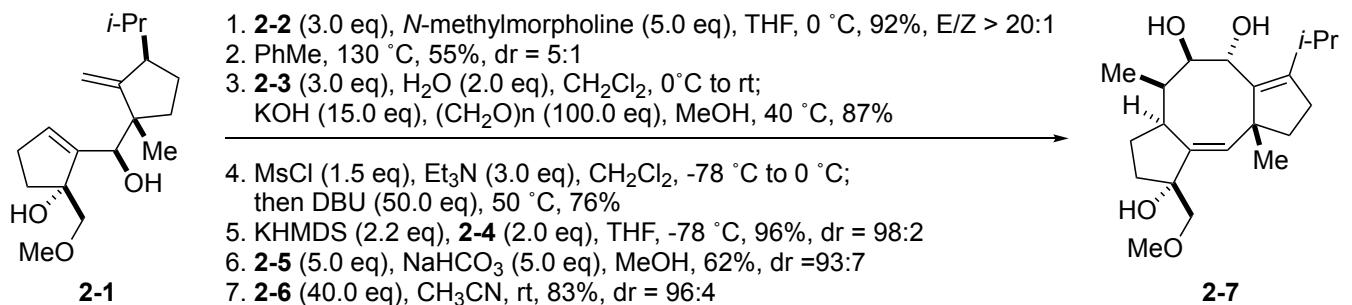




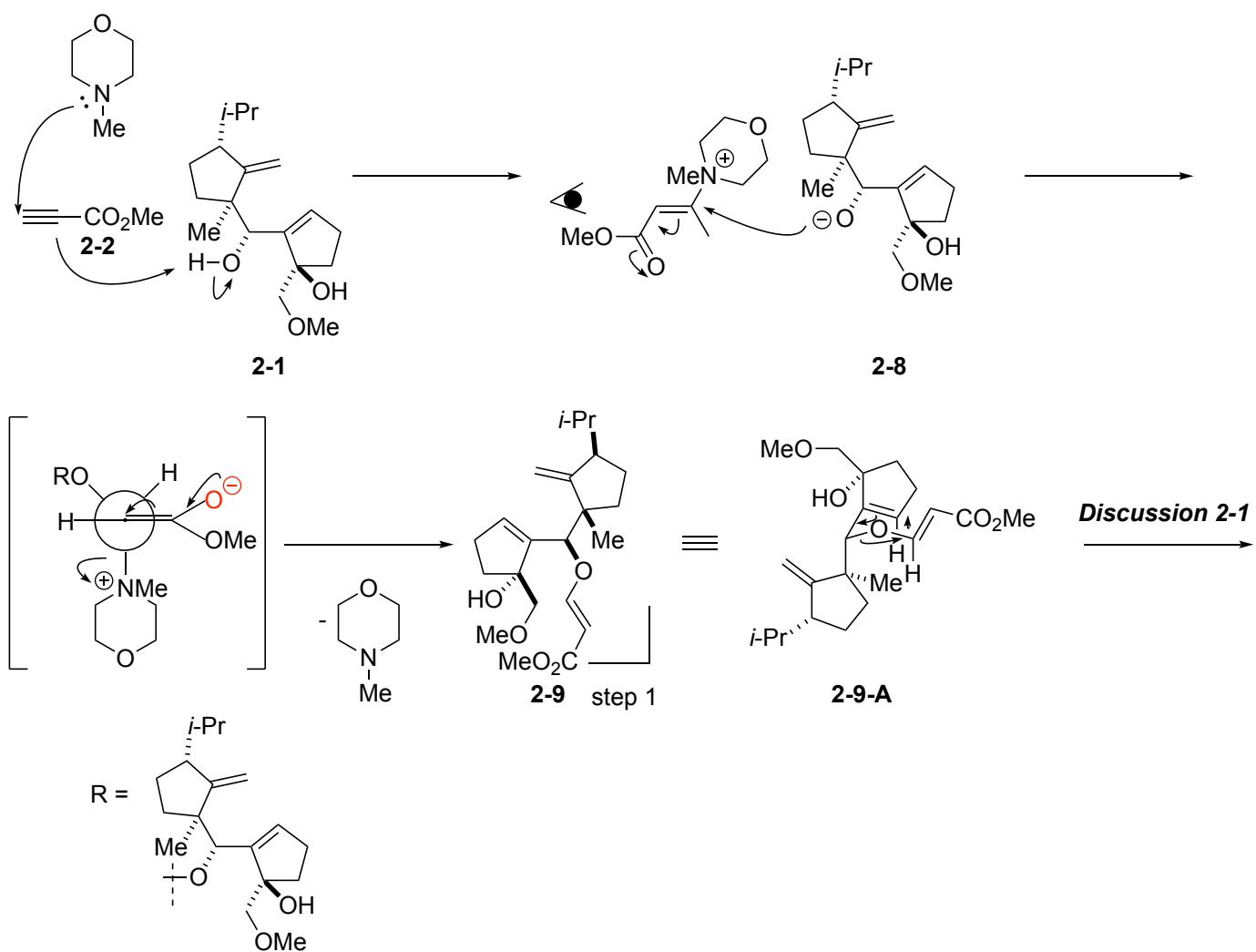
Discussion 1-2

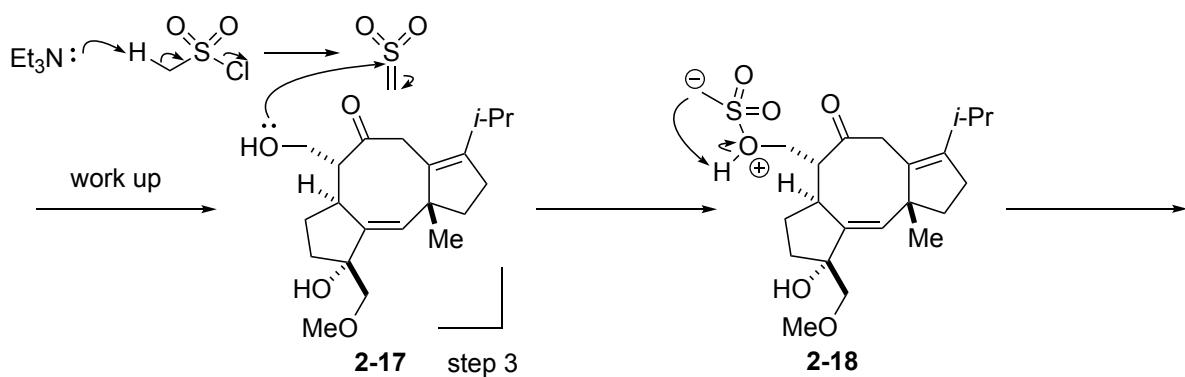
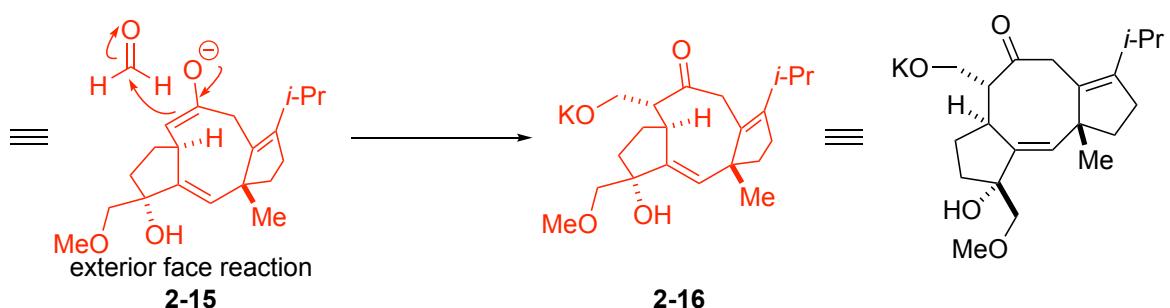
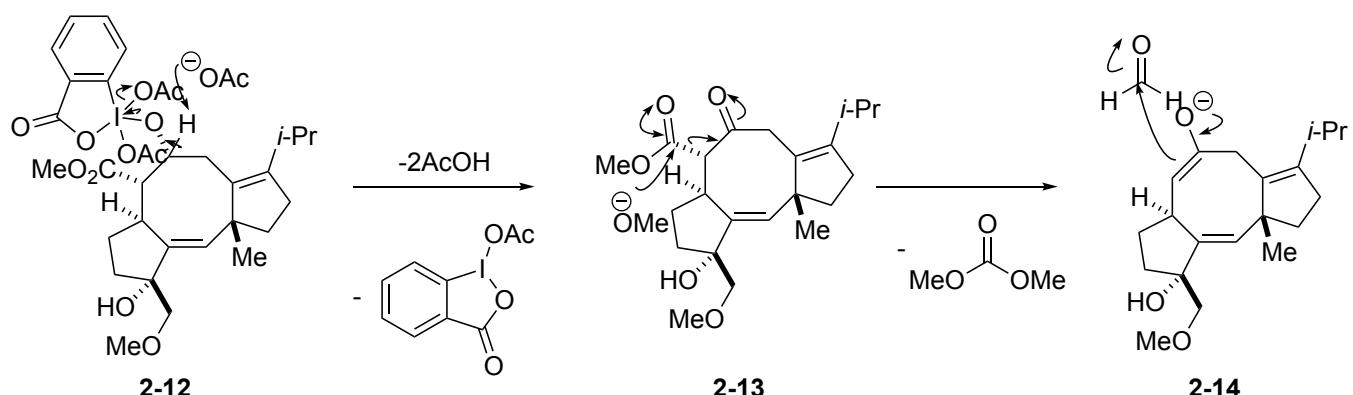
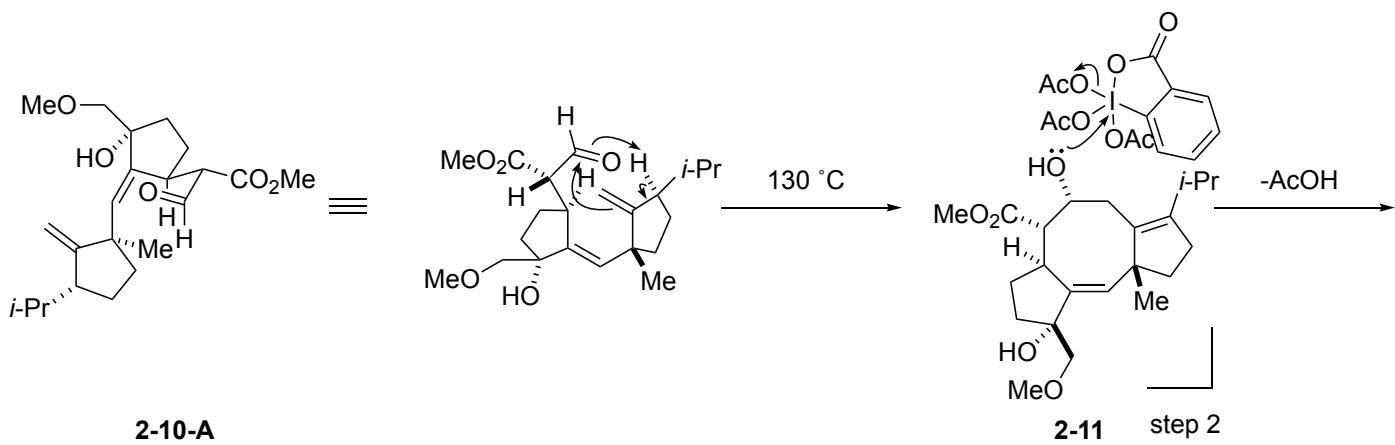


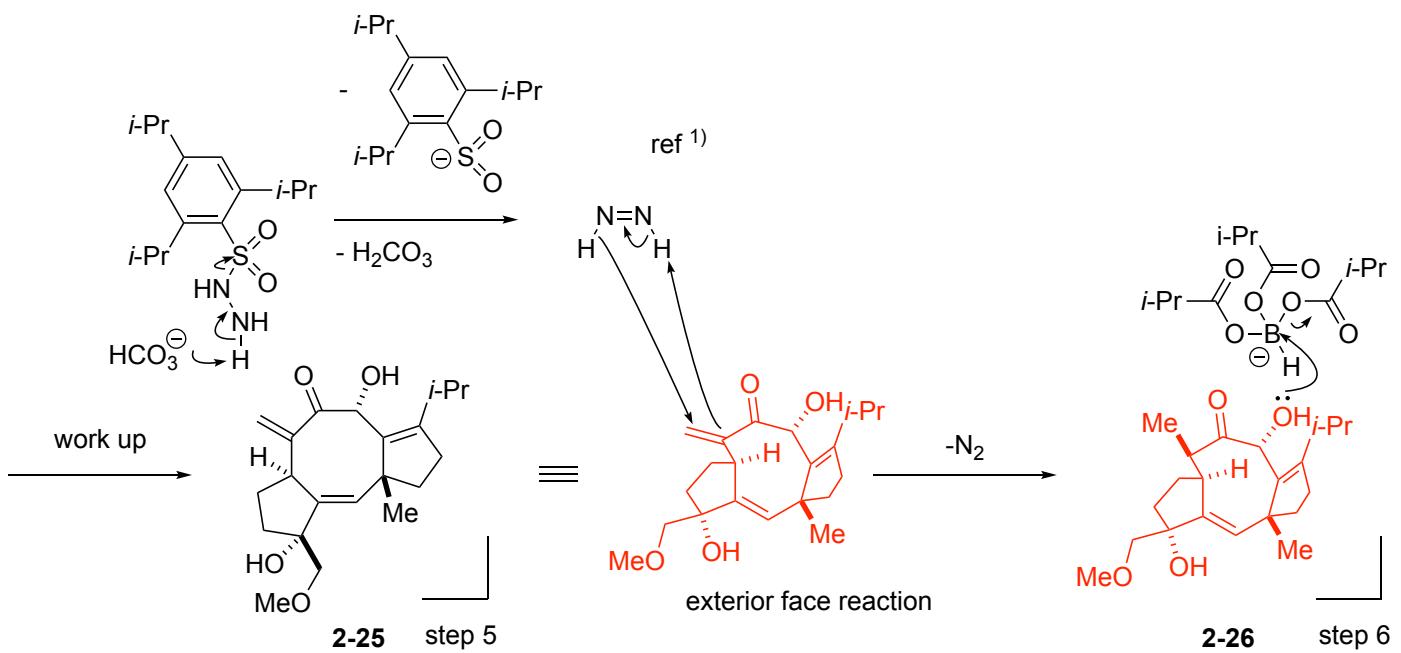
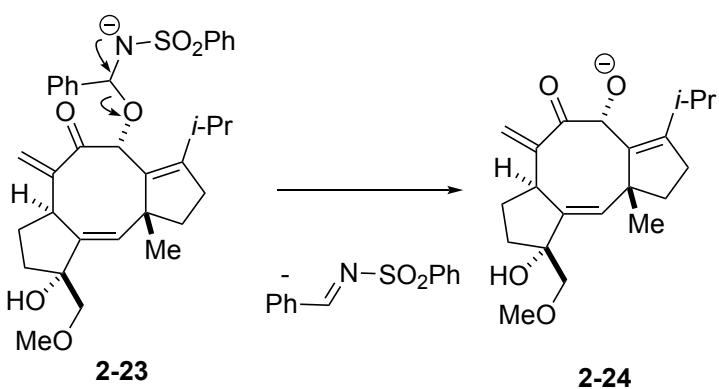
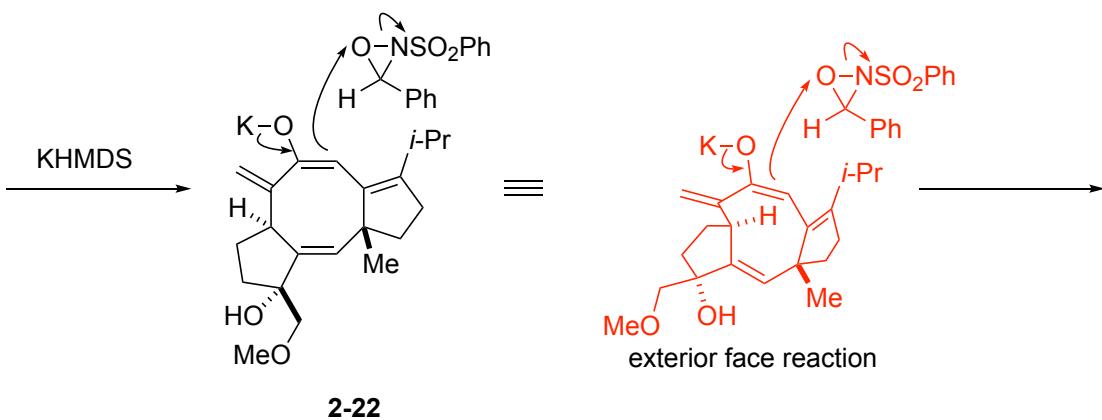
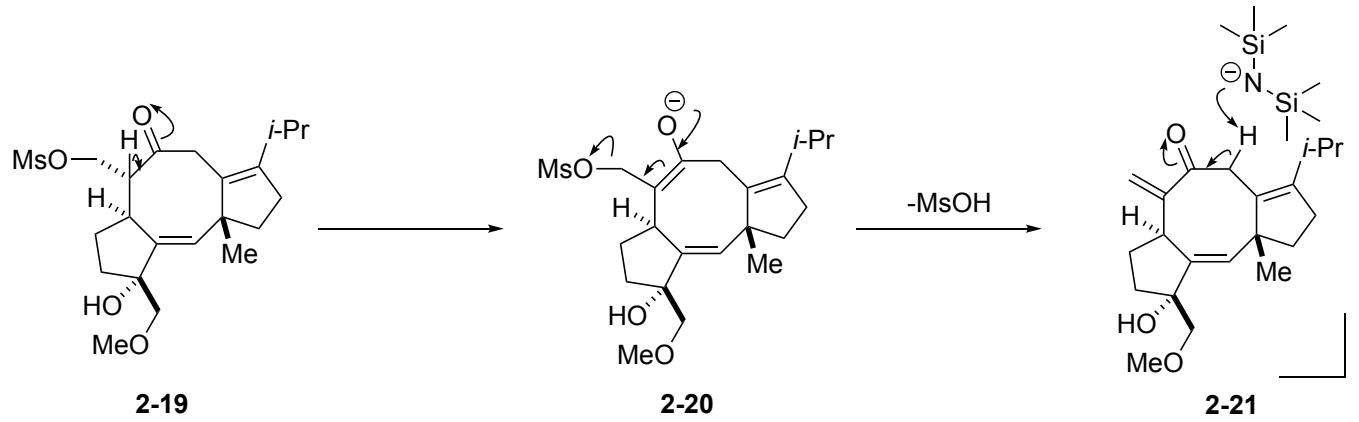
Problem 2

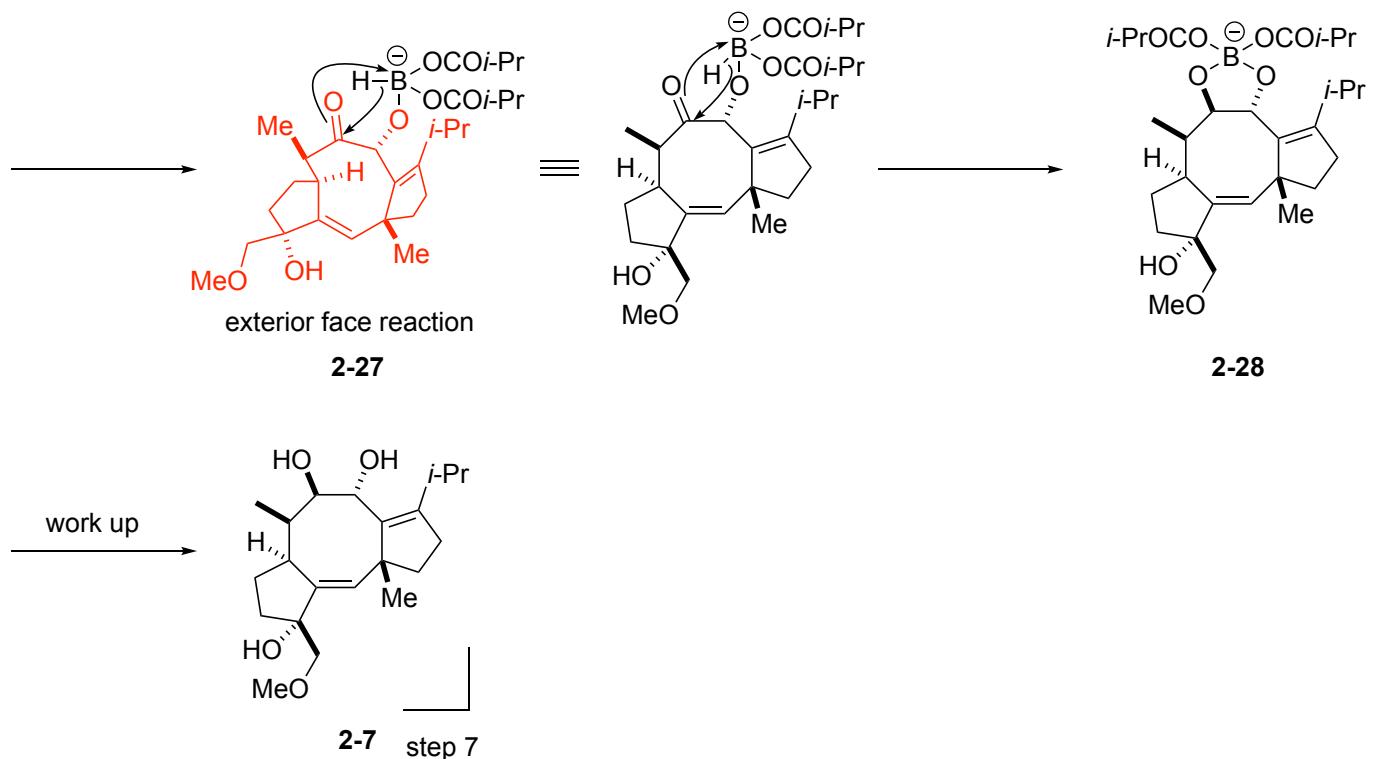


Huffman, T.; Kuroo, A.; Sato, R.; Shenvi, R. Concise synthesis of (-)-cotylenol, a 14-3-3 PPI molecular glue



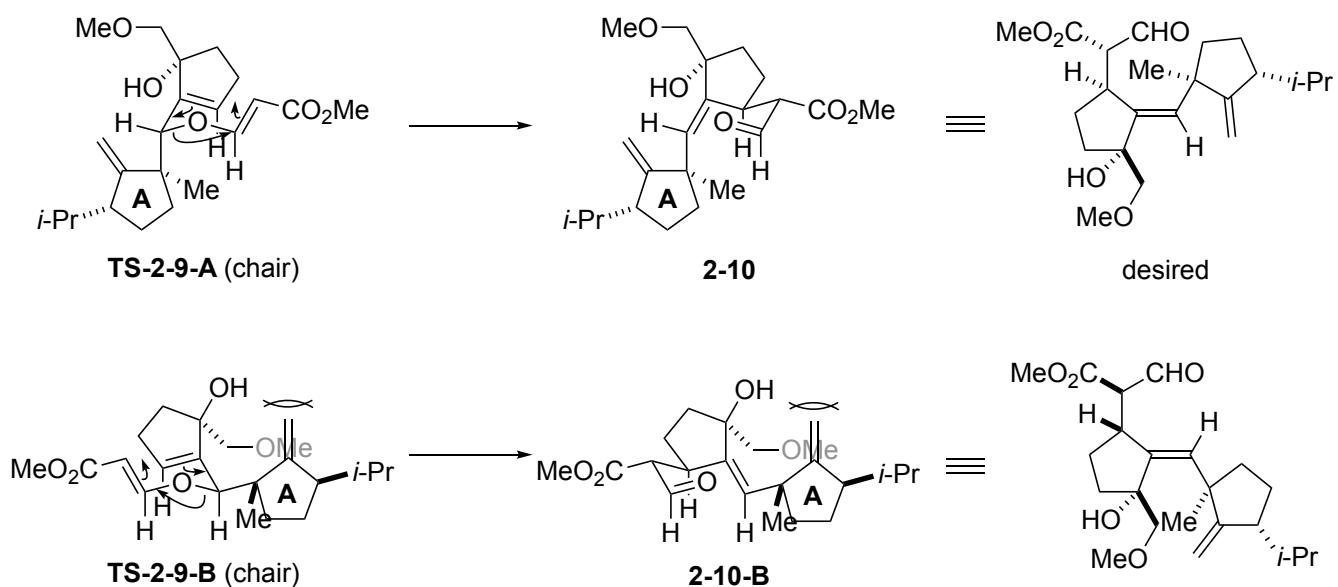


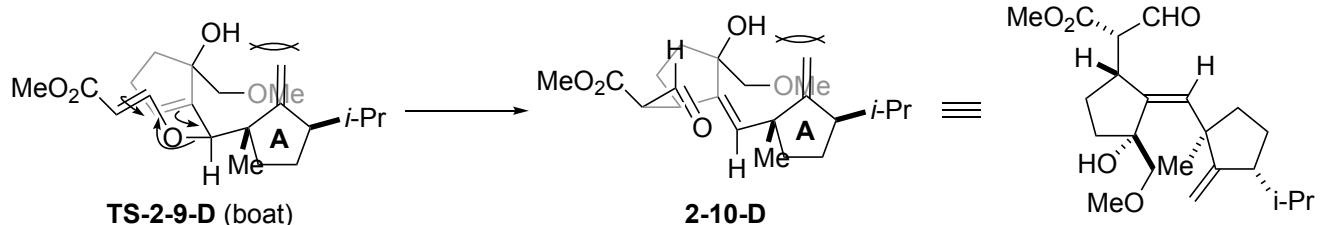
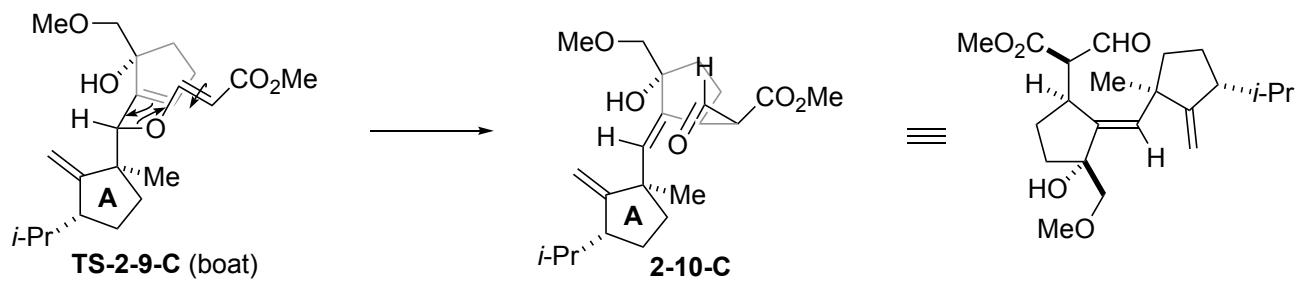




Discussion 2-1

Claisen rearrangement





The A_{1,2}-strain enforces a pseudo-axial orientation of A ring.

Reference

- Cusack, N. J.; Reese, C. B.; Risius, A. C.; Roozepeikar, B. *Tetrahedron*, **1976**, *32*, 2157.