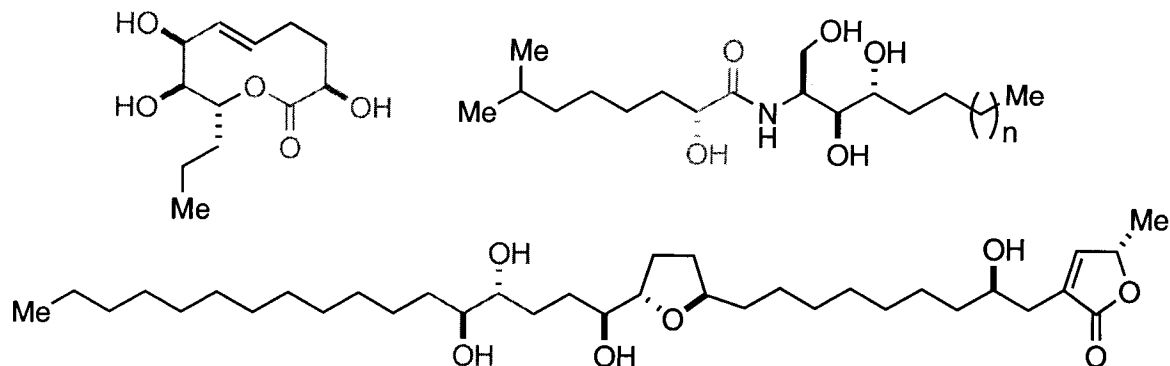
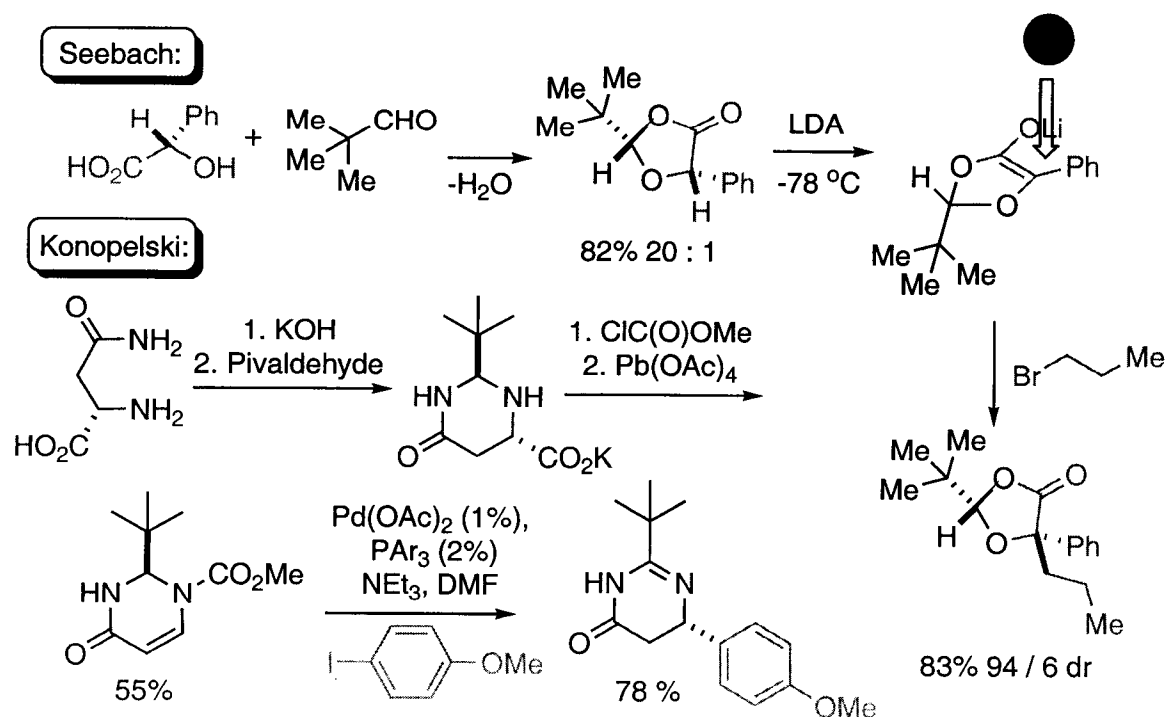


# Self-Reproduction of Chirality: Development and Application of Butane 2,3-Diacetals



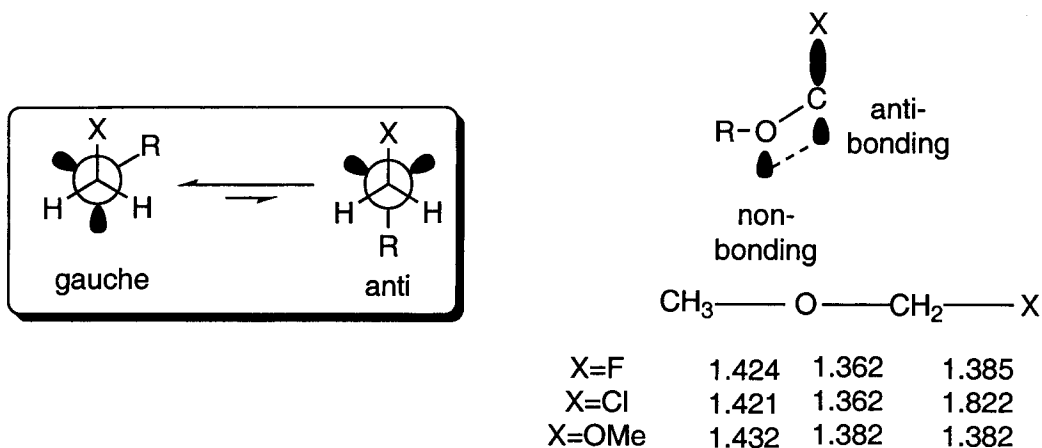
William Collins  
 SED Group Meeting  
 11-08-05

## Self-Reproduction of Chirality: Dioxolanones / Pyrimidinones

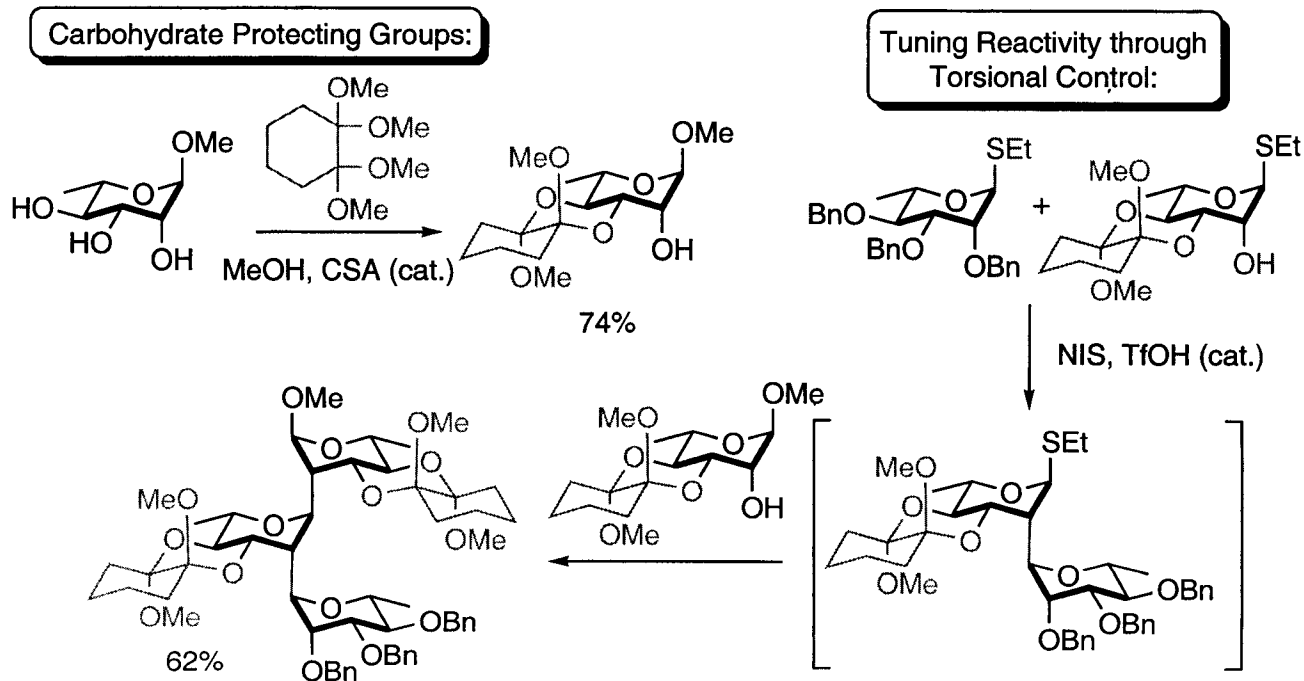


## Stabilization through the Anomeric Effect:

**Anomeric Effect: Orig.** thermodynamic preference for the axial conformer in an aglycon. **General.** Preference for synclinal (gauche) conformer of a fragment Y-C-X-C (where X and Y are O, N, or F).

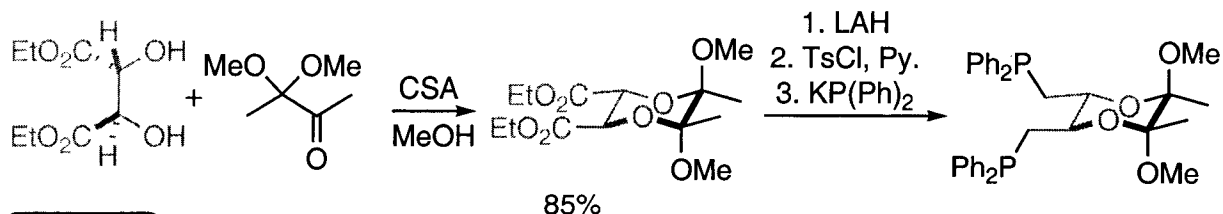


## Historical View of 1,2-Diacetals: Carbohydrate Chemistry

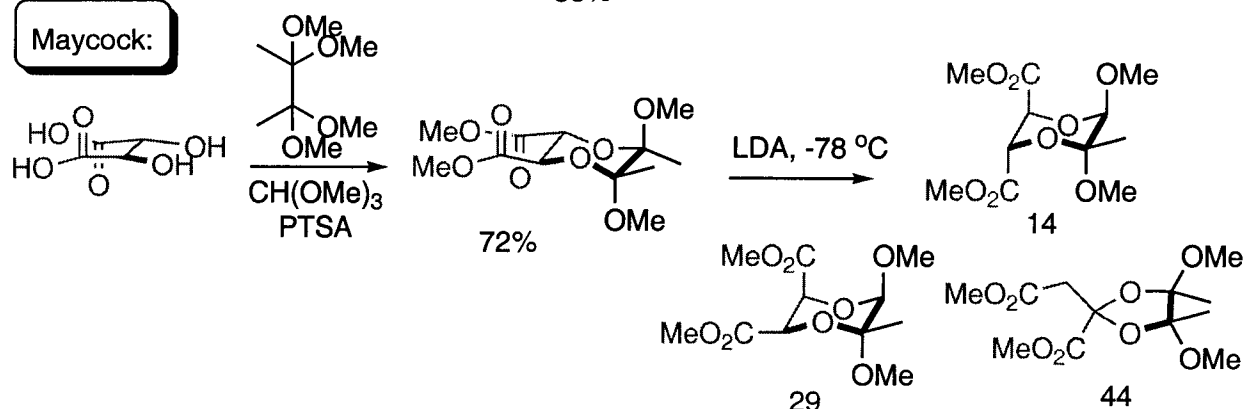


# Historical View of 1,2-Diacetals: Introduction of Butane Diacetals

**Barens:**

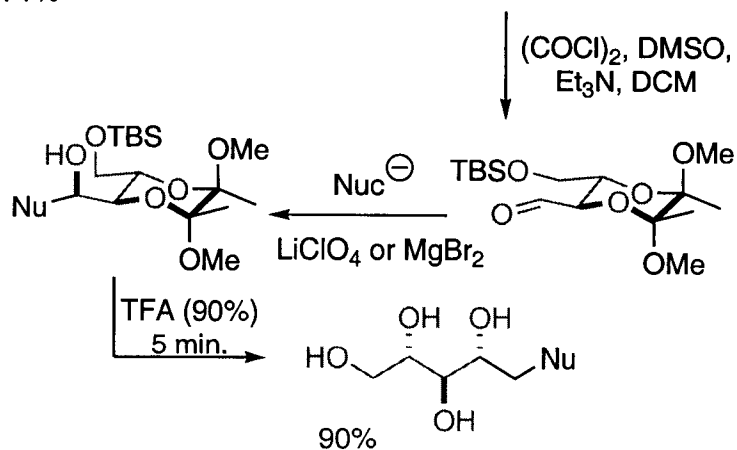
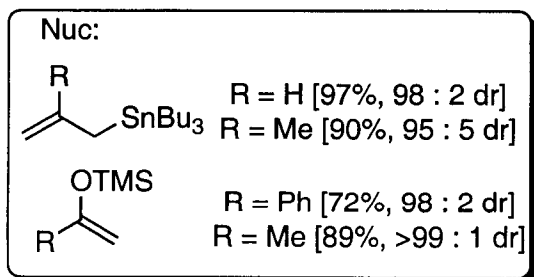
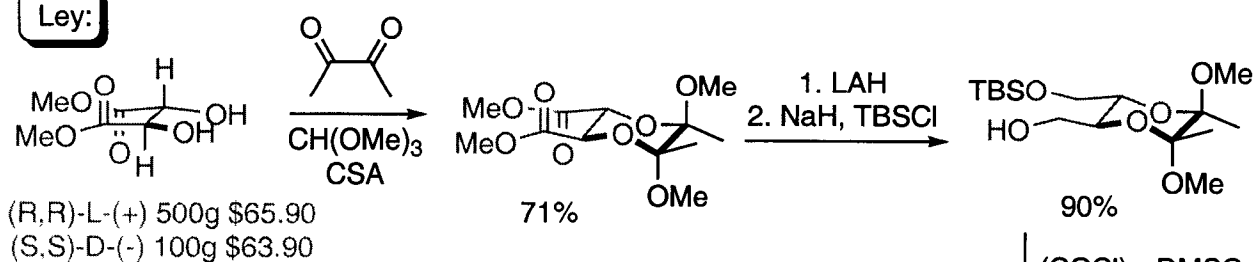


**Maycock:**

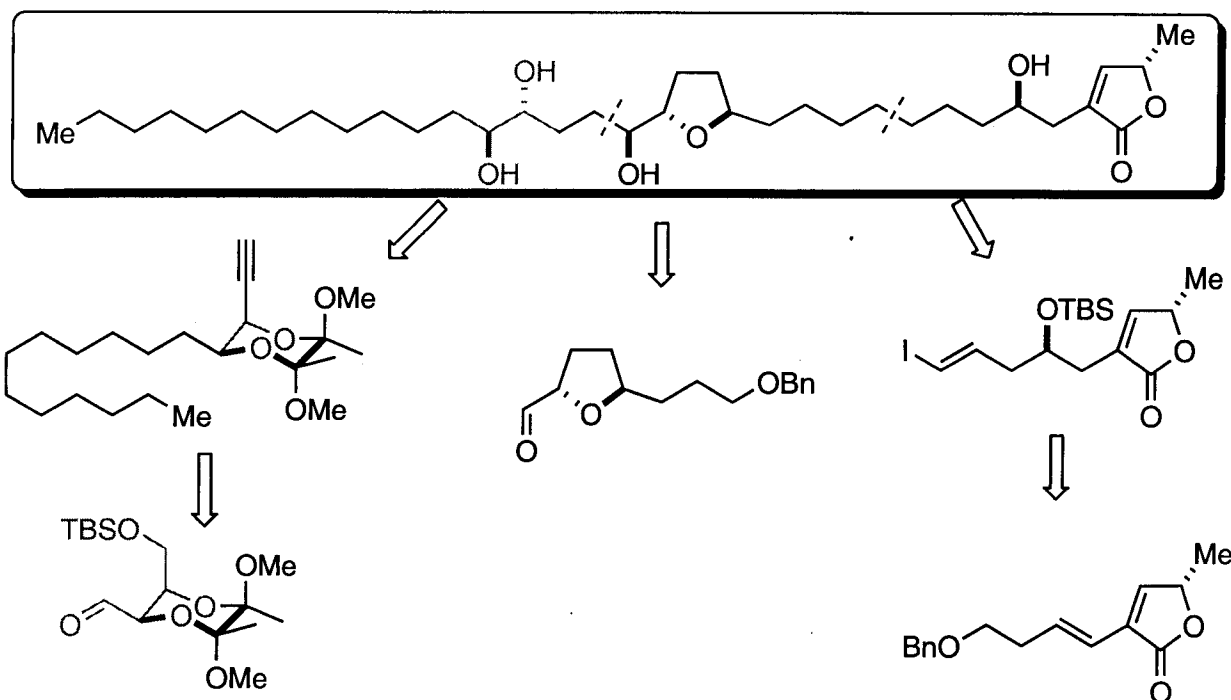


## Butane 1,2-Diacetal: The beginnings...

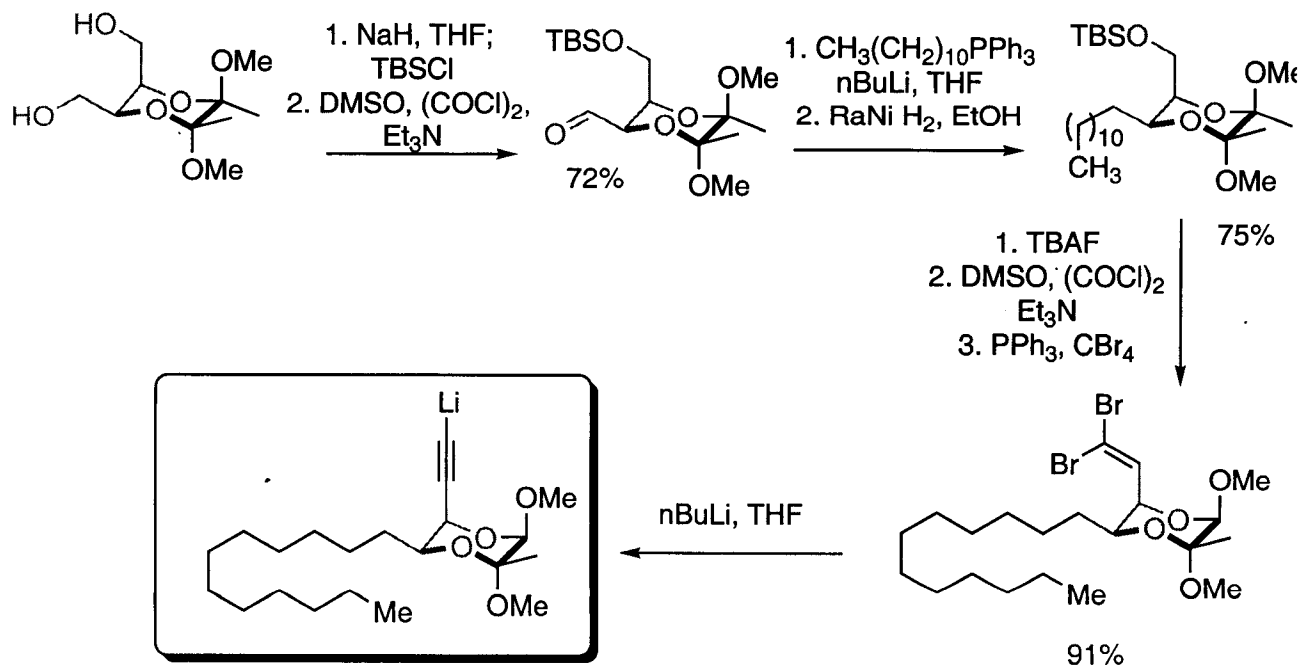
**Ley:**



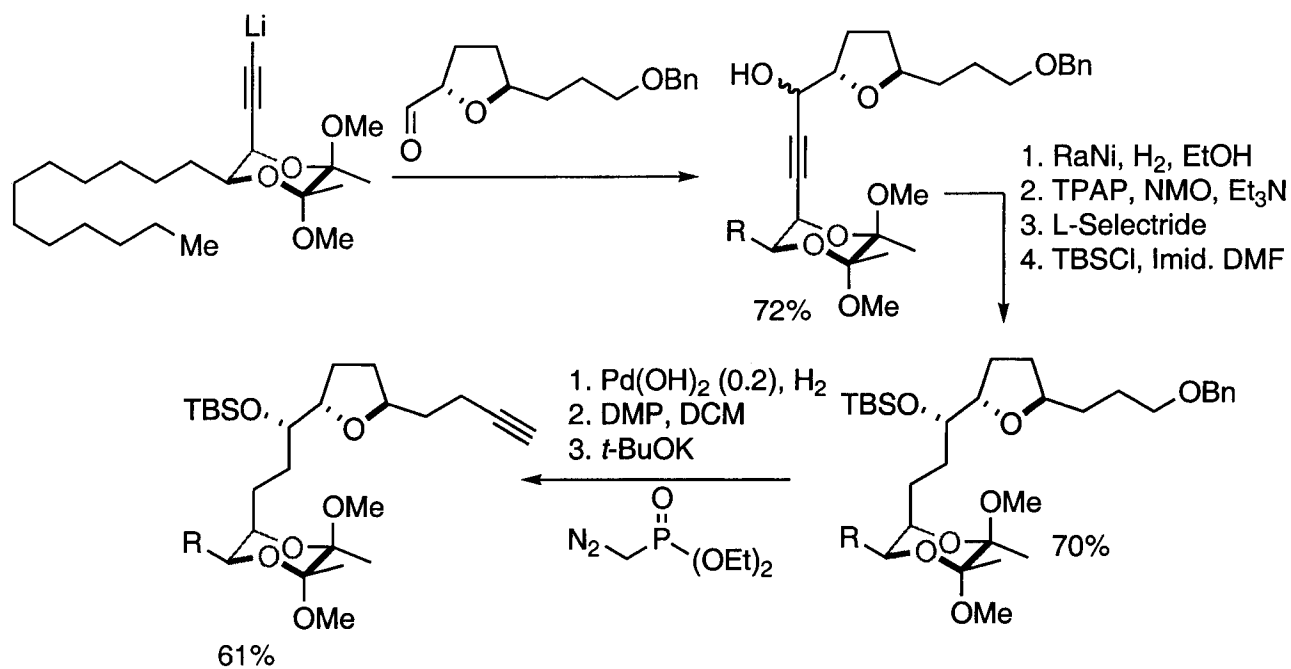
## Total Synthesis of Muricatetrocin C: Retrosynthesis



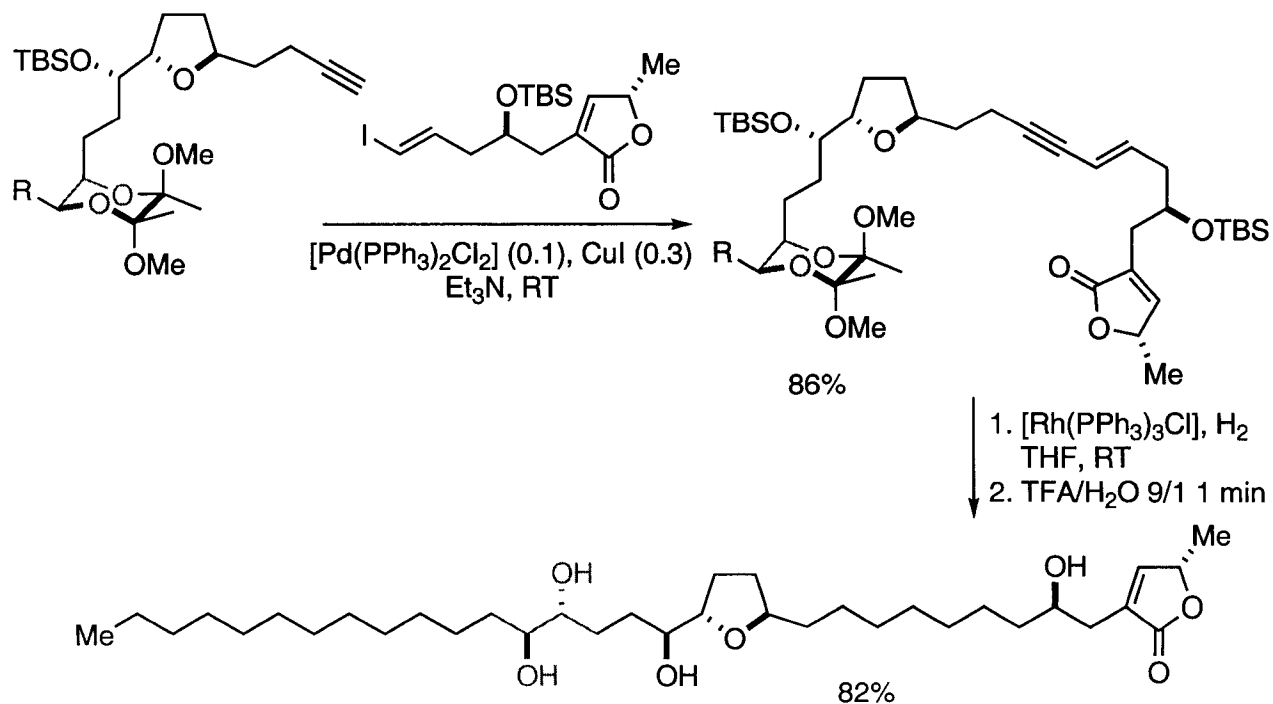
## Total Synthesis of Muricatetrocin C: West Fragment



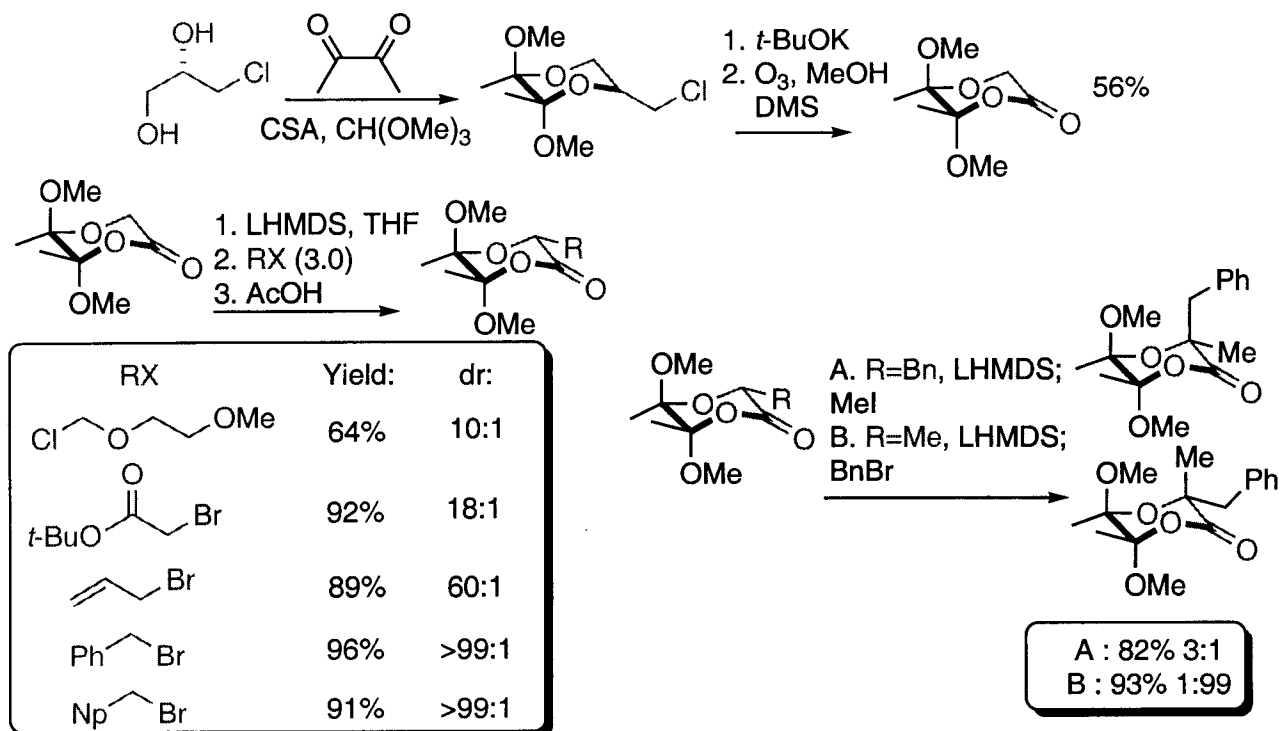
## Total Synthesis of Muricatetrocin C: End Game



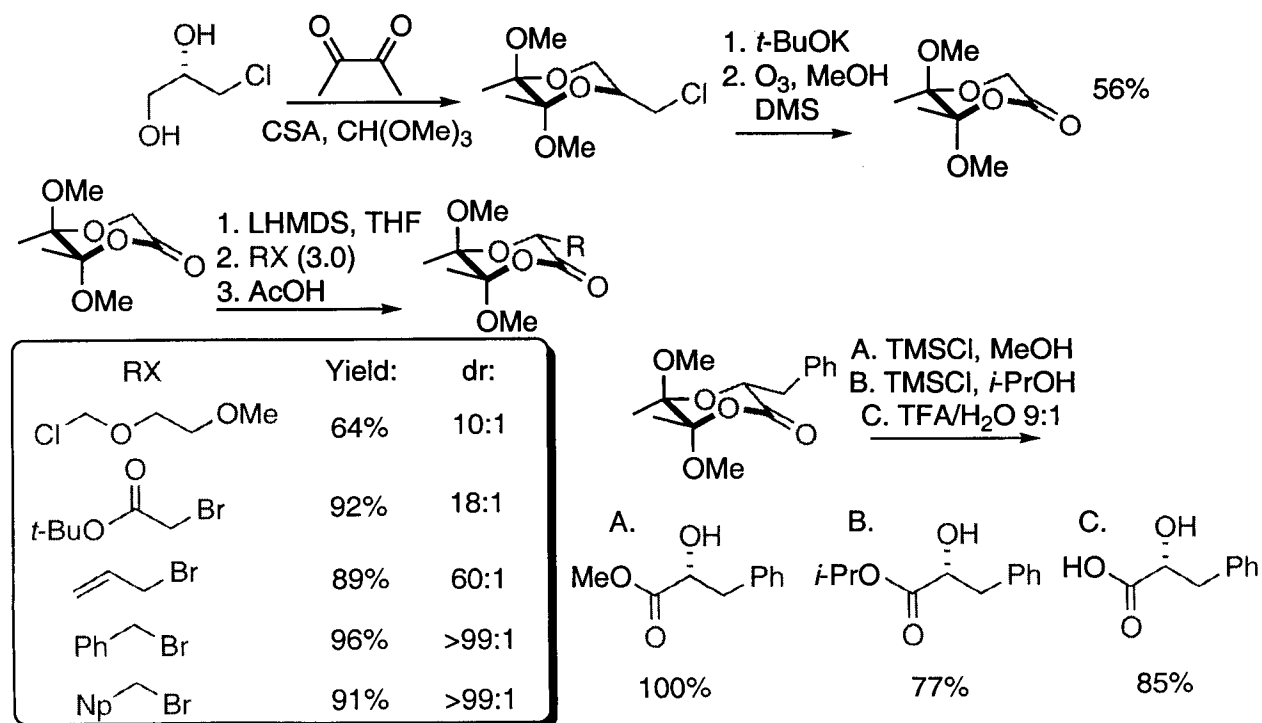
## Total Synthesis of Muricatetrocin C: End Game



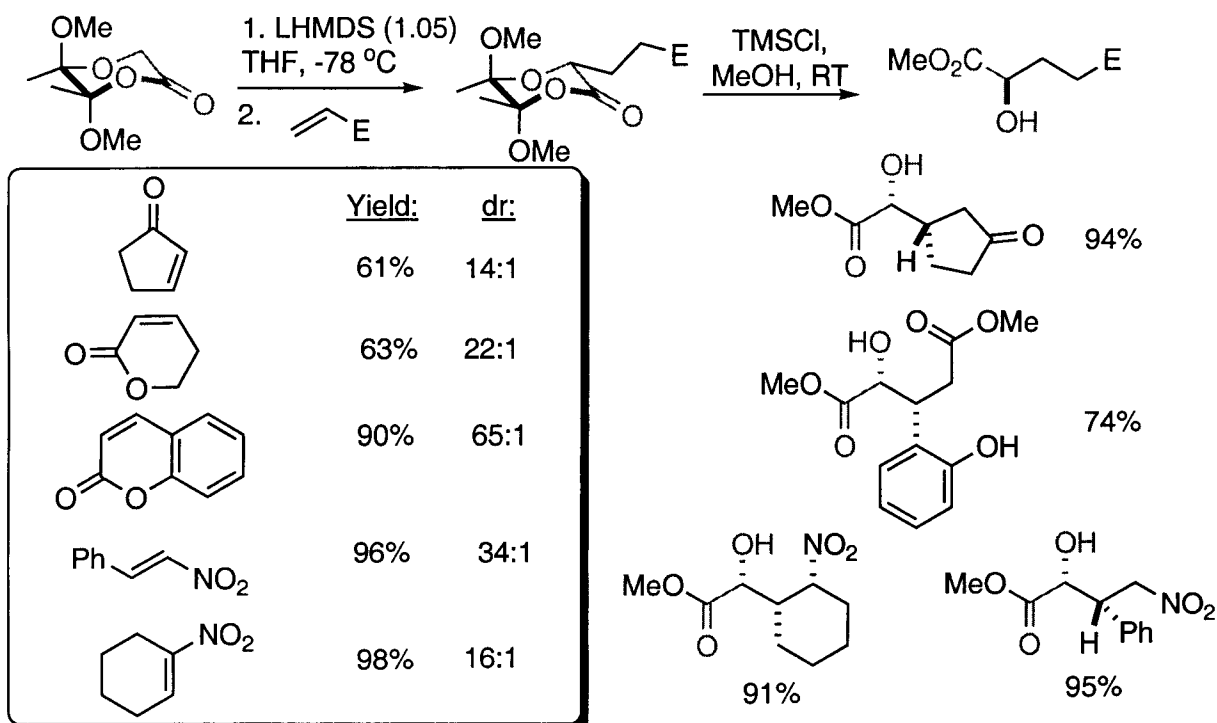
## Butane 2,3-Diacetal Desymmetrized Glycolic Acid:



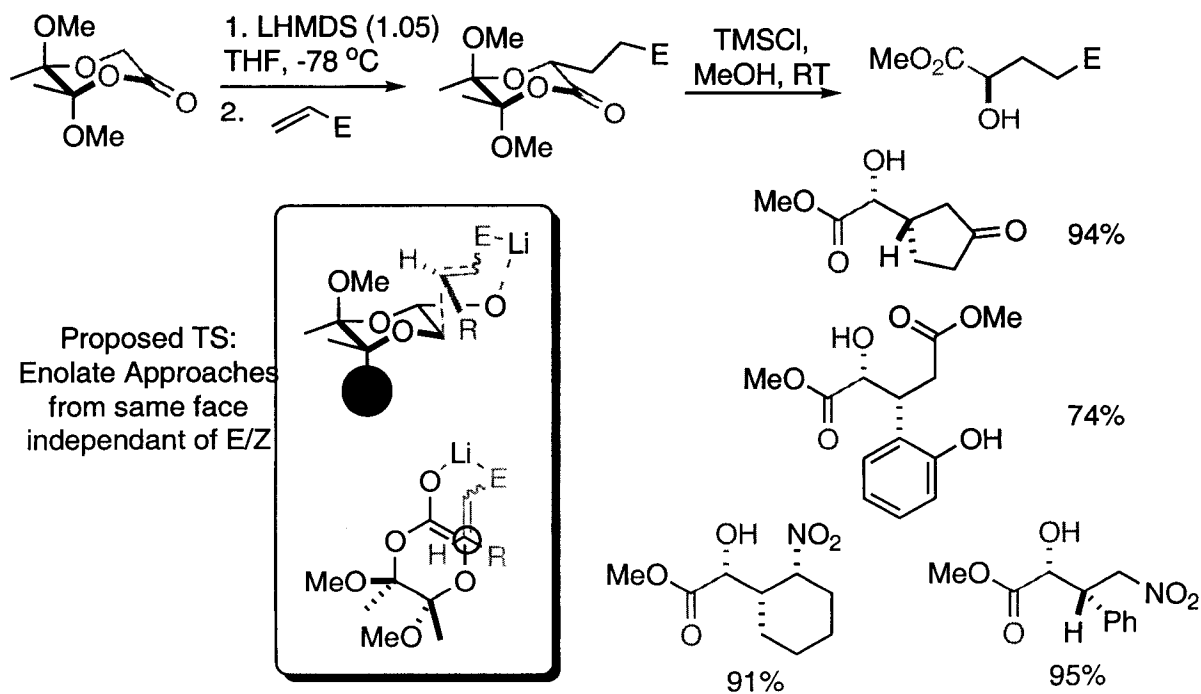
## Butane 2,3-Diacetal Desymmetrized Glycolic Acid: Alkylation



## Butane 2,3-Diacetal Desymmetrized Glycolic Acid: Conjugate Add.



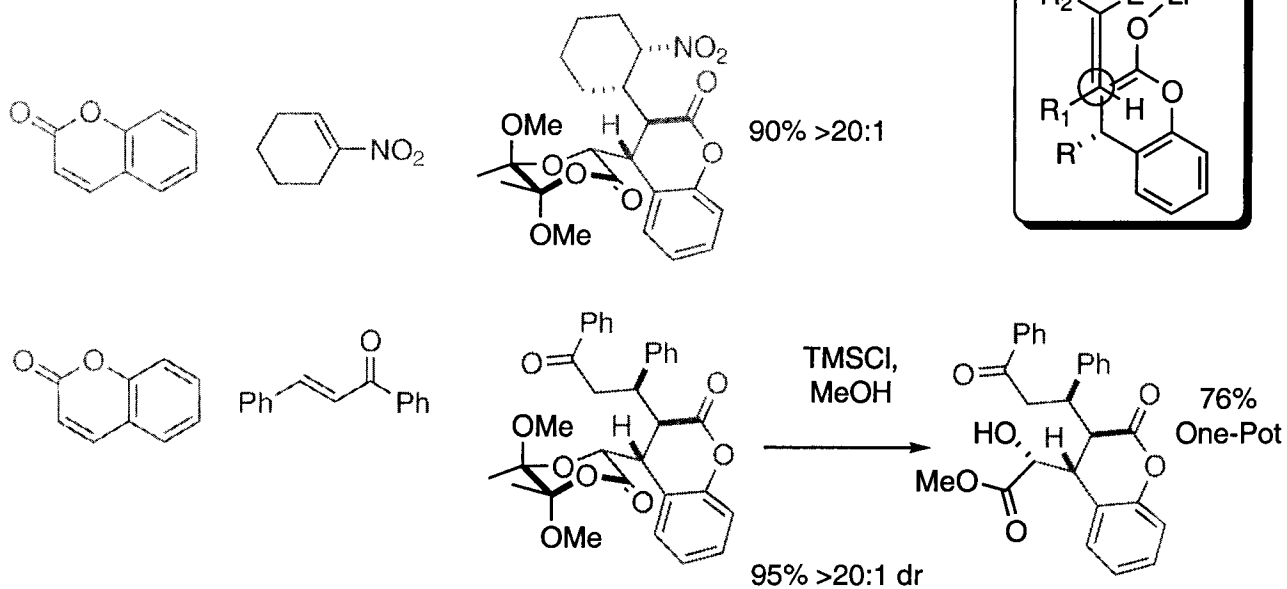
## Butane 2,3-Diacetal Desymmetrized Glycolic Acid: Conjugate Add.



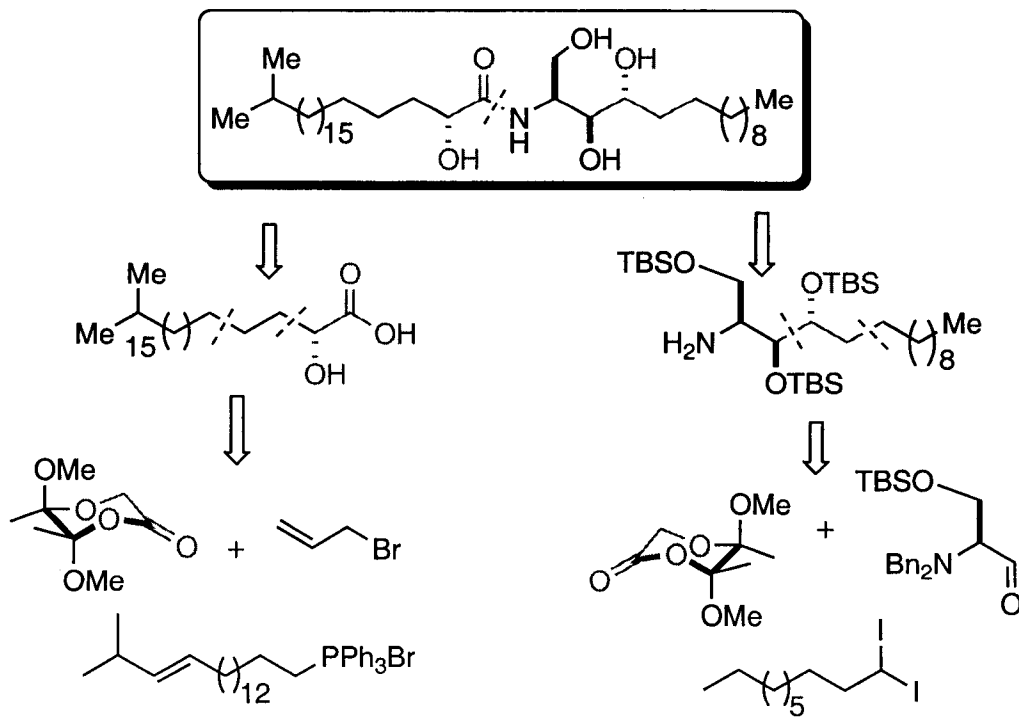
# Butane 2,3-Diacetal Desymmetrized Glycolic Acid: Domino Rxns

Michael-Conjugate:

Proposed TS:

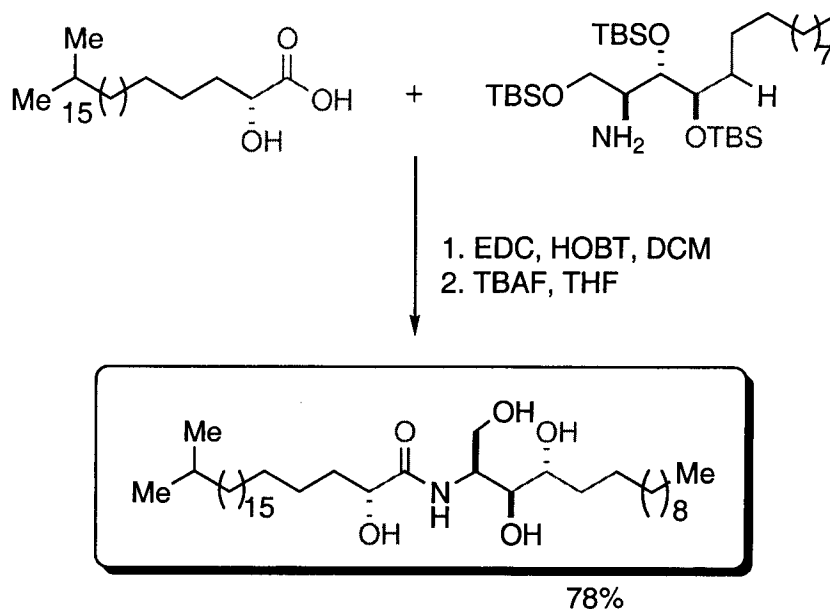


# Total Synthesis of a Ceramide Sphingolipid:



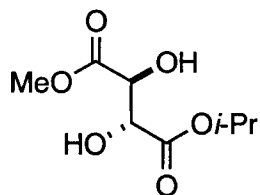


# Total Synthesis of a Ceramide Sphingolipid: End Game

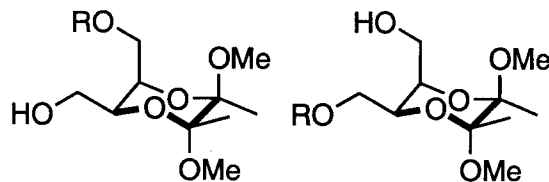


## Summary

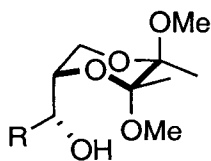
Desymmetrisation of Tartaric Acid:



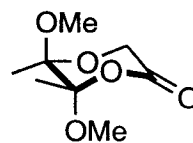
Prep of anti-1,2 Diols/Triols/Tetrols:



Glyceraldehyde Equiv.



Glycolic Acids: Aldol, Conjugate Add.



# Application of 2,3-Butane Diacetals; Self-Reproduction of Chirality.

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