

Massachusetts Institute of Technology

Organic Chemistry 5.512

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Strategies for Stereocontrolled Synthesis

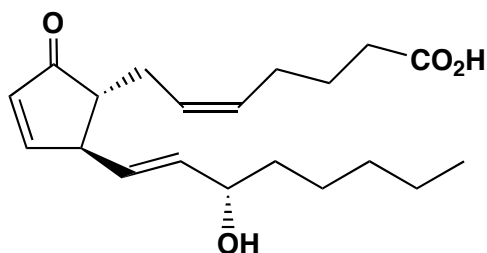
Case Study #2

Total Synthesis of Prostaglandins

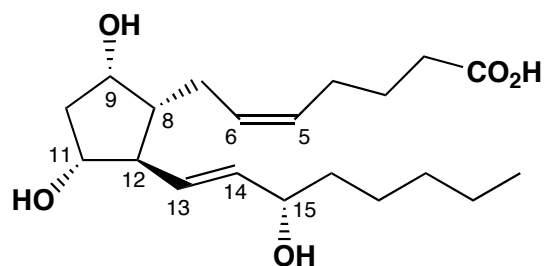
A Sweet Approach

G. Stork and S. Raucher *J. Am. Chem. Soc.* **1976**, *98*, 1583

G. Stork, T. Takahashi, I. Kawamoto, and T. Suzuki *J. Am. Chem. Soc.* **1978**, *100*, 8272



Prostaglandin A₂



Prostaglandin F_{2α}

References

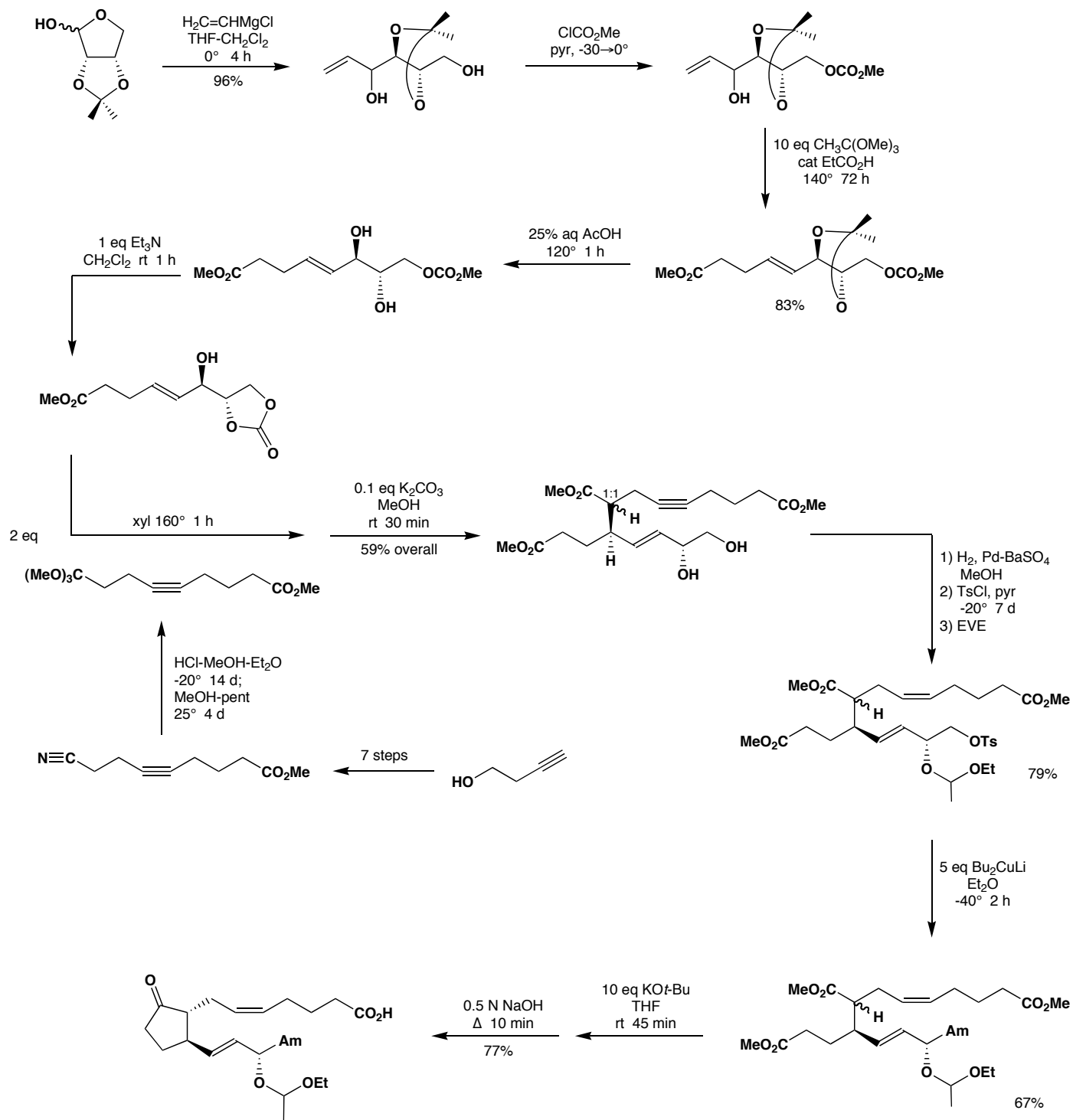
For discussions of the use of chiral natural products as starting materials for the synthesis of complex molecules, see

(1) S. Hanessian "Total Synthesis of Natural Products: The 'Chiron Approach' ", Pergamon Press: Oxford, 1983.

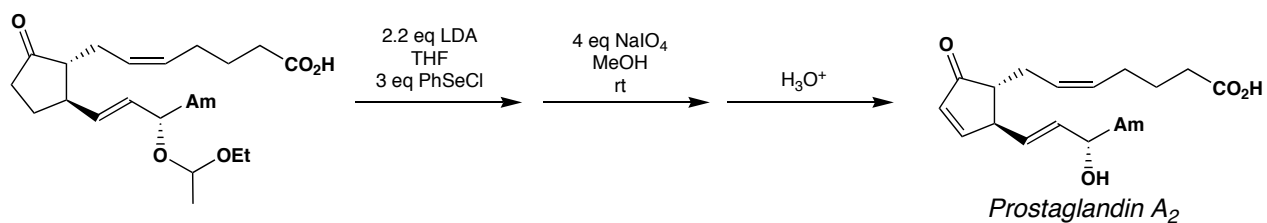
(2) T.-L. Ho "Enantioselective Synthesis: Natural Products from Chiral Terpenes", Wiley Interscience: New York, 1992.

Stork Total Synthesis of Prostaglandins from Sugars

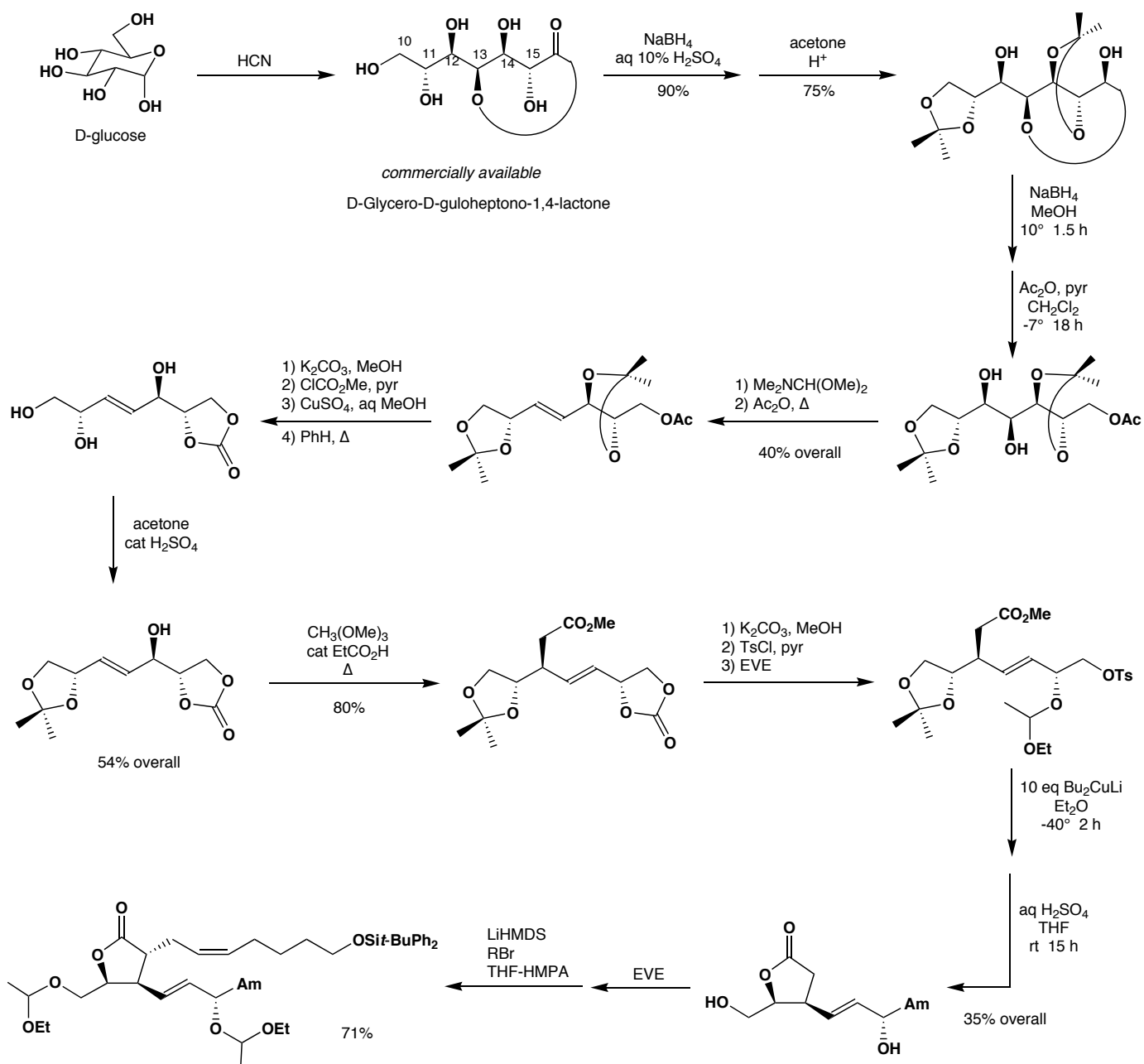
I. Total Synthesis of Prostaglandin A₂



Synthesis of PGA₂ (continued)



II. Total Synthesis of Prostaglandin F_{2α}



Synthesis of PGF_{2α} (continued)

