M. J. WILLIAMS, H. L. DEAK, M. L. SNAPPER* (BOSTON COLLEGE, CHESNUT HILL, USA)

Intramolecular Cyclobutadiene Cycloaddition/Cyclopropanation/Thermal Rearrangement: An Effective Strategy for the Asymmetric Syntheses of Pleocarpenene and Pleocarpenone
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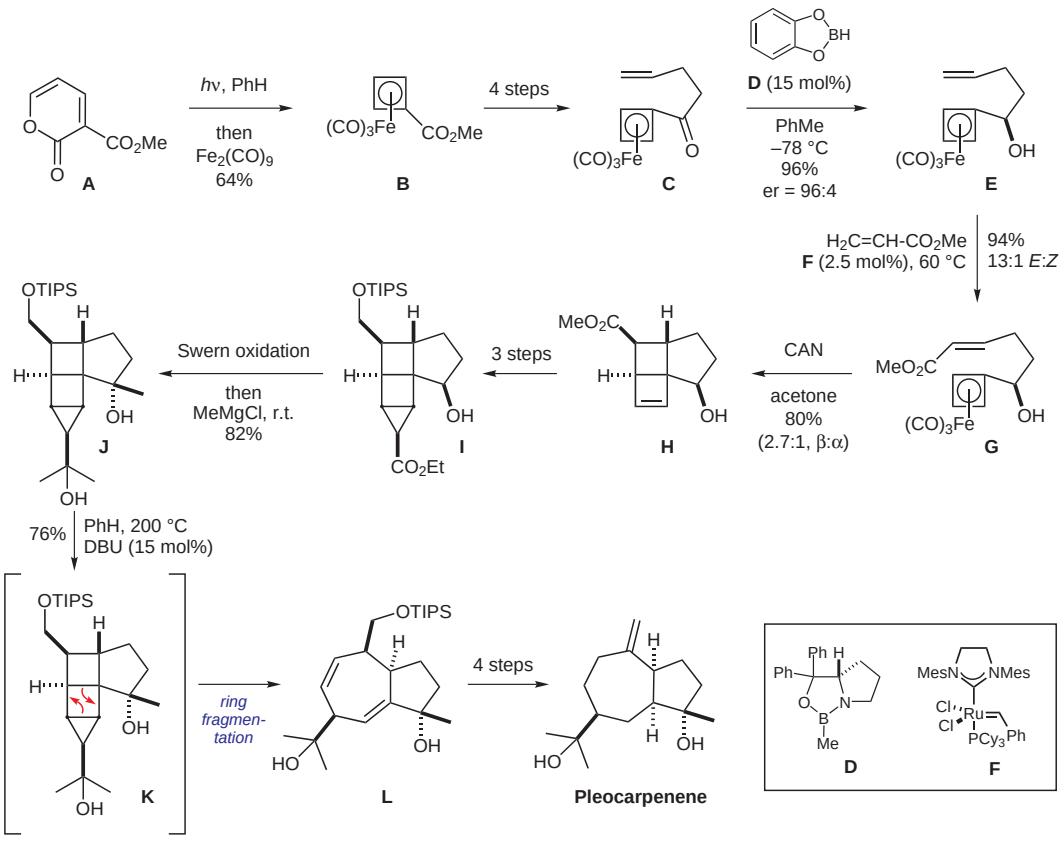
Synthesis of Pleocarpenene



Significance: Pleocarpenene is a guaiane natural product. Snapper and co-workers used (1) an intramolecular cyclobutadiene cycloaddition reaction and (2) a thermal ring fragmentation reaction *en route* to the 5–7-fused ring system.

Comment: Asymmetric reduction of iron-cyclobutadiene complex **C** using the Corey oxazaborolidine gave enantioenriched **E** that underwent cross-metathesis giving **G**. Subsequent oxidation with cerium ammonium nitrate (CAN) gave **H** as the major diastereoisomer. Later, thermolysis of **J** in the presence of DBU afforded **L** as the product of ring fragmentation.

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Category

Synthesis of Natural Products and Potential Drugs

Key words

iron-cyclobutadiene complex

Corey oxazaborolidine

cross-metathesis

ring fragmentation