
The Endiandric Acid Cascade. Electrocyclizations in Organic Synthesis. 1. Stepwise, Stereocontrolled Total Synthesis of Endiandric Acids A and B


The Endiandric Acid Cascade. Electrocyclizations in Organic Synthesis. 2. Stepwise, Stereocontrolled Total Synthesis of Endiandric Acids C–G


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Total Synthesis of Endiandric Acids

Significance: Nicolaou and co-workers describe the total synthesis of the endiandric acids. Their approach exploits a cascade of pericyclic reactions, which allow assembly of the carbon skeletons in one step. This pathway had been hypothesized to be the biosynthetic origin of these natural products.

Comment: Aldehyde C was chosen as a common intermediate for the synthesis of alkynes E and G. Glaser coupling, oxidation, and elimination results in the formation of dialkyne H. Partial reduction to polyolefin I results in a series of electrocyclizations and cycloadditions giving rise to the target structures.