Synthesis of Diterpenoid Steenkrotin A

Significance: Ding and co-workers report the first total synthesis of (±)-steenkrotin A, a diterpenoid isolated from an African shrub. Structurally, this natural product is characterized by a pentacyclic skeleton, embedded with a sterically congested tetrahydrofuran moiety. The authors focused first on the construction of tricycle **I**, which set the stage for further elegant transformations to access the target.

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Comment: The tetrahydrofuran subunit was installed by a Rh-catalyzed *O*-H bond insertion and a carbonyl-ene reaction. A SmI₂-mediated Ueno-Stork reaction and a ketyl-olefin cyclization were used to construct spirocycle **L**. Interestingly, (±)-steenkrotin A could be accomplished by a cascade aldol condensation-vinylogous retro-aldol-aldol reaction, followed by elimination.

Category

Synthesis of Natural Products and Potential Drugs

Key words

steenkrotin A
 terpenoids
O-H bond insertion
 carbonyl-ene reaction
 Ueno-Stork reaction
 ketyl-olefin cyclization
 aldol condensation

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