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Total Synthesis of (±)-Rubriflordilactone A

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Total Synthesis of (±)-Rubriflordilactone A

Significance: Chen and co-workers present the total synthesis of (±)-rubriflordilactone A, a highly oxygenated polycyclic triterpenoid isolated from Schisandra plants, which exhibits anti-HIV activity. The natural product, with its central polysubstituted arene motif, is accessed via a rare ortho-quinone methide type [4+2]-cycloaddition.

Comment: Commercially available phenol **A** was elaborated into key butenolide H. Treatment of the latter with BF3·OEt2 initiated an intramolecular Prins cyclization, affording a seven-membered ring in J. Mukaiyama hydration triggered an oxa-Michael reaction, affording γ -lactone L that, after reduction, was reacted with furan \mathbf{M} in a [4+2]-cycloaddition. Subsequently, photooxygenation and reduction furnished (±)-rubriflordilactone A.

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Category

Synthesis of Natural

Key words

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Schisandra triterpenoids

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photooxygenation

Mukaivama hydration

