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Total Synthesis of (−)-Cephinoid P

Significance: The authors disclose the syntheses of several cephalotaxus C19 diterpenoids, including (−)-cephinoid P. These structurally complex natural products exhibit intriguing bioactivities, rendering them appealing targets for total synthesis. Gao and co-workers show a universal strategy via (−)-cephinoid P to access a total of six natural products.

Comment: The synthetic endeavor commenced with the preparation of propargylic alcohol E. The Lewis acidic activation of the dicobalt hexacarbonyl complex triggered nucleophilic attack of the allyl-silane, reminiscent of a Hosomi–Sakurai reaction, forming intermediate F. Introduction of the bridgehead ketone and i-Pr-ketal paved the way to the Pauson–Khand reaction, yielding (−)-cephinoid P after four additional steps. From there, five additional natural products were accessed.