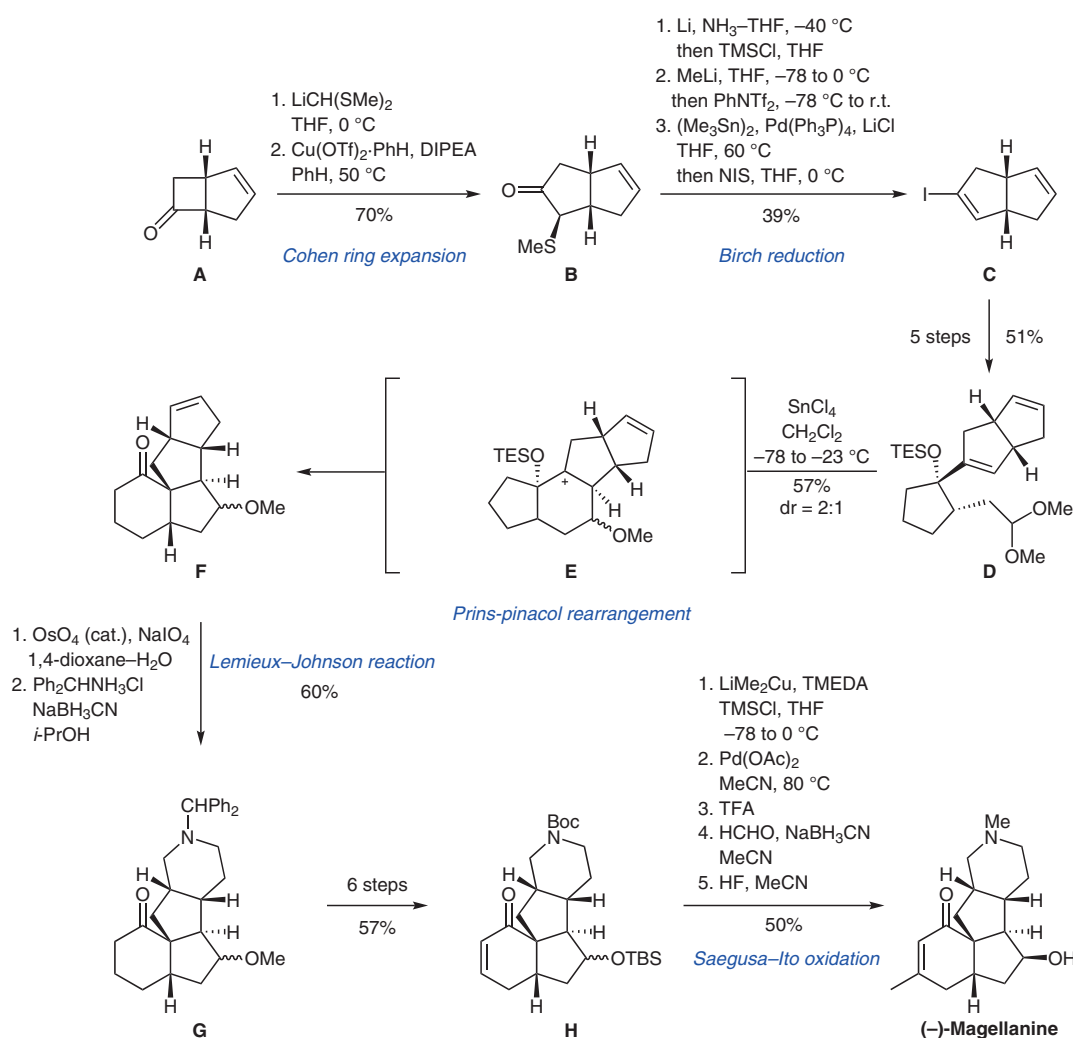


G. C. HIRST, T. O. JOHNSON JR, L. E. OVERMAN* (UNIVERSITY OF CALIFORNIA IRVINE, USA)

First Total Synthesis of Lycopodium Alkaloids of the Magellanane Group. Enantioselective Total Syntheses of (-)-Magellanine and (+)-Magellaninone

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Total Synthesis of (-)-Magellanine



Significance: In 1993, Overman and co-workers present the enantioselective total synthesis of (-)-magellanine, isolated from *Lycopodium magellanicum*. Salient features of the natural product include a congested 6-5-5 ring-fused system, as well as a piperidine ring. Biosynthetically related to the fawcettimines, (-)-magellanine is thought to be derived from the amino acid lysine.

Comment: The synthesis hinges on and showcases a Prins-pinacol rearrangement to access tetracycle **F**, setting the central quaternary carbon center, as well as forging the carbocyclic core. Subsequent Johnson–Lemieux reaction and reductive amination grant access to the piperidine ring present in the natural product. Finally, methyl 1,4-addition, desaturation, Boc deprotection, and amine methylation, followed by silyl deprotection, afford (-)-magellanine.

SYNFACTS Contributors: Erick M. Carreira, Rudolf L. Z. Ganzoni
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Prins-pinacol rearrangement

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