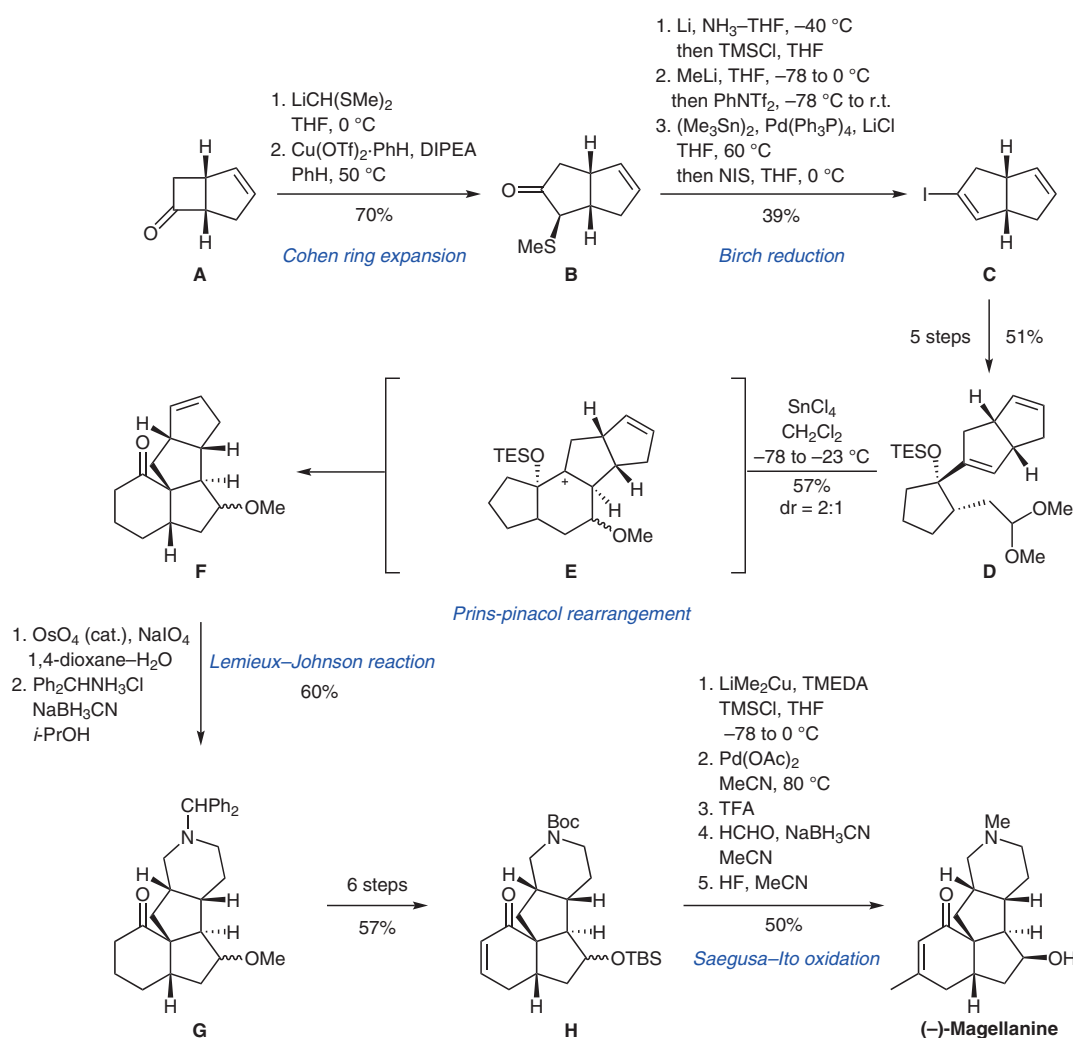


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First Total Synthesis of Lycopodium Alkaloids of the Magellanane Group. Enantioselective Total Syntheses of (-)-Magellanine and (+)-Magellaninone

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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.

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