A. Y. HONG, C. D. VANDERWAL* (UNIVERSITY OF CALIFORNIA, IRVINE, USA)
A Synthesis of Alsmaphorazine B Demonstrates the Chemical Feasibility of a New Biogenetic Hypothesis
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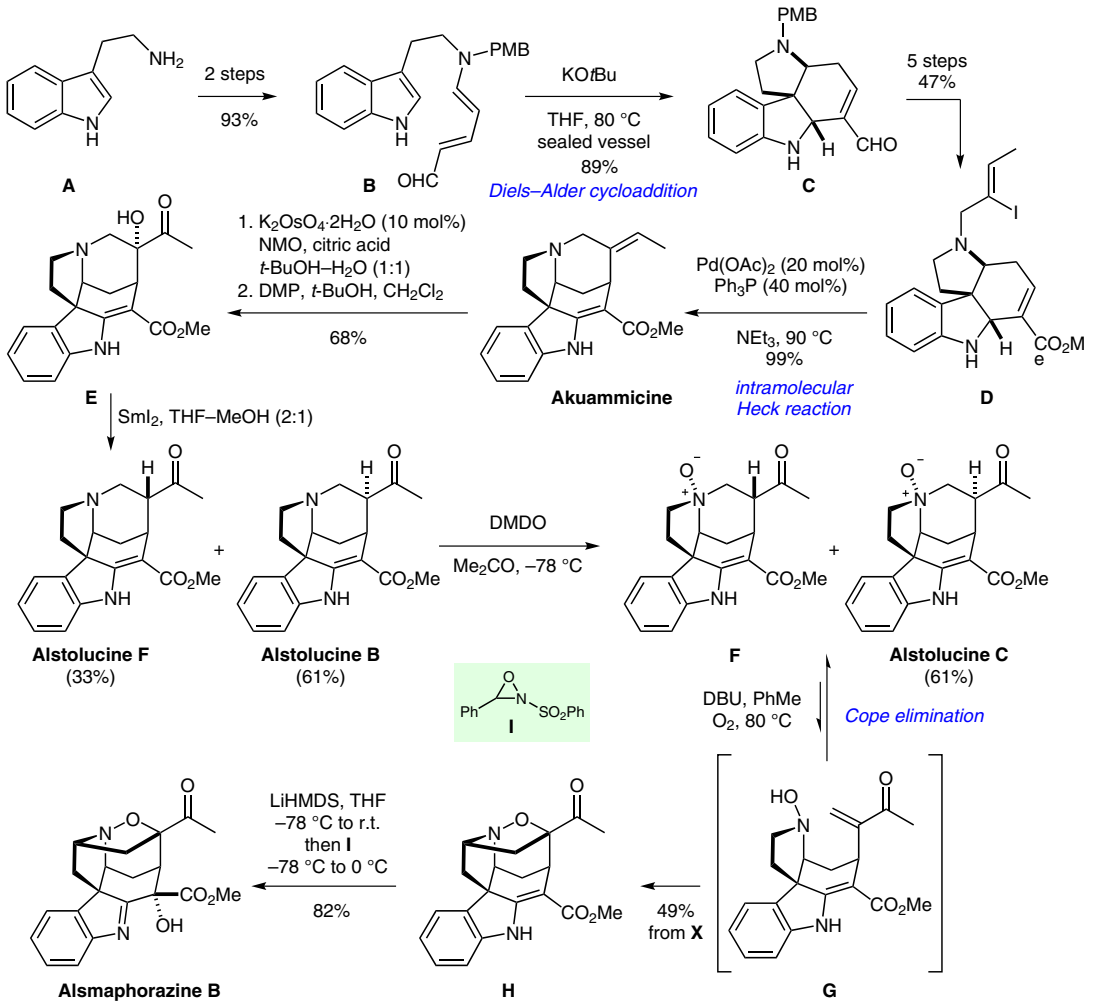
Synthesis of Alsmaphorazine B



Significance: Alsmaphorazine B is an indole alkaloid endowed with an isoaxzolidine embedded in the hexacyclic skeleton. Biosynthetically, this natural product is believed to originate from the related alkaloid akuammicine. Hong and Vanderwal present a short synthetic route employing an oxidation/Cope elimination/cycloaddition sequence to enable the transformation of akuammicine into alsmaphorazine B.

Comment: A previously employed intramolecular Heck reaction provided high-yielding access to acuammicine from **D**. Oxidation followed by SmI_2-mediated deoxygenation gave alstolucines B and F. Oxidation with DMDO followed by base induced Cope elimination yielded hydroxylamine **G**, which upon oxidation to the nitrone underwent 1,3-dipolar cycloaddition to **H**. Finally, α-hydroxylation furnished alsmaphorazine B in 15 steps and 11% overall yield.

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