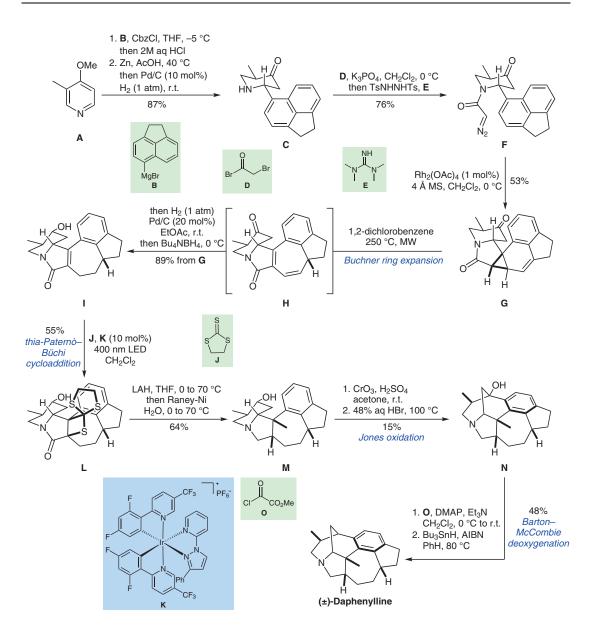
B. A. WRIGHT, A. REGNI, N. CHAISAN, R. SARPONG* (UNIVERSITY OF CALIFORNIA, BERKELEY, USA)

Navigating Excess Complexity: Total Synthesis of Daphenylline *J. Am. Chem. Soc.* **2024**, *146*, 1813–1818, DOI: 10.1021/jacs.3c12953.

Total Synthesis of (±)-Daphenylline



Significance: Sarpong and co-workers report the total synthesis of (\pm) -daphenylline. The alkaloid features a 2-azabicyclo[3.3.1]nonane core attached to a 5-7-5 ring system. Their key synthetic strategy is the formation of the seven-membered ring by a Buchner ring expansion.

Comment: Diazoacetamide **F** was accessed from pyridine **A** in three steps. After cyclopropanation, lactam I was furnished through a 6π -electrocyclic ring opening and reduction. The benzylic methyl group in amine **M** was installed through a thia-Paternò-Büchi cycloaddition and subsequent reduction of the thietane using LAH and Raney-Ni.

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Category

Synthesis of Natural

(ev words

(±)-daphenylline

Daphniphyllum alkaloid

Buchner ring expansion

thia-Paternò–Büchi cycloaddition

Barton–McCombie deoxygenation

