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Total Synthesis of (–)-Rauvomine B via a Strain-Promoted Intramolecular Cyclopropanation *J. Am. Chem. Soc.* **2024**, *146*, 22047–22055, DOI: 10.1021/jacs.4c07669.

## Total Synthesis of (–)-Rauvomine B

**Significance:** Smith, Chen, and co-workers report the first total synthesis of (–)-rauvomine B, a monoterpene indole alkaloid belonging to the sarpagine class. The natural product features an unusual bridging cyclopropane motif embedded in an indoloquinolizidine unit. Key to the synthesis is the construction of a triazole via azide dipolar cycloaddition, which serves as a carbene precursor for the intramolecular cyclopropanation.

Comment: The synthesis commenced with the stereospecific allylation of tryptophan methyl ester A to secondary amine C. Compound C was engaged in a Pictet–Spengler reaction with aldehyde D to afford alkyl selenide E. Oxidation and elimination of E returned diene F, which was subjected to HG II catalyst, delivering the indoloquinolizidine in H. Conversion of the methyl ester into H to the key triazole L set the stage for the intramolecular cyclopropanation. Under Rh(II) catalysis, L formed the putative carbene that cleanly returned the full core of (–)-rauvomine B. Boc deprotection mediated by TFA completed the synthesis.

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Synthesis of Natural Products

## Key words

(-)-rauvomine B

sarpagine indole alkaloids

enantiospecific allylation

Pictet-Spengler reaction

Ohira-Bestmann homologation

azide dipolar cycloaddition

intramolecular cyclopropanation

