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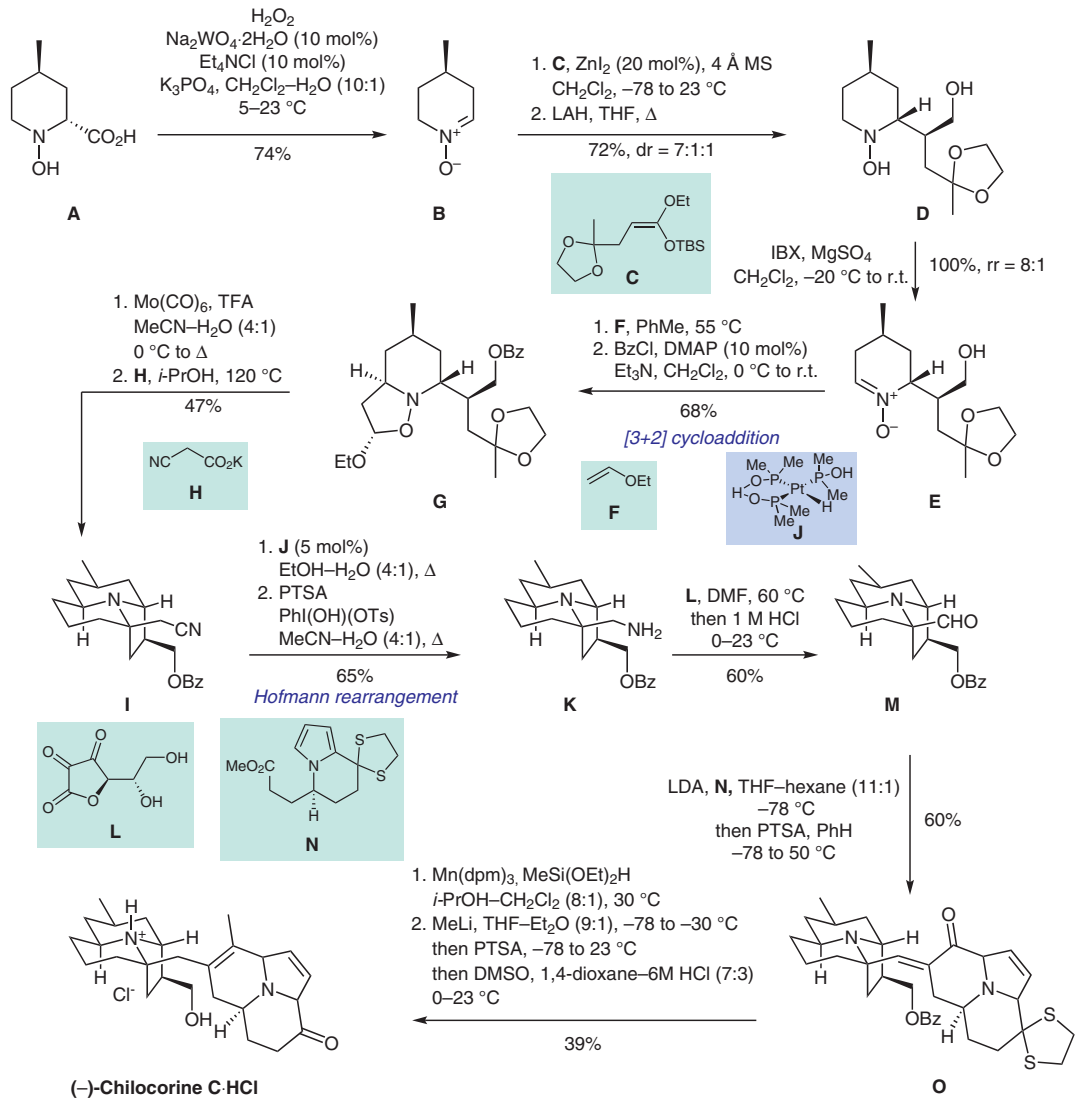
A Concise, Enantiospecific Total Synthesis of Chilocorine C Fueled by a Reductive Cyclization/Mannich Reaction Cascade
J. Am. Chem. Soc. **2020**, *142*, 12027–12033.

Synthesis of (–)-Chilocorine C



Significance: Snyder and co-workers reported the asymmetric total synthesis of (–)-chilocorine C, a defensive alkaloid isolated from ladybugs. Key to the synthesis was a reductive cyclization/Mannich cascade.

Comment: Advanced intermediate **G**, prepared by a [3+2] cycloaddition, is rapidly converted into **I** containing the tricyclic core of the natural product. Hofmann rearrangement followed by oxidation and aldol condensation leads to **O**, which is transformed into the natural product in two steps.

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Synfacts 2020, 16(09), 1011 Published online: 18.08.2020
DOI: 10.1055/s-0040-1705829; **Reg-No.:** C04320SF

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Category
Synthesis of Natural Products and Potential Drugs

Key words
(–)-chilocorine C
[3+2] cycloaddition
cascade reaction
Mannich reaction
Hofmann rearrangement

Synfact of the Month

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