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The Total Synthesis of Racemic Talatisamine
Pure Appl. Chem. **1975**, *41*, 93–112, DOI: 10.1351/pac197541010093.

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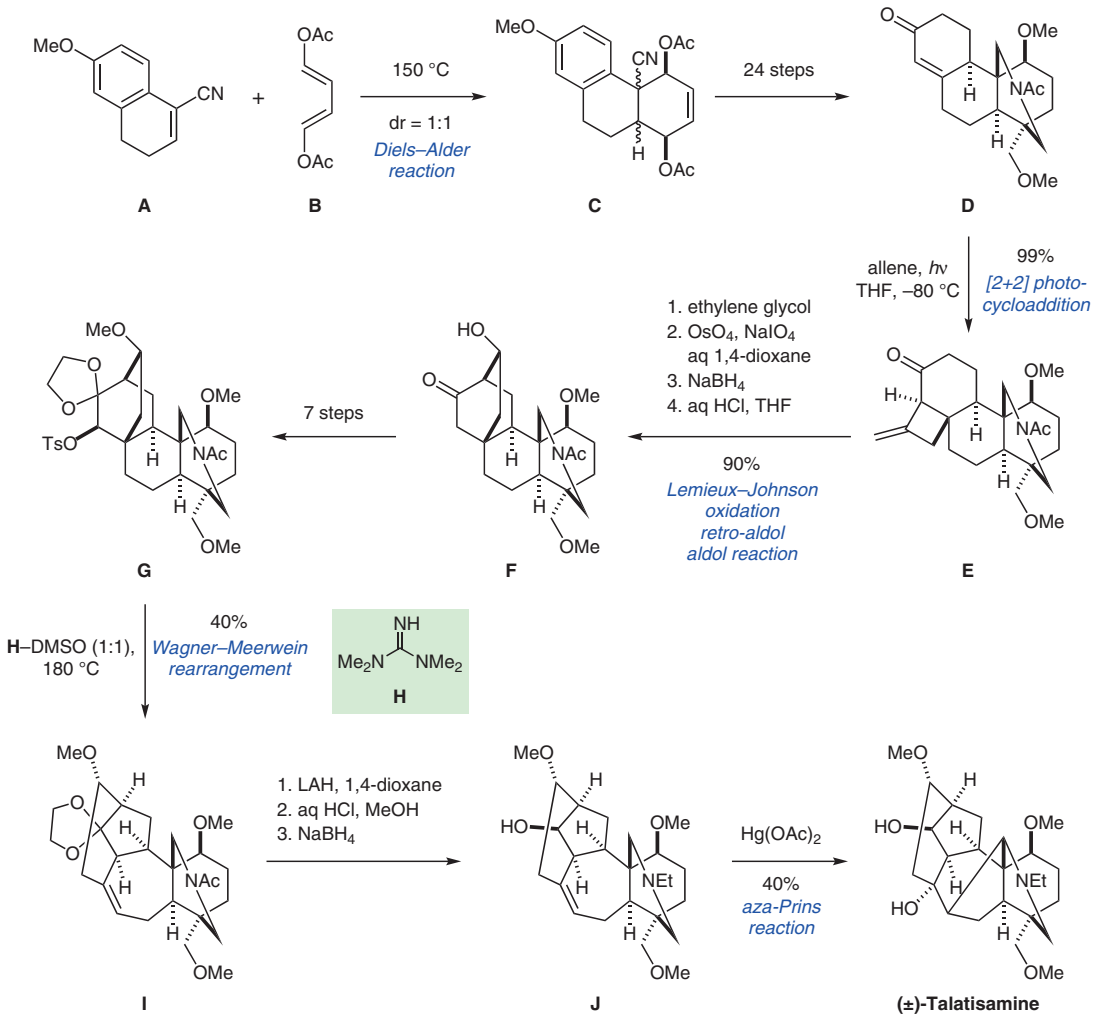
Total Synthesis of Talatisamine, a Delphinine Type Alkaloid
J. Am. Chem. Soc. **1974**, *96*, 4990–4992, DOI: 10.1021/ja00822a048.

Total Synthesis of (±)-Talatisamine



Significance: (–)-Talatisamine is a potassium ion channel inhibitor isolated from an *aconitum* species. Wiesner and co-workers reported the first total synthesis of (±)-talatisamine. Its preparation was facilitated by synthetic studies on degradation products of natural (–)-talatisamine. Other diterpene alkaloids prepared by the Wiesner group include atisine and napelline.

Comment: The tricyclic core of (±)-talatisamine is assembled by a Diels–Alder reaction. Ring expansion from the cyclobutane in **E** via retro-aldol– aldol reaction furnishes the bicyclo[2.2.2]octane motif within **F**. The atisine-type scaffold **G** is converted into the delphinine-type skeleton **I** by Wagner–Meerwein rearrangement in analogy to Wiesner's biosynthetic proposal. An oxidation followed by *aza*-Prins reaction furnishes the hexacyclic 6/6/5/6/5/6-membered-ring scaffold of (±)-talatisamine.

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Category
Synthesis of Natural Products

Key words
(±)-talatisamine
Diels–Alder reaction
[2+2] photo-cycloaddition
Lemieux–Johnson oxidation
retro-aldol–aldol reaction
Wagner–Meerwein rearrangement
aza-Prins reaction