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Enantioselective Total Synthesis of (−)-Zygadenine
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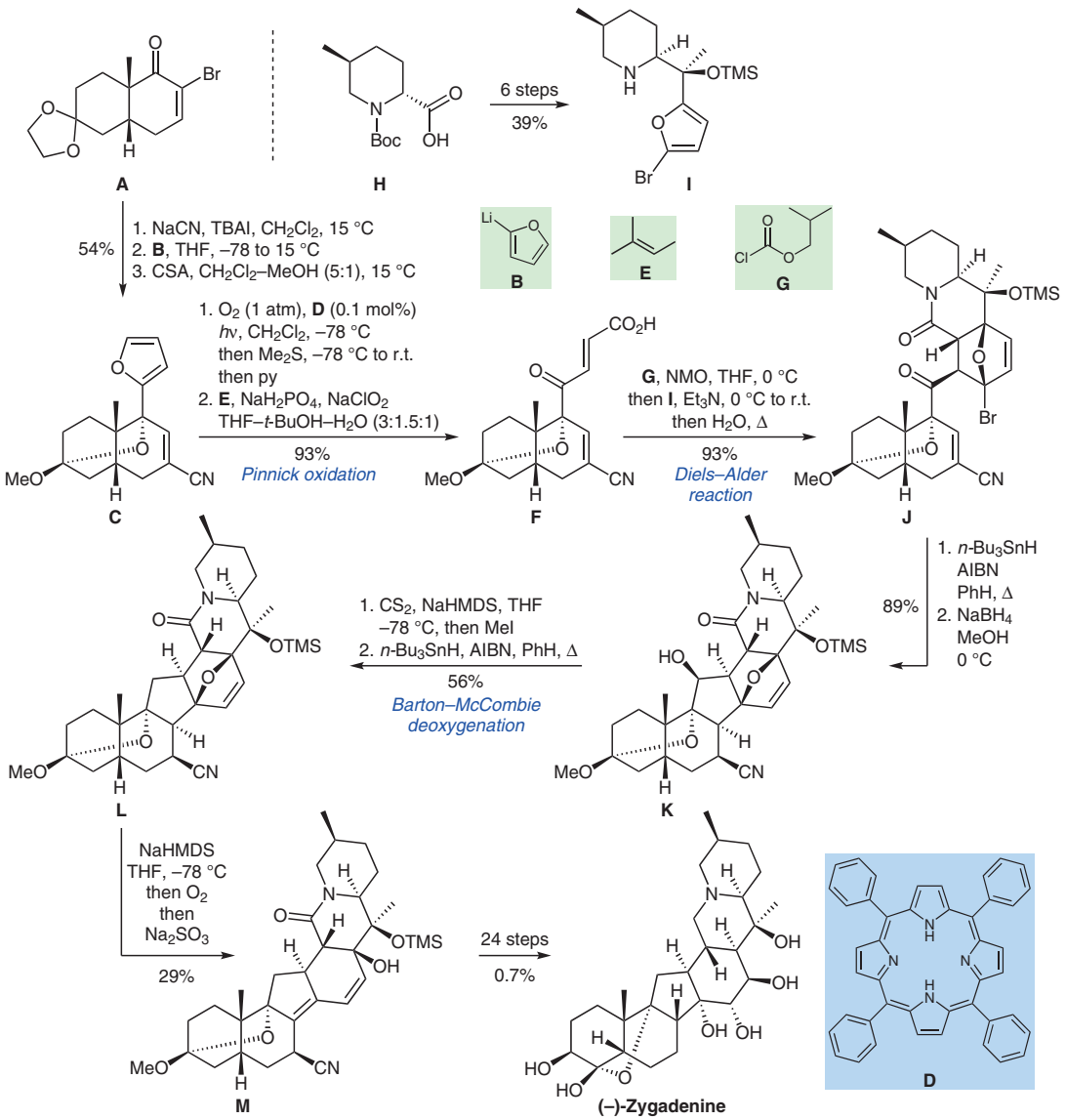
Synthesis of (–)-Zygadenine



Significance: Luo and co-workers report the synthesis of (−)-zygadenine. Key to their approach is a stereoselective intramolecular Diels–Alder reaction, followed by a radical cyclization to construct the hexacyclic carbon skeleton.

Comment: Cyclization precursor **F** was prepared from commercially available enone **A** in five steps. Formation of a mixed anhydride with furan **I** enabled intramolecular Diels–Alder reaction to diketone **J**. Treatment with AIBN and tributyltin hydride, followed by reduction furnished hexacyclic **K**.

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Category
Synthesis of Natural Products
Key words
(–)-zygadenine
Veratrum alkaloid
Pinnick oxidation
Diels–Alder reaction
Barton–McCombie deoxygenation

Synfact of the Month