Synthesis of (+)-Lycopalhine A

Significance: Lycopalhine A represents an intriguing target for total synthesis. The authors present an elegant route towards the complex hexacyclic natural product based on the use of L-glutamic acid as starting material and relying on the use of a Mannich and a biomimetic aldol cyclization.

Comment: Precursor E underwent a clean Pauson–Khand reaction. Conjugate addition to F and deprotection afforded amine I, which was subjected to a proline-mediated Mannich cyclization. The spectral data of the diastereomeric product mixture are identical to those of the natural sample.