Synthesis of (+)-Lyconadin A

Significance: Lyconadin A was isolated in 2001 from the club moss Lycopodium complanatum and found to exhibit modest biological activity against some cancer cell lines. To date, two total syntheses have been reported by Smith and Sarpong, in 2007 and 2010, respectively.

Comment: This highly efficient synthesis contains many notable steps. One particularly interesting transformation is the formation of tetracycle I by ring expansion of the cyclopropane present in G, followed by nucleophilic attack of the secondary amine to quench the allyl cation.

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