Synthesis of (±)-Hippolachnin A

Significance: In this work, the authors combine their independently elaborated routes into a unique collaborative total synthesis of (±)-hippolachnin A. The convergent synthesis relies on a [2+2] quadricyclane cycloaddition, followed by ring-opening metathesis and allylic C–H oxidation.

Comment: Thermal [2+2] cycloaddition of acyl chloride A and quadricyclane B generated cyclobutane C after treatment with sodium hydroxide in moderate yield and excellent diastereoselectivity. Ring-opening metathesis catalyzed by Grubbs I under an ethylene atmosphere gave carboxylic acid D. A late stage C–H oxidation of bicyclic D gave lactone F, which was converted in three further steps into (±)-hippolachnin A.