Category

Synthesis of Natural Products and Potential Drugs

Key words

zaragozic acid C

aldol reaction

oxidative kinetic resolution

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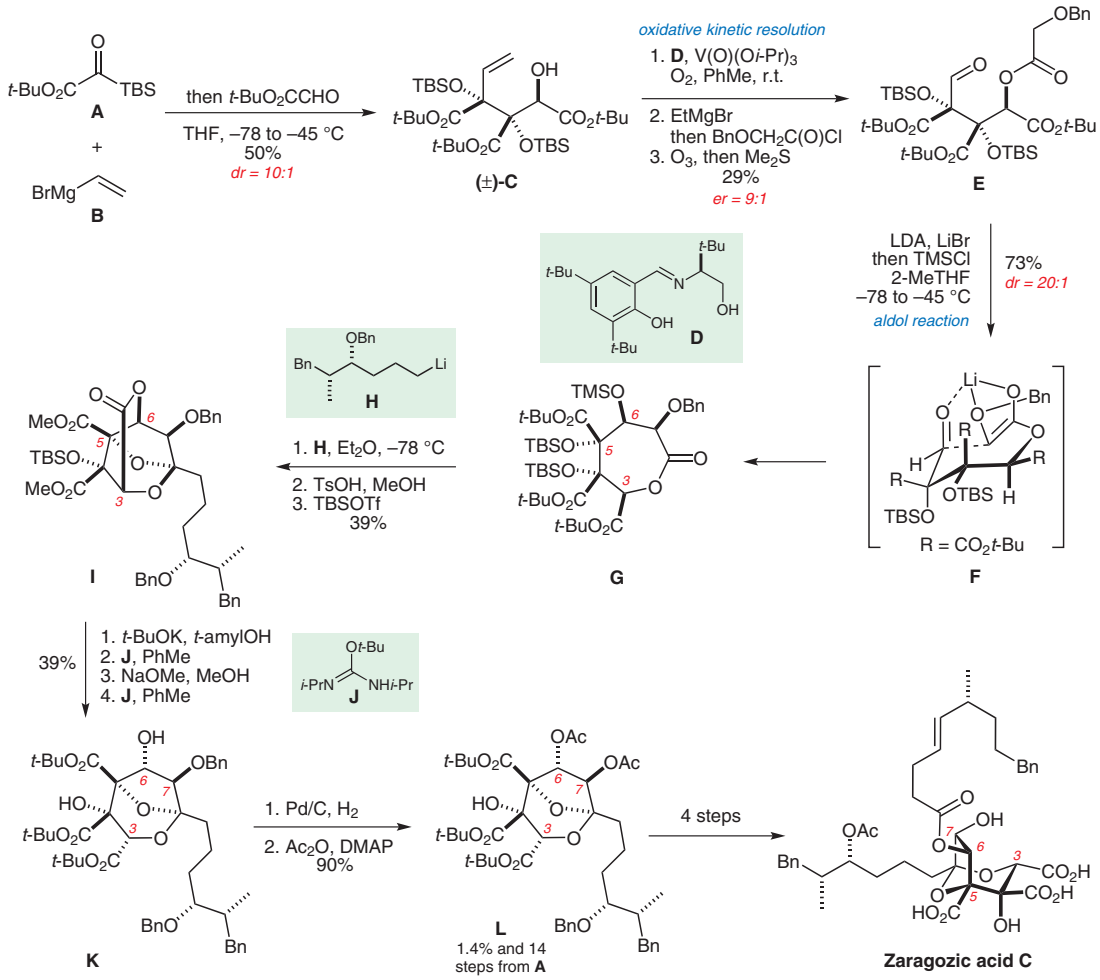
Self-Consistent Synthesis of the Squalene Synthase Inhibitor Zaragozic Acid C via Controlled Oligomerization
J. Am. Chem. Soc. **2008**, *130*, 17281-17283.

Synthesis of Zaragozic Acid C



Significance: The zaragozic acids are picomolar inhibitors of squalene synthase, an enzyme that catalyzes the first step in cholesterol biosynthesis. They also enhance radiochemotheraphy of acute myeloid leukemia cell lines. This formal synthesis features the use of silyl glyoxylate **A** as a geminal dipolar glyoxylate synthon in the diastereoselective synthesis of **C**.

Comment: The yield of the oxidative kinetic resolution of racemic **C** reached 48%. Diastereoselective aldol reaction in **E** afforded lactone **G** in good yield and selectivity. Opening of the lactone **I** with *t*-BuOK resulted in inversion of the C6 stereocenter. Intermediate **L** is an intermediate in Carreira's synthesis of zaragozic acid (*J. Am. Chem. Soc.* **1995**, *117*, 8106).

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