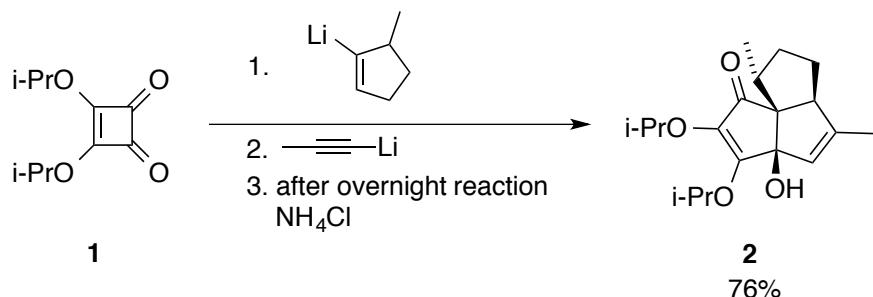
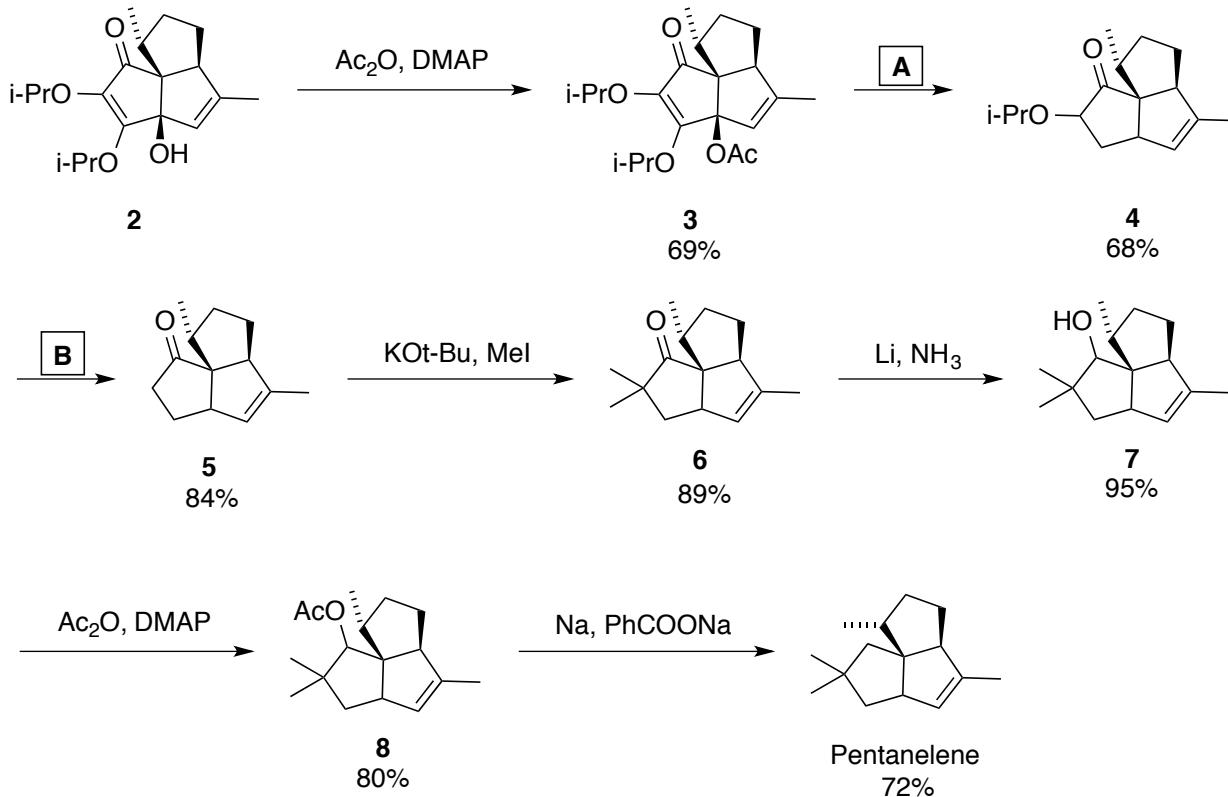


A Highly Abbreviated Synthesis of Pentalenene by Means of the Squarate Ester Cascade

Problem:

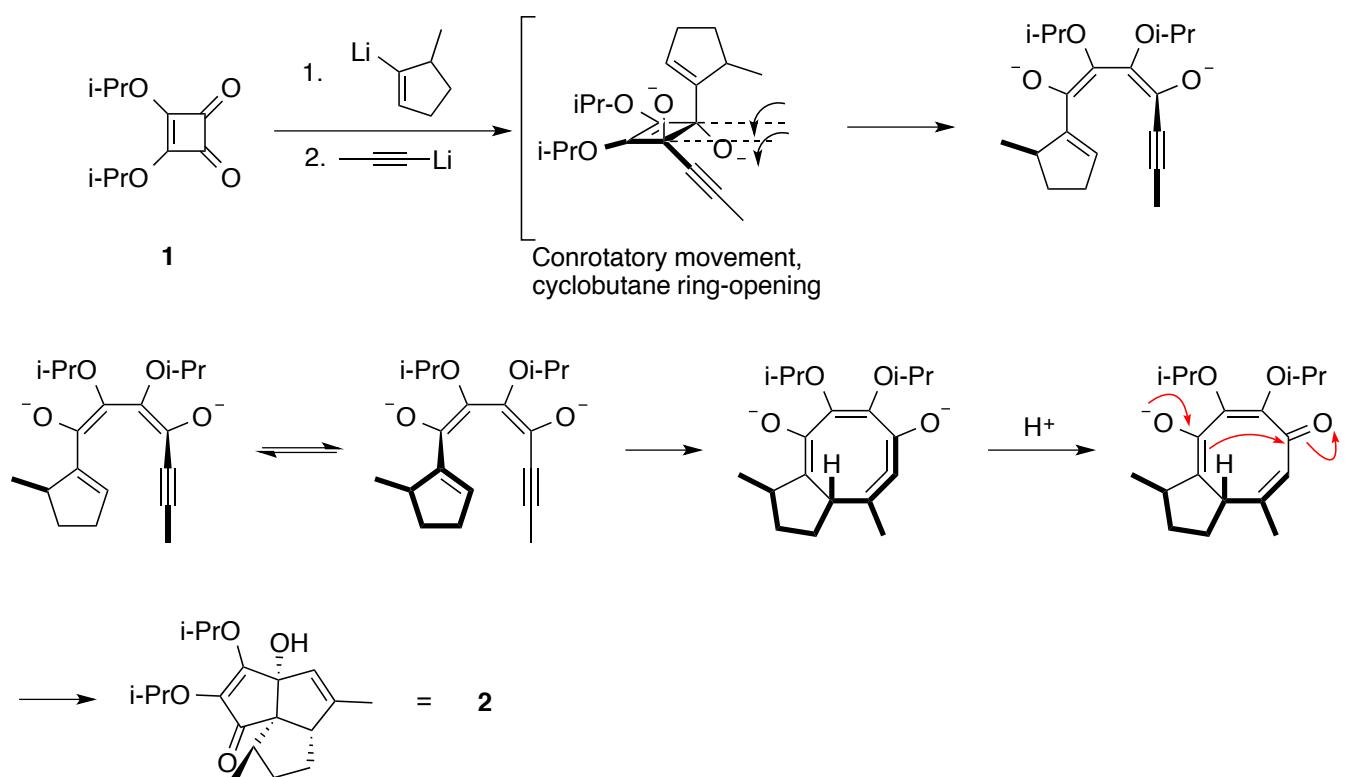


1. Propose a mechanism for the formation of **2** starting from Squarate (**1**). (Hints: Allene intermediate, Aldol reaction)



2. Propose conditions **A** and **B** (1 step).

Solution:



2. A = Li, NH_3 (MeOH)
B = Li, NH_3 (Et_2O)

References:

L. A. Paquette, F. Geng, *Org. Lett.* **2002**, 4(25), 4547–4549