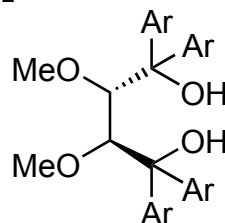
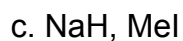
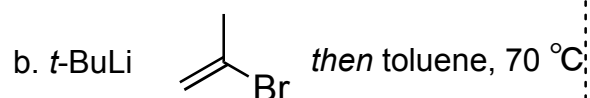
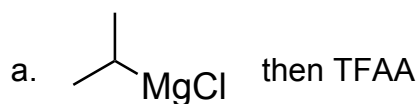
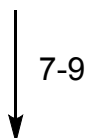
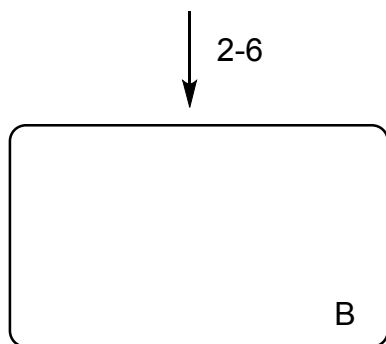
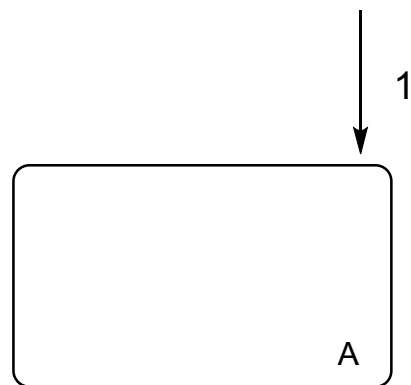
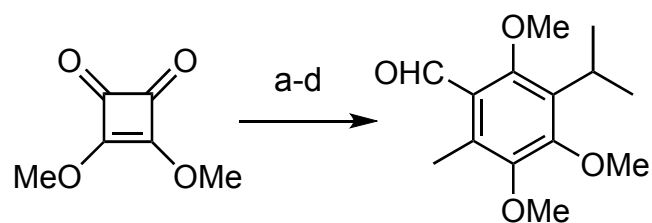


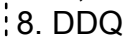
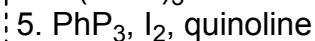
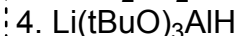
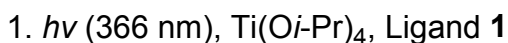
Asymmetric Total Synthesis and Biosynthetic Implications of Perovskones, Hydrangenone, and Hydrangenone B

Baochao Yang, Guoen Wen, Quan Zhang, Min Hou, Haibing He, and Shuanhu Gao*

J. Am. Chem. Soc. **2021**, *143*, 6370–6375



Ligand **1**



Step 1:

Draw A with correct stereochemistry

Hint:

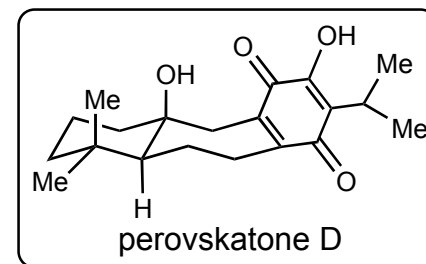
This reaction is called “photoenolization/Diels–Alder”.

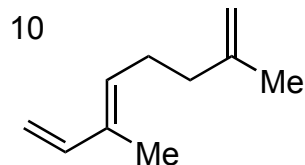
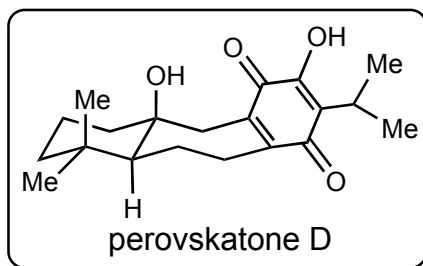
Check the natural product for the stereochemistry outcome of this reaction

Step 4:

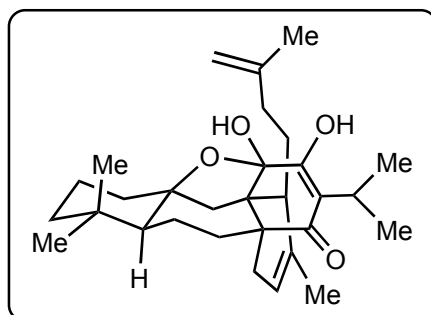
hint: It's a bulky reducing agent

Step 5: Name the reaction



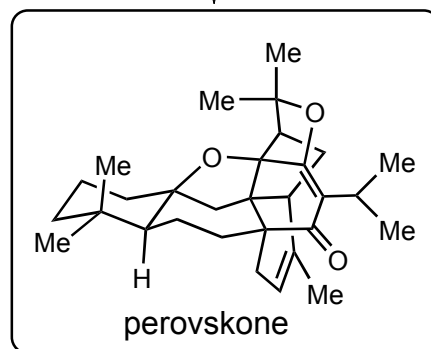


10. $\text{Eu}(\text{fod})_3$



11

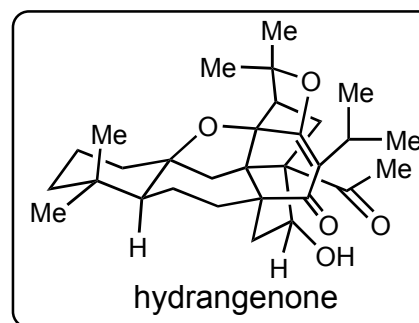
11. $\text{Cu}(\text{OTf})_2$



12. $\text{O}_3, \text{Me}_2\text{S}$

13. pyrrolidine, AcOH

12-13



Step 10:

Endo or exo?

This is a biomimetic reaction, suggest any other reaction conditions you may want to try when you do this reaction?

Step 11:

This is also a biomimetic reaction, the mechanism? Which named reaction it would possibly be?