

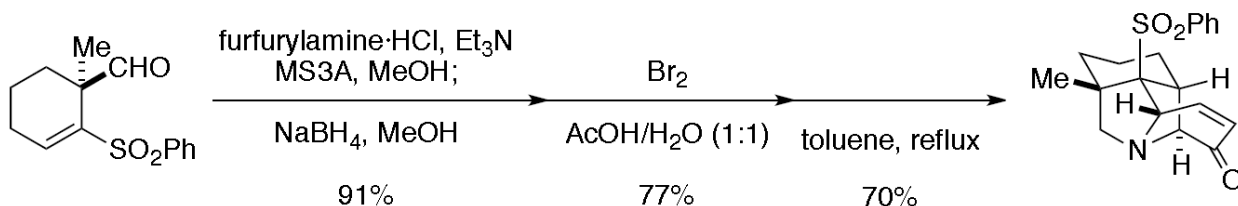


CHEM 8410_6410_4410 – Organic Synthesis

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Problem Set 3: This problem set is now available at (www.blackboard.utoledo.edu). It will be due in class 28 days (03/15/16) from today (02/16/16) @ 5:00 pm sharp. Grades will be administered as follows: 10 (exceptional effort), 8 (complete), 5 (incomplete or inadequate effort), 2 (poor effort), 0 (nonexistent). **No late problem sets will be accepted.**

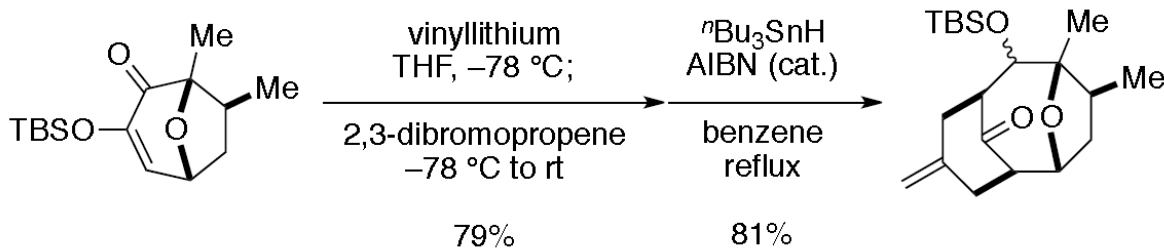
1. **Problem:** Work by the Gin group is highlighted below. Provide the reaction mechanisms for the transformations. Be as detailed as possible.



D. Y. Gin *et al.* *Org. Lett.*, **2005**, 7, 3323.

Answer:

2. **Problem:** Work by the Mascarenas *et al.* group accumulated into a complex fused, bridged tricyclic system as shown below. Provide all the mechanisms for the transformations leading to the target molecule. Show the structure of AIBN and make sure the correct arrows are used for your mechanism (homolytic vs heterolytic).



J. L. Mascarenas *et al.* *Org. Lett.*, **2001**, 3, 1181.

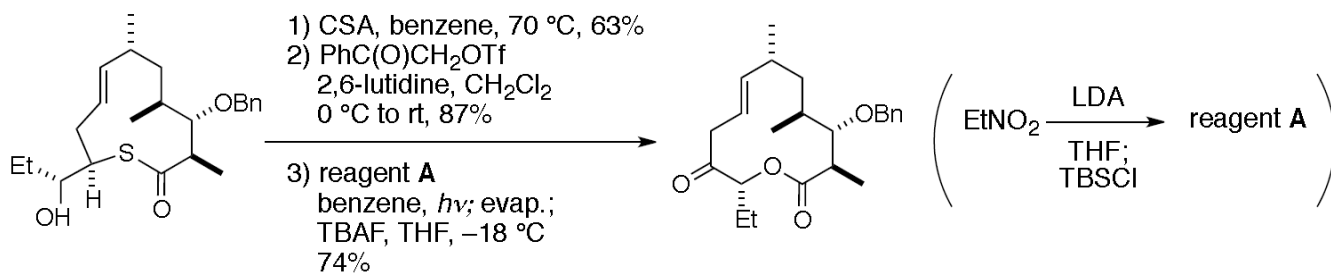
Answer:



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3. **Problem:** Give the major product(s) of each of the following reactions.



E. Vedejas *et al.*, *J. Am. Chem. Soc.*, **1989**, 111, 8430.

Answer: