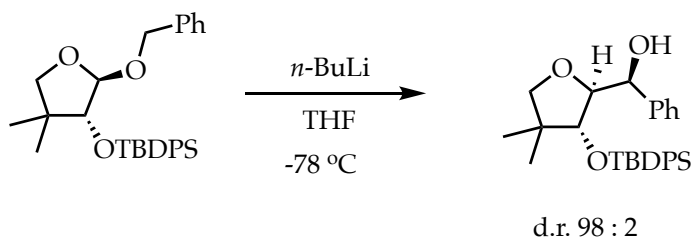


Alistair's EAA Group Problems – 5th February 2019

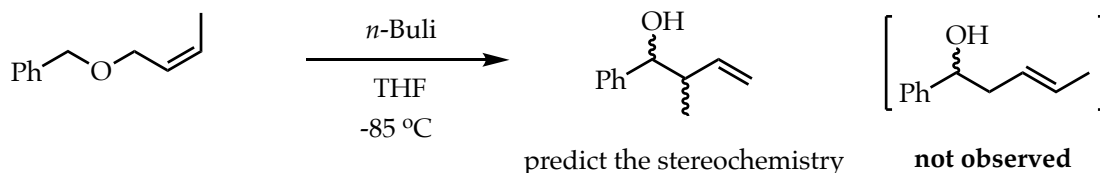
Please provide mechanisms and rationalise any stereochemistry you might come across in the following problems.

1. On a theme of Wittig rearrangements:

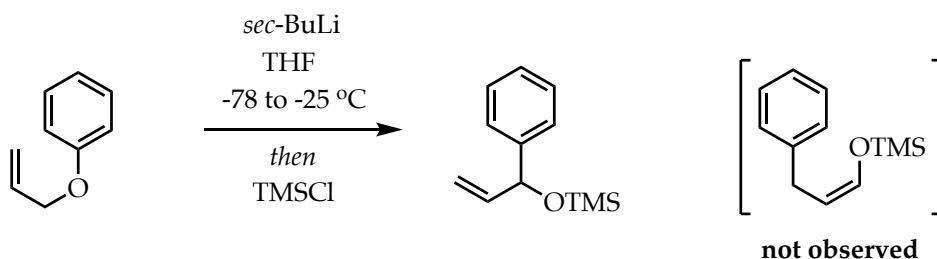
a) Mechanism I



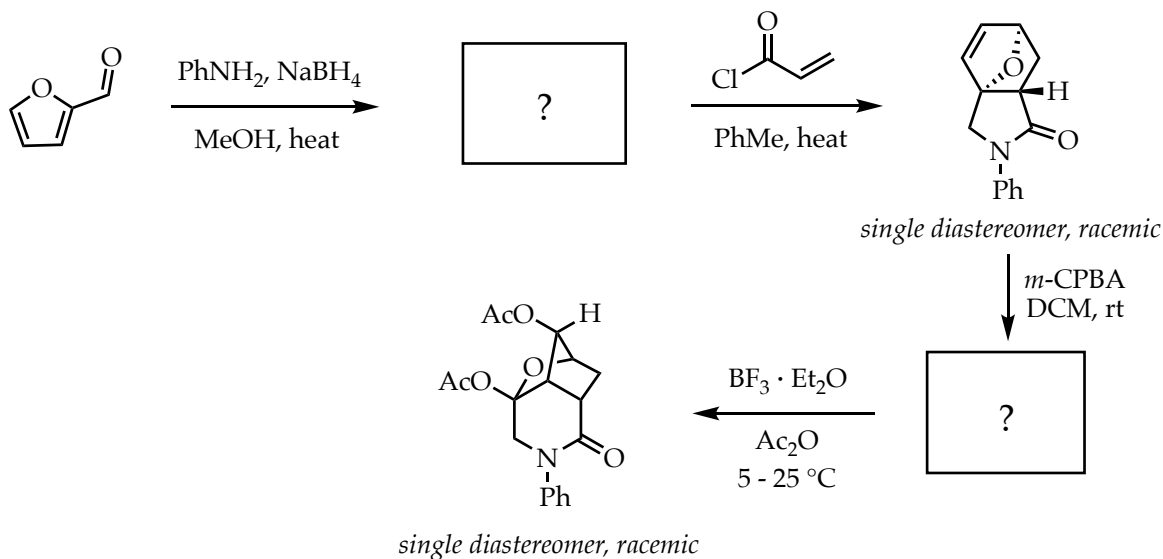
b) Mechanism II



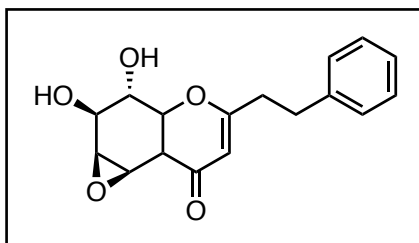
c) Mechanism III (a special case)



2. Non-classical carbocation chemistry:



3. Retrosynthesis (with a twist):



10.1021/acs.jnatprod.8b00635

Please propose a retrosynthetic analysis and forward synthesis of this phenylethylchromone.

Rules:

1. Try to create a route with as many unprecedented steps as possible (of course some preceded steps are unavoidable)
2. Your unprecedented steps should be reasonable "on paper"
3. No starting material is too expensive
4. Be creative and ambitious!
5. Your steps may be critiqued, but will not be ridiculed

The most exciting route will get its inventor a prize!