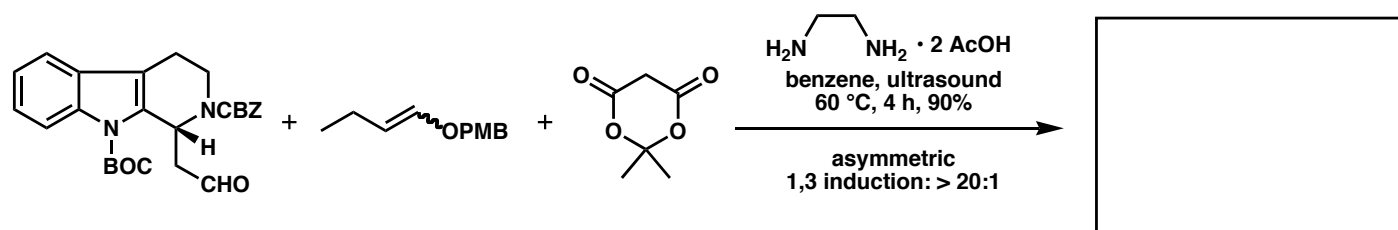


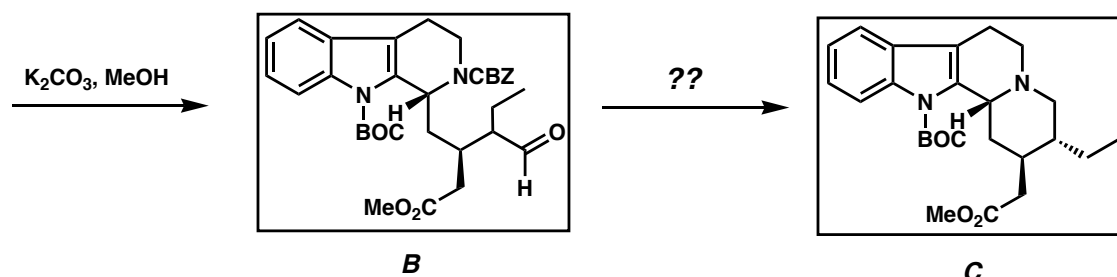


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Please fill in the structure for A, the reagent for the conversion of B to C, and the mechanisms for *the entire sequence*.



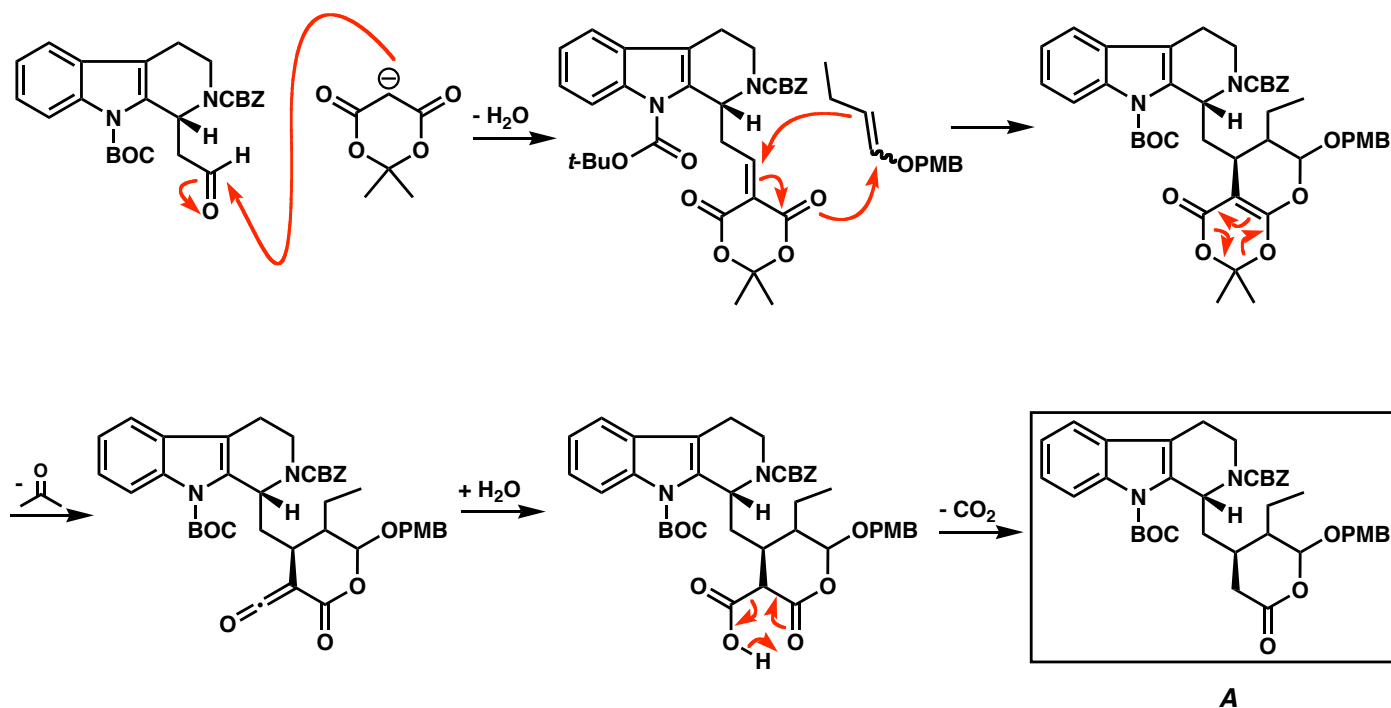
A

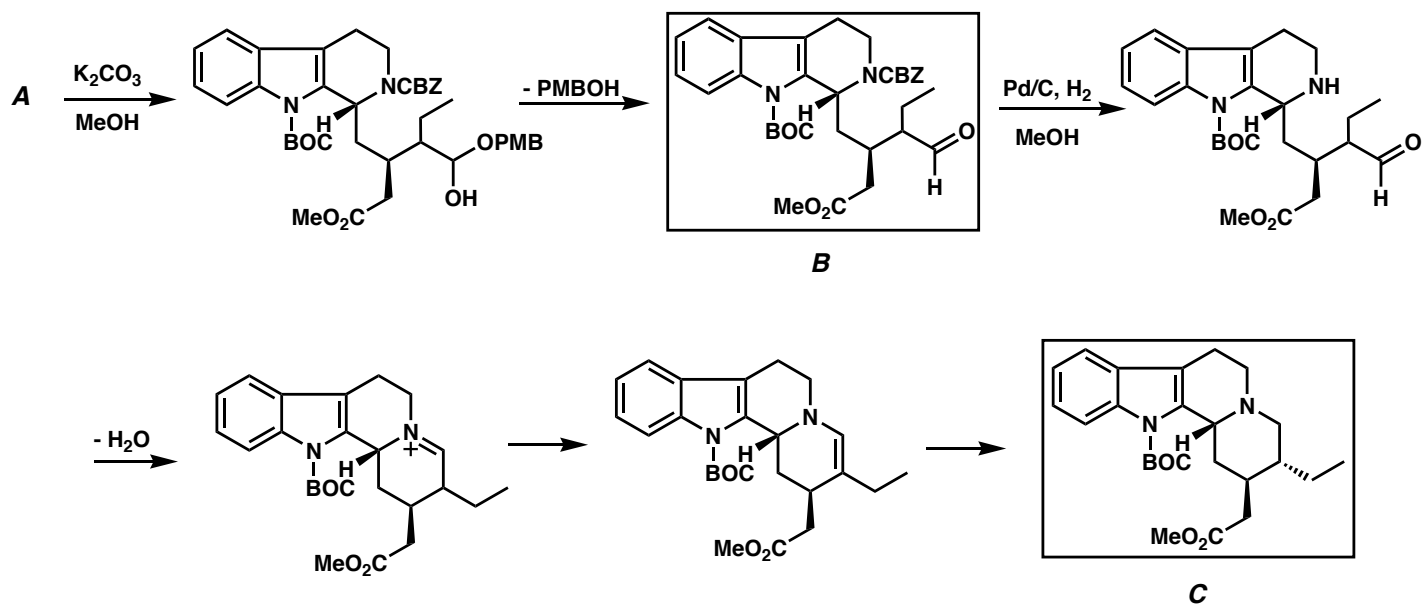


B

C

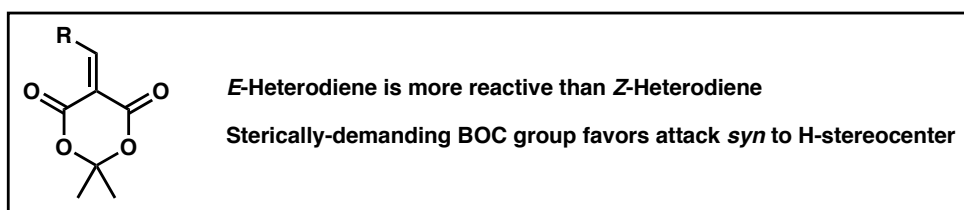
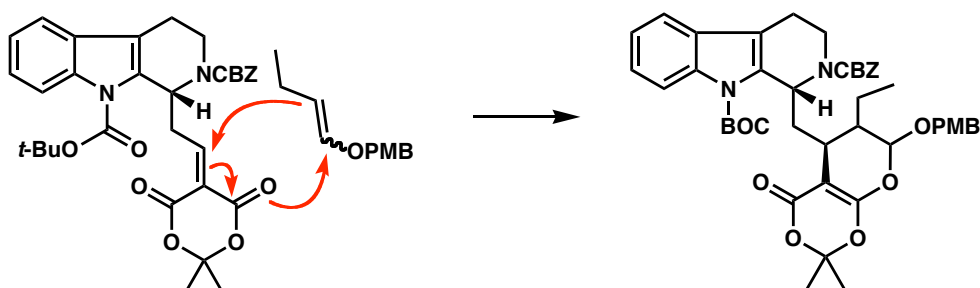
Hint: The BOC, CBZ, and PMB groups are all present in A.



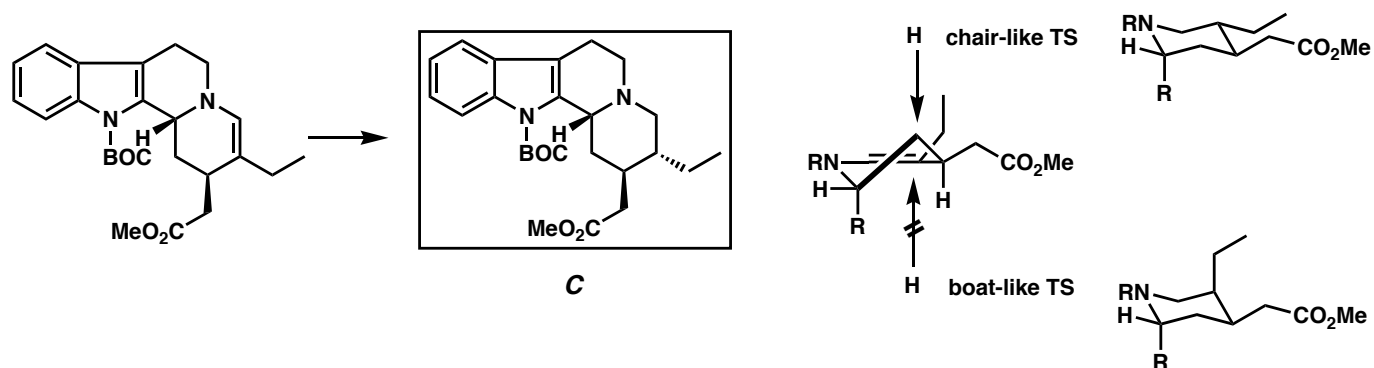


Explanations of Reactivity:

Tietze, L. F. *Angew. Chem., Int. Ed.* **1999**, *38*, 2045.  
Hirsutine Total Synthesis



Stereochemistry can be explained by stereoelectronic arguments.



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 Ryan McFadden 6/27/05

In the following reaction sequence, the authors conclude that there are two pathways to the product. Provide both mechanisms and (if possible) state the earliest intermediate that is common to both pathways. Try to rationalize the relative stereochemistry. *Hint: most of the complexity of the molecule is generated in steps one and two. Also, the authors can isolate the product of step 3 chromatographically.*

