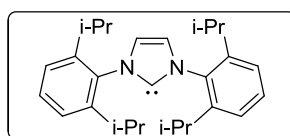
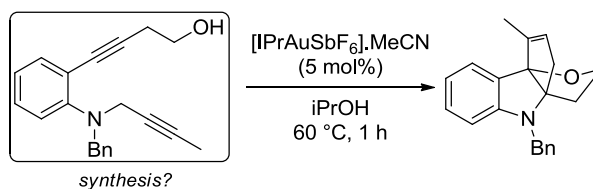




EAA Group Problems - 16/06/15

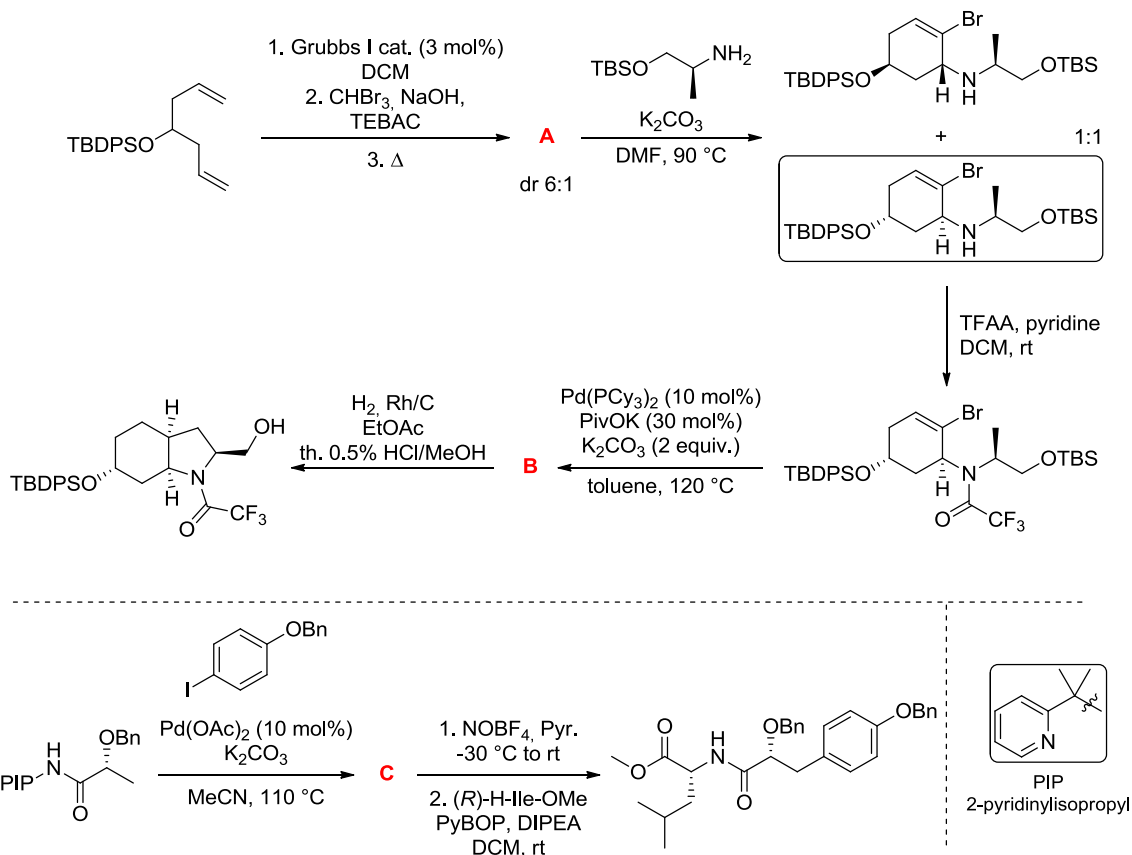


Problem 1. Please provide a mechanism for the formation of the tetracyclic compound below as well as a synthesis of the substrate.

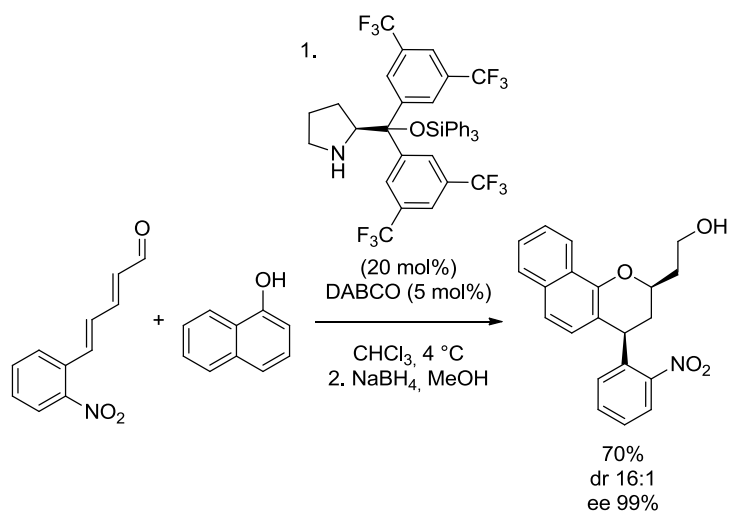


IPr
1,3-Bis(2,6-diisopropylphenyl)-1,3-dihydro-2H-imidazol-2-ylidene

Problem 2. Here is a synthesis of two fragments of both aeruginosin 298A and 98 B. Please identify the structures of intermediates **A**, **B** and **C**, and give mechanisms and stereochemistry of the resulting products where needed.



Problem 3. Please provide a mechanism and a stereochemistry rationale for the formation of the chromane below.



Problem 4. Here is a synthesis of two precursors of spirooliganones A and B. Please identify the structures of intermediates **D**, and give mechanisms and stereochemistry of the resulting products where needed.

