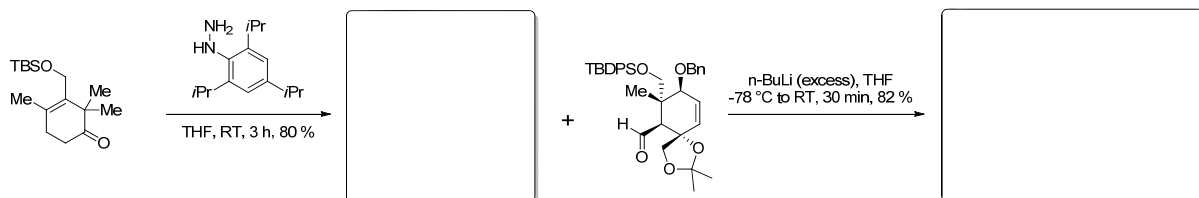




Problem Set No. 2

- Answer the following questions derived from Reich *J. Org. Chem.* **2012**, 77, 5471:
 - How can the Brook Rearrangement be used to produce lithiated allenes?
 - What is the product that forms when 1 eq. of phenyl lithium is added to 1 eq. of iodobenzene? How was the structure characterized?
 - How does the addition of HMPA alter the structure of organolithium species.
 - What is the structure of *o*-(dimethylaminomethyl)phenyllithium in THF and in THF with 3 eq. of HMPA?
 - What impact does addition of HMPA have on the chemoselectivity associated with addition to cyclohexenone?
 - Draw the structure of LDA in 3THF:2Et₂O

- The following sequence was used by Nicolaou et al. (*J. Am. Chem. Soc.* **1994**, 116, 591.) to synthesize the anti-cancer agent Taxol. Fill-in the blanks and provide an arrow pushing mechanism for the last step.



- Supplement the schemes with starting materials or products!

