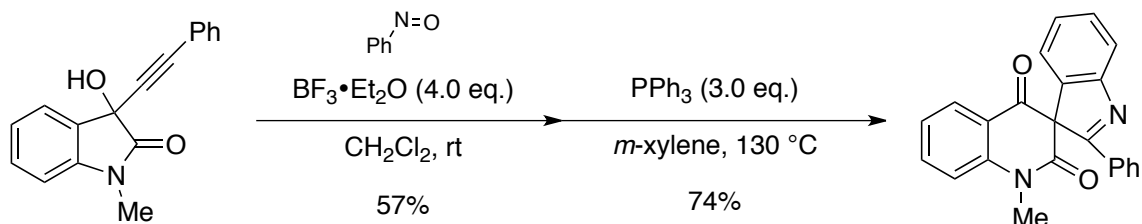


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05/12/2018

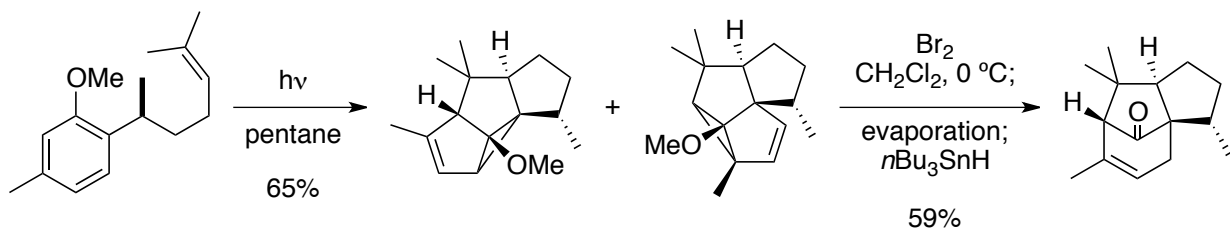
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The product was also obtained in refluxing 1,2-dichlorobenzene for 6 h even in the absence of  $\text{PPh}_3$  in the second step. Different mechanisms were proposed. Please answer each mechanisms.

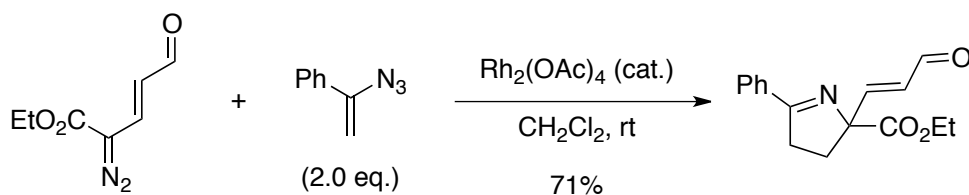
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2



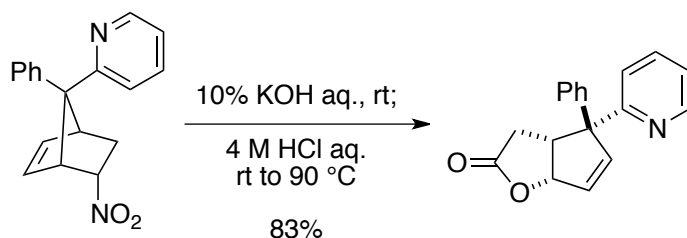
P. A. Wender and J. J. Howbert, *J. Am. Chem. Soc.*, **103**, 688 (1981)

3



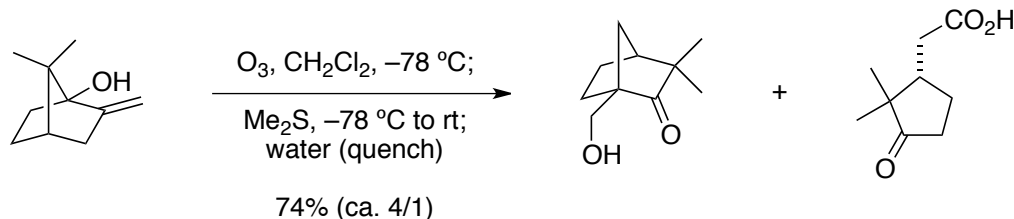
S. Katukojvala and V. Kanchupalli, *Angew. Chem. Int. Ed.*, **57**, 1 (2018)

4



H. E. Zimmerman *et al.*, *Helv. Chim. Acta*, **84**, 1342 (2001)

5

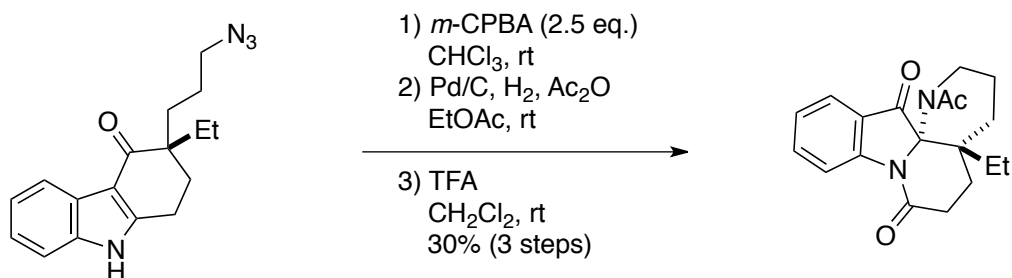


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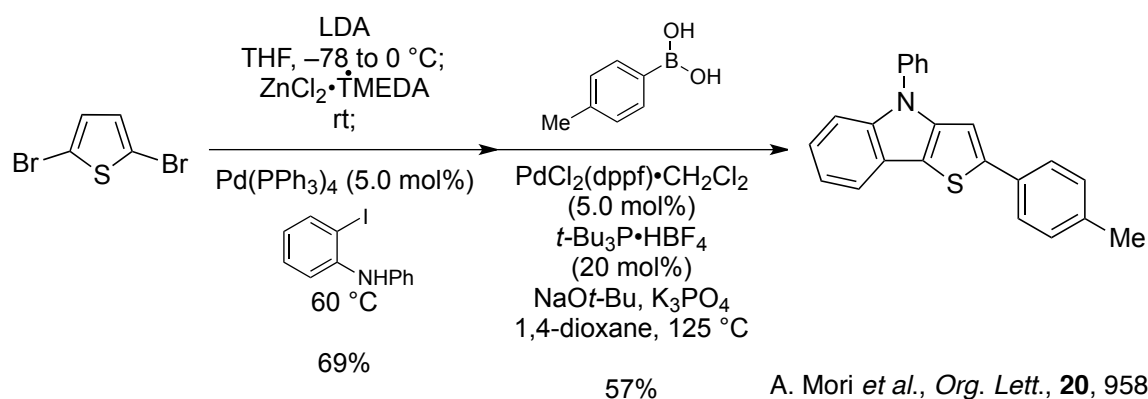
05/19/2018

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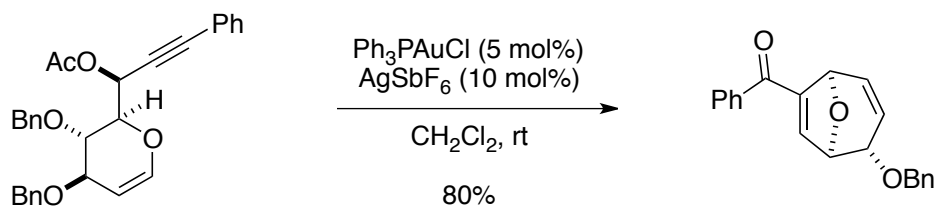
M. Dai *et al.*, *Org. Lett.*, **16**, 6216 (2014)

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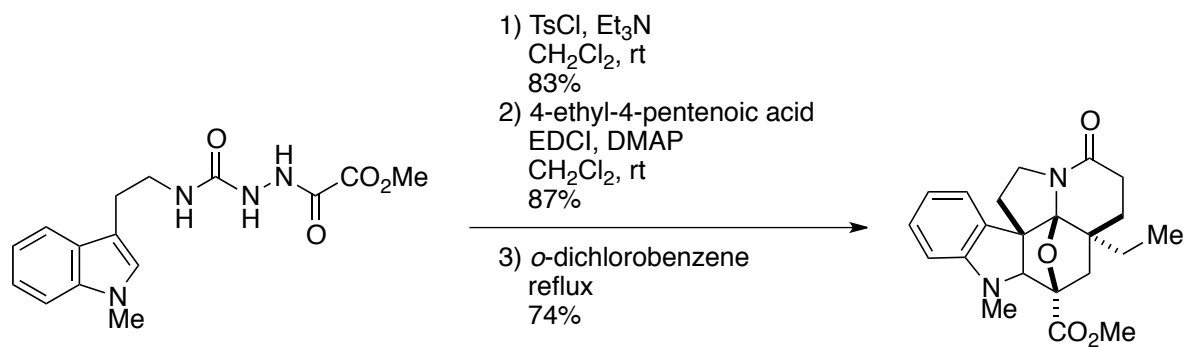
A. Mori *et al.*, *Org. Lett.*, **20**, 958 (2018)

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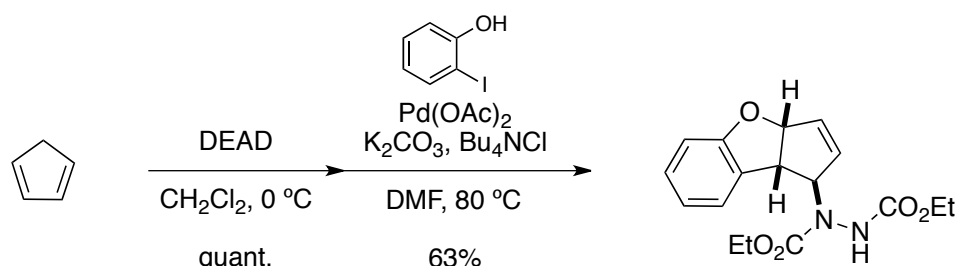
X.-W. Liu *et al.*, *Chem. Sci.*, **8**, 6656 (2017)

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D. L. Boger *et al.*, *Org. Lett.*, **7**, 741 (2005)

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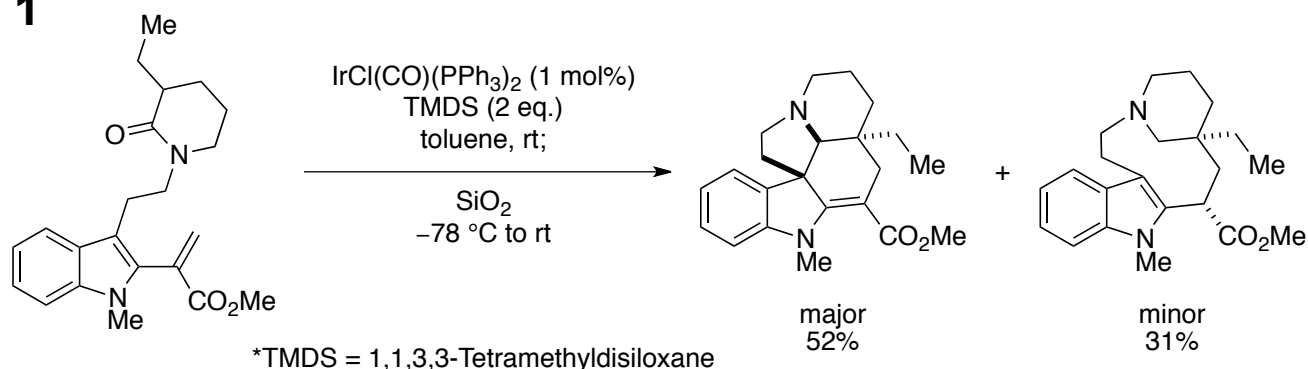


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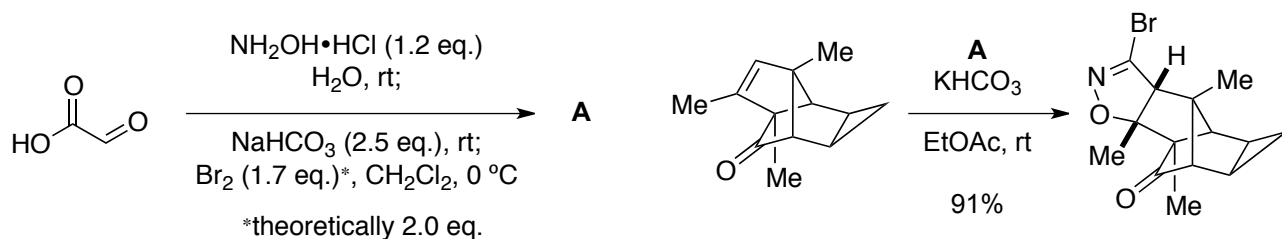
05/26/2018

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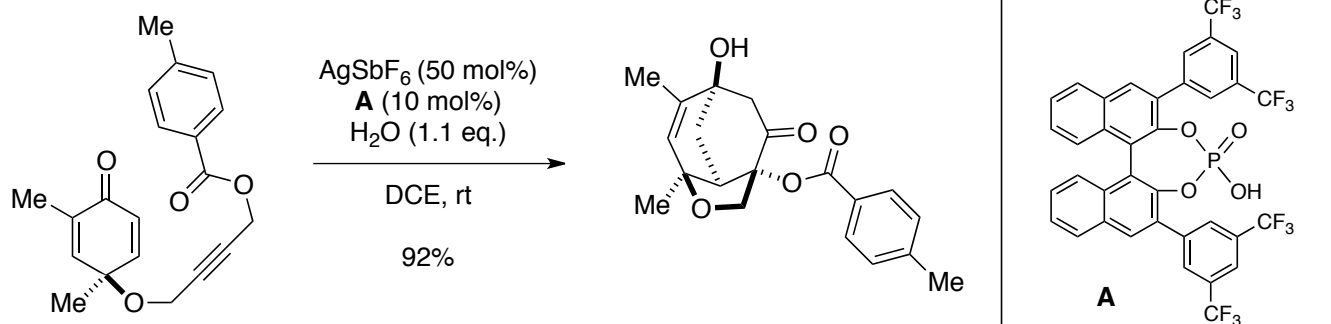
D. J. Dixon *et al.*, *Angew. Chem. Int. Ed.*, **55**, 13436 (2016)

2



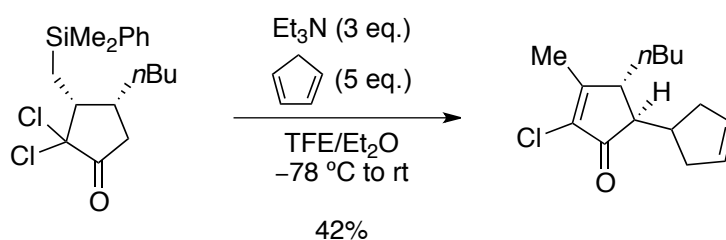
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E. M. Carreira *et al.*, *Angew. Chem. Int. Ed.*, **54**, 11227 (2015)

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P. R. Schreiner *et al.*, *Angew. Chem. Int. Ed.*, **47**, 8696 (2008)