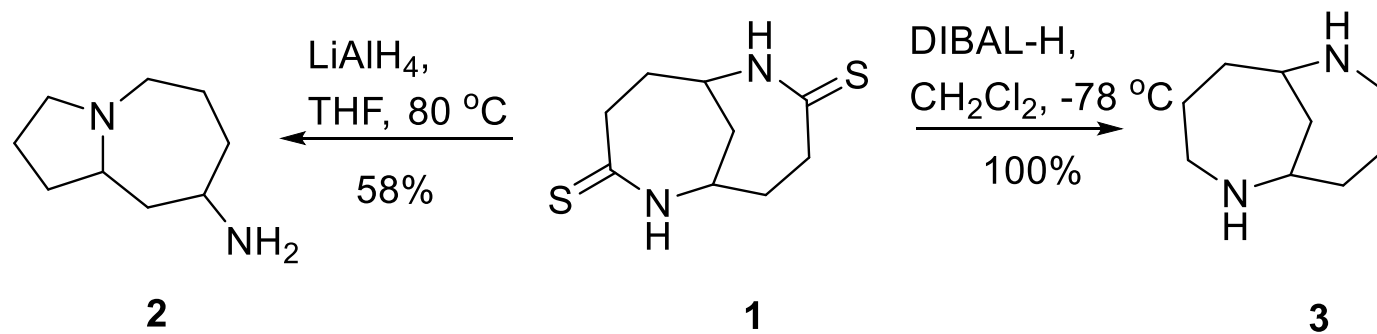
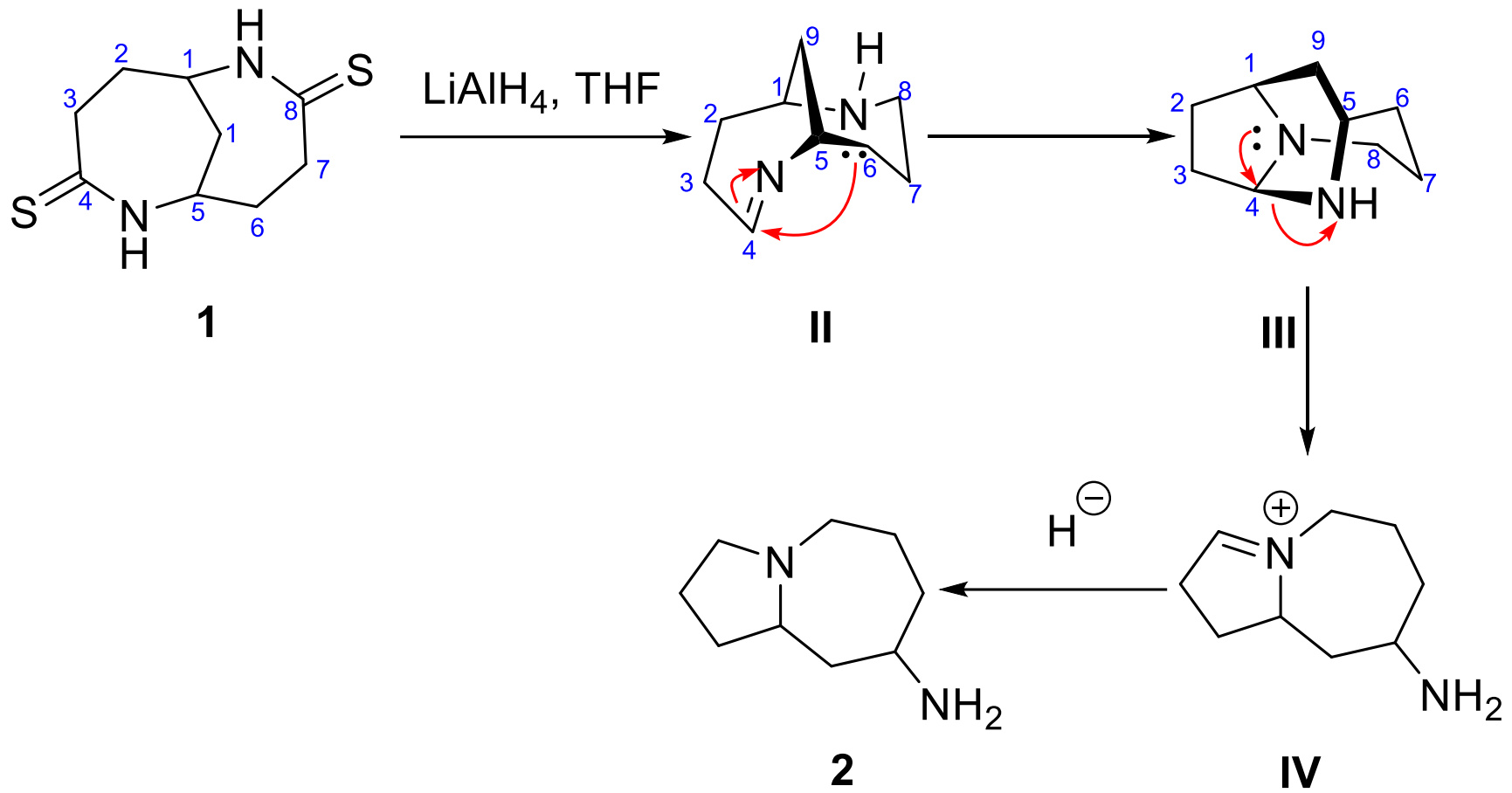


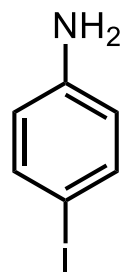
1.



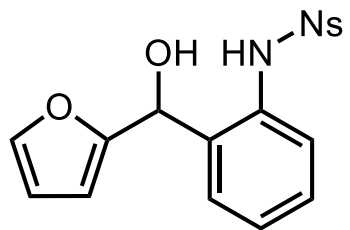
DOI: 10.1021/acs.joc.0c00829



2.



+

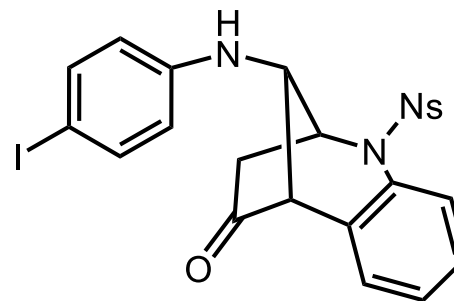


Ca(NTf₂)₂ (5 mol%)
n-Bu₄NPF₆ (5 mol%)

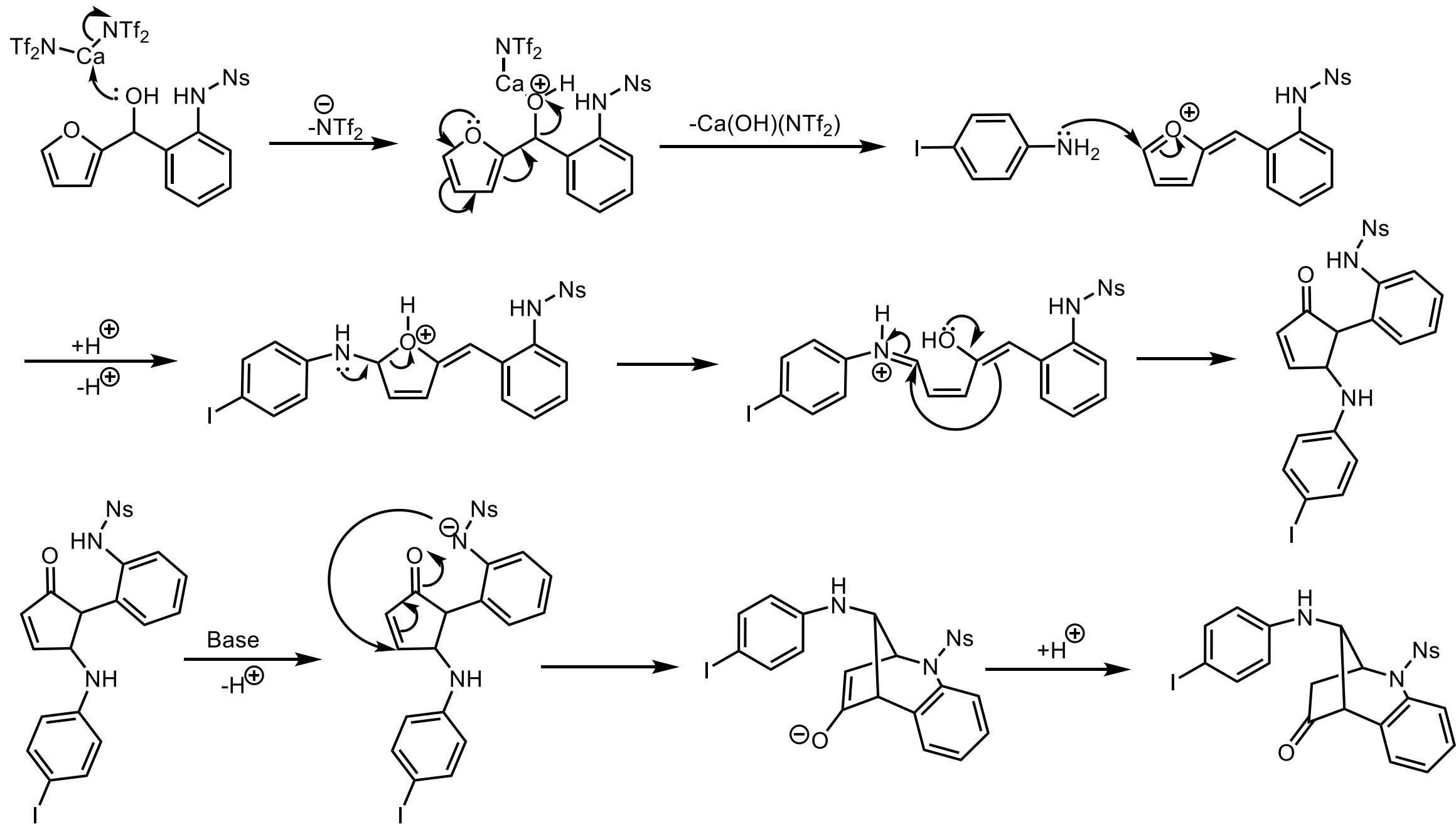
toluene, HFIP, 20°C;

Et₃N

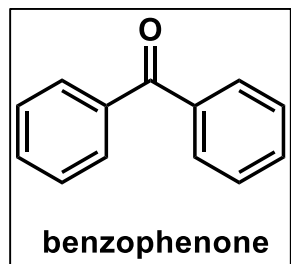
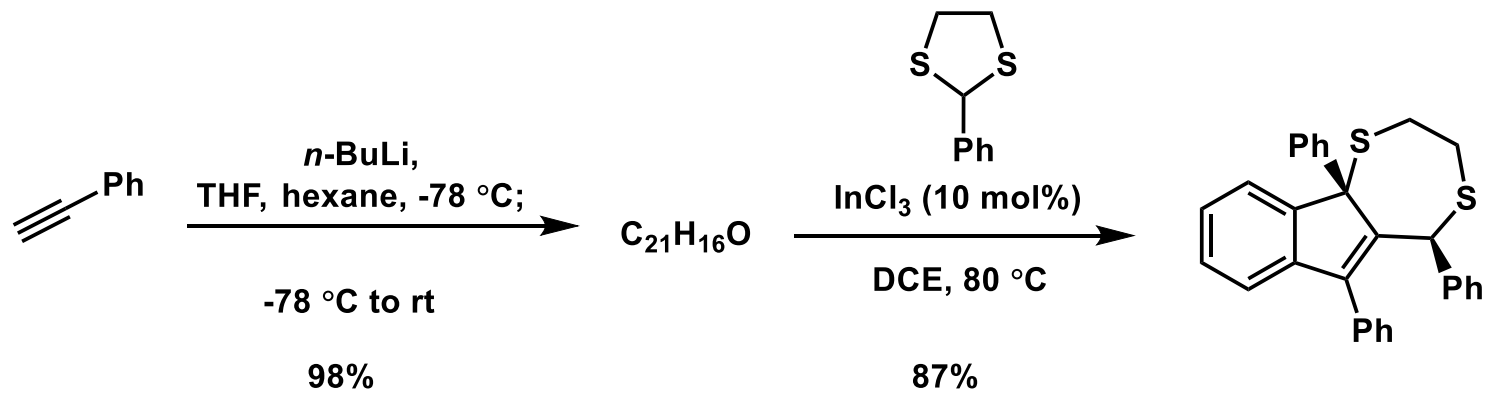
87%



Angew. Chem. Int. Ed. **2020**, 59, 1134-1138

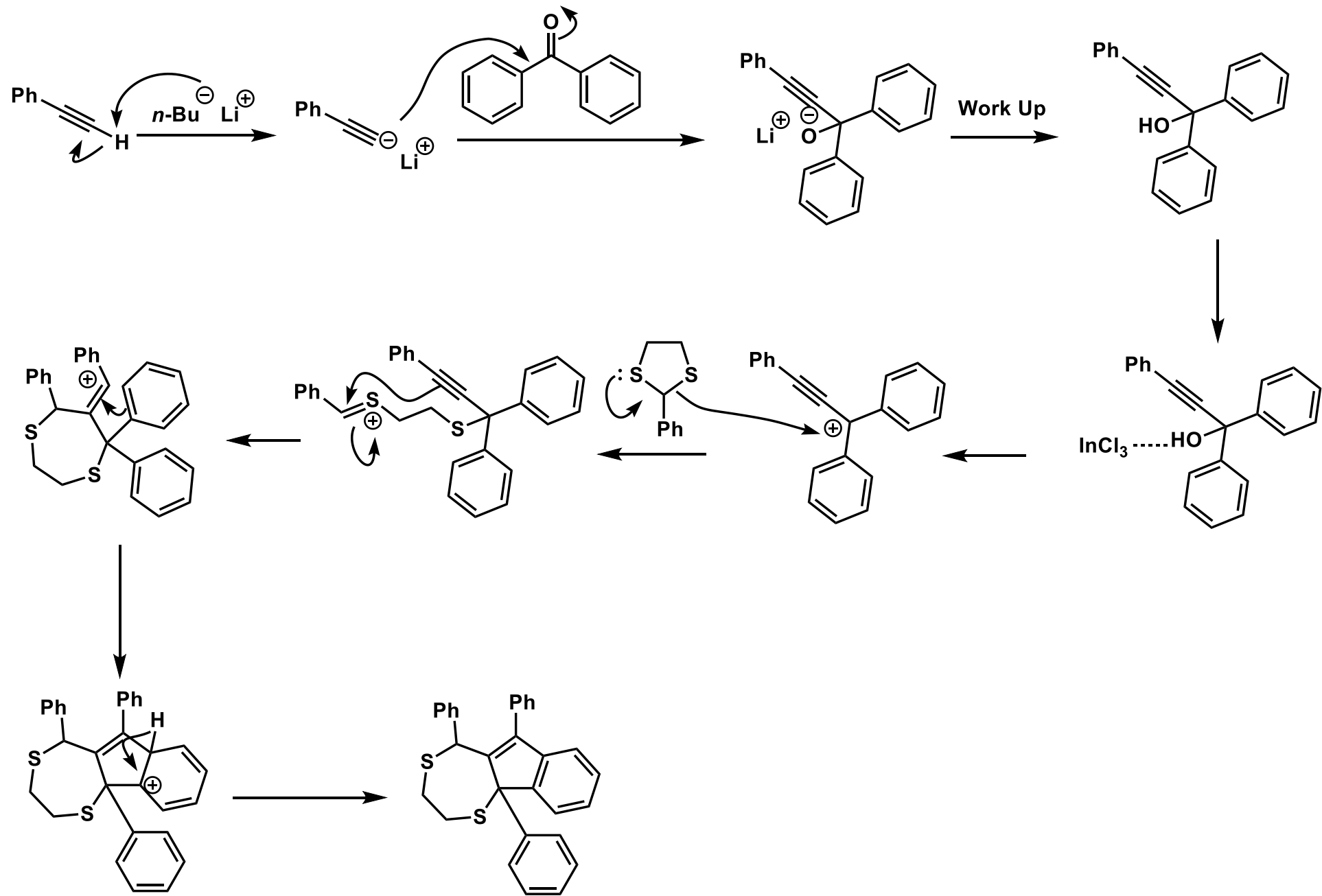


3.

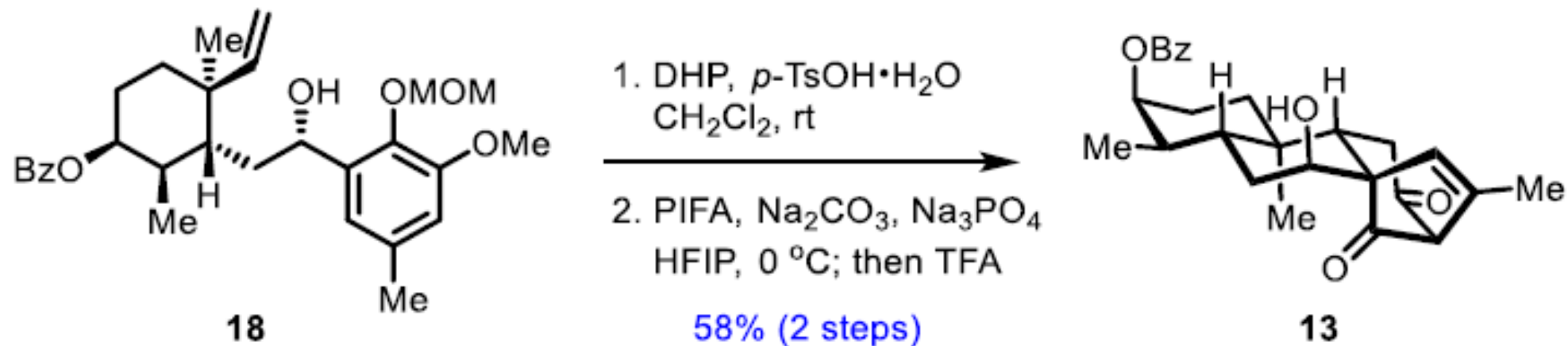


Org. Lett., **2013**, *15*, 5222-5225.

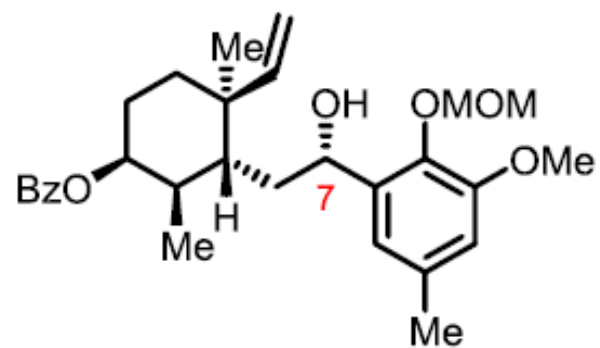
Chem. Commun., **2015**, *51*, 707-710.



4.

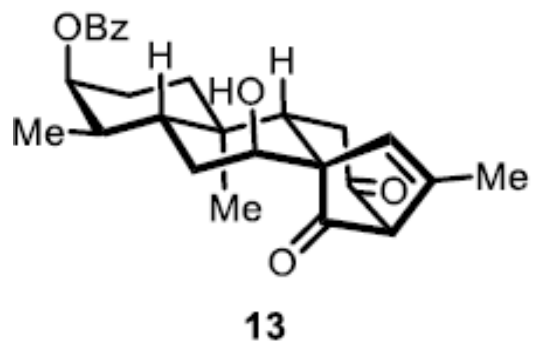
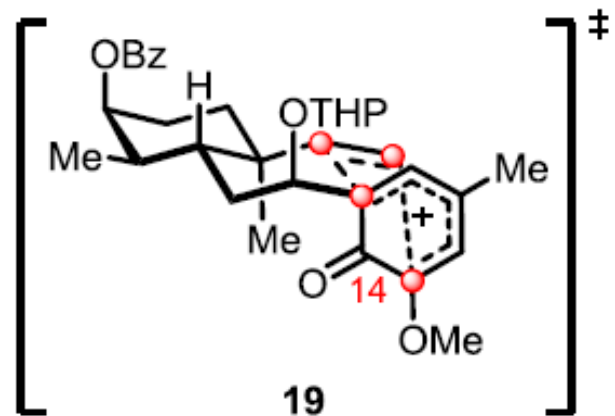


J. Am. Chem. Soc. **2020**, *142*, 4592-4597.



1. DHP, *p*-TsOH·H₂O
2. PIFA, Na₂CO₃, Na₃PO₄
HFIP, 0 °C

58% (2 steps)
[gram scale]



TFA

