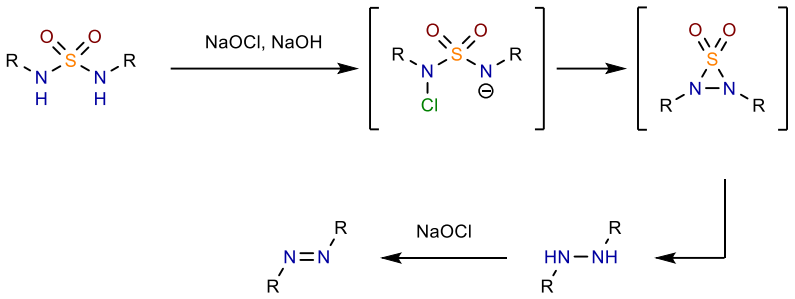
Aza Ramberg-Bäcklund

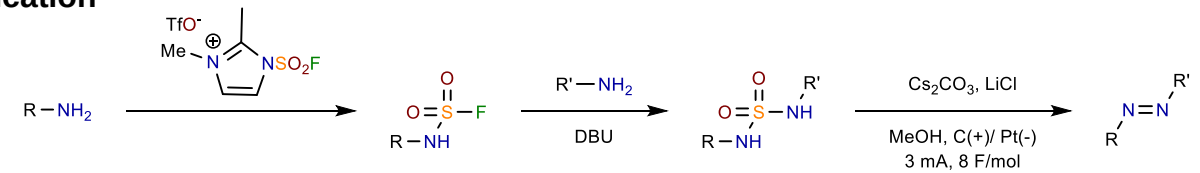
Introduction

- Typically, diaryl azos are prepared by electrophilic aromatic substitution.
- Diazenes can also be prepared by condensation of hydrazine followed by oxidation, or by [4+2] cycloadditions with azidocarboxylates.
- The “aza Ramberg-Bäcklund” offers an alternative approach to the preparation of aryl and alkyl diazenes.
- Mechanistically this is similar to the Ramberg-Bäcklund and occurs with extrusion of SO_2.

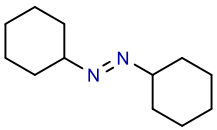


Schmitz, E. *Angew. Chem. Int. Ed.* **1965**, 4, 433. https://doi.org/10.1002/anie.196504332

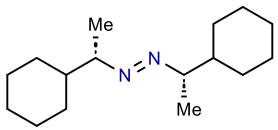
Electrochemical Modification



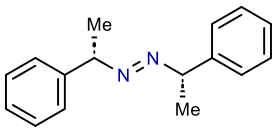
Symmetrical



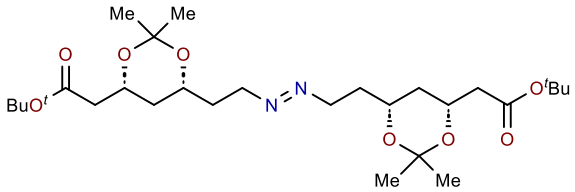
62%



87%

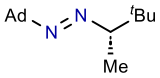


42%

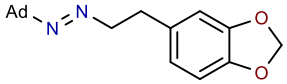


52%

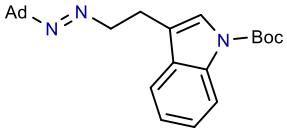
Unsymmetrical



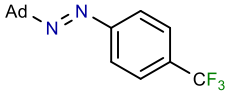
71%



47%



34%



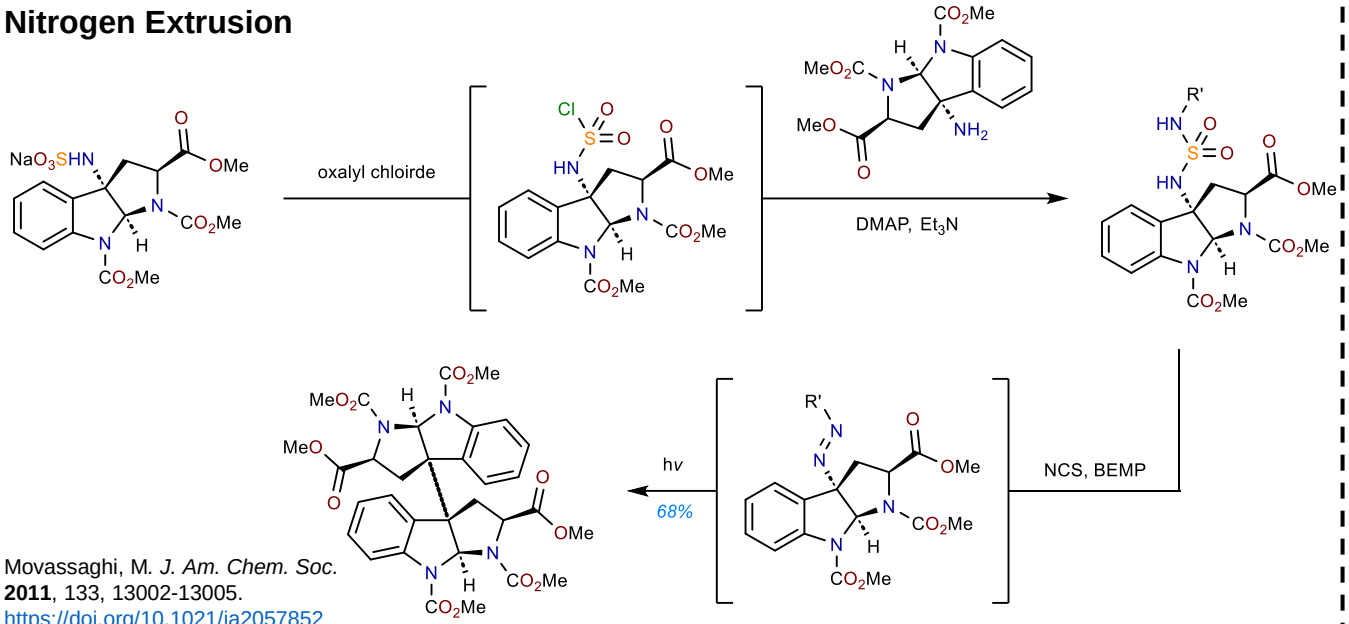
70%

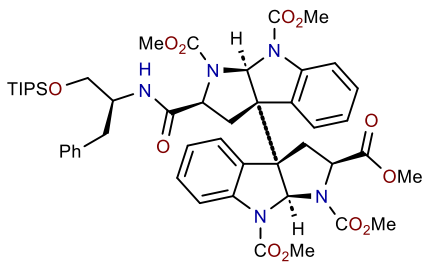
Ad= adamnatane

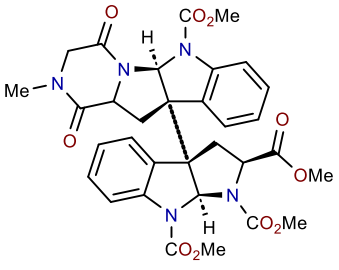
Michaudel, Q. *Org. Lett.* **2024**, 26, 7501-7506 https://doi.org/10.1021/acs.orglett.4c02218

Aza Ramberg-Bäcklund

Nitrogen Extrusion

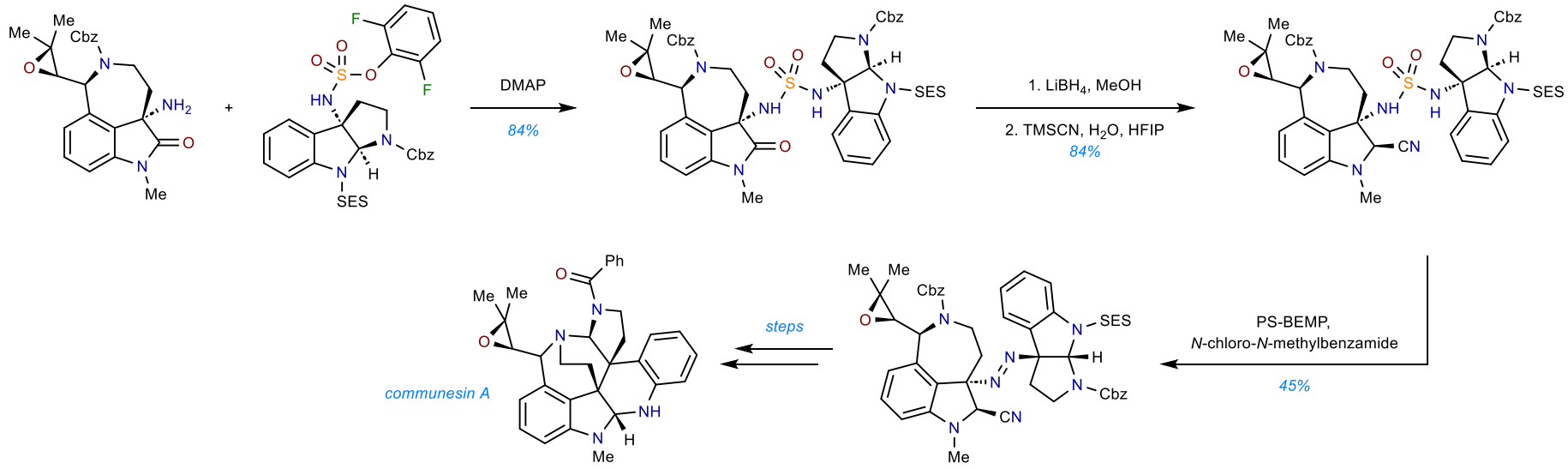






Movassaghi, M. *J. Am. Chem. Soc.* **2011**, 133, 13002-13005. https://doi.org/10.1021/ja2057852

Example in Total Synthesis



Movassaghi, M. *J. Am. Chem. Soc.* **2019**, 141, 14411-14420. https://doi.org/10.1021/jacs.9b07397