

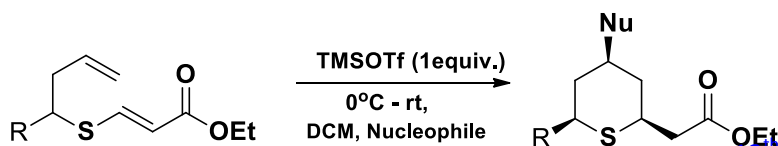
An efficient metal free methodology for the Synthesis of thiomorpholine derivatives via intramolecular Lewis acid mediated cyclization of N-tethered thioalkenols



Manash Jyoti Deka
Indian Institute of Technology Guwahati, Assam, India

Abstract

Tetrahydropyrans and its derivatives are important structural moiety of many bioactive naturally occurring molecules.¹ They are found in many petroleum products² and also play a key role in the biological activities of a number of pharmaceutical agents.² Synthesis of these tetrahydrothiopyran moieties have always been an exciting challenge for the synthetic organic chemists. Hence an efficient, metal free, methodology for the diastereoselective synthesis of dihydropyrans using Prins enol-ether cyclization reaction from enol ethers mediated by trimethylsilyl trifluoromethanesulfonate (TMSOTf) in good yields under mild reaction conditions has been developed.



The reaction of thioenol-ether derivatives with TMSOTf in dry dichloromethane and nucleophiles was carried out at 0°C. The reaction with TMSOTf in Toluene/CH₂Cl₂ (1:1) solvent system produced 2,4,6-trisubstituted tetrahydrothiopyrans in 75% yield with *dr* 88:12. The structure of the compounds were confirmed by ¹H, ¹³C NMR, IR and mass spectrometry. The diastereomeric ratio was determined from the ¹H NMR of crude reaction mixture. The reaction was also screened with various Lewis and Brønsted acids with an aim to synthesize dihydrothiopyran ring system.

Speaker Publications:

1. "Tuning electrical properties of Graphene with different π -stacking organic molecules"; The Journal of Physical Chemistry C, 2018, 2016, Volume 120, Issue 7, Pages 4121 - 4129
2. "Carbon dot based sensing of dopamine and ascorbic acid"; Journal of Nanoparticles, 2014, doi/ /2014/178518/
3. "Chiral carbon dots and their effect on the optical properties of photosensitizers†"; Rsc Advances, 2017, Volume 7, Pages: 53-57

[12th International Conference on Medicinal Chemistry and Drug Discovery](#); October 14-15, 2020, webinar.

Abstract Citation:

Manash Jyoti Deka, An efficient metal free methodology for the Synthesis of thiomorpholine derivatives via intramolecular Lewis acid mediated cyclization of N-tethered thioalkenols, Euro Medicinal Chemistry 2020, 12th International Conference on Medicinal Chemistry and Drug Discovery, October 14-15, 2020, webinar.

<https://medicinalchemistrymeetings.pharmaceuticalconferences.com/abstract/2020/an-efficient-metal-free-methodology-for-the-synthesis-of-thiomorpholine-derivatives-via-intramolecular-lewis-acid-mediated-cyclization-of-n-tethered-thioalkenols>



Biography: Dr Manash Jyoti Deka has completed his PhD at the age of 30 years from IIT Guwahati. He has published more than 10 papers in reputed journals. He is currently working as an Assistan Professor in the Department of Chemistry, Assam Don Bosco University.