Electronic Supplementary Material (ESI) for Organic & Biomolecular Chemistry. This journal is © The Royal Society of Chemistry 2017

[3, 3]-Sigmatropic Rearrangement of Allenic Alcohols: Stereoselective Synthesis of 1,3-Diene-2-ol Sulfonates

Yuyang Zhao a,b, Yurong Wang a, Zhanshou Gu b, Zhiming Wang a,b,*

^a College of Pharmaceutical Science, Zhejiang Chinese Medical University,

Hangzhou, Zhejiang 311400, P. R. China

^b School of Petrochemical Engineering, Changzhou University, Changzhou,

Jiangsu 213164, P. R. China.

wzmmol@hotmail.com; zhiming@cczu.edu.cn

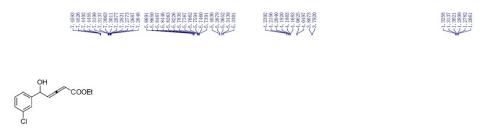
Supporting Information

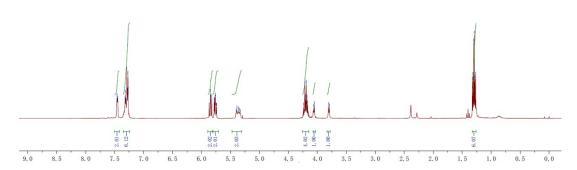
List of contents

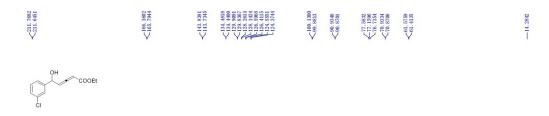
¹ H NMR and ¹³ C NMR spectra copies of compounds 2h , 2o	S2-S3
¹ H NMR and ¹³ C NMR spectra copies of compounds 3a-t	S4-S23
¹ H NMR, ¹³ C NMR and NOESY spectra copies of compounds 4-8	S23-S32

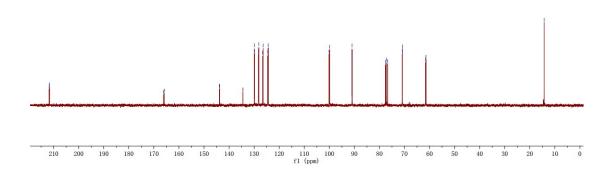
¹H and ¹³C NMR Spectra of 2

¹H NMR spectrum of compound 2h





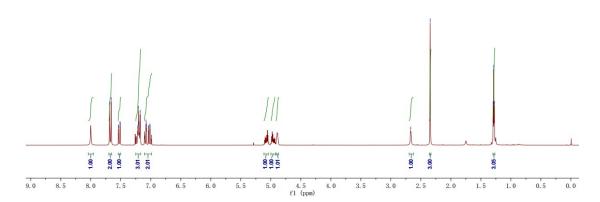




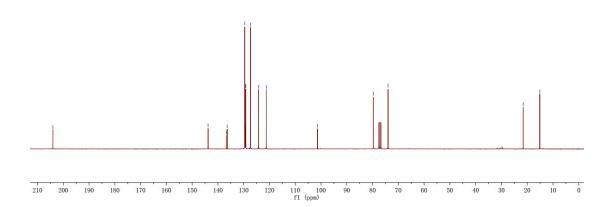
¹H NMR spectrum of compound 20







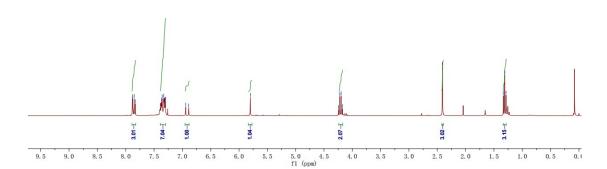


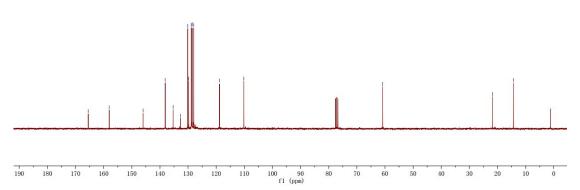


¹H and ¹³C NMR Spectra of 3

¹H NMR spectrum of compound 3a

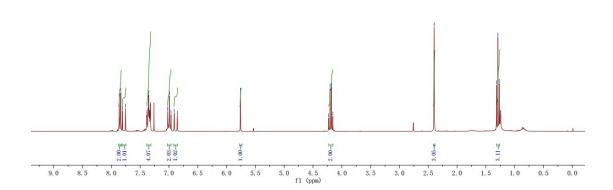




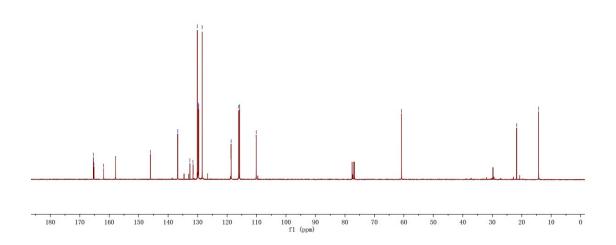


¹H NMR spectrum of compound 3b



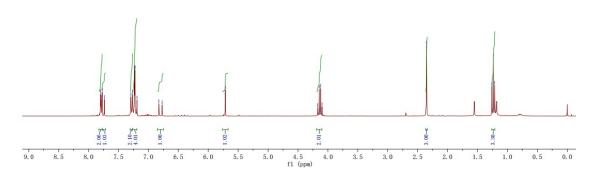


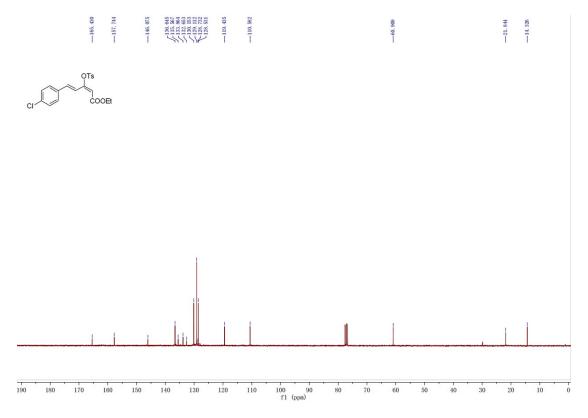




¹H NMR spectrum of compound 3c

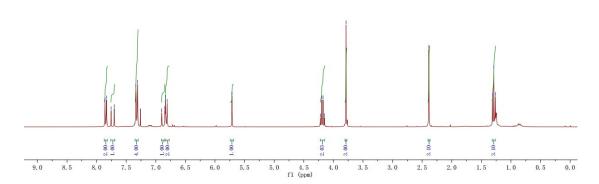




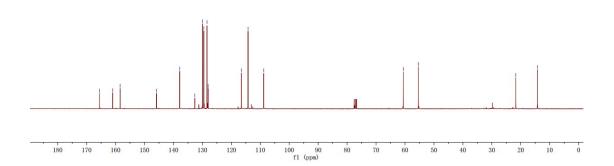


¹H NMR spectrum of compound 3d

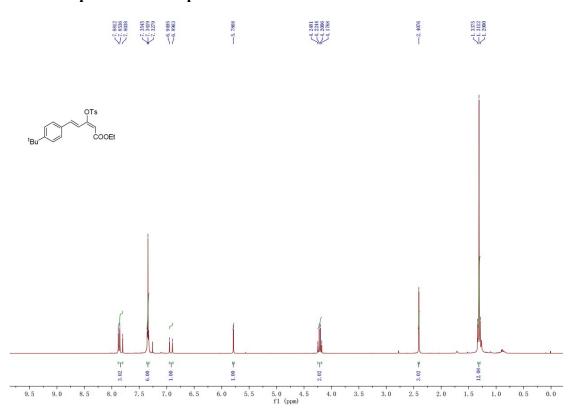




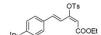


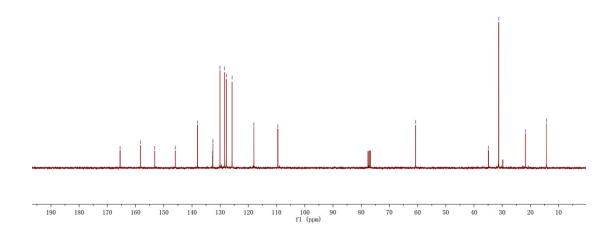


¹H NMR spectrum of compound 3e



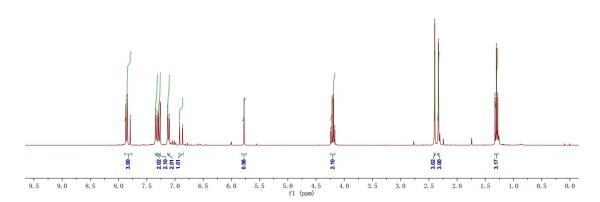




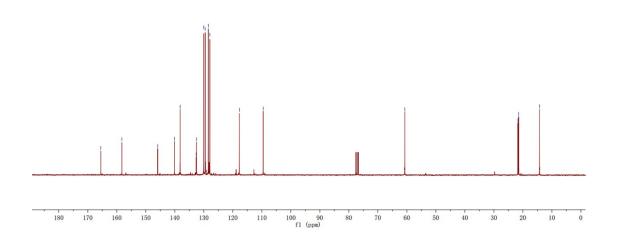


¹H NMR spectrum of compound 3f



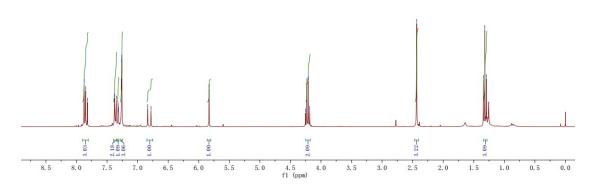


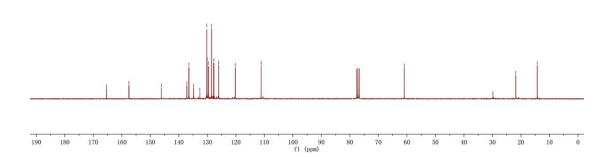




¹H NMR spectrum of compound 3g

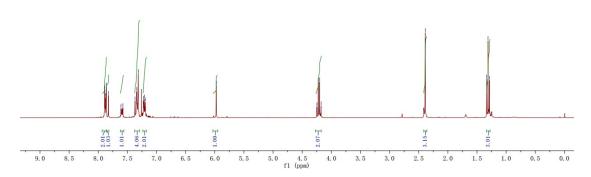




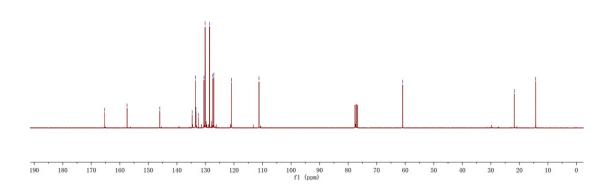


¹H NMR spectrum of compound 3h



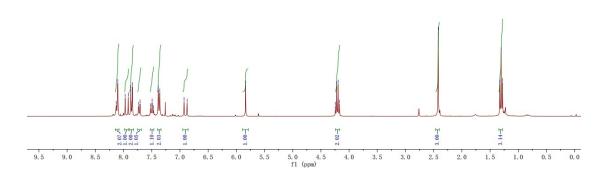


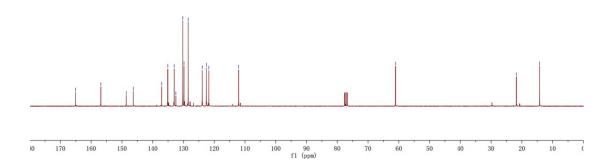




¹H NMR spectrum of compound 3i

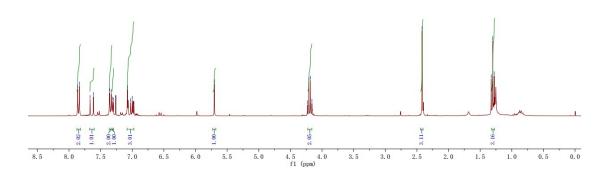




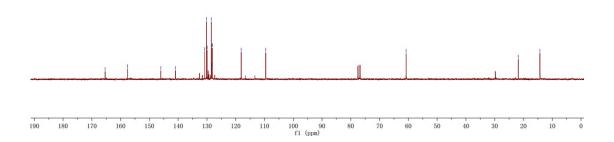


¹H NMR spectrum of compound 3j





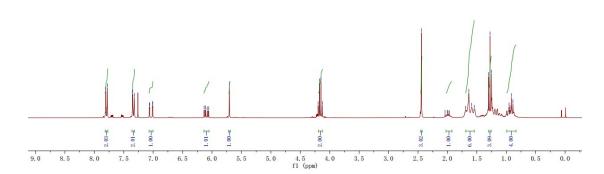




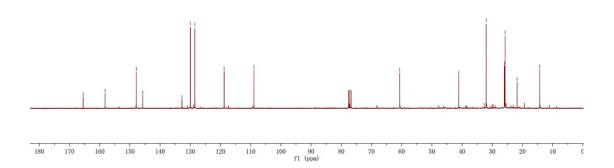
¹H NMR spectrum of compound 3k





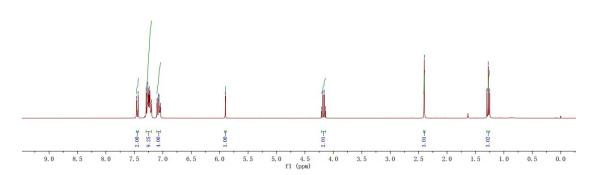




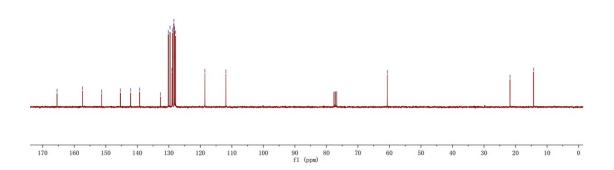


¹H NMR spectrum of compound 31



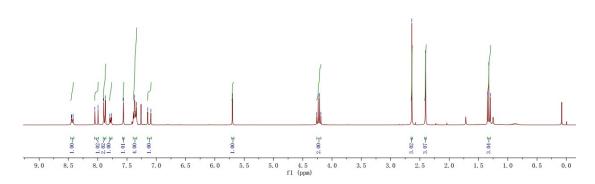


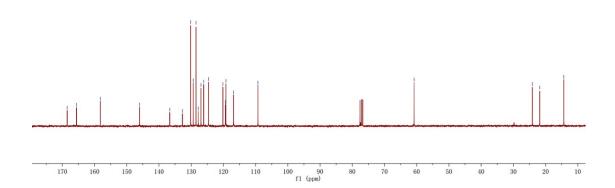




¹H NMR spectrum of compound 3m

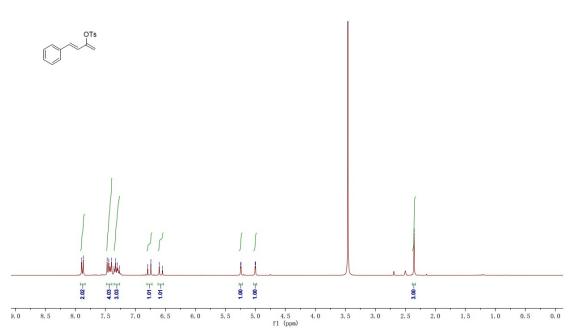


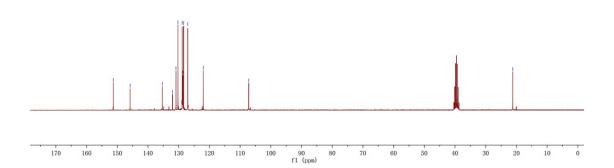






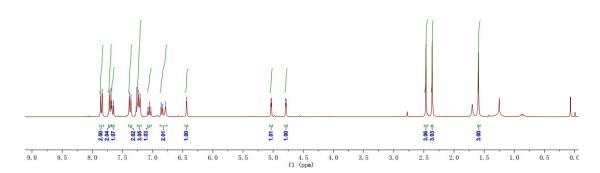


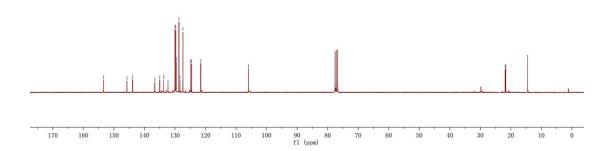




¹H NMR spectrum of compound 30



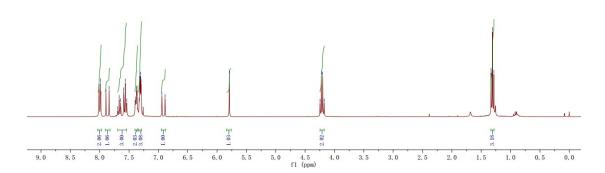




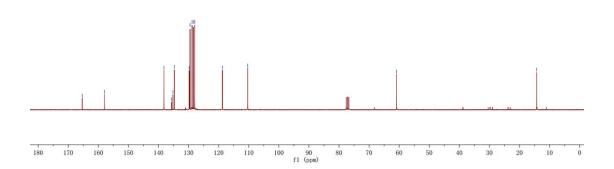
^{1}H NMR spectrum of compound 3p





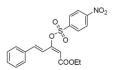


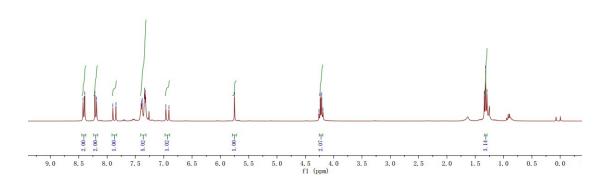




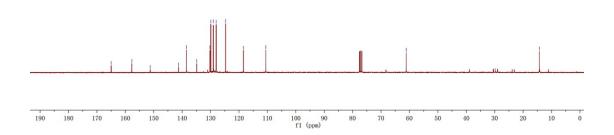
¹H NMR spectrum of compound 3q



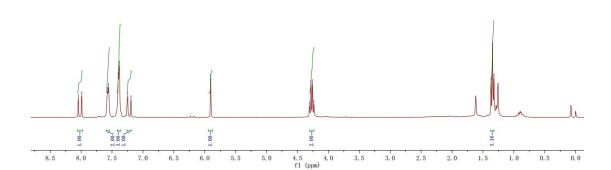








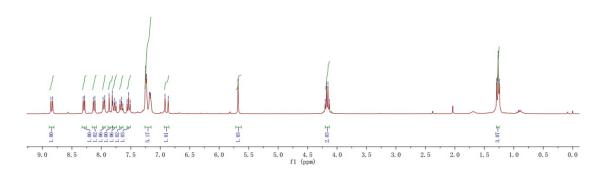




¹H NMR spectrum of compound 3s



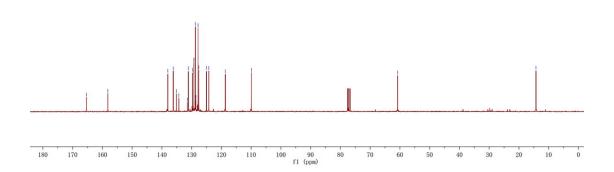




¹³C NMR spectrum of compound 3s

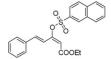
| 165,336 | 188, 102 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 | 189, 103 |

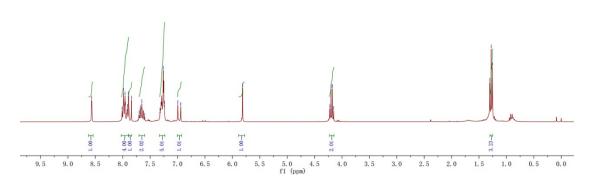




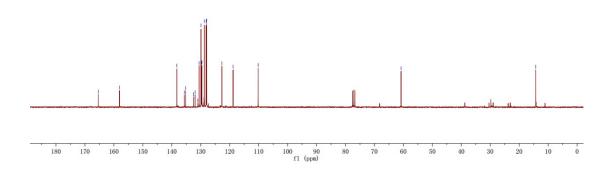
¹H NMR spectrum of compound 3t







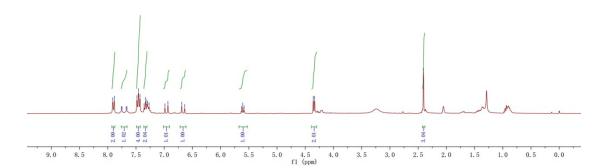


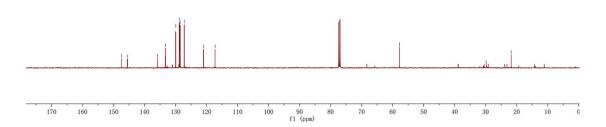


¹H, ¹³C NMR and NOESY Spectra of 4-8

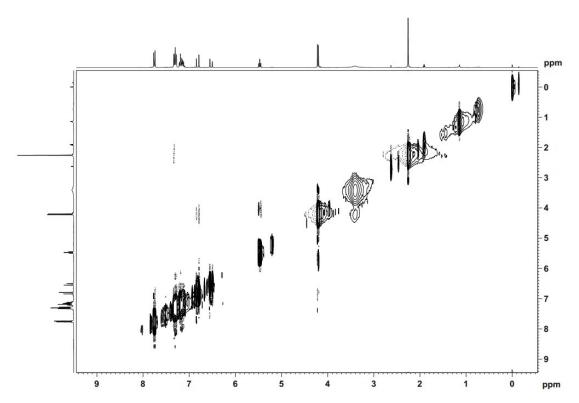
¹H NMR spectrum of compound 4





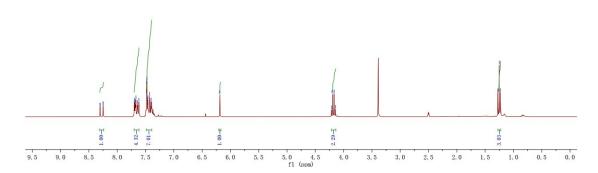


NOESY NMR spectrum of compound 4

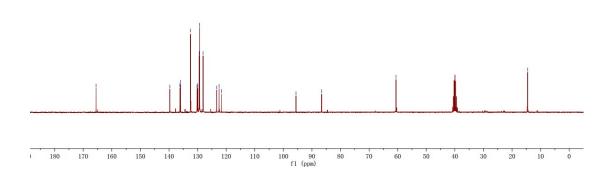


¹H NMR spectrum of compound 5

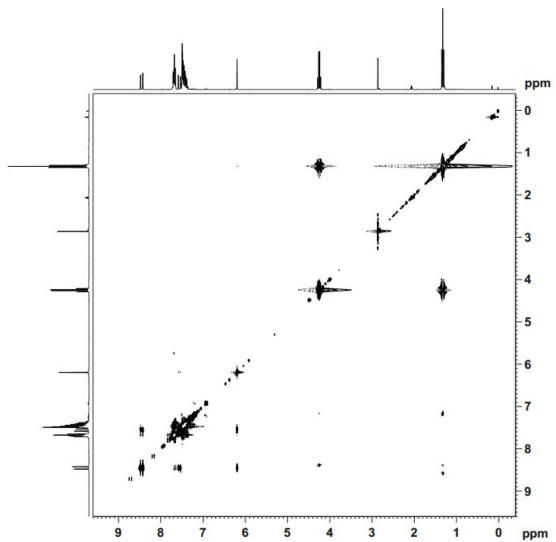






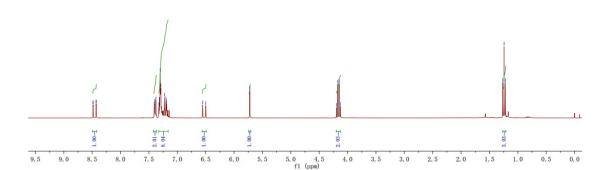


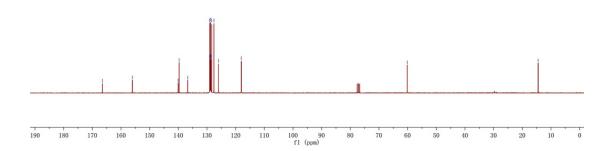
NOESY NMR spectrum of compound 5



¹H NMR spectrum of compound 6



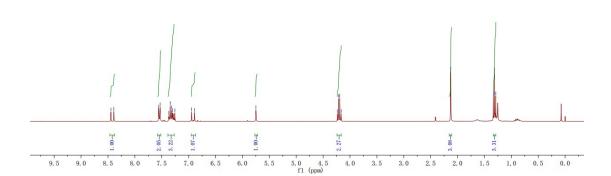




¹H NMR spectrum of compound (2Z, 4E)-7

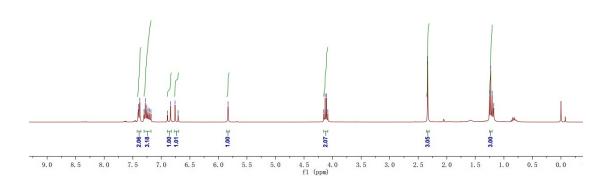






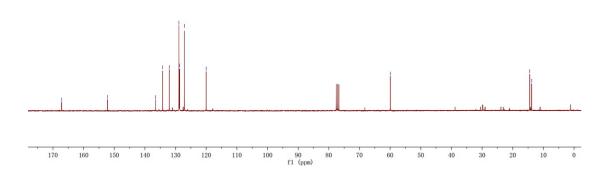
1 H NMR spectrum of compound (2*E*, 4*E*)-7





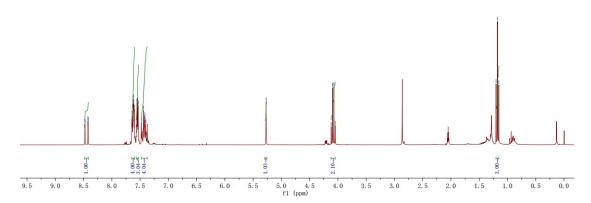
13 C NMR spectrum of compound (2*E*, 4*E*)-7



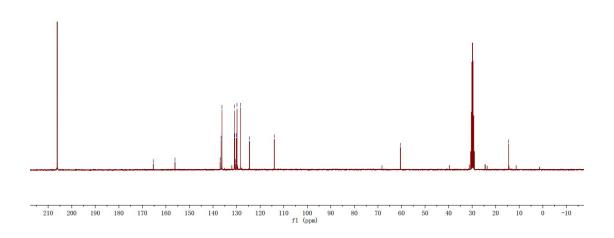


¹H NMR spectrum of compound 8









NOESY NMR spectrum of compound 8

