

New Flavone C-Glycosides from *Scleranthus perennis* and Their Anti-Collagenase Activity

Katarzyna Jakimiuk ¹, Jakub W. Strawa ¹, Sebastian Granica ², and Michał Tomczyk ^{1,*}

¹ Department of Pharmacognosy, Faculty of Pharmacy with the Division of Laboratory Medicine, Medical University of Białystok, ul. Mickiewicza 2a, 15-230 Białystok, Poland; katarzyna.jakimiuk@umb.edu.pl (K.J.), jakub.strawa@umb.edu.pl (J.W.S.); michal.tomczyk@umb.edu.pl (M.T.)

² Microbiota Lab, Center for Preclinical Studies, Department of Pharmacognosy and Molecular Basis of Phytotherapy, Faculty of Pharmacy, Medical University of Warsaw, ul. Banacha 1, 02-097 Warsaw, Poland; sgranica@wum.edu.pl (S.G.)

* Correspondence: michal.tomczyk@umb.edu.pl; Tel.: +48 85 748 56 94

Contents

Fig. 1S. Product ion scan in positive mode of **1**

Fig. 2S. Product ion scan in negative mode of **1**

Fig. 3S. UV spectrum of **1**

Fig. 4S. IR spectrum of **1** in KBr

Fig. 5S. ¹H NMR spectrum (400 MHz) of **1** in CD₃OD

Fig. 6S. ¹³C NMR spectrum (400 MHz) of **1** in CD₃OD

Fig. 7S. ¹H-¹H COSY spectrum of **1** in CD₃OD

Fig. 8S. HSQC spectrum of **1** in CD₃OD

Fig. 9S. HMBC spectrum of **1** in CD₃OD

Fig. 10S. Product ion scan in positive mode of **2**

Fig. 11S. Product ion scan in negative mode of **2**

Fig. 12S. UV spectrum of **2**

Fig. 13S. IR spectrum of **2** in KBr

Fig. 14S. ¹H NMR spectrum (400 MHz) of **2** in CD₃OD

Fig. 15S. ¹³C NMR spectrum (400 MHz) of **2** in CD₃OD

Fig. 16S. ¹H-¹H COSY spectrum of **2** in CD₃OD

Fig. 17S. HSQC spectrum of **2** in CD₃OD

Fig. 18S. HMBC spectrum of **2** in CD₃OD

Fig. 19S. ¹H NMR spectrum (400 MHz) of **3** in CD₃OD

Fig. 20S. ¹³C NMR spectrum (400 MHz) of **3** in CD₃OD

Fig. 21S. ¹H-¹H COSY spectrum of **3** in CD₃OD

Fig. 22S. HSQC spectrum of **3** in CD₃OD

Fig. 23S. HMBC spectrum of **3** in CD₃OD

Fig. 24S. Product ion scan in positive mode of **4**

Fig. 25S. Product ion scan in negative mode of **4**

Fig. 26S. UV spectrum of **4**

Fig. 27S. IR spectrum of **4** in KBr

Fig. 28S. ^1H NMR spectrum (400 MHz) of **4** in CD_3OD

Fig. 29S. ^{13}C NMR spectrum (400 MHz) of **4** in CD_3OD

Fig. 30S. ^1H - ^1H COSY spectrum of **4** in CD_3OD

Fig. 31S. HSQC spectrum of **4** in CD_3OD

Fig. 32S. HMBC spectrum of **4** in CD_3OD

Fig. 1S. Product ion scan in positive mode of 1

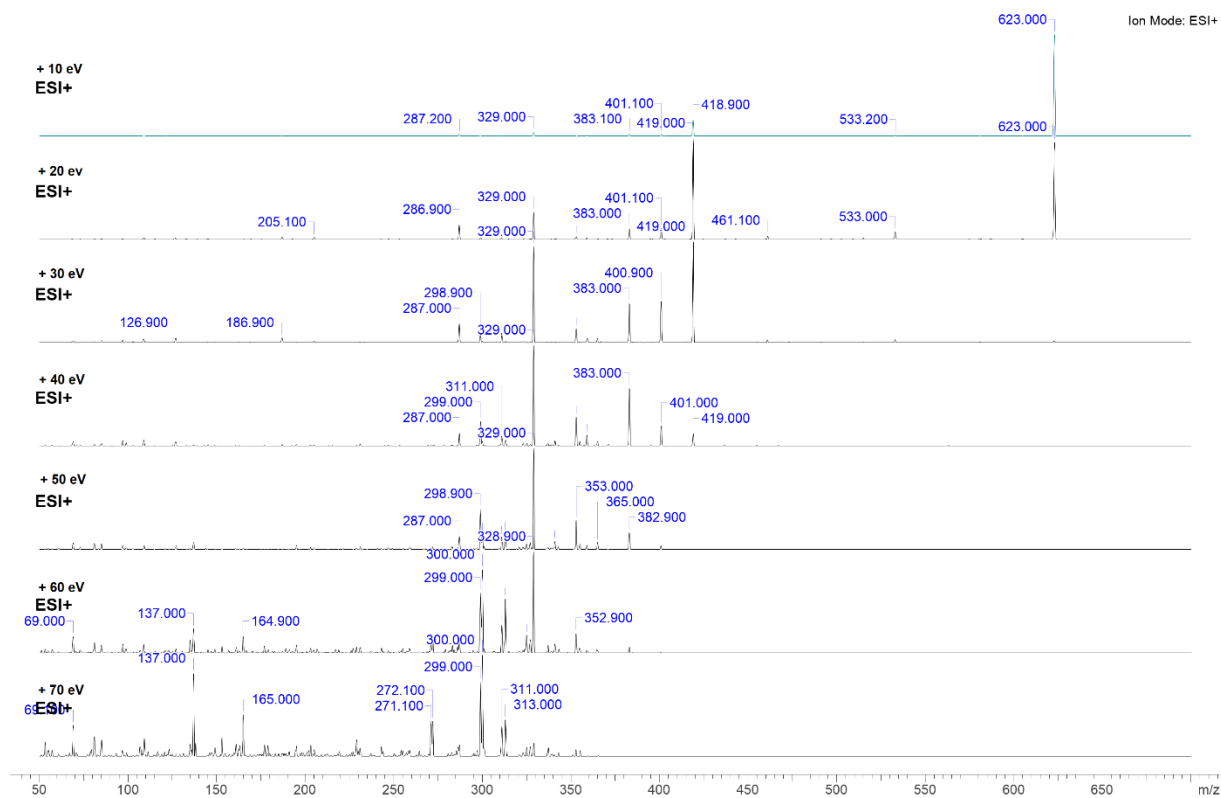


Fig. 2S. Product ion scan in negative mode of 1

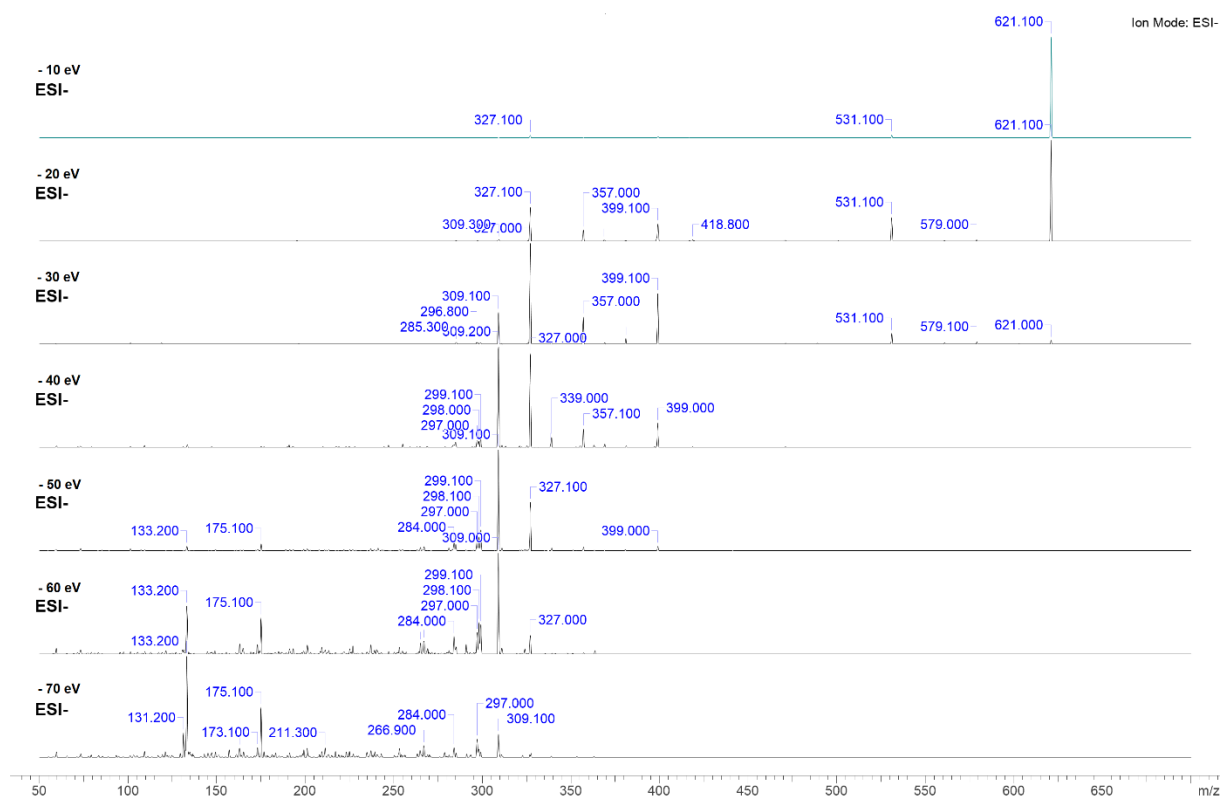


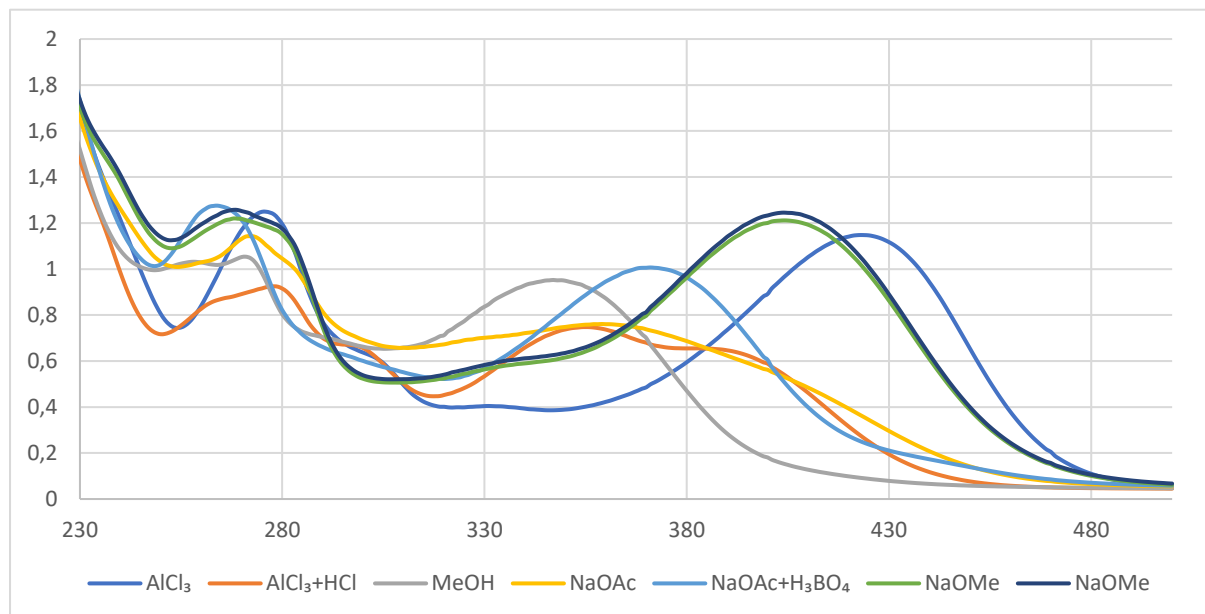
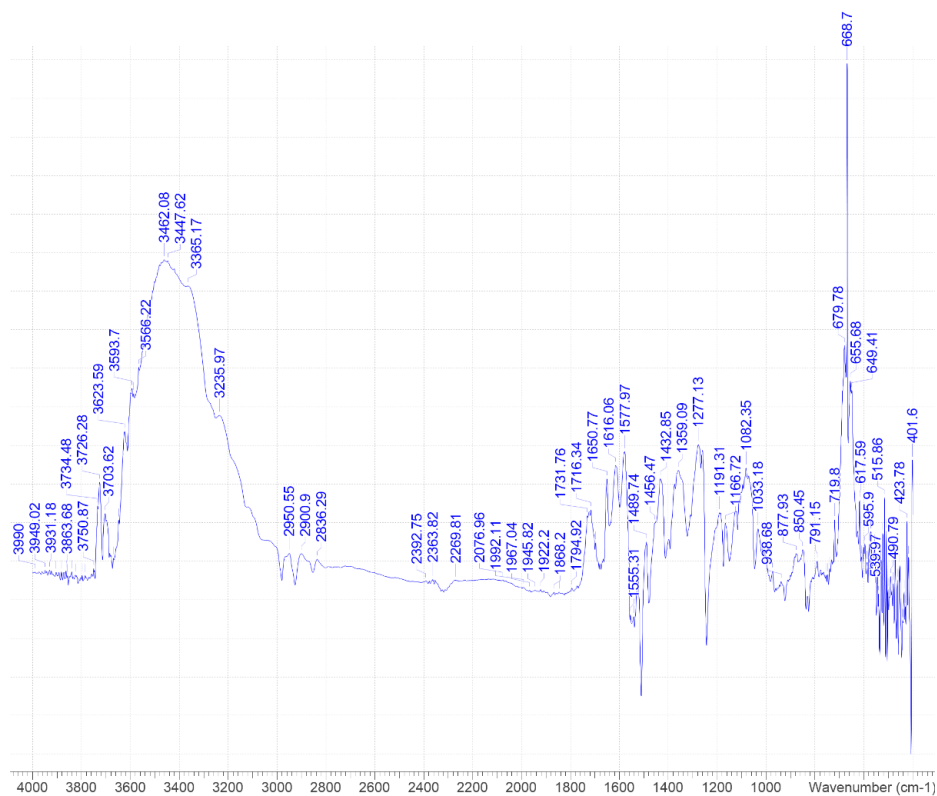
Fig. 3S. UV spectrum of **1****Fig. 3S.** IR spectrum of **1** in KBr

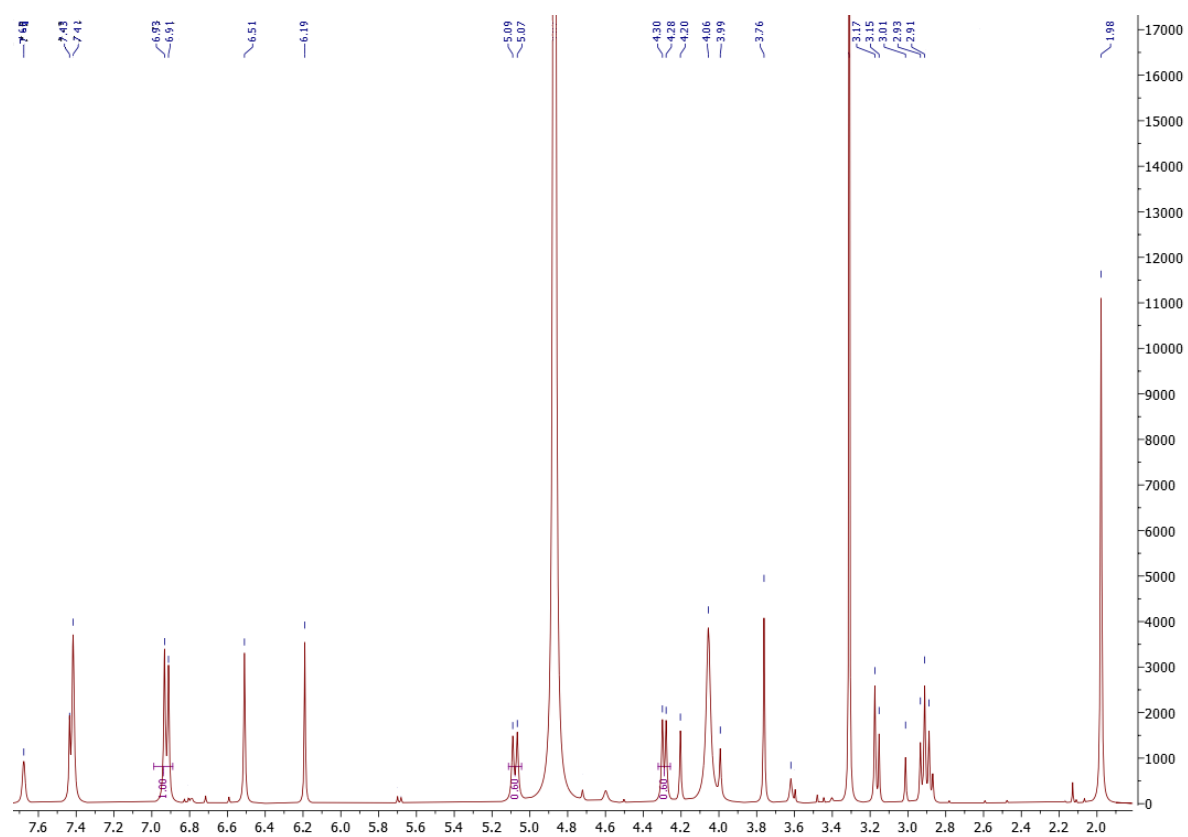
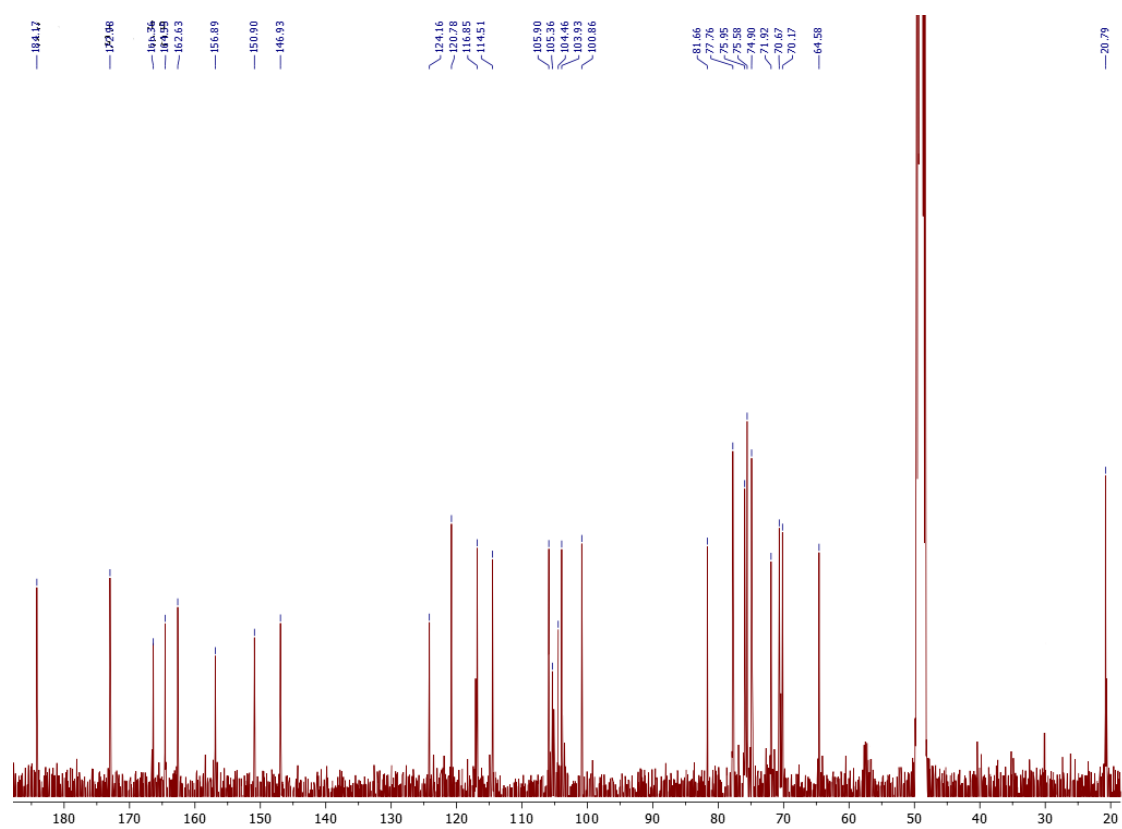
Fig. 5S. ^1H NMR spectrum (400 MHz) of **1** in CD_3OD **Fig. 6S.** ^{13}C NMR spectrum (400 MHz) of **1** in CD_3OD 

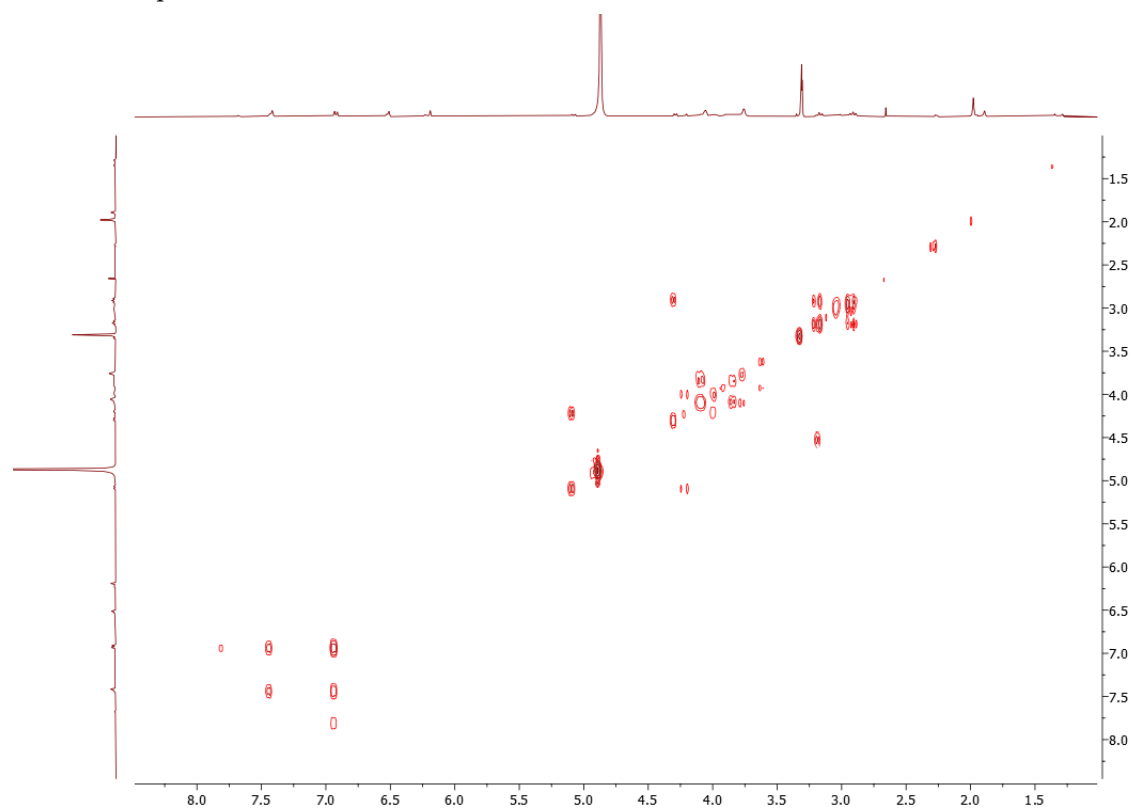
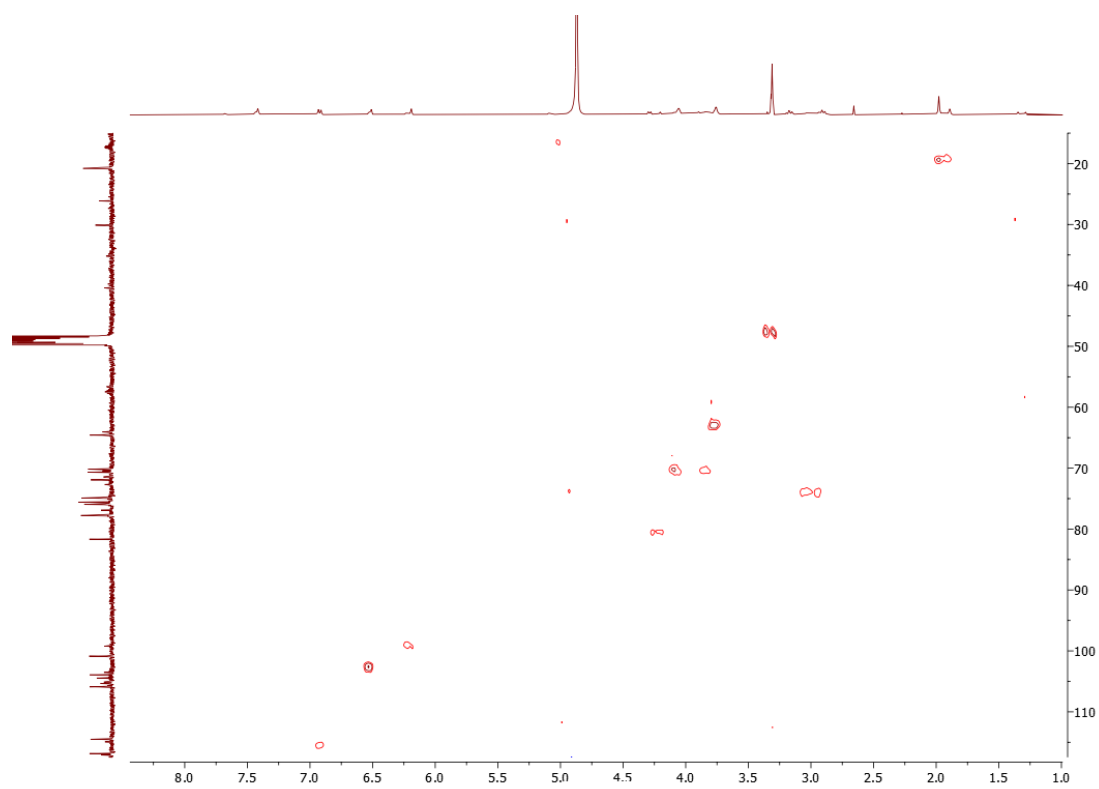
Fig. 7S. ^1H - ^1H COSY spectrum of **1** in CD_3OD **Fig. 8S.** HSQC spectrum of **1** in CD_3OD 

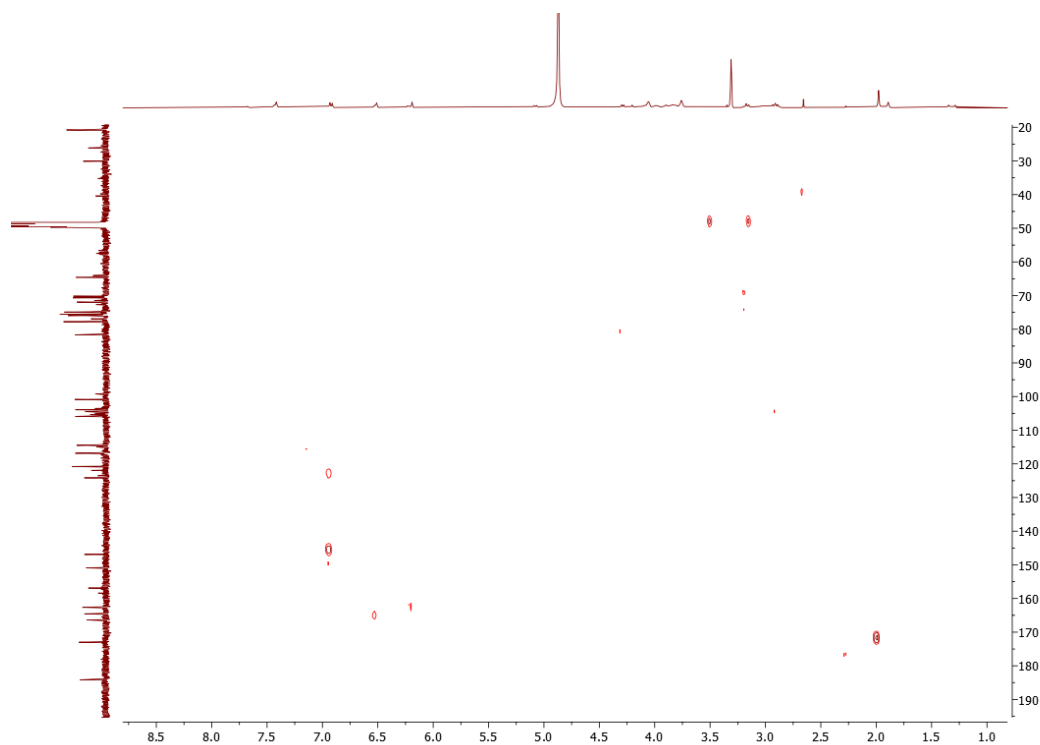
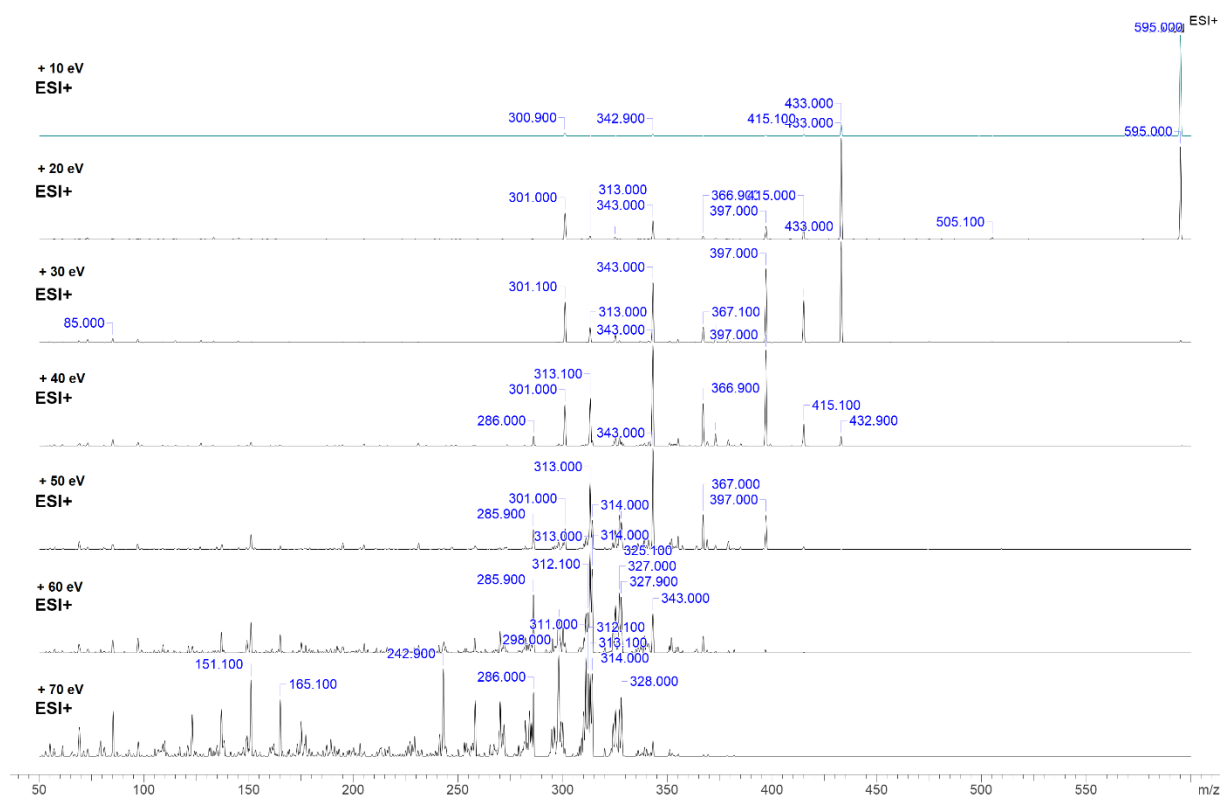
Fig. 9S. HMBC spectrum of **1** in CD₃ODFig. 10S. Product ion scan in positive mode of **2**

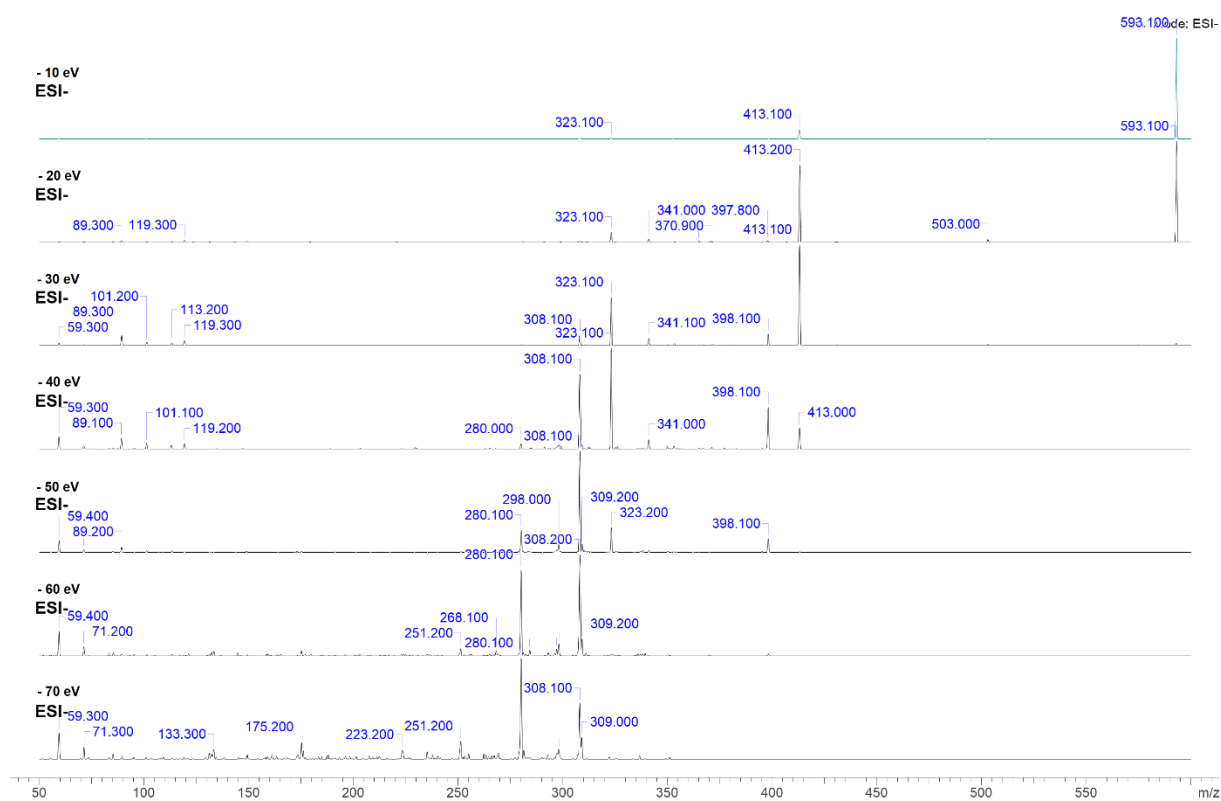
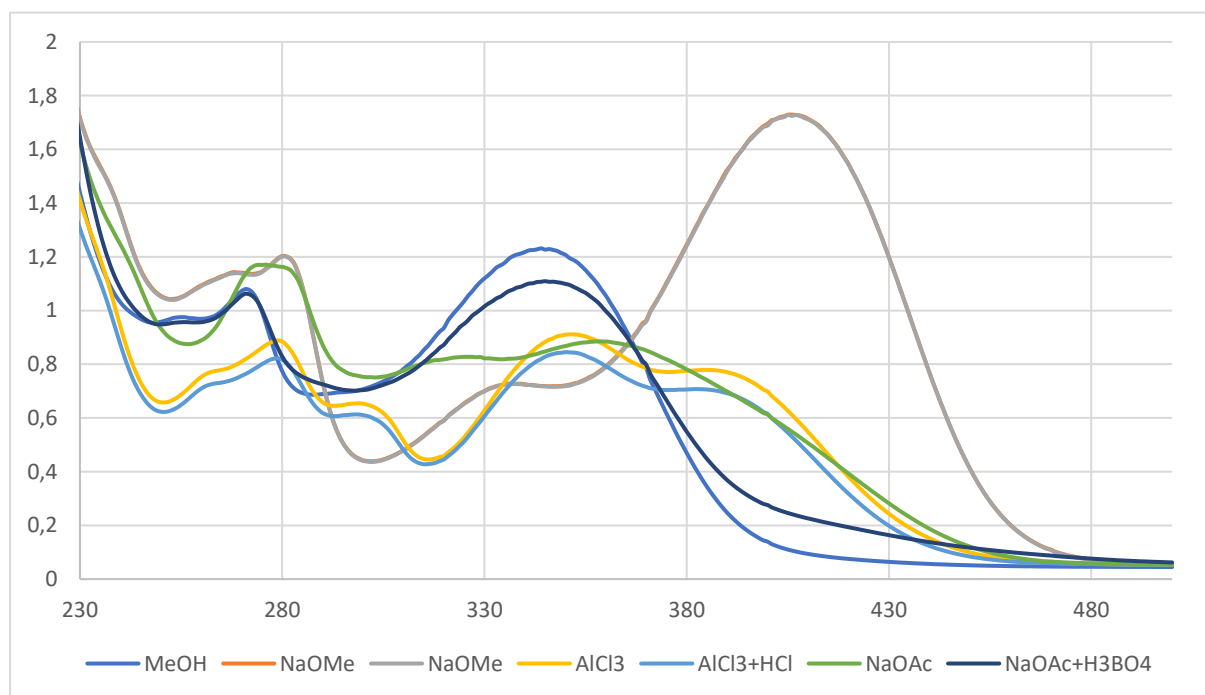
Fig. 11S. Product ion scan in negative mode of **2****Fig. 12S.** UV spectrum of **2**

Fig. 13S. IR spectrum of 2 in KBr

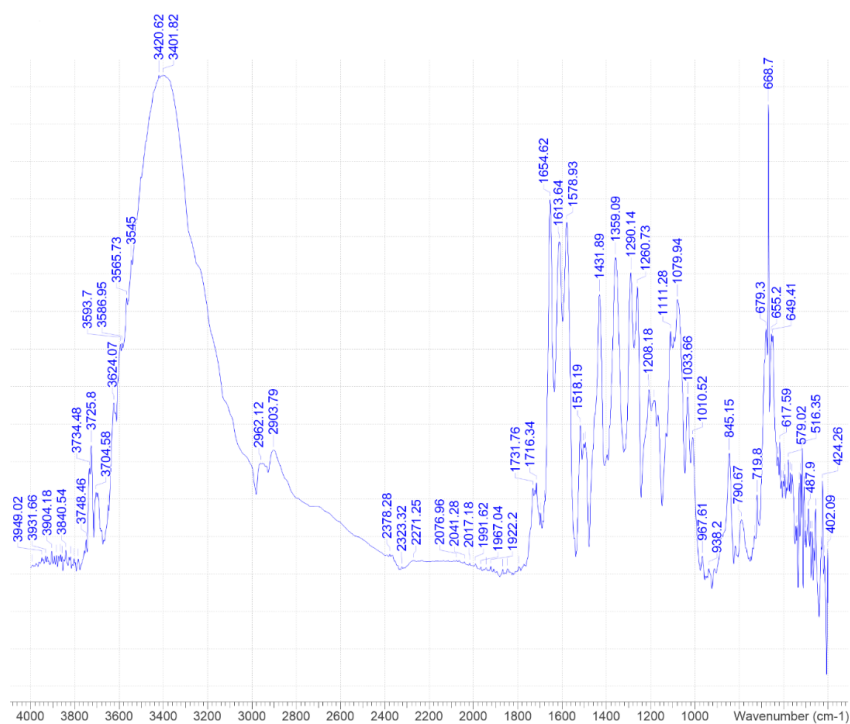
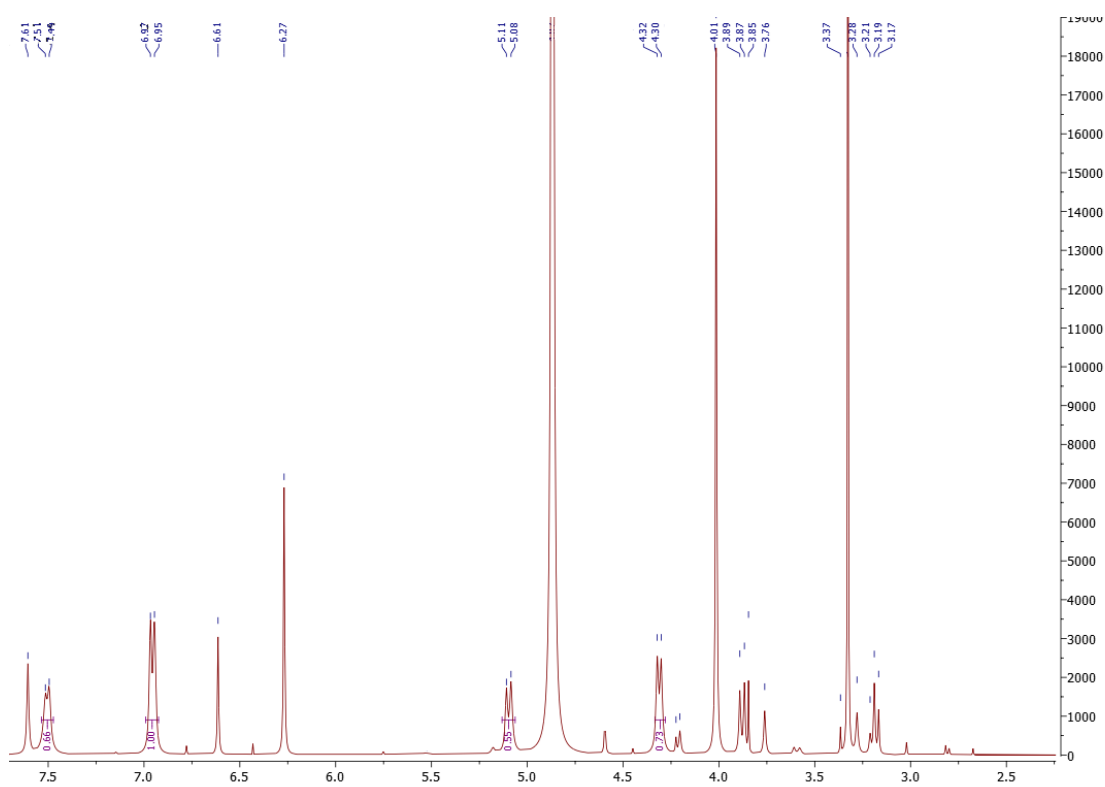
Fig. 14S. ¹H NMR spectrum (400 MHz) of 2 in CD₃OD

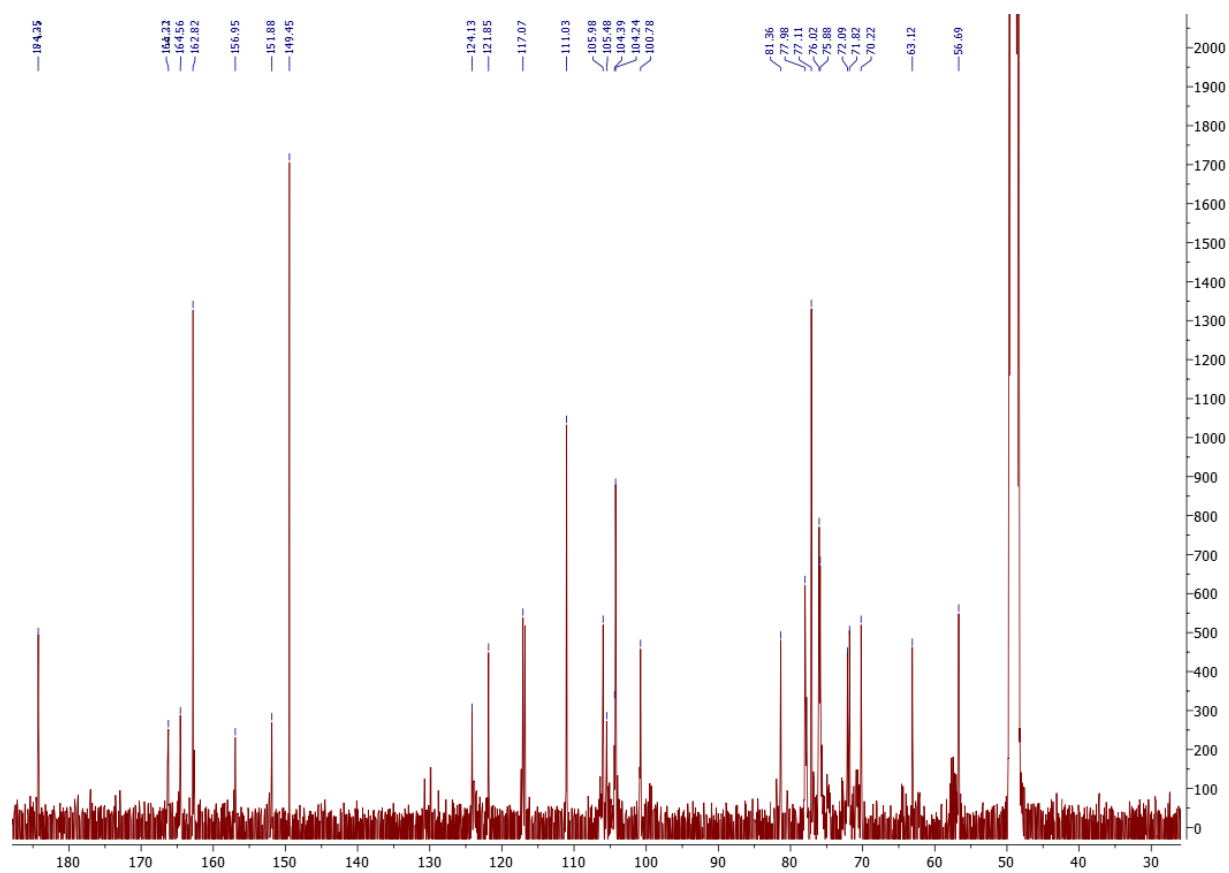
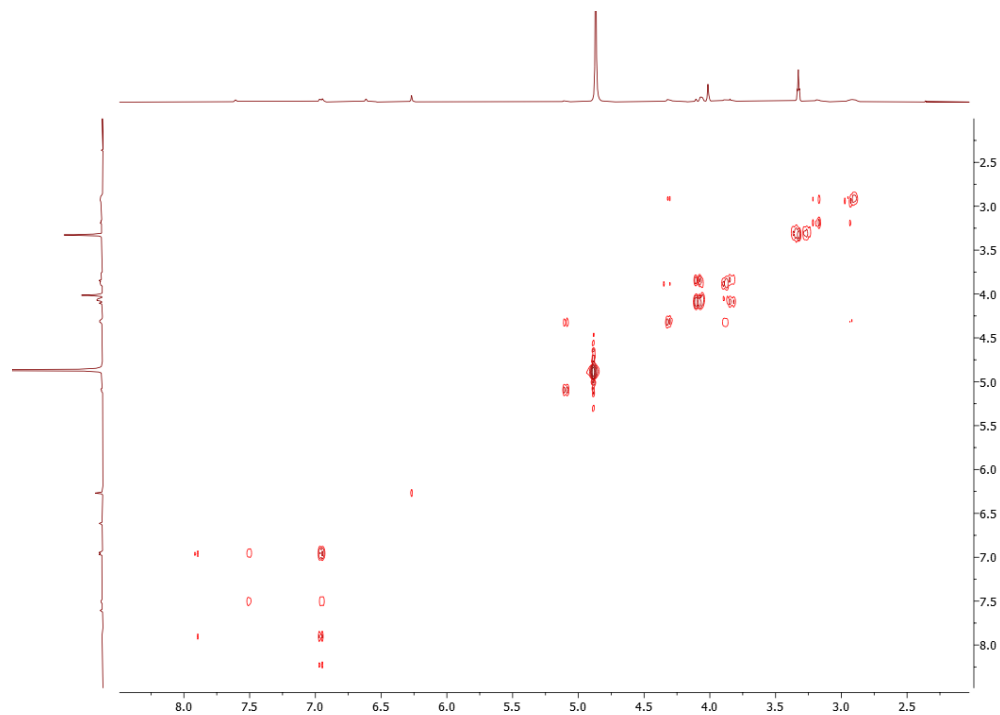
Fig. 15S. ^{13}C NMR spectrum (400 MHz) of **2** in CD_3OD **Fig. 16S.** ^1H - ^1H COSY spectrum of **2** in CD_3OD 

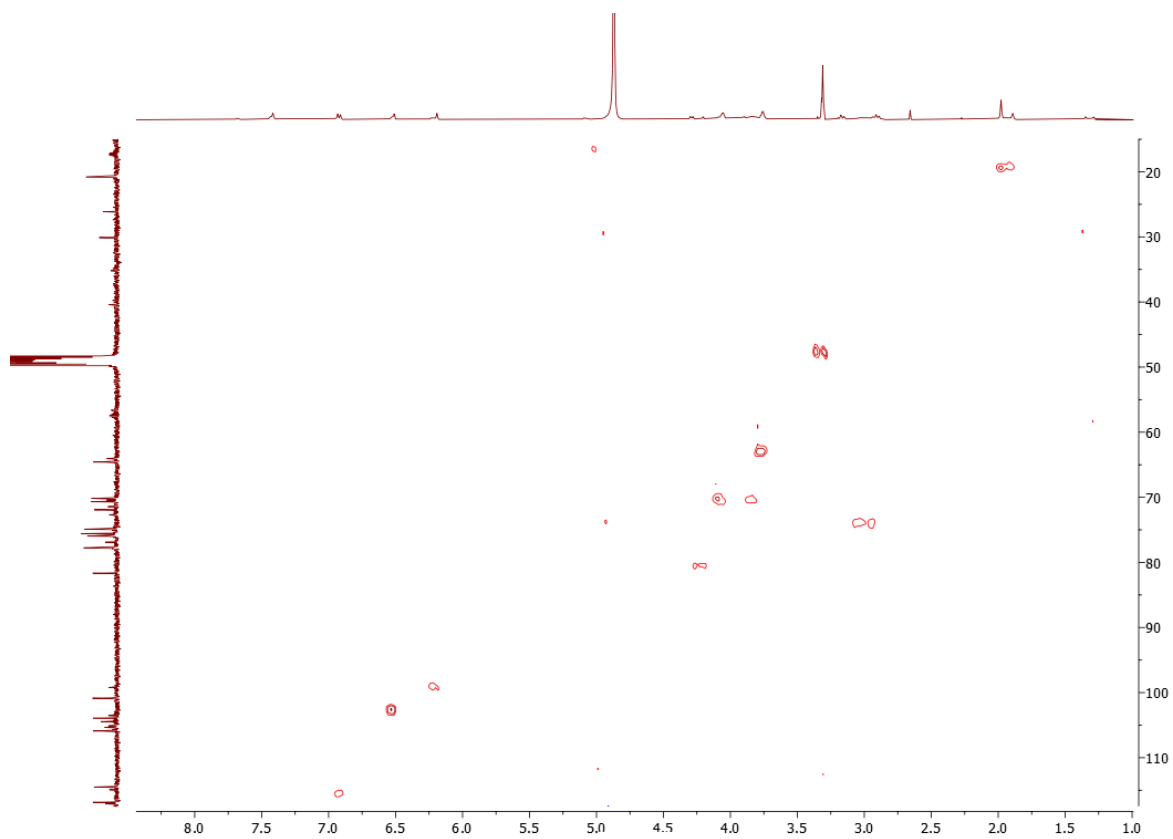
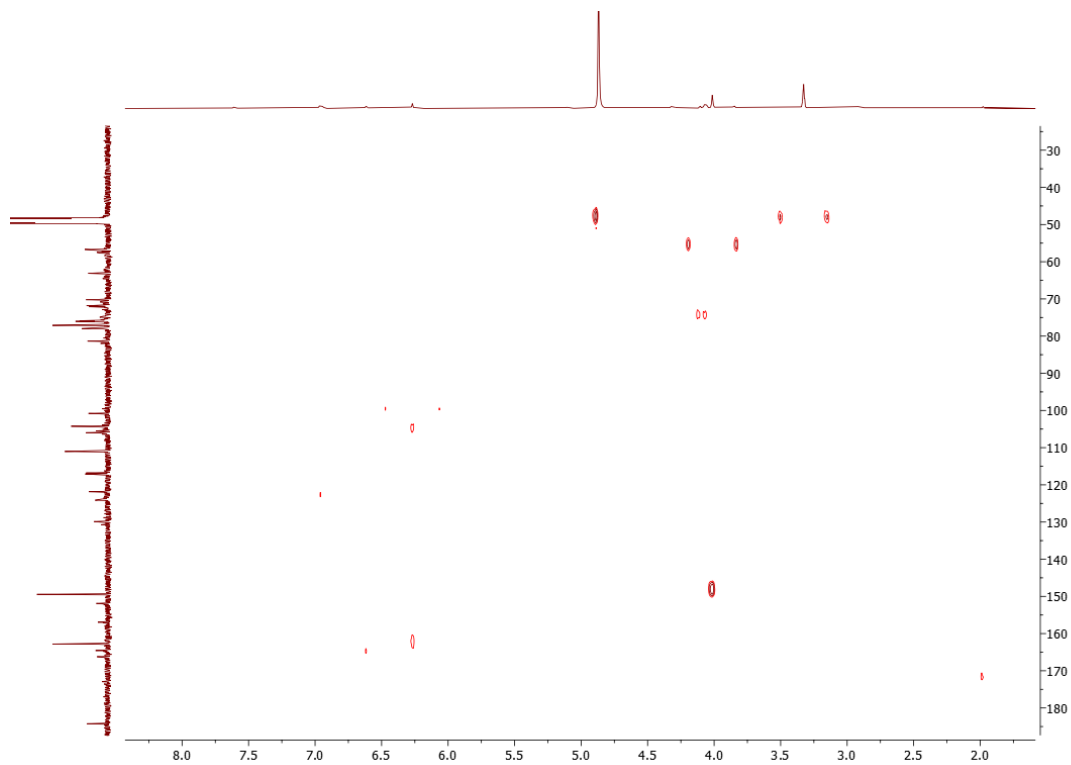
Fig. 17S. HSQC spectrum of **2** in CD₃OD**Fig. 18S.** HMBC spectrum of **2** in CD₃OD

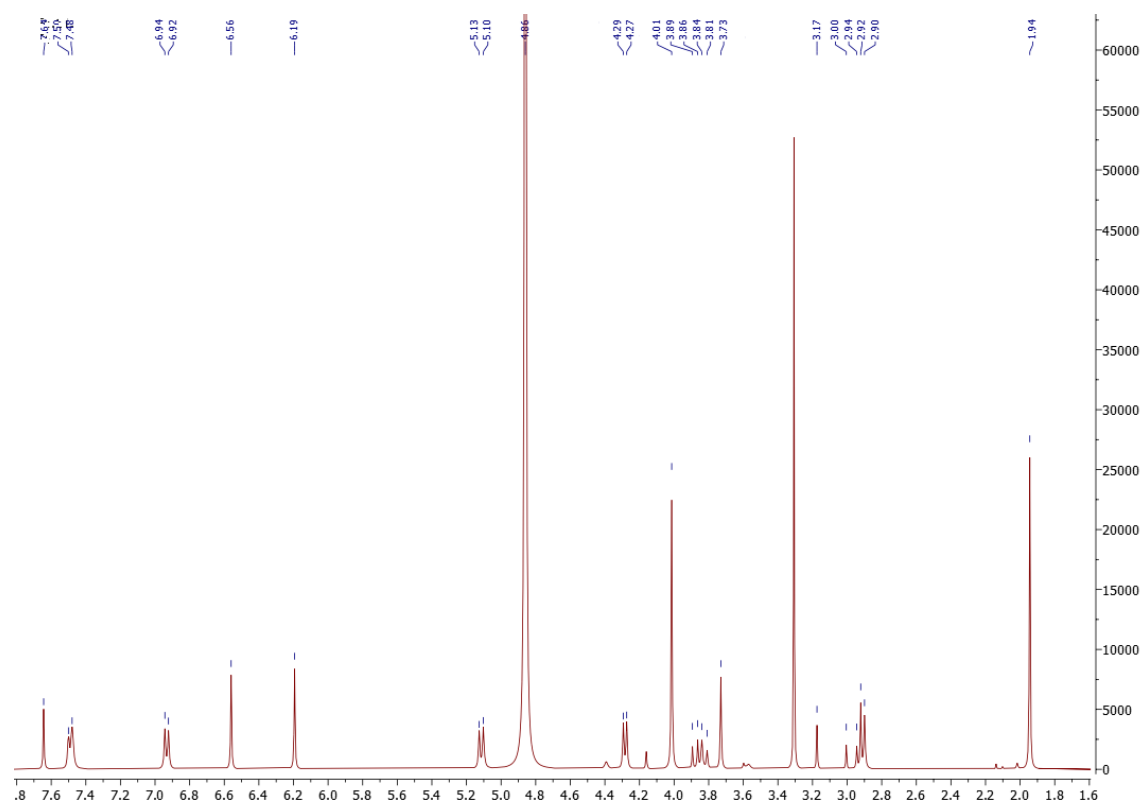
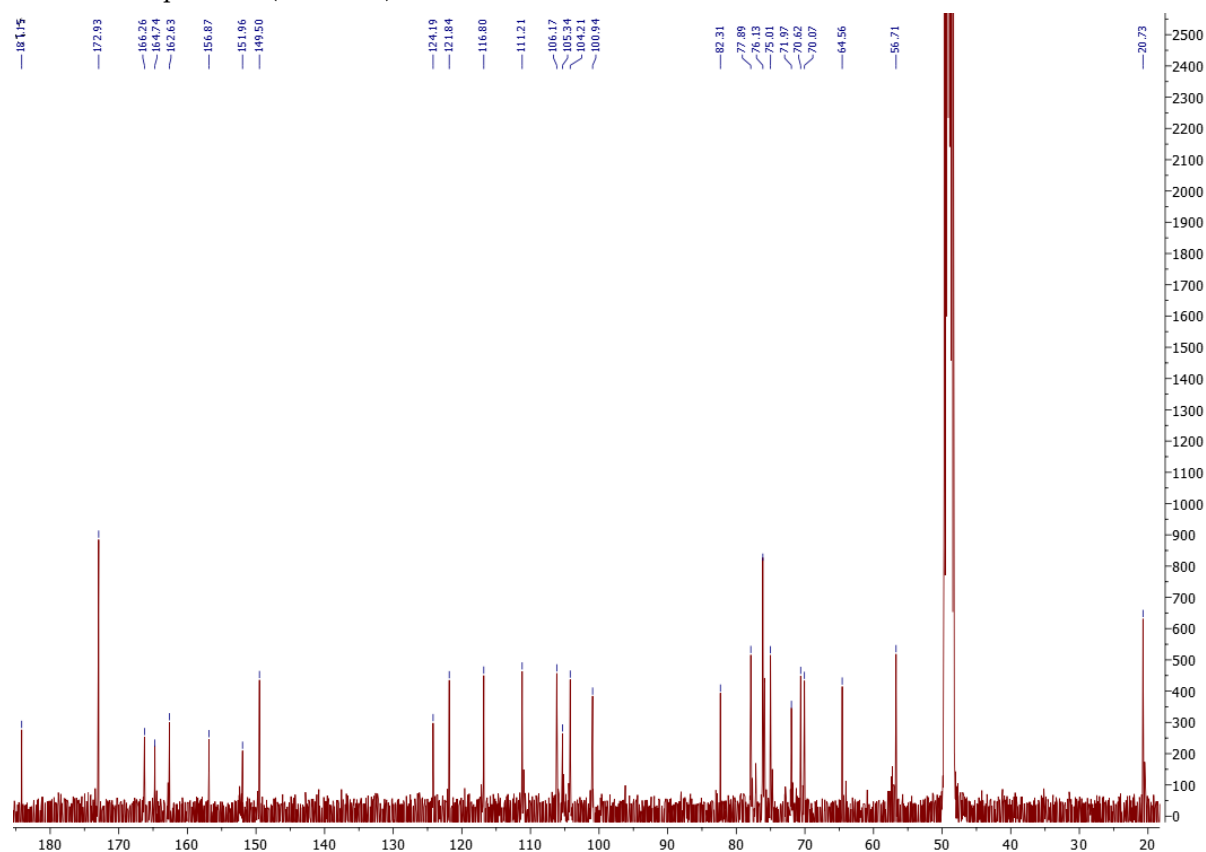
Fig. 19S. ^1H NMR spectrum (400 MHz) of **3** in CD_3OD **Fig. 20S.** ^{13}C NMR spectrum (400 MHz) of **3** in CD_3OD 

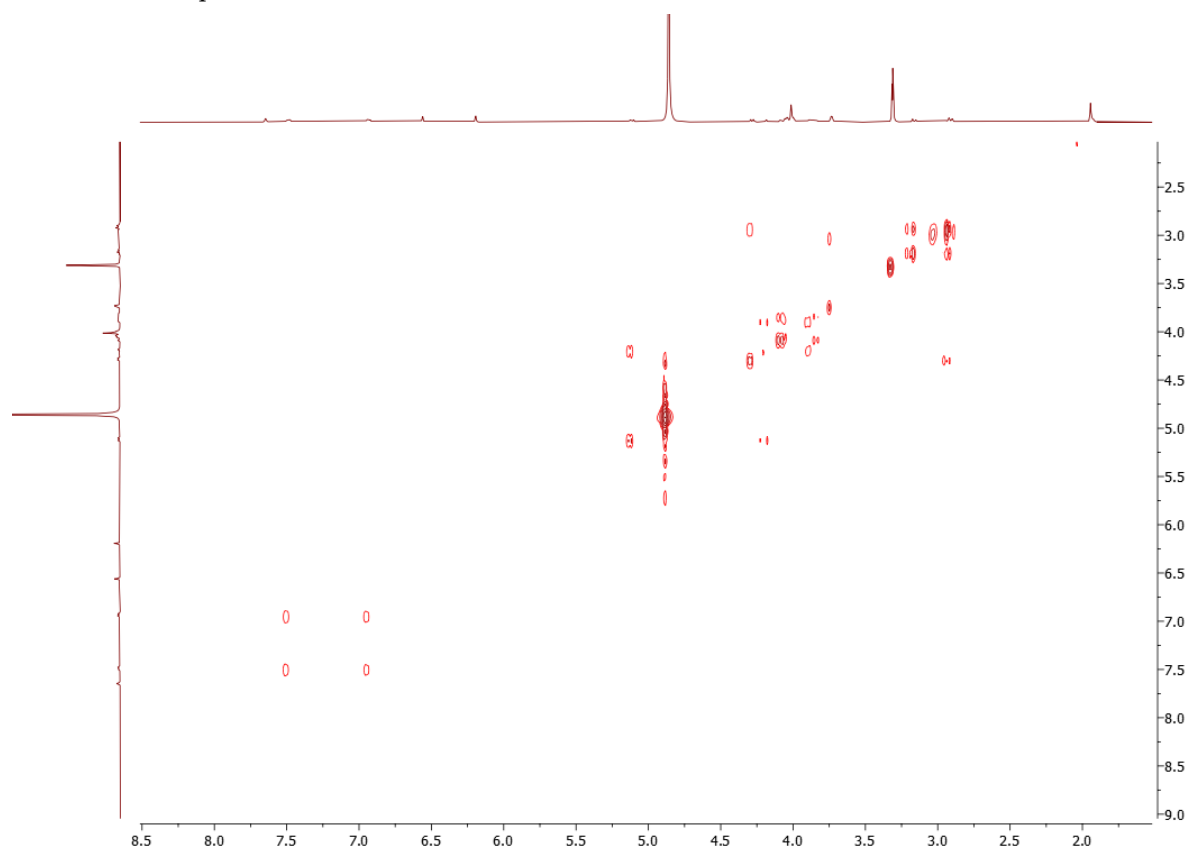
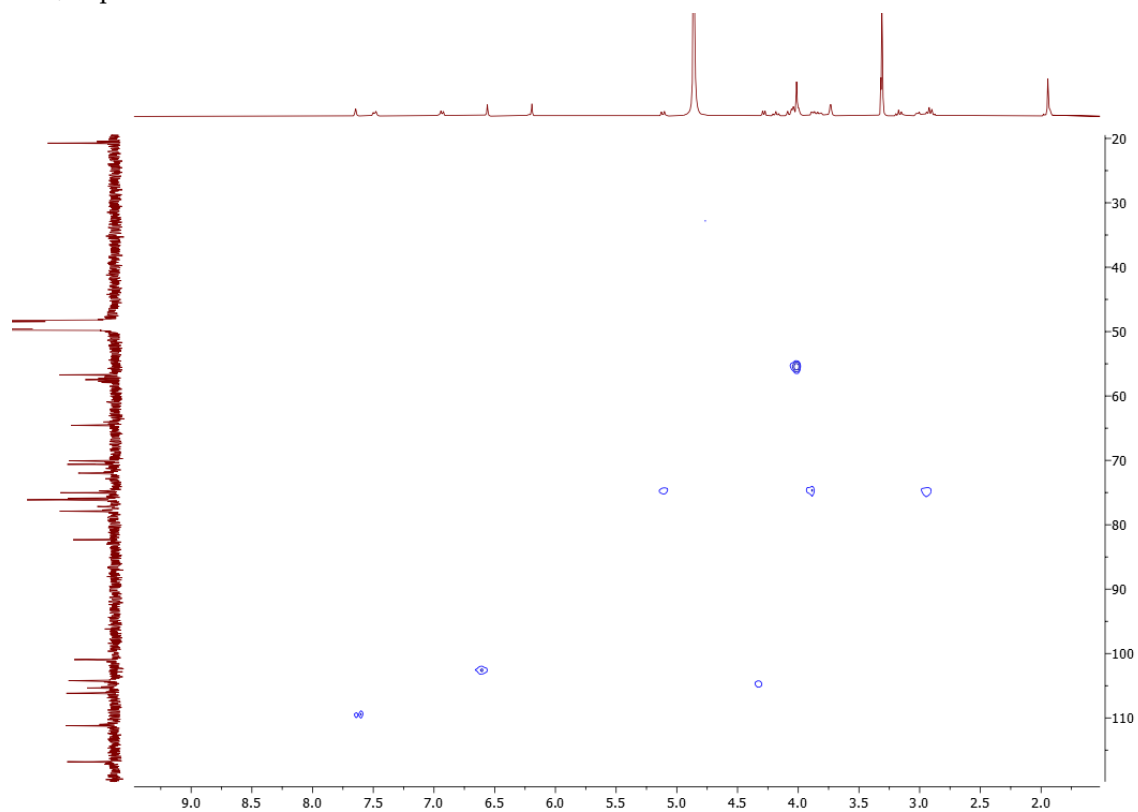
Fig. 21S. ^1H - ^1H COSY spectrum of **3** in CD_3OD **Fig. 22S.** HSQC spectrum of **3** in CD_3OD 

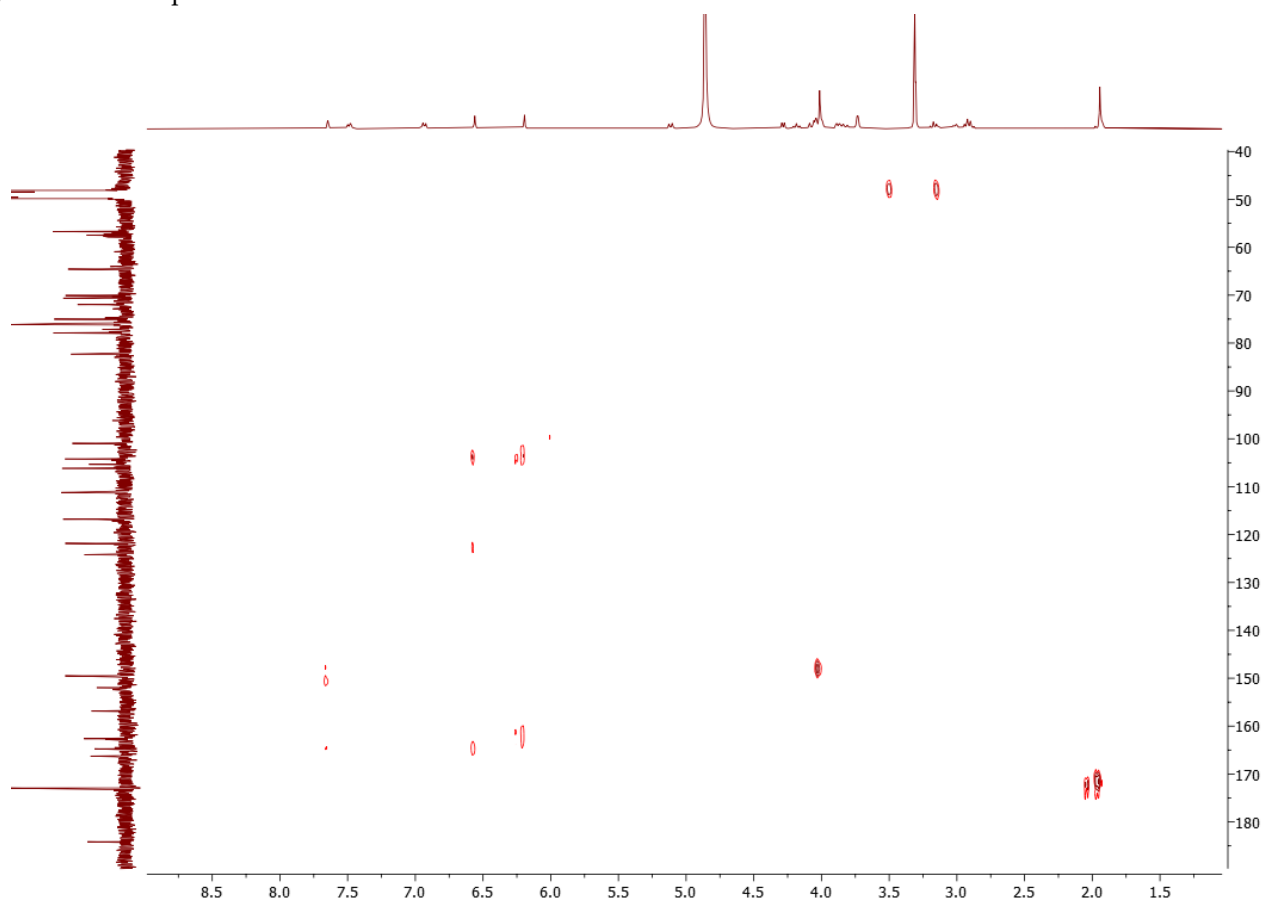
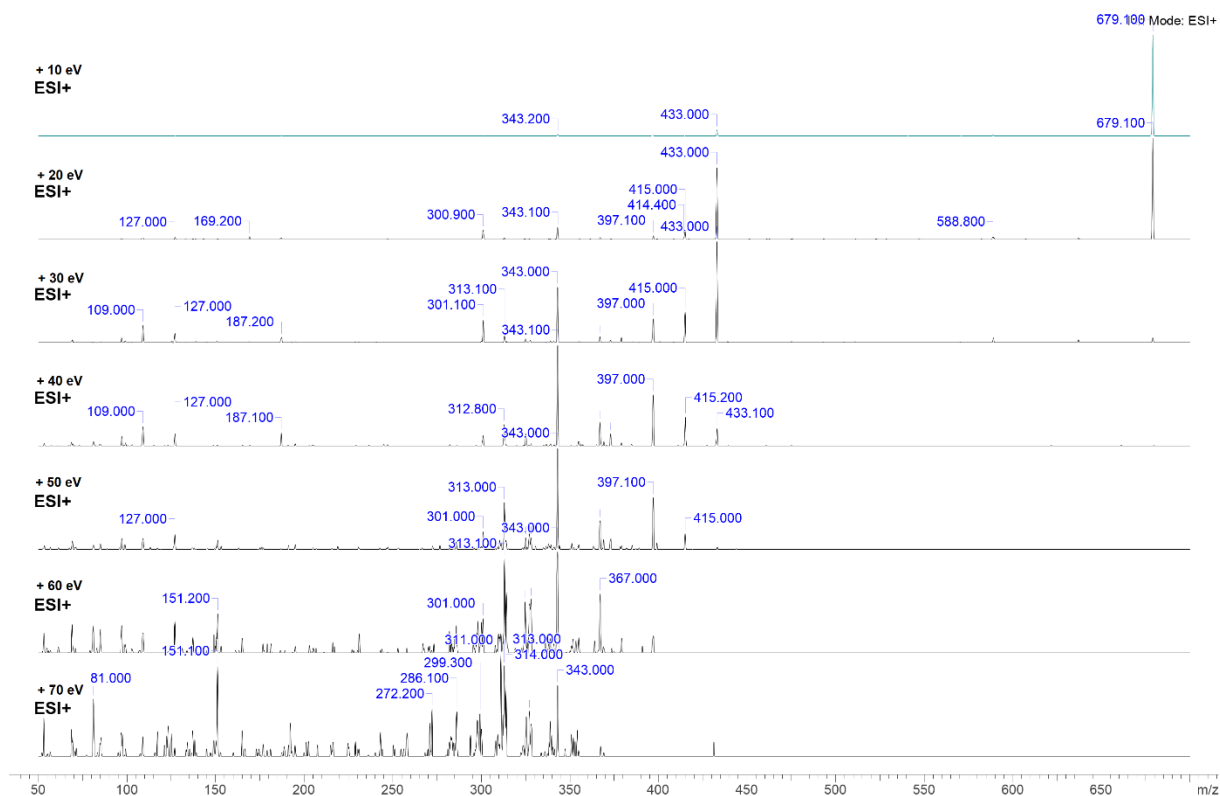
Fig. 23S. HMBC spectrum of **3** in CD₃ODFig. 24S. Product ion scan in positive mode of **4**

Fig. 25S. Product ion scan in negative mode of 4

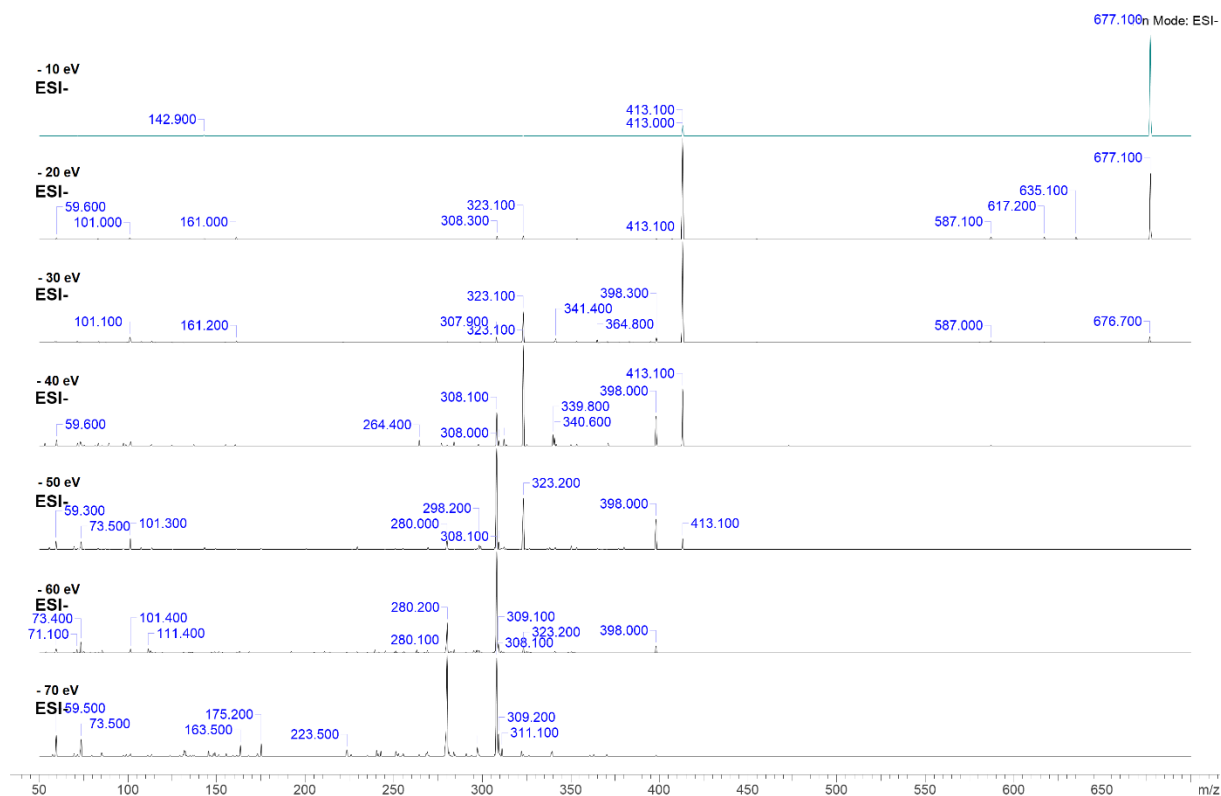


Fig. 26S. UV spectrum of 4

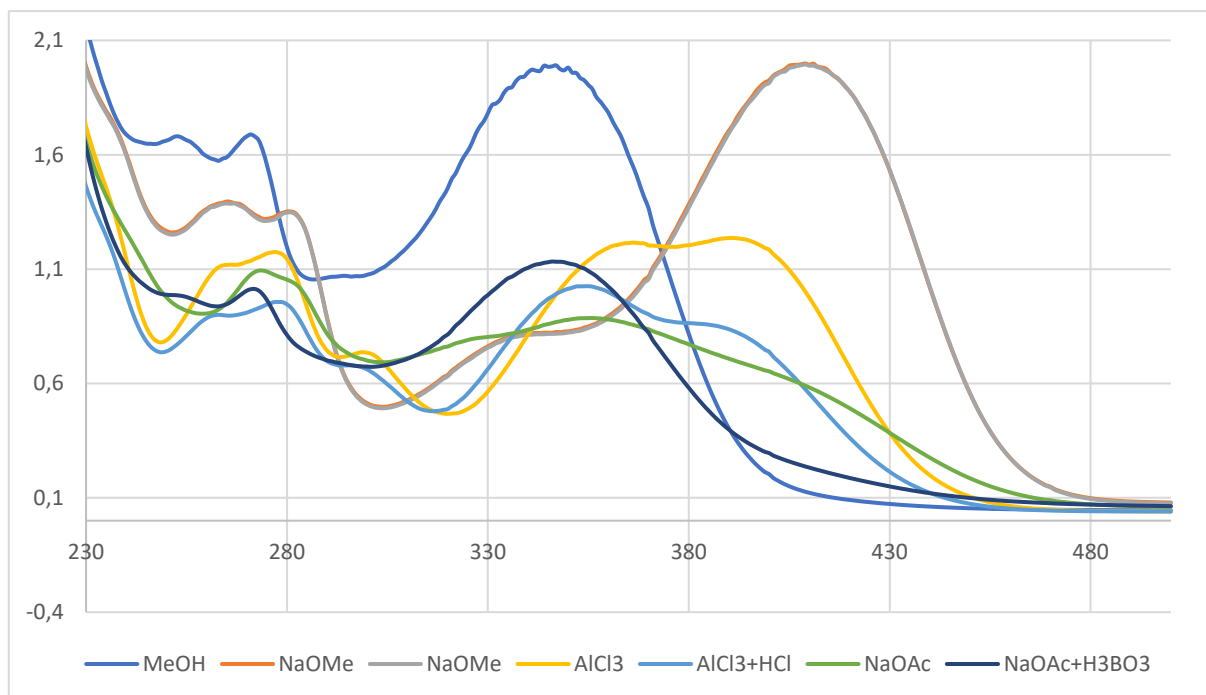


Fig. 27S. IR spectrum of 4 in KBr

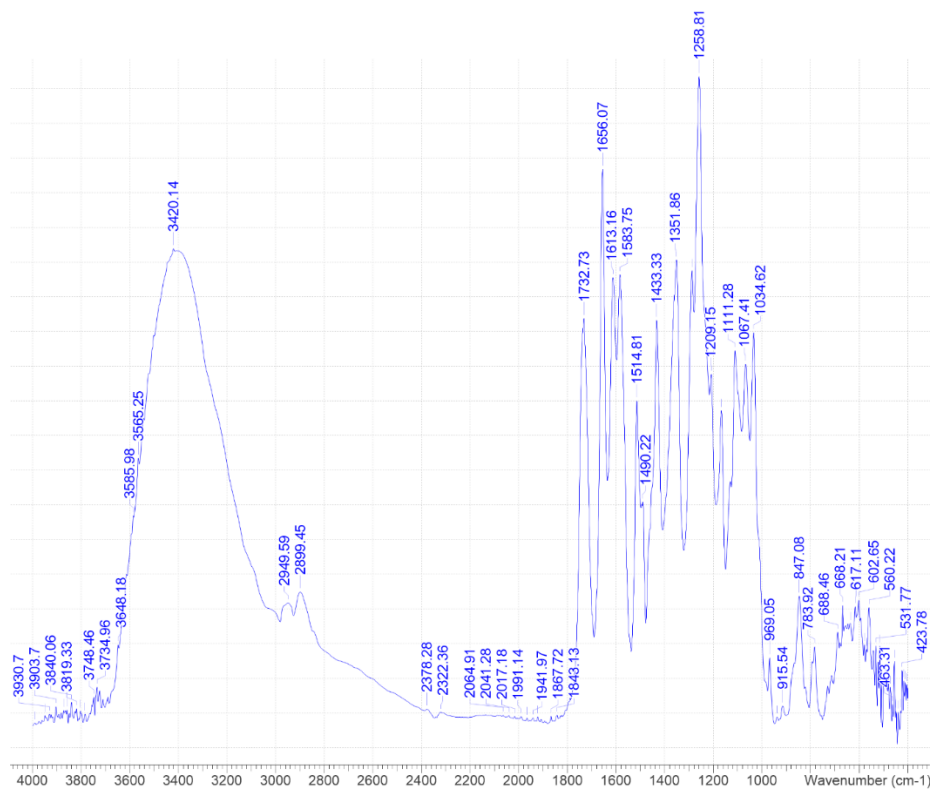
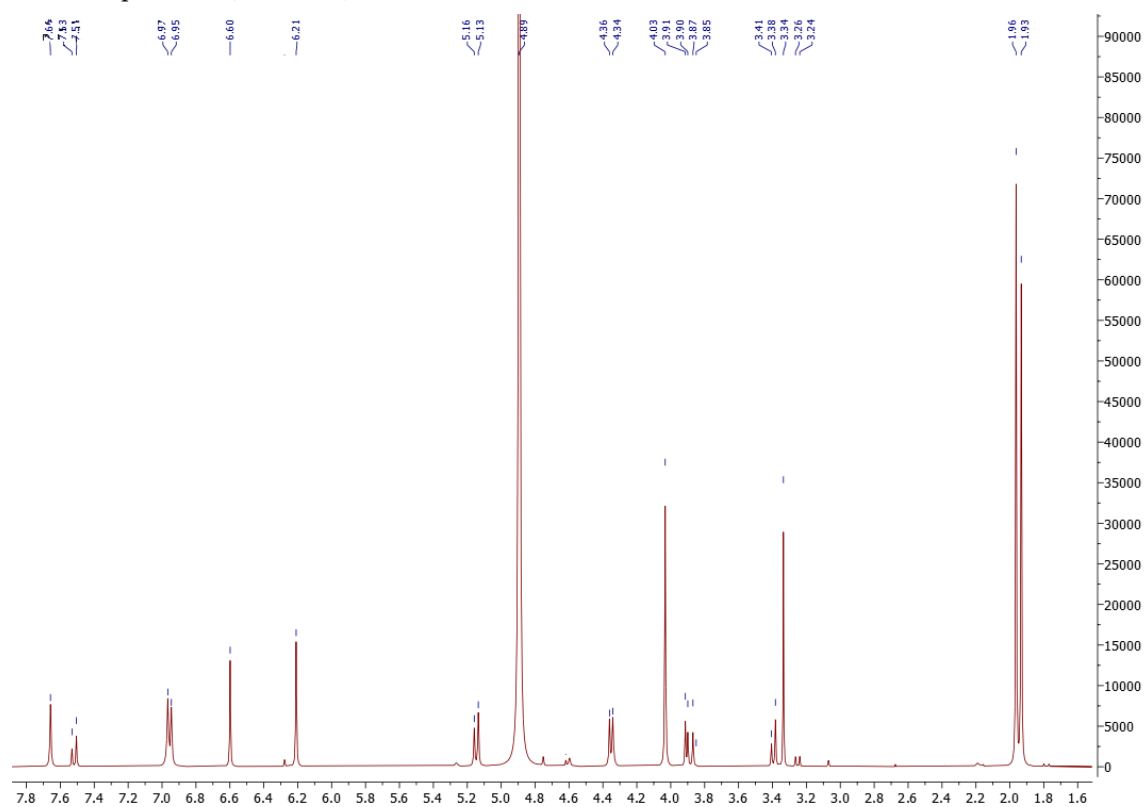
Fig. 28S. ¹H NMR spectrum (400 MHz) of 4 in CD₃OD

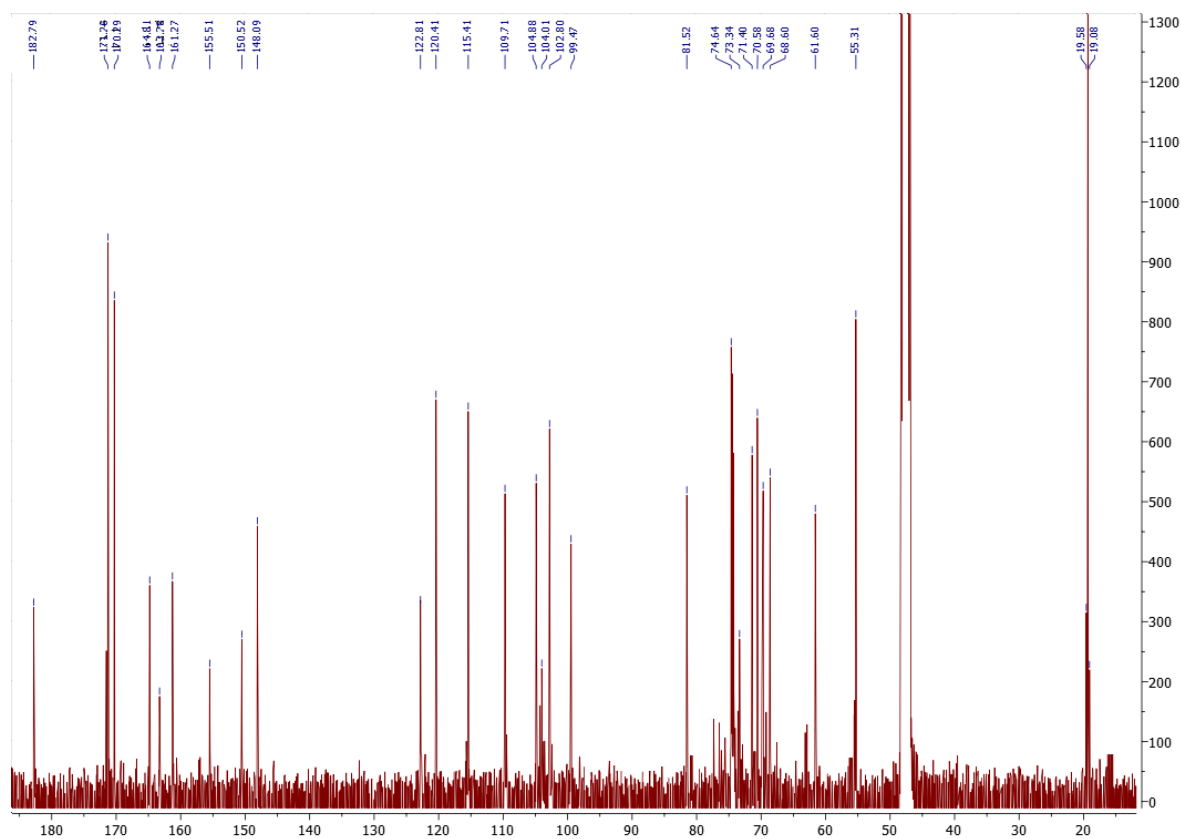
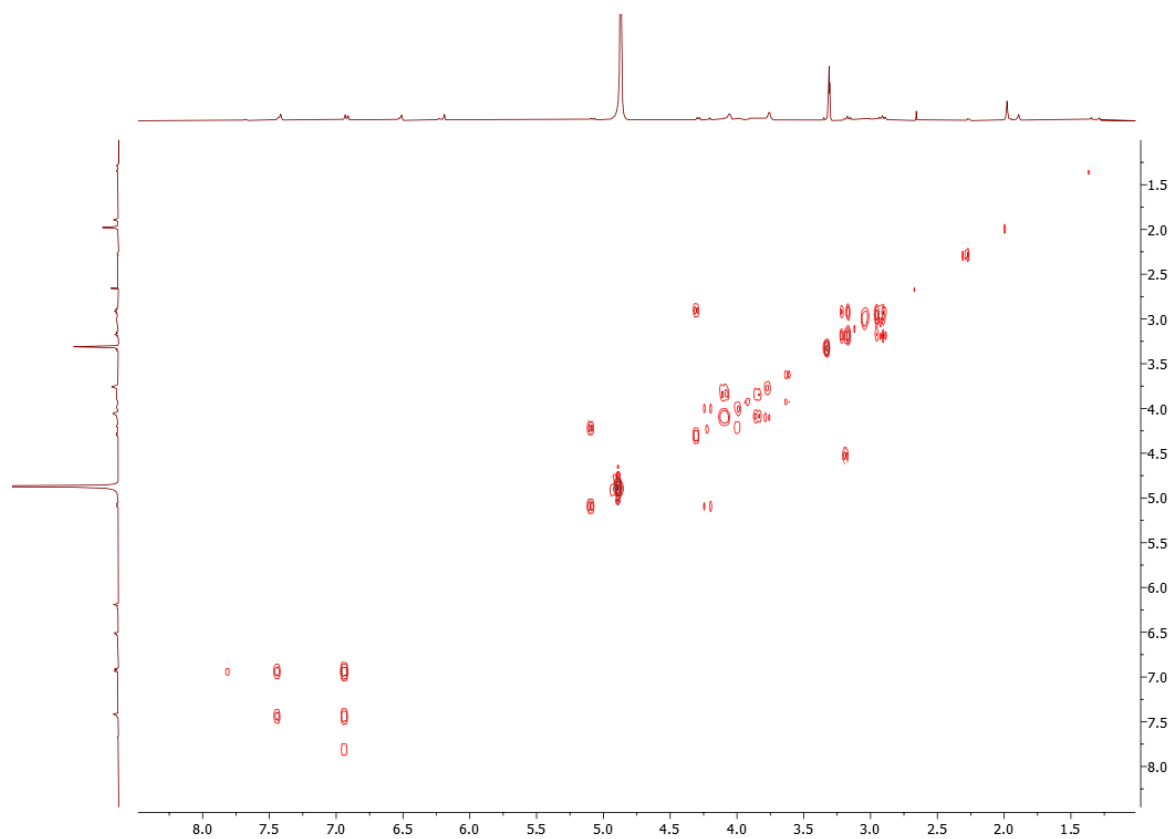
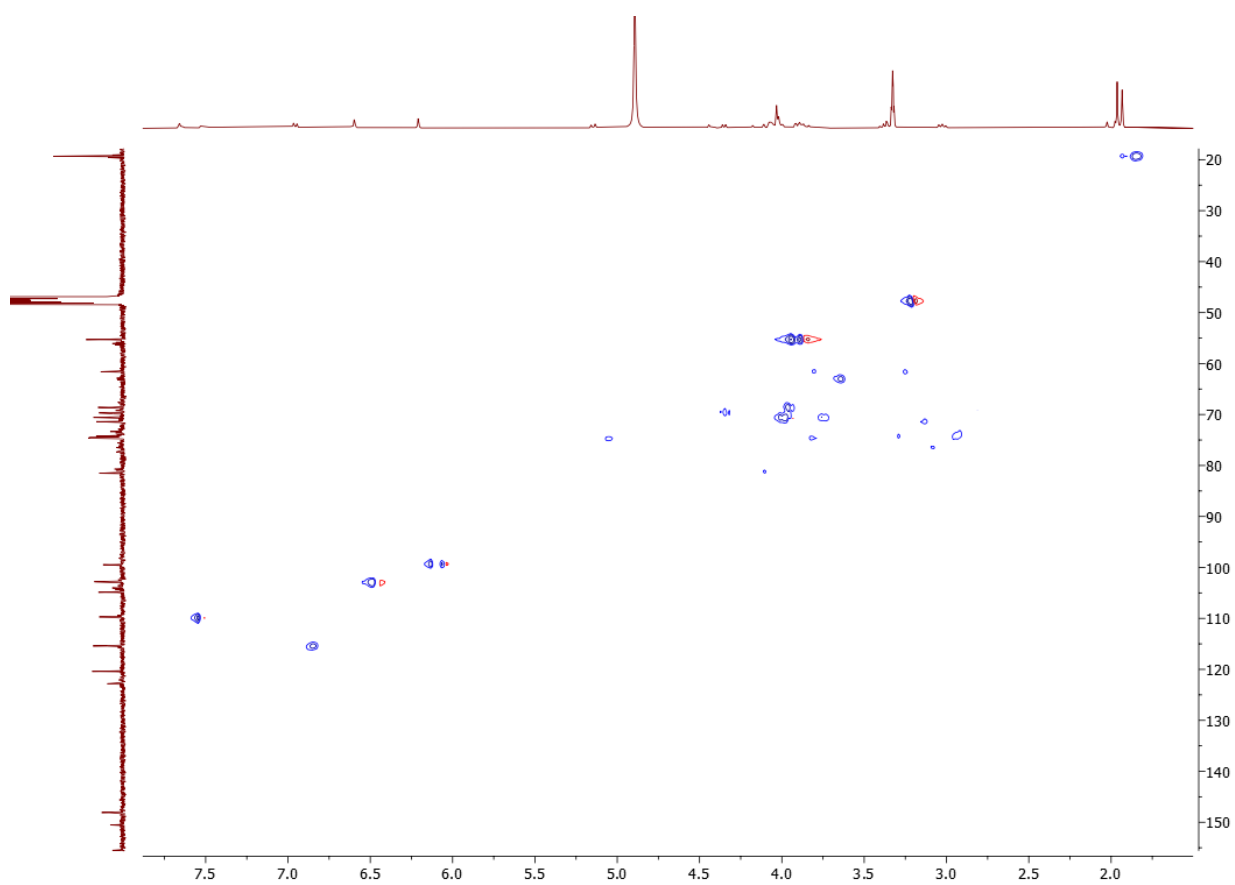
Fig. 29S. ^{13}C NMR spectrum (400 MHz) of **4** in CD_3OD **Fig. 30S.** ^1H - ^1H COSY spectrum of **4** in CD_3OD 

Fig. 31S. HSQC spectrum of **4** in CD₃OD**Fig. 32S.** HMBC spectrum of **4** in CD₃OD