

# **Supporting Information**

## **Alkaloids and Polyketides from *Penicillium citrinum*, an Endophyte Isolated from the Moroccan Plant *Ceratonia siliqua***

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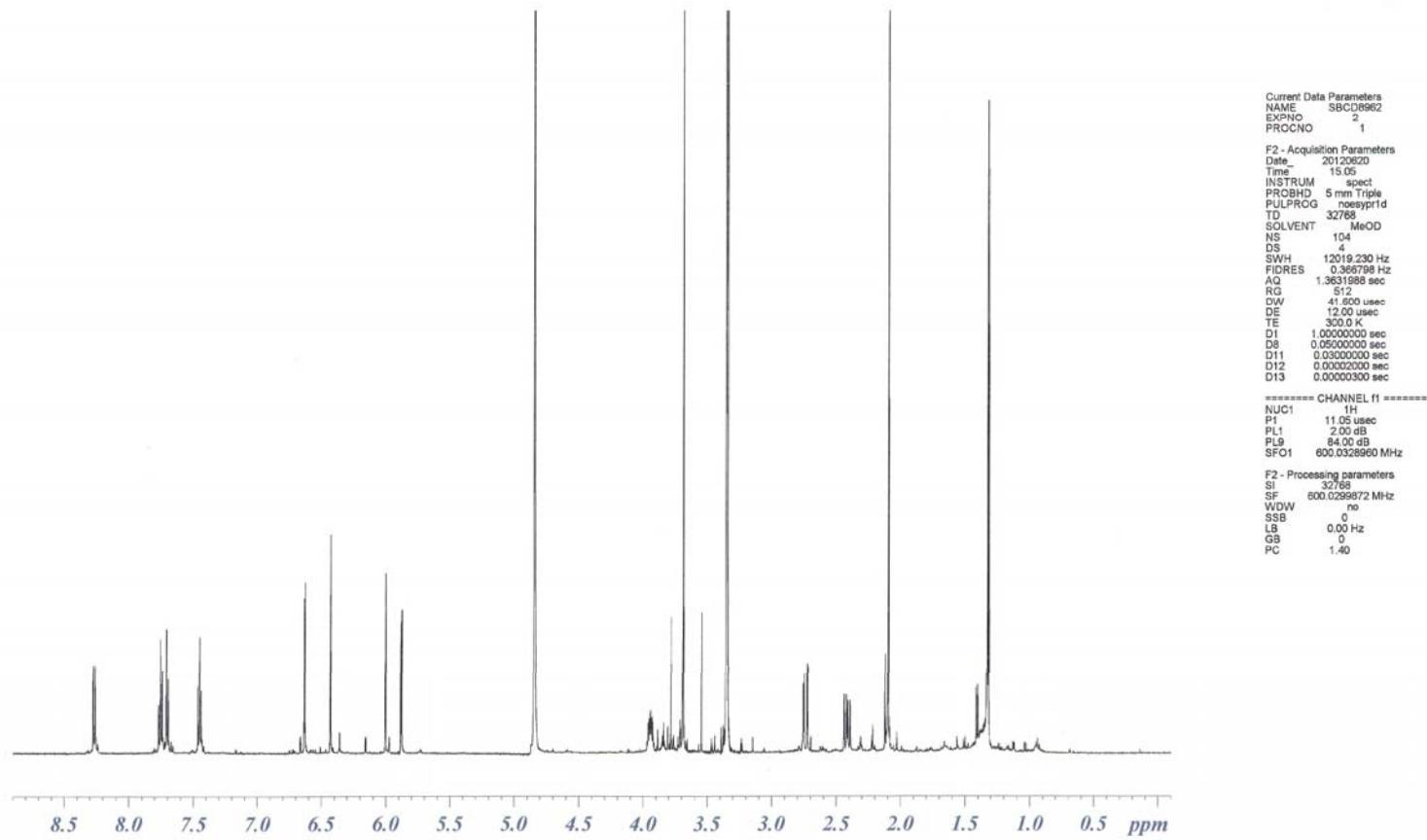
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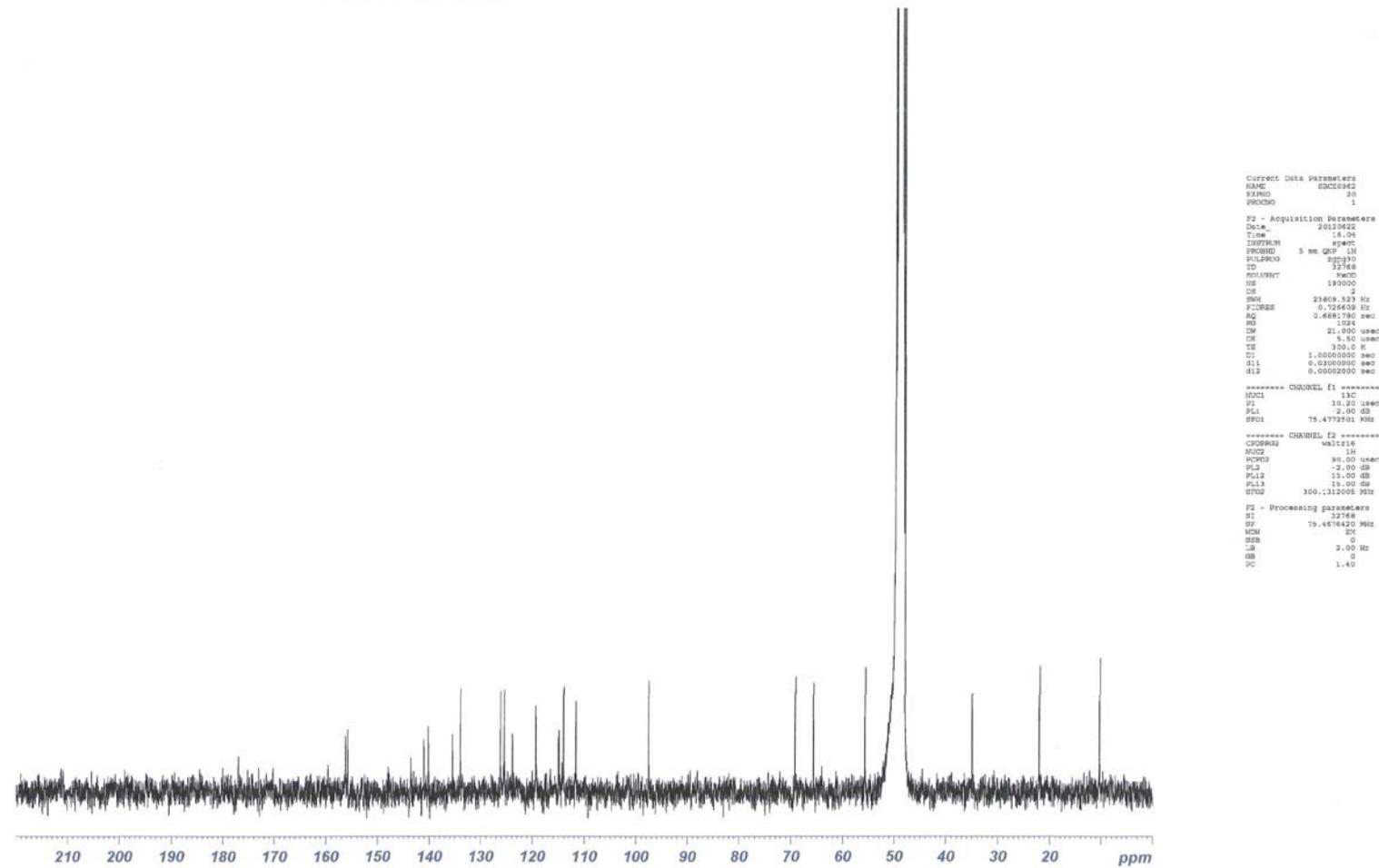
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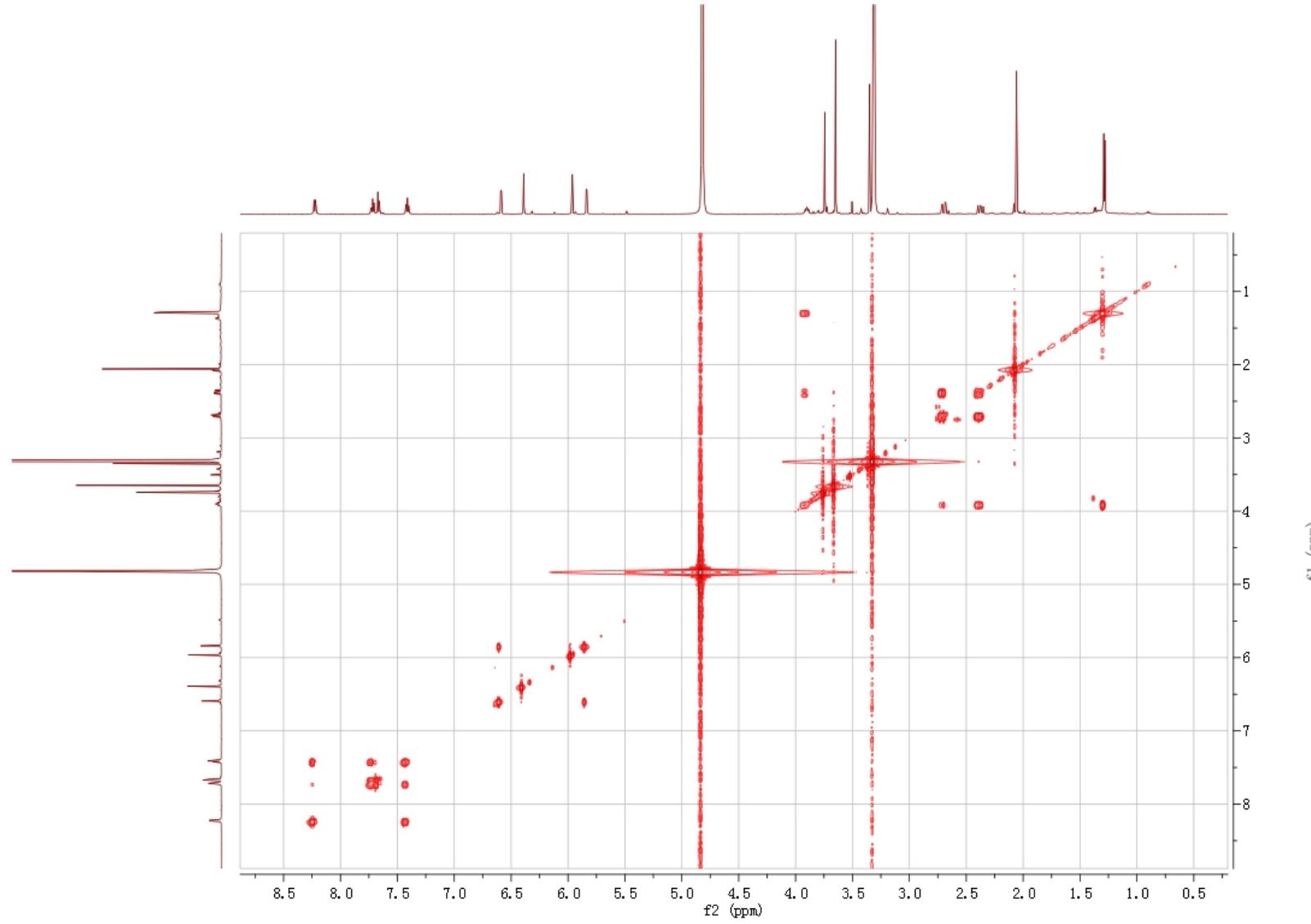


**Fig. S1-1**  $^1\text{H}$  NMR spectrum of compound **1** ( $\text{CD}_3\text{OD}$ )

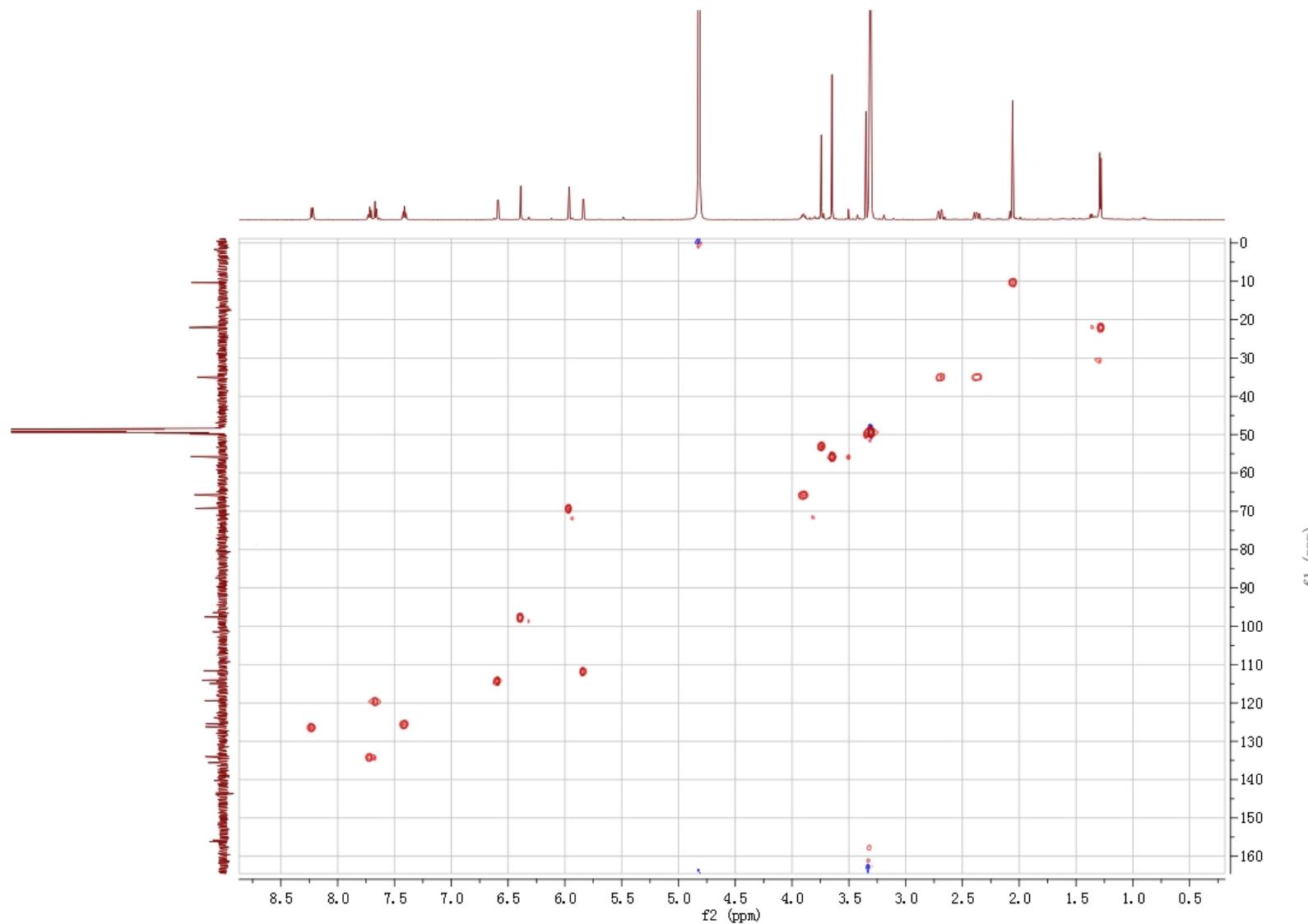
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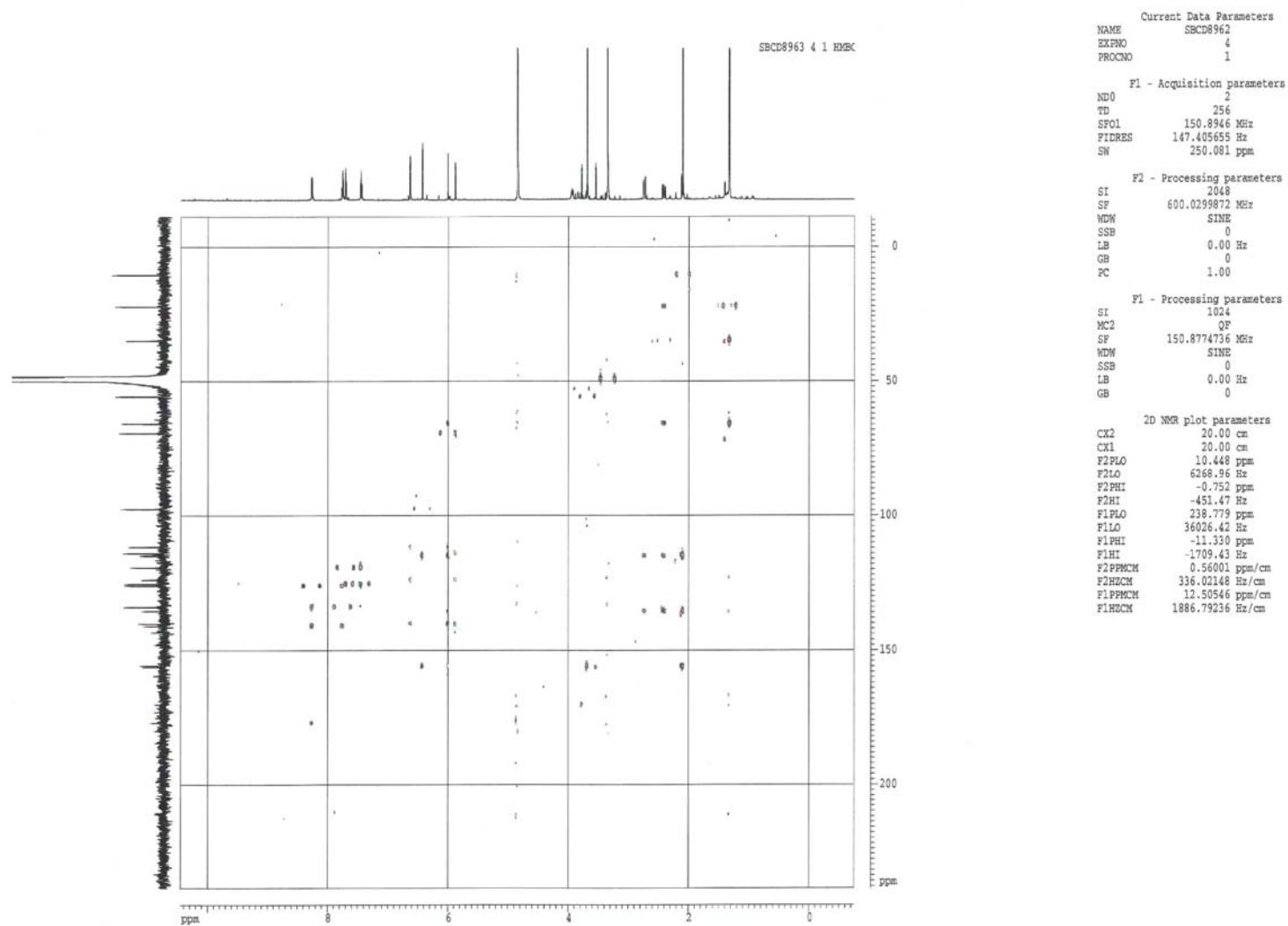
**Fig. S1-2**  $^{13}\text{C}$  NMR spectrum of compound **1** ( $\text{CD}_3\text{OD}$ )



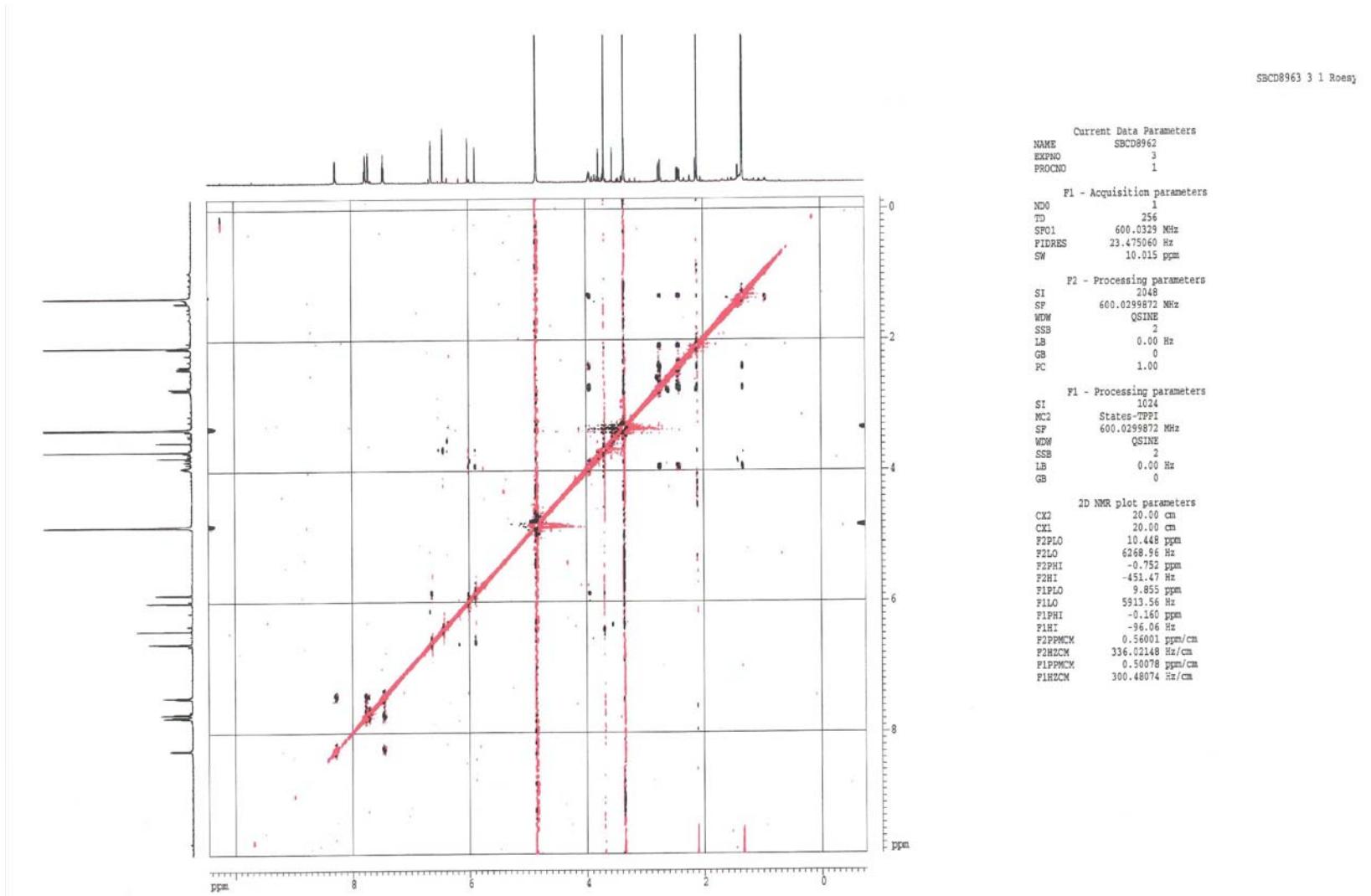
**Fig. S1-3** COSY spectrum of compound 1



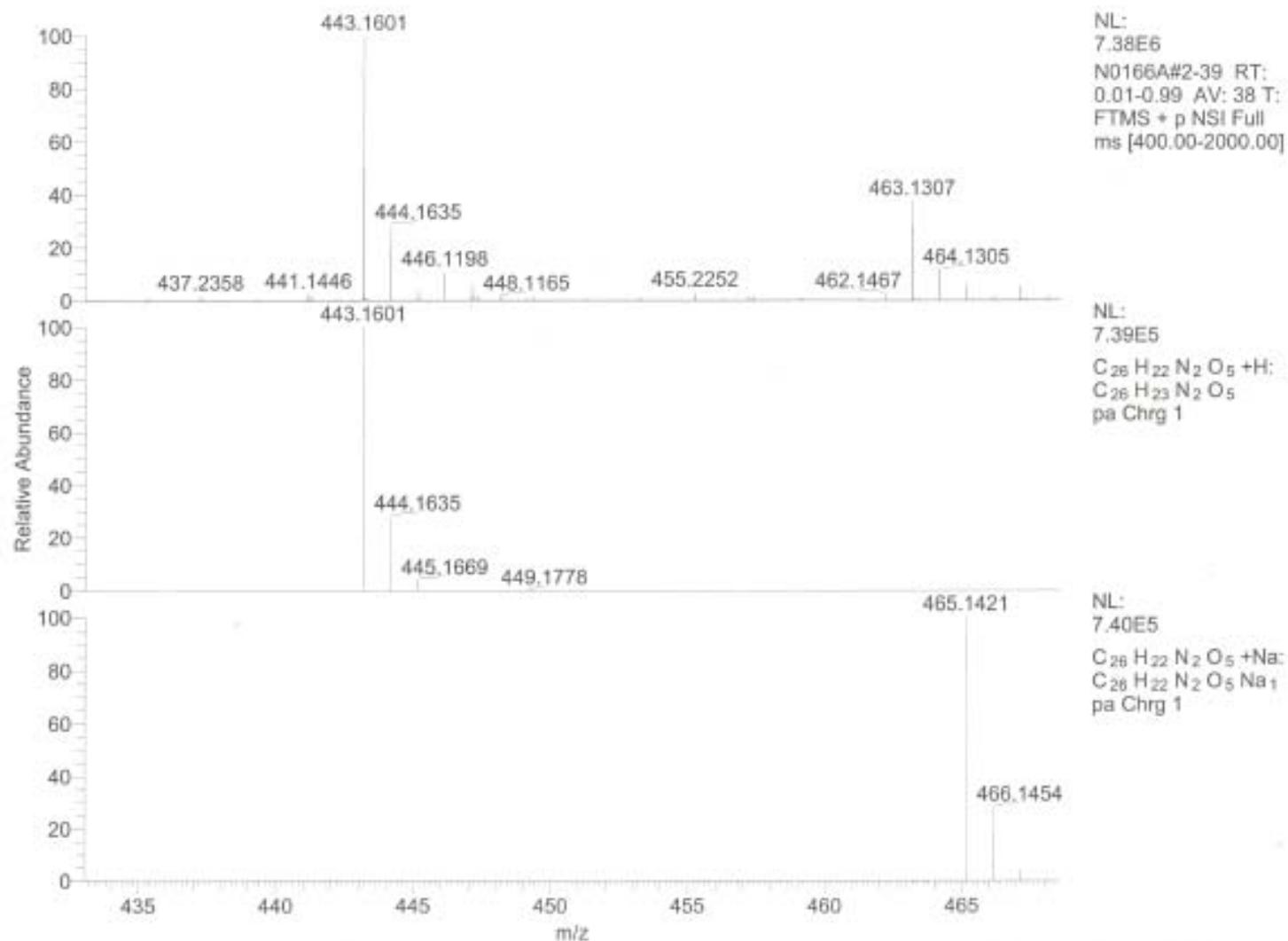
**Fig. S1-4** HSQC spectrum of compound 1



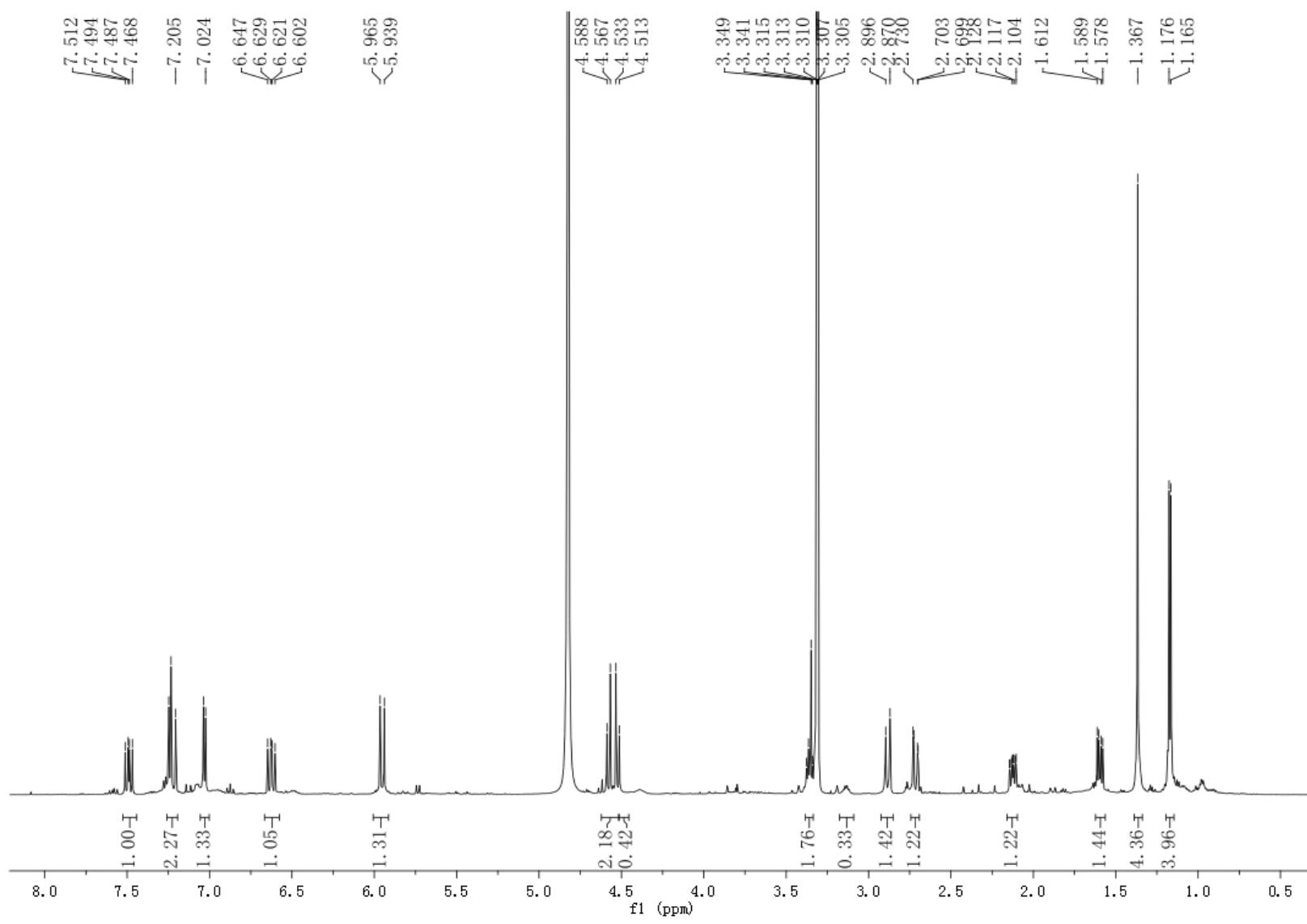
**Fig. S1-5** HMBC spectrum of compound 1



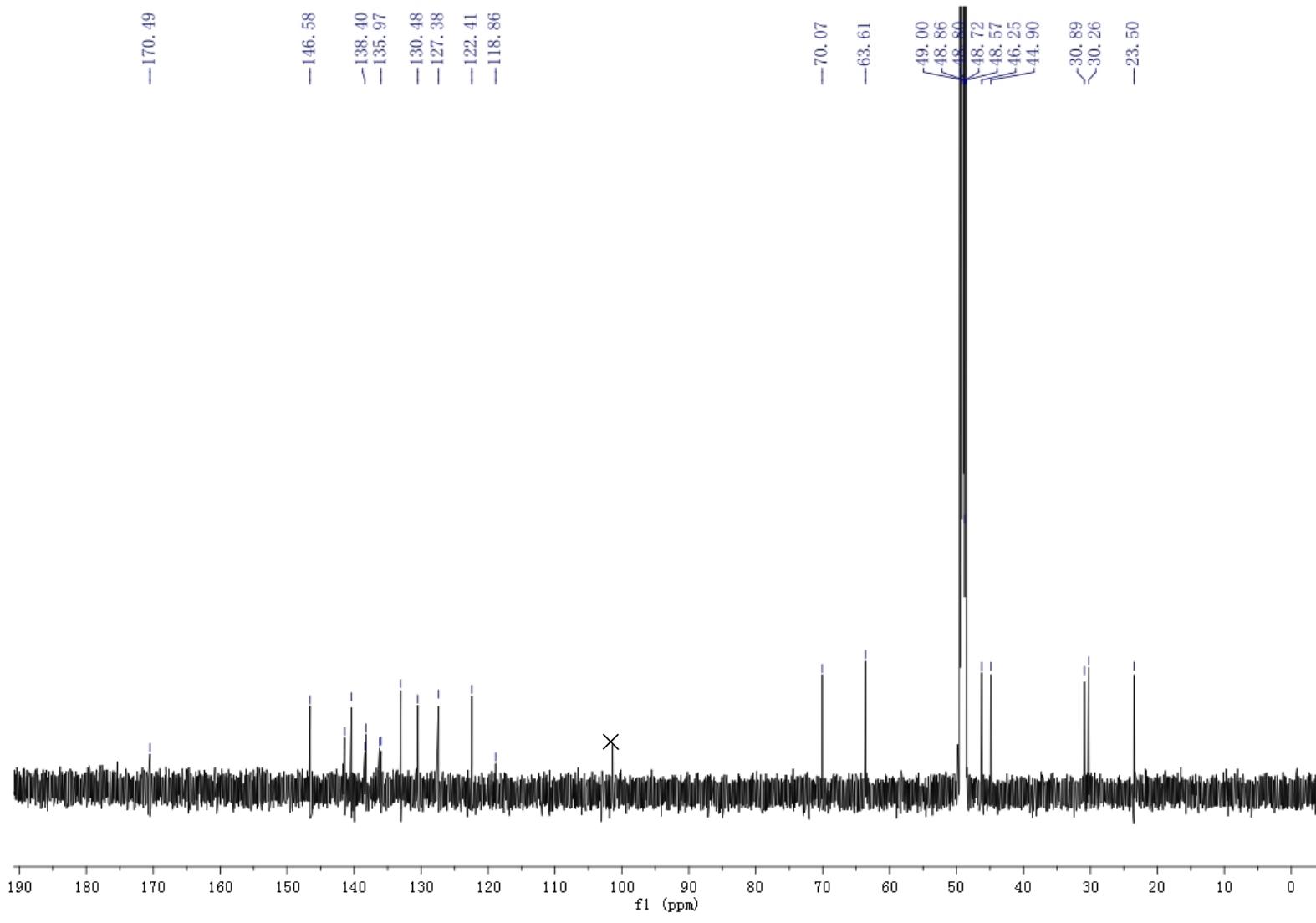
**Fig. S1-6** ROESY spectrum of compound **1**



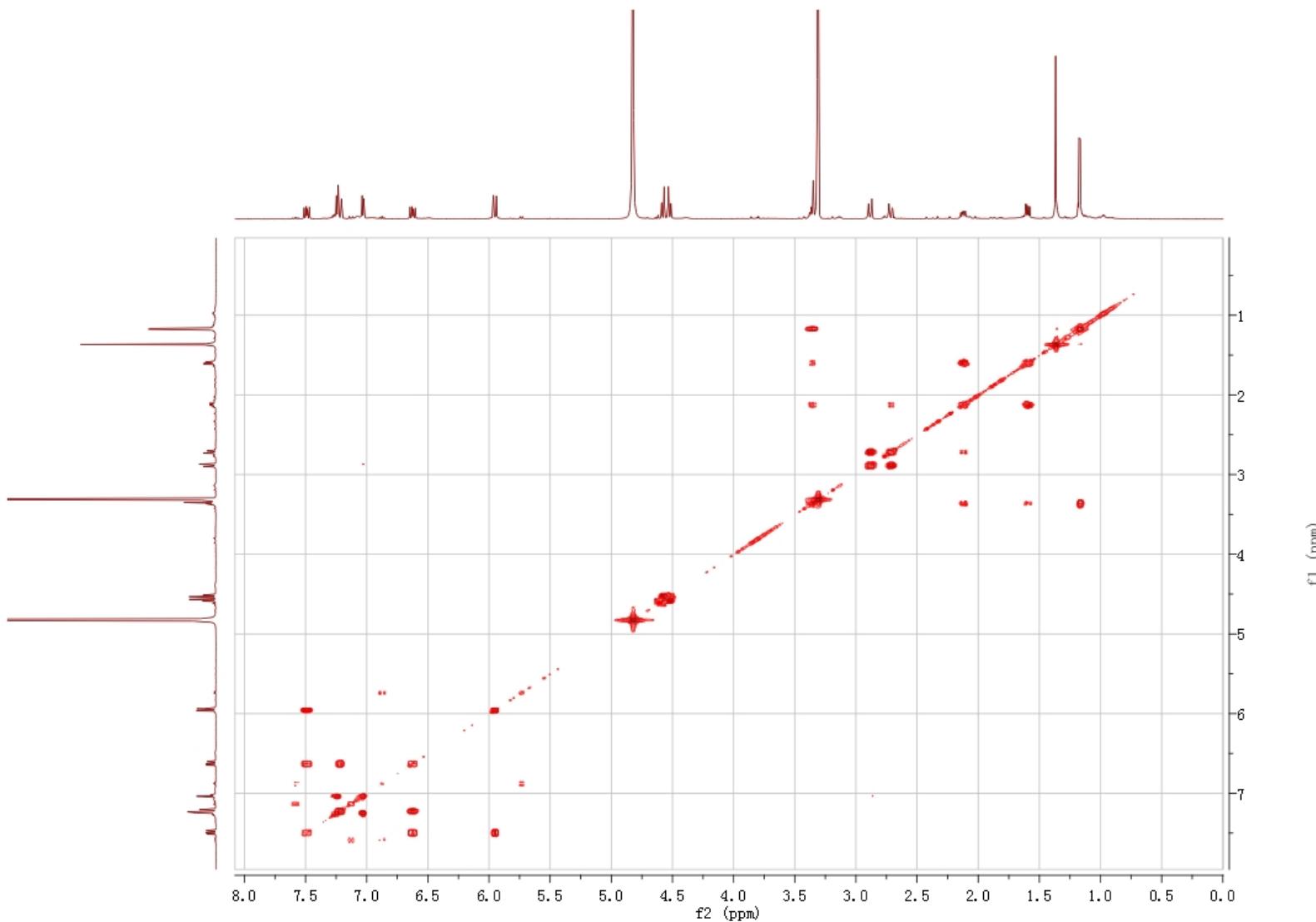
**Fig. S1-7** HRMS spectrum of compound **1**



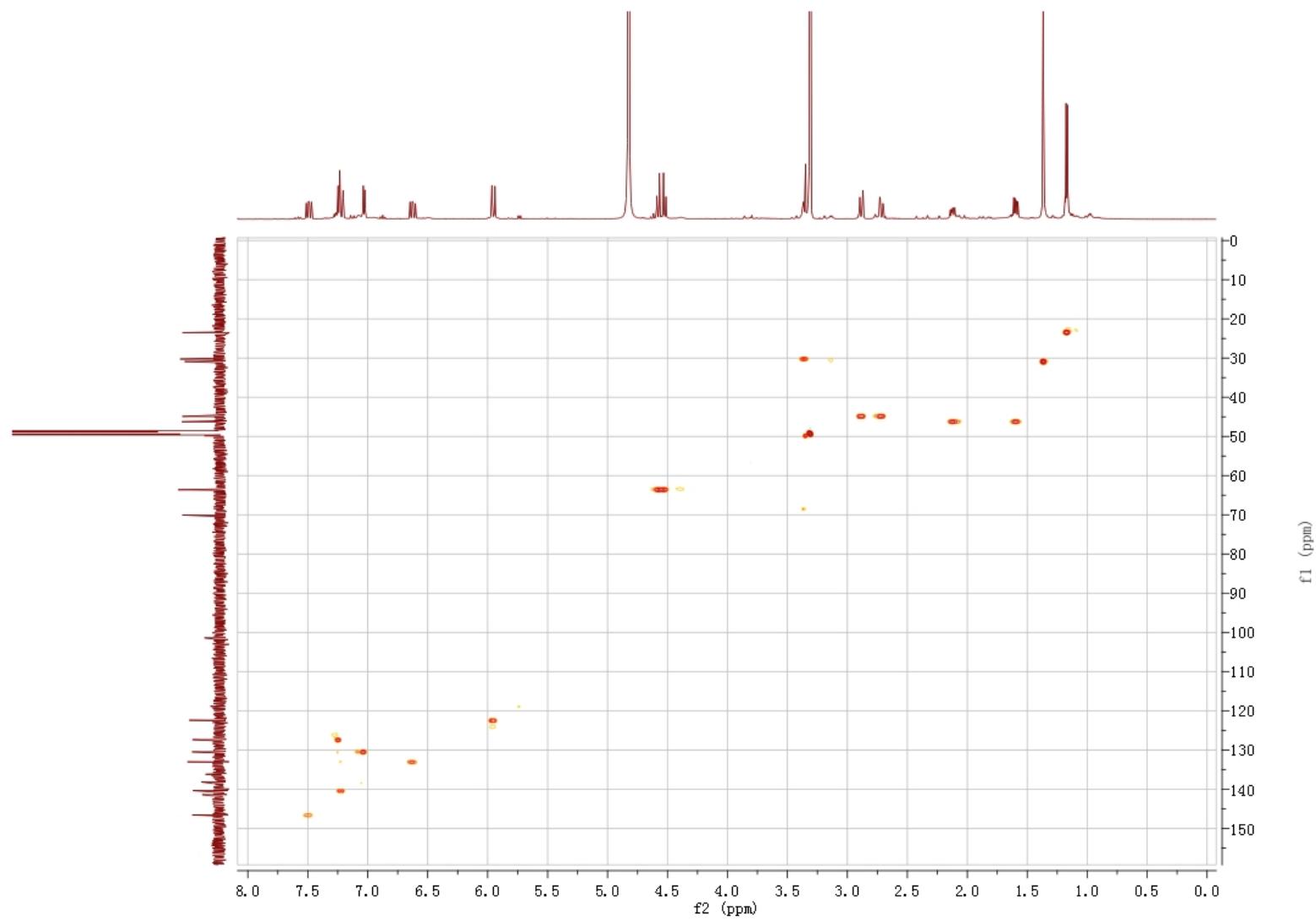
**Fig. S2-1**  ${}^1\text{H}$  NMR spectrum of compound 2 ( $\text{CD}_3\text{OD}$ )



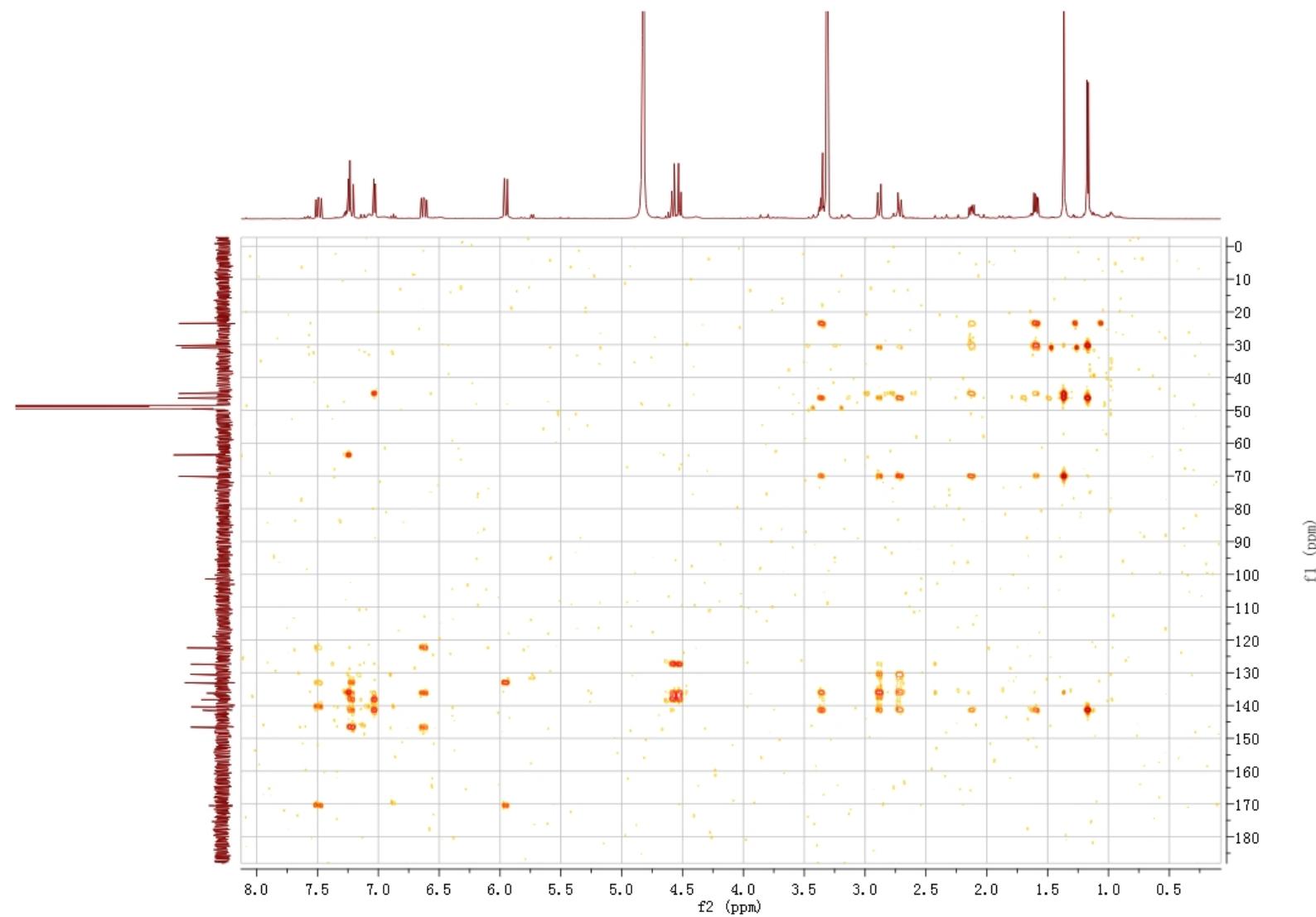
**Fig. S2-2**  $^{13}\text{C}$  NMR spectrum of compound 2 ( $\text{CD}_3\text{OD}$ )



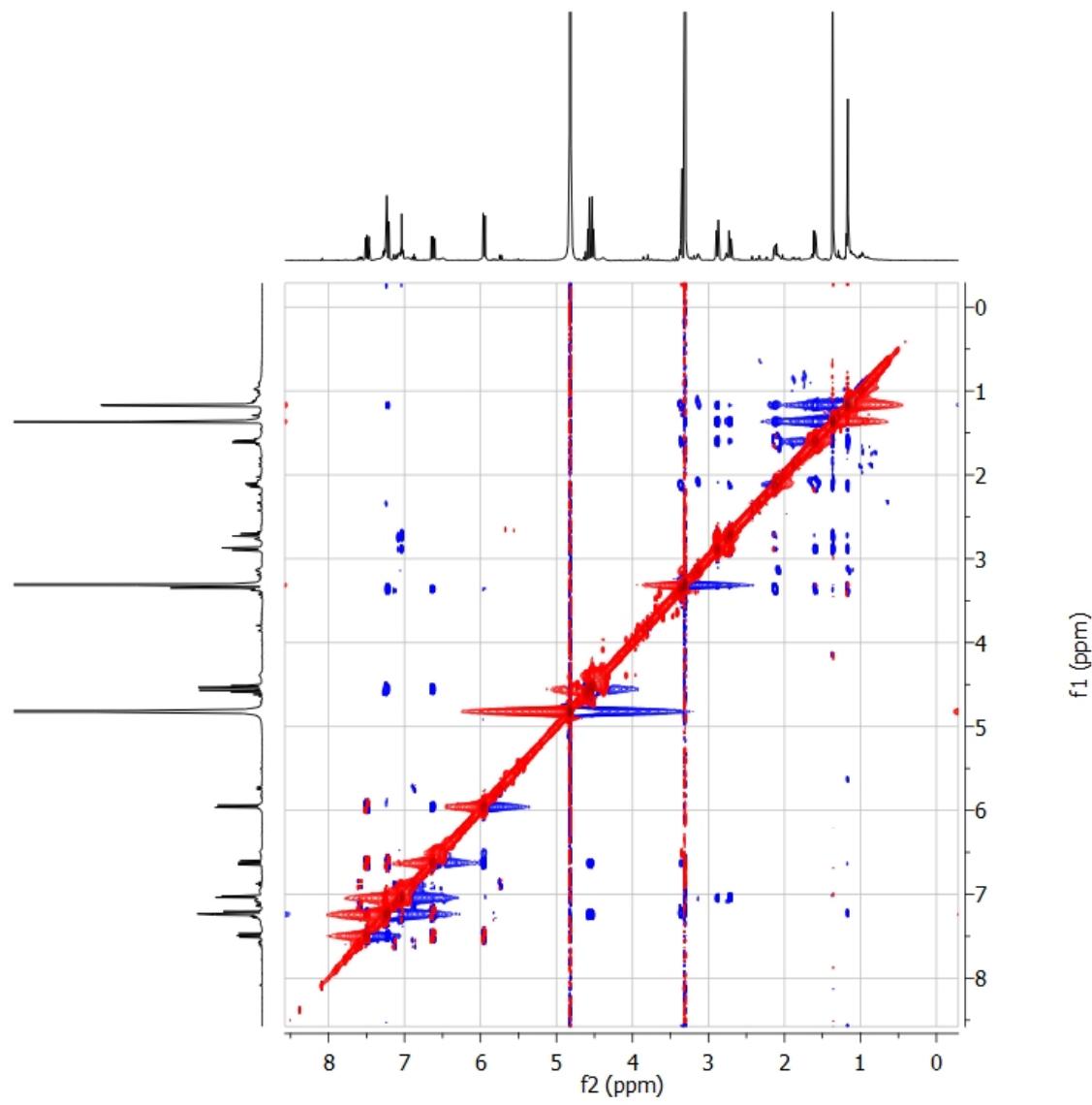
**Fig. S2-3** COSY spectrum of compound 2



**Fig. S2-4** HSQC spectrum of compound 2



**Fig. S2-5** HMBC spectrum of compound 2

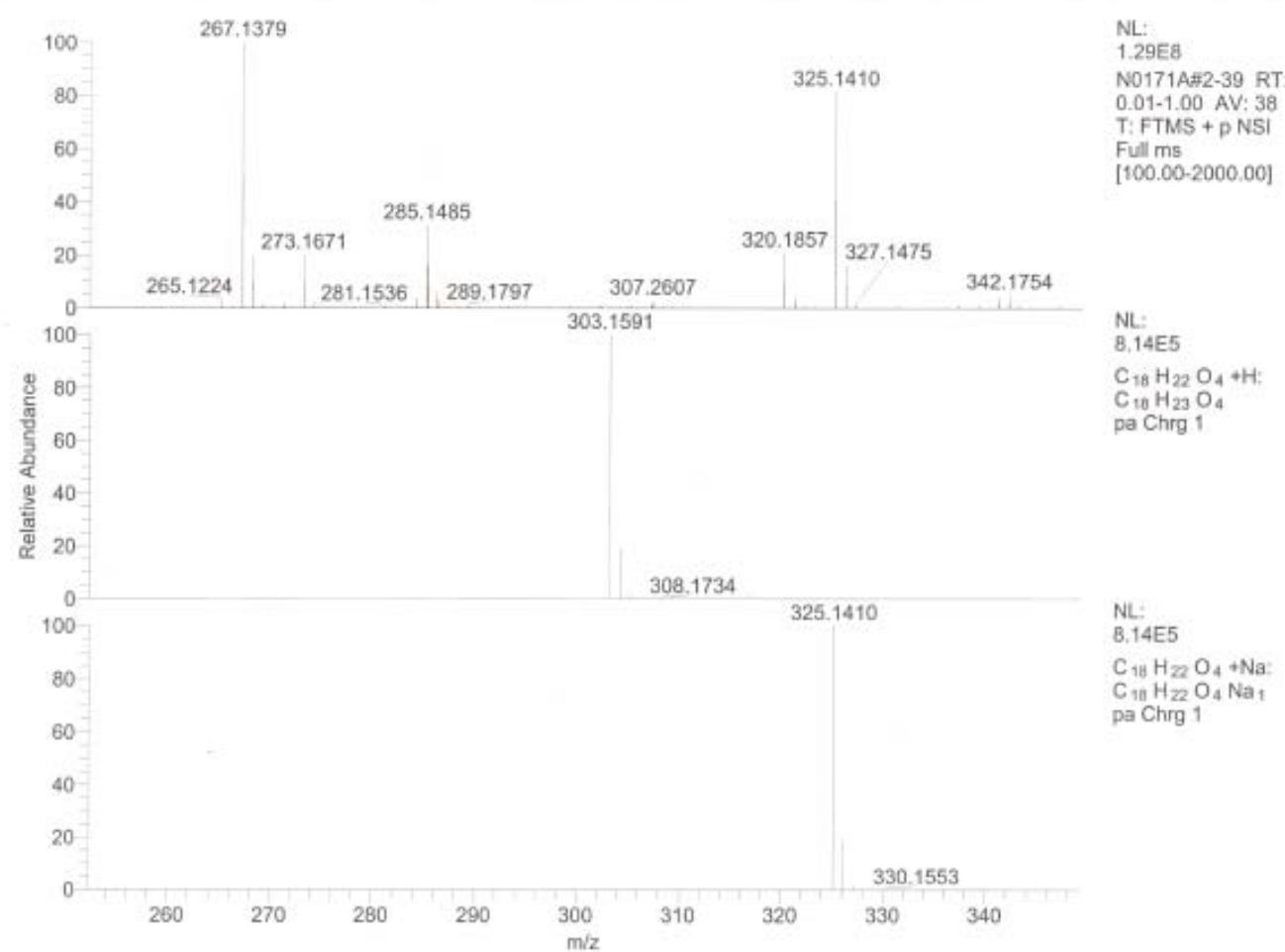


**Fig. S2-6** ROESY spectrum of compound 2

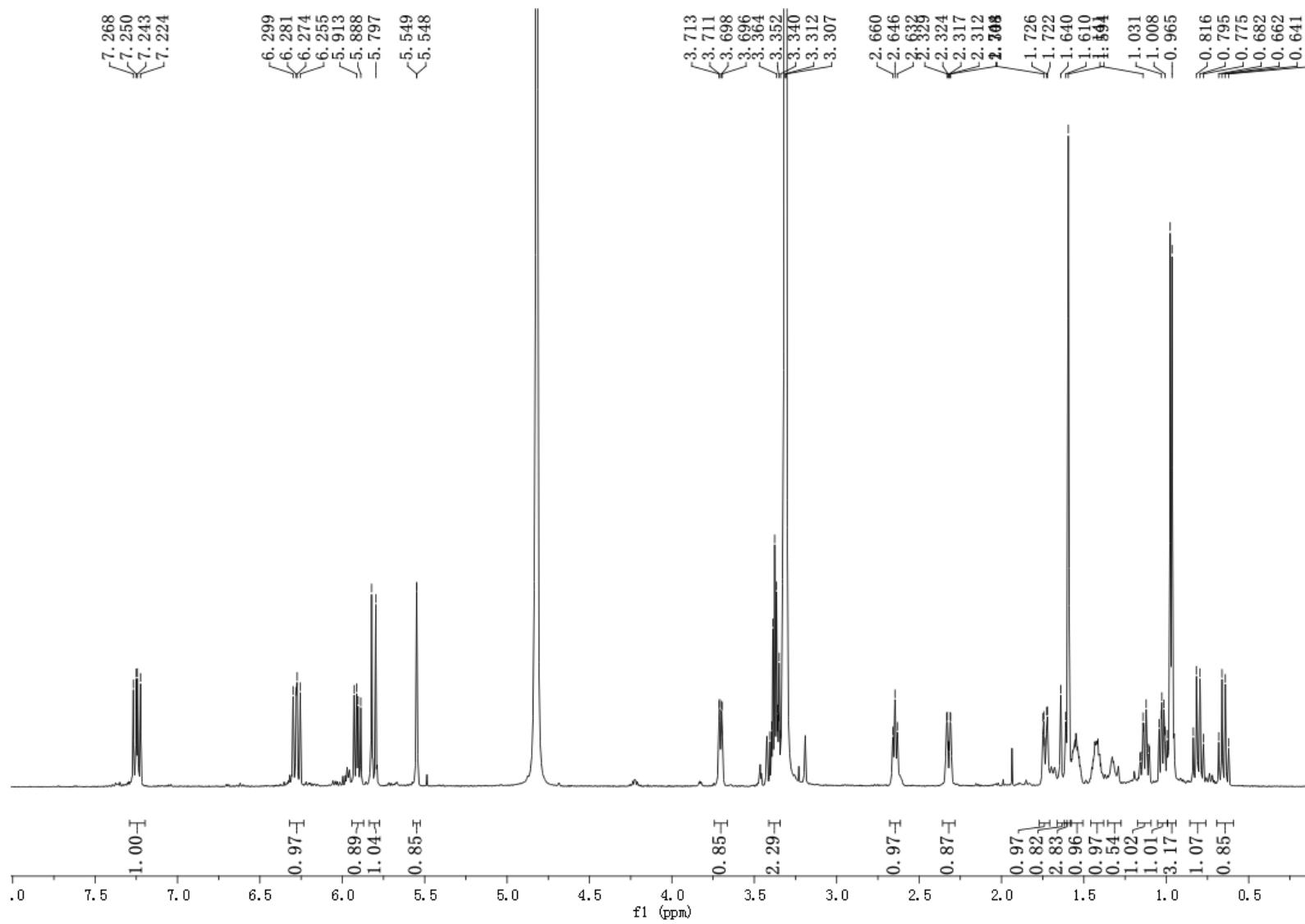
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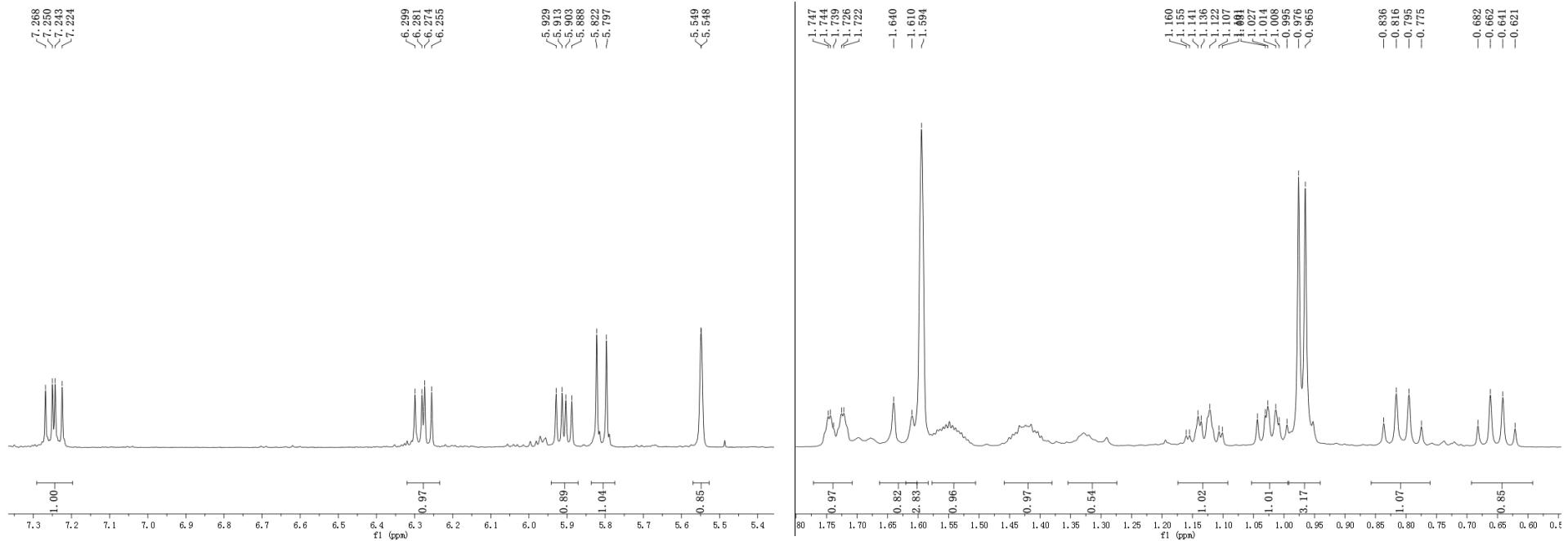
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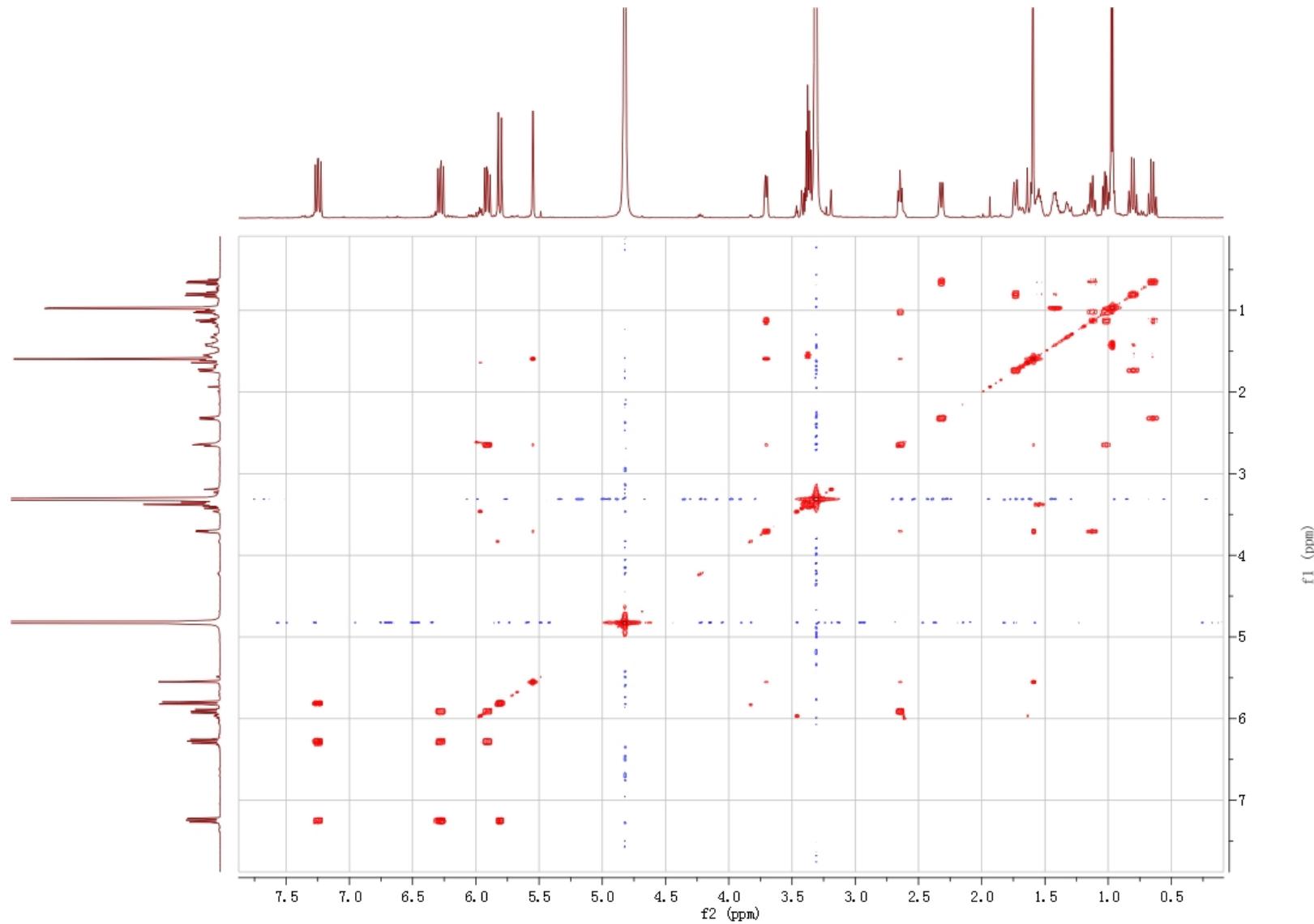
**Fig. S2-7** HRMS spectrum of compound 2



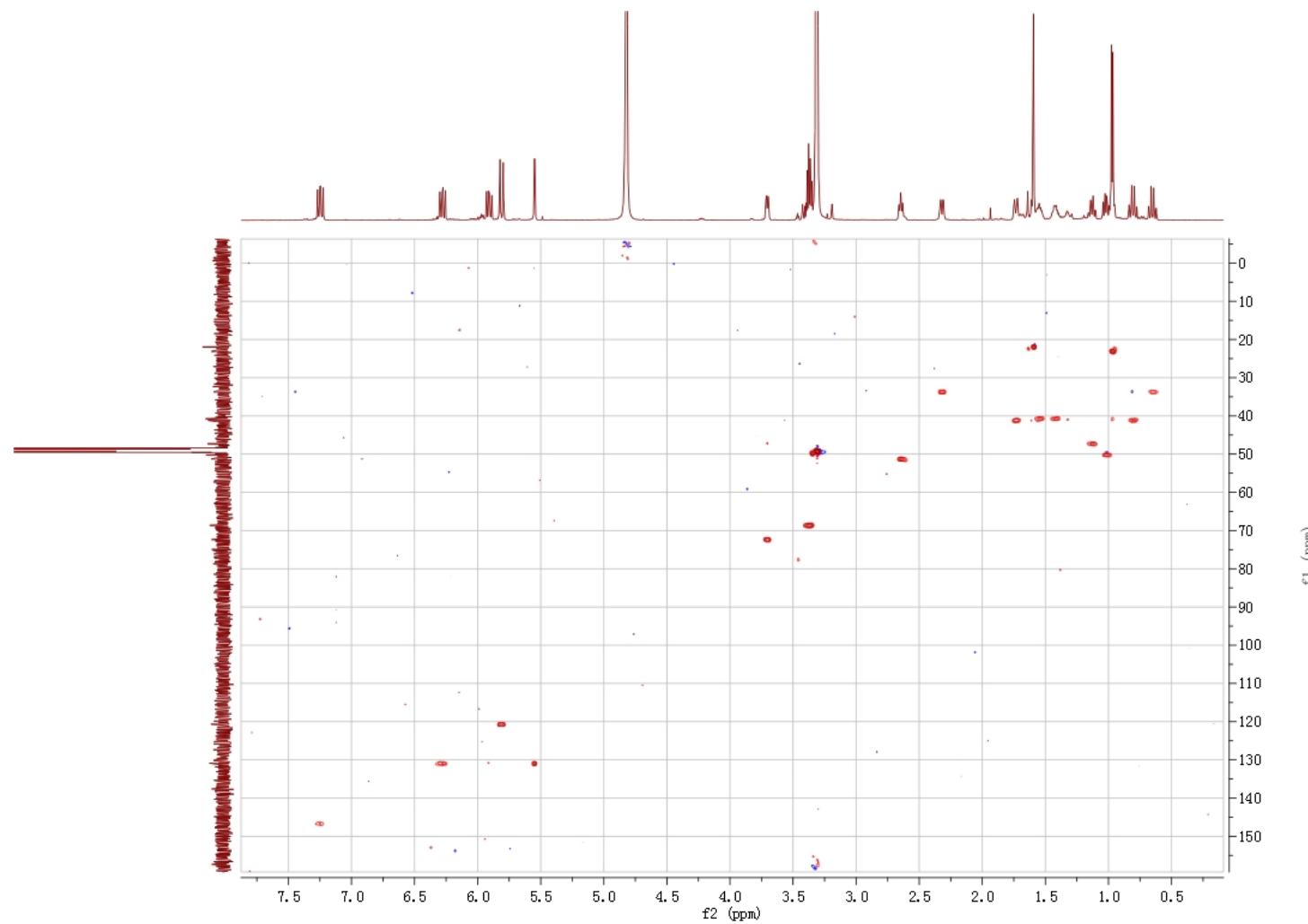
**Fig. S3-1**  $^1\text{H}$  NMR spectrum of compound **3** ( $\text{CD}_3\text{OD}$ )



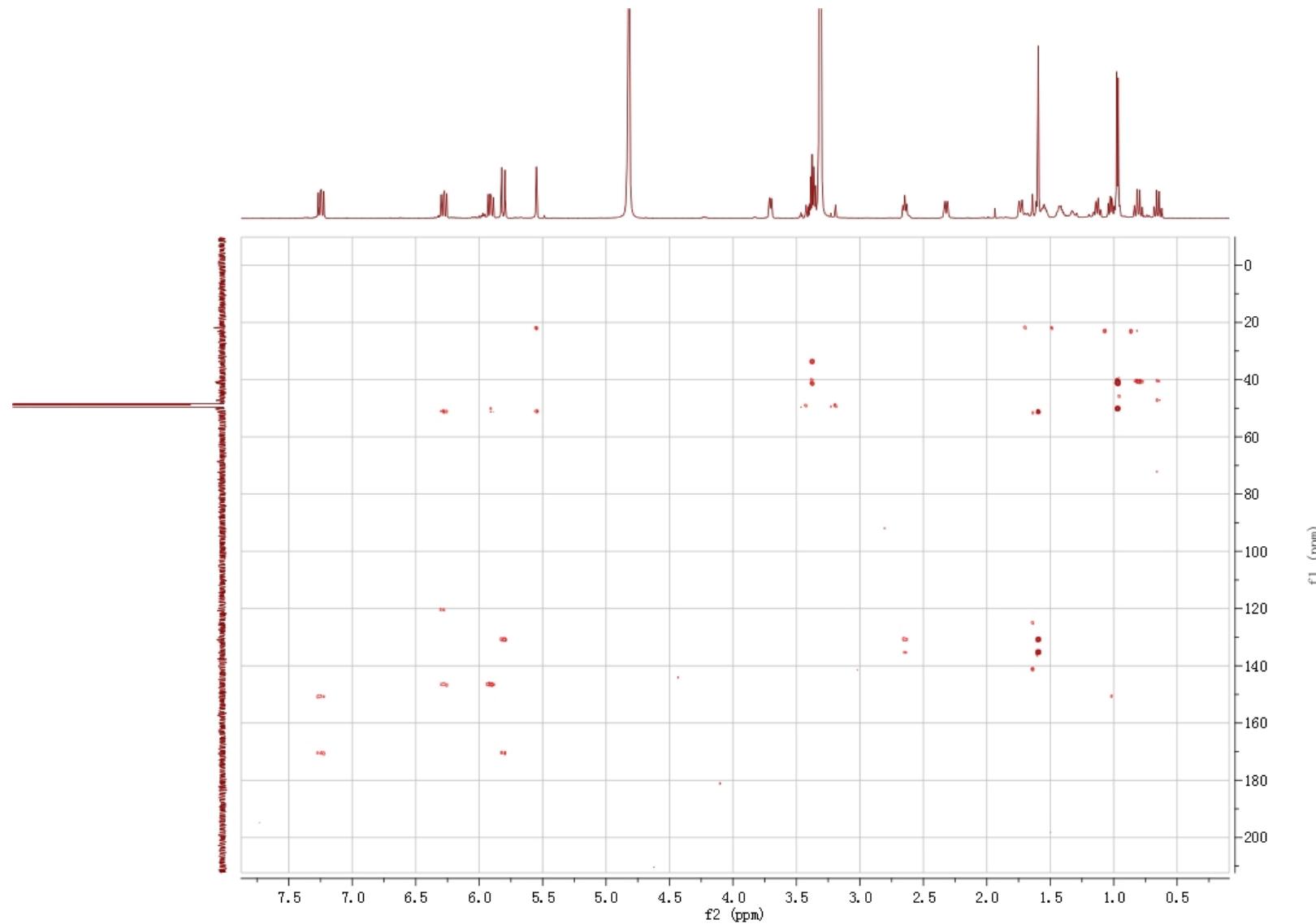
**Fig. S3-2**  $^1\text{H}$  NMR spectrum (expanded) of compound **3** ( $\text{CD}_3\text{OD}$ )



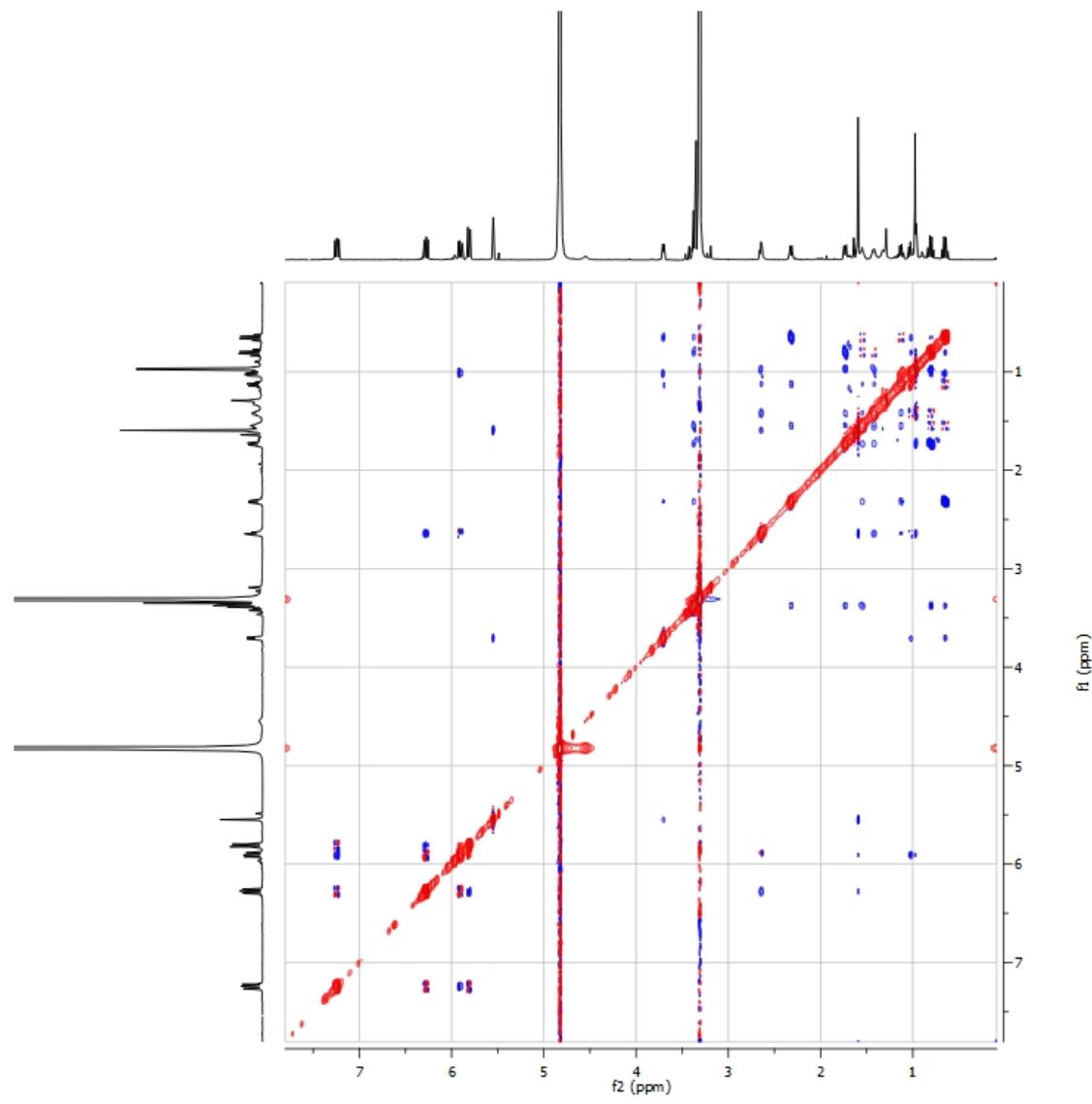
**Fig. S3-3** COSY spectrum of compound 3



**Fig. S3-4** HSQC spectrum of compound 3



**Fig. S3-5** HMBC spectrum of compound 3

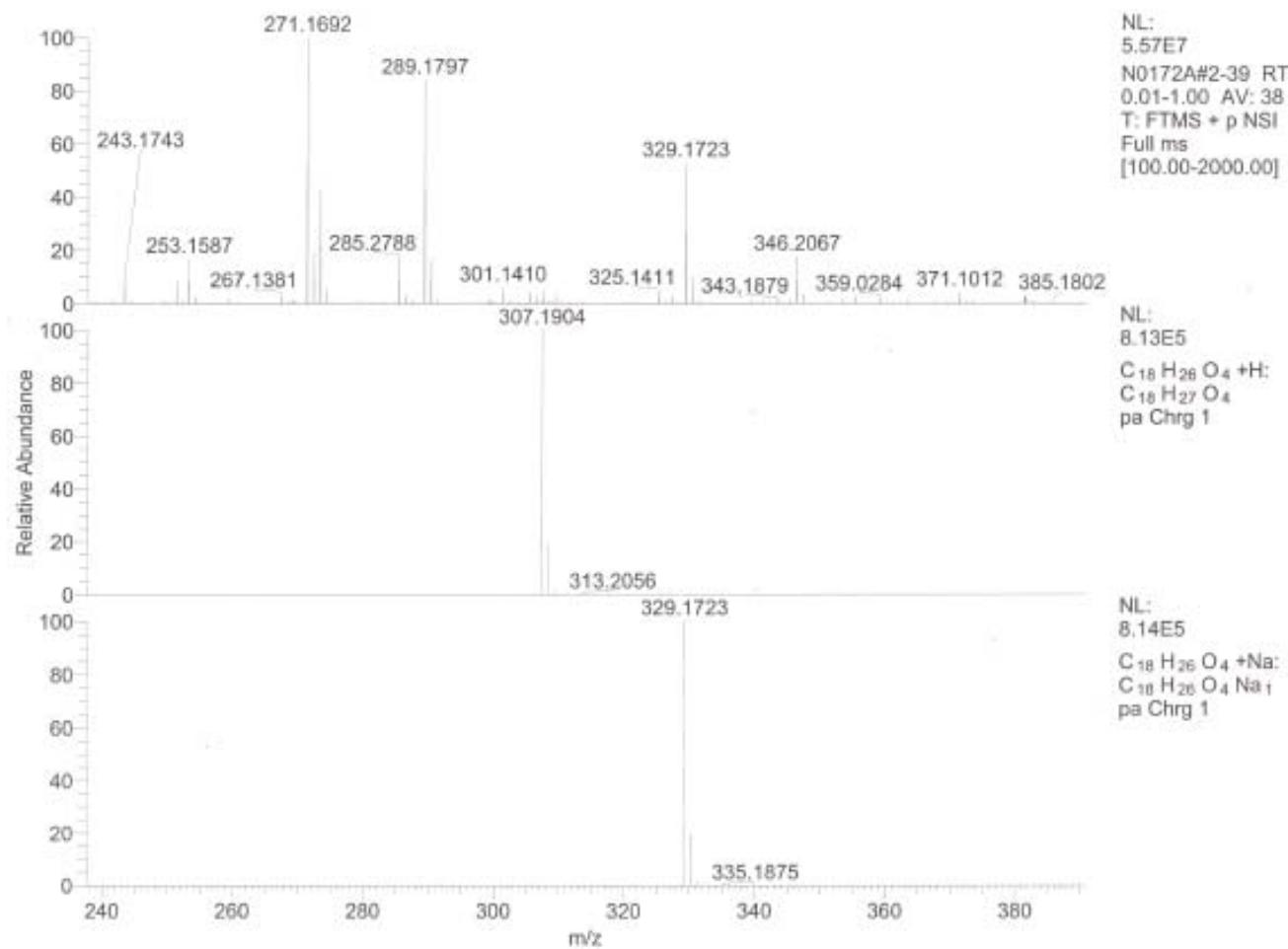


**Fig. S3-6** ROESY spectrum of compound 3

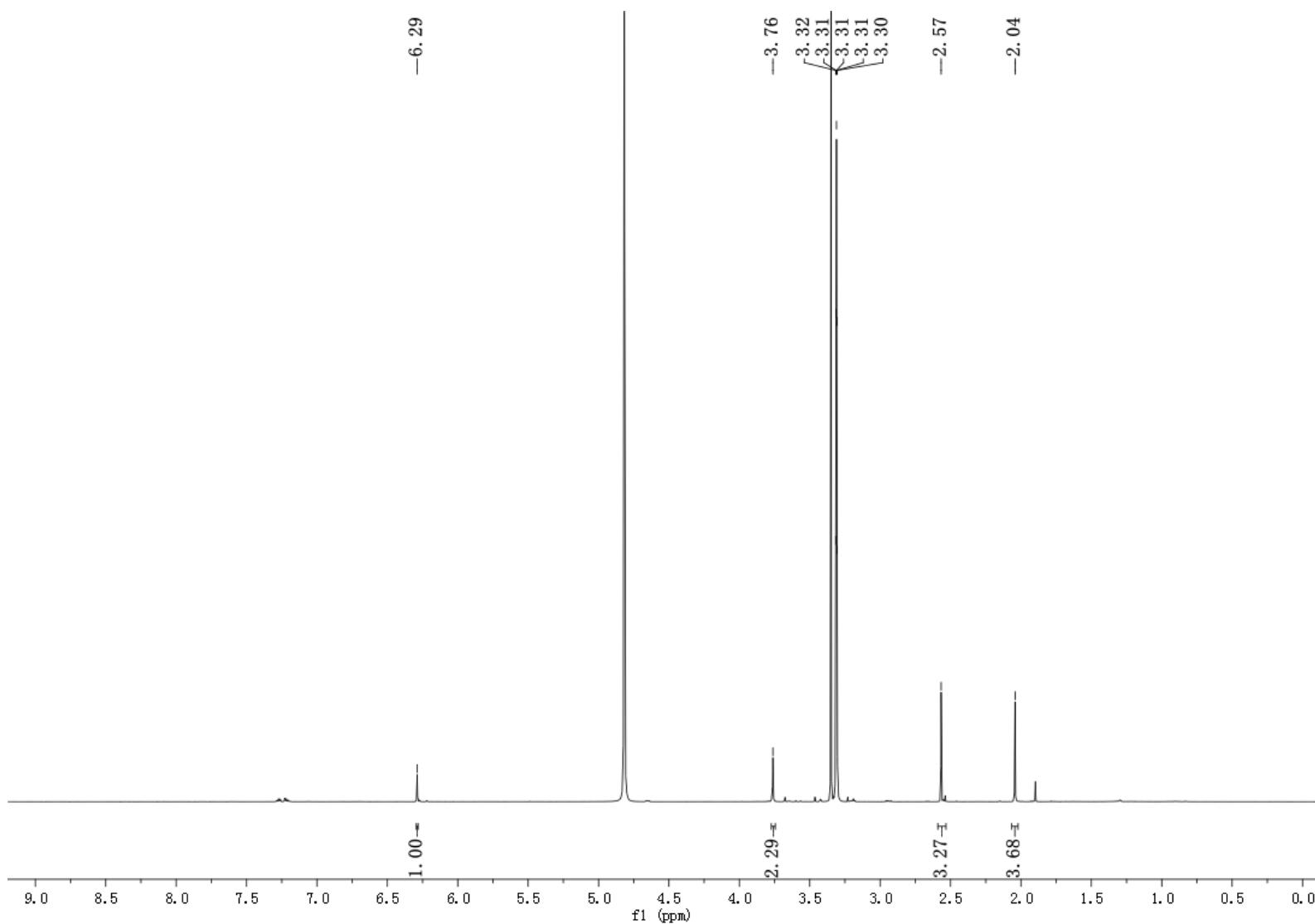
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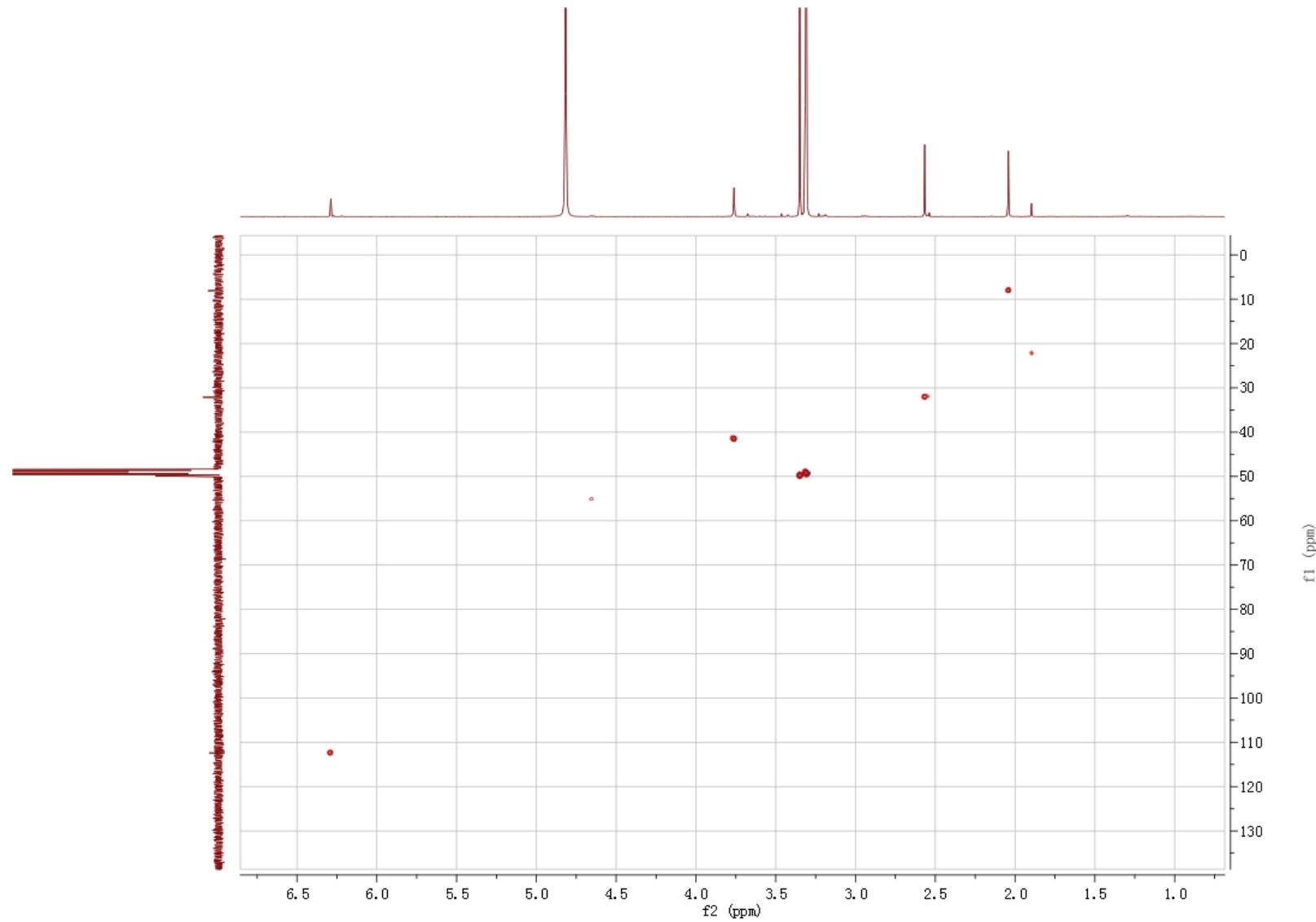
150blau, MNBr12



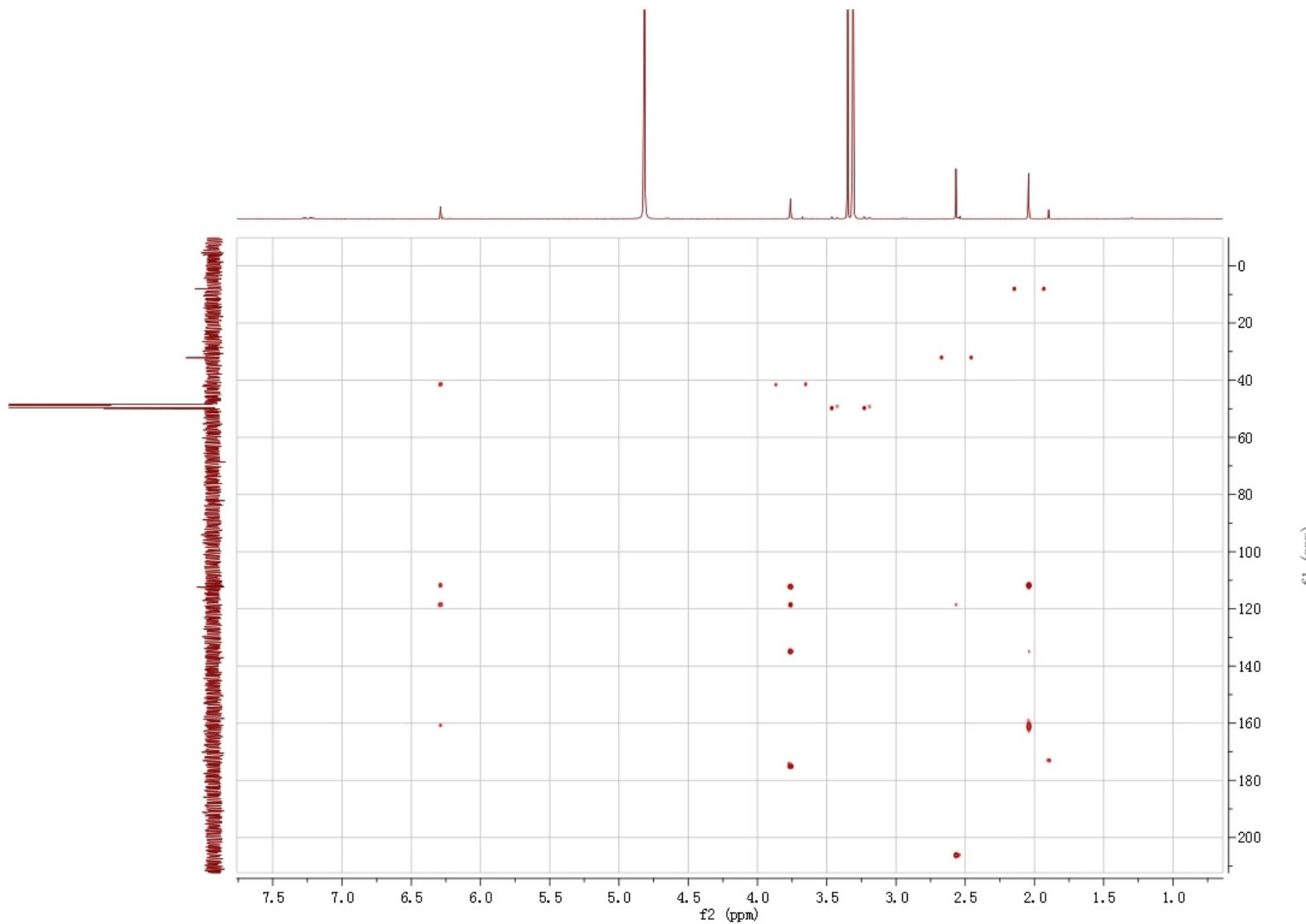
**Fig. S3-7** HRMS spectrum of compound 3



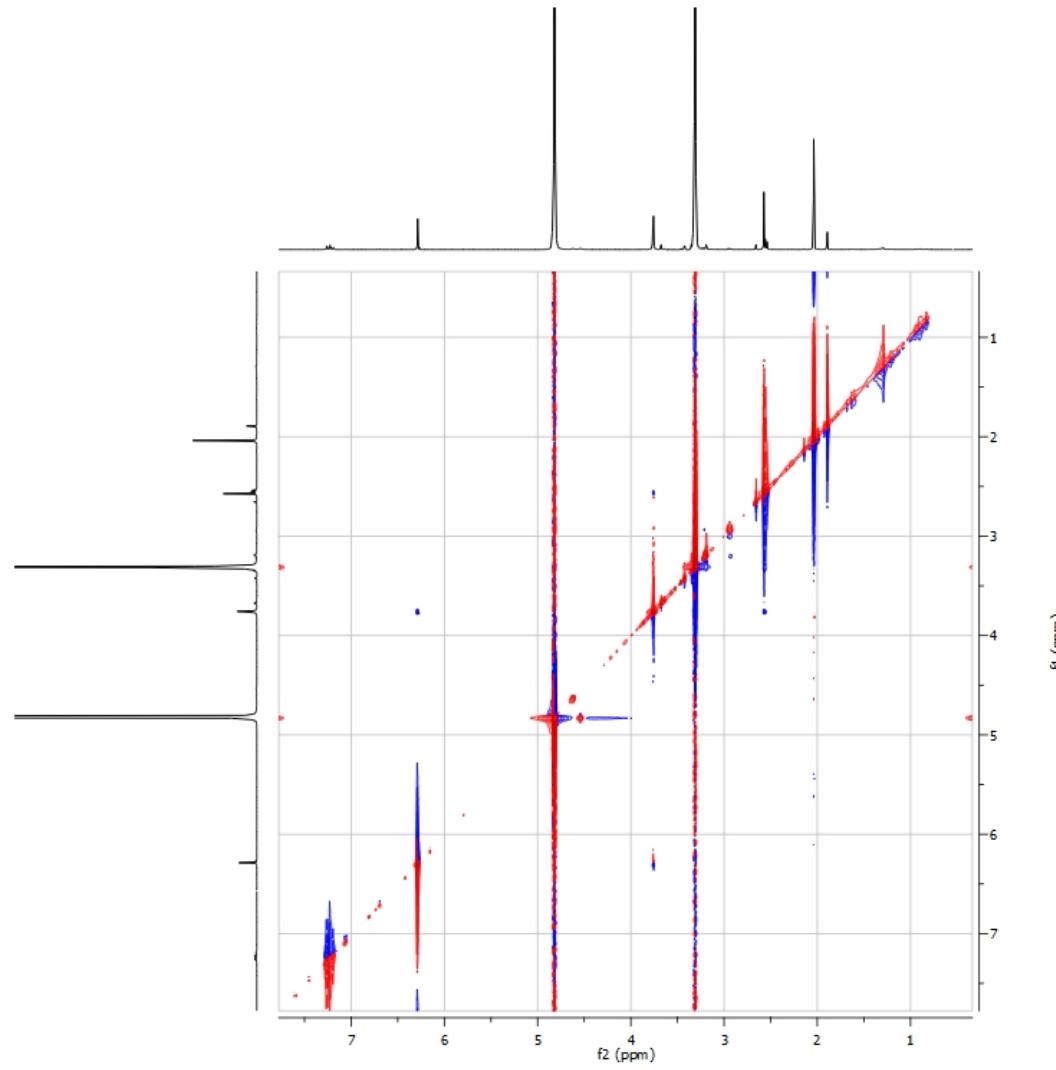
**Fig. S4-1**  $^1\text{H}$  NMR spectrum of compound 4 ( $\text{CD}_3\text{OD}$ )



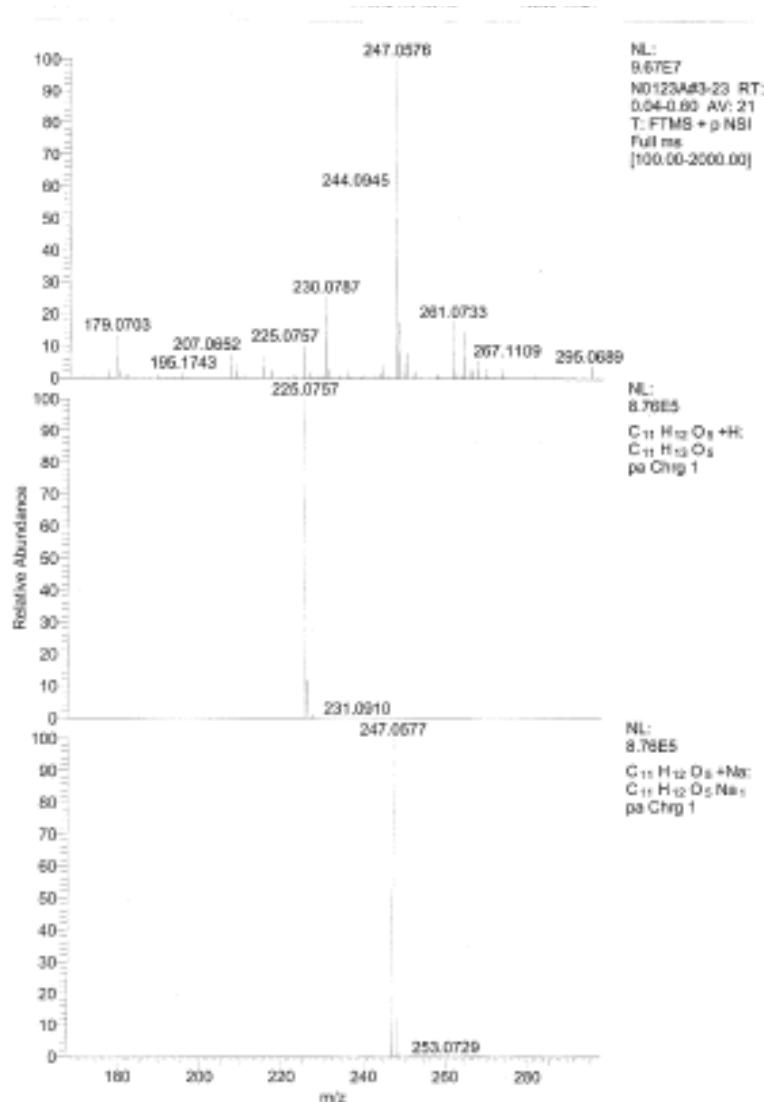
**Fig. S4-2** HSQC spectrum of compound 4



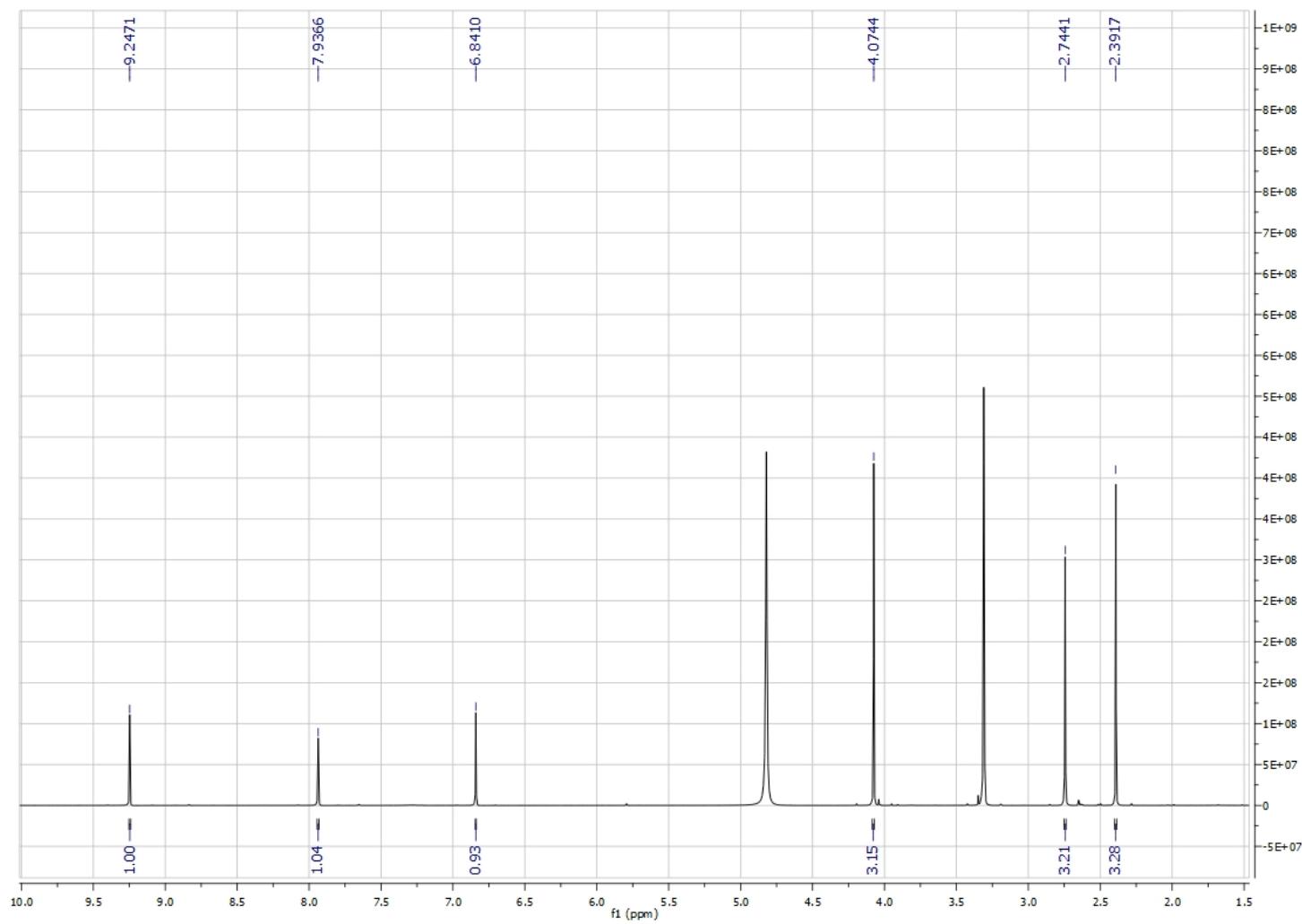
**Fig. S4-3** HMBC spectrum of compound 4



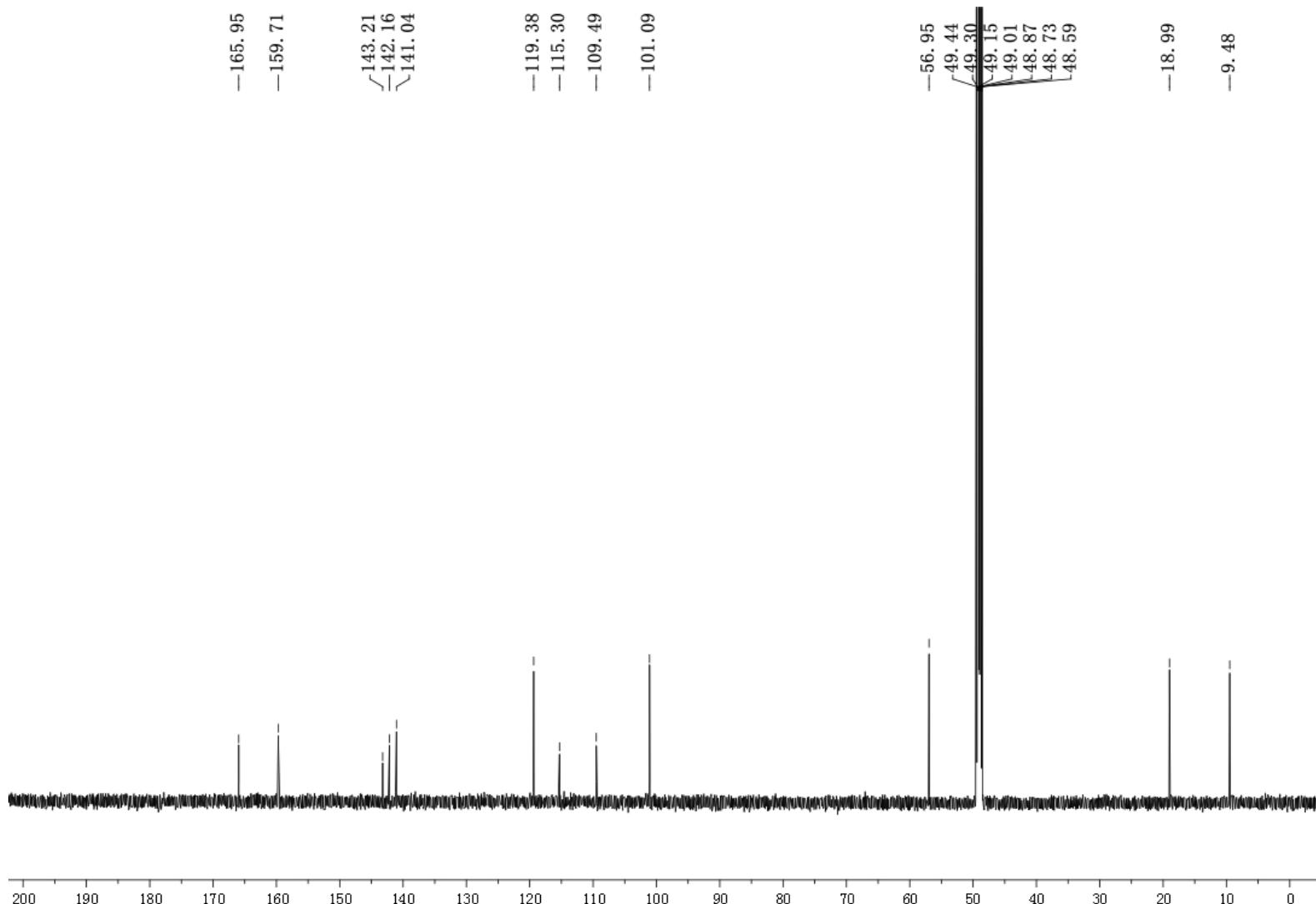
**Fig. S4-4** ROESY spectrum of compound 4



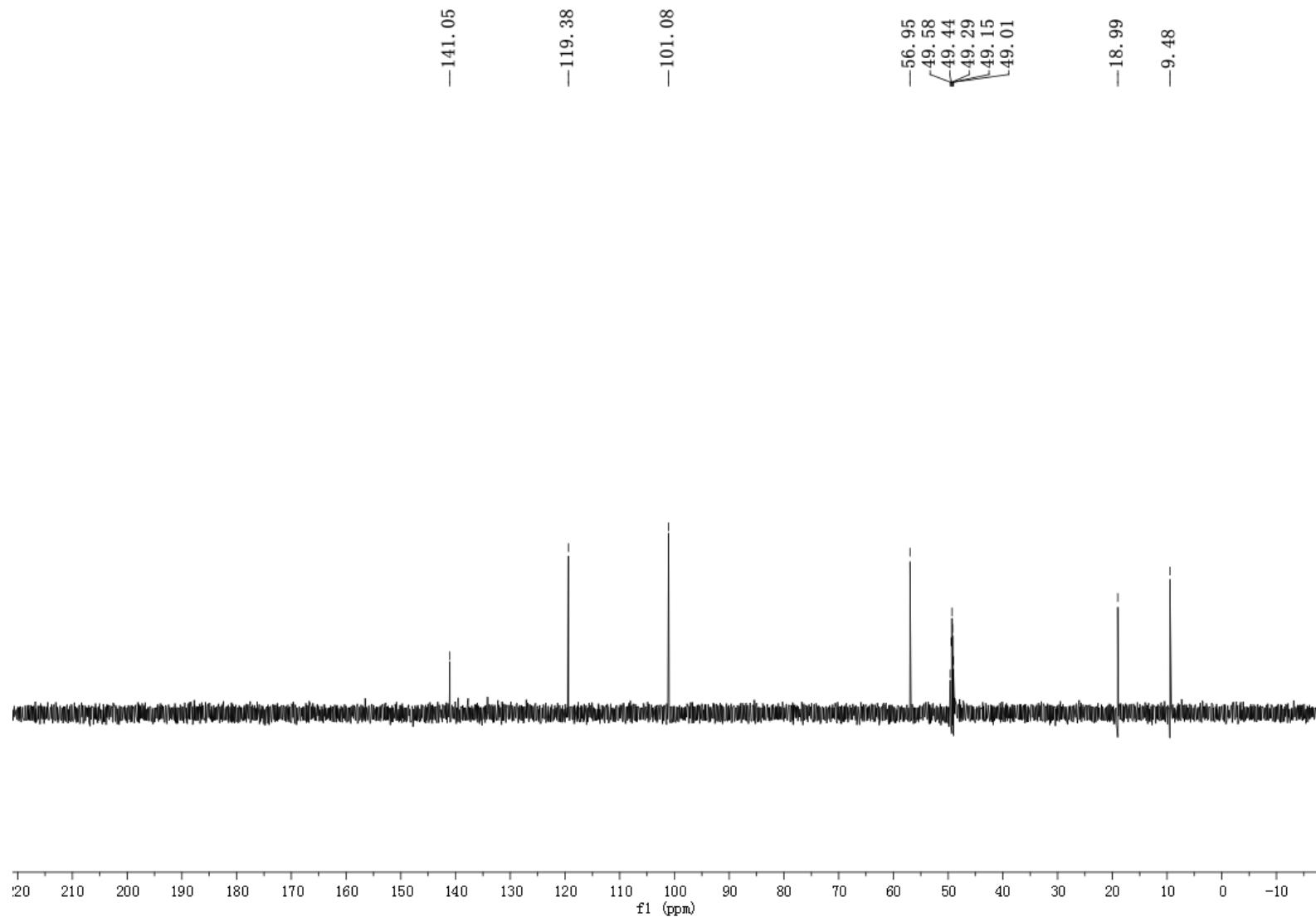
**Fig. S4-5** HRMS spectrum of compound 4



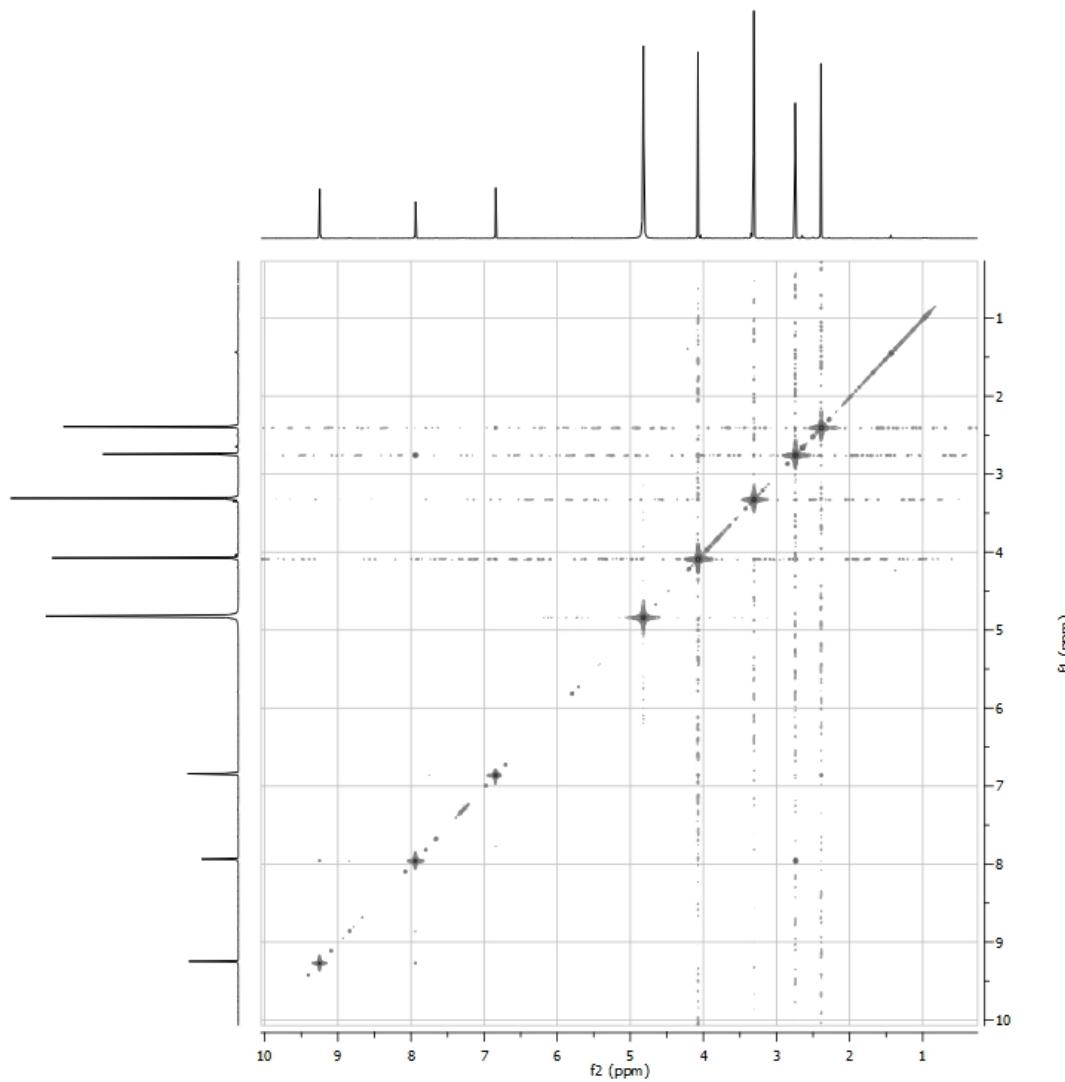
**Fig. S5-1**  ${}^1\text{H}$  NMR spectrum of compound 5 ( $\text{CD}_3\text{OD}$ )



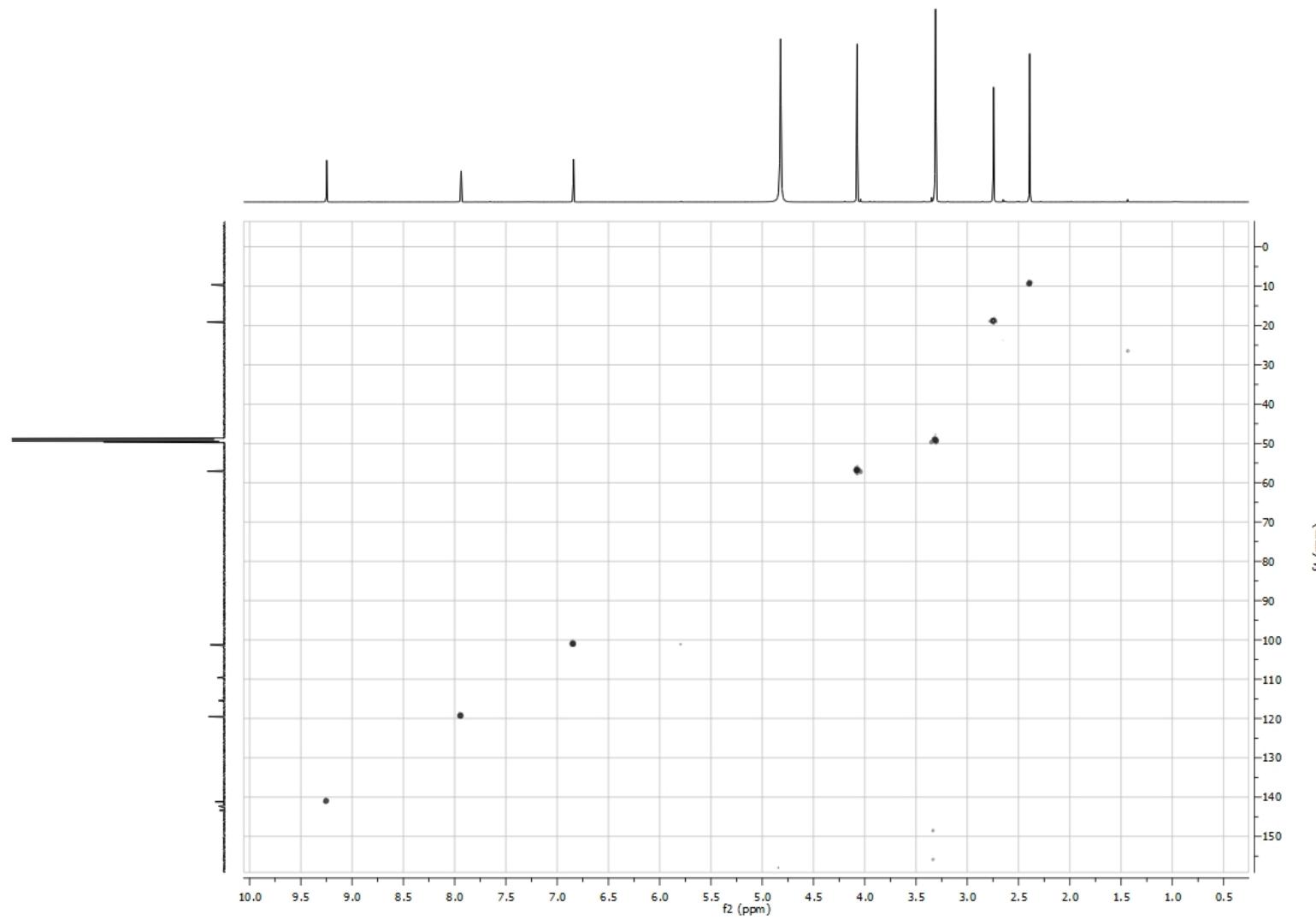
**Fig. S5-2**  $^{13}\text{C}$  NMR spectrum of compound 5 ( $\text{CD}_3\text{OD}$ )



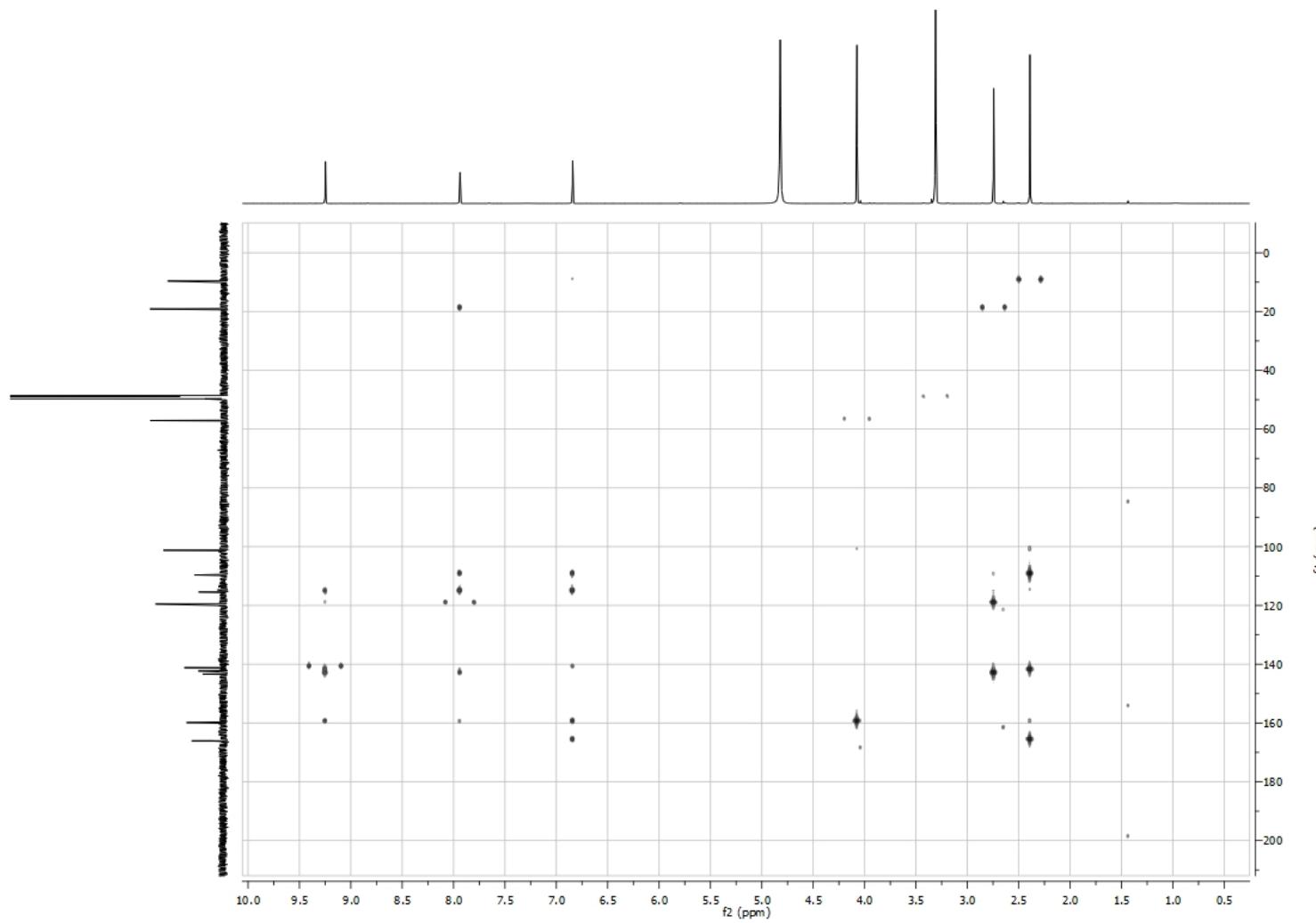
**Fig. S5-3** DEPT-135 spectrum of compound **5** ( $\text{CD}_3\text{OD}$ )



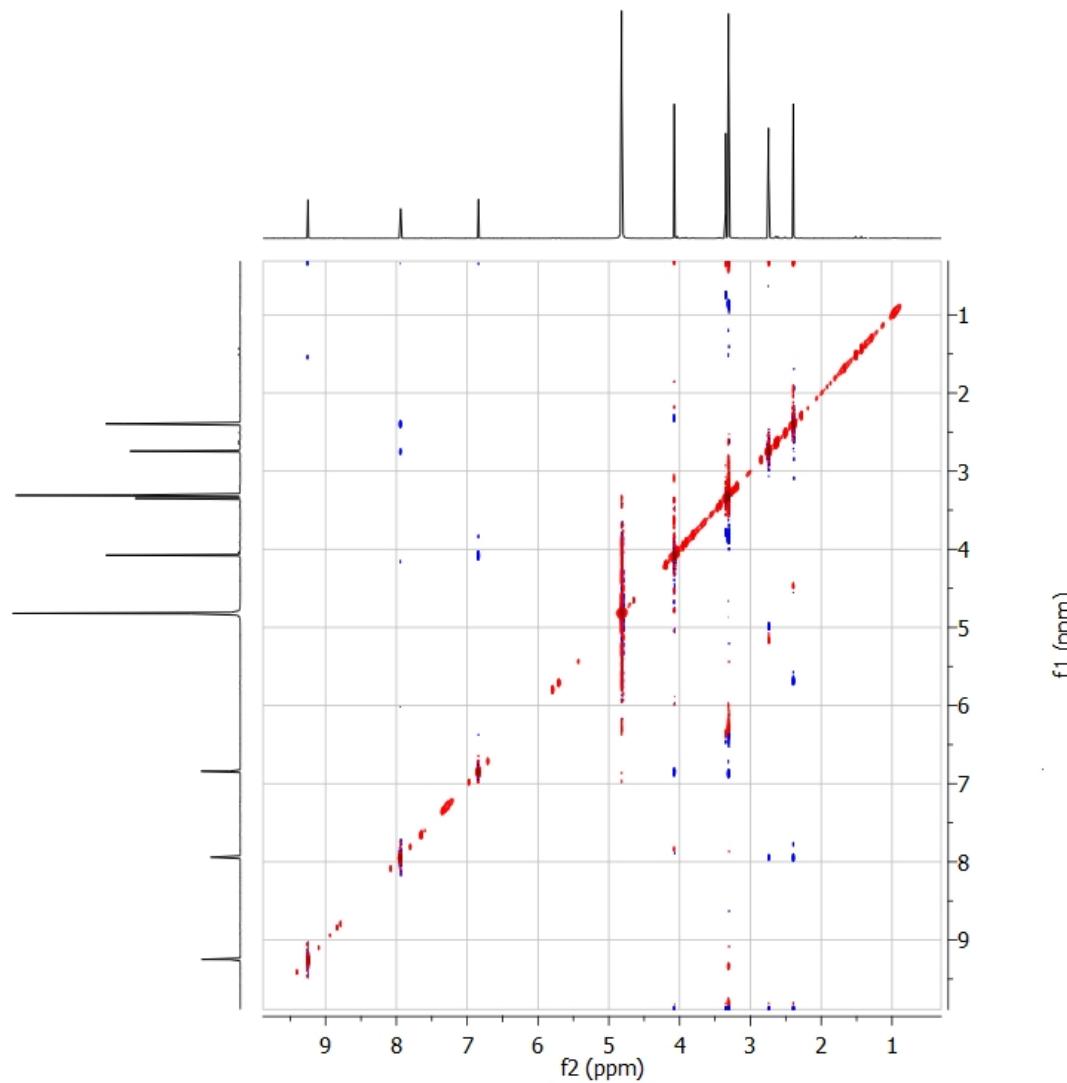
**Fig. S5-4** COSY spectrum of compound 5



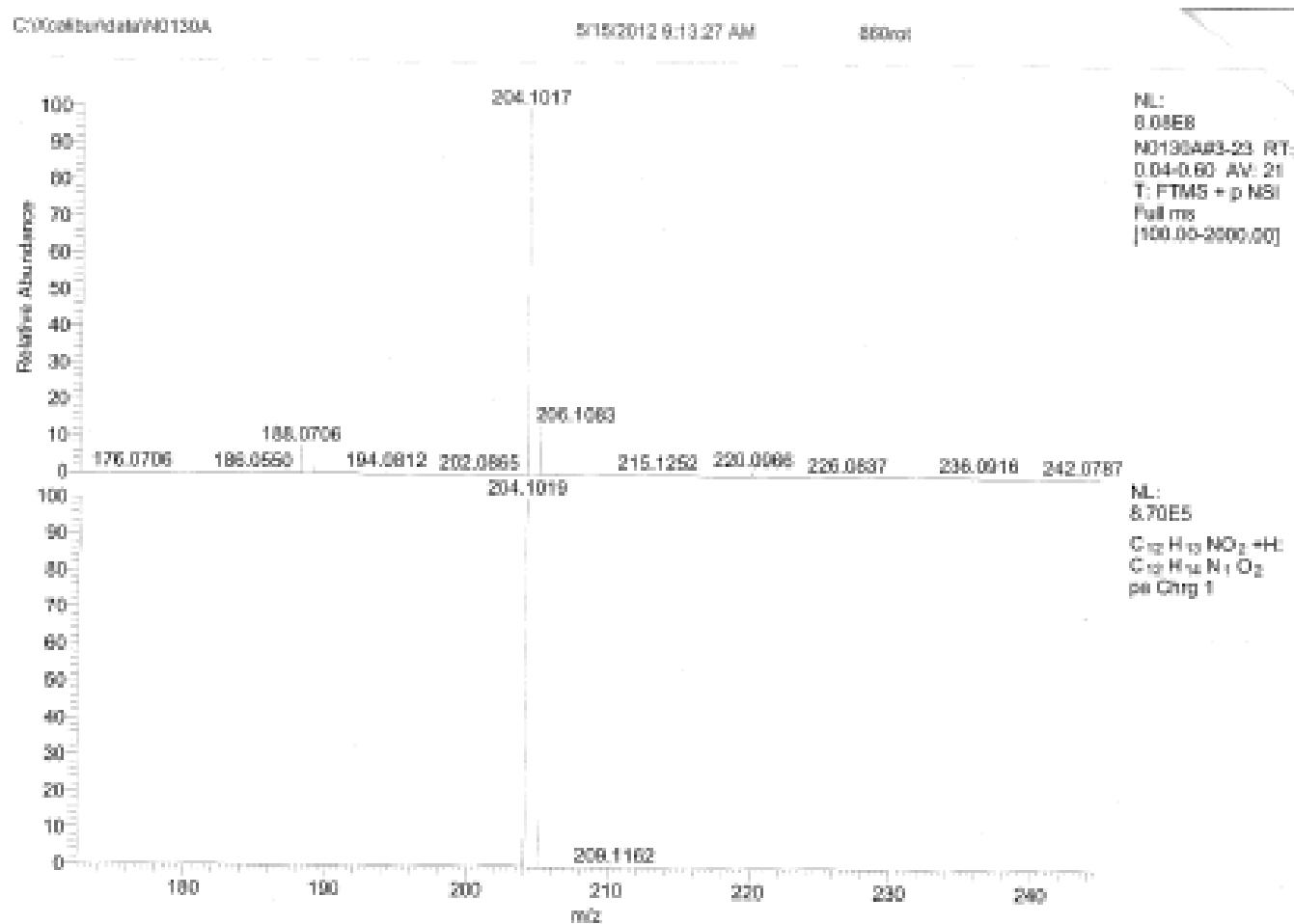
**Fig. S5-5** HSQC spectrum of compound 5



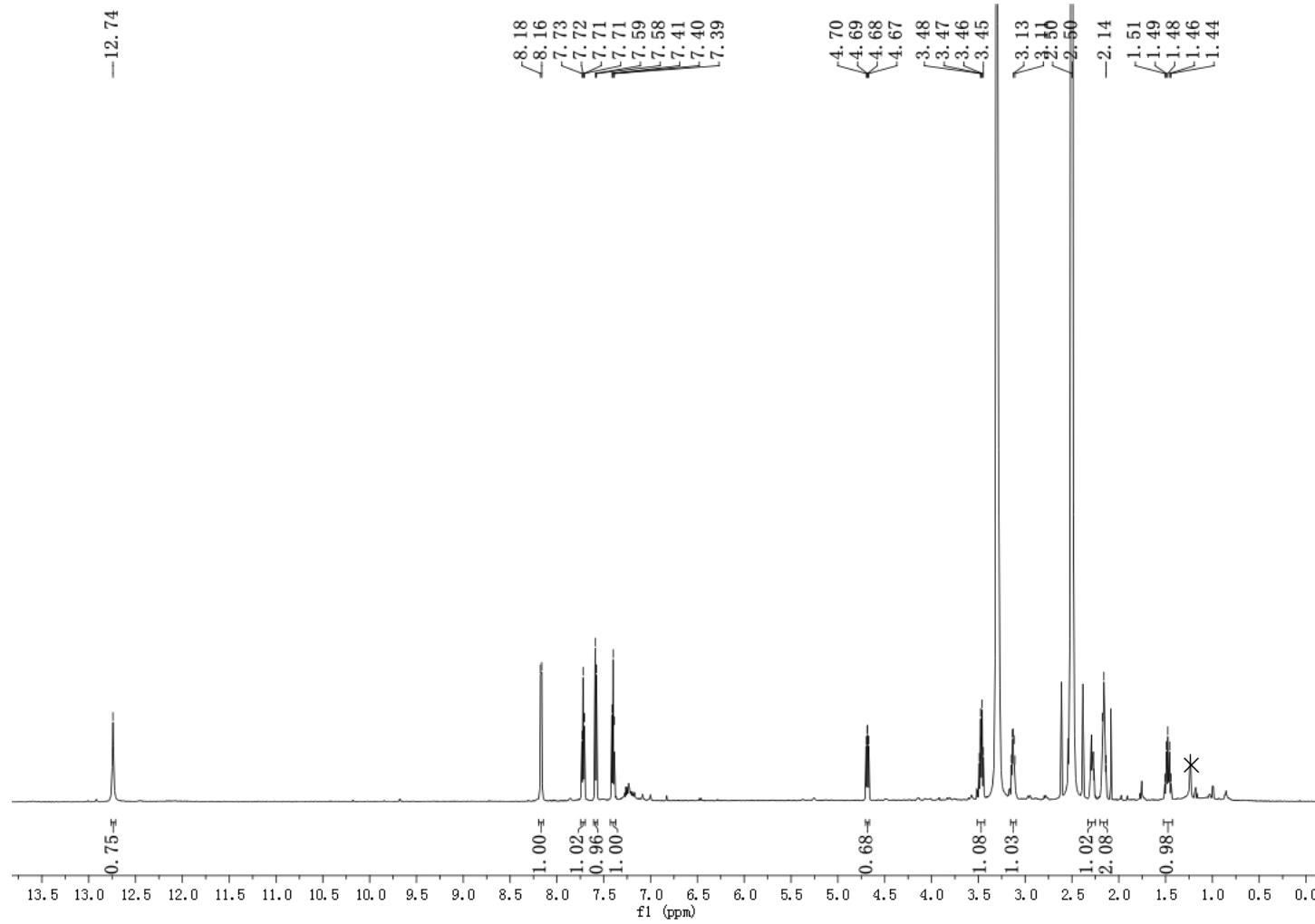
**Fig. S5-6** HMBC spectrum of compound 5



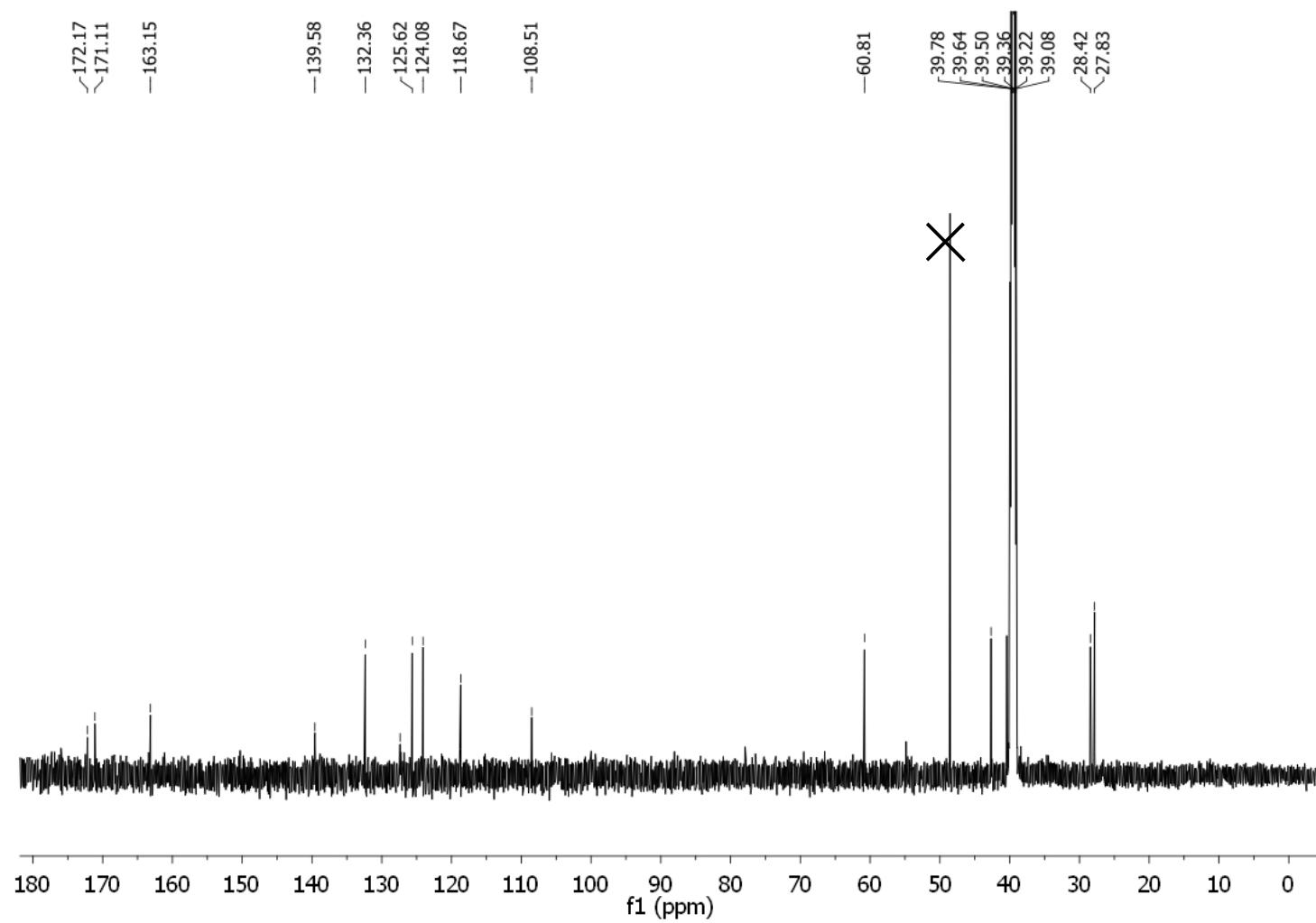
**Fig. S5-7** ROESY spectrum of compound 5



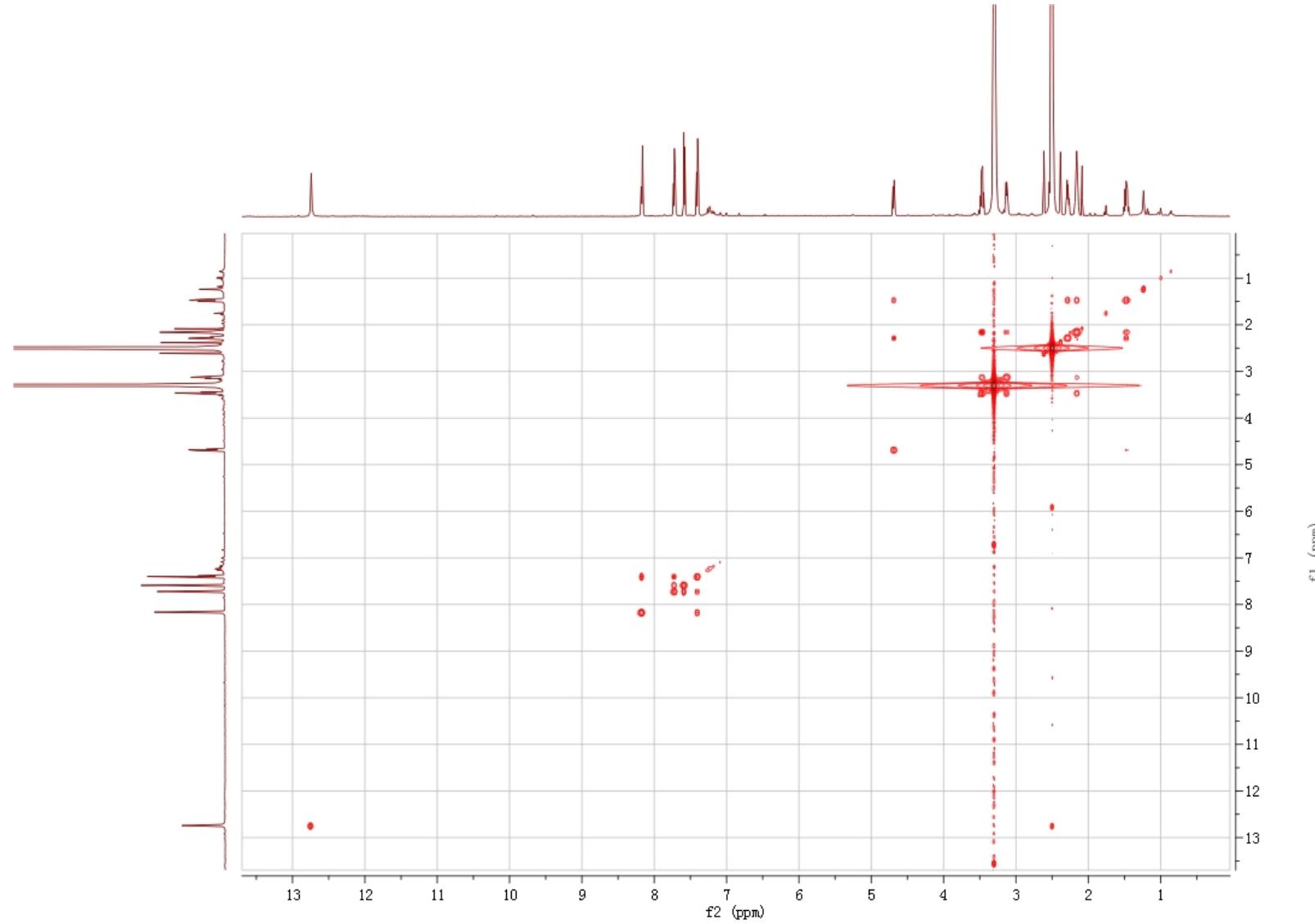
**Fig. S5-8** HRMS spectrum of compound 5



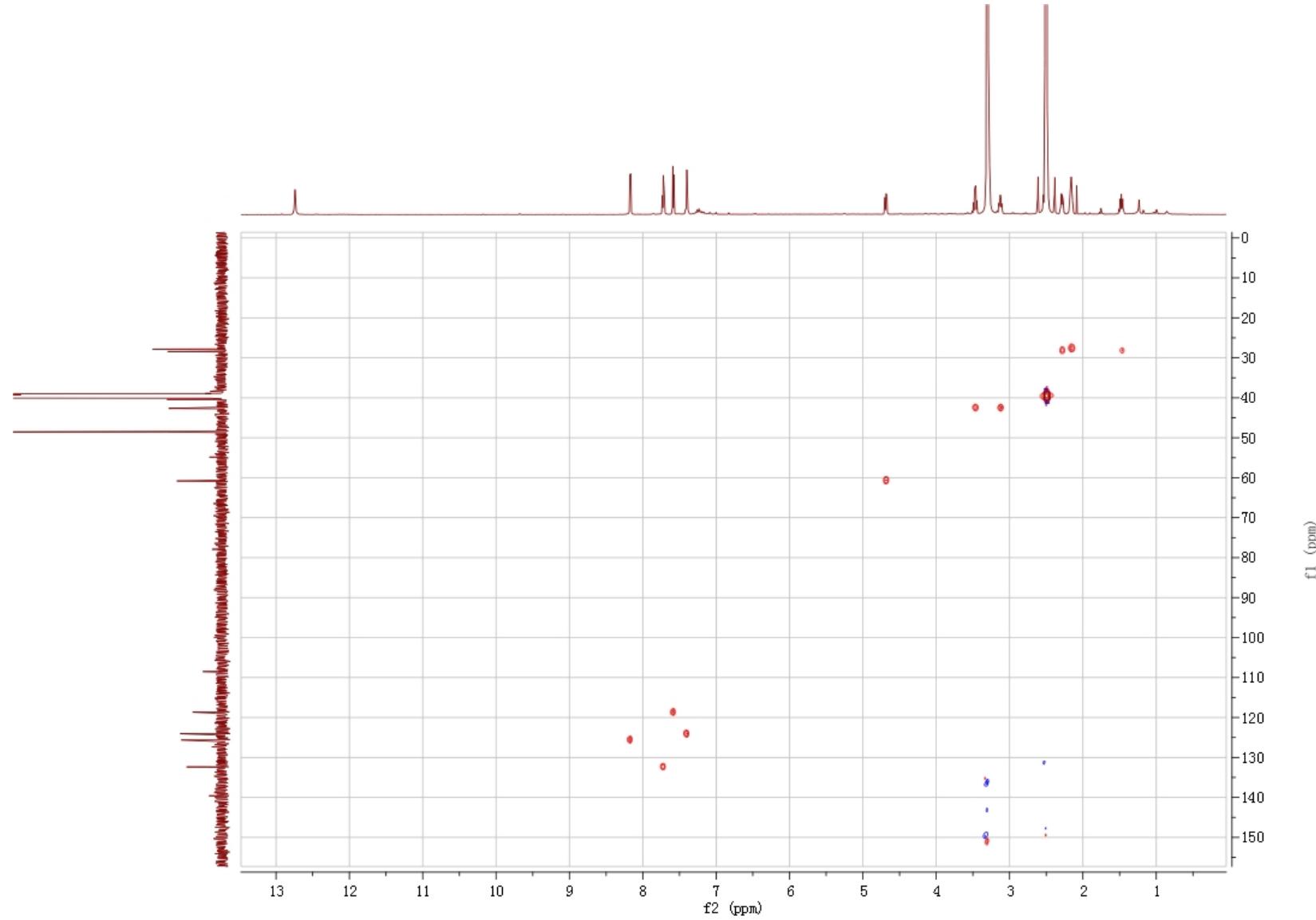
**Fig. S6-1.** <sup>1</sup>H NMR spectrum of compounds **6** (DMSO-*d*<sub>6</sub>)



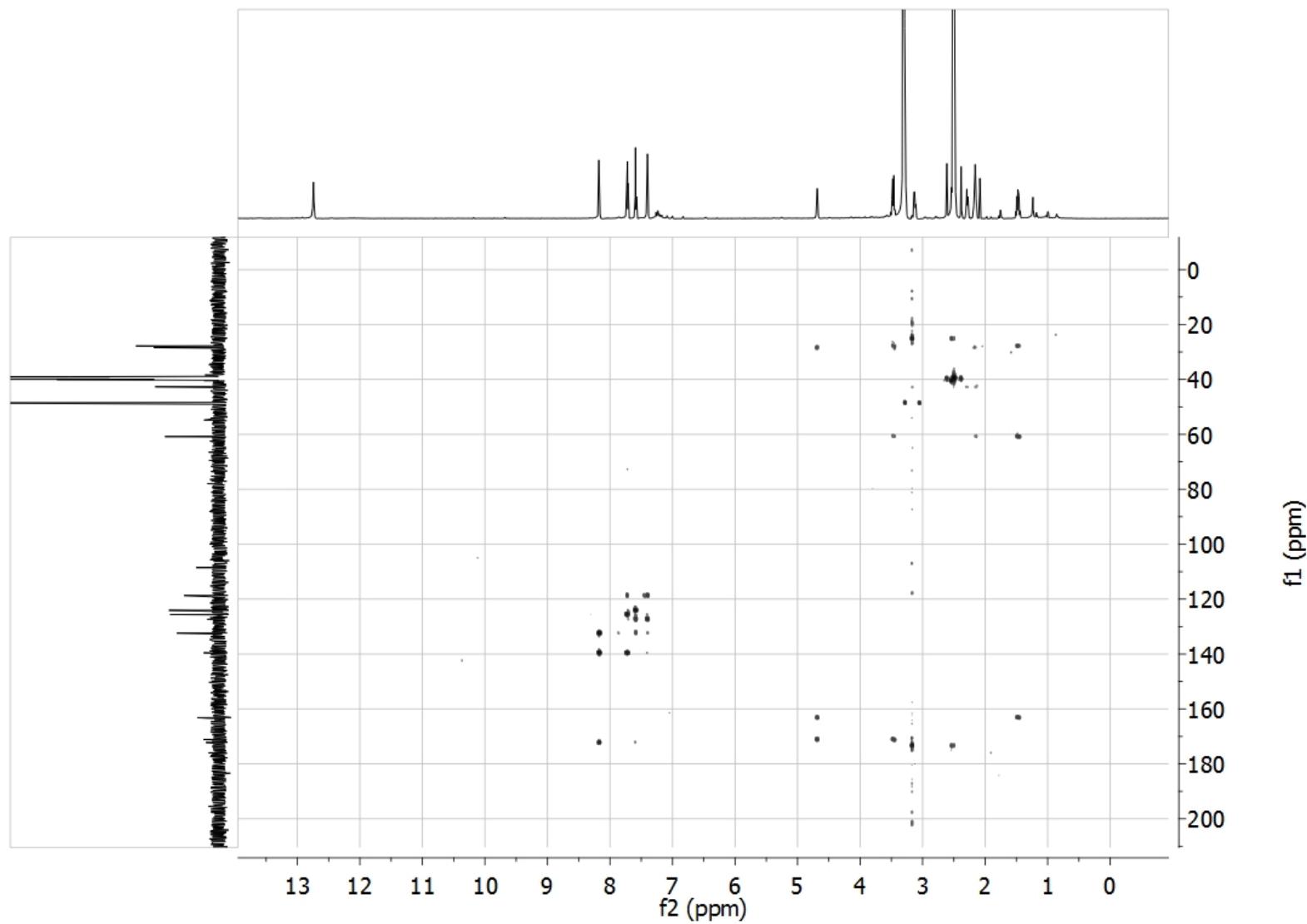
**Fig. S6-2**  $^{13}\text{C}$  NMR spectrum of compound **6** ( $\text{DMSO}-d_6$ )



**Fig. S6-3** COSY spectrum of compound **6**



**Fig. S6-4** HSQC spectrum of compound 6



**Fig. S6-5** HMBC spectrum of compound **6**

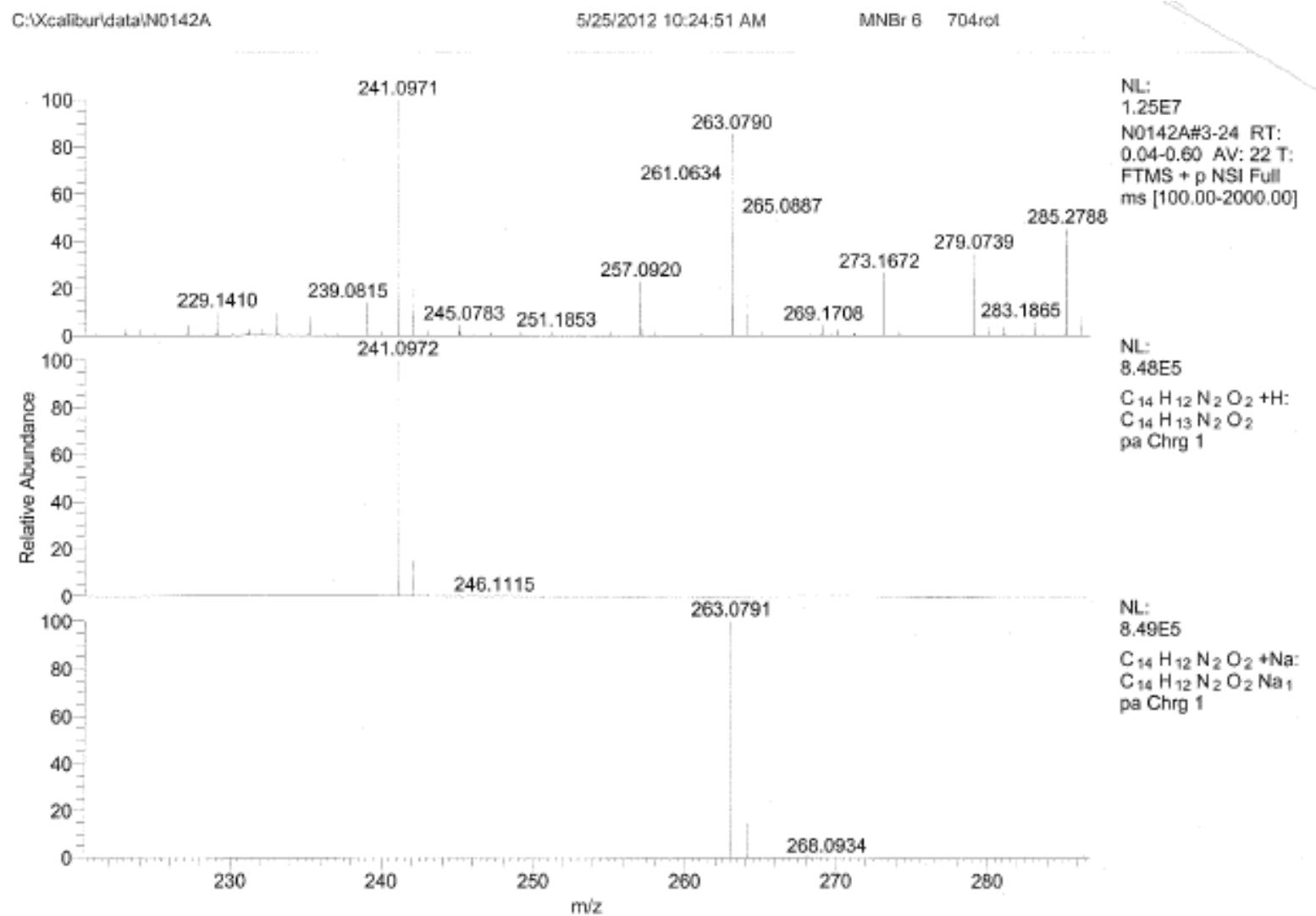


Fig. S6-7 HRMS spectrum of compound 6