

# Supporting Information

## Components with Anti-Diabetic Activity Isolated from the Leaves and Twigs of *Glycosmis pentaphylla* Collected in Vietnam

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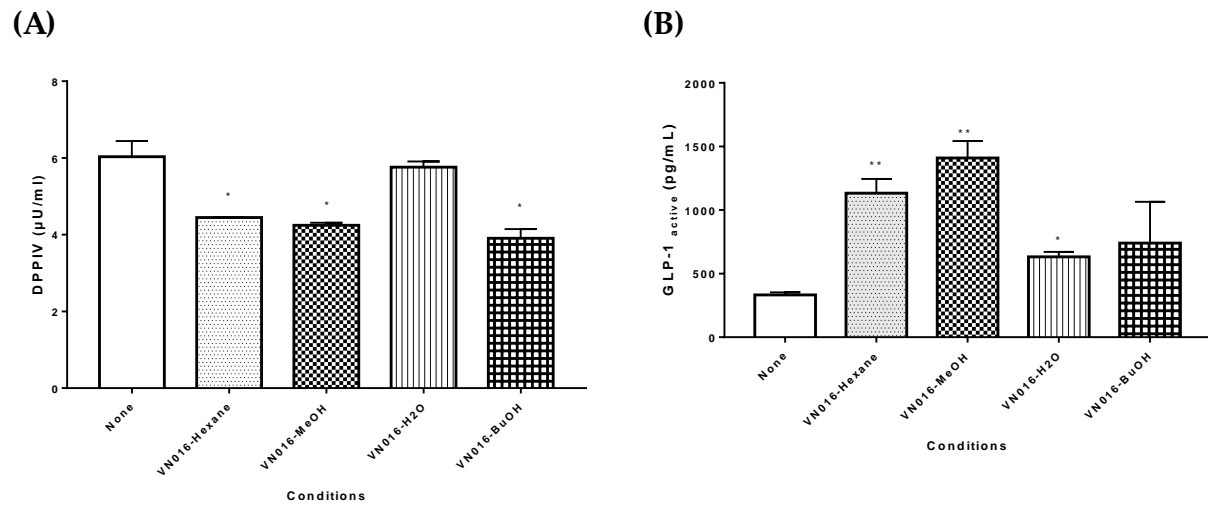
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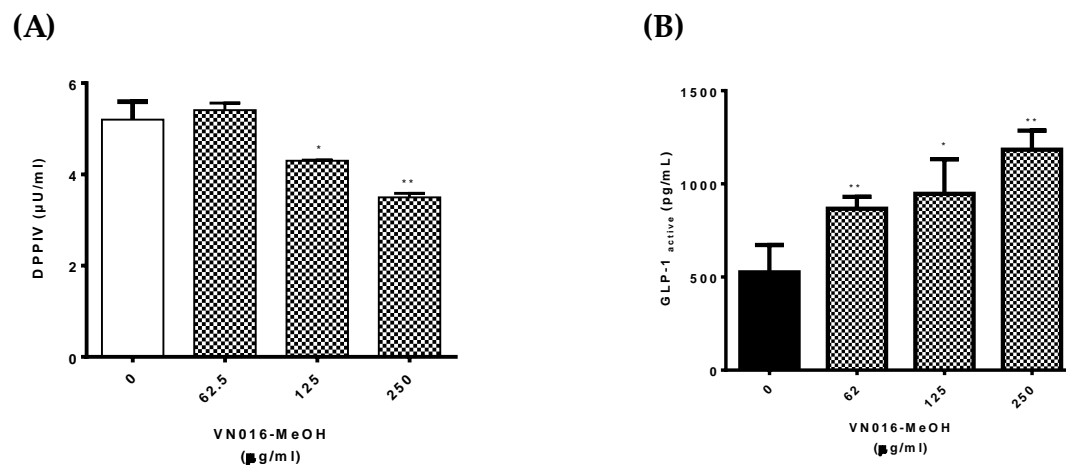
## Table of Contents

Figure S1. Preliminary screening of dual biological activities related to modulation of GLP-1 levels.....	3
Figure S2. Dose dependent effects of VN016-MeOH.....	3
Figure S3. <sup>1</sup> H NMR spectrum of <b>1</b> (CDCl <sub>3</sub> , 600 MHz).....	4
Figure S4. <sup>13</sup> C NMR and DEPT spectra of <b>1</b> (CDCl <sub>3</sub> , 150 MHz).....	5
Figure S5. COSY spectrum of <b>1</b> .....	6
Figure S6. HSQC spectrum of <b>1</b> .....	7
Figure S7. HMBC spectrum of <b>1</b> .....	8
Figure S8. NOESY spectrum of <b>1</b> .....	9
Figure S9. HRESIMS spectrum of <b>1</b> .....	10
Figure S10. UV spectrum of <b>1</b> .....	11
Figure S11. IR spectrum of <b>1</b> .....	11
Figure S12. <sup>1</sup> H NMR spectrum of <b>2</b> (CDCl <sub>3</sub> , 700 MHz).....	12
Figure S13. <sup>13</sup> C NMR and DEPT spectra of <b>2</b> (CDCl <sub>3</sub> , 175 MHz).....	13
Figure S14. COSY spectrum of <b>2</b> .....	14
Figure S15. HSQC spectrum of <b>2</b> .....	15
Figure S16. HMBC spectrum of <b>2</b> .....	16
Figure S17. HRESIMS spectrum of <b>2</b> .....	17
Figure S18. UV spectrum of <b>2</b> .....	18
Figure S19. IR spectrum of <b>2</b> .....	18
Figure S20. <sup>1</sup> H NMR spectrum of <b>3</b> (CDCl <sub>3</sub> , 600 MHz).....	19
Figure S21. <sup>13</sup> C NMR and DEPT spectra of <b>3</b> (CDCl <sub>3</sub> , 150 MHz).....	20
Figure S22. COSY spectrum of <b>3</b> .....	21
Figure S23. HSQC spectrum of <b>3</b> .....	22
Figure S24. HMBC spectrum of <b>3</b> .....	23
Figure S25. HRESIMS spectrum of <b>3</b> .....	24
Figure S26. UV spectrum of <b>3</b> .....	25
Figure S27. IR spectrum of <b>3</b> .....	25

**Figure S1. Preliminary screening of dual biological activities related to modulation of GLP-1 levels.** (A) DPP-IV activity and (B) GLP-1 secretion were employed to screen the four layers of *Glycosmis pentaphylla* (VN016) with dual activities. Data represents Mean  $\pm$  SEM (n = 2–3). \* $P$ <0.05 and \*\* $P$ <0.01 when compared with None.



**Figure S2. Dose dependent effects of *G. pentaphylla* (VN016-MeOH).** (A) DPP-IV activity and (B) GLP-1 secretion were employed to test dose-dependent effects of VN016-MeOH with dual activities. Data represents Mean  $\pm$  SEM (n = 2–3). \* $P$ <0.05 and \*\* $P$ <0.01 when compared with None.



**Chemical structure of compound 1:** A substituted cyclohexane ring with a phenyl group at C1, a hydroxyl group at C2, and a side chain at C3. The side chain consists of a methylene group (C4), a methylene group (C5), and a terminal hydroxyl group (C6). The cyclohexane ring is labeled with carbons 1 through 6. The side chain is labeled with carbons 7 through 10. The phenyl ring is labeled with carbons 11 through 14.

**<sup>1</sup>H NMR spectrum (CDCl<sub>3</sub>):**

- Chemical shift (ppm):** 7.3997, 7.3987, 7.3970, 7.3959, 7.3856, 7.3844, 7.3829, 7.3819, 7.3708, 7.3597, 7.3583, 7.3569, 7.3463, 7.3451, 7.3016, 7.2896, 6.4778, 6.4668, 6.4581, 6.4472, 6.0177, 6.0146, 5.9981, 5.9951, 5.9914, 5.6614, 5.6523, 5.6506, 5.6493, 5.6474, 5.0053, 4.9959, 4.5956, 4.1600, 4.1489, 4.1376, 1.6682, 1.6668, 1.6576, 1.6557, 1.6537, 1.6521, 1.6445, 1.6426, 1.4236, 1.4110, 1.3983, 1.3859, 1.2555, 0.9594, 0.9470, 0.9346.
- Integration values:** 2.06, 2.18, 1.10, 1.12, 1.09, 1.10, 1.04, 1.10, 1.48, 1.75, 1.36, 1.04, 1.21, 1.07, 3.76.
- Peak assignments:** 2, 4, 1, 5, 3, 11, 12, 10, 7, 9, 1', 8, 2', 3', 4'.

**Figure S4.**  $^{13}\text{C}$  NMR and DEPT spectra of **1** ( $\text{CDCl}_3$ , 150 MHz)

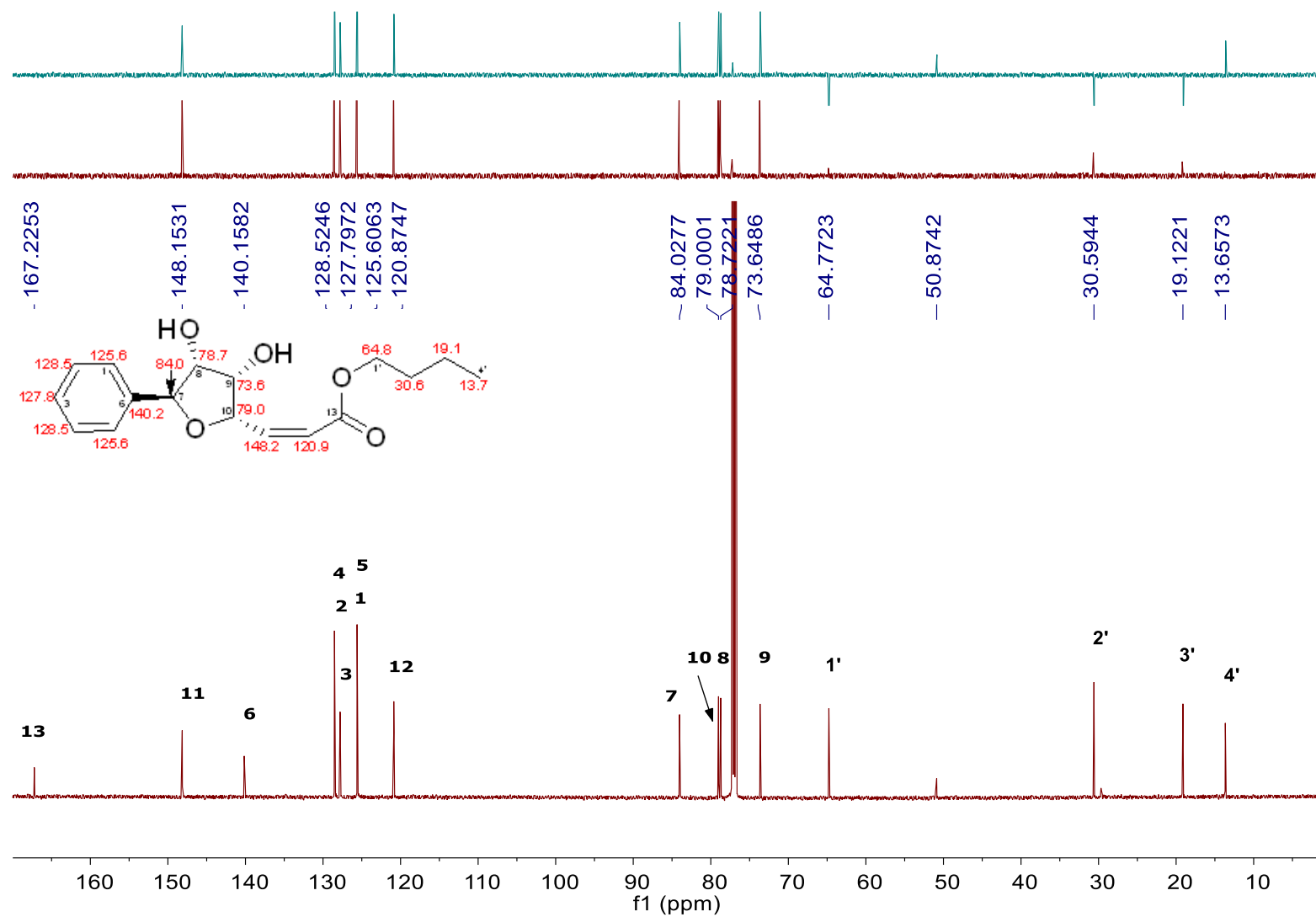


Figure S5. COSY spectrum of 1

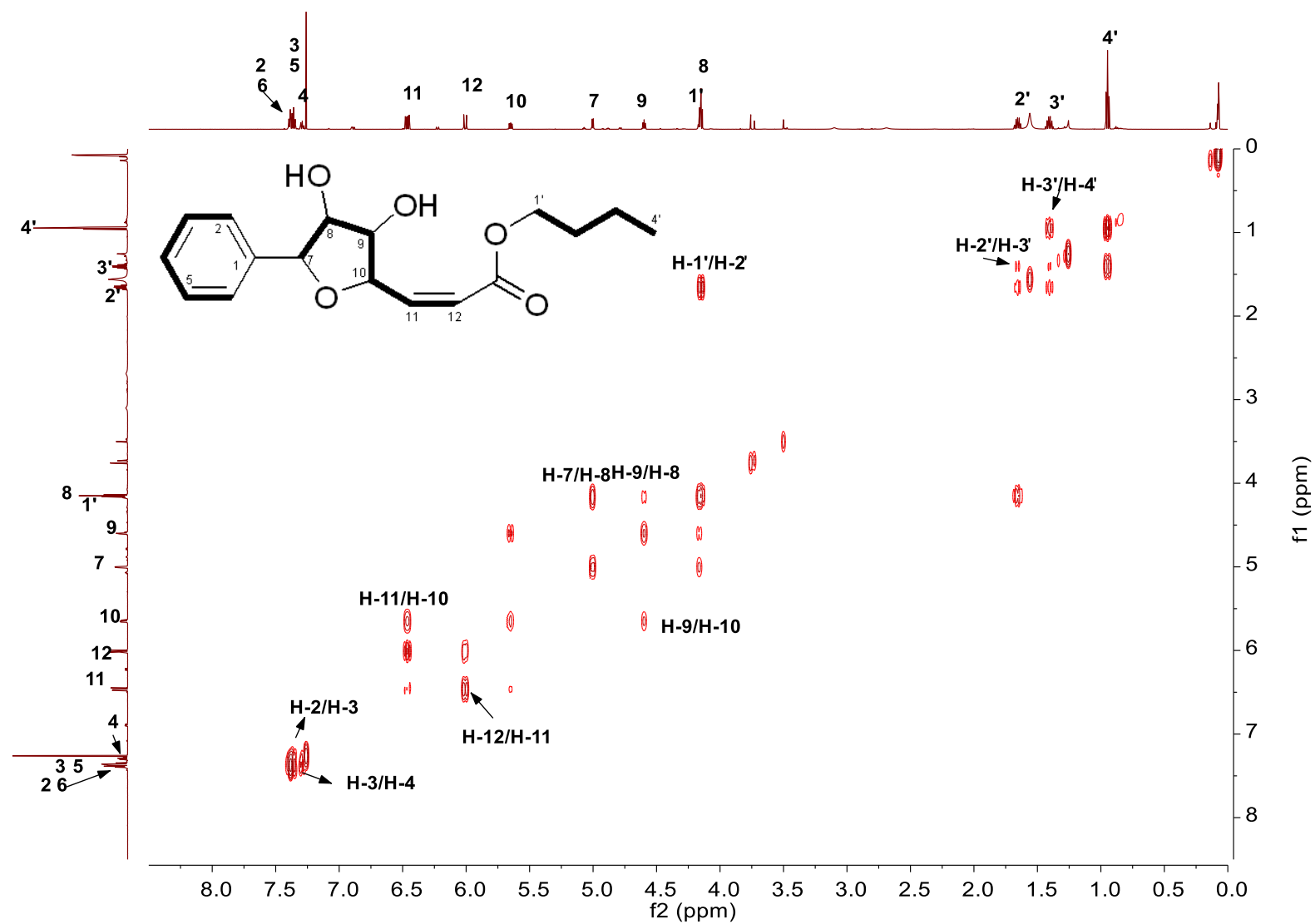


Figure S6. HSQC spectrum of **1**

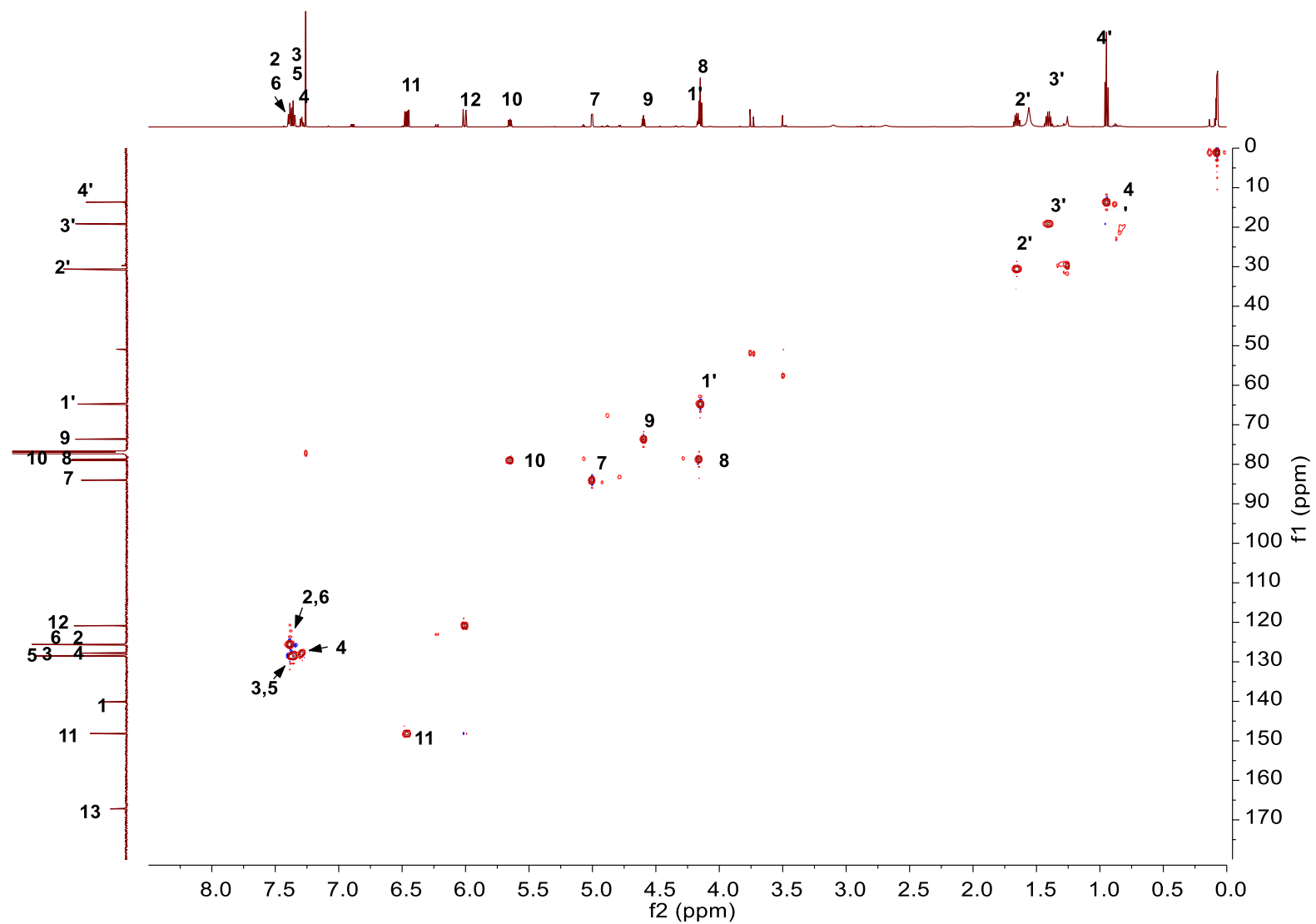


Figure S7. HMBC spectrum of 1

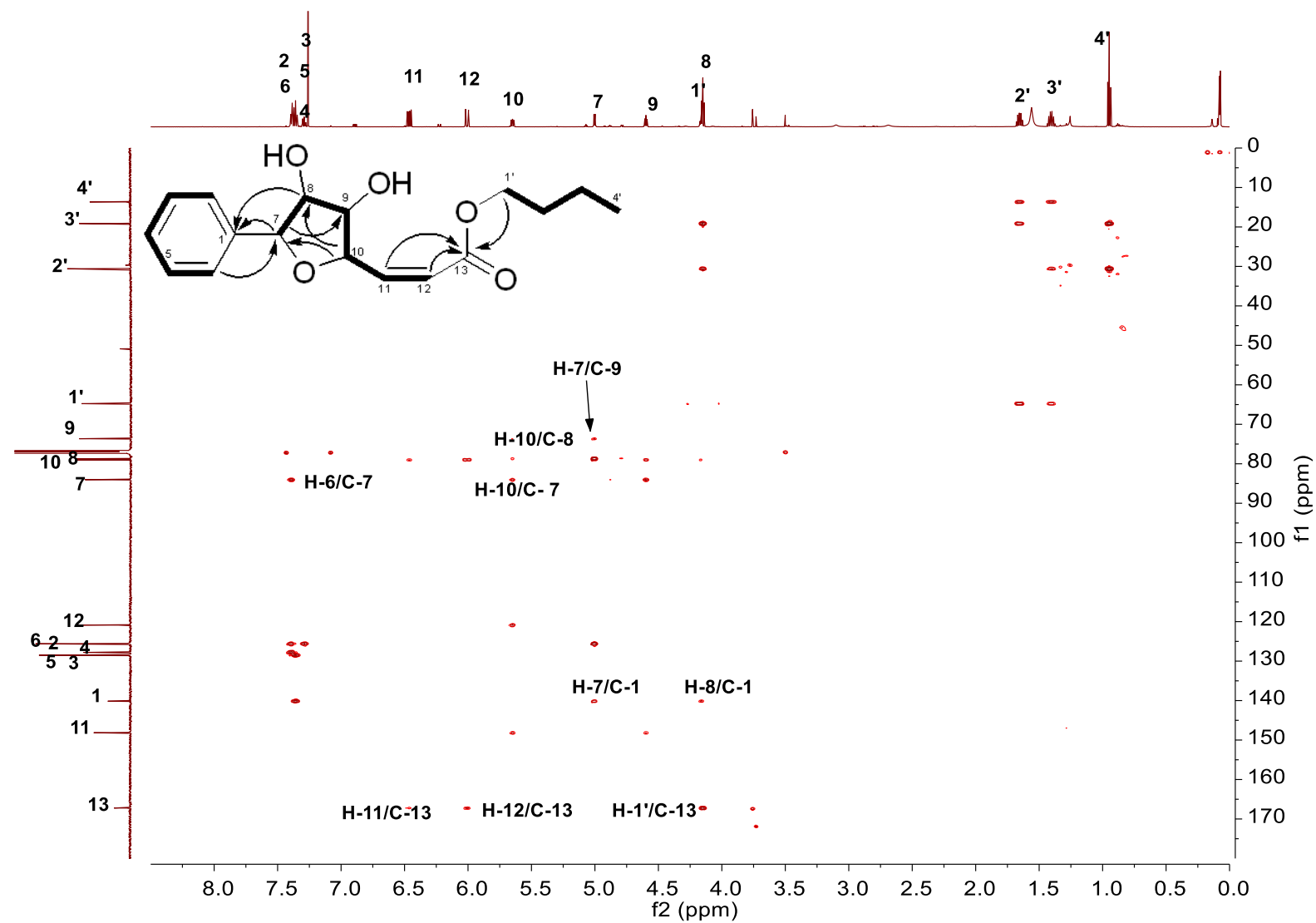




Figure S8. NOESY spectrum of **1**

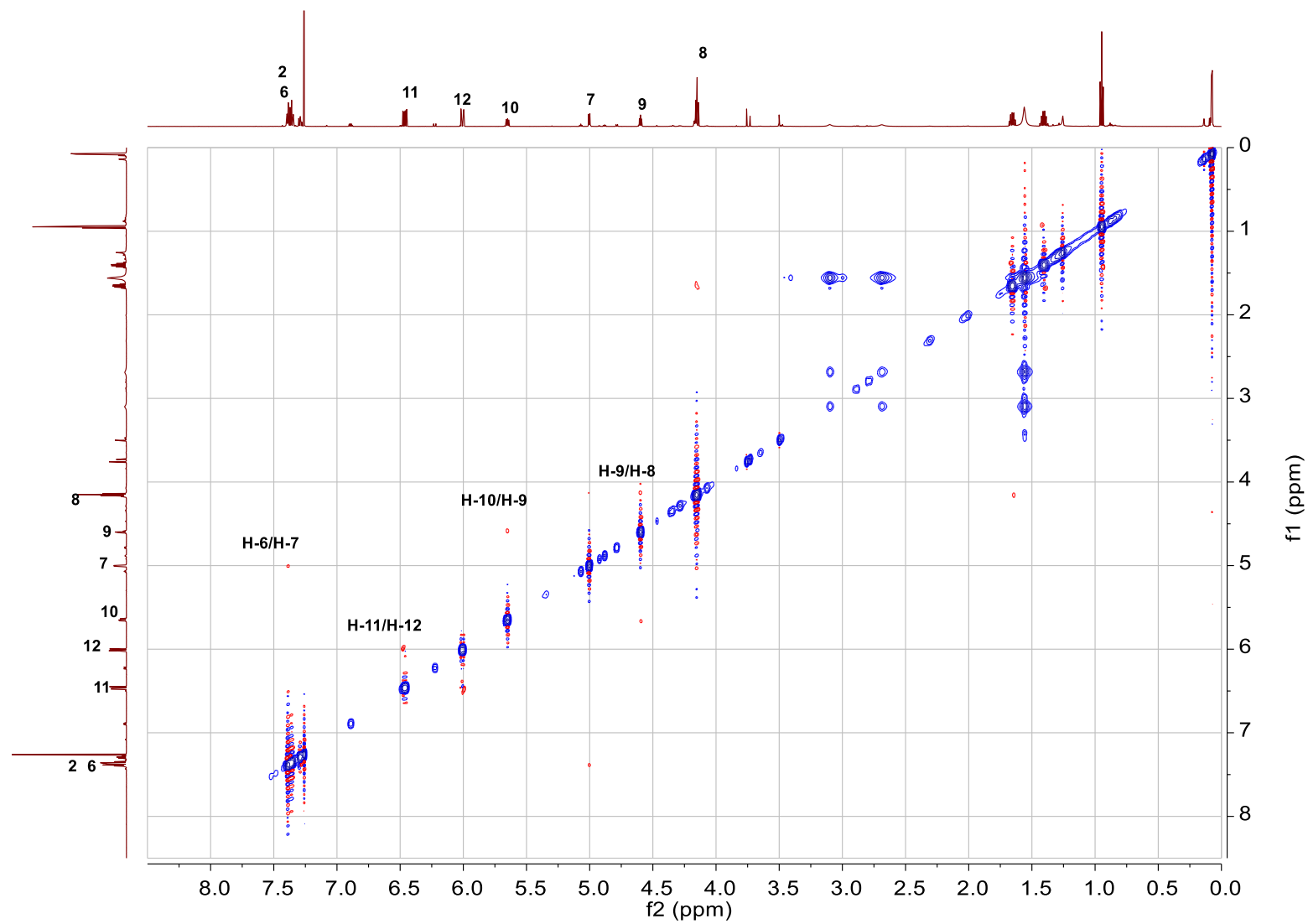
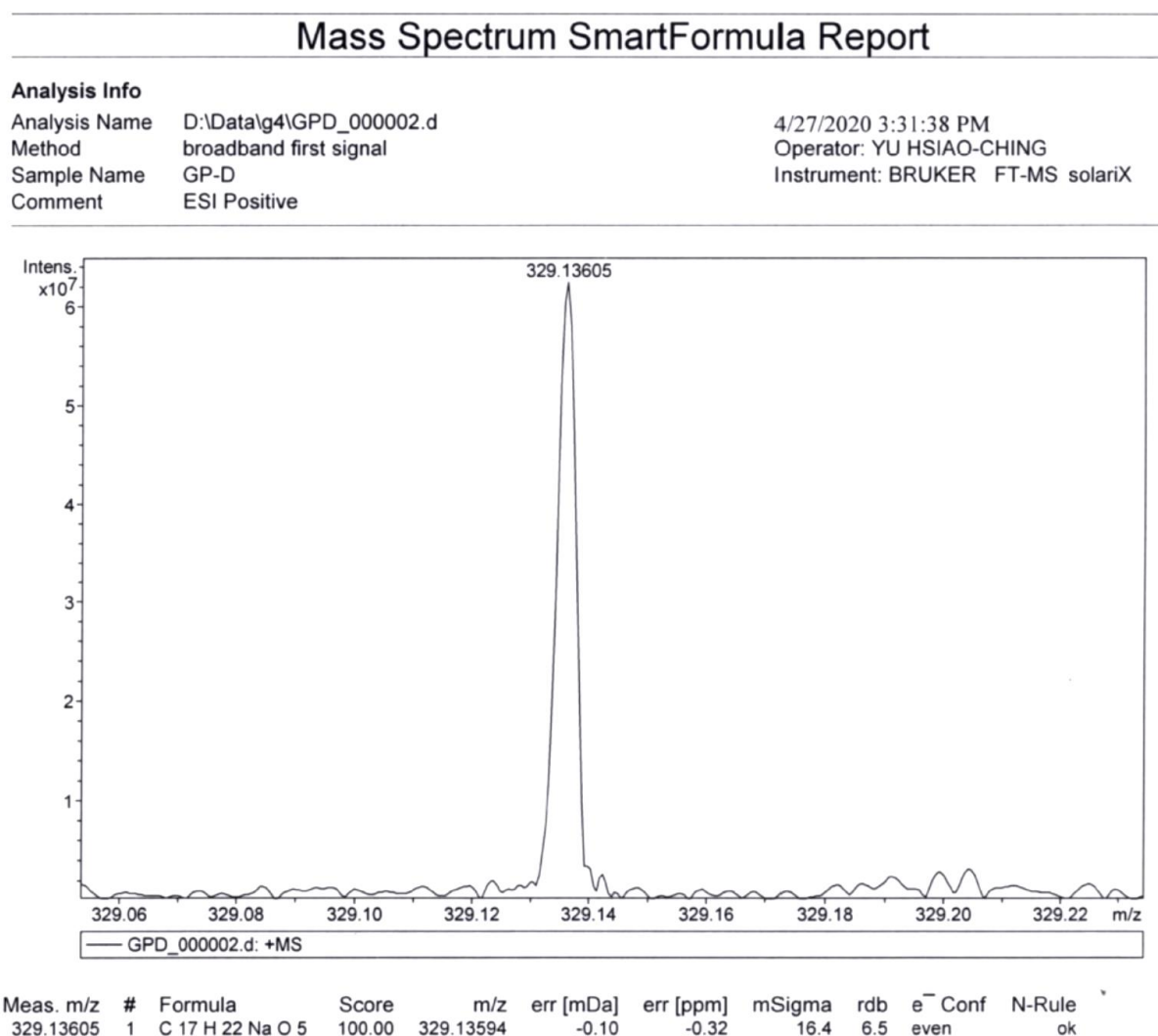
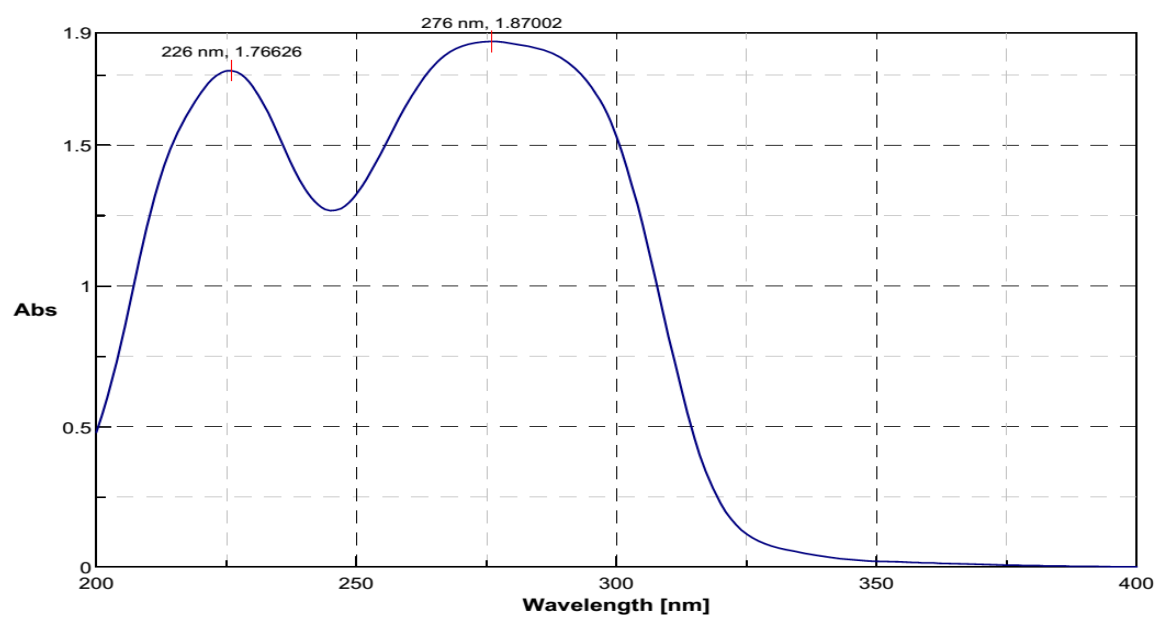


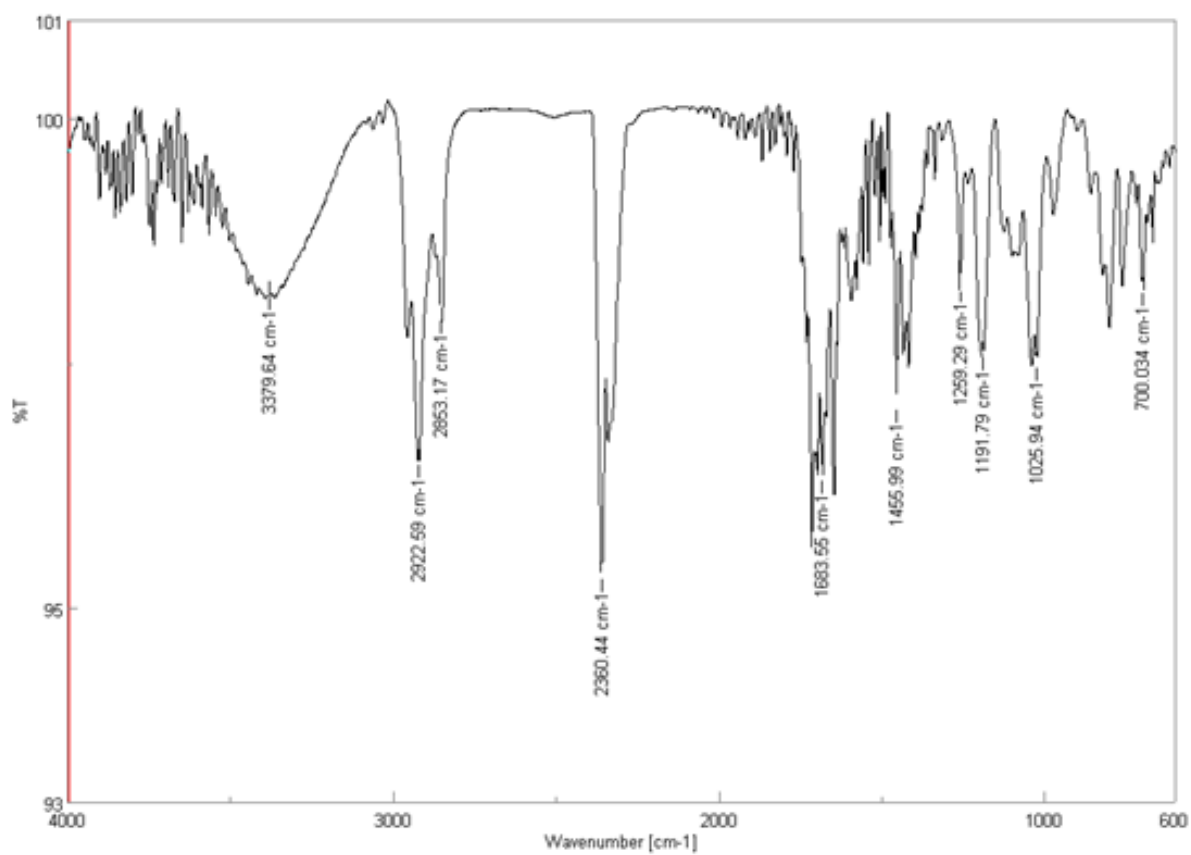
Figure S9. HRESIMS spectrum of 1



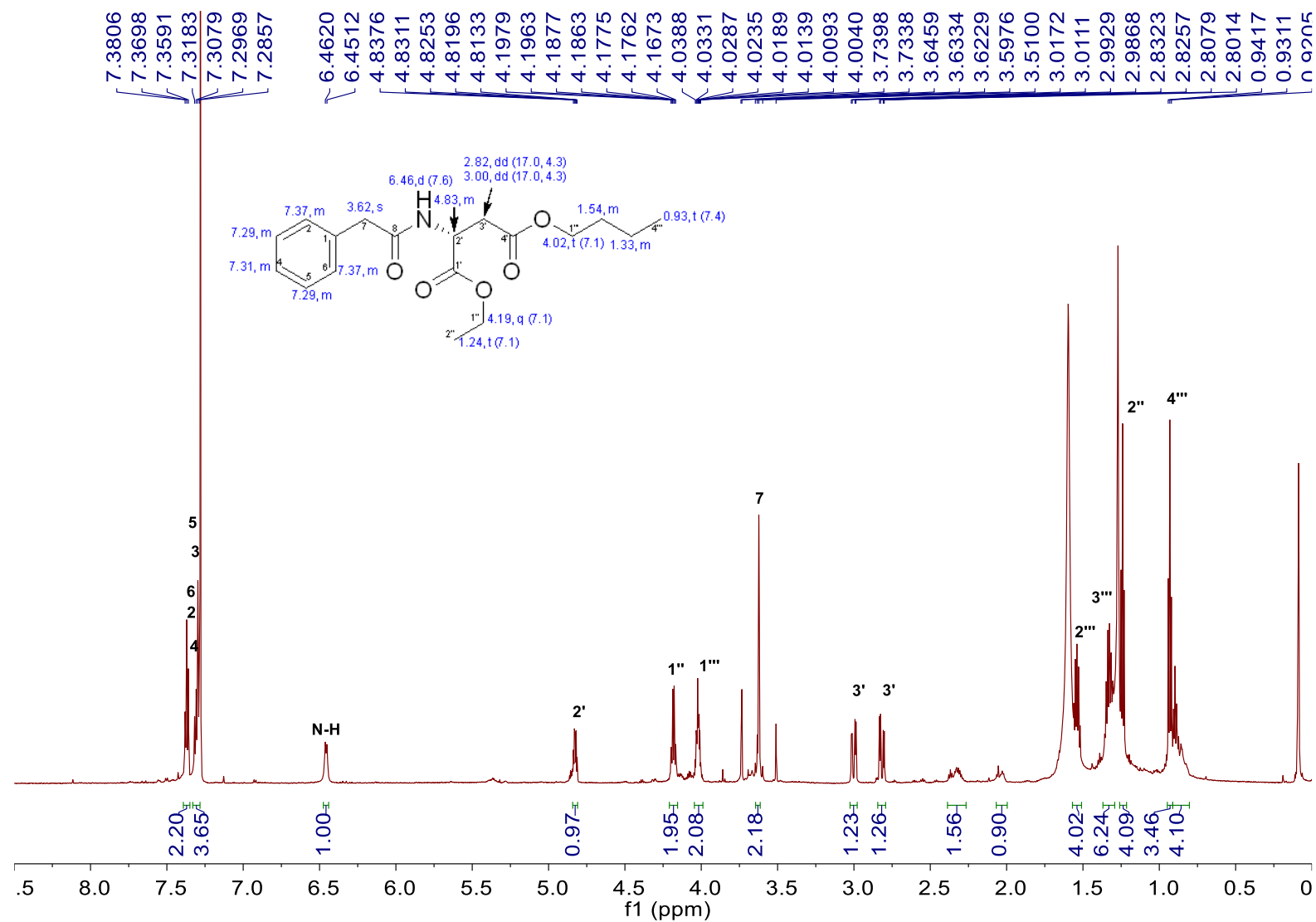
**Figure S10.** UV spectrum of **1**



**Figure S11.** IR spectrum of **1**



**Figure S12.**  $^1\text{H}$  NMR spectrum of **2** ( $\text{CDCl}_3$ , 700 MHz)



**Figure S13.**  $^{13}\text{C}$  NMR and DEPT spectra of **2** ( $\text{CDCl}_3$ , 175 MHz)

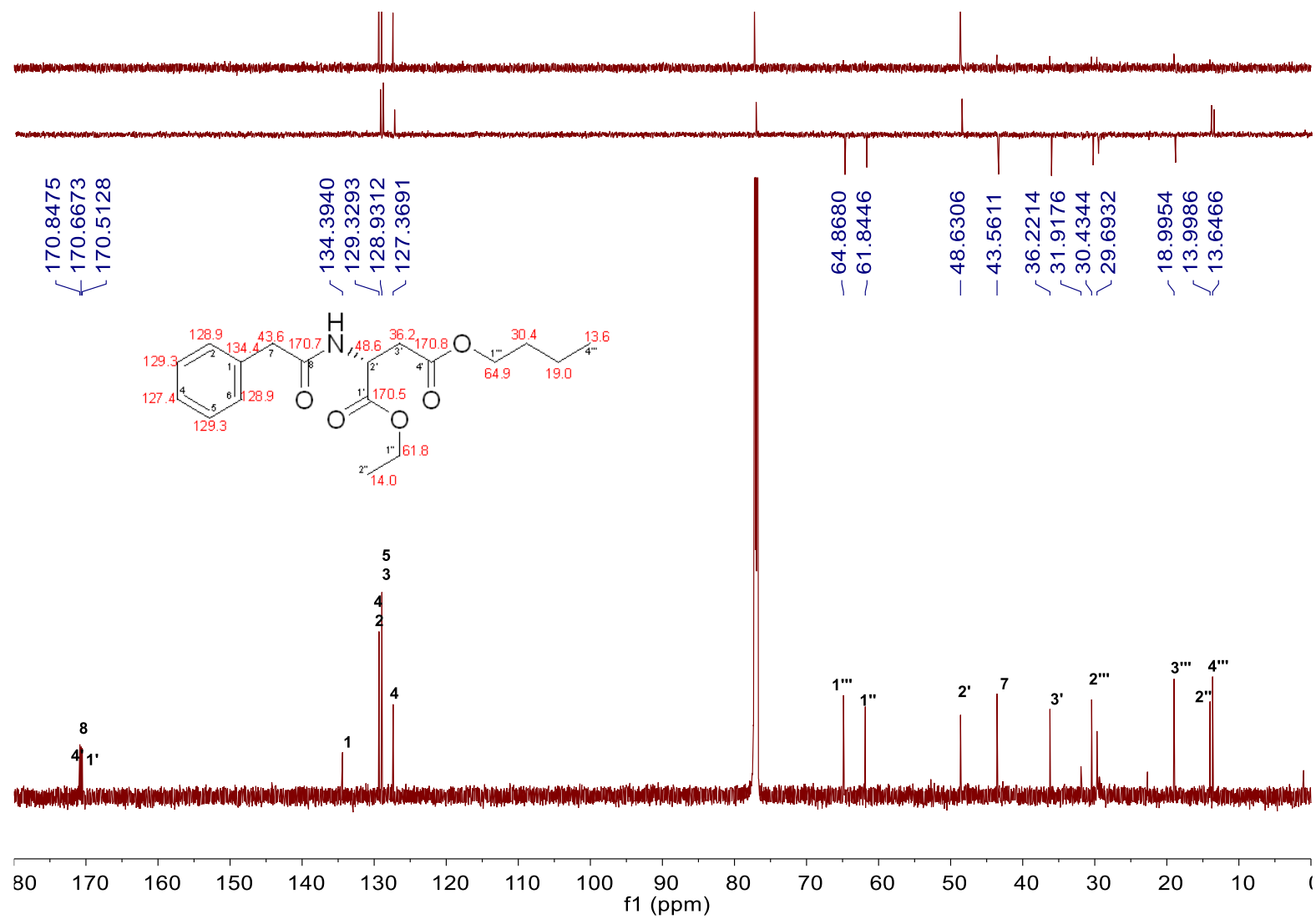


Figure S14. COSY spectrum of 2

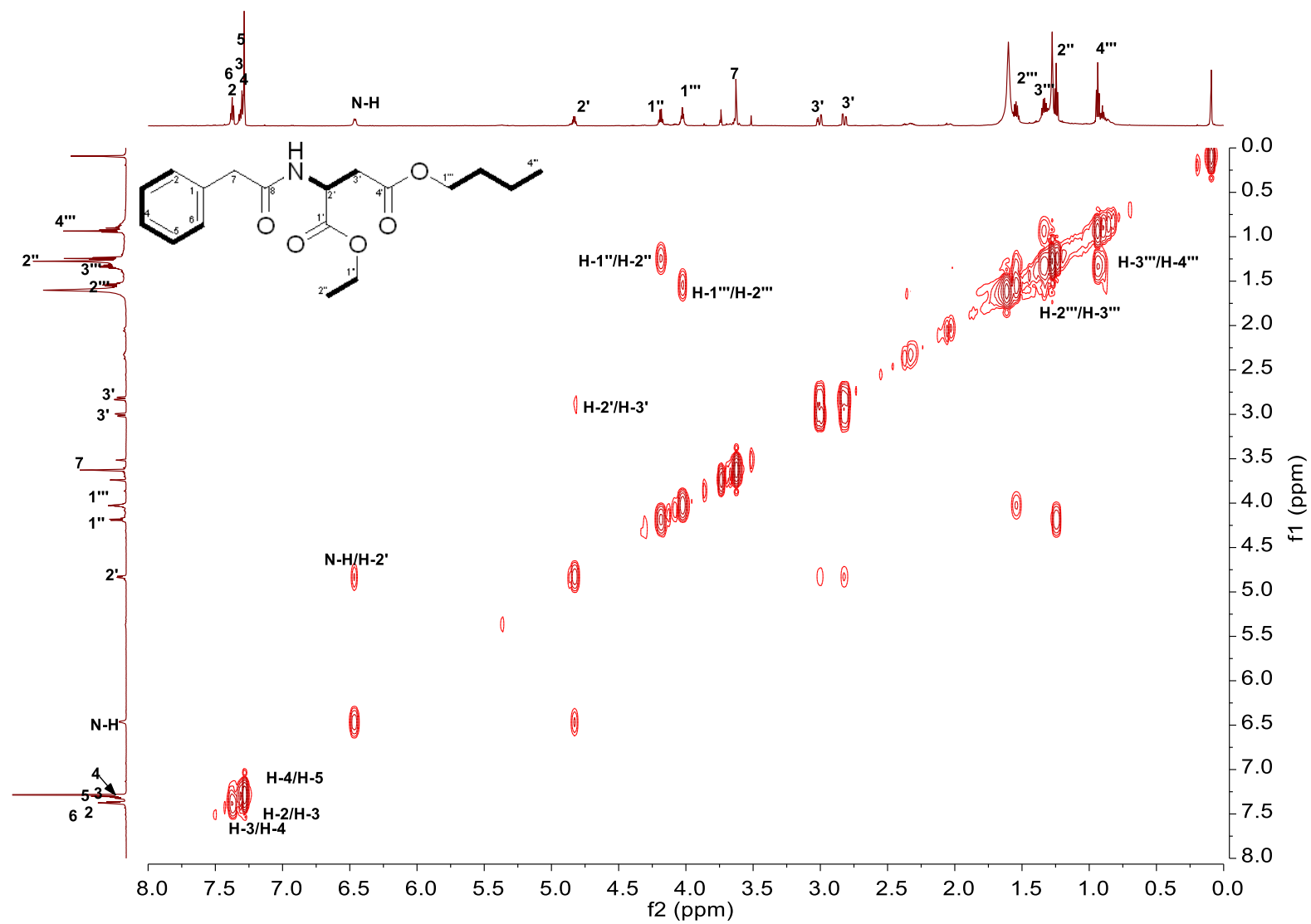


Figure S15. HSQC spectrum of **2**

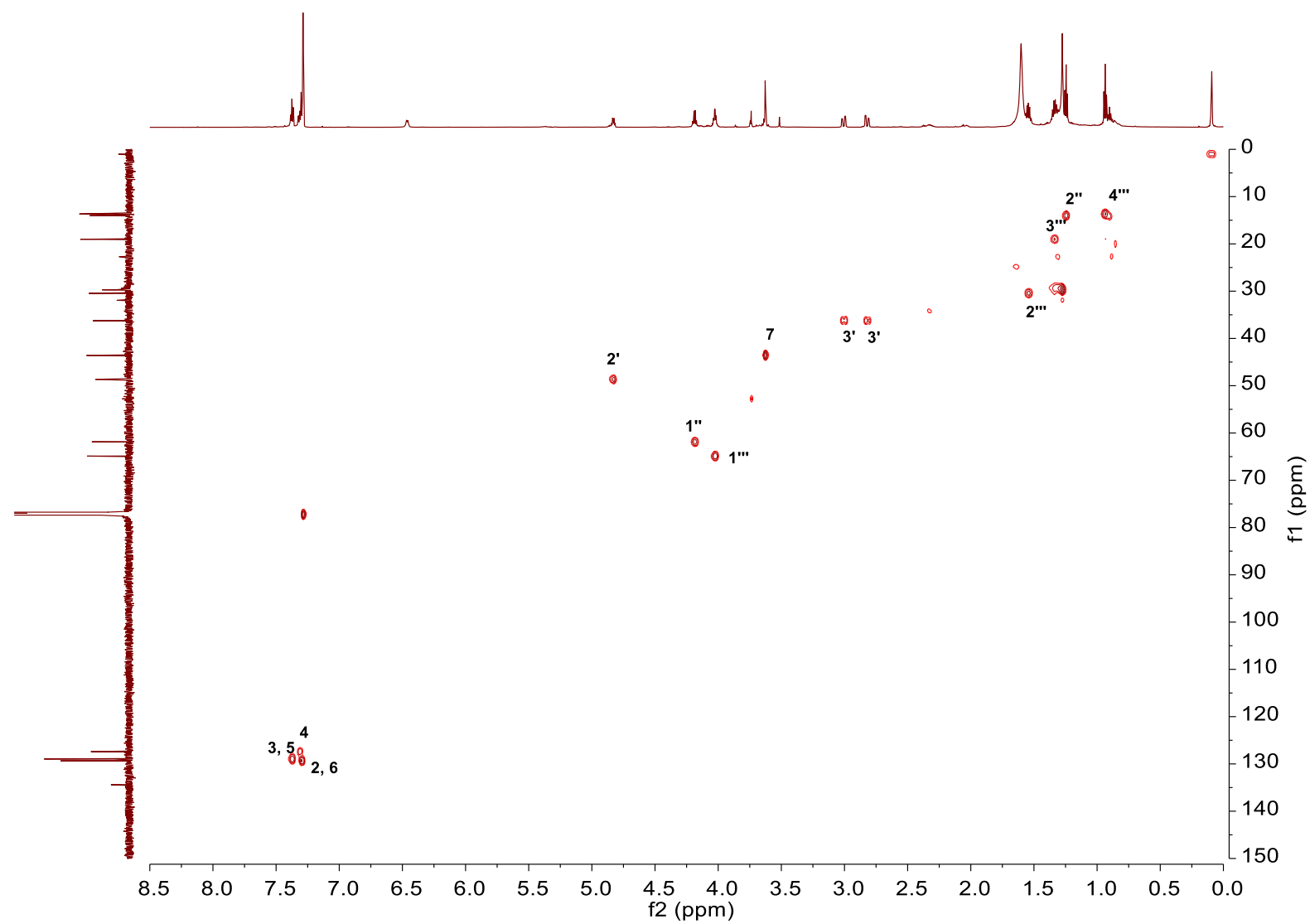


Figure S16. HMBC spectrum of 2

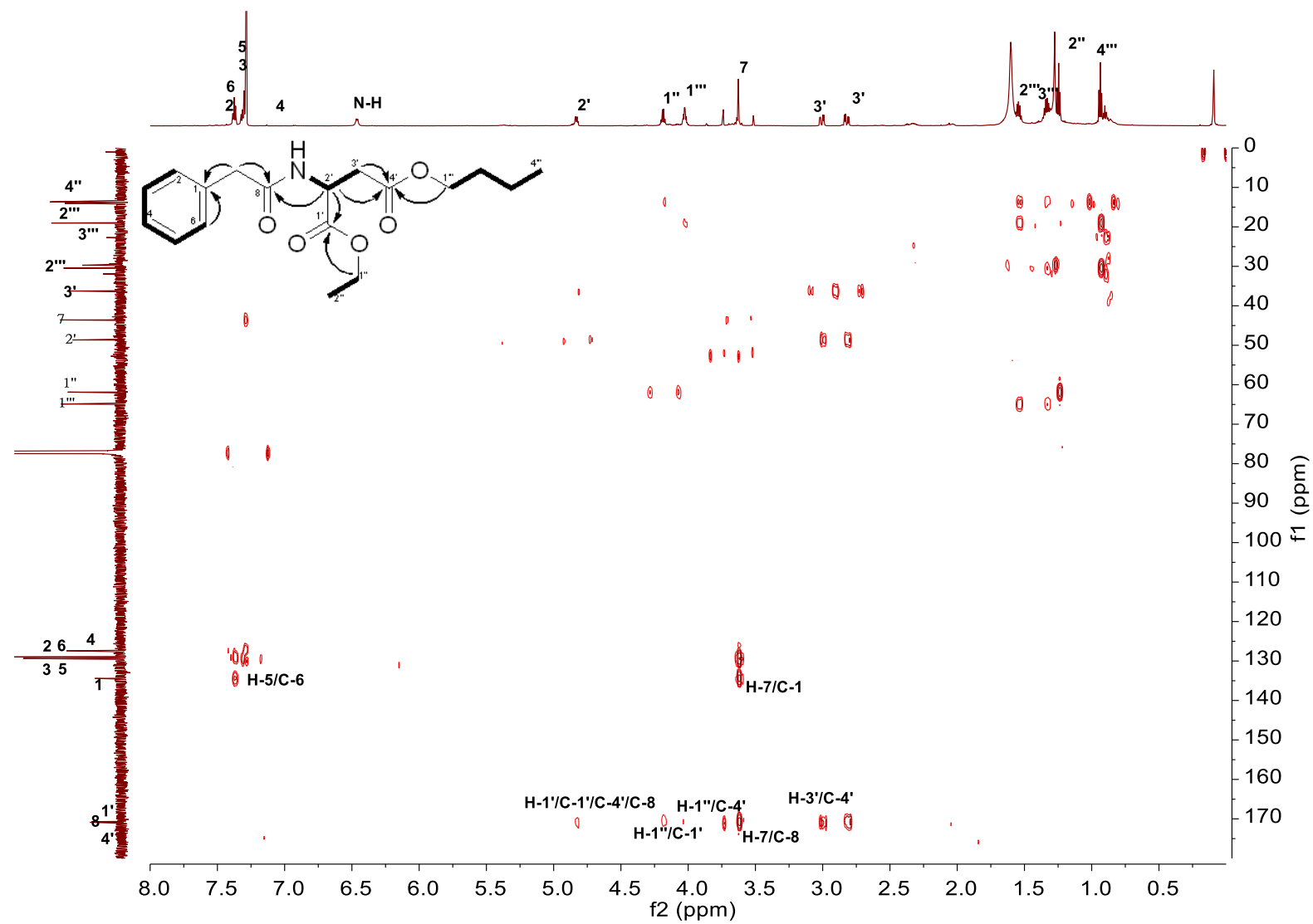
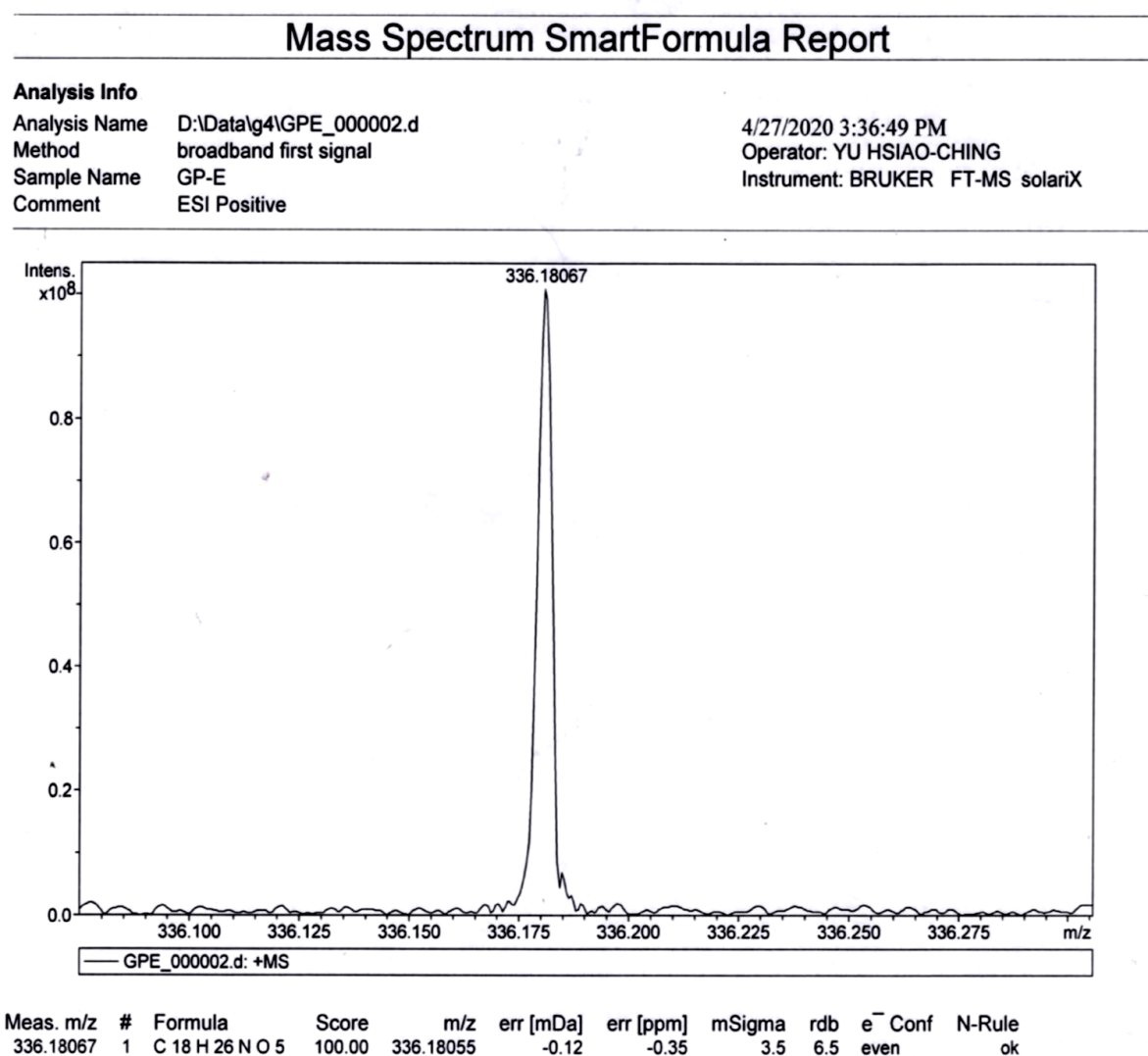
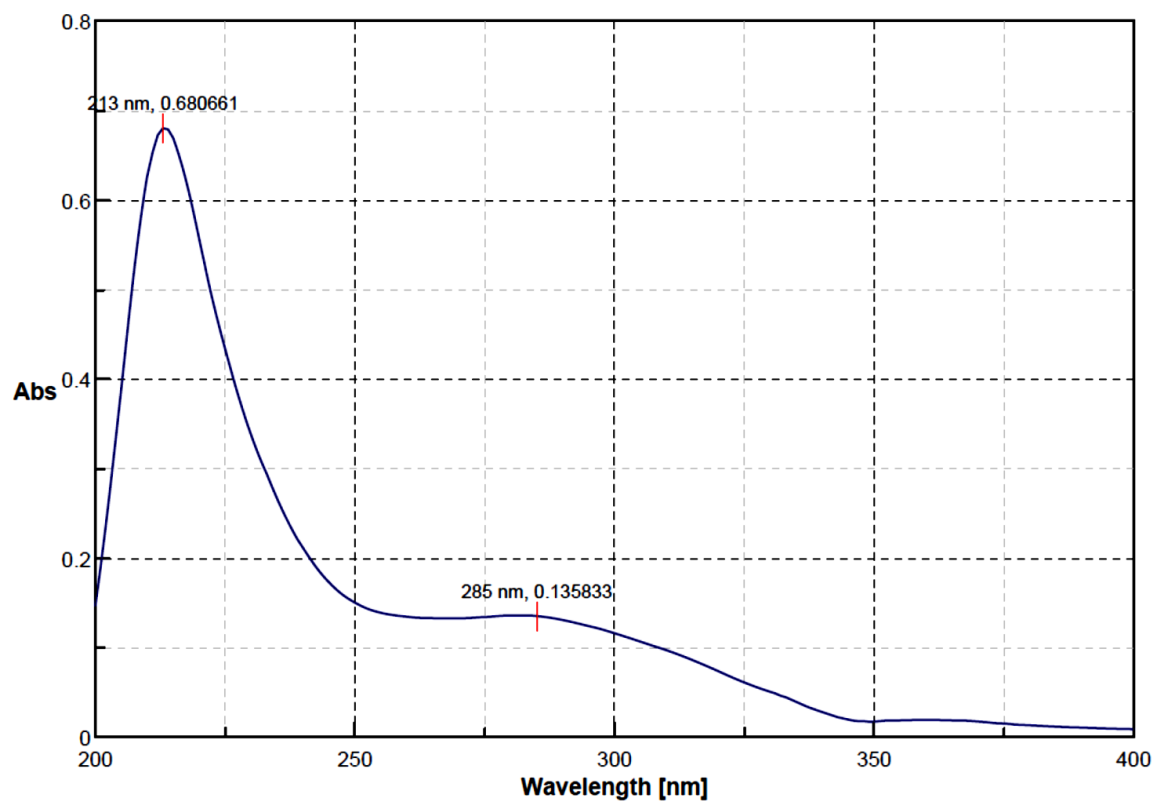




Figure S17. HRESIMS spectrum of 2



**Figure S18.** UV spectrum of **2**



**Figure S19.** IR spectrum of **2**

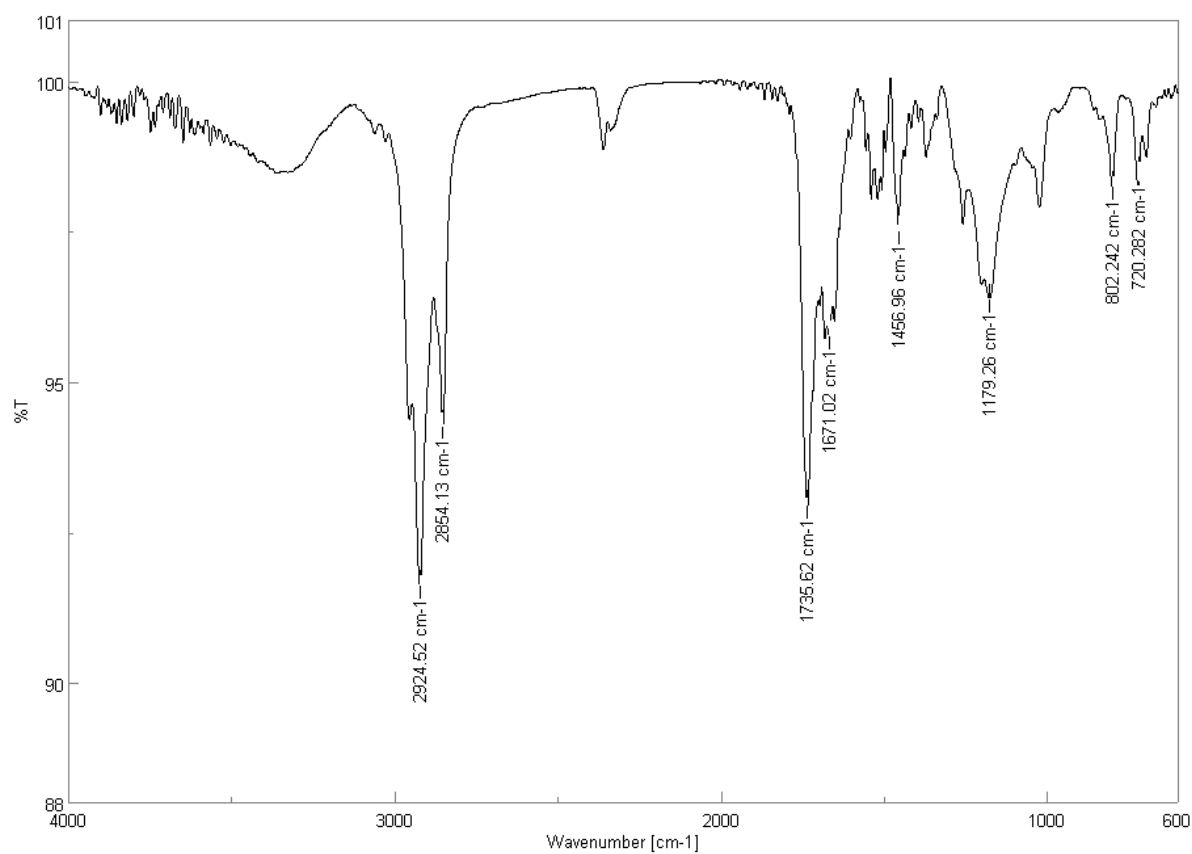
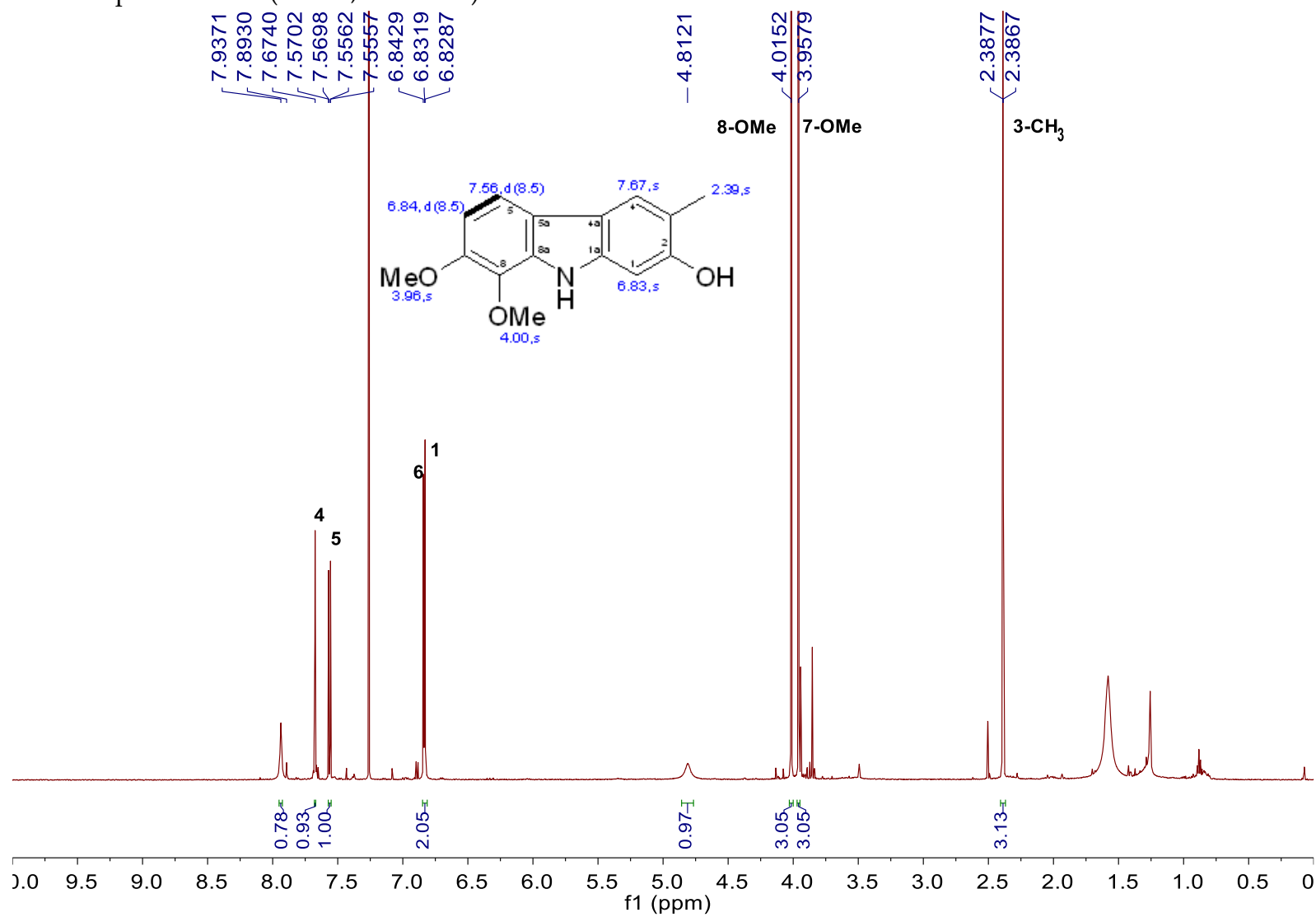


Figure S20.  $^1\text{H}$  NMR spectrum of **3** ( $\text{CDCl}_3$ , 600 MHz)



**Figure S21.**  $^{13}\text{C}$  NMR and DEPT spectra of **3** ( $\text{CDCl}_3$ , 150 MHz)

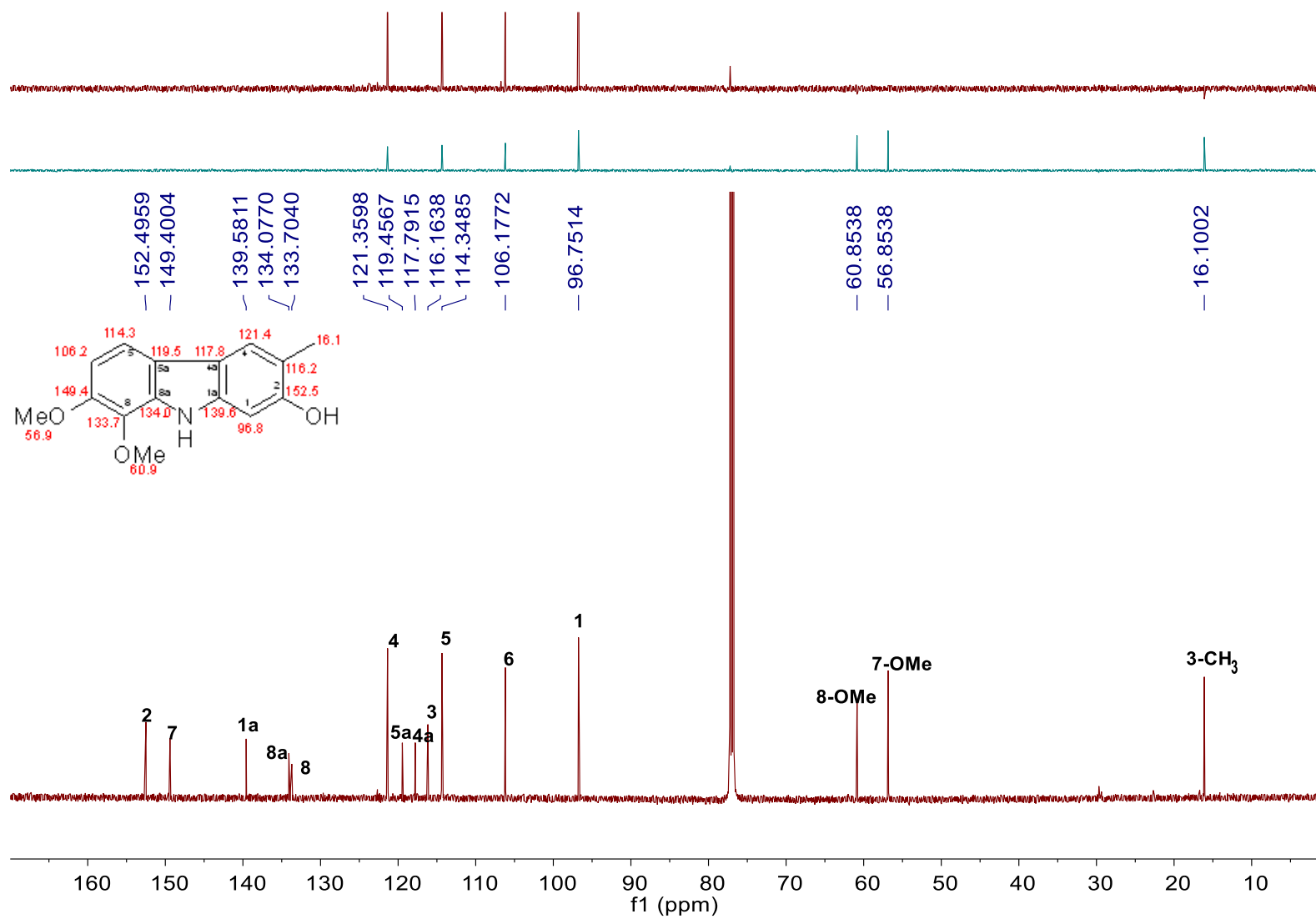


Figure S22. COSY spectrum of 3

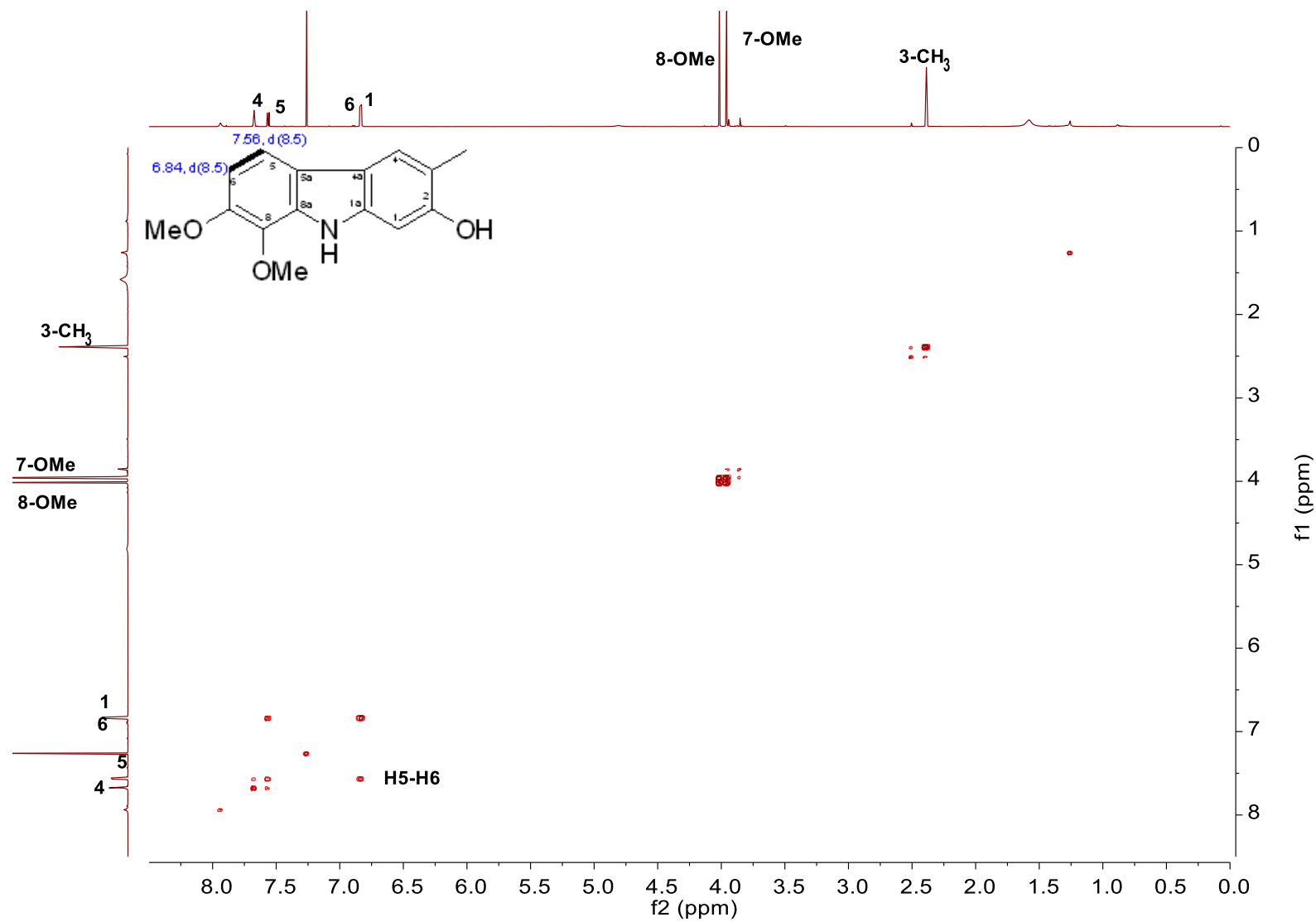


Figure S23. HSQC spectrum of 3

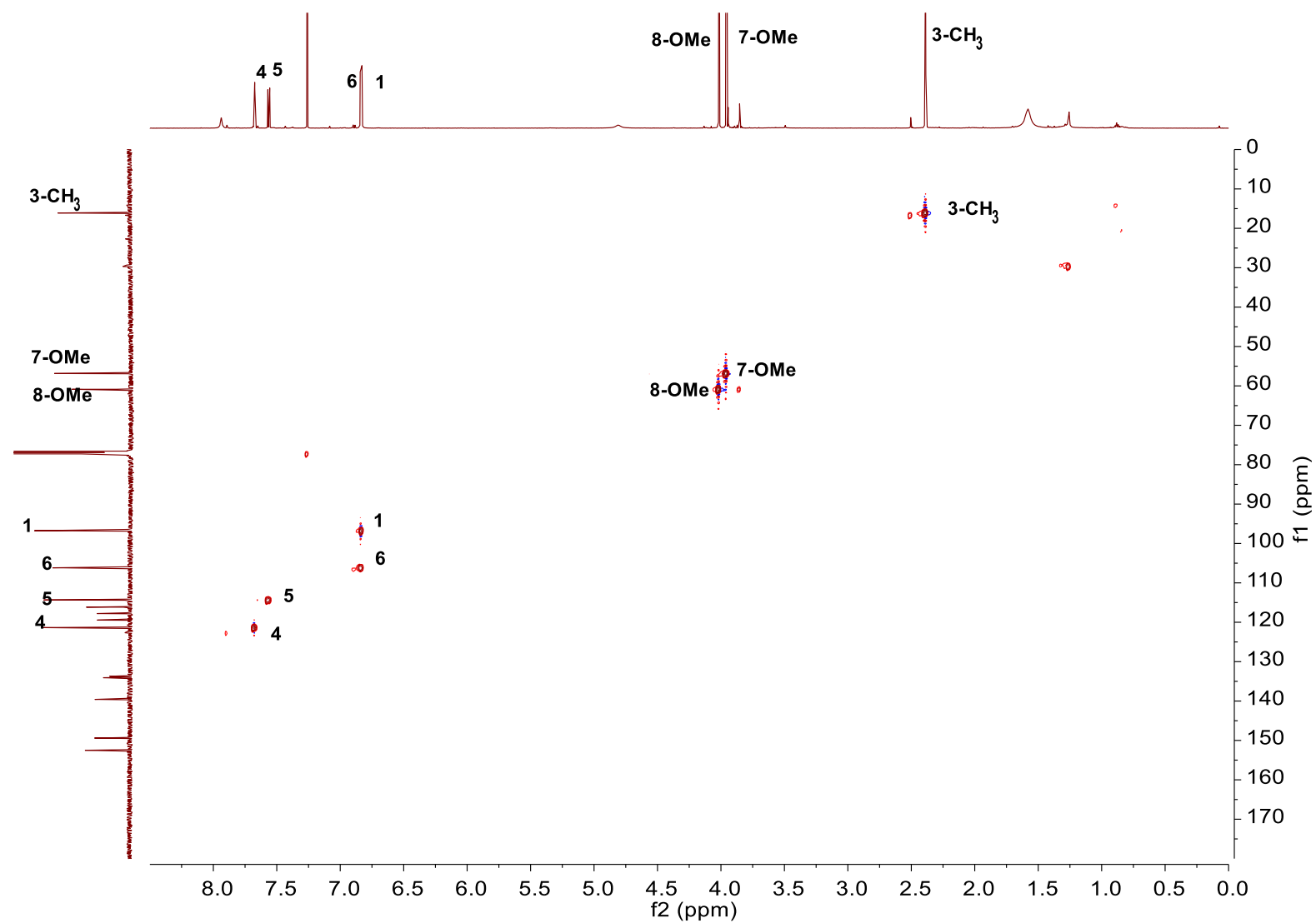


Figure S24. HMBC spectrum of 3

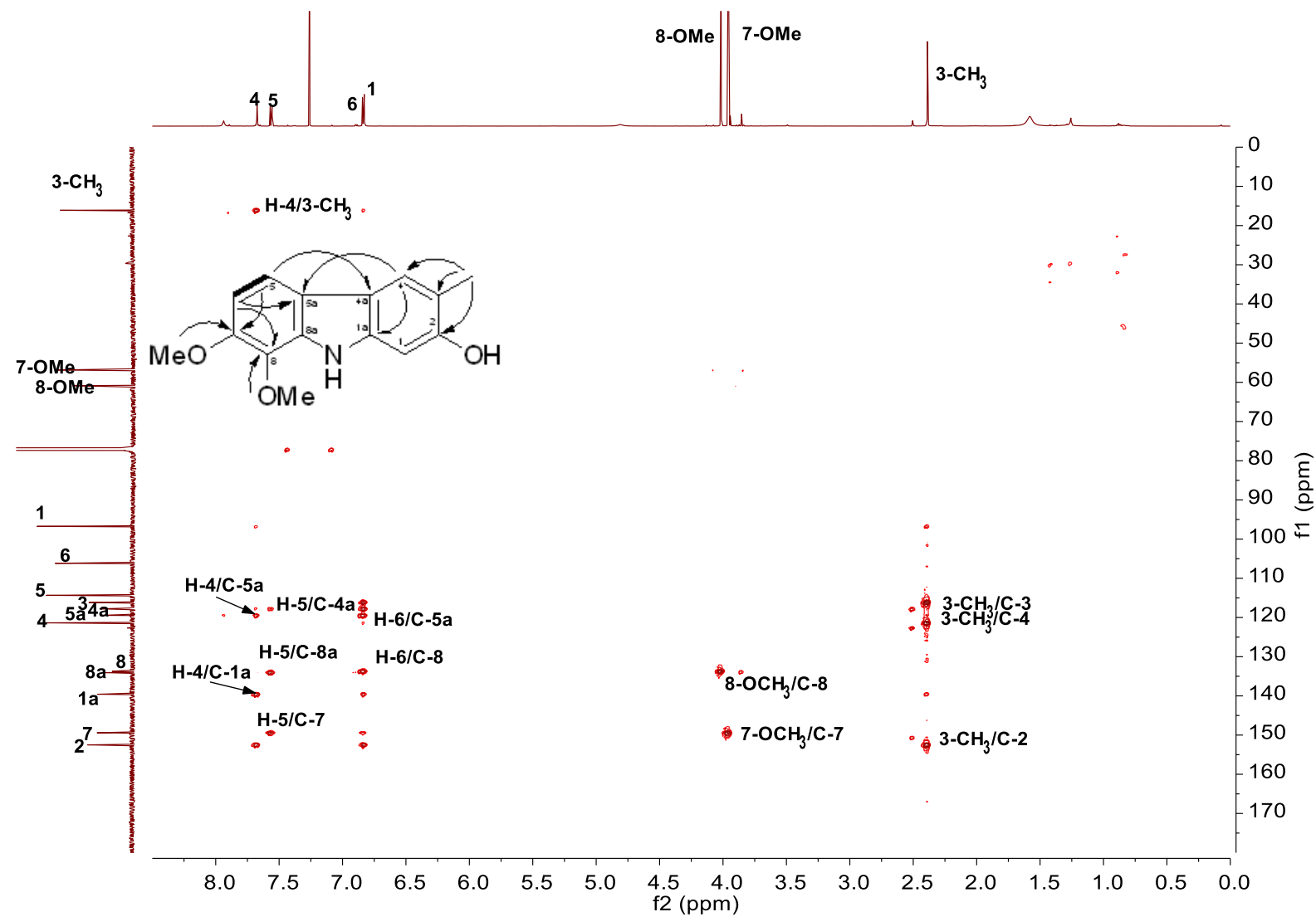
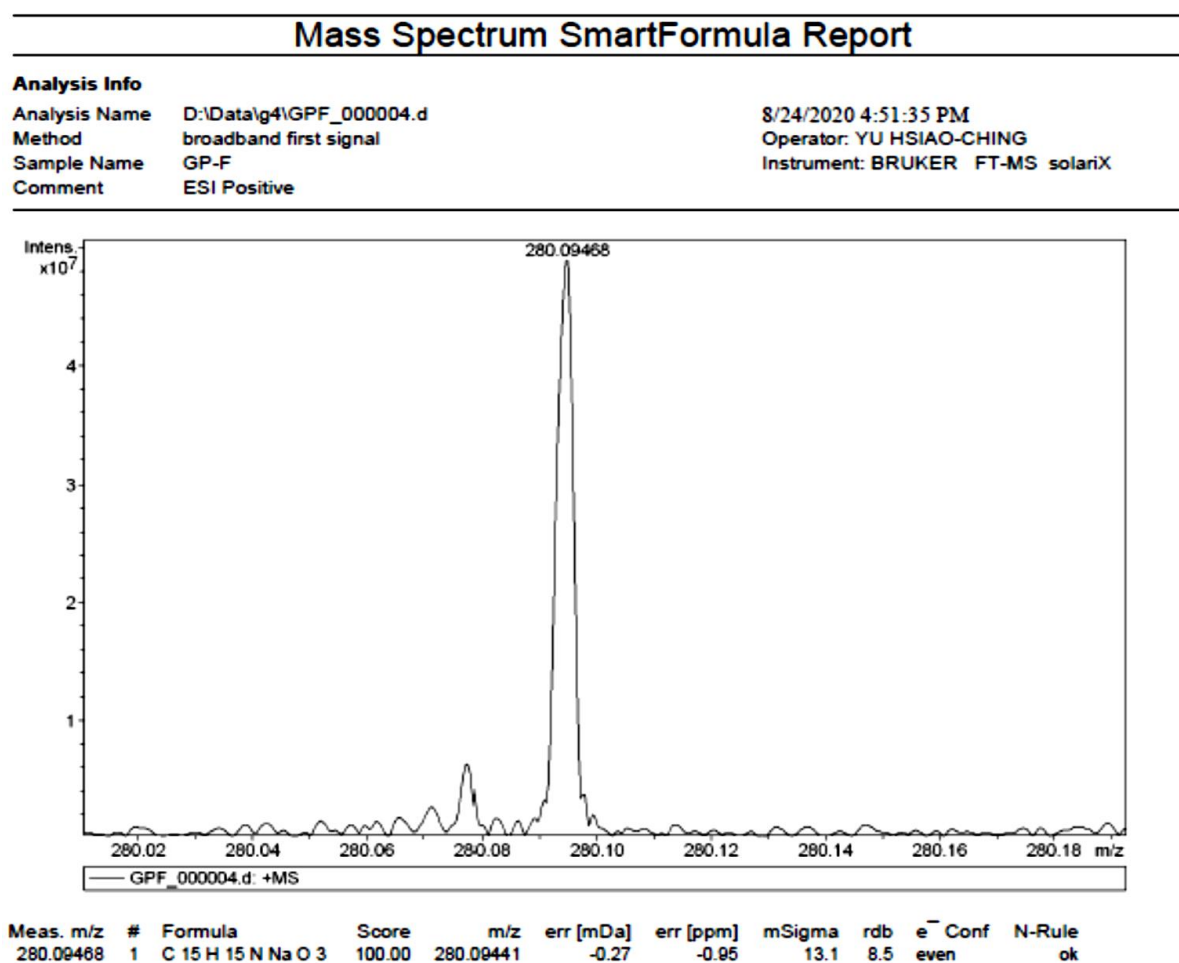
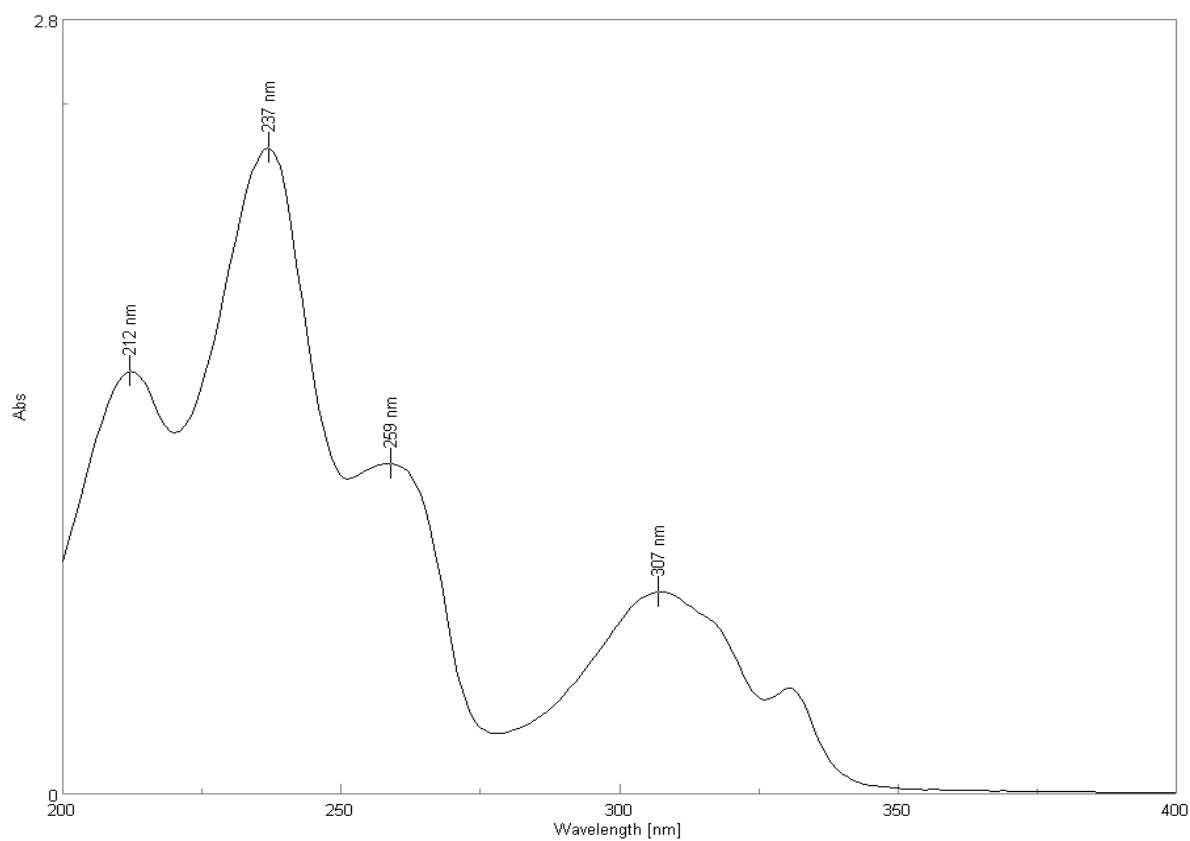


Figure S25. HRESIMS spectrum of 3





**Figure S26.** UV spectrum of **3**



**Figure S27.** IR spectrum of **3**

