

# Supplementary Materials

## **Flavanonol Glycosides from the Stems of *Myrsine seguinii* and their Neuroprotective Activities**

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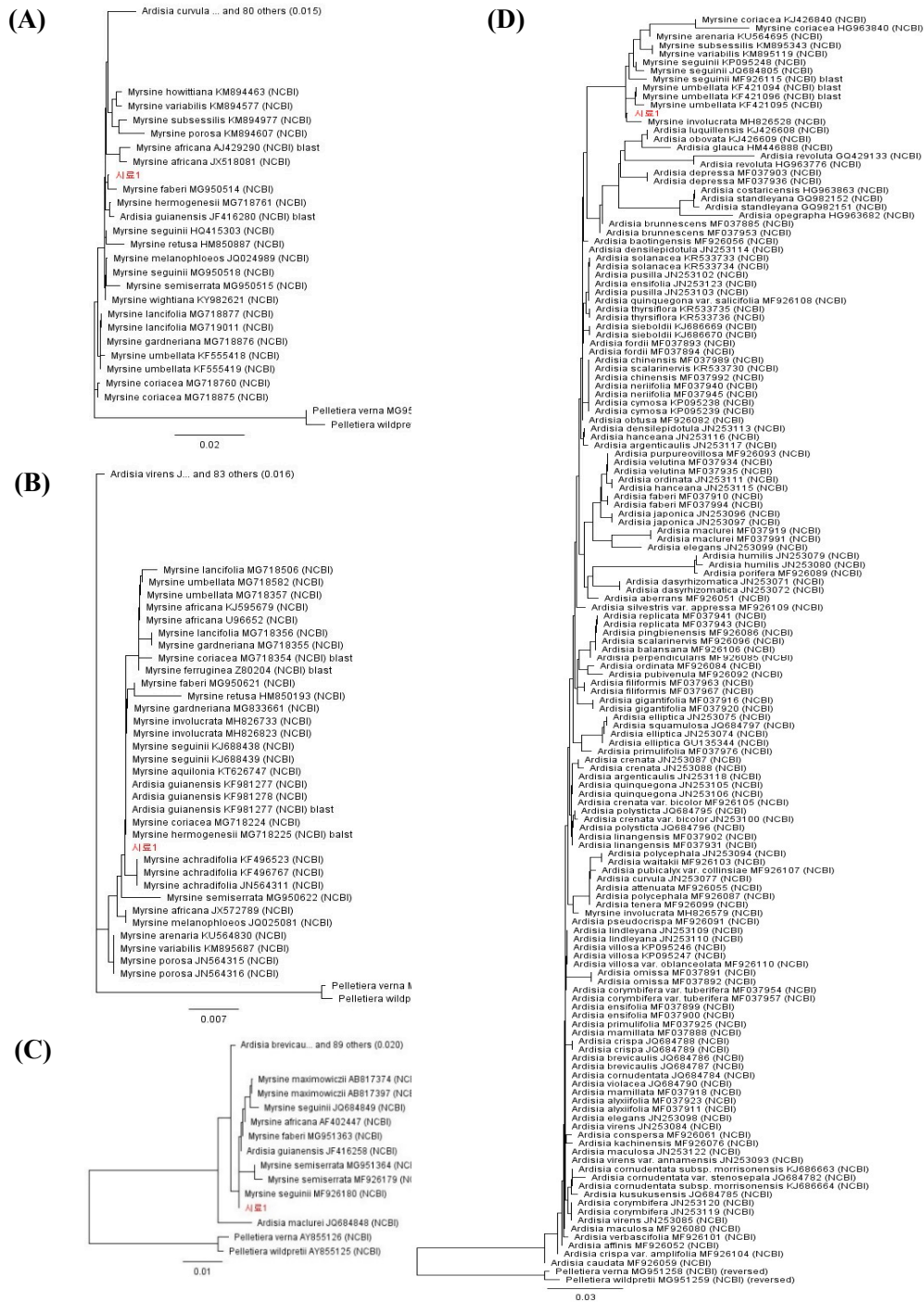


Figure S1. The neighbor-joining tree based on four DNA sequences. (A) *matK* sequences; (B) *rbcL* sequences; (C) *trnL-trnF* sequences; (D) *trnH-psbA* sequences. The red character was directly sequenced in this study, and the other sample sequences were downloaded from GenBank via Blast analysis.

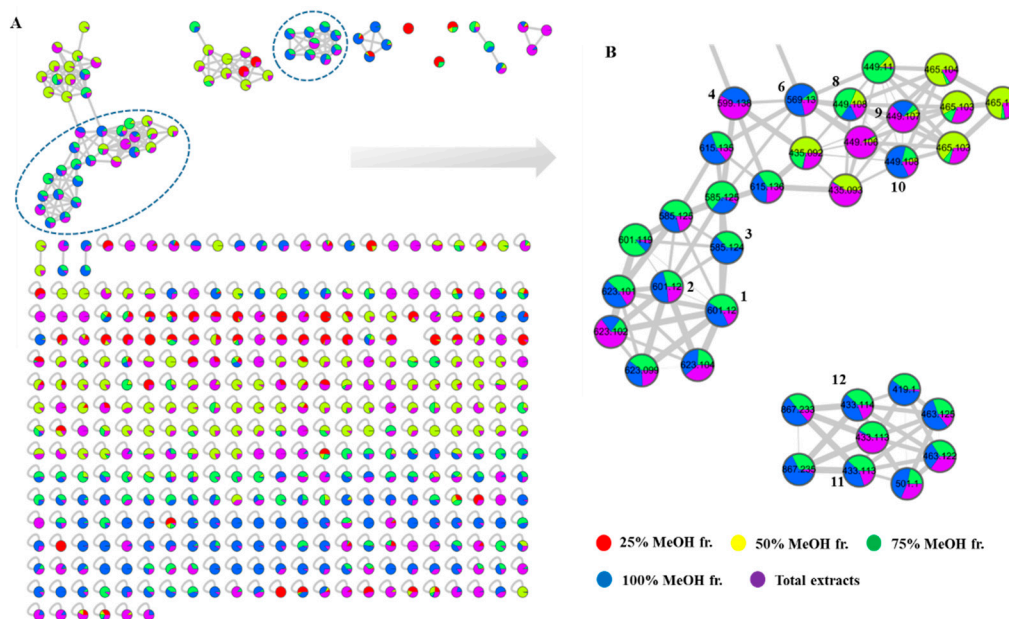


Figure S2. Molecular network of extract and fractions from *M. seguinii*. (A) Full clusters of *M. seguinii* extract and fractions; (B) Targeted cluster of flavanone glycosides derivatives in molecular networking.

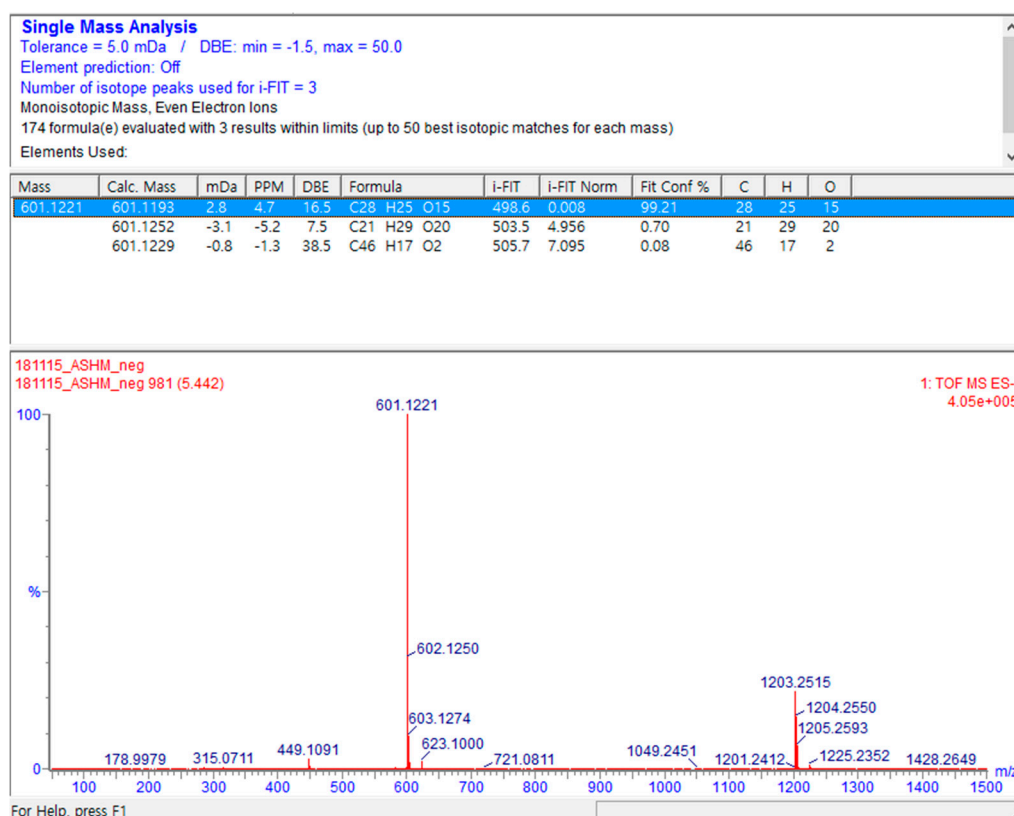


Figure S3. HR-ESI-MS of compound 1.

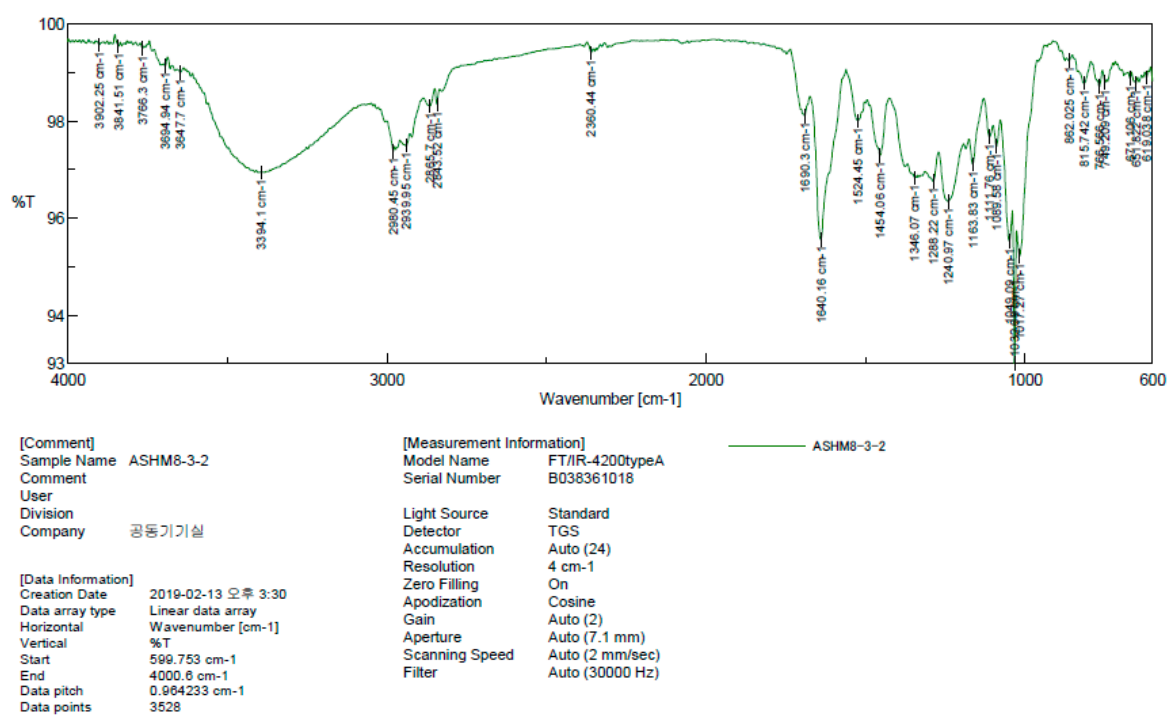


Figure S4. IR spectrum of compound 1.

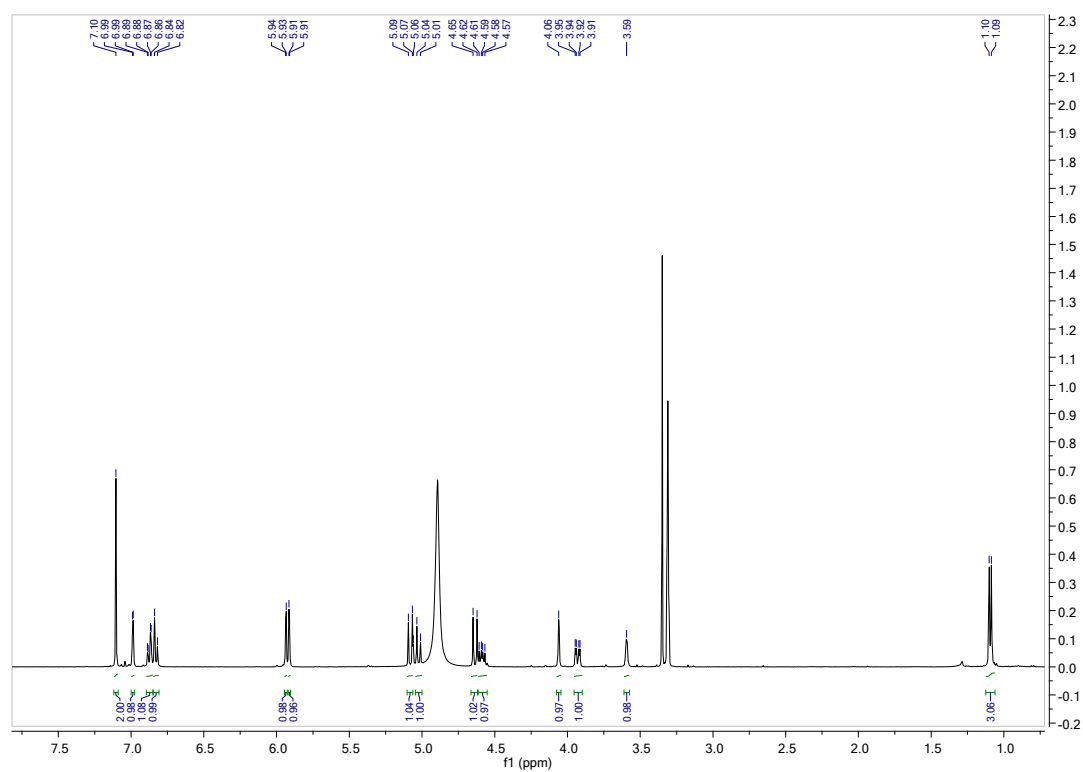


Figure S5. <sup>1</sup>H NMR spectrum (CD<sub>3</sub>OD, 400 MHz) of compound 1.

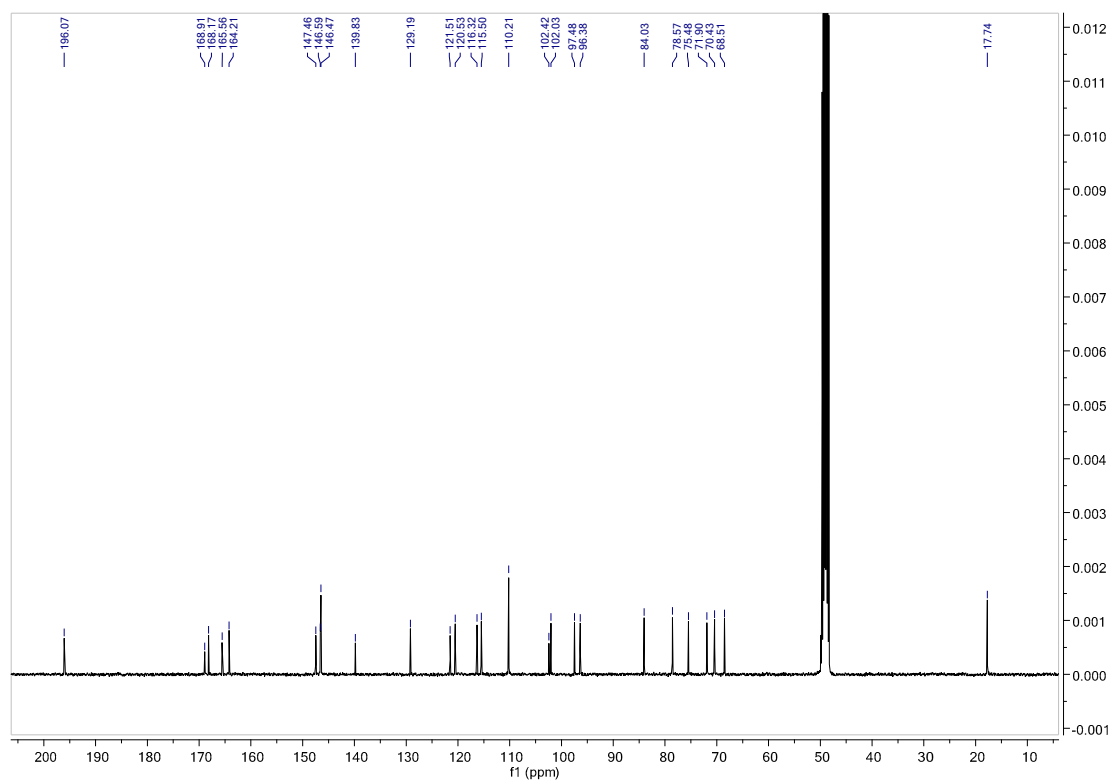


Figure S6.  $^{13}\text{C}$  NMR spectrum ( $\text{CD}_3\text{OD}$ , 100 MHz) of compound **1**.

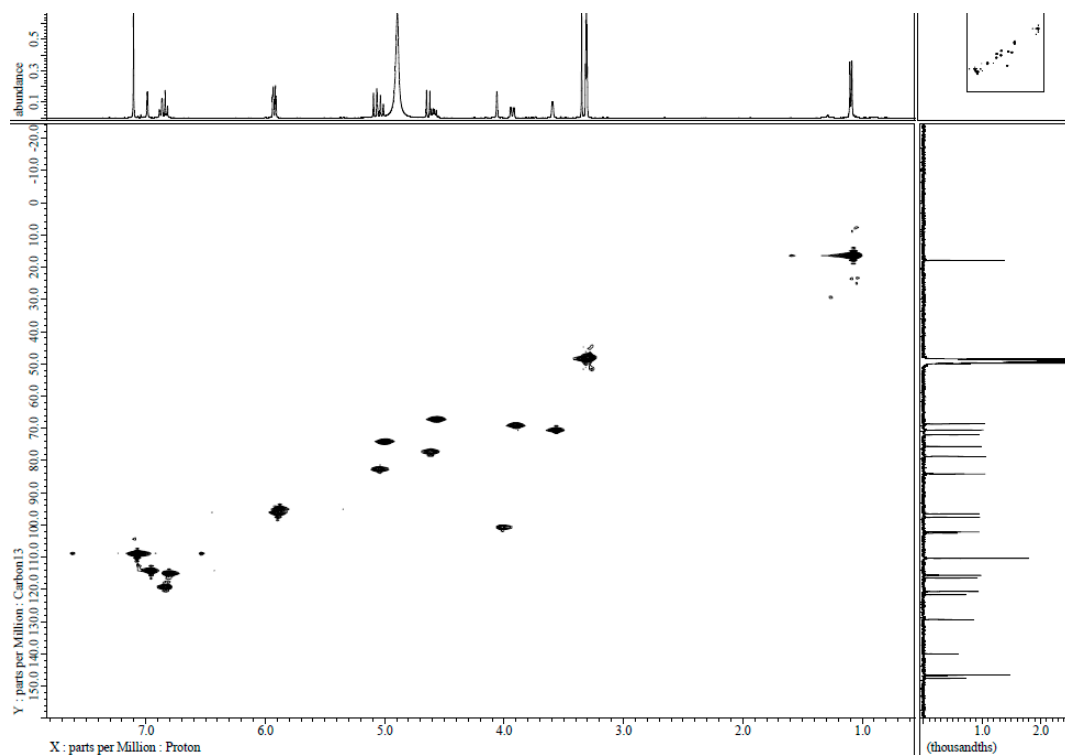


Figure S7. HSQC spectrum ( $\text{CD}_3\text{OD}$ , 400 MHz) of compound **1**.



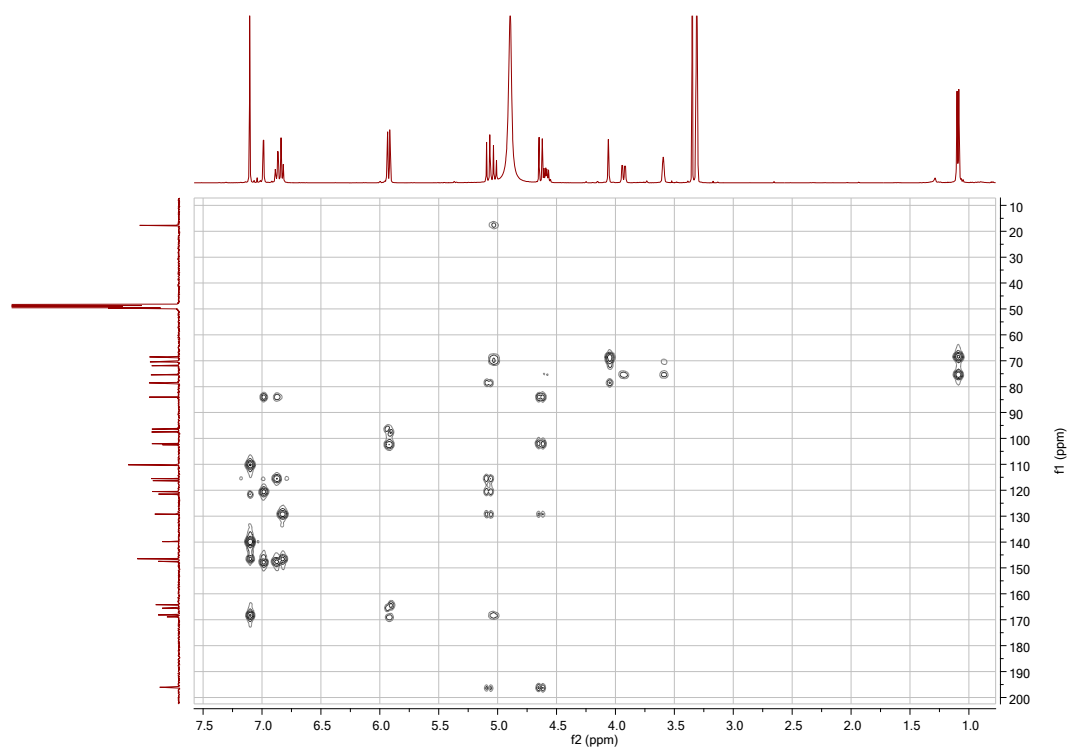


Figure S8. HMBC spectrum ( $\text{CD}_3\text{OD}$ , 400 MHz) of compound **1**.

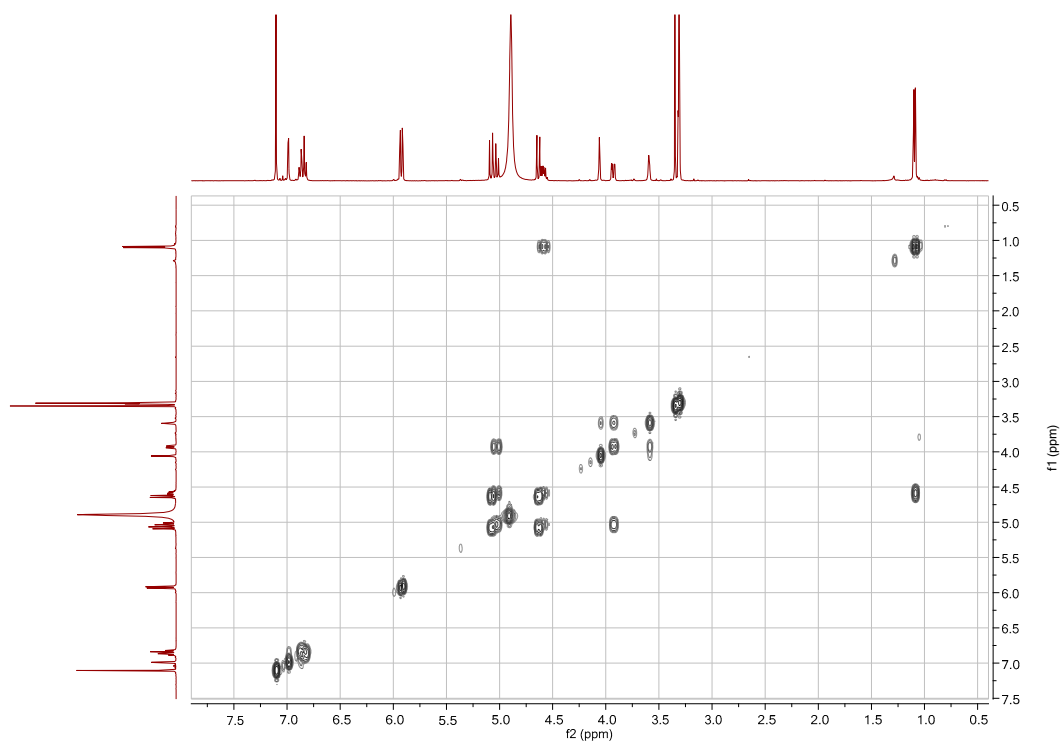


Figure S9.  $^1\text{H}$ - $^1\text{H}$  COSY spectrum ( $\text{CD}_3\text{OD}$ , 400 MHz) of compound **1**.

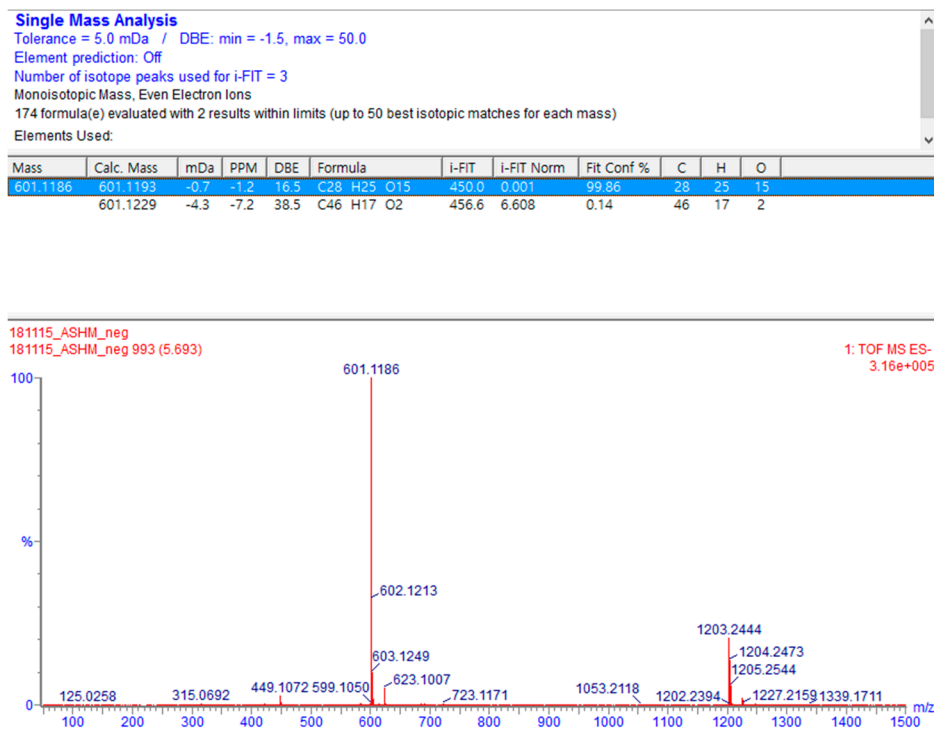


Figure S10. HR-ESI-MS of compound 2.

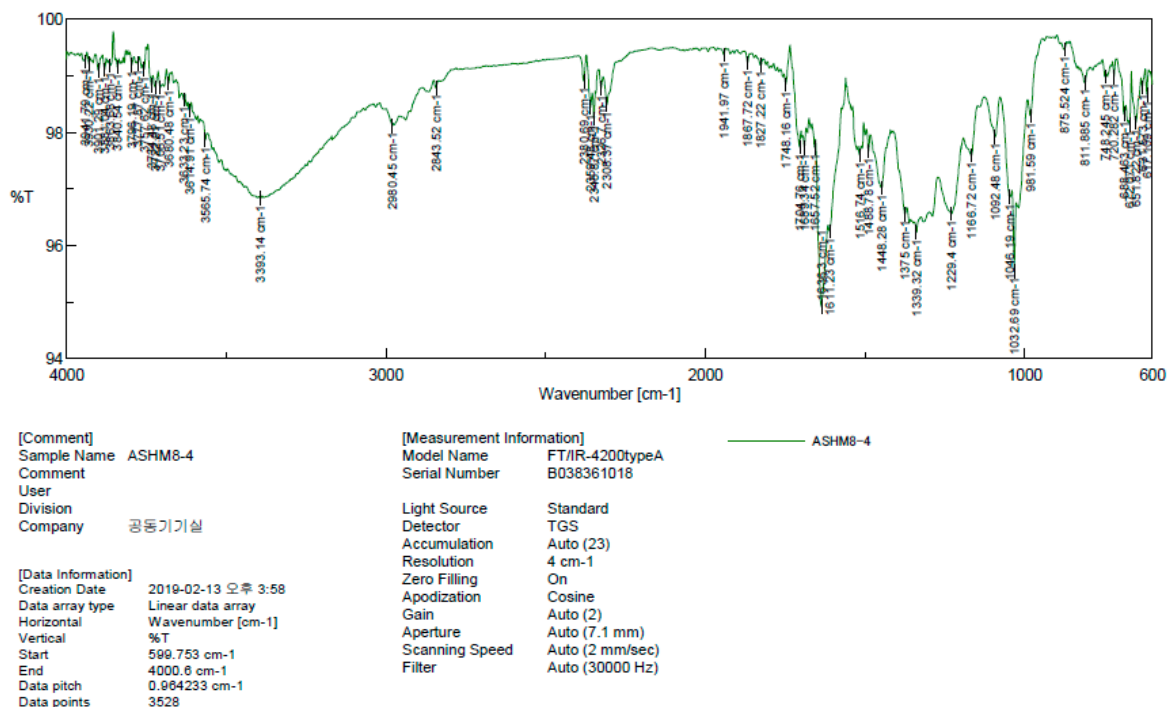


Figure S11. IR spectrum of compound 2.

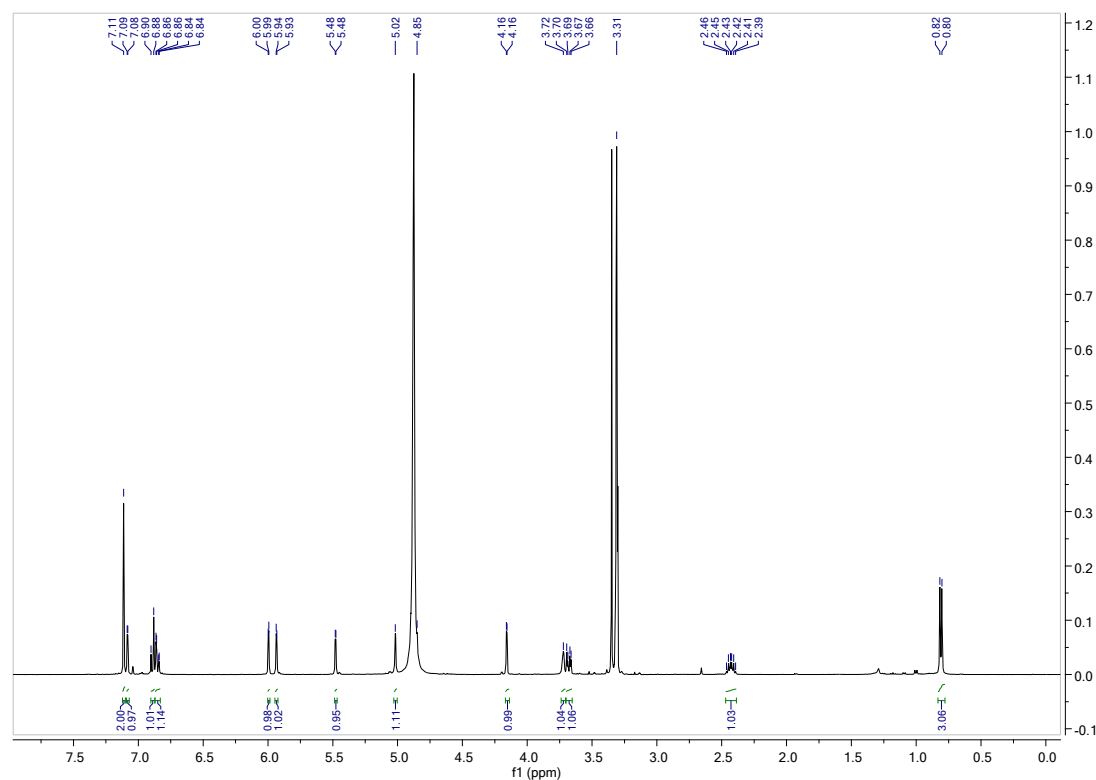


Figure S12. <sup>1</sup>H NMR spectrum (CD<sub>3</sub>OD, 400 MHz) of compound 2.

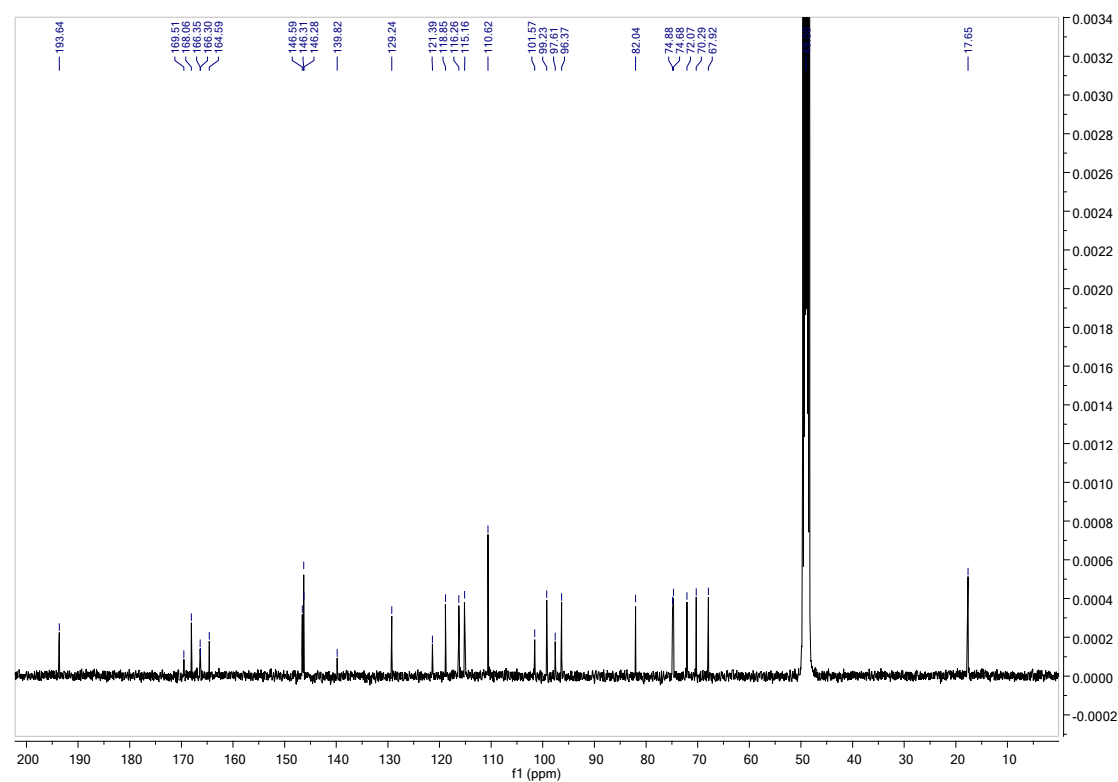


Figure S13. <sup>13</sup>C NMR spectrum (CD<sub>3</sub>OD, 100 MHz) of compound 2.

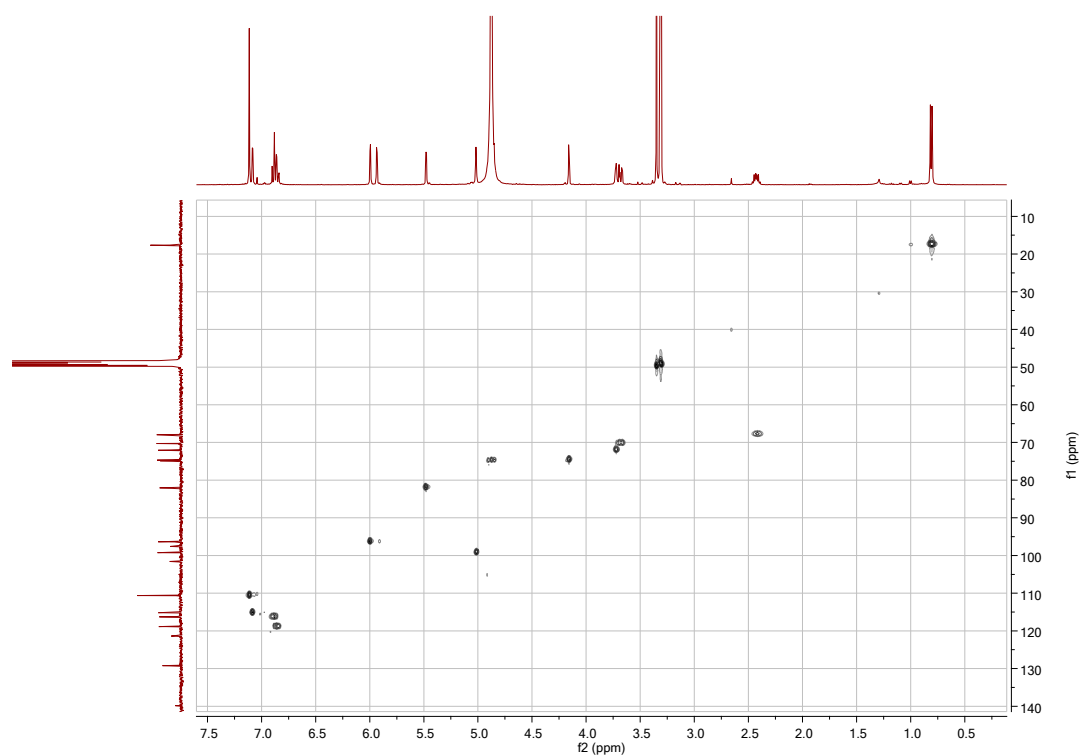


Figure S14. HSQC spectrum ( $\text{CD}_3\text{OD}$ , 400 MHz) of compound **2**.

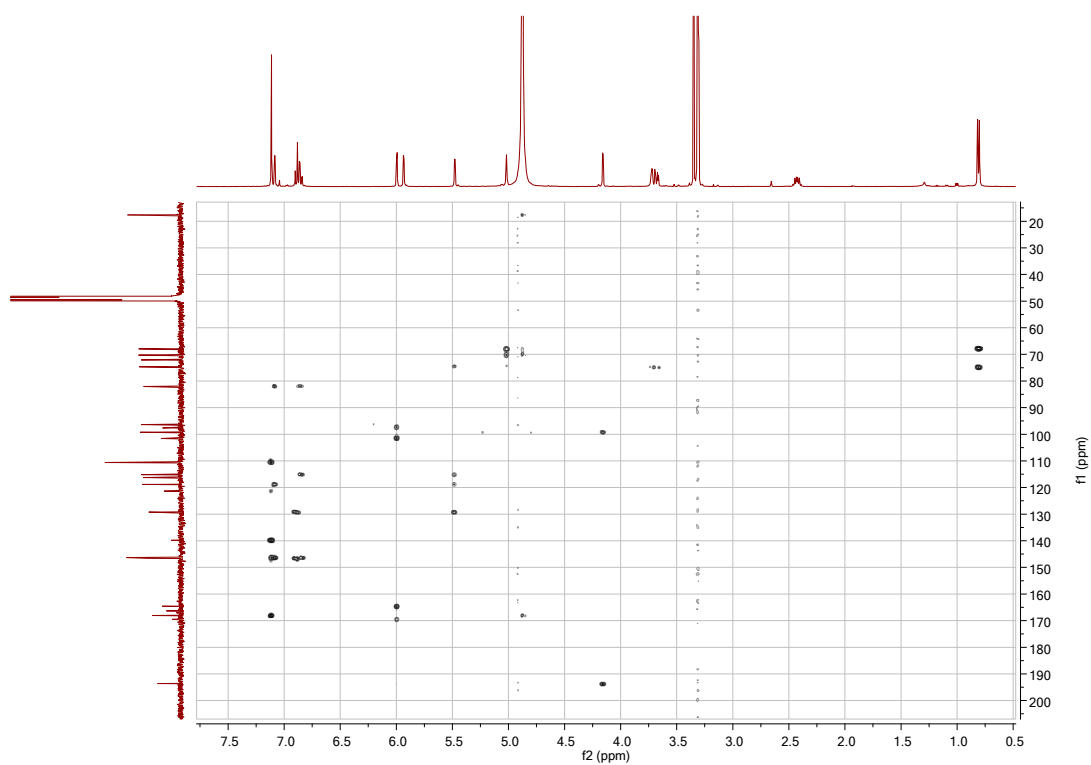


Figure S15. HMBC spectrum ( $\text{CD}_3\text{OD}$ , 400 MHz) of compound **2**.

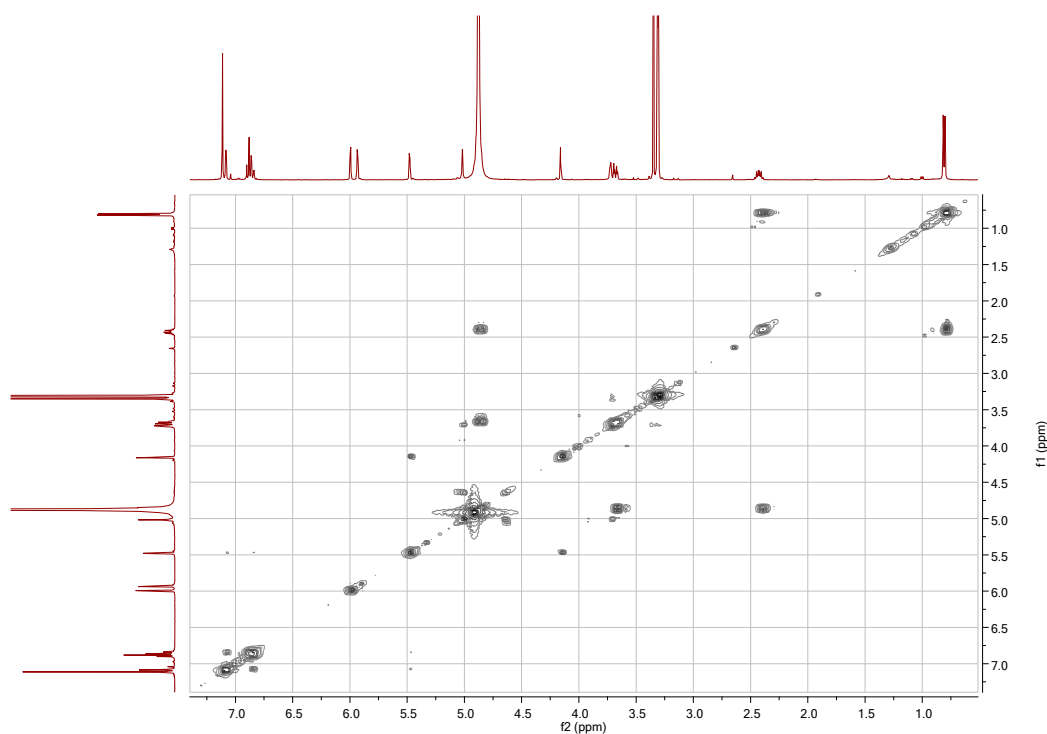


Figure S16.  $^1\text{H}$ - $^1\text{H}$  COSY spectrum ( $\text{CD}_3\text{OD}$ , 400 MHz) of compound **2**.

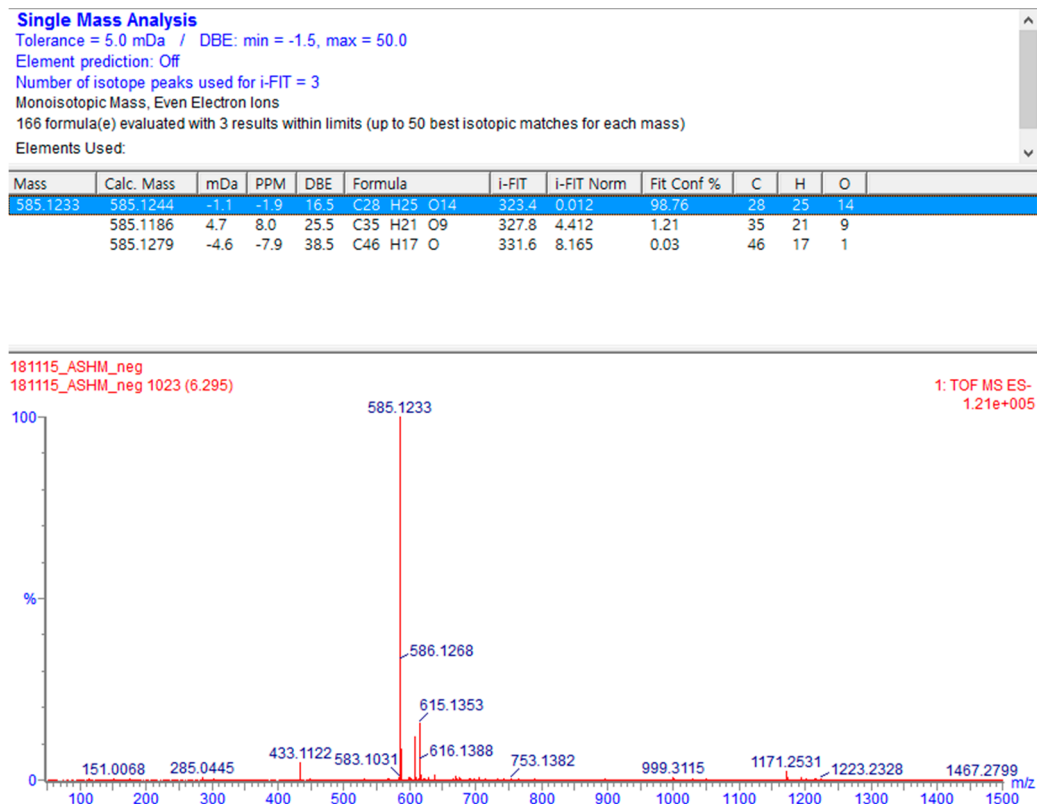


Figure S17. HR-ESI-MS of compound **3**.

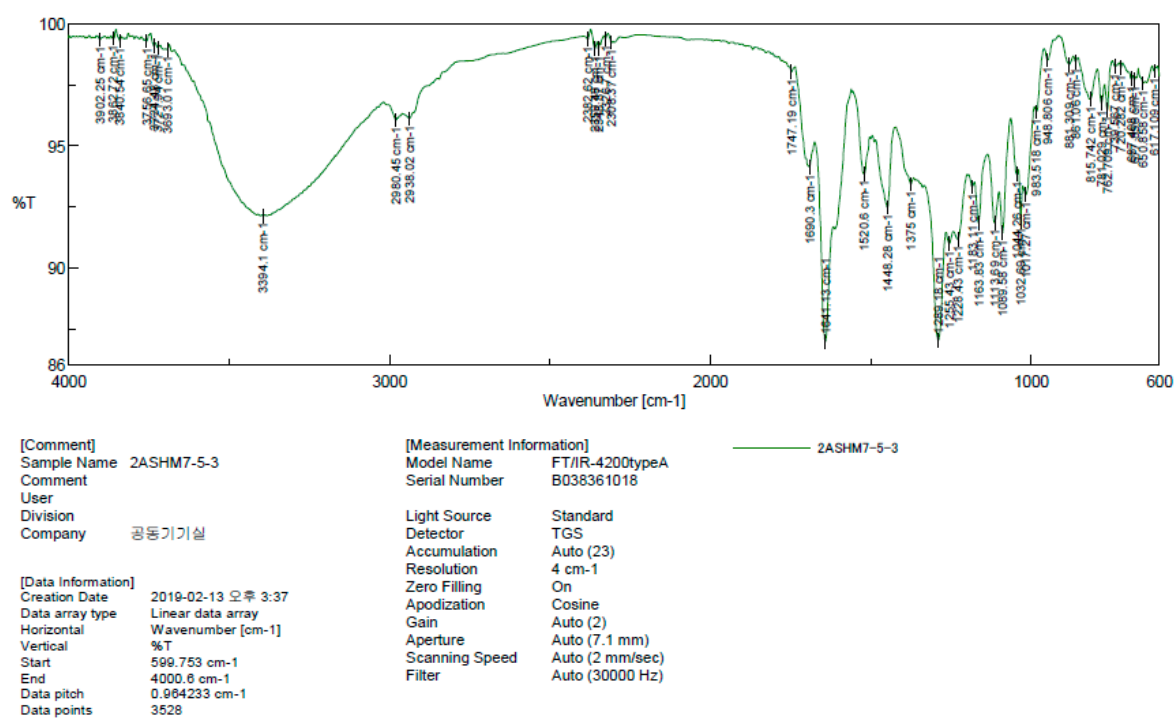


Figure S18. IR spectrum of compound 3.

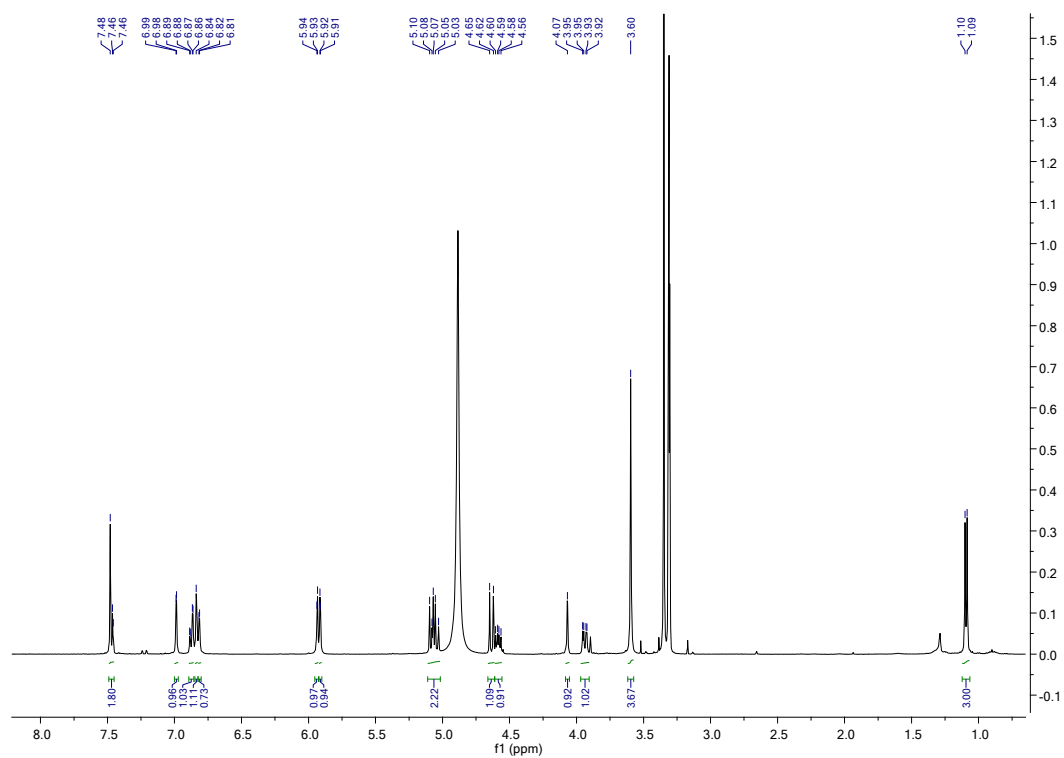


Figure S19.  $^1\text{H}$  NMR spectrum ( $\text{CD}_3\text{OD}$ , 400 MHz) of compound 3.

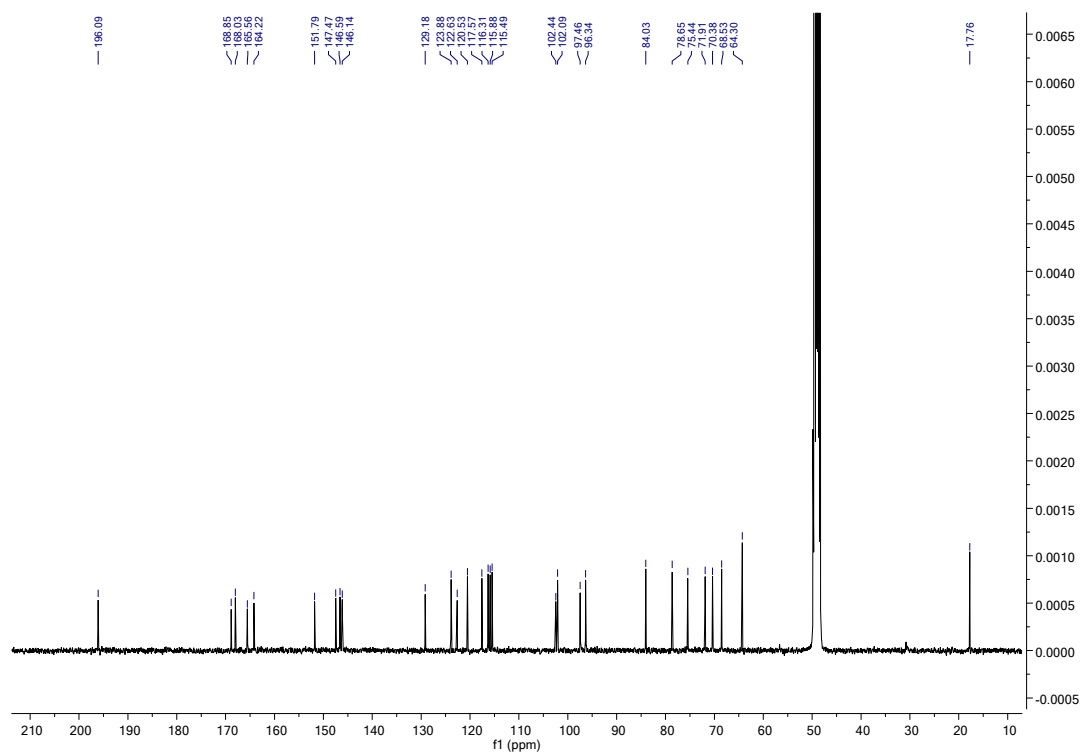


Figure S20.  $^{13}\text{C}$  NMR spectrum ( $\text{CD}_3\text{OD}$ , 100 MHz) of compound **3**.

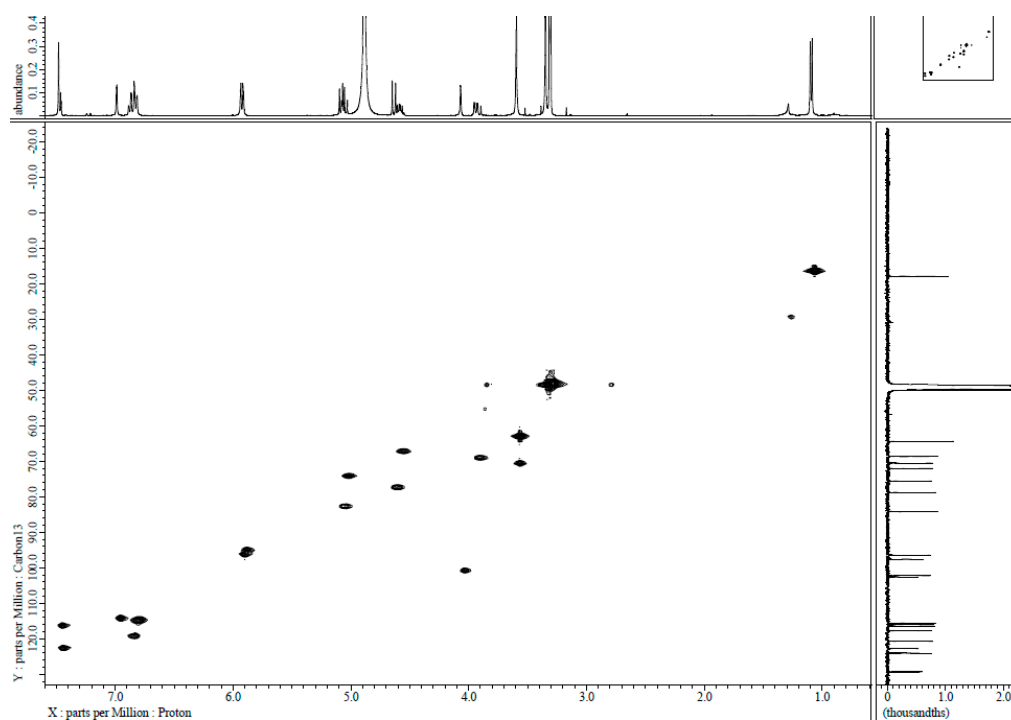


Figure S21. HSQC spectrum ( $\text{CD}_3\text{OD}$ , 400 MHz) of compound **3**.

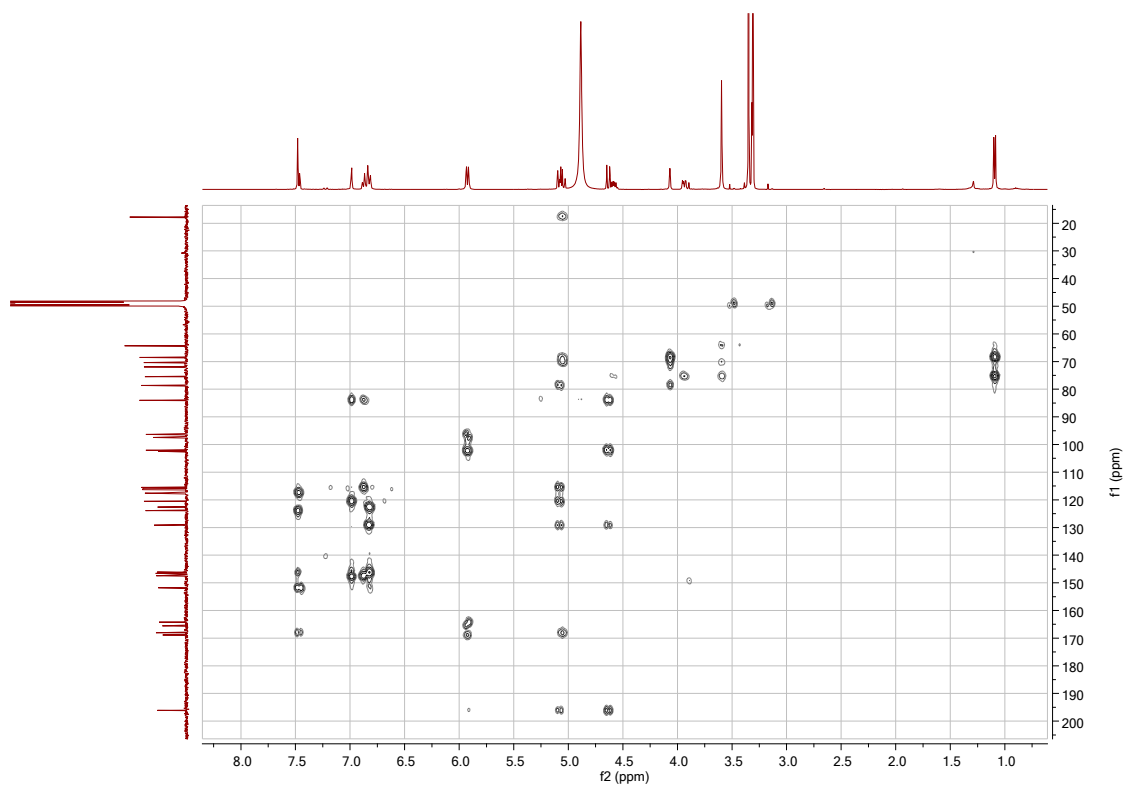


Figure S22. HMBC spectrum ( $\text{CD}_3\text{OD}$ , 400 MHz) of compound **3**.

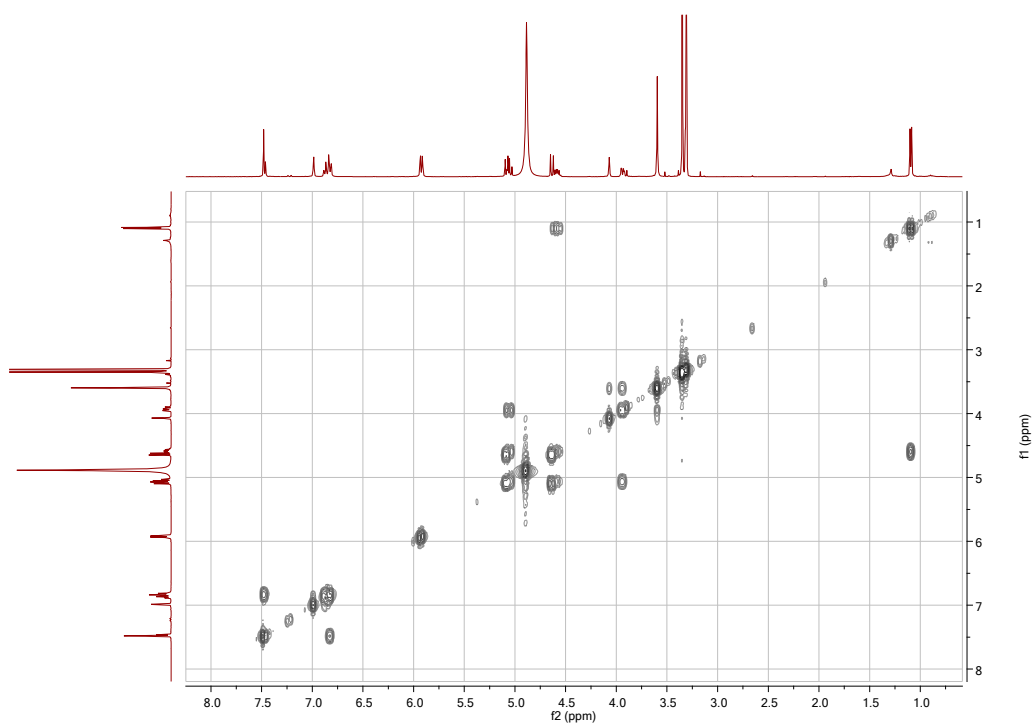


Figure S23.  $^1\text{H}$ - $^1\text{H}$  COSY spectrum ( $\text{CD}_3\text{OD}$ , 400 MHz) of compound **3**.



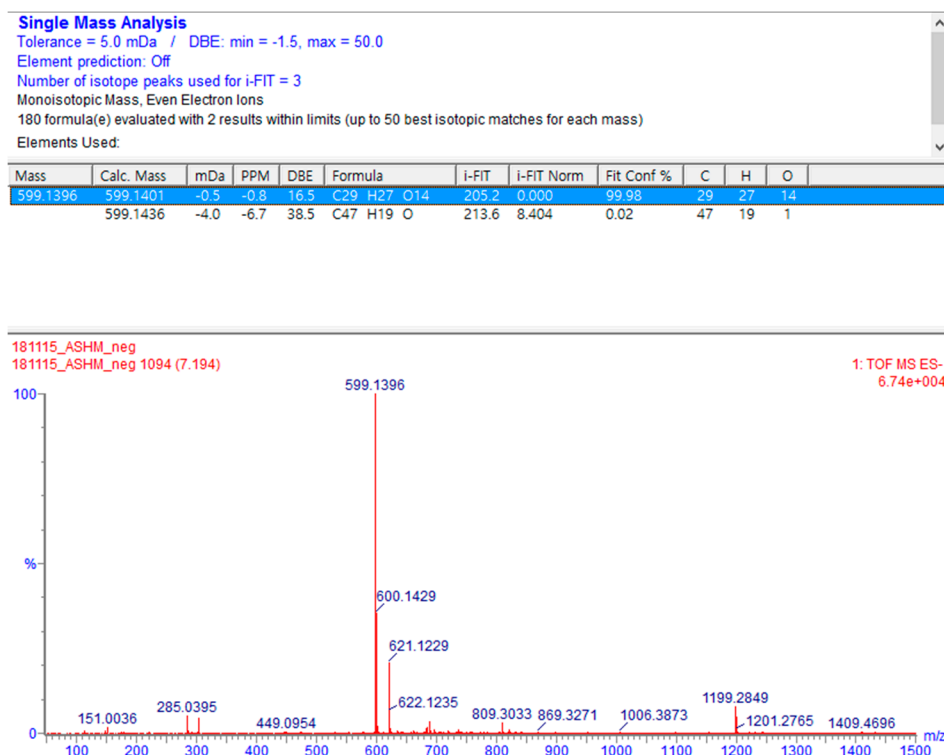


Figure S24. HR-ESI-MS of compound 4.

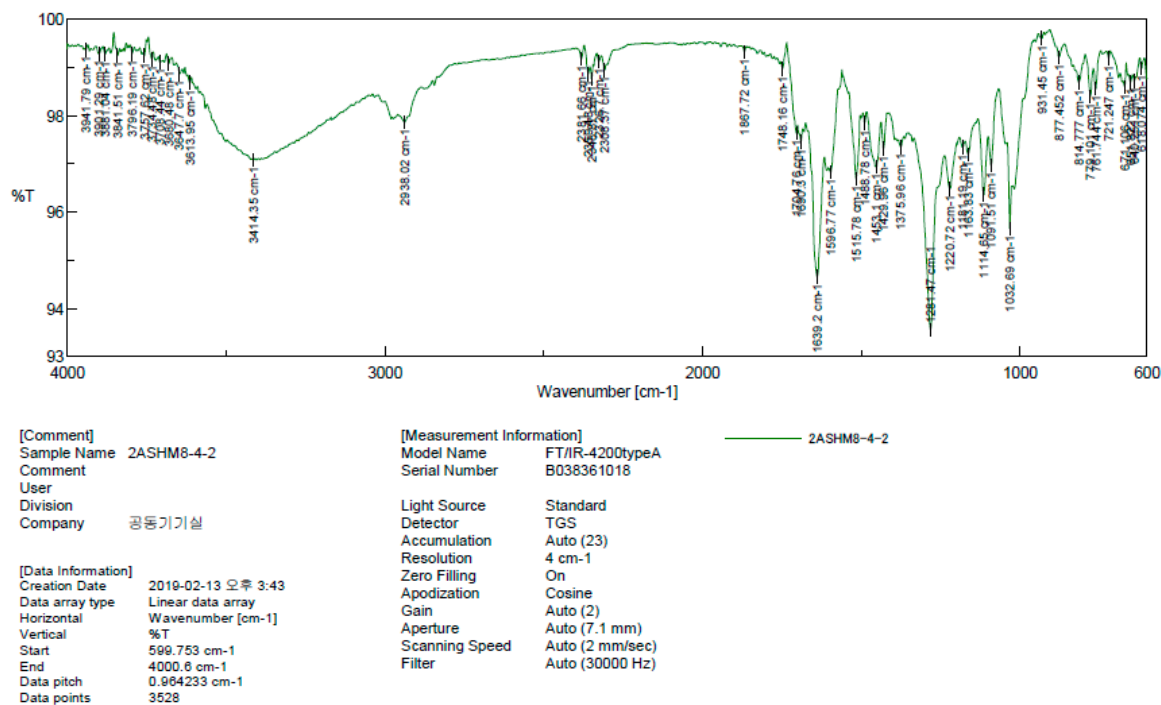


Figure S25. IR spectrum of compound 4.

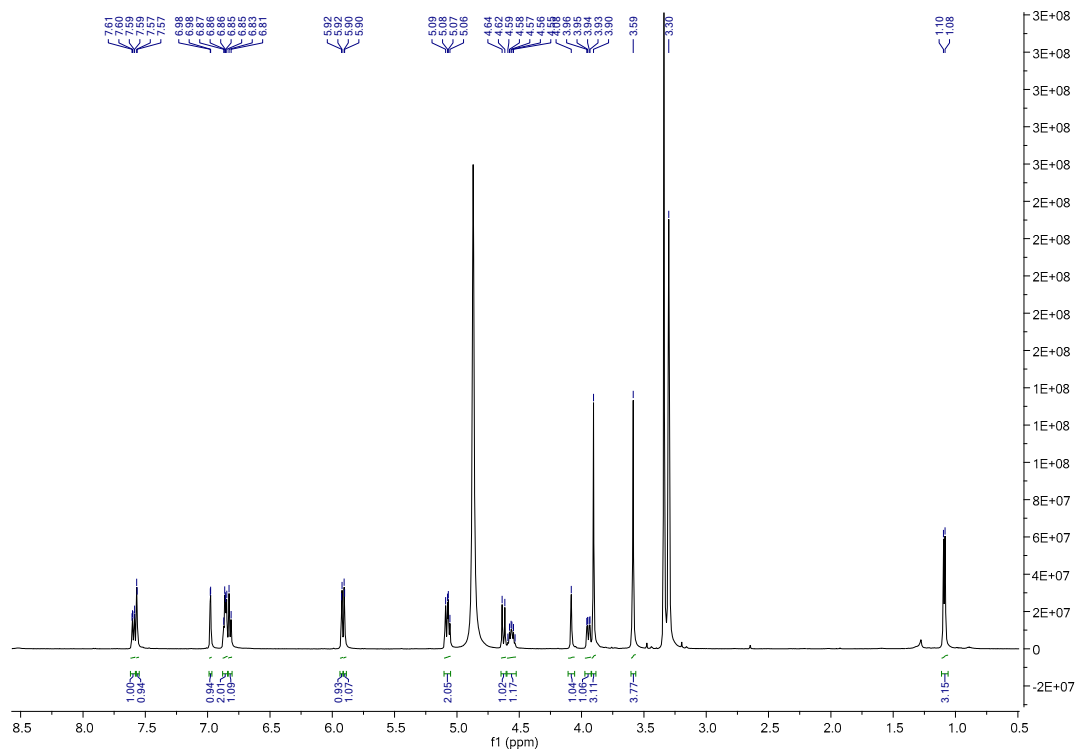


Figure S26.  $^1\text{H}$  NMR spectrum ( $\text{CD}_3\text{OD}$ , 500 MHz) of compound **4**.

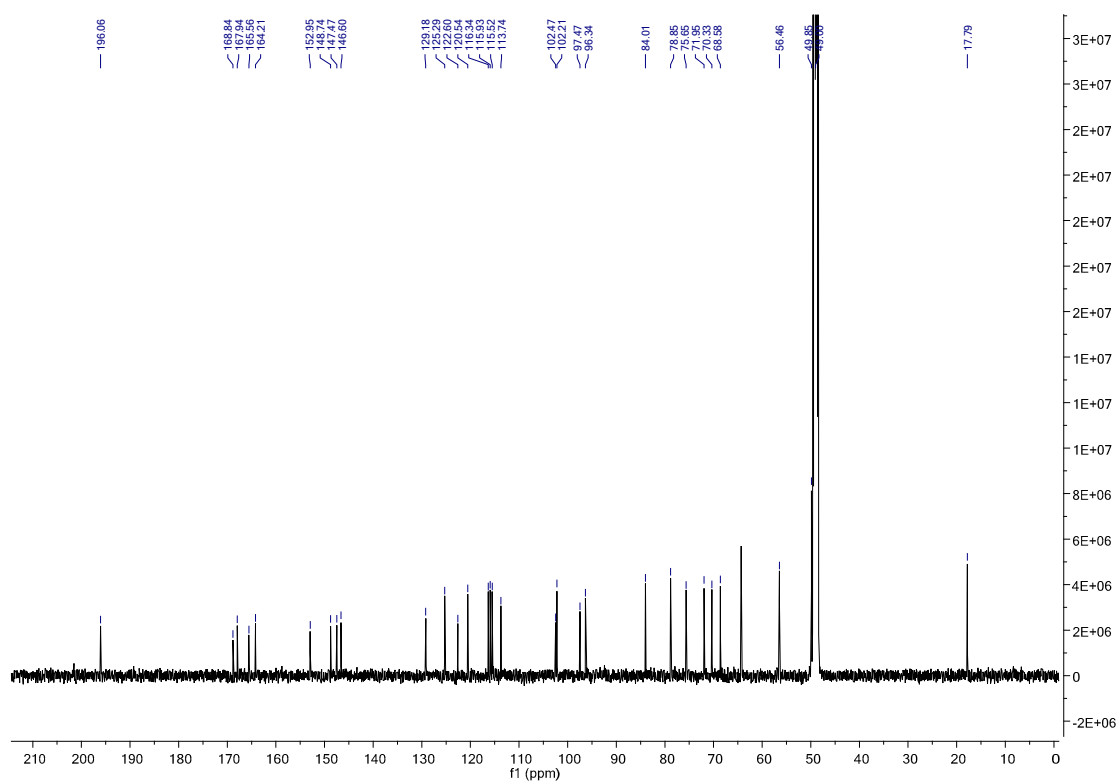


Figure S27.  $^{13}\text{C}$  NMR spectrum ( $\text{CD}_3\text{OD}$ , 125 MHz) of compound **4**.

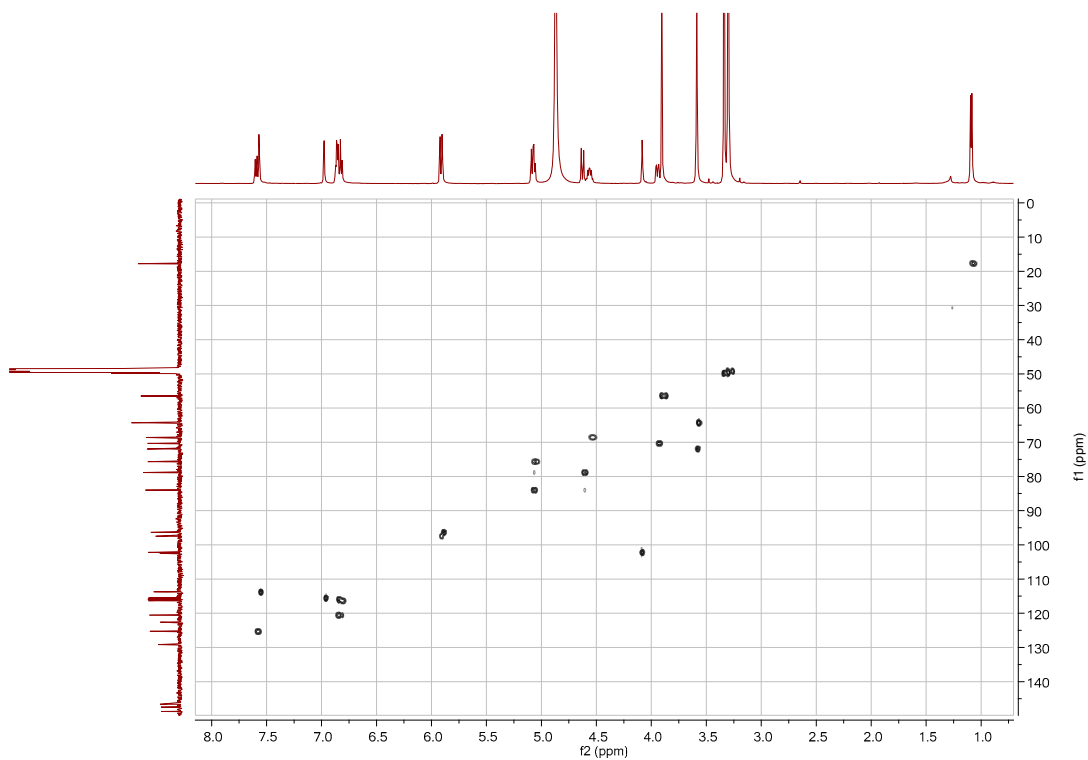


Figure S28. HSQC spectrum ( $\text{CD}_3\text{OD}$ , 500 MHz) of compound **4**.

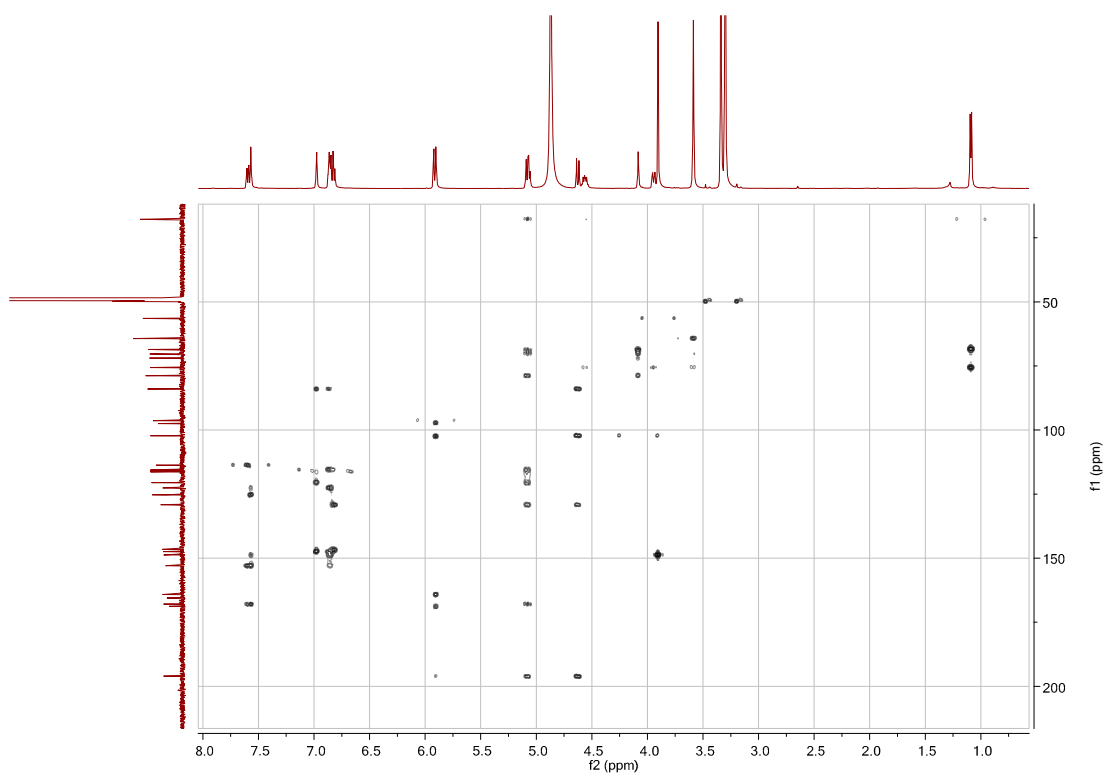


Figure S29. HMBC spectrum ( $\text{CD}_3\text{OD}$ , 500 MHz) of compound **4**.

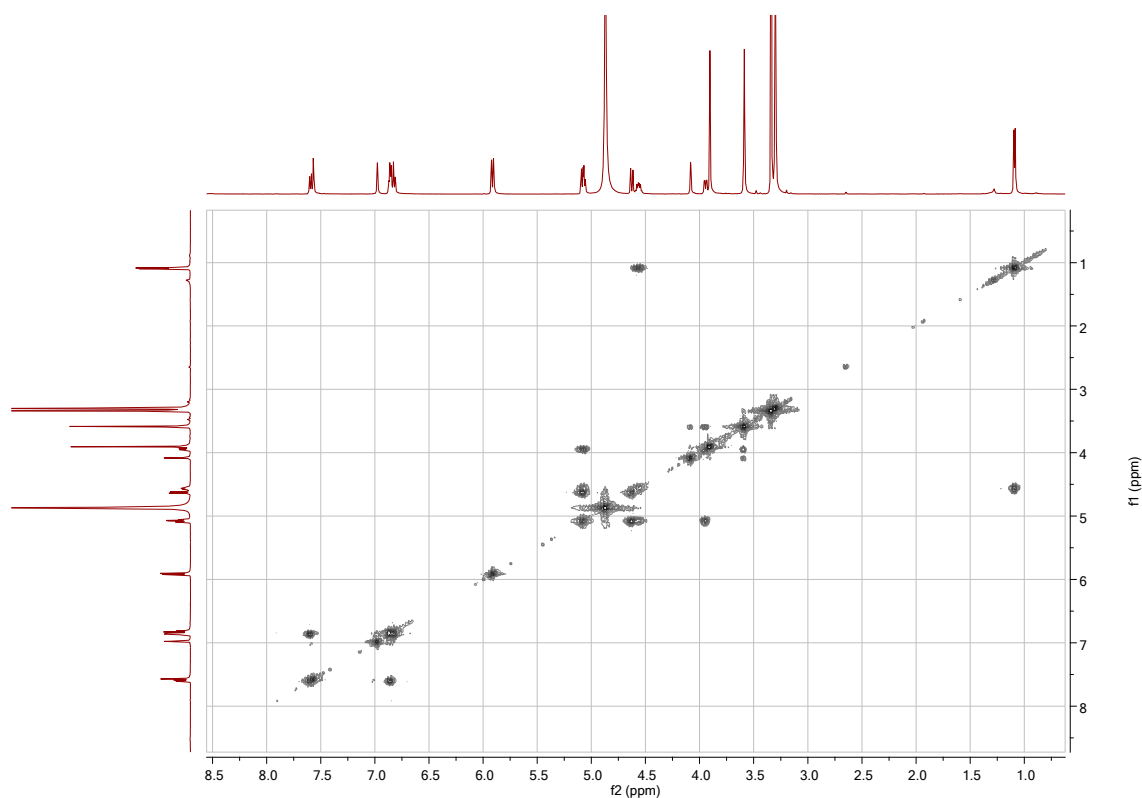


Figure S30.  $^1\text{H}$ - $^1\text{H}$  COSY spectrum ( $\text{CD}_3\text{OD}$ , 500 MHz) of compound 4.

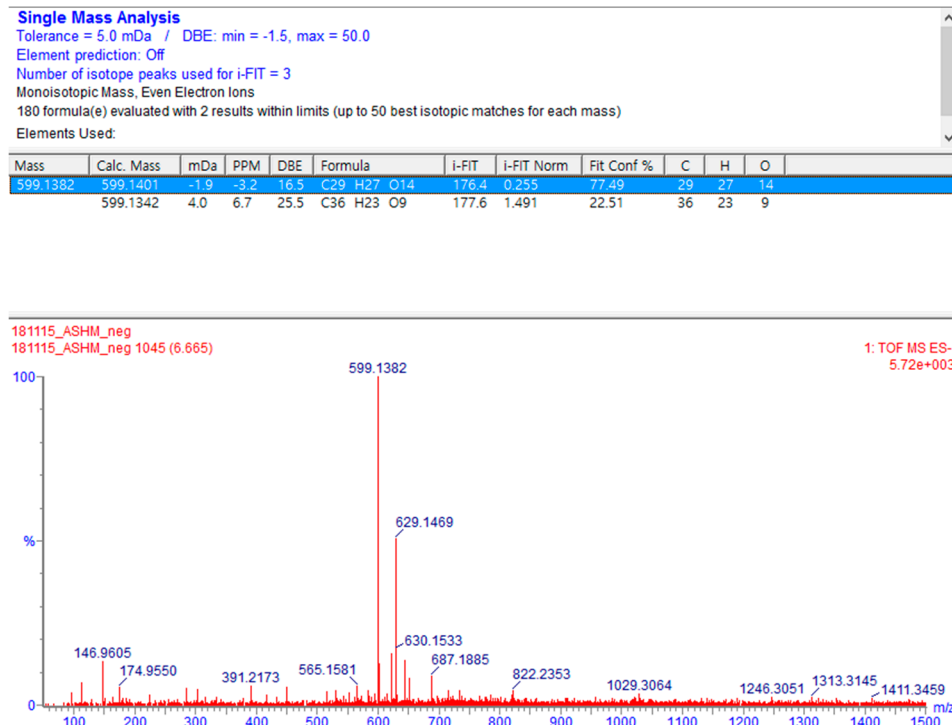
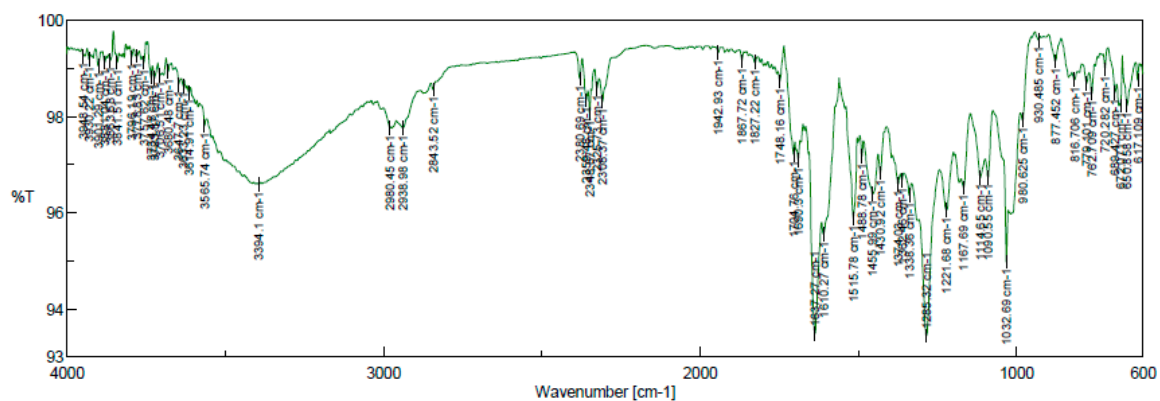


Figure S31. HR-ESI-MS of compound 5.



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Division		Detector	TGS
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		Zero Filling	On
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Figure S32. IR spectrum of compound 5.

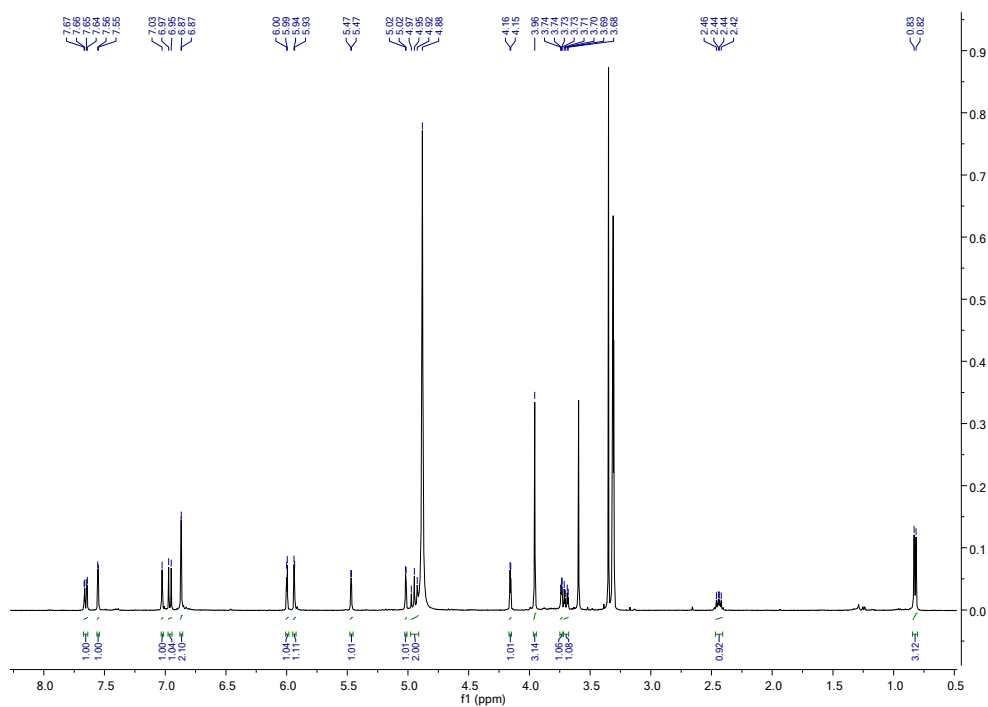


Figure S33. <sup>1</sup>H NMR spectrum (CD<sub>3</sub>OD, 400 MHz) of compound 5.

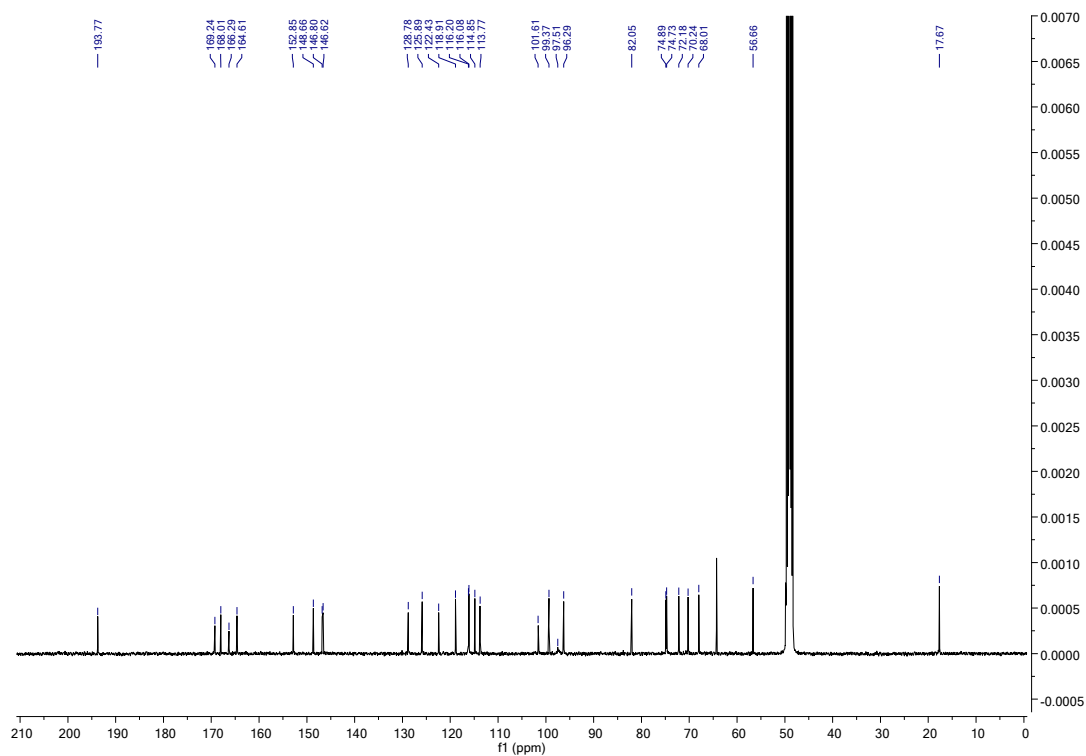


Figure S34.  $^{13}\text{C}$  NMR spectrum ( $\text{CD}_3\text{OD}$ , 100 MHz) of compound **5**.

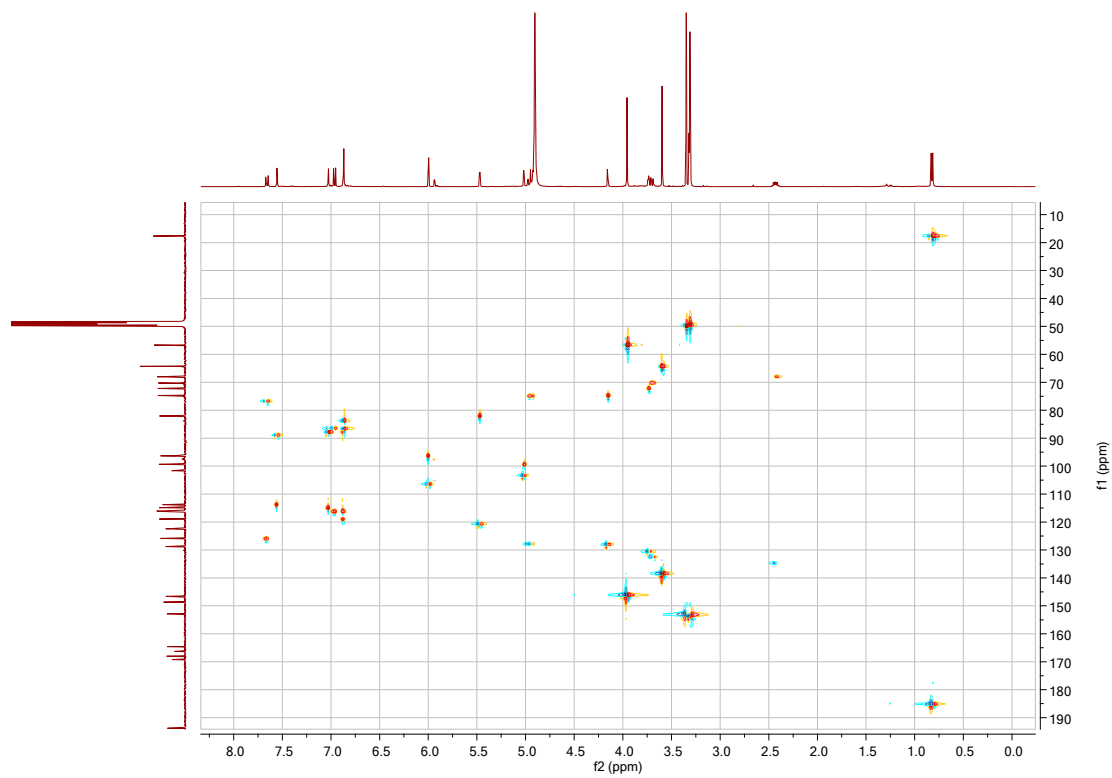


Figure S35. HSQC spectrum ( $\text{CD}_3\text{OD}$ , 400 MHz) of compound **5**.

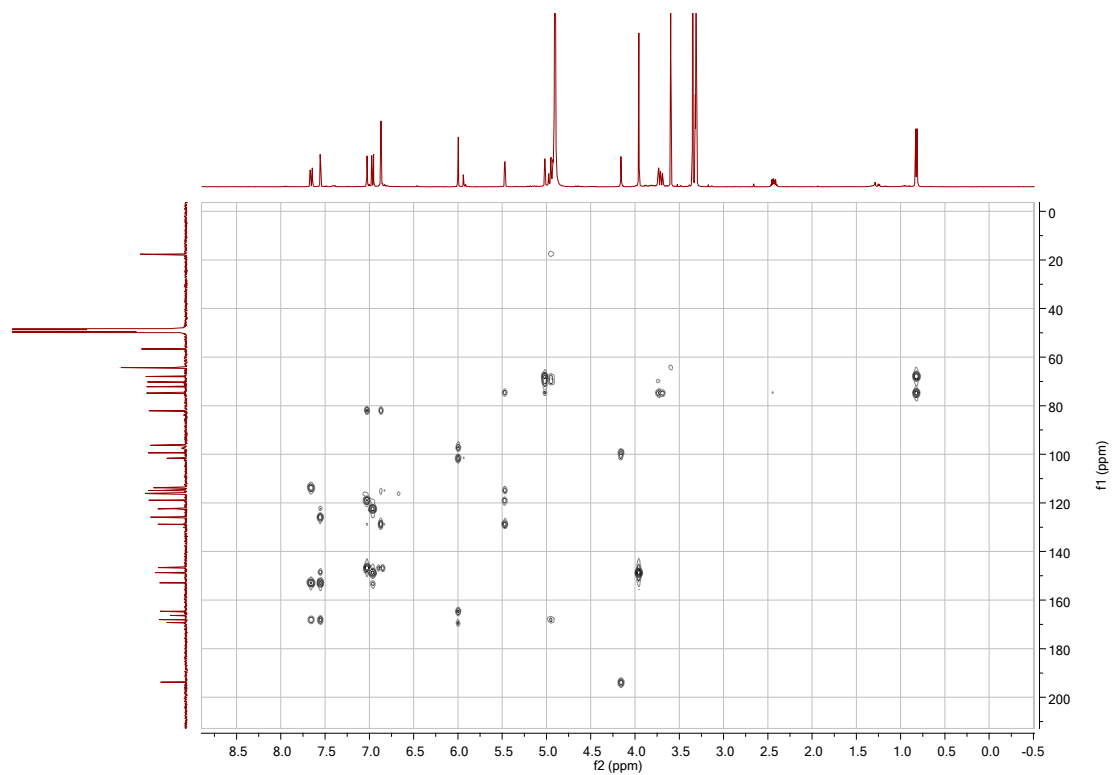


Figure S36. HMBC spectrum ( $\text{CD}_3\text{OD}$ , 400 MHz) of compound **5**.

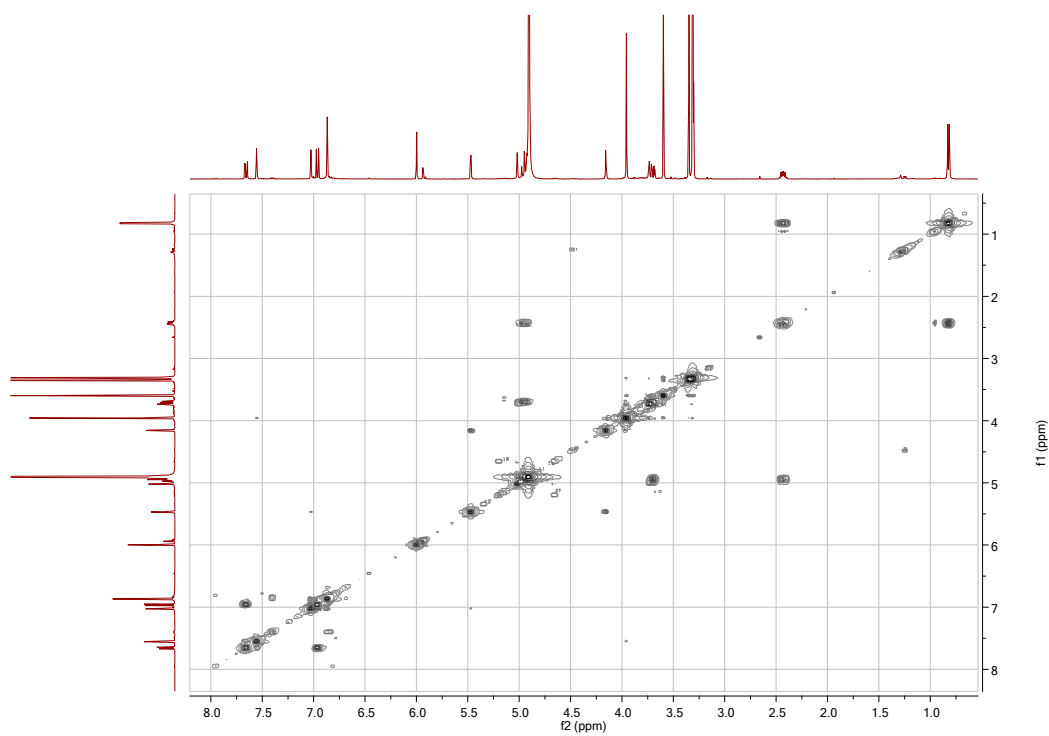


Figure S37.  $^1\text{H}$ - $^1\text{H}$  COSY spectrum ( $\text{CD}_3\text{OD}$ , 400 MHz) of compound **5**.

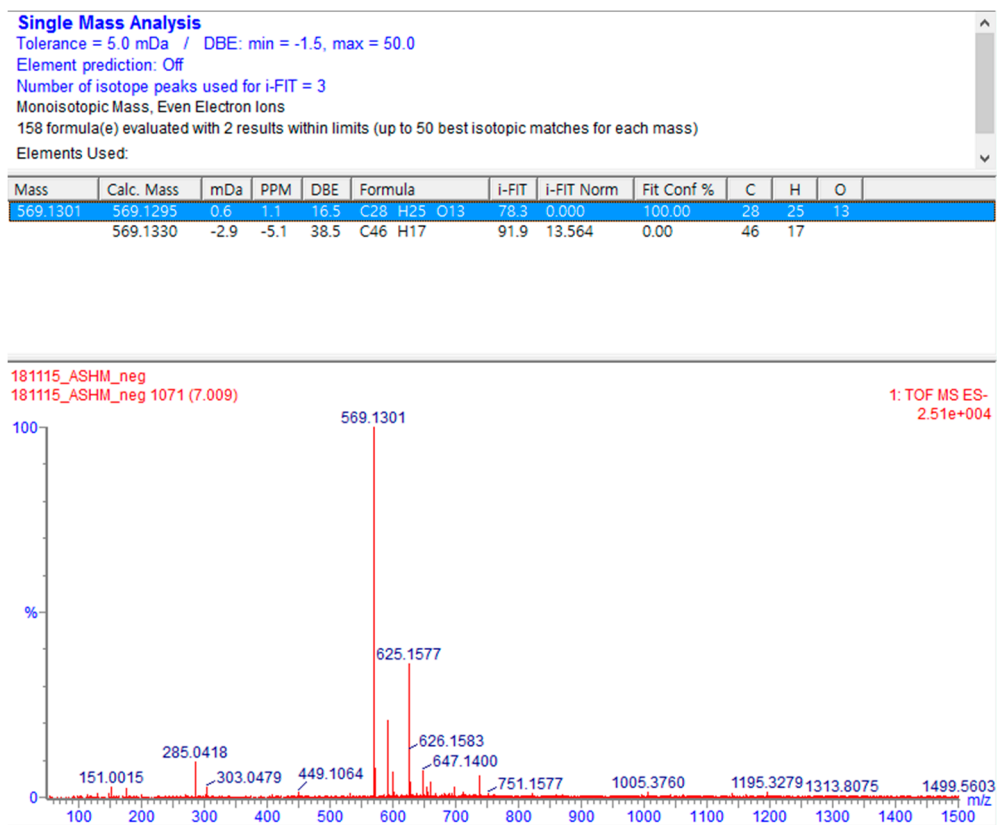


Figure S38. HR-ESI-MS of compound 6.

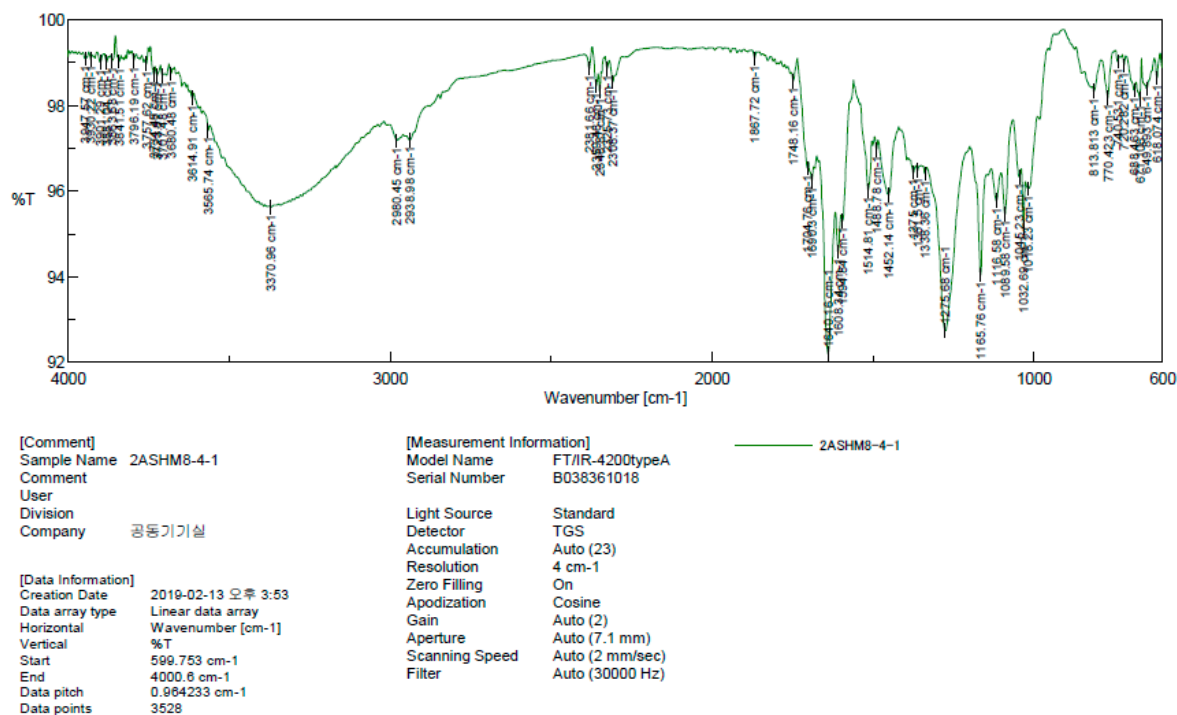


Figure S39. IR spectrum of compound 6.



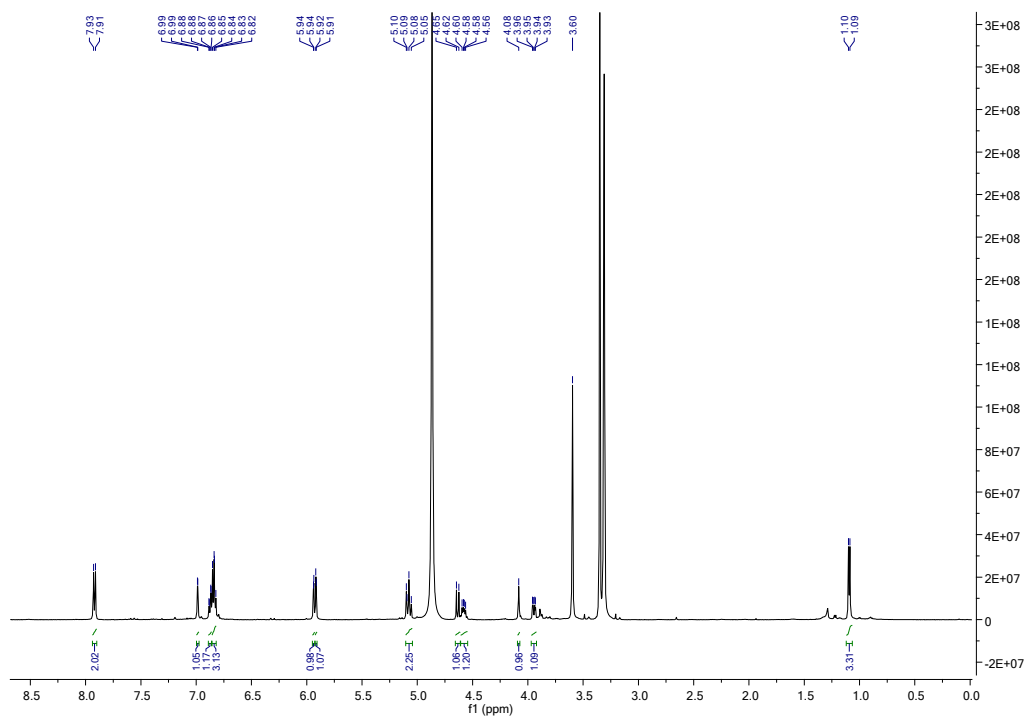


Figure S40. <sup>1</sup>H NMR spectrum (CD<sub>3</sub>OD, 500 MHz) of compound 6.

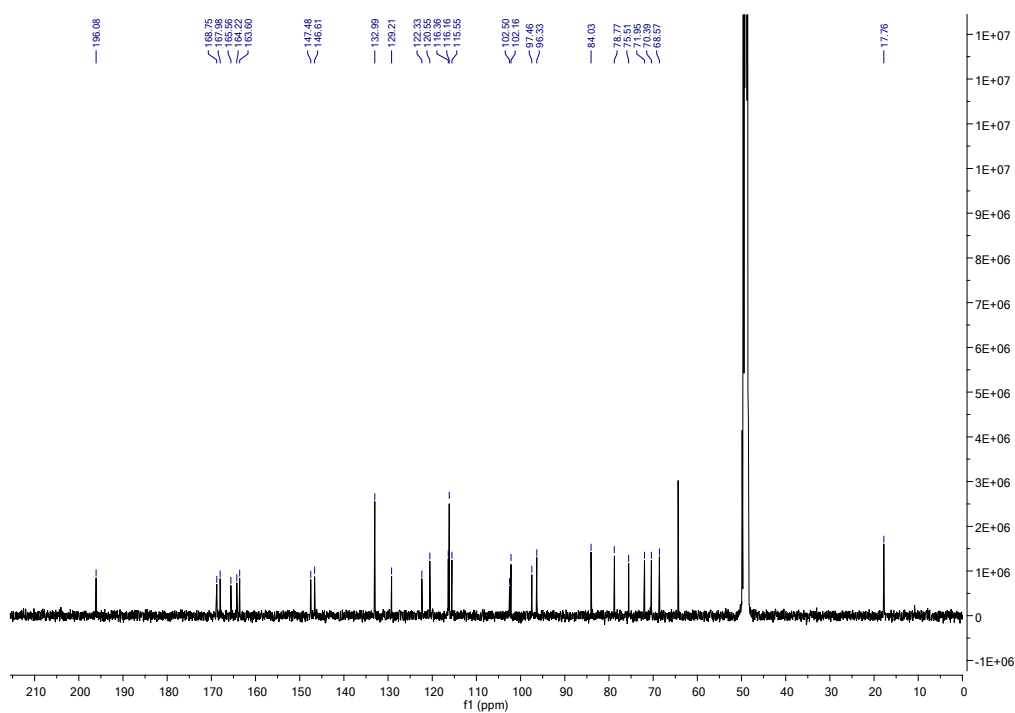


Figure S41. <sup>13</sup>C NMR spectrum (CD<sub>3</sub>OD, 125 MHz) of compound 6.

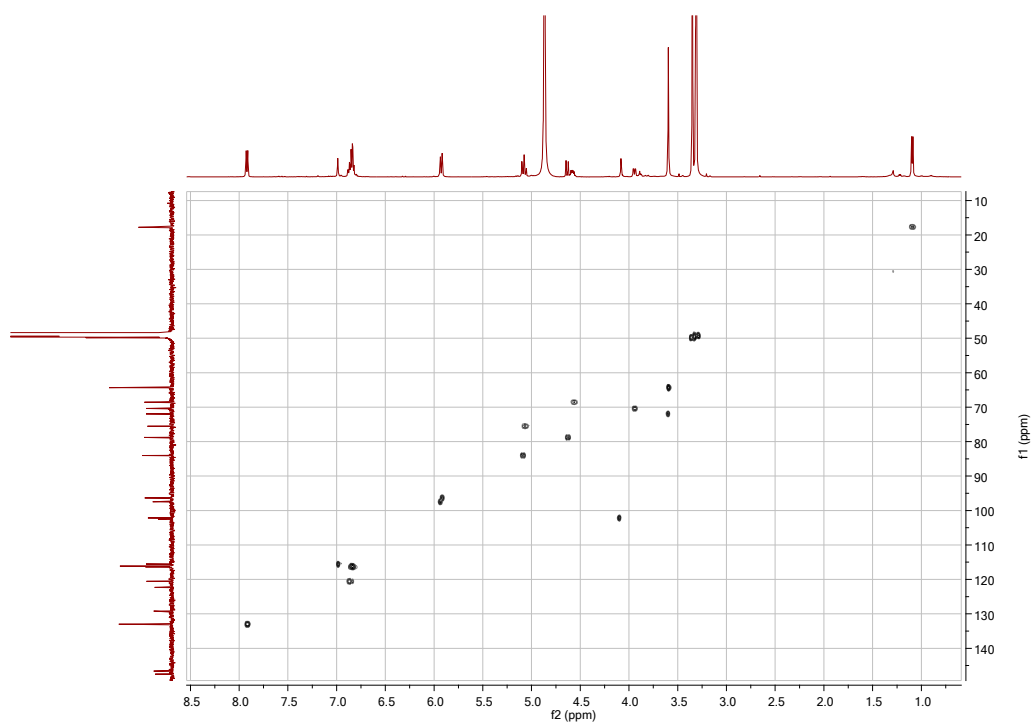


Figure S42. HSQC spectrum ( $\text{CD}_3\text{OD}$ , 500 MHz) of compound **6**.

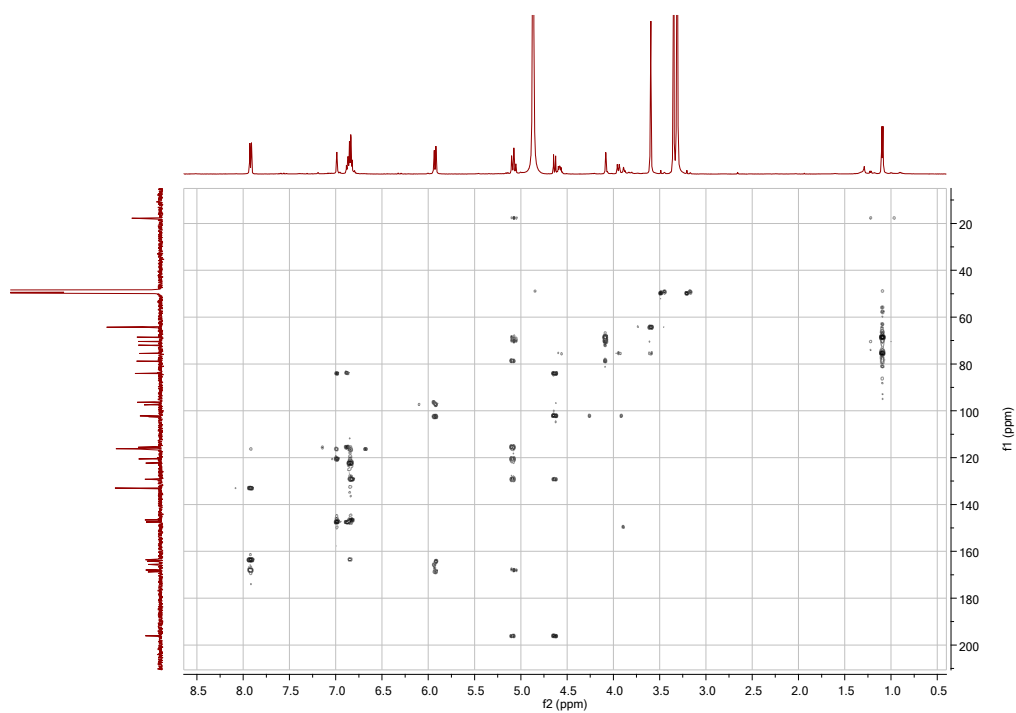


Figure S43. HMBC spectrum ( $\text{CD}_3\text{OD}$ , 500 MHz) of compound **6**.

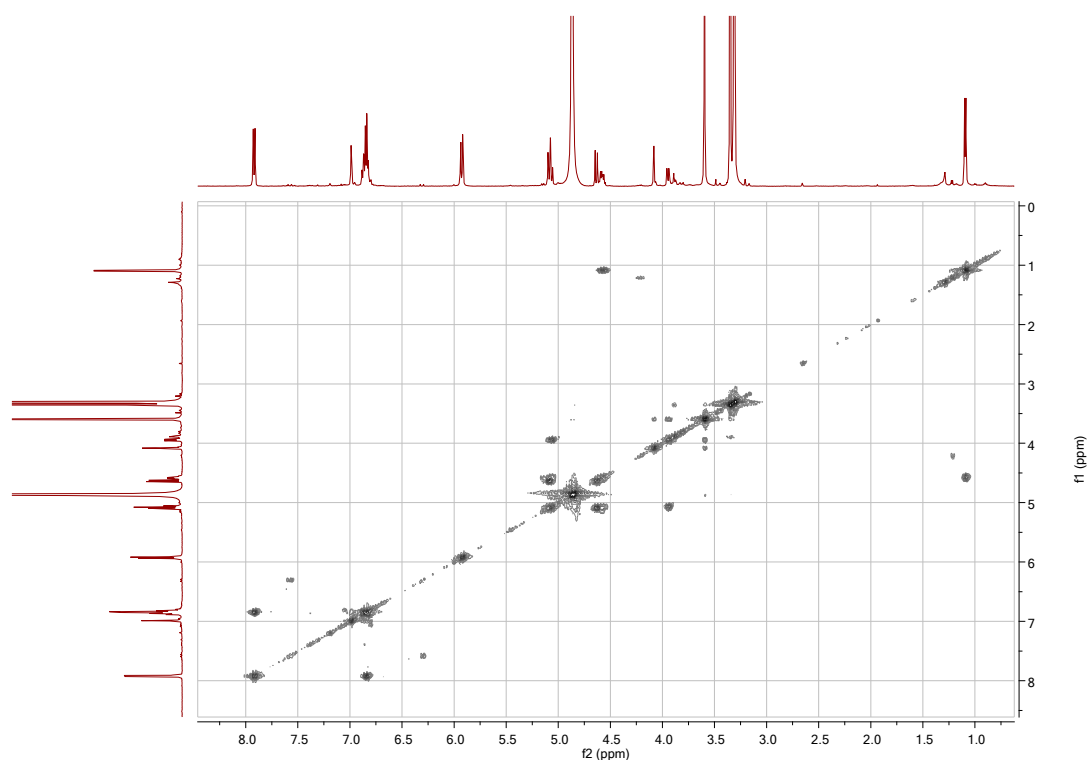


Figure S44.  $^1\text{H}$ - $^1\text{H}$  COSY spectrum ( $\text{CD}_3\text{OD}$ , 500 MHz) of compound 6.

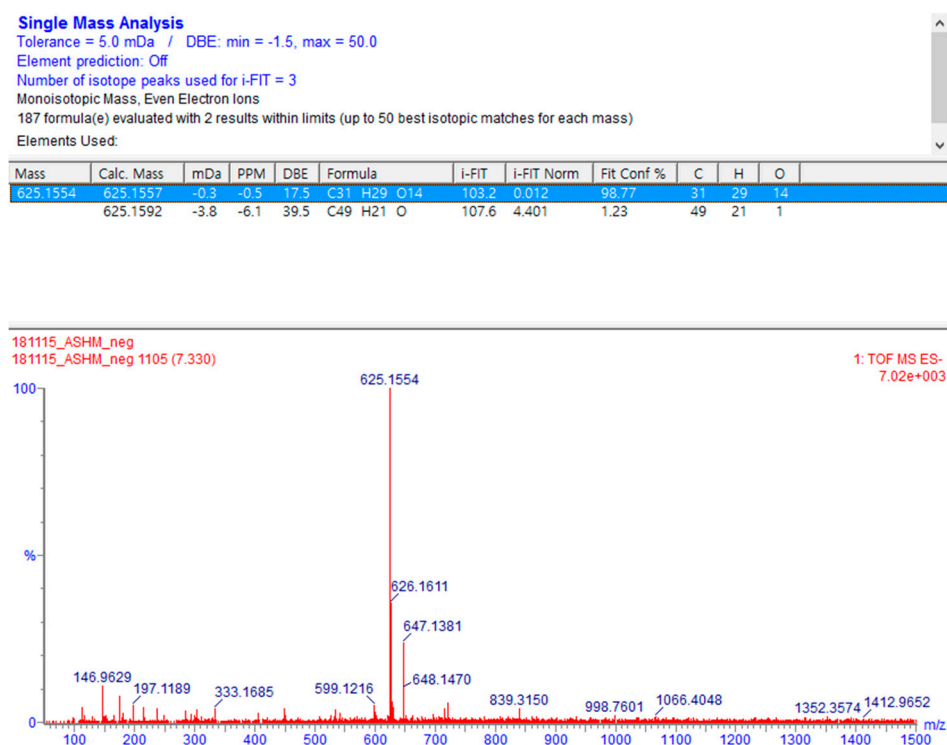


Figure S45. HR-ESI-MS of compound 7.

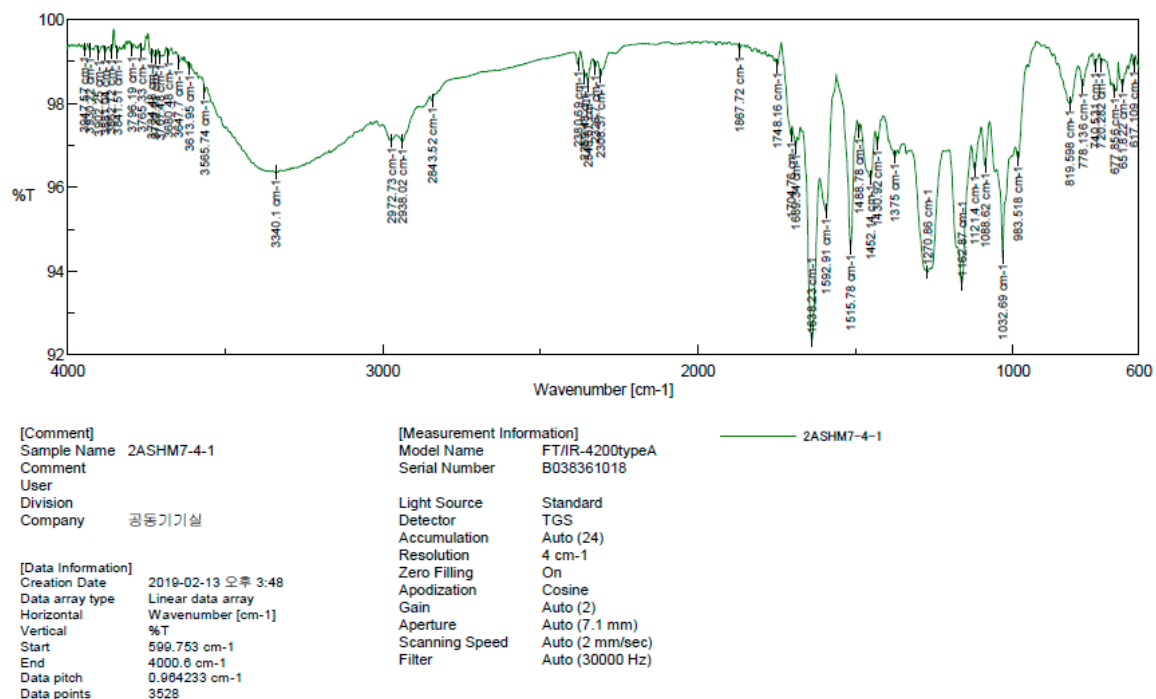


Figure S46. IR spectrum of compound 7.

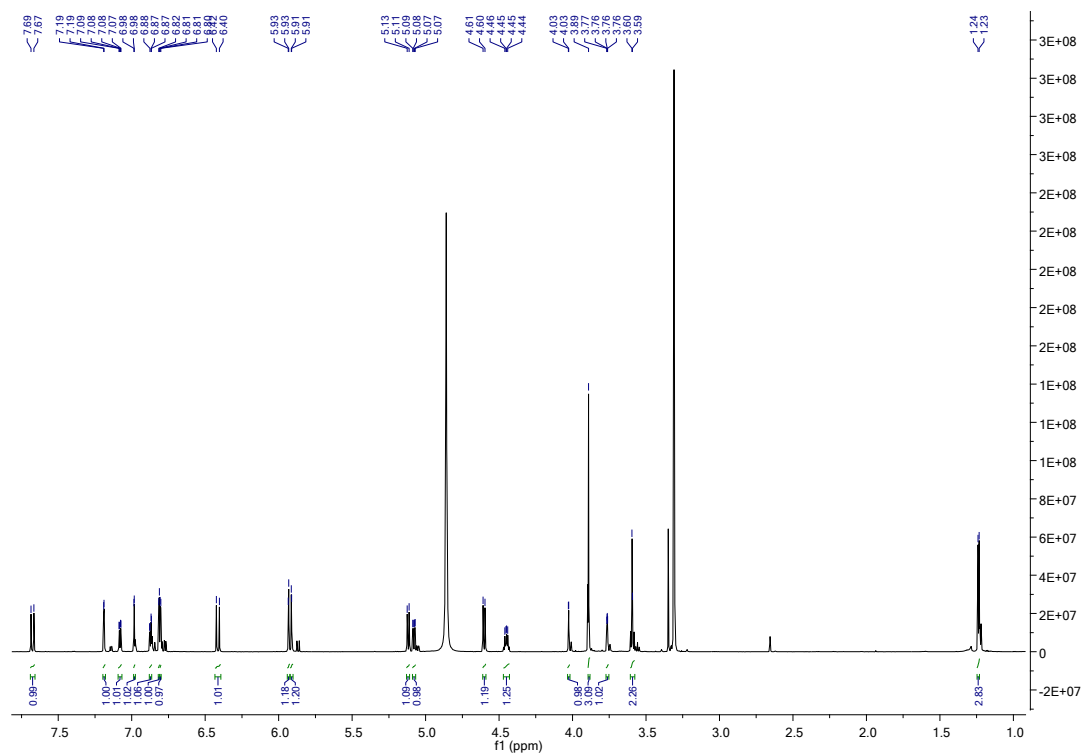


Figure S47.  $^1\text{H}$  NMR spectrum ( $\text{CD}_3\text{OD}$ , 800 MHz) of compound 7.

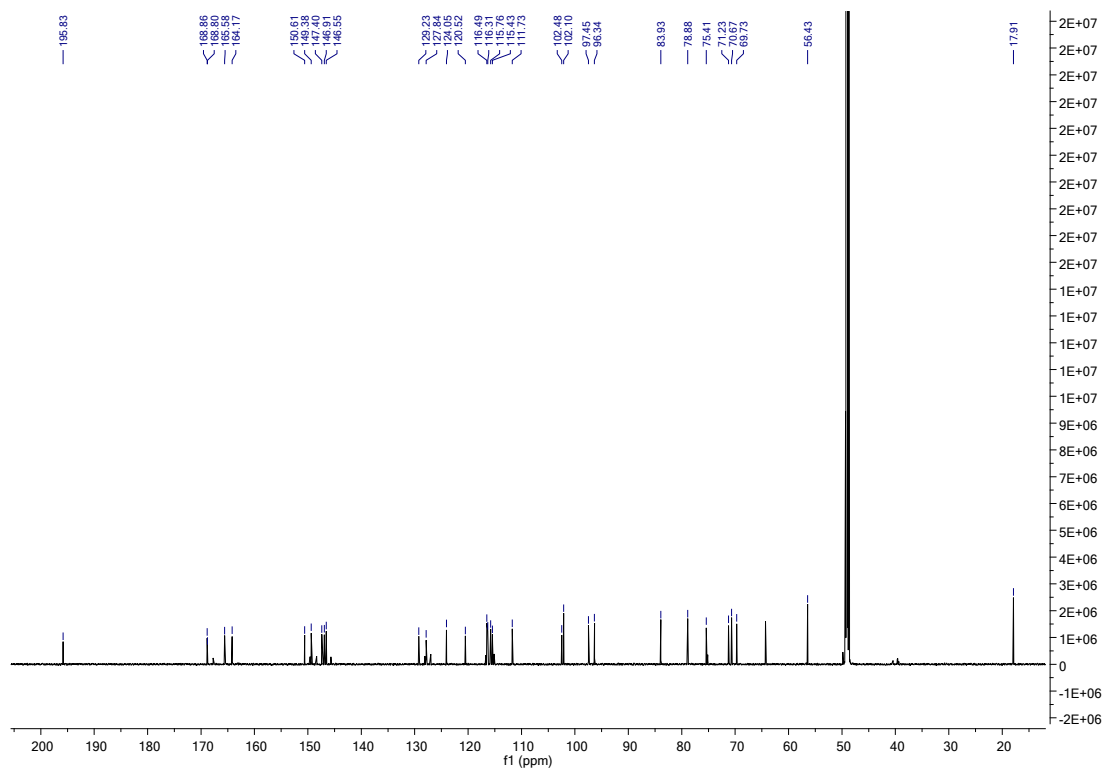


Figure S48.  $^{13}\text{C}$  NMR spectrum ( $\text{CD}_3\text{OD}$ , 200 MHz) of compound 7.

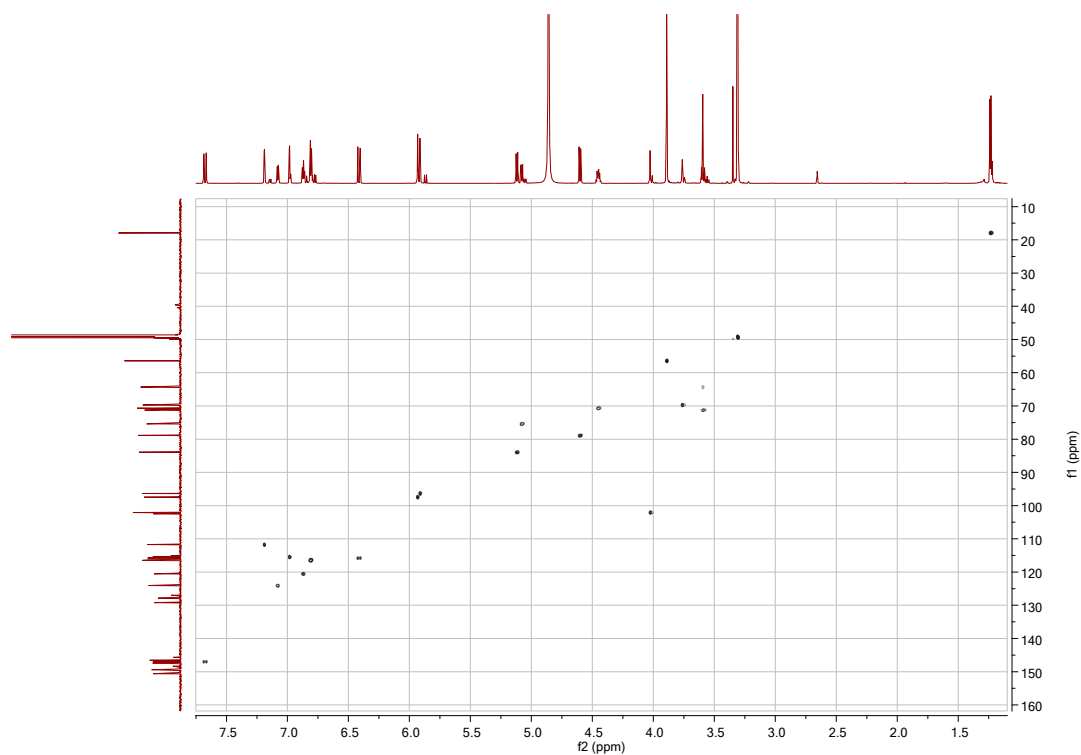


Figure S49. HSQC spectrum ( $\text{CD}_3\text{OD}$ , 800 MHz) of compound 7.

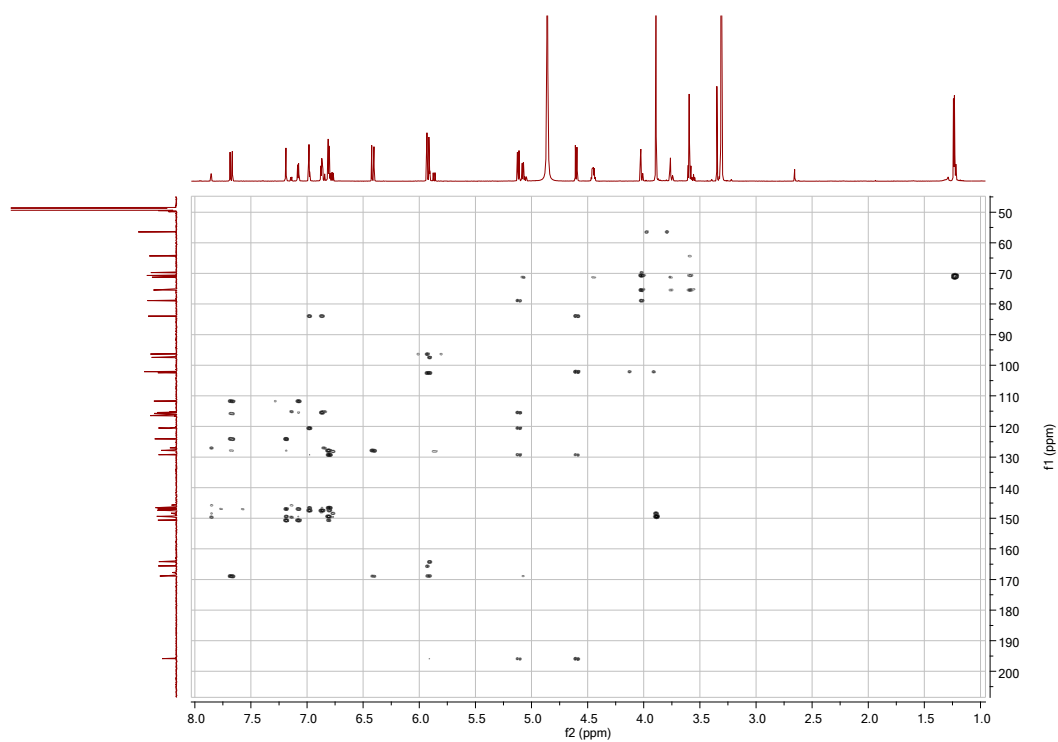


Figure S50. HMBC spectrum ( $\text{CD}_3\text{OD}$ , 800 MHz) of compound **7**.

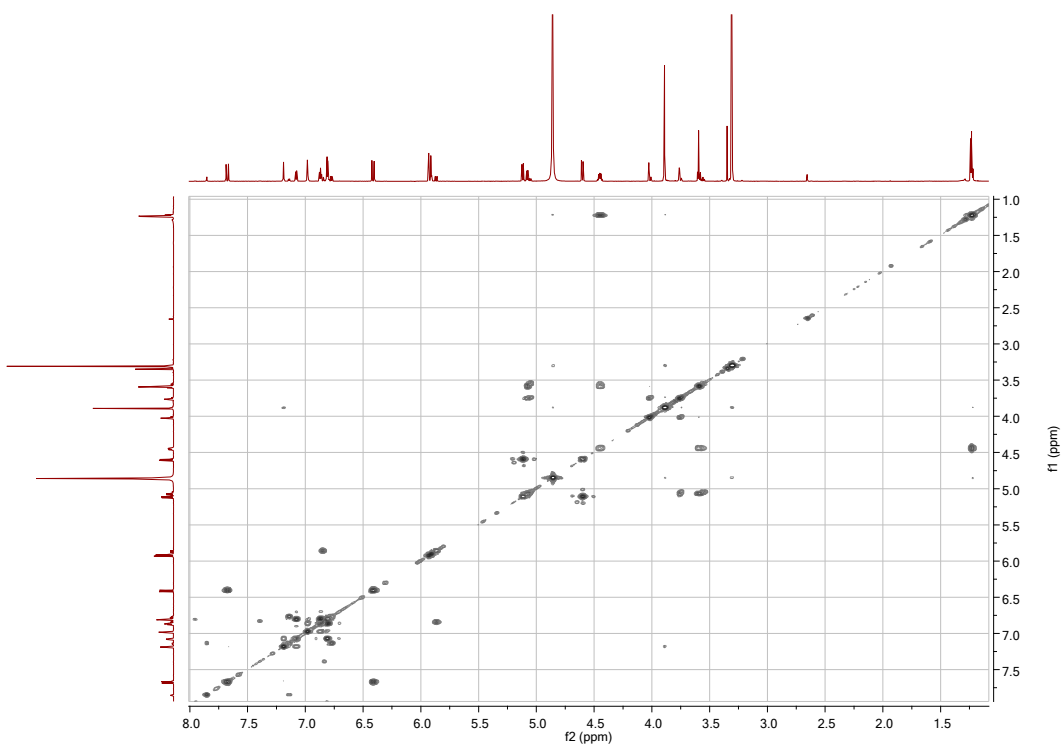


Figure S51.  $^1\text{H}$ - $^1\text{H}$  COSY spectrum ( $\text{CD}_3\text{OD}$ , 800 MHz) of compound **7**.

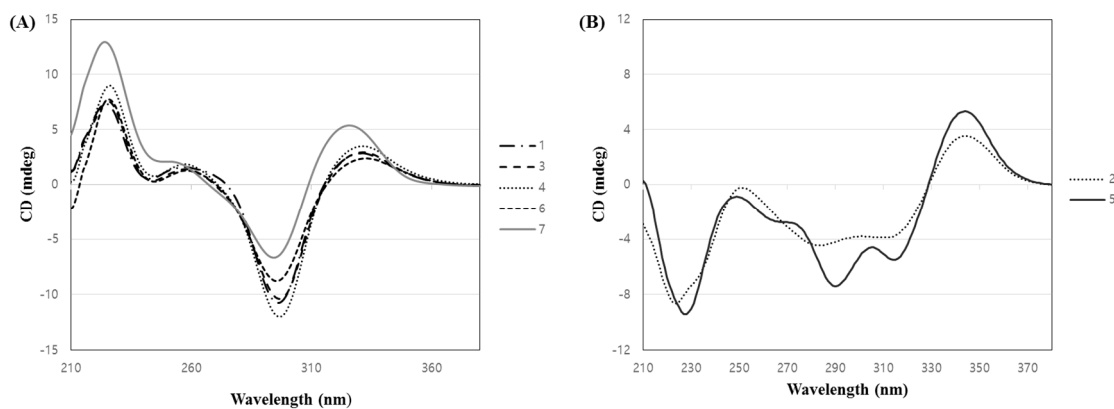


Figure S52. Experimental circular dichroism (ECD) spectra of compounds 1–7. (A) compounds 1, 3, 4, 6 and 7; (B) compounds 2 and 5

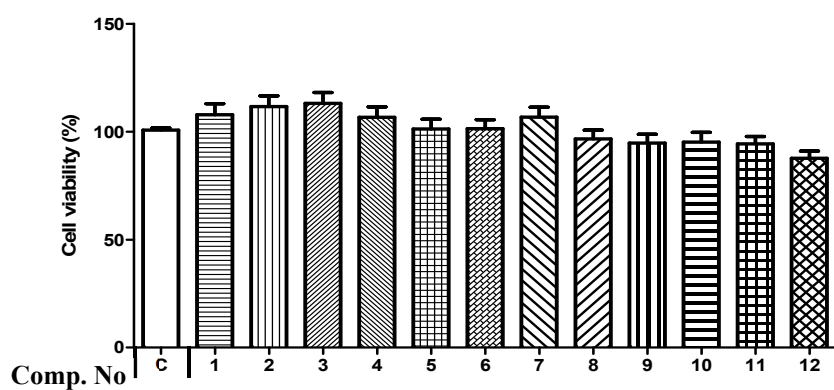


Figure S53. Cytotoxicity of compounds 1–12 in HT22 cells. The compounds were treated at 20  $\mu$ M for 24 h, the cytotoxicity was calculated compared with control group.

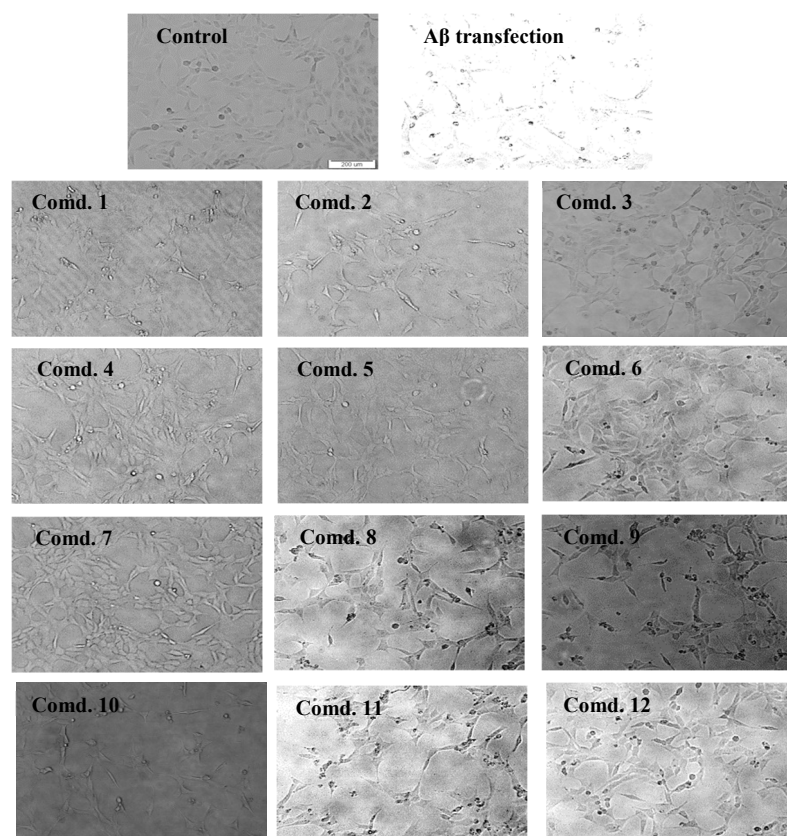


Figure S54. Cell morphology of HT22 cells treated with compounds **1–12** after pEGFP-C1/A $\beta_{1-42}$  plasmid transfection. The cells were transfected with A $\beta_{1-42}$  plasmid using Lipofectamine for 10 h. The transfected cells were exposed to test compound at 20  $\mu$ M for 24 h.



Table S1. BLAST results of *M. seguinii*.

GenBank BLAST Report								
<i>rbcL</i> (703 bp)			<i>matK</i> (1,221 bp)			<i>trnH-psbA</i> (495 bp)		
<i>Myrsine hermogenesii</i>			<i>Ardisia guianensis</i>			<i>Myrsine umbellata</i>		
1299 <sup>i</sup>	100% <sup>ii</sup>	MG718225.1 <sup>iii</sup>	2224 <sup>i</sup>	99% <sup>ii</sup>	JF416280.1 <sup>iii</sup>	891 <sup>i</sup>	99% <sup>ii</sup>	KF421096.1 <sup>iii</sup>
<i>Myrsine coriacea</i>			<i>Myrsine africana</i>			<i>Myrsine umbellata</i>		
1293 <sup>i</sup>	99% <sup>ii</sup>	Z80204.1 <sup>iii</sup>	2196 <sup>i</sup>	99% <sup>ii</sup>	AJ429290.1 <sup>iii</sup>	891 <sup>i</sup>	99% <sup>ii</sup>	KF421094.1 <sup>iii</sup>
<i>Ardisia guianensis</i>			<i>Ardisia polysticta</i>			<i>Myrsine seguinii</i>		
1291 <sup>i</sup>	100% <sup>ii</sup>	KF981277.1 <sup>iii</sup>	2174 <sup>i</sup>	99% <sup>ii</sup>	KC465962.1 <sup>iii</sup>	880 <sup>i</sup>	99% <sup>ii</sup>	MF926115.2 <sup>iii</sup>
<i>trnL-trnF</i> (544 bp)			ITS (685 bp)					
<i>Myrsine africana</i>			<i>Myrsine seguinii</i>					
1000 <sup>i</sup>	99% <sup>ii</sup>	AJ430880.1 <sup>iii</sup>	1190 <sup>i</sup>	98% <sup>ii</sup>	KP092669.1 <sup>iii</sup>			
<i>Ardisia polysticta</i>			<i>Myrsine seguinii</i>					
985 <sup>i</sup>	99% <sup>ii</sup>	KC465962.1 <sup>iii</sup>	1188 <sup>i</sup>	98% <sup>ii</sup>	MF926239.1 <sup>iii</sup>			
<i>Ardisia crenata</i> var. <i>bicolor</i>			<i>Myrsine chathamica</i>					
977 <sup>i</sup>	99% <sup>ii</sup>	MF926169.2 <sup>iii</sup>	1181 <sup>i</sup>	98% <sup>ii</sup>	EF660539.1 <sup>iii</sup>			

<sup>i</sup>) Maximum match Scores, <sup>ii</sup>) Maximum similarities. <sup>iii</sup>) Accession Num.