

## Supplementary Materials

# ***In Vitro* Anticancer and Cancer-Preventive Activity of New Triterpene Glycosides from the Far Eastern Starfish *Solaster pacificus***

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## List

**Figure S1.** HRESIMS spectrum of pacificusoside D (**1**).

**Figure S2.** IR spectrum of pacificusoside D (**1**) in KBr.

**Figure S3.**  $^1\text{H}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S4.** Expansion №1 of  $^1\text{H}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S5.** Expansion №2 of  $^1\text{H}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S6.** Expansion №3 of  $^1\text{H}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S7.**  $^{13}\text{C}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S8.** Expansion №1 of  $^{13}\text{C}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S9.** Expansion №2 of  $^{13}\text{C}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S10.** Expansion №3 of  $^{13}\text{C}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S11.**  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S12.** HSQC spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S13.** HMBC spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S14.** ROESY spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S15.** UV spectrum of pacificusoside D (**1**) in MeOH.

**Figure S16.** HRESIMS spectrum of pacificusoside E (**2**).

**Figure S17.** IR spectrum of pacificusoside E (**2**) in KBr.

**Figure S18.**  $^1\text{H}$ -NMR spectrum of pacificusoside E (**2**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S19.**  $^{13}\text{C}$ -NMR spectrum of pacificusoside E (**2**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S20.**  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of pacificusoside E (**2**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S21.** HSQC spectrum of pacificusoside E (**2**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S22.** HMBC spectrum of pacificusoside E (**2**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S23.** ROESY spectrum of pacificusoside E (**2**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S24.** HRESIMS spectrum of pacificusoside F (**3**).

**Figure S25.** IR spectrum of pacificusoside F (**3**) in KBr.

**Figure S26.** <sup>1</sup>H-NMR spectrum of pacificusoside F (**3**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S27.** <sup>13</sup>C-NMR spectrum of pacificusoside F (**3**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S28.** <sup>1</sup>H-<sup>1</sup>H COSY spectrum of pacificusoside F (**3**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S29.** HSQC spectrum of pacificusoside F (**3**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S30.** HMBC spectrum of pacificusoside F (**3**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S31.** ROESY spectrum of pacificusoside F (**3**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S32.** HRESIMS spectrum of pacificusoside G (**5**).

**Figure S33.** IR spectrum of pacificusoside G (**5**) in KBr.

**Figure S34.** <sup>1</sup>H-NMR spectrum of pacificusoside G (**5**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S35.** Expansion №1 of <sup>1</sup>H-NMR spectrum of pacificusoside G (**5**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S36.** Expansion №2 of <sup>1</sup>H-NMR spectrum of pacificusoside G (**5**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S37.** Expansion №3 of <sup>1</sup>H-NMR spectrum of pacificusoside G (**5**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S38.** <sup>13</sup>C-NMR spectrum of pacificusoside G (**5**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S39.** Expansion №1 of <sup>13</sup>C-NMR spectrum of pacificusoside G (**5**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S40.** Expansion №2 of <sup>13</sup>C-NMR spectrum of pacificusoside G (**5**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S41.** Expansion №3 of <sup>13</sup>C-NMR spectrum of pacificusoside G (**5**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S42.** UV spectrum of pacificusoside G (**5**) in MeOH.

**Figure S43.** <sup>1</sup>H-<sup>1</sup>H COSY spectrum of pacificusoside G (**5**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S44.** HSQC spectrum of pacificusoside G (**5**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S45.** HMBC spectrum of pacificusoside G (**5**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S46.** ROESY spectrum of pacificusoside G (**5**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S47.** HRESIMS spectrum of pacificusoside H (**6**).

**Figure S48.** IR spectrum of pacificusoside H (**6**) in KBr.

**Figure S49.** <sup>1</sup>H-NMR spectrum of pacificusoside H (**6**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S50.** <sup>13</sup>C-NMR spectrum of pacificusoside H (**6**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S51.** <sup>1</sup>H-<sup>1</sup>H COSY spectrum of pacificusoside H (**6**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S52.** HSQC spectrum of pacificusoside H (**6**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S53.** HMBC spectrum of pacificusoside H (**6**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S54.** ROESY spectrum of pacificusoside H (**6**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S55.** HRESIMS spectrum of pacificusoside I (**7**).

**Figure S56.** IR spectrum of pacificusoside I (**7**) in KBr.

**Figure S57.** <sup>1</sup>H-NMR spectrum of pacificusoside I (**7**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S58.** <sup>13</sup>C-NMR spectrum of pacificusoside I (**7**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S59.** <sup>1</sup>H-<sup>1</sup>H COSY spectrum of pacificusoside I (**7**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S60.** HSQC spectrum of pacificusoside I (**7**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S61.** HMBC spectrum of pacificusoside I (**7**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S62.** ROESY spectrum of pacificusoside I (**7**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S63.** HRESIMS spectrum of pacificusoside J (**8**).

**Figure S64.** IR spectrum of pacificusoside J (**8**) in KBr.

**Figure S65.** <sup>1</sup>H-NMR spectrum of pacificusoside J (**8**) in C<sub>5</sub>D<sub>5</sub>N.

**Figure S66.**  $^{13}\text{C}$ -NMR spectrum of pacificusoside J (**8**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S67.**  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of pacificusoside J (**8**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S68.** HSQC spectrum of pacificusoside J (**8**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S69.** HMBC spectrum of pacificusoside J (**8**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S70.** ROESY spectrum of pacificusoside J (**8**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S71.** HRESIMS spectrum of pacificusoside K (**9**).

**Figure S72.** IR spectrum of pacificusoside K (**9**) in KBr.

**Figure S73.**  $^1\text{H}$ -NMR spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S74.** Expansion №1 of  $^1\text{H}$ -NMR spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S75.** Expansion №2 of  $^1\text{H}$ -NMR spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S76.** Expansion №3 of  $^1\text{H}$ -NMR spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S77.**  $^{13}\text{C}$ -NMR spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S78.** Expansion №1 of  $^{13}\text{C}$ -NMR spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S79.** Expansion №2 of  $^{13}\text{C}$ -NMR spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S80.** Expansion №3 of  $^{13}\text{C}$ -NMR spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .

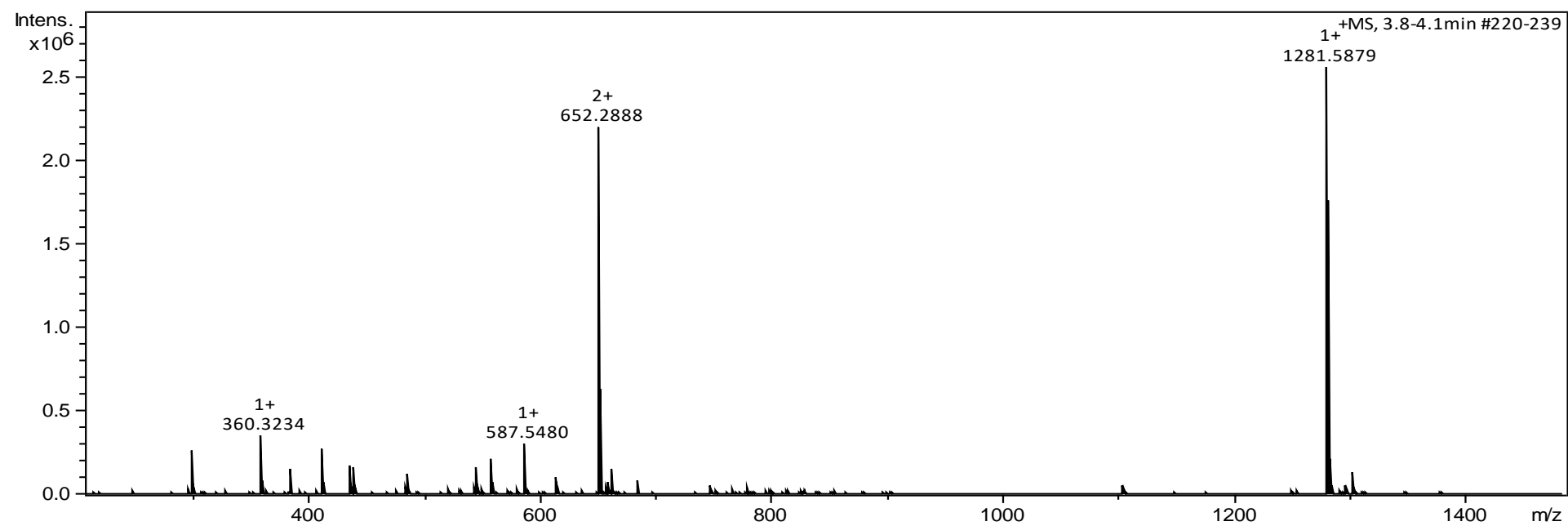
**Figure S81.**  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S82.** HSQC spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .

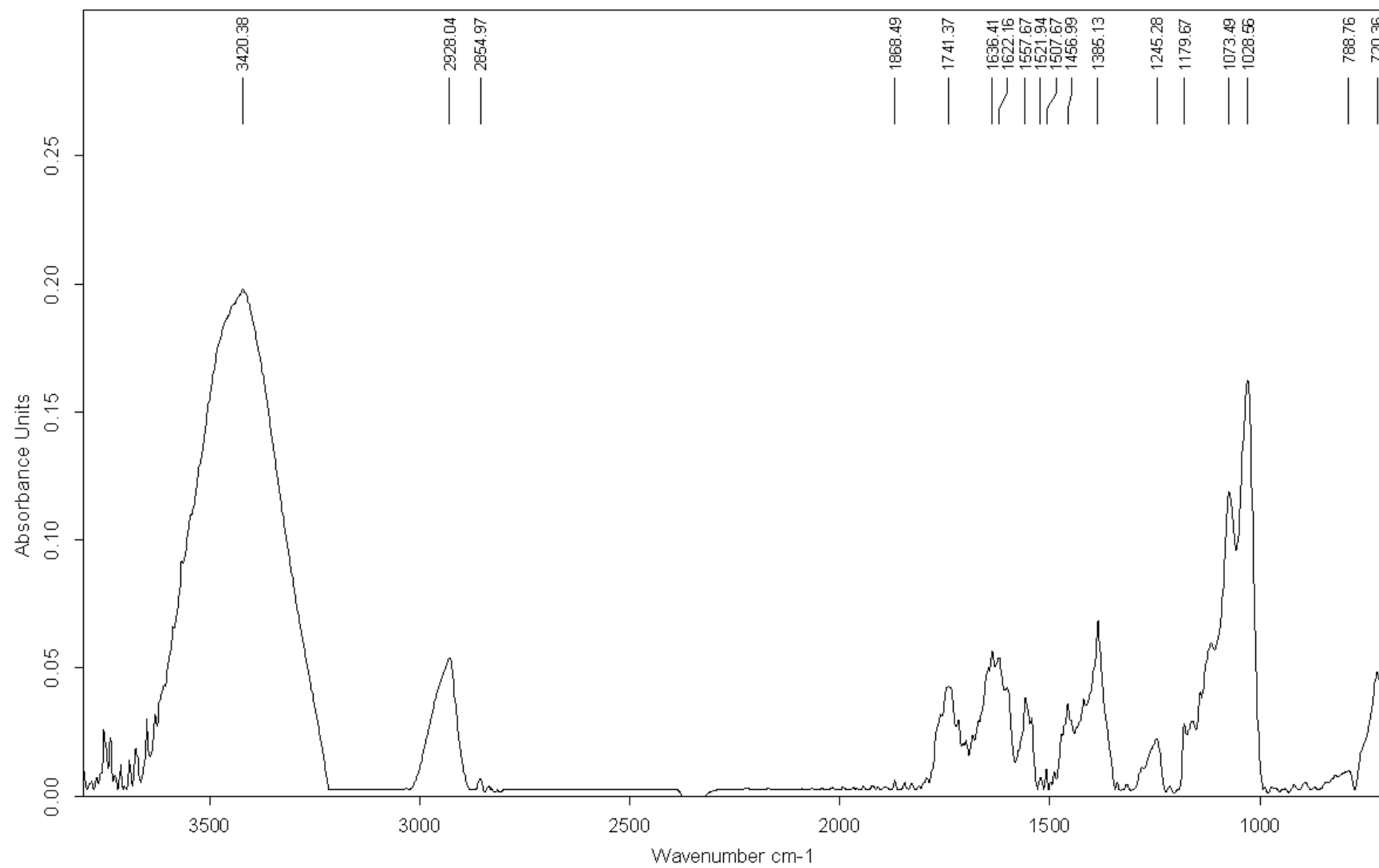
**Figure S83.** HMBC spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .

**Figure S84.** ROESY spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .

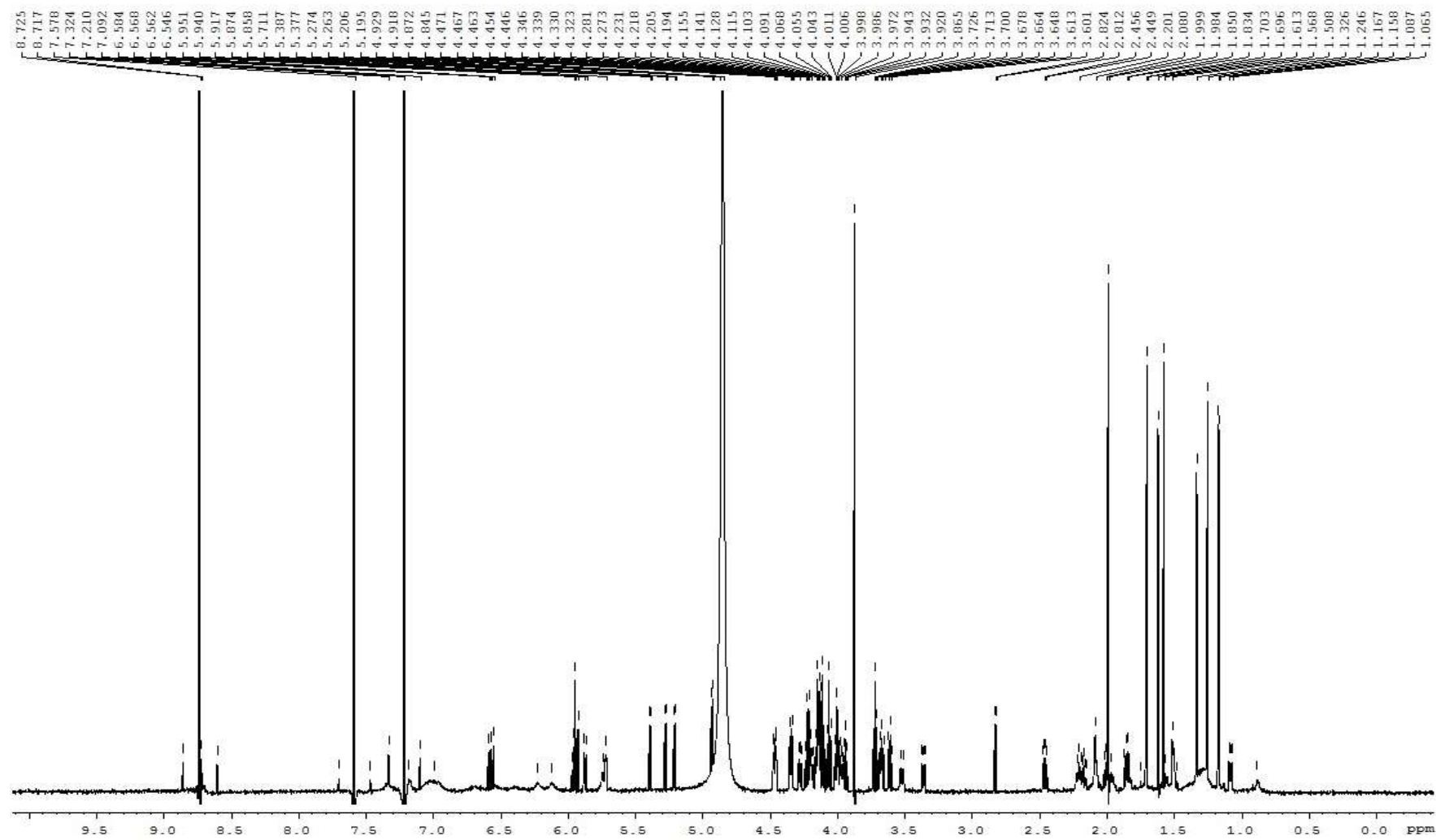
**Figure S1.** HRESIMS spectrum of pacificusoside D (**1**).



**Figure S2.** IR spectrum of pacificusoside D (**1**) in KBr.

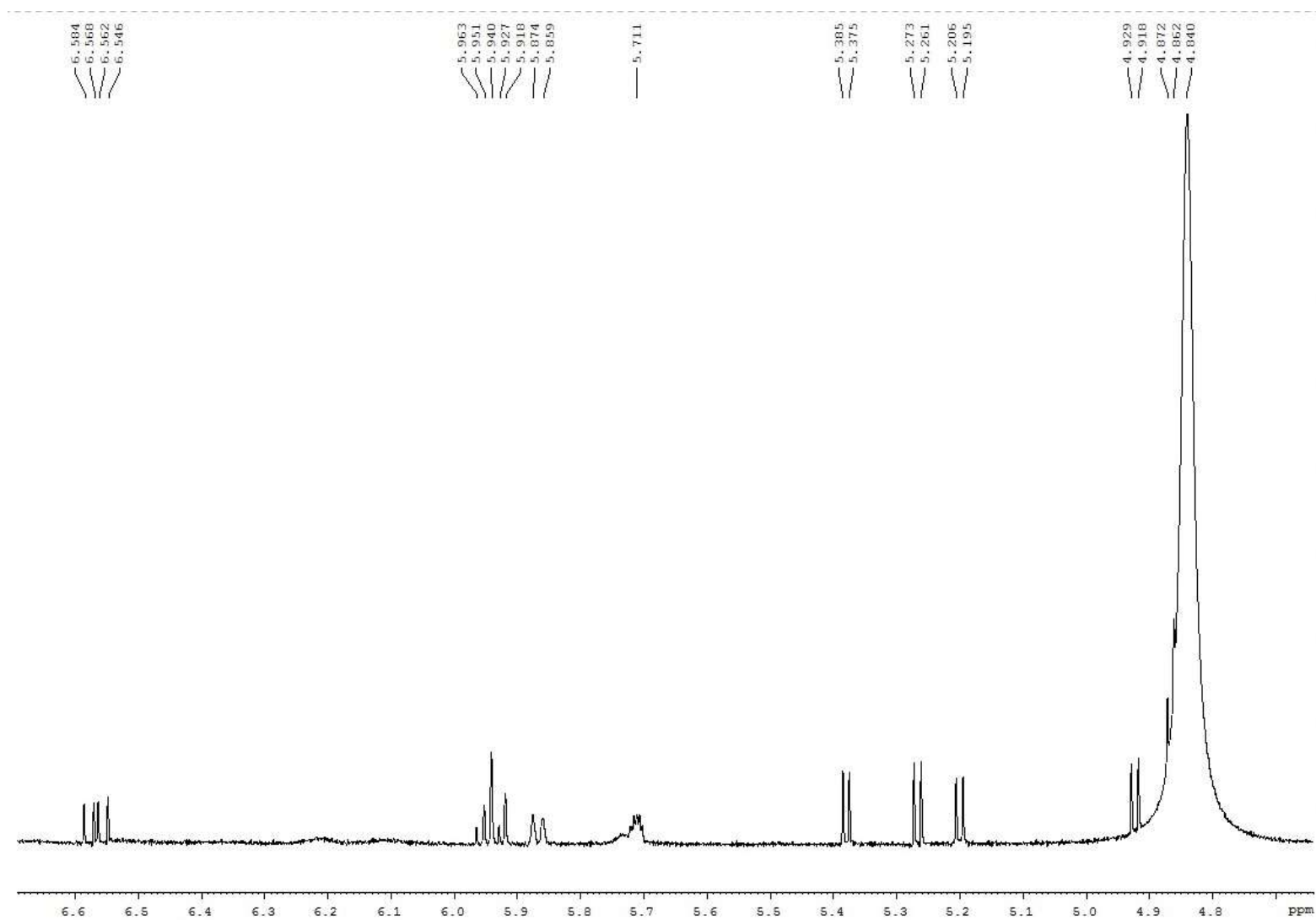


**Figure S3.**  $^1\text{H}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .

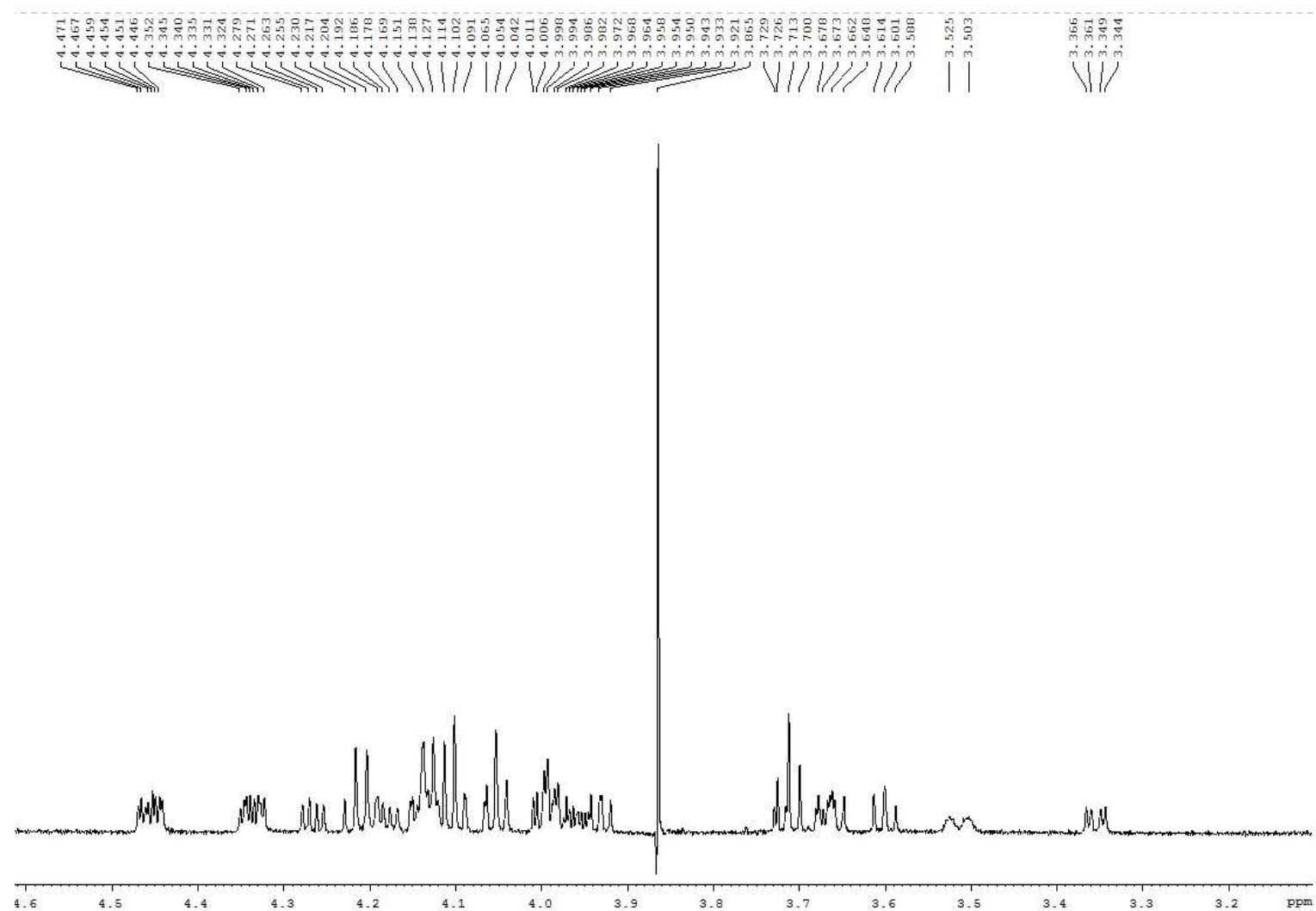




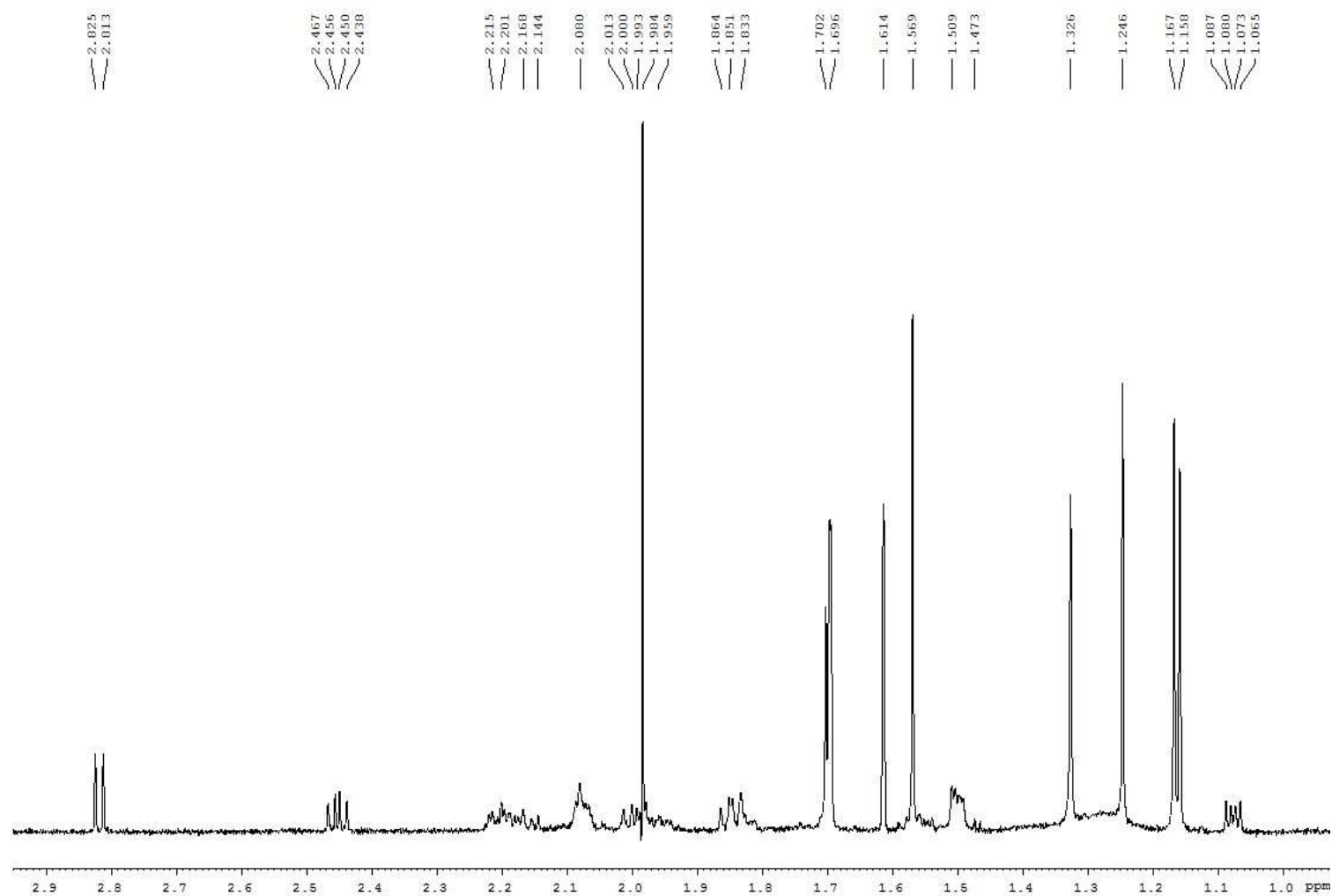
**Figure S4.** Expansion №1 of  $^1\text{H}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .



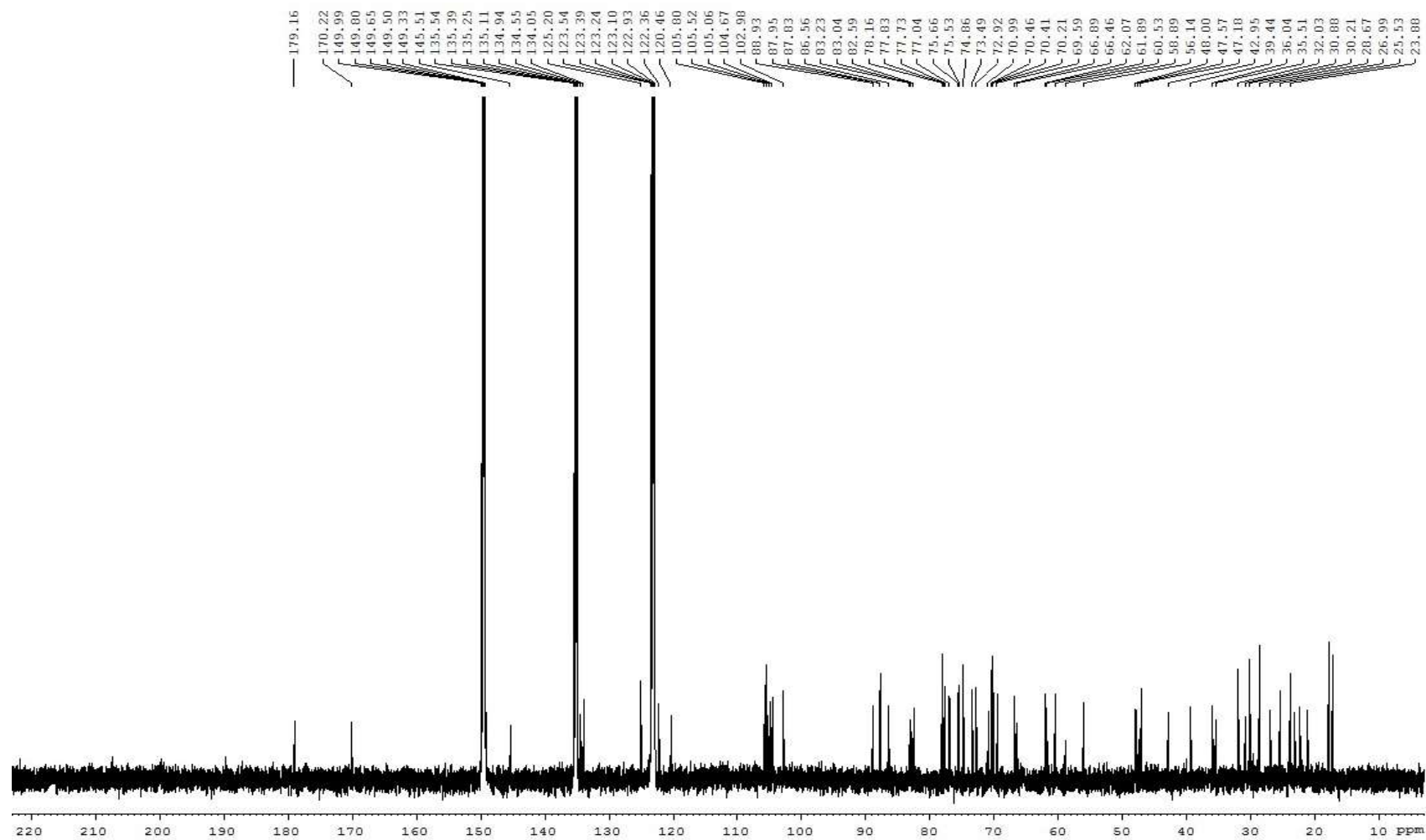
**Figure S5.** Expansion №2 of  $^1\text{H}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .



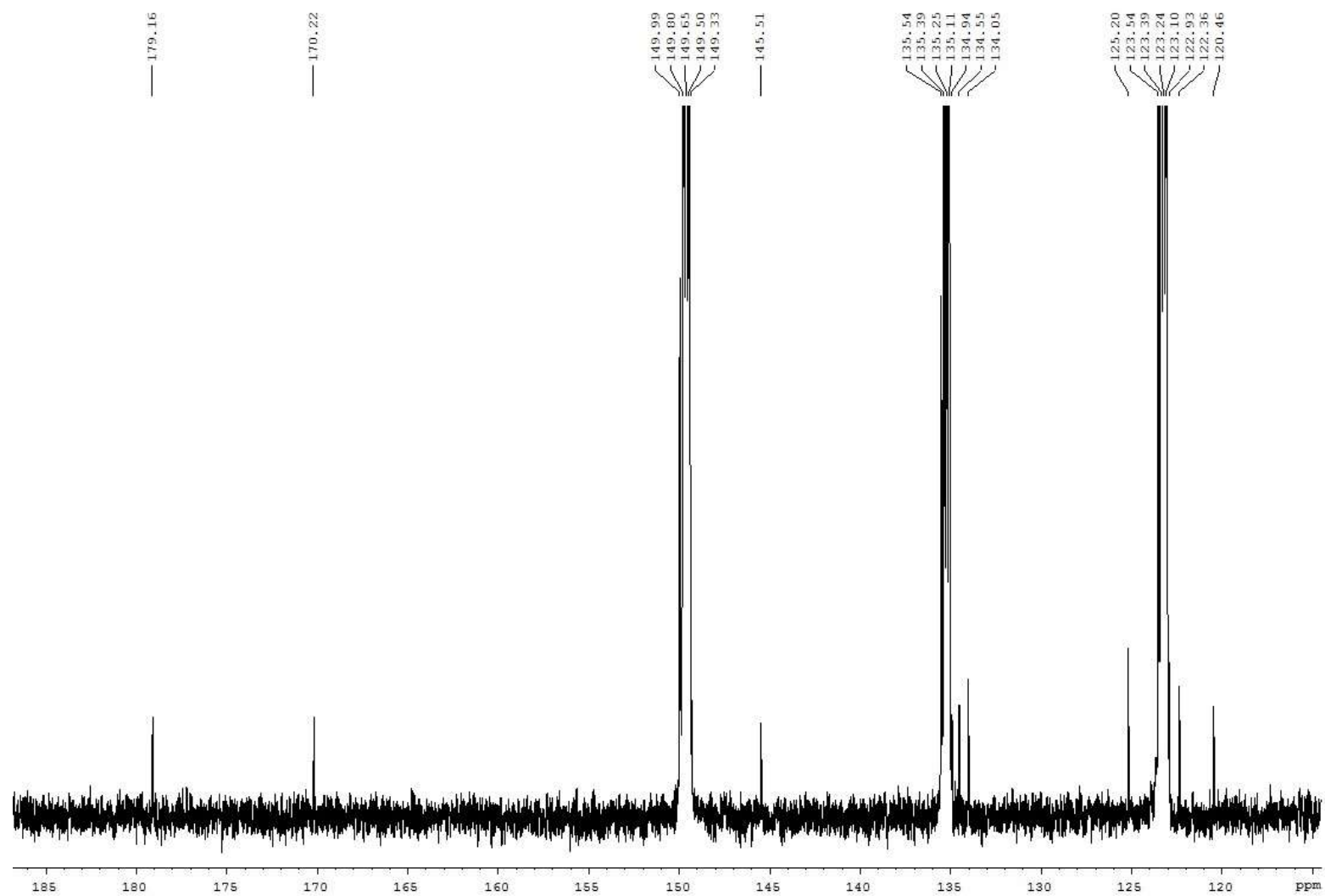
**Figure S6.** Expansion №3 of  $^1\text{H}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .



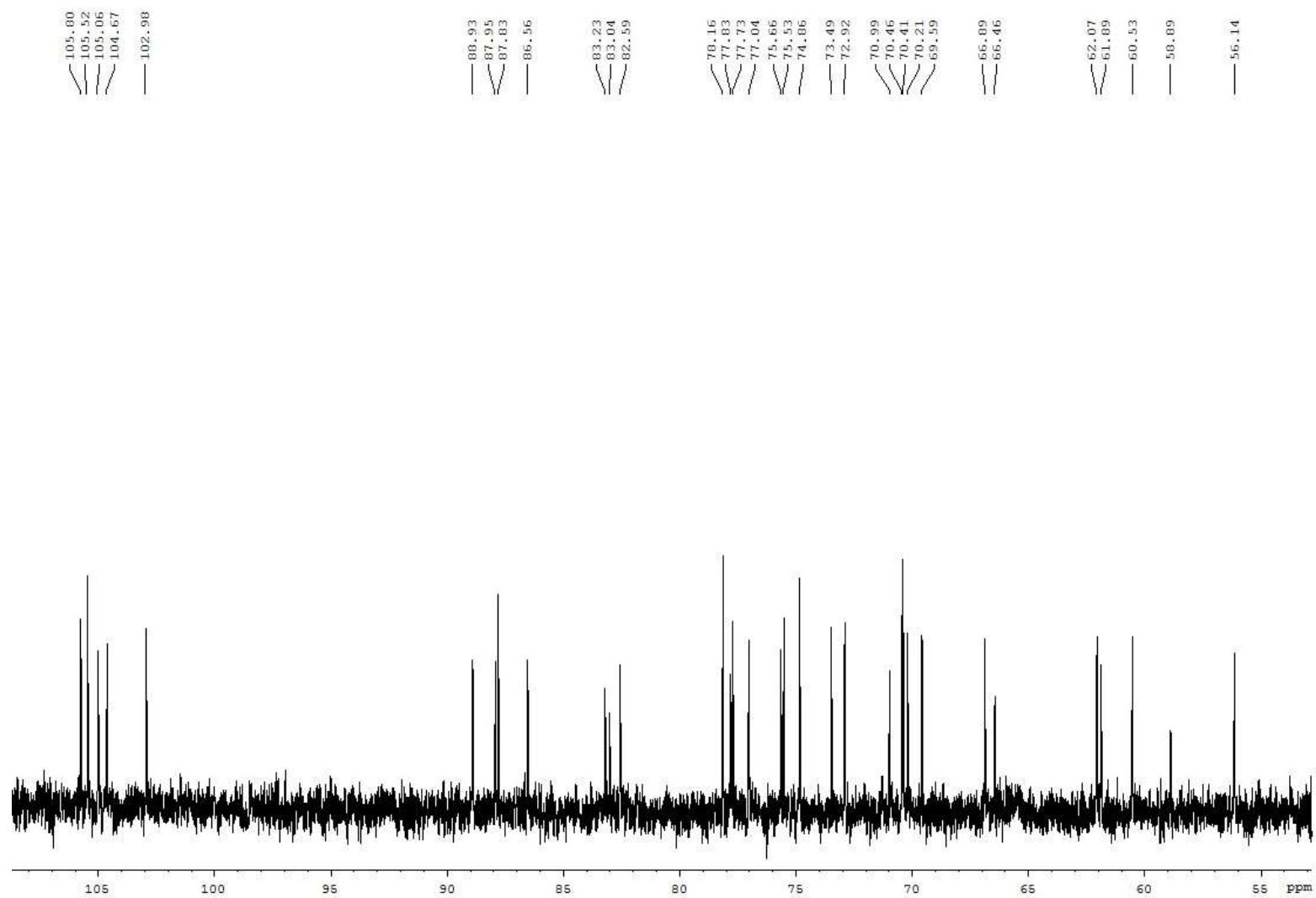
**Figure S7.**  $^{13}\text{C}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .



**Figure S8.** Expansion №1 of  $^{13}\text{C}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .



**Figure S9.** Expansion №2 of  $^{13}\text{C}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .



**Figure S10.** Expansion №3 of  $^{13}\text{C}$ -NMR spectrum of pacificusoside D (**1**) in  $\text{C}_5\text{D}_5\text{N}$ .

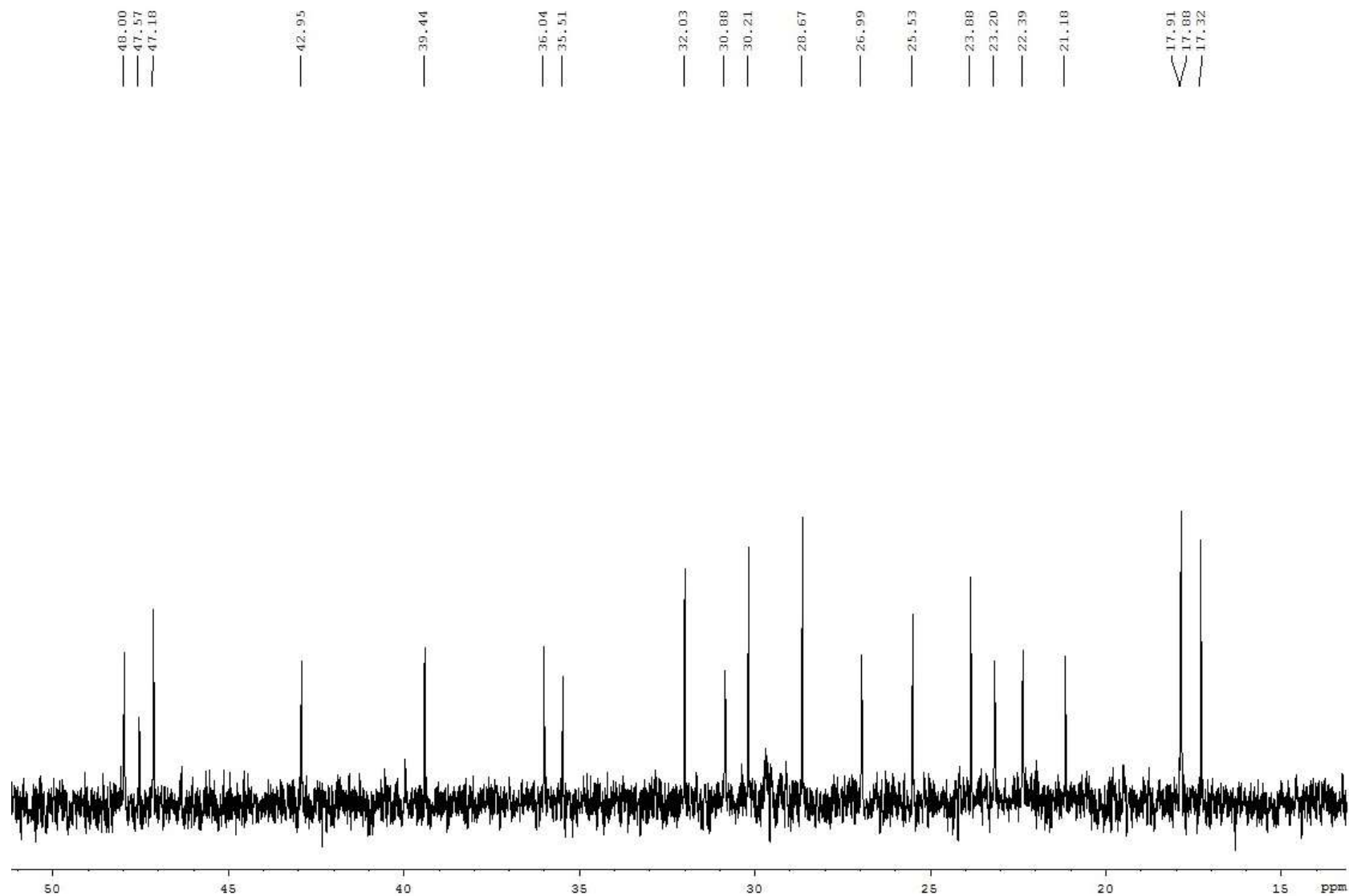
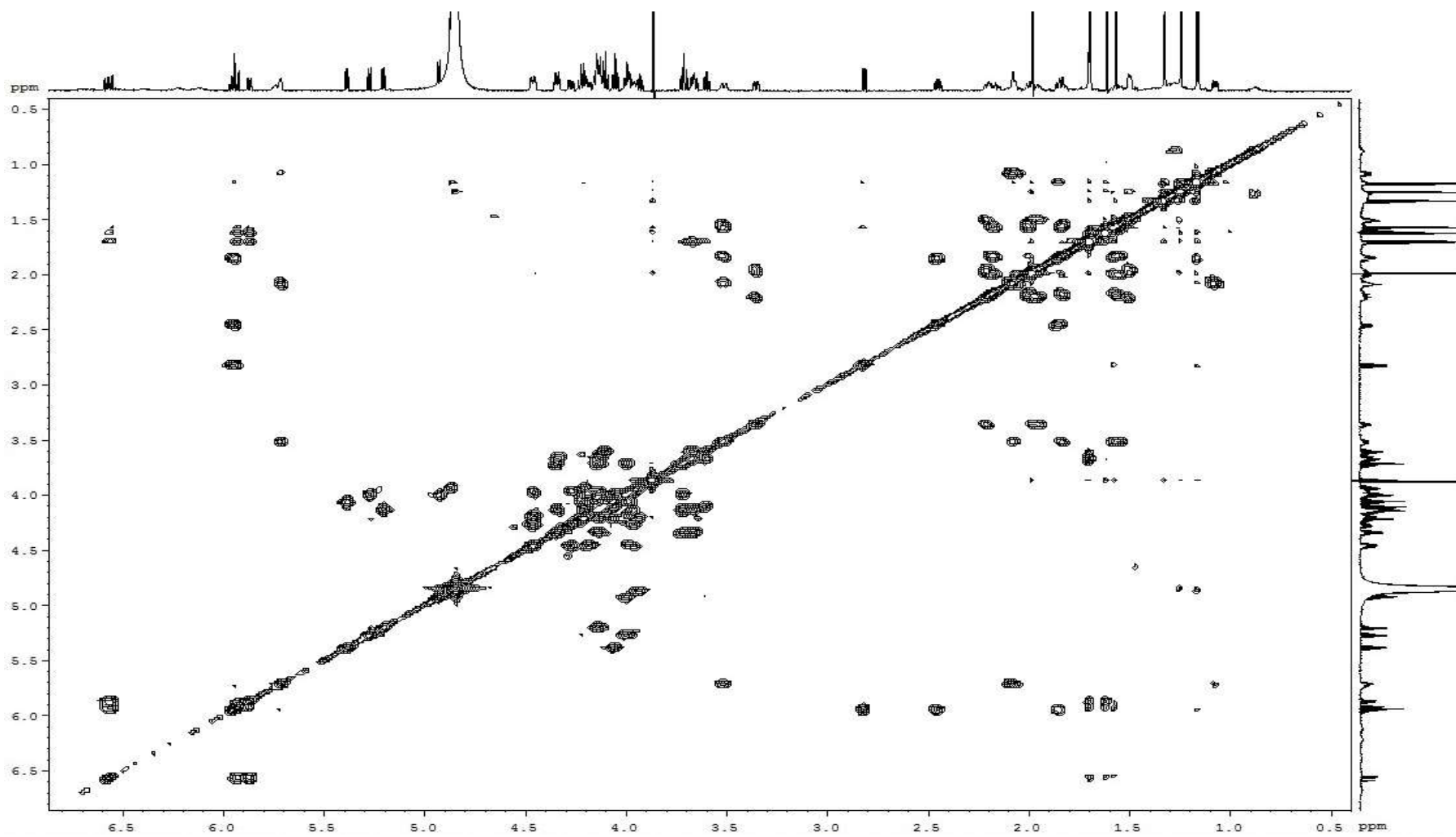
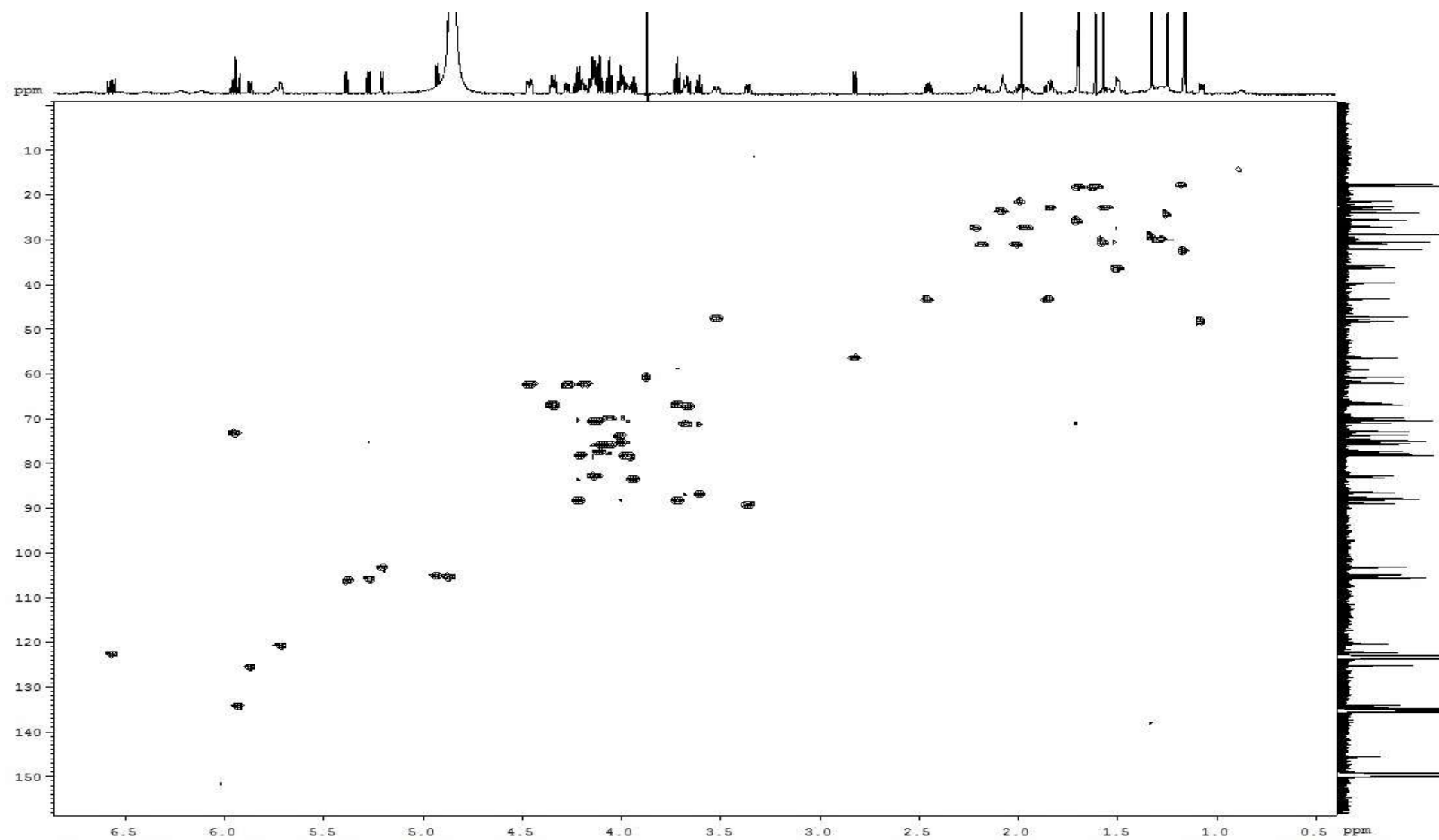


Figure S11.  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of pacificusoside D (1) in  $\text{C}_5\text{D}_5\text{N}$ .

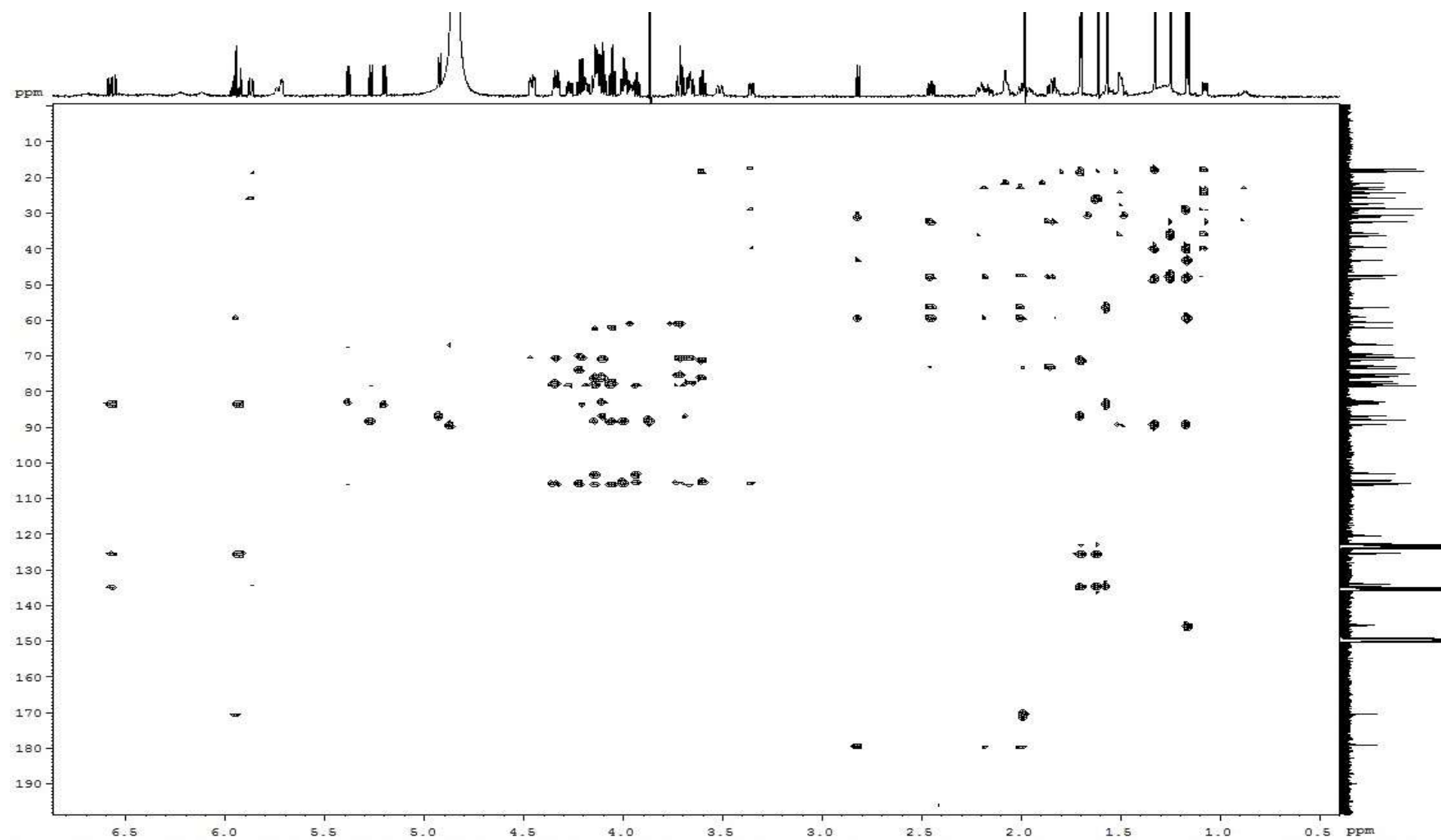




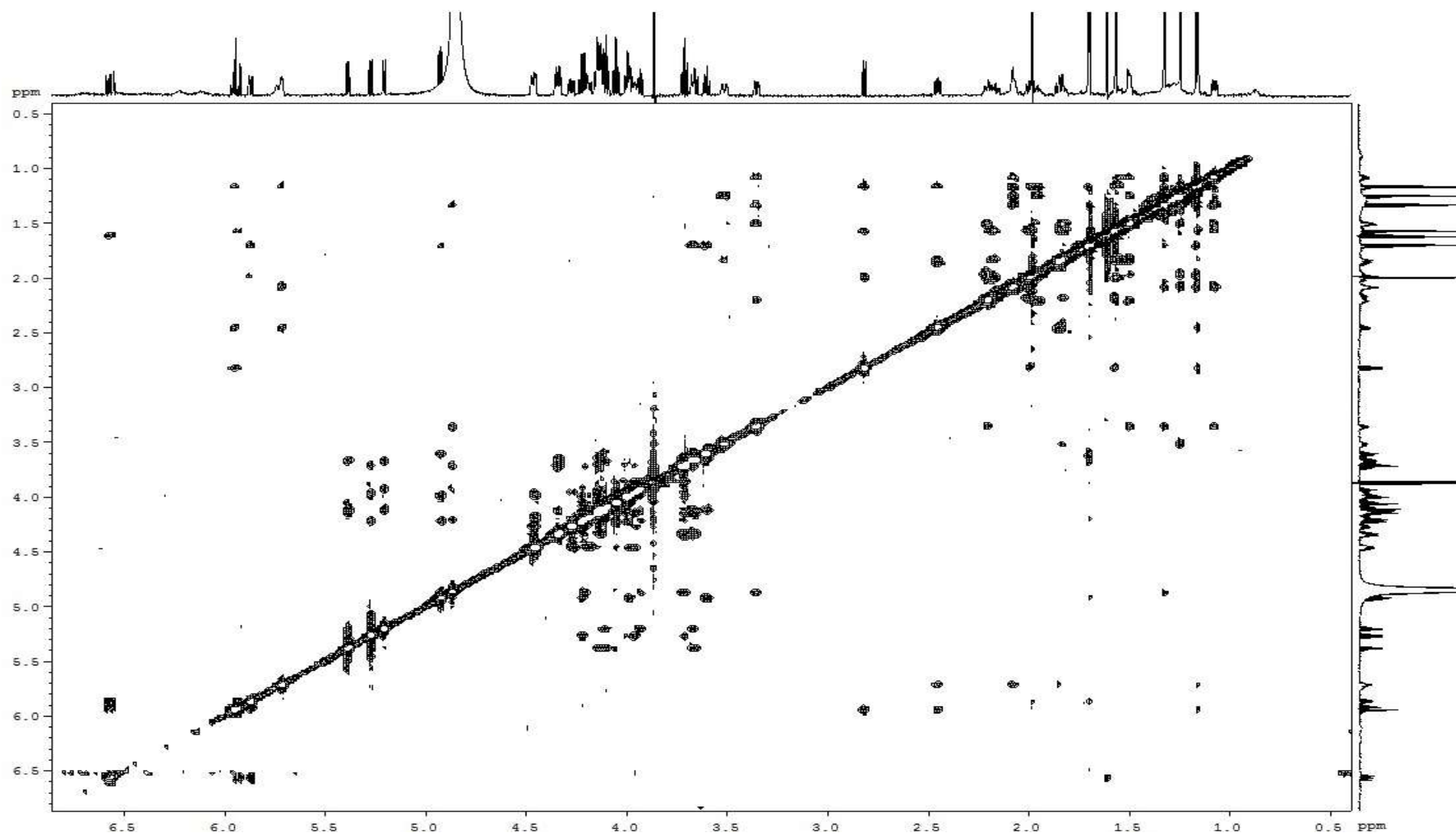
**Figure S12.** HSQC spectrum of pacificusoside D (1) in C<sub>5</sub>D<sub>5</sub>N.



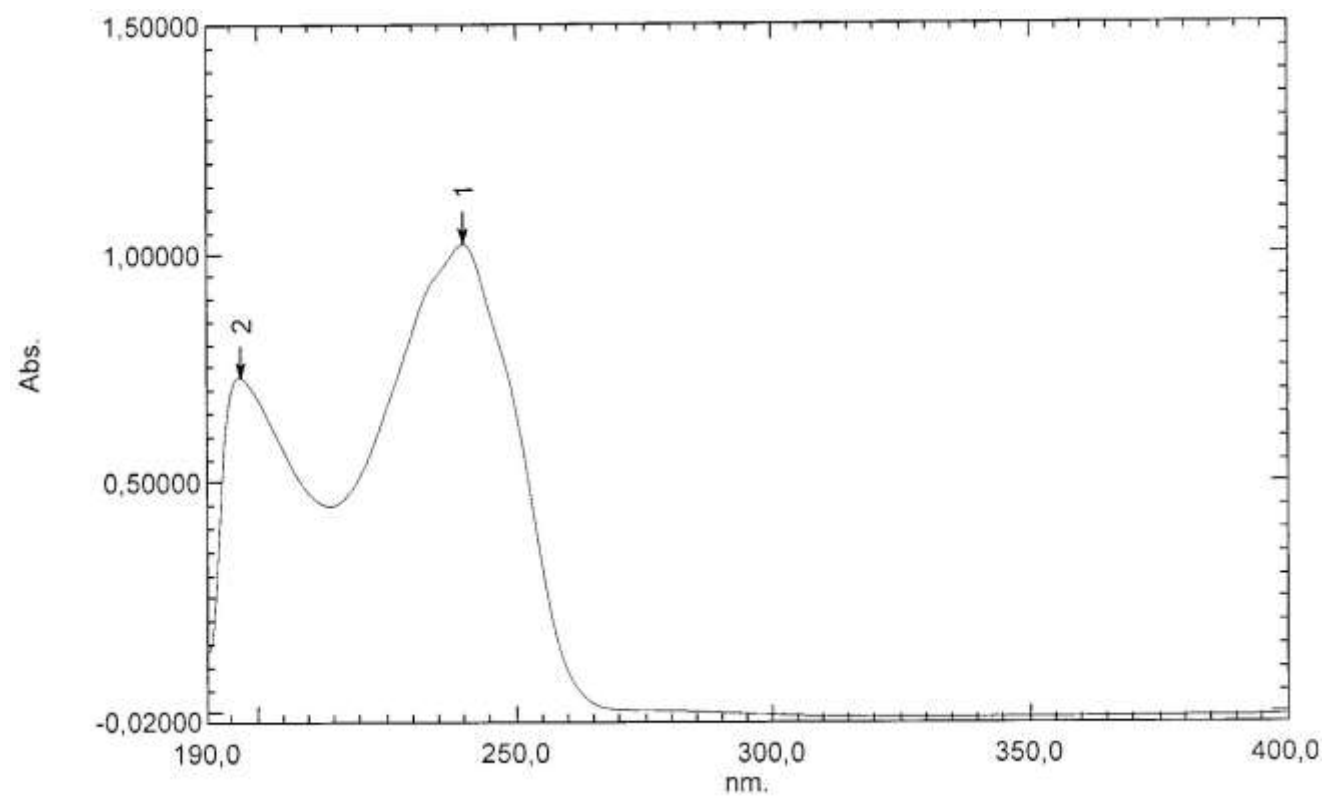
**Figure S13.** HMBC spectrum of pacificusoside D (1) in C<sub>5</sub>D<sub>5</sub>N.



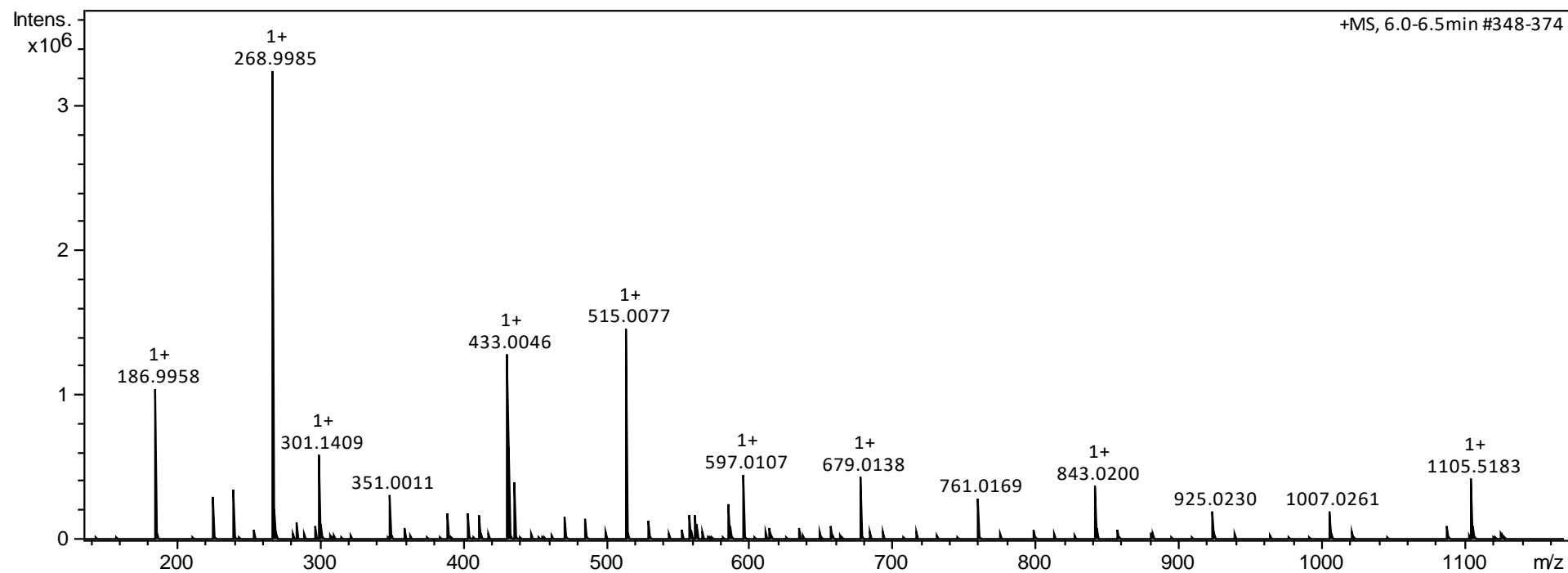
**Figure S14.** ROESY spectrum of pacificusoside D (**1**) in  $C_5D_5N$ .



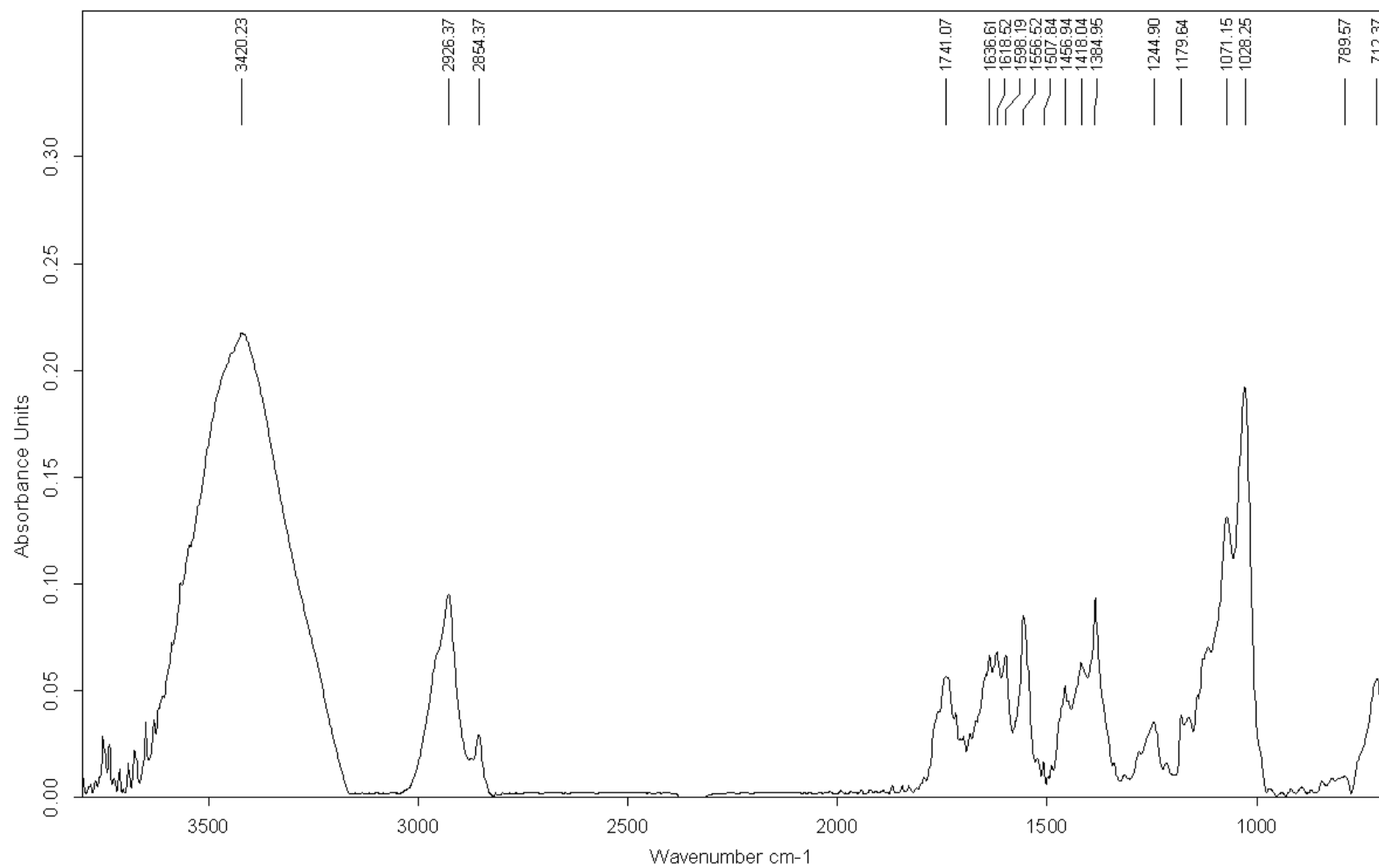
**Figure S15.** UV spectrum of pacificusoside D (**1**) in MeOH.



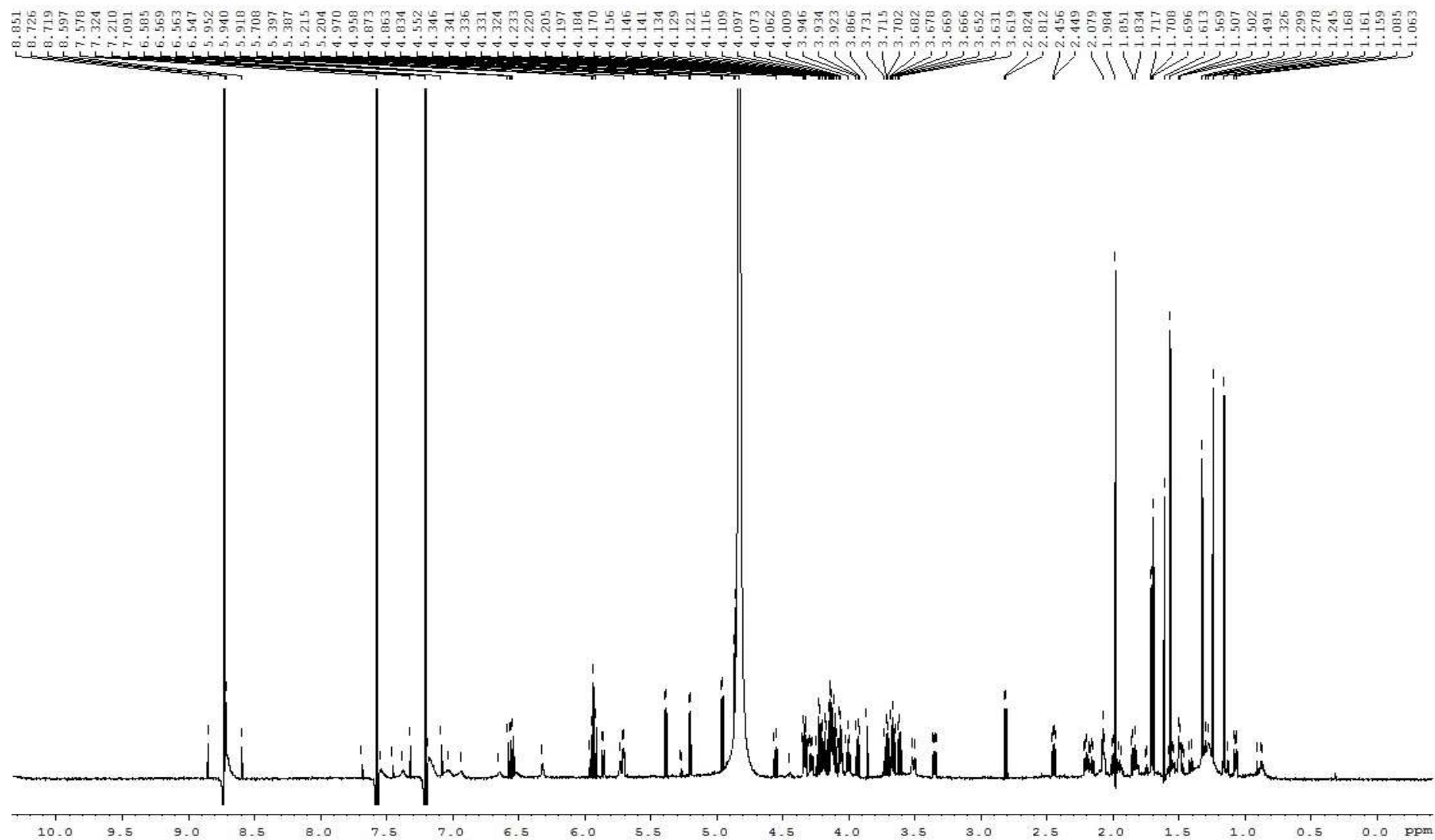
**Figure S16.** HRESIMS spectrum of pacificusoside E (**2**).



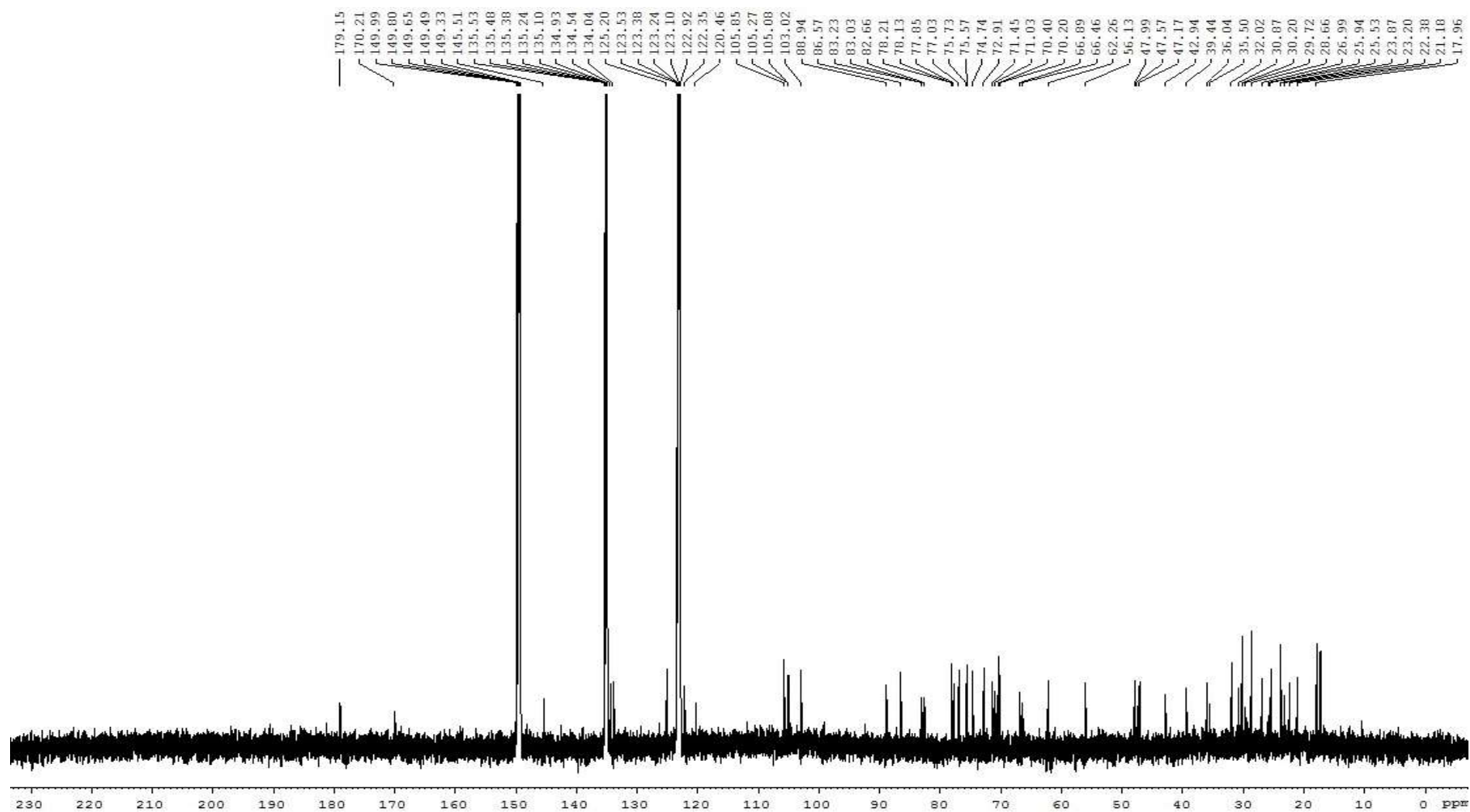
**Figure S17.** IR spectrum of pacificusoside E (**2**) in KBr.



**Figure S18.**  $^1\text{H}$ -NMR spectrum of pacificusoside E (**2**) in  $\text{C}_5\text{D}_5\text{N}$ .

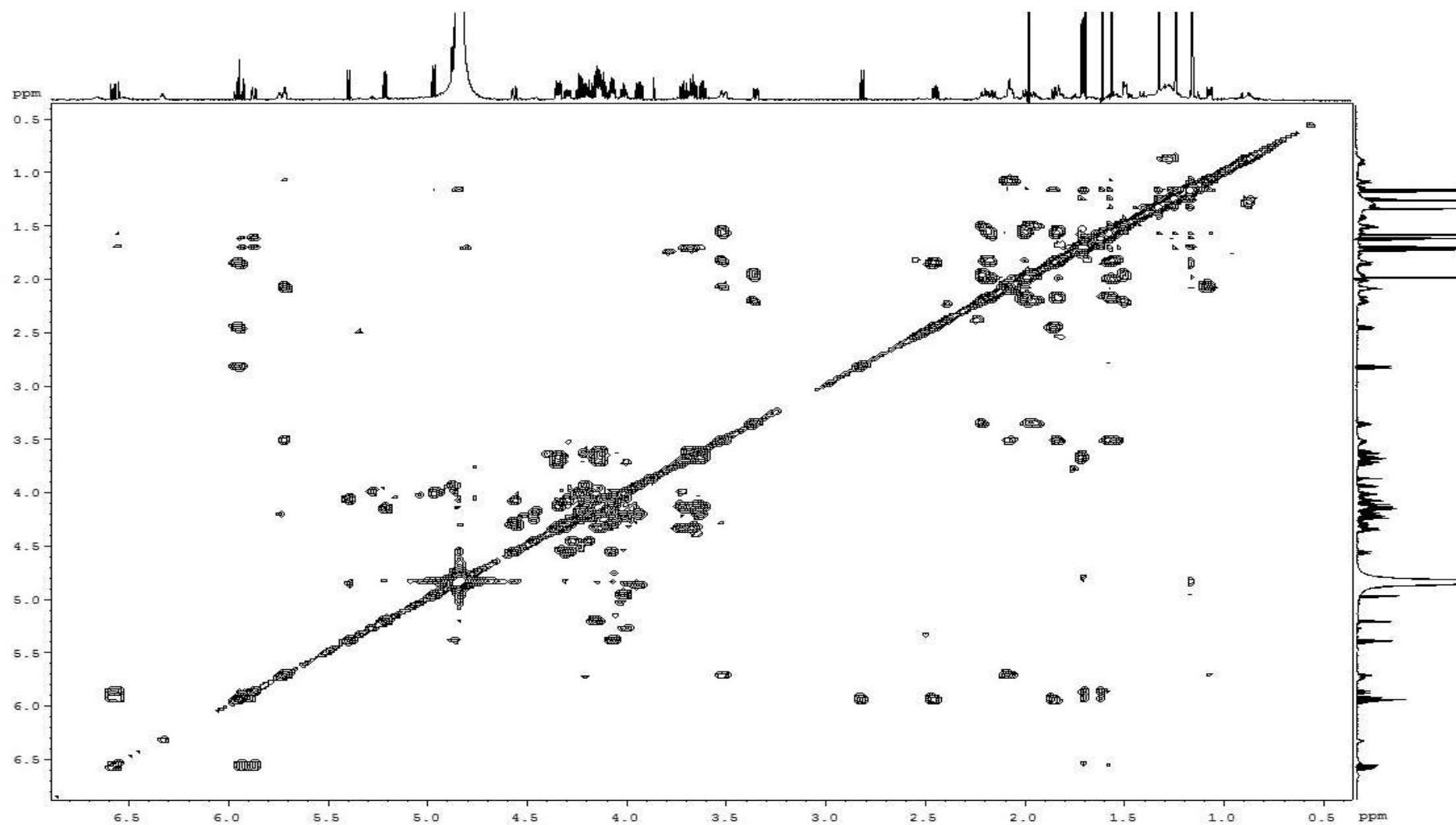


**Figure S19.**  $^{13}\text{C}$ -NMR spectrum of pacificusoside E (**2**) in  $\text{C}_5\text{D}_5\text{N}$ .

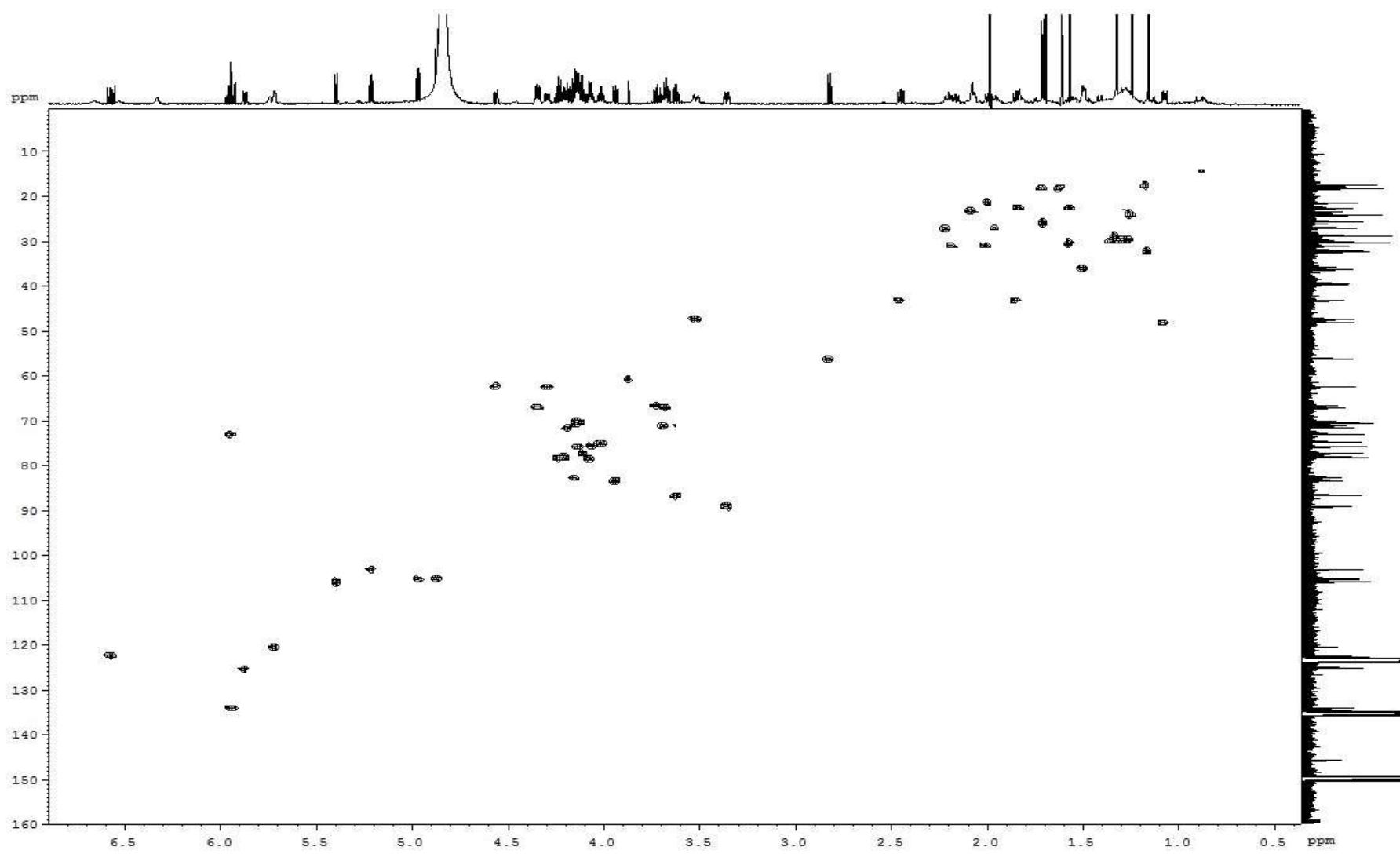




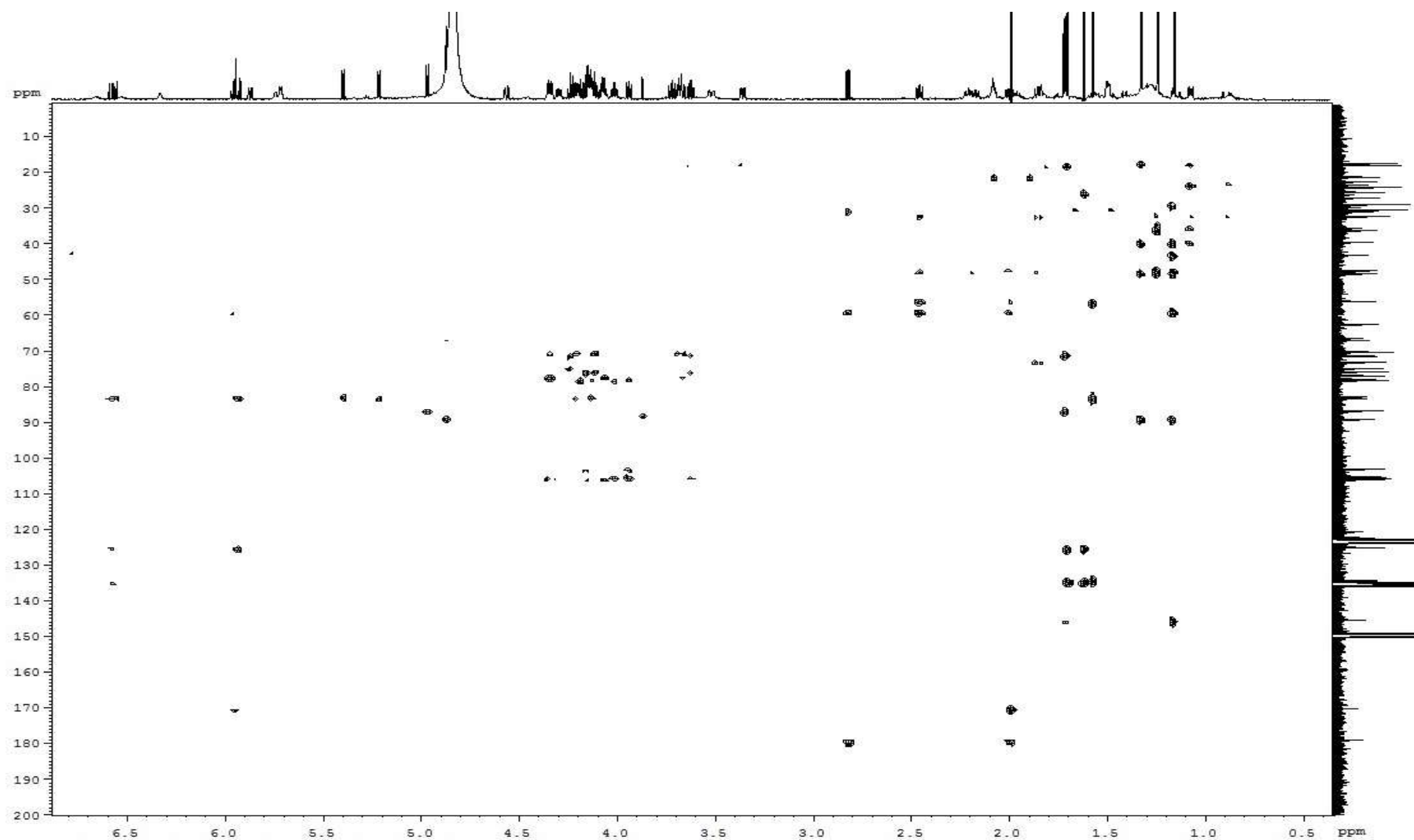
**Figure S20.**  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of pacificusoside E (**2**) in  $\text{C}_5\text{D}_5\text{N}$ .



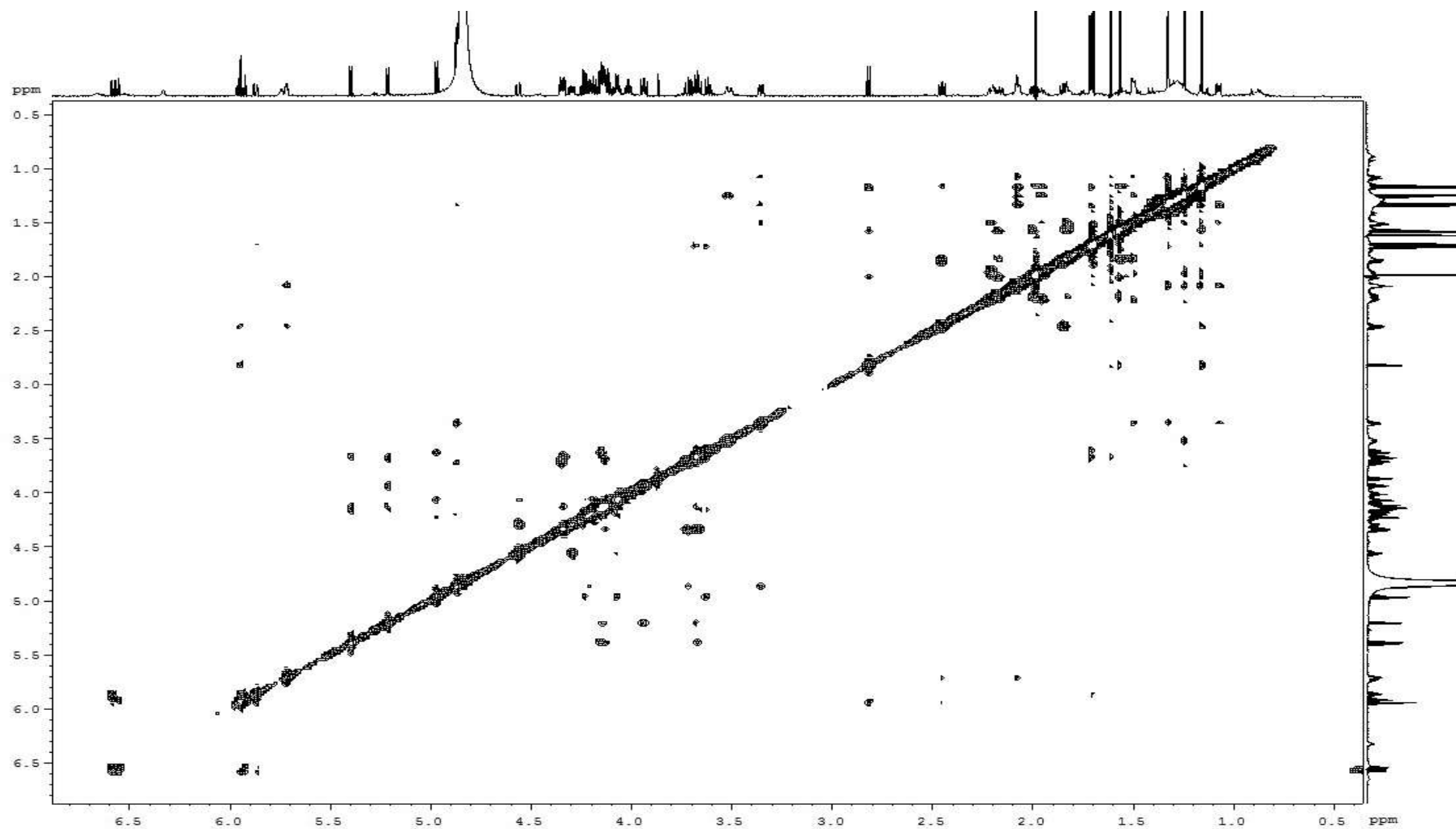
**Figure S21.** HSQC spectrum of pacificusoside E (**2**) in C<sub>5</sub>D<sub>5</sub>N.



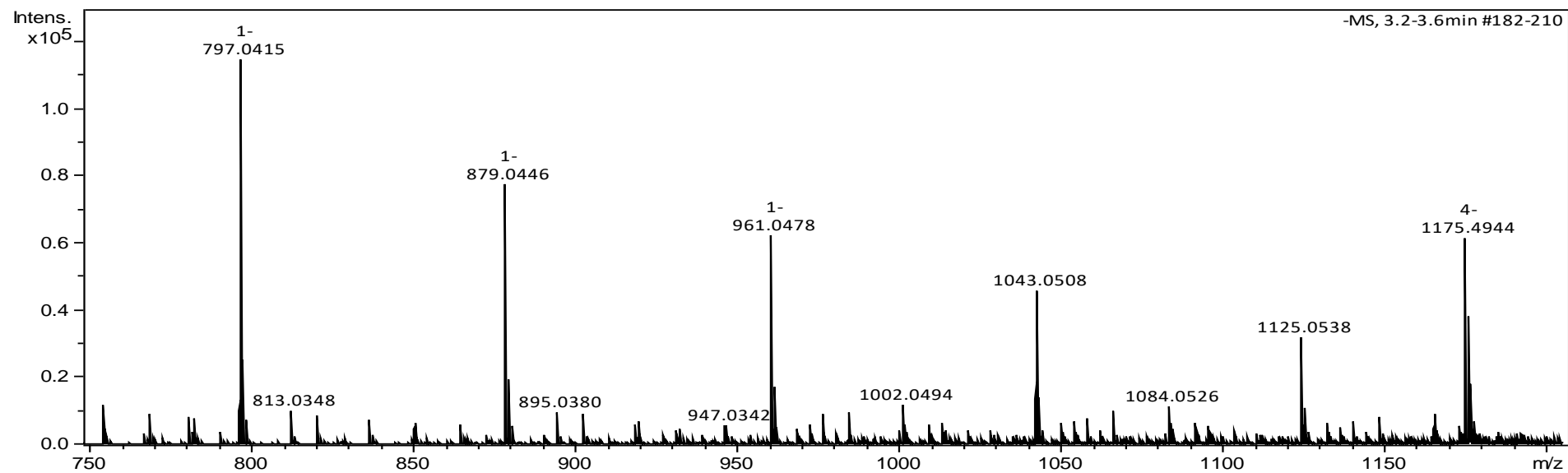
**Figure S22.** HMBC spectrum of pacificusoside E (**2**) in  $C_5D_5N$ .



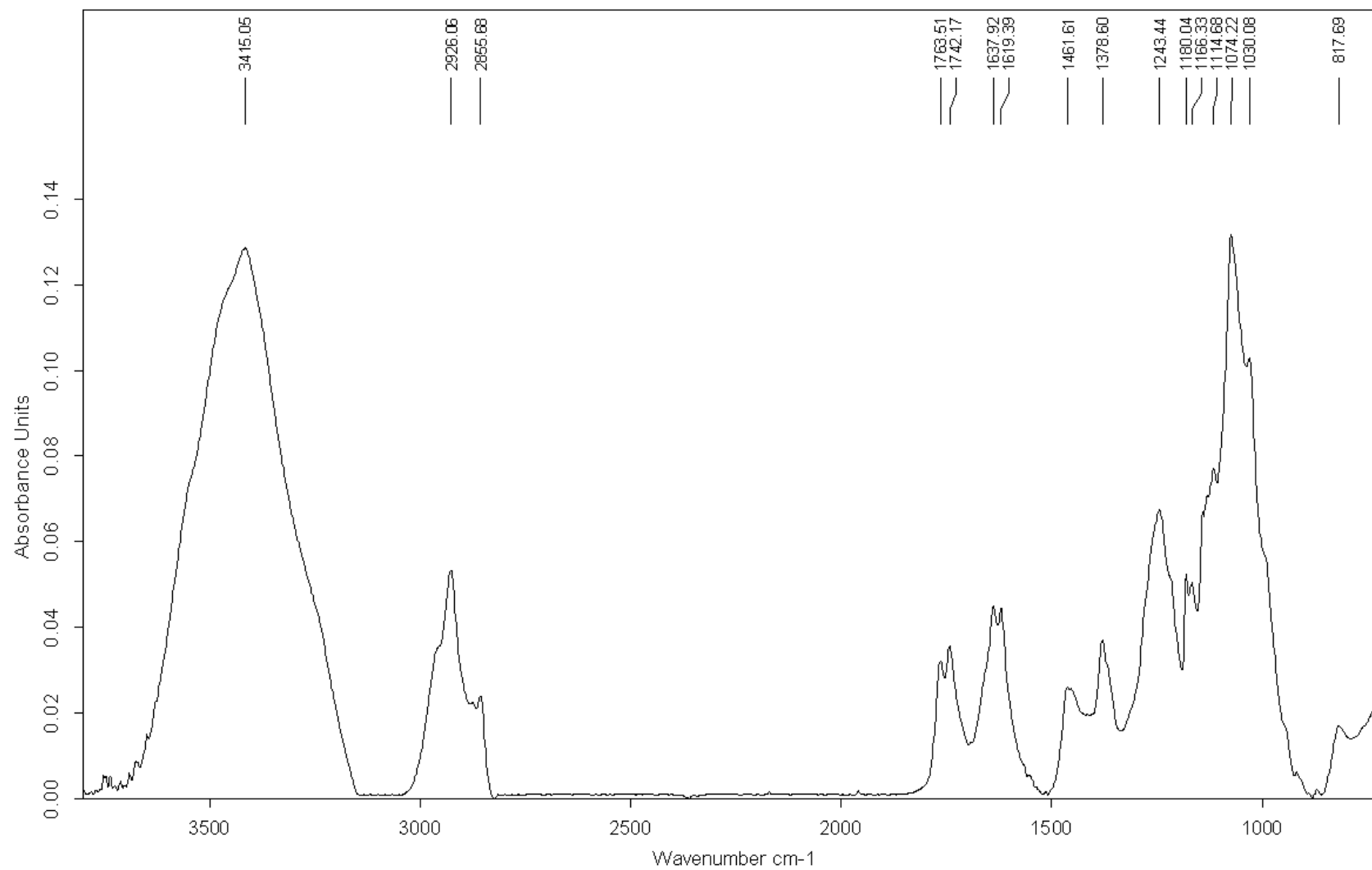
**Figure S23.** ROESY spectrum of pacificusoside E (**2**) in C<sub>5</sub>D<sub>5</sub>N.



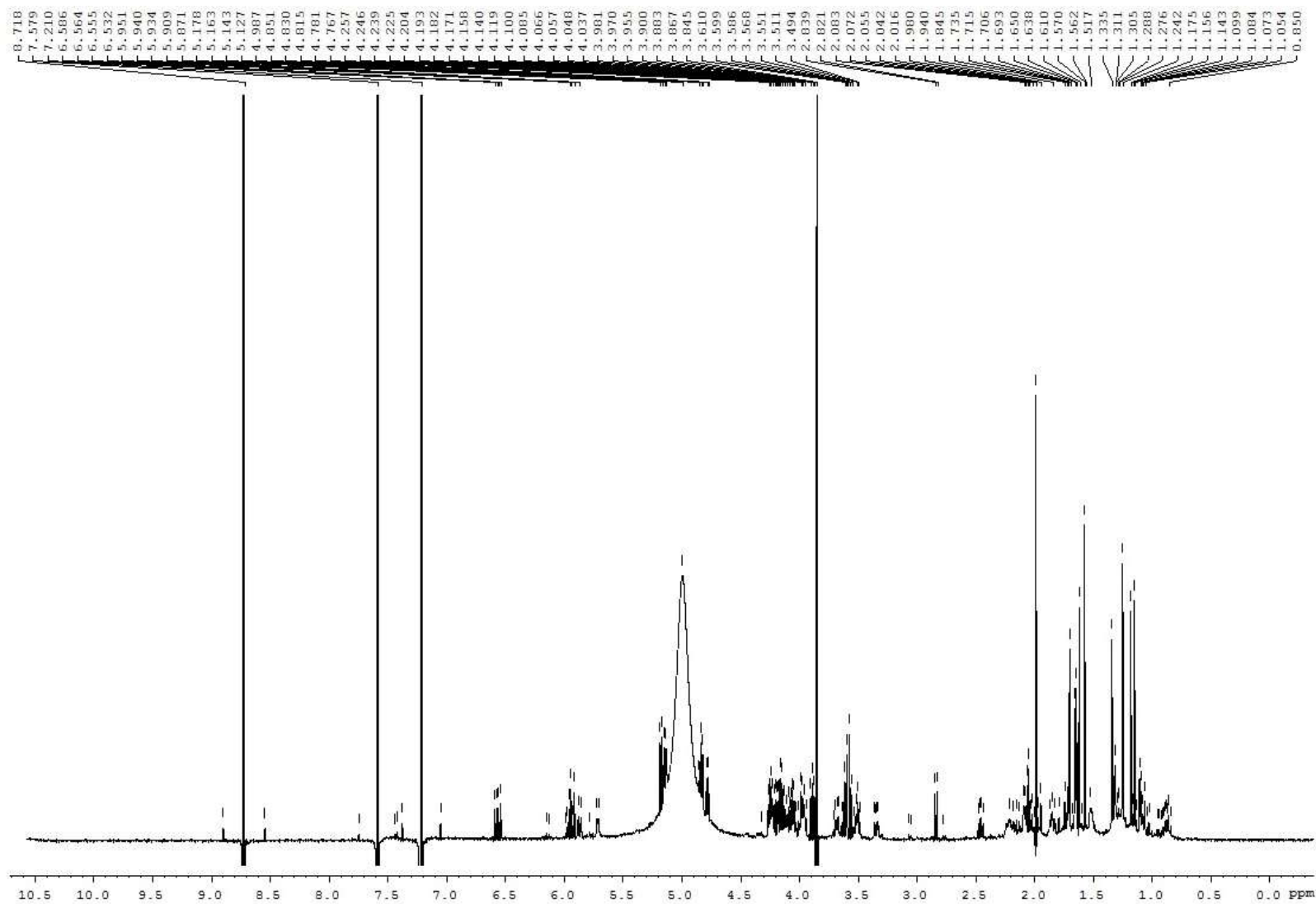
**Figure S24.** HRESIMS spectrum of pacificusoside F (3).



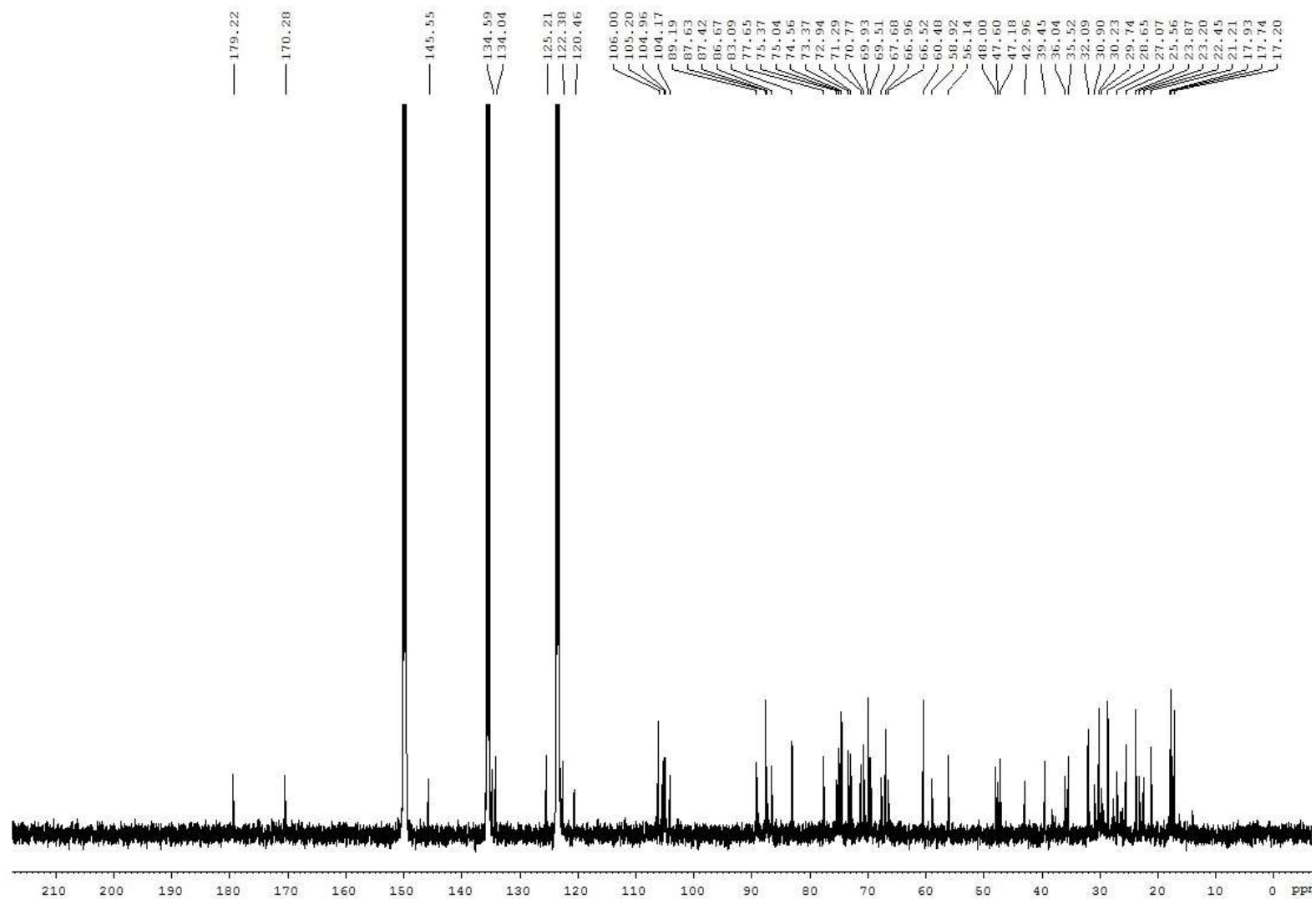
**Figure S25.** IR spectrum of pacificusoside F (**3**) in KBr.



**Figure S26.**  $^1\text{H}$ -NMR spectrum of pacificusoside F (**3**) in  $\text{C}_5\text{D}_5\text{N}$ .

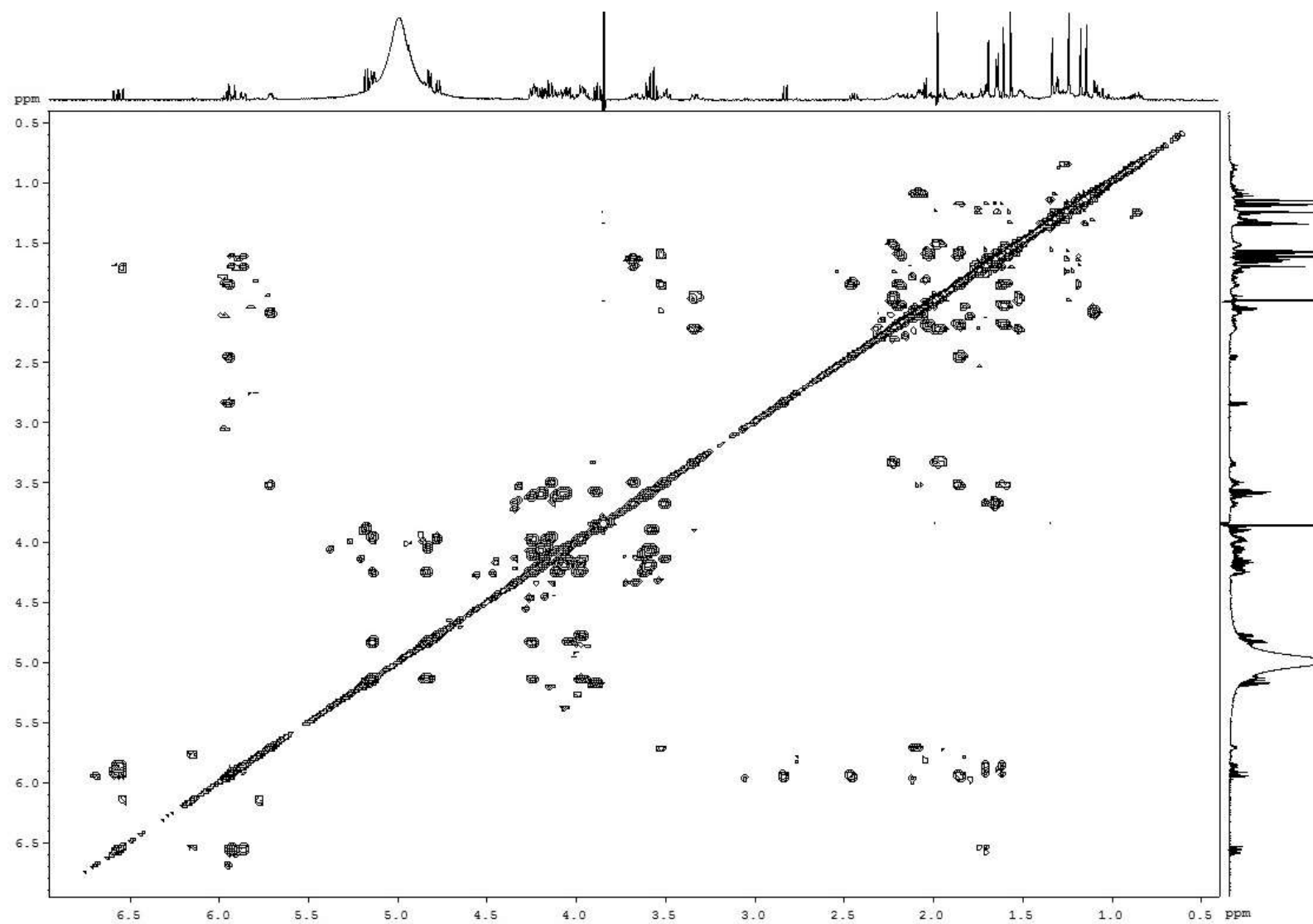


**Figure S27.**  $^{13}\text{C}$ -NMR spectrum of pacificusoside F (**3**) in  $\text{C}_5\text{D}_5\text{N}$ .

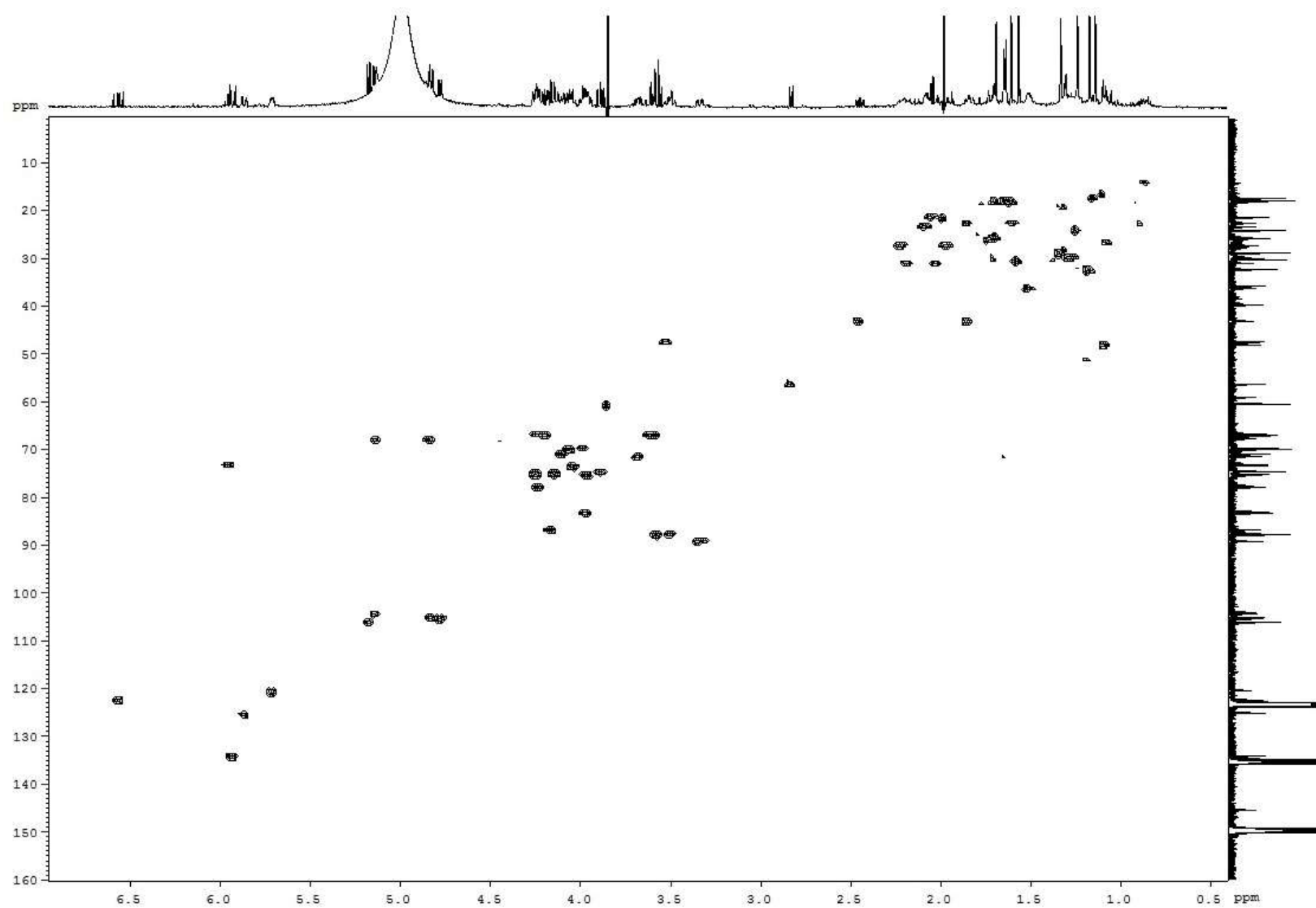




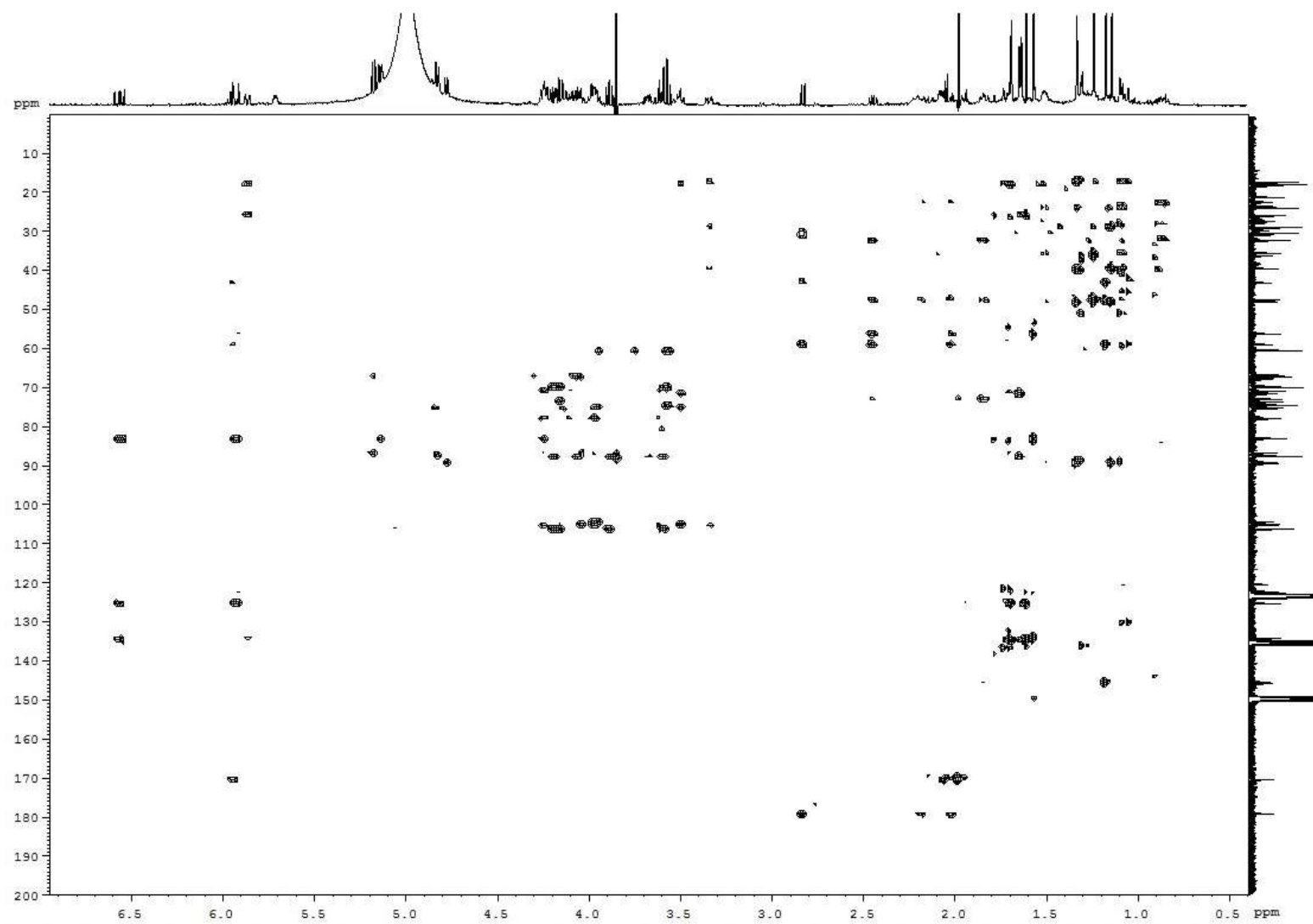
**Figure S28.**  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of pacificusoside F (**3**) in  $\text{C}_5\text{D}_5\text{N}$ .



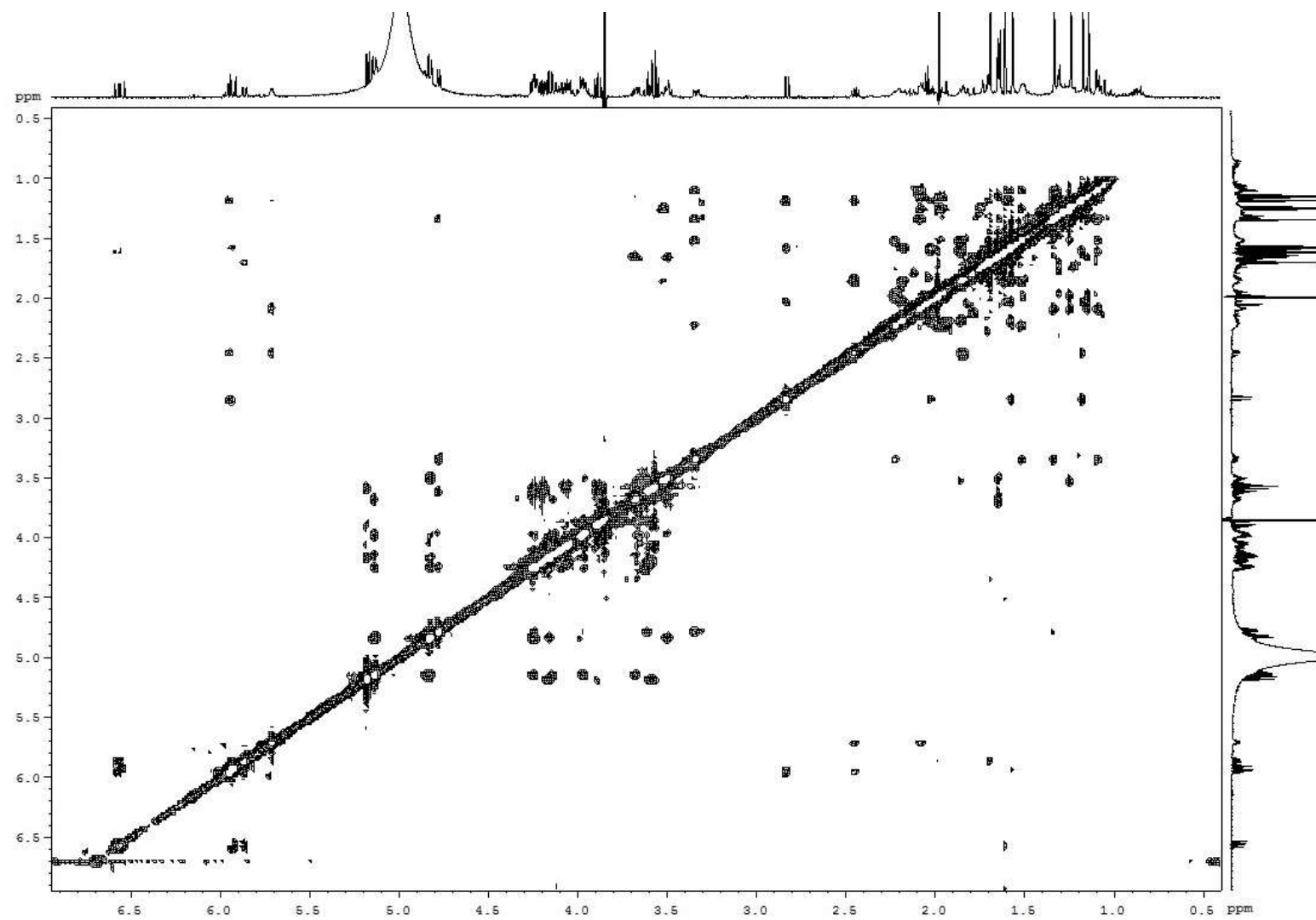
**Figure S29.** HSQC spectrum of pacificusoside F (**3**) in C<sub>5</sub>D<sub>5</sub>N.



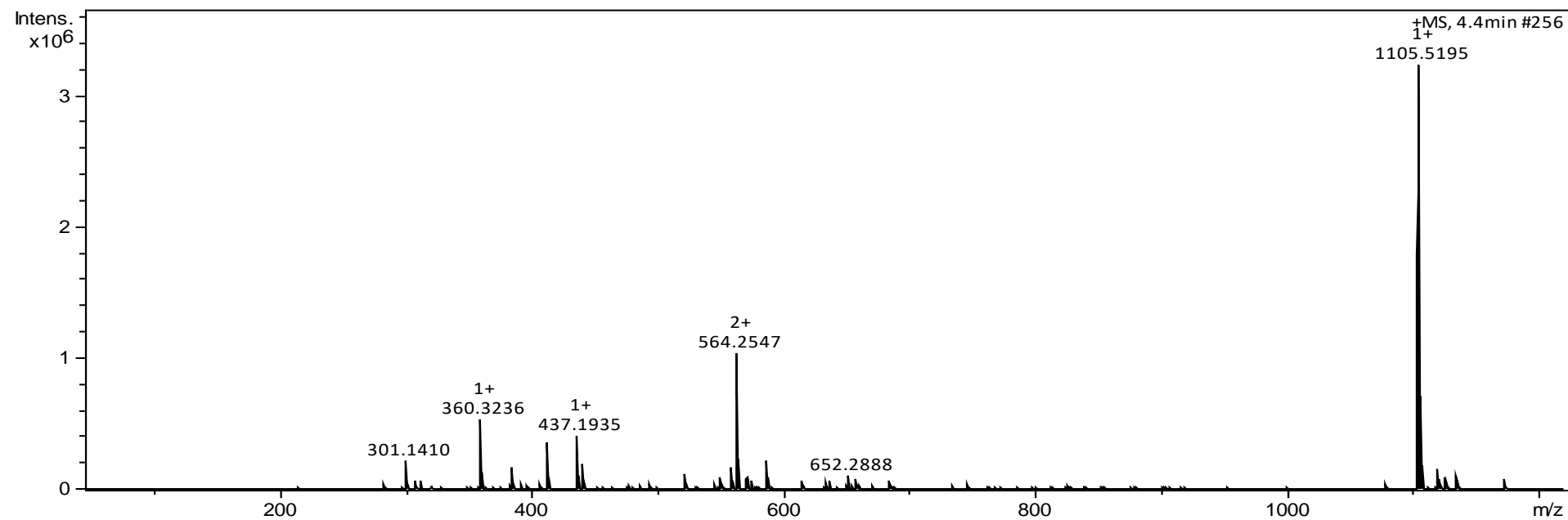
**Figure S30.** HMBC spectrum of pacificusoside F (**3**) in C<sub>5</sub>D<sub>5</sub>N.



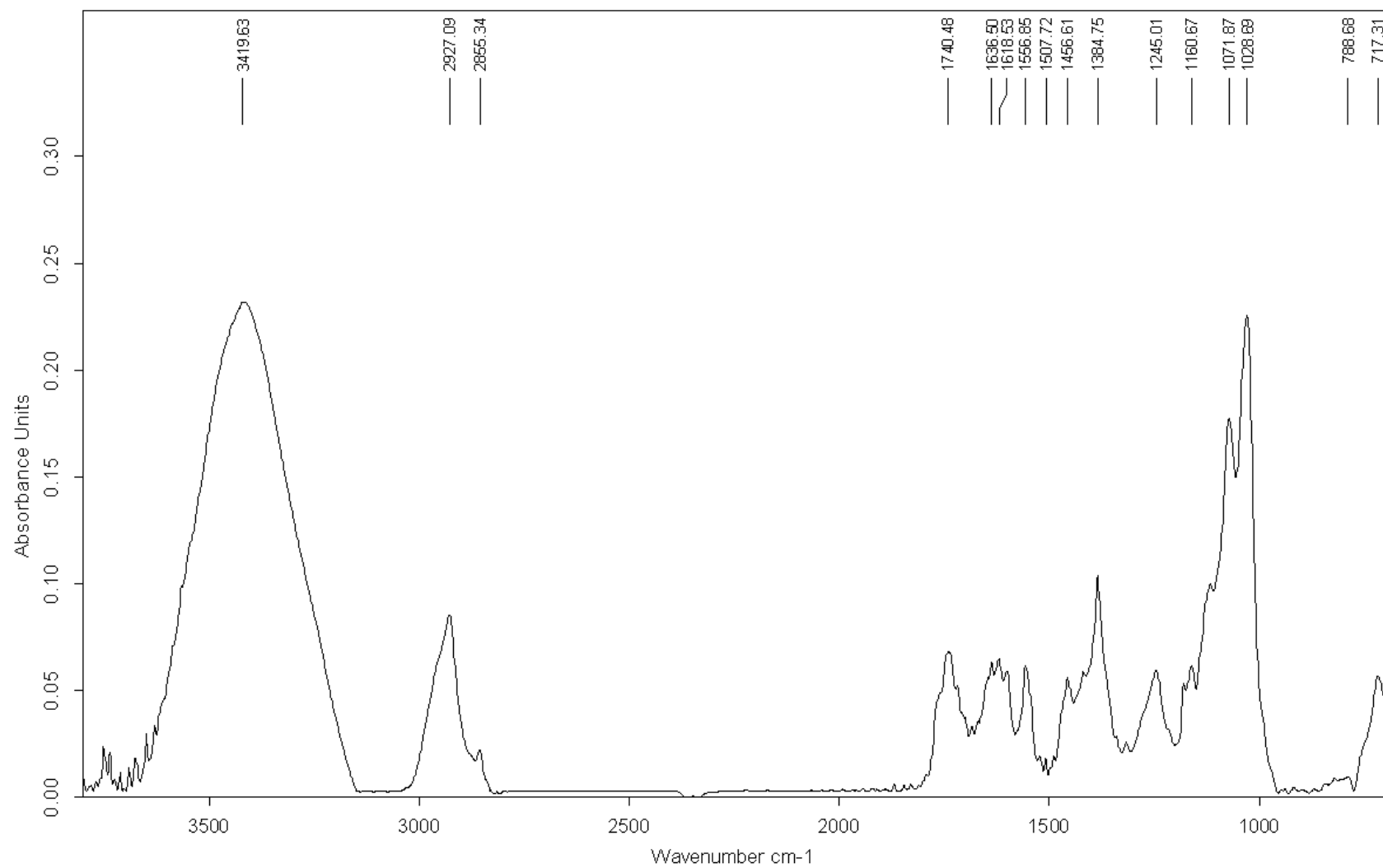
**Figure S31.** ROESY spectrum of pacificusoside F (**3**) in C<sub>5</sub>D<sub>5</sub>N.



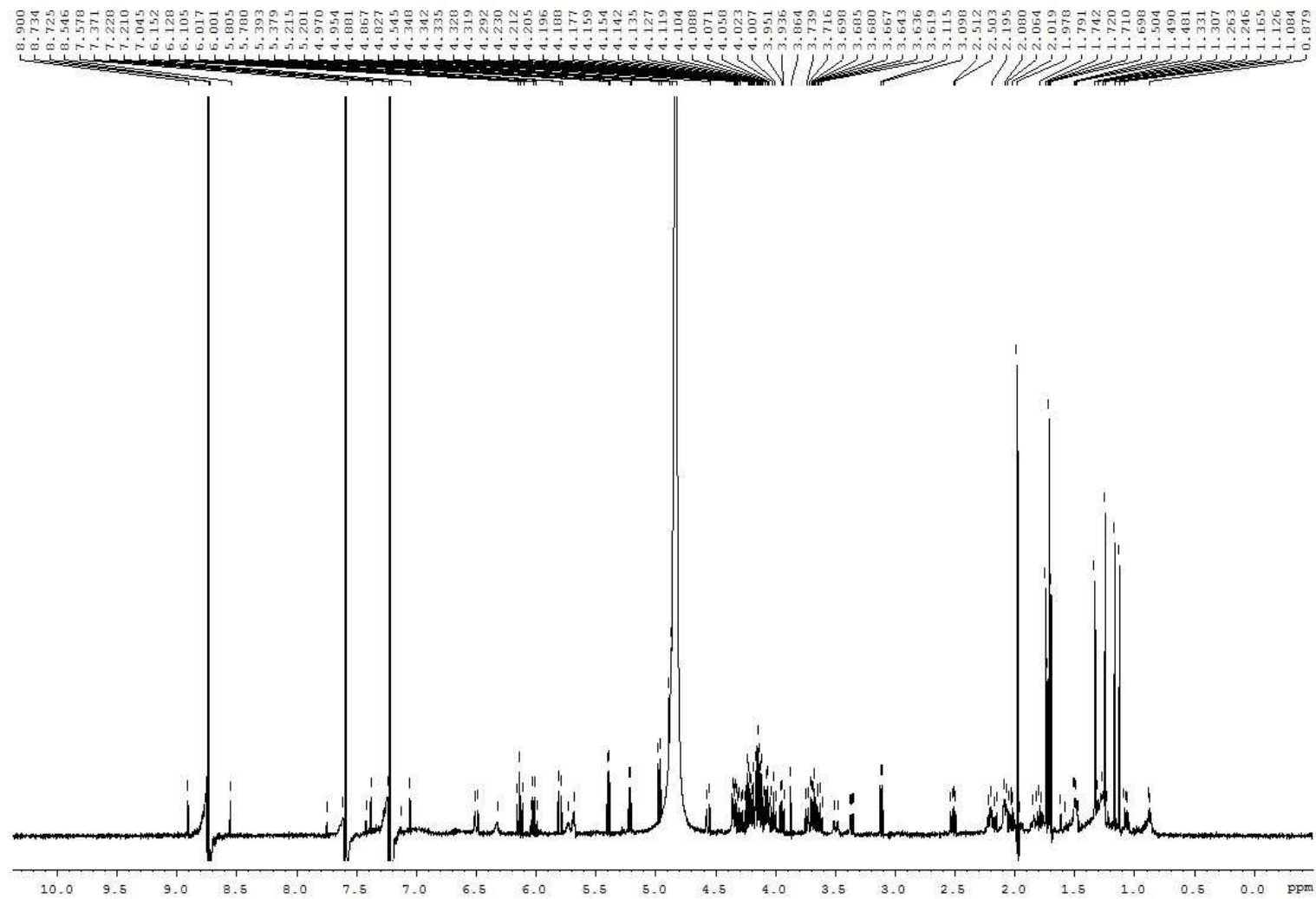
**Figure S32.** HRESIMS spectrum of pacificusoside G (5).



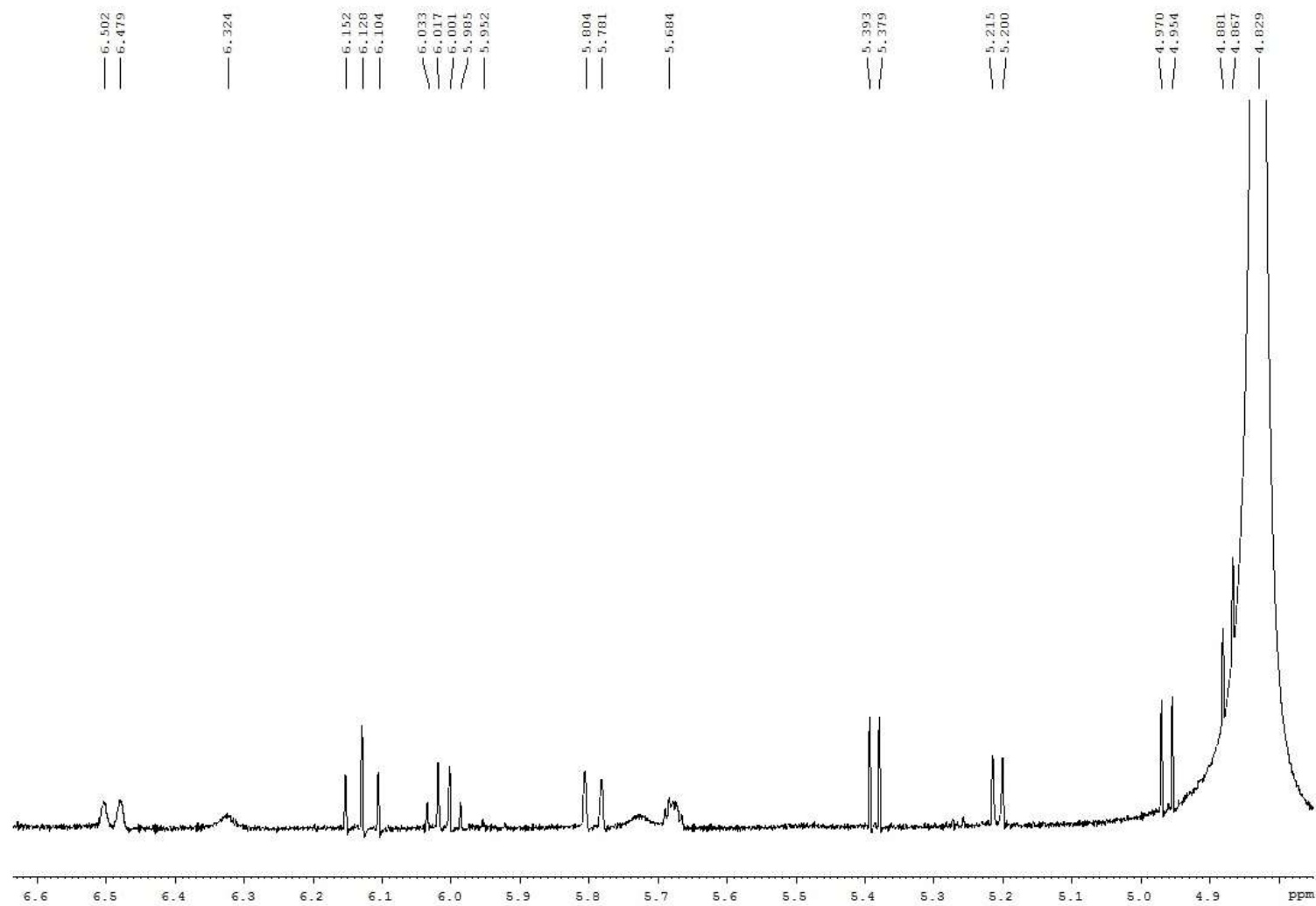
**Figure S33.** IR spectrum of pacificusoside G (**5**) in KBr.



**Figure S34.**  $^1\text{H}$ -NMR spectrum of pacificusoside G (**5**) in  $\text{C}_5\text{D}_5\text{N}$ .

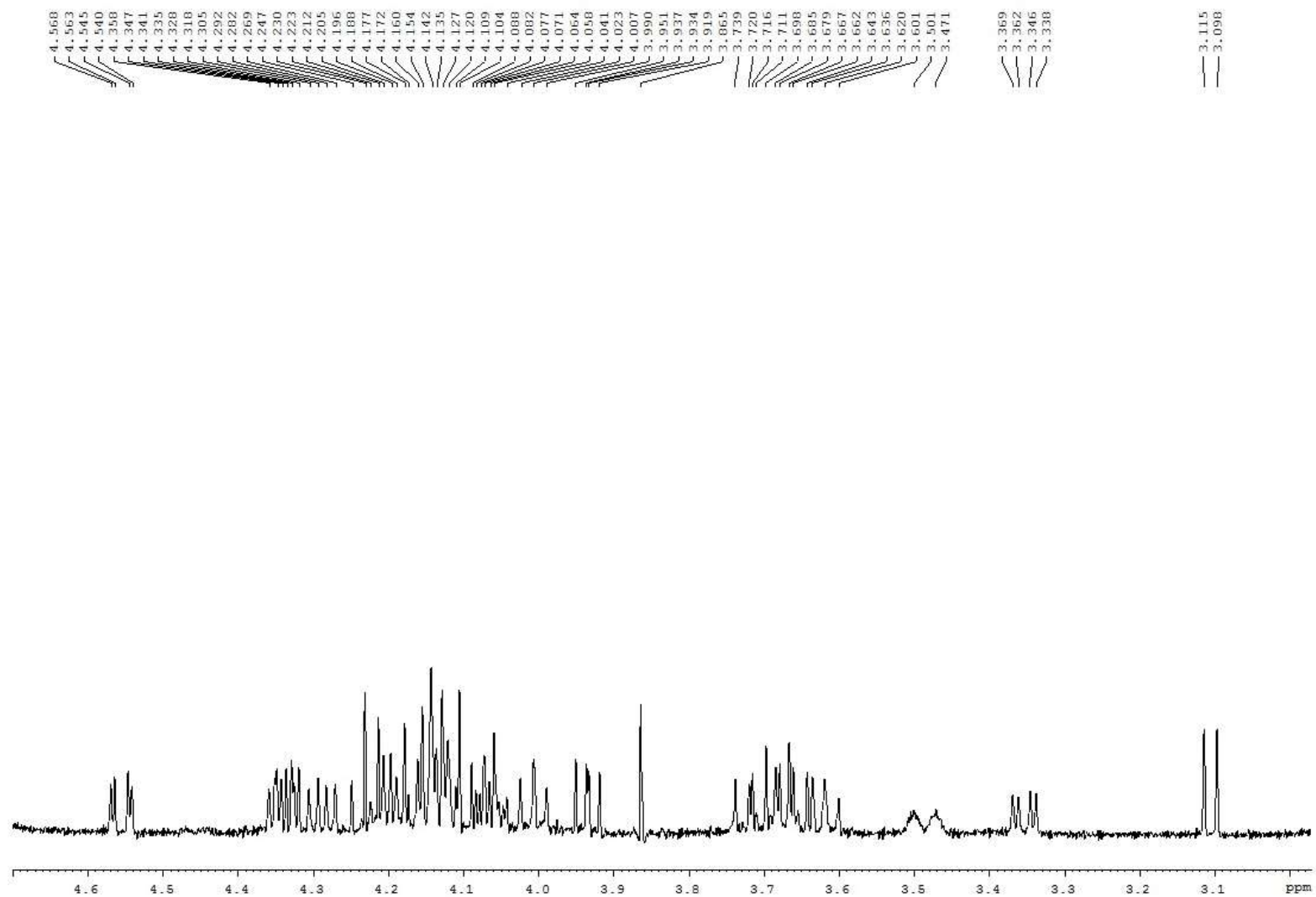


**Figure S35.** Expansion №1 of  $^1\text{H}$ -NMR spectrum of pacificusoside G (**5**) in  $\text{C}_5\text{D}_5\text{N}$ .

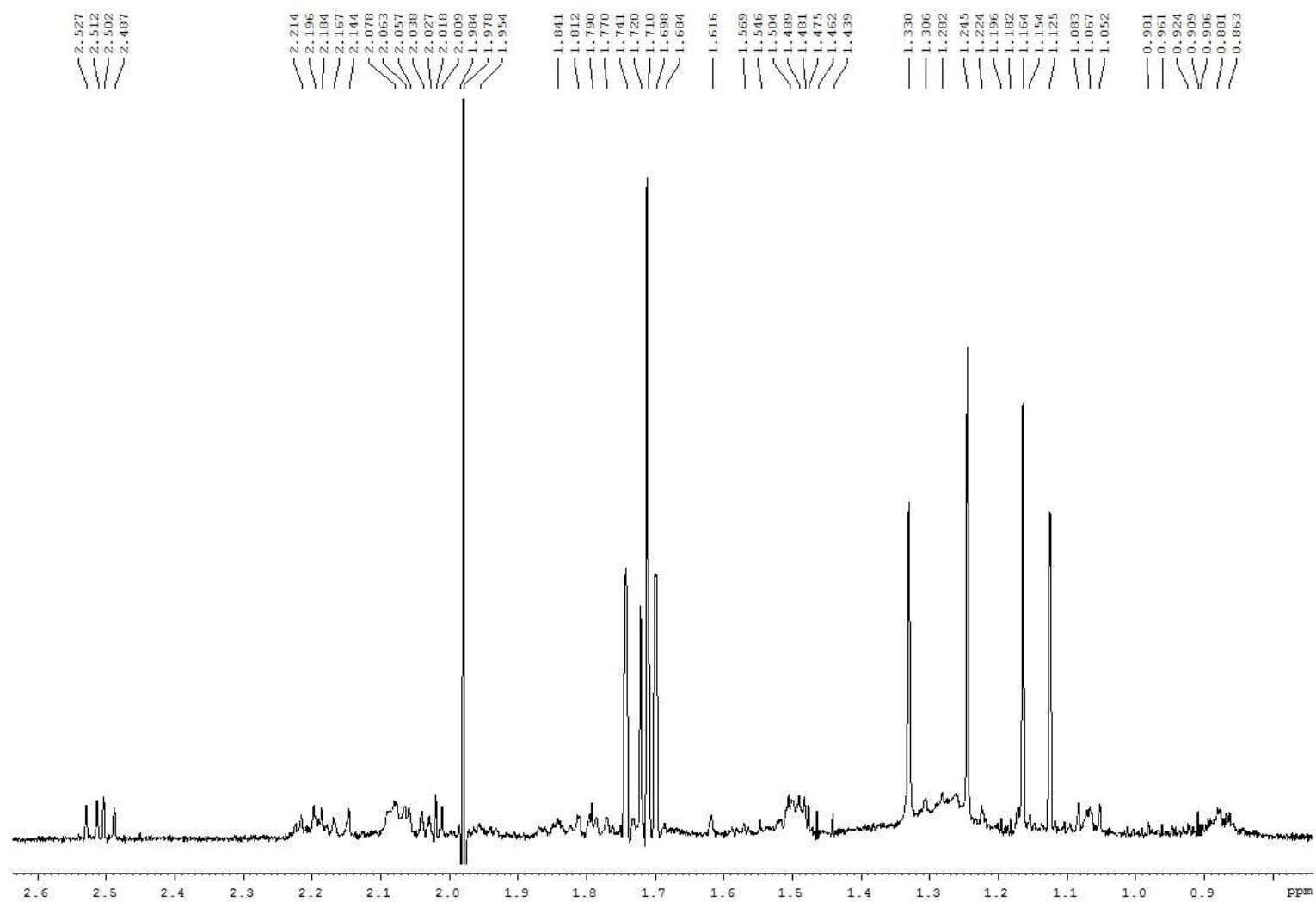




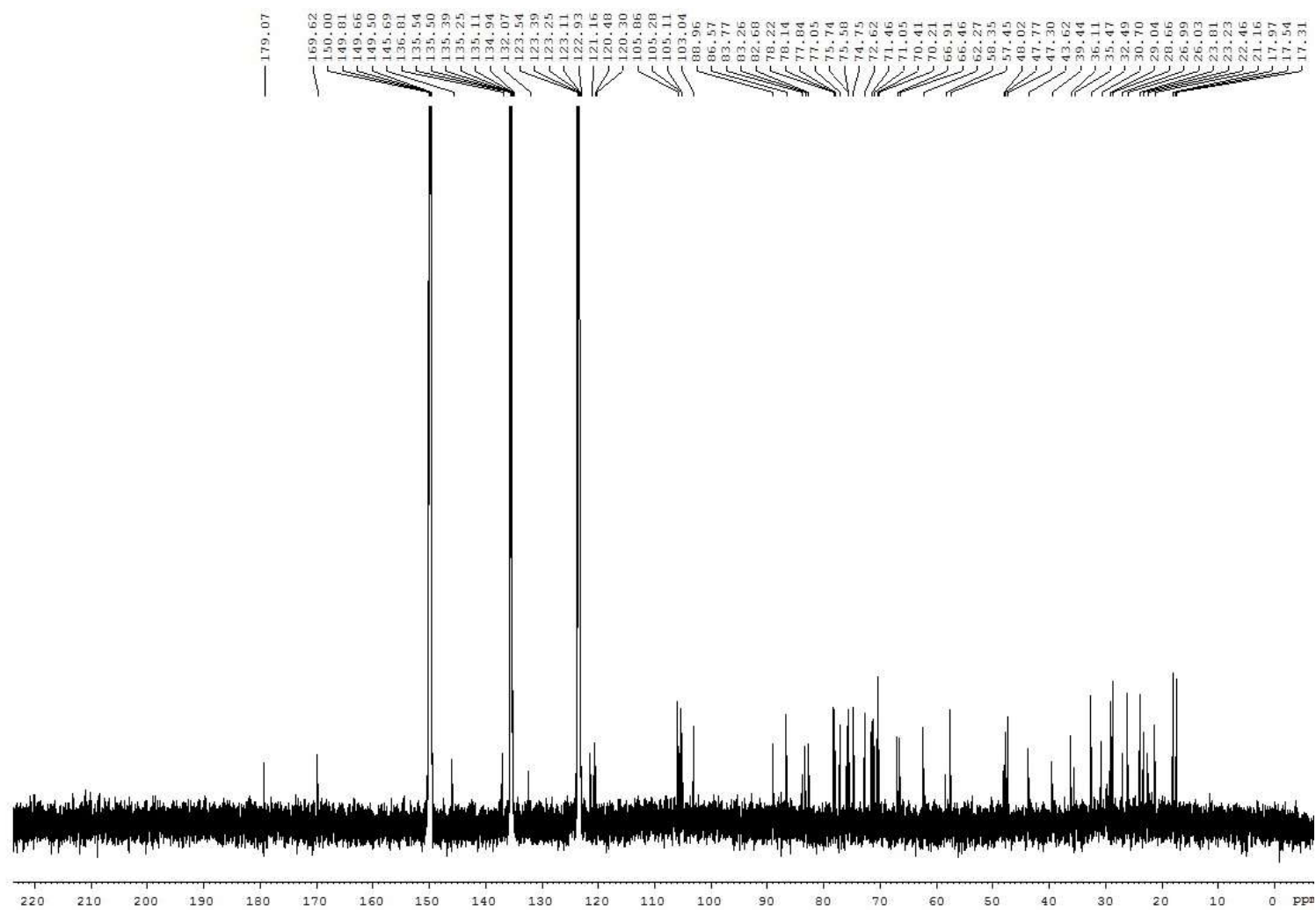
**Figure S36.** Expansion №2 of  $^1\text{H}$ -NMR spectrum of pacificusoside G (**5**) in  $\text{C}_5\text{D}_5\text{N}$ .



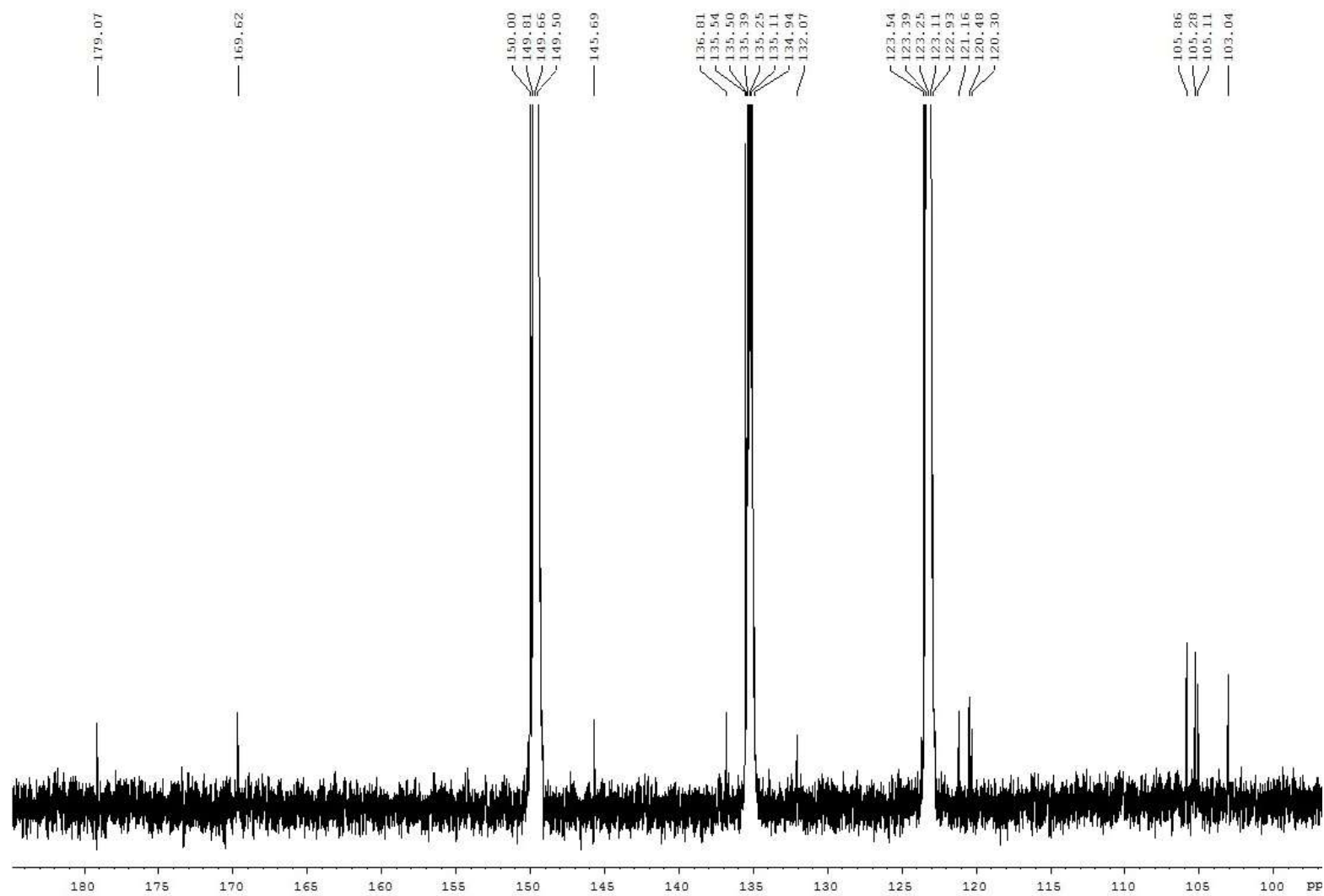
**Figure S37.** Expansion №3 of  $^1\text{H}$ -NMR spectrum of pacificusoside G (**5**) in  $\text{C}_5\text{D}_5\text{N}$ .



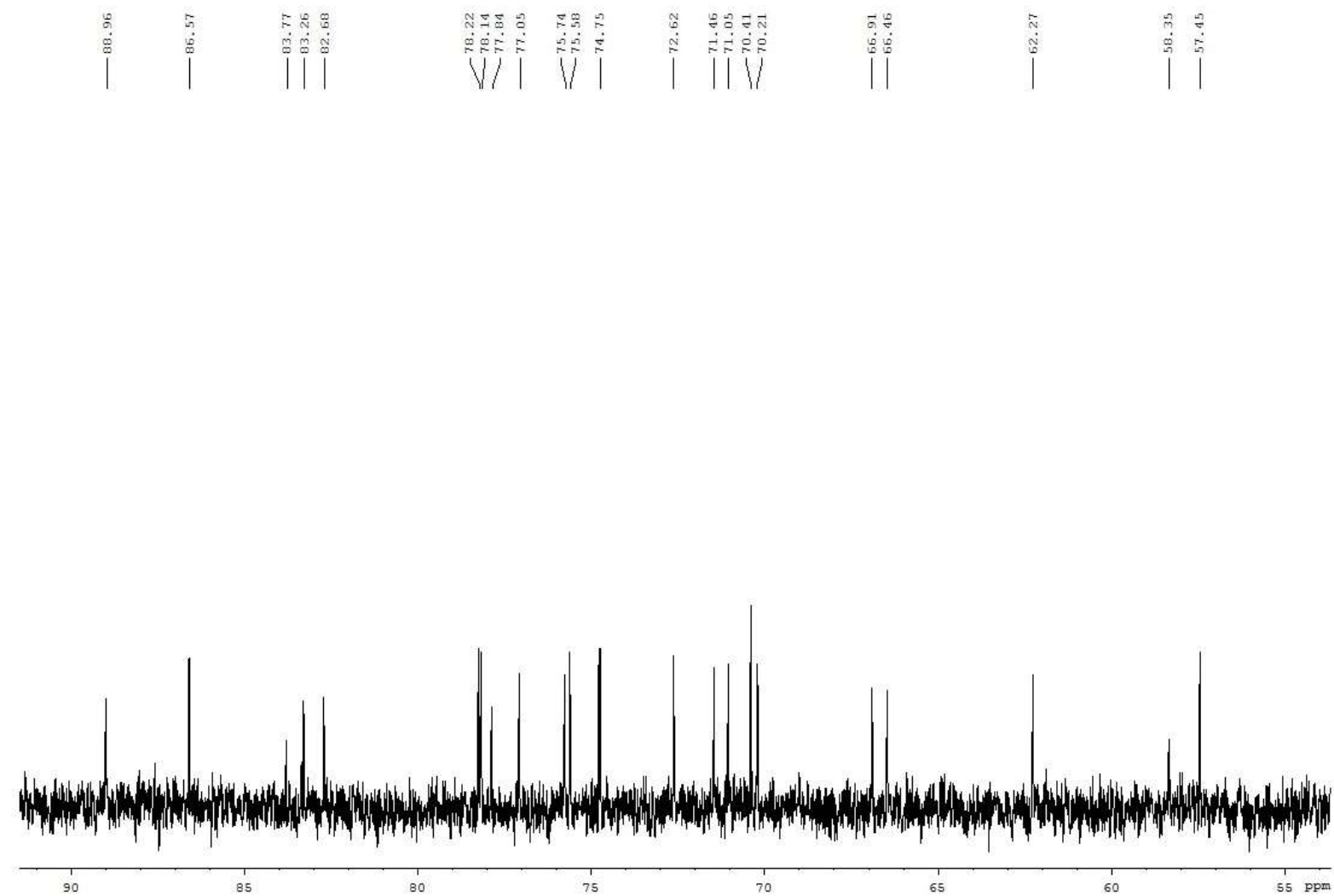
**Figure S38.**  $^{13}\text{C}$ -NMR spectrum of pacificusoside G (**5**) in  $\text{C}_5\text{D}_5\text{N}$ .



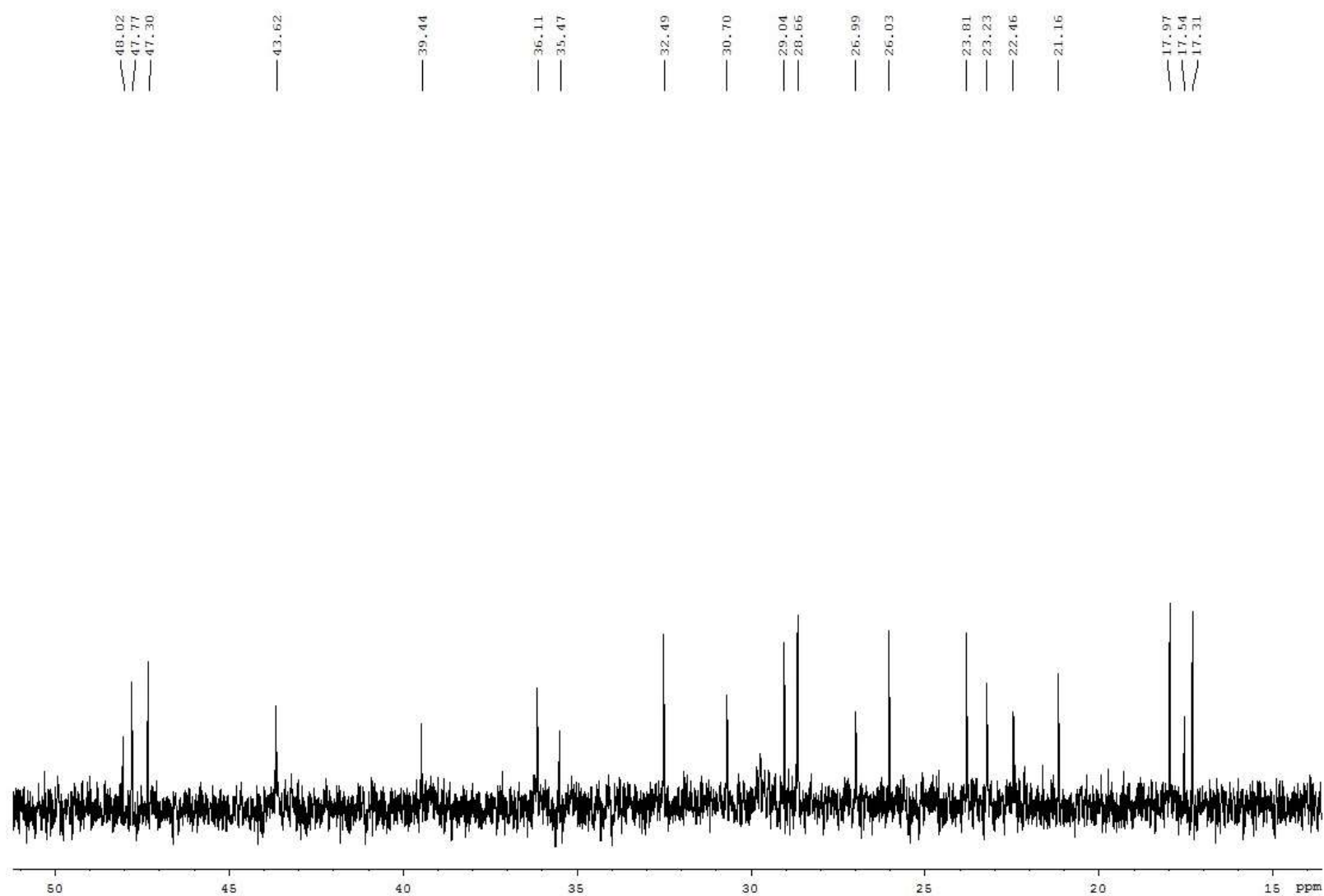
**Figure S39.** Expansion №1 of  $^{13}\text{C}$ -NMR spectrum of pacificusoside G (**5**) in  $\text{C}_5\text{D}_5\text{N}$ .



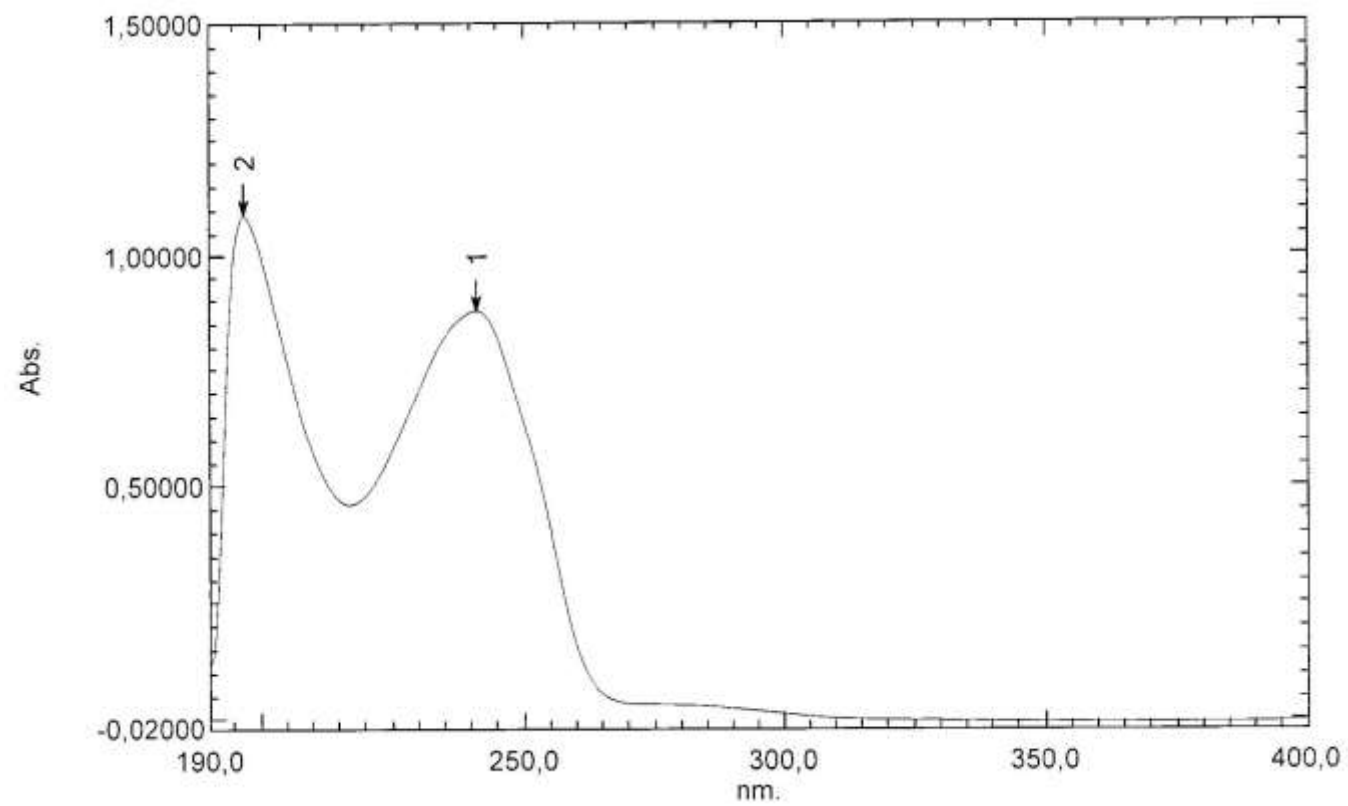
**Figure S40.** Expansion N<sup>o</sup>2 of <sup>13</sup>C-NMR spectrum of pacificusoside G (**5**) in C<sub>5</sub>D<sub>5</sub>N.



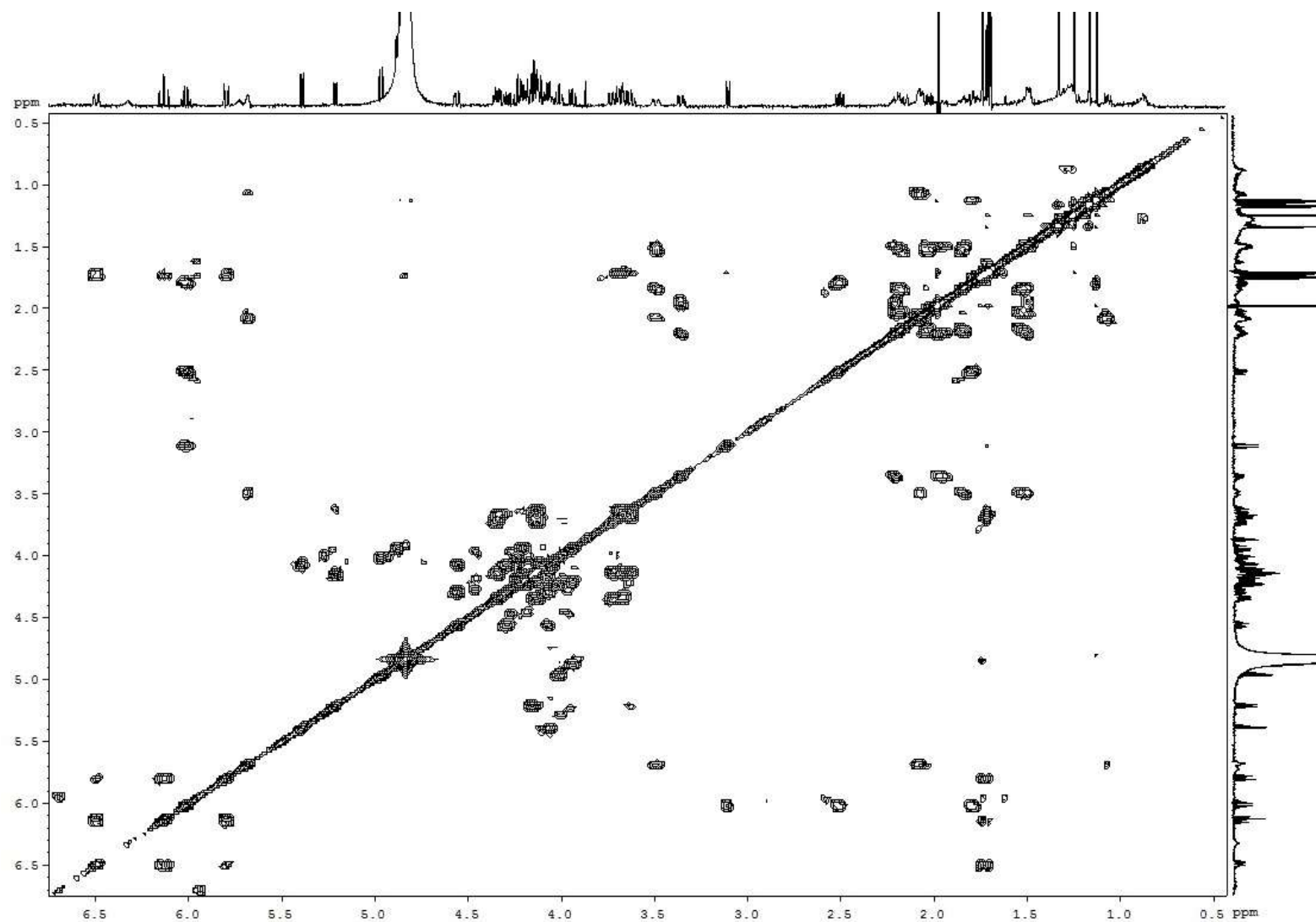
**Figure S41.** Expansion №3 of  $^{13}\text{C}$ -NMR spectrum of pacificusoside G (**5**) in  $\text{C}_5\text{D}_5\text{N}$ .



**Figure S42.** UV spectrum of pacificusoside G (5) in MeOH.

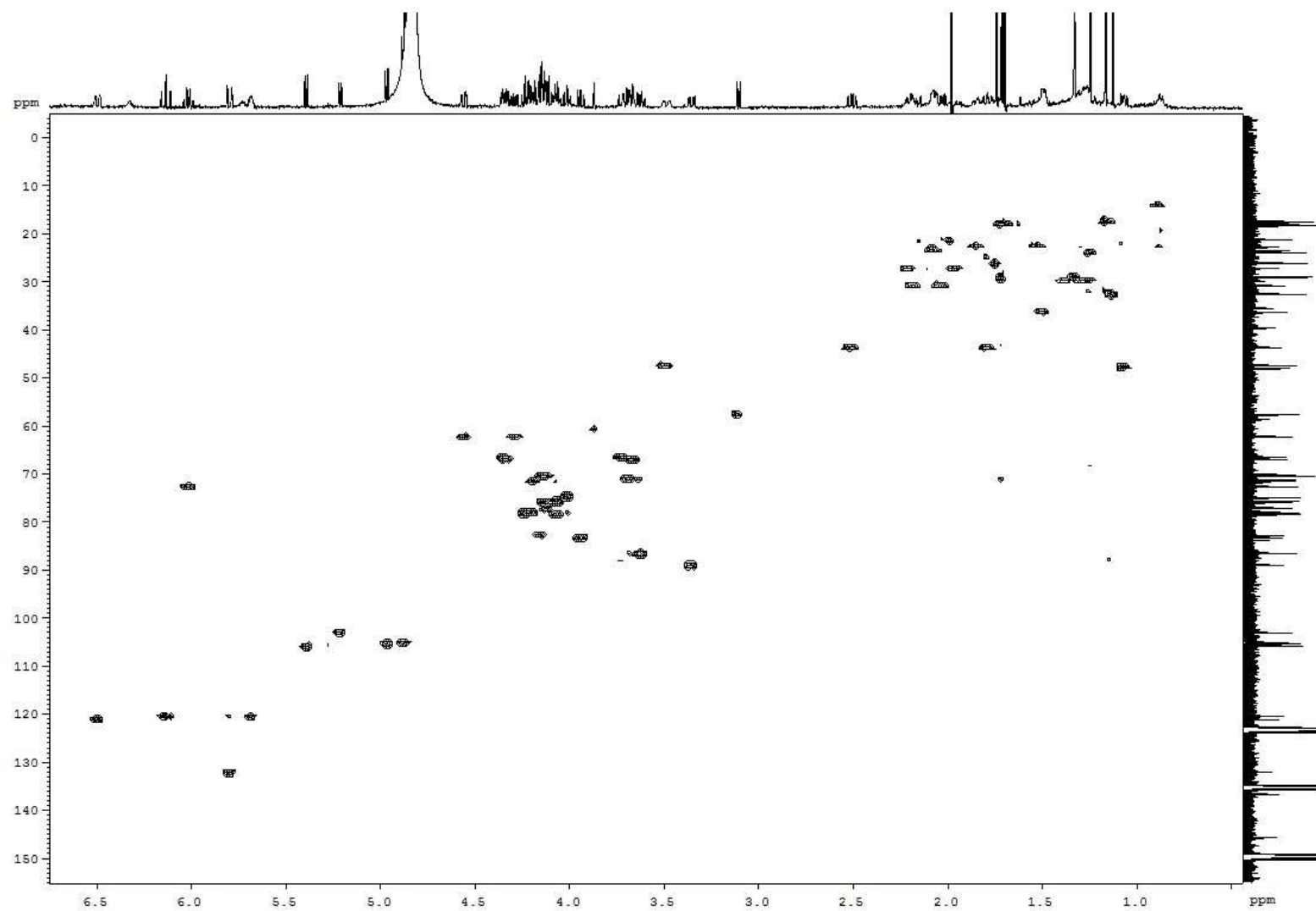


**Figure S43.**  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of pacificusoside G (**5**) in  $\text{C}_5\text{D}_5\text{N}$ .

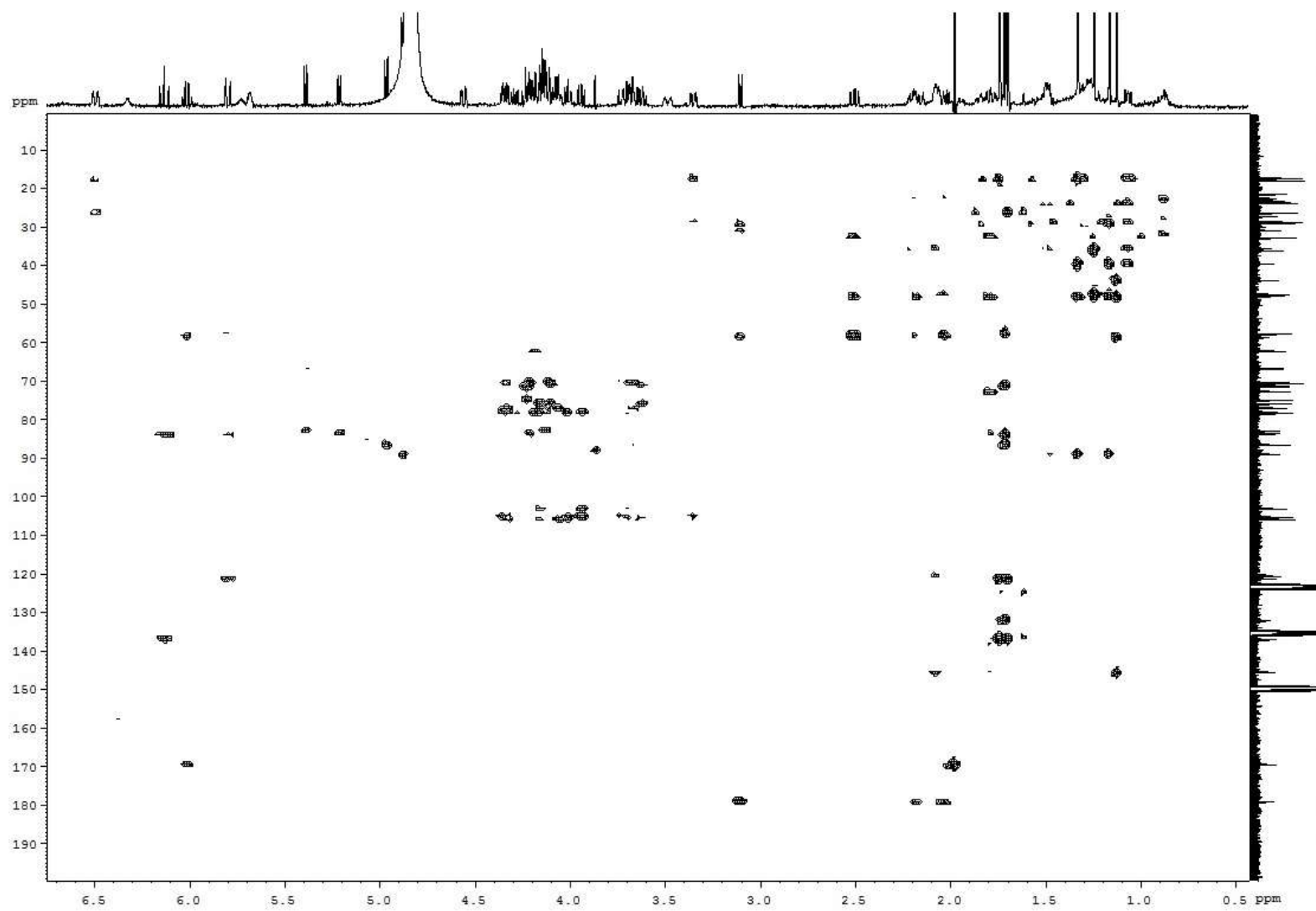




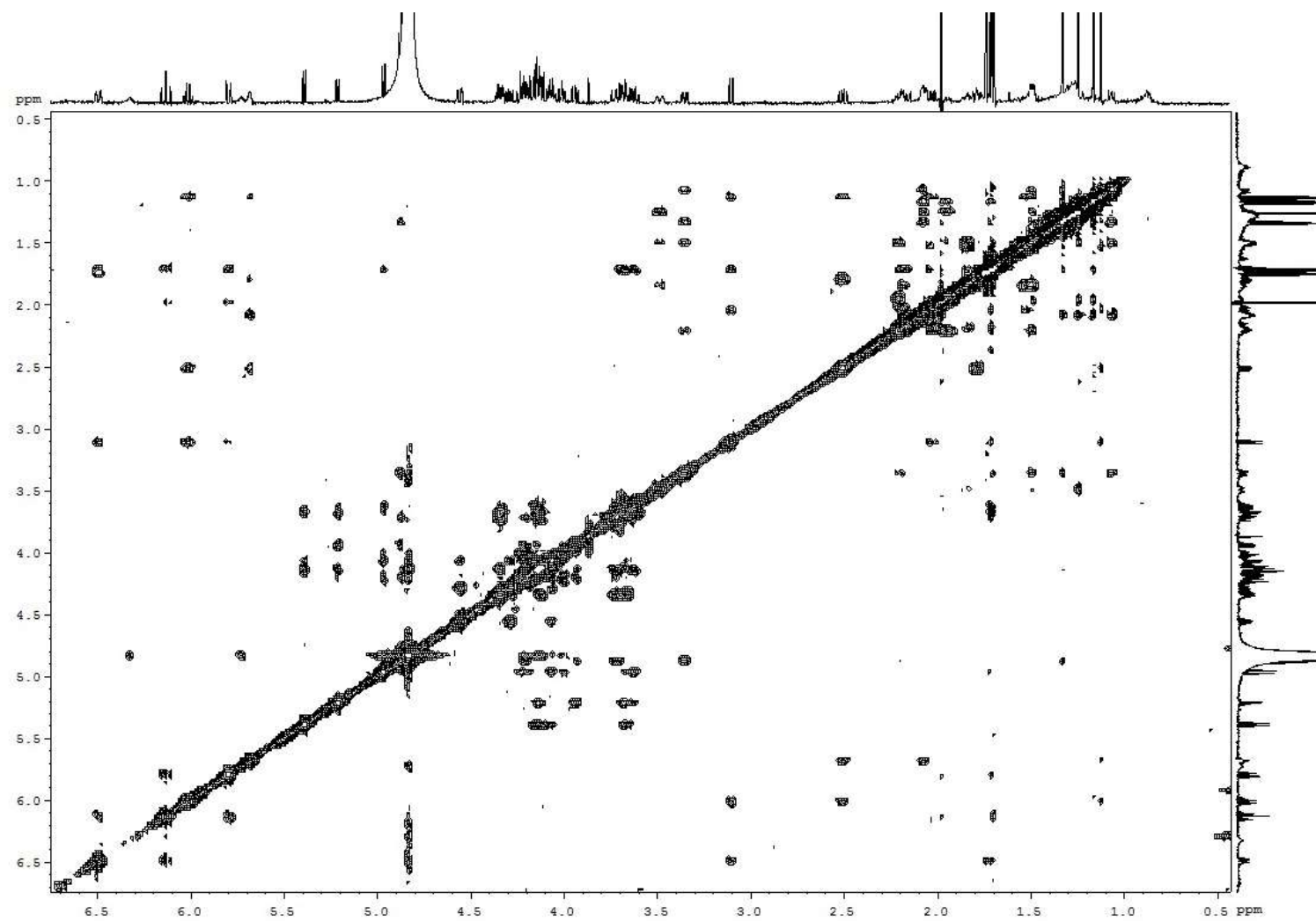
**Figure S44.** HSQC spectrum of pacificusoside G (5) in  $C_5D_5N$ .



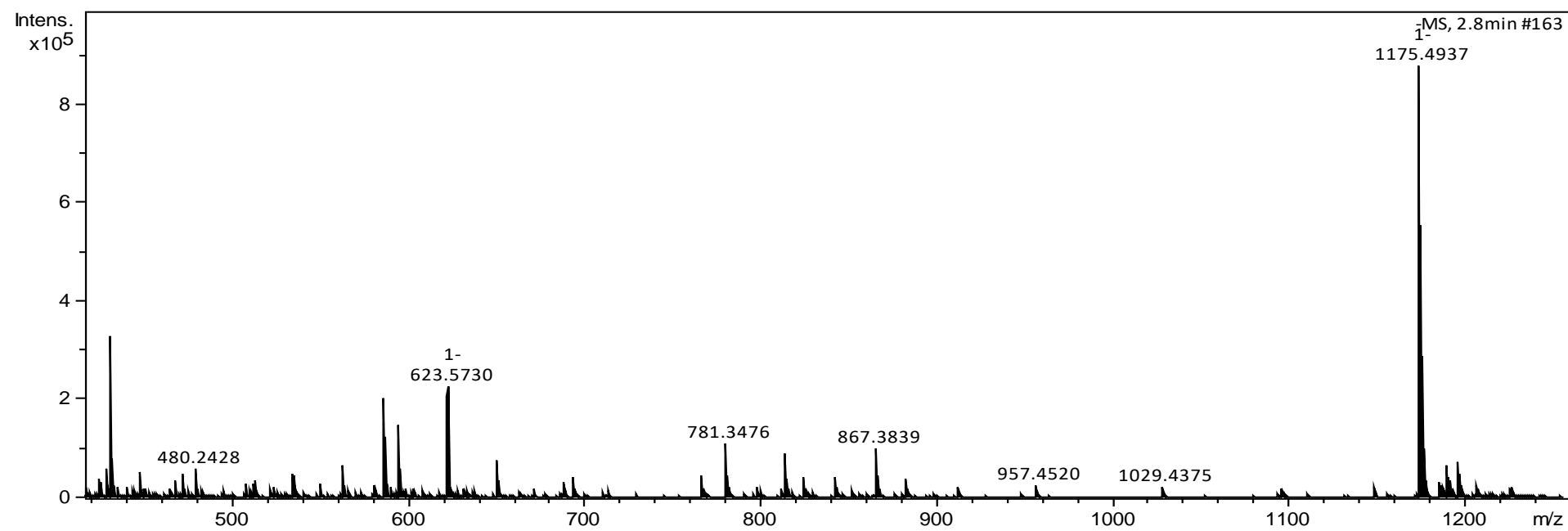
**Figure S45.** HMBC spectrum of pacificusoside G (**5**) in  $C_5D_5N$ .



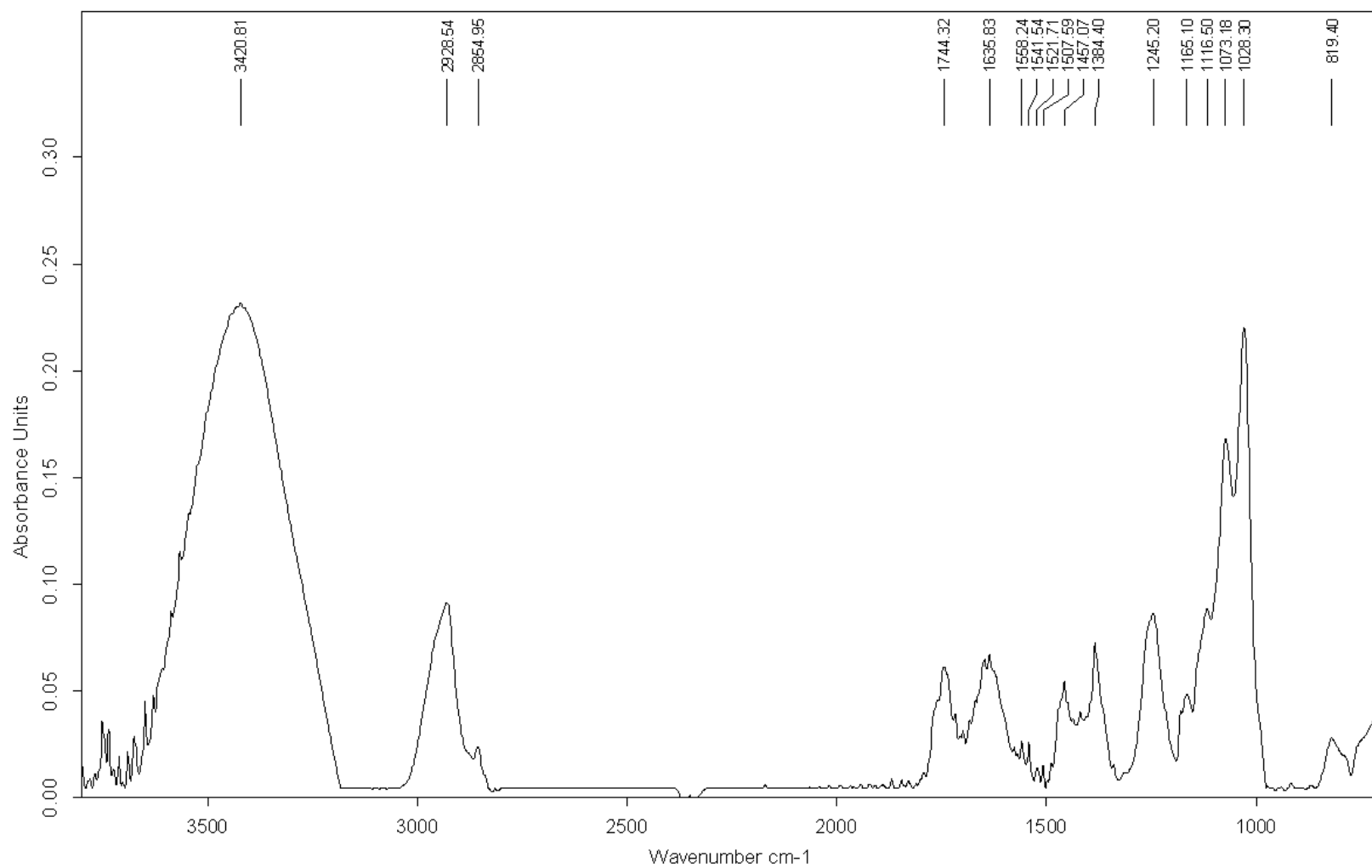
**Figure S46.** ROESY spectrum of pacificusoside G (5) in  $C_5D_5N$ .



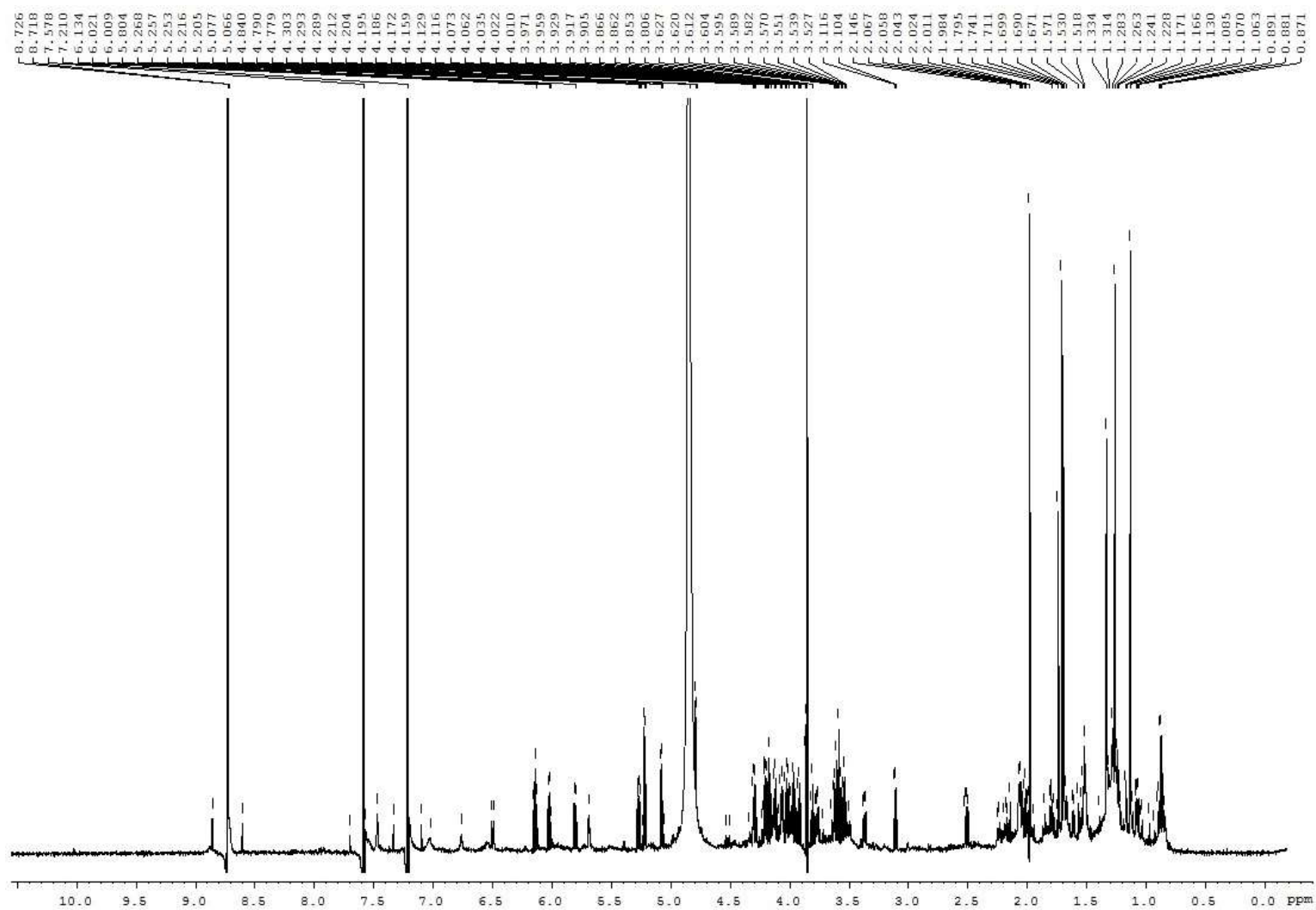
**Figure S47.** HRESIMS spectrum of pacificusoside H (**6**).



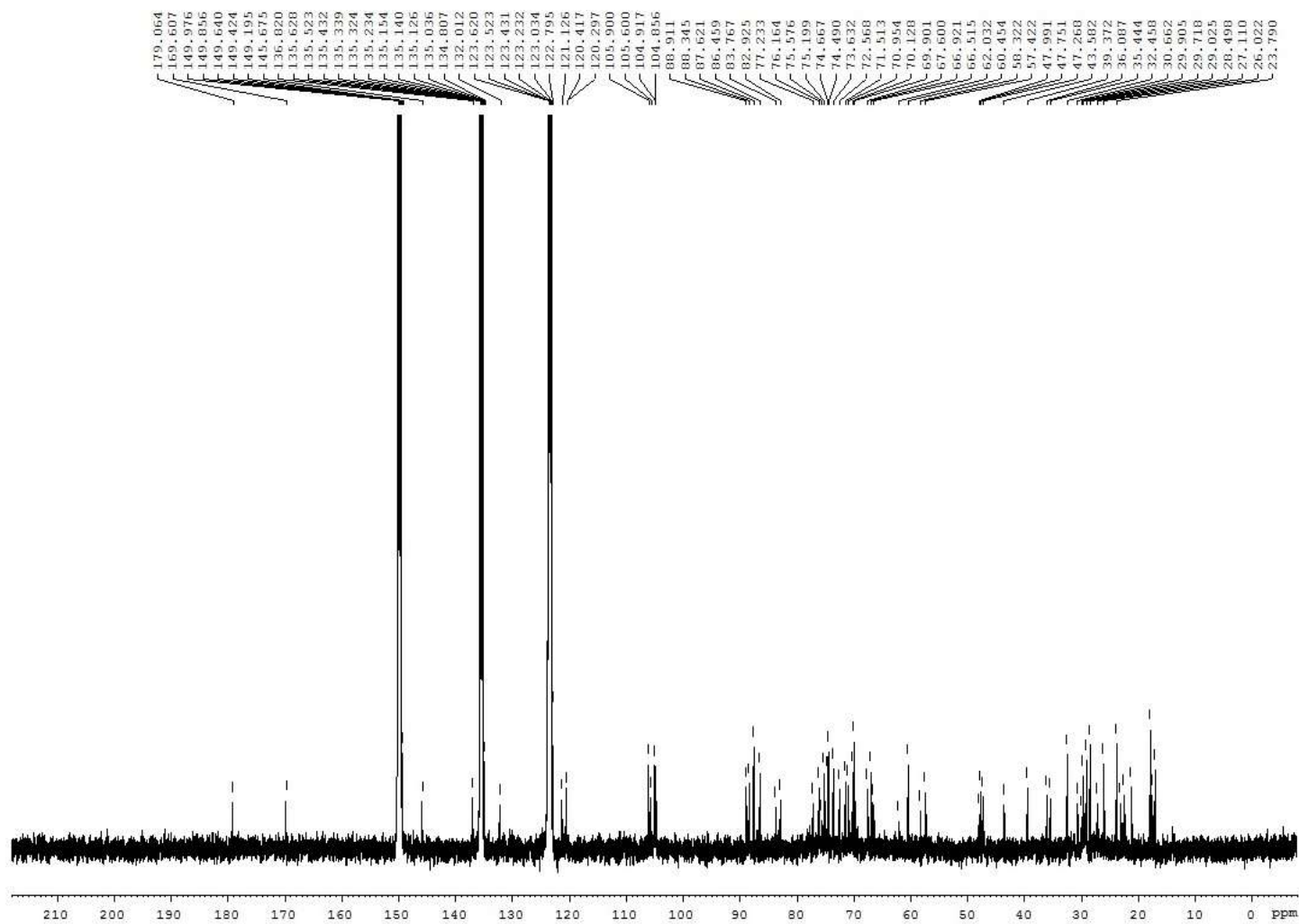
**Figure S48.** IR spectrum of pacificusoside H (**6**) in KBr.



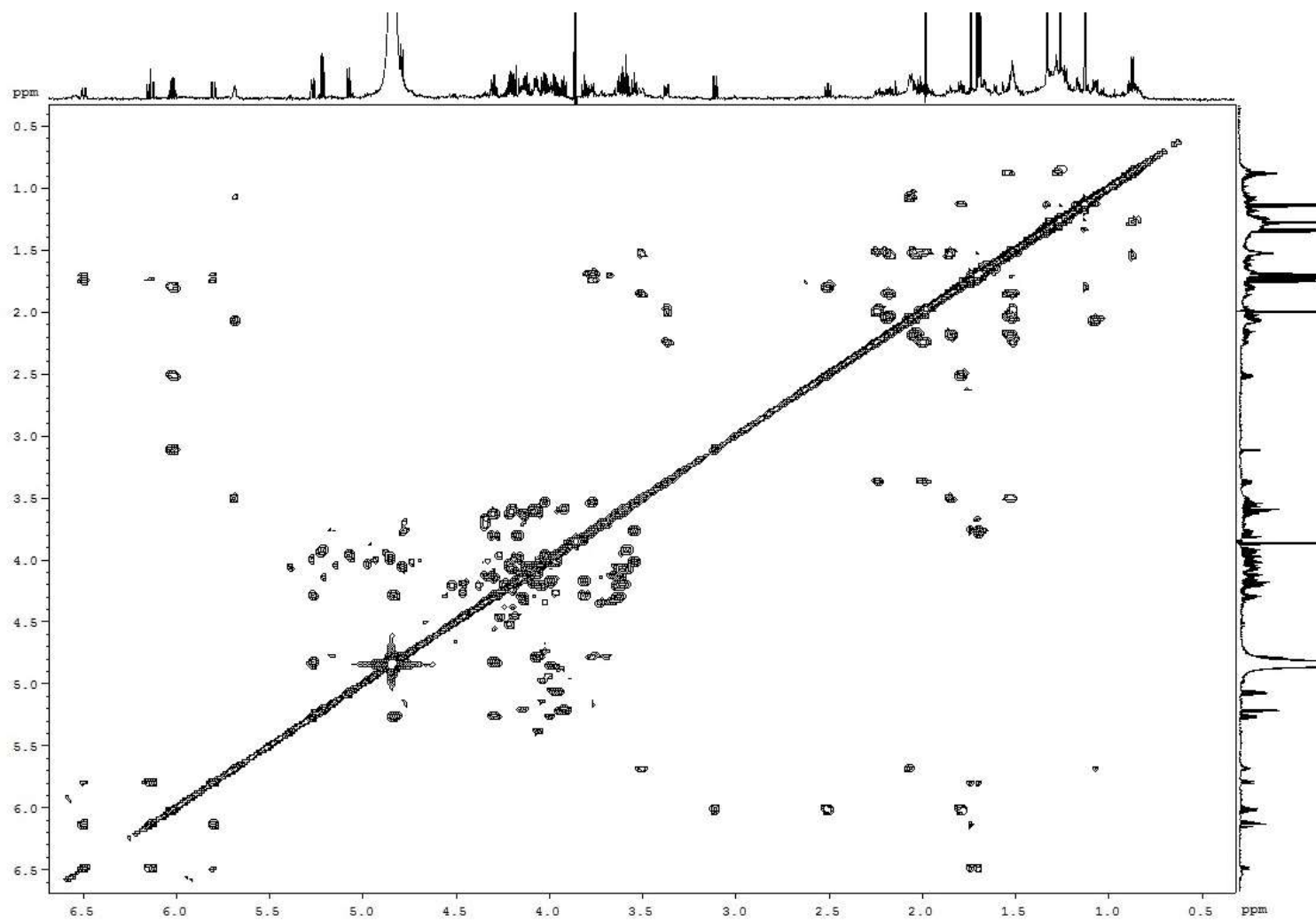
**Figure S49.**  $^1\text{H}$ -NMR spectrum of pacificusoside H (**6**) in  $\text{C}_5\text{D}_5\text{N}$ .



**Figure S50.**  $^{13}\text{C}$ -NMR spectrum of pacificusoside H (**6**) in  $\text{C}_5\text{D}_5\text{N}$ .

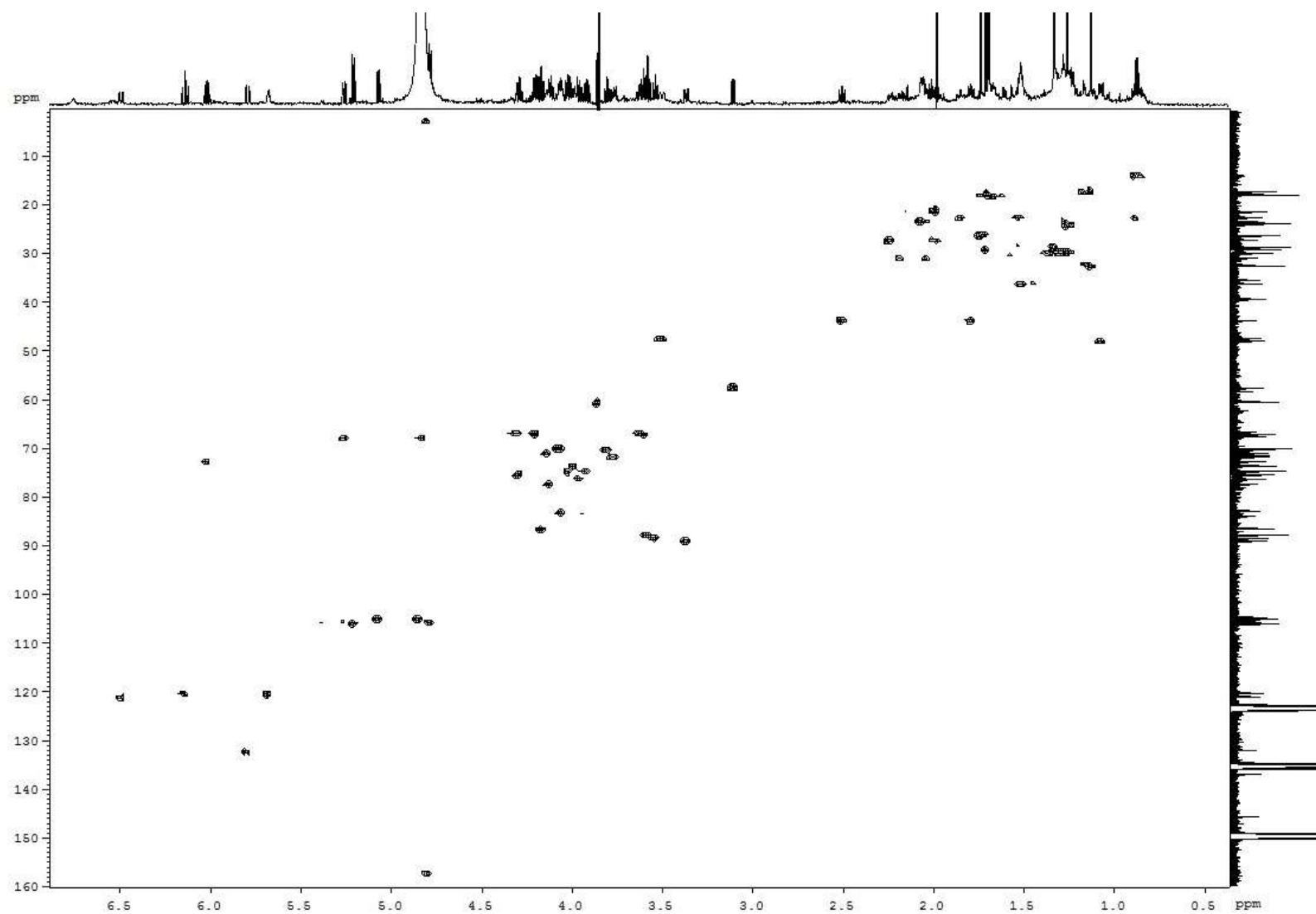


**Figure S51.**  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of pacificusoside H (**6**) in  $\text{C}_5\text{D}_5\text{N}$ .

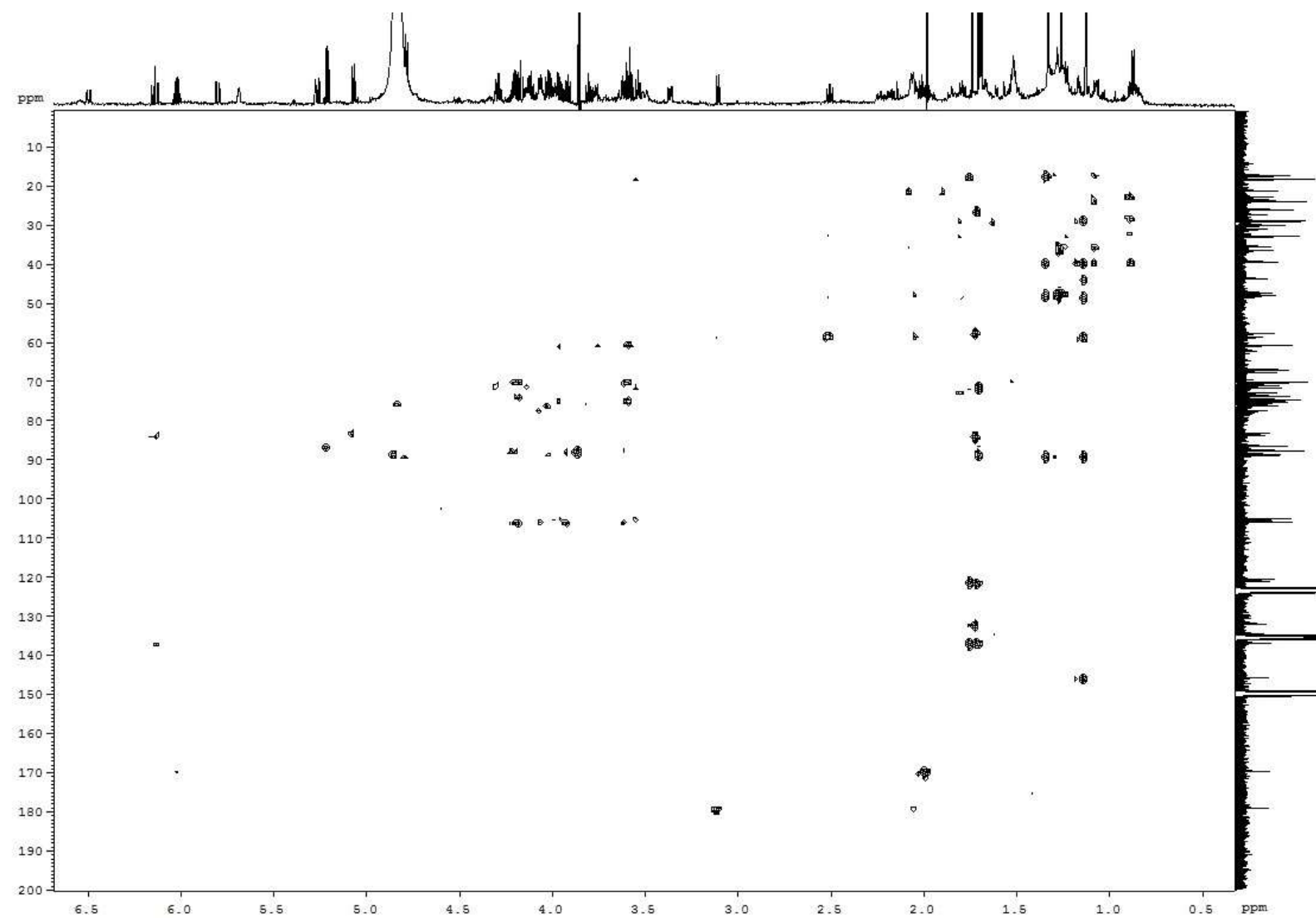




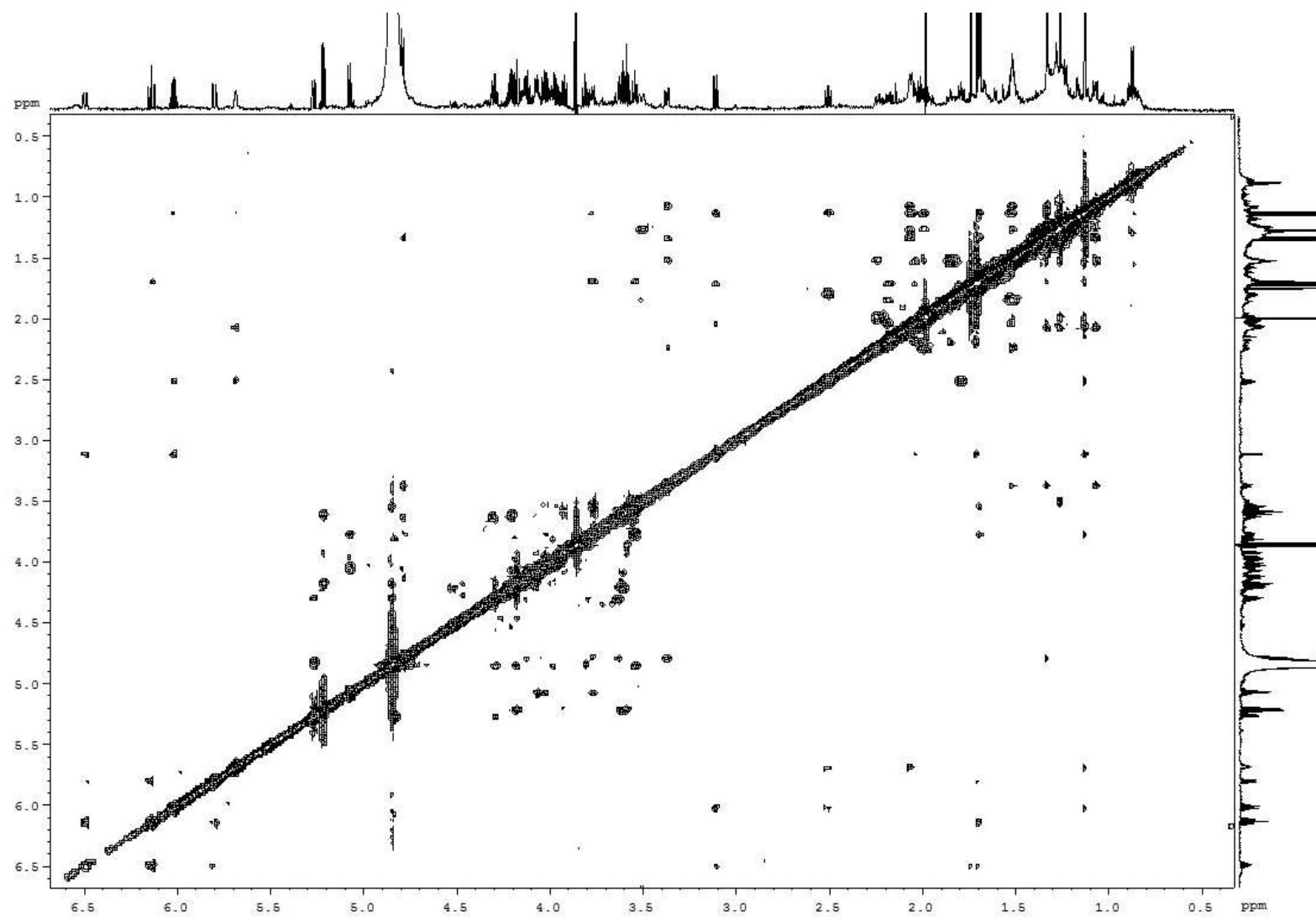
**Figure S52.** HSQC spectrum of pacificusoside H (**6**) in  $C_5D_5N$ .



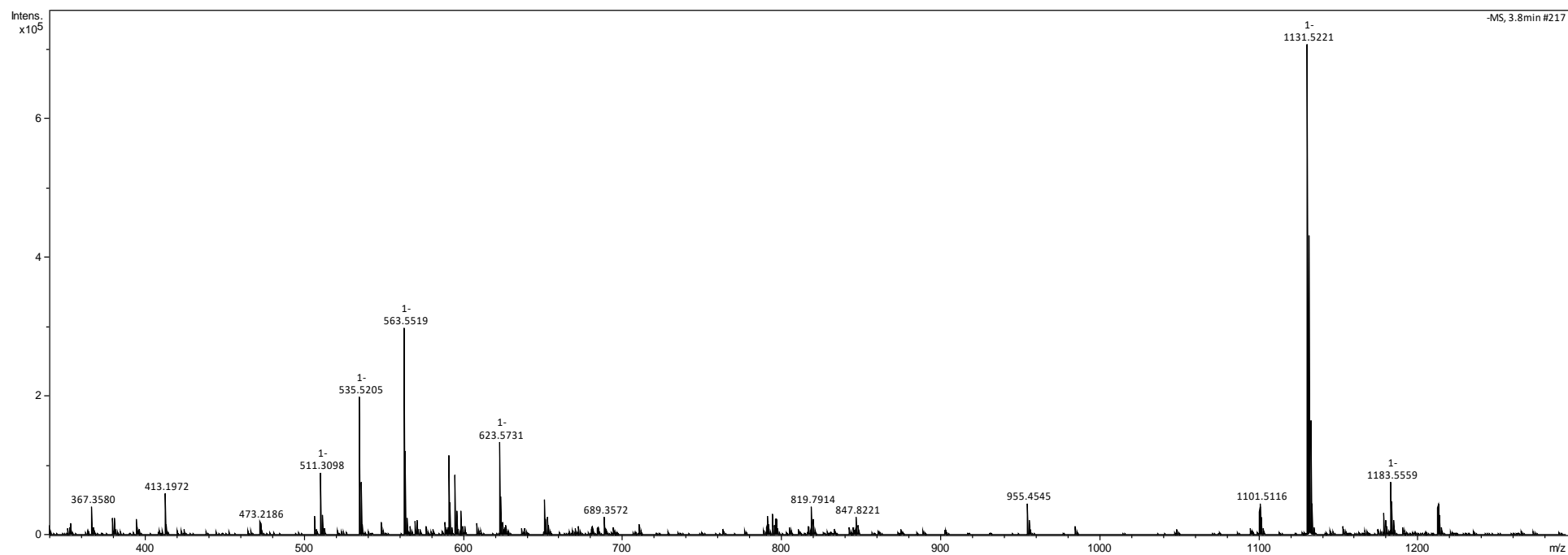
**Figure S53.** HMBC spectrum of pacificusoside H (**6**) in C<sub>5</sub>D<sub>5</sub>N.



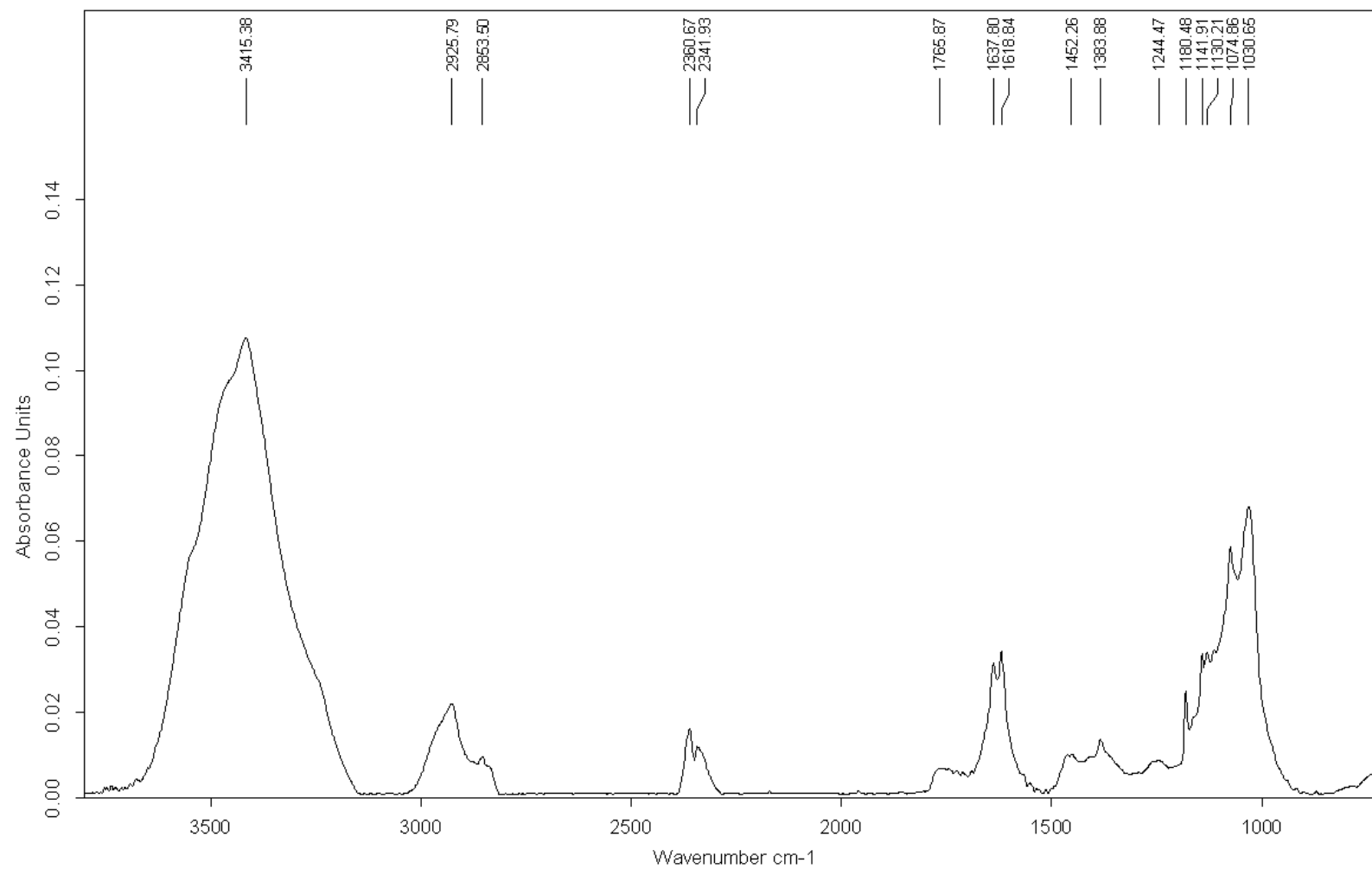
**Figure S54.** ROESY spectrum of pacificusoside H (6) in  $C_5D_5N$ .



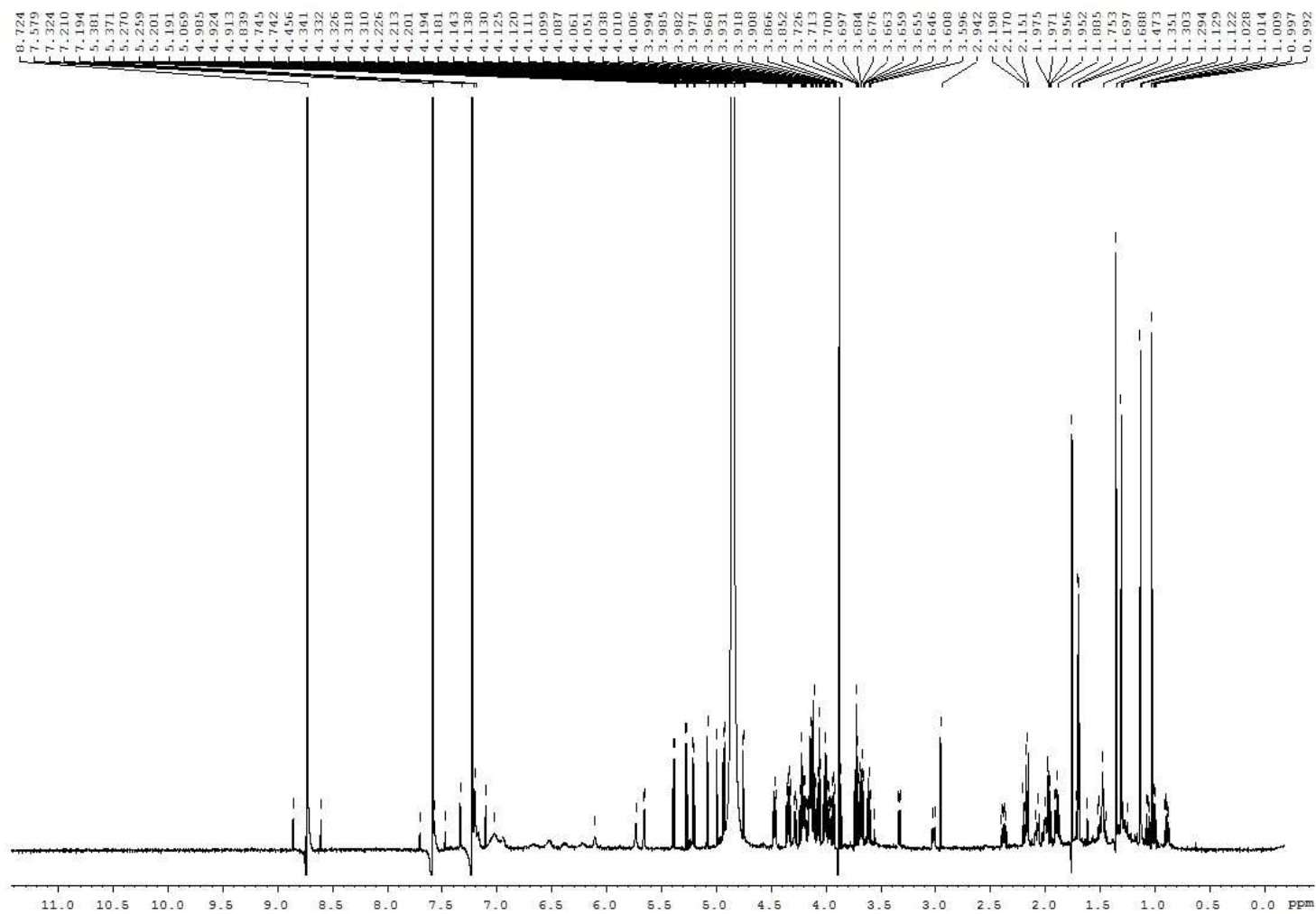
**Figure S55.** HRESIMS spectrum of pacificusoside I (7).



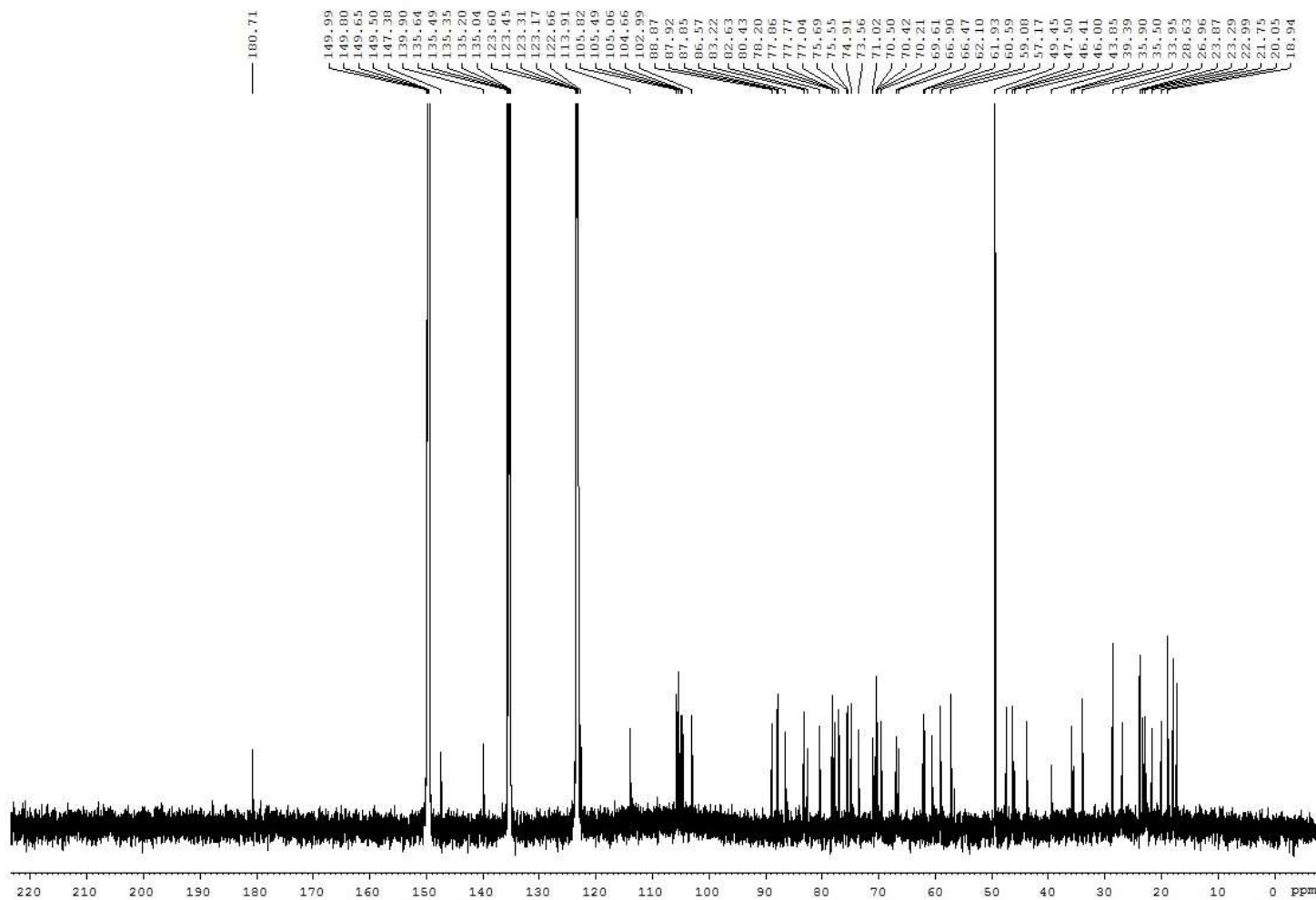
**Figure S56.** IR spectrum of pacificusoside I (**7**) in KBr.



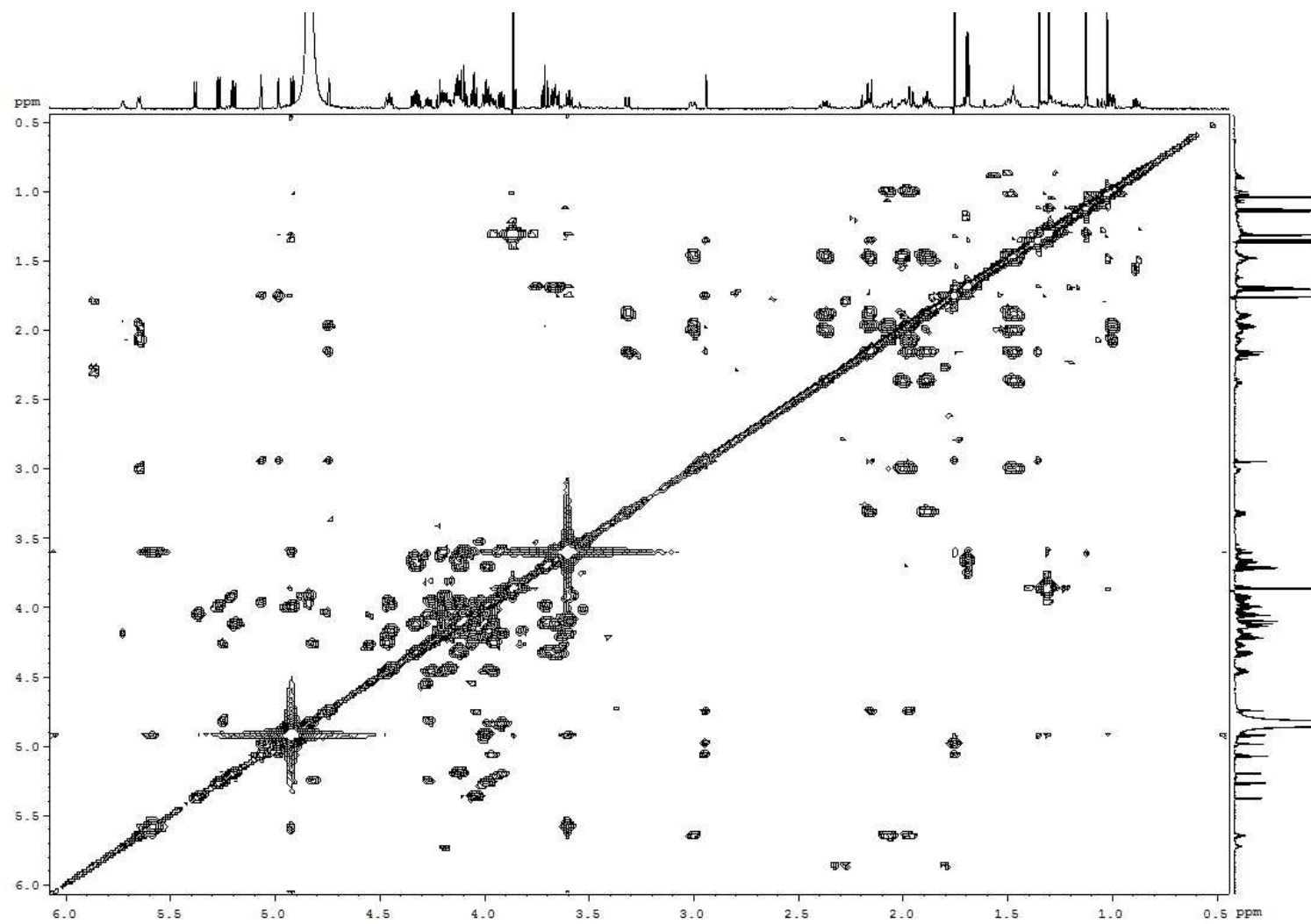
**Figure S57.**  $^1\text{H}$ -NMR spectrum of pacificusoside I (**7**) in  $\text{C}_5\text{D}_5\text{N}$ .



**Figure S58.**  $^{13}\text{C}$ -NMR spectrum of pacificusoside I (**7**) in  $\text{C}_5\text{D}_5\text{N}$ .

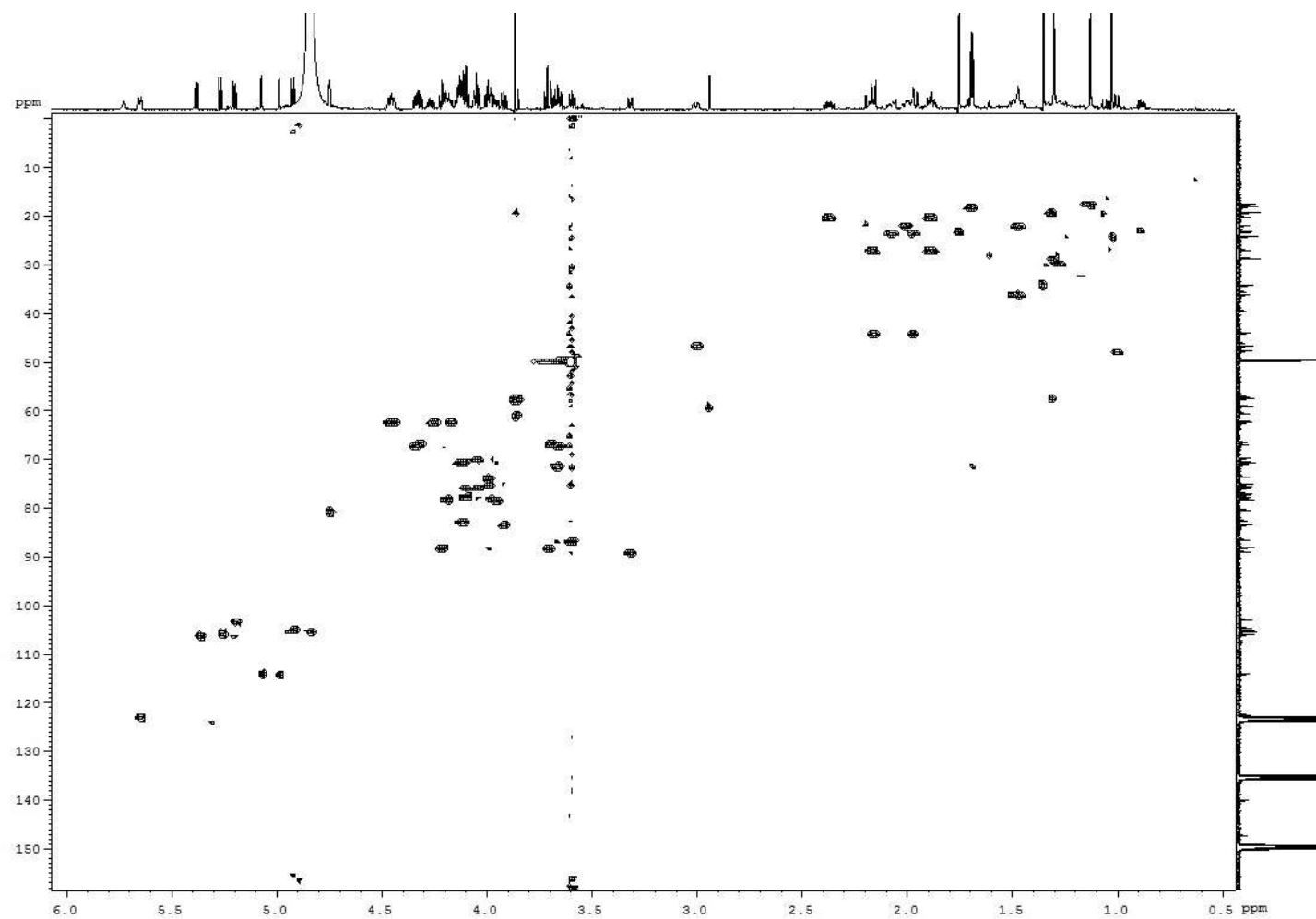


**Figure S59.**  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of pacificusoside I (7) in  $\text{C}_5\text{D}_5\text{N}$ .

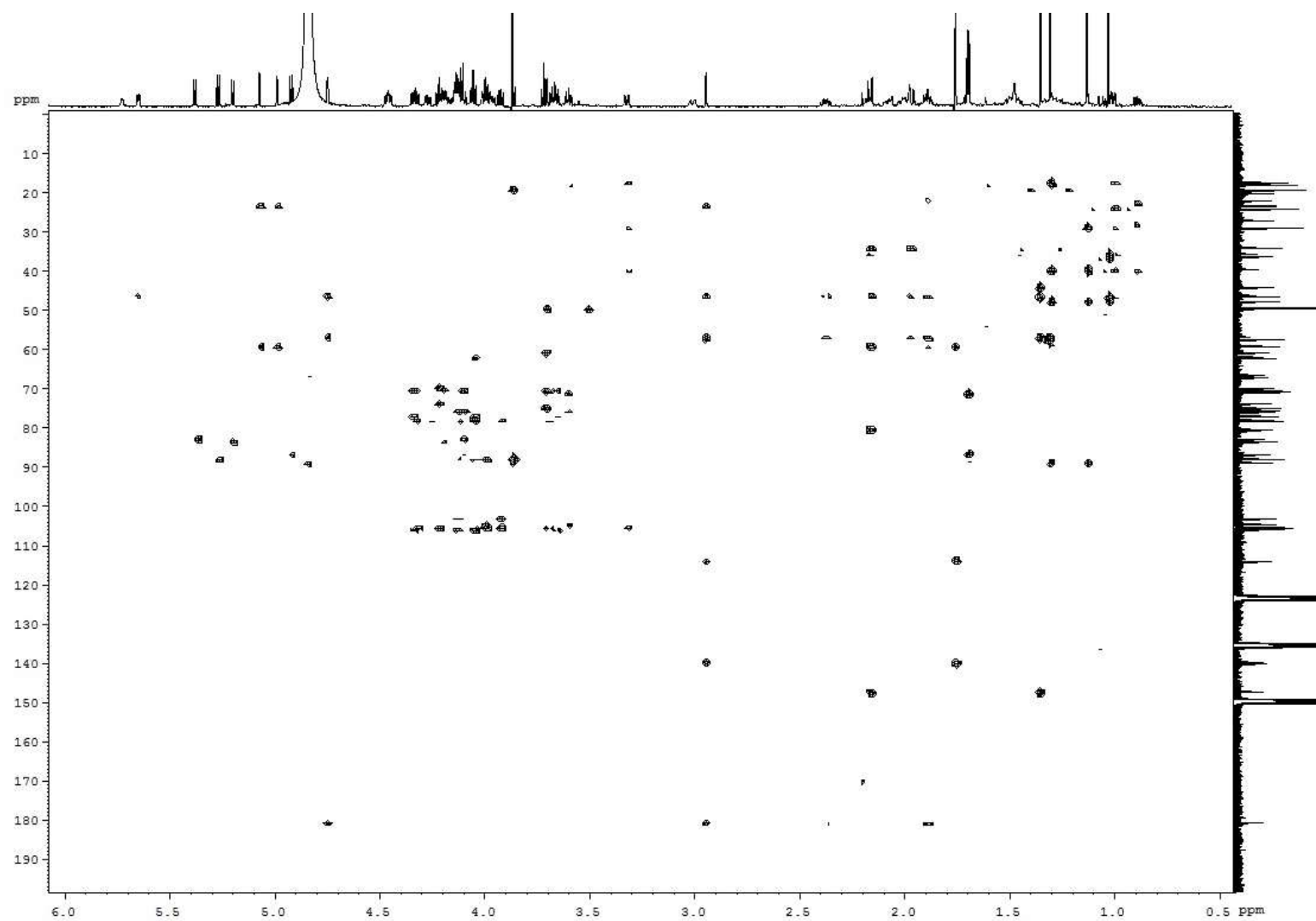




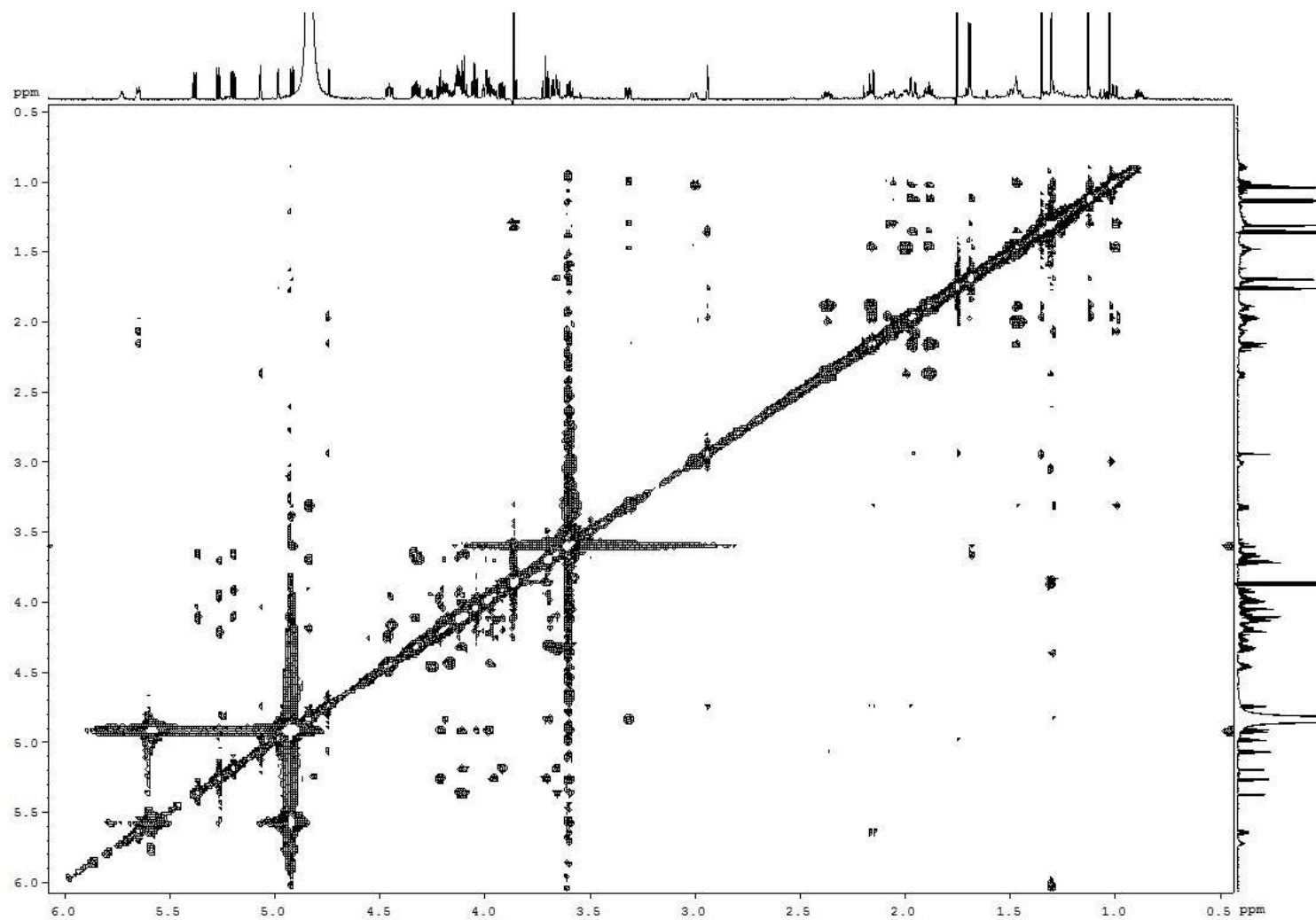
**Figure S60.** HSQC spectrum of pacificusoside I (7) in  $C_5D_5N$ .



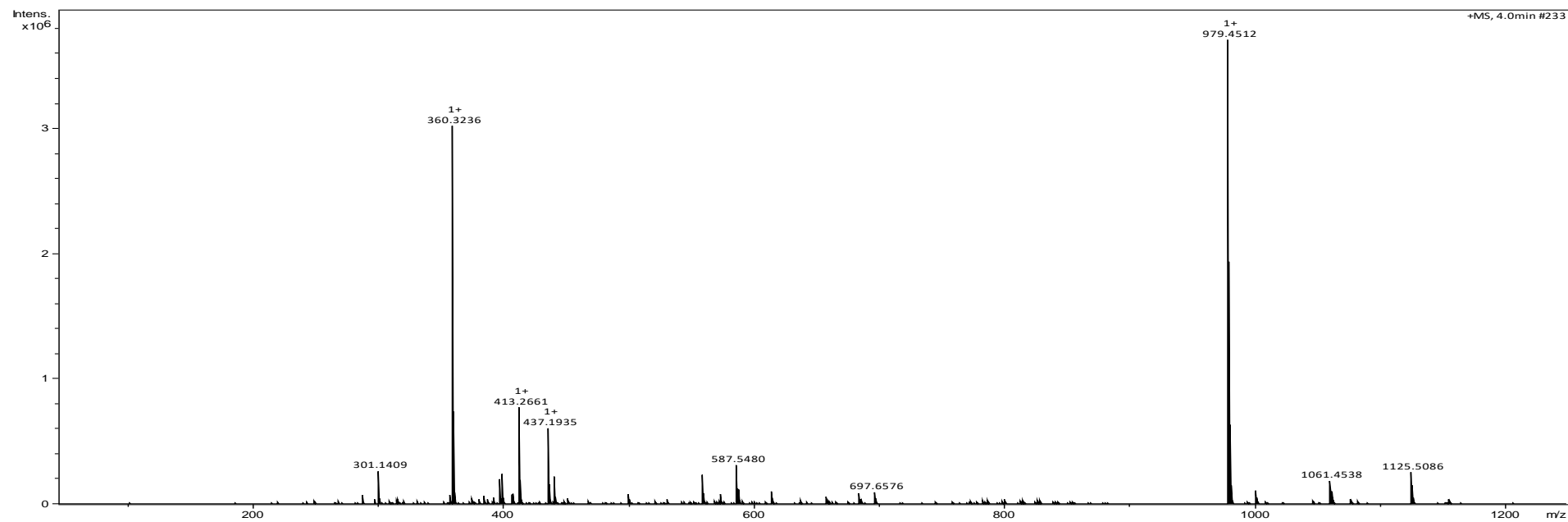
**Figure S61.** HMBC spectrum of pacificusoside I (7) in C<sub>5</sub>D<sub>5</sub>N.



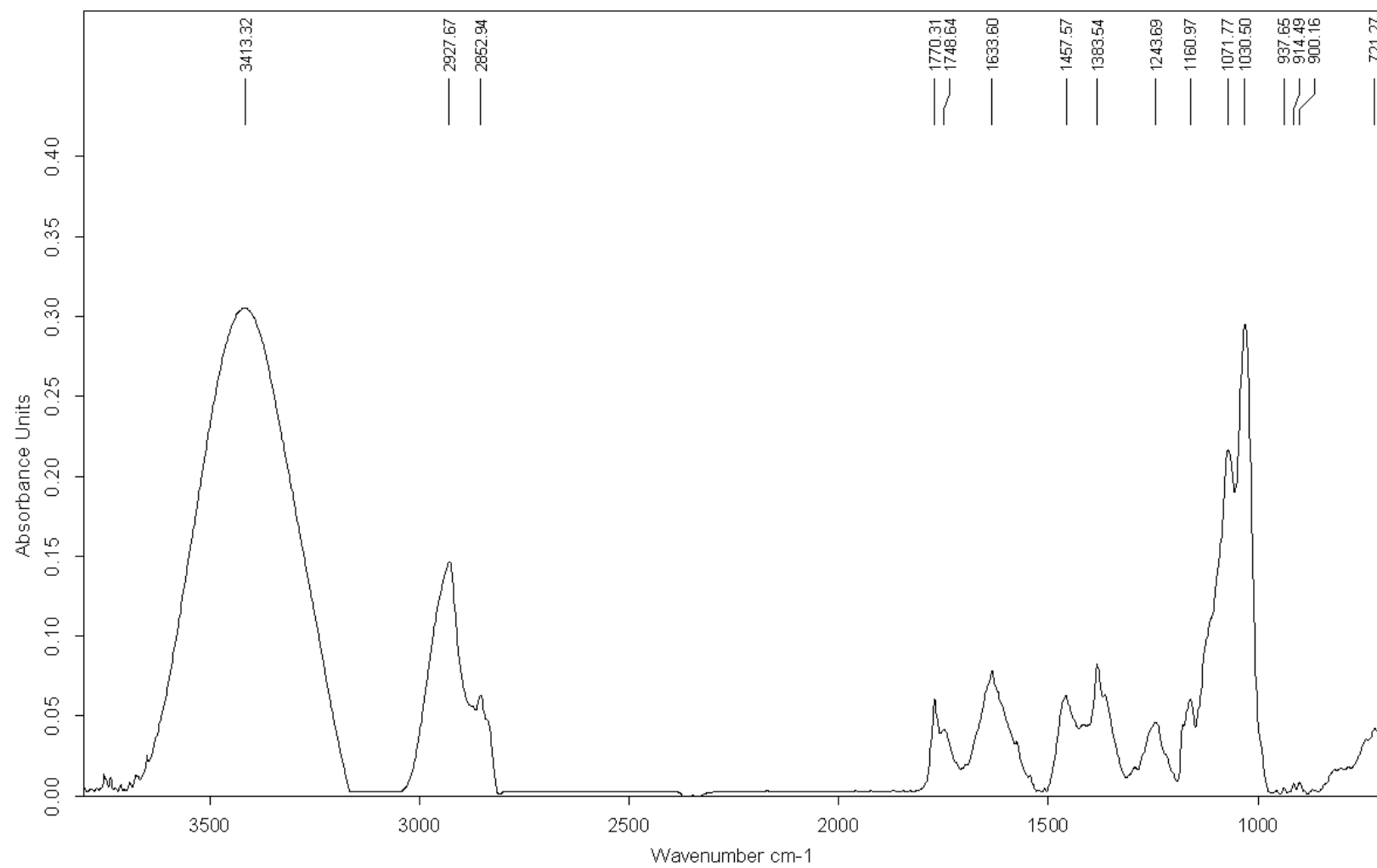
**Figure S62.** ROESY spectrum of pacificusoside I (7) in C<sub>5</sub>D<sub>5</sub>N.



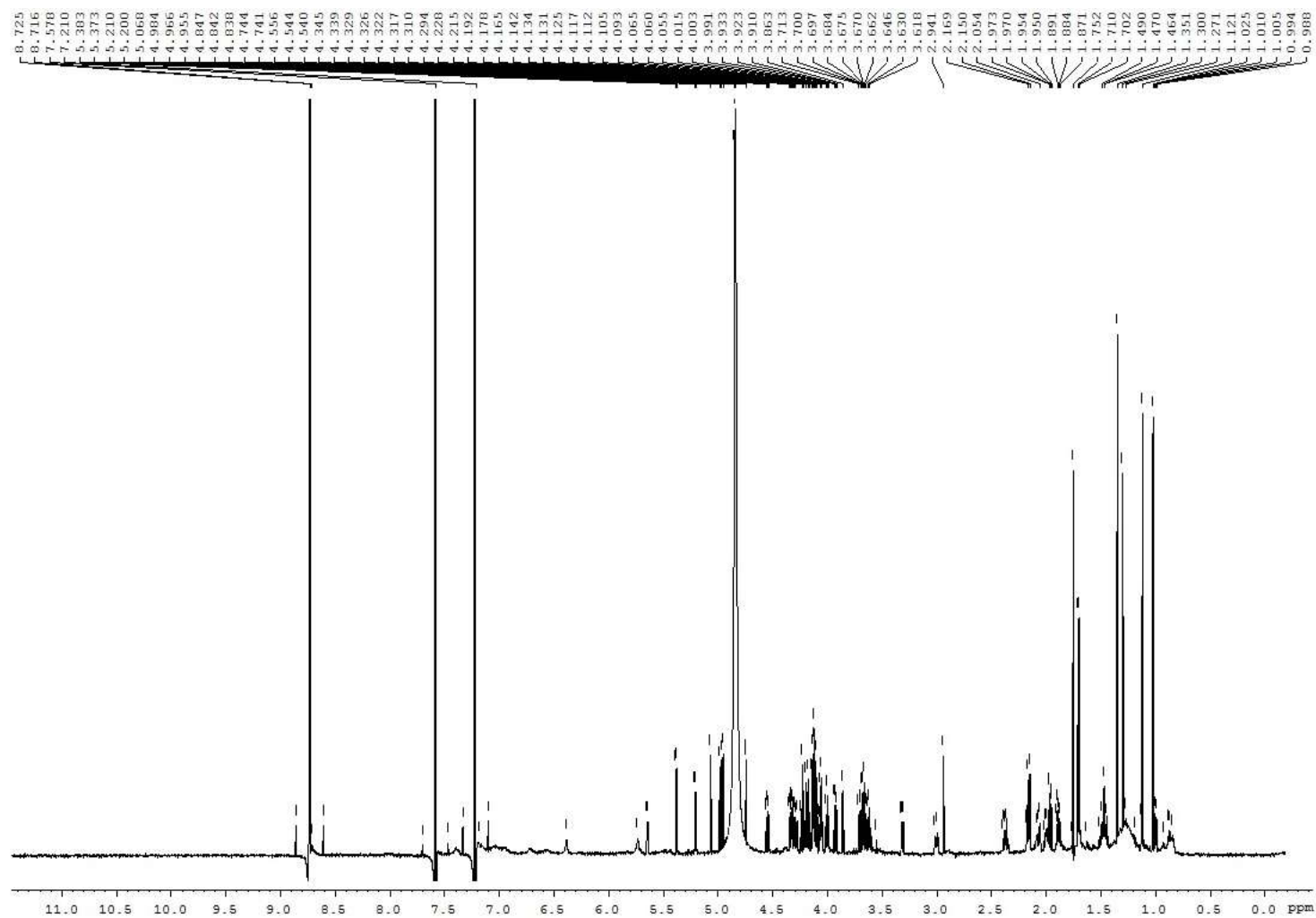
**Figure S63.** HRESIMS spectrum of pacificusoside J (8).



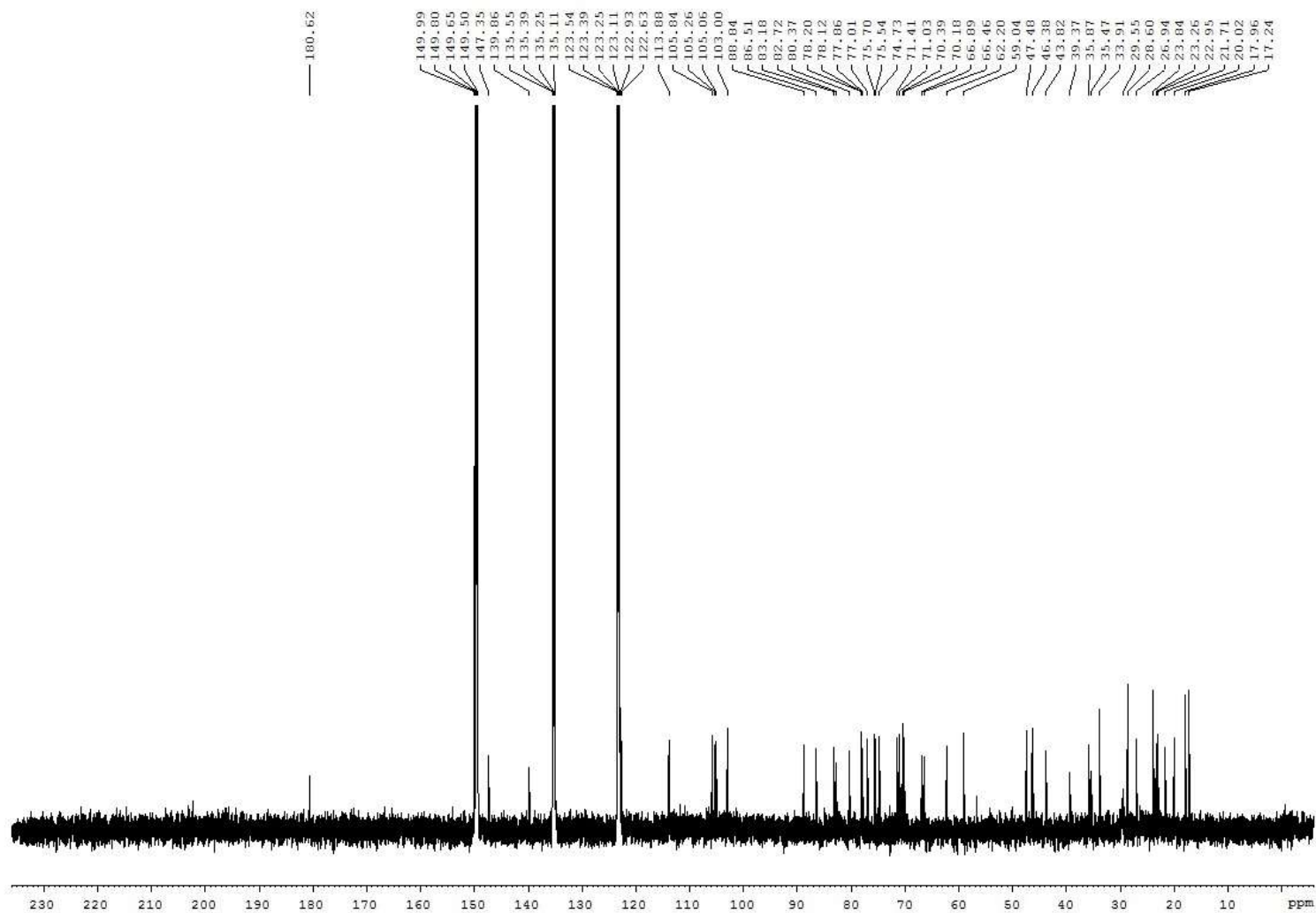
**Figure S64.** IR spectrum of pacificusoside J (**8**) in KBr.



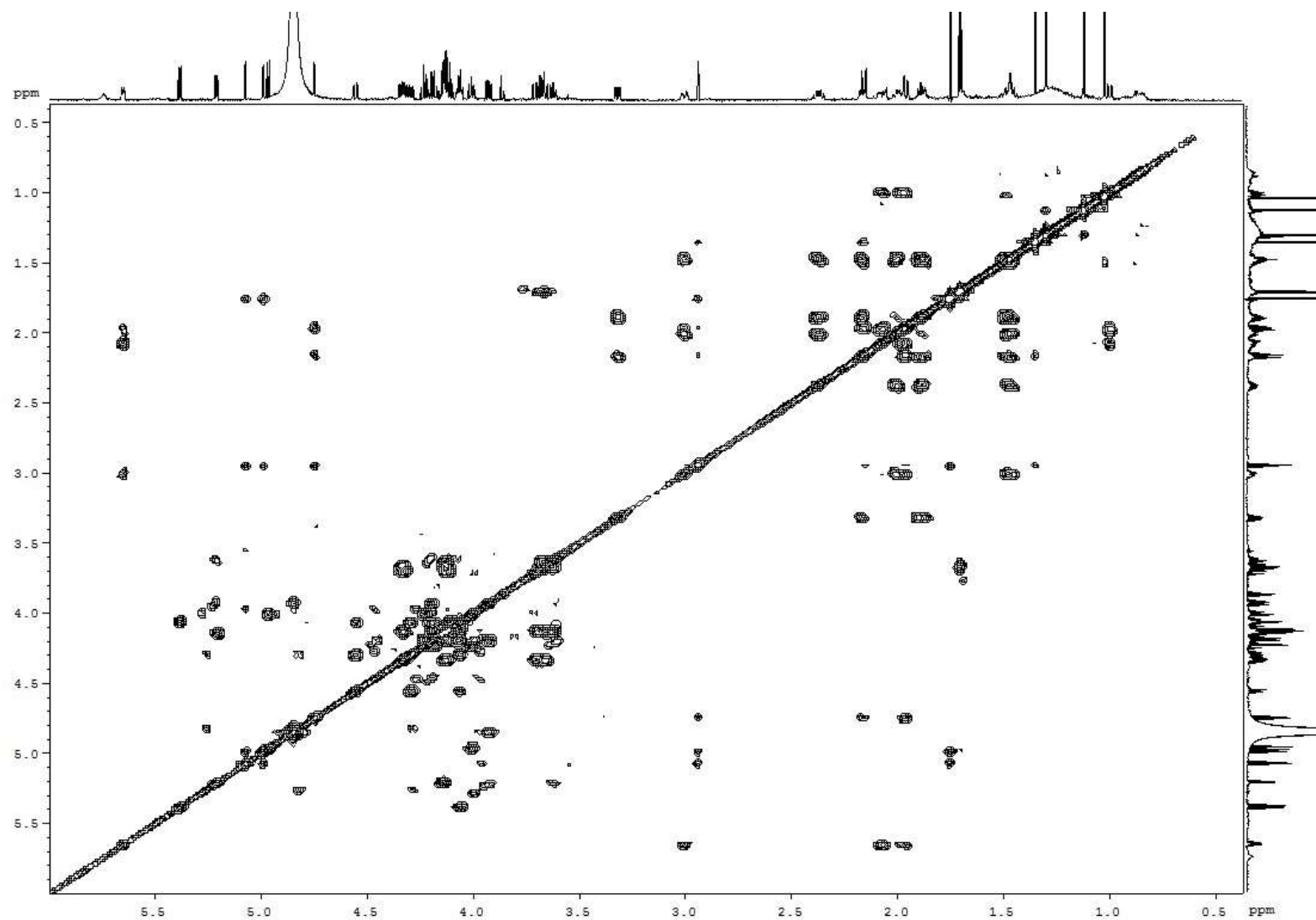
**Figure S65.**  $^1\text{H}$ -NMR spectrum of pacificusoside J (**8**) in  $\text{C}_5\text{D}_5\text{N}$ .



**Figure S66.**  $^{13}\text{C}$ -NMR spectrum of pacificusoside J (**8**) in  $\text{C}_5\text{D}_5\text{N}$ .

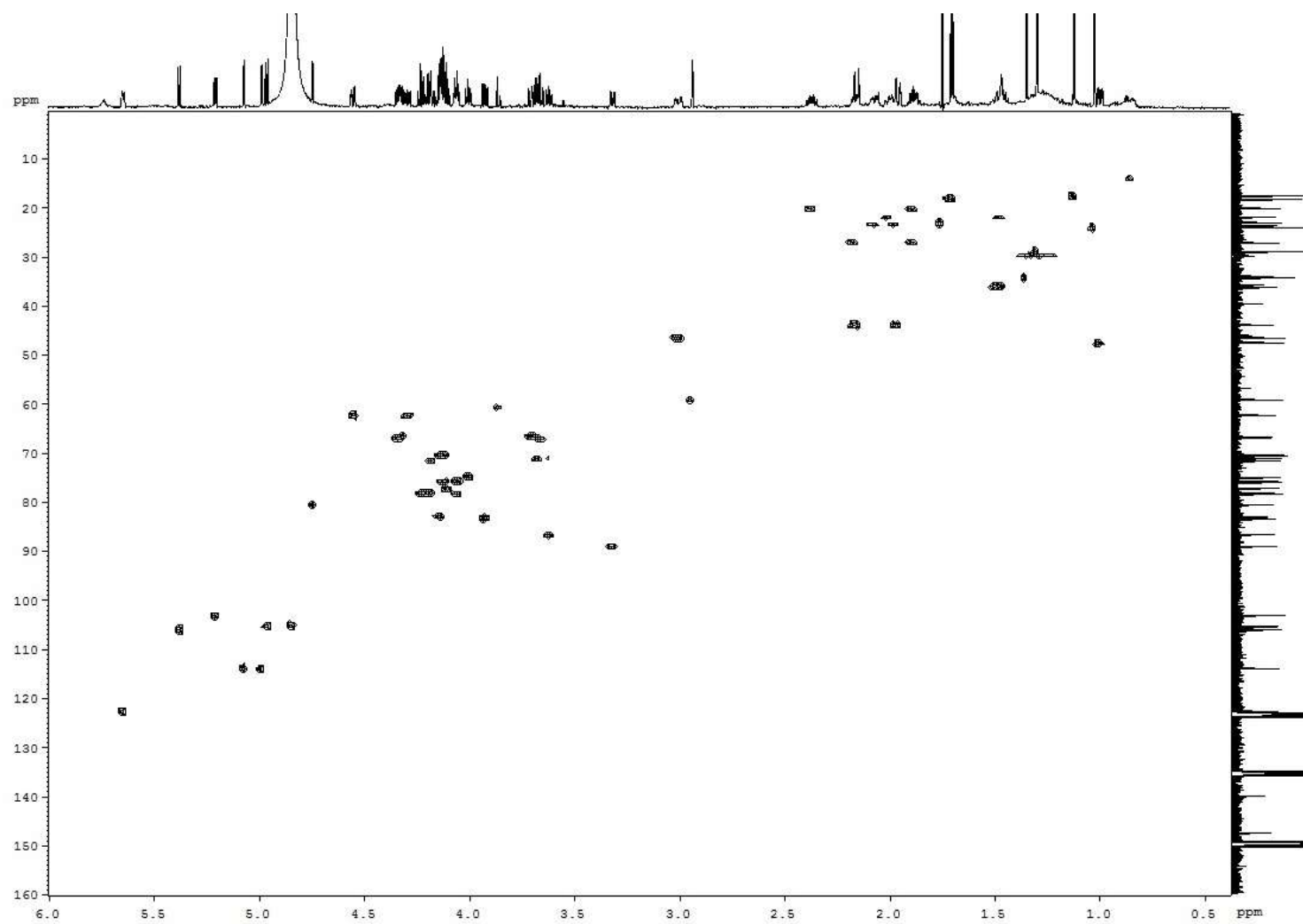


**Figure S67.**  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of pacificusoside J (**8**) in  $\text{C}_5\text{D}_5\text{N}$ .

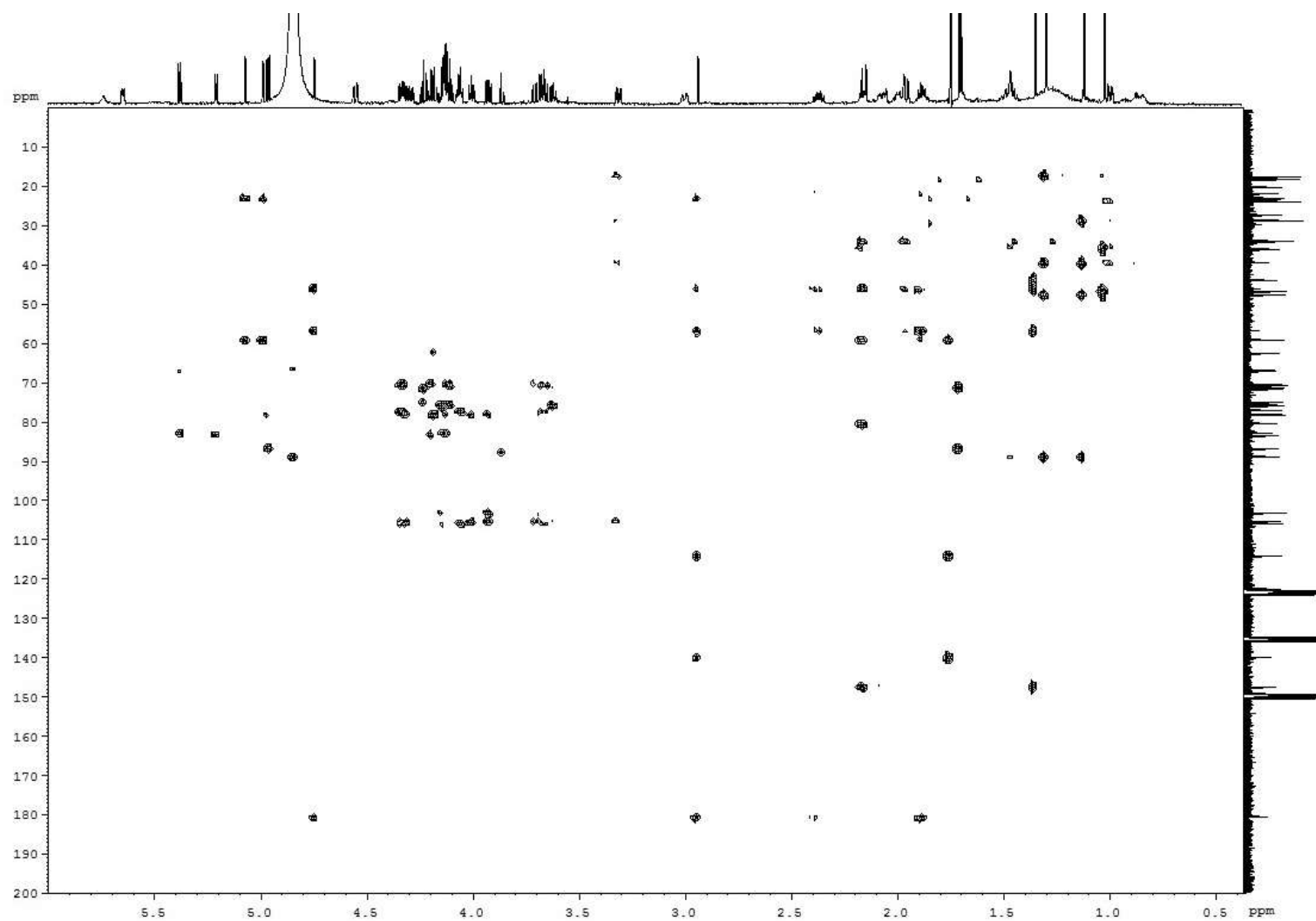




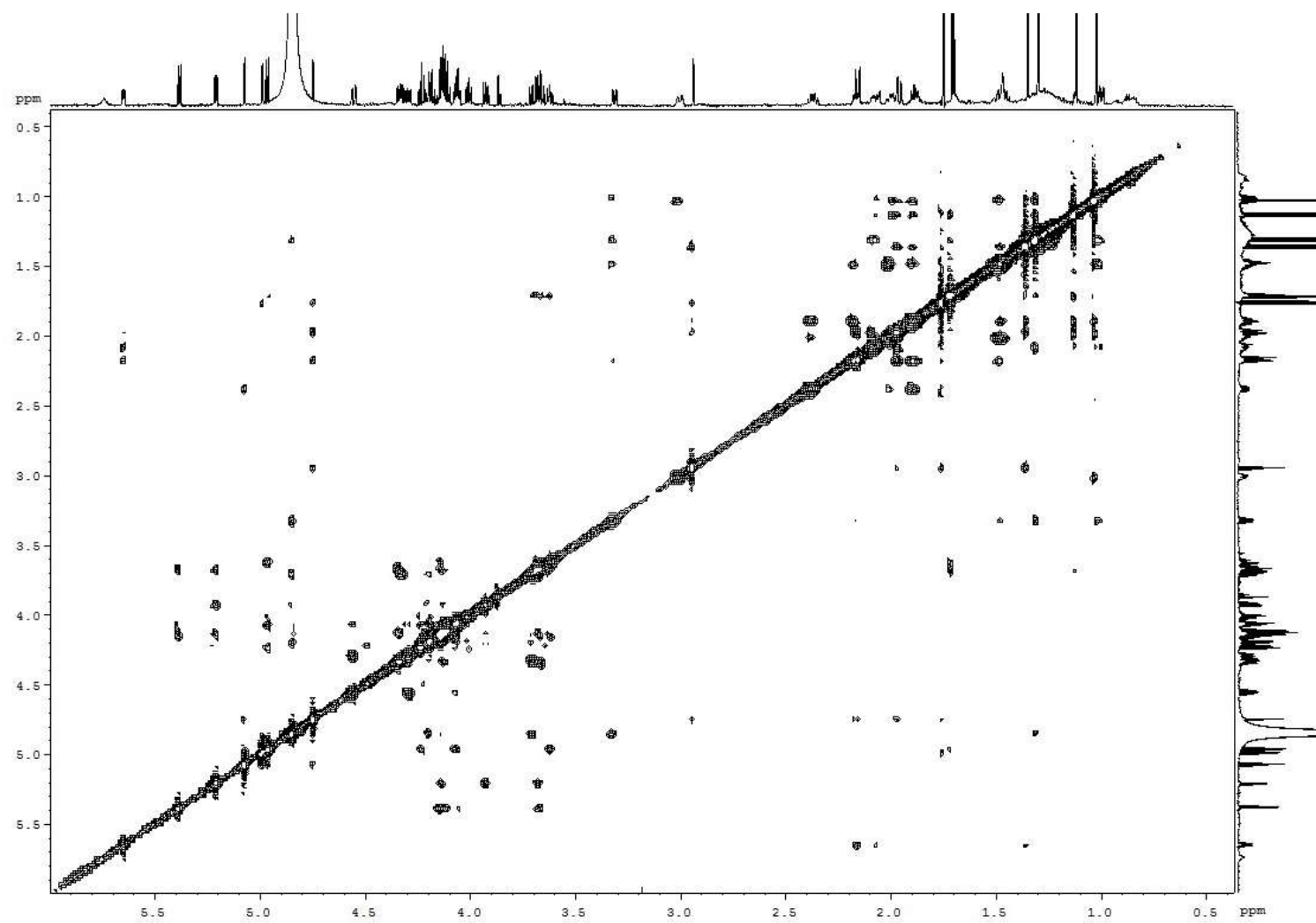
**Figure S68.** HSQC spectrum of pacificusoside J (8) in C<sub>5</sub>D<sub>5</sub>N.



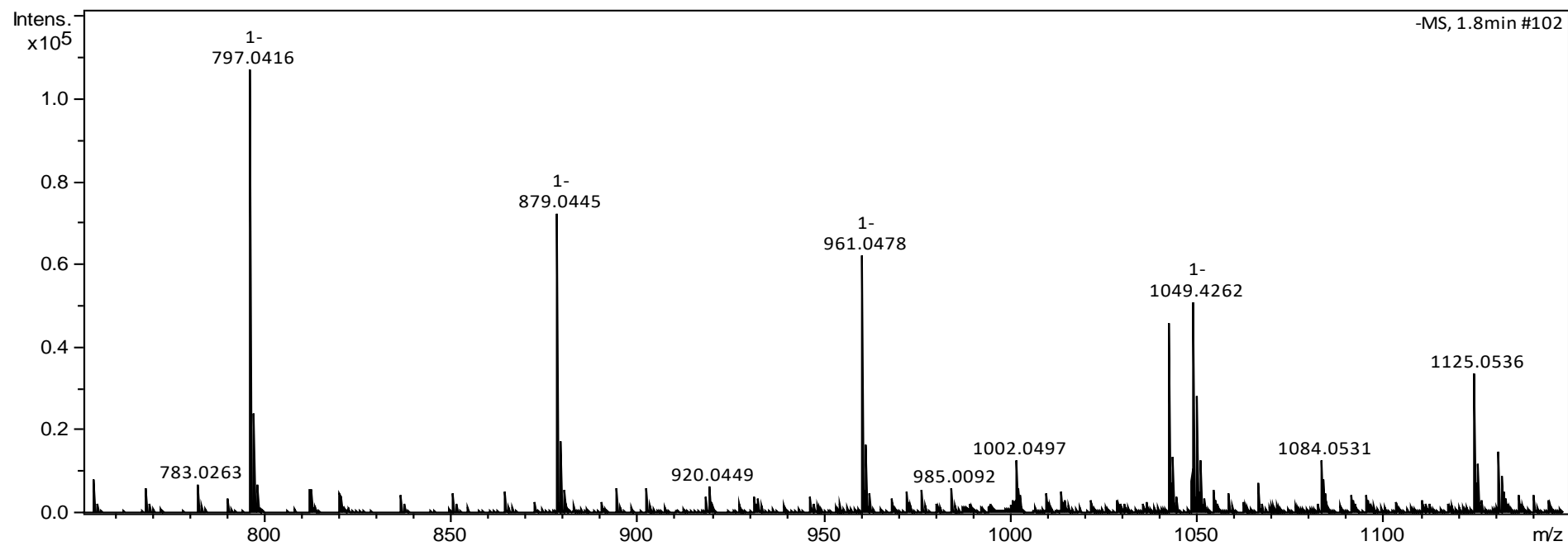
**Figure S69.** HMBC spectrum of pacificusoside J (**8**) in C<sub>5</sub>D<sub>5</sub>N.



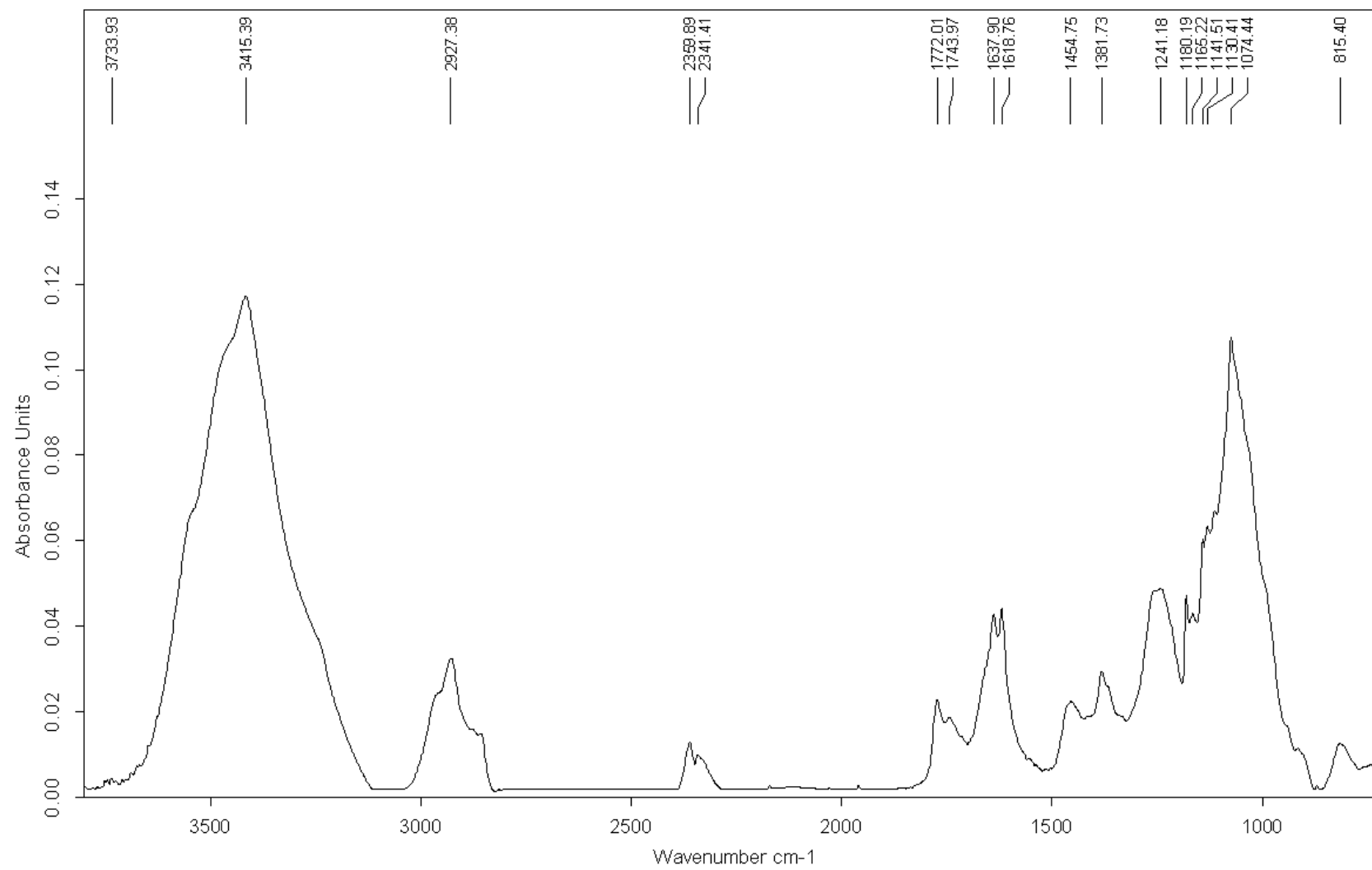
**Figure S70.** ROESY spectrum of pacificusoside J (**8**) in C<sub>5</sub>D<sub>5</sub>N.



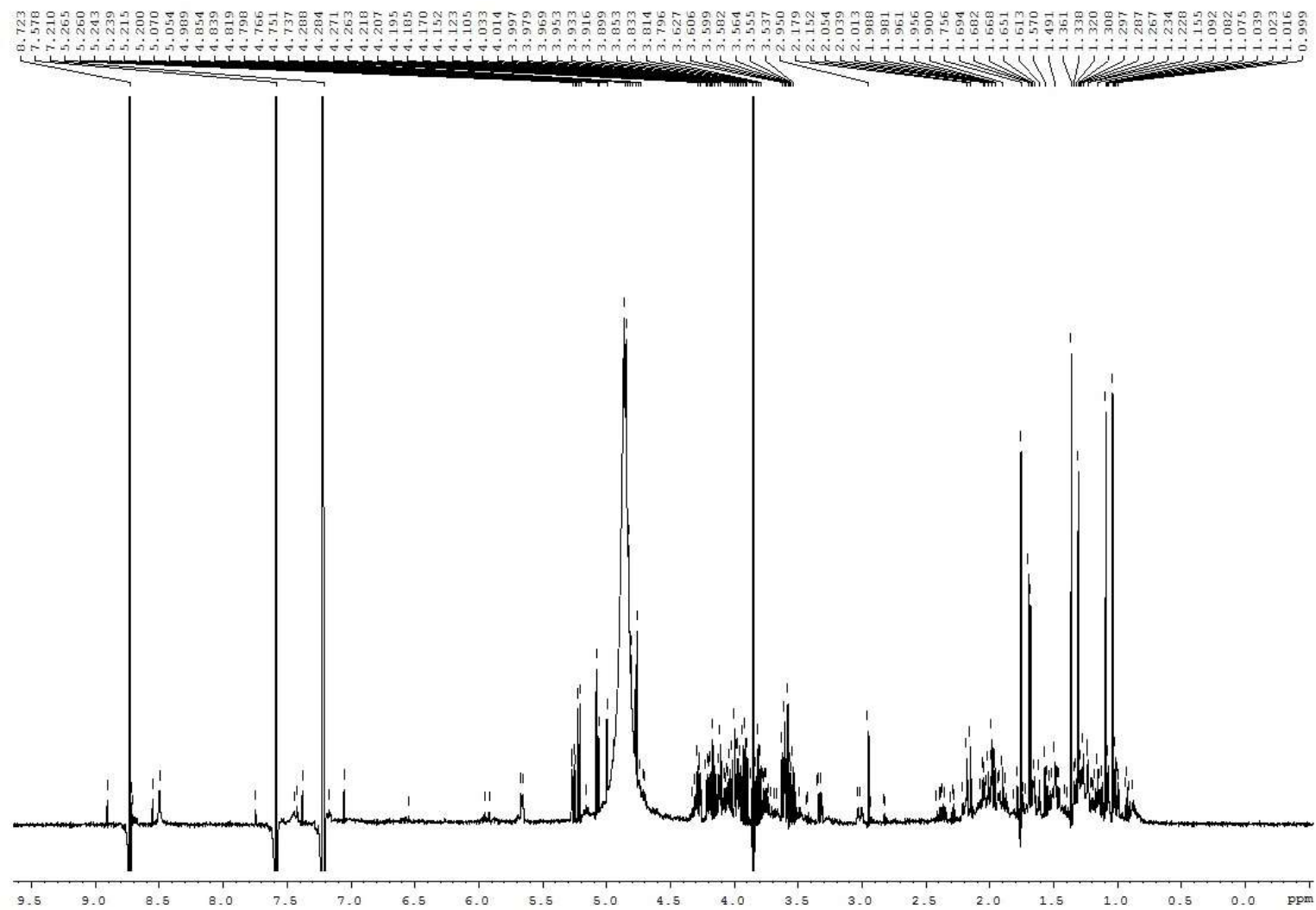
**Figure S71.** HRESIMS spectrum of pacificusoside K (9).



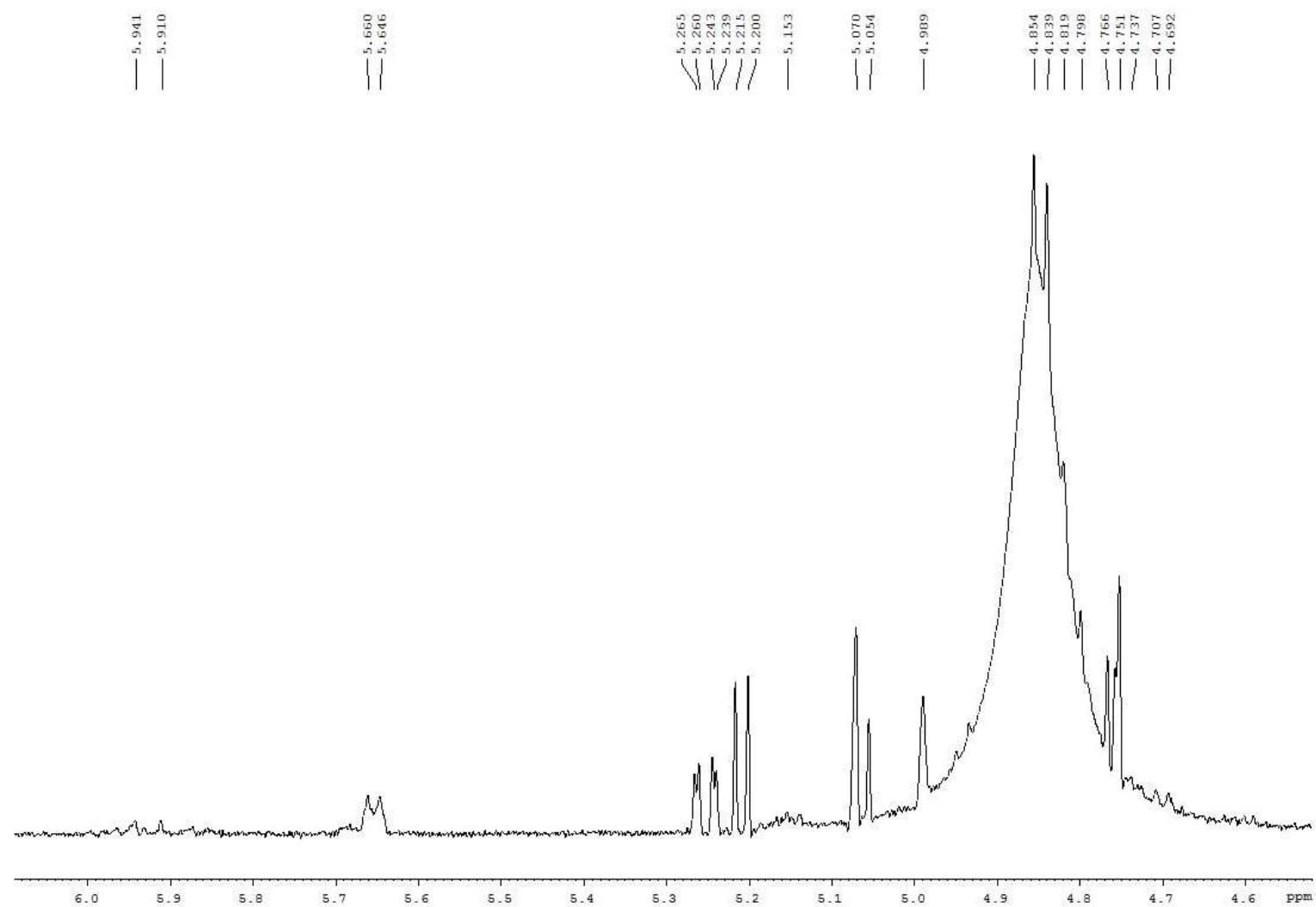
**Figure S72.** IR spectrum of pacificusoside K (9) in KBr.



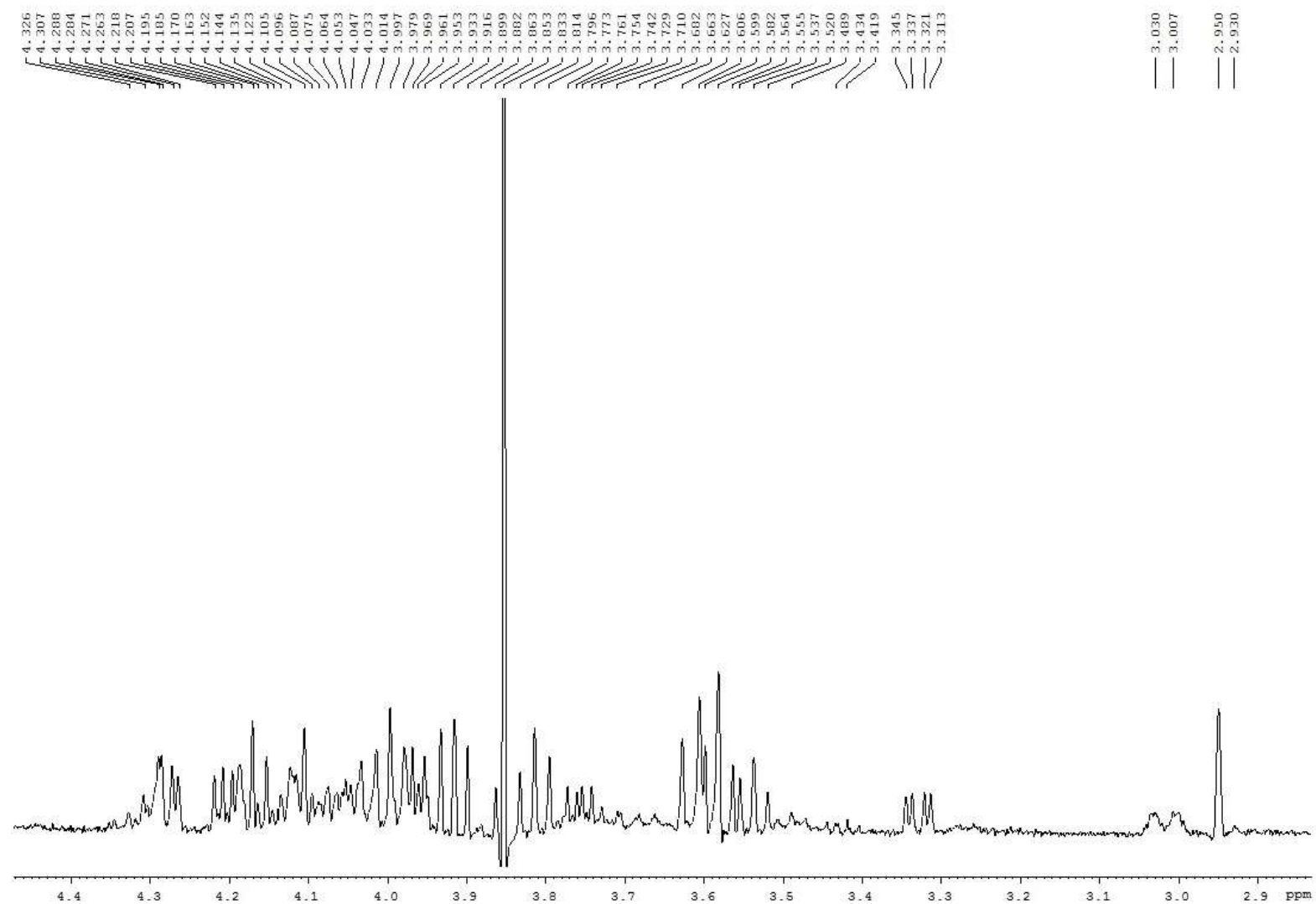
**Figure S73.**  $^1\text{H}$ -NMR spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .



**Figure S74.** Expansion №1 of  $^1\text{H}$ -NMR spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .

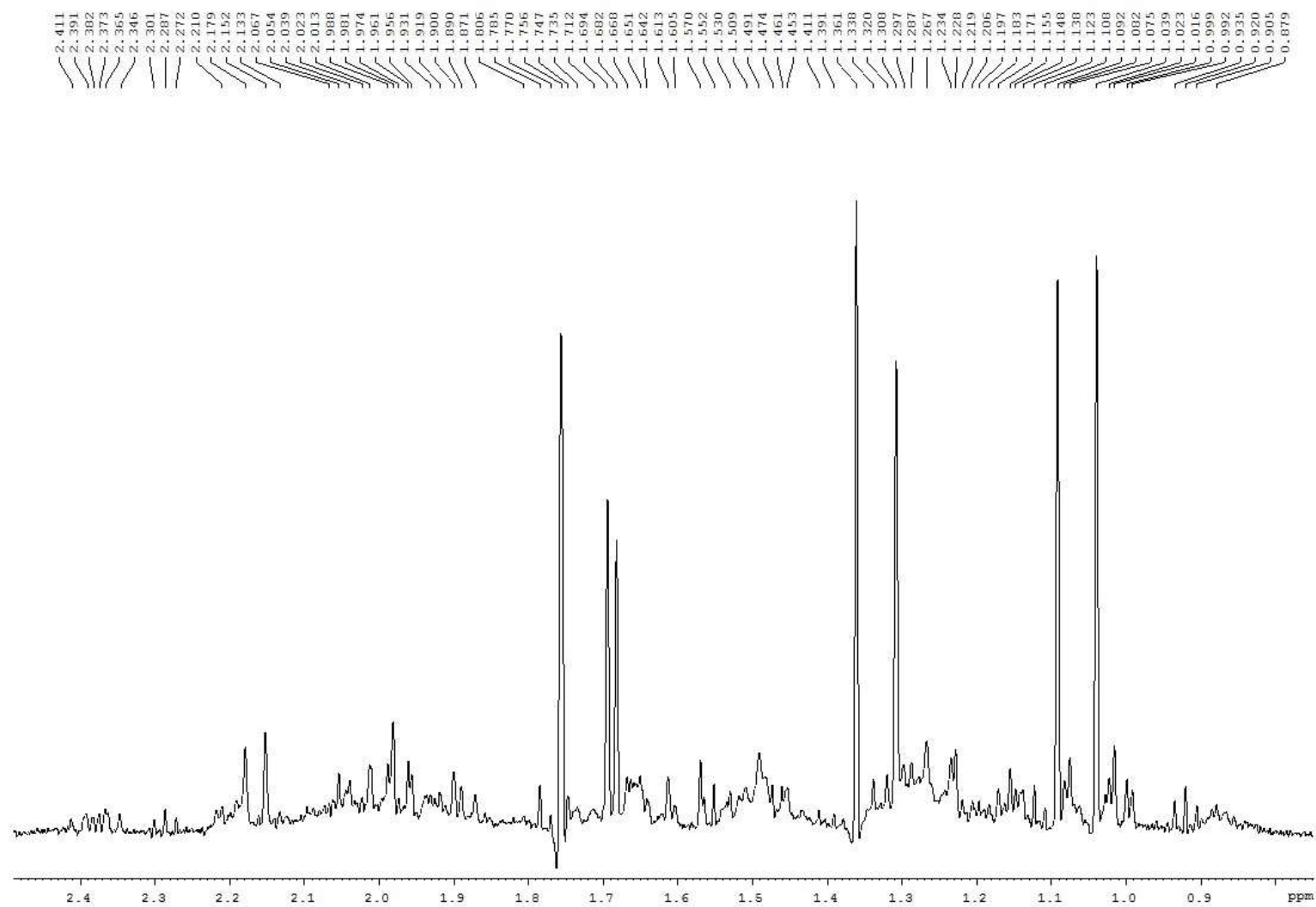


**Figure S75.** Expansion №2 of  $^1\text{H}$ -NMR spectrum of pacificusoside K (9) in  $\text{C}_5\text{D}_5\text{N}$ .

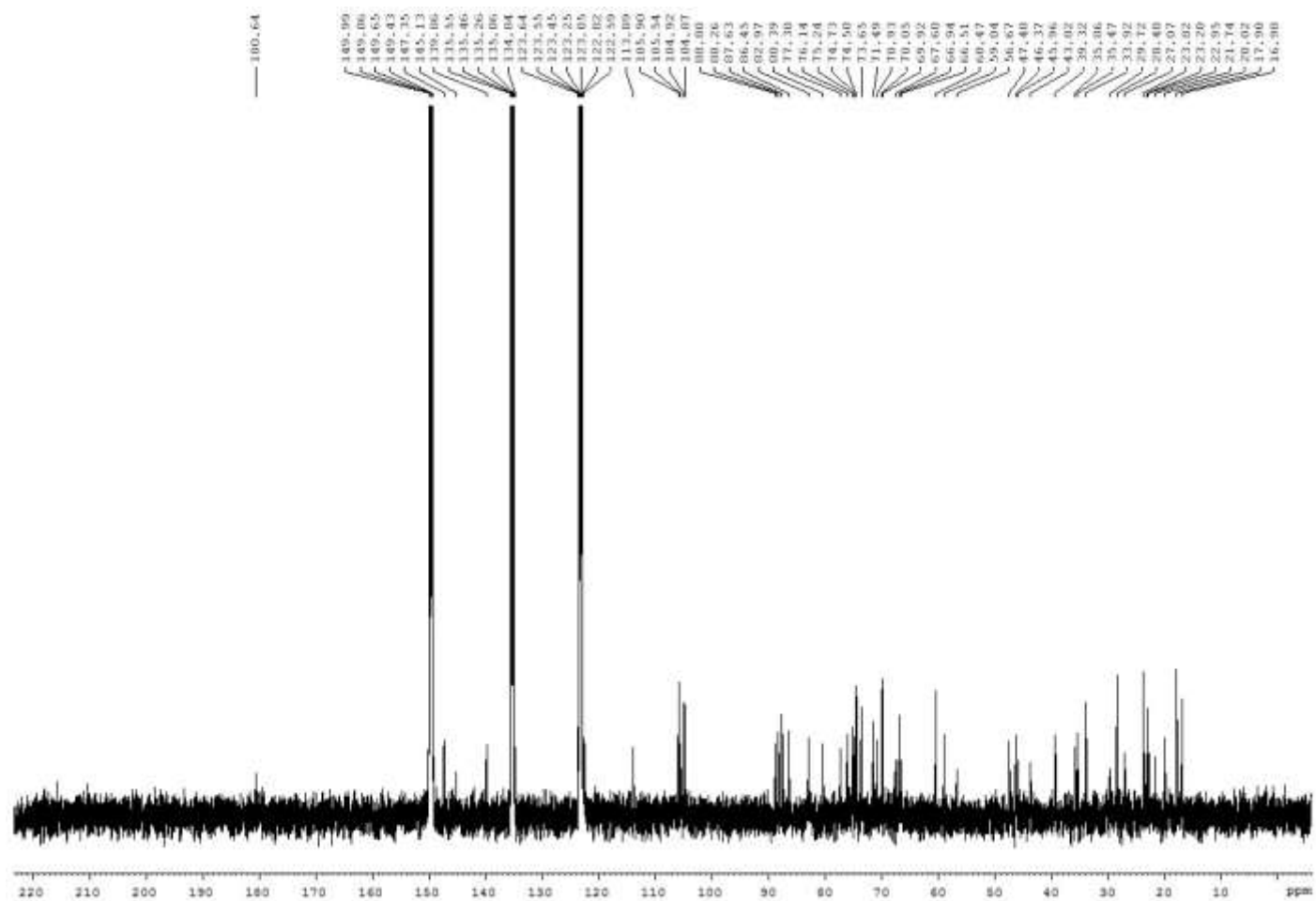




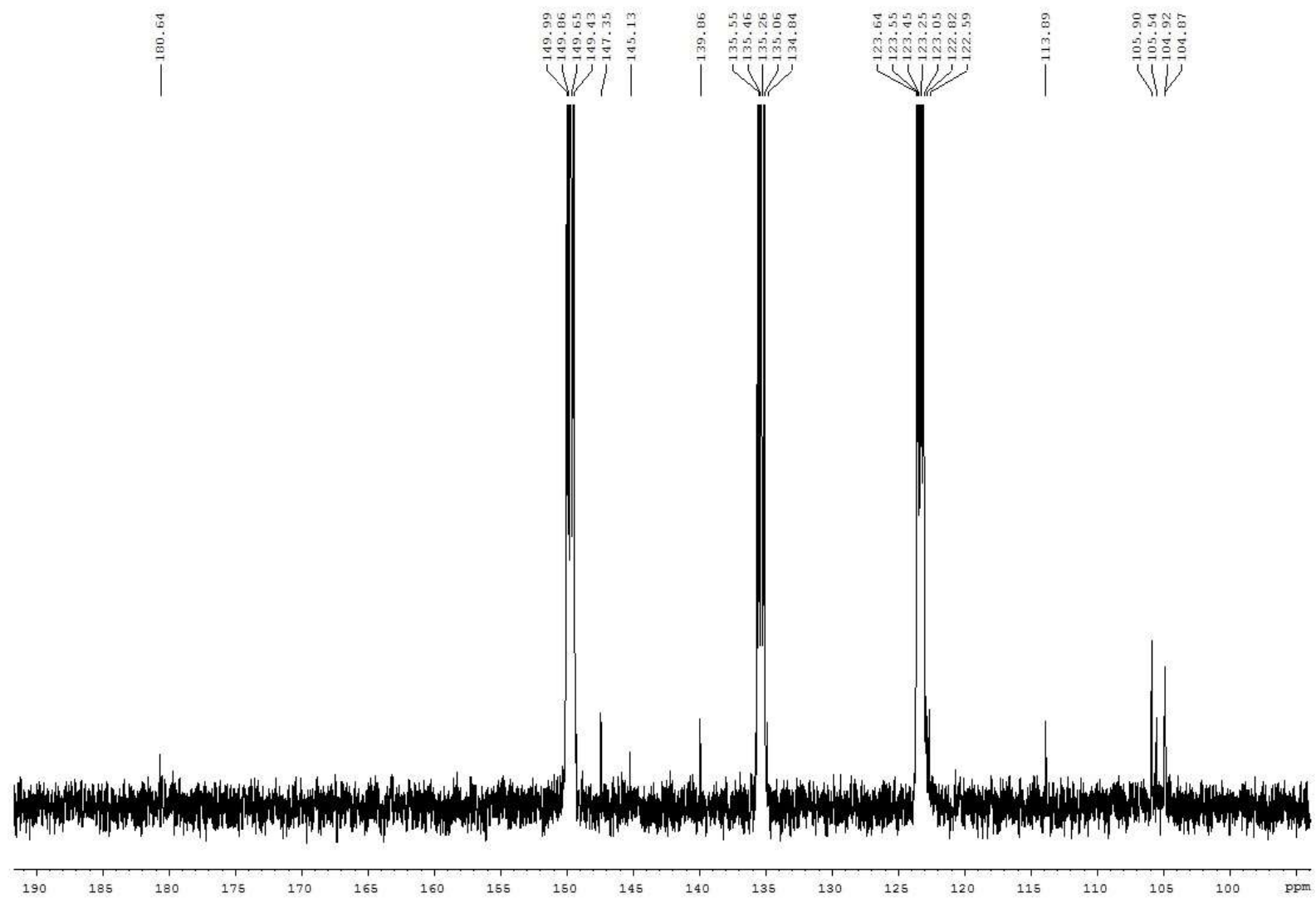
**Figure S76.** Expansion №3 of  $^1\text{H}$ -NMR spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .



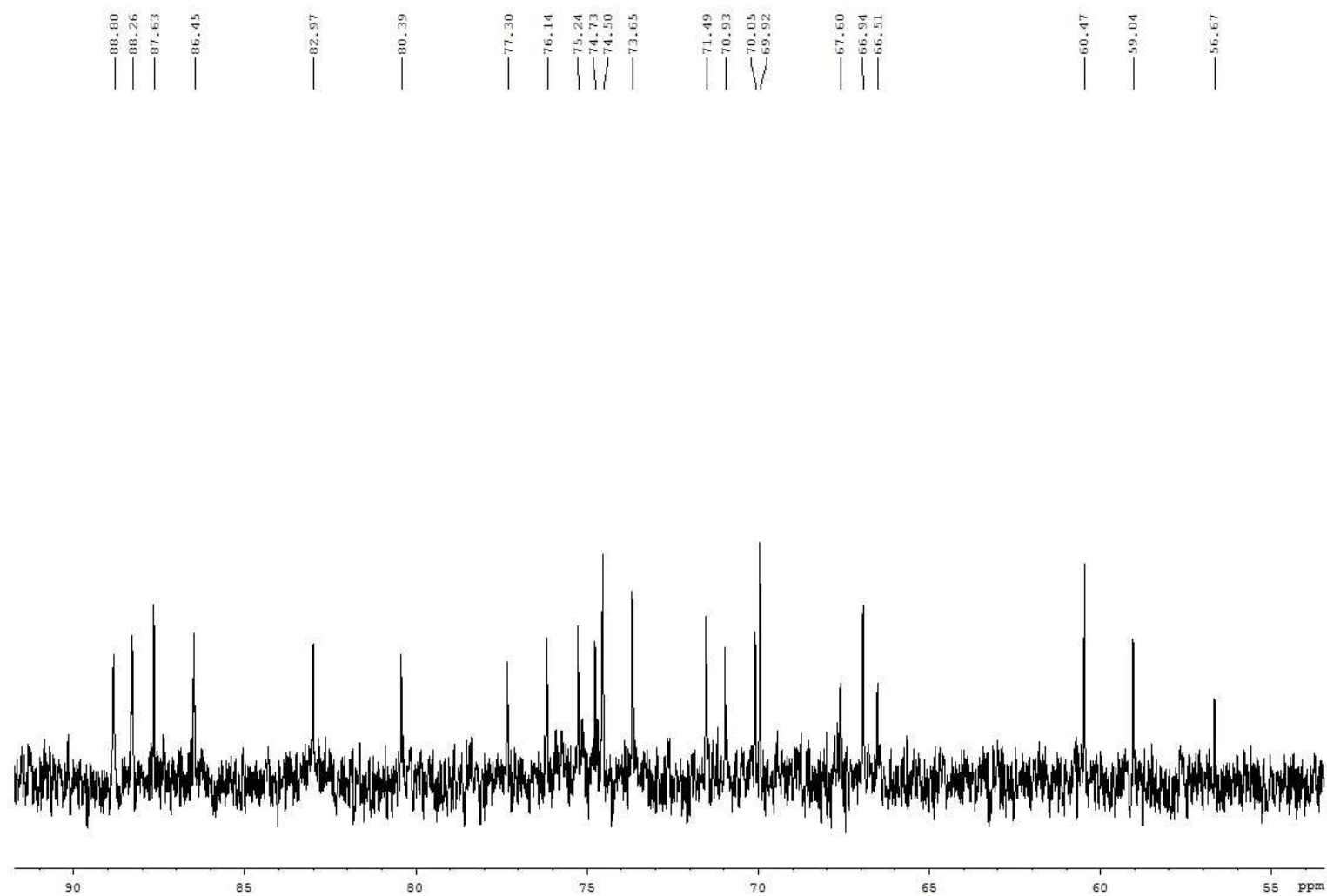
**Figure S77.**  $^{13}\text{C}$ -NMR spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .



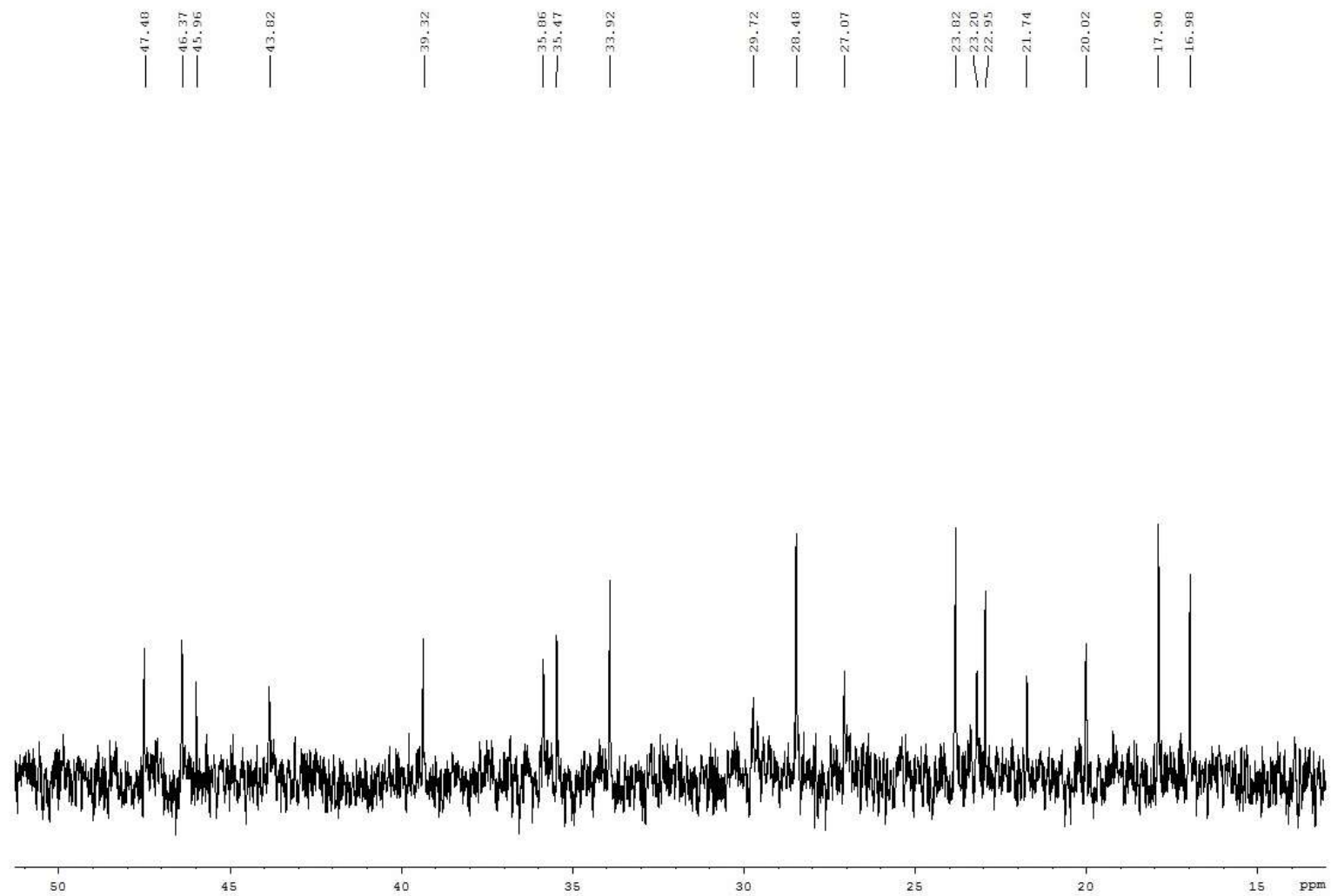
**Figure S78.** Expansion №1 of  $^{13}\text{C}$ -NMR spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .



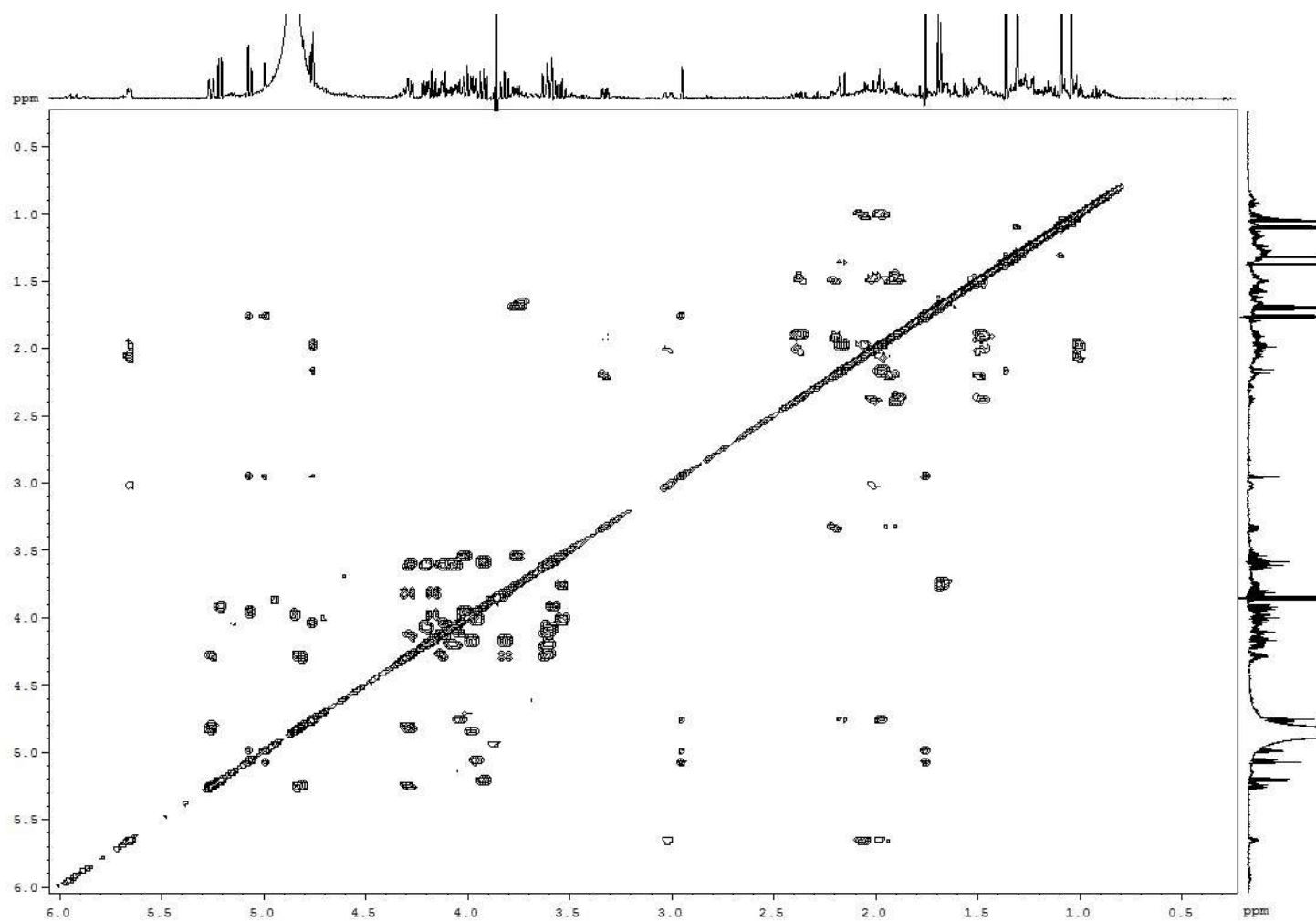
**Figure S79.** Expansion N02 of  $^{13}\text{C}$ -NMR spectrum of pacificusoside K (**9**) in  $\text{C}_5\text{D}_5\text{N}$ .



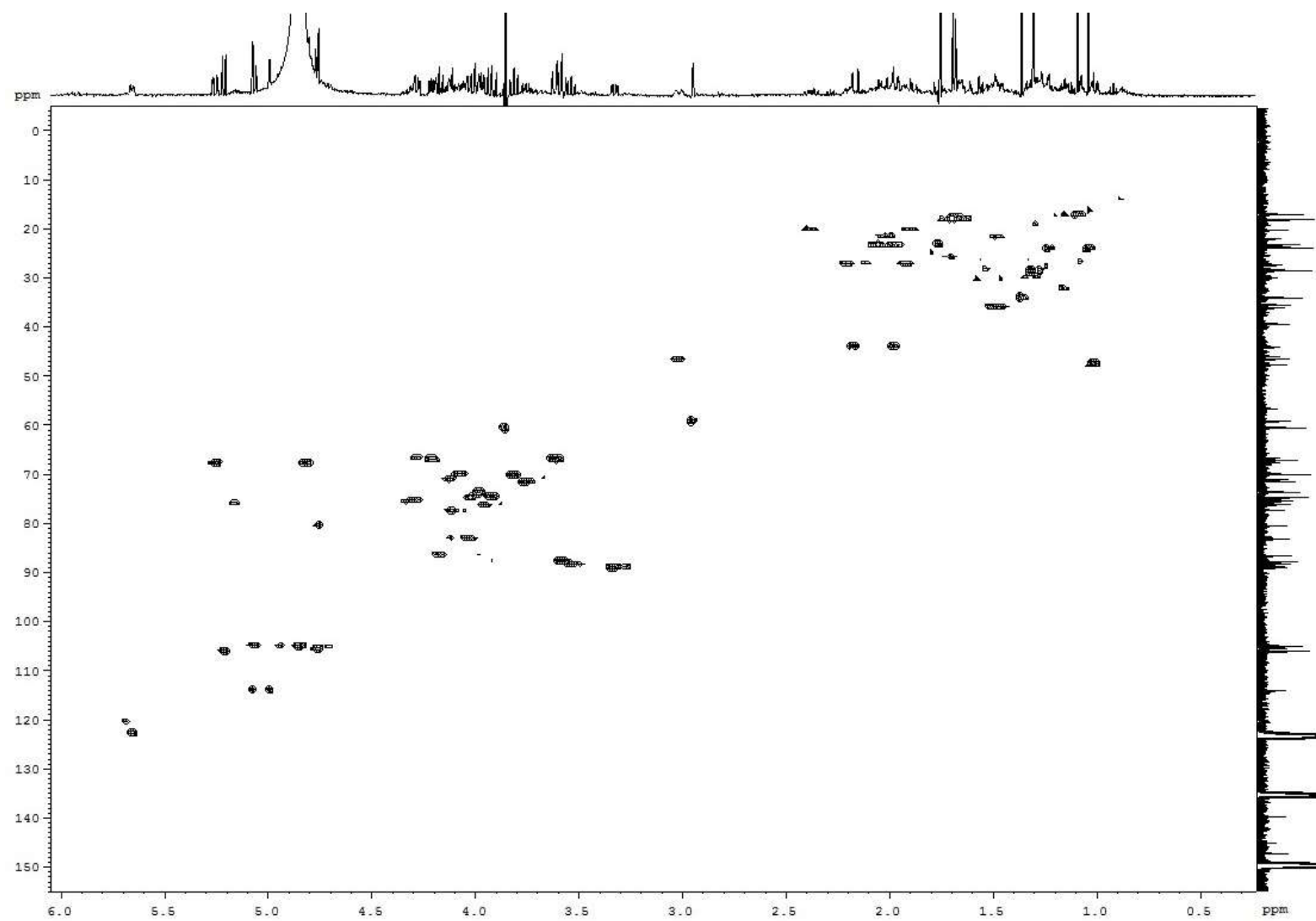
**Figure S80.** Expansion N03 of  $^{13}\text{C}$ -NMR spectrum of pacificusoside K (9) in  $\text{C}_5\text{D}_5\text{N}$ .



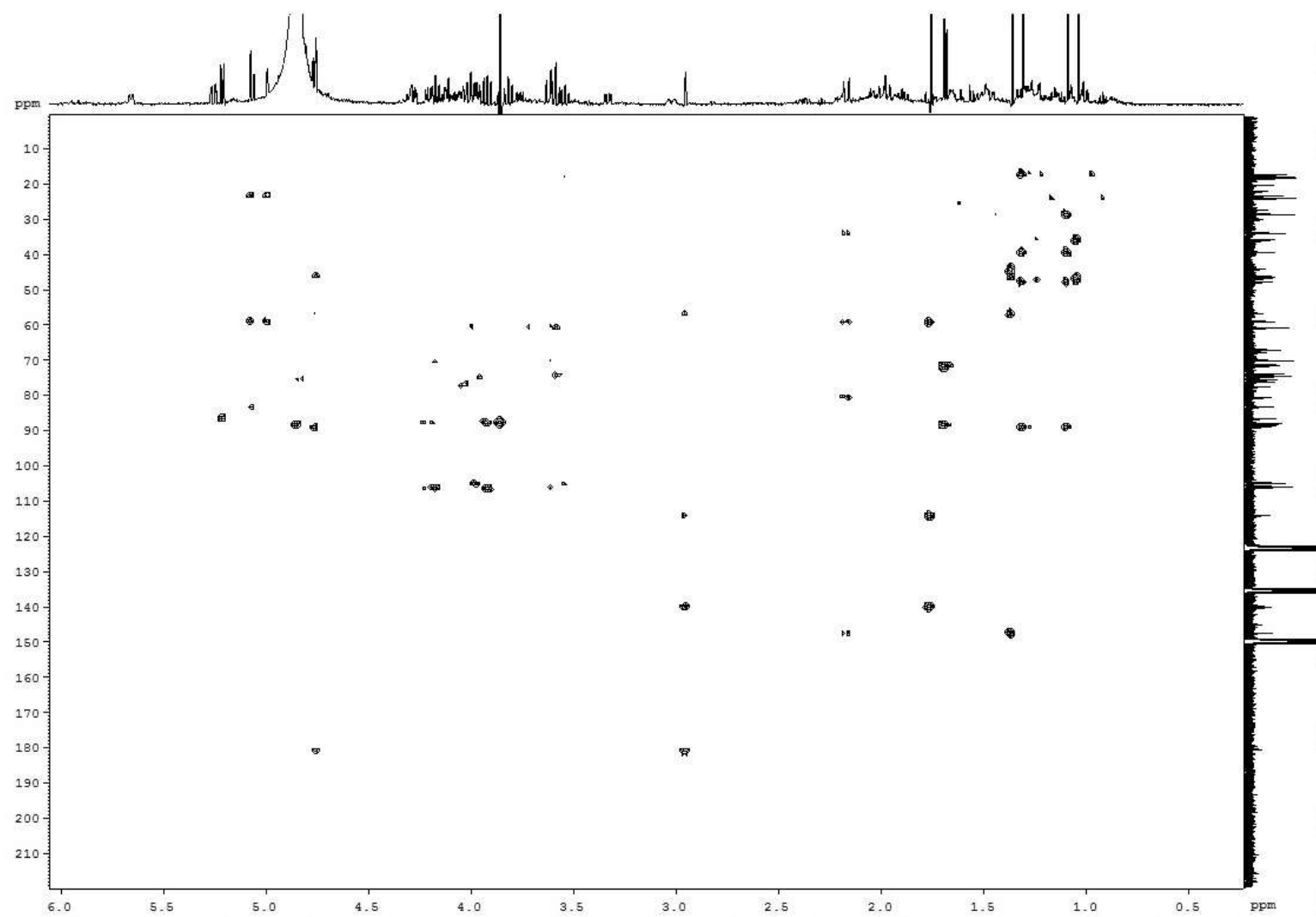
**Figure S81.**  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of pacificusoside K (9) in  $\text{C}_5\text{D}_5\text{N}$ .



**Figure S82.** HSQC spectrum of pacificusoside K (9) in  $C_5D_5N$ .



**Figure S83.** HMBC spectrum of pacificusoside K (9) in C<sub>5</sub>D<sub>5</sub>N.





**Figure S84.** ROESY spectrum of pacificusoside K (9) in C<sub>5</sub>D<sub>5</sub>N.

