



Supplementary Material

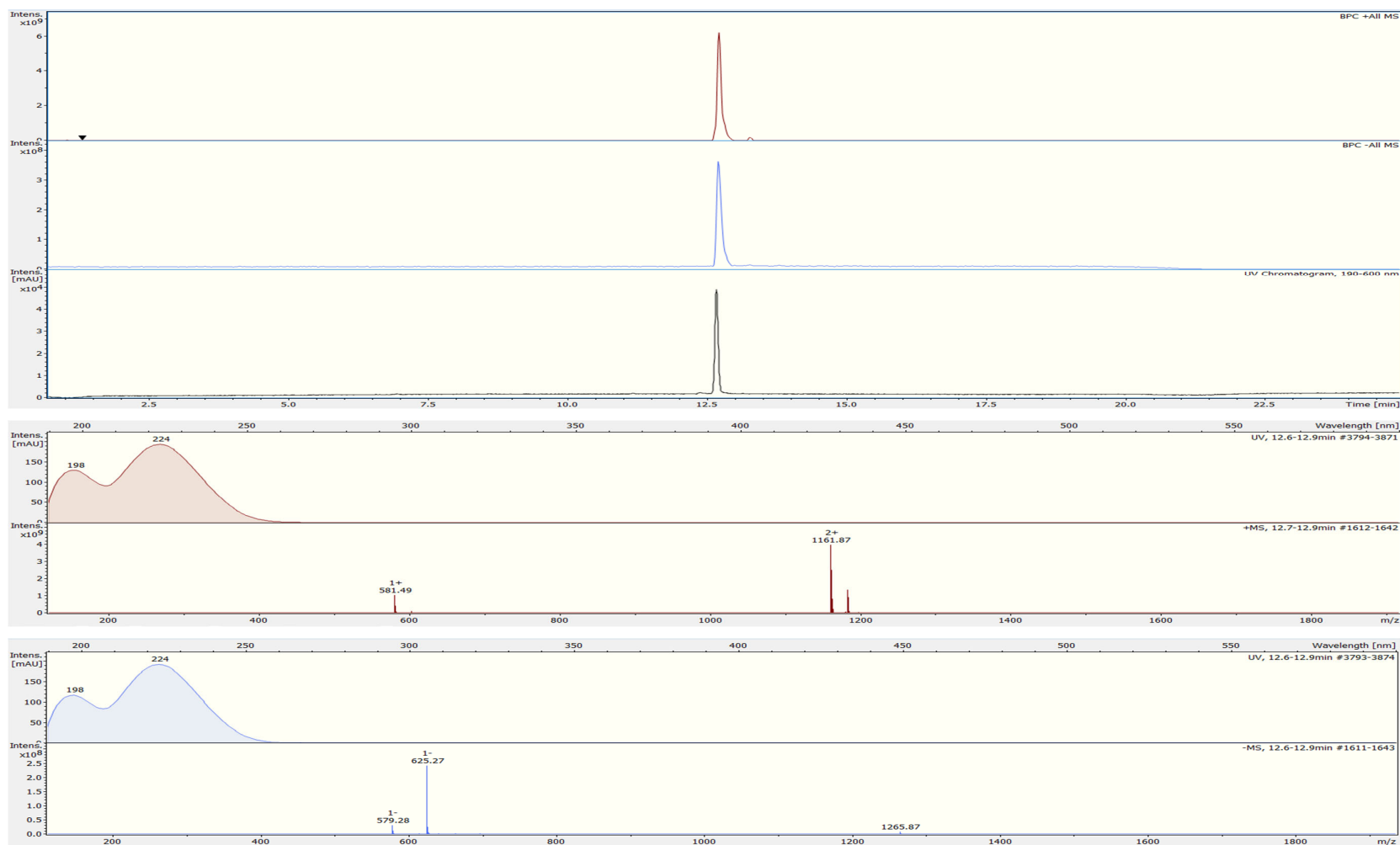
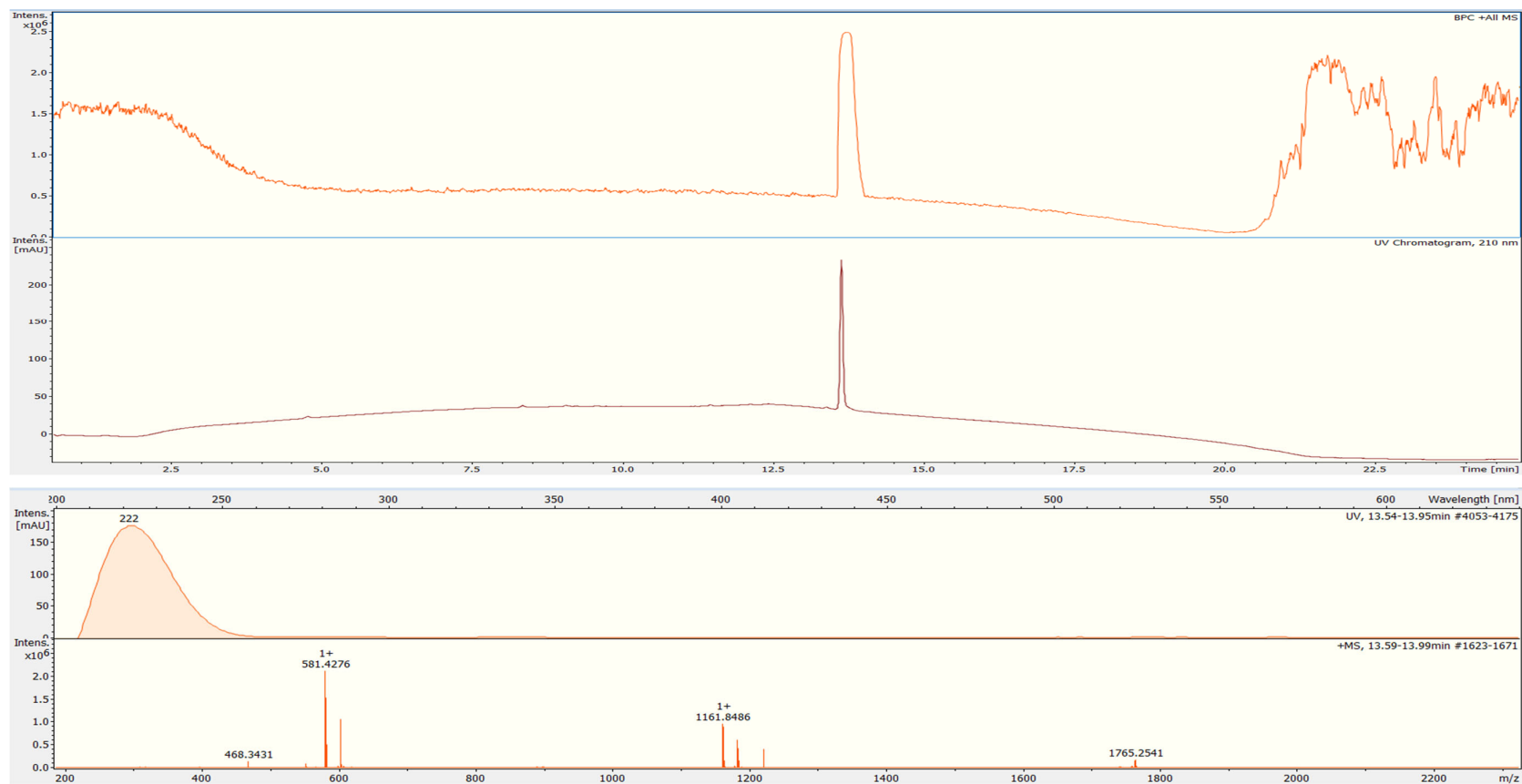


Figure S1. HPLC-ESI-MS spectrum of morinagadepsin (1) in positive and negative mode.



**Figure S2.** HPLC-HRESI-MS spectrum of morinagadepsin (1) in positive mode.

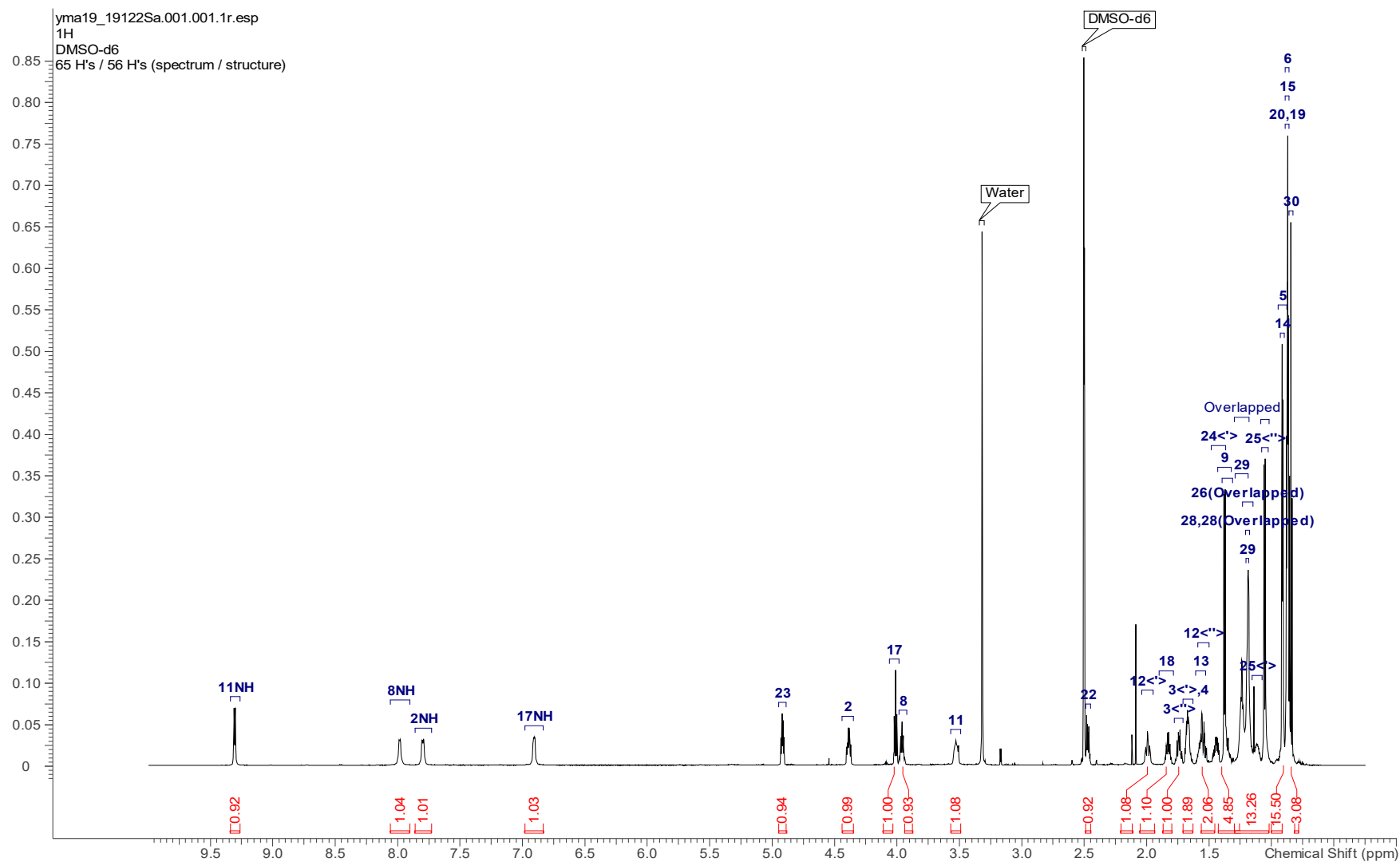


Figure S3.  $^1\text{H}$  NMR spectrum (700 MHz,  $\text{DMSO}-d_6$ ) of morinagadepsin (1).

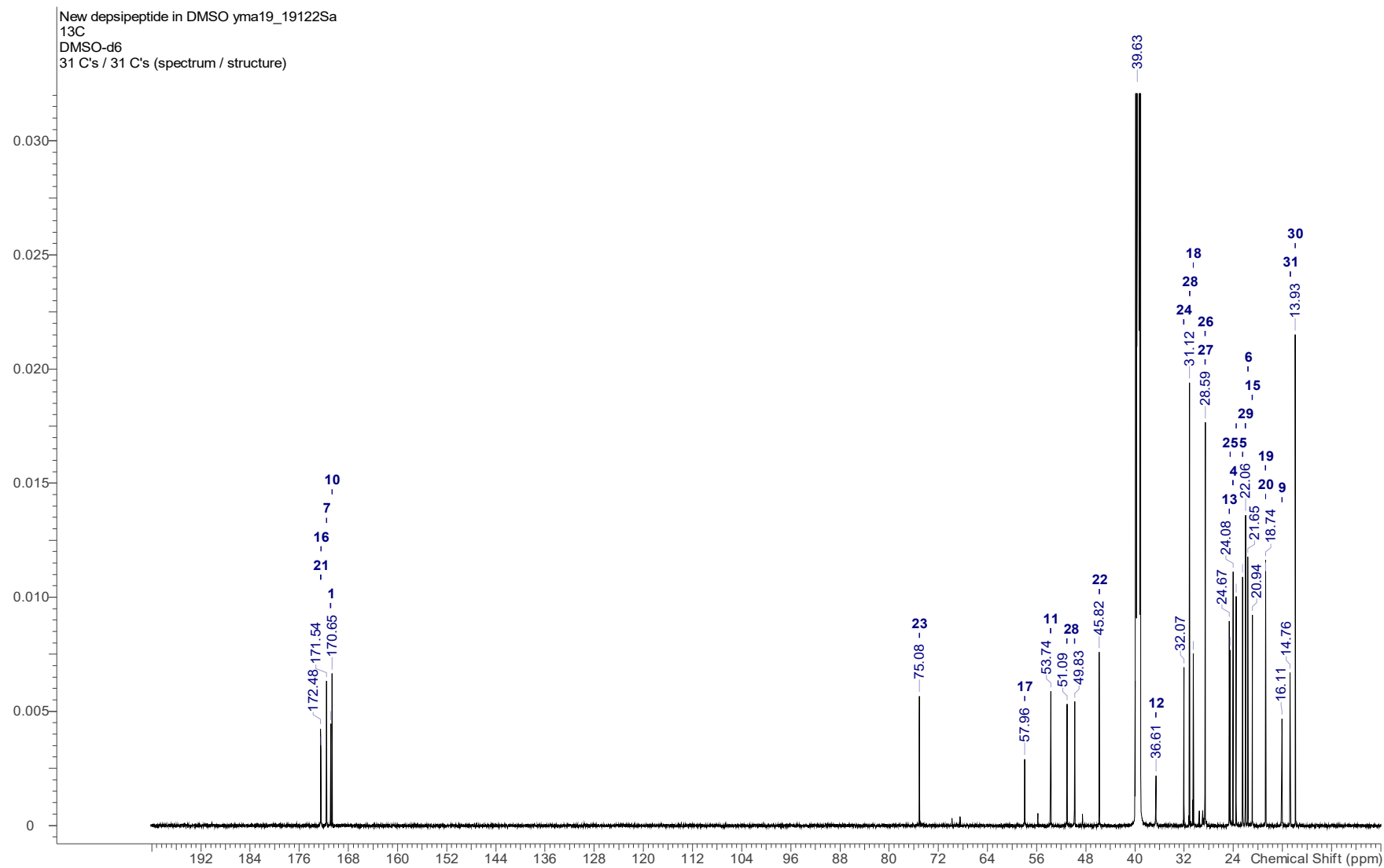
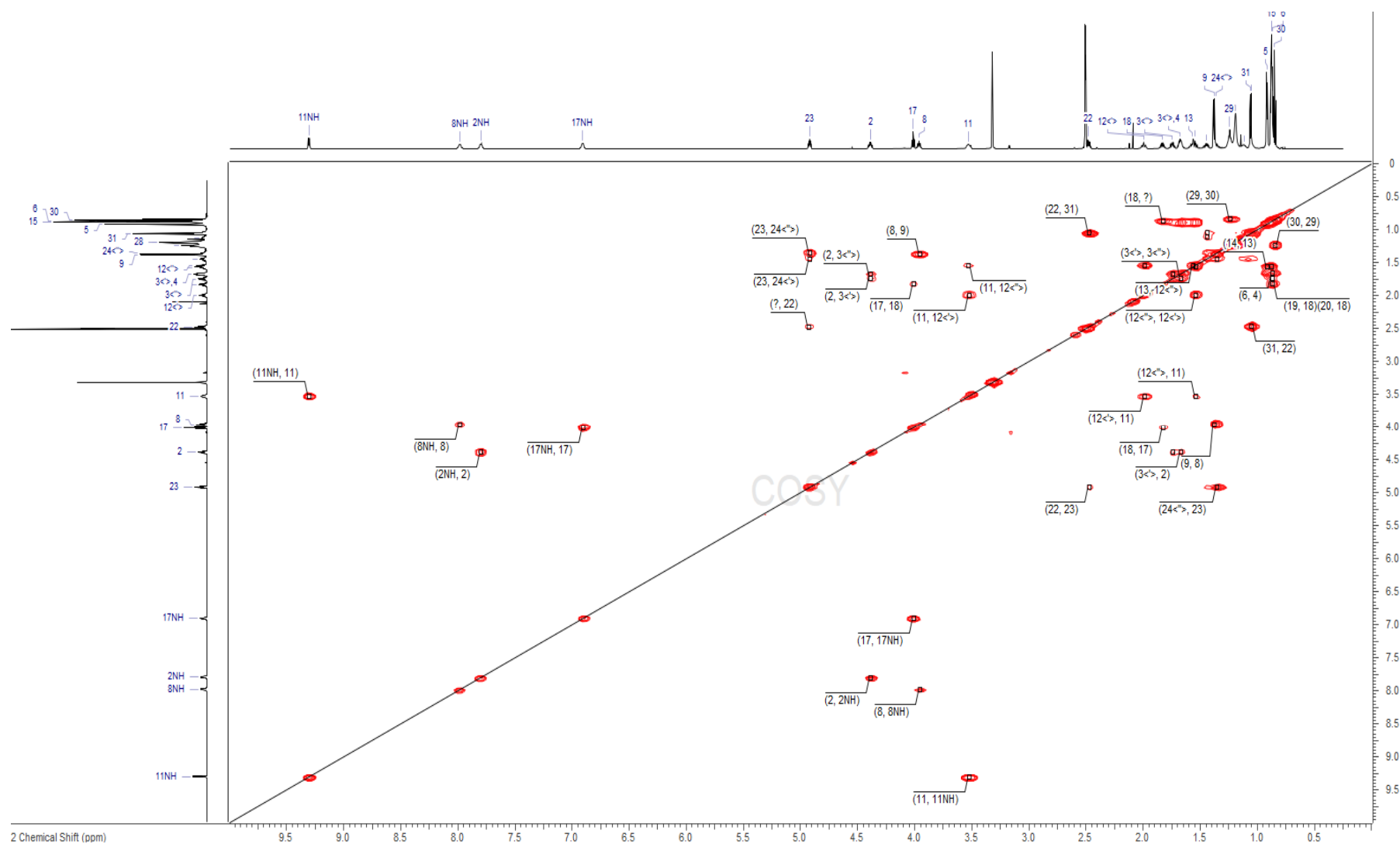
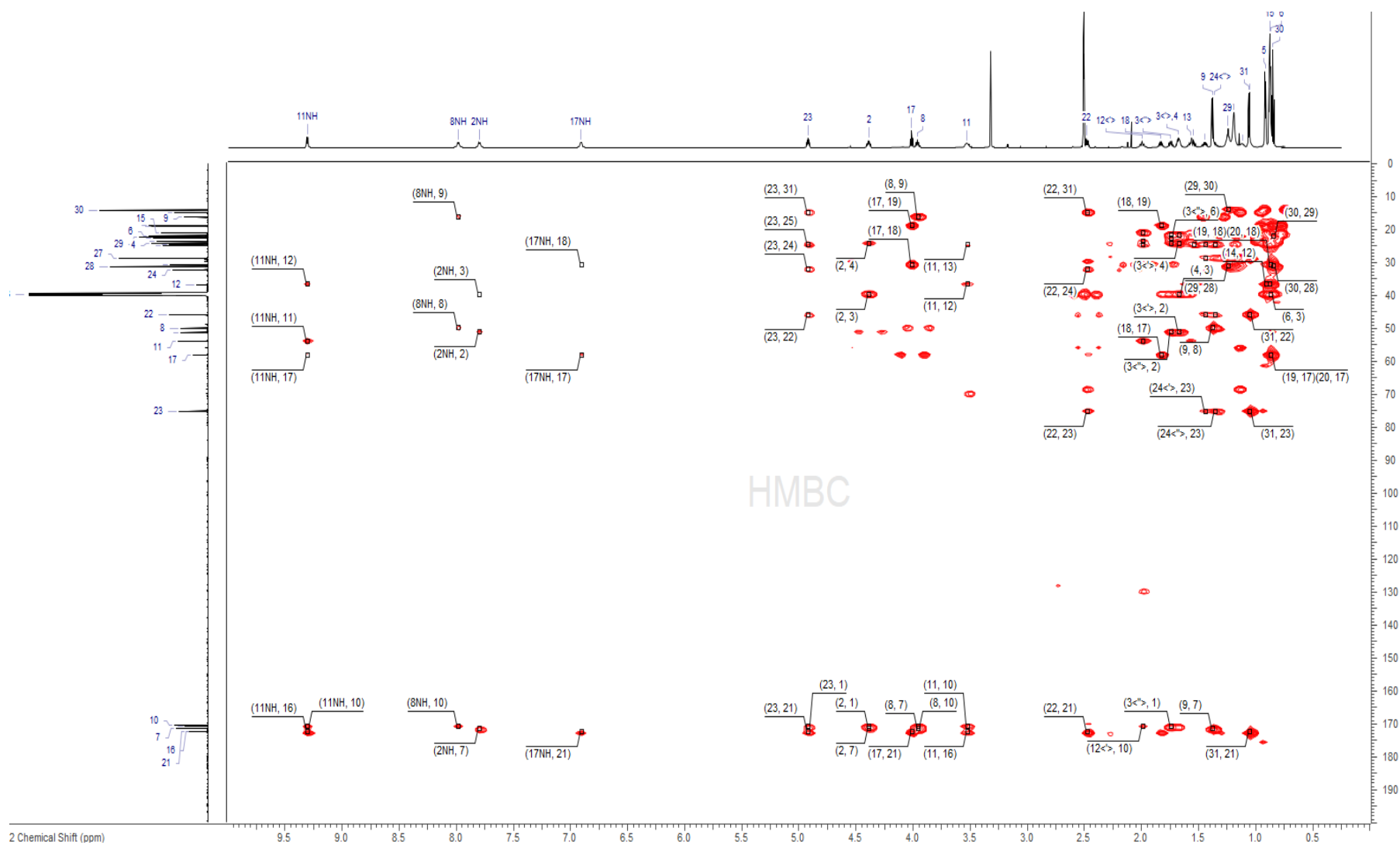


Figure S4.  $^{13}\text{C}$  NMR spectrum (175 MHz,  $\text{DMSO}-d_6$ ) of morinagadepsin (1).



**Figure S5.** COSY NMR spectrum (700 MHz, DMSO- $d_6$ ) of morinagadepsin (1).





**Figure S7.** HMBC NMR spectrum (700 MHz, DMSO-*d*<sub>6</sub>) of morinagadepsin (**1**).

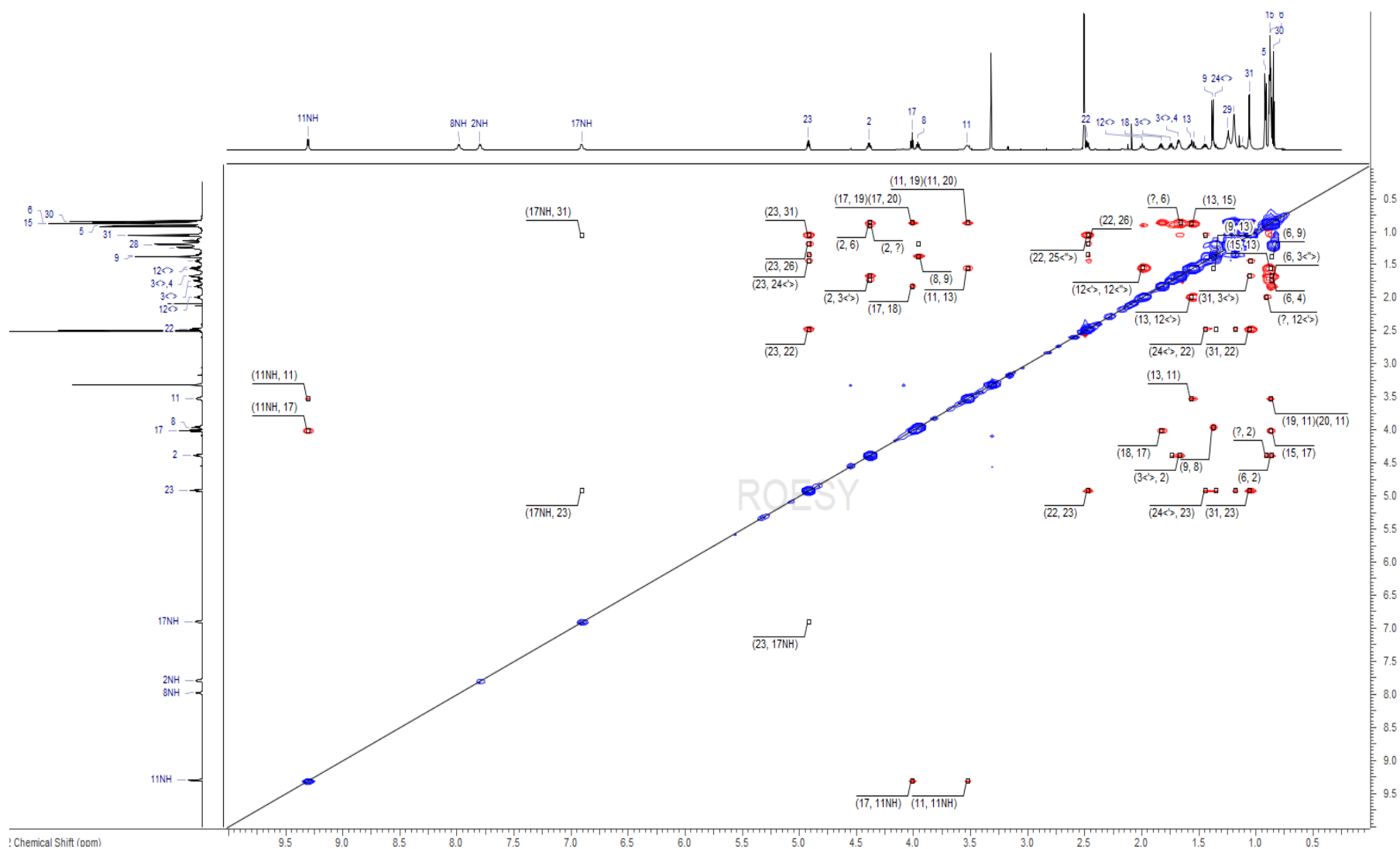
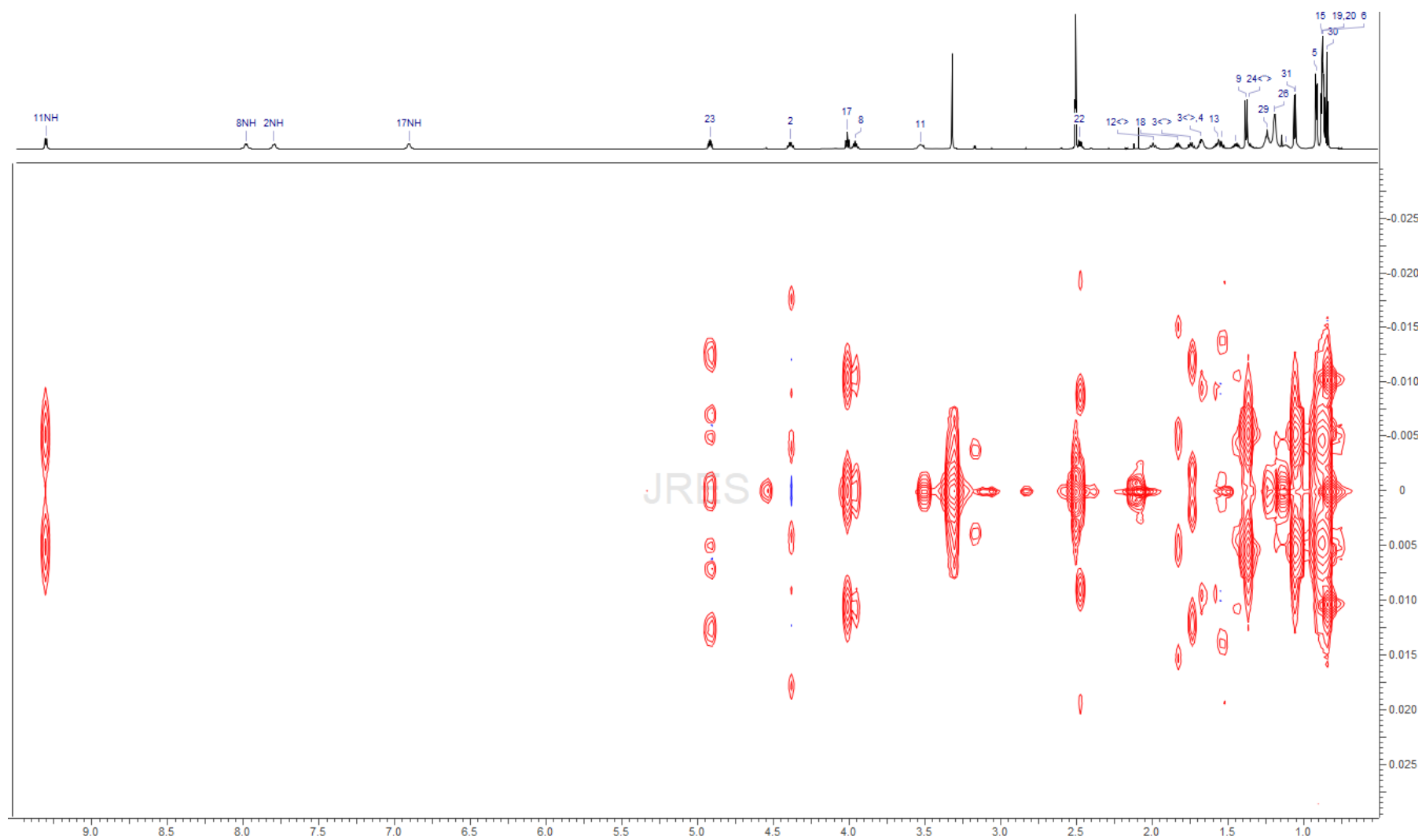
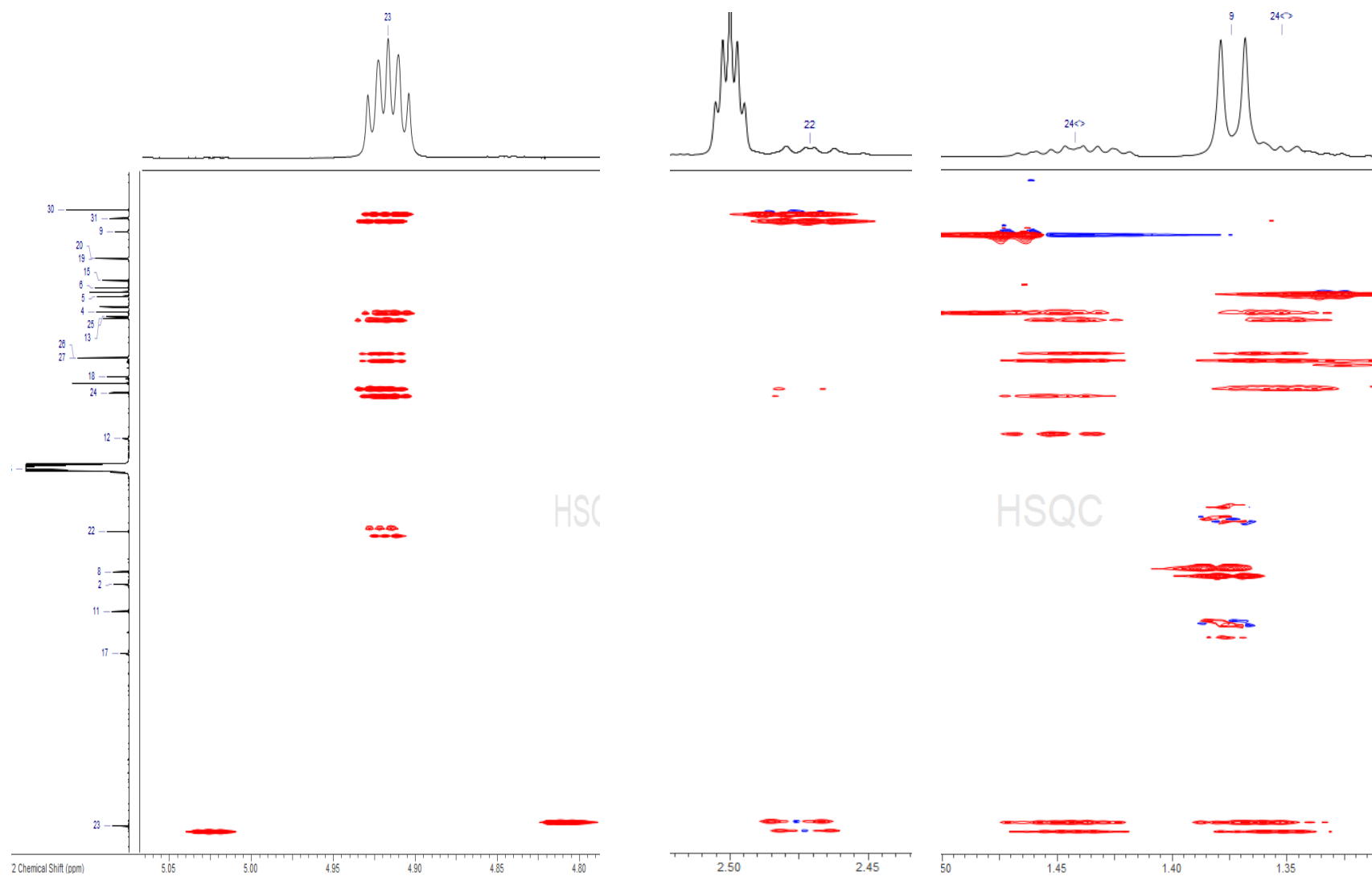


Figure S8. ROESY NMR spectrum (700 MHz, DMSO- $d_6$ ) of morinagadepsin (1).





**Figure S9.** J-res NMR spectrum (700 MHz, DMSO-*d*<sub>6</sub>) of morinagadepsin (1).



**Figure S10.** Sections from the HSQC-Hecade NMR spectrum (700 MHz, DMSO-*d*<sub>6</sub>) of morinagadepsin (**1**).

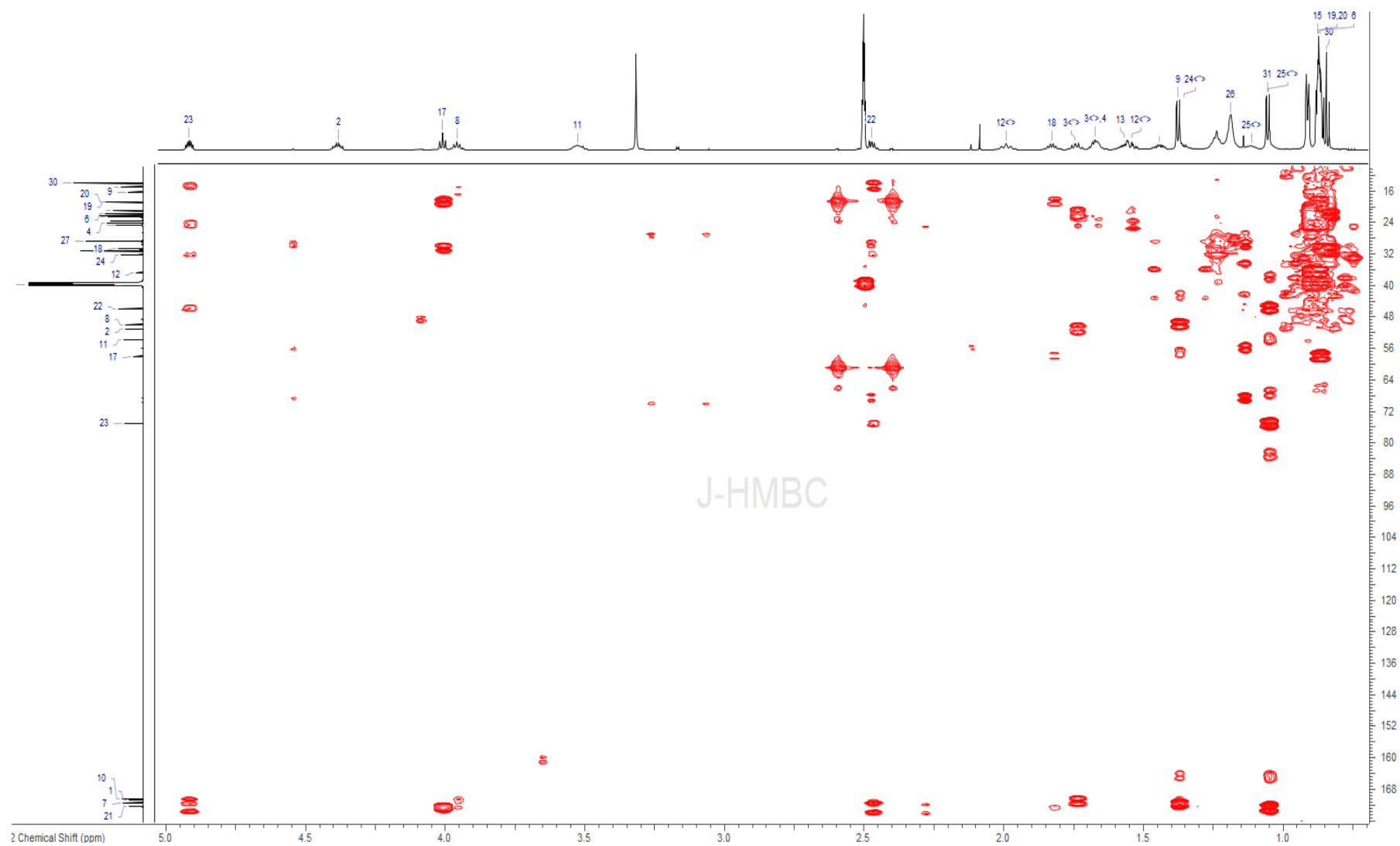
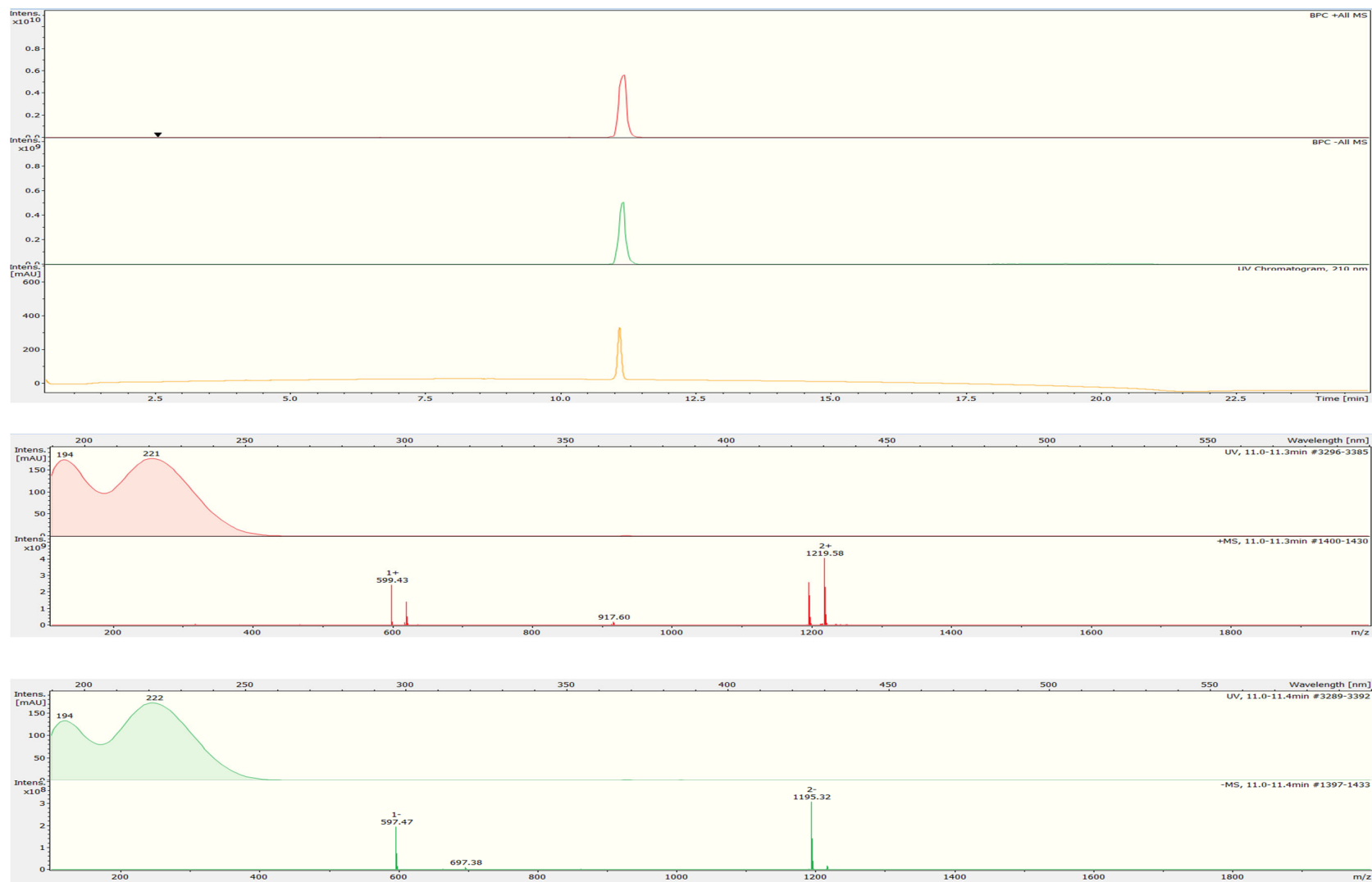


Figure S11. J-HMBC NMR spectrum (700 MHz, DMSO-*d*<sub>6</sub>) of morinagadepsin (1).



**Figure S12.** HPLC-ESI-MS spectrum of **2** in positive and negative mode.

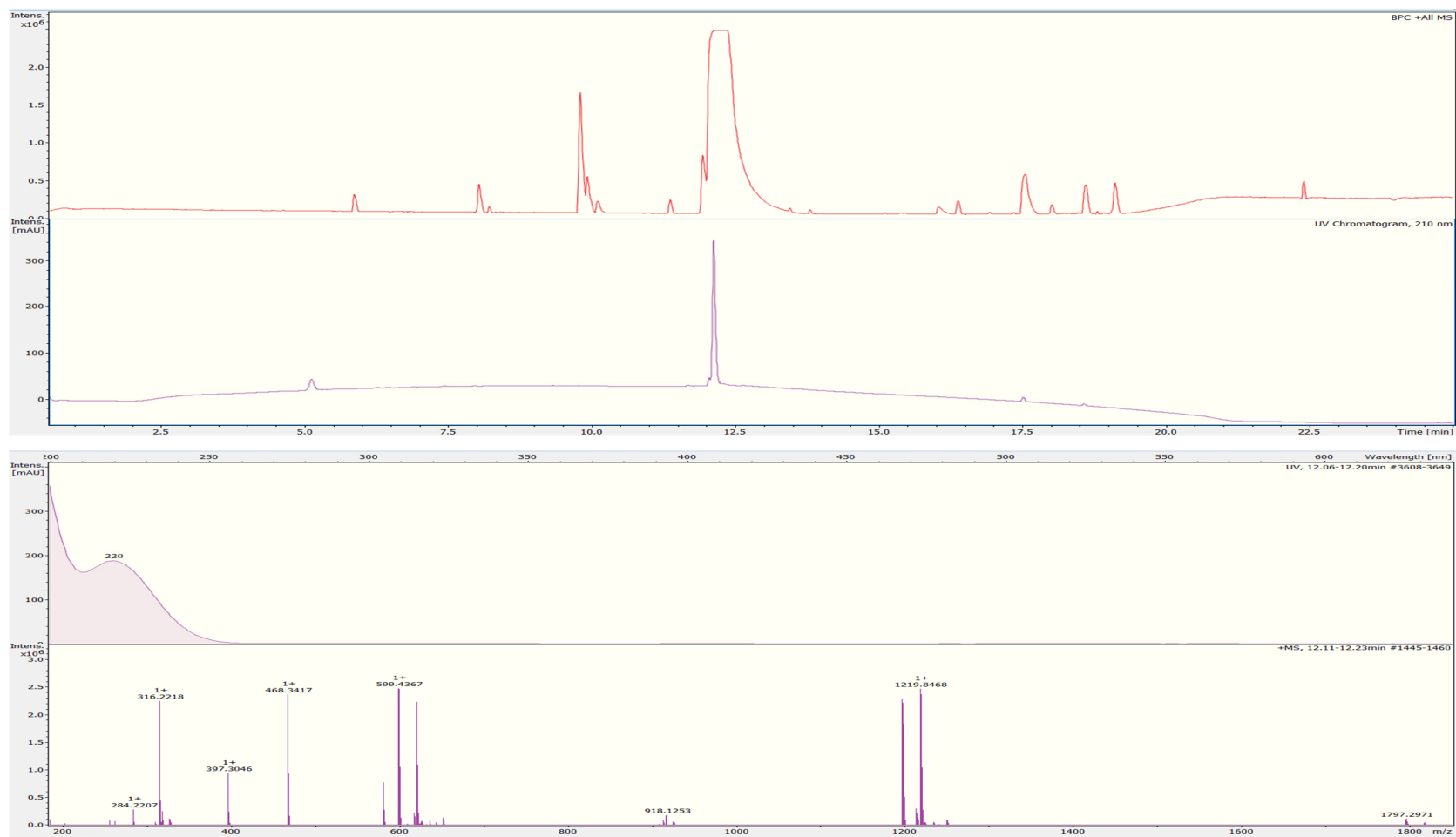


Figure S13. HPLC-HRESI-MS spectrum of 2 in positive mode.

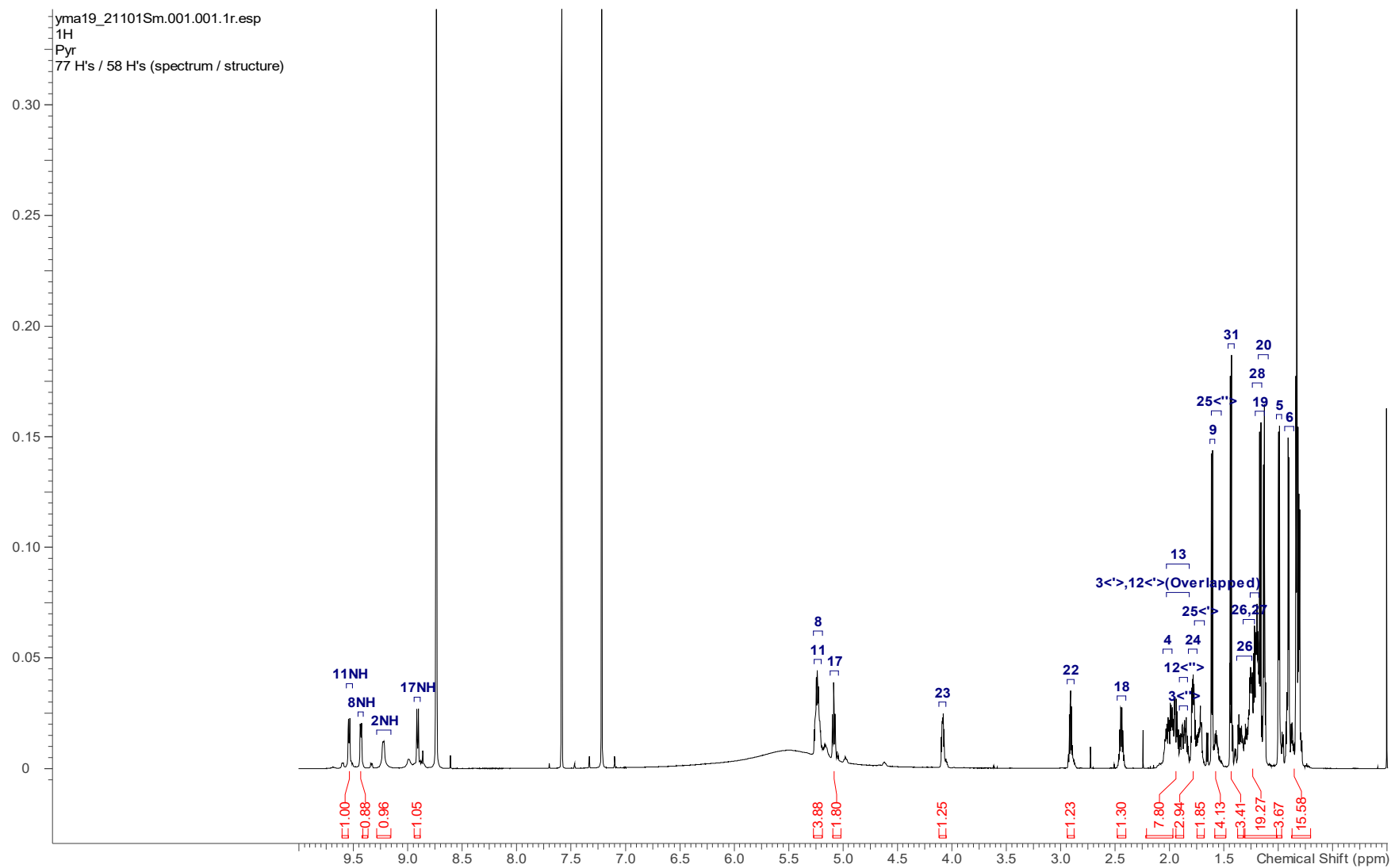


Figure S14.  $^1\text{H}$  NMR spectrum (700 MHz, pyridine- $d_5$ ) of **2**.

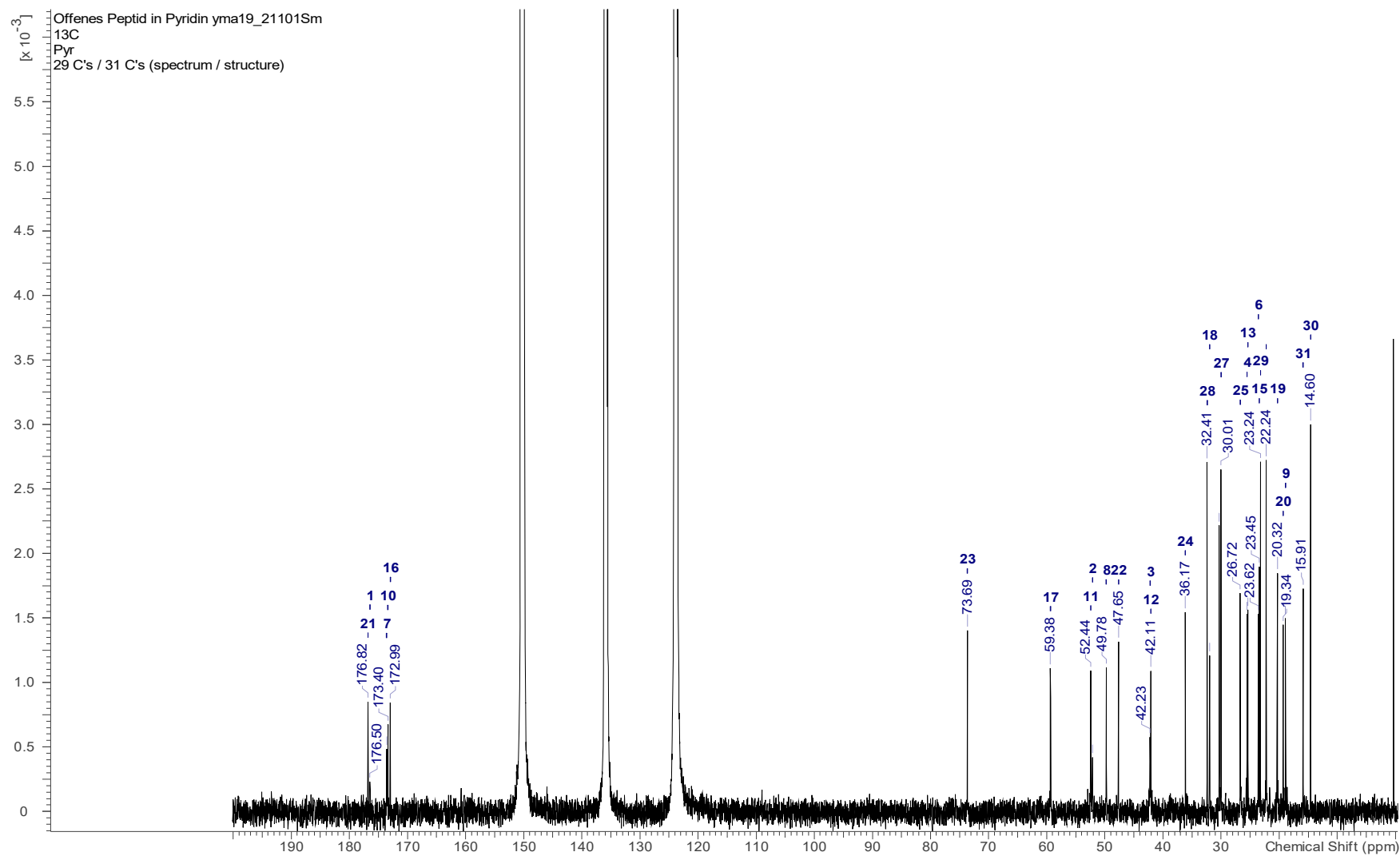


Figure S15.  $^{13}\text{C}$  NMR spectrum (175 MHz, pyridine- $d_5$ ) of 2.

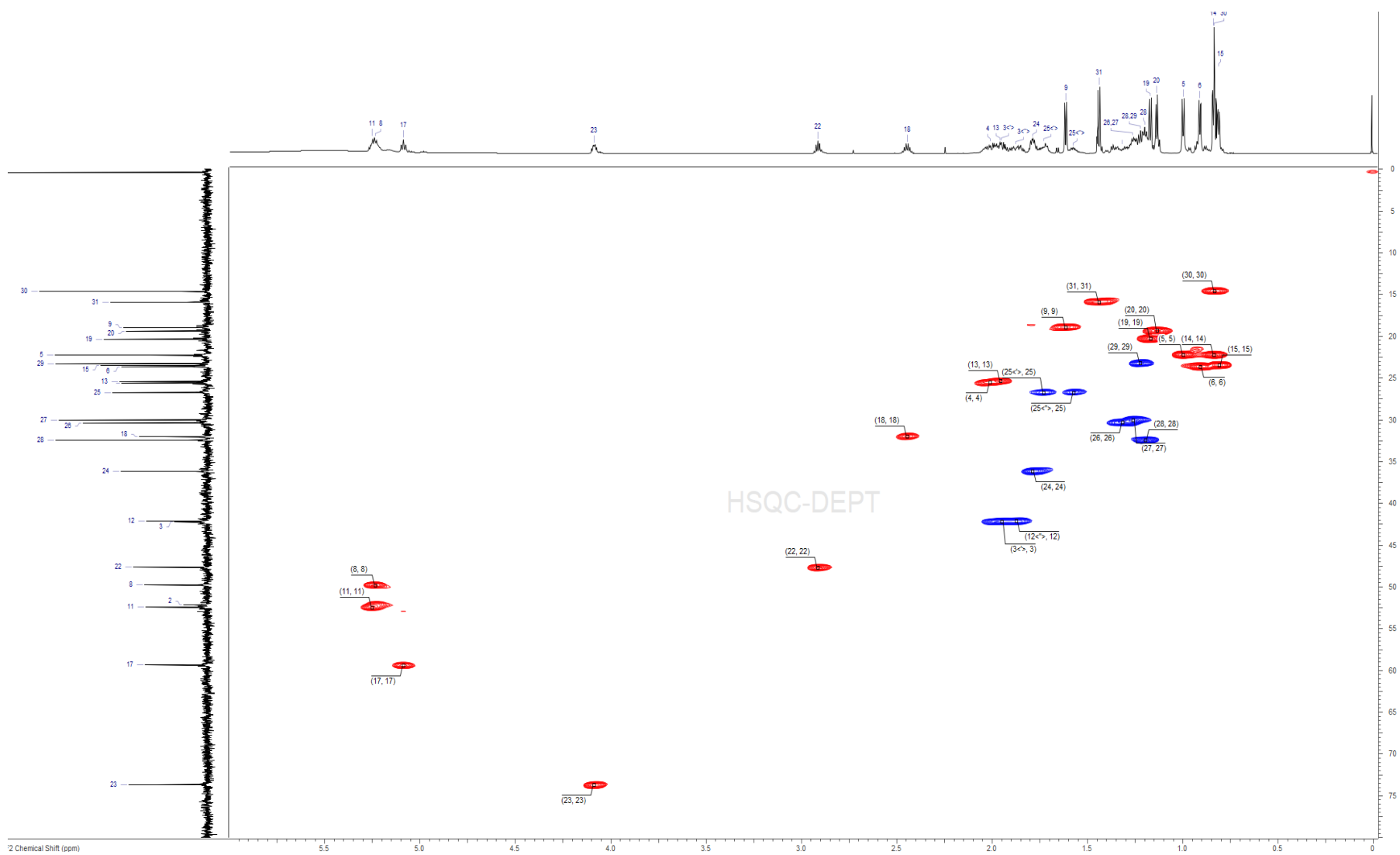


Figure S16. HSQC NMR spectrum (700 MHz, pyridine-*d*<sub>5</sub>) of **2**.



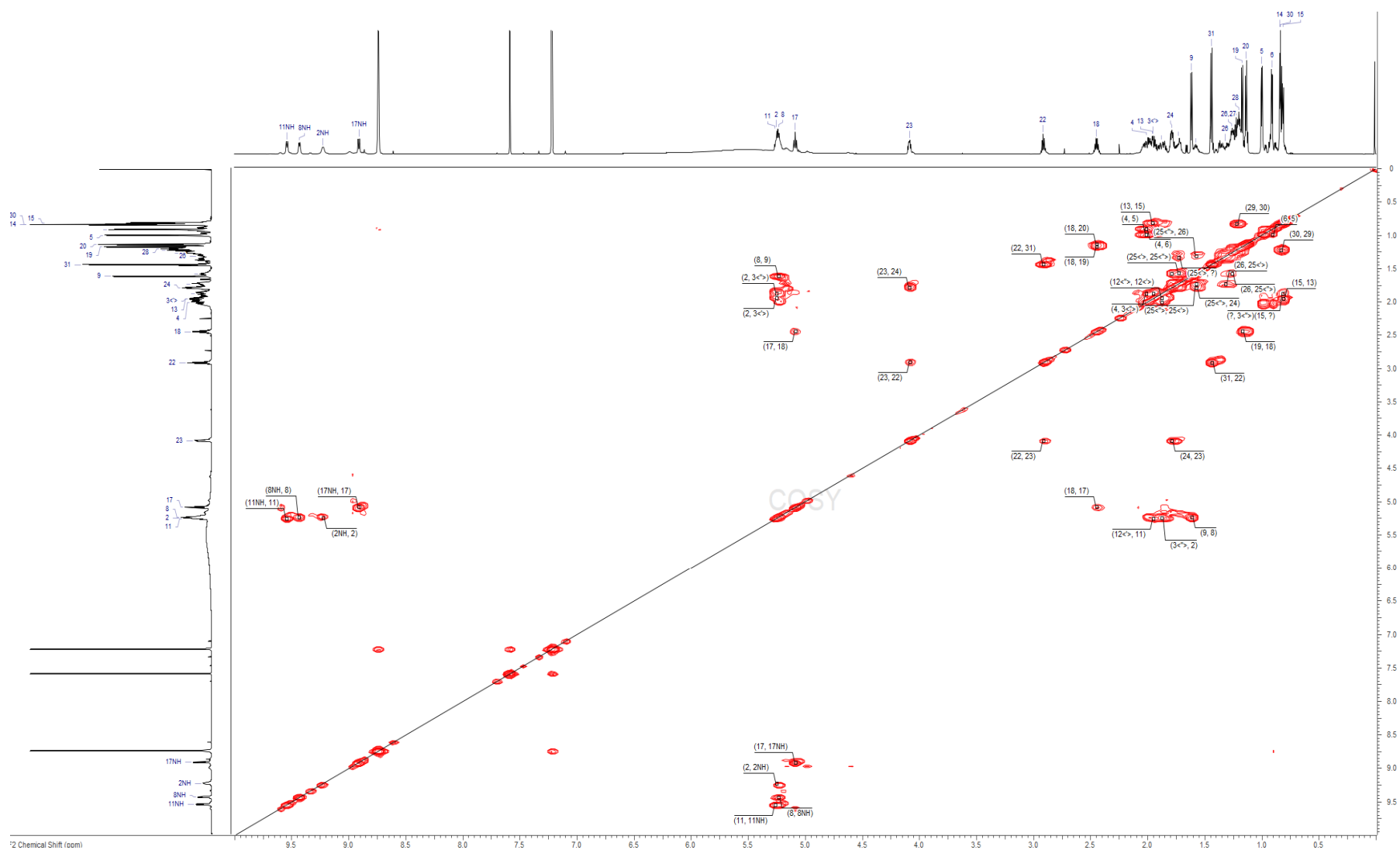
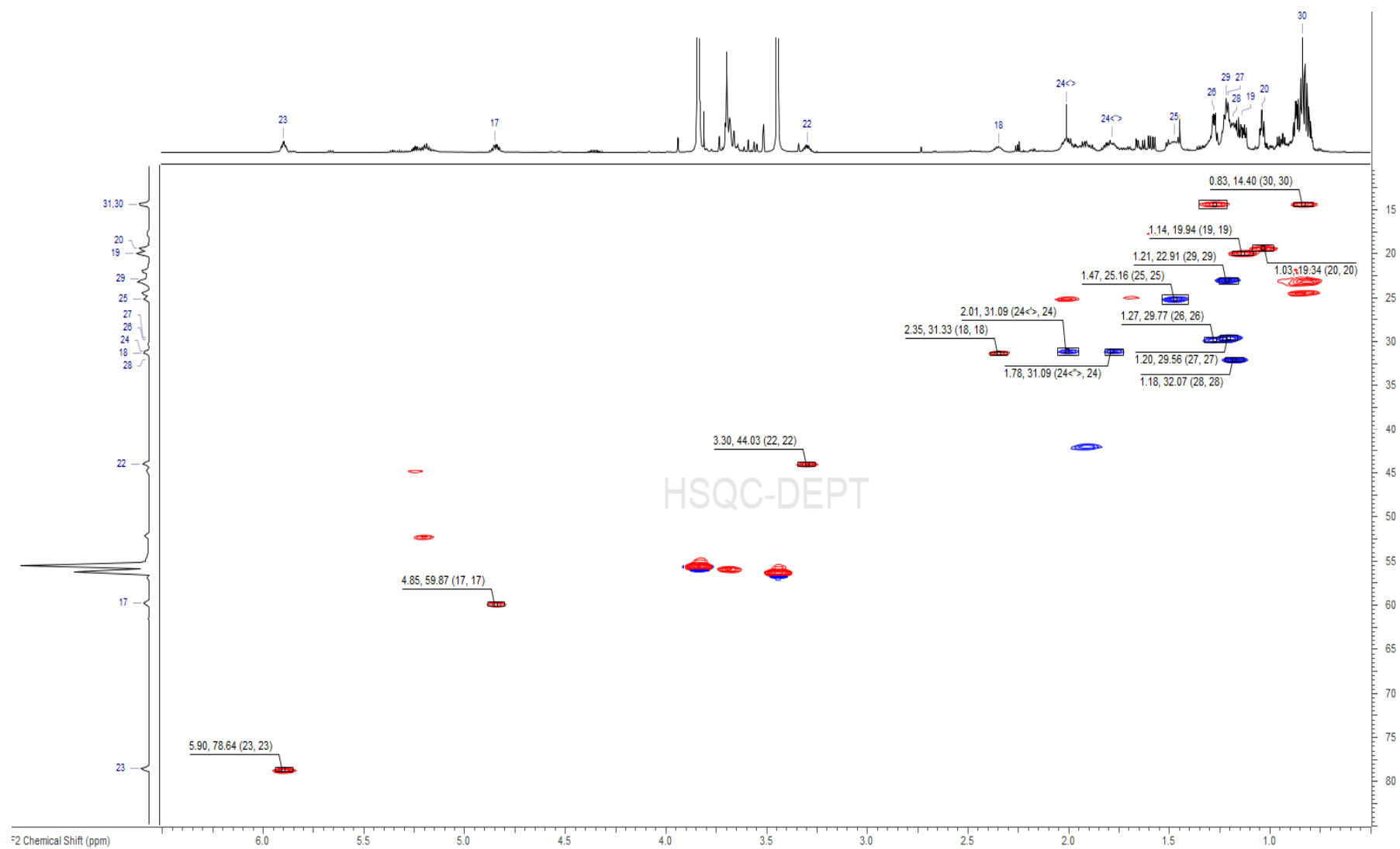


Figure S17. COSY NMR spectrum (700 MHz, pyridine-*d*<sub>5</sub>) of 2.





**Figure S19.** HSQC NMR spectrum (700 MHz, pyridine- $d_5$ ) of the S-MTPA-ester of **2**.

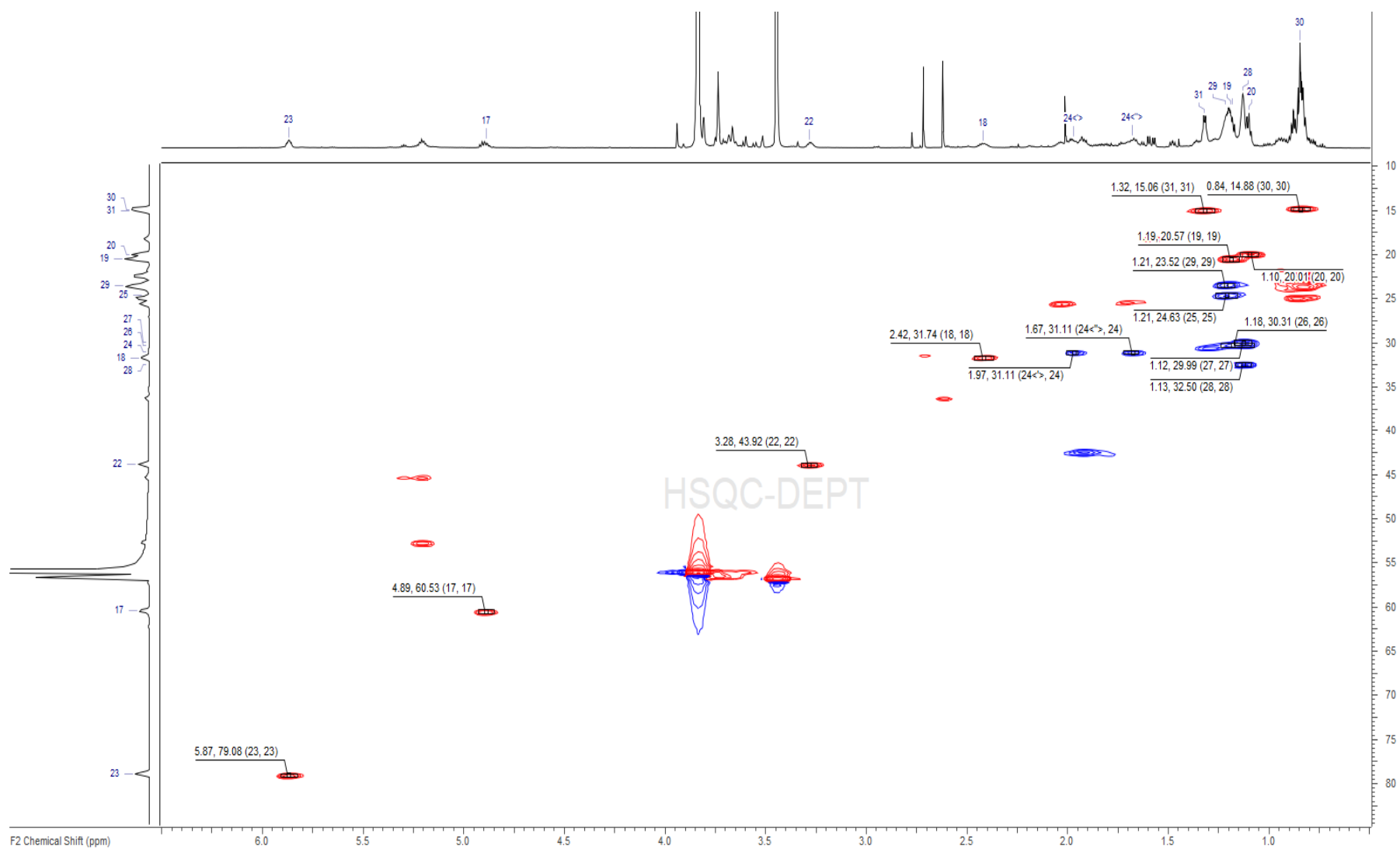
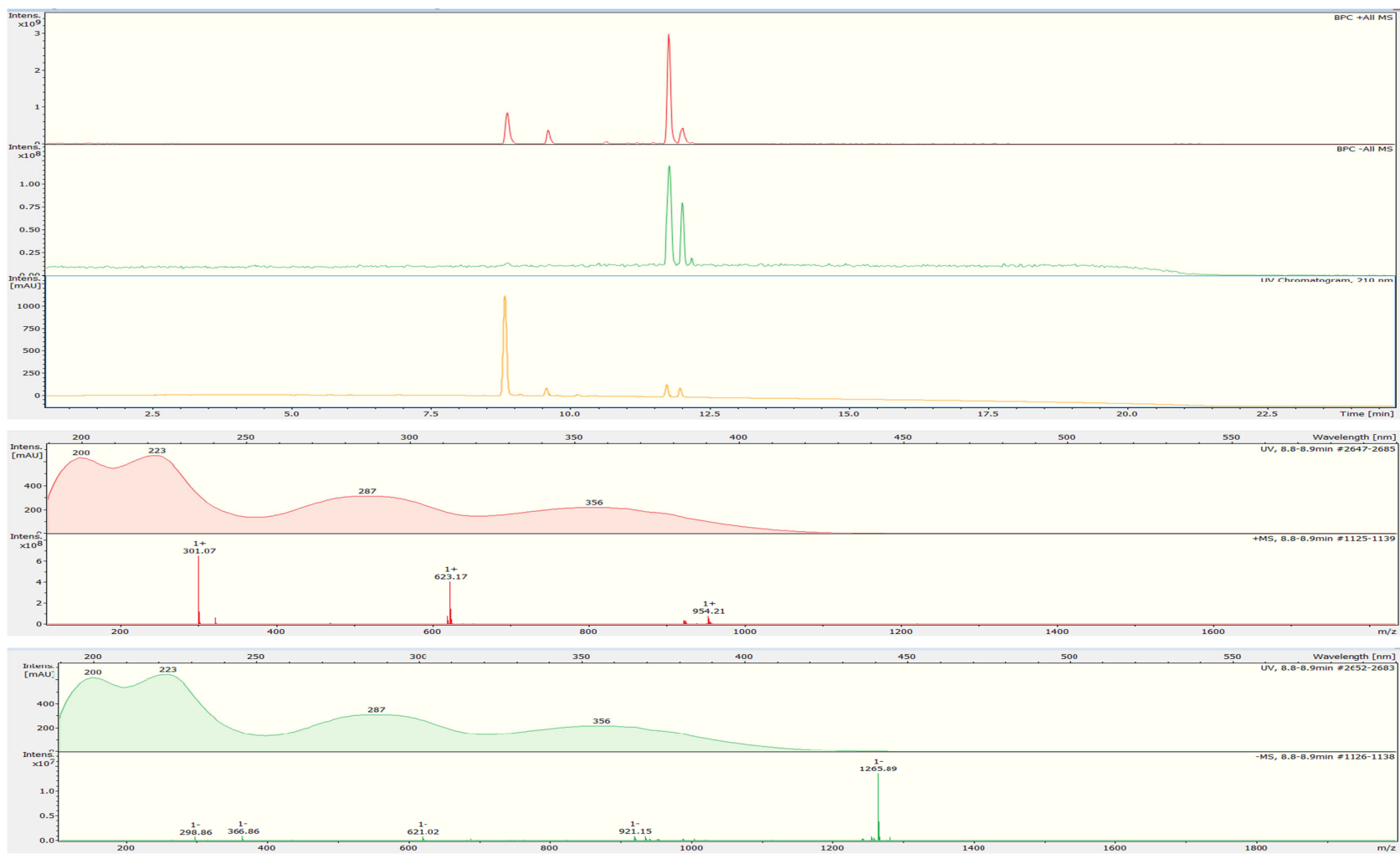
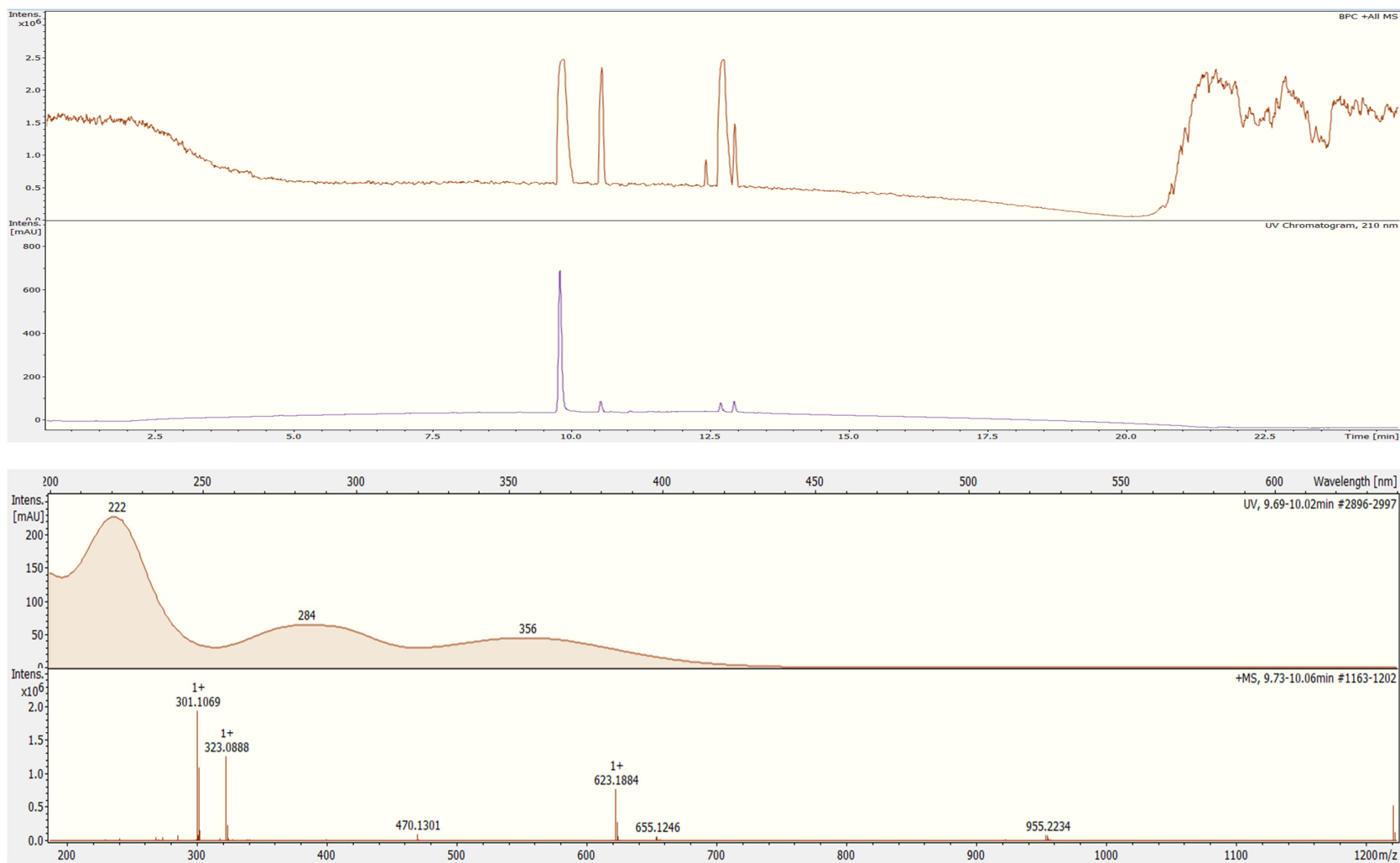


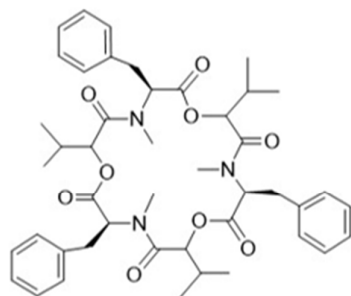
Figure S20. HSQC NMR spectrum (700 MHz, pyridine- $d_5$ ) of the R-MTPA-ester of **2**.



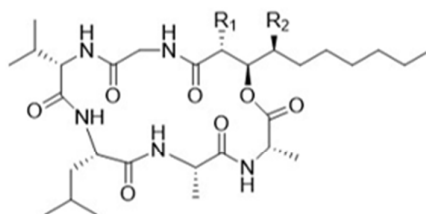
**Figure S21.** HPLC-ESI-MS spectrum of chaetone B (3) in positive and negative mode.



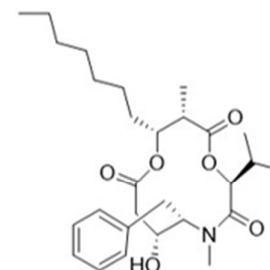
**Figure S22.** HPLC-HRESI-MS spectrum of chaetone B (3) in positive mode.



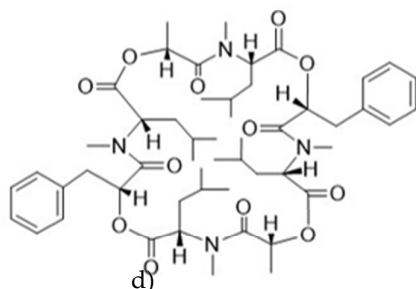
a) Beauvericin



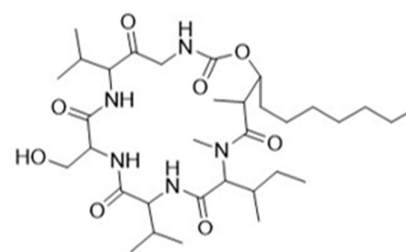
b) Emericellamide C R<sub>1</sub>= Me, R<sub>2</sub>= H  
Emericellamide D R<sub>1</sub>= H, R<sub>2</sub>= Me



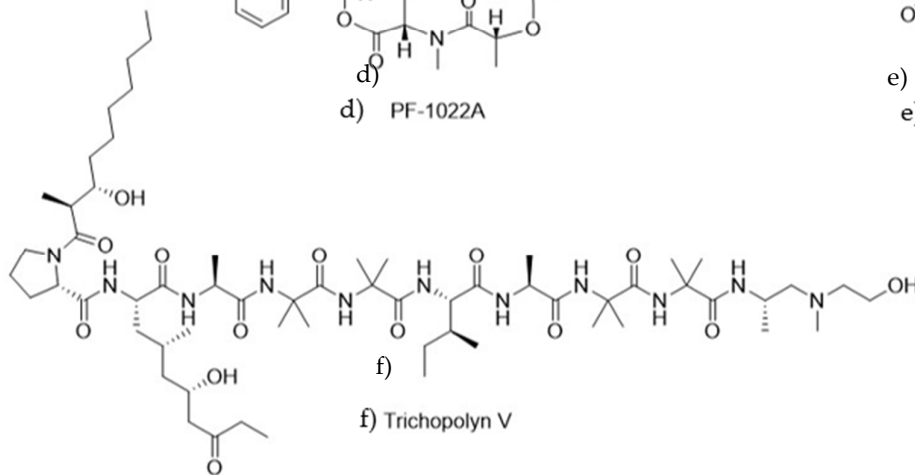
c) Hapalosin



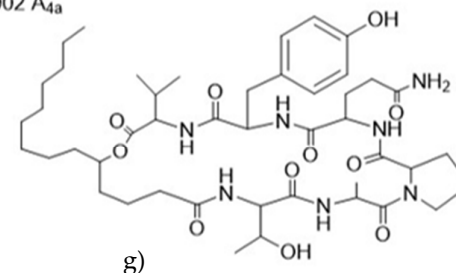
d) PF-1022A



e) SF-1902 A<sub>4a</sub>



f) Trichopolyn V



g) Verlamelin

Figure S23. Structures of known depsipeptides.