

Supplementary Information

Figure S1. ^1H -NMR spectrum of 2 (in CD_3OD).	3
Figure S2. ^1H -NMR spectrum of 2 (in $\text{DMSO}-d_6$).	3
Figure S3. ^{13}C -NMR spectrum of 2 (in CD_3OD).	4
Figure S4. ^{13}C -NMR spectrum of 2 (in $\text{DMSO}-d_6$).	4
Figure S5. HMQC spectrum of 2 (in CD_3OD).	5
Figure S6. HMQC spectrum of 2 (in $\text{DMSO}-d_6$).	5
Figure S7. HMBC spectrum of 2 (in $\text{DMSO}-d_6$).	6
Figure S8. UV spectrum of 2 .	6
Figure S9. HRESIMS spectrum of 2 .	7
Figure S10. ^1H -NMR spectrum of 3 (in CD_3OD).	8
Figure S11. ^1H -NMR spectrum of 3 (in $\text{DMSO}-d_6$).	9
Figure S12. ^{13}C -NMR spectrum of 3 (in CD_3OD).	10
Figure S13. ^{13}C -NMR spectrum of 3 (in $\text{DMSO}-d_6$).	10
Figure S14. HMQC spectrum of 3 (in CD_3OD).	11
Figure S15. HMQC spectrum of 3 (in $\text{DMSO}-d_6$).	11
Figure S16. HMBC spectrum of 3 (in CD_3OD).	12
Figure S17. ROESY spectrum of 3 (in $\text{DMSO}-d_6$).	12
Figure S18. HRESIMS spectrum of 3 .	13
Figure S19. UV spectrum of 3 .	14
Figure S20. ^1H -NMR spectrum of 4 (in CD_3OD).	15
Figure S21. ^1H -NMR spectrum of 4 (in $\text{DMSO}-d_6$).	16
Figure S22. ^{13}C -NMR spectrum of 4 (in CD_3OD).	17
Figure S23. ^{13}C -NMR spectrum of 4 (in $\text{DMSO}-d_6$).	17
Figure S24. HMQC spectrum of 4 (in CD_3OD).	18
Figure S25. HMBC spectrum of 4 (in CD_3OD).	18
Figure S26. COSY spectrum of 4 (in CD_3OD).	19
Figure S27. UV spectrum of 4 .	19
Figure S28. HRESI MS spectrum of 4 .	20
Figure S29. ^1H -NMR spectrum of 5 (in $\text{DMSO}-d_6$).	21
Figure S30. ^{13}C -NMR spectrum of 5 (in $\text{DMSO}-d_6$).	21
Figure S31. HMQC spectrum of 5 (in $\text{DMSO}-d_6$).	22
Figure S32. HRESIMS spectrum of 5 (in $\text{DMSO}-d_6$).	23
Figure S33. UV spectrum of 5 .	24
Figure S34. ^1H -NMR spectrum of 6 (in $\text{DMSO}-d_6$).	25
Figure S35. ^{13}C -NMR spectrum of 6 (in $\text{DMSO}-d_6$).	26
Figure S36. HMQC spectrum of 6 (in $\text{DMSO}-d_6$).	26
Figure S37. HMBC spectrum of 6 (in $\text{DMSO}-d_6$).	27
Figure S38. HRESI MS spectrum of 6 (in $\text{DMSO}-d_6$).	27
Figure S39. ^1H -NMR spectrum of 7 (in $\text{DMSO}-d_6$).	28
Figure S40. ^{13}C -NMR spectrum of 7 (in $\text{DMSO}-d_6$).	29
Figure S41. HMQC spectrum of 7 (in $\text{DMSO}-d_6$).	29

Figure S42. HRESI MS spectrum of 7 .	30
Figure S43. HPLC profiles of the ethanol extract and the active 90% MeOH fraction.	30
Figure S44. 16S rDNA sequence data of marine <i>Streptomyces fradiae</i> strain PTZ0025.	31
Figure S45. Fradimycin B (4) induced apoptosis and necrosis in SW620 cells.	32
Figure S46. Fradimycin B (4) induced apoptosis and necrosis in C ₆ cells.	33

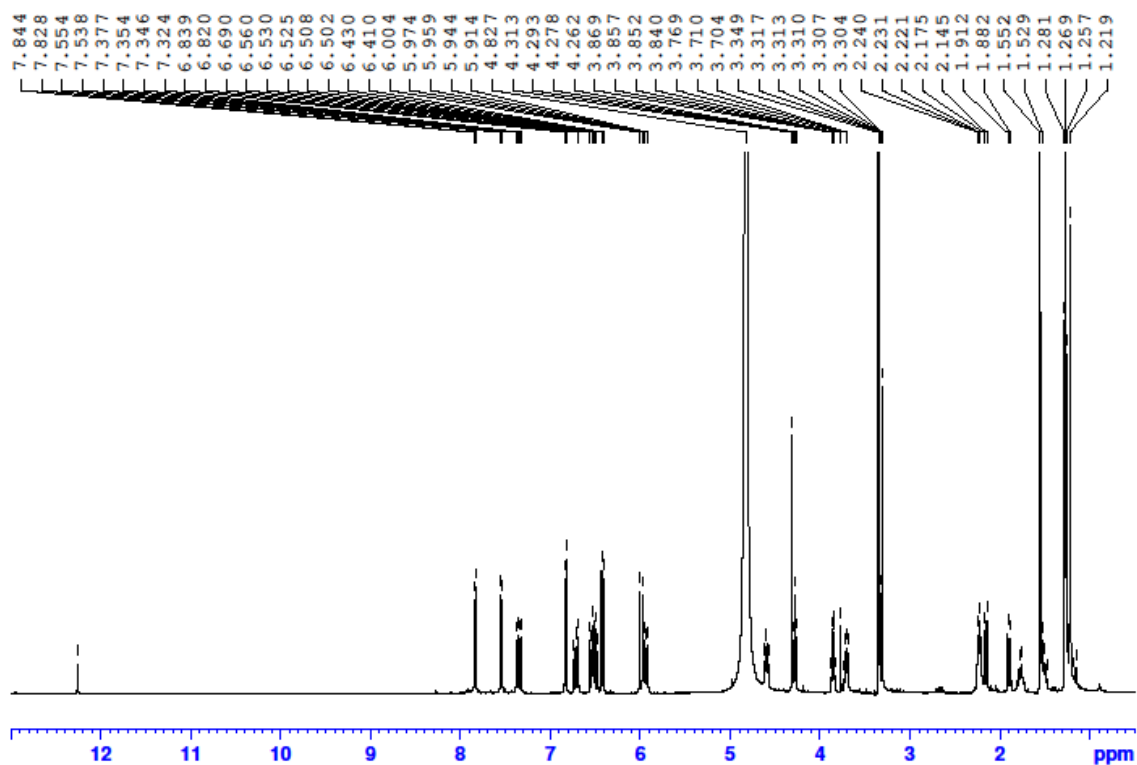
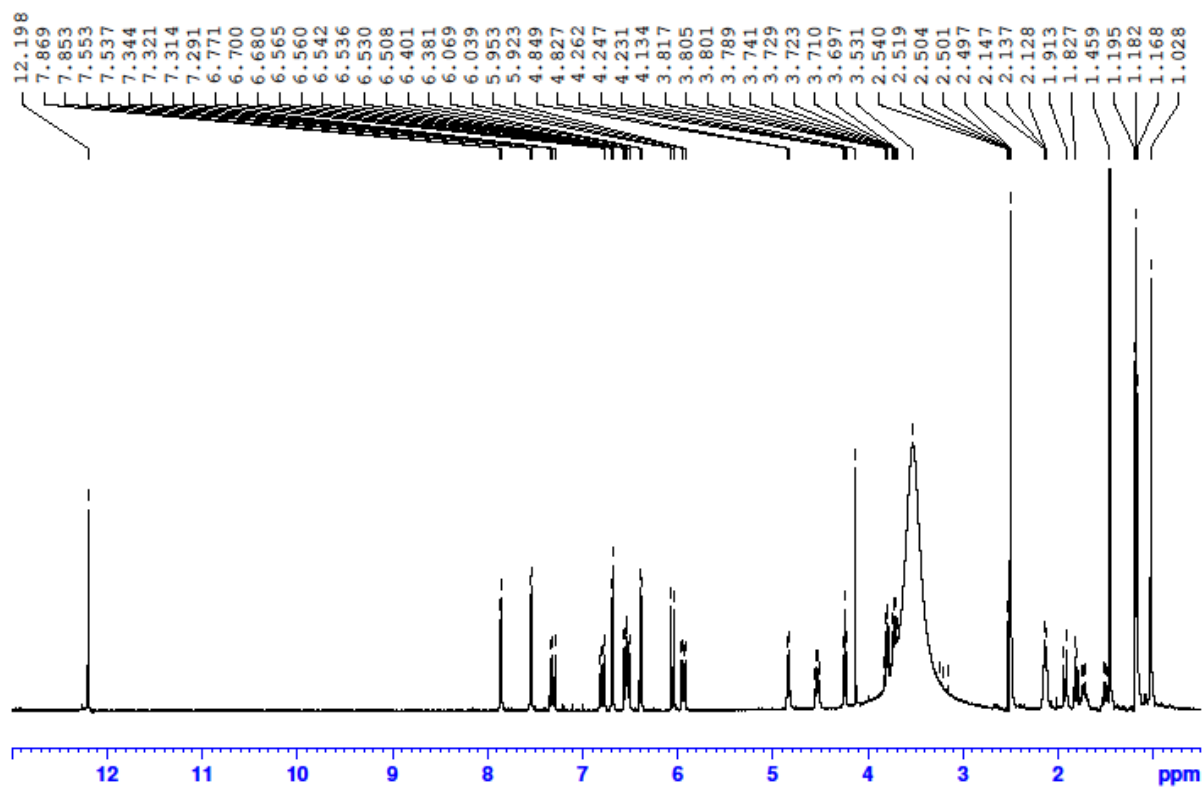
Figure S1. $^1\text{H-NMR}$ spectrum of **2** (in CD_3OD).Figure S2. $^1\text{H-NMR}$ spectrum of **2** (in $\text{DMSO-}d_6$).

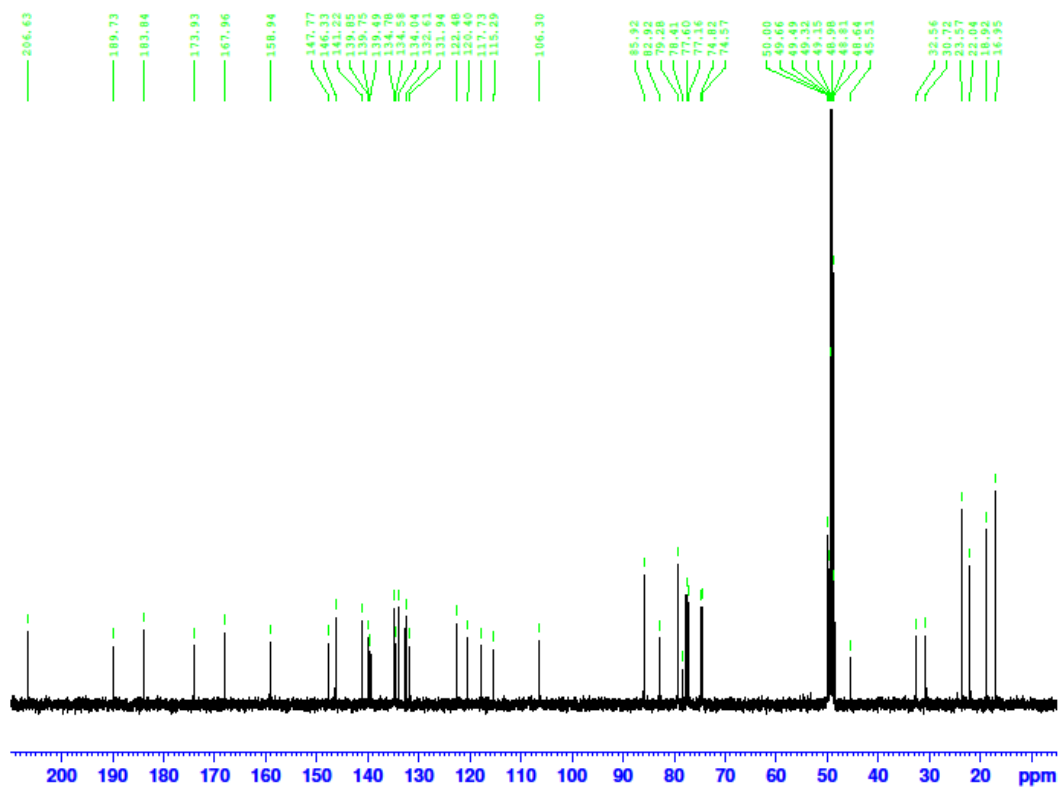
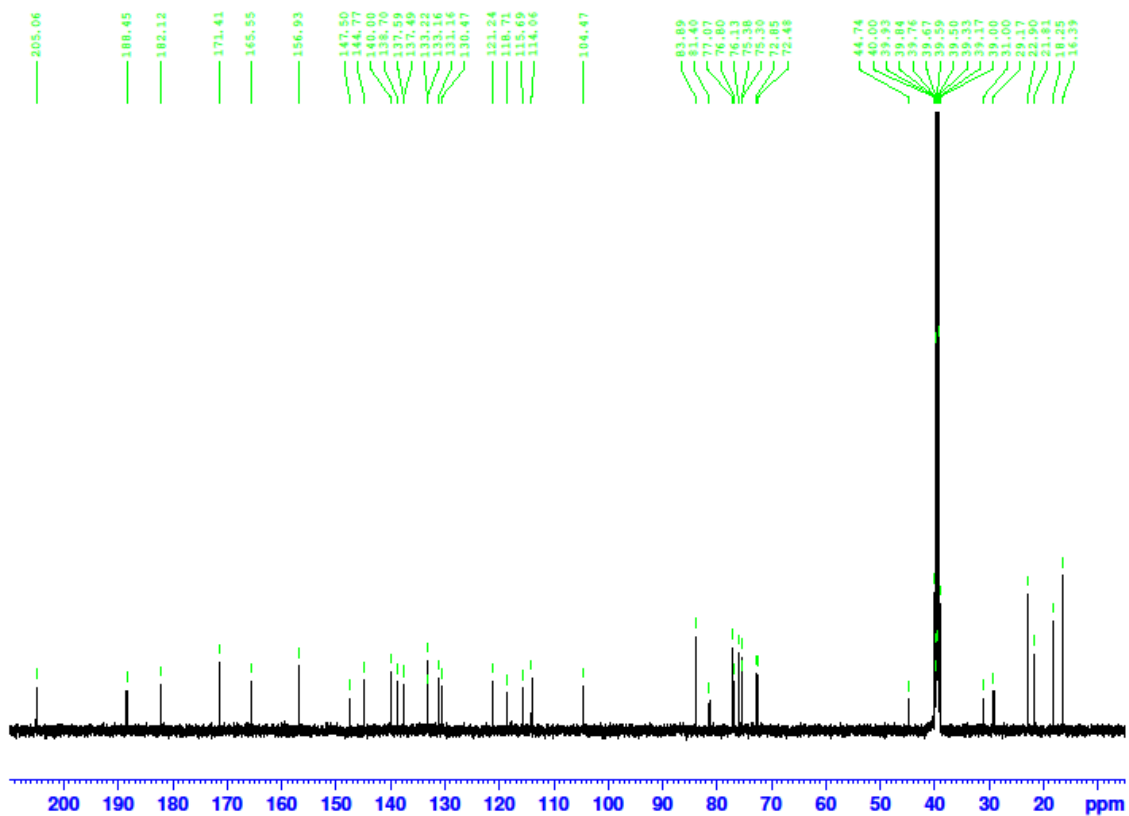
Figure S3. ^{13}C -NMR spectrum of **2** (in CD_3OD).**Figure S4.** ^{13}C -NMR spectrum of **2** (in $\text{DMSO}-d_6$).

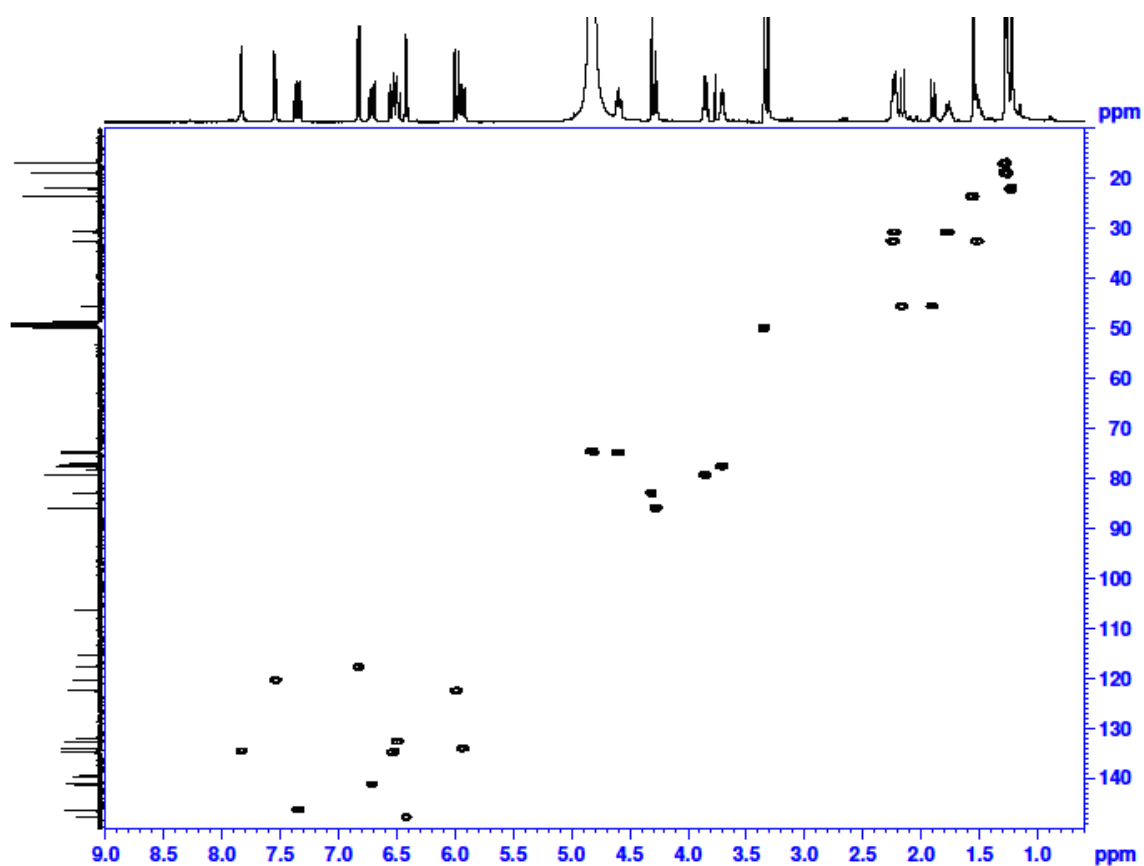
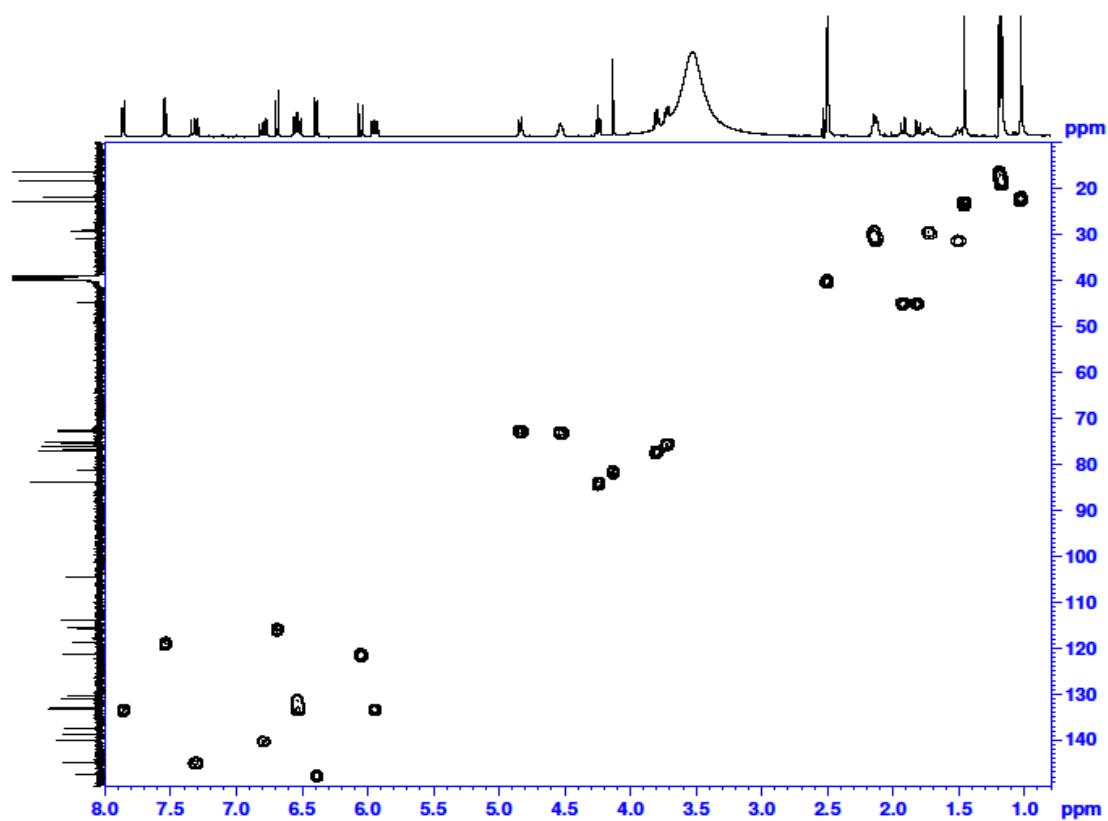
Figure S5. HMQC spectrum of **2** (in CD₃OD).Figure S6. HMQC spectrum of **2** (in DMSO-*d*₆).

Figure S7. HMBC spectrum of 2 (in DMSO- d_6).

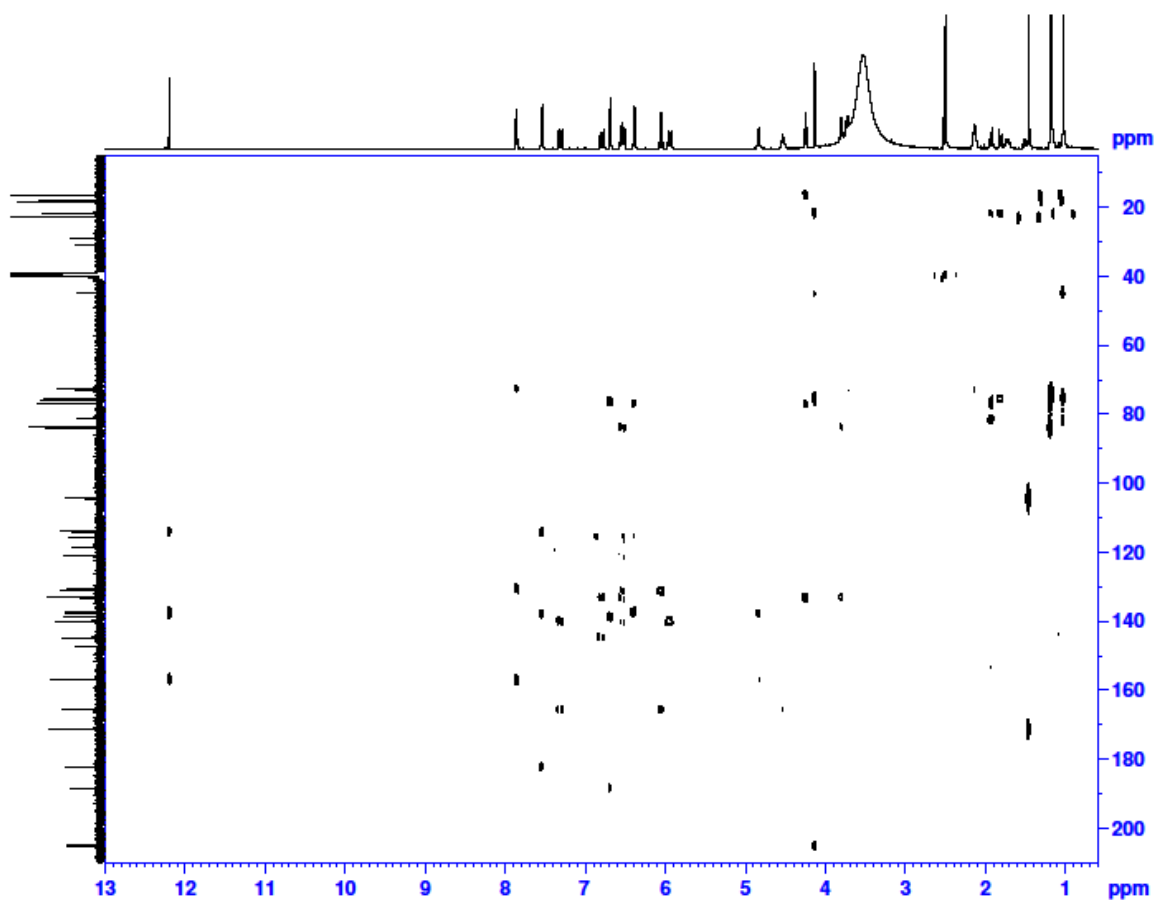


Figure S8. UV spectrum of 2.

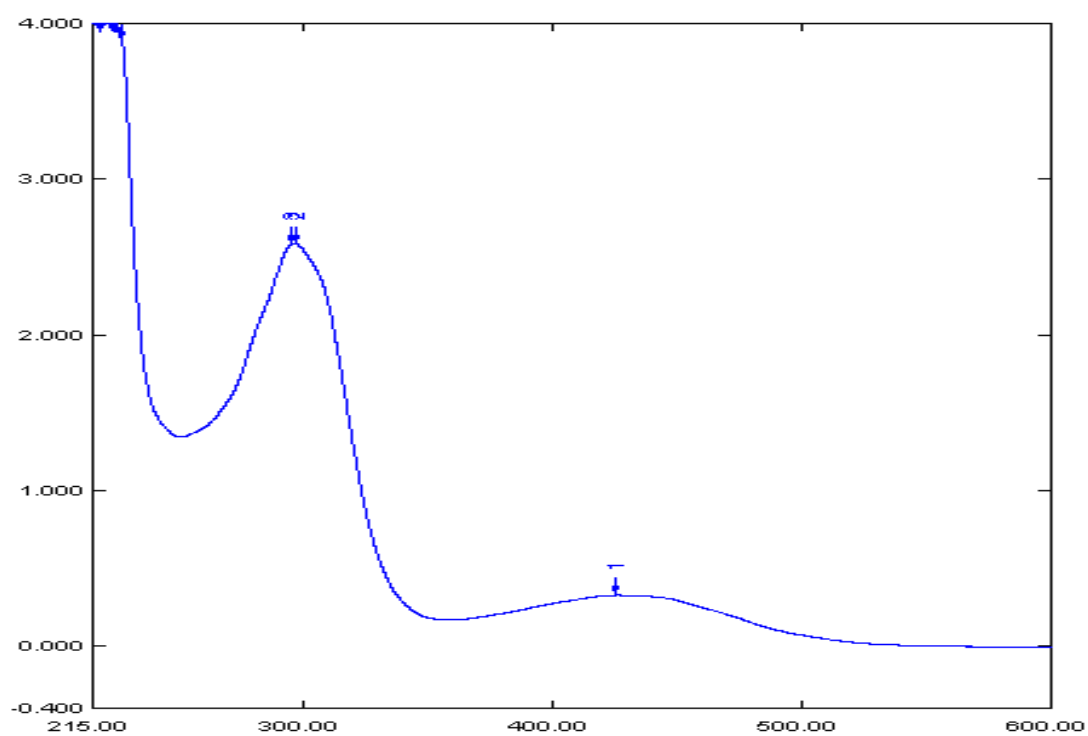


Figure S9. HRESIMS spectrum of 2.

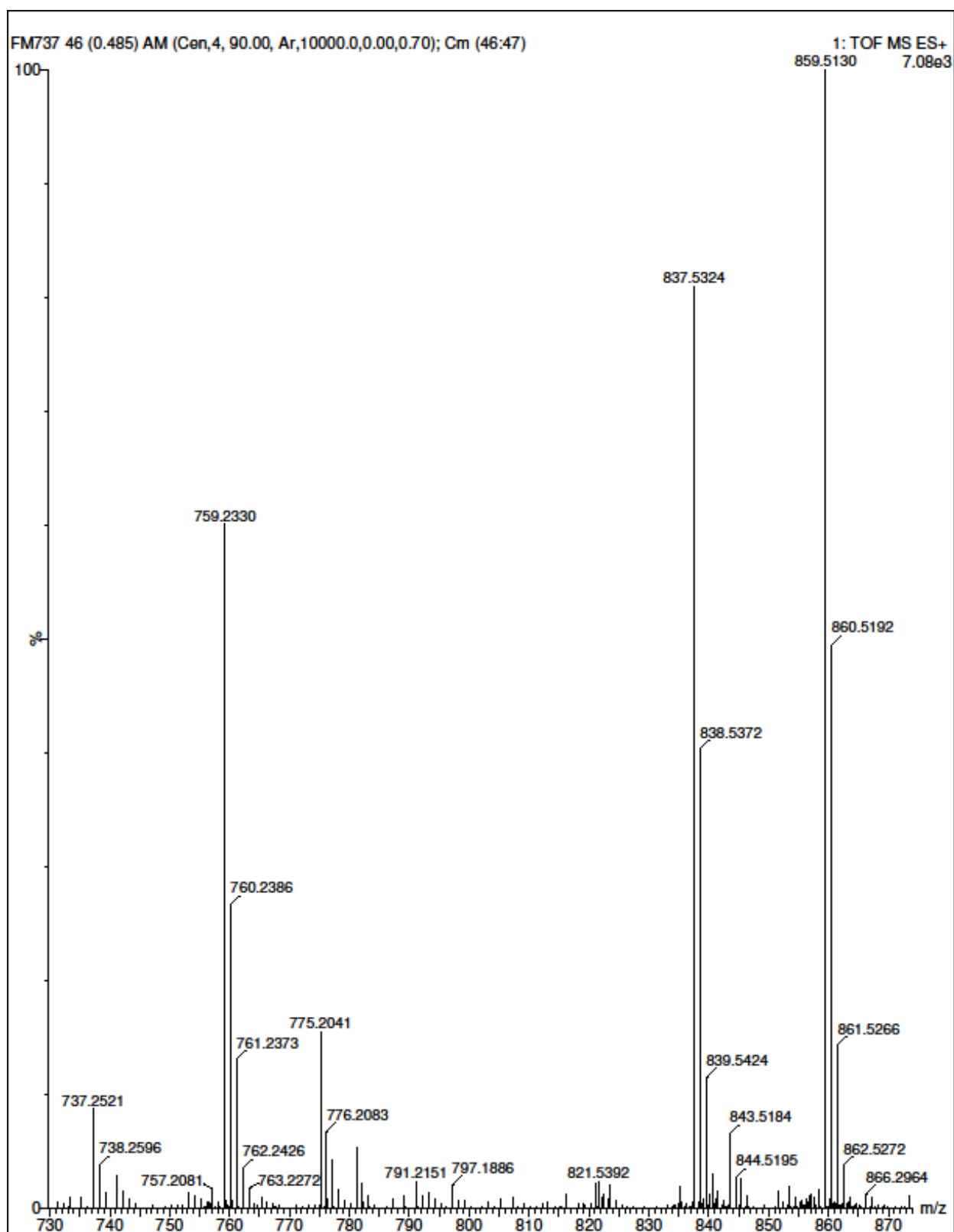


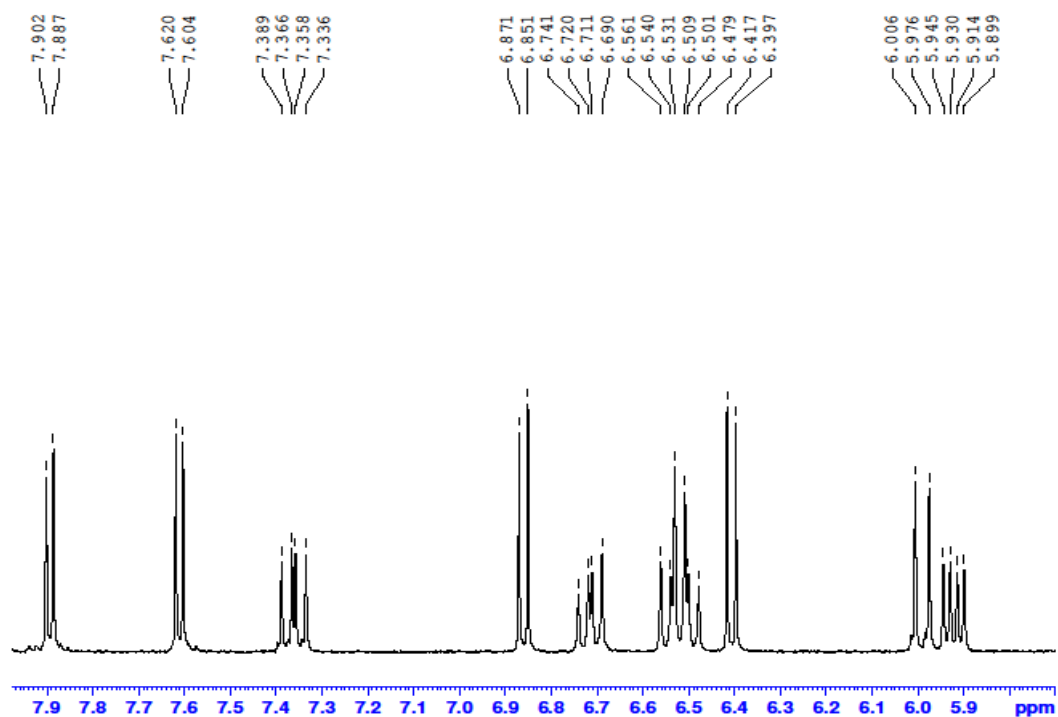
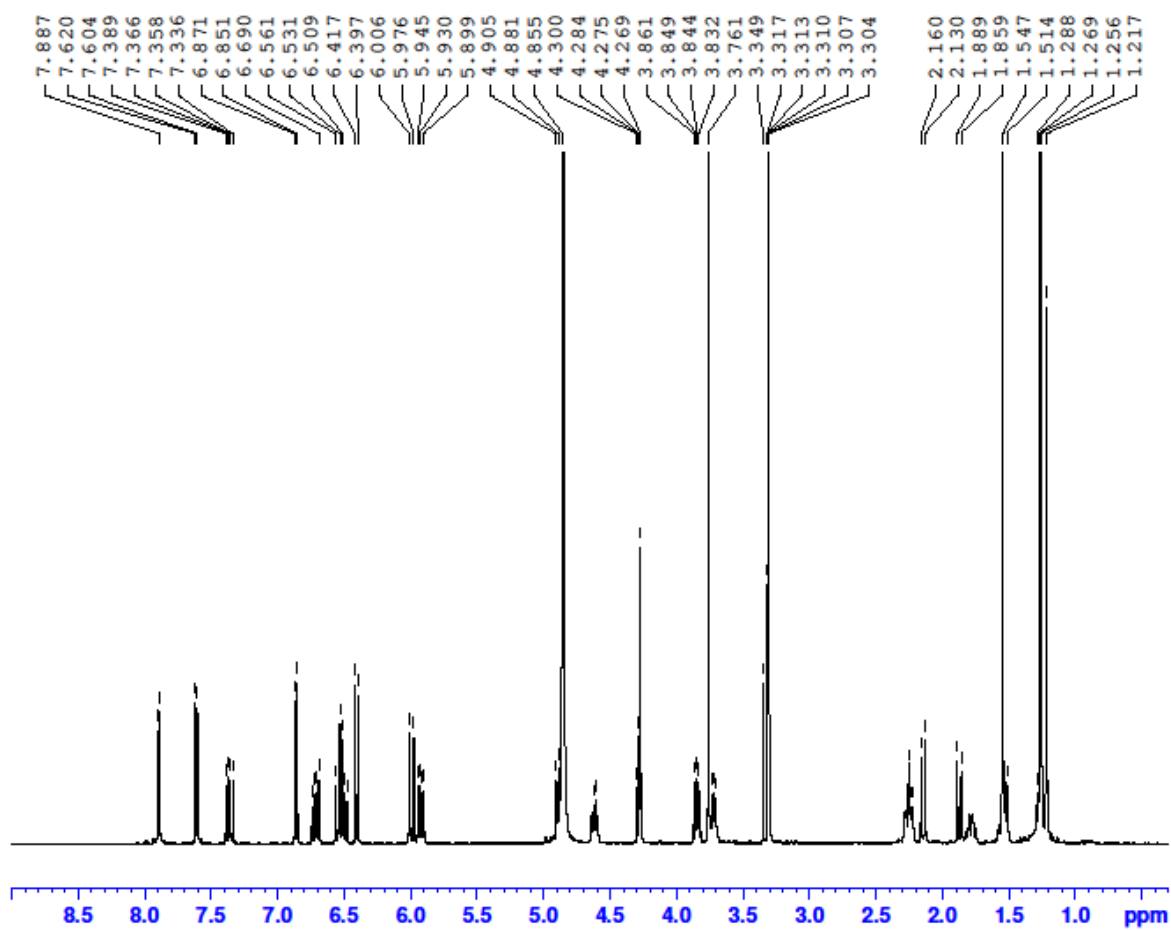
Figure S10. $^1\text{H-NMR}$ spectrum of **3** (in CD_3OD).

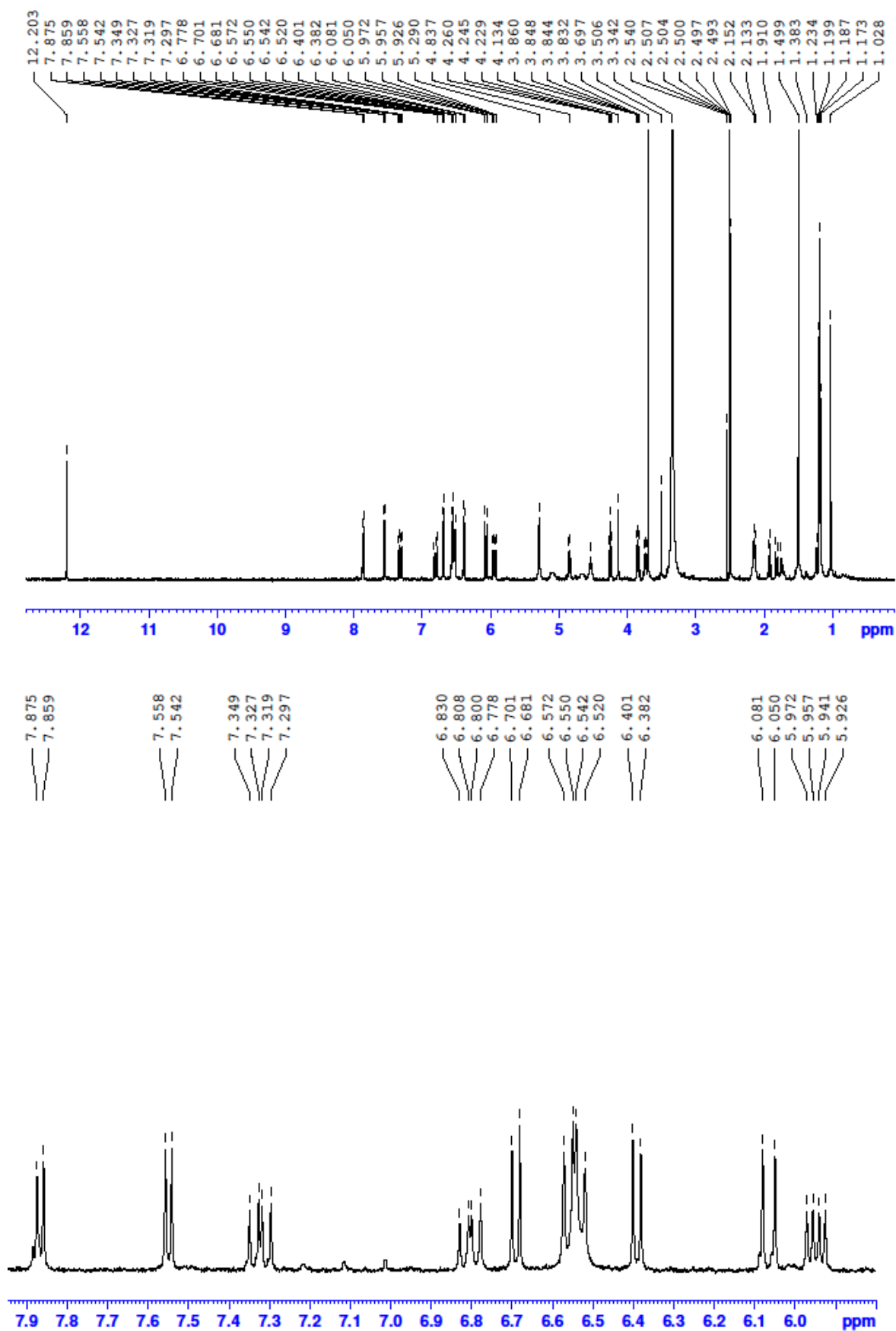
Figure S11. $^1\text{H-NMR}$ spectrum of **3** (in $\text{DMSO-}d_6$).

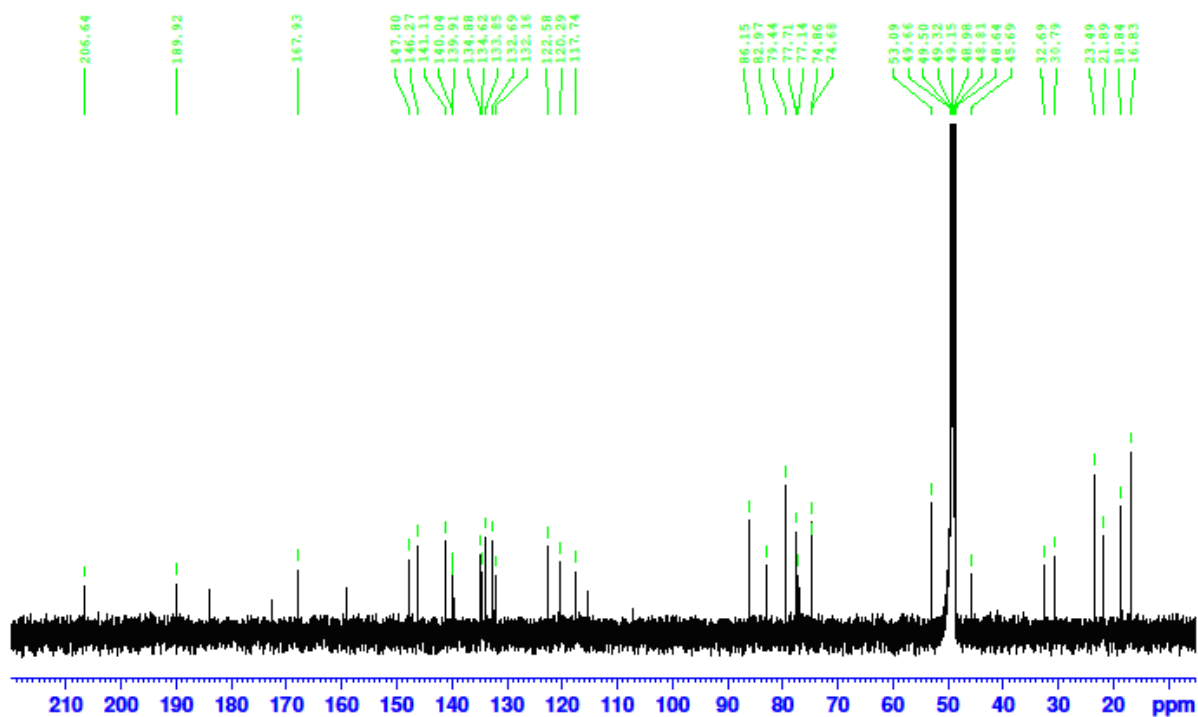
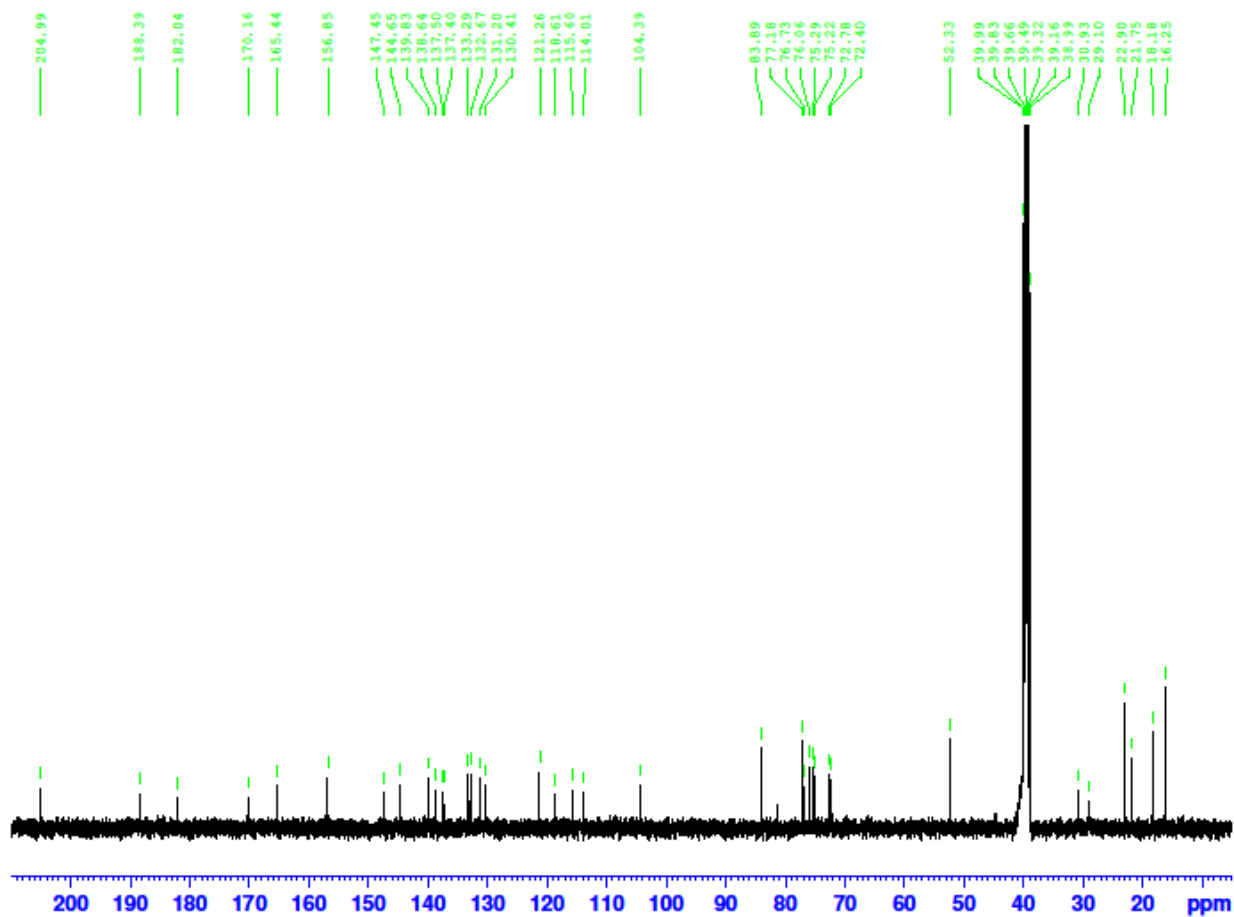
Figure S12. ^{13}C -NMR spectrum of **3** (in CD_3OD).**Figure S13.** ^{13}C -NMR spectrum of **3** (in $\text{DMSO}-d_6$).

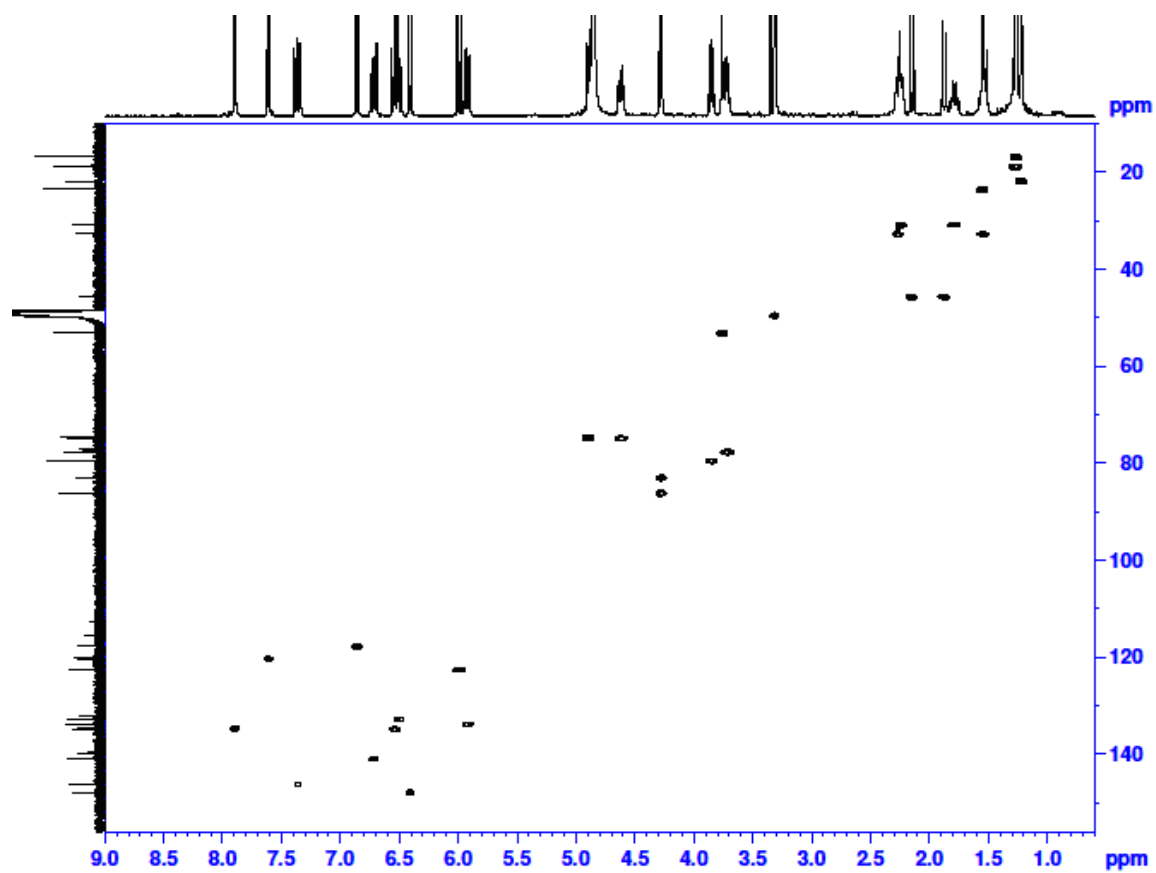
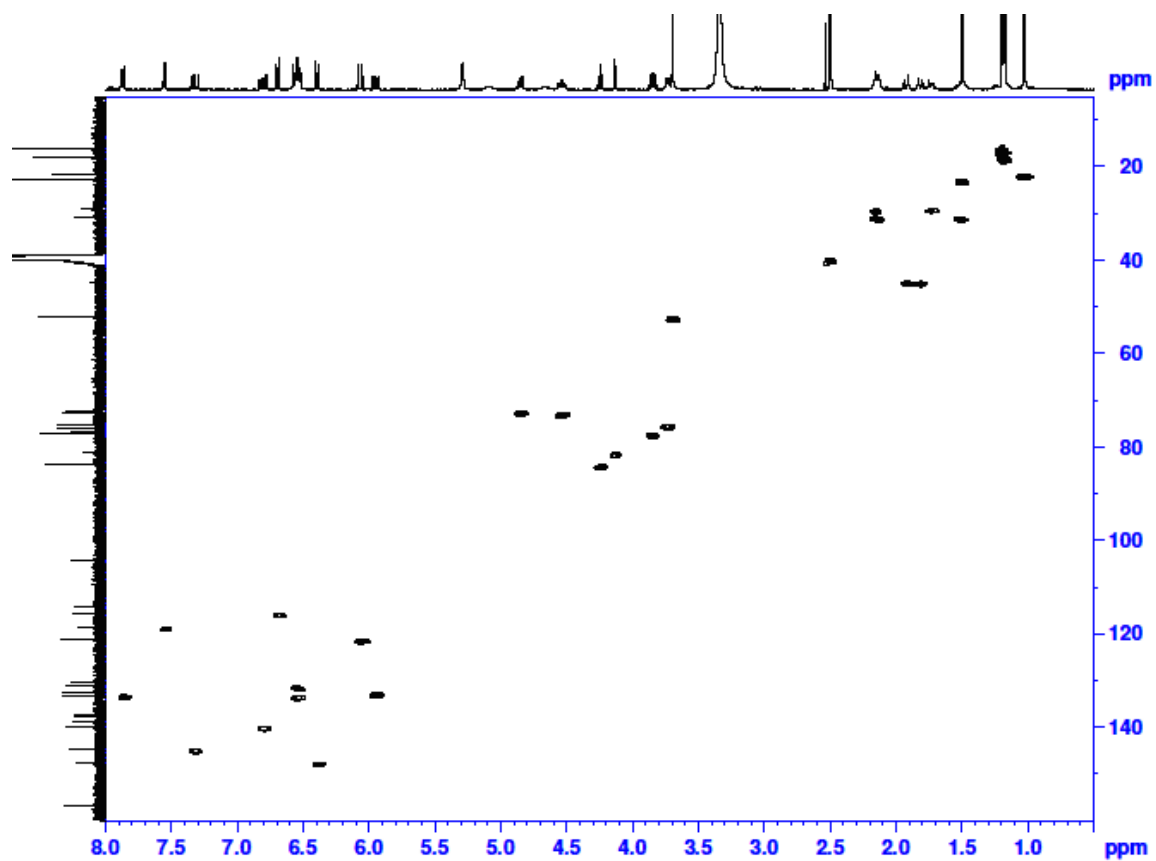
Figure S14. HMQC spectrum of **3** (in CD₃OD).Figure S15. HMQC spectrum of **3** (in DMSO-*d*₆).

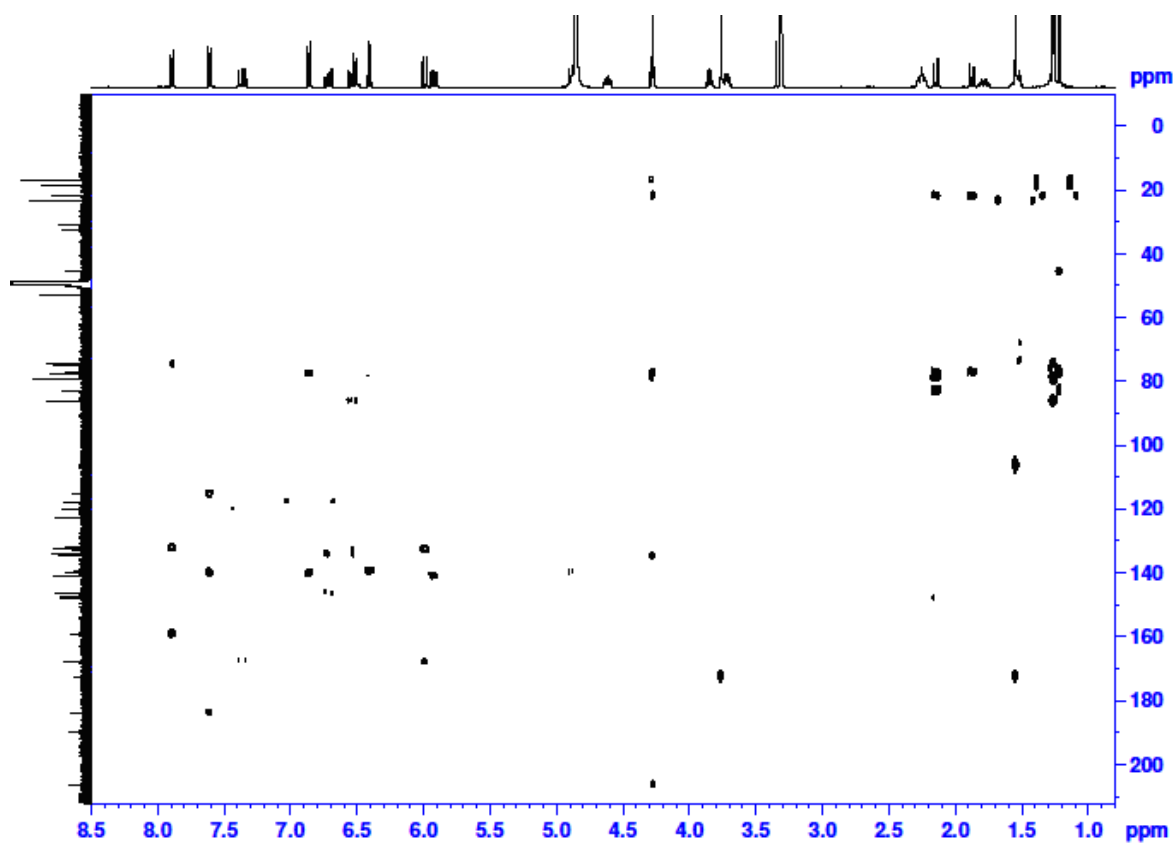
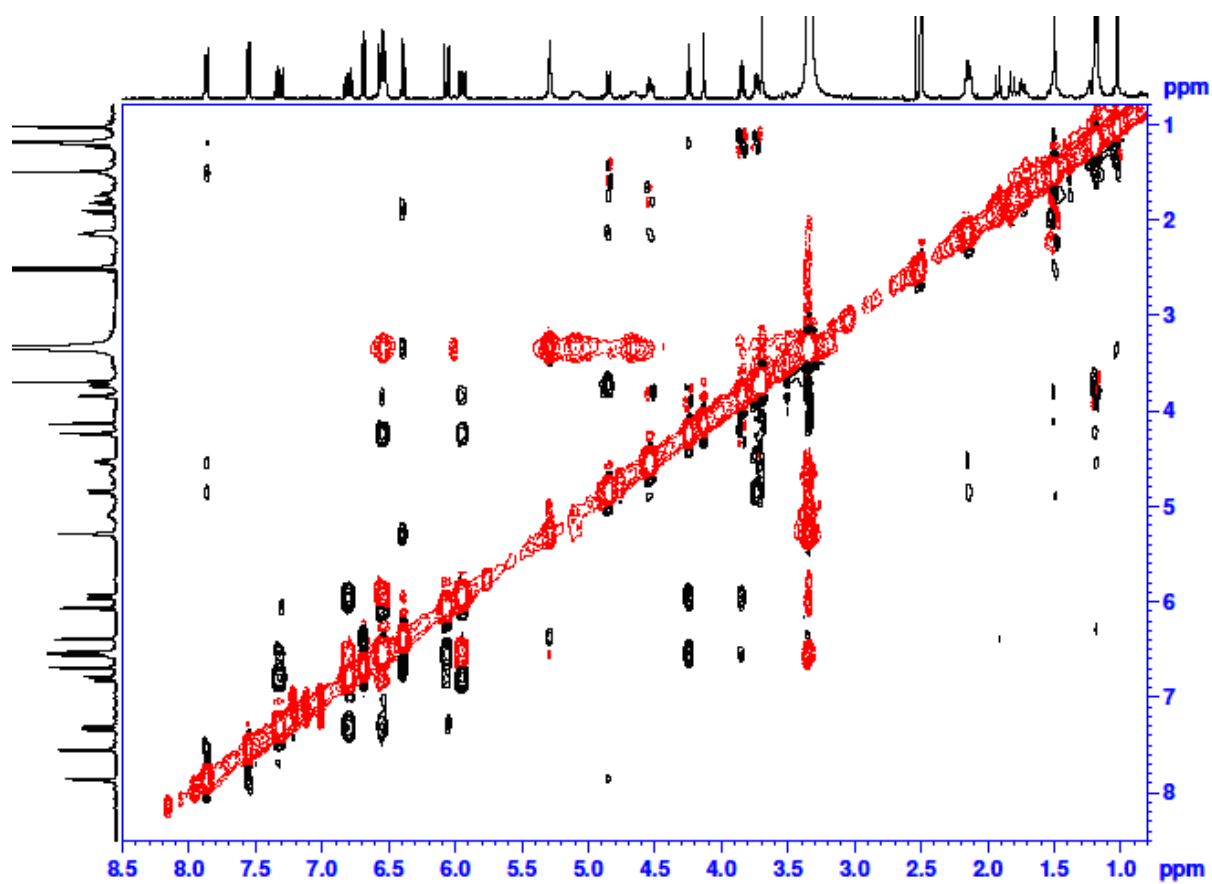
Figure S16. HMBC spectrum of **3** (in CD₃OD).Figure S17. ROESY spectrum of **3** (in DMSO-*d*₆).

Figure S18. HRESIMS spectrum of 3.

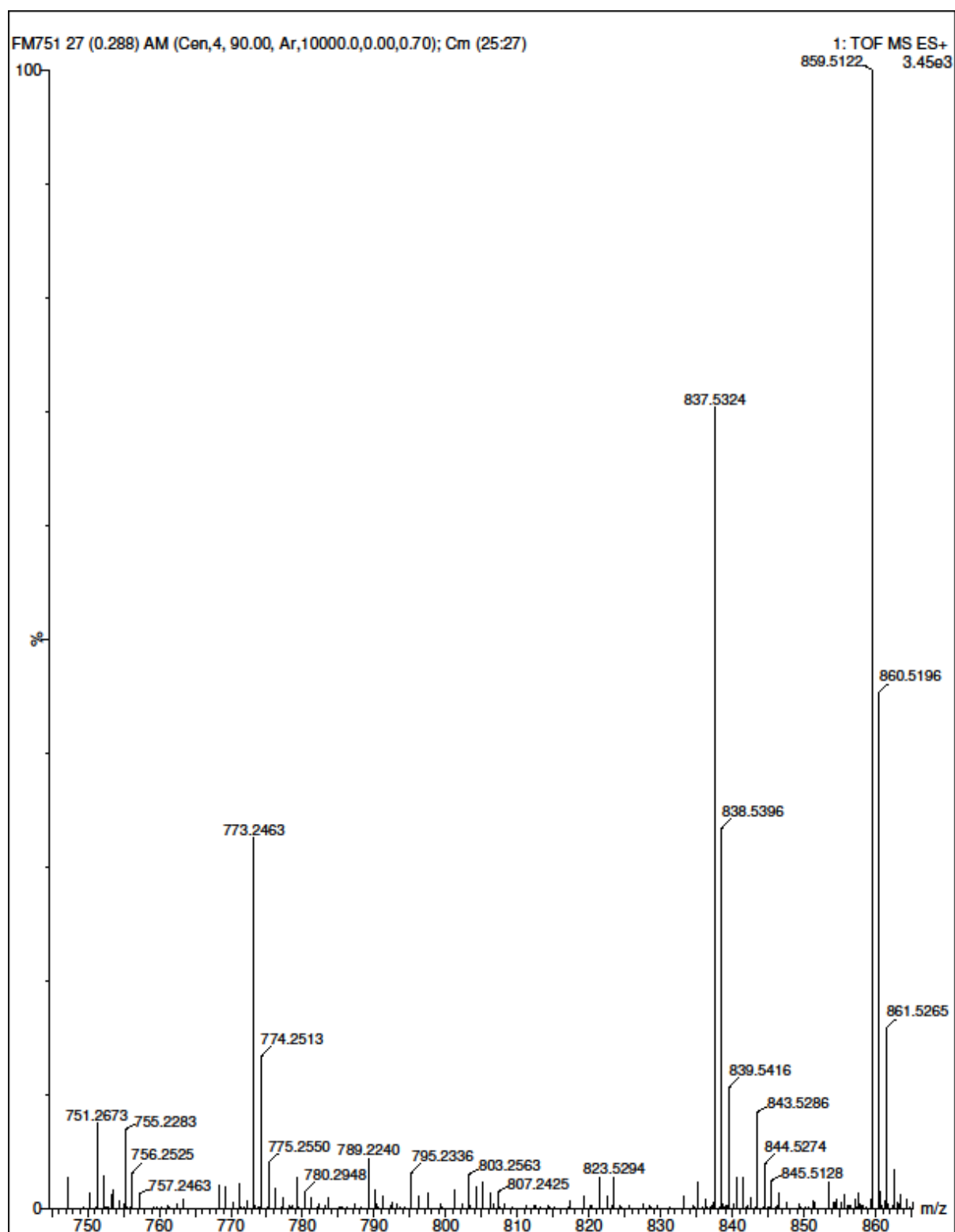


Figure S19. UV spectrum of 3.

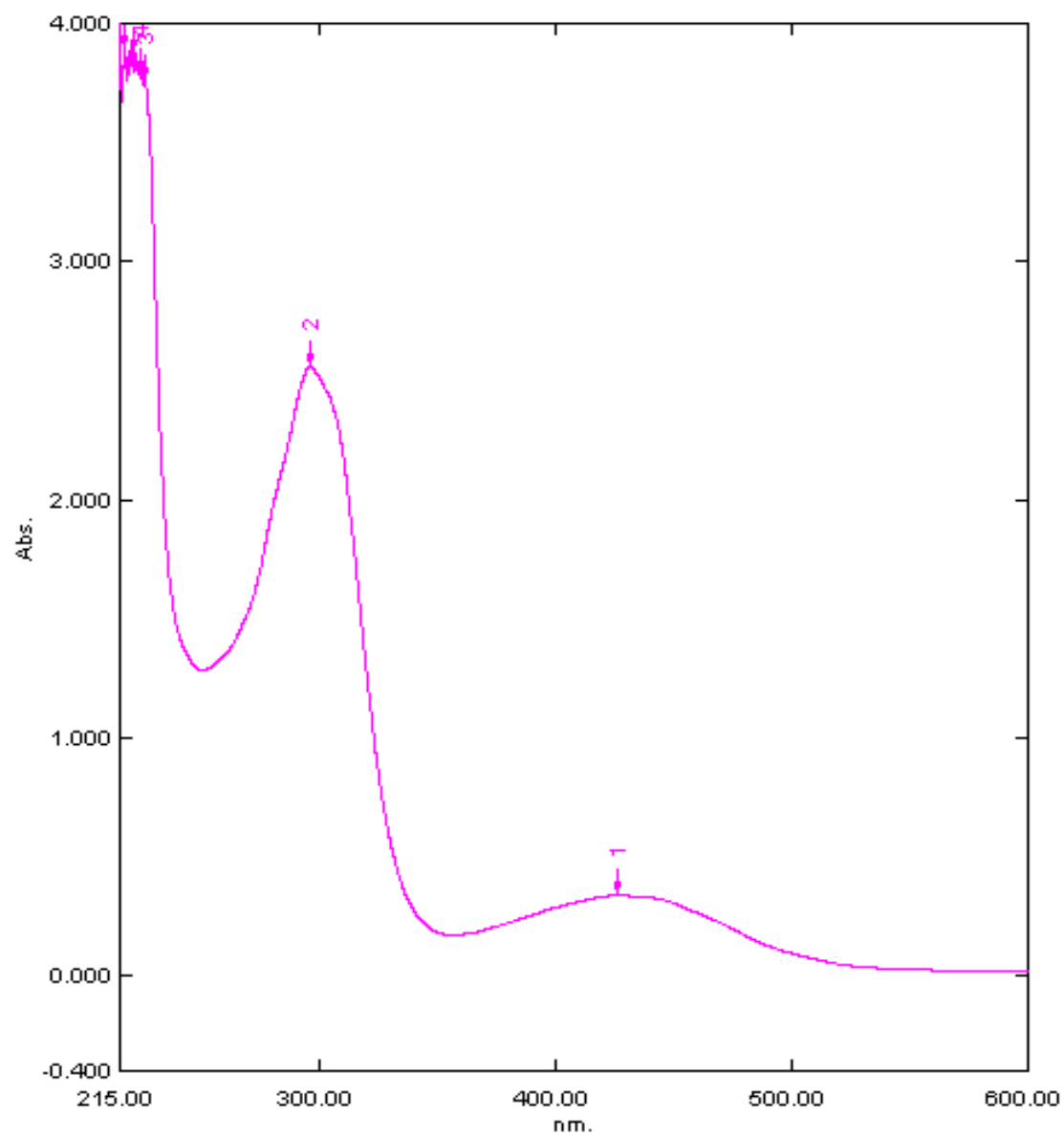


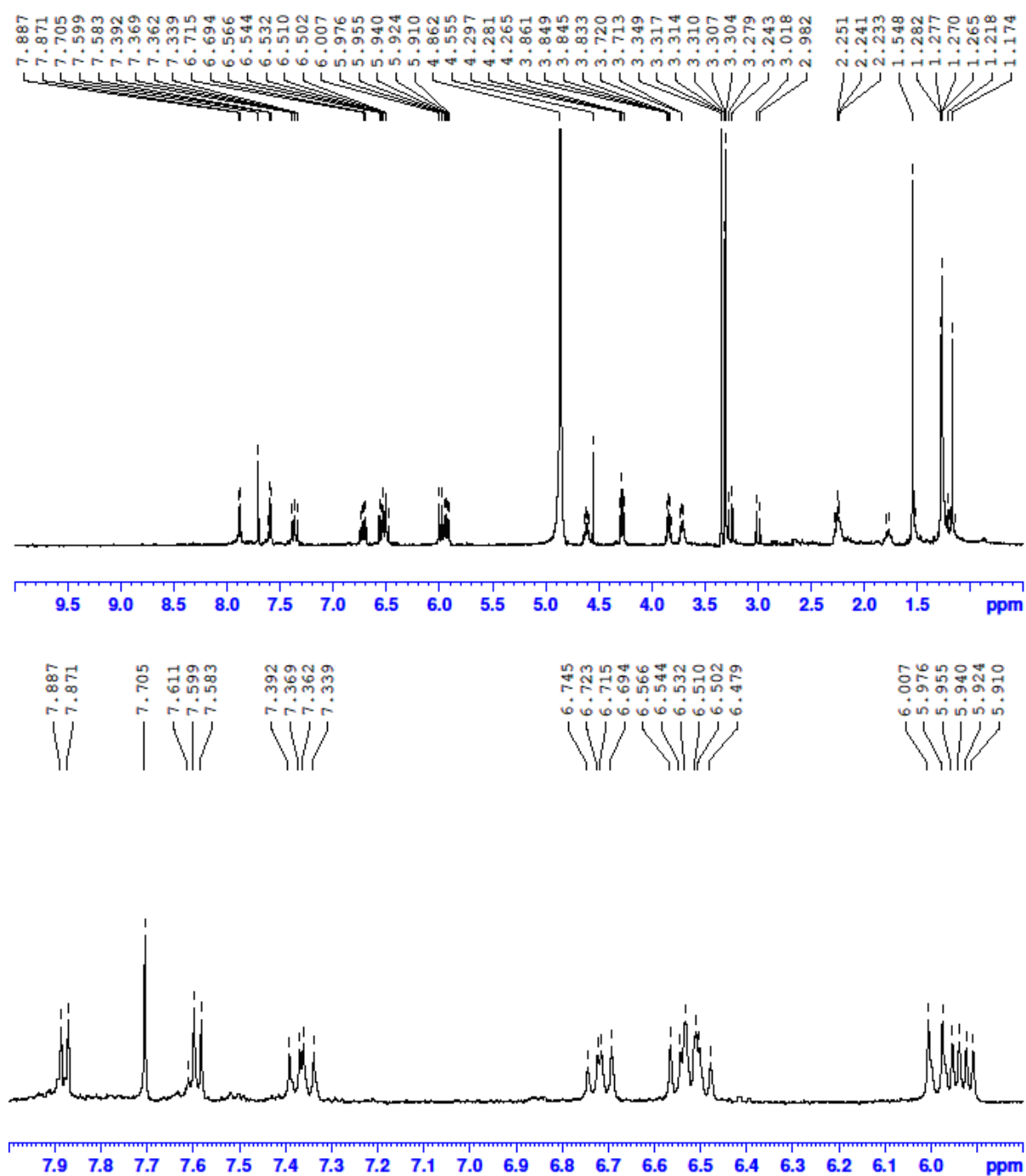
Figure S20. $^1\text{H-NMR}$ spectrum of **4** (in CD_3OD).

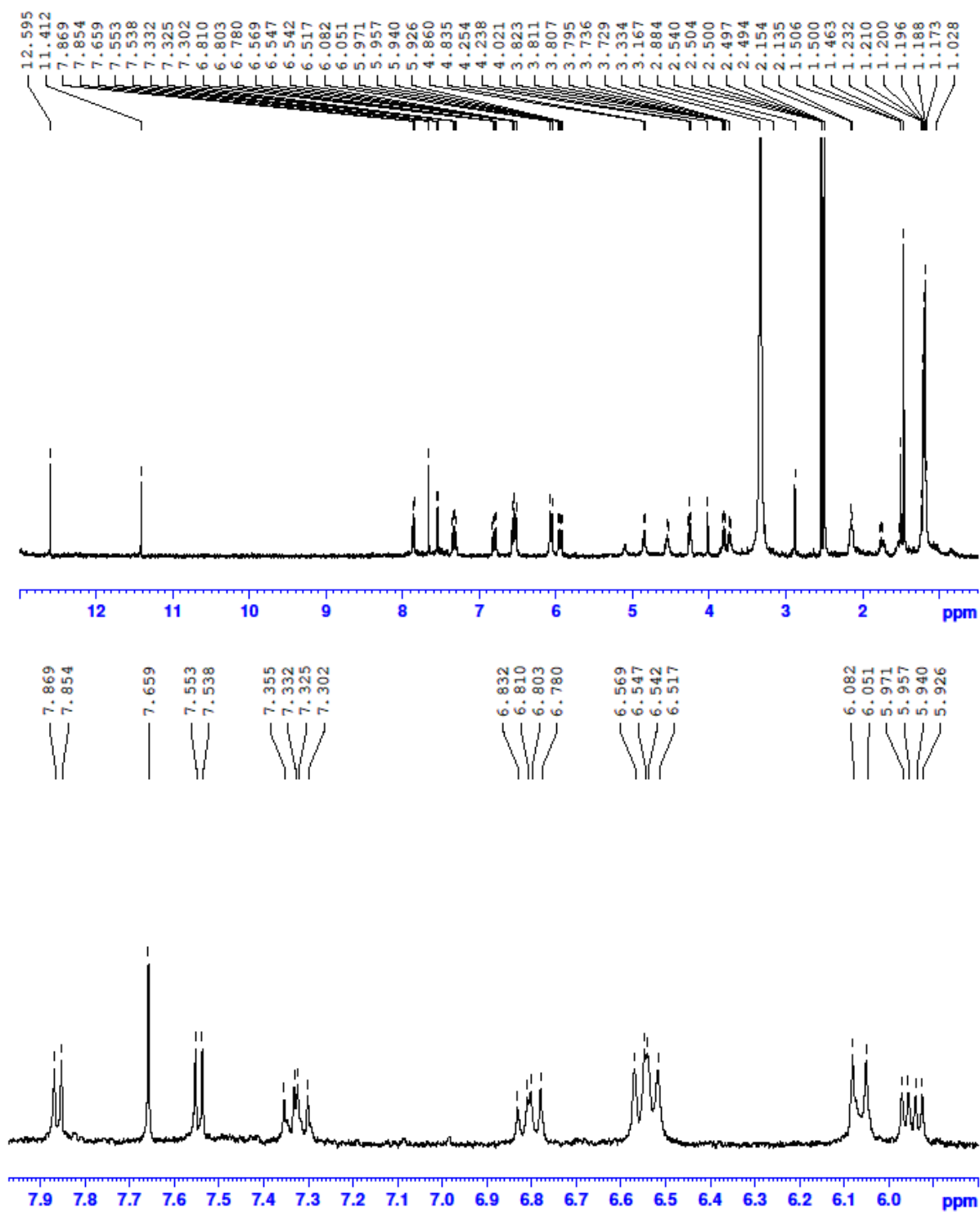
Figure S21. $^1\text{H-NMR}$ spectrum of **4** ($\text{DMSO-}d_6$).

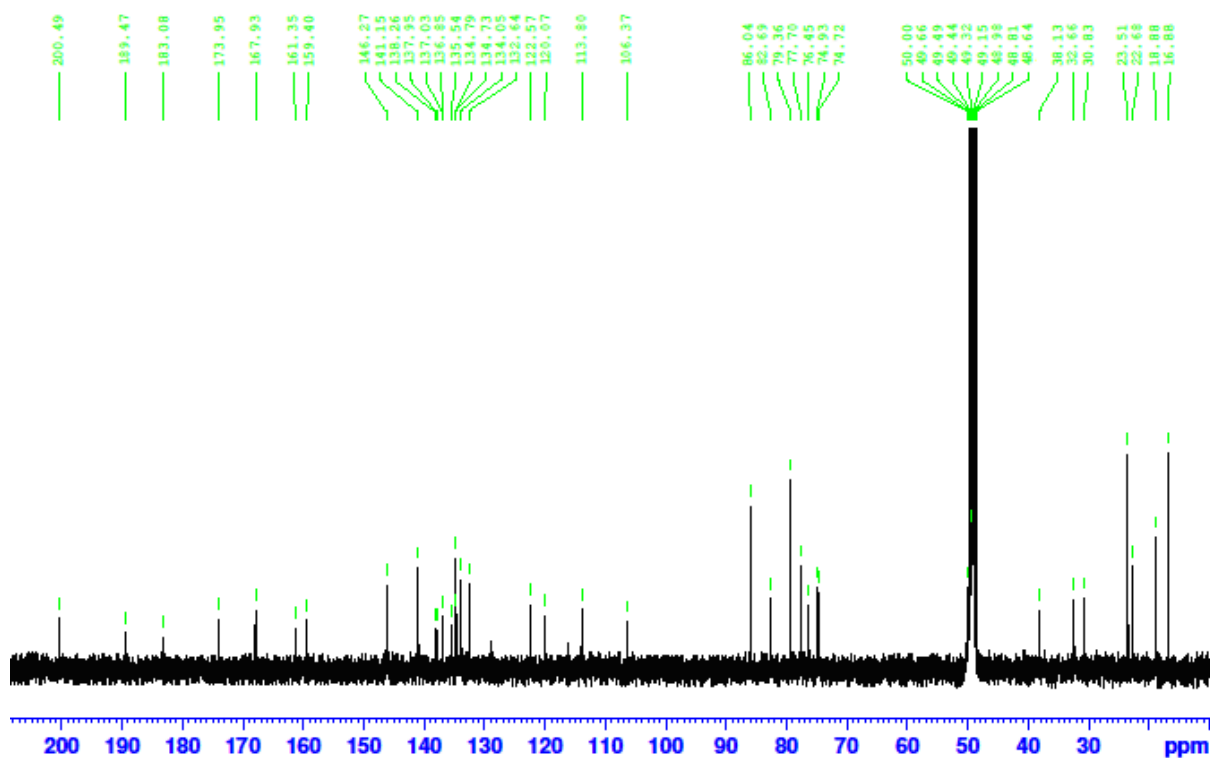
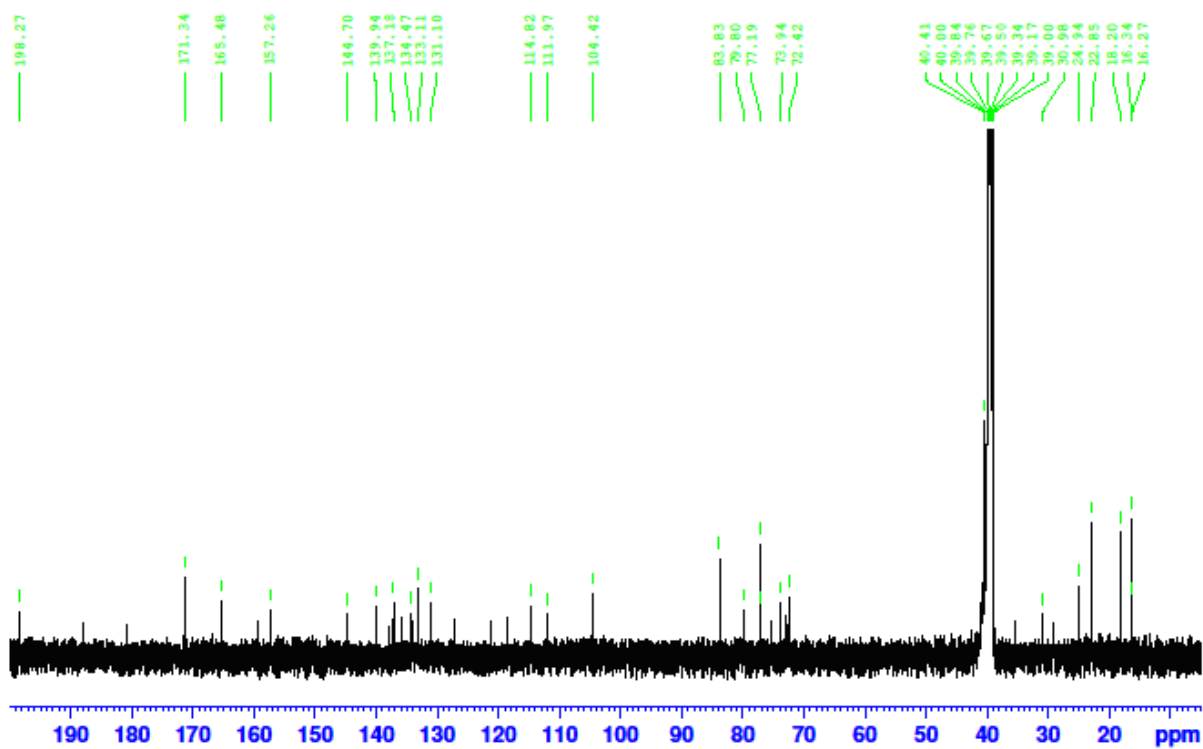
Figure S22. ^{13}C -NMR spectrum of 4 (in CD_3OD).Figure S23. ^{13}C -NMR spectrum of 4 (in $\text{DMSO}-d_6$).

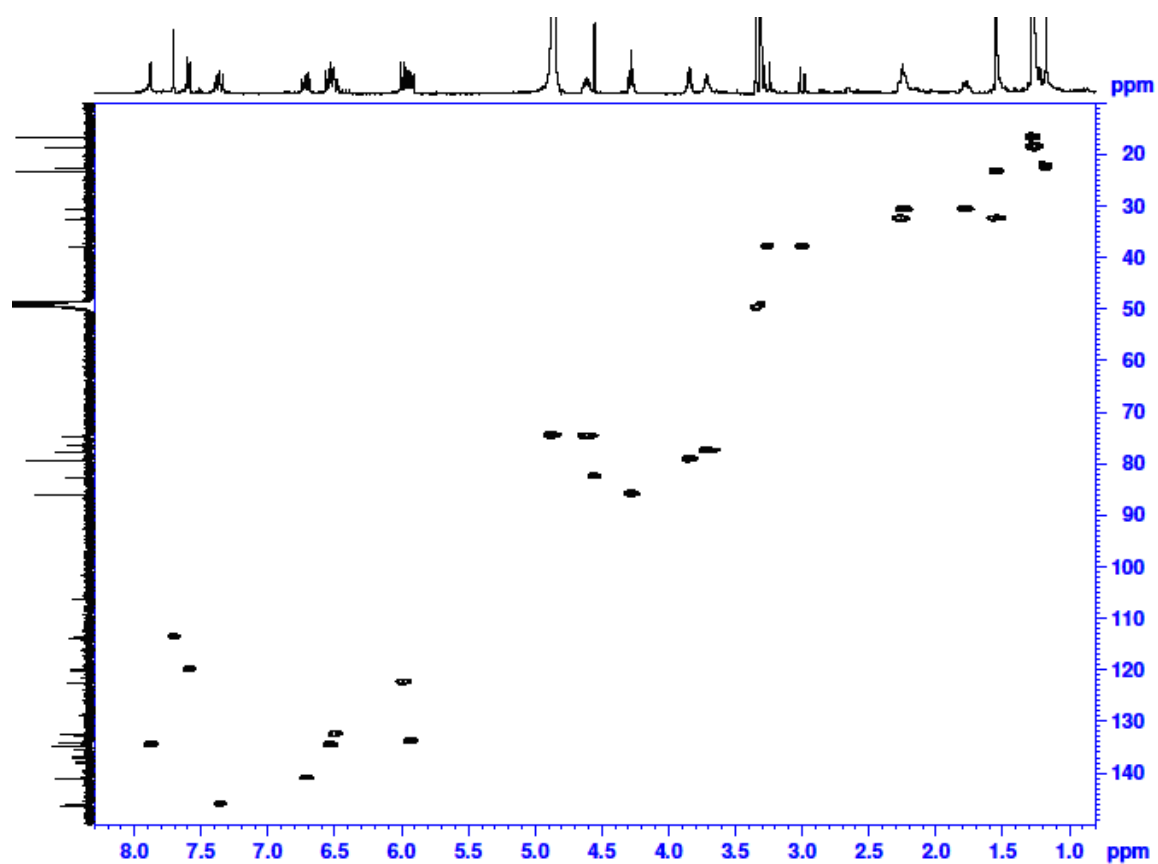
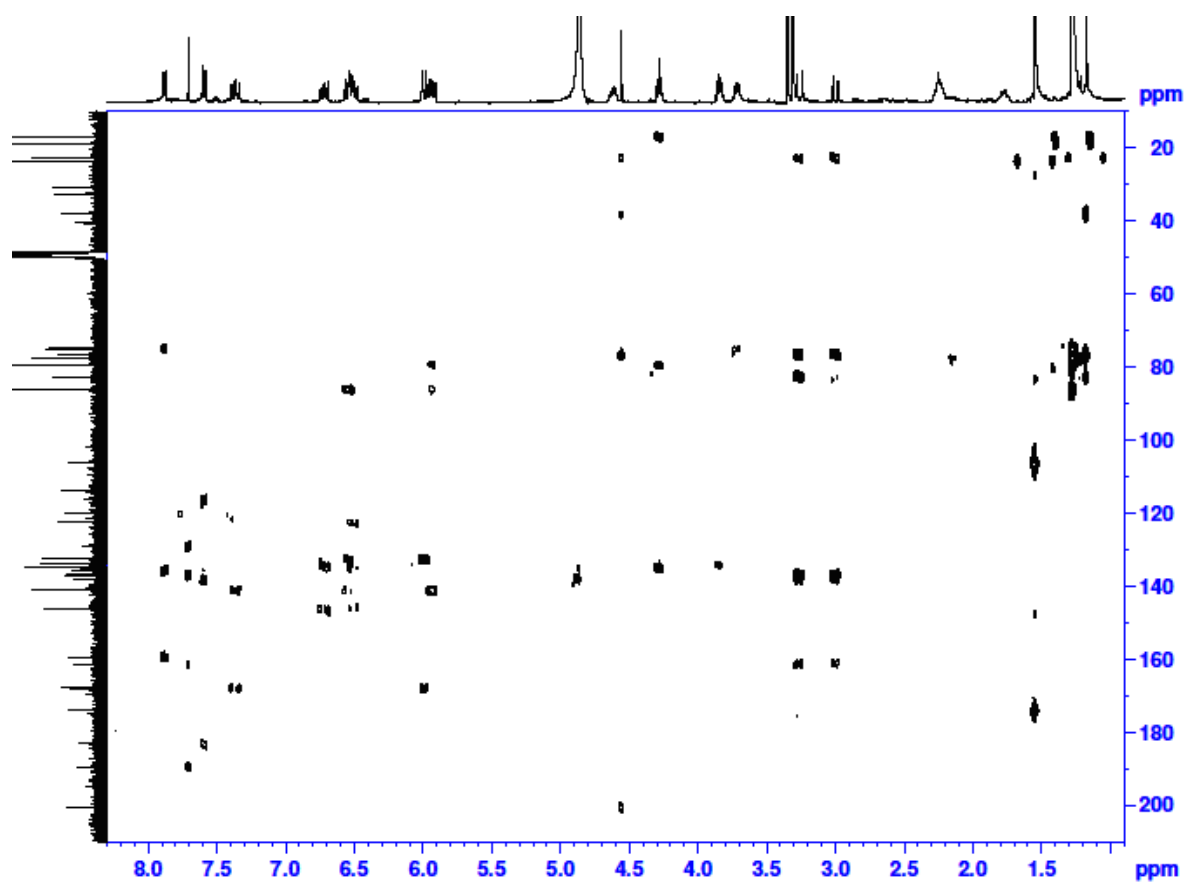
Figure S24. HMQC spectrum of 4 (in CD₃OD).Figure S25. HMBC spectrum of 4 (in CD₃OD).

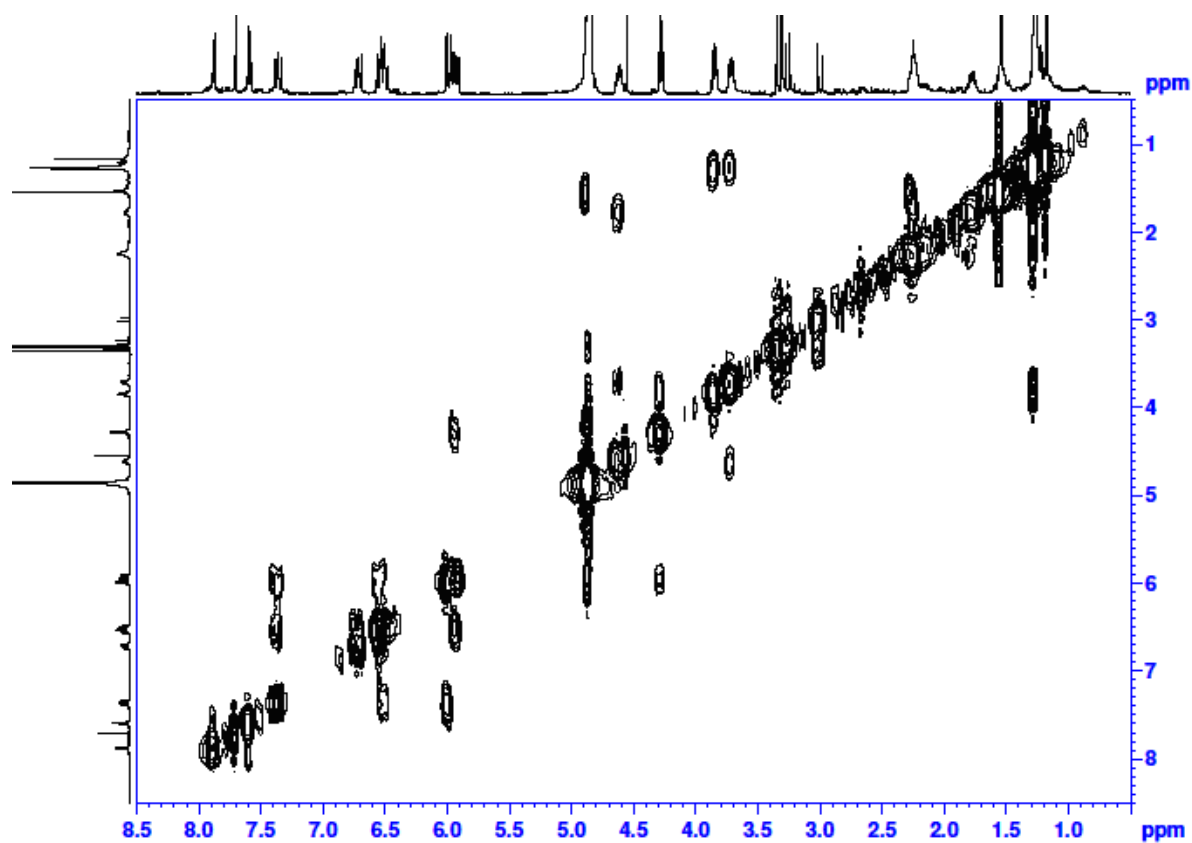
Figure S26. COSY spectrum of 4 (in CD₃OD).

Figure S27. UV spectrum of 4.

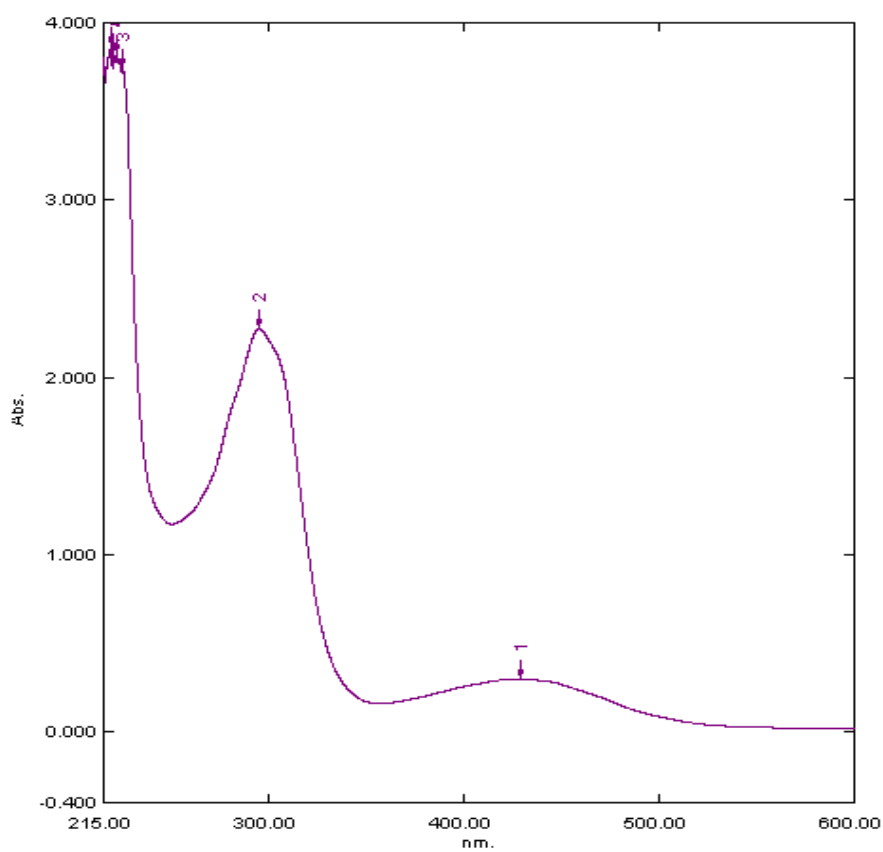


Figure S28. HRESIMS spectrum of 4.

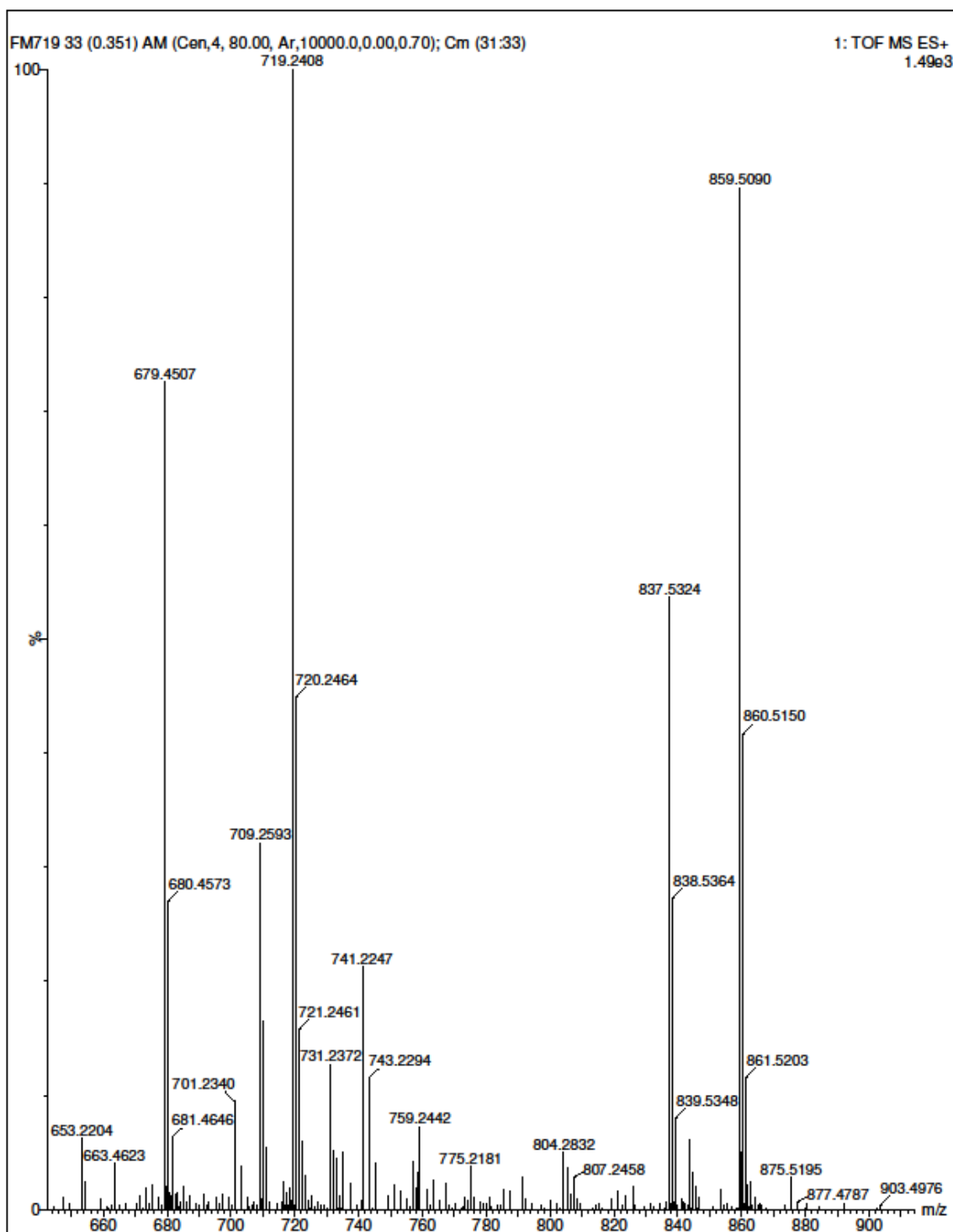


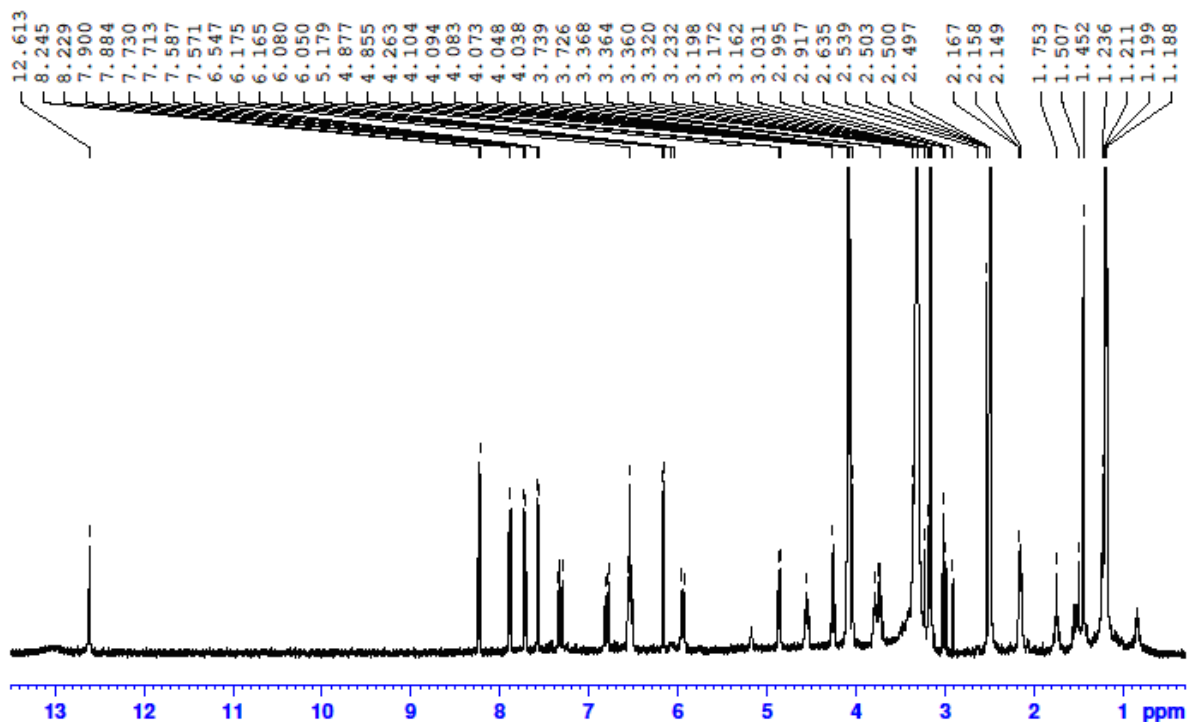
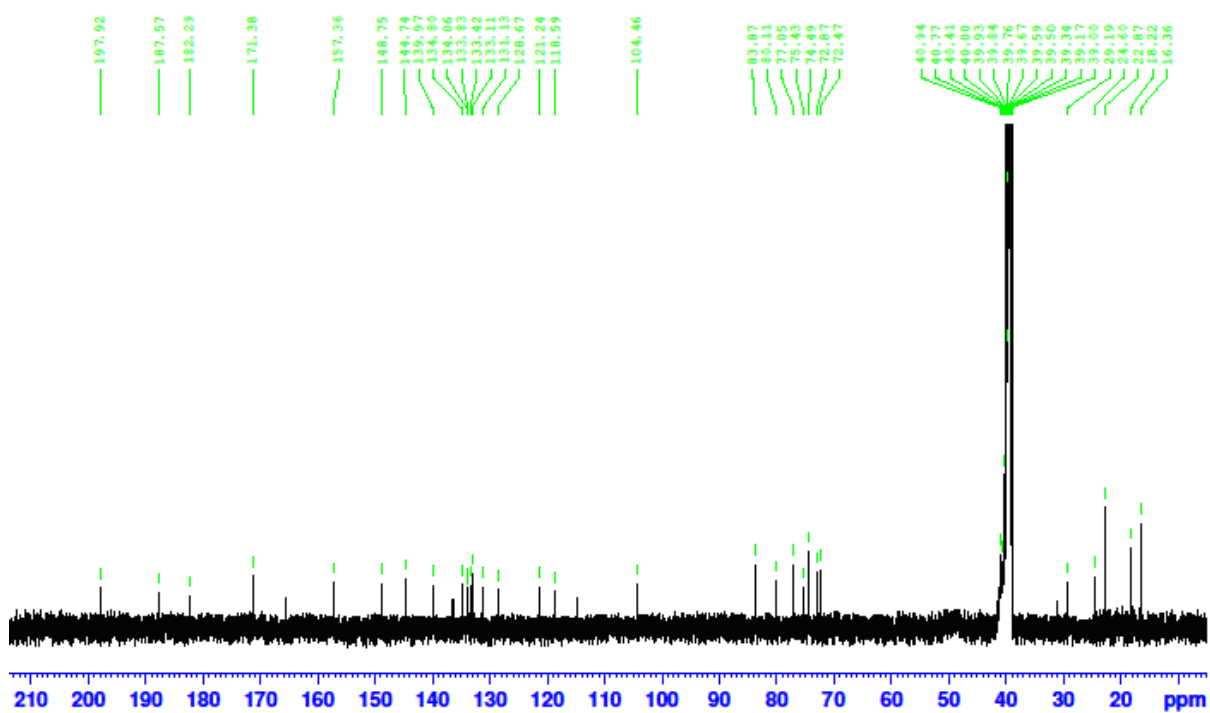
Figure S29. $^1\text{H-NMR}$ spectrum of **5** (in $\text{DMSO-}d_6$).Figure S30. $^{13}\text{C-NMR}$ spectrum of **5** (in $\text{DMSO-}d_6$).

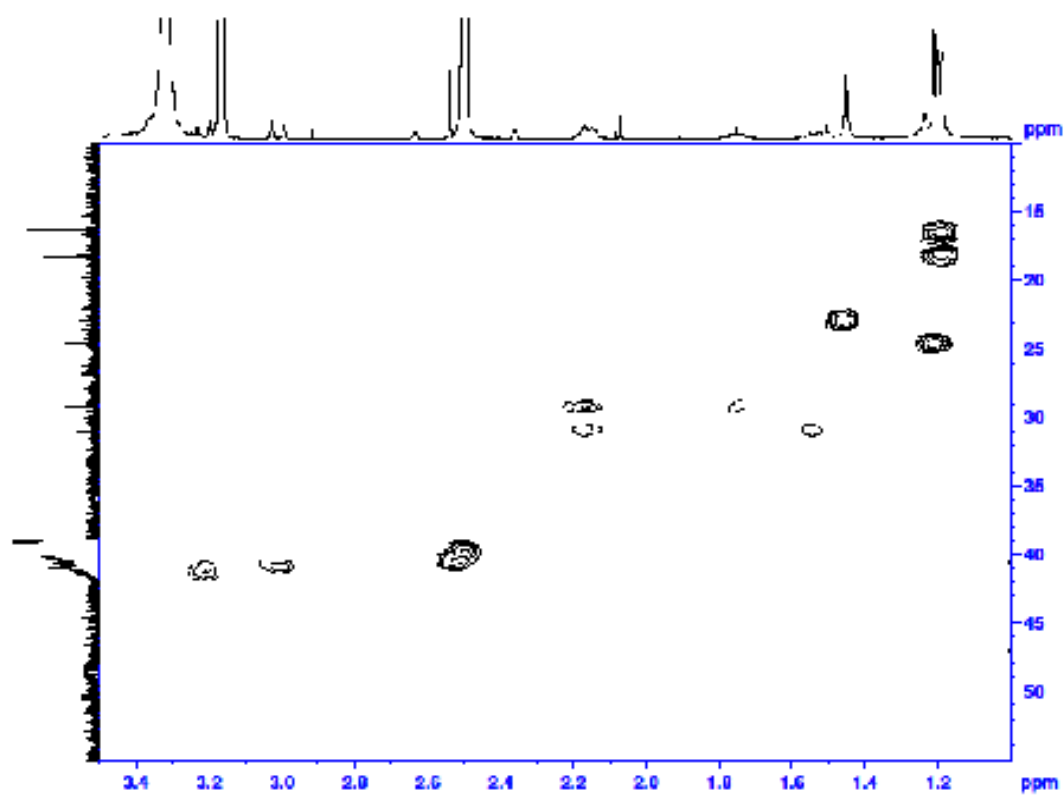
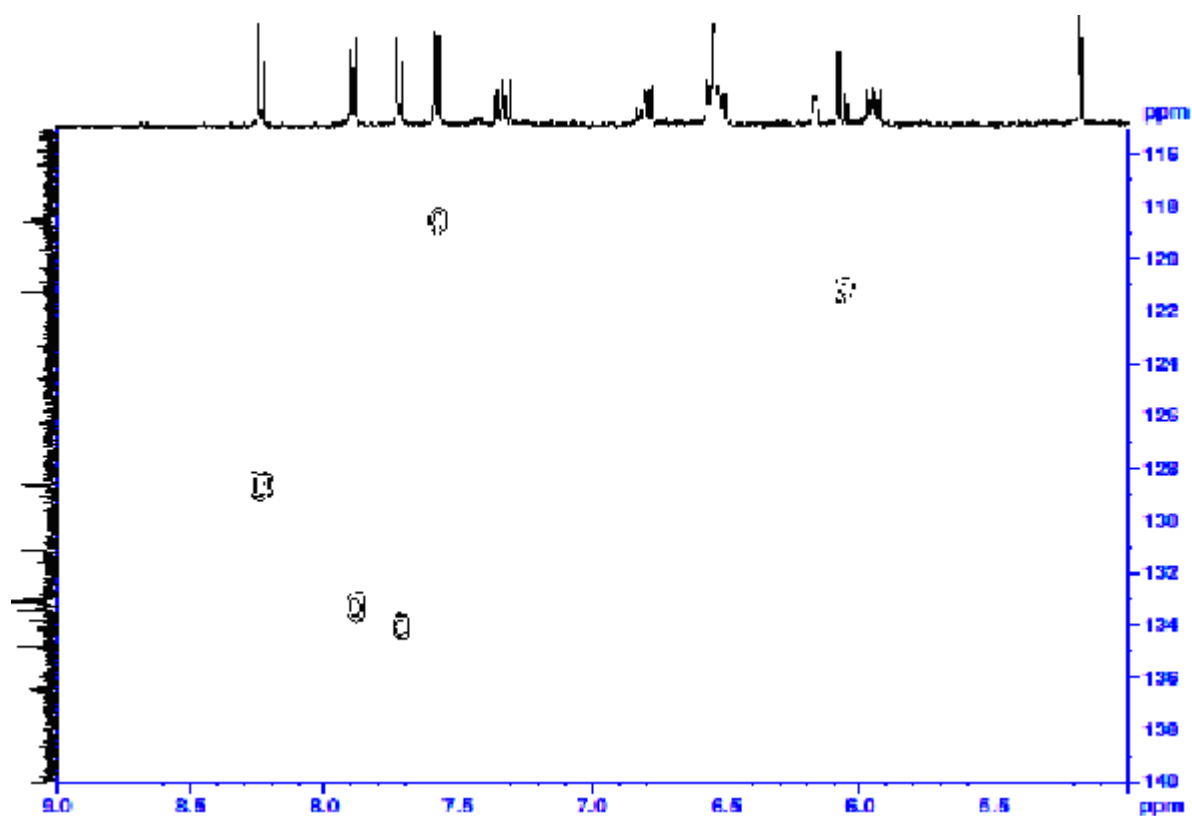
Figure S31. HMQC spectrum of **5** (in DMSO- d_6).

Figure S32. HRESIMS spectrum of 5.

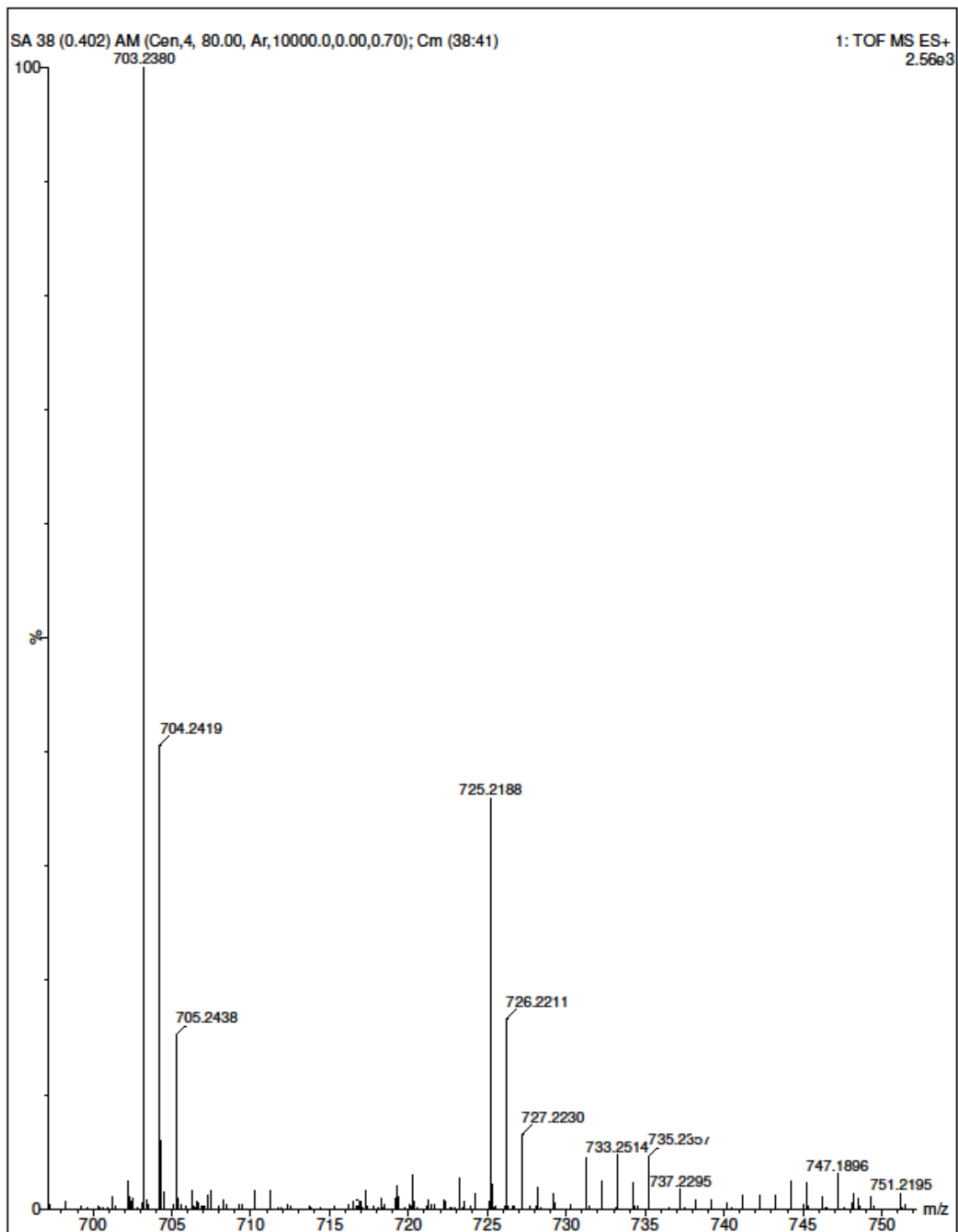


Figure S33. UV spectrum of 5.

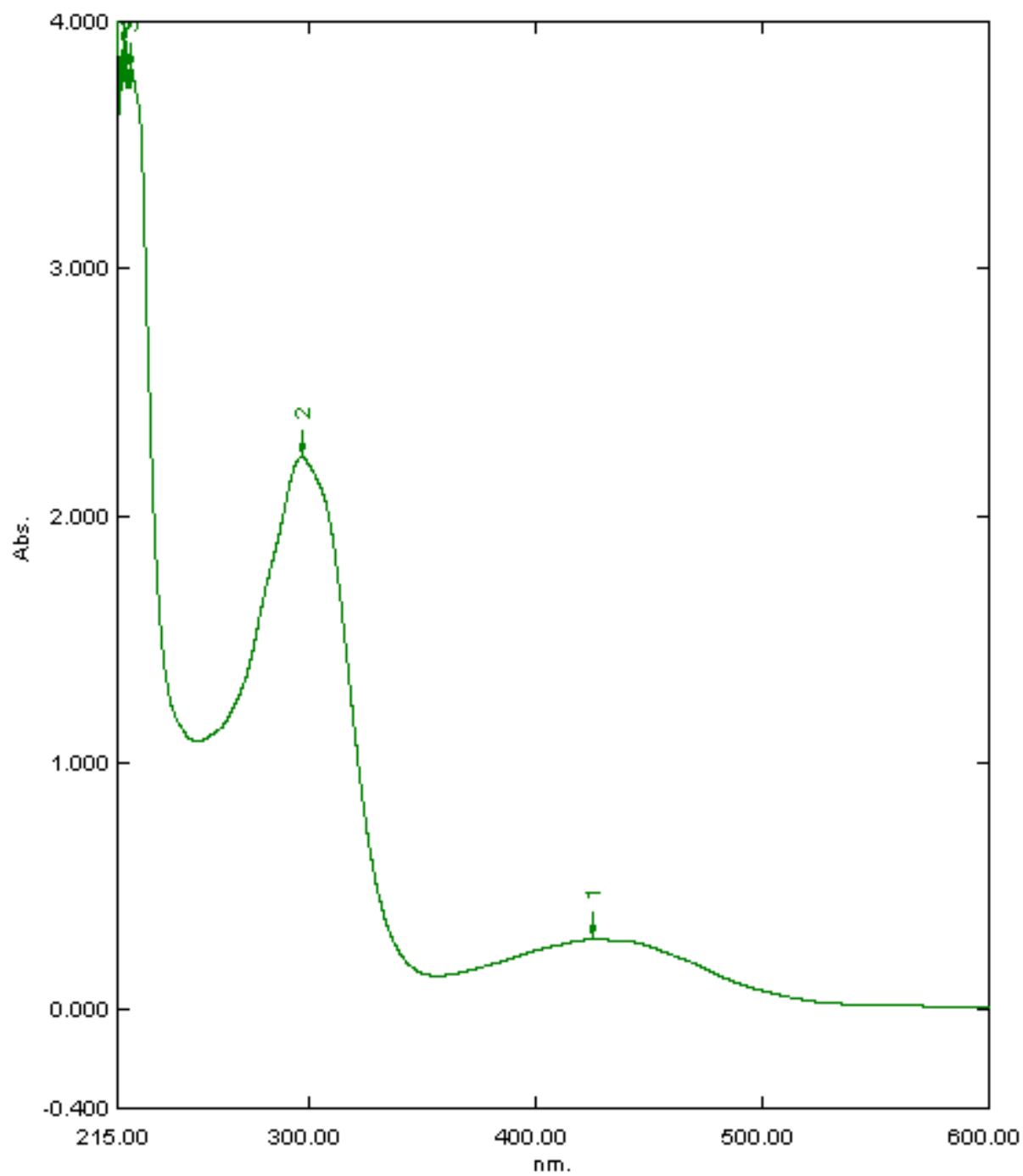


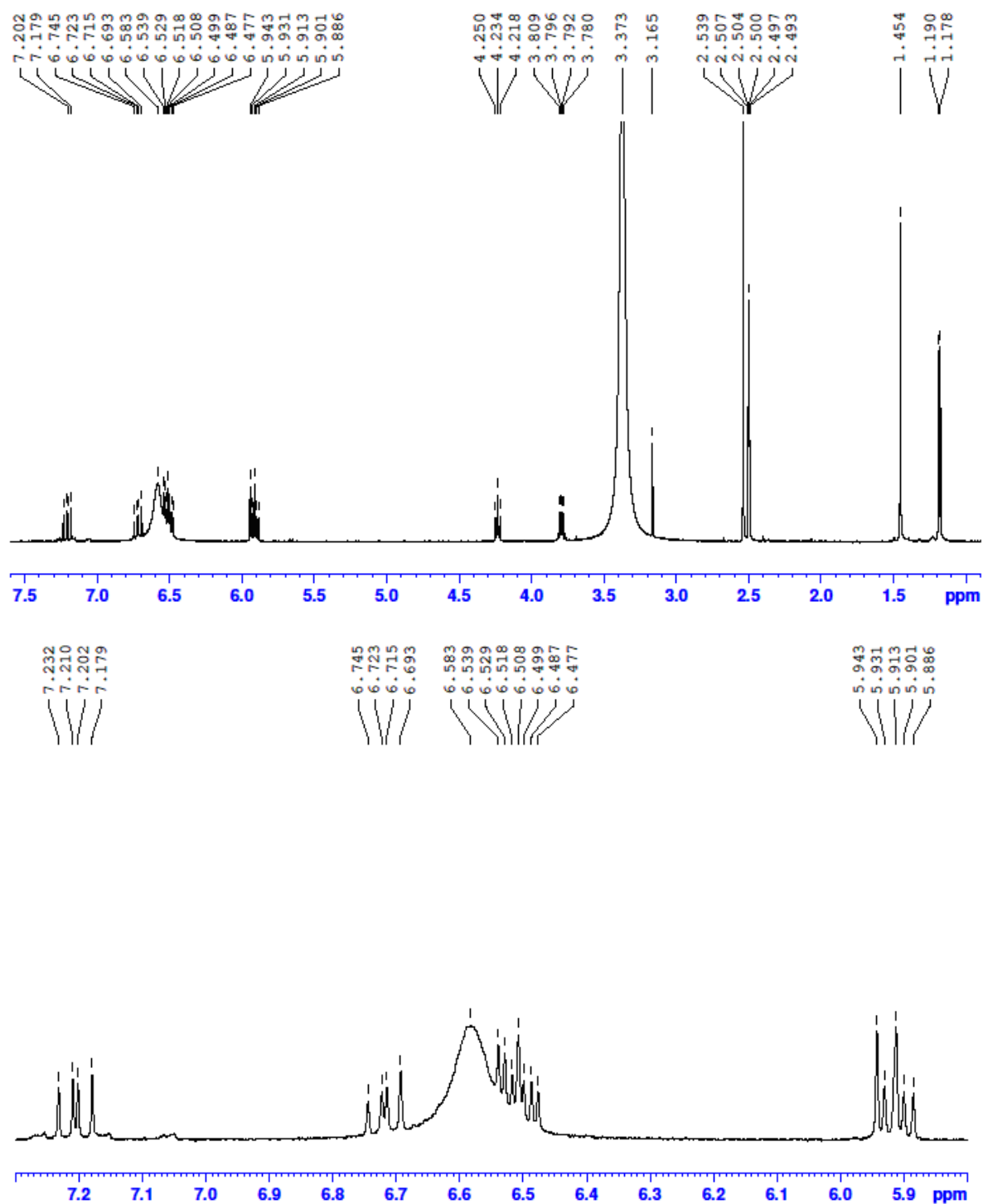
Figure S34. $^1\text{H-NMR}$ spectrum of **6** (in $\text{DMSO-}d_6$).

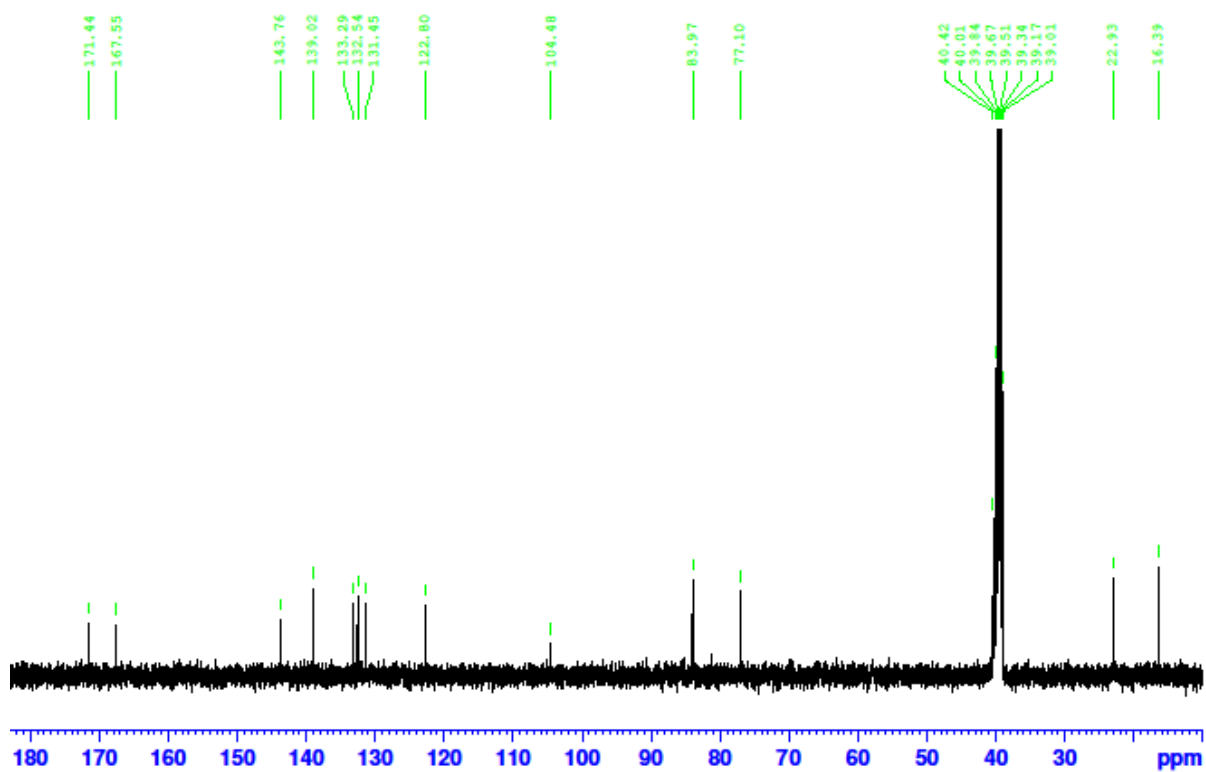
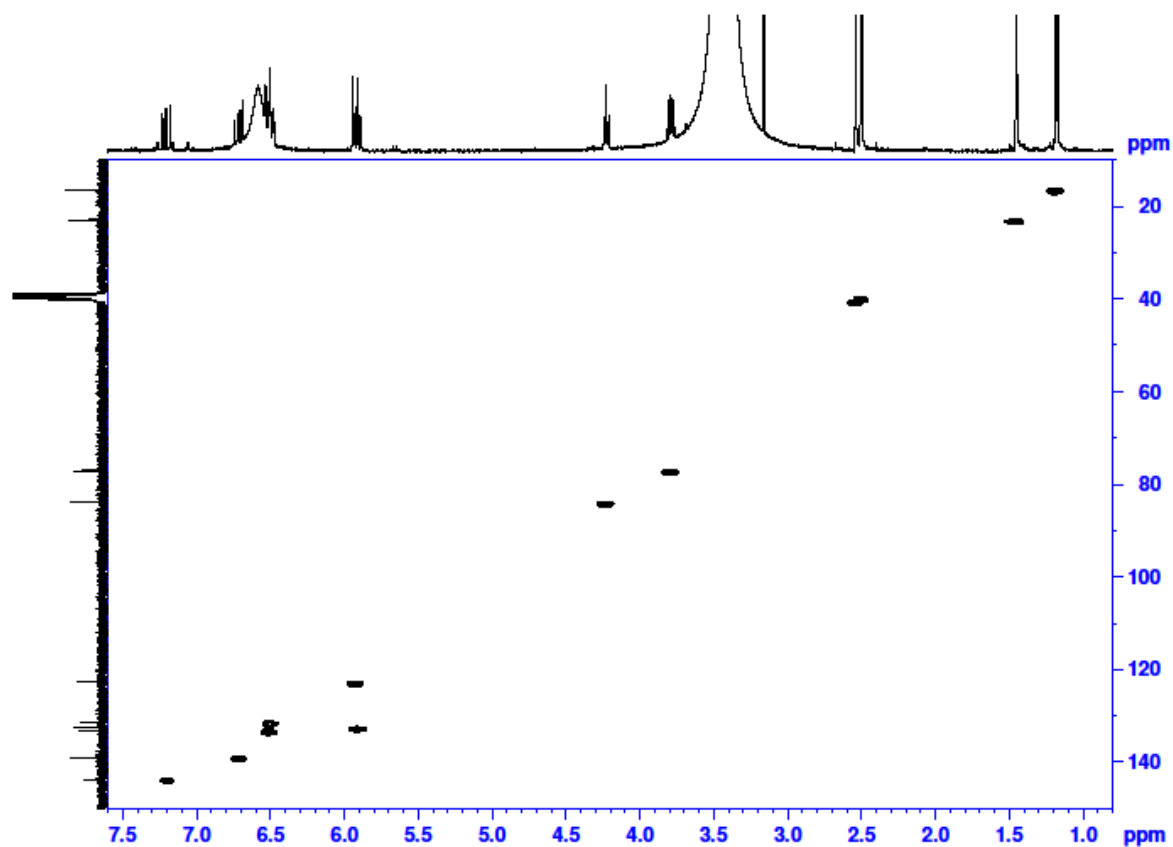
Figure S35. ^{13}C -NMR spectrum of **6** (in $\text{DMSO-}d_6$).**Figure S36.** HMQC spectrum of **6** (in $\text{DMSO-}d_6$).

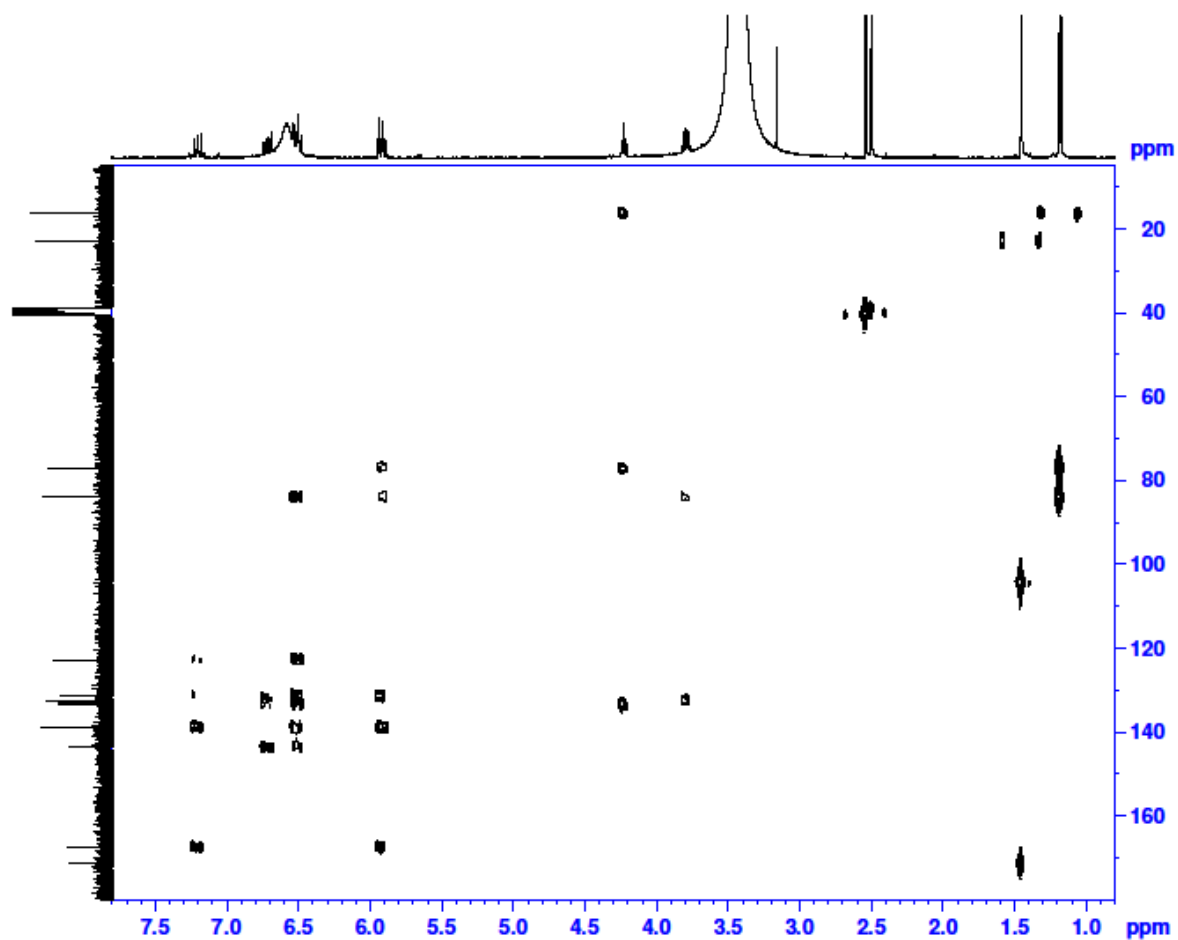
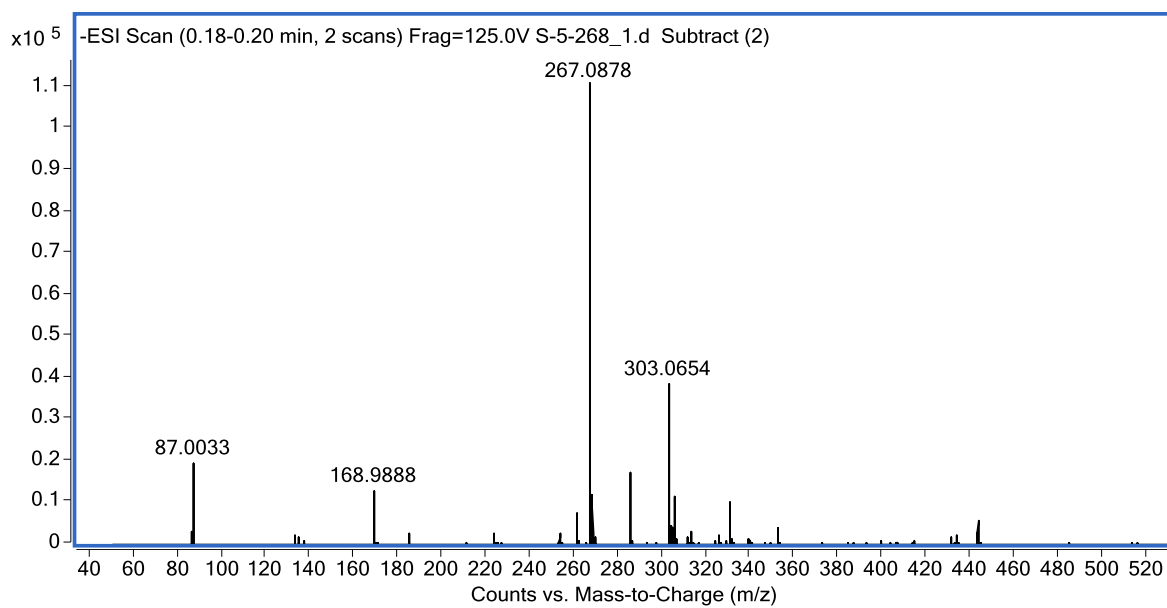
Figure S37. HMBC spectrum of **6** (in DMSO- d_6).Figure S38. HRESIMS spectrum of **6**.

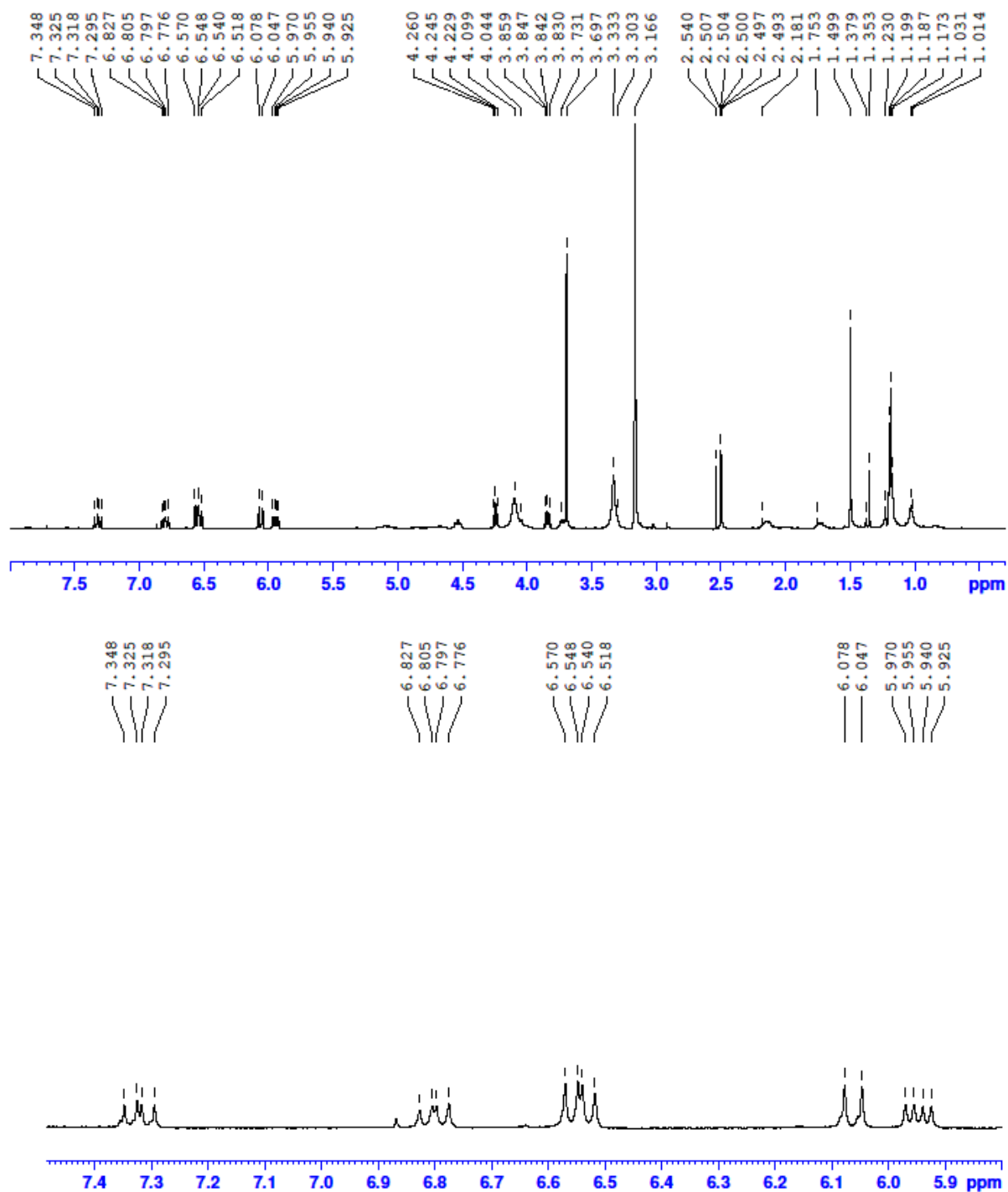
Figure S39. $^1\text{H-NMR}$ spectrum of **7** (in $\text{DMSO-}d_6$).

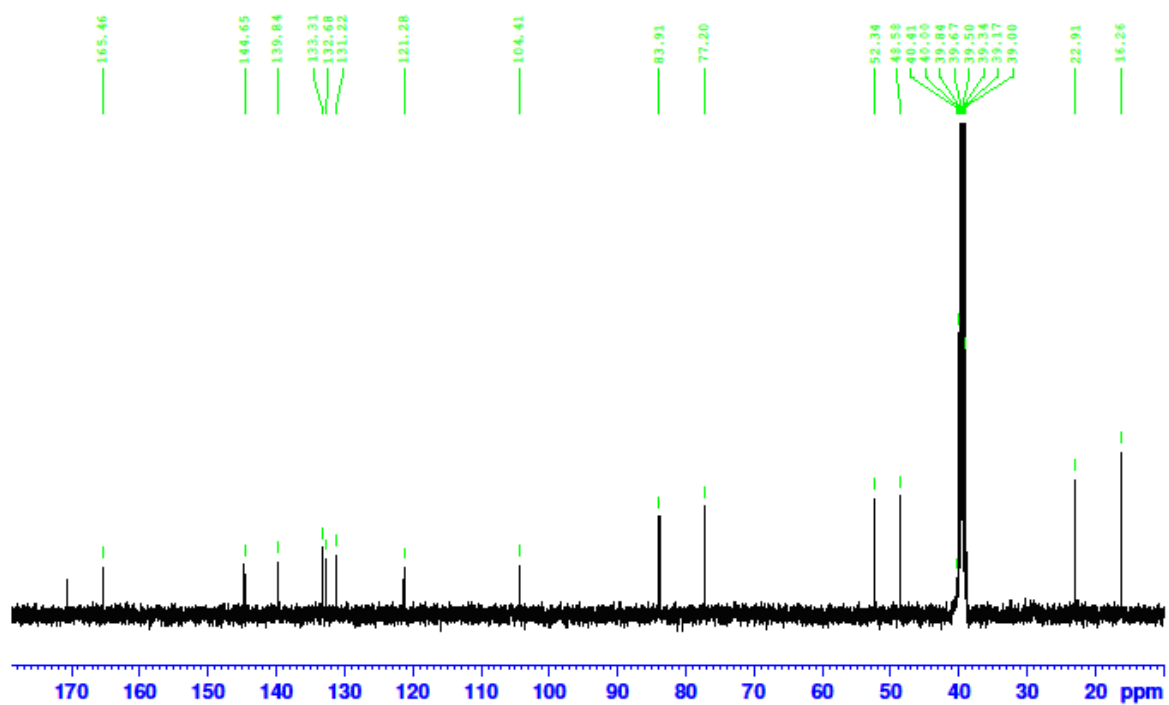
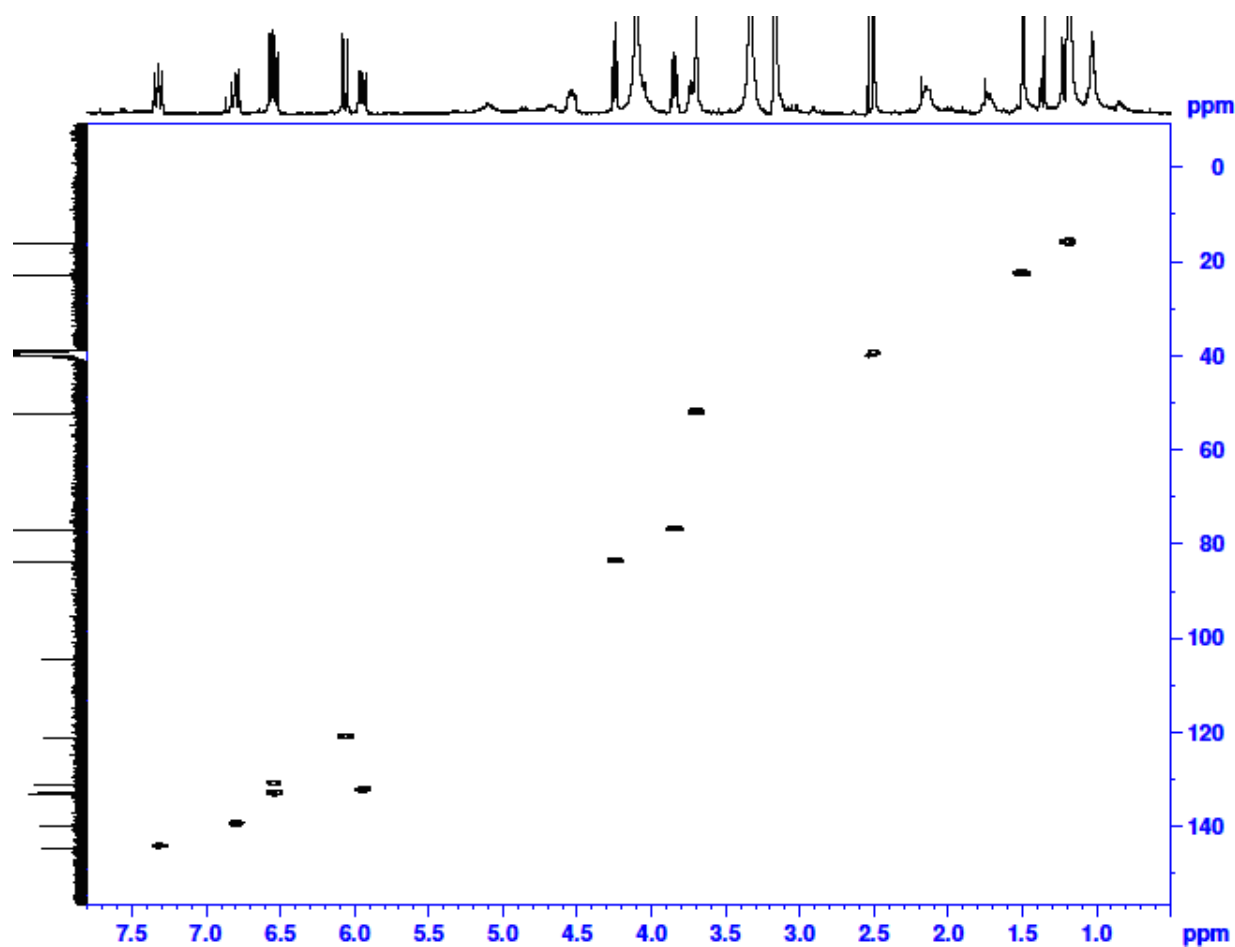
Figure S40. ^{13}C -NMR spectrum of **7** (in $\text{DMSO-}d_6$).**Figure S41.** HMQC spectrum of **7** (in $\text{DMSO-}d_6$).

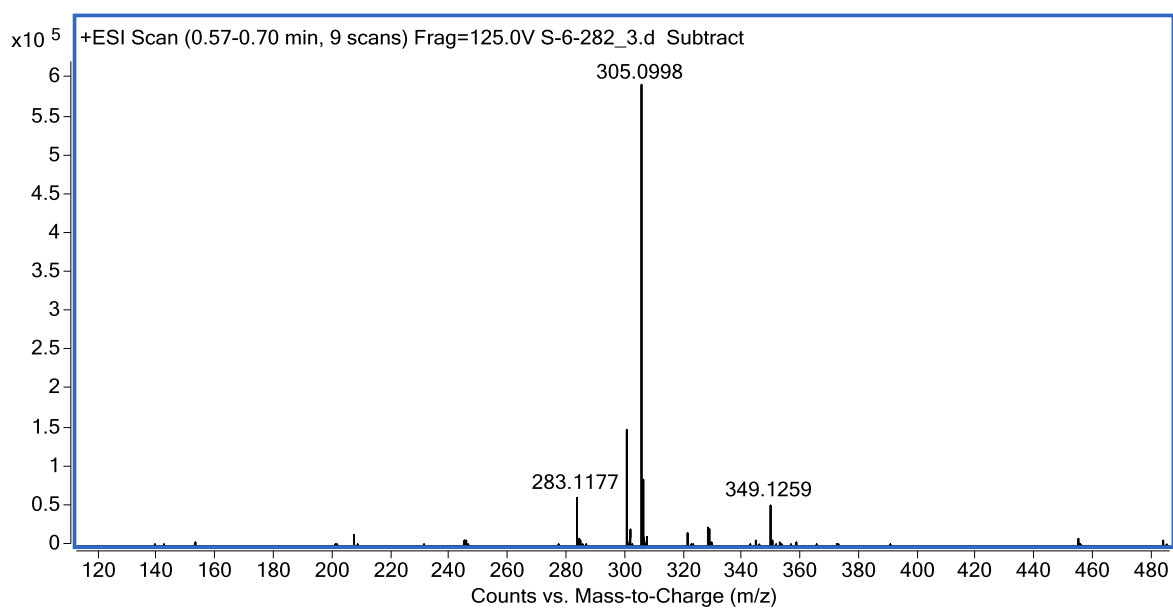
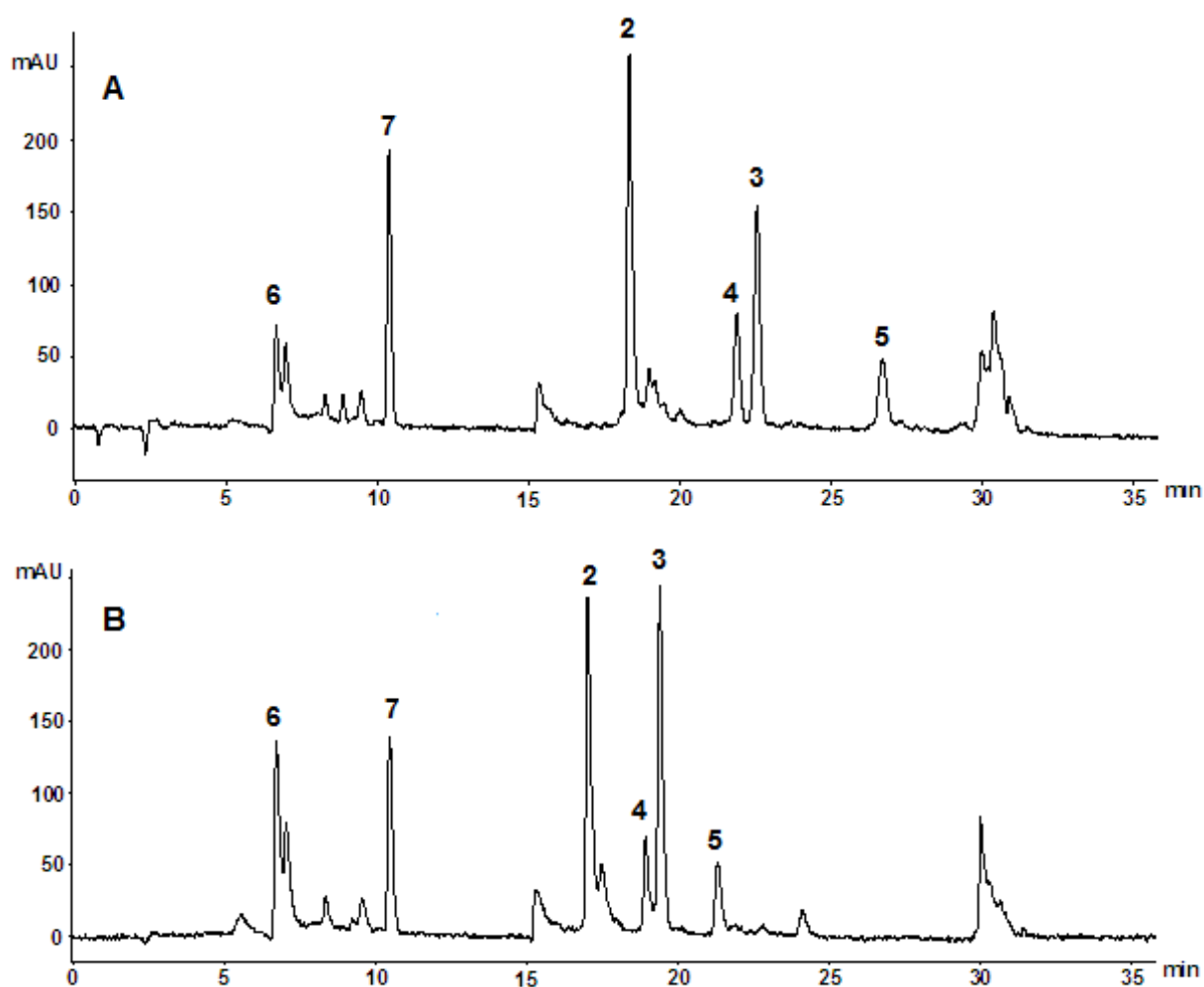
Figure S42. HRESI MS spectrum of **7**.**Figure S43.** HPLC profiles of the ethanol extract (**A**) and the active 90% MeOH fraction (**B**).

Figure S44. 16S rDNA sequence data of marine *Streptomyces fradiae* strain PTZ0025.

TGACGGGCGGTGTGTACAAGGCCCGGGAACGTATTCACCGCAGCAATGCTGATC
TGCGATTACTAGCGACTCCGACTTCATGGGGTCGAGTTGCAGACCCCAATCCGA
ACTGAGACCGGCTTTTTGAGATTCGCTCCACCTTGCGGTATCGCAGCTCTTTGTA
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GTCGTCCCCACCTTCTCCGAGTTGACCCCGGGCGGTCTCCCGTGAGTCCCCAGC
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TAACCCAACATCTCACGACACGAGCTGACGACAGCCATGCACCACCTGTACACC
GACCACAAGGGGGCACCCATCTCTGGGTGTTTCCGGTGTATGTCAAGCCTTGGT
AAGGTTCTTCGCGTTGCGTCGAA^tTAAGCCACATGCTCCGCCGCTTGTGCGGGC
CCCCGTCAATTCCTTTGAGTTTTAGCCTTGCGGGCCGTACTCCCCAGGCGGGGAA
CTTAATGCGTTAGCTGCGGCACGGACGACGTGGAATGTGCCACACCTAGTTC
CCAACGTTTACGGCGTGGACTACCAGGGTATCTAATCCTGTTGCTCCCCACGCT
TTCGCTCCTCAGCGTCAGTATCGGCCAGAGATCCGCCTTCGCCACCGGTGTTT
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CACCATCAGATGCCTGAAGTGGTCGTATCCGGTATTAGACCCCGTTTCCAGGGCT
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Figure S45. Fradimycin B (4) induced apoptosis and necrosis in SW620 cells.

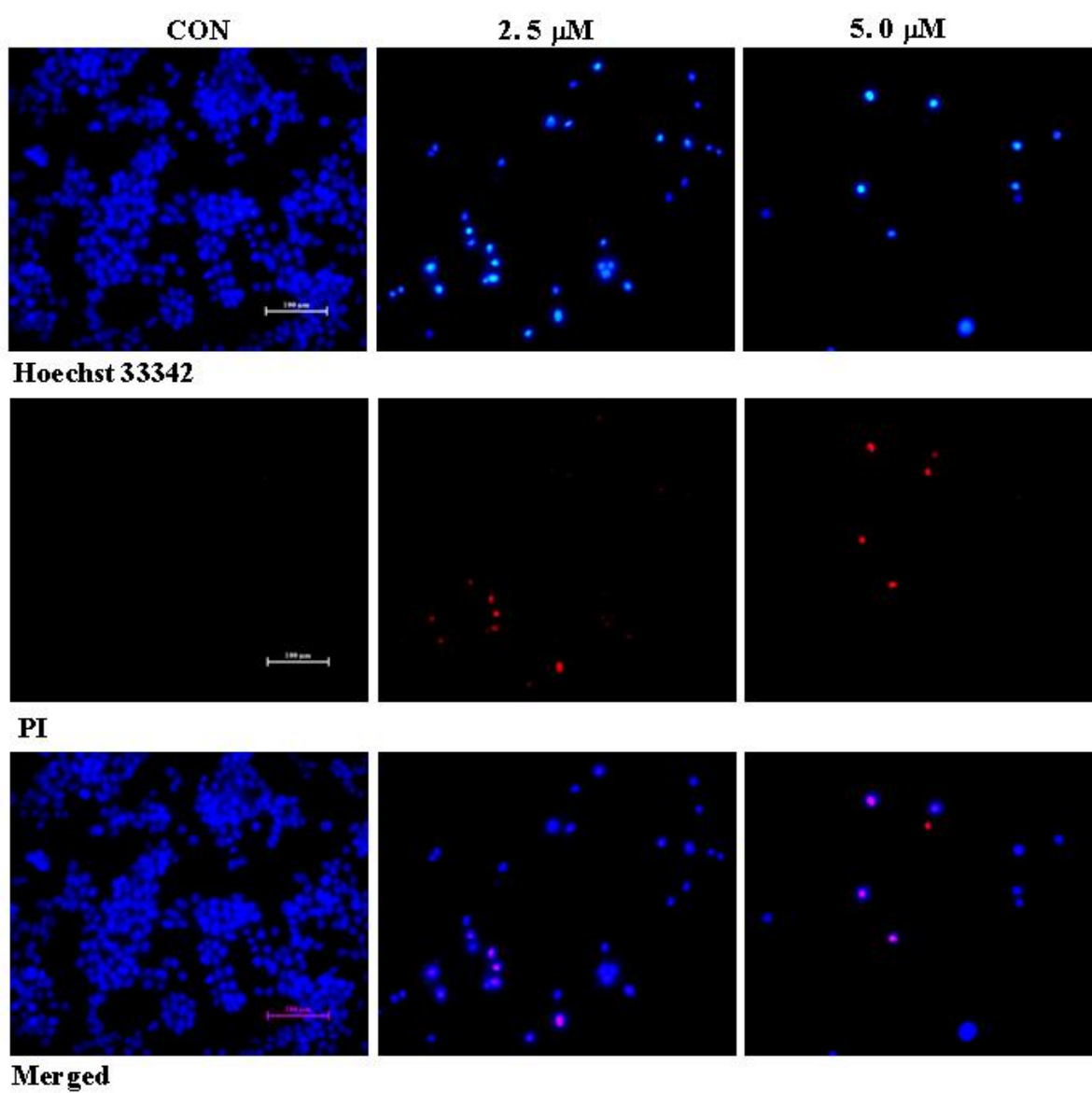


Figure S46. Fradimycin B (4) induced apoptosis and necrosis in rat glioma C6 cells.

