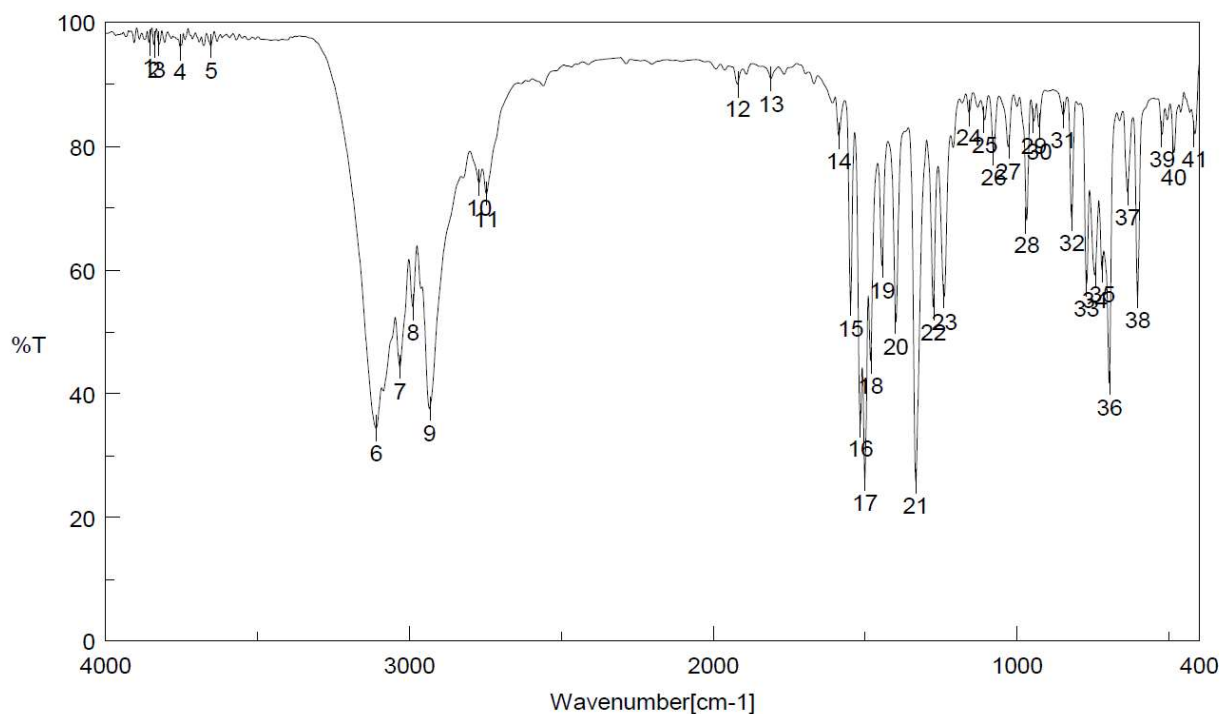


Supplementary Materials:



|                      |                      |                      |
|----------------------|----------------------|----------------------|
| 1: 3857.9, 96.8392   | 2: 3841.51, 96.454   | 3: 3824.15, 96.5053  |
| 4: 3754.73, 96.0992  | 5: 3653.48, 96.252   | 6: 3109.65, 34.4465  |
| 7: 3031.55, 44.3997  | 8: 2989.12, 54.0434  | 9: 2934.16, 37.6293  |
| 10: 2771.21, 74.1128 | 11: 2747.1, 72.3265  | 12: 1920.75, 90.0573 |
| 13: 1809.87, 90.9847 | 14: 1586.16, 81.6968 | 15: 1547.59, 54.5559 |
| 16: 1515.78, 35.1811 | 17: 1500.35, 26.3908 | 18: 1482.03, 45.3565 |
| 19: 1444.42, 60.6882 | 20: 1399.1, 51.6141  | 21: 1333.53, 25.9243 |
| 22: 1275.68, 54.0415 | 23: 1240, 55.7116    | 24: 1158.04, 85.4651 |
| 25: 1106.94, 84.2797 | 26: 1077.05, 79.0401 | 27: 1028.84, 79.9479 |
| 28: 968.09, 68.0758  | 29: 944.949, 84.113  | 30: 927.593, 83.1571 |
| 31: 848.525, 85.0804 | 32: 819.598, 68.4528 | 33: 771.387, 57.8268 |
| 34: 744.388, 59.2171 | 35: 720.282, 60.086  | 36: 696.177, 41.7412 |
| 37: 636.394, 72.5918 | 38: 602.646, 55.9087 | 39: 522.615, 81.9207 |
| 40: 484.045, 78.9843 |                      |                      |

Figure S1. FT-IR spectrum of compound 4;

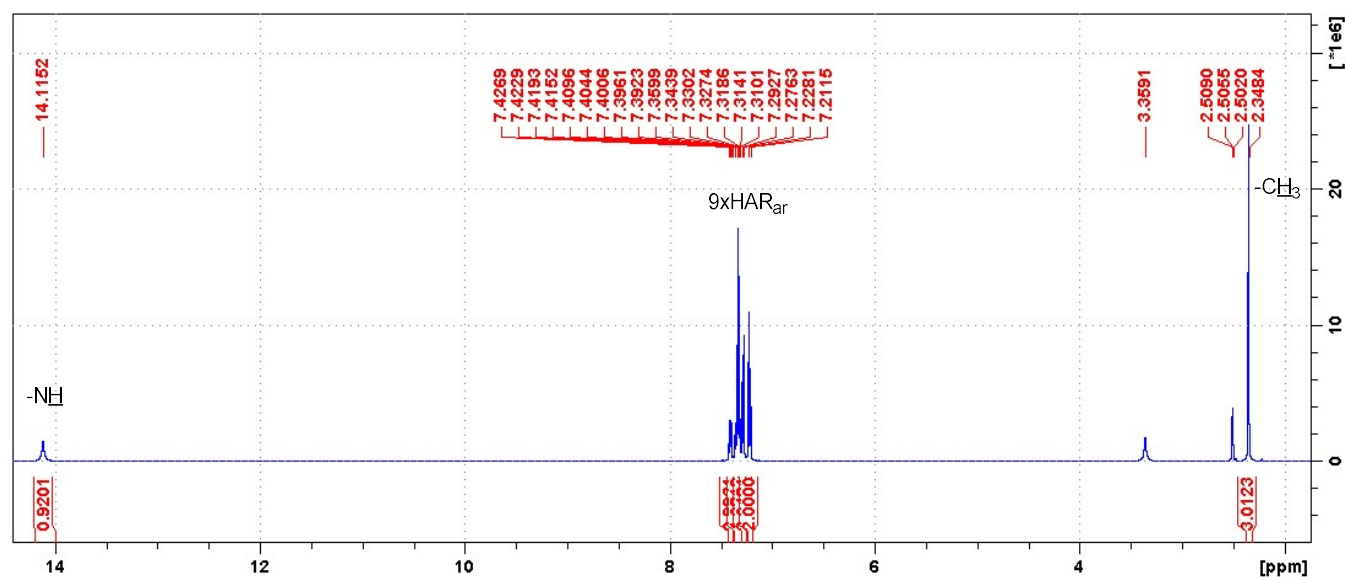


Figure S2. <sup>1</sup>H NMR spectrum of compound **4** in DMSO-*d*<sub>6</sub>

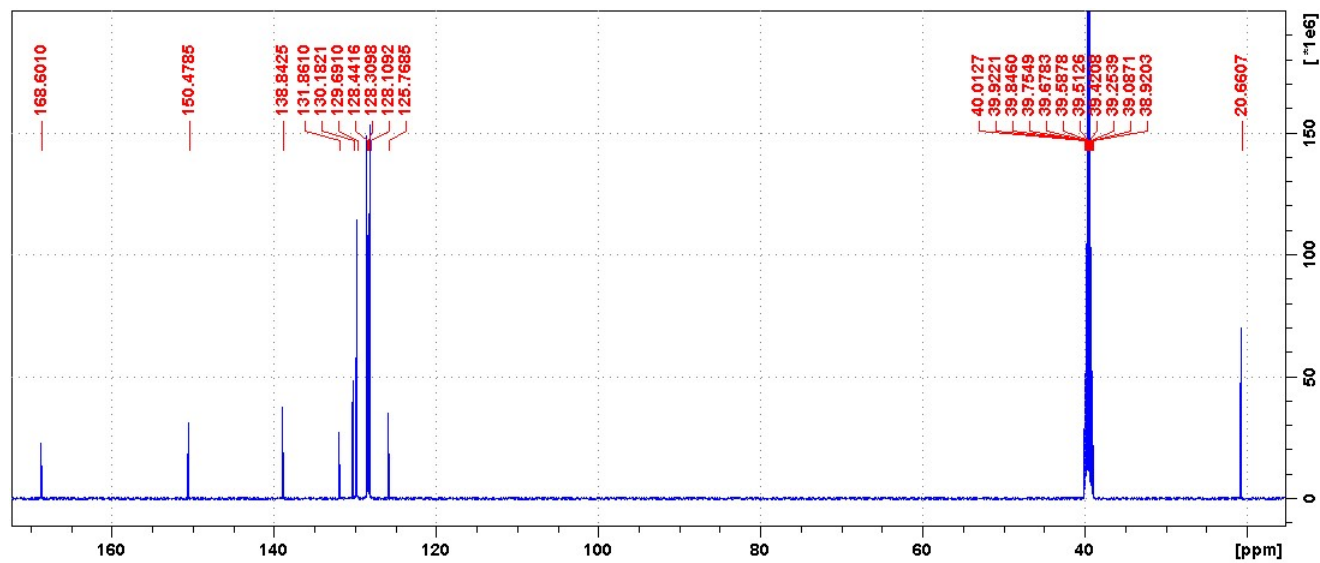
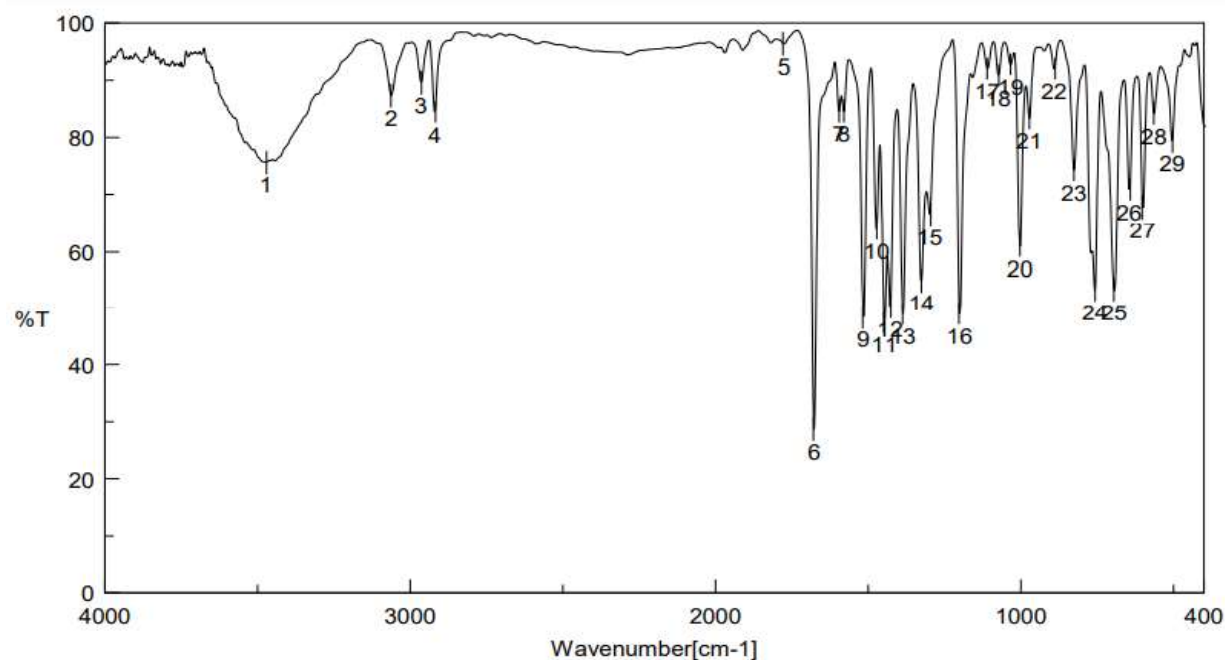


Figure S3. <sup>13</sup>C NMR spectrum of compound **4** in DMSO-*d*<sub>6</sub>



|                      |                      |                      |
|----------------------|----------------------|----------------------|
| 1: 3472.2, 75.6896   | 2: 3061.44, 87.4059  | 3: 2964.05, 89.6689  |
| 4: 2919.7, 84.5015   | 5: 1775.15, 96.4146  | 6: 1676.8, 28.7145   |
| 7: 1595.81, 84.6082  | 8: 1579.41, 84.6197  | 9: 1514.81, 48.457   |
| 10: 1472.38, 64.0612 | 11: 1446.35, 47.4226 | 12: 1428.03, 50.3666 |
| 13: 1385.6, 48.9787  | 14: 1325.82, 54.833  | 15: 1298.82, 66.6118 |
| 16: 1199.51, 48.9488 | 17: 1108.87, 92.091  | 18: 1073.19, 90.9477 |
| 19: 1032.69, 92.7206 | 20: 1002.8, 61.0281  | 21: 971.947, 83.3424 |
| 22: 890.952, 91.9921 | 23: 825.384, 74.3    | 24: 756.923, 53.2042 |
| 25: 693.284, 53.243  | 26: 644.108, 70.9026 | 27: 599.753, 67.7155 |
| 28: 563.112, 84.2412 | 29: 504.294, 79.4669 |                      |

Figure S4. FT-IR spectrum of compound 5;

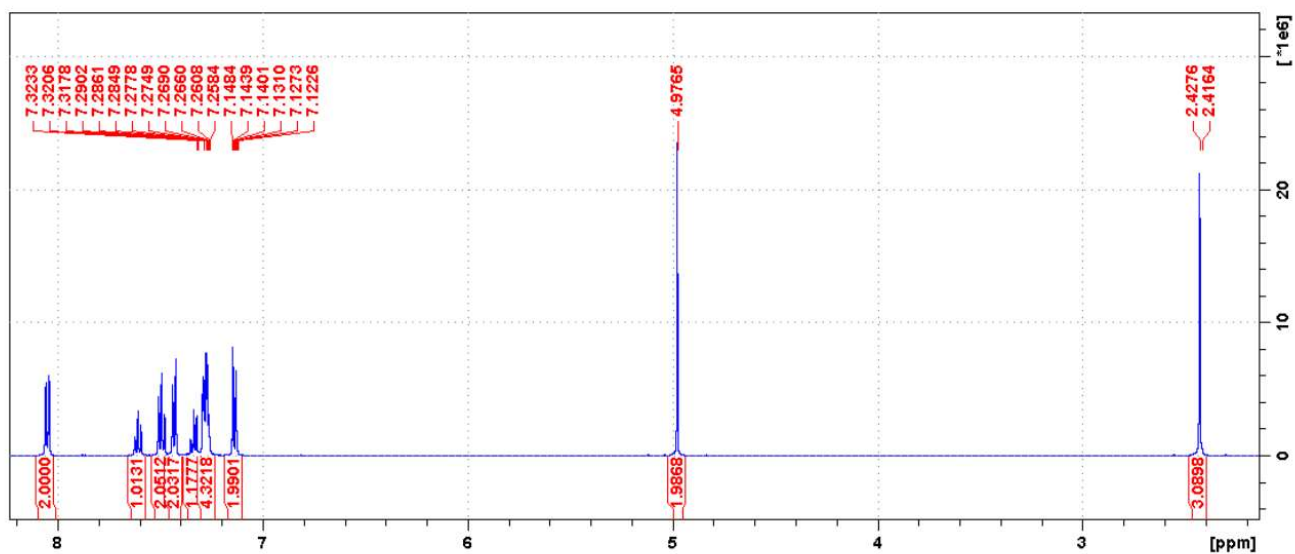


Figure S5. <sup>1</sup>H NMR spectrum of compound **5** in CDCl<sub>3</sub>;

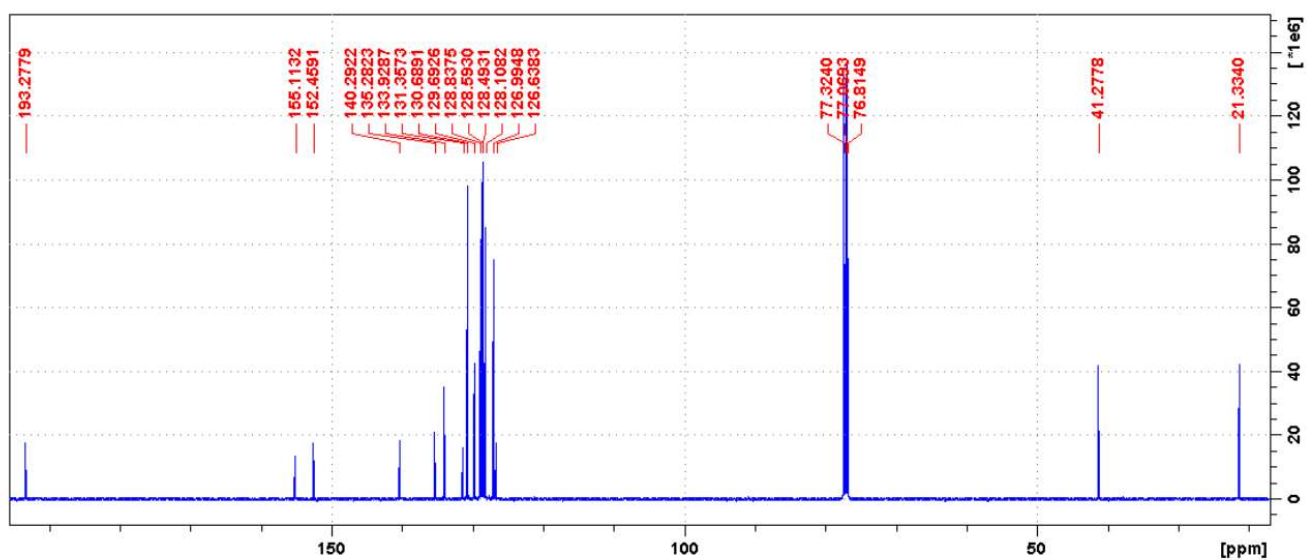


Figure S6. <sup>13</sup>C NMR spectrum of compound **5** in CDCl<sub>3</sub>;

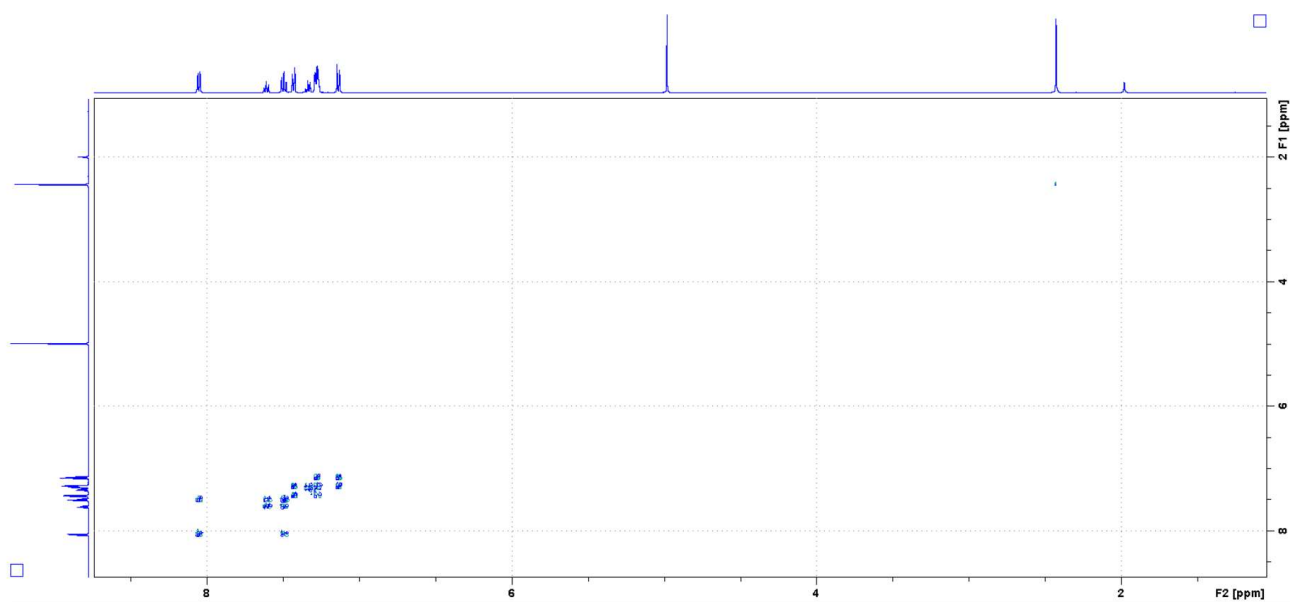


Figure S7. COSY  $^1\text{H}$ - $^1\text{H}$  spectrum of compound **5** in  $\text{CDCl}_3$ ;

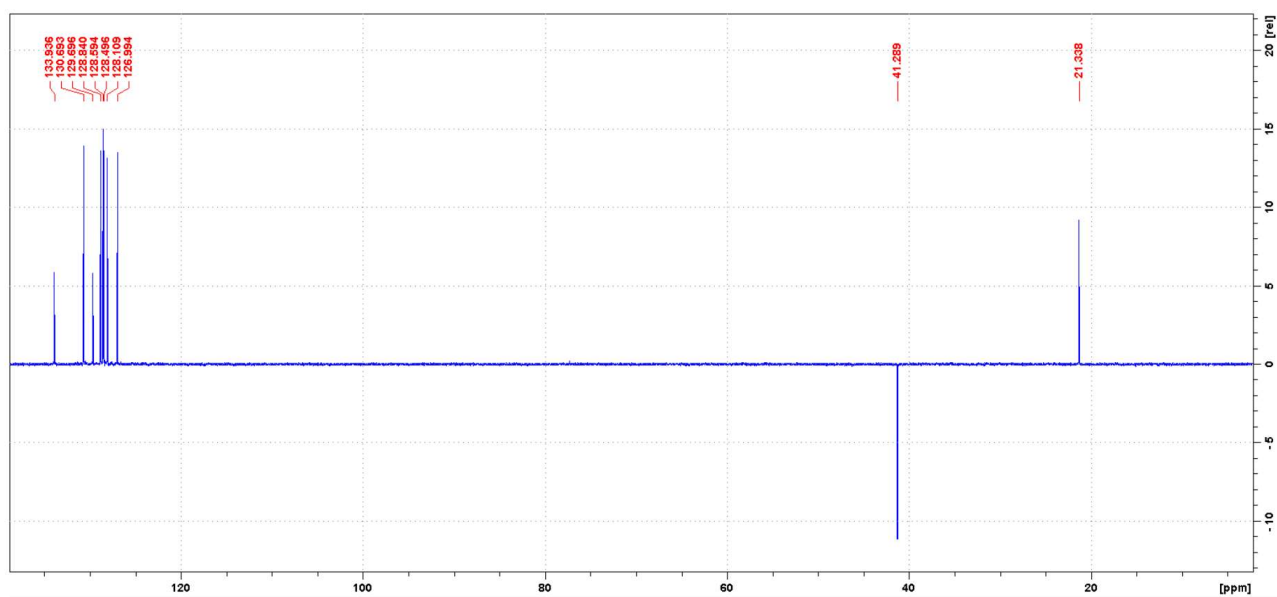


Figure S8.  $^{13}\text{C}$  DEPT135 spectrum of compound **5** in  $\text{CDCl}_3$ ;

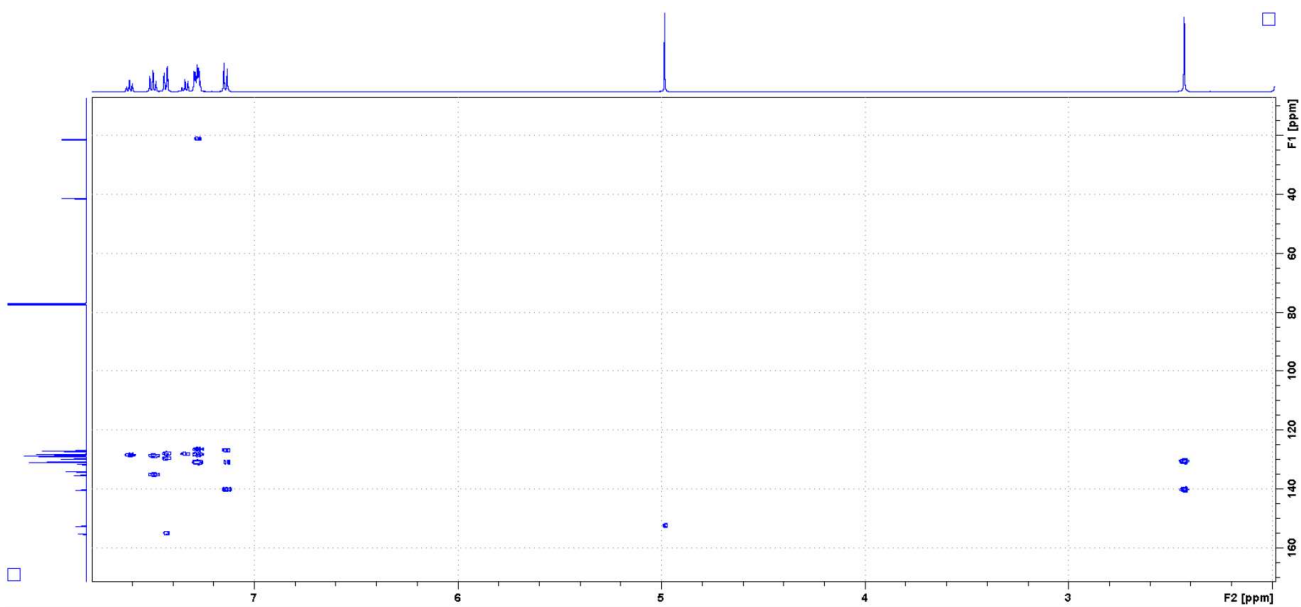


Figure S9. HMBC  $^1\text{H}$ - $^{13}\text{C}$  spectrum of compound **5** in  $\text{CDCl}_3$ ;

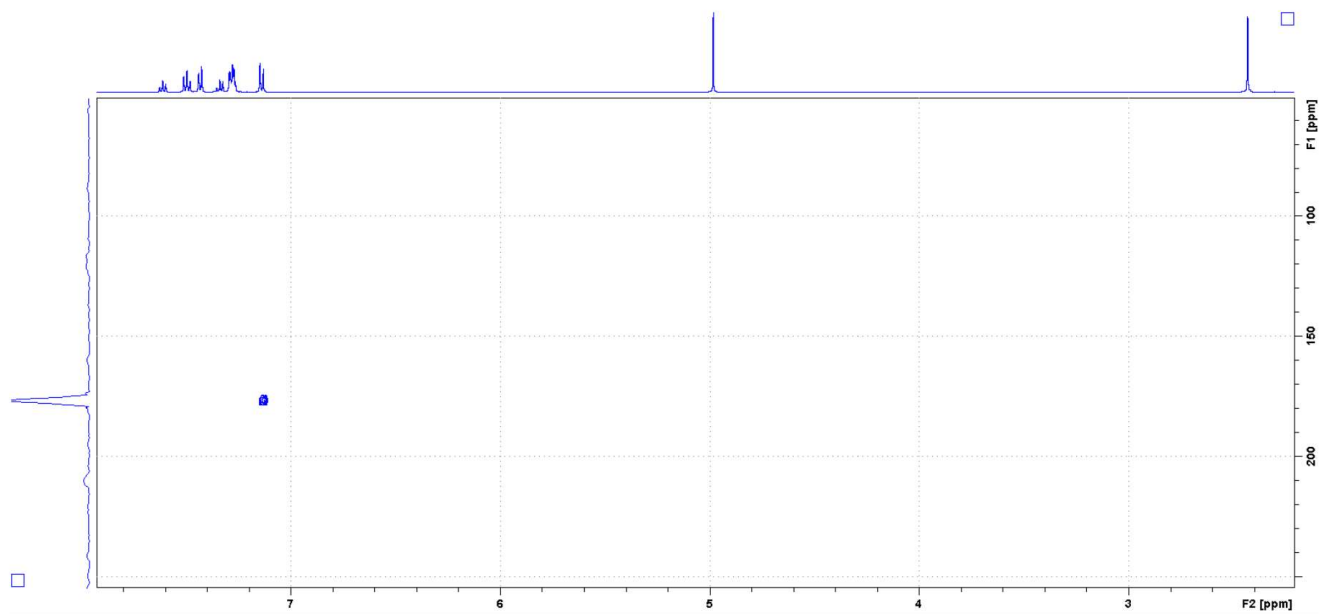


Figure S10. HMBC  $^1\text{H}$ - $^{15}\text{N}$  spectrum of compound **5** in  $\text{CDCl}_3$ ;

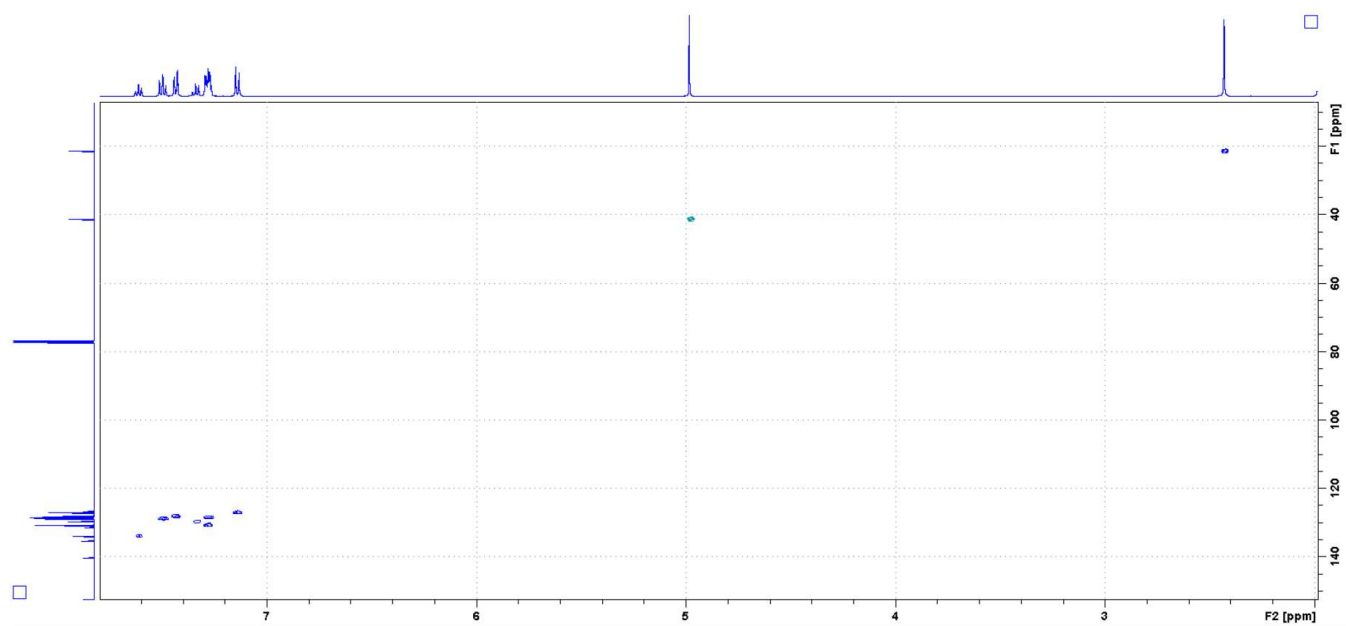
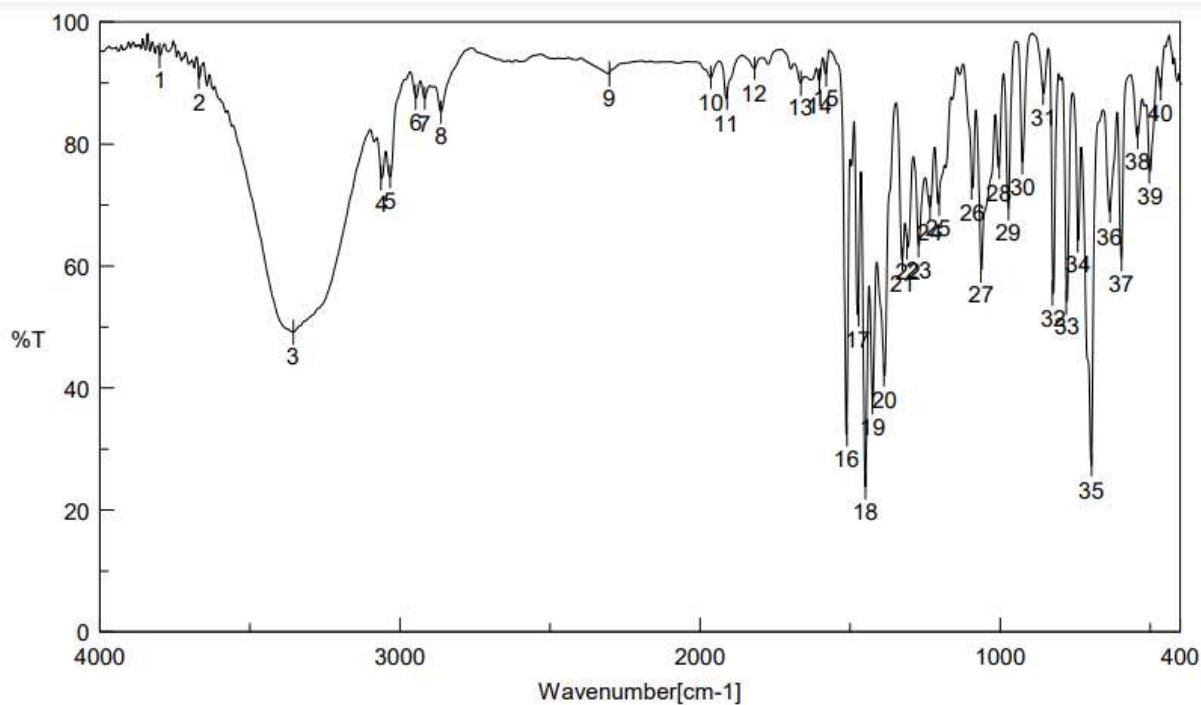


Figure S11. HSQCED  $^1\text{H}$ - $^{13}\text{C}$  spectrum of compound **5** in  $\text{CDCl}_3$ ;



|                      |                      |                      |
|----------------------|----------------------|----------------------|
| 1: 3799.08, 94.5648  | 2: 3667.94, 90.8293  | 3: 3356.5, 49.2151   |
| 4: 3059.51, 74.3615  | 5: 3033.48, 74.6346  | 6: 2945.73, 87.5946  |
| 7: 2917.77, 87.4887  | 8: 2862.81, 85.3157  | 9: 2303.55, 91.4636  |
| 10: 1965.11, 90.8861 | 11: 1913.04, 87.4432 | 12: 1819.51, 92.4402 |
| 13: 1665.23, 90.0401 | 14: 1602.56, 90.3752 | 15: 1581.34, 91.4672 |
| 16: 1511.92, 32.3562 | 17: 1474.31, 52.0482 | 18: 1449.24, 23.8485 |
| 19: 1425.14, 37.6972 | 20: 1385.6, 42.0394  | 21: 1325.82, 61.05   |
| 22: 1306.54, 63.1346 | 23: 1270.86, 63.3527 | 24: 1234.22, 69.6638 |
| 25: 1206.26, 70.1785 | 26: 1091.51, 72.7865 | 27: 1062.59, 59.4594 |
| 28: 1004.73, 76.0715 | 29: 972.912, 69.4539 | 30: 924.7, 77.0815   |
| 31: 855.275, 88.3413 | 32: 822.491, 55.5053 | 33: 777.172, 54.1087 |
| 34: 739.567, 64.3079 | 35: 696.177, 27.3339 | 36: 635.43, 68.9409  |
| 37: 596.861, 61.2658 | 38: 541.899, 81.1048 | 39: 499.473, 75.4962 |
| 40: 465.725, 89.0675 |                      |                      |

Figure S12. FT-IR spectrum of compound 6;



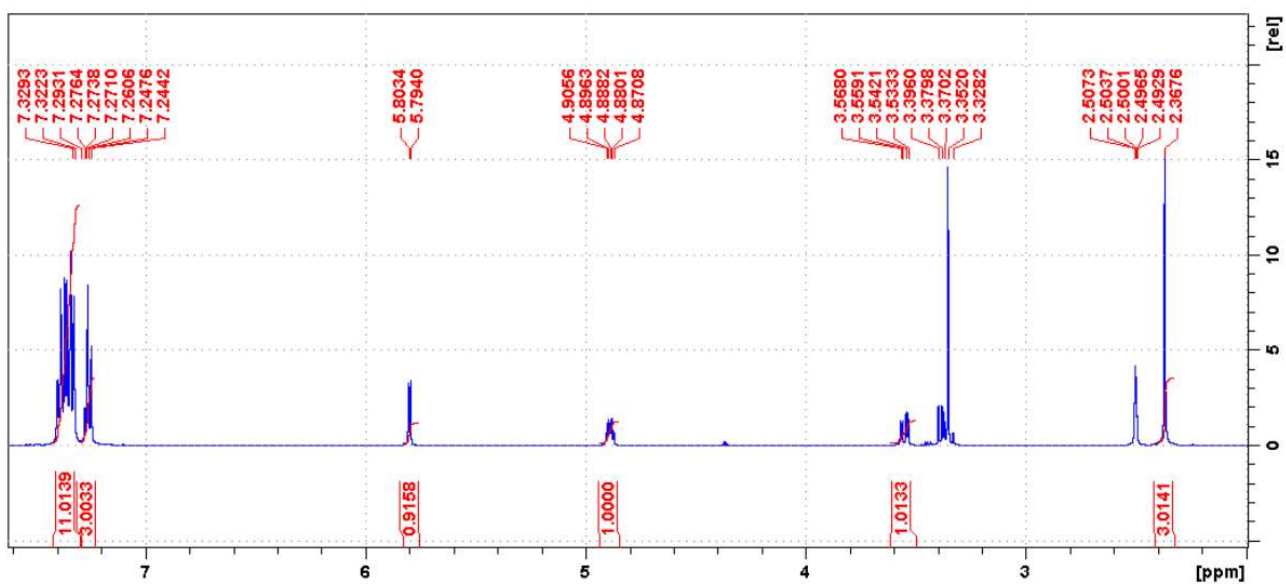


Figure S13. <sup>1</sup>H NMR spectrum of compound **6** in DMSO-*d*<sub>6</sub>;

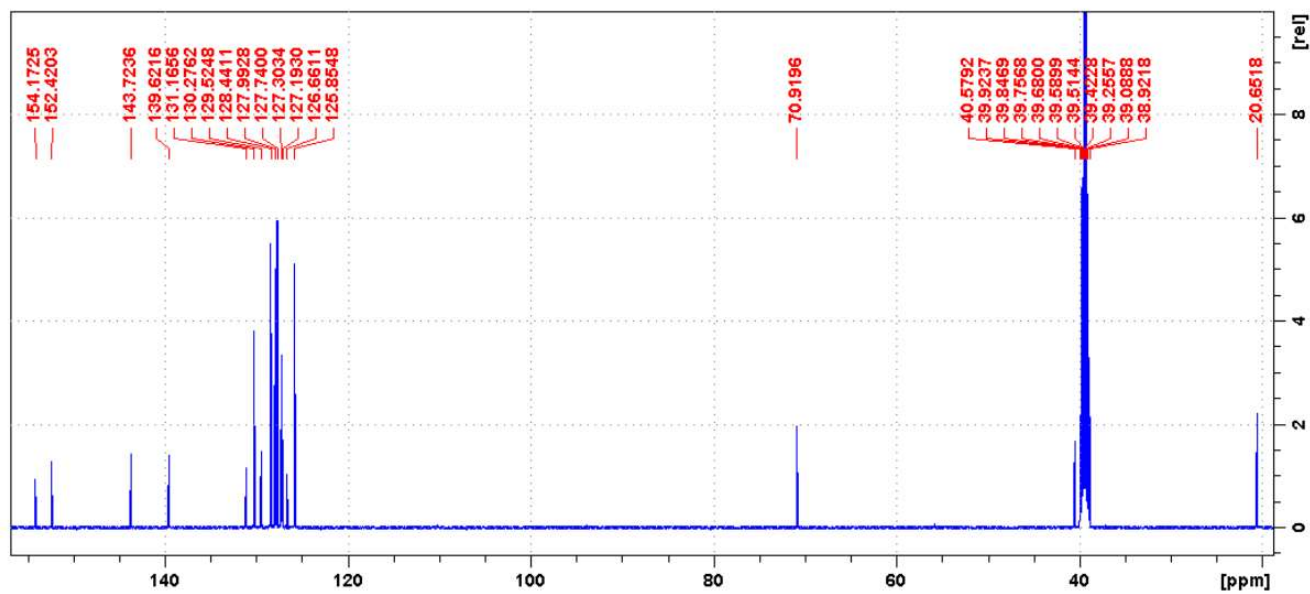


Figure S14. <sup>13</sup>C NMR spectrum of compound **6** in DMSO-*d*<sub>6</sub>;

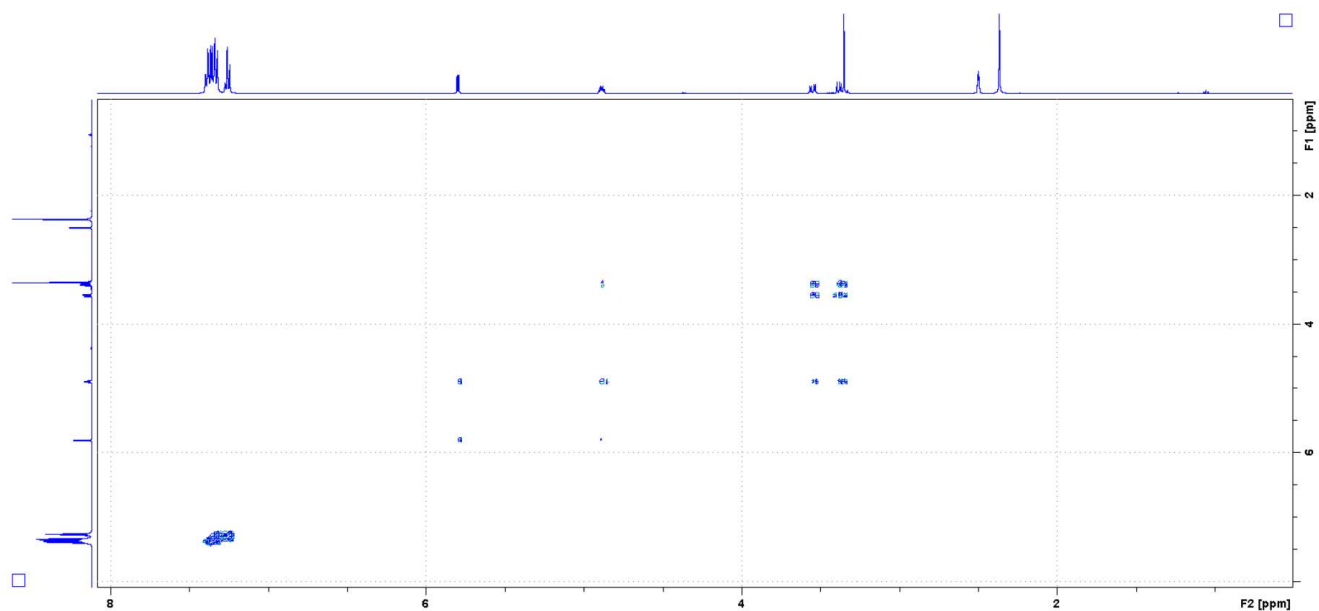


Figure S15. COSY  $^1\text{H}$ - $^1\text{H}$  spectrum of compound **6** in  $\text{DMSO-}d_6$ ;

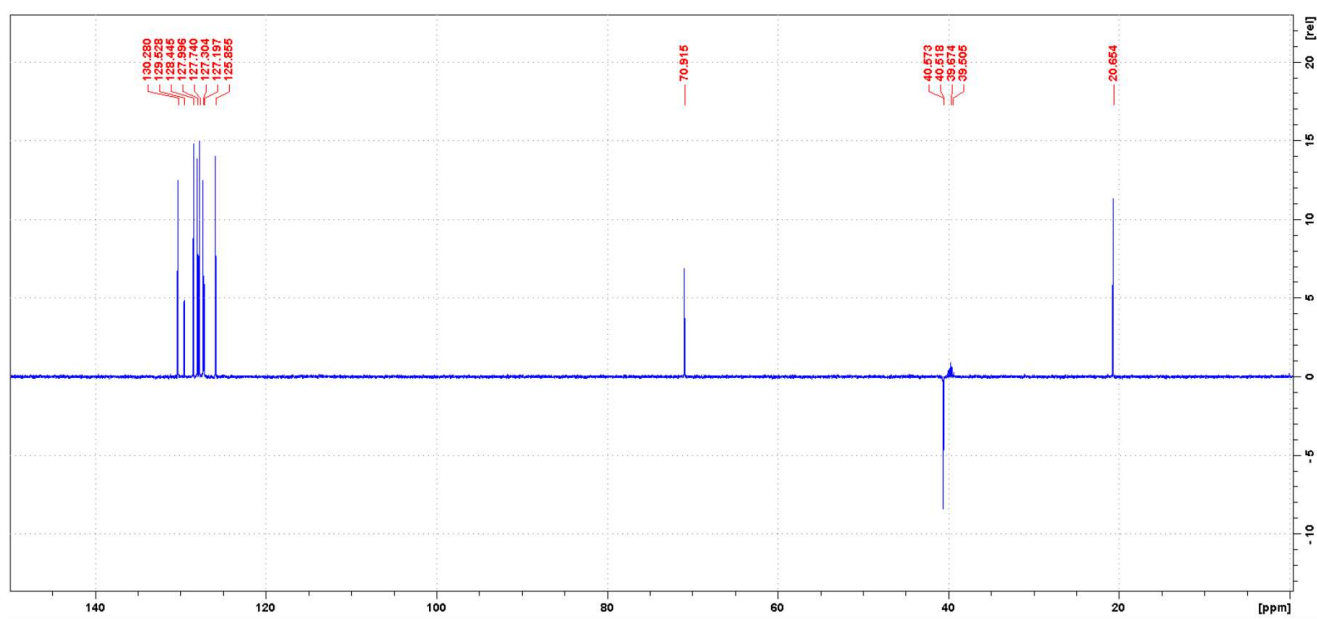


Figure 16.  $^{13}\text{C}$  DEPT135 spectrum of compound **6** in  $\text{DMSO-}d_6$ ;

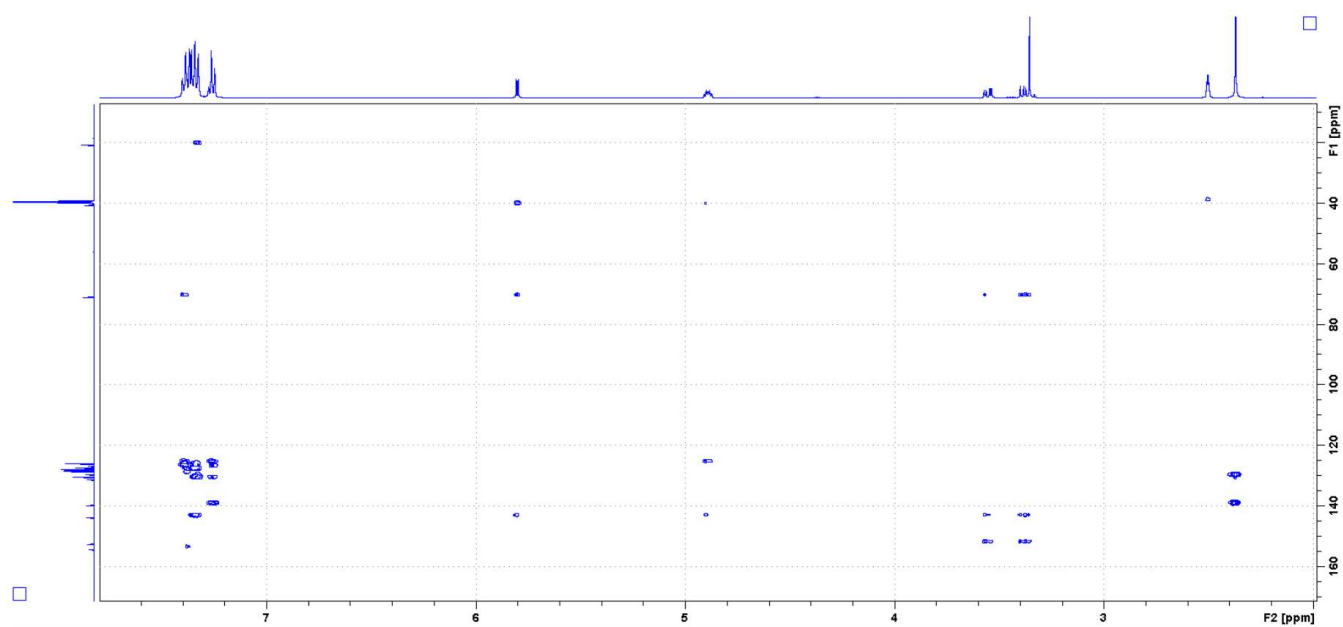


Figure S17. HMBC  $^1\text{H}$ - $^{13}\text{C}$  spectrum of compound **6** in  $\text{DMSO}-d_6$ ;

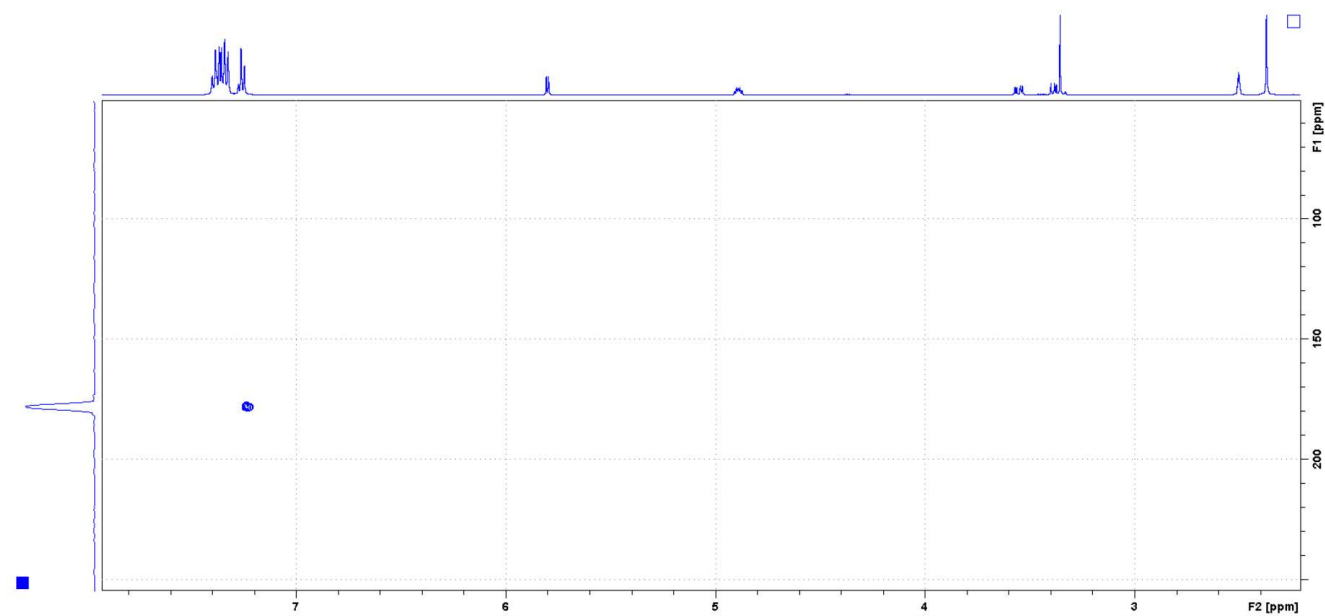


Figure S18. HMBC  $^1\text{H}$ - $^{15}\text{N}$  spectrum of compound **6** in  $\text{DMSO}-d_6$ ;

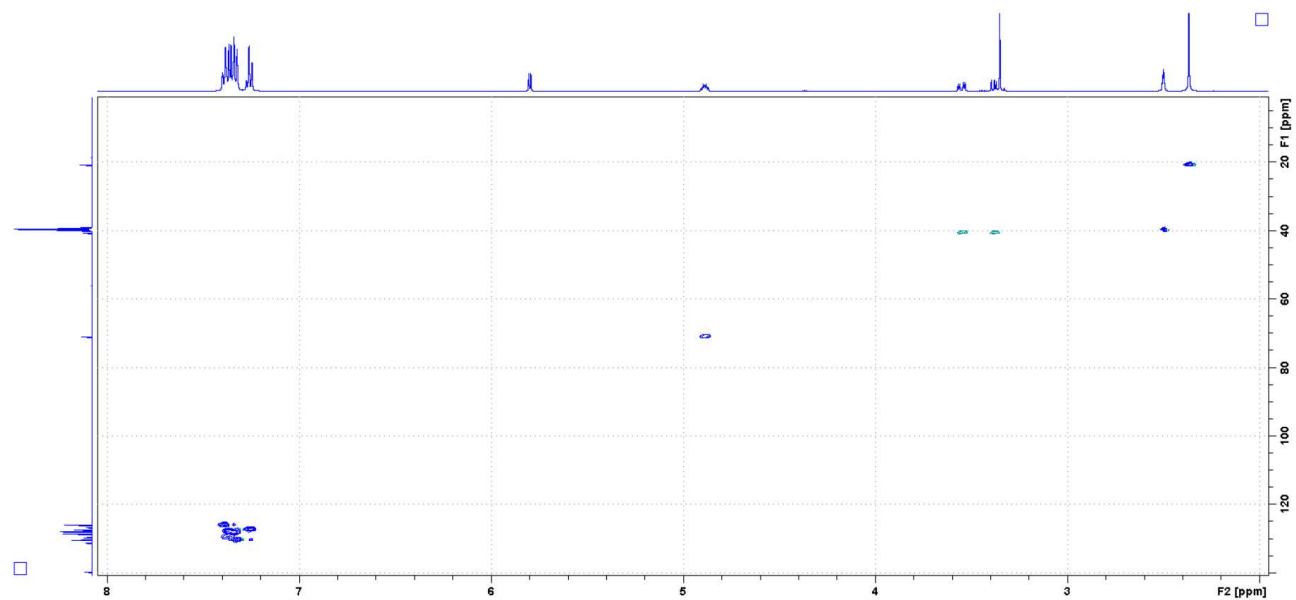


Figure S19. HSQCED  $^1\text{H}$ - $^{13}\text{C}$  spectrum of compound **6** in  $\text{DMSO}-d_6$ ;