

Figure 2. ¹³C NMR spectrum of compound 6a

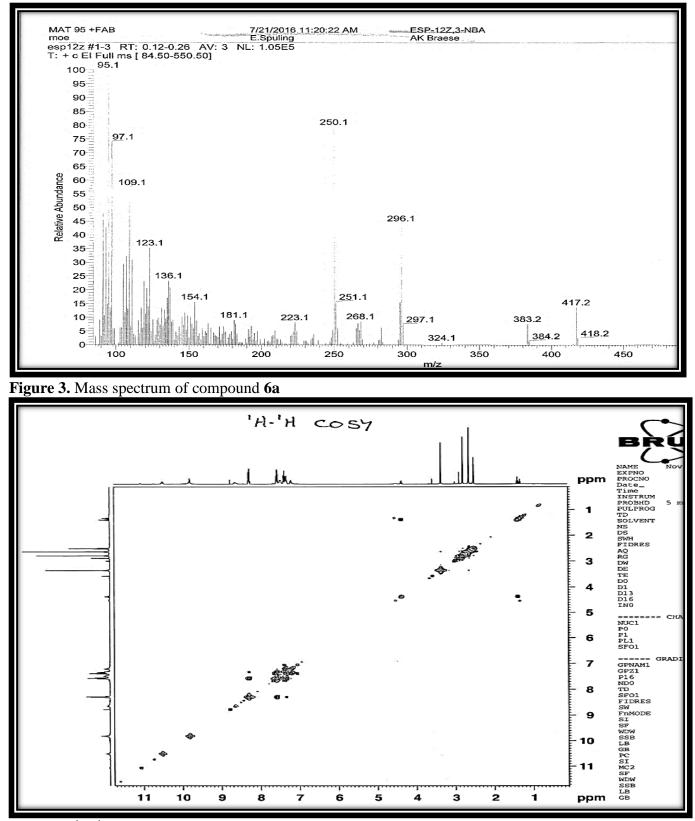


Figure 4. ¹H-¹H COSY spectrum of compound 6a

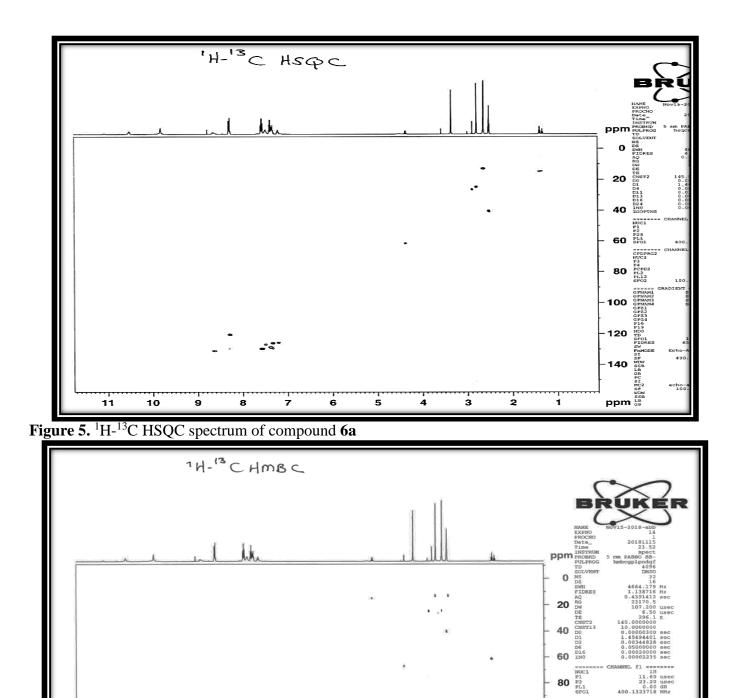


Figure 6. ¹H-¹³C HMBC spectrum of compound 6a

8

9

11

10

5

6

4

1,6

3

2

1

EL £2

100.6127690 SINE 0.00

13C 9.00 usec -2.45 dB 100.6228138 MHz

100 NUC: P3 PL2 SP0

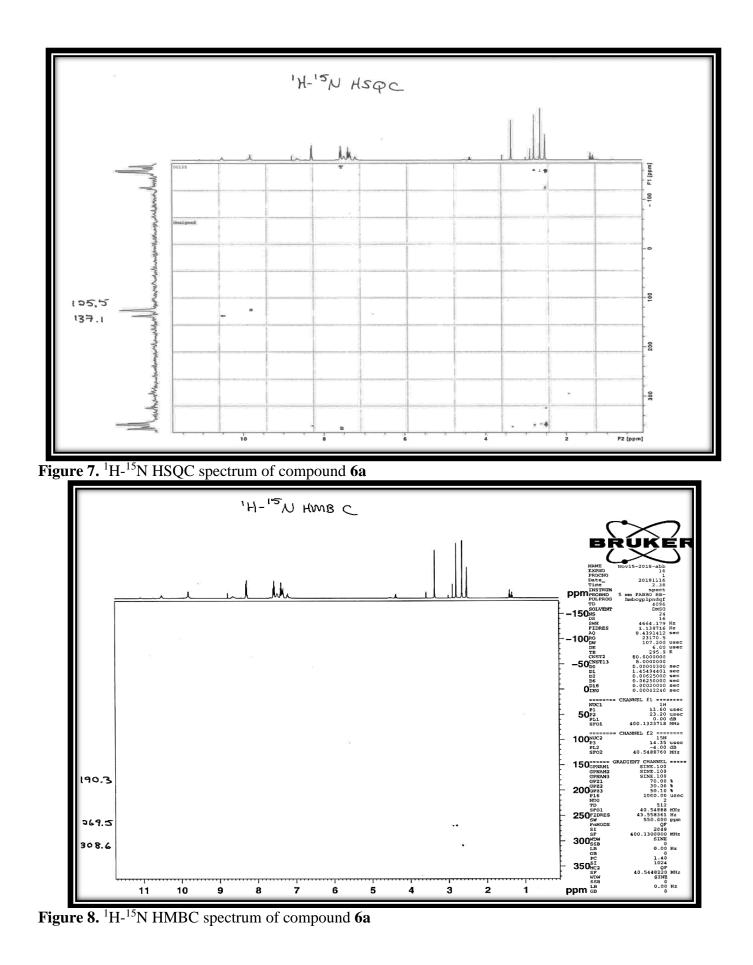
120

160 FID

180 with ss

200

ppm



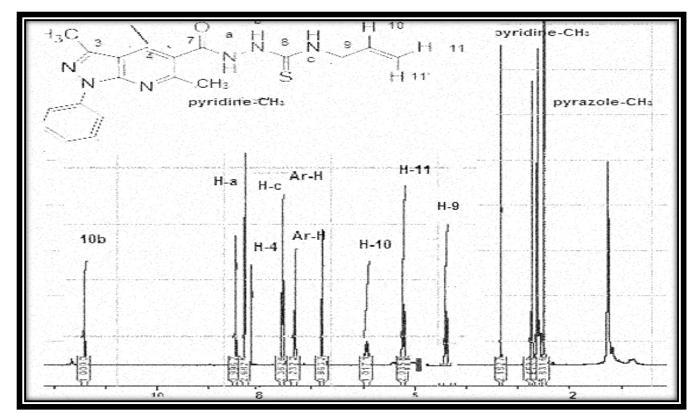


Figure 9. ¹H NMR of compound 6b

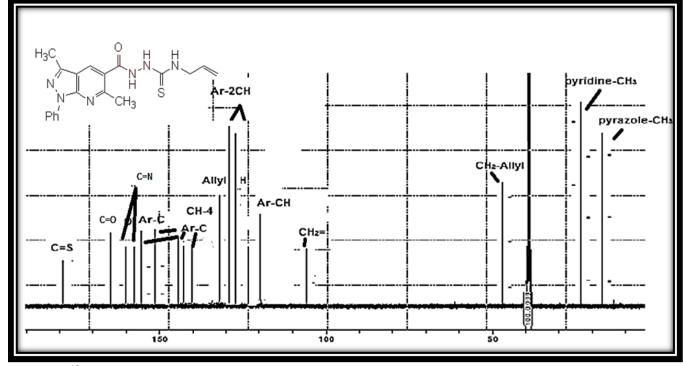


Figure 10. ¹³C NMR of compound 6b

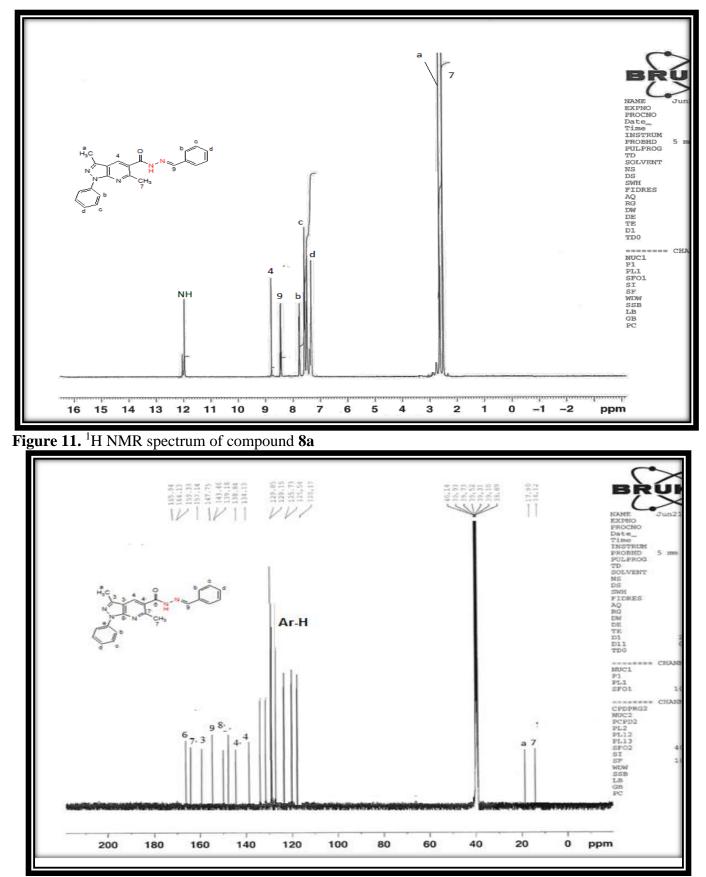
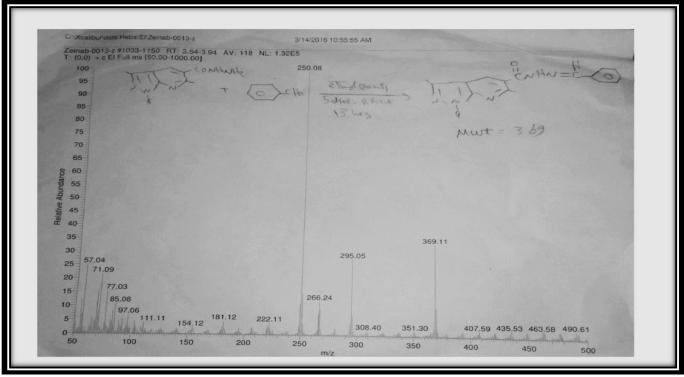
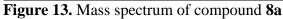


Figure 12. ¹³C NMR spectrum of compound 8a





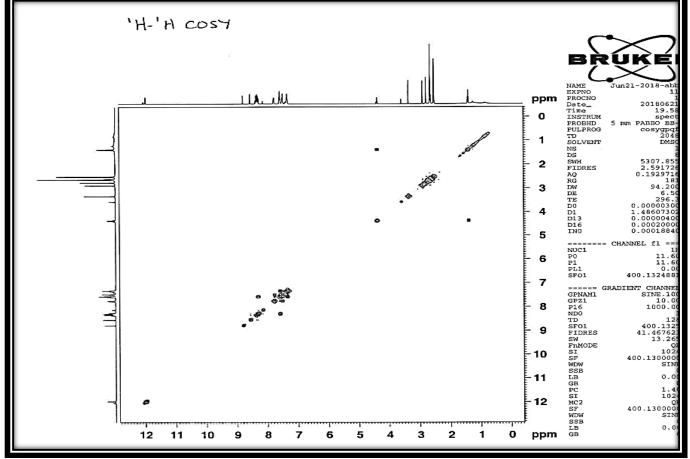


Figure 14. ¹H-¹H COSY spectrum of compound 8a

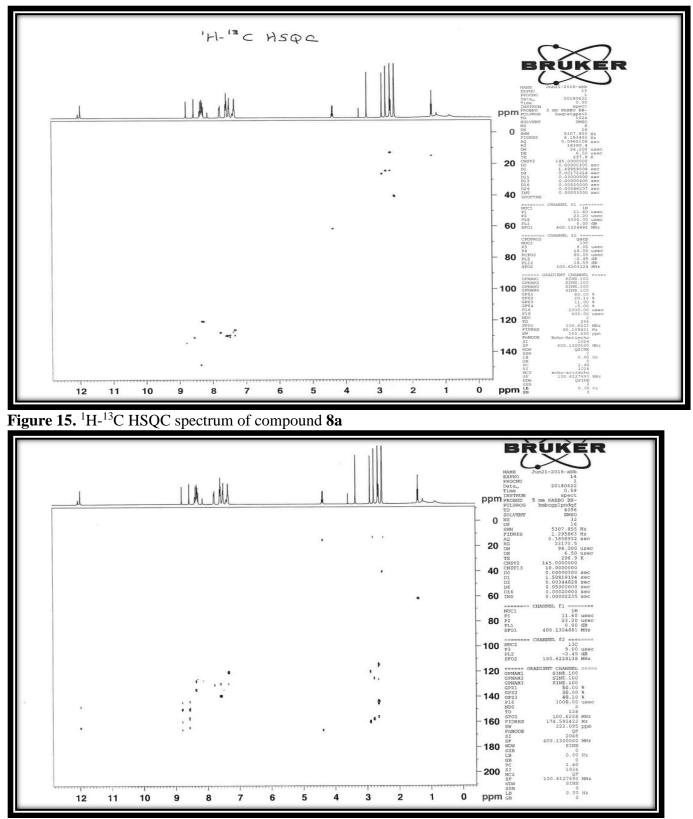


Figure 16. ¹H-¹³C HMBC spectrum of compound 8a

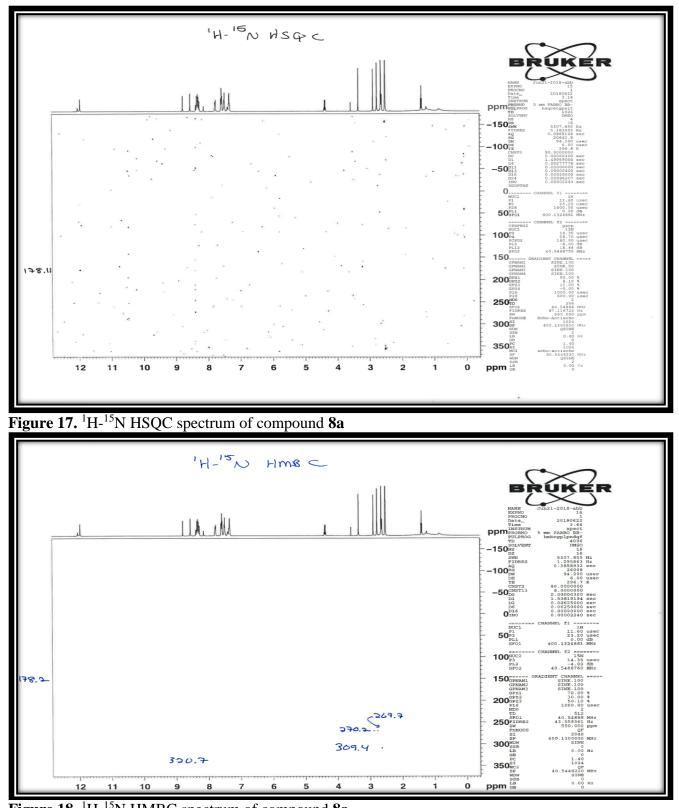


Figure 18. ¹H-¹⁵N HMBC spectrum of compound 8a

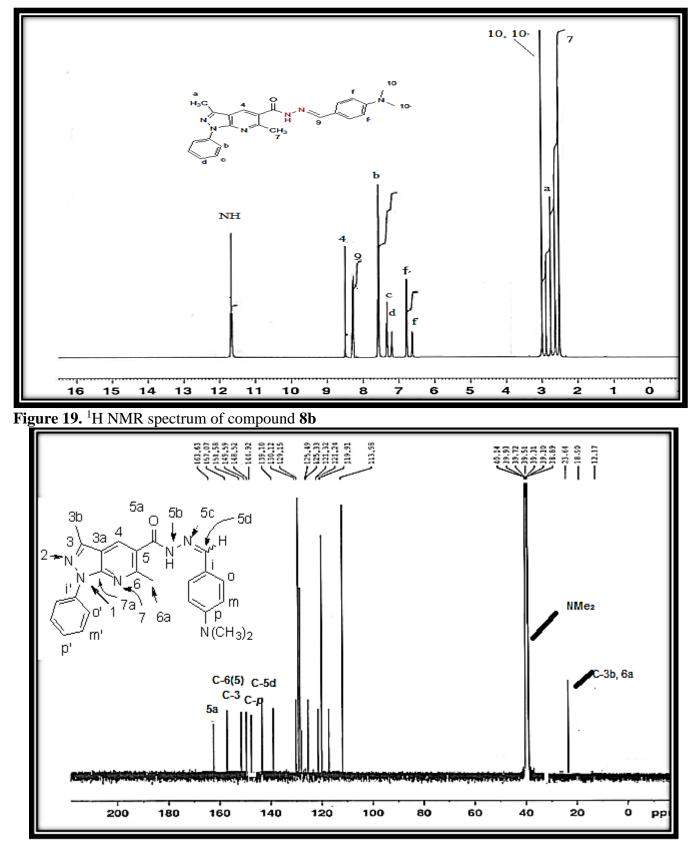


Figure 20. ¹³C NMR spectrum of compound 8b

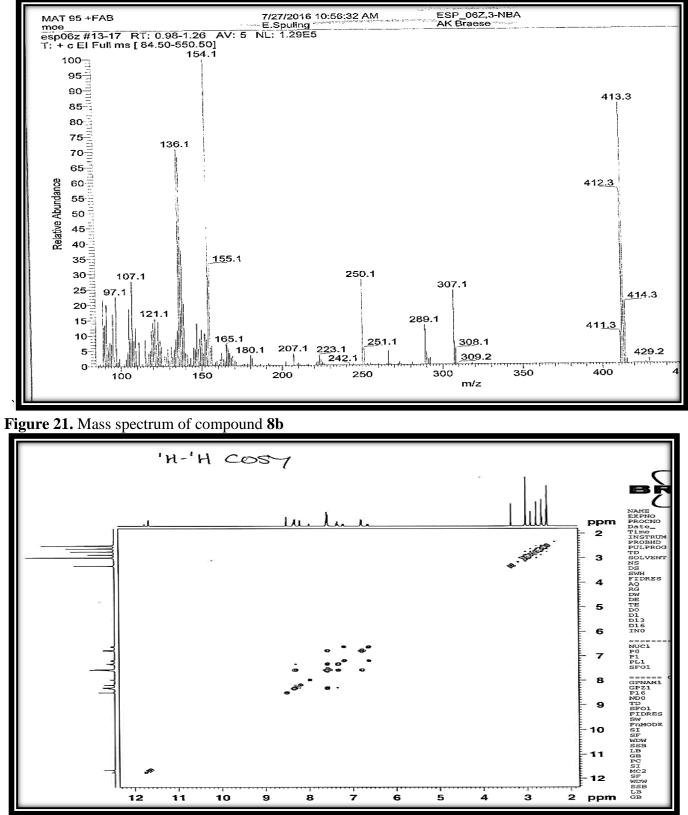


Figure 22. ¹H-¹H COSY spectrum of compound 8b

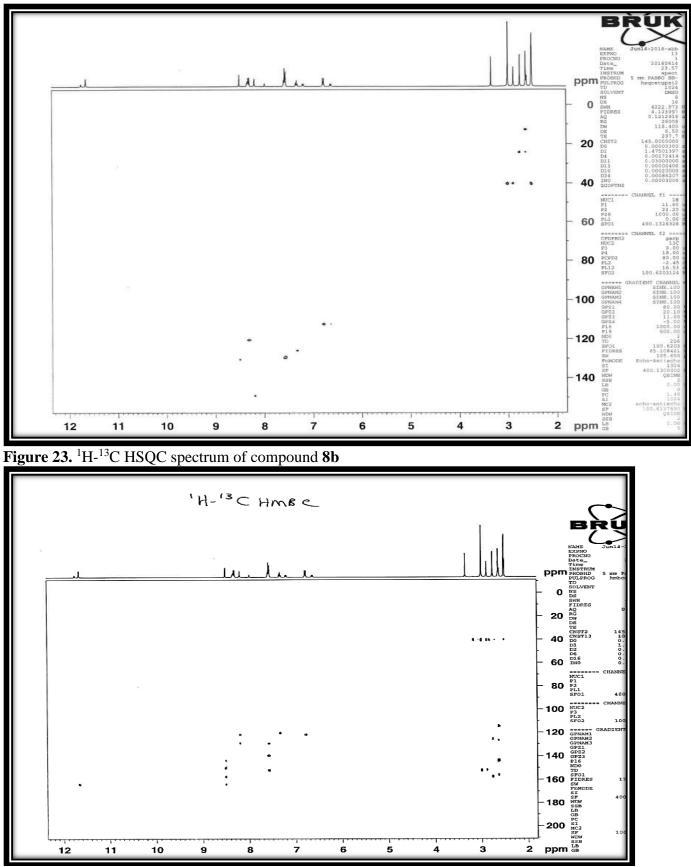


Figure 24. ¹H-¹³C HMBC spectrum of compound 8b

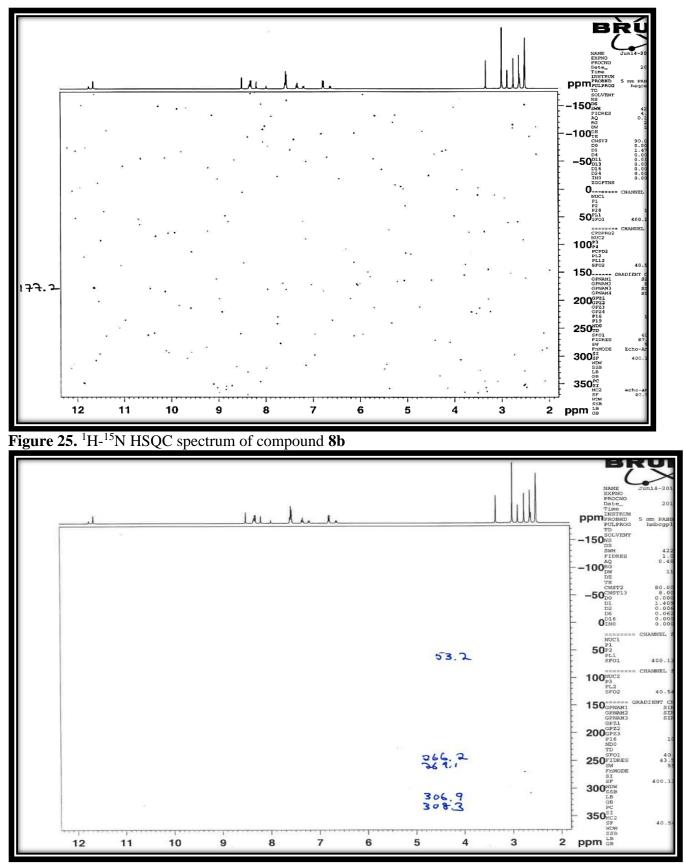


Figure 26. ¹H-¹⁵N HMBC spectrum of compound 8b

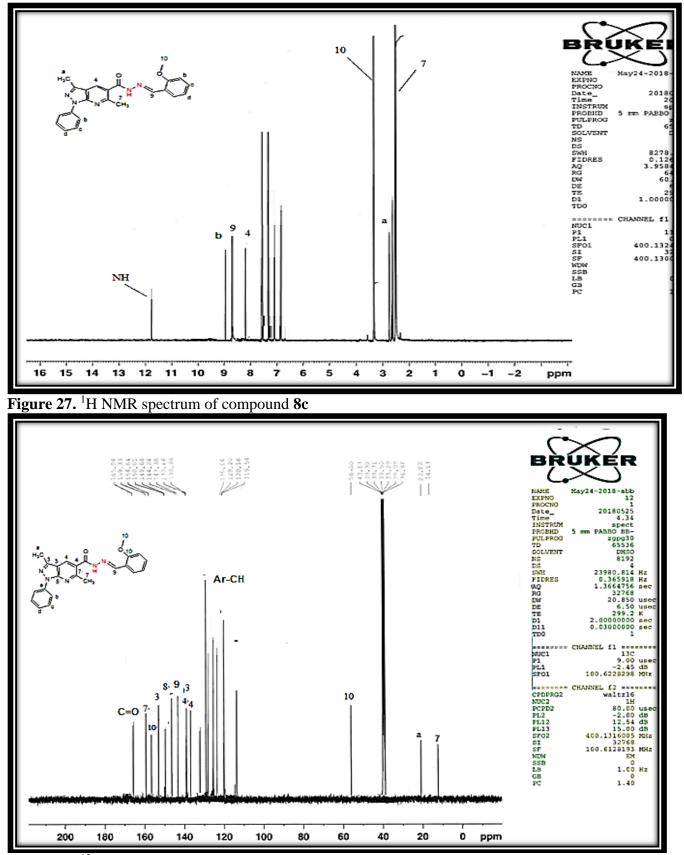


Figure 28. ¹³C NMR spectrum of compound 8c

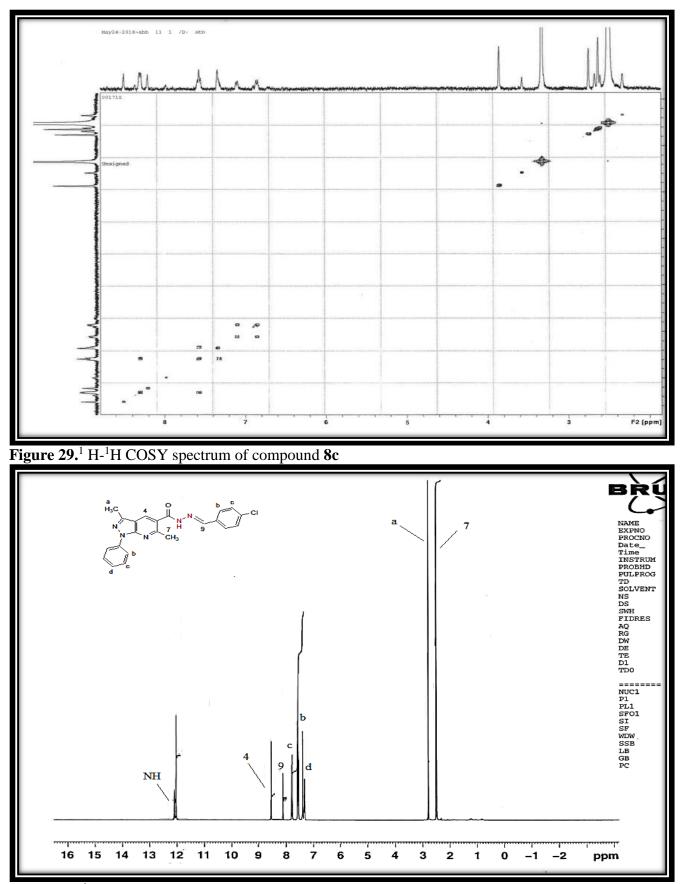
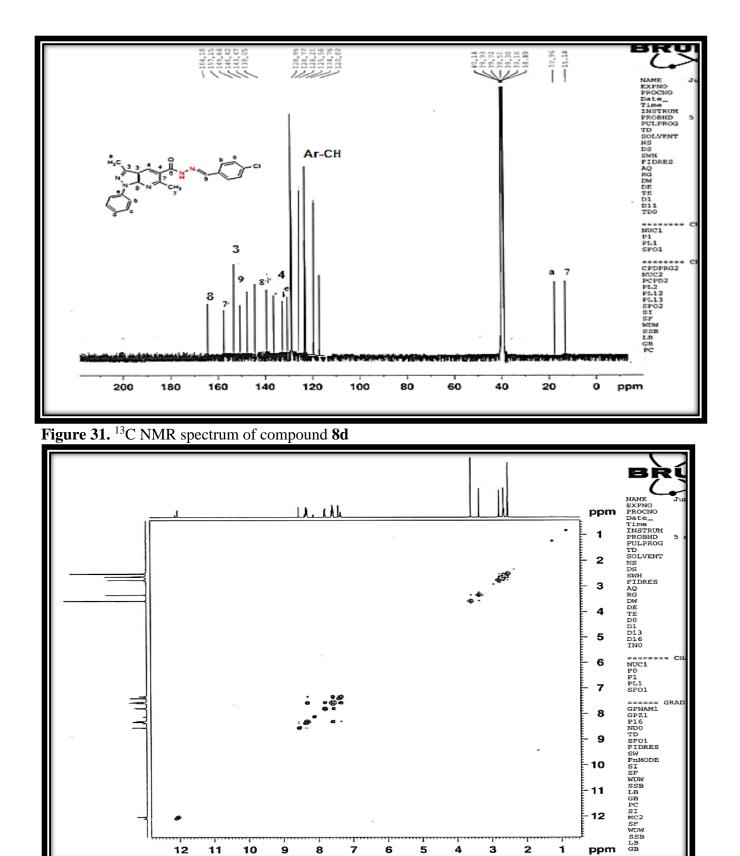
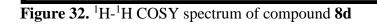


Figure 30. ¹H NMR spectrum of compound 8d





з

ppm

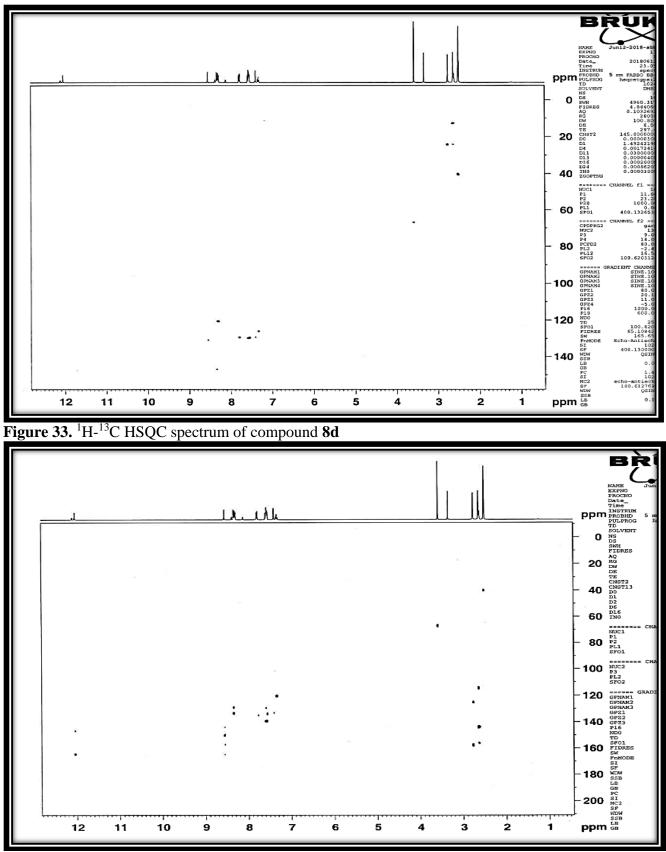


Figure 34. ¹H-¹³C HMBC spectrum of compound 8d

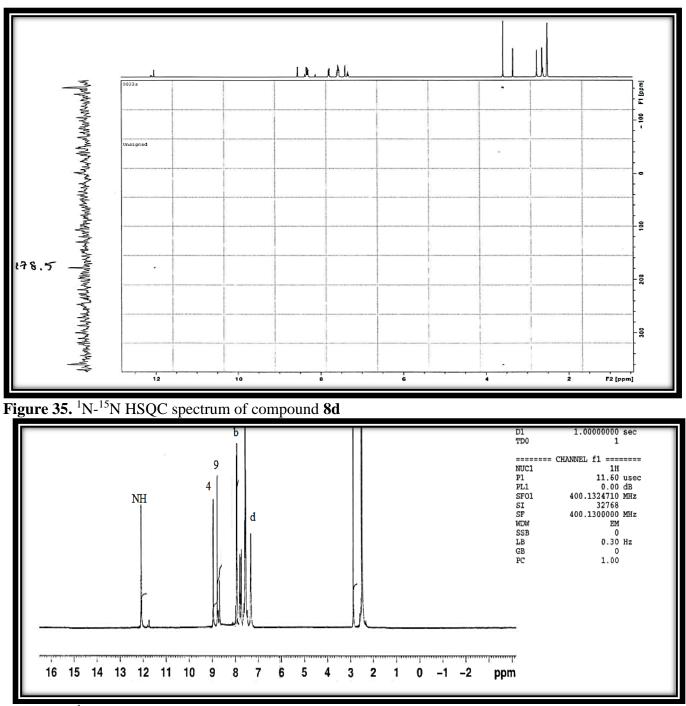


Figure 36. ¹H NMR spectrum of compound 8e

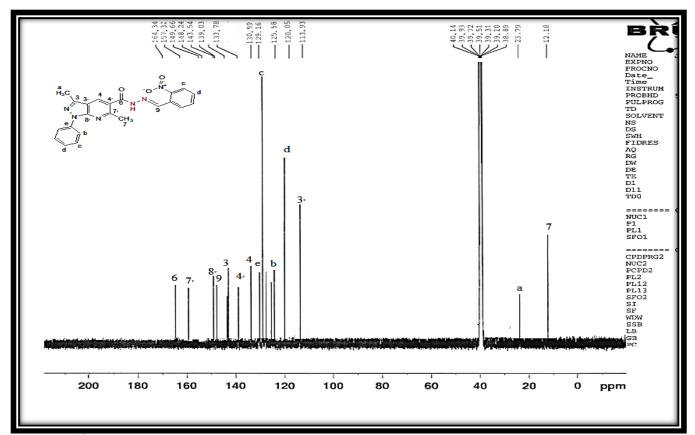


Figure 37. ¹³C NMR spectrum of compound 8e

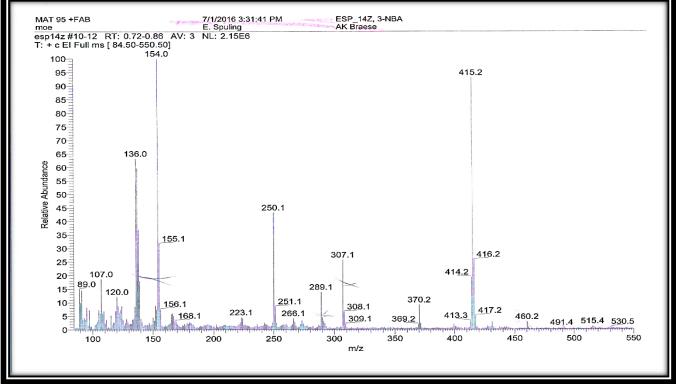


Figure 38. Mass spectrum of compound 8e

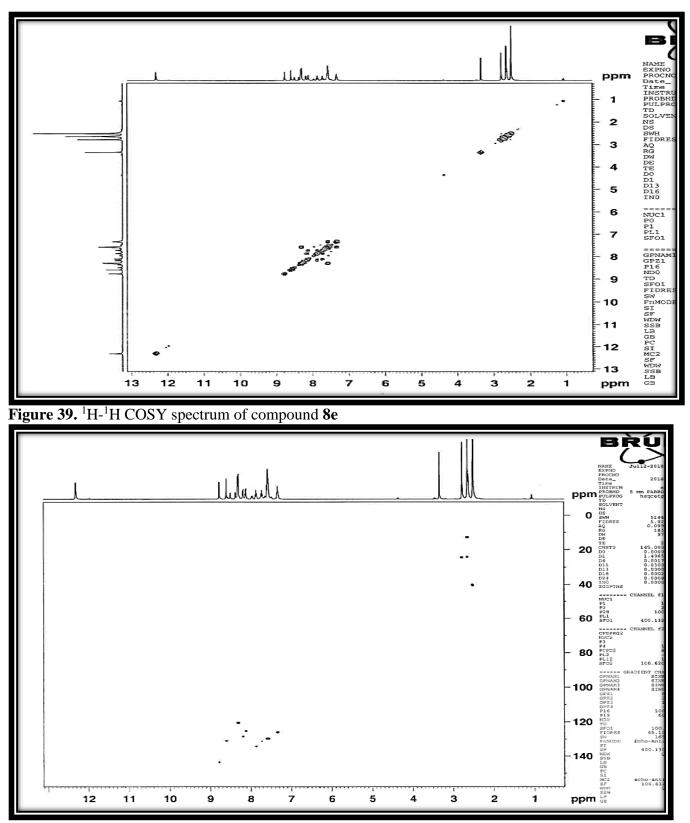
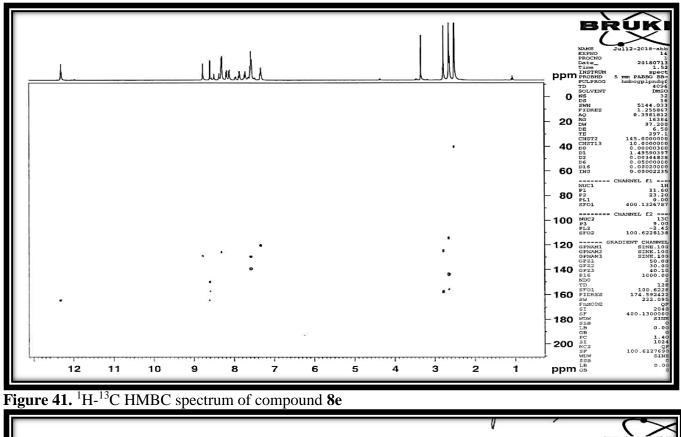


Figure 40. ¹H-¹³C HSQC spectrum of compound 8e



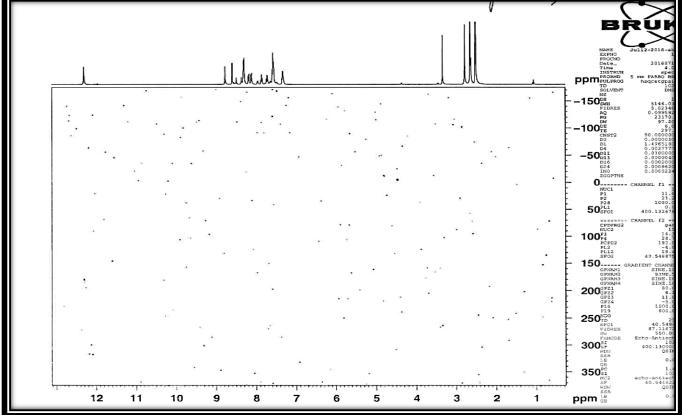


Figure 42. ¹H-¹⁵N HSQC spectrum of compound 8e

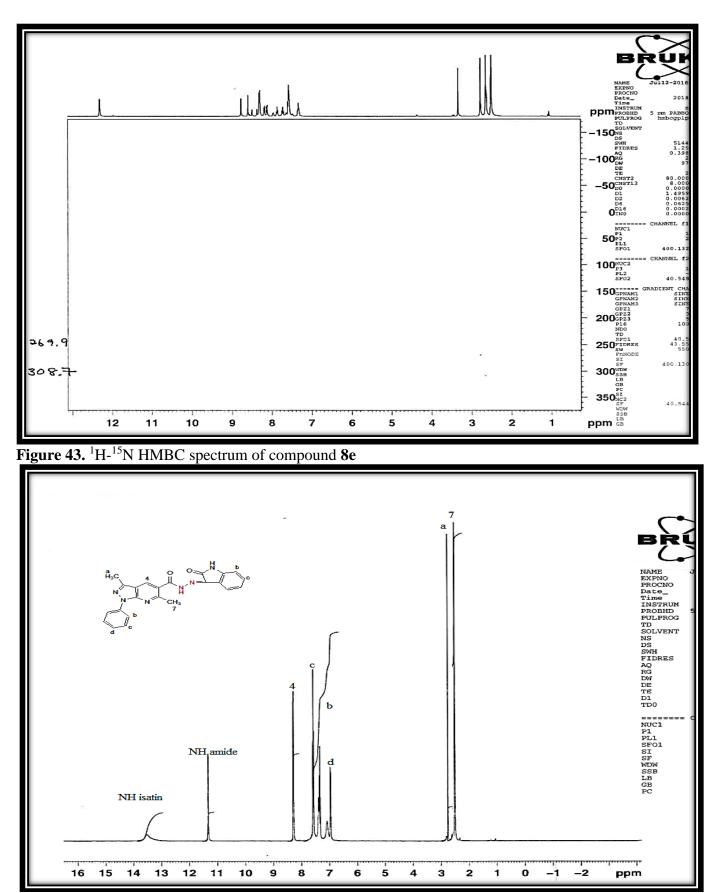
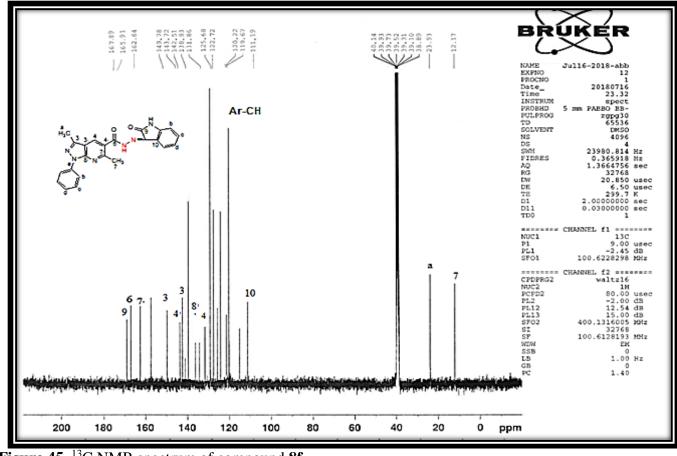


Figure 44. ¹H NMR spectrum of compound 8f





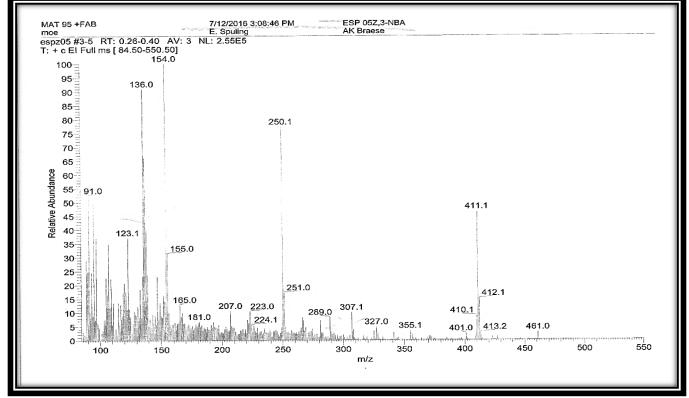


Figure 46. Mass spectrum of compound 8f

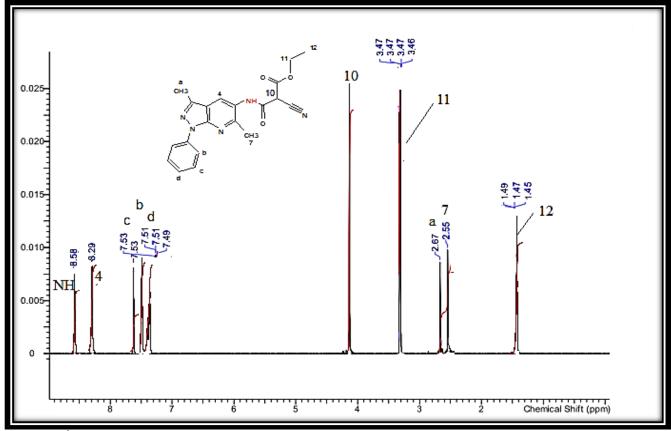


Figure 47. ¹H NMR spectrum of compound 11

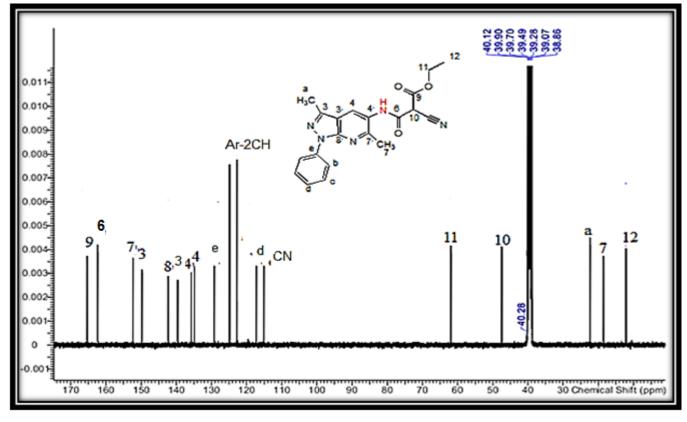


Figure 48. ¹³C NMR spectrum of compound 11

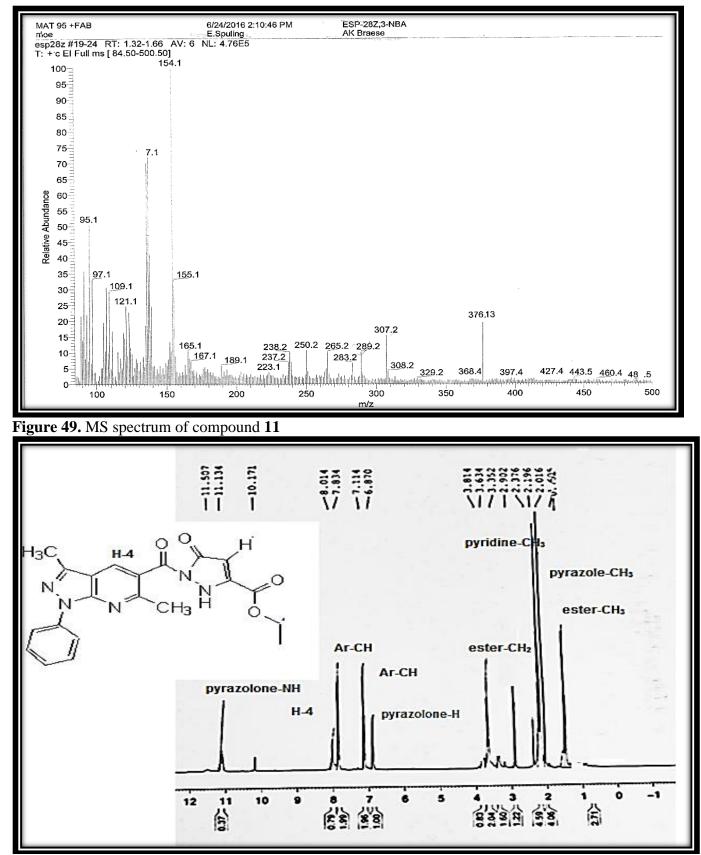


Figure 50. ¹H NMR spectrum of compound 13

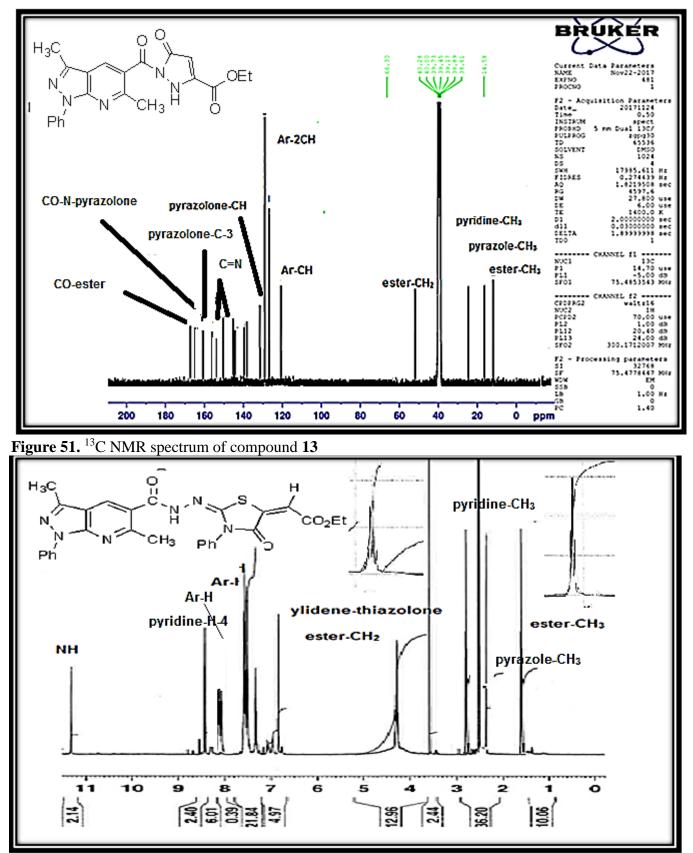


Figure 52. ¹H NMR spectrum of compound 14a

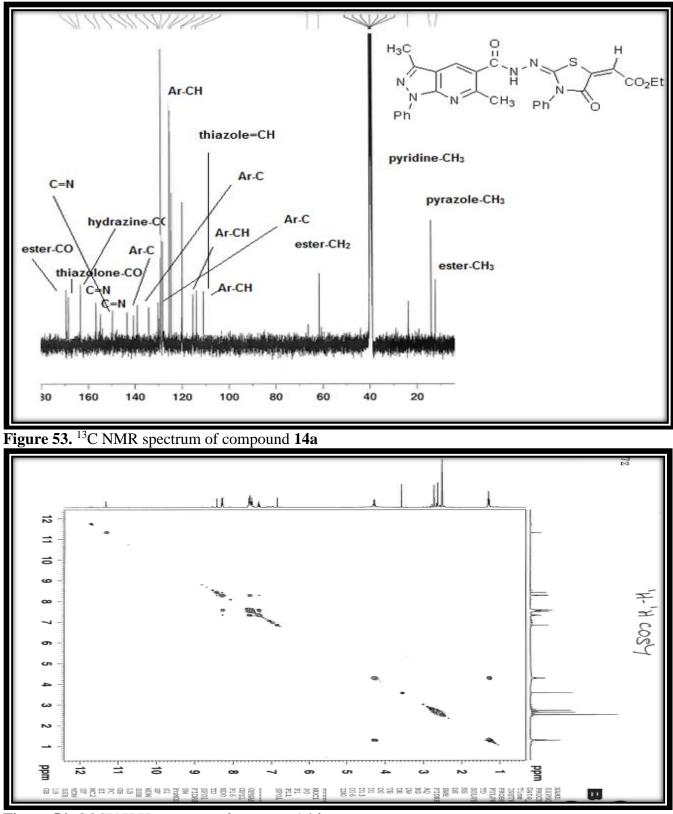


Figure 54. COSY H H spectrum of compound 14a

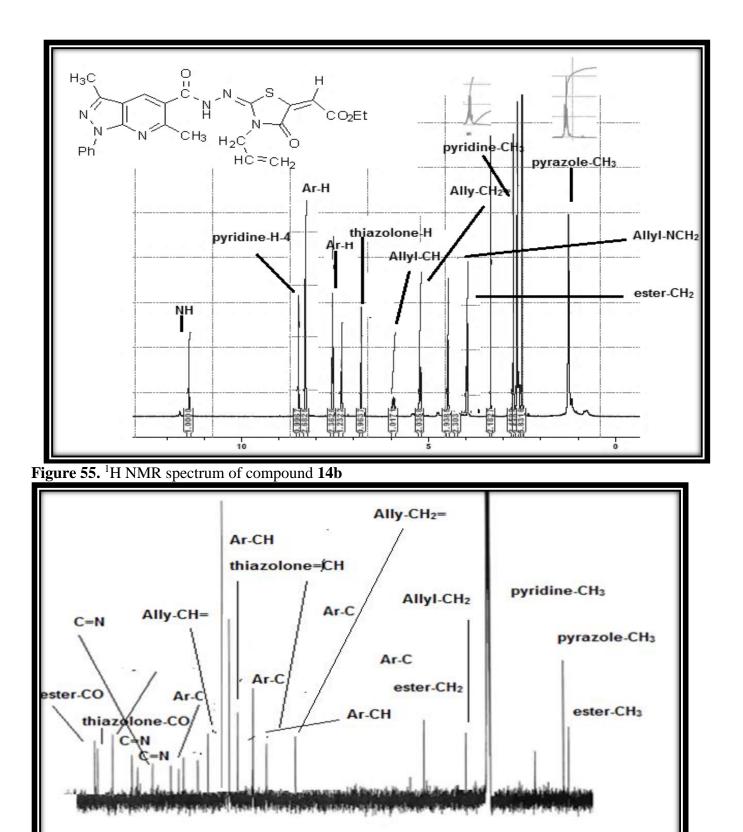


Figure 56. ¹³C NMR spectrum of compound 14b

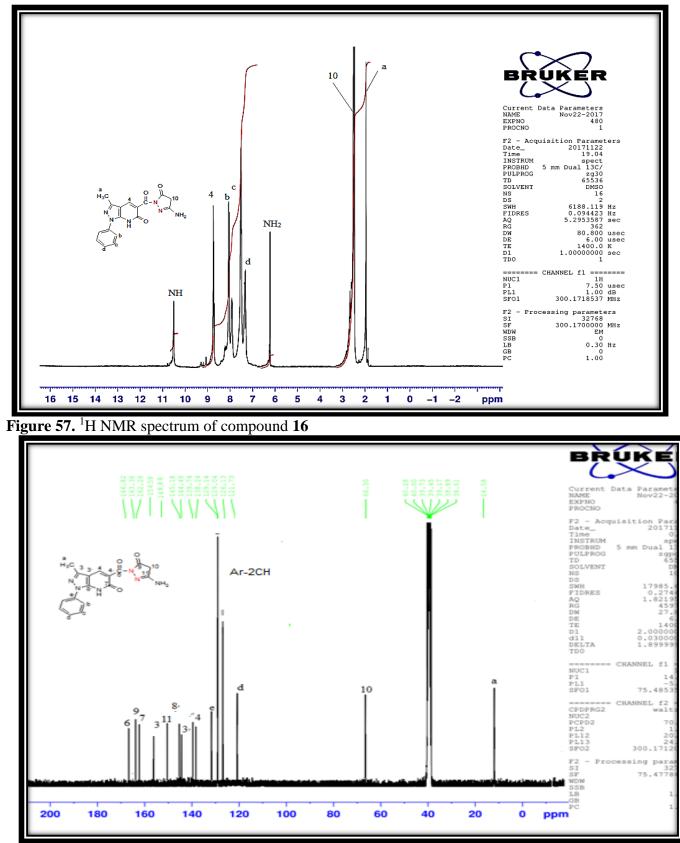
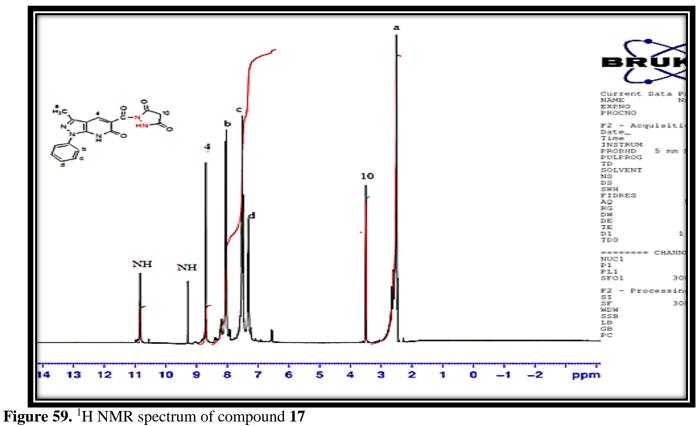


Figure 58. ¹³C NMR spectrum of compound 16



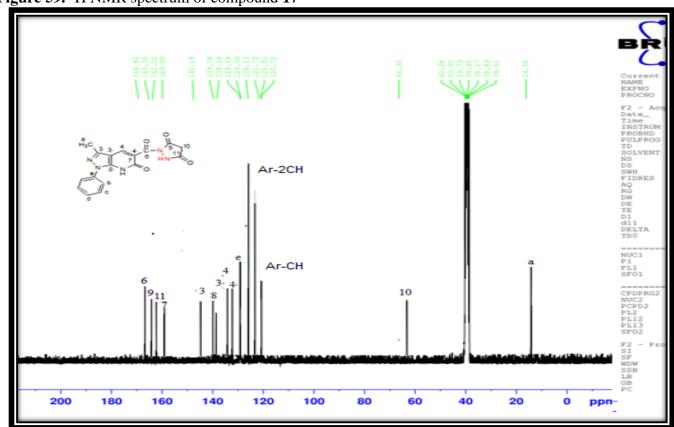


Figure 60. ¹³C NMR spectrum of compound 17

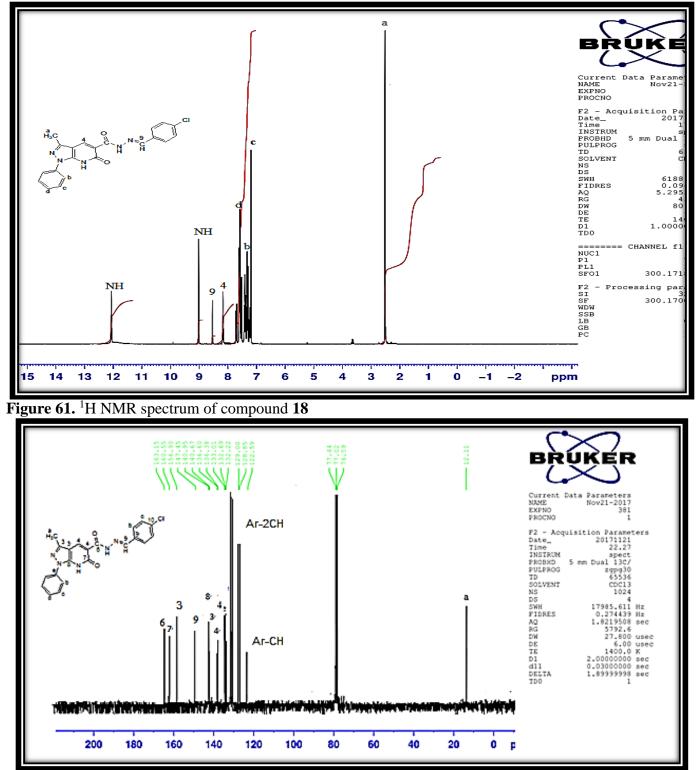


Figure 62. ¹³C NMR spectrum of compound 18

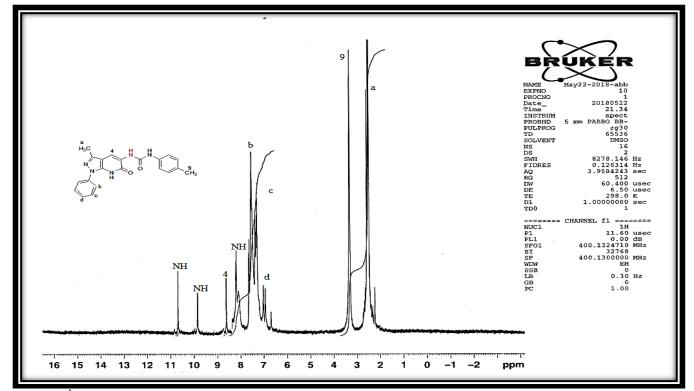


Figure 63. ¹H NMR spectrum of compound 20

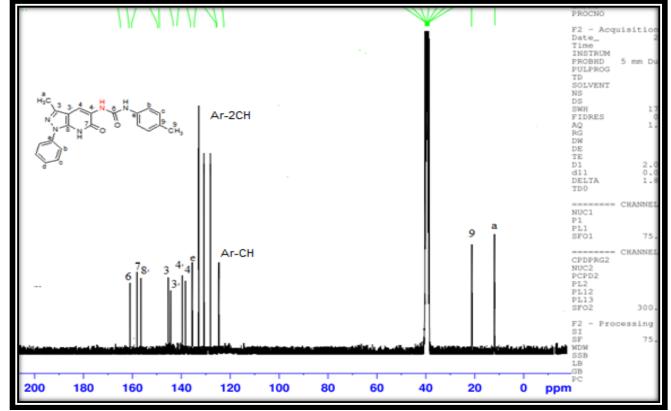
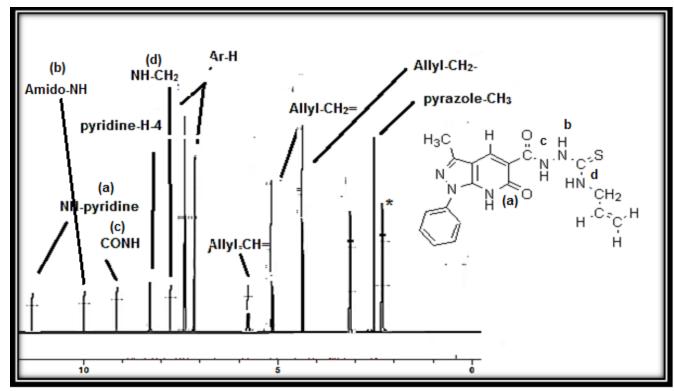
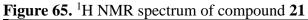


Figure 64. ¹³C NMR spectrum of compound 20





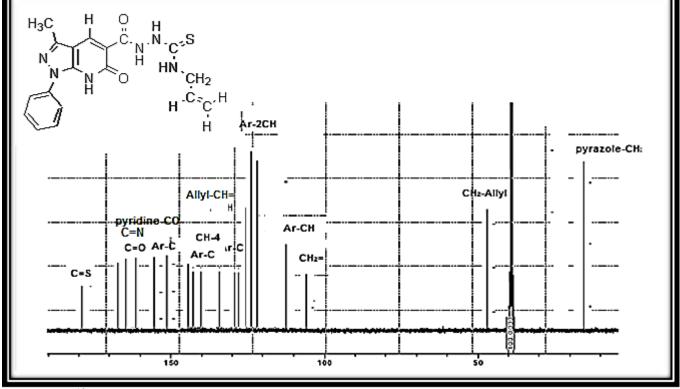


Figure 66. ¹³C NMR spectrum of compound 21

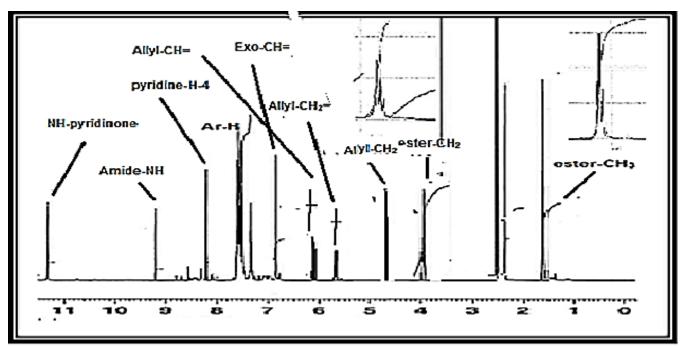


Figure 67. ¹H NMR spectrum of compound 22

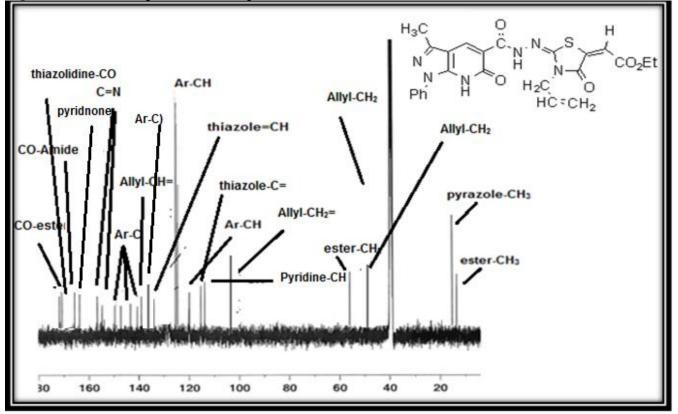


Figure 68. ¹³C NMR spectrum of compound 22