

Supplementary Material

The synthesis of new pyrazolo[1,5-*a*]pyrimidine derivatives

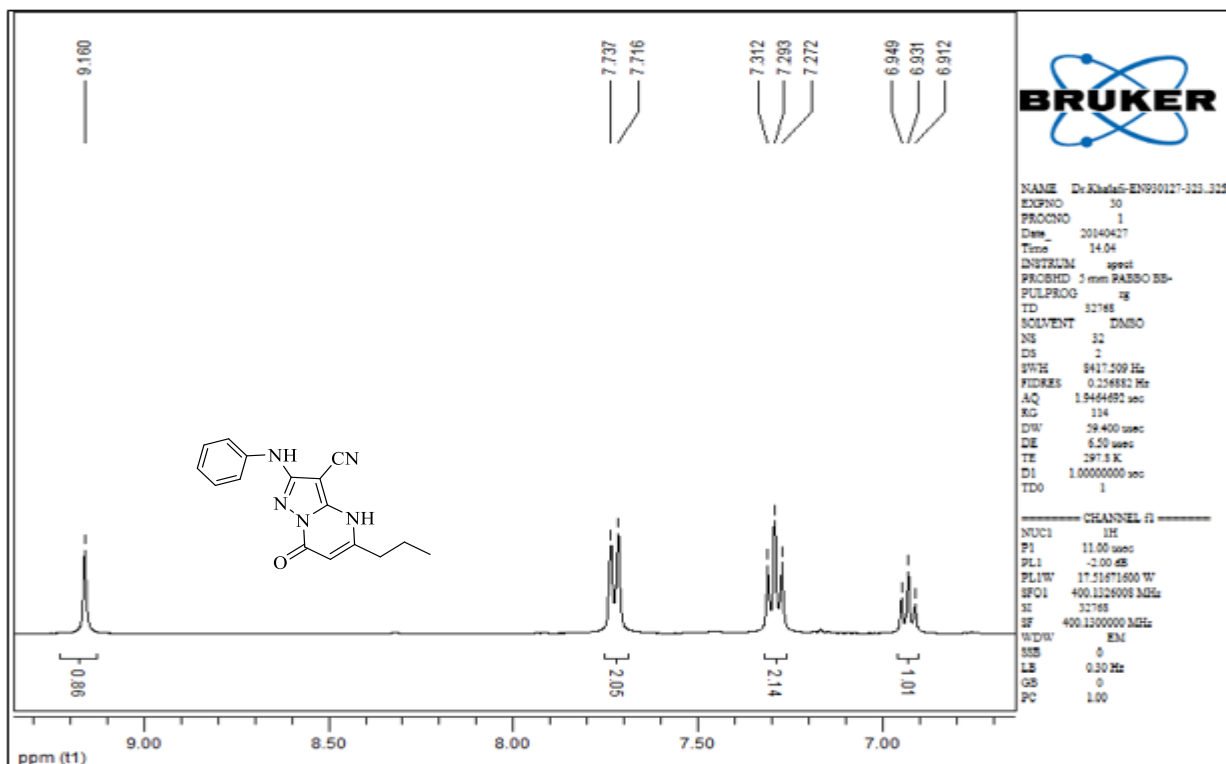
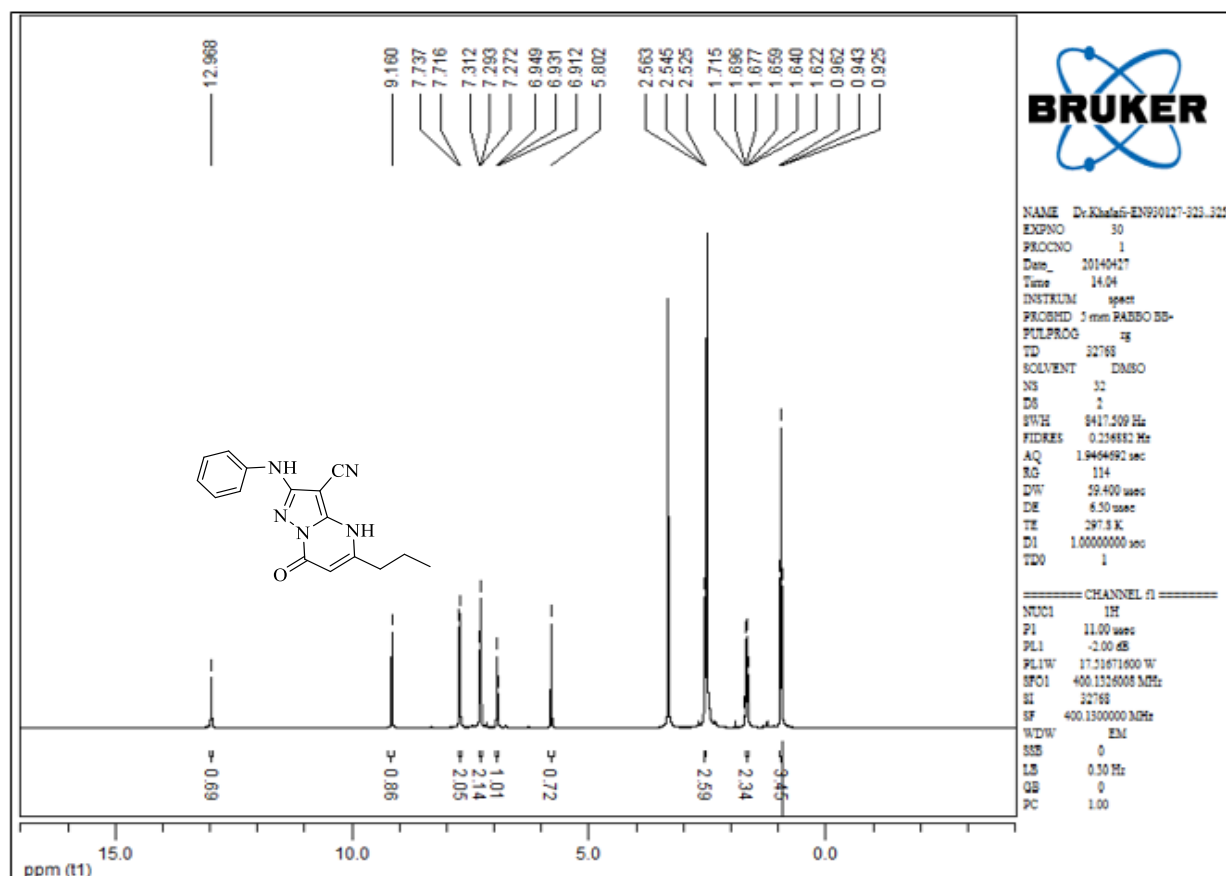
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Table of Contents

Figure S1. ¹ H NMR spectrum of compound 4a	S3
Figure S2. ¹³ C NMR spectrum of compound 4a	S4
Figure S3. IR spectrum of compound 4a	S5
Figure S4. ¹ H NMR spectrum of compound 4b	S5
Figure S5. ¹³ C NMR spectrum of compound 4b	S7
Figure S6. IR spectrum of compound 4b	S7
Figure S7. ¹ H NMR spectrum of compound 4c	S8
Figure S8. ¹³ C NMR spectrum of compound 4c	S9
Figure S9. IR spectrum of compound 4c	S10
Figure S10. ¹ H NMR spectrum of compound 4d	S10
Figure S11. ¹³ C NMR spectrum of compound 4d	S12
Figure S12. IR spectrum of compound 4d	S12
Figure S13. ¹ H NMR spectrum of compound 4e	S13
Figure S14. ¹³ C NMR spectrum of compound 4e	S14
Figure S15. IR spectrum of compound 4e	S15
Figure S16. ¹ H NMR spectrum of compound 4f	S15
Figure S17. ¹³ C NMR spectrum of compound 4f	S17
Figure S18. IR spectrum of compound 4f	S17
Figure S19. ¹ H NMR spectrum of compound 4g	S18
Figure S20. ¹³ C NMR spectrum of compound 4g	S20
Figure S21. IR spectrum of compound 4g	S20
Figure S22. ¹ H NMR spectrum of compound 4h	S21
Figure S23. ¹³ C NMR spectrum of compound 4h	S22
Figure S24. IR spectrum of compound 4h	S23
Figure S25. ¹ H NMR spectrum of compound 4i	S23
Figure S26. ¹³ C NMR spectrum of compound 4i	S25
Figure S27. IR spectrum of compound 4i	S25
Figure S28. ¹ H NMR spectrum of compound 4j	S26
Figure S29. ¹³ C NMR spectrum of compound 4j	S27
Figure S30. IR spectrum of compound 4j	S28

Figure S31. ^1H NMR spectrum of compound 4k	S28
Figure S32. ^{13}C NMR spectrum of compound 4k	S30
Figure S33. IR spectrum of compound 4k	S30
Figure S34. ^1H NMR spectrum of compound 4l	S31
Figure S35. ^{13}C NMR spectrum of compound 4l	S33
Figure S36. IR spectrum of compound 4l	S33
Figure S37. ^1H NMR spectrum of compound 4m	S34
Figure S38. ^{13}C NMR spectrum of compound 4m	S36
Figure S39. IR spectrum of compound 4m	S36

Figure S1. ^1H NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4a**.

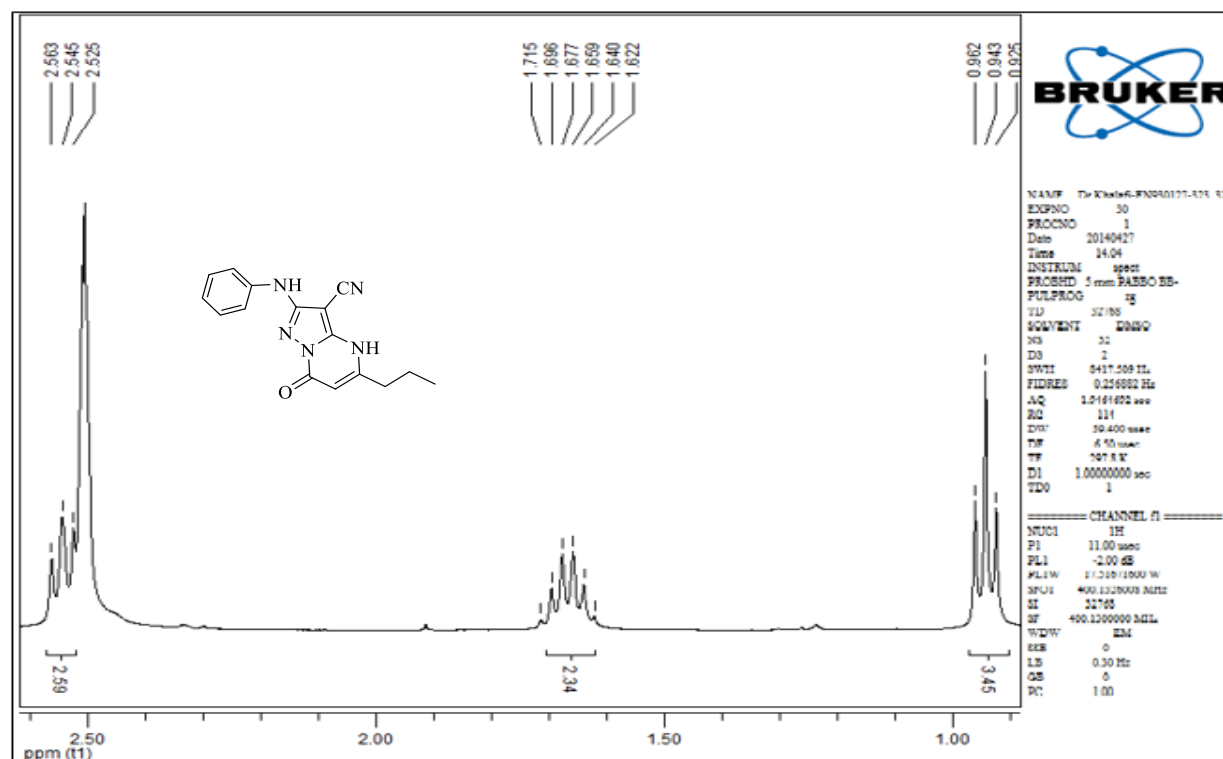


Figure S2. ¹³C NMR spectrum (300 MHz, DMSO-*d*₆) of compound 4a.

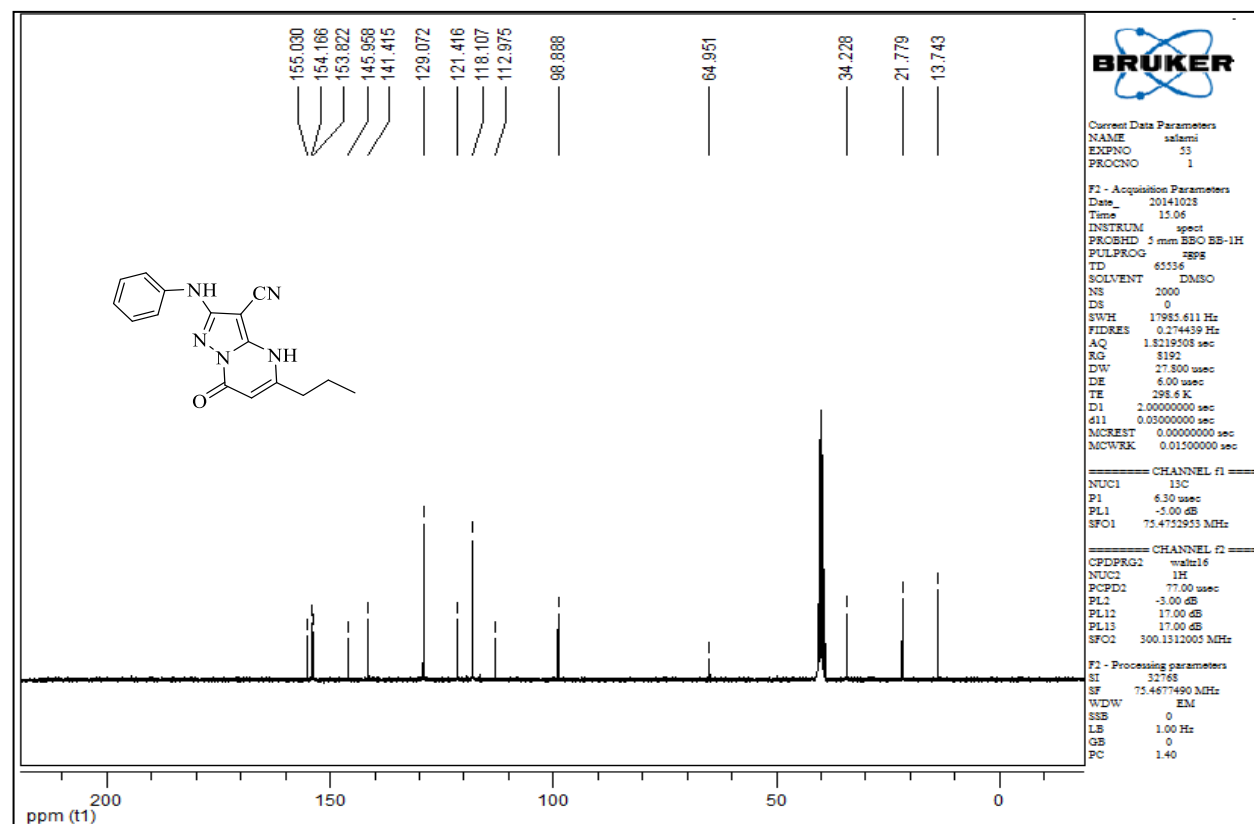
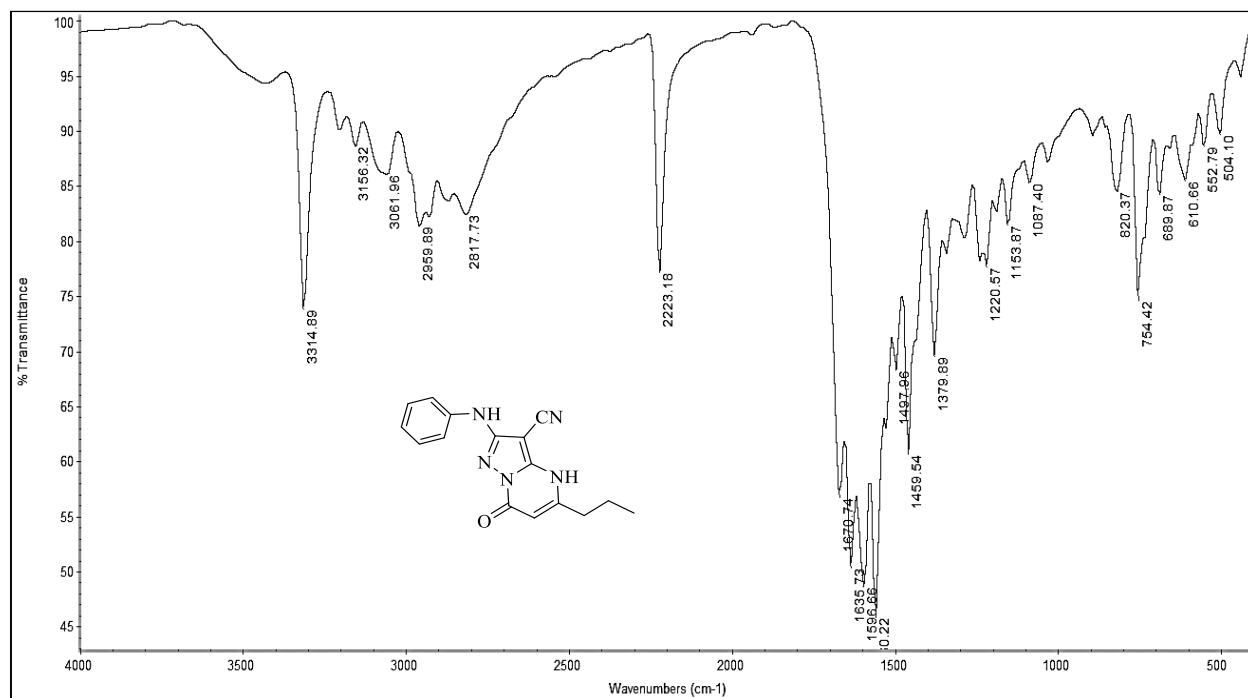
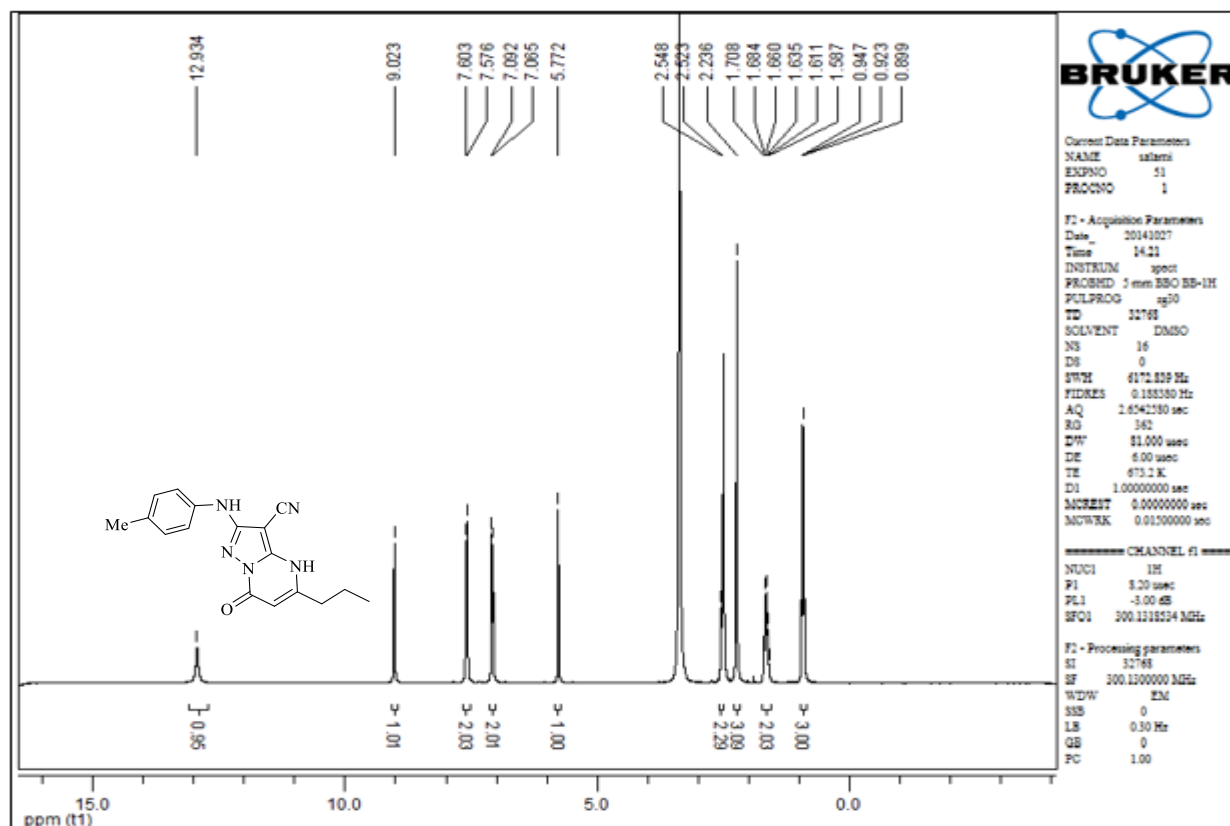


Figure S3. IR spectrum (KBr) of compound **4a**.**Figure S4.** ^1H NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4b**.

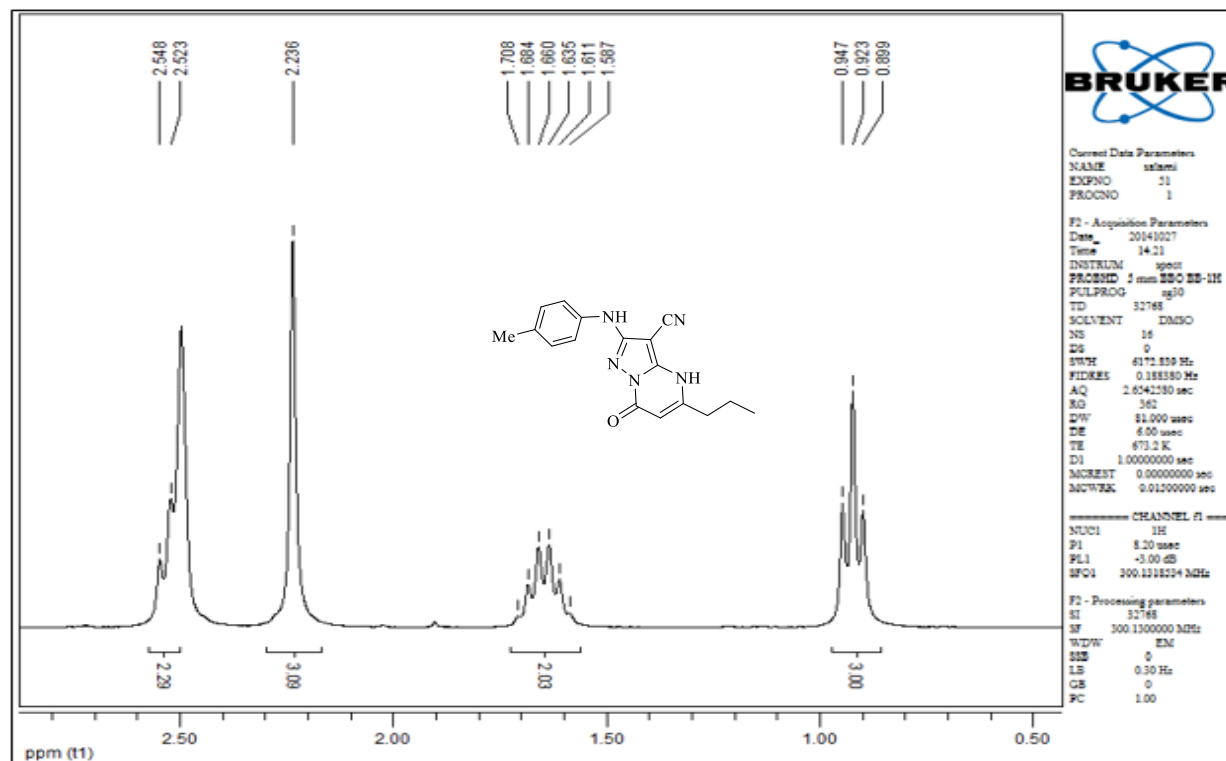
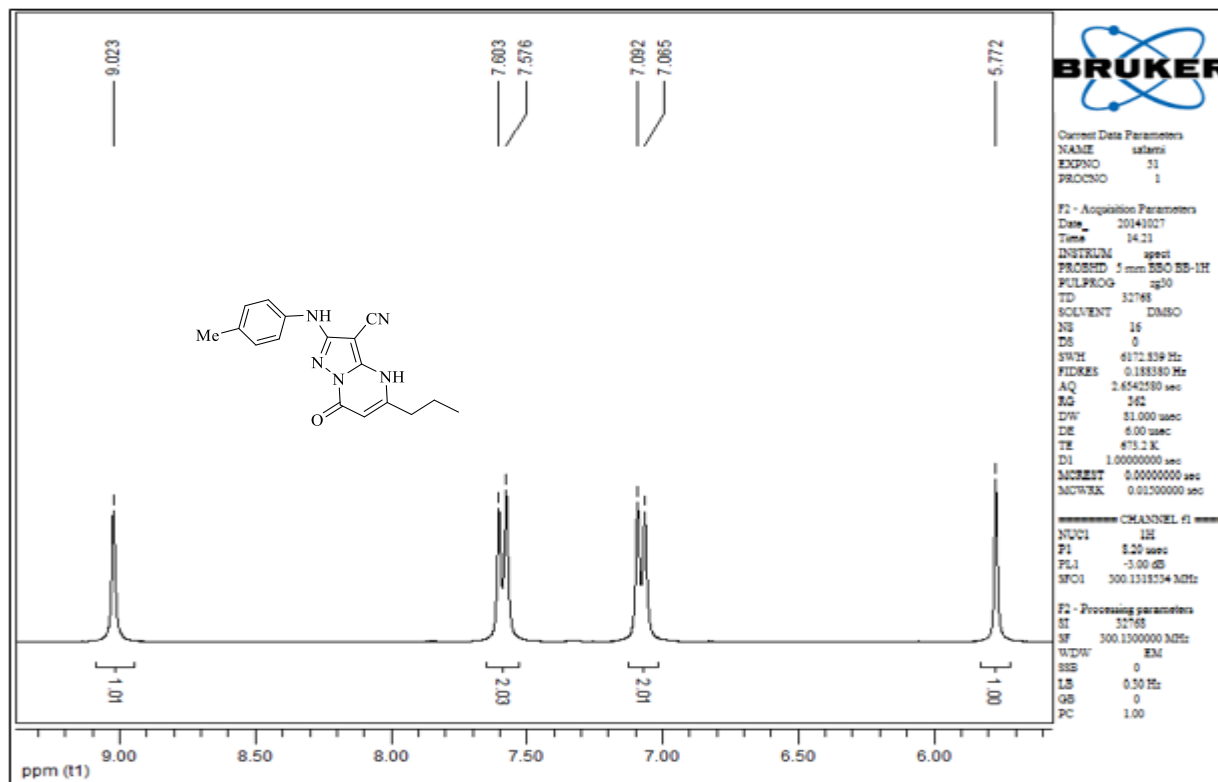


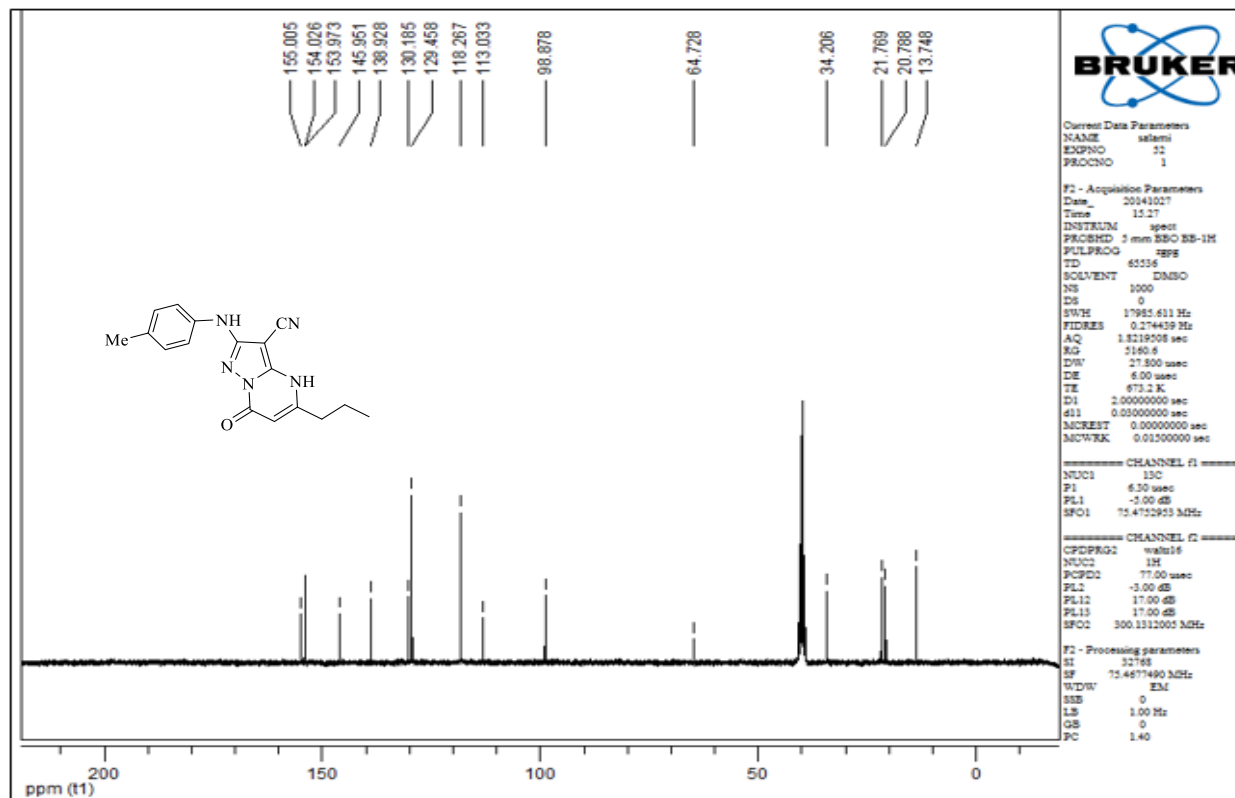
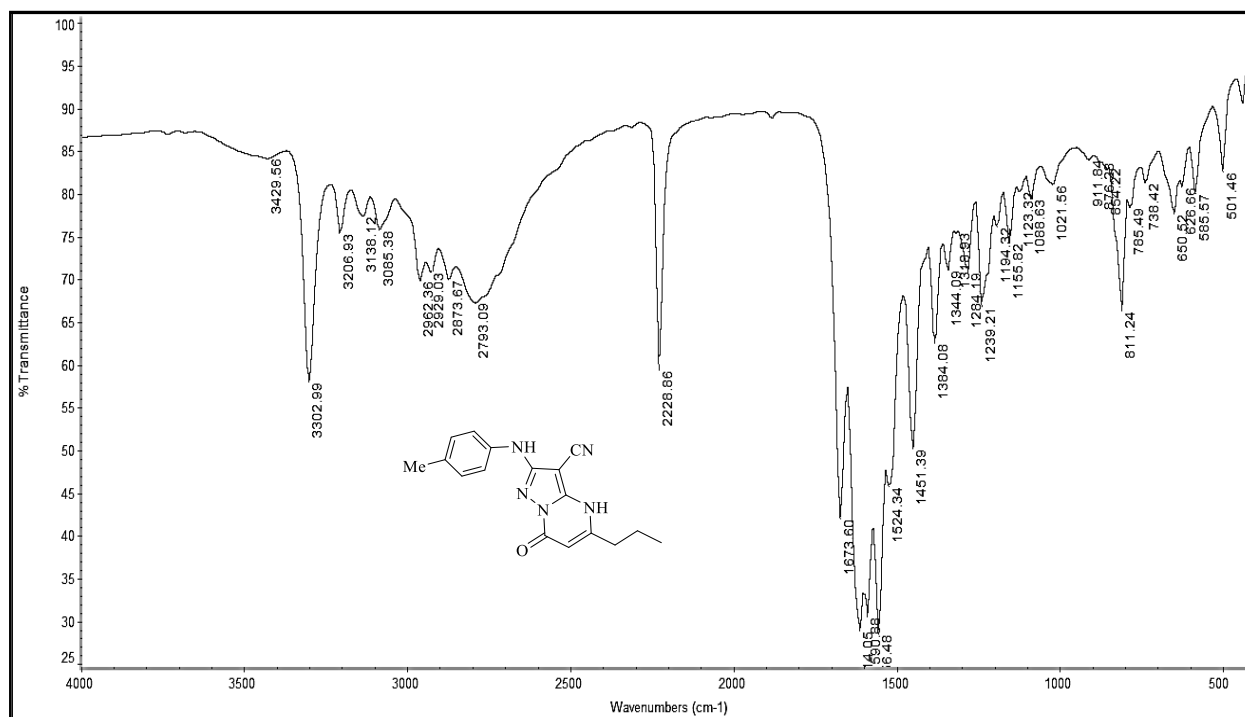
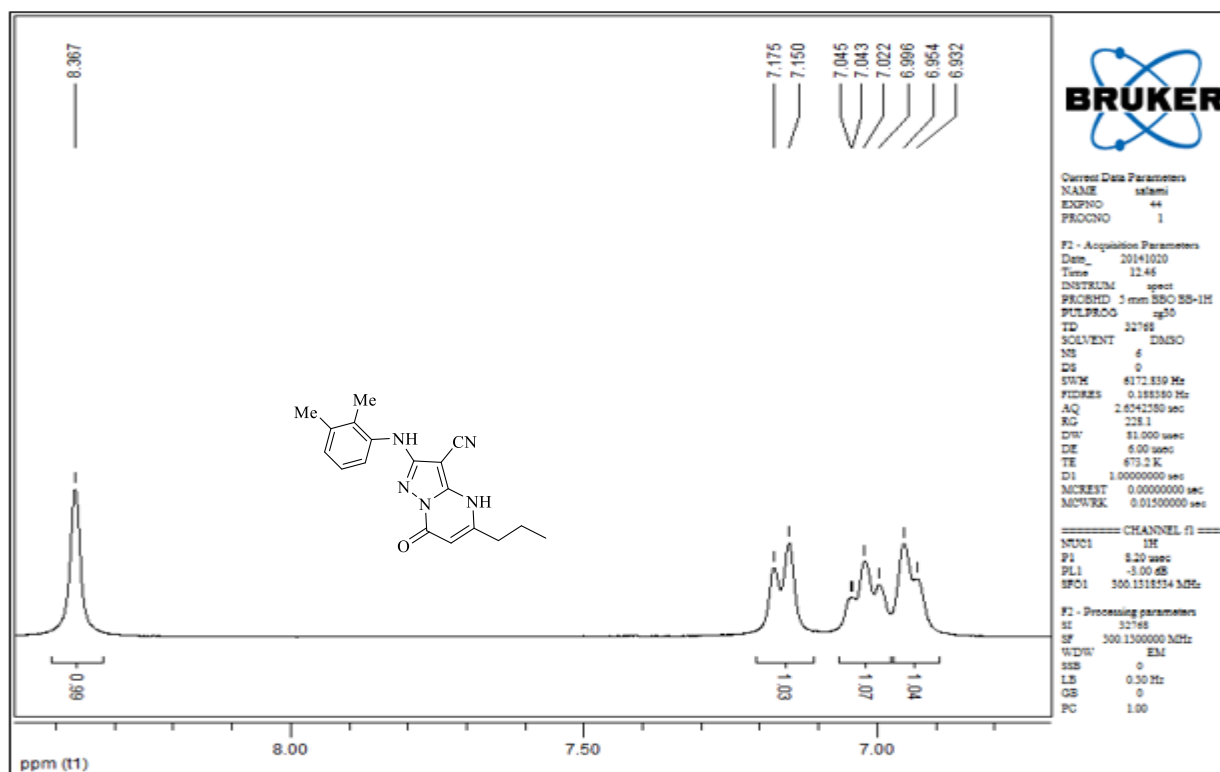
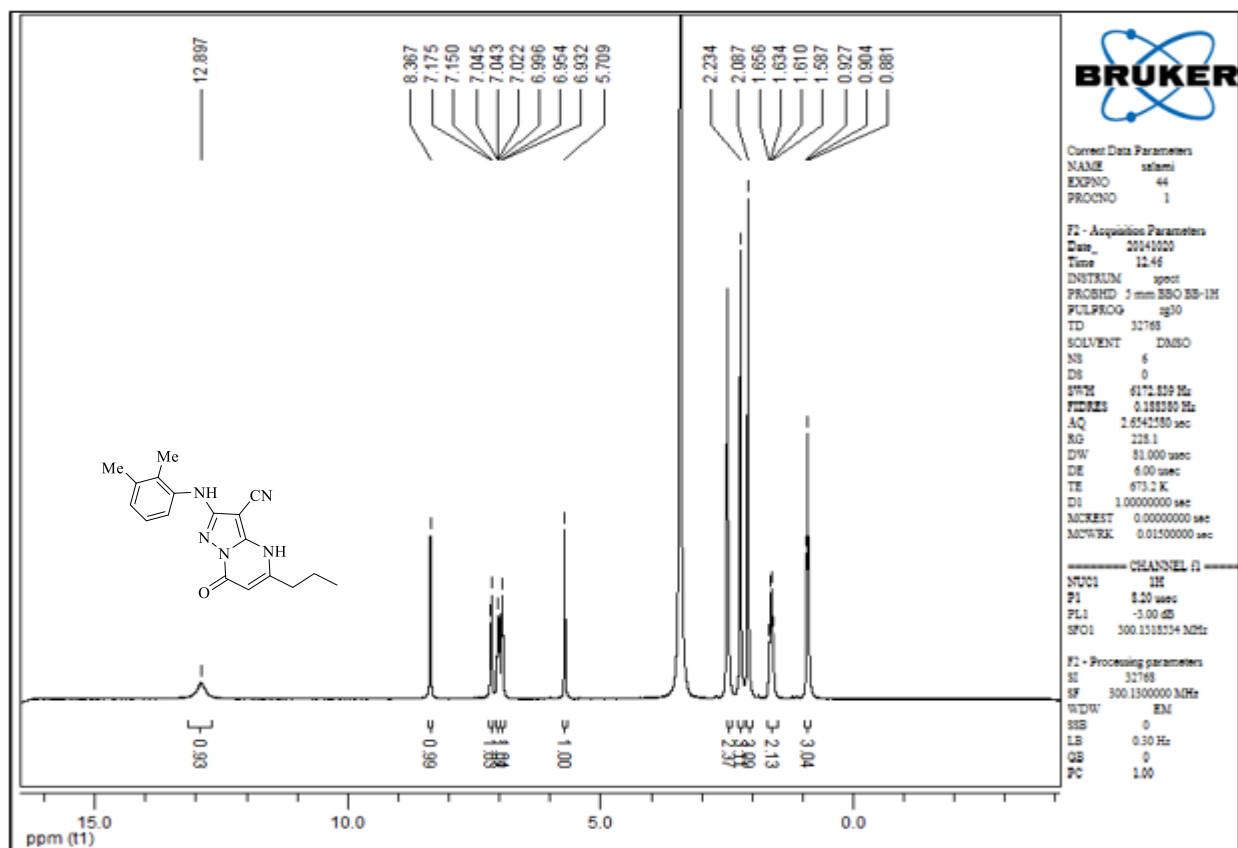
Figure S5. ^{13}C NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4b**.**Figure S6.** IR spectrum (KBr) of compound **4b**.

Figure S7. ^1H NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4c**.

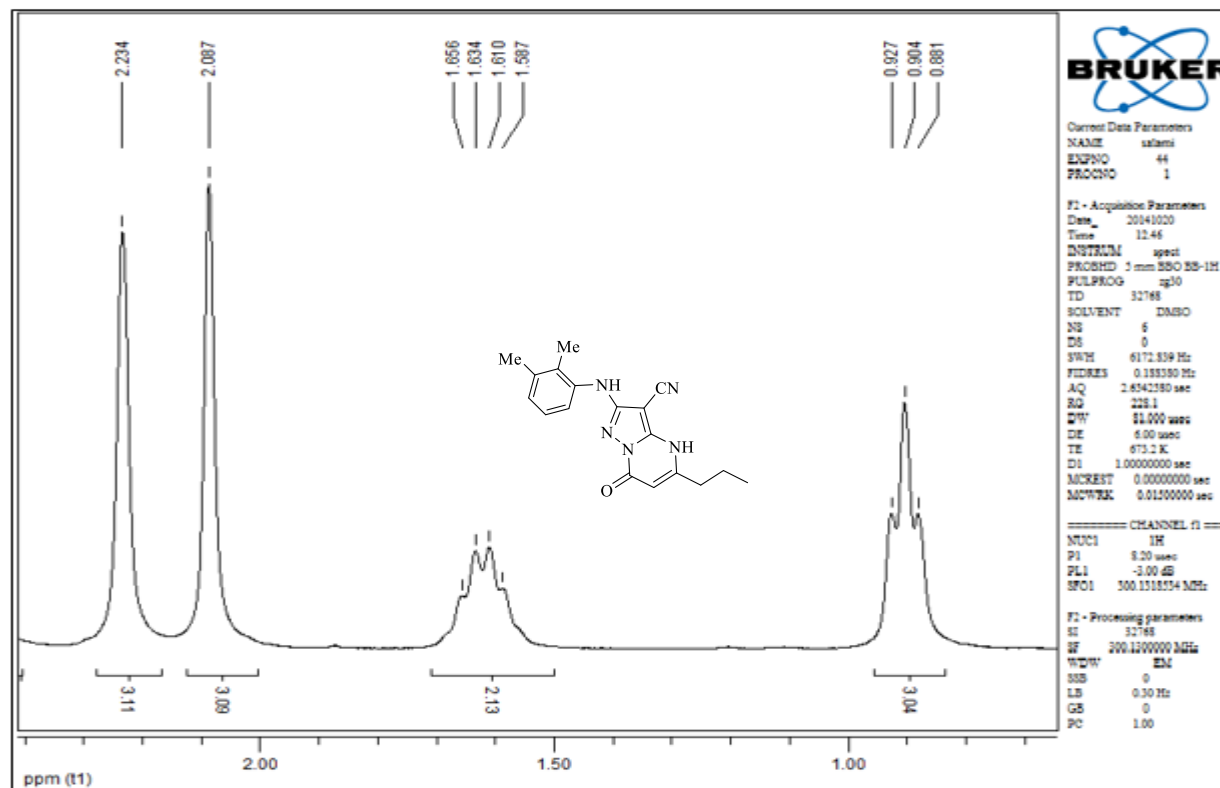


Figure S8. ^{13}C NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4c**.

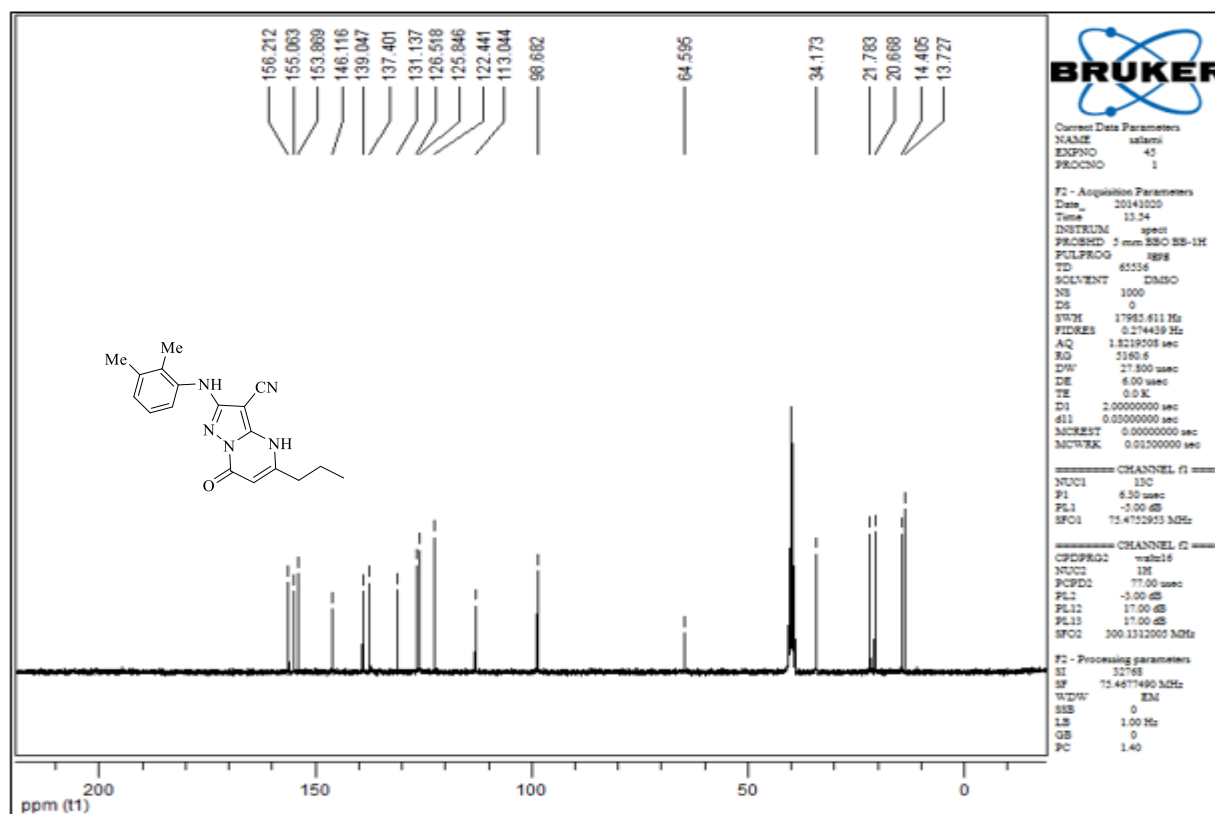
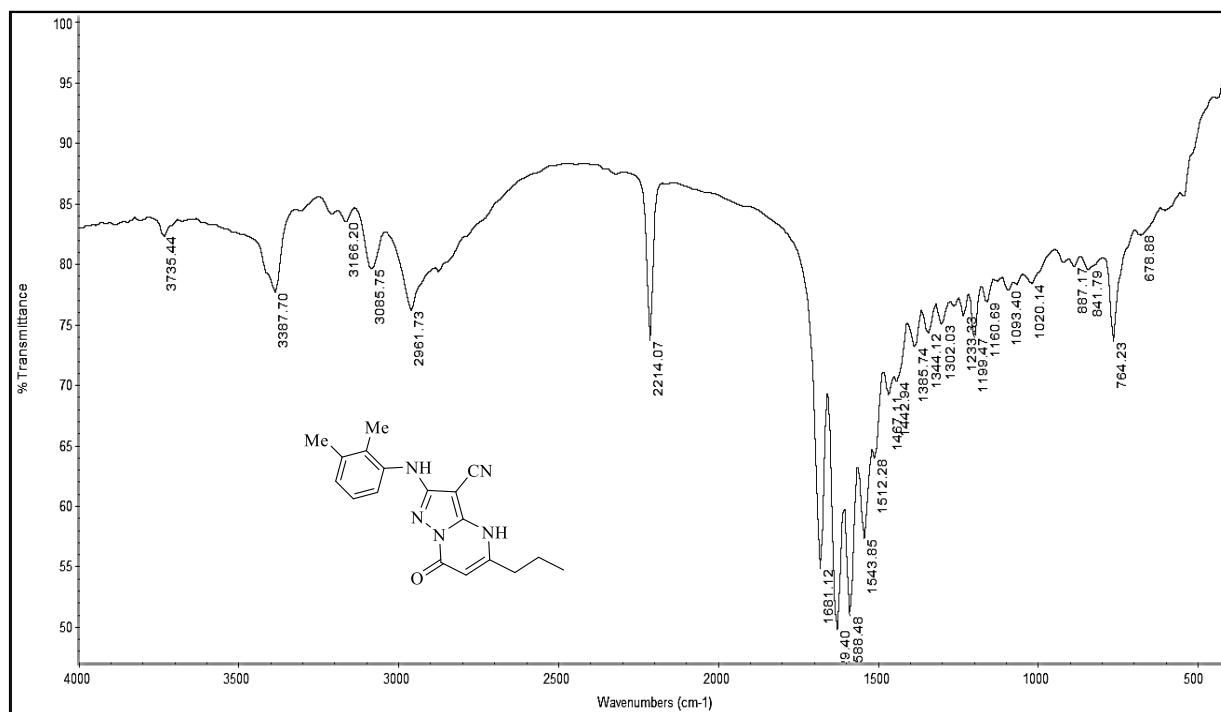
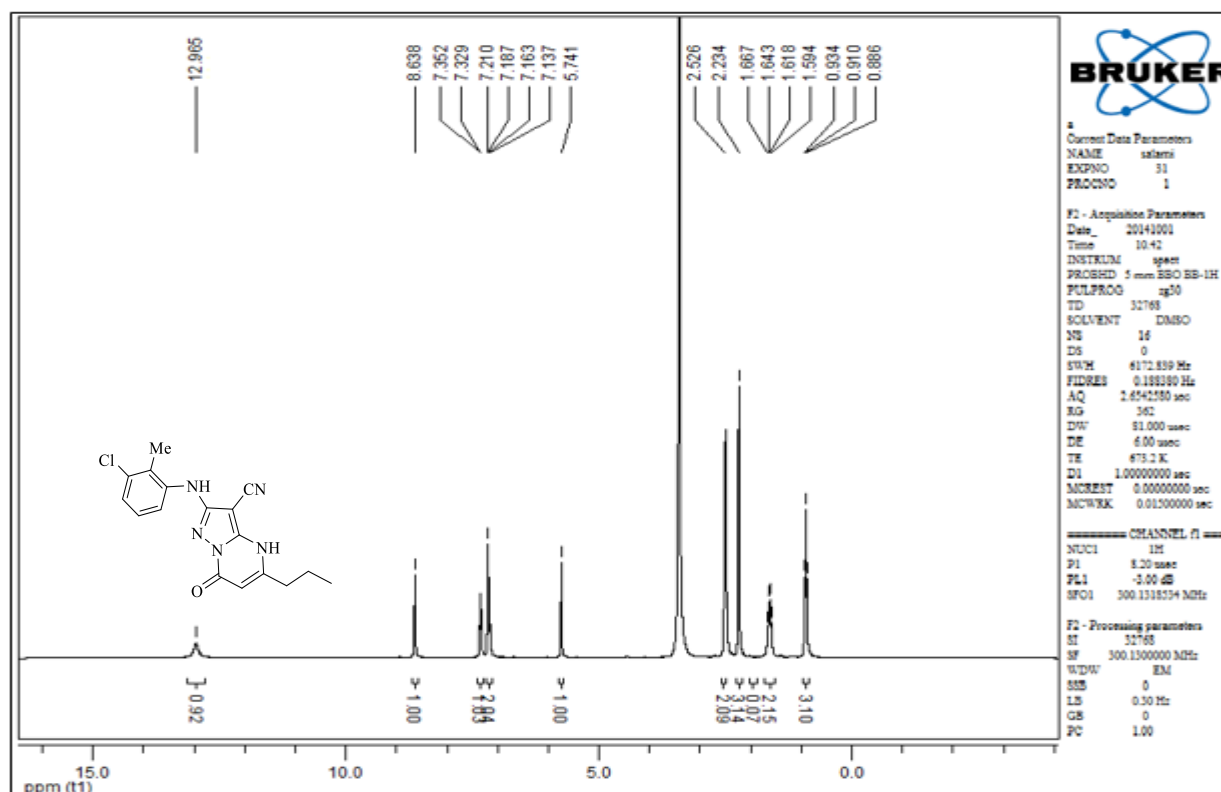


Figure S9. IR spectrum (KBr) of compound **4c**.**Figure S10.** ^1H NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4d**.

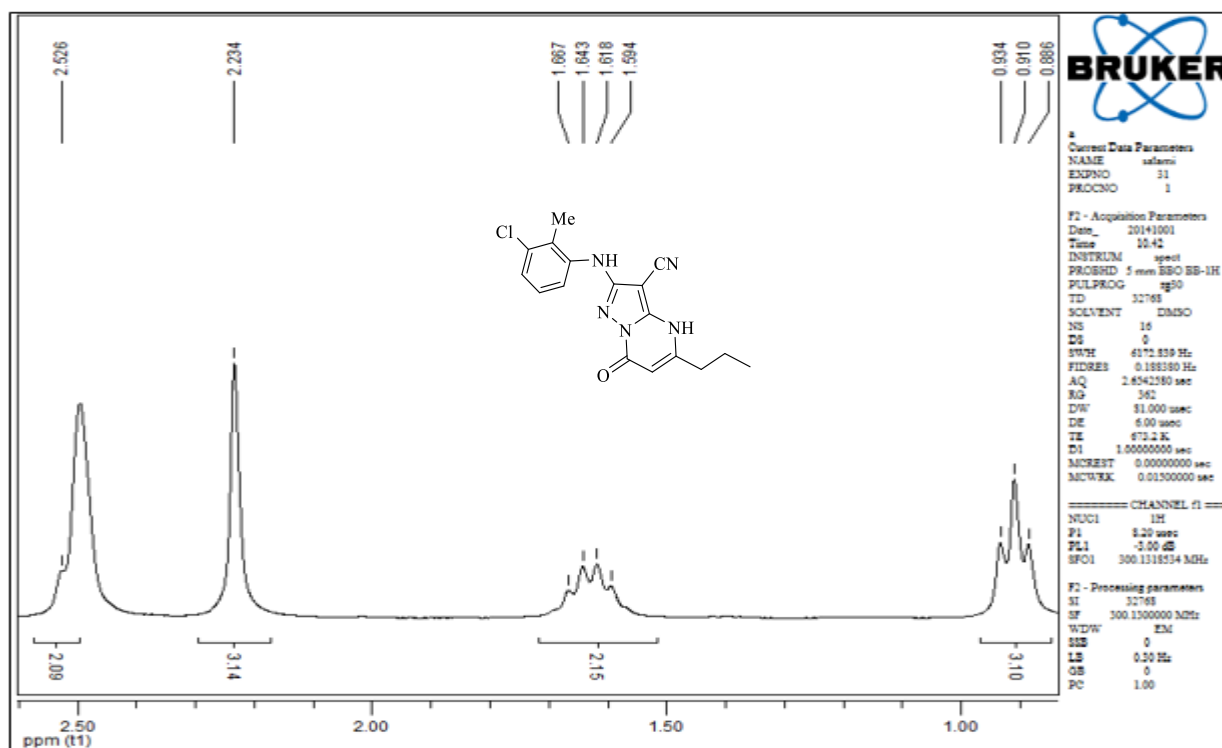
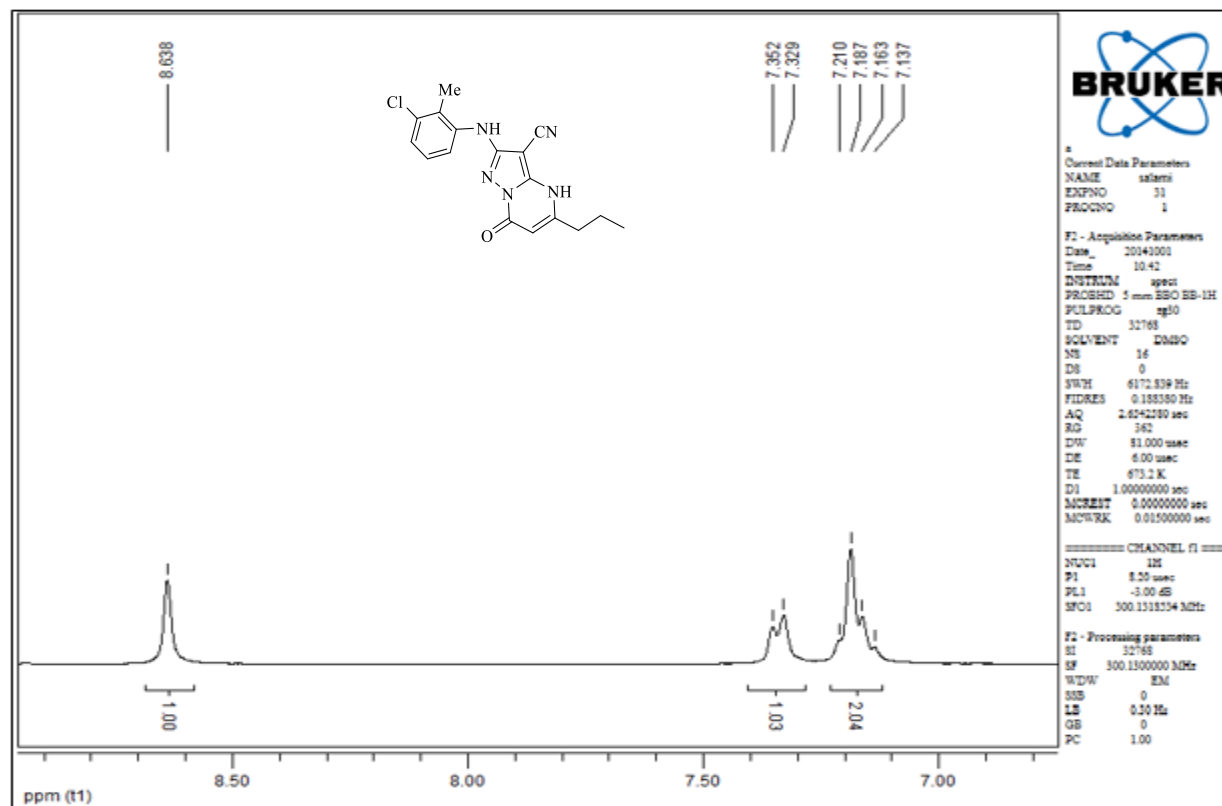


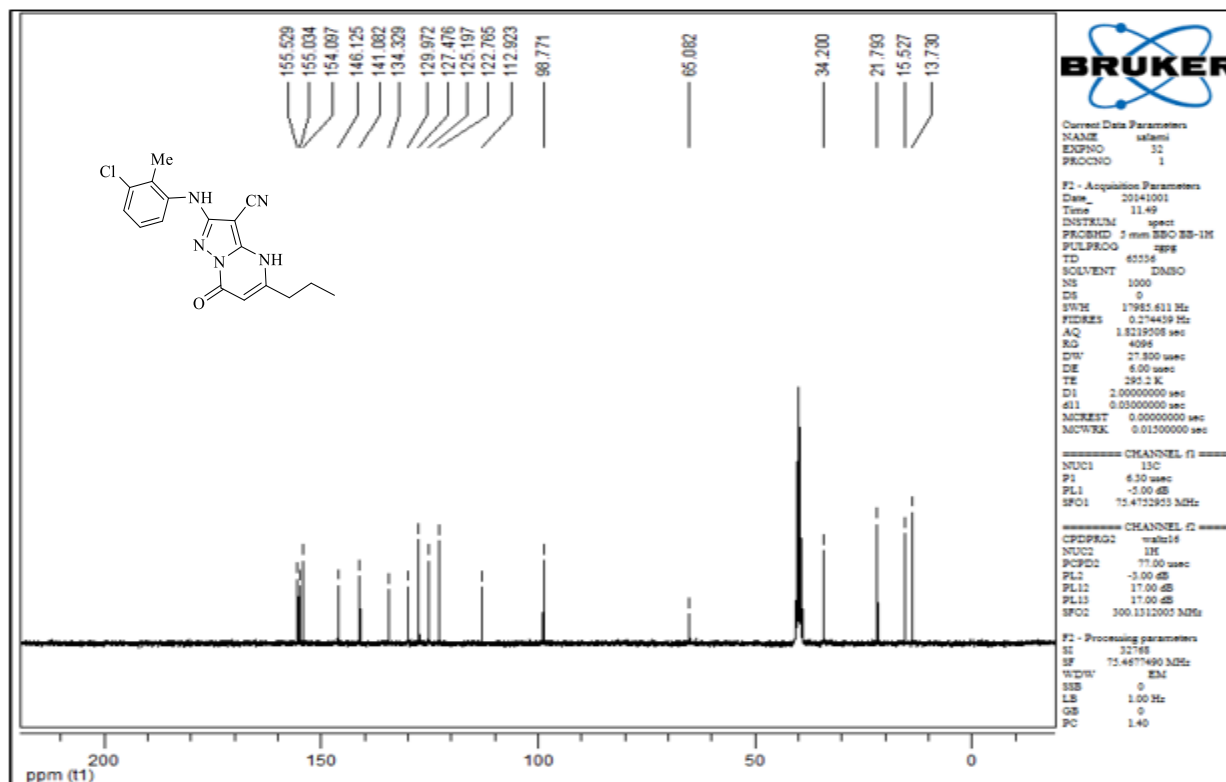
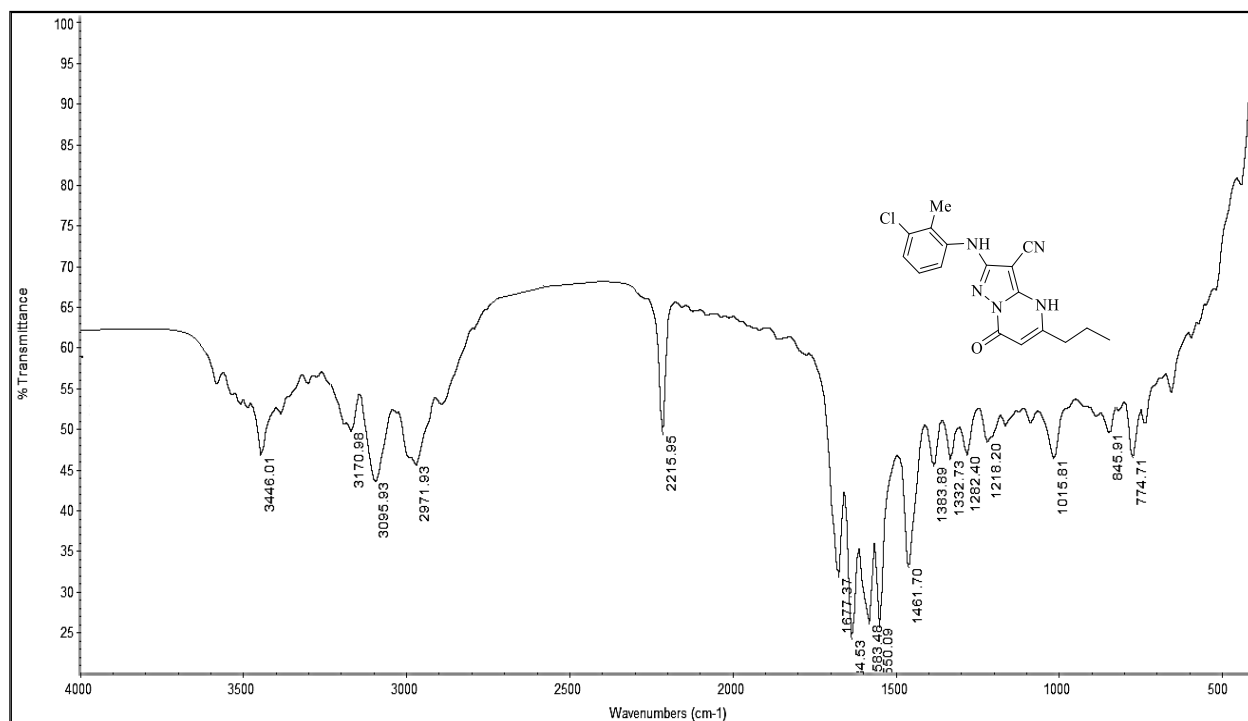
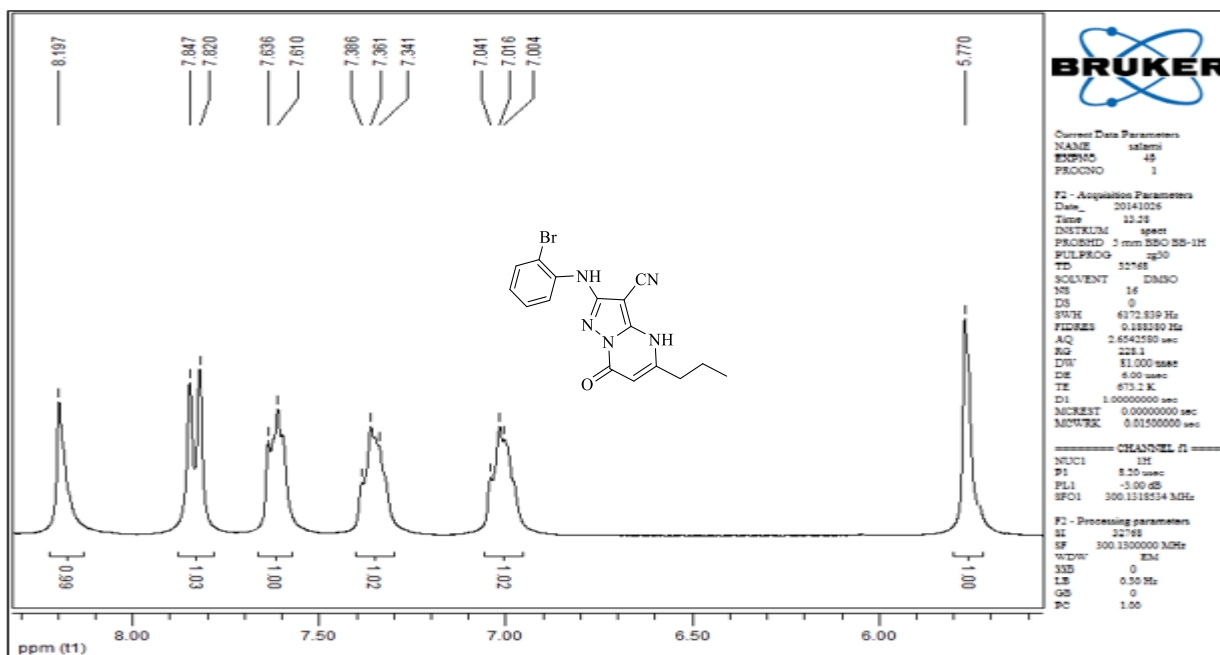
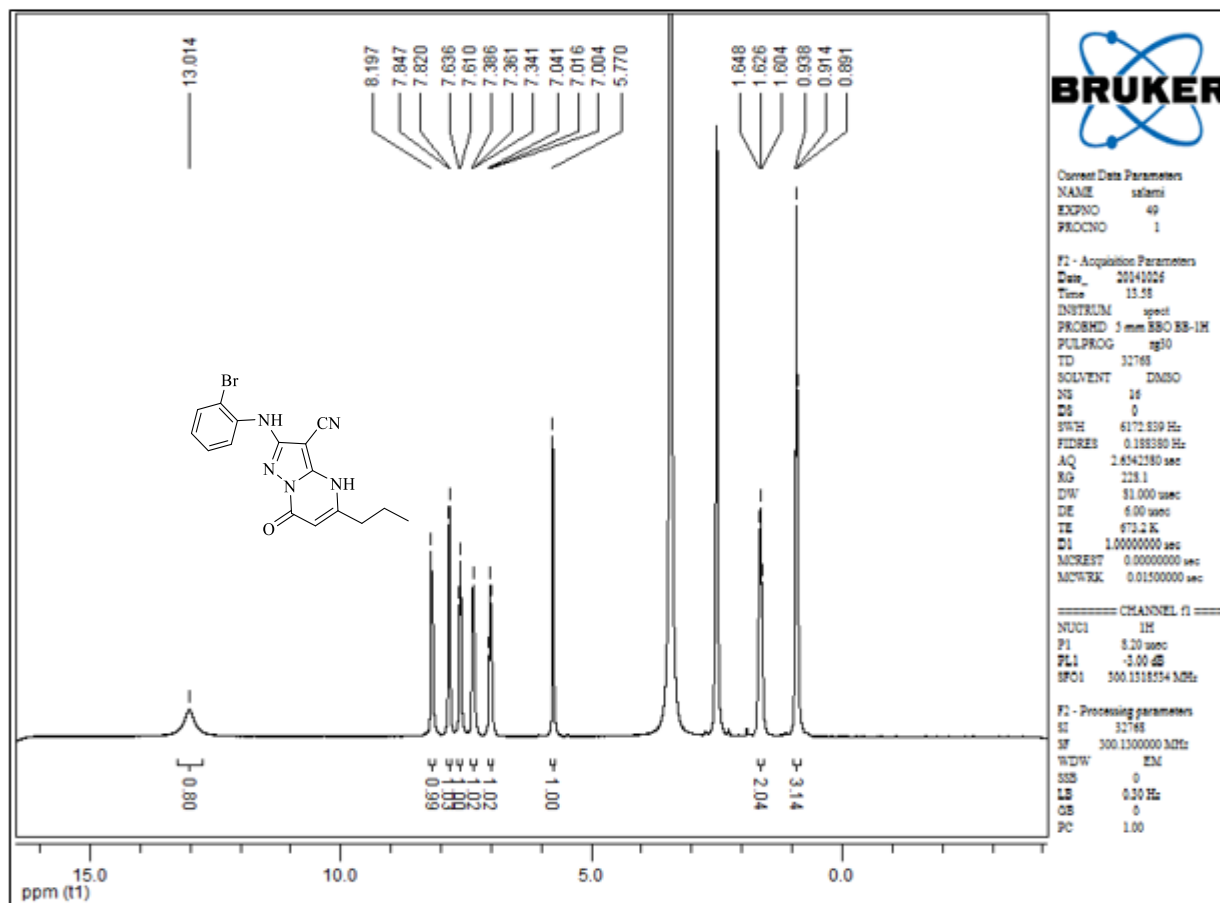
Figure S11. ^{13}C NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4d**.**Figure S12.** IR spectrum (KBr) of compound **4d**.

Figure S13. ^1H NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4e**.

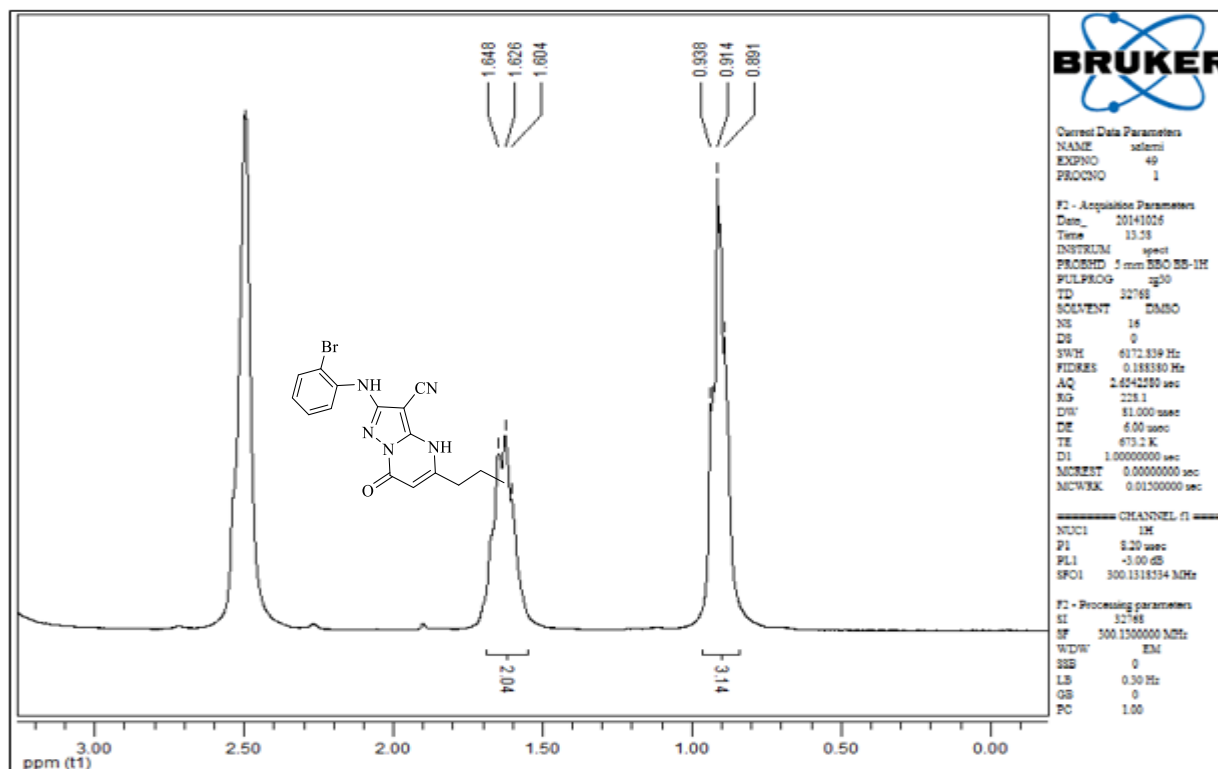


Figure S14. ^{13}C NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4e**.

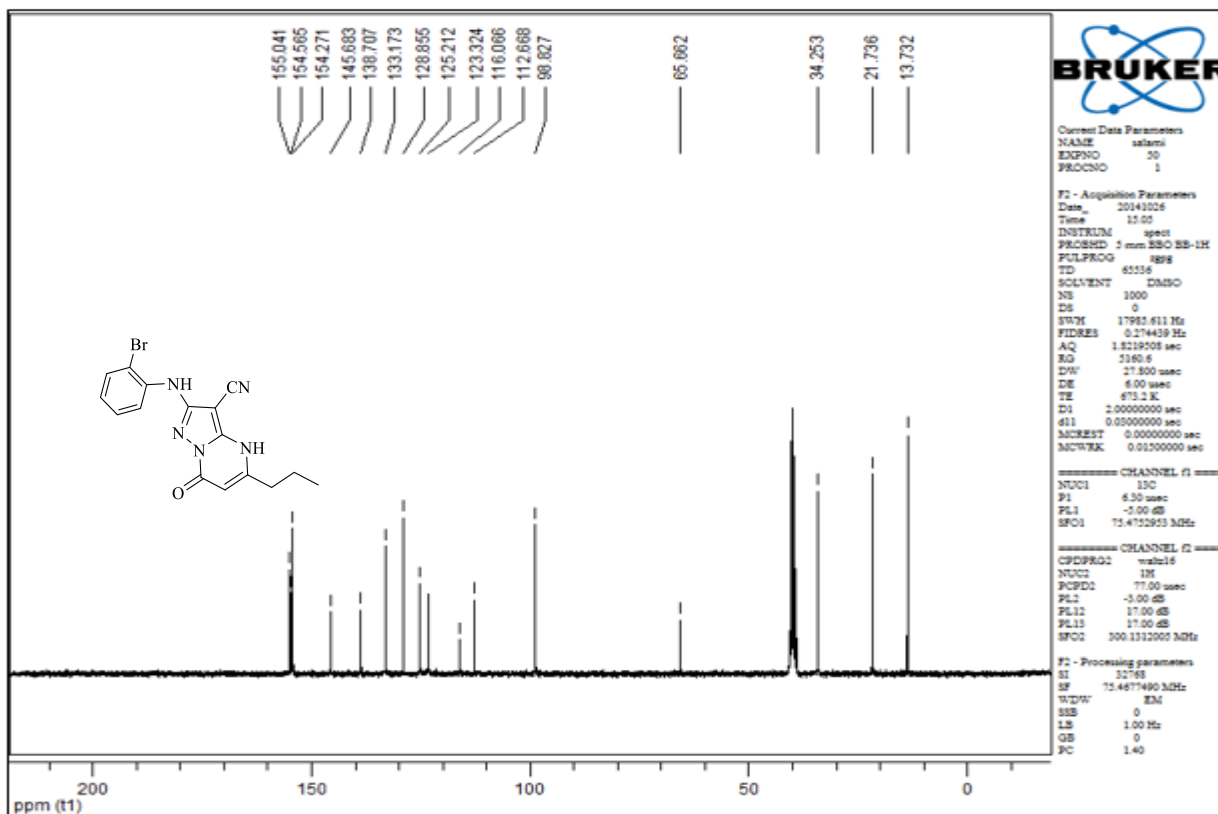
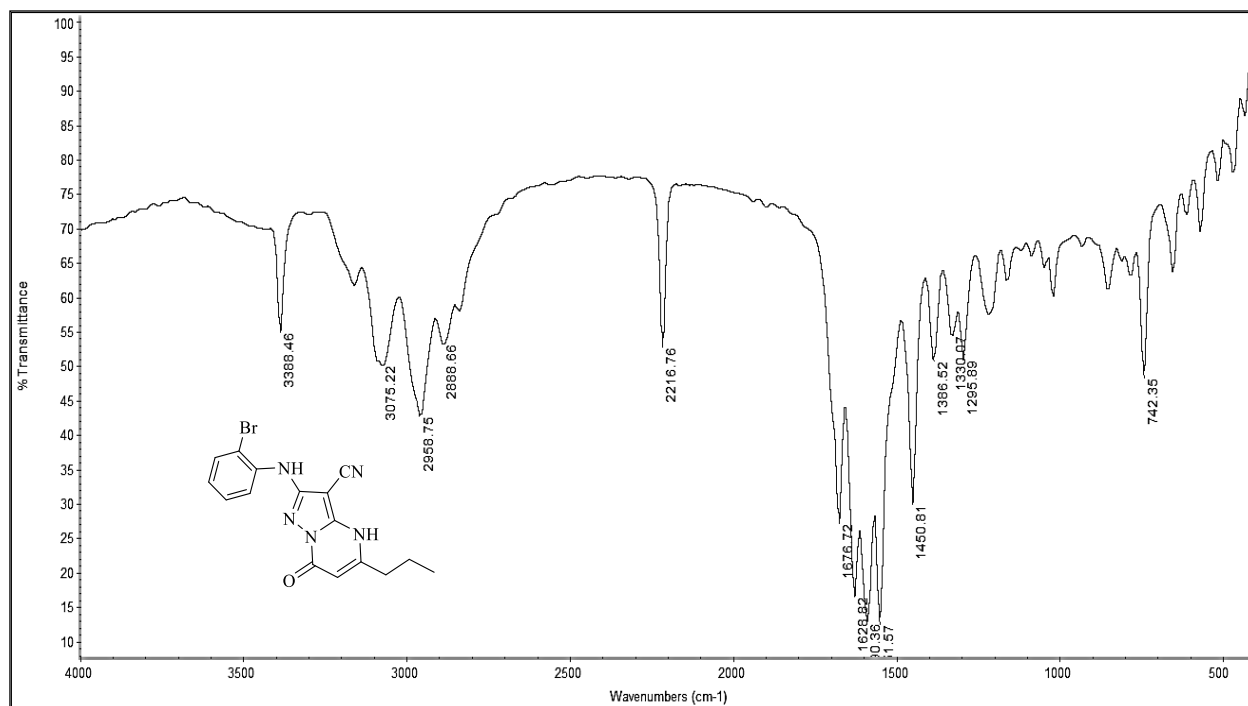
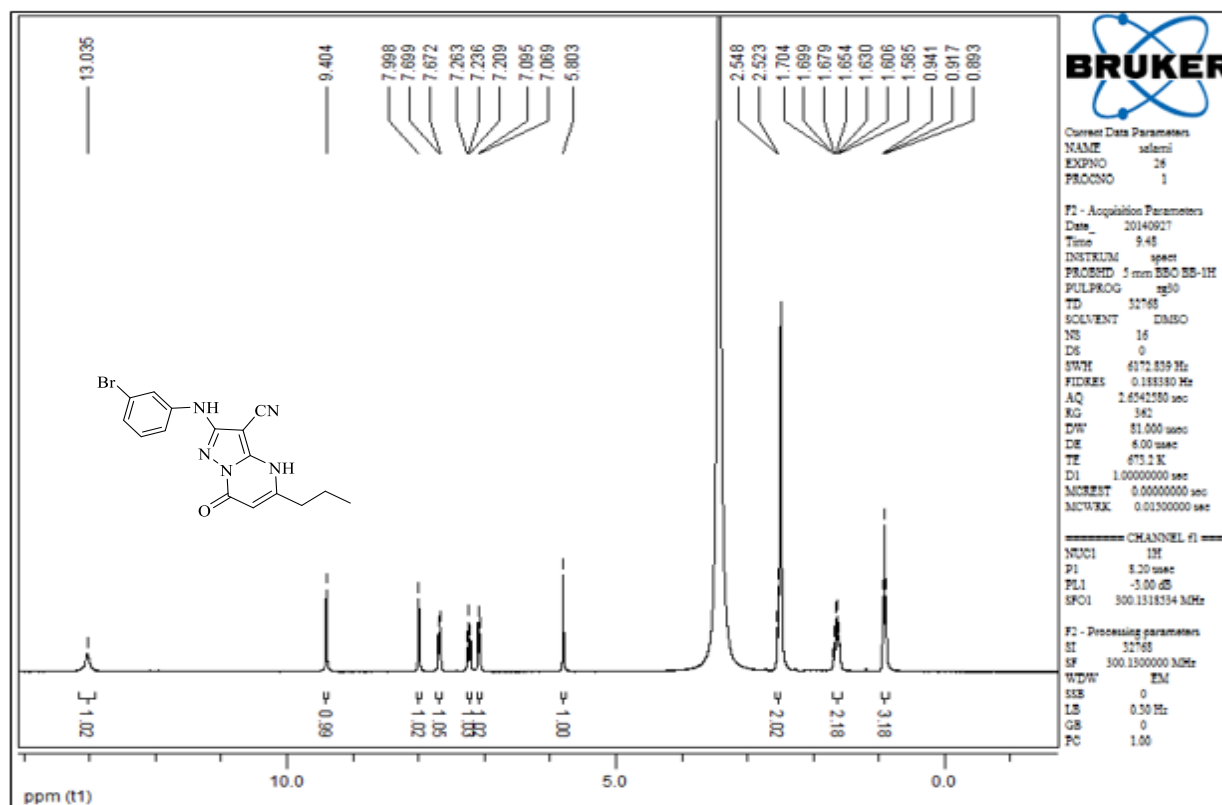


Figure S15. IR spectrum (KBr) of compound **4e**.**Figure S16.** ¹H NMR spectrum (300 MHz, DMSO-*d*₆) of compound **4f**.

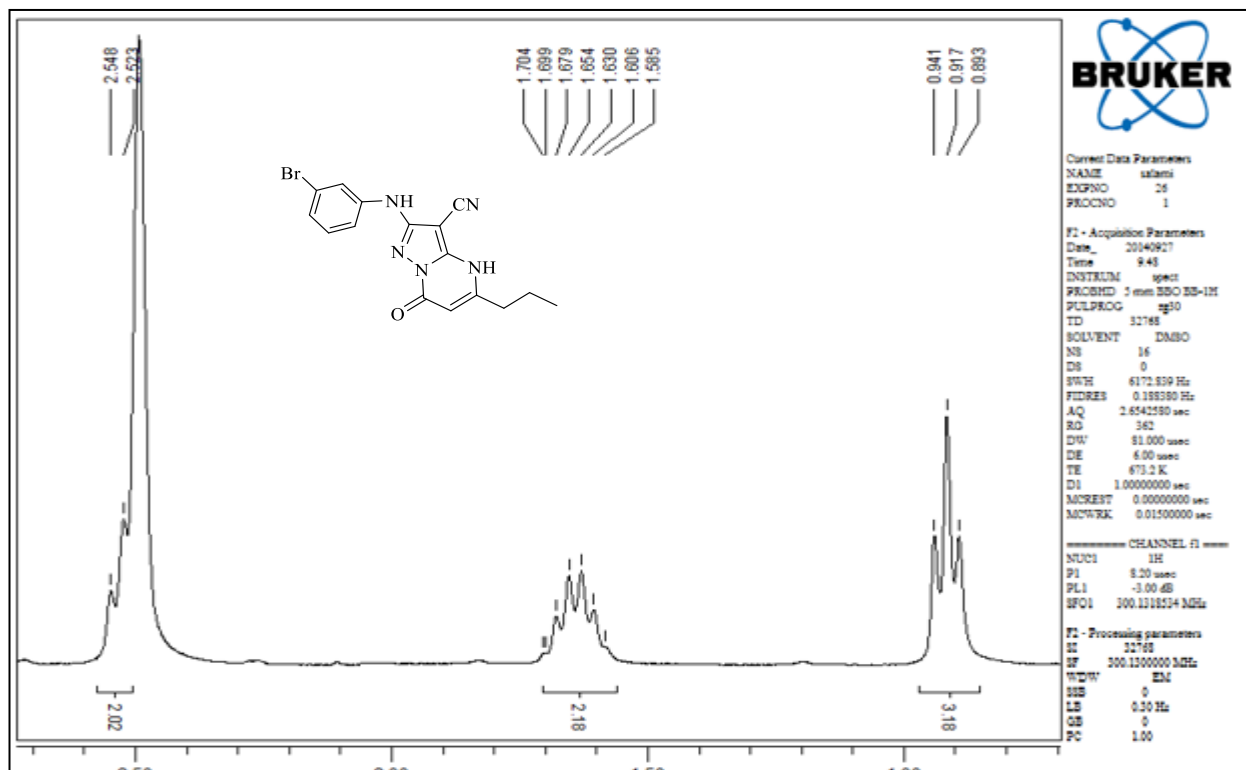
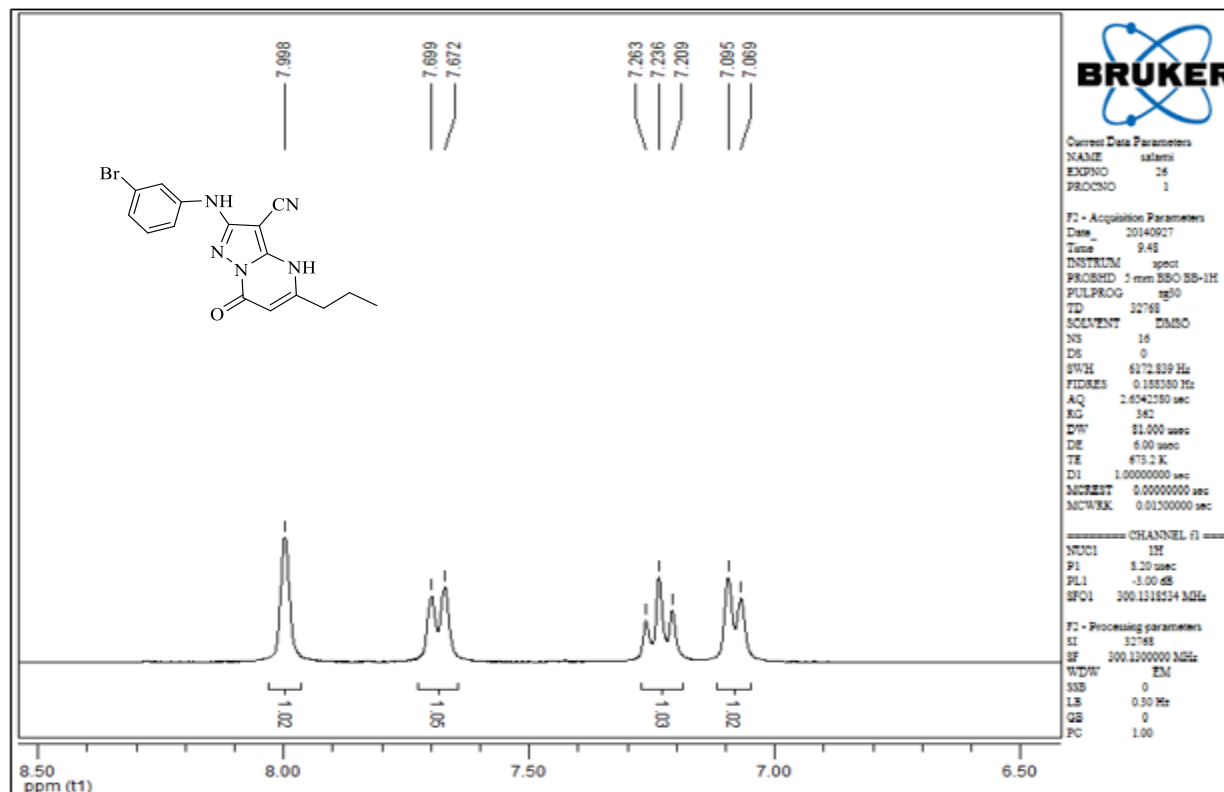


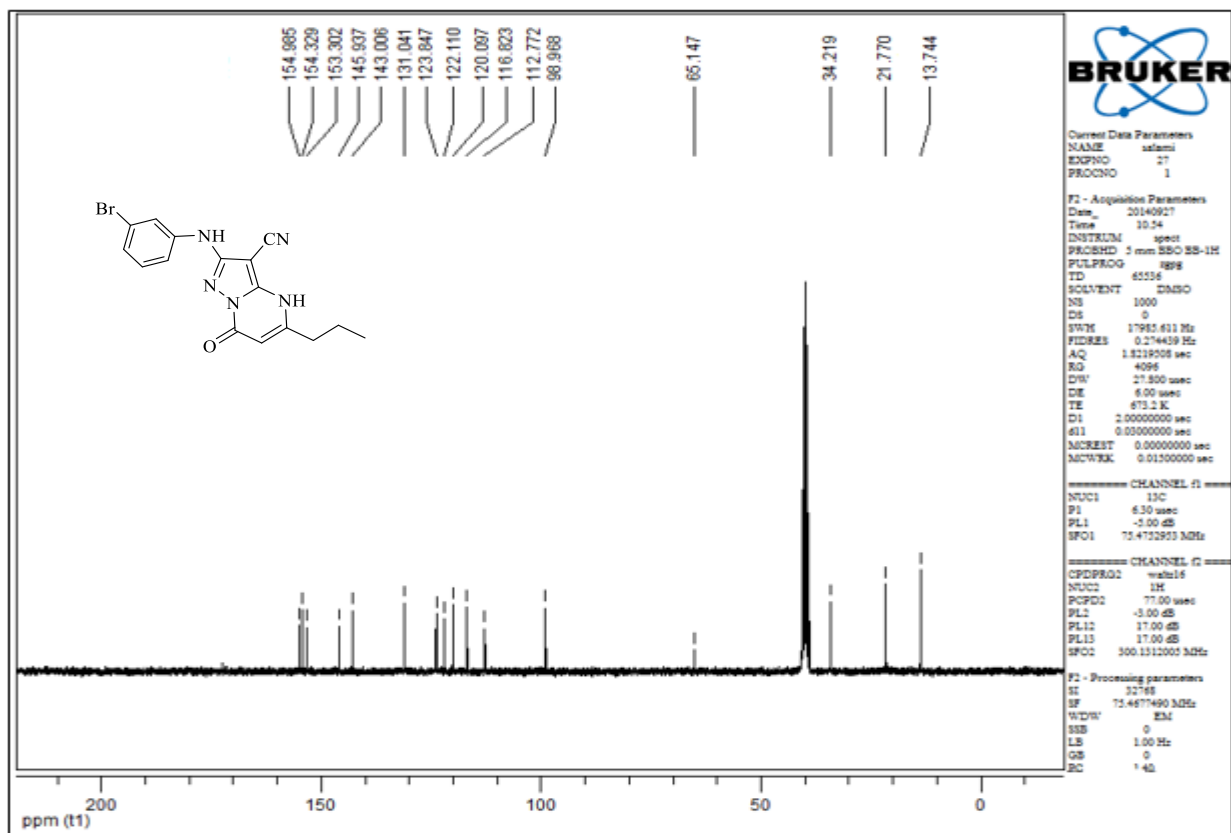
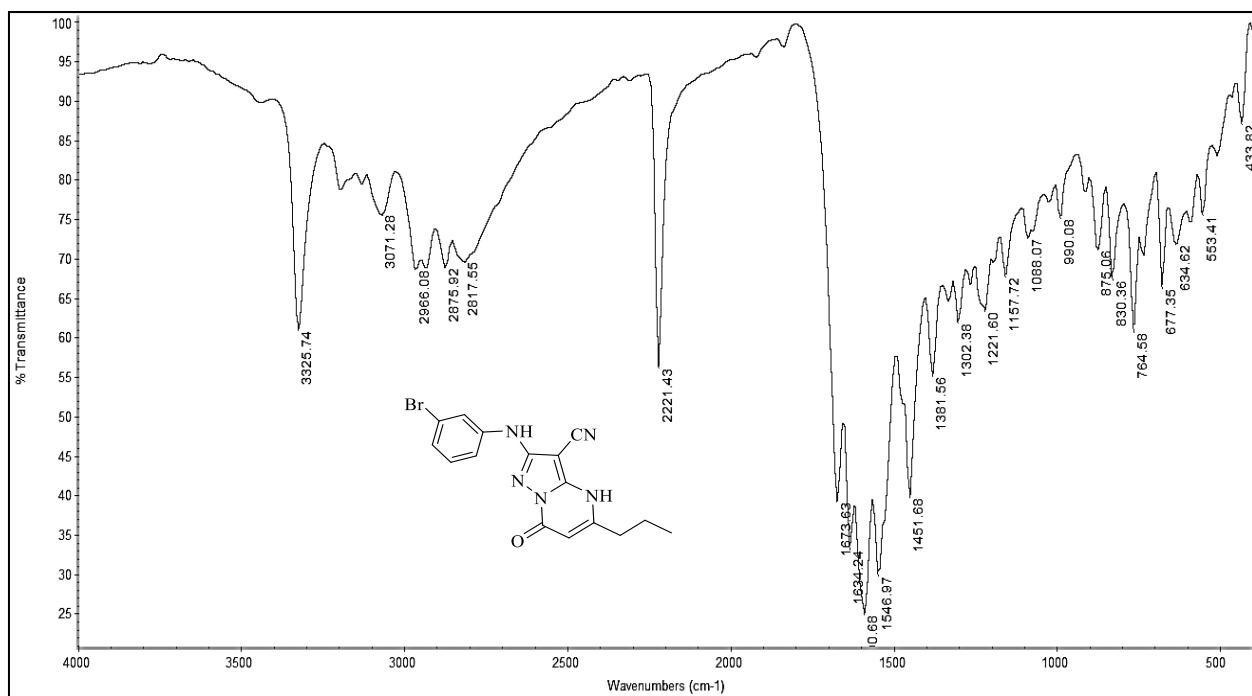
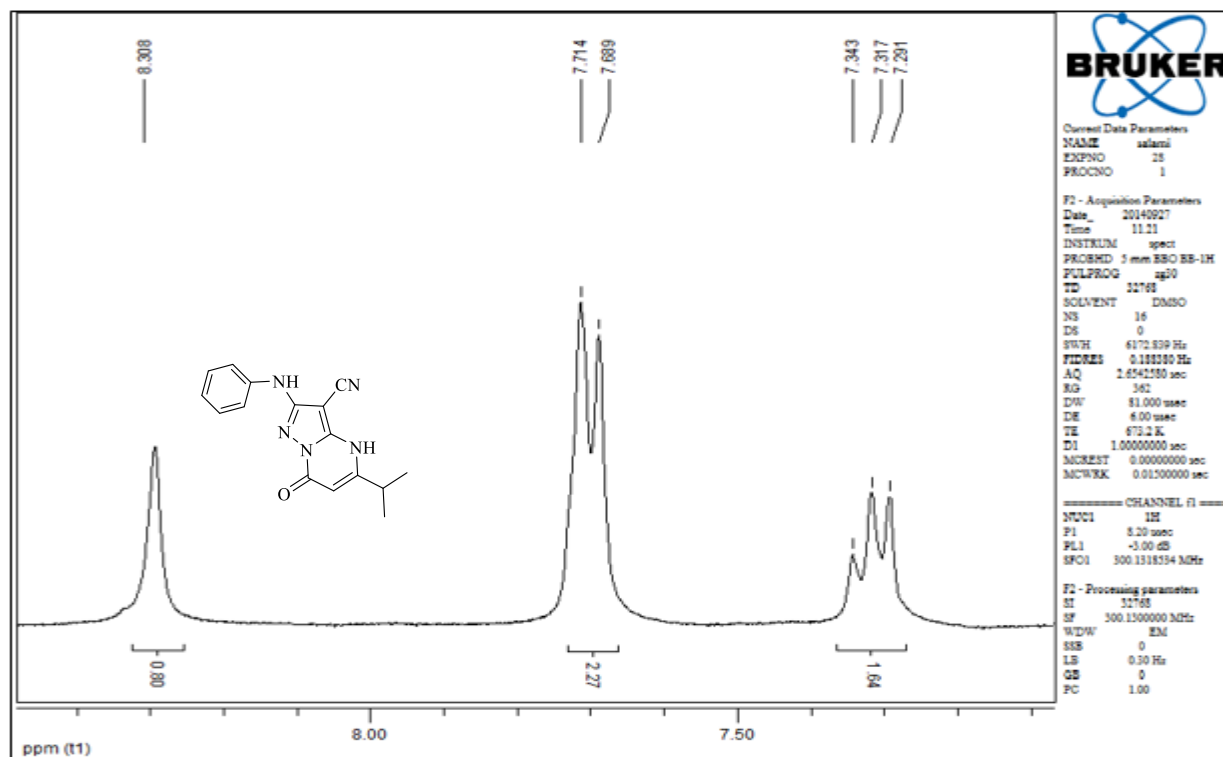
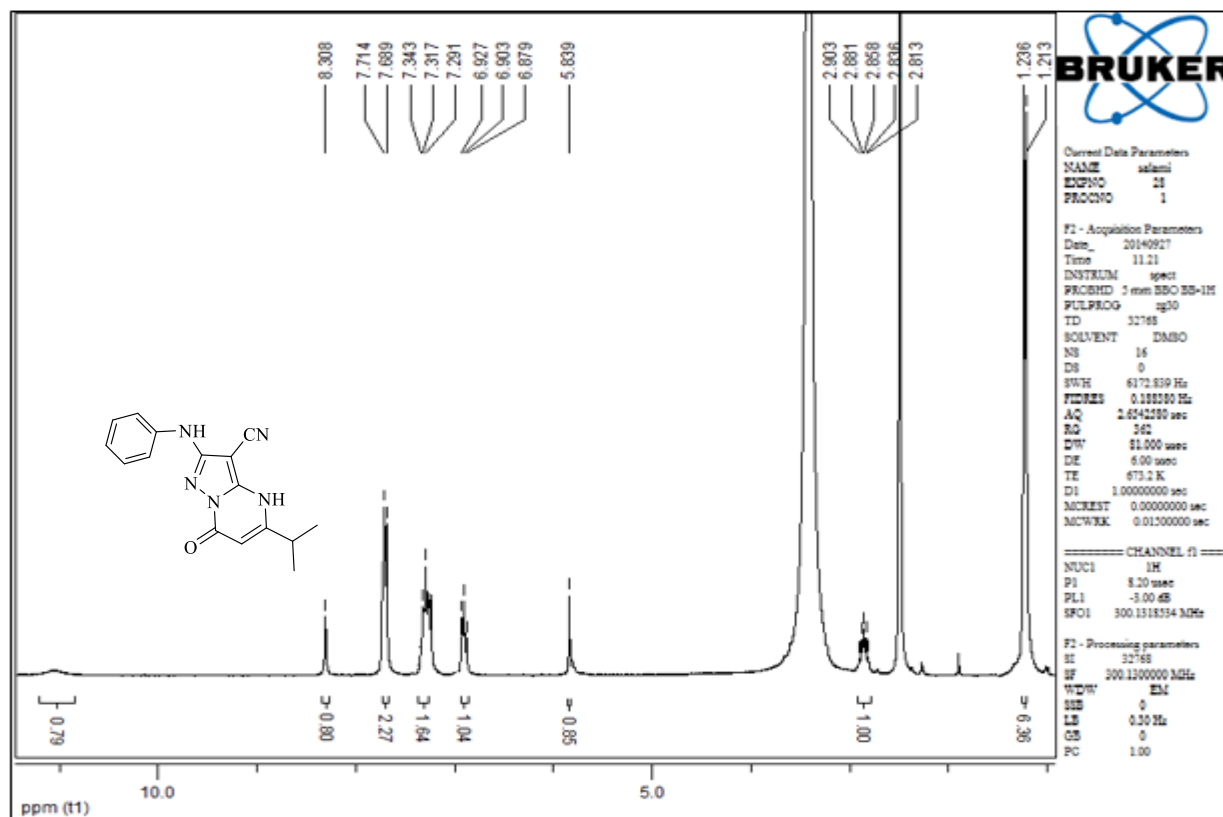
Figure S17. ^{13}C NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4f**.**Figure S18.** IR spectrum (KBr) of compound **4f**.

Figure S19. ^1H NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4g**.

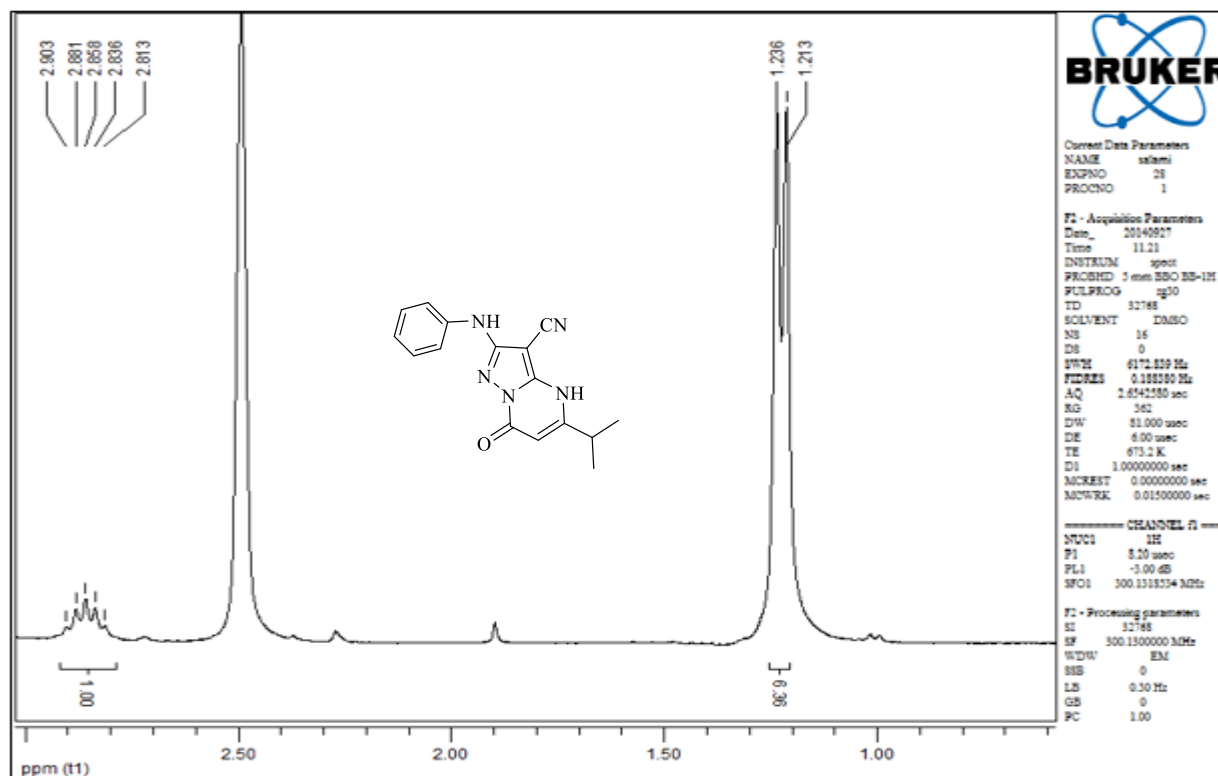
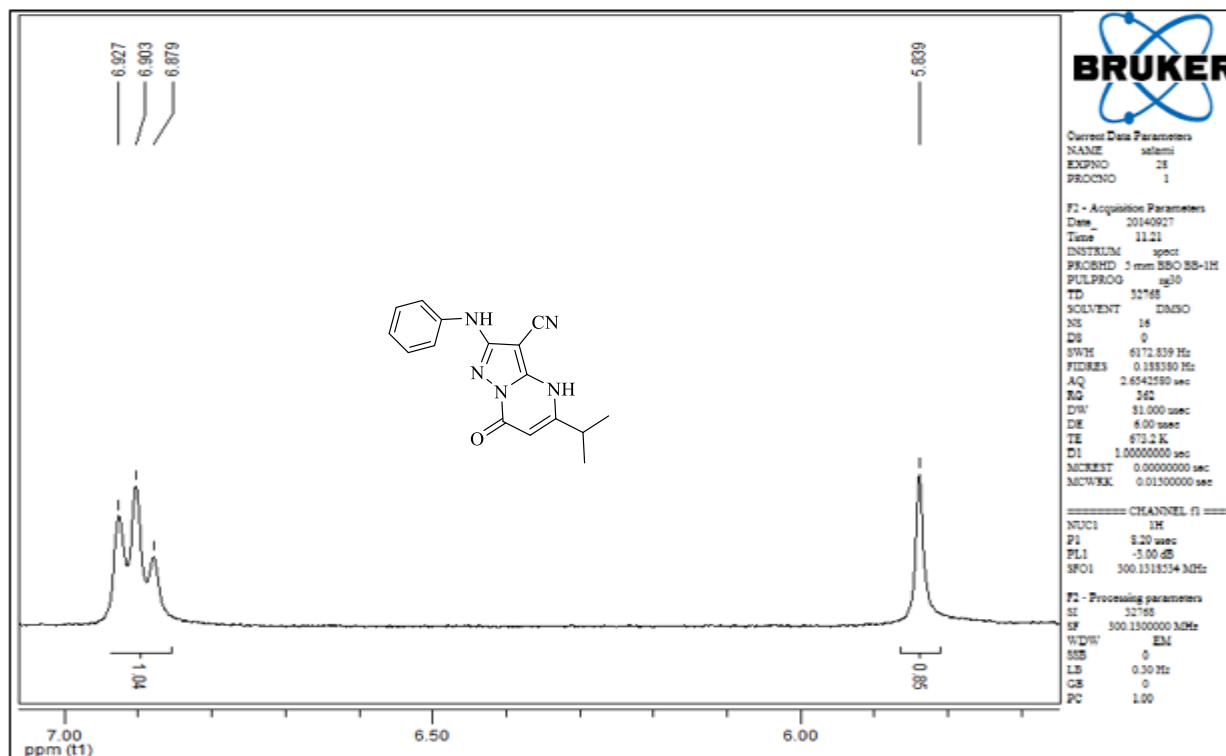


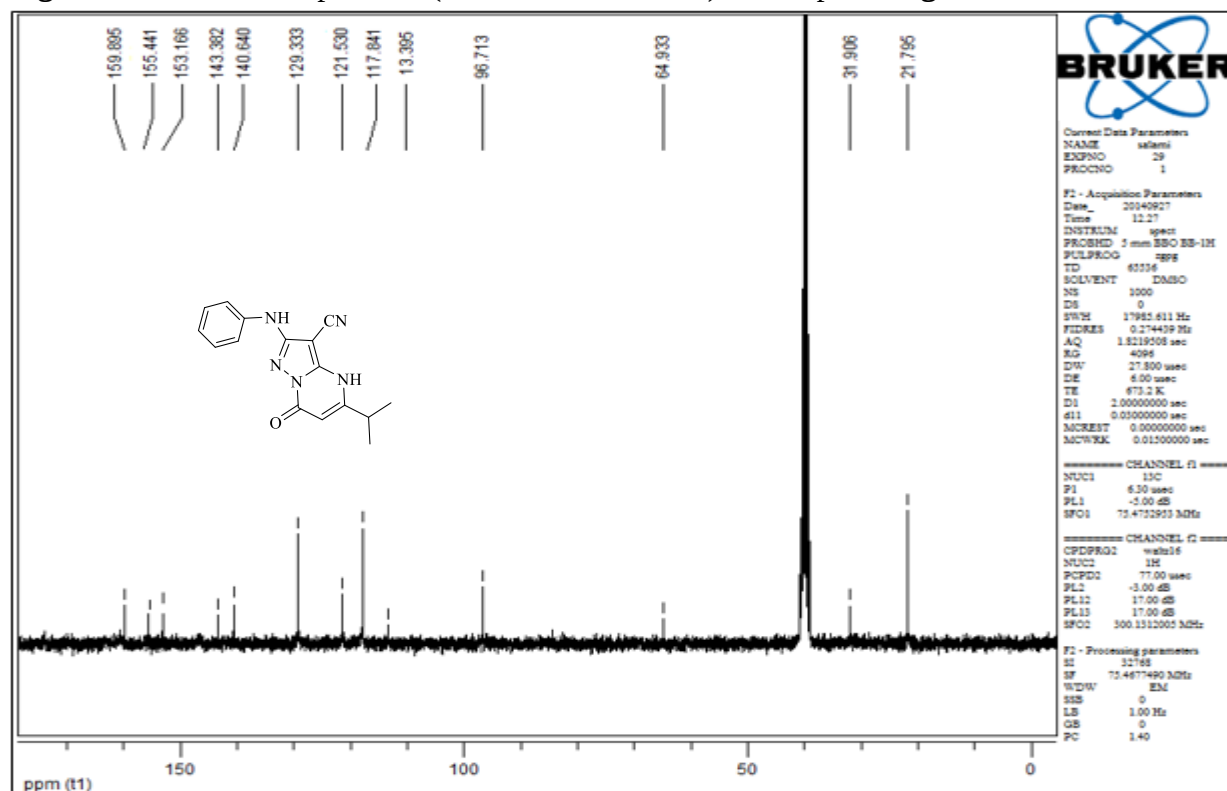
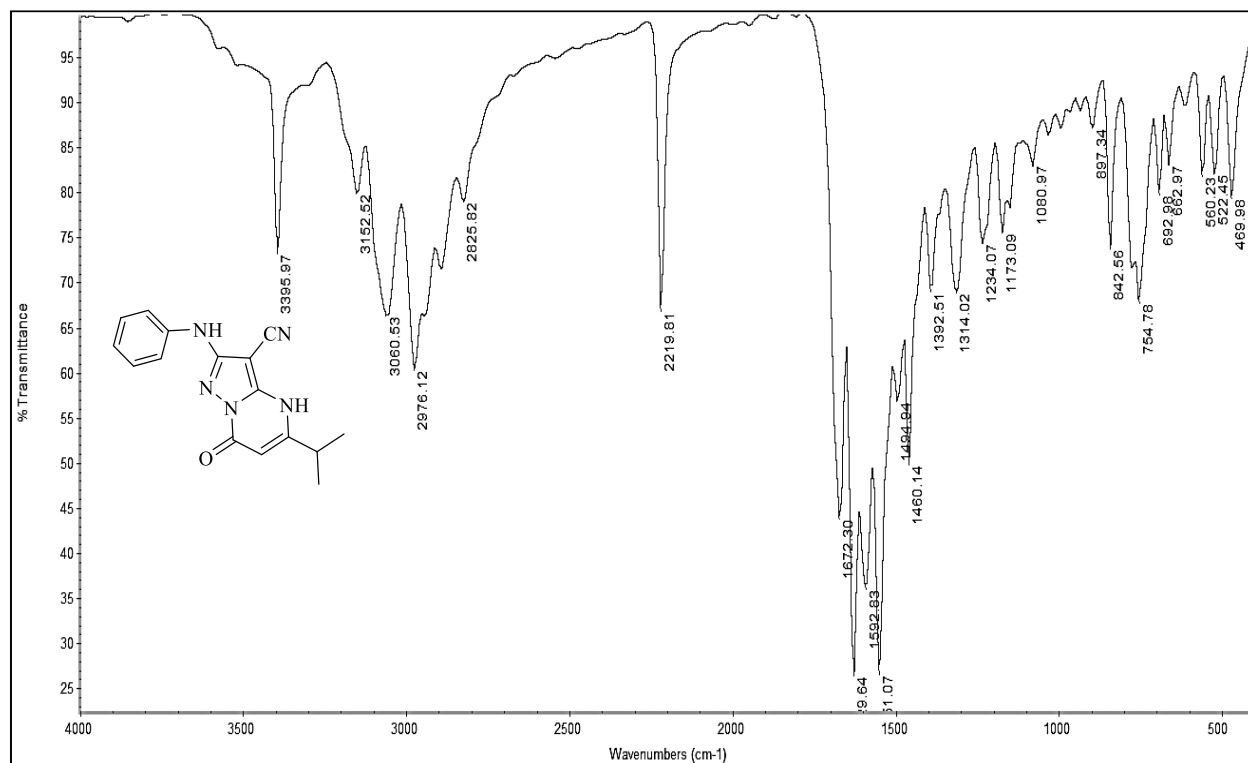
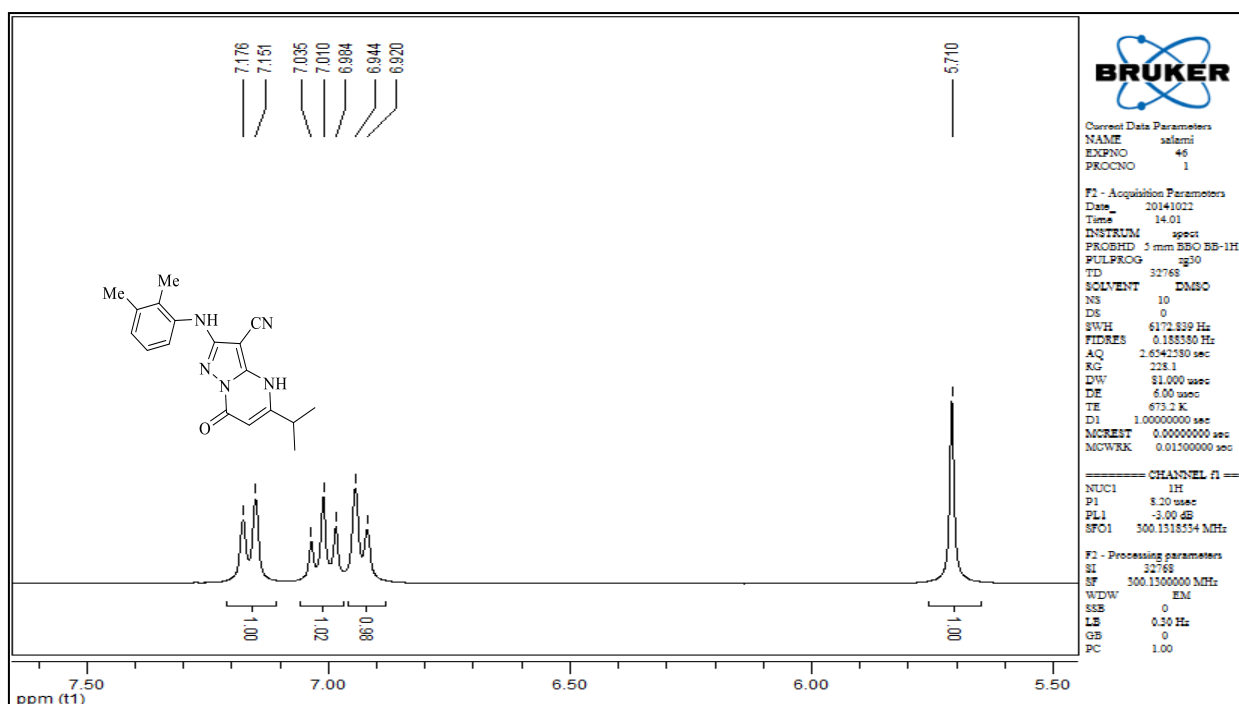
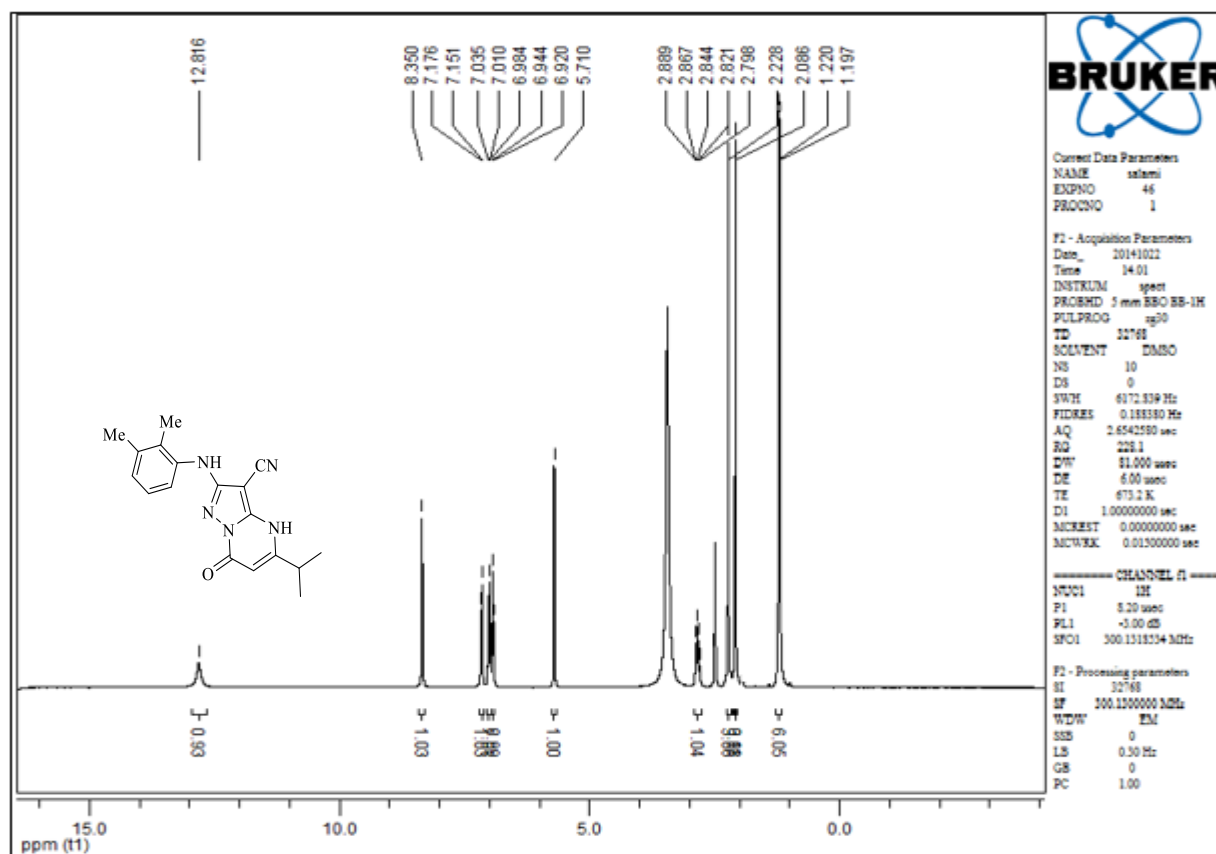
Figure S20. ^{13}C NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4g**.**Figure S21.** IR spectrum (KBr) of compound **4g**.

Figure S22. ^1H NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4h**.

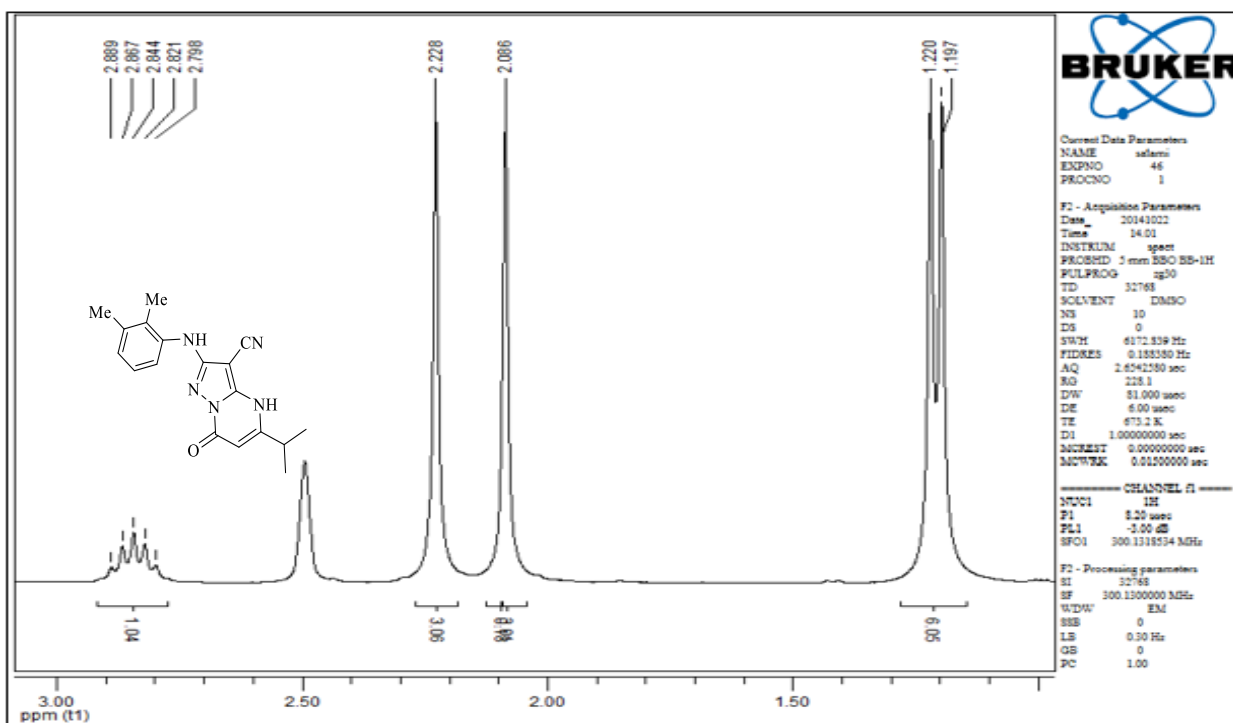


Figure S23. ^{13}C NMR spectrum (300 MHz, $\text{DMSO-}d_6$) of compound **4h**.

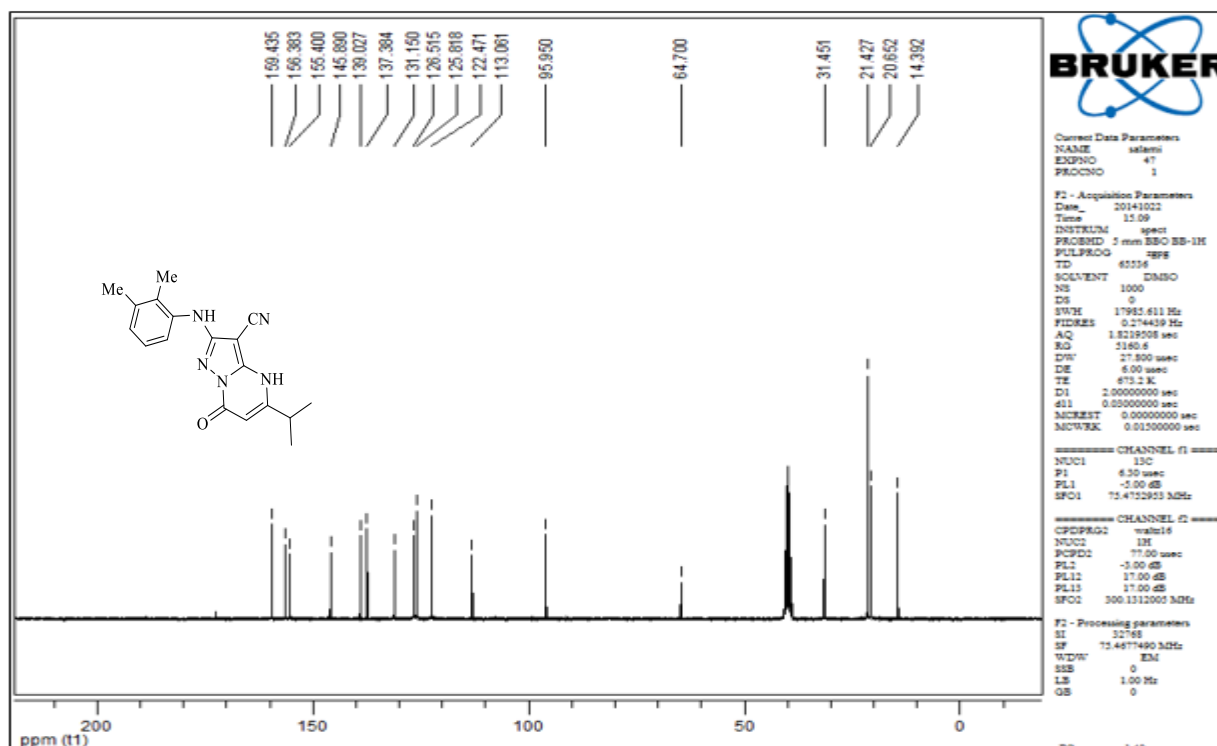
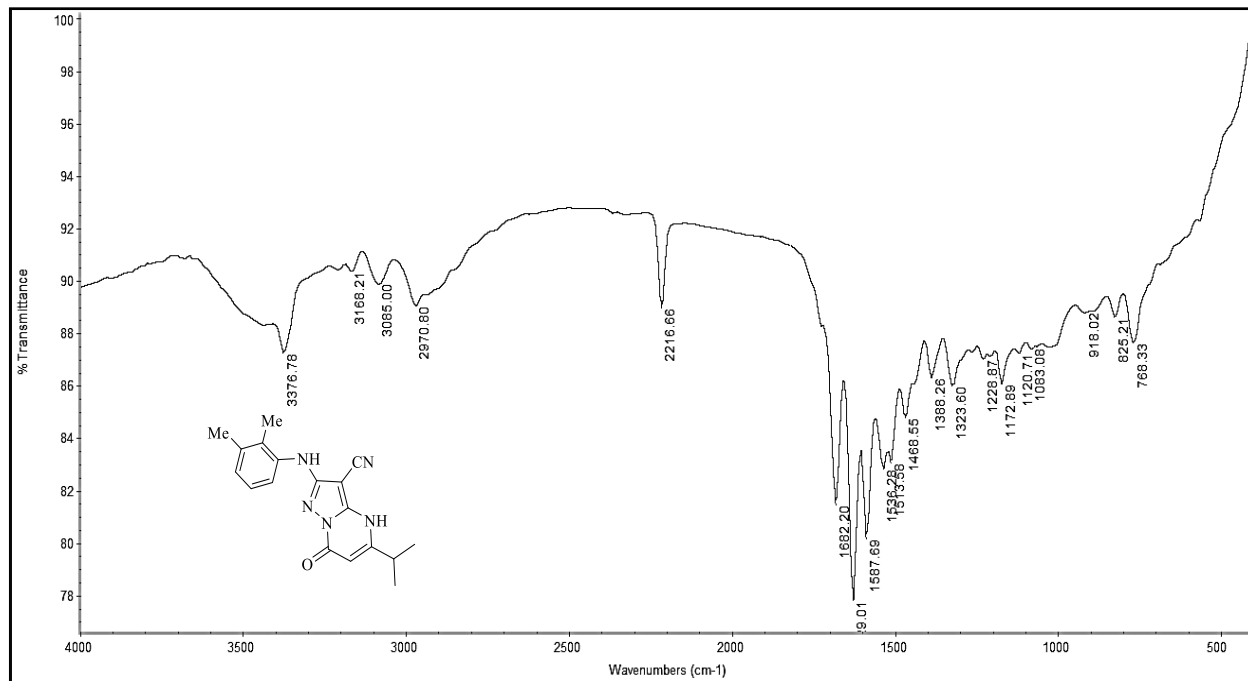
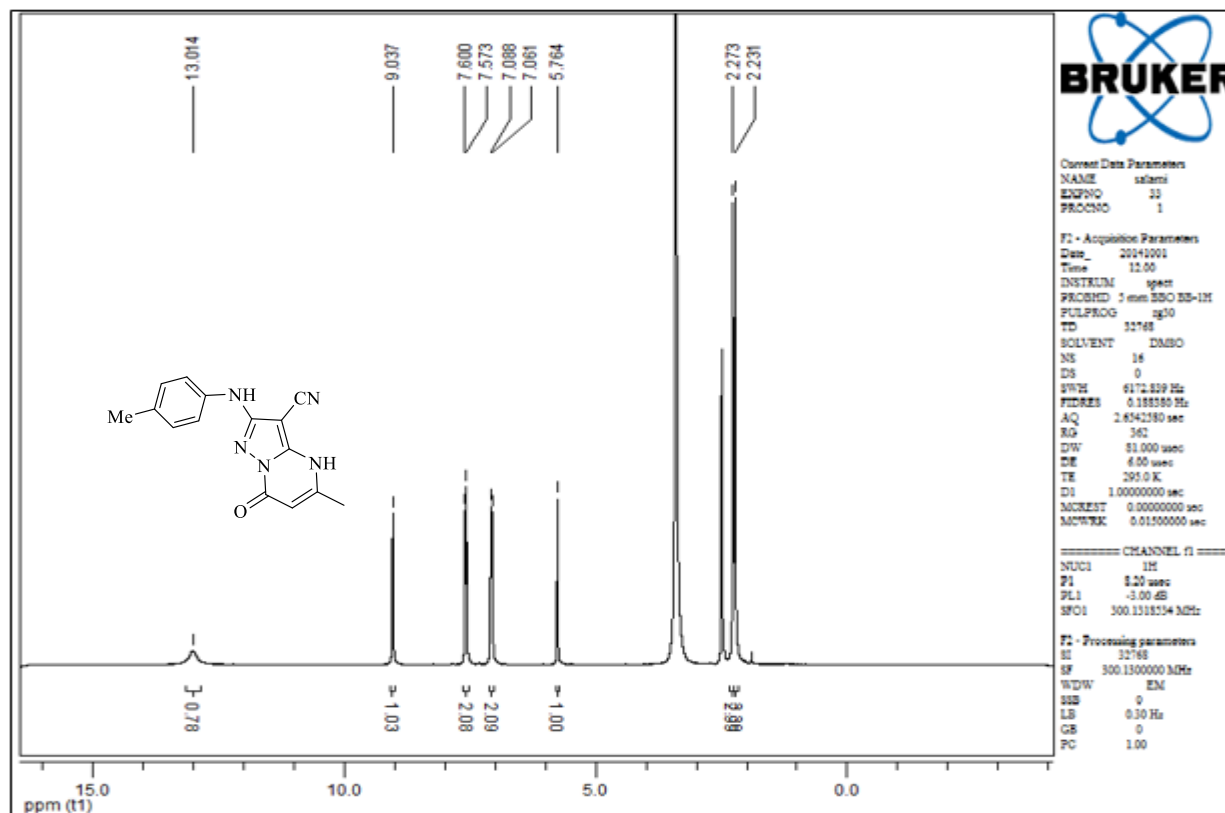


Figure S24 . IR spectrum (KBr) of compound 4h.**Figure S25. ¹H NMR spectrum (300 MHz, DMSO-*d*₆) of compound 4i.**

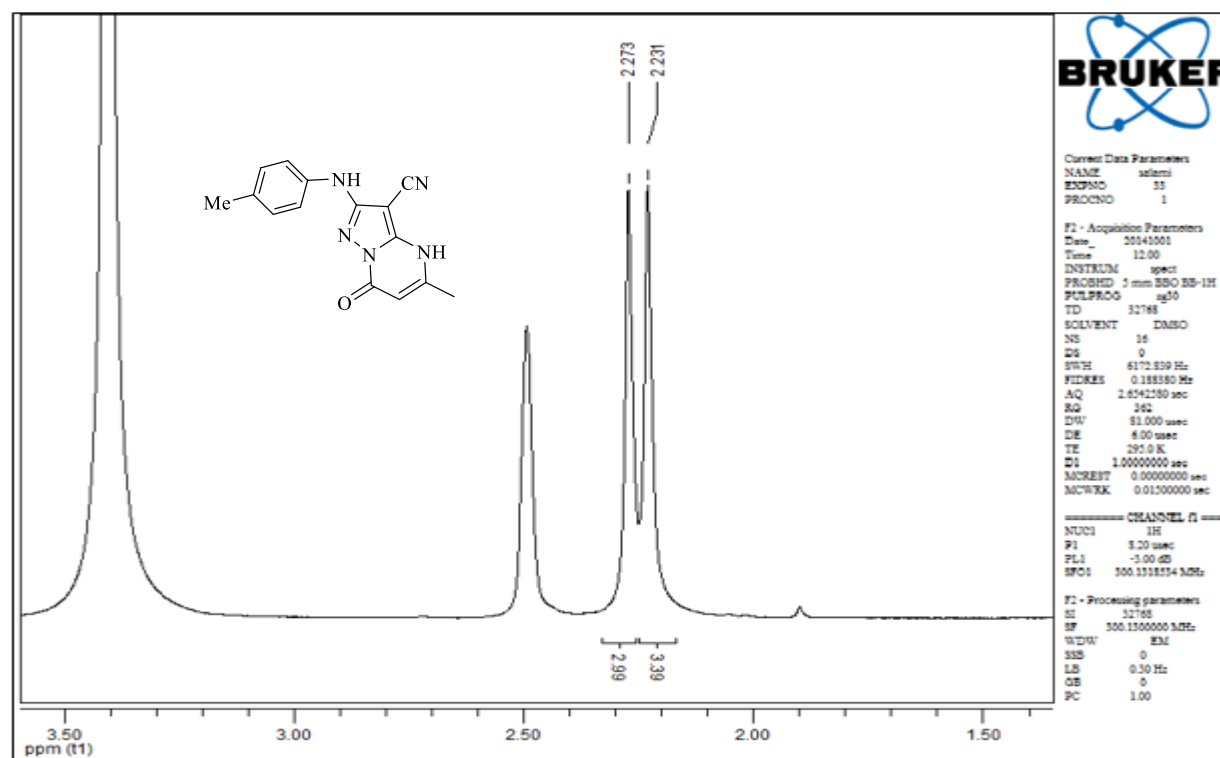
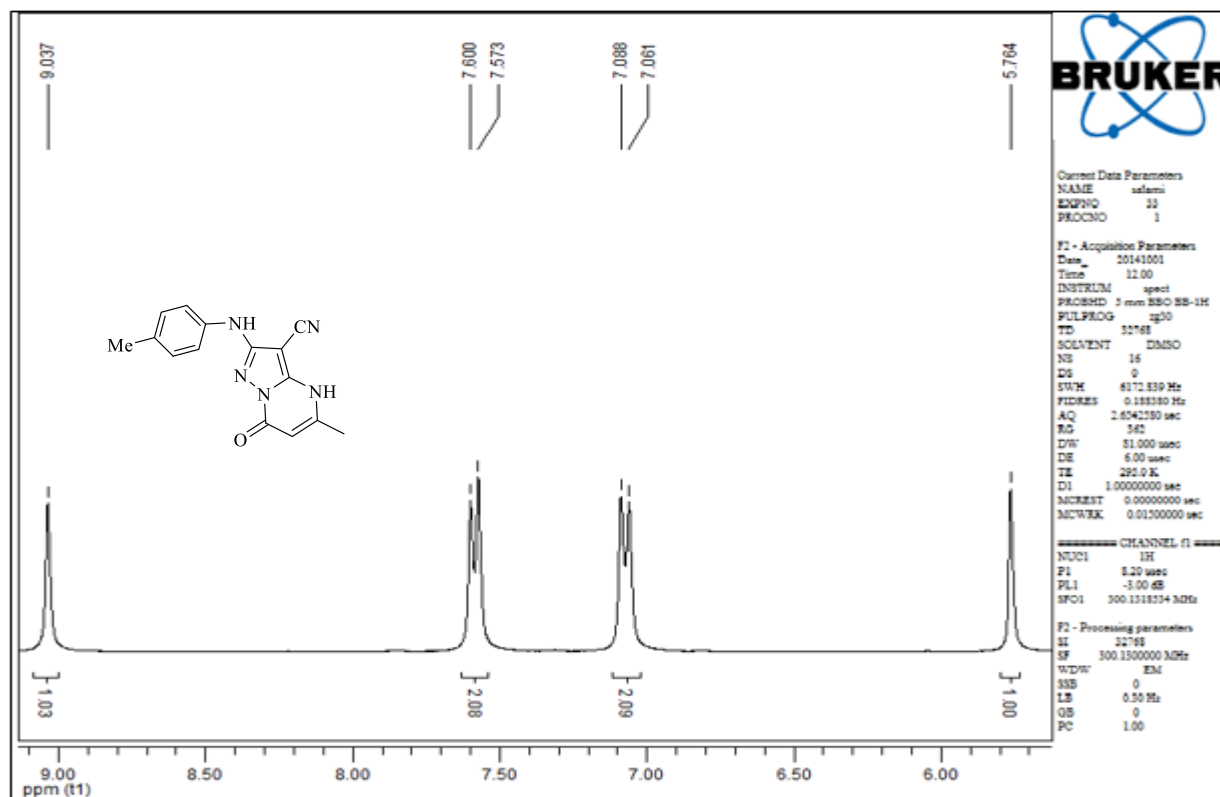


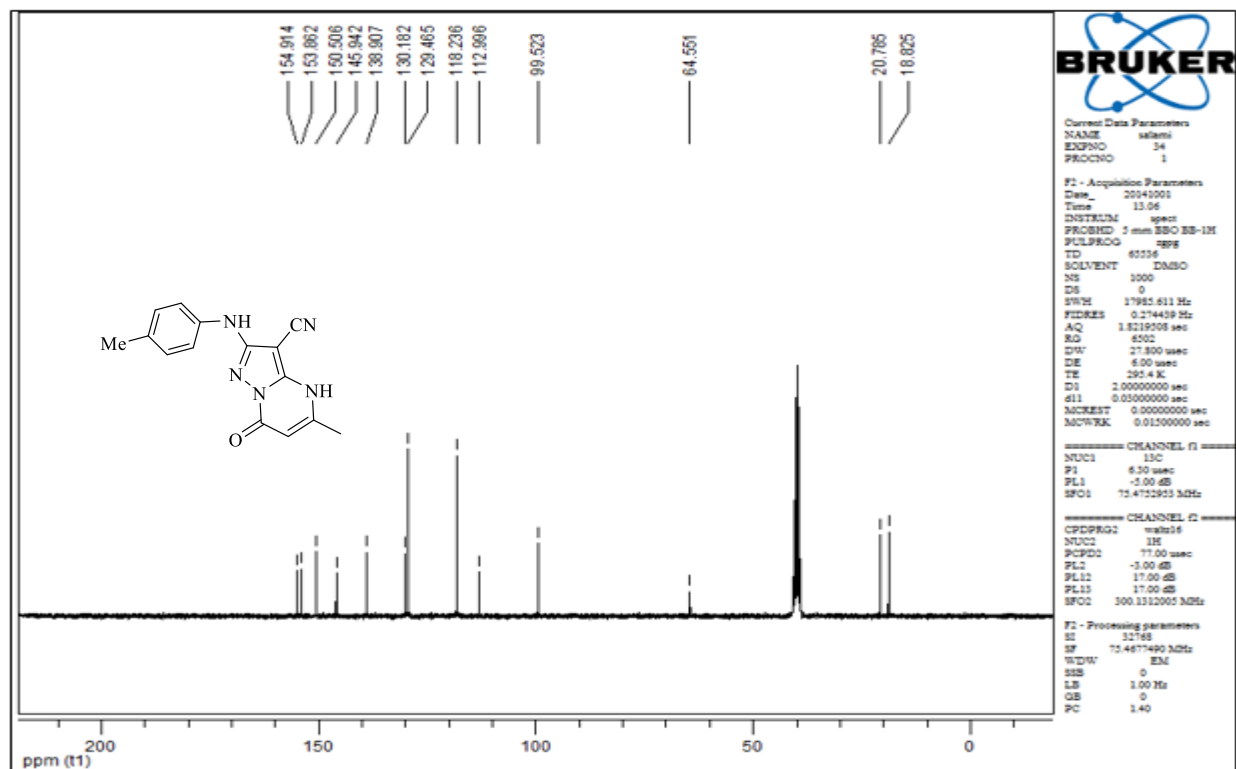
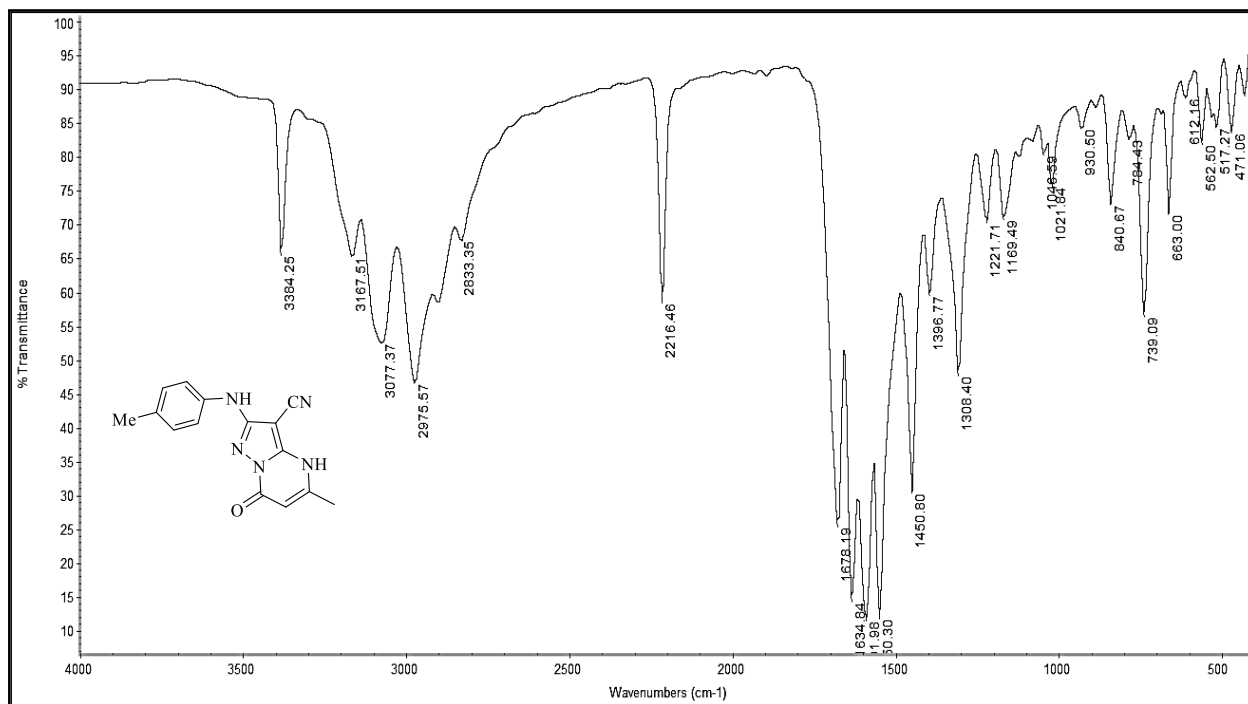
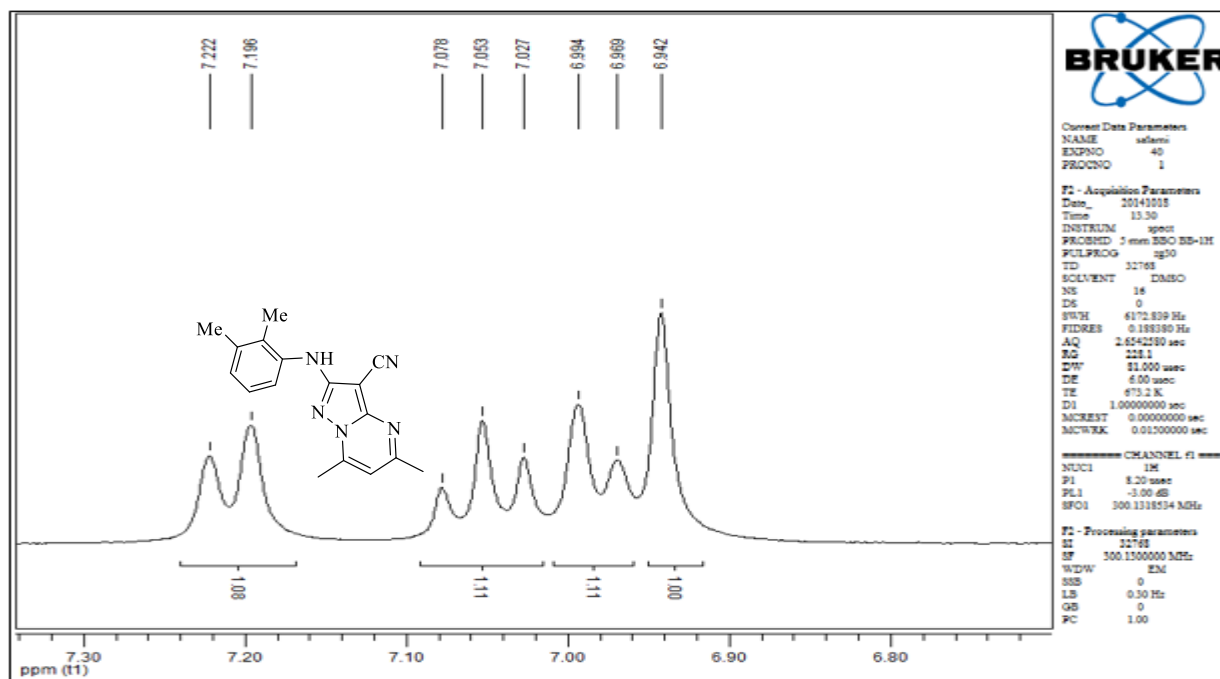
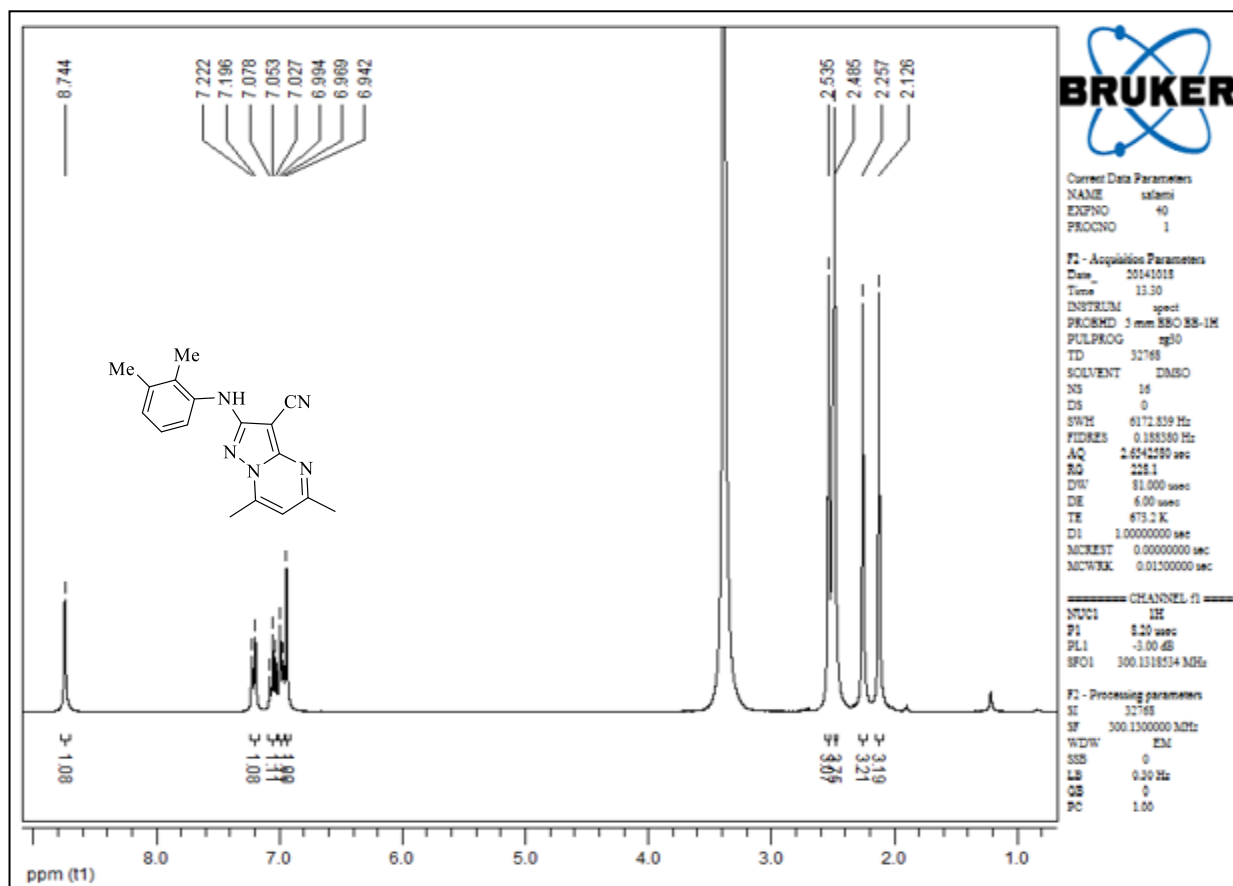
Figure S26. ^{13}C NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4i**.**Figure S27.** IR spectrum (KBr) of compound **4i**.

Figure S28. ^1H NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4j**.

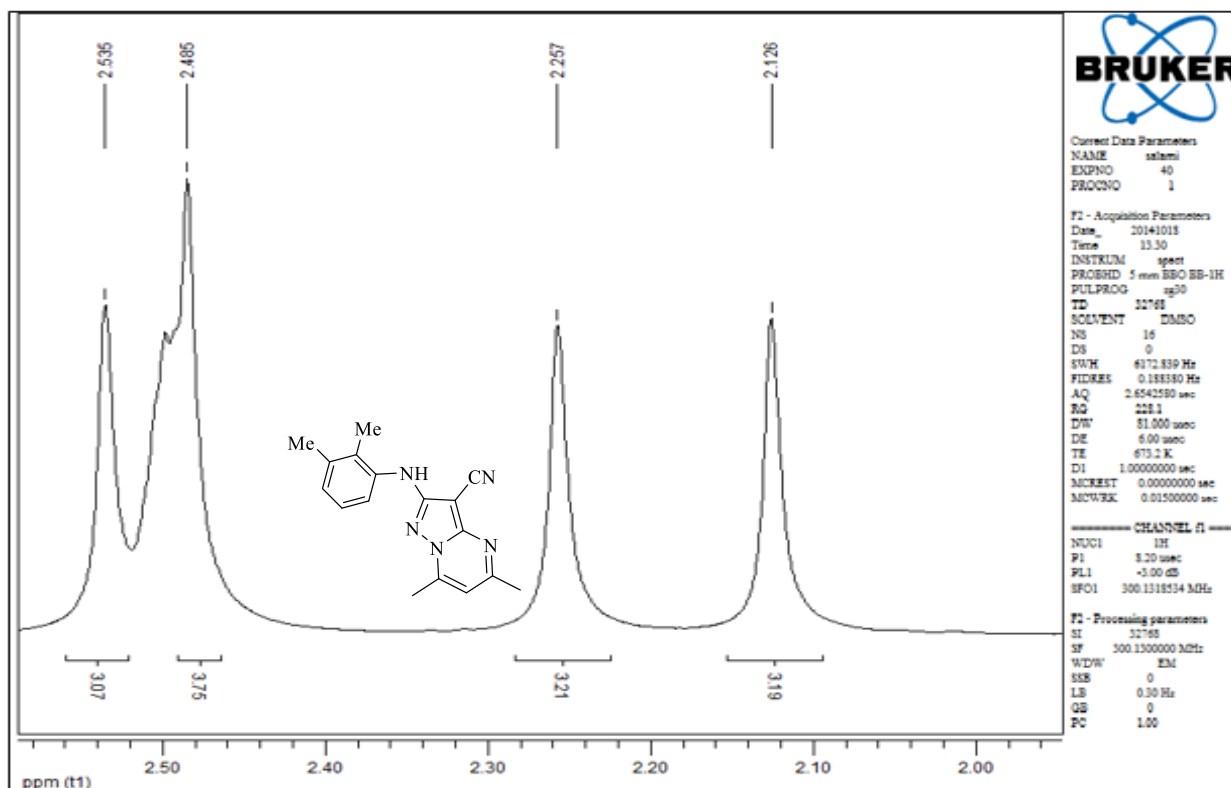


Figure S29. ¹³C NMR spectrum (300 MHz, DMSO-d₆) of compound **4j**.

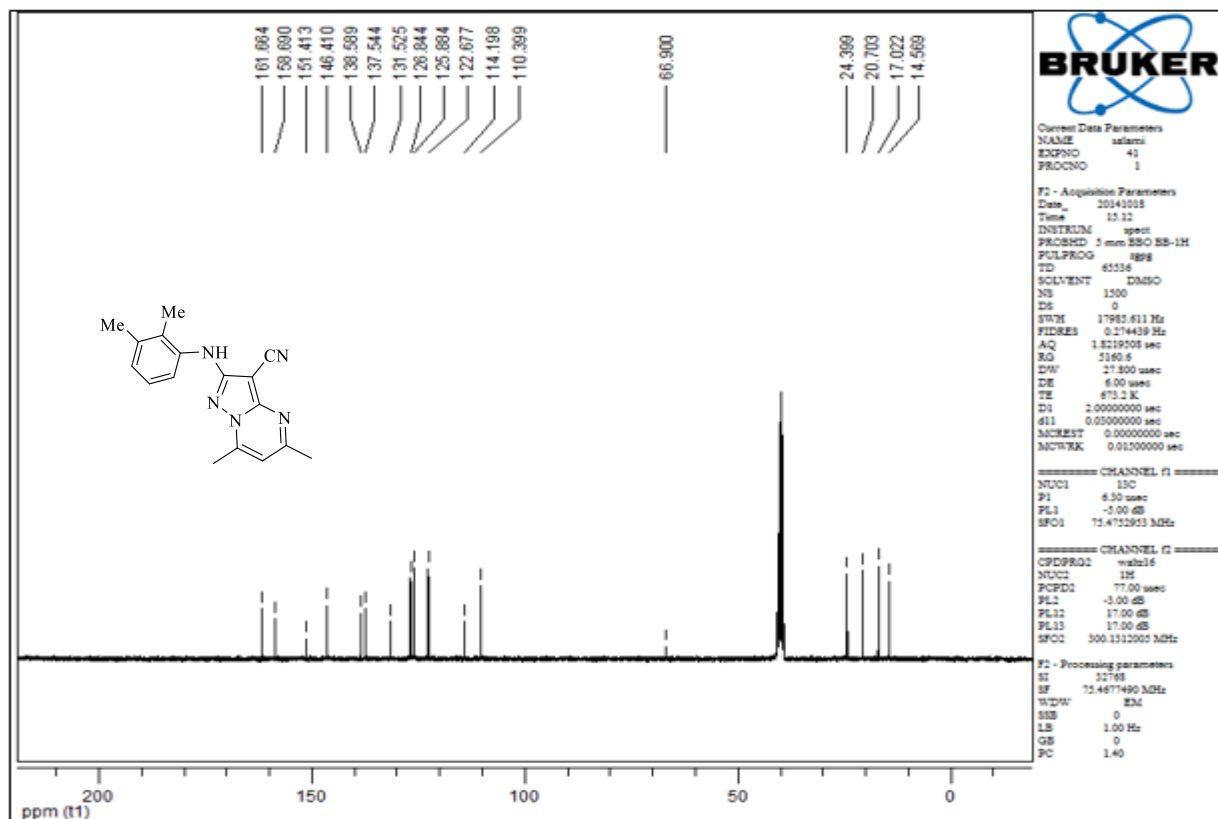
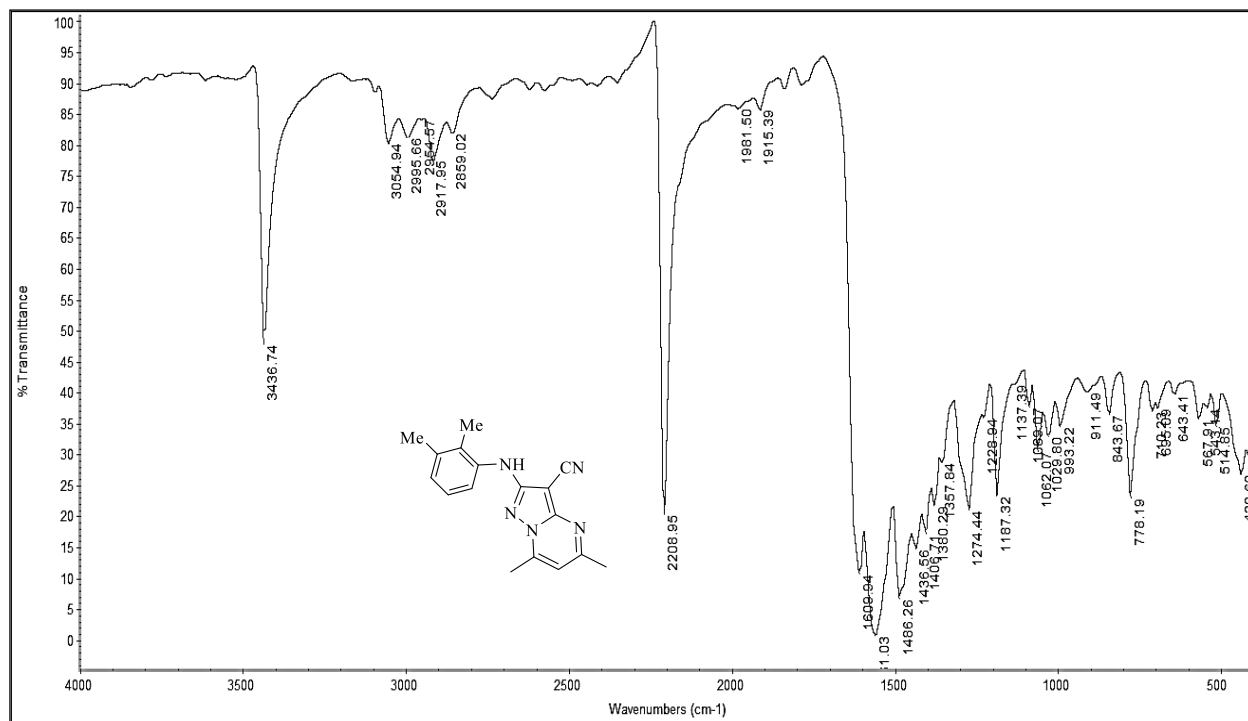
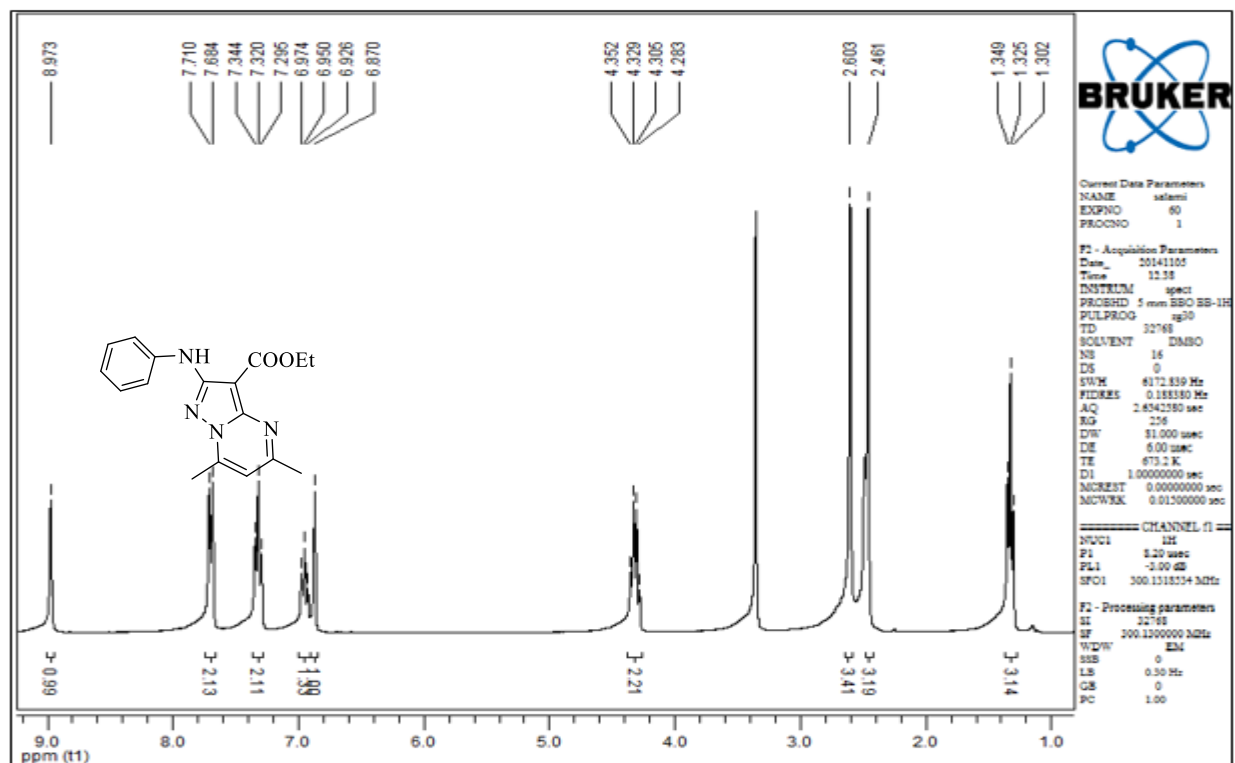


Figure S30. IR spectrum (KBr) of compound **4j**.**Figure S31.** ^1H NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4k**.

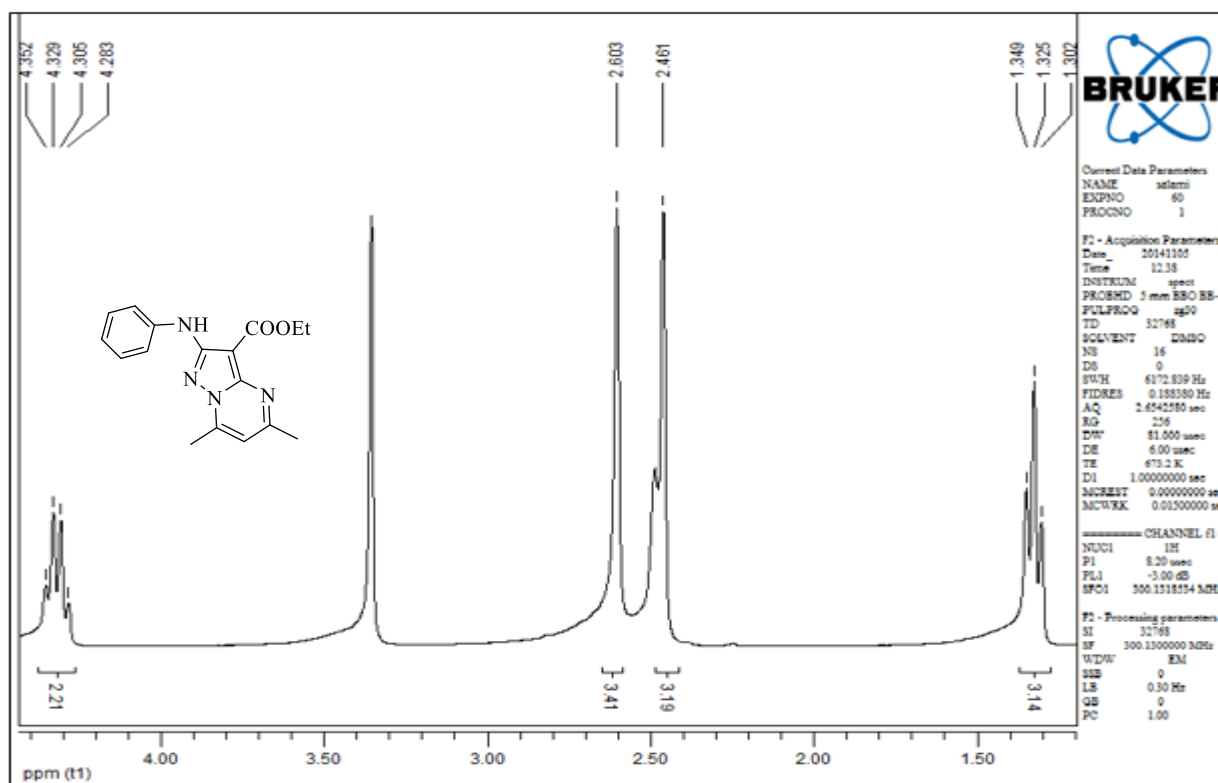
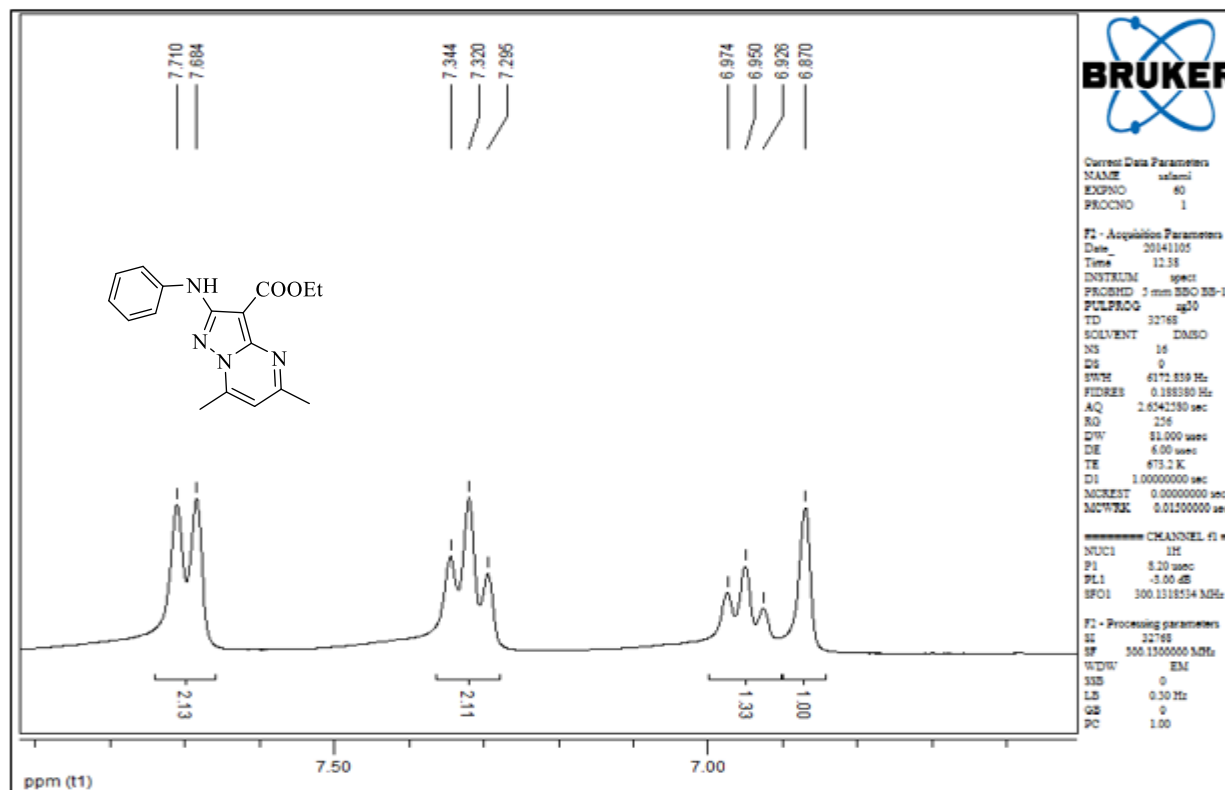


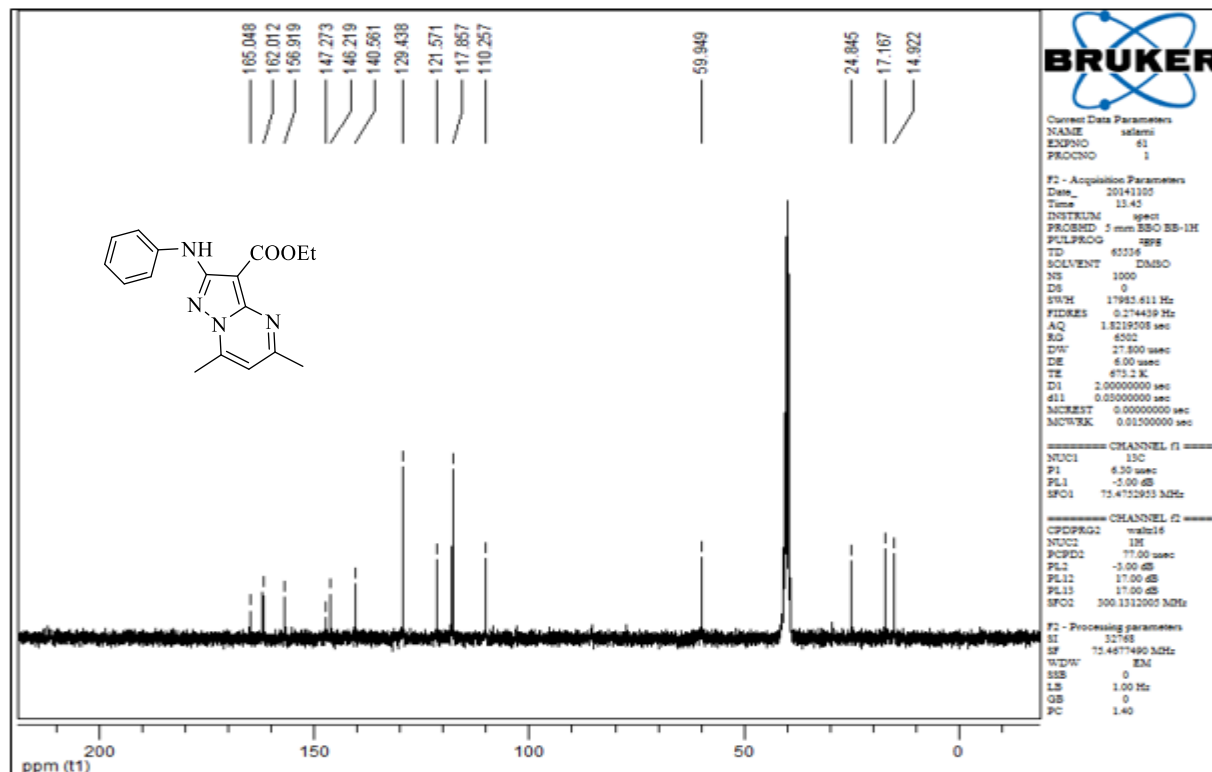
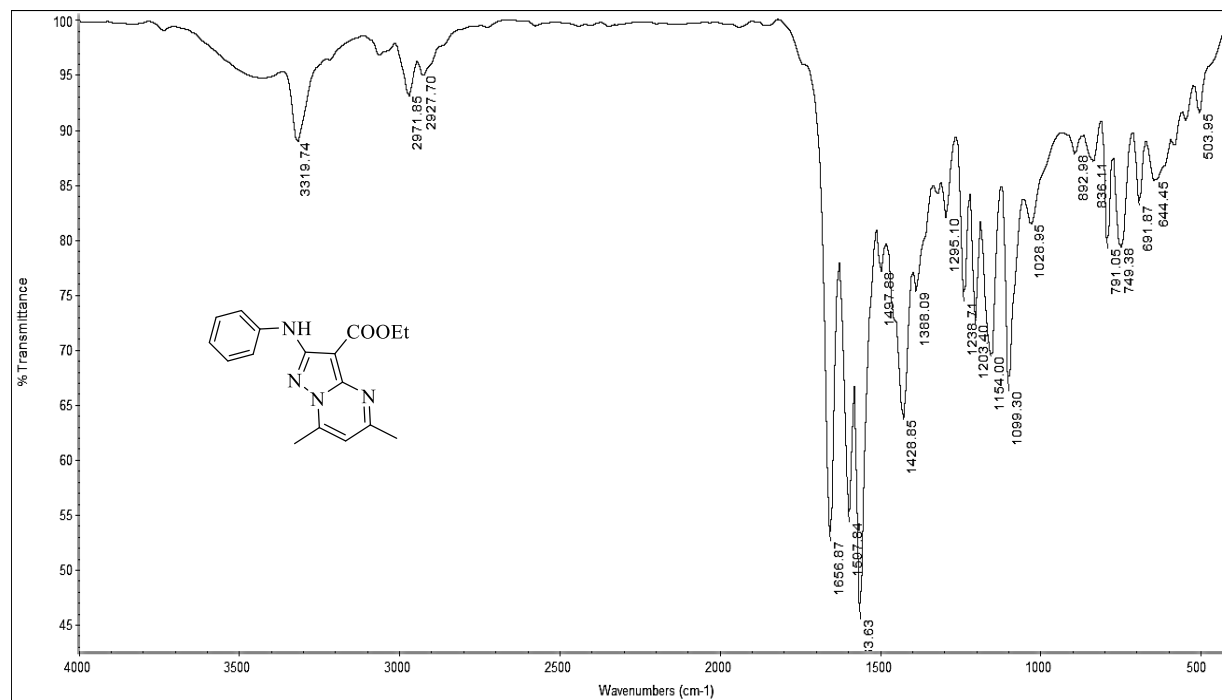
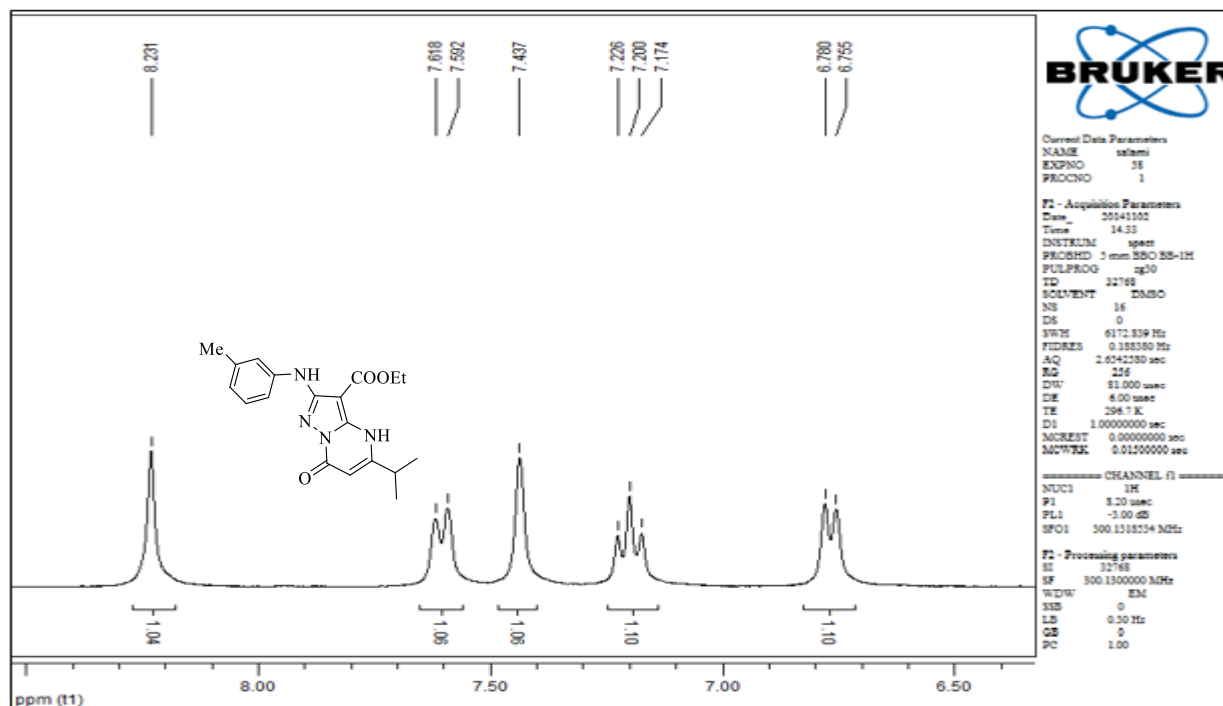
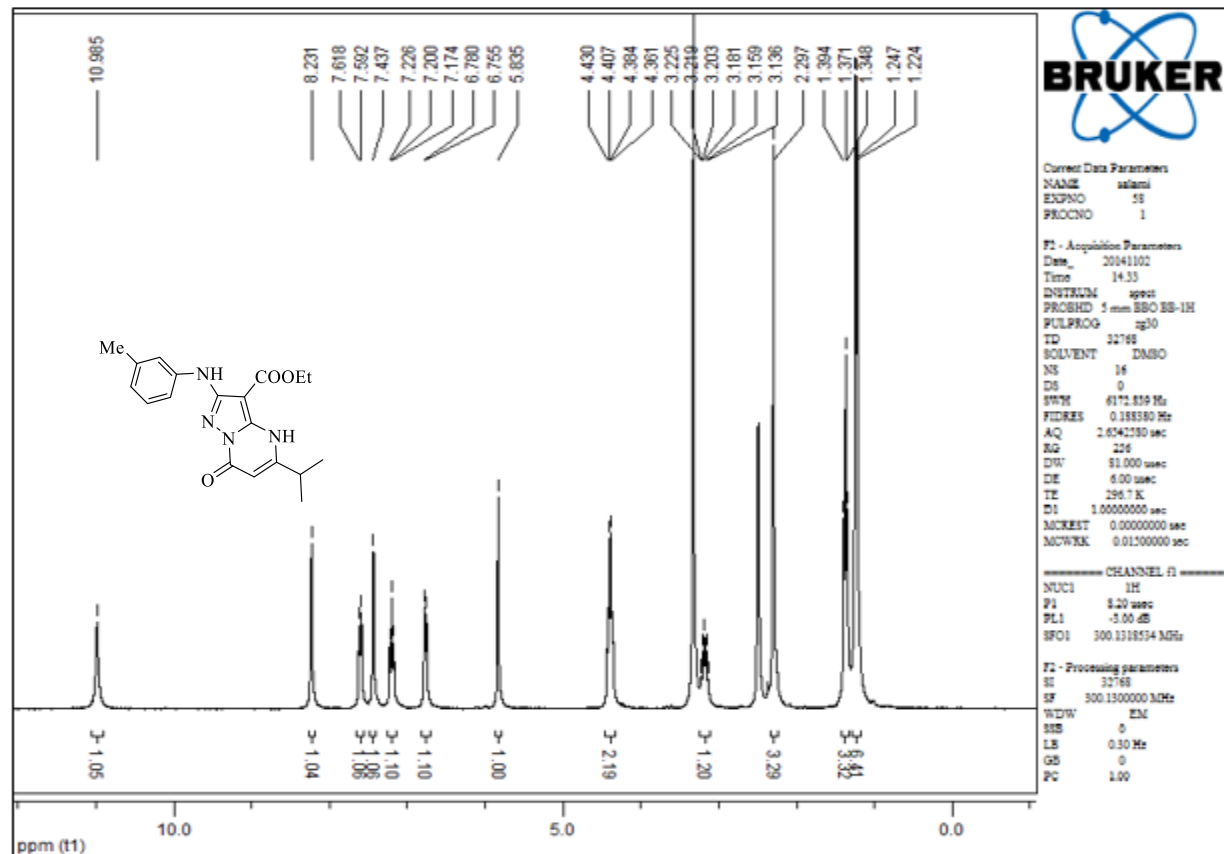
Figure S32. ^{13}C NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4k**.**Figure S33.** IR spectrum (KBr) of compound **4k**.

Figure S34. ^1H NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4l**.

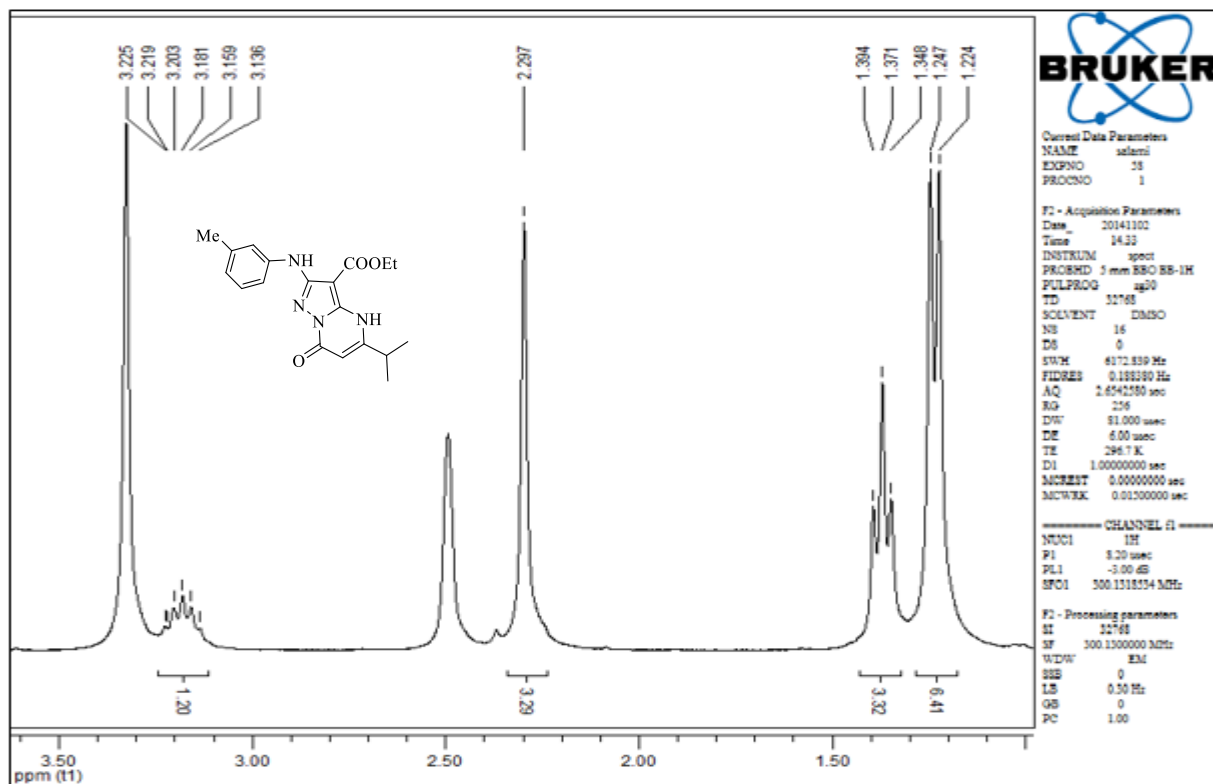
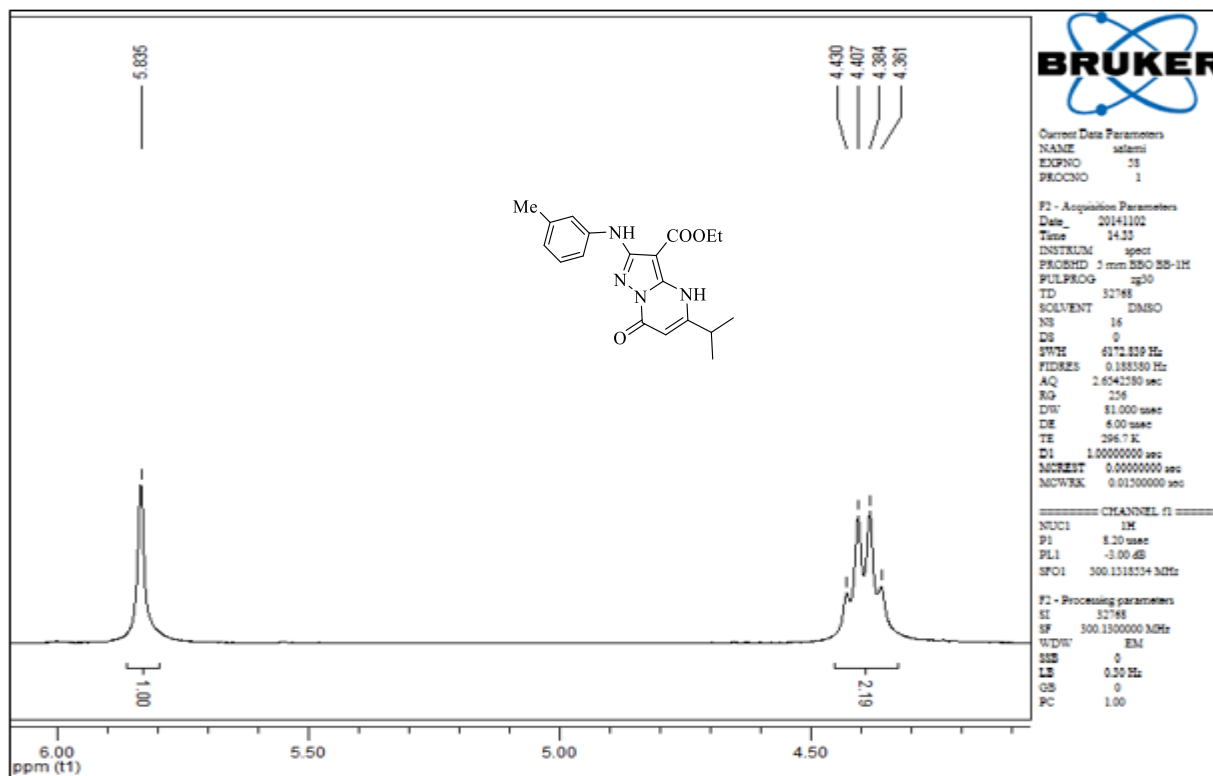


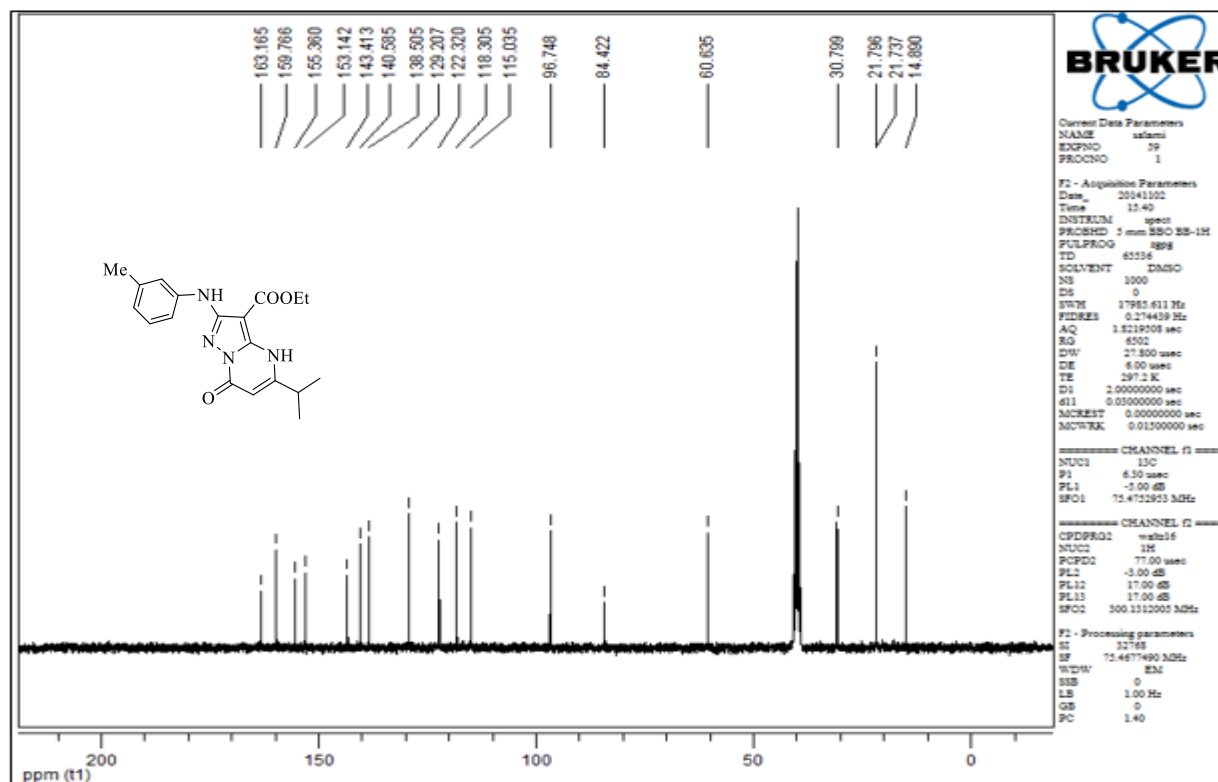
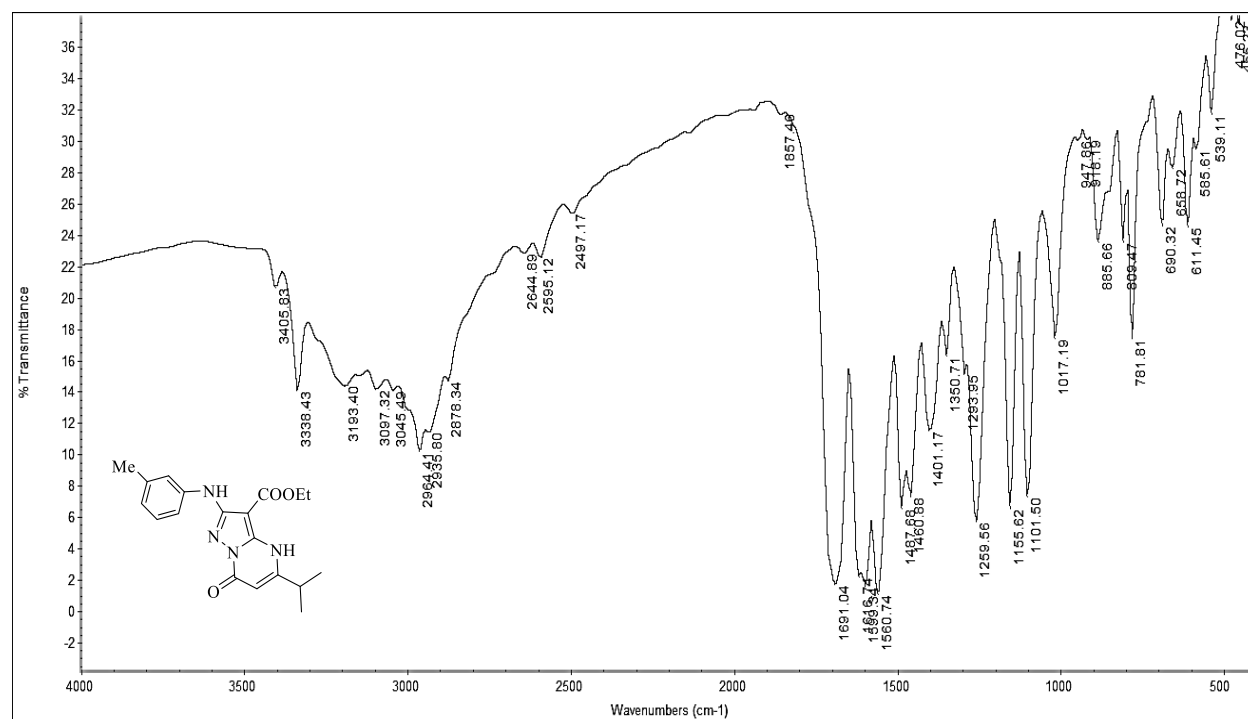
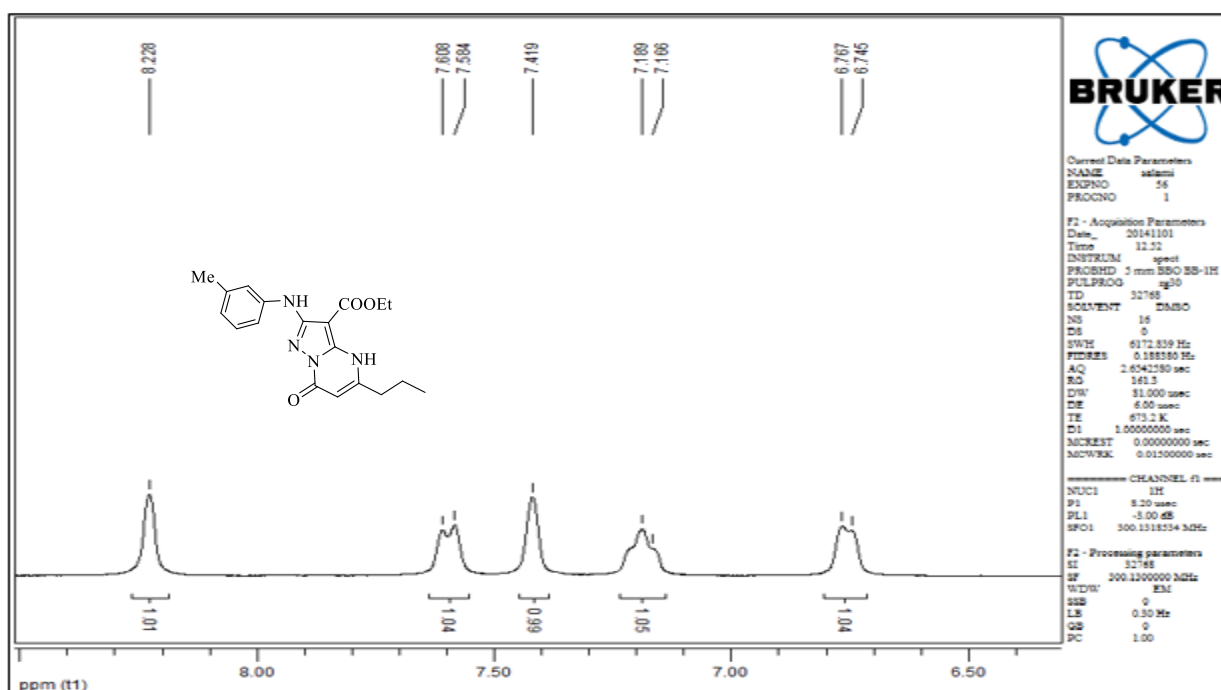
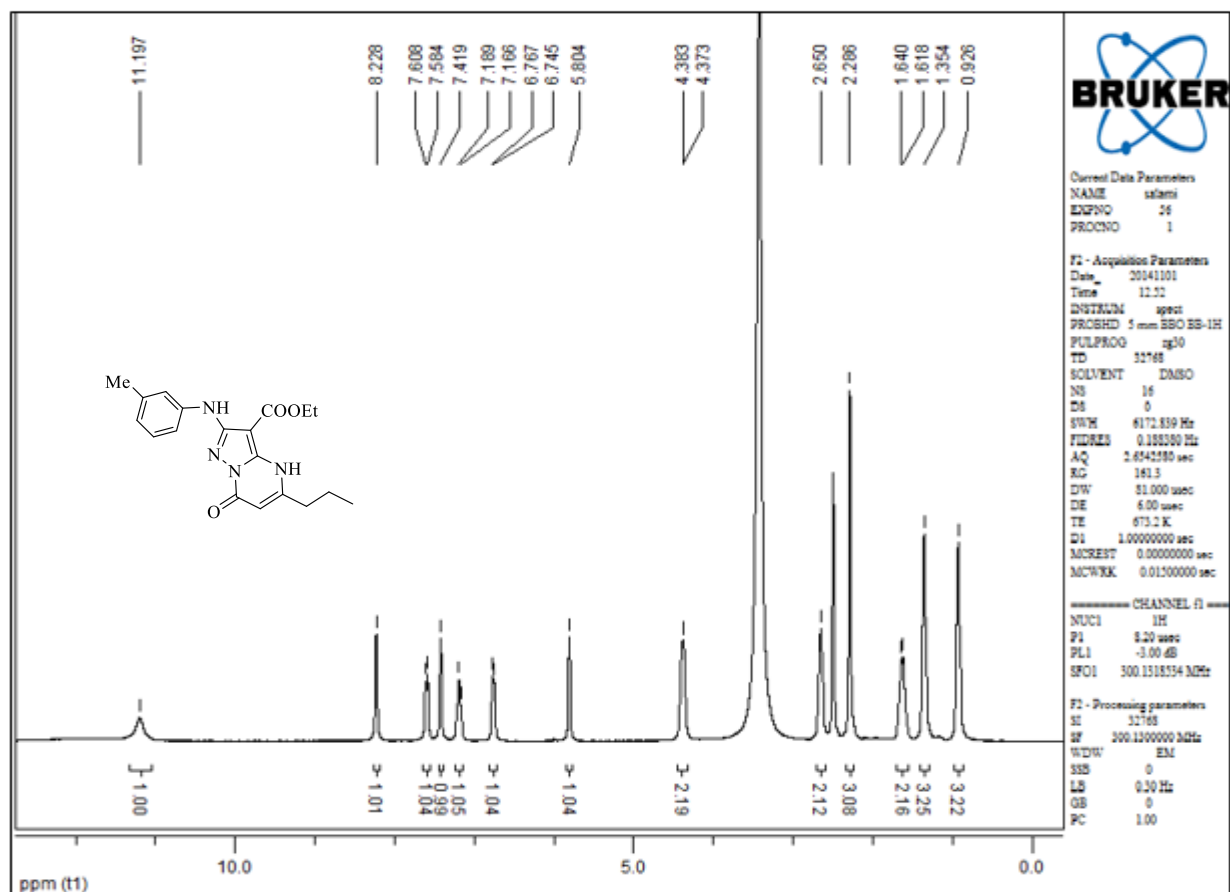
Figure S35. ^{13}C NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4l**.**Figure S36.** IR spectrum (KBr) of compound **4l**.

Figure S37. ^1H NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4m**.

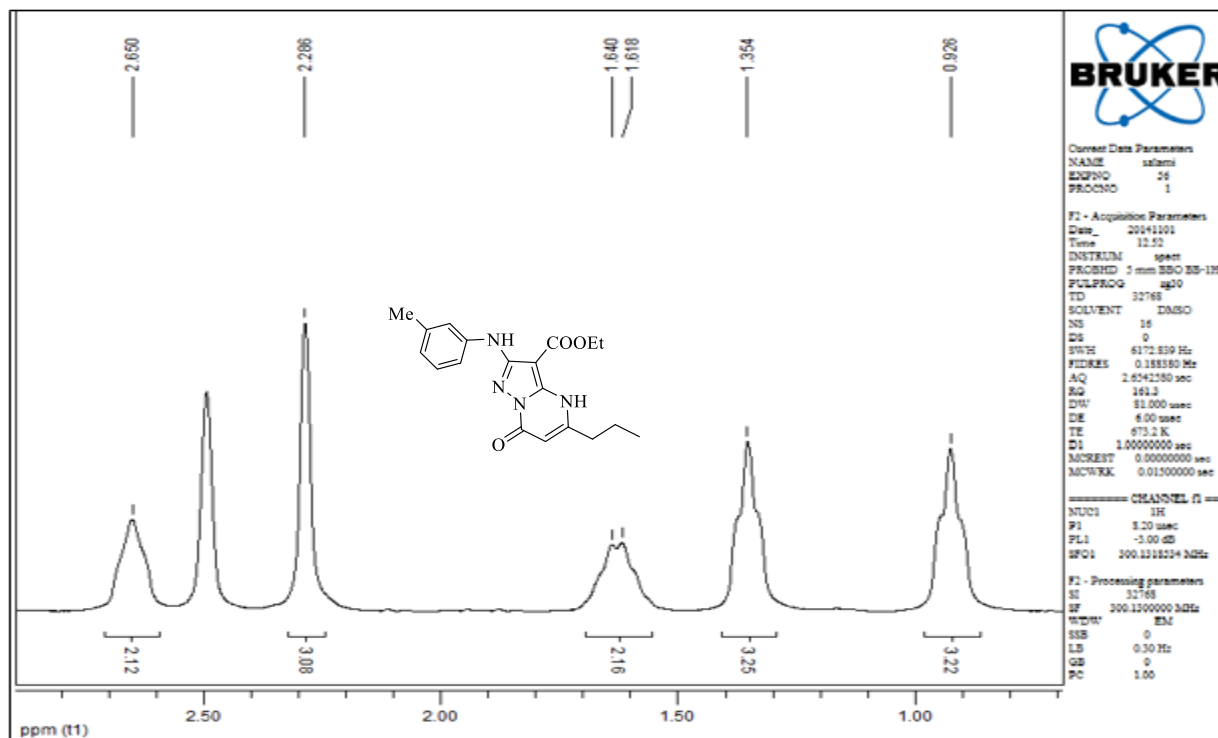
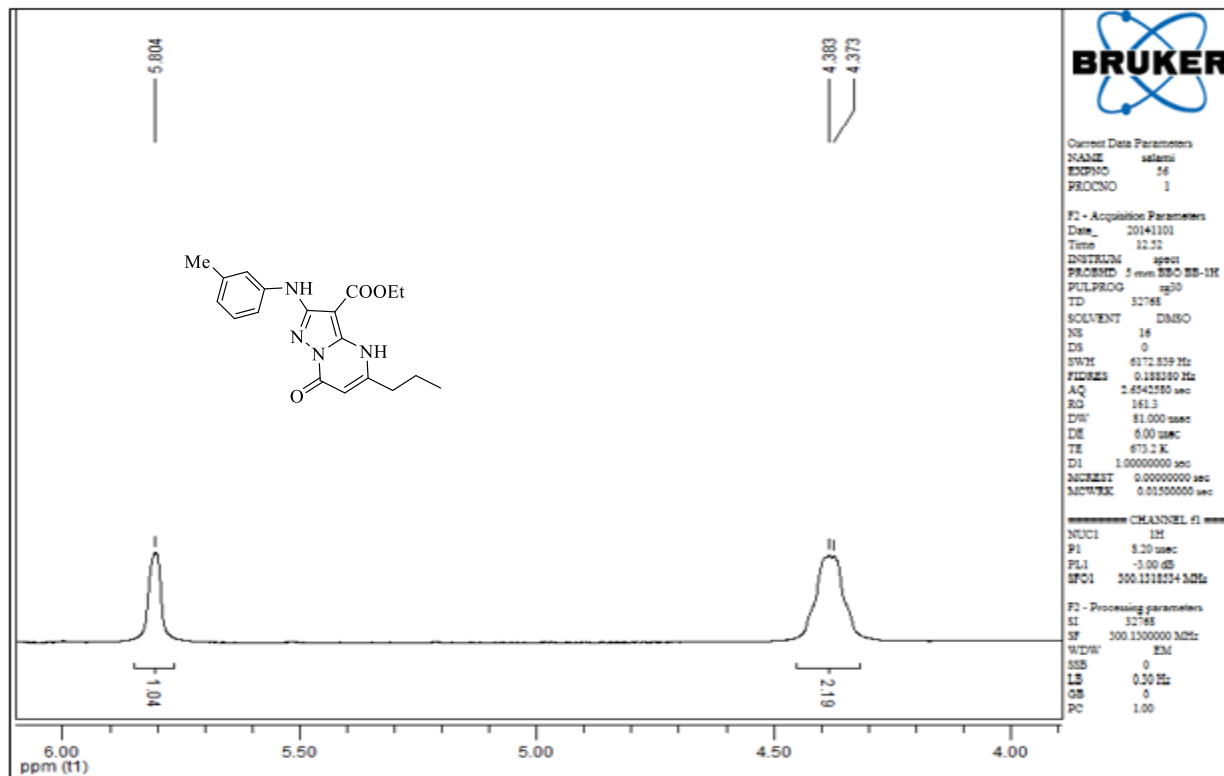
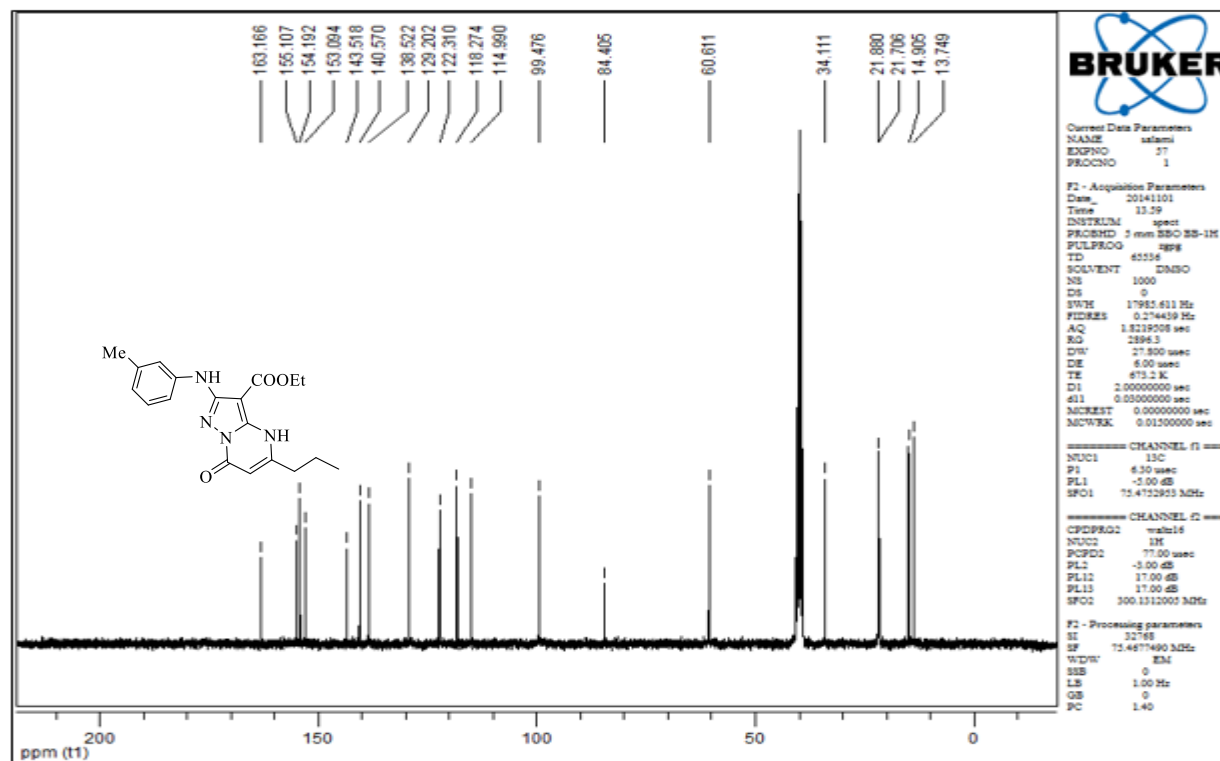


Figure S38. ^{13}C NMR spectrum (300 MHz, $\text{DMSO}-d_6$) of compound **4m**.**Figure S39.** IR spectrum (KBr) of compound **4m**.