

Electronic Supporting information

Unveiling the Synthesis and Spectral Characterizations of Novel (E)-Furan-2-yl Acrylohydrazides: An Exploration in Molecular Design

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(E)-ethyl 3-(furan-2-yl) acrylate (2)

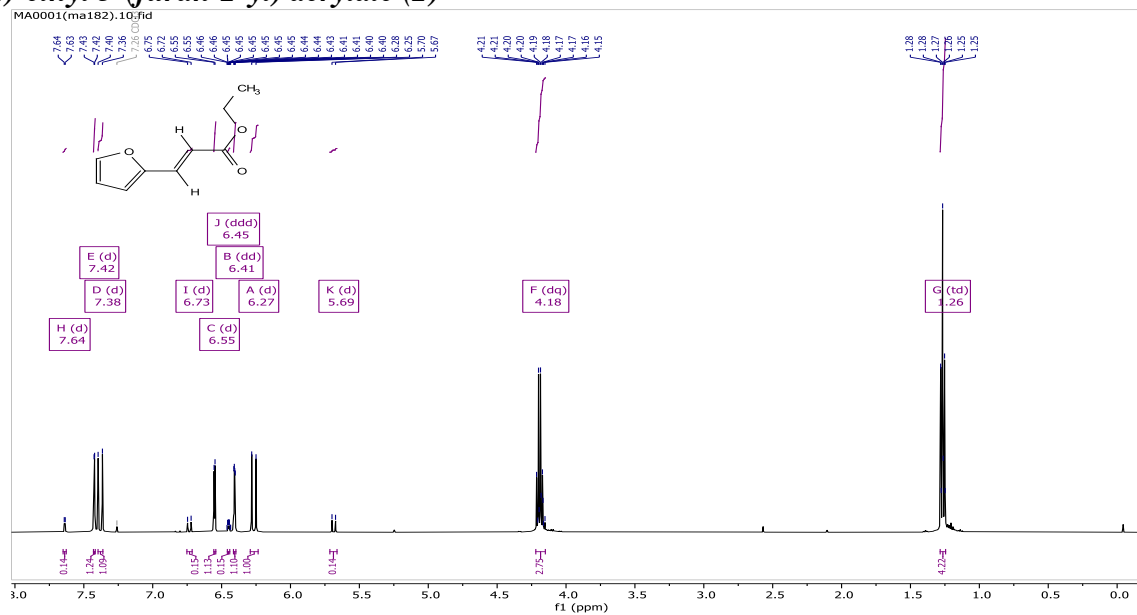


Figure S1: ^1H NMR spectrum of Compound 2 recorded in CDCl_3

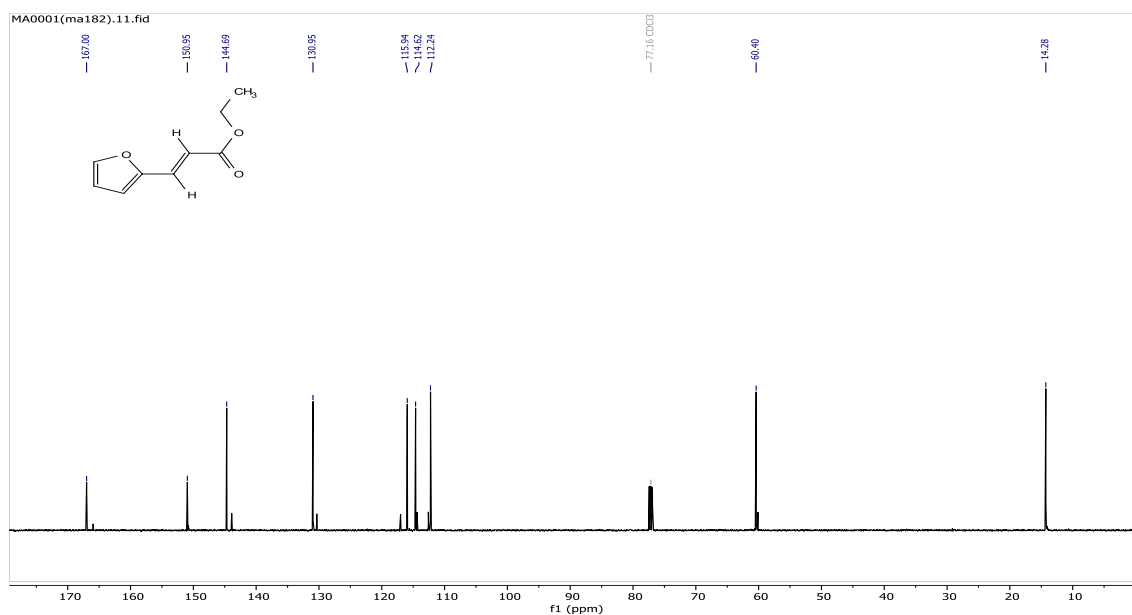


Figure S2 : ^{13}C NMR spectrum of Compound 2 recorded in CDCl_3

(E)-3-(furan-2-yl) acrylohydrazide (3)

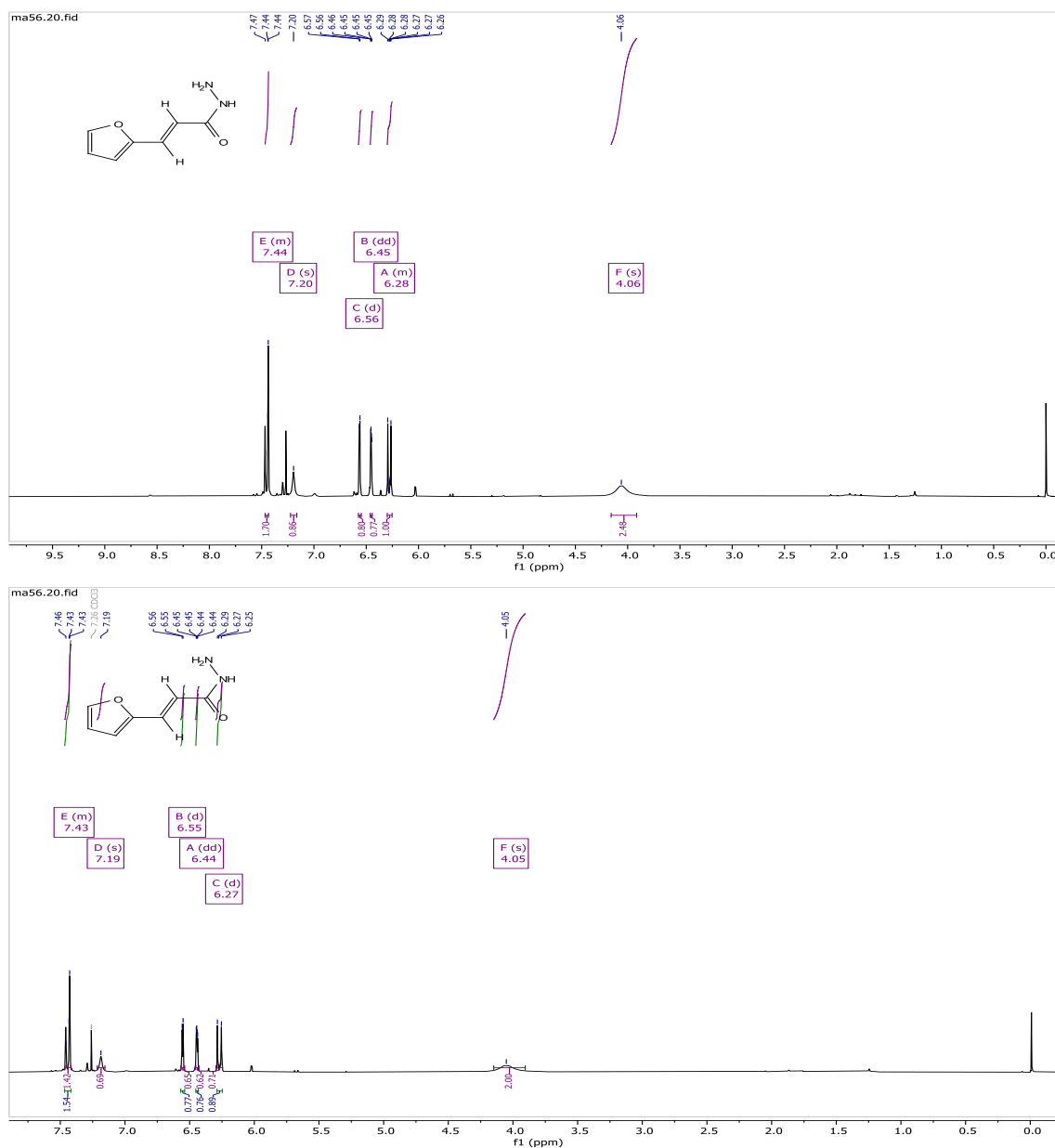


Figure S3 : ^1H NMR spectrum of Compound 3 recorded in CDCl_3

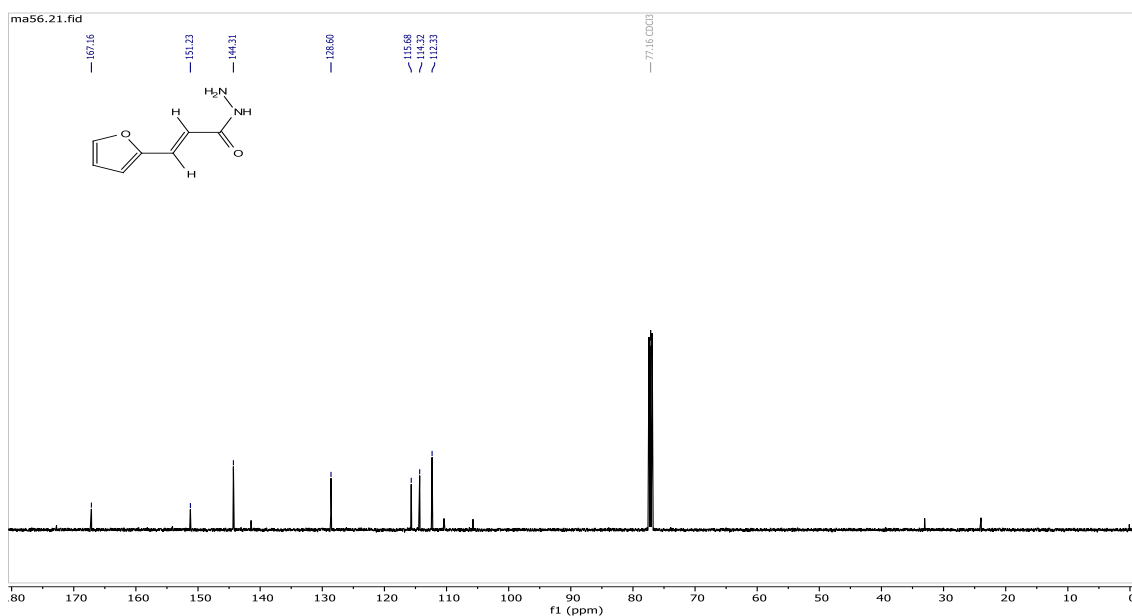
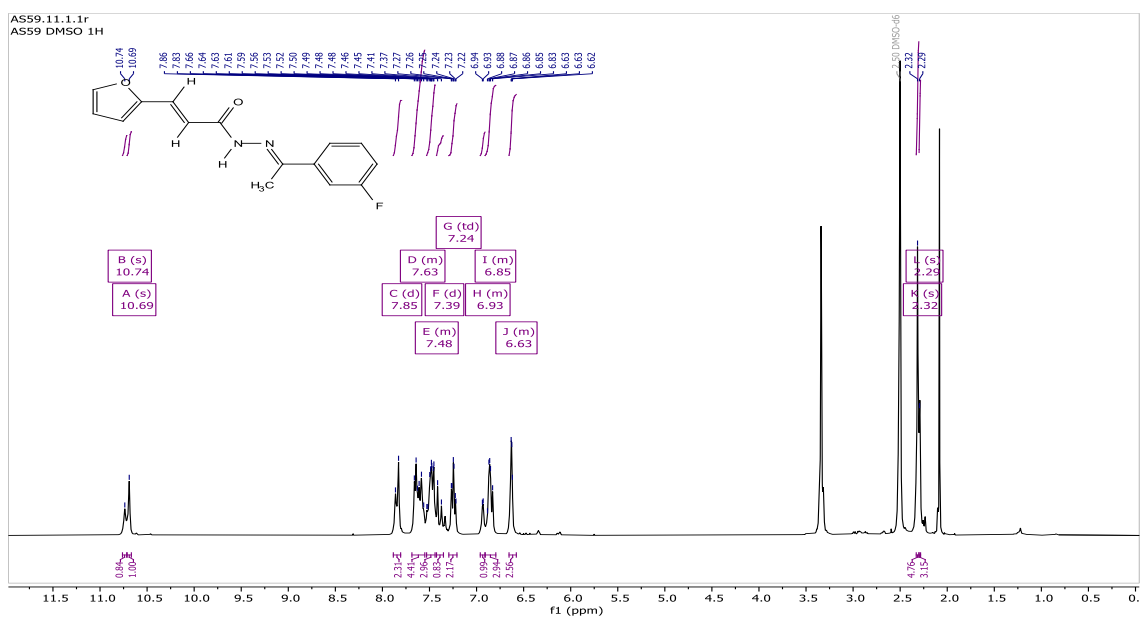
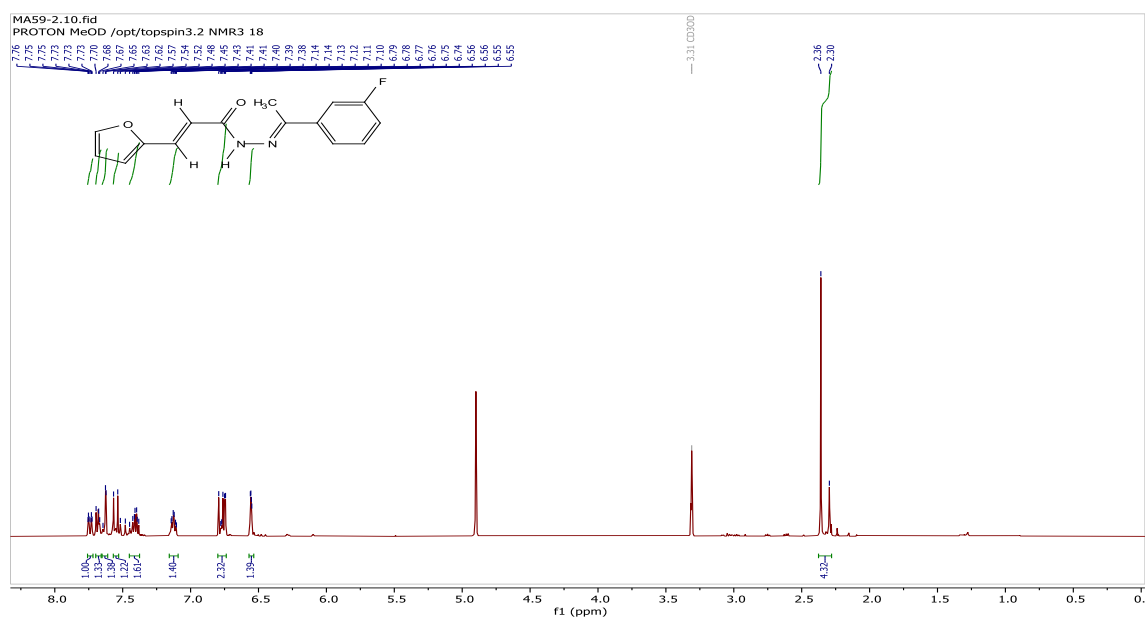
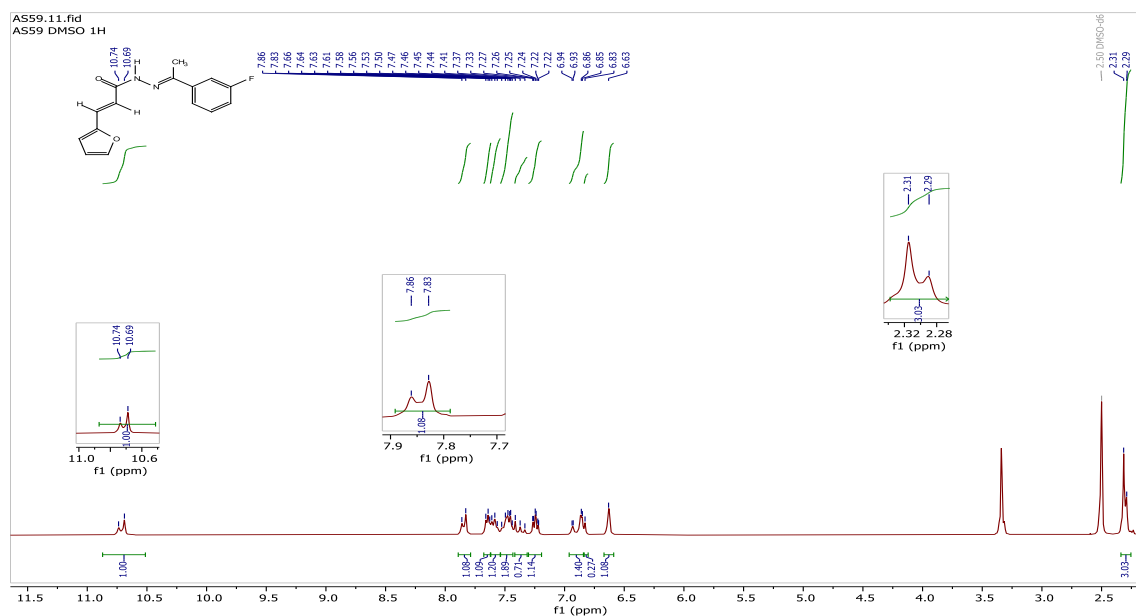


Figure S4 : ¹³C NMR spectrum of Compound 3 recorded in CDCl₃

(2*E*, *N'E*) -*N'*-(1-(3-fluorophenyl) ethylidene) -3-(furan-2-yl) acrylohydrazide (4a)**





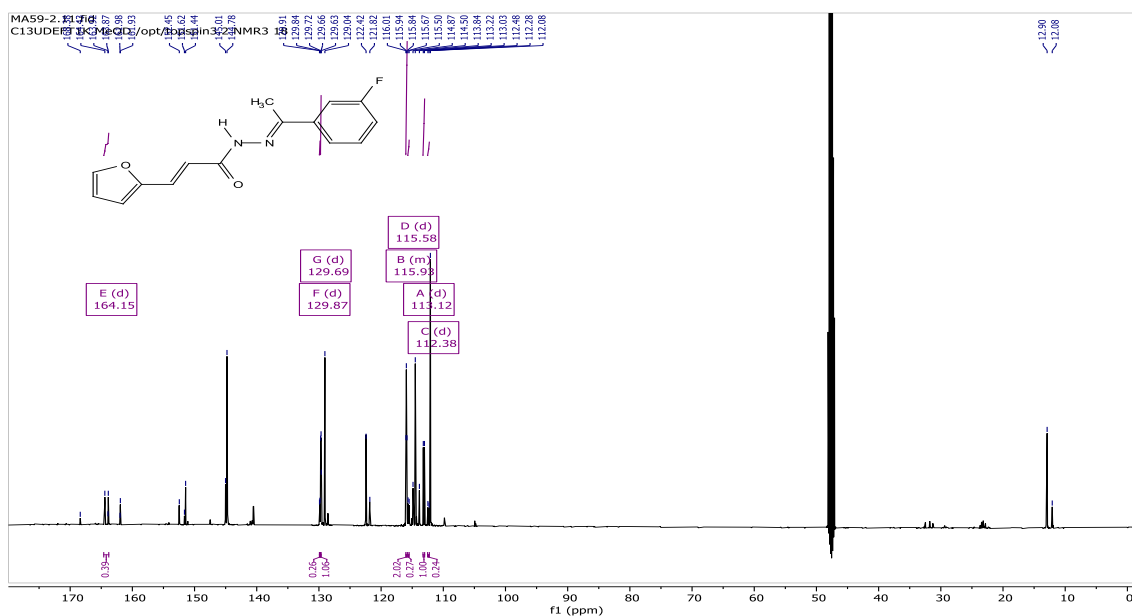


Figure S7 : ^{13}C NMR spectrum of Compound 4a recorded in methanol- d_4

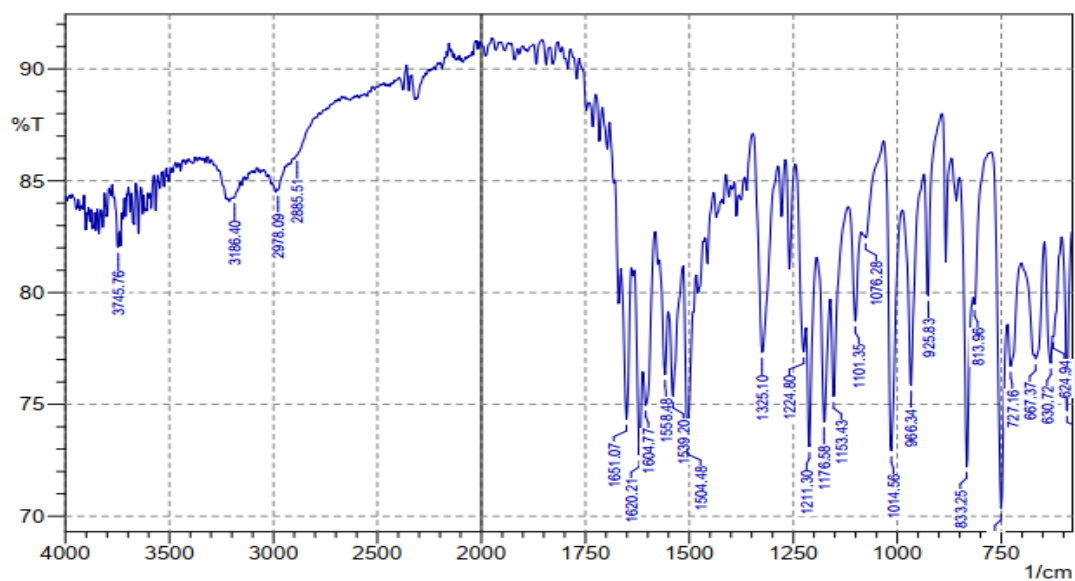


Figure S8: FT-IR spectrum of compound 4a

(2*E*, *N'E*) -*N'*-(1-(4-fluorophenyl) ethylidene) -3-(furan-2-yl) acrylohydrazide (4b)**

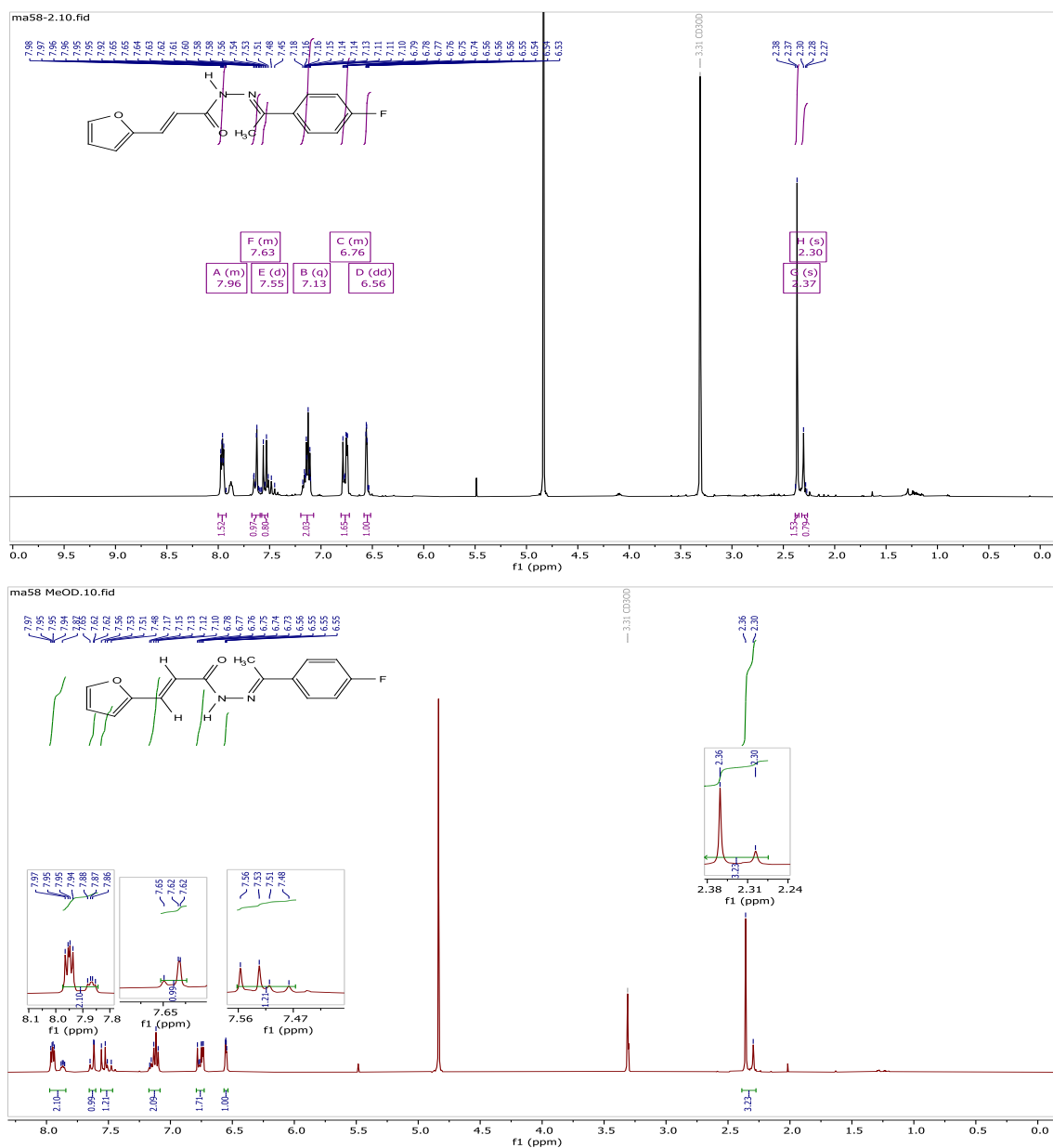


Figure S9: ^1H NMR spectrum of Compound 4b recorded in methanol- d_4 .

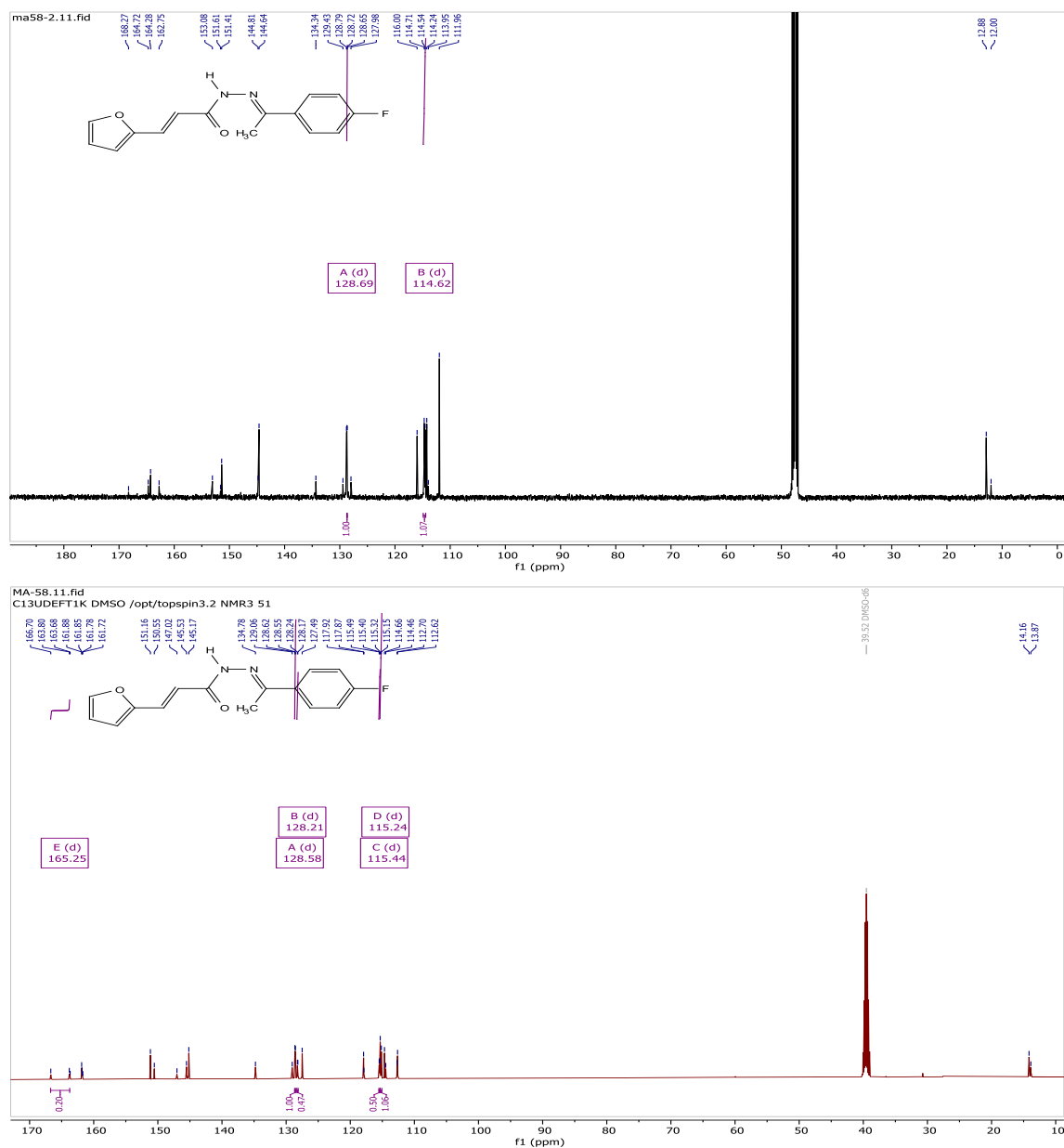


Figure S10 : ^{13}C NMR spectrum of Compound 4b recorded in Methanol-*d*₄ and DMSO-*d*₆

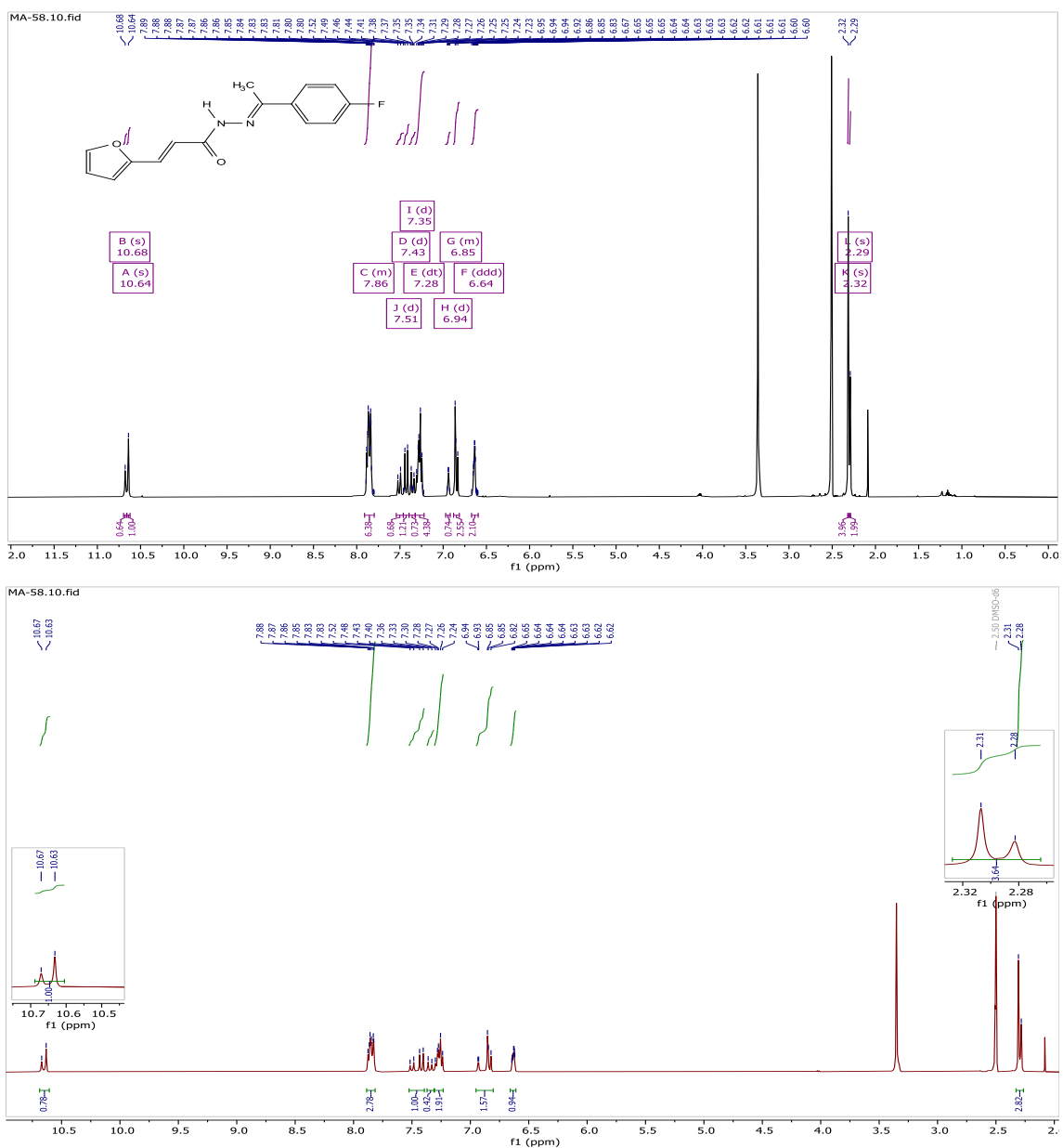


Figure S11 : ^1H NMR spectrum of Compound 4b recorded in $\text{DMSO}-d_6$

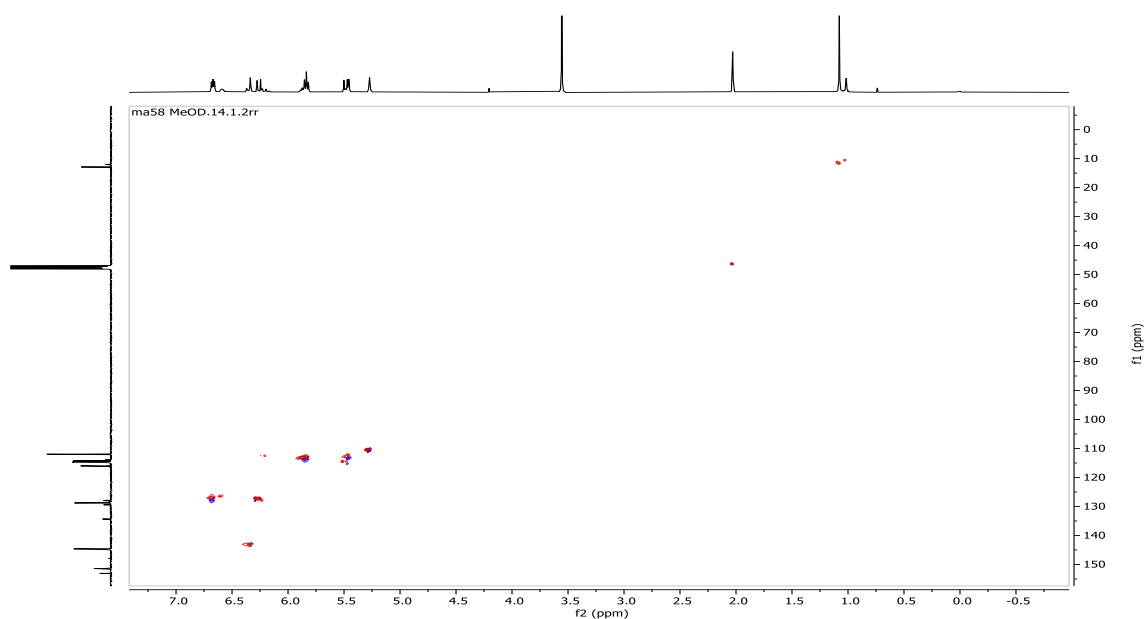


Figure S12: HSQC spectrum of compound 4b record in Methanol- d_4

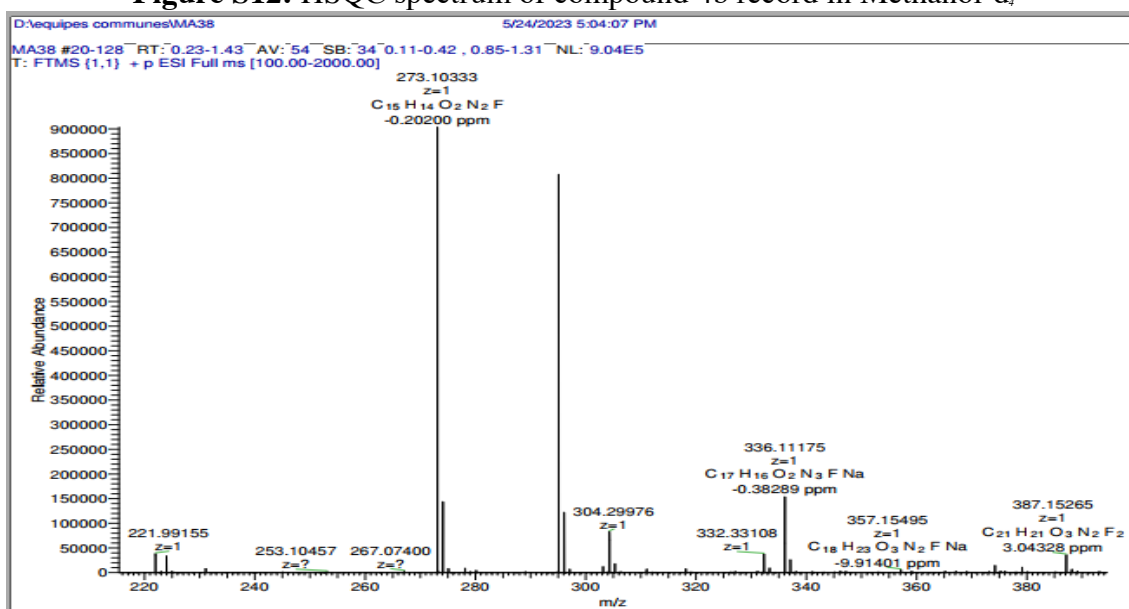


FIGURE S13: MASS SPECTRUM OF THE COMPOUND 4B (E^+)

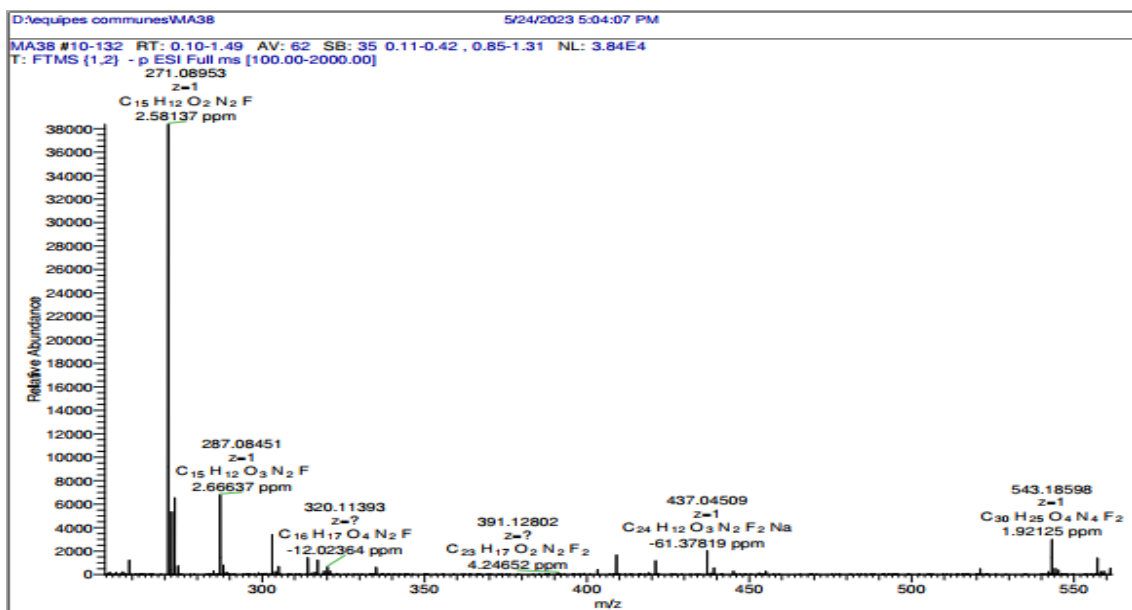


FIGURE S14: MASS SPECTRUM OF THE COMPOUND 4b (E)

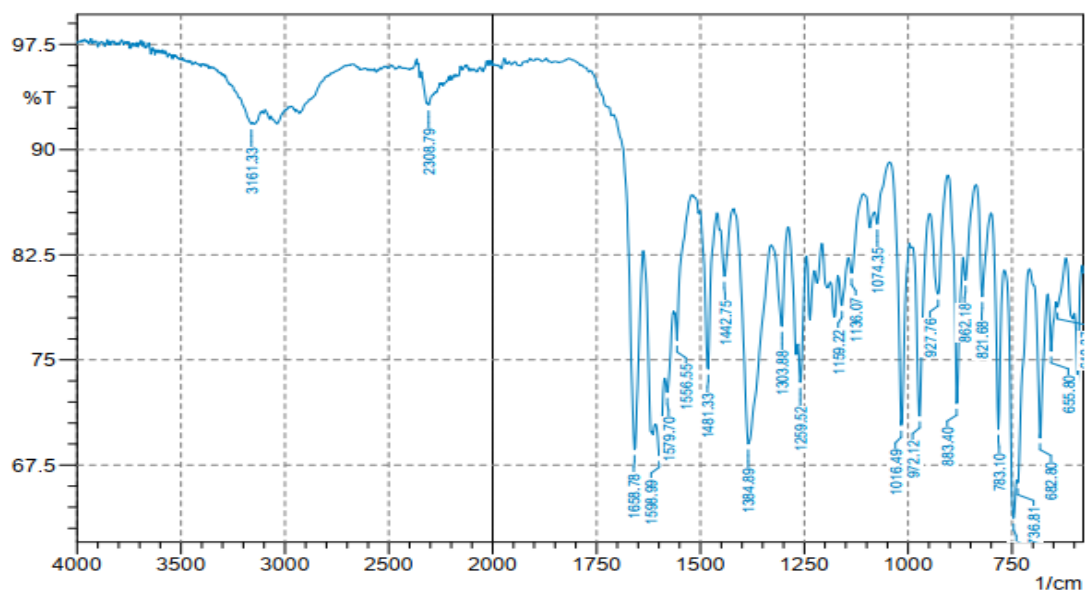


Figure S15: FT-IR spectrum of compound 4b

(2E, N'E)-3-(furan-2-yl) -N'-(thiophen-2-ylmethylene) acrylohydrazide (4c)

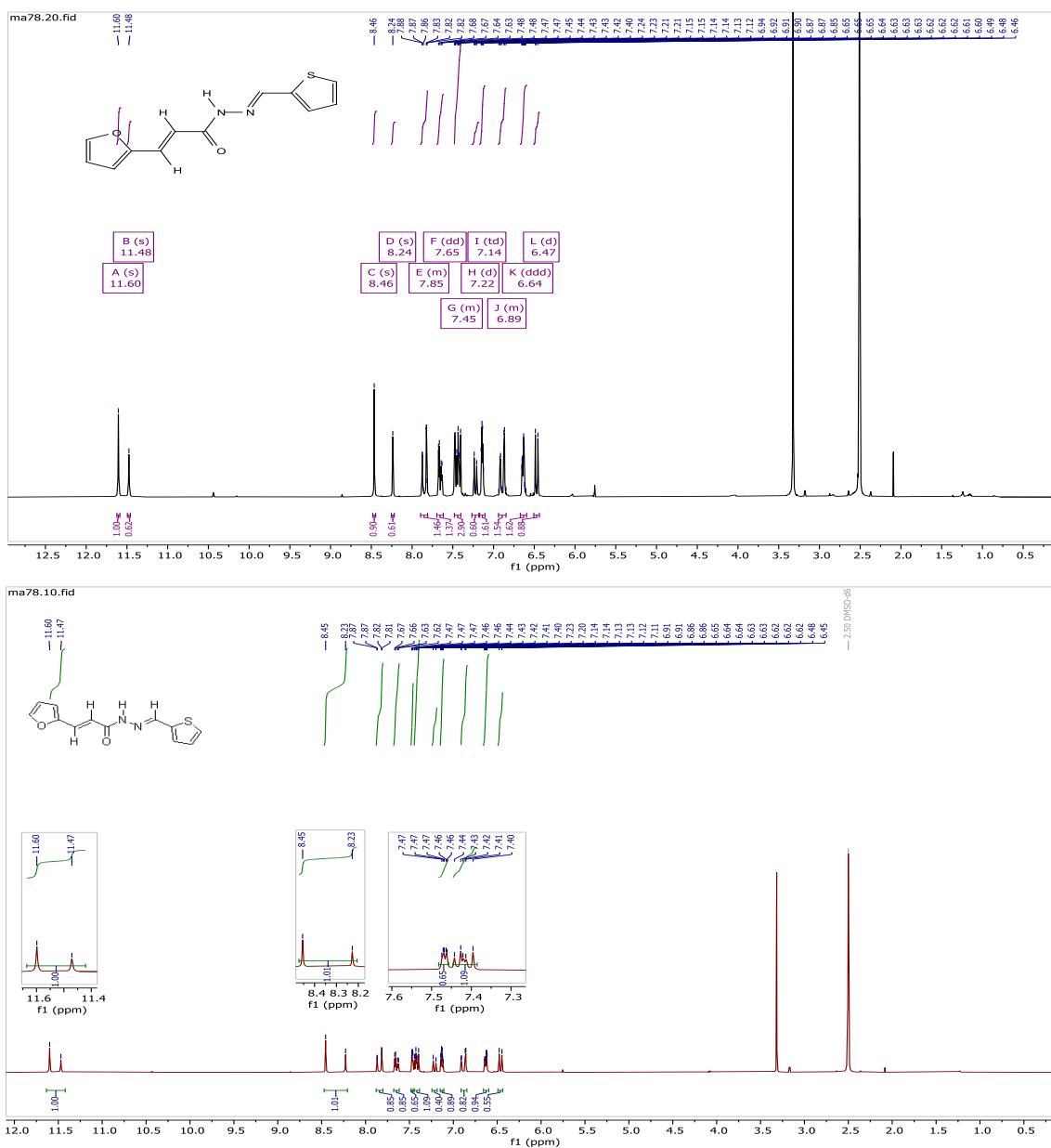


Figure S16 : ¹H NMR spectrum of Compound 4c recorded in DMSO-*d*₆

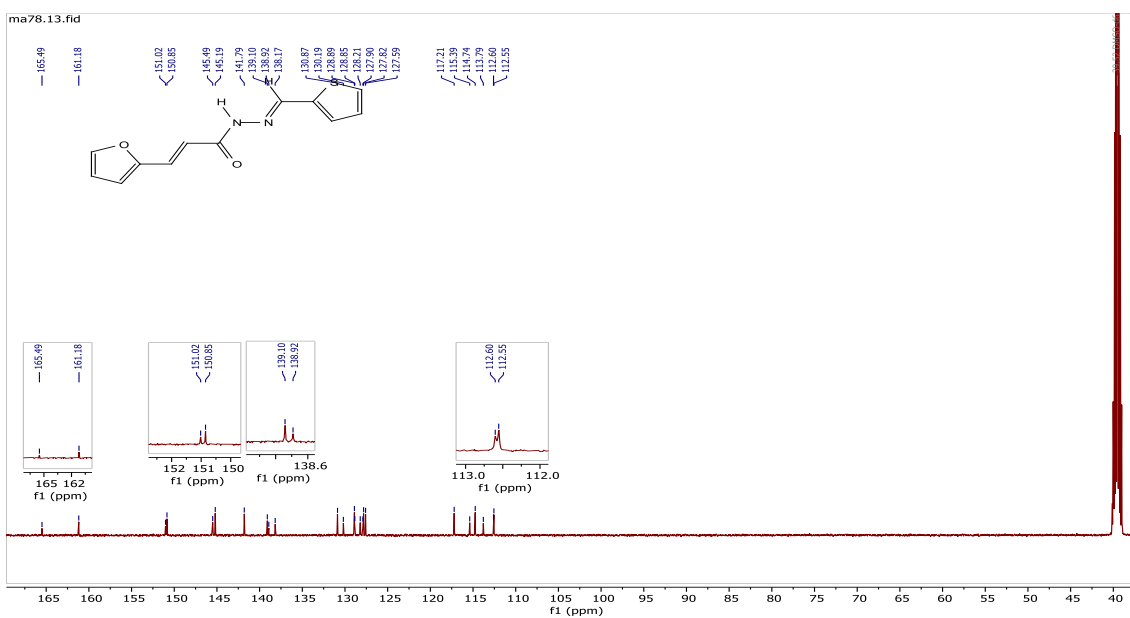
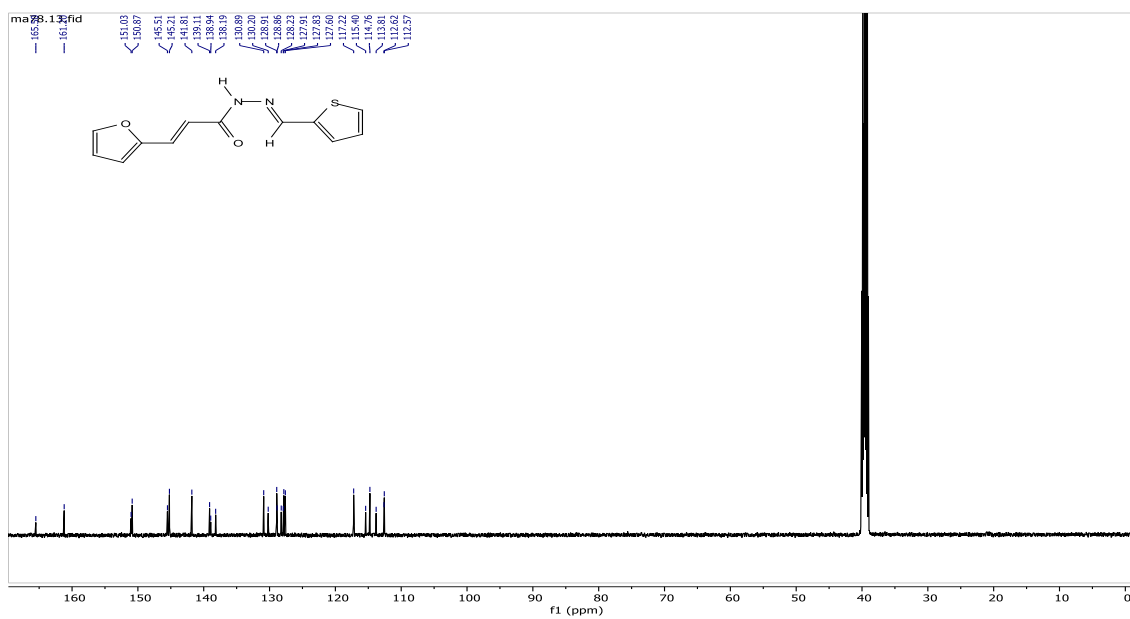


Figure S17 : ^{13}C NMR spectrum of Compound 4c recorded in $\text{DMSO-}d_6$

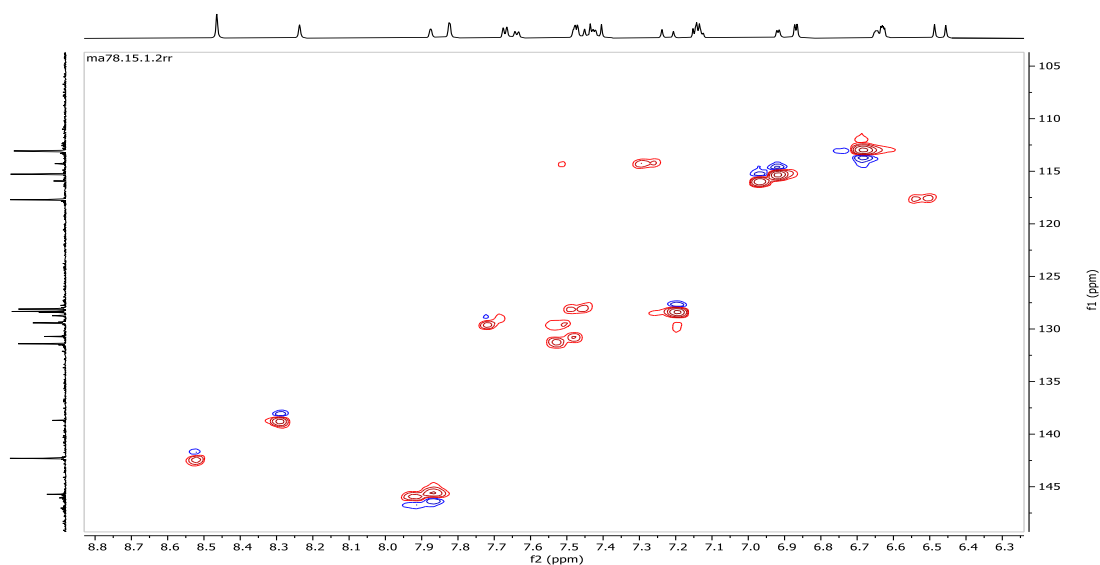


Figure S18 : HSQC spectrum of compound 4c record in DMSO-d₆

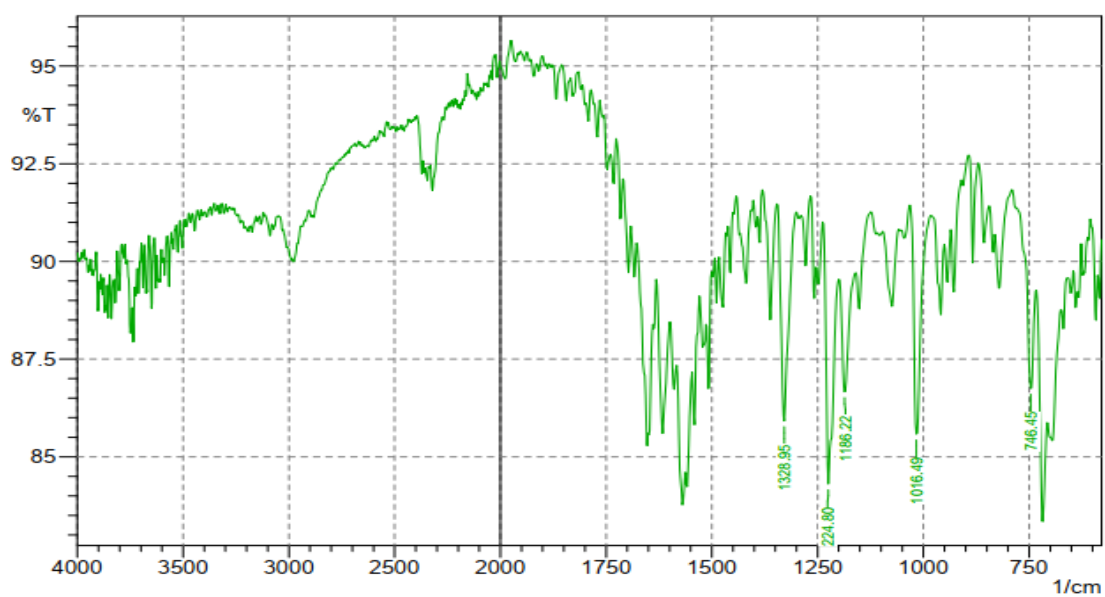
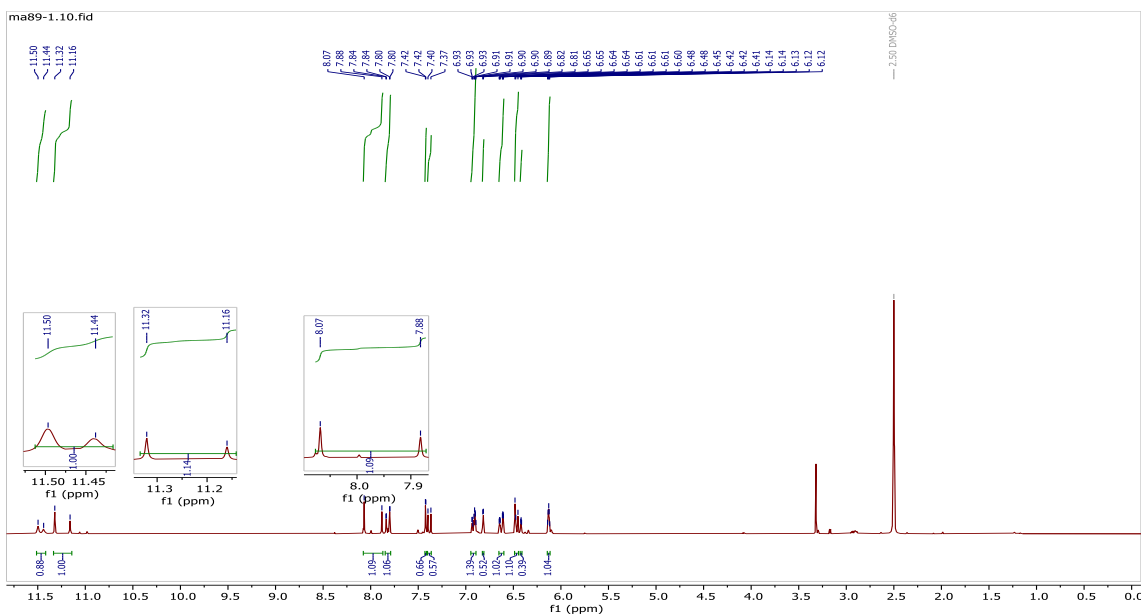


Figure S19: FT-IR spectrum of compound 4c

(2E, N'E)'-N'-((1H pyrrol-2-yl) methylene) -3-(furan-2-yl) acrylohydrazide (4d)



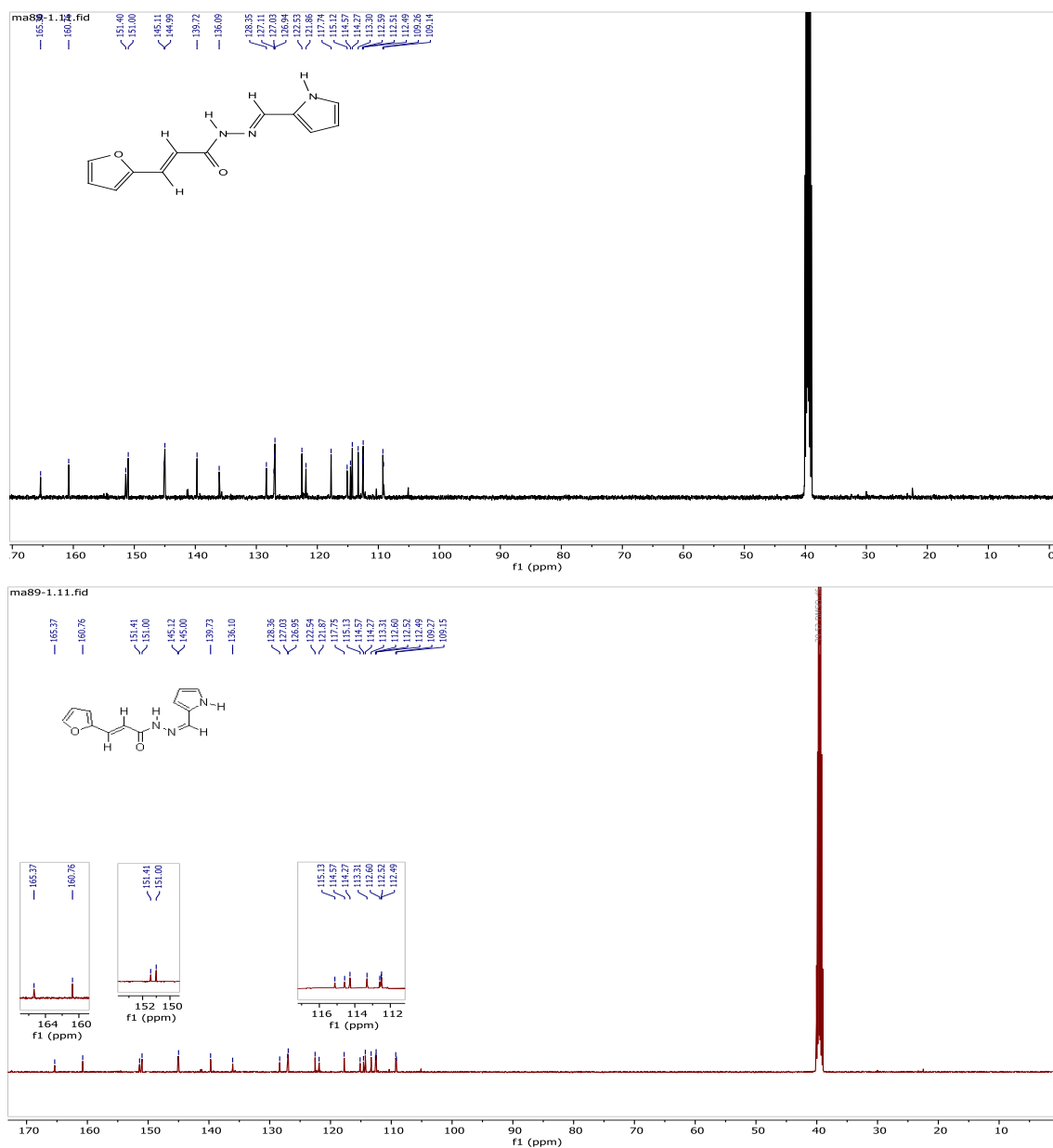


Figure S21 : ¹³C NMR spectrum of Compound 4d recorded in DMSO-*d*₆

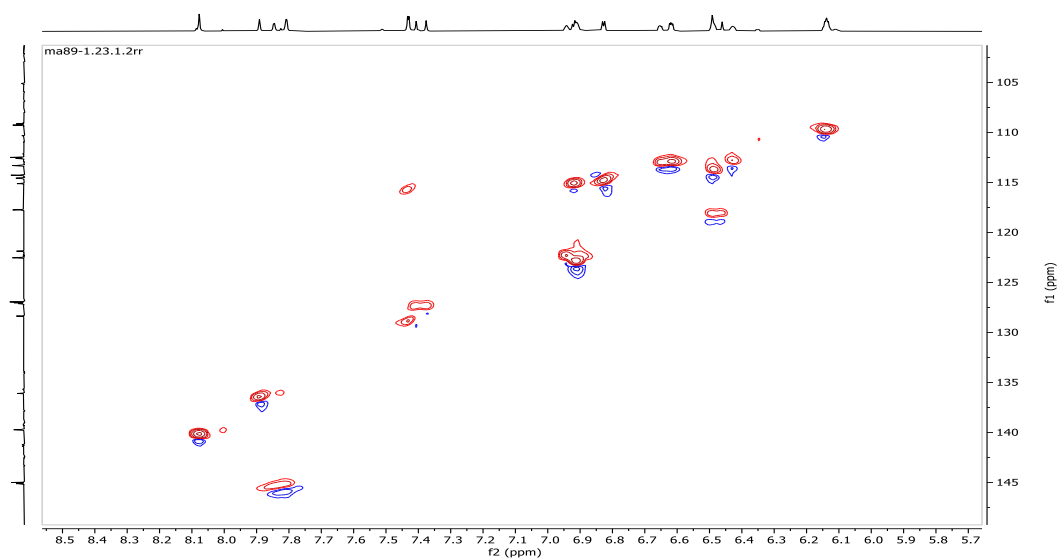


Figure S22 : HSQC spectrum of compound 4d record in DMSO- d_6

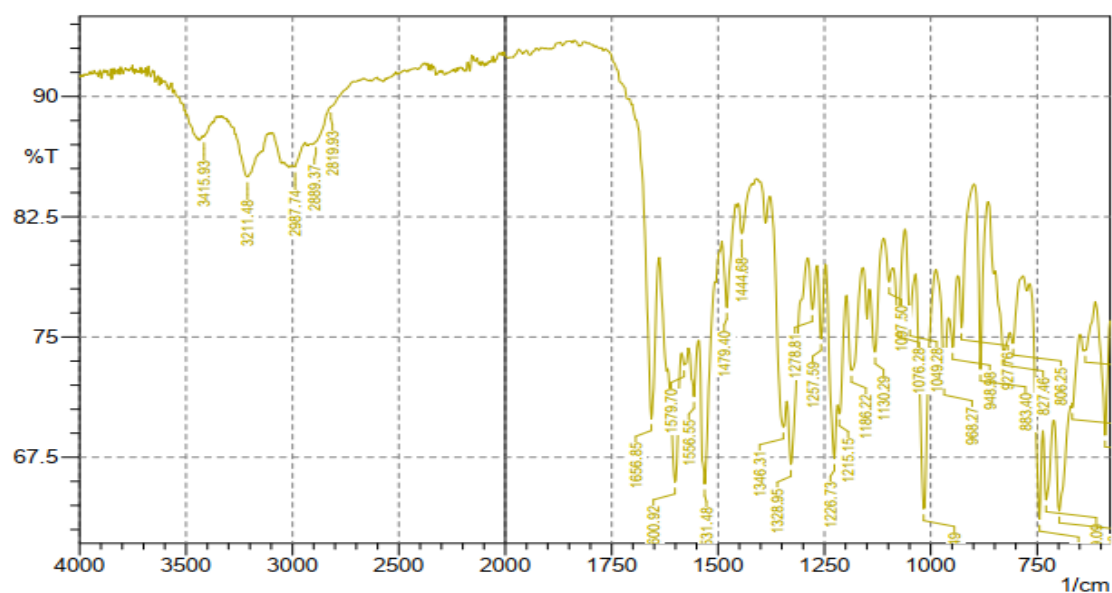


Figure S23: FT-IR spectrum of compound 4d

(2E, N'E)'-3-(furan-2-yl) -*N'*-(furan-2-ylmethylene) acrylohydrazide (**4e**)

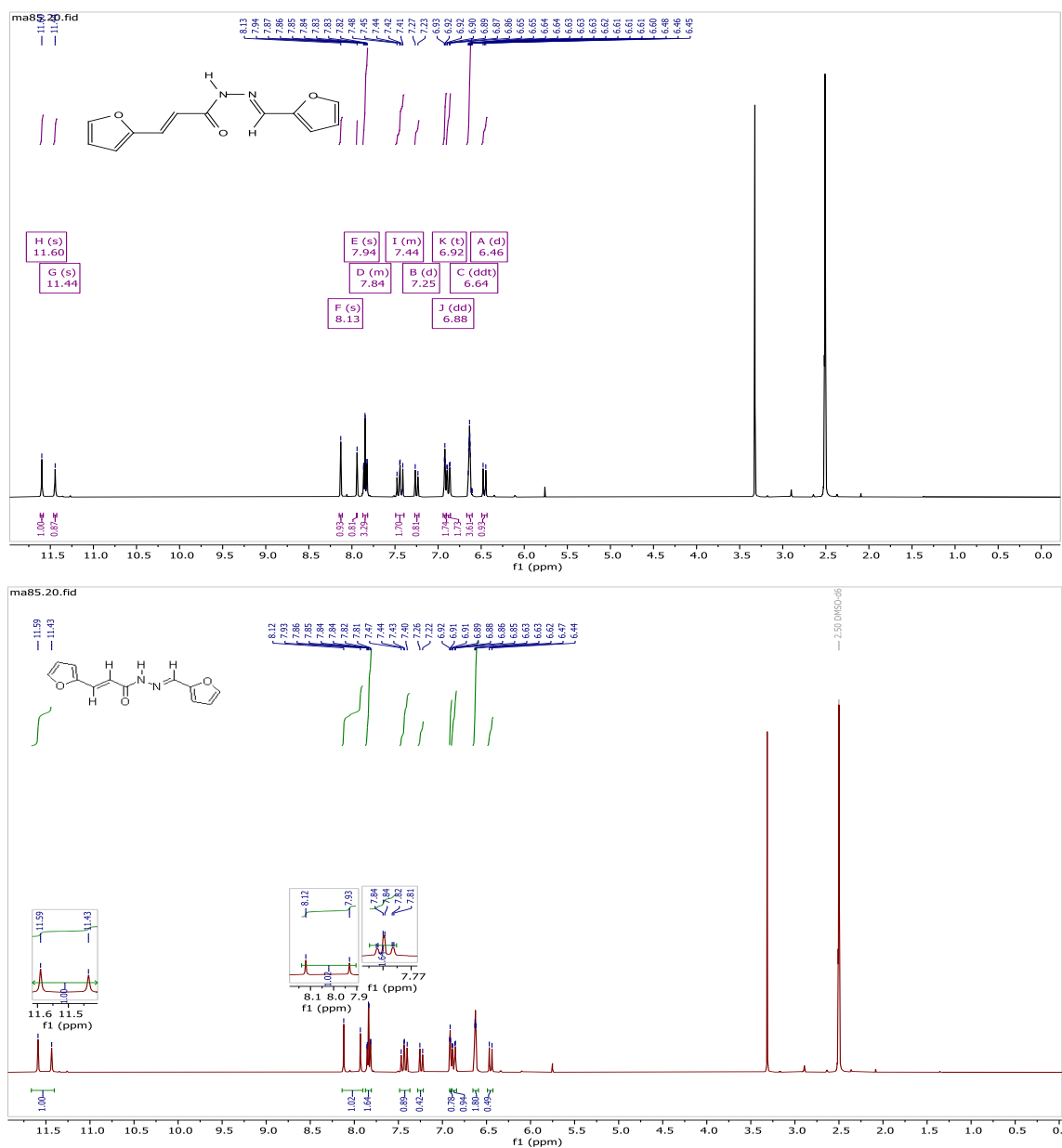


Figure S24 : ¹H NMR spectrum of Compound 4e recorded in DMSO-*d*₆

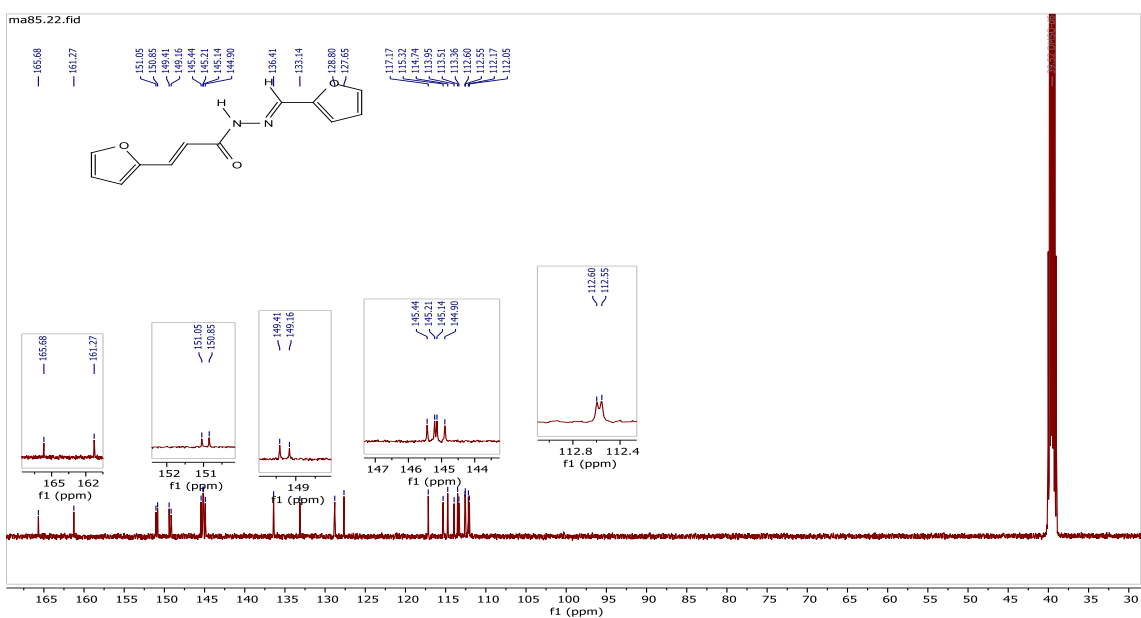
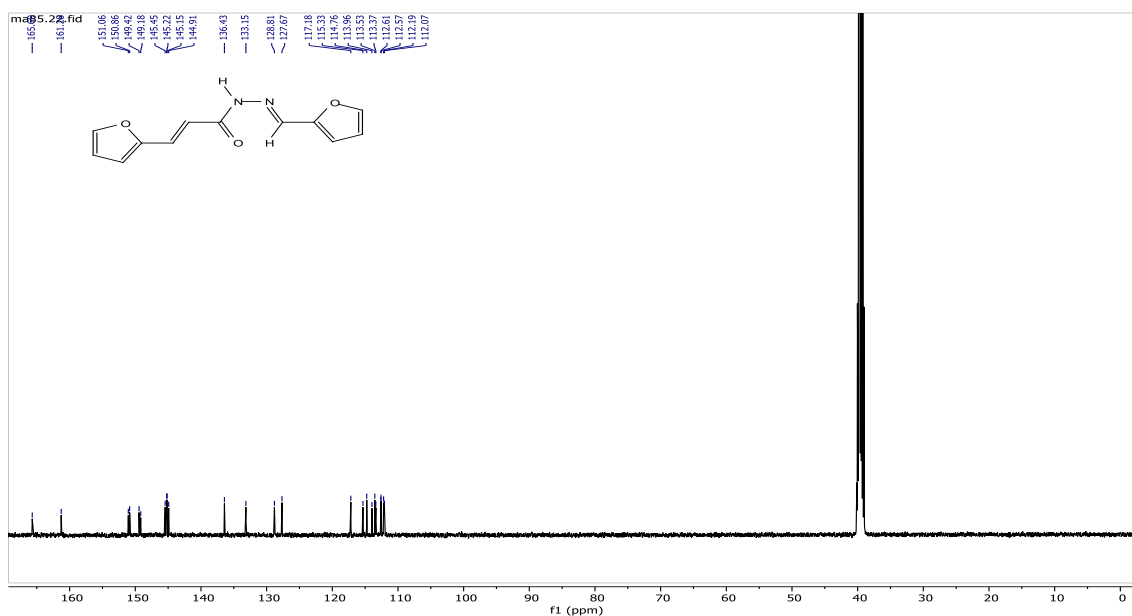
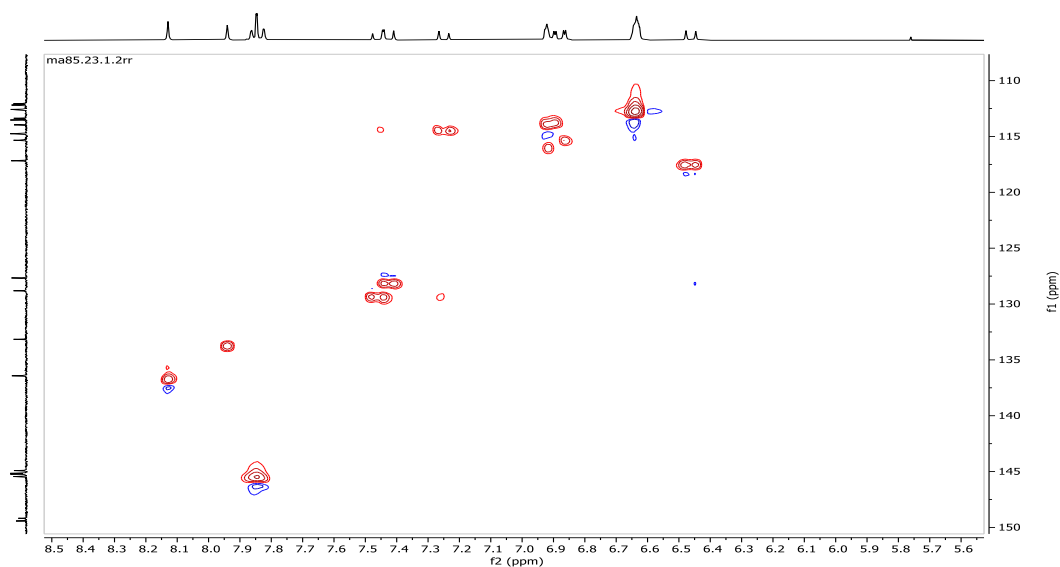


Figure S25 : ^{13}C NMR spectrum of Compound 4e recorded in $\text{DMSO}-d_6$



(2*E*, *N'E*)-3-(furan-2-yl)-*N'*-(pyridin-2-ylmethylene) acrylohydrazide (4f)**

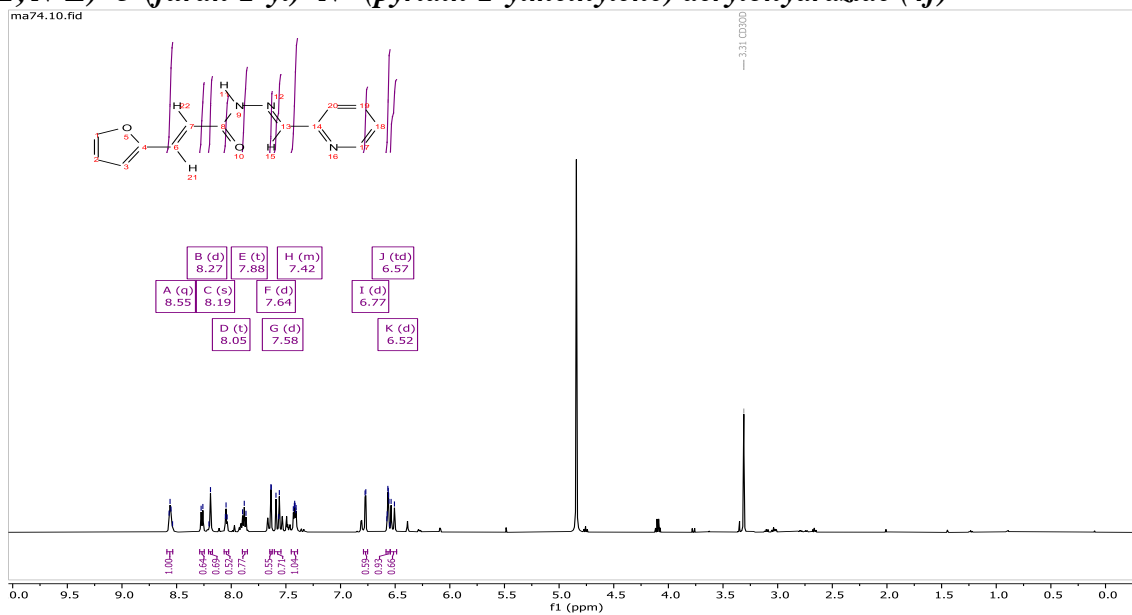


Figure S28 : ¹H NMR spectrum of Compound 4f recorded in methanol-*d*₄

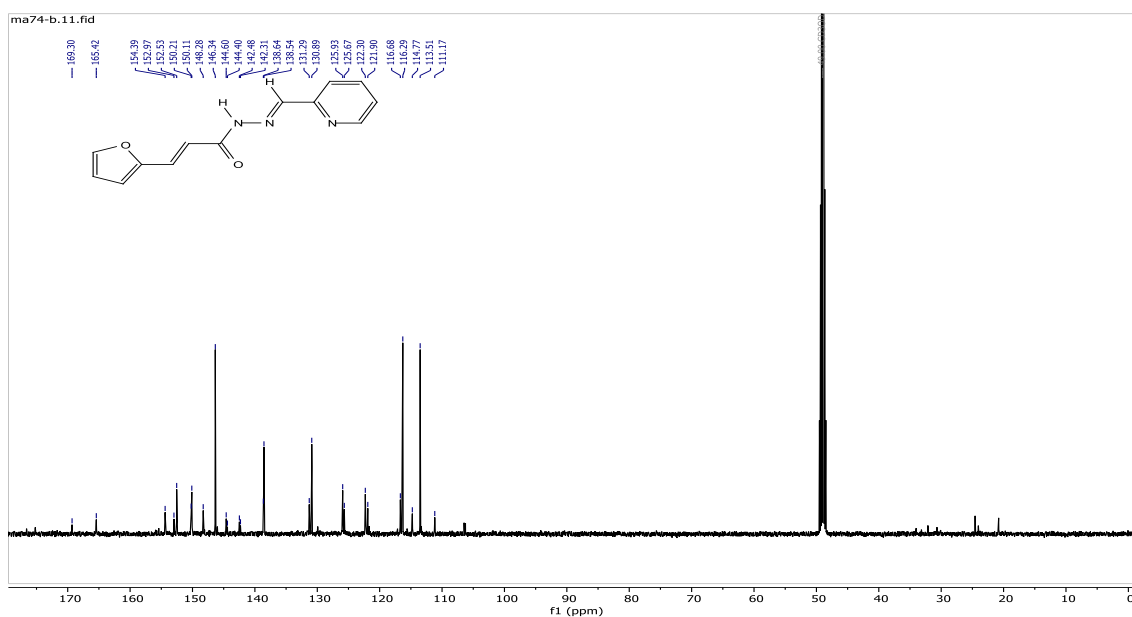


Figure S29 : ¹³C NMR spectrum of Compound 4f recorded in methanol-*d*₄

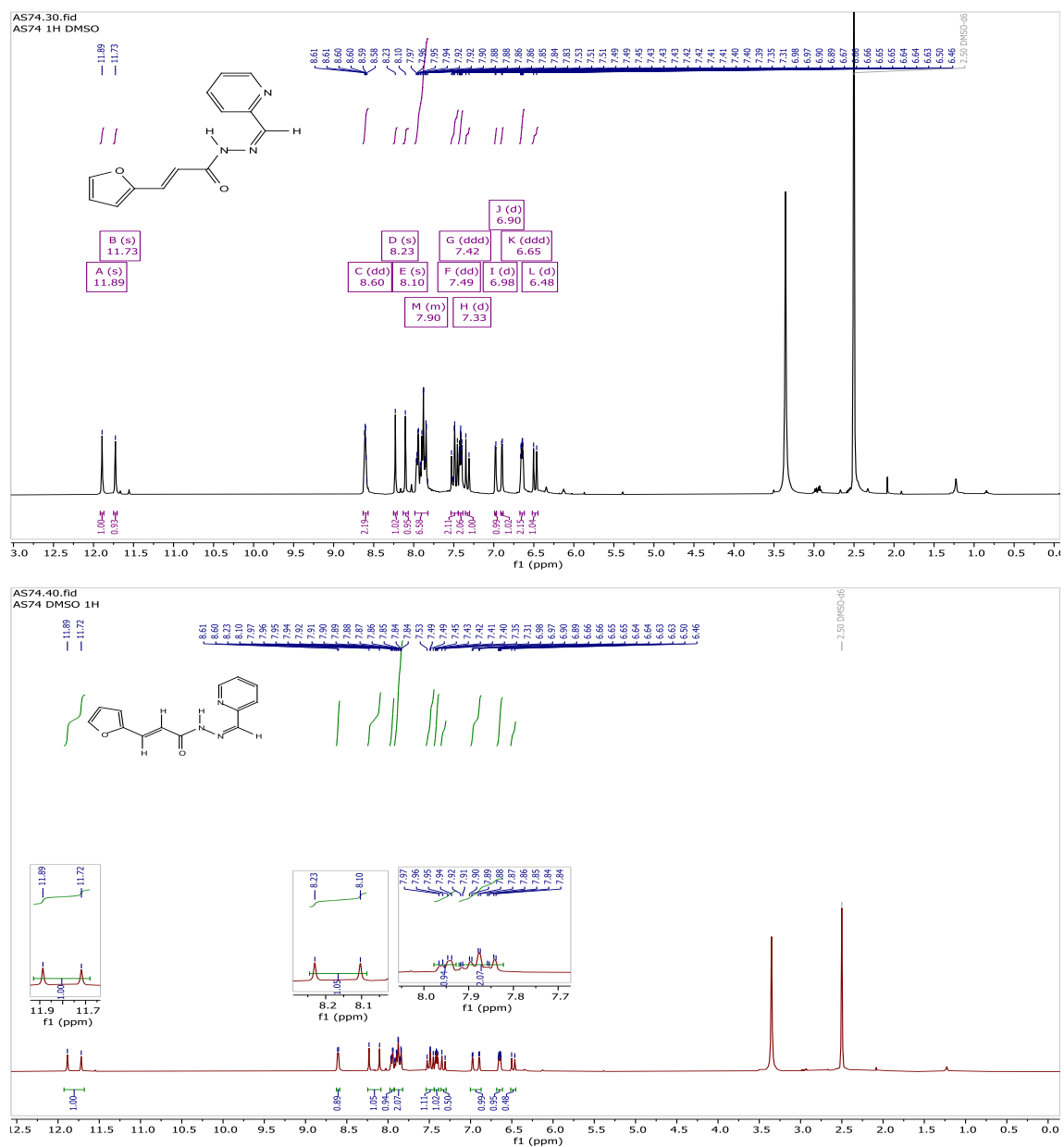


Figure S30: ^1H NMR spectrum of Compound 4f recorded in $\text{DMSO-}d_6$

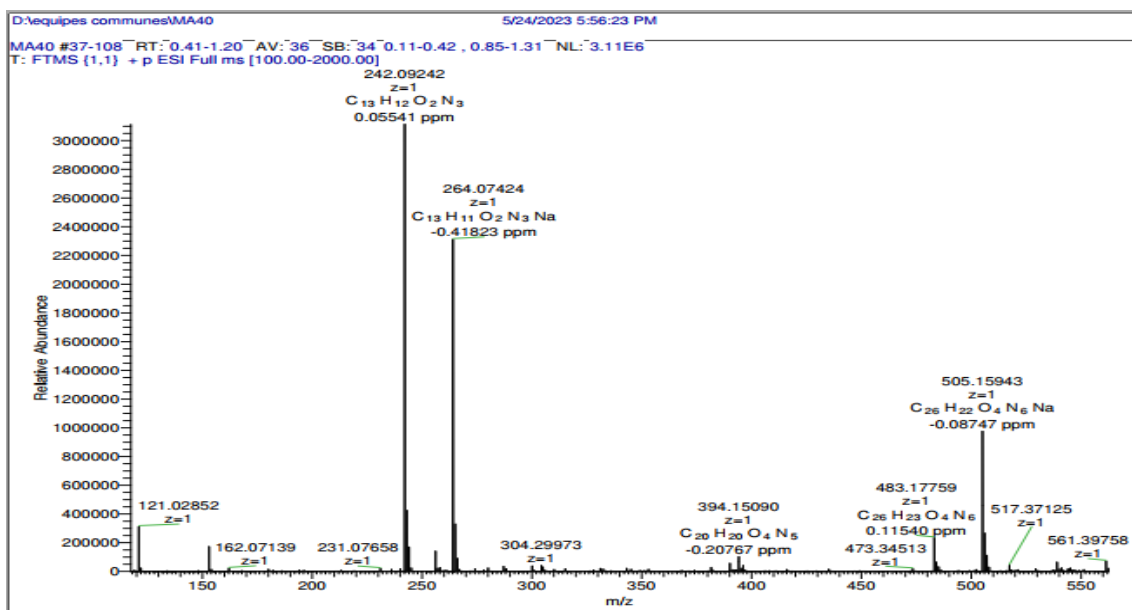


FIGURE S31: MASS SPECTRUM OF THE COMPOUND 4f (E-)

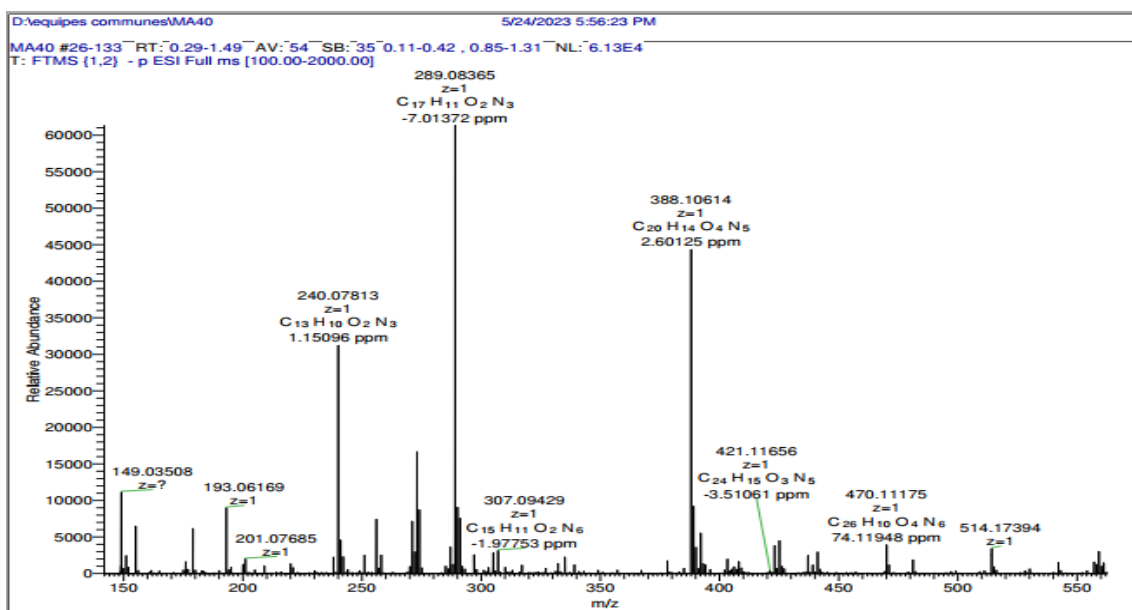


FIGURE S32: MASS SPECTRUM OF THE COMPOUND 4f (E-)

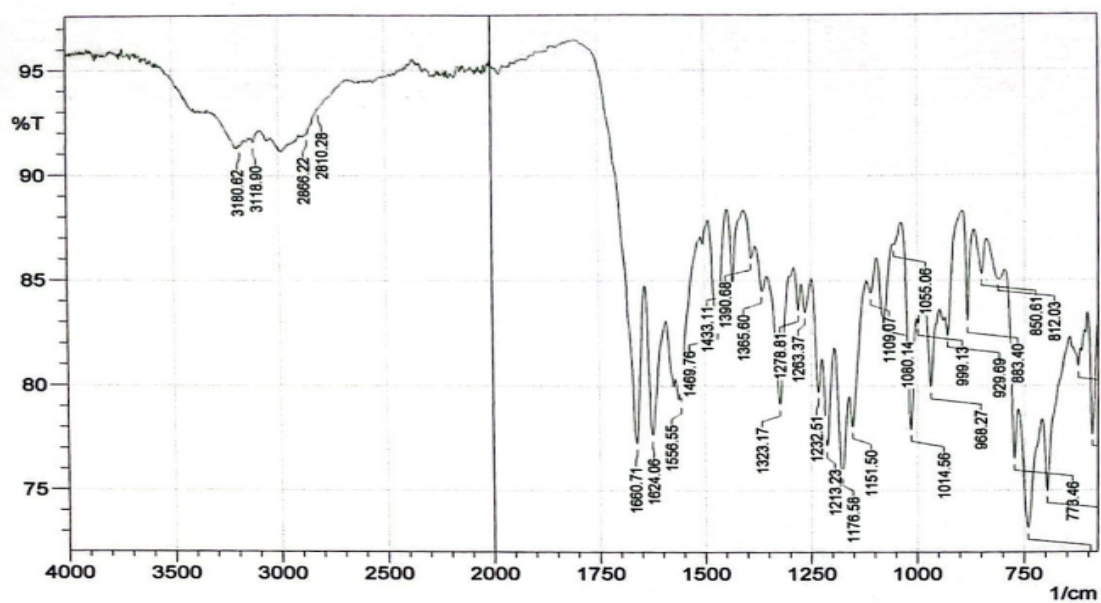
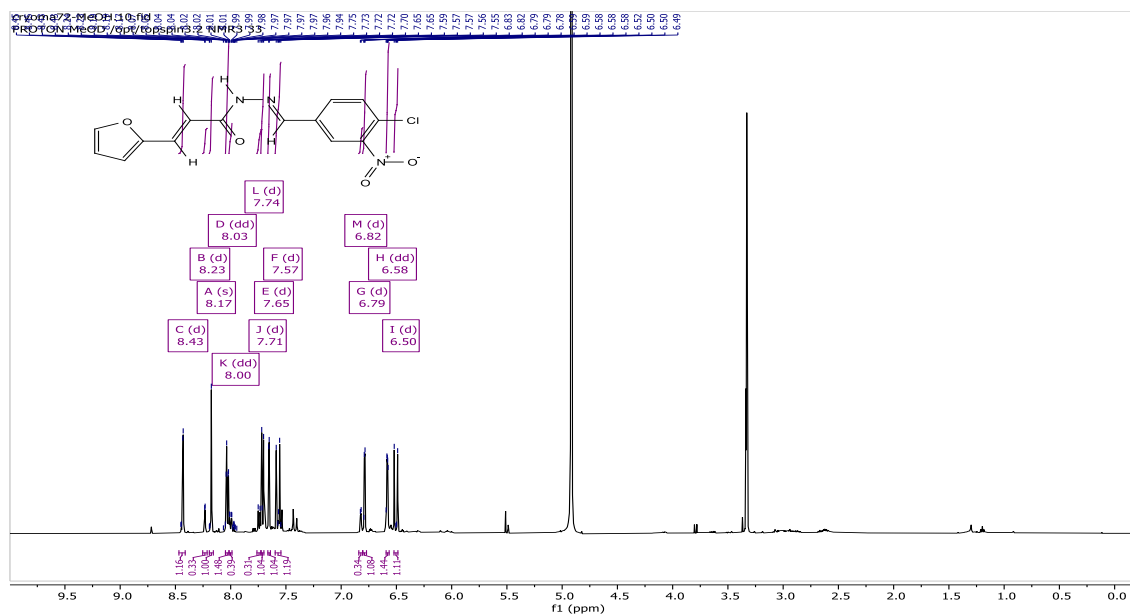
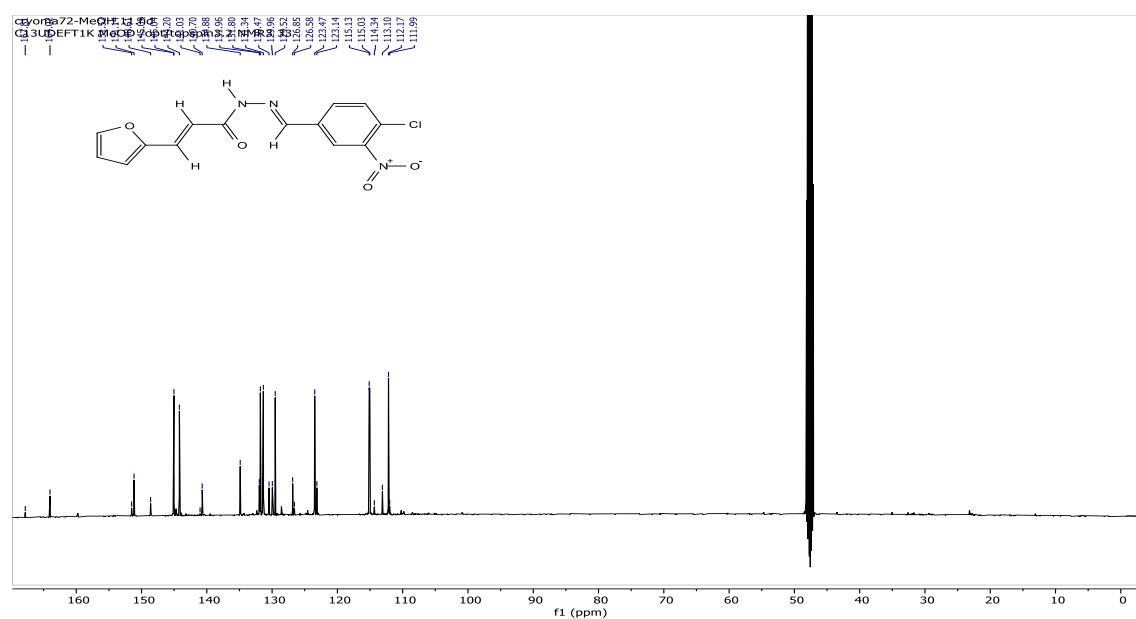
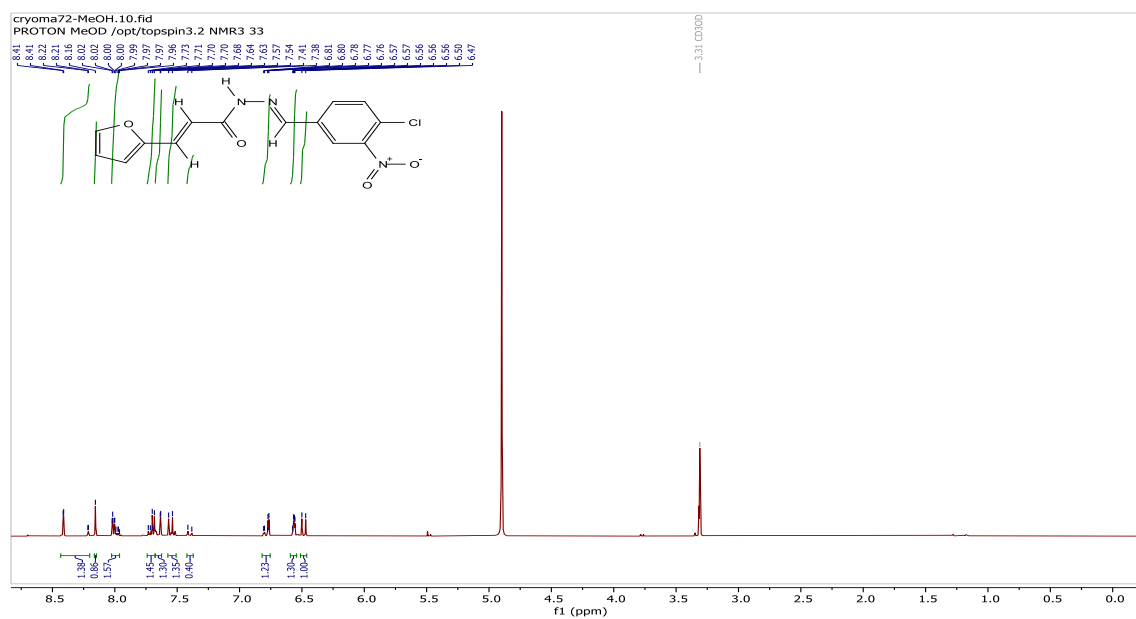


Figure S33: FT-IR spectrum of compound 4f

(2*E*, *N'E*) -*N'*-(1-(4chloro-3-nitrobenzylidene) -3-(furan-2-yl) acrylohydrazide (4g)**





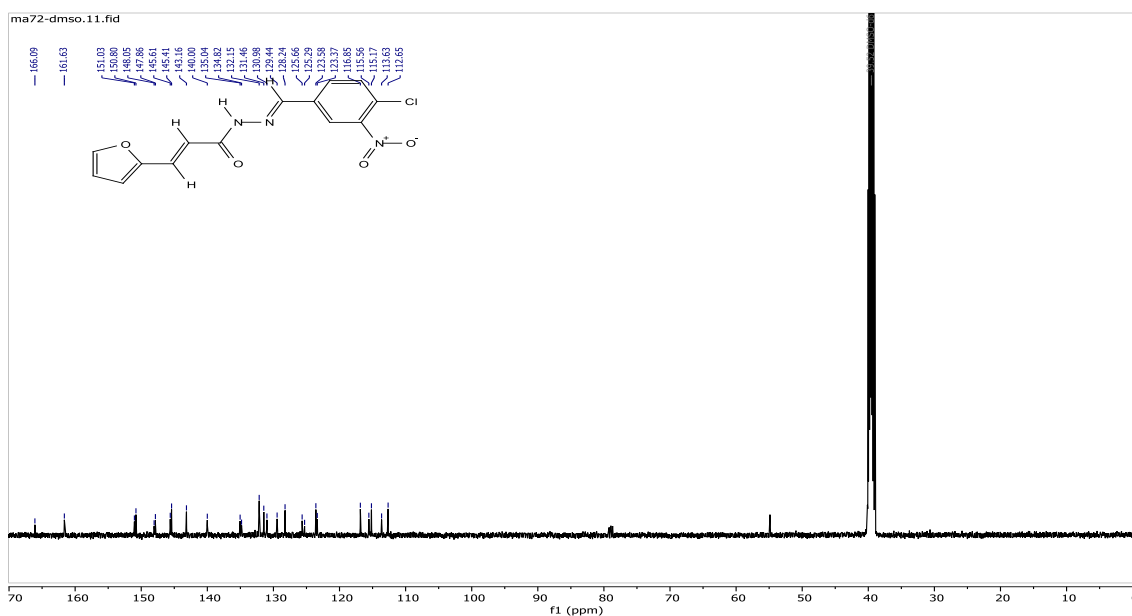


Figure S37: ¹³C NMR spectrum of Compound 4g recorded in DMSO-*d*₆

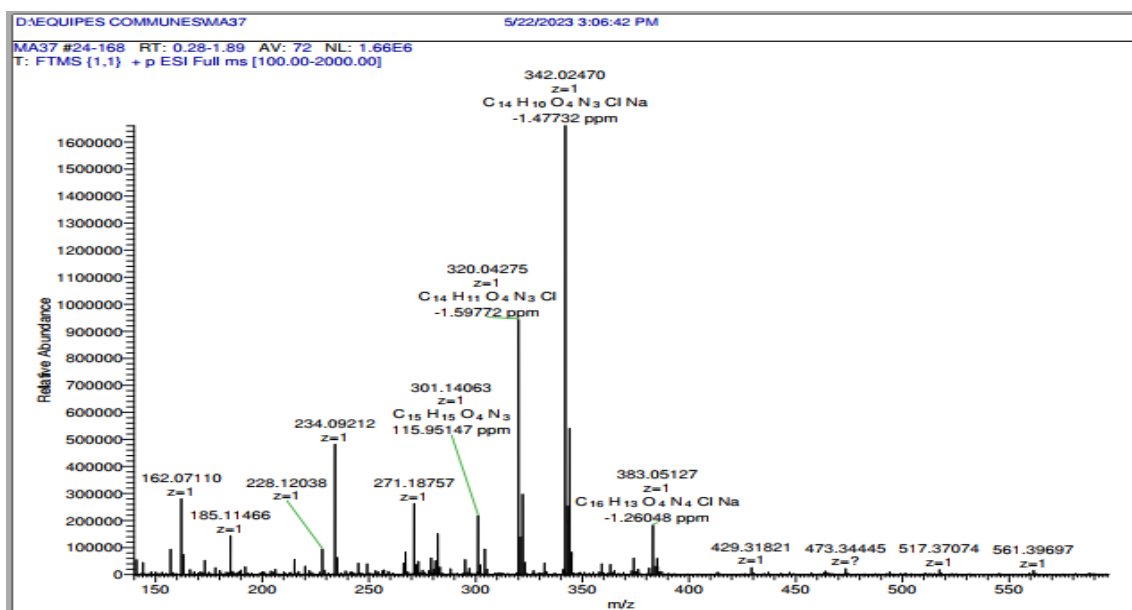


FIGURE S38: MASS SPECTRUM OF THE COMPOUND 4G (E-)

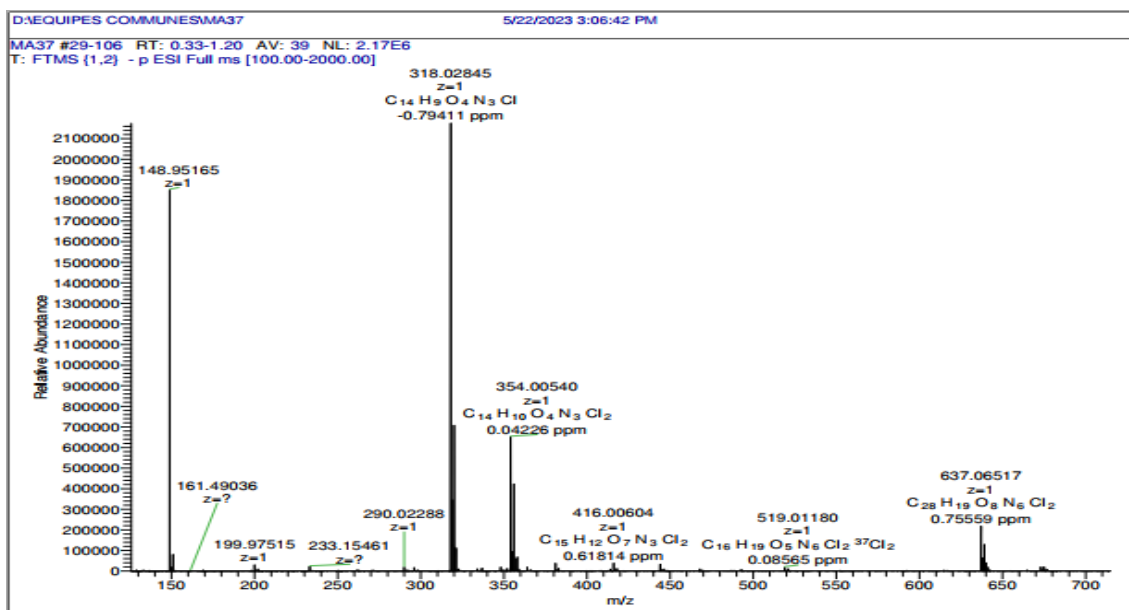


FIGURE S39: MASS SPECTRUM OF THE COMPOUND 4G (E)

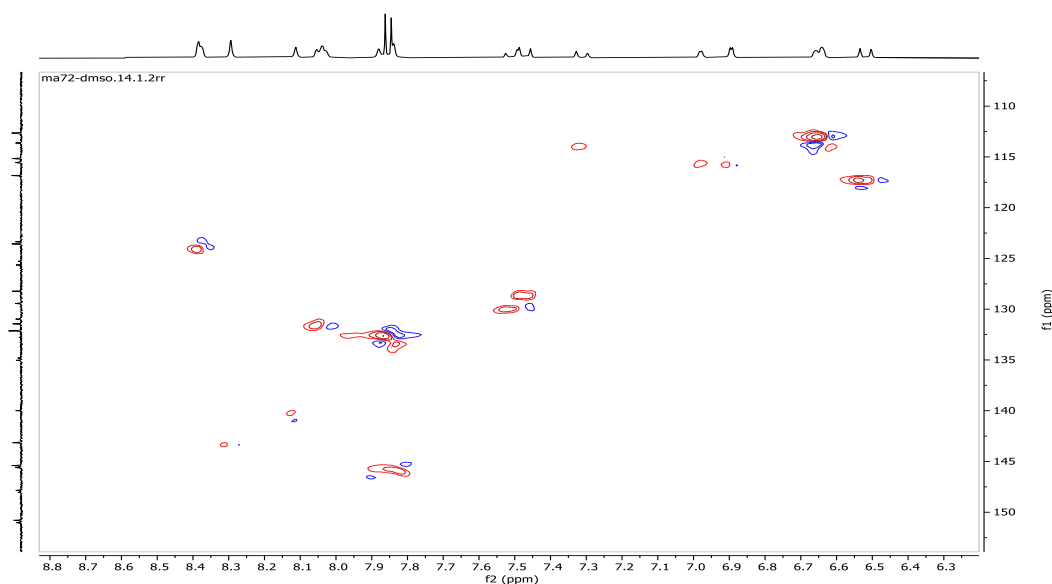


Figure S 40 : HSQC spectrum of compound 4g record in DMSO- d_6

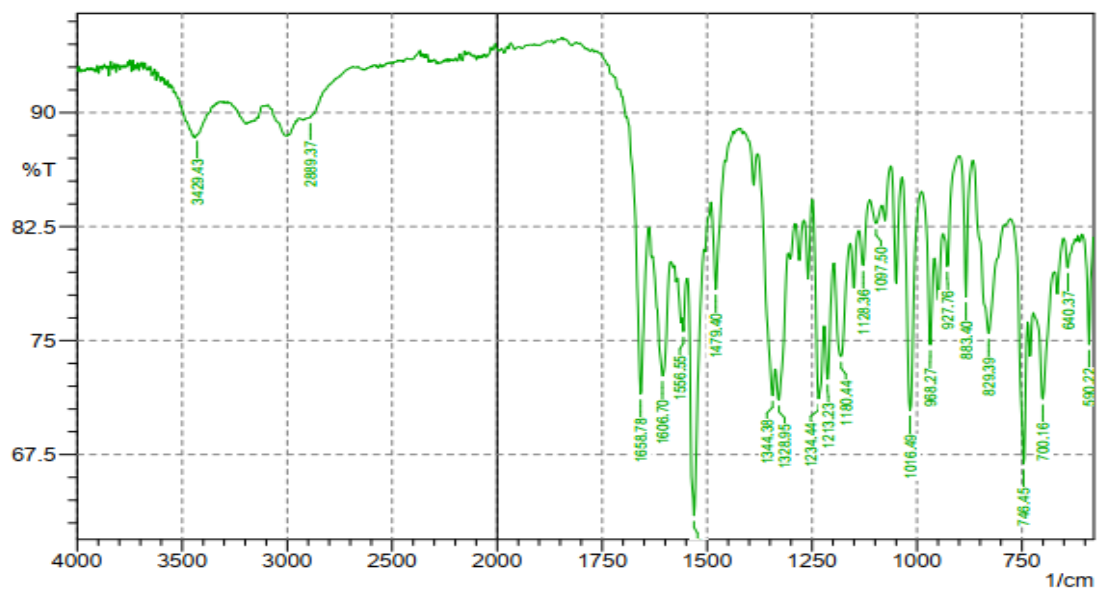
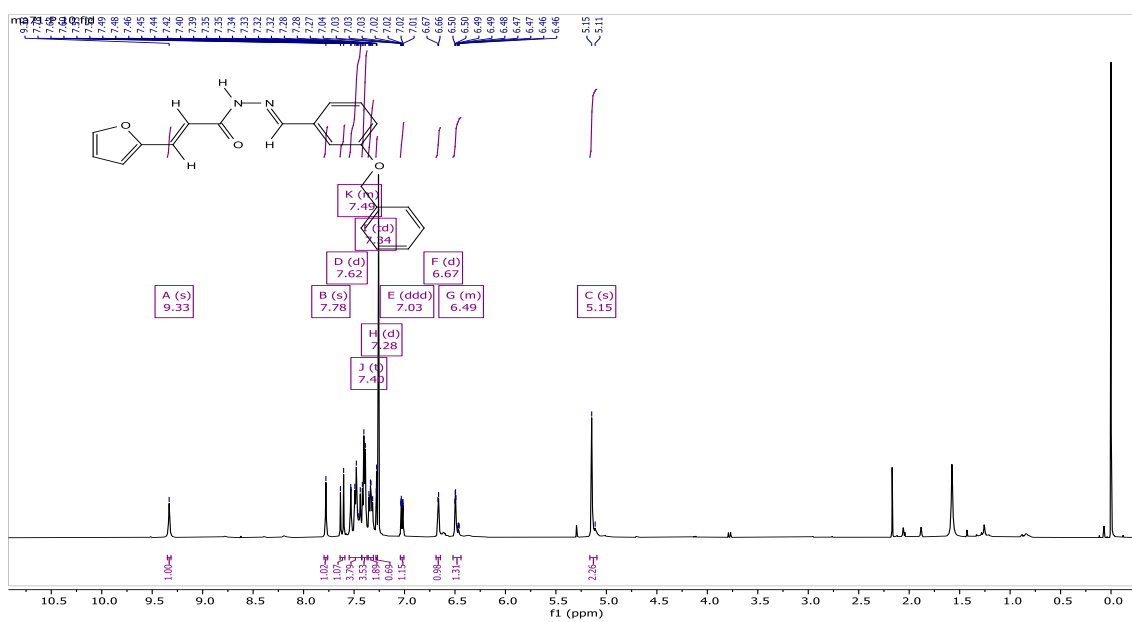


Figure S41: FT-IR spectrum of compound 4g

(2E, N'E) -N'-(3-(benzyloxy) benzylidene) -3-(furan-2-yl) acrylohydrazide (4h)



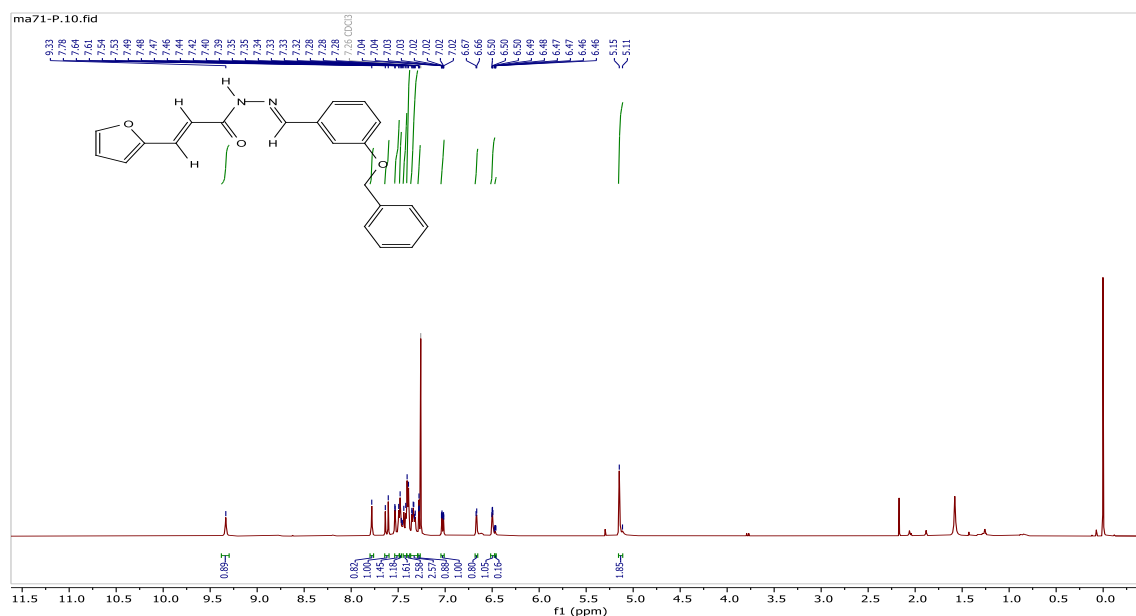


Figure S42: ^1H NMR spectrum of Compound 4h recorded in CDCl_3

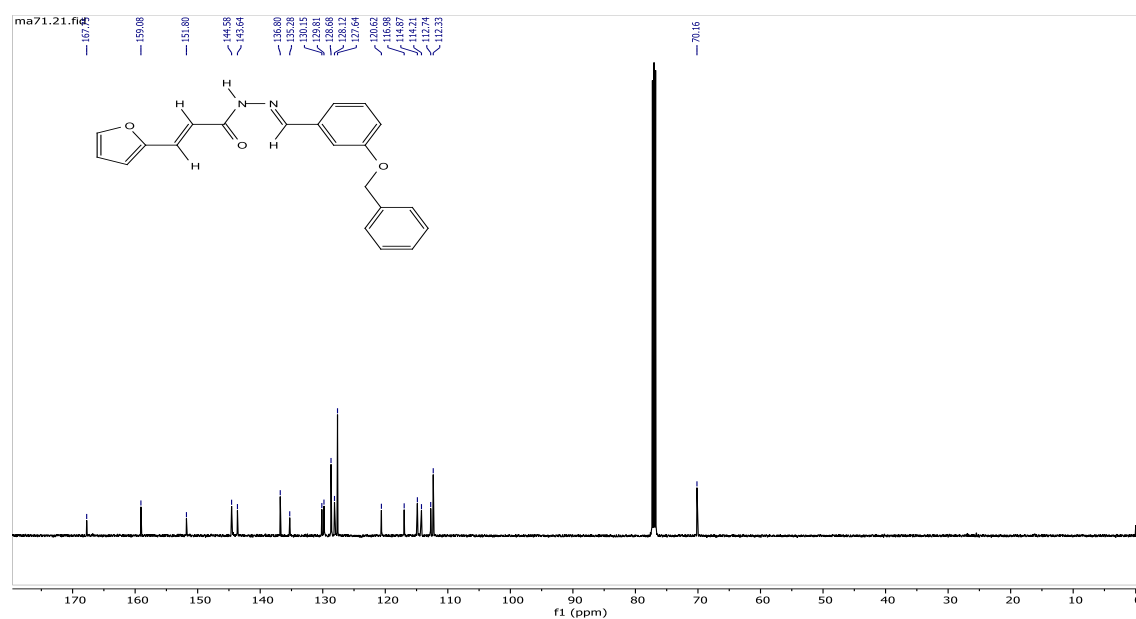


Figure S43: ^{13}C NMR spectrum of Compound 4h recorded in CDCl_3

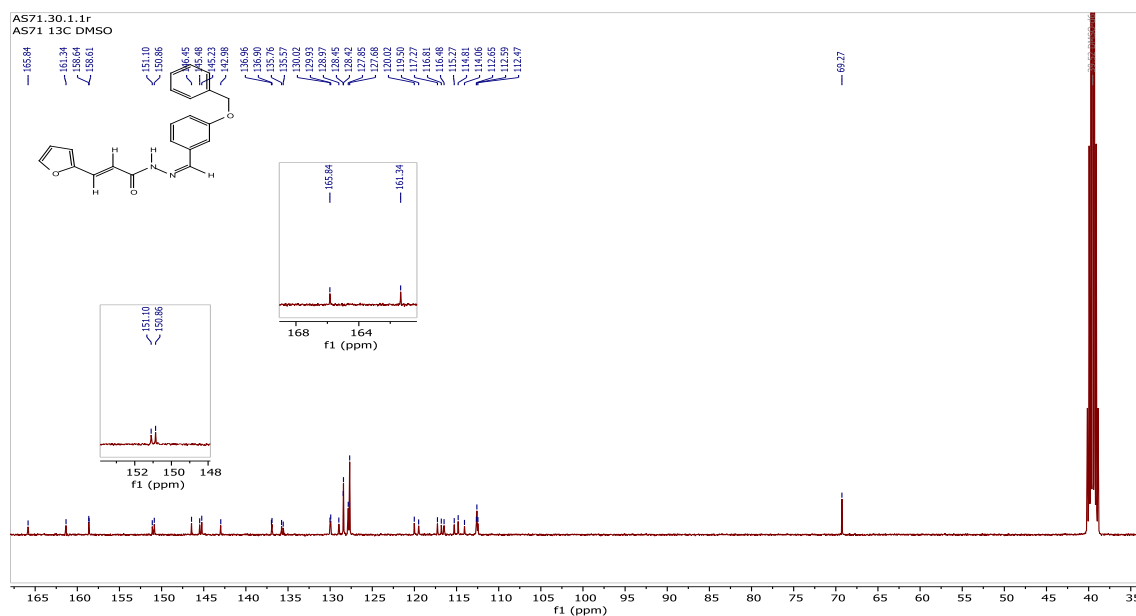


Figure S45: ^{13}C NMR spectrum of Compound 4h recorded in $\text{DMSO}-d_6$

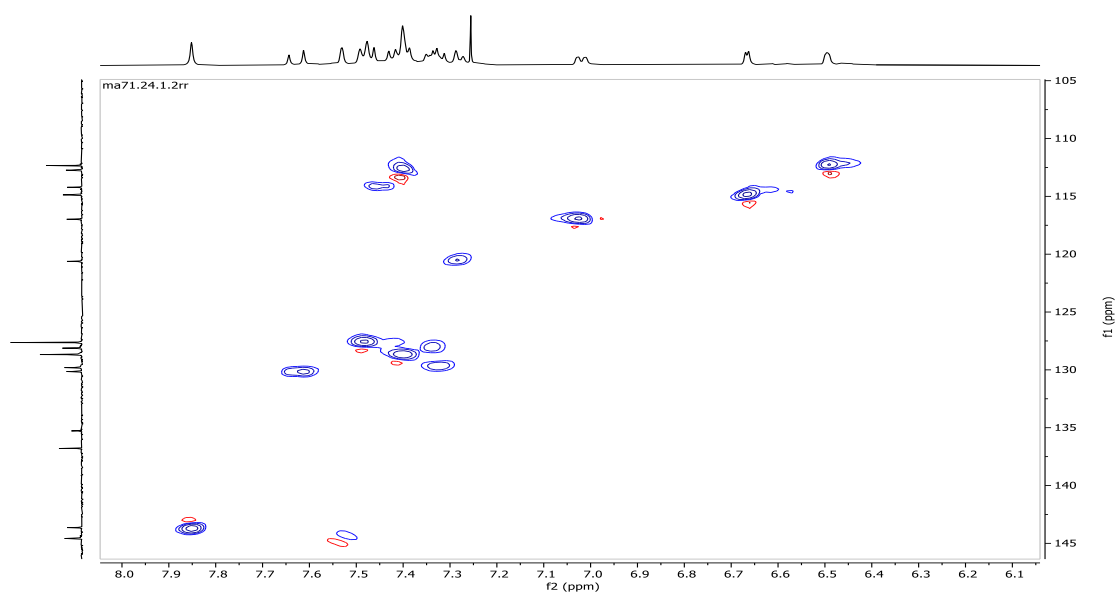


Figure S46: HSQC spectrum of compound 4h record in CDCl_3-d_6

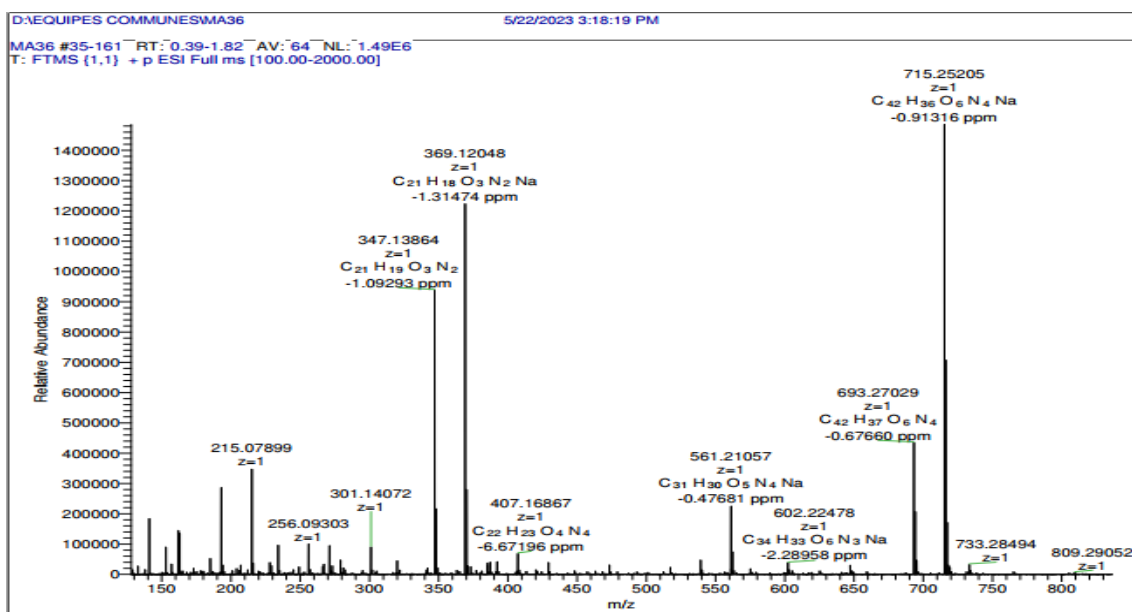


FIGURE S47: MASS SPECTRUM OF THE COMPOUND 4H (E⁻)

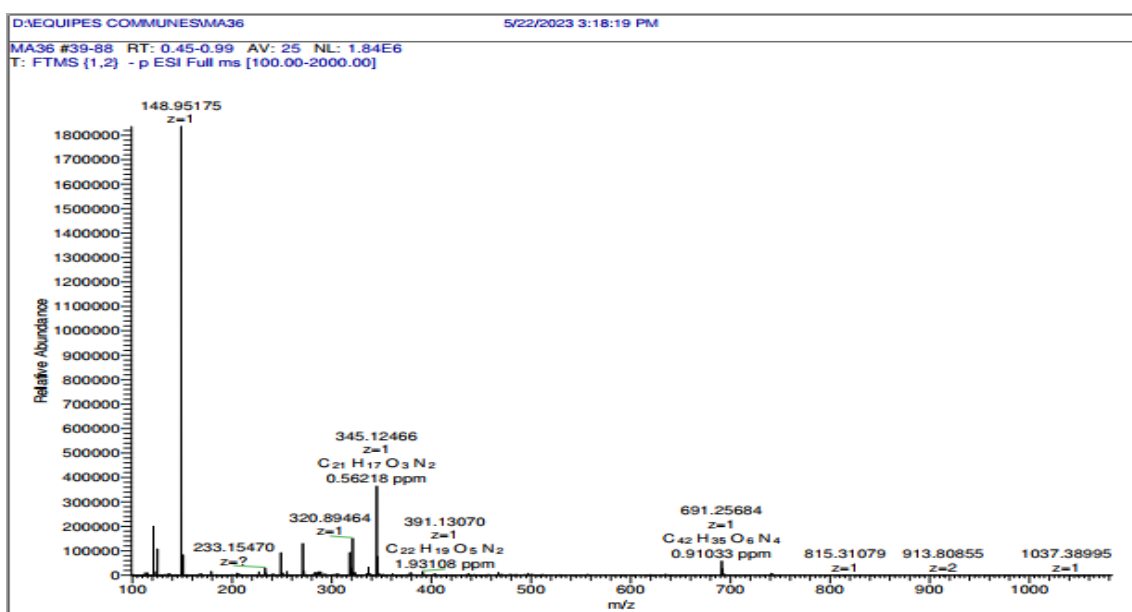


FIGURE S48: MASS SPECTRUM OF THE COMPOUND 4H (E)

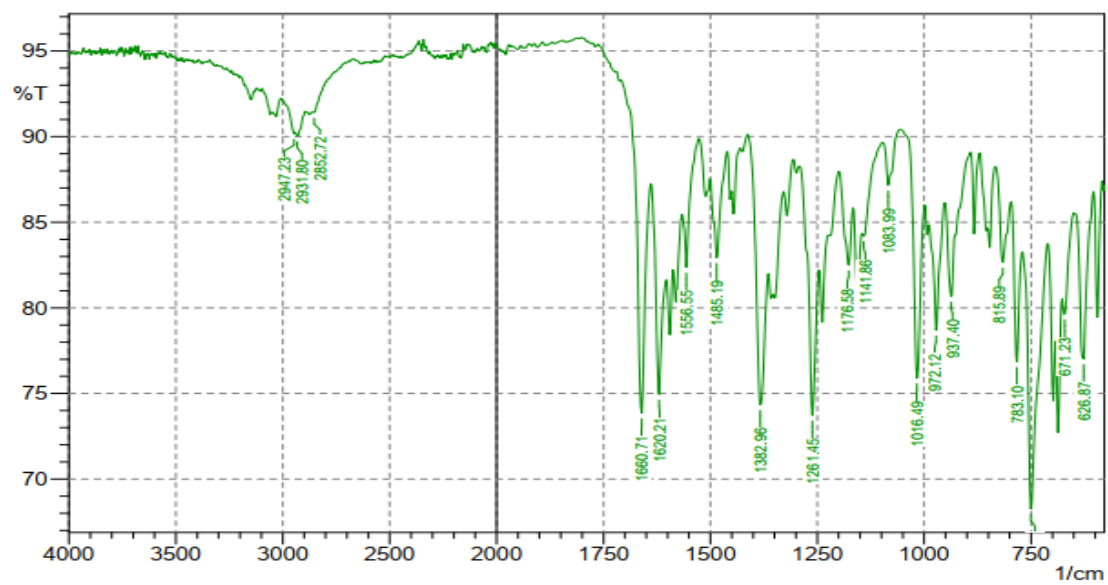


Figure S 49: FT-IR spectrum of compound 4h