

Supporting Information

Org. Commun. 15:1 (2022) 44-58

Mandelic acid: an efficient and green organo-catalyst for synthesis of 2,4,5-trisubstituted Imidazoles under solvent free condition

Ramesh S. Ghogare

Department of Chemistry, B. N. N. College Bhiwandi, Dist-Thane, Maharashtra, India-421305

Table of Contents		Page
Figure S1: ¹ H-NMR (300 MHz, DMSO- <i>d</i> ₆), Spectrum of Compound 4a		2
Figure S2: ¹³ C-NMR (75 MHz, , DMSO- <i>d</i> ₆) Spectrum of Compound 4a		2
Figure S3: ¹ H-NMR (300 MHz, , DMSO- <i>d</i> ₆) Spectrum of Compound 4b		3
Figure S4: ¹³ C-NMR (75 MHz, , DMSO- <i>d</i> ₆) Spectrum of Compound 4b		3
Figure S5: ¹ H-NMR (300 MHz, , DMSO- <i>d</i> ₆) Spectrum of Compound 4c		4
Figure S6: ¹³ C-NMR (75 MHz, , DMSO- <i>d</i> ₆) Spectrum of Compound 4c		4
Figure S7: ¹ H-NMR (300 MHz, , DMSO- <i>d</i> ₆) Spectrum of Compound 4d		5
Figure S8: ¹³ C-NMR (75 MHz, , DMSO- <i>d</i> ₆) Spectrum of Compound 4d		5
Figure S9: ¹ H-NMR (300 MHz, , DMSO- <i>d</i> ₆), Spectrum of Compound 4e		6
Figure S10: ¹³ C-NMR (75 MHz, , DMSO- <i>d</i> ₆) Spectrum of Compound 4e		6
Figure S11: ¹ H-NMR (300 MHz, , DMSO- <i>d</i> ₆), Spectrum of Compound 4f		7
Figure S12: ¹³ C-NMR (75 MHz, , DMSO- <i>d</i> ₆) Spectrum of Compound 4f		7
Figure S13: ¹ H-NMR (300 MHz, , DMSO- <i>d</i> ₆), Spectrum of Compound 4g		8
Figure S14: ¹³ C-NMR (75 MHz, , DMSO- <i>d</i> ₆) Spectrum of Compound 4g		8
Figure S15: ¹ H-NMR (300 MHz, , DMSO- <i>d</i> ₆), Spectrum of Compound 4h		9
Figure S16: ¹³ C-NMR (75 MHz, , DMSO- <i>d</i> ₆) Spectrum of Compound 4h		9
Figure S17: ¹ H-NMR (300 MHz, , DMSO- <i>d</i> ₆), Spectrum of Compound 4i		10
Figure S18: ¹³ C-NMR (75 MHz, , DMSO- <i>d</i> ₆) Spectrum of Compound 4i		10
Figure S19: ¹ H-NMR (300 MHz, , DMSO- <i>d</i> ₆), Spectrum of Compound 4j		11
Figure S20: ¹³ C-NMR (75 MHz, , DMSO- <i>d</i> ₆) Spectrum of Compound 4j		11

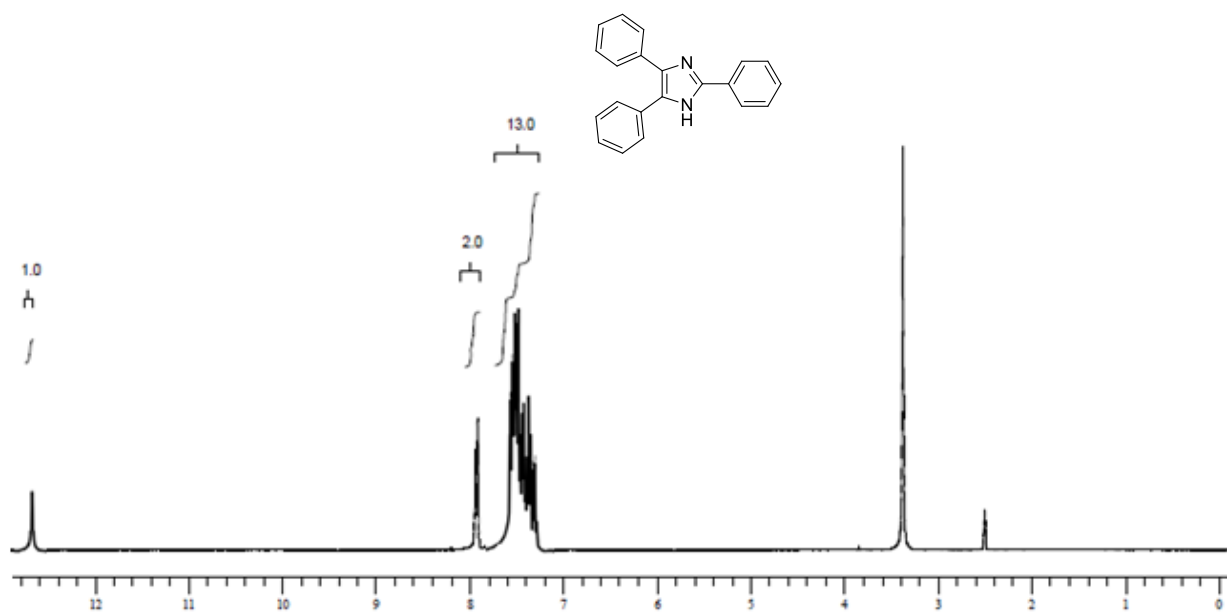


Figure S1: $^1\text{H-NMR}$ (300 MHz, $\text{DMSO-}d_6$) Spectrum of Compound 4a

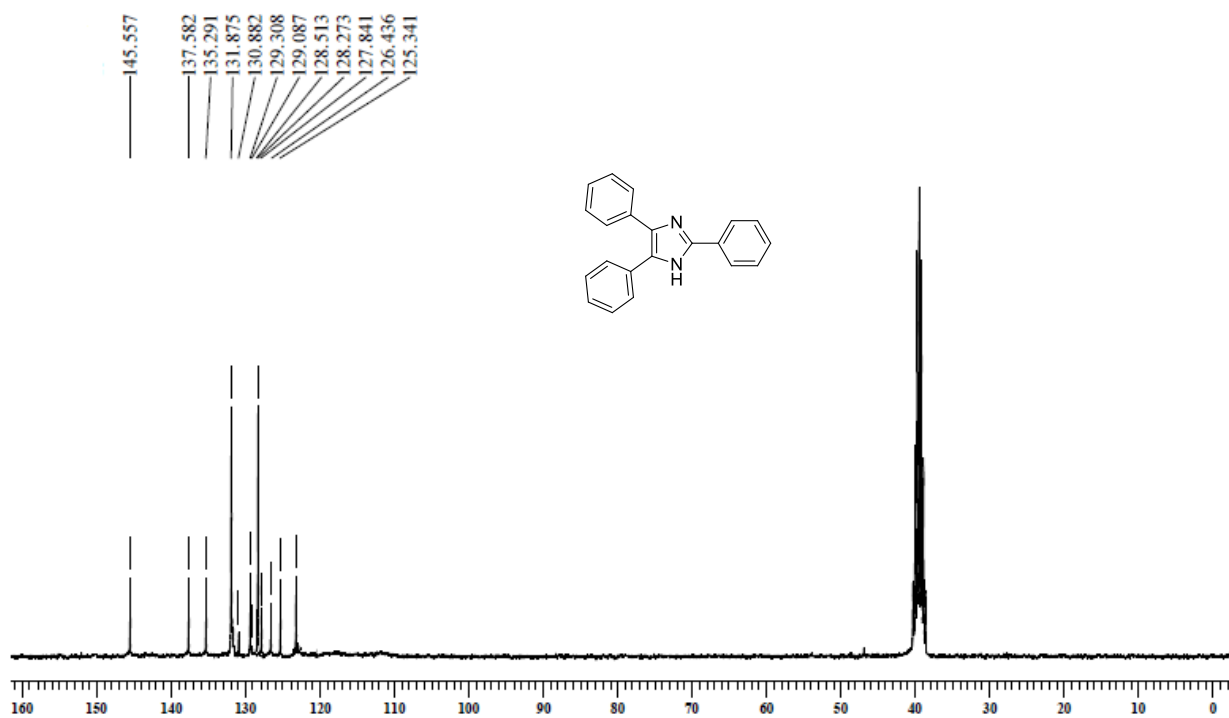


Figure S2: $^{13}\text{C-NMR}$ (75 MHz, $\text{DMSO-}d_6$) Spectrum of Compound 4a

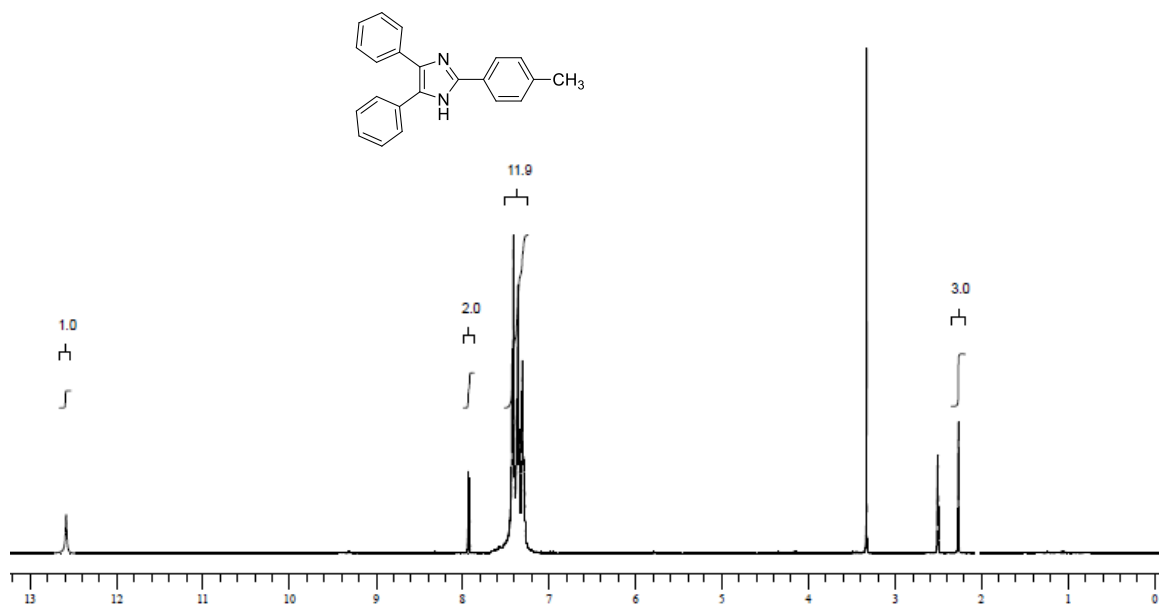


Figure S3: ¹H-NMR (300 MHz, DMSO-*d*₆) Spectrum of Compound 4b

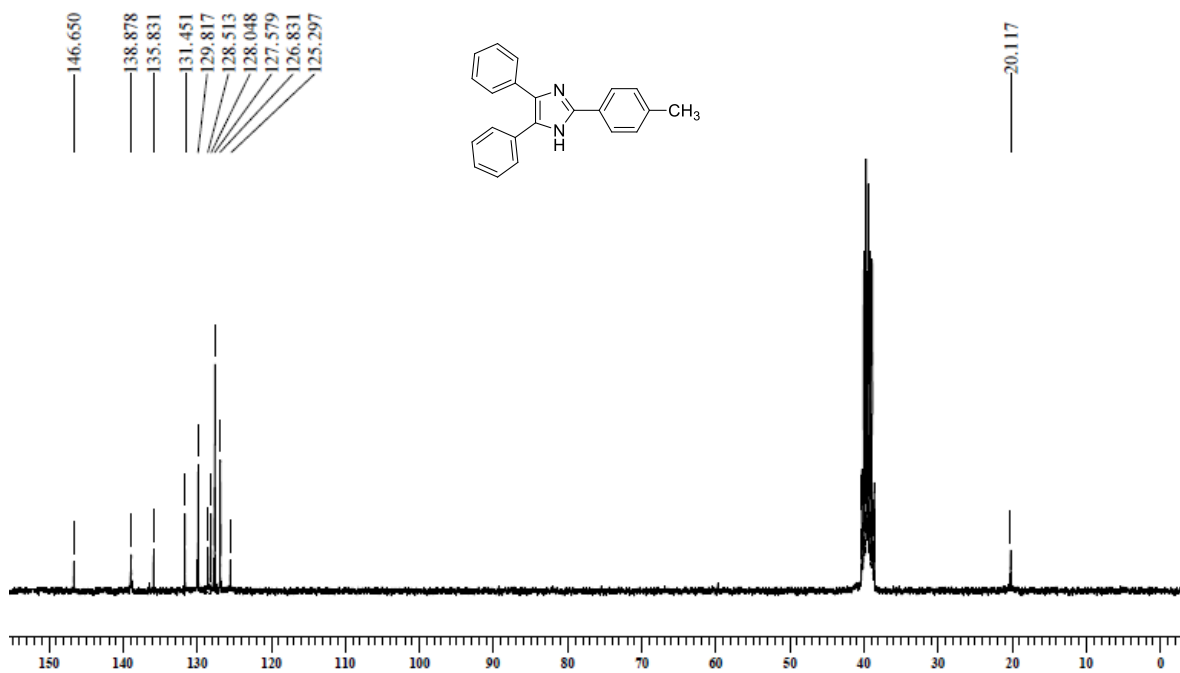


Figure S4: ¹³C-NMR (75 MHz, DMSO-*d*₆) Spectrum of Compound 4b

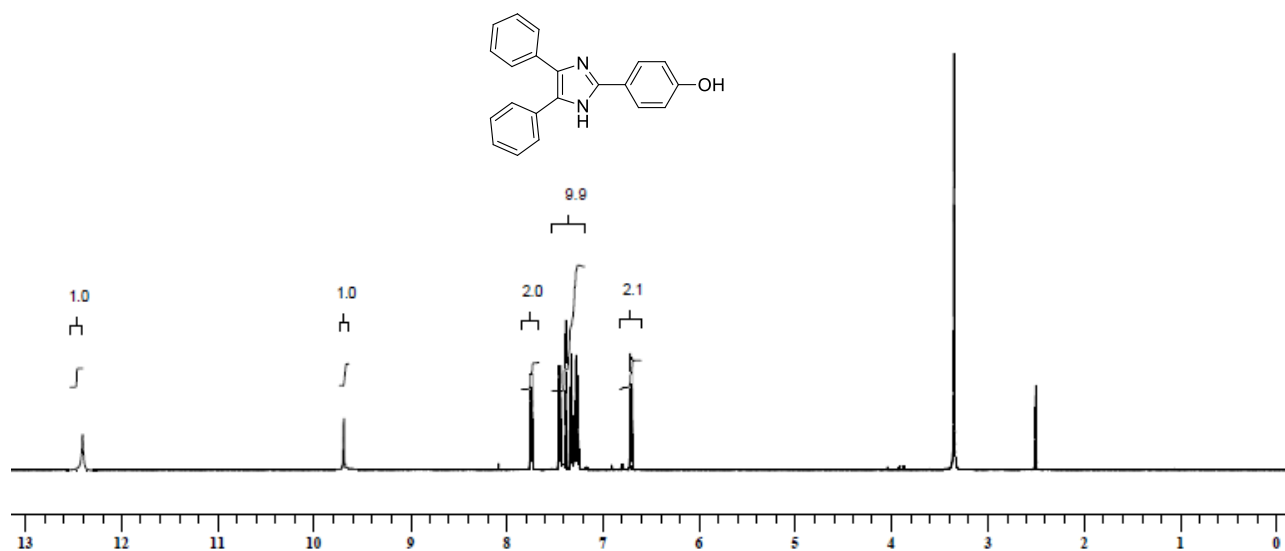


Figure S5: ¹H-NMR (300 MHz, DMSO-*d*₆) Spectrum of Compound 4c

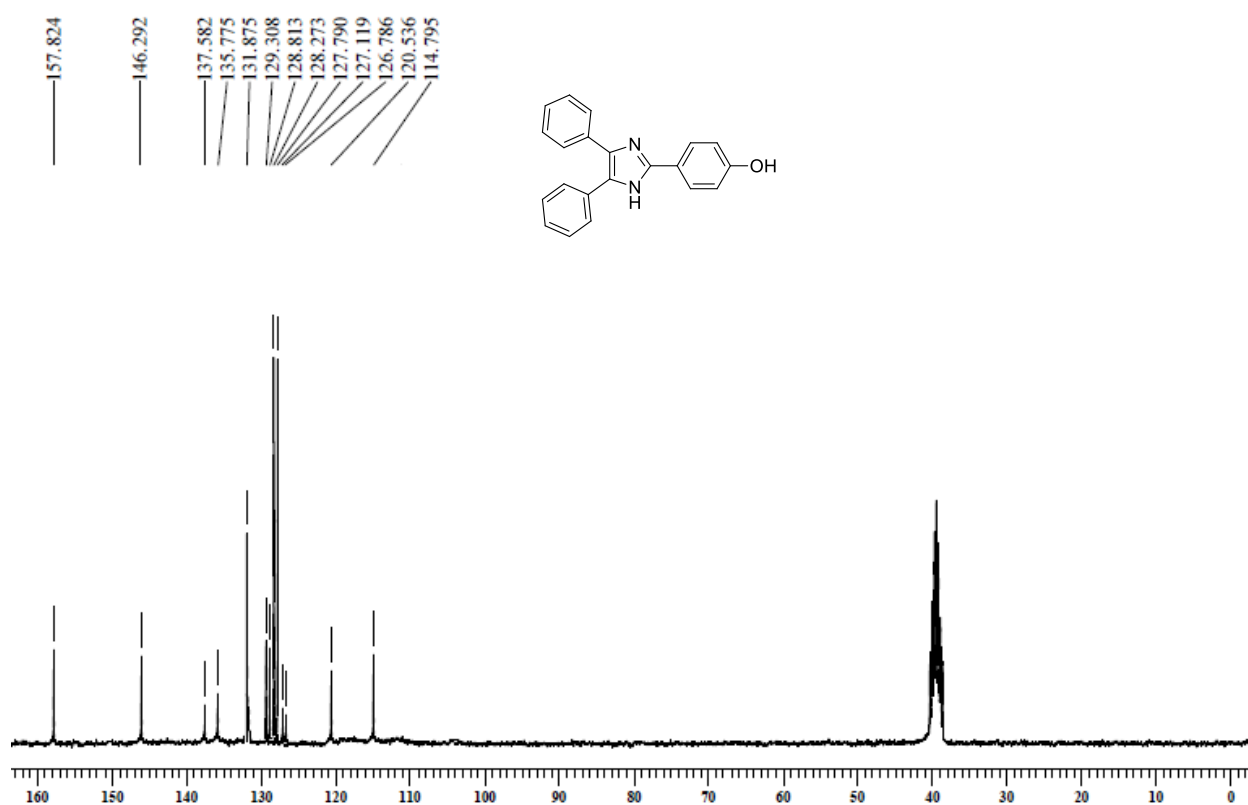
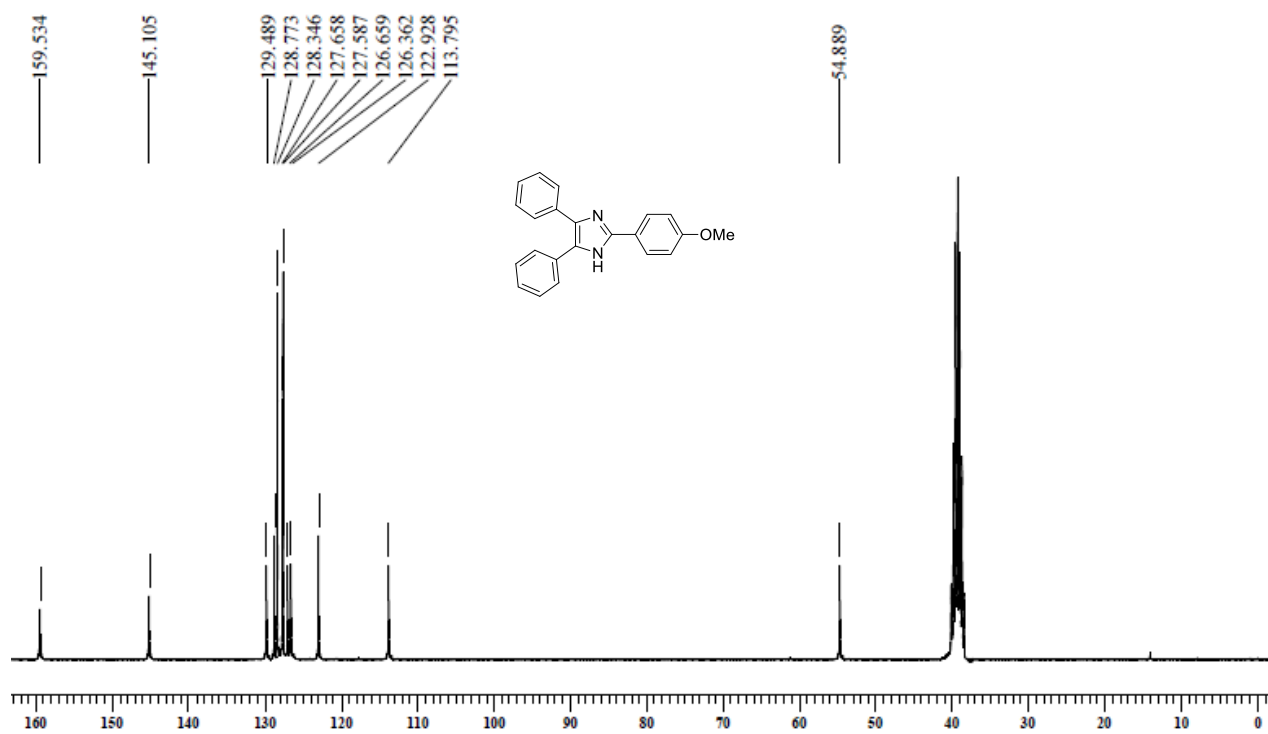
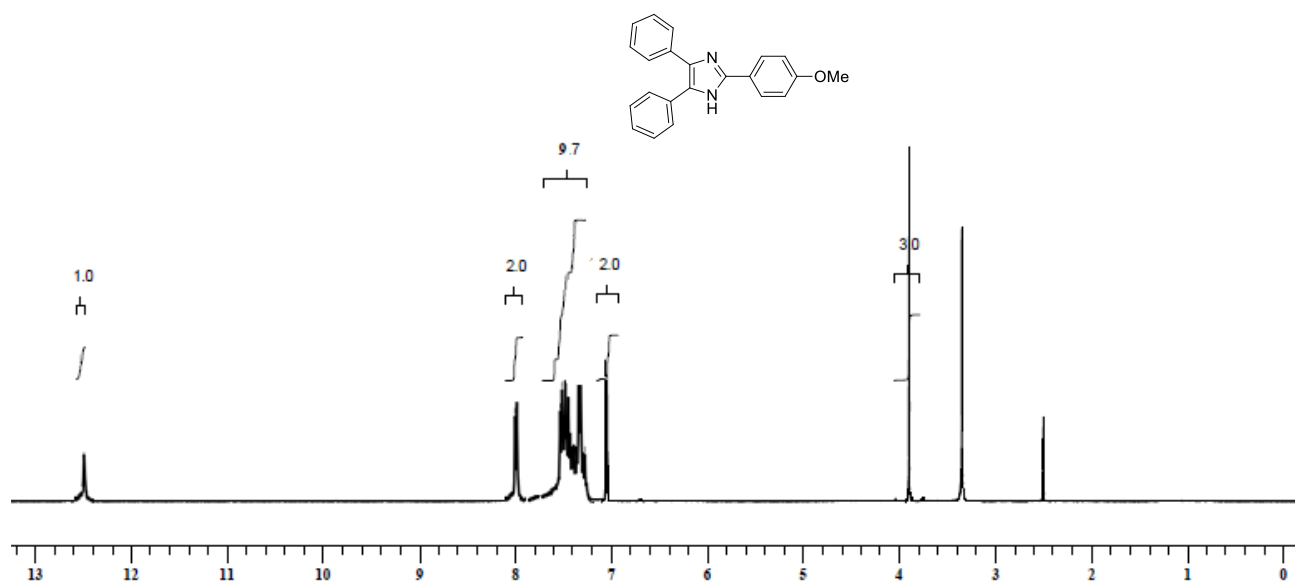


Figure S6: ¹³C-NMR (75 MHz, DMSO-*d*₆) Spectrum of Compound 4c



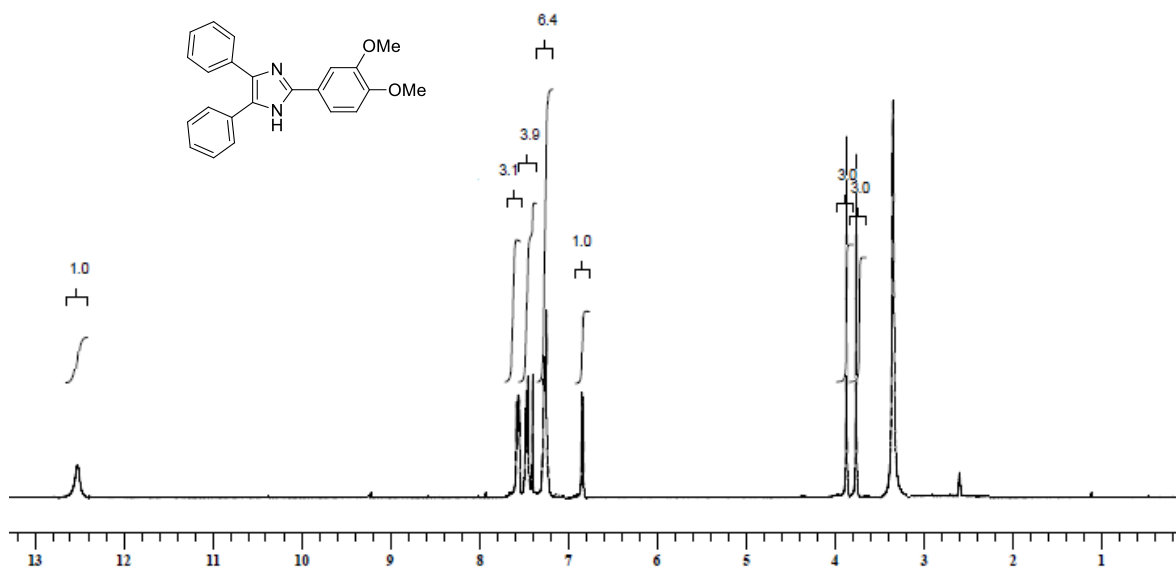


Figure S9: $^1\text{H-NMR}$ (300 MHz, $\text{DMSO-}d_6$) Spectrum of Compound **4e**

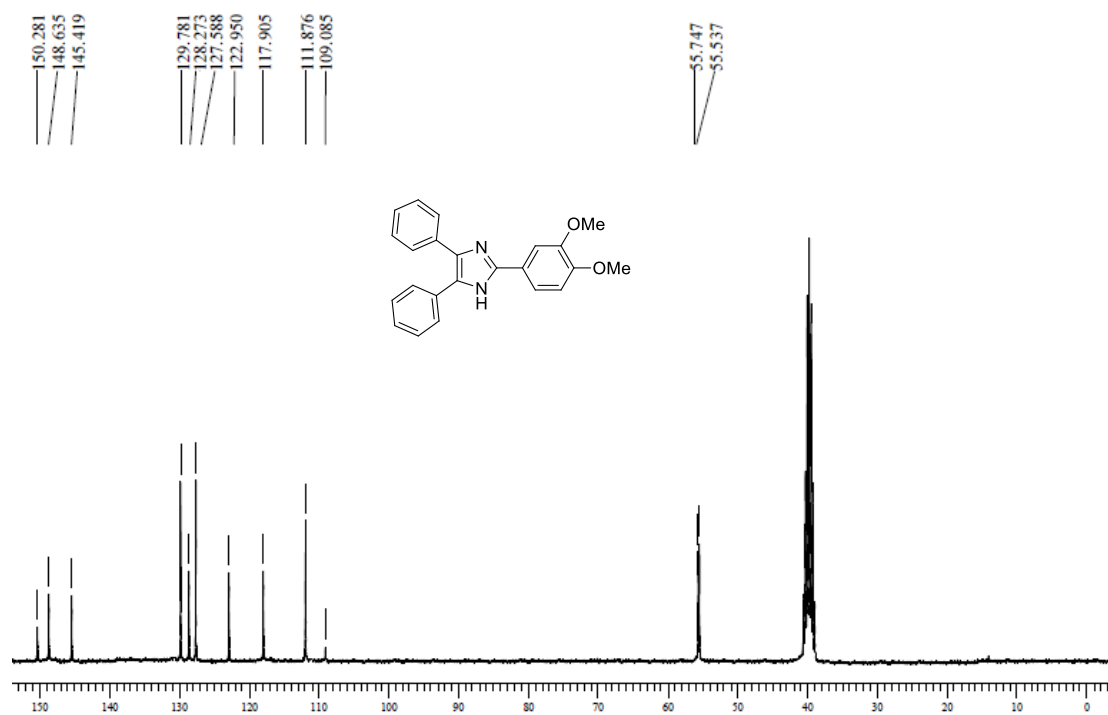


Figure S10: $^{13}\text{C-NMR}$ (75 MHz, $\text{DMSO-}d_6$) Spectrum of Compound **4e**

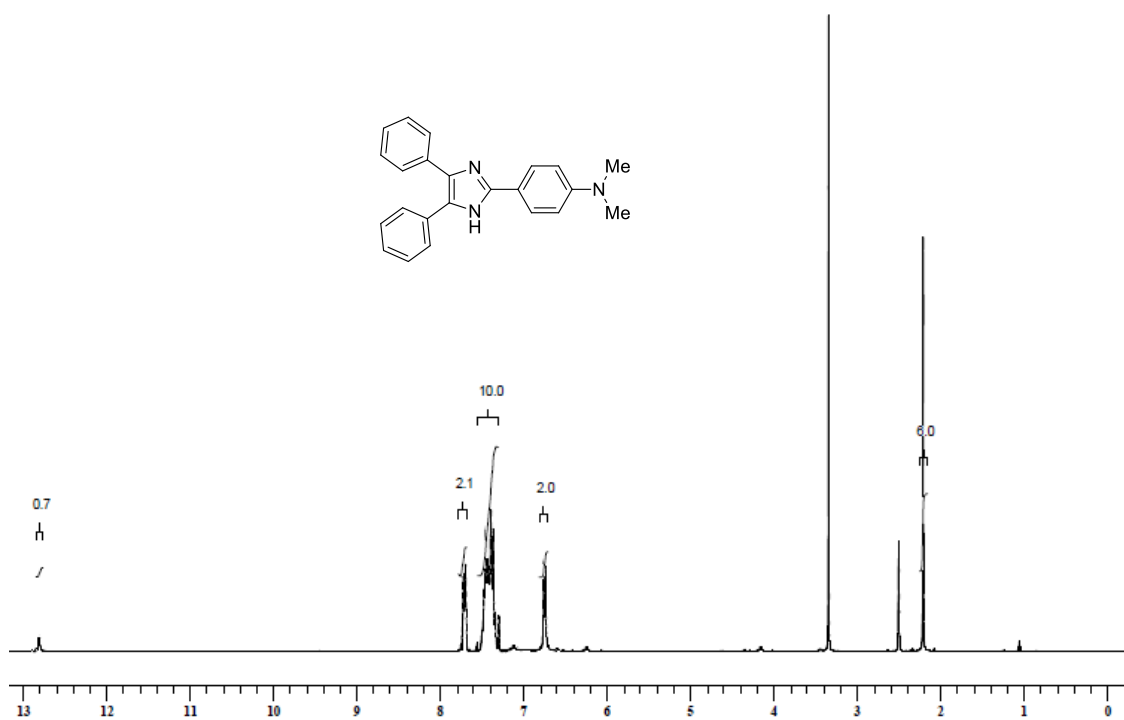


Figure S11: ¹H-NMR (300 MHz, DMSO-*d*₆) Spectrum of Compound **4f**

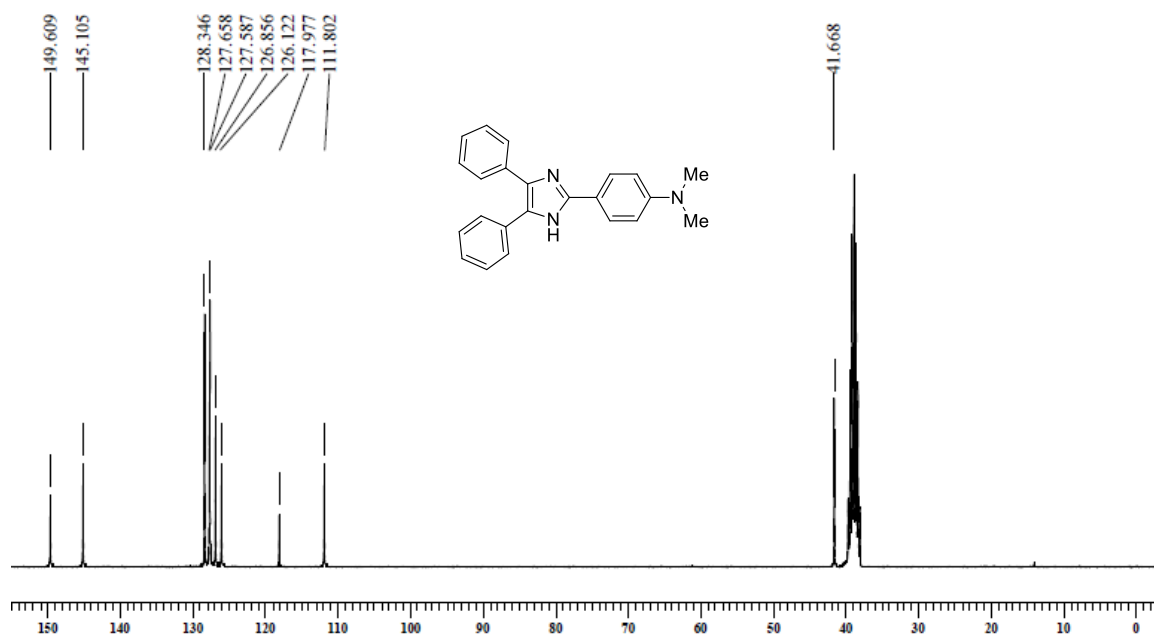
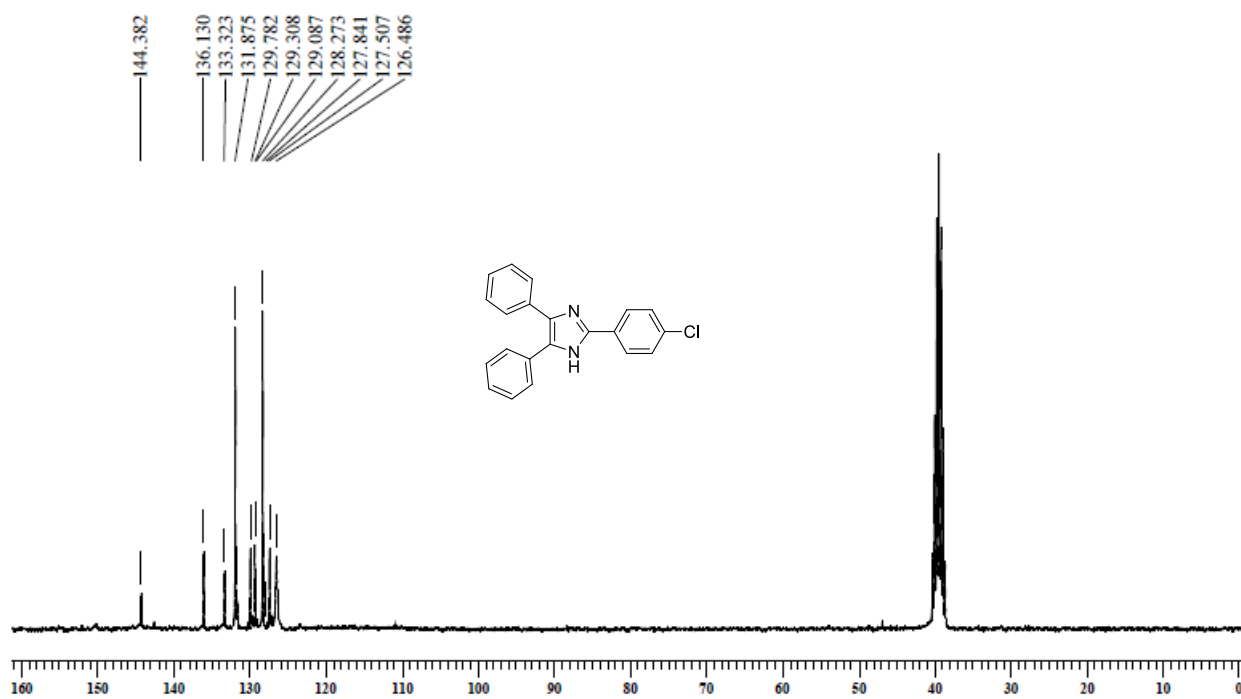
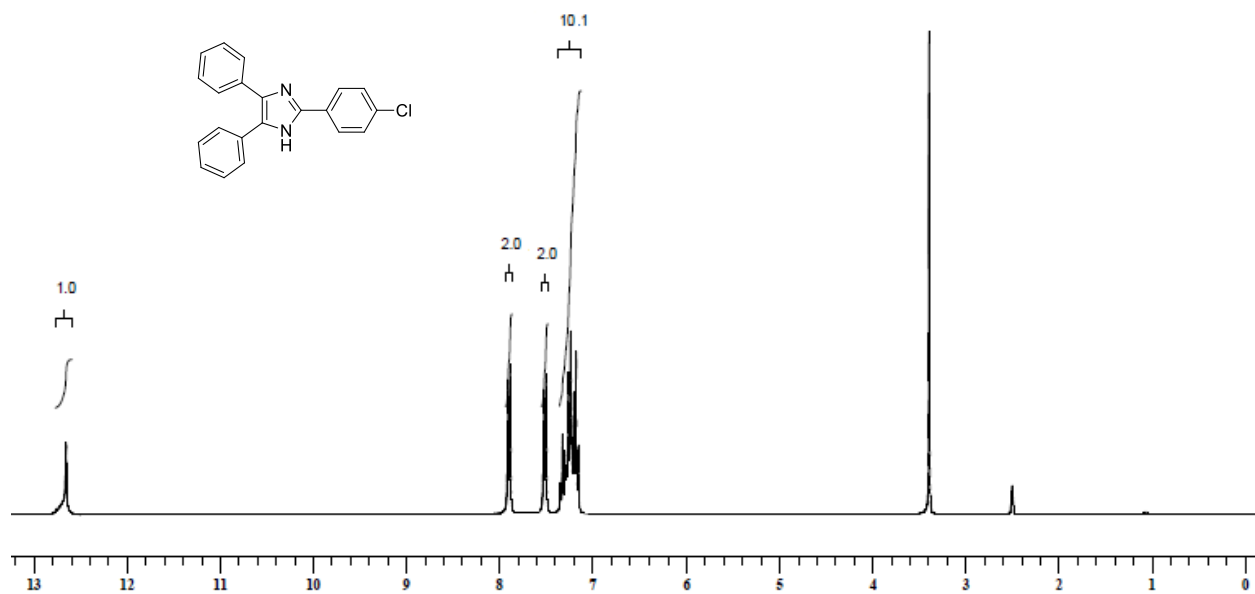


Figure S12: ¹³C-NMR (75 MHz, DMSO-*d*₆) Spectrum of Compound **4f**



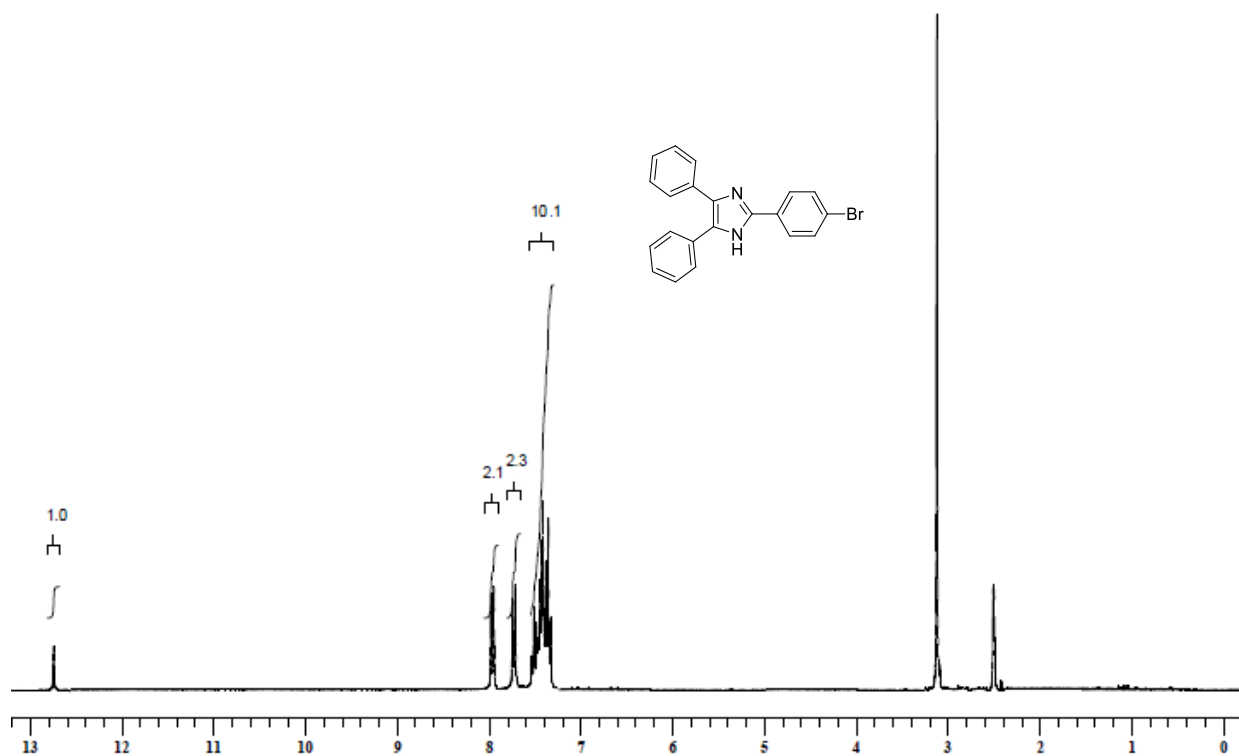


Figure S15: $^1\text{H-NMR}$ (300 MHz, $\text{DMSO-}d_6$) Spectrum of Compound **4h**

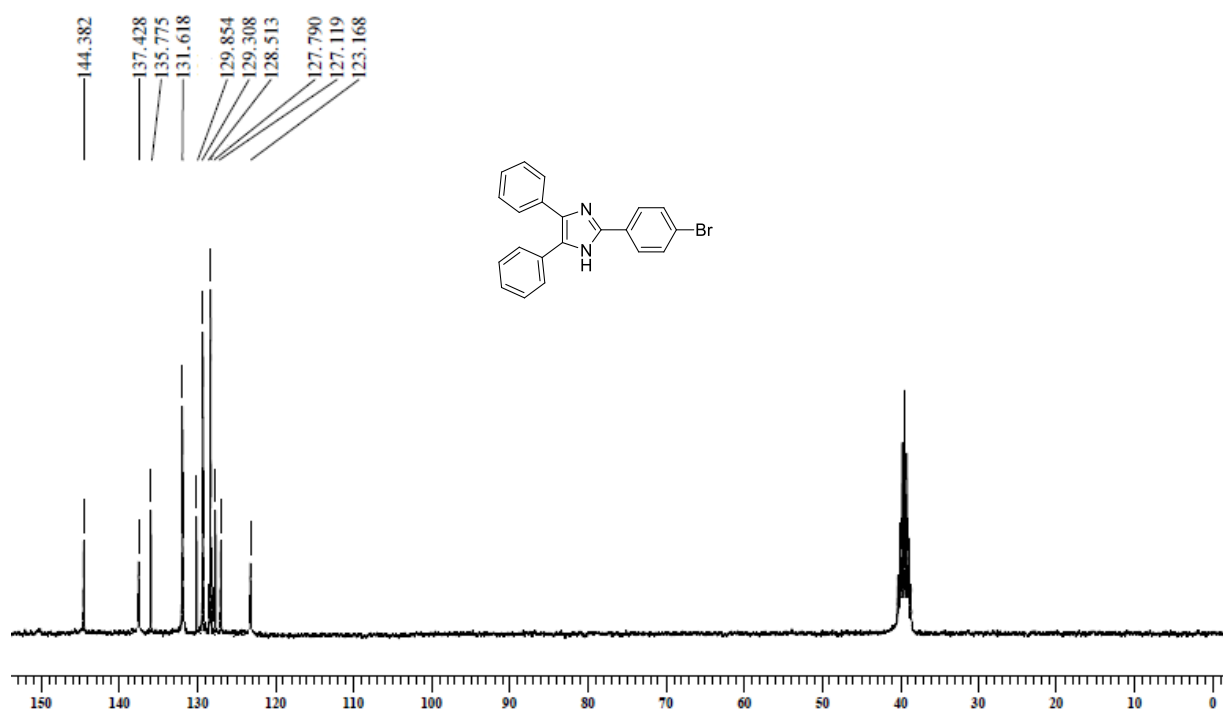


Figure S16: $^{13}\text{C-NMR}$ (75 MHz, $\text{DMSO-}d_6$) Spectrum of Compound **4h**

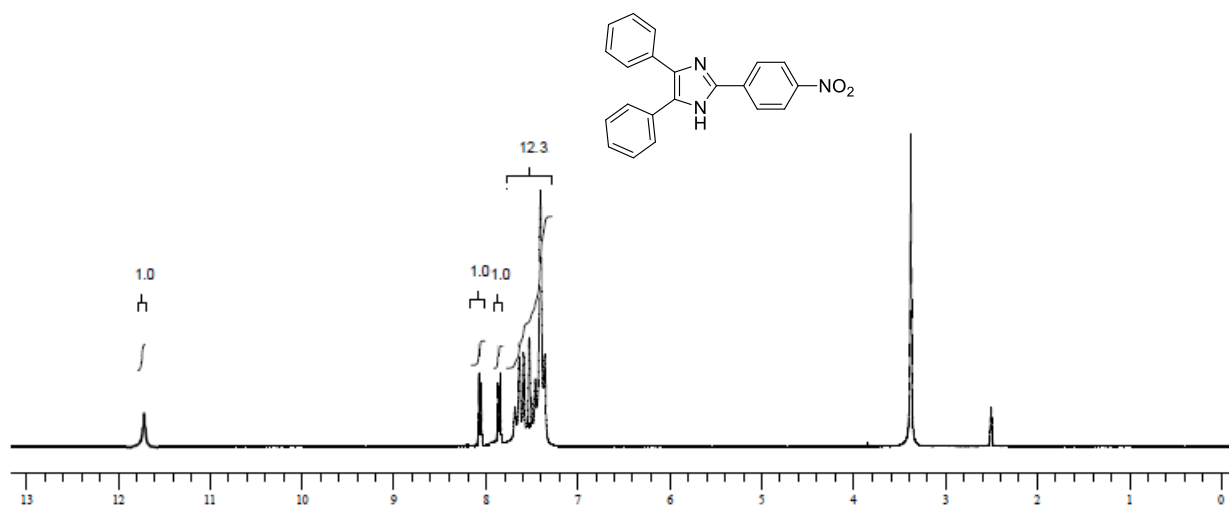


Figure S17: $^1\text{H-NMR}$ (300 MHz, $\text{DMSO-}d_6$) Spectrum of Compound **4i**

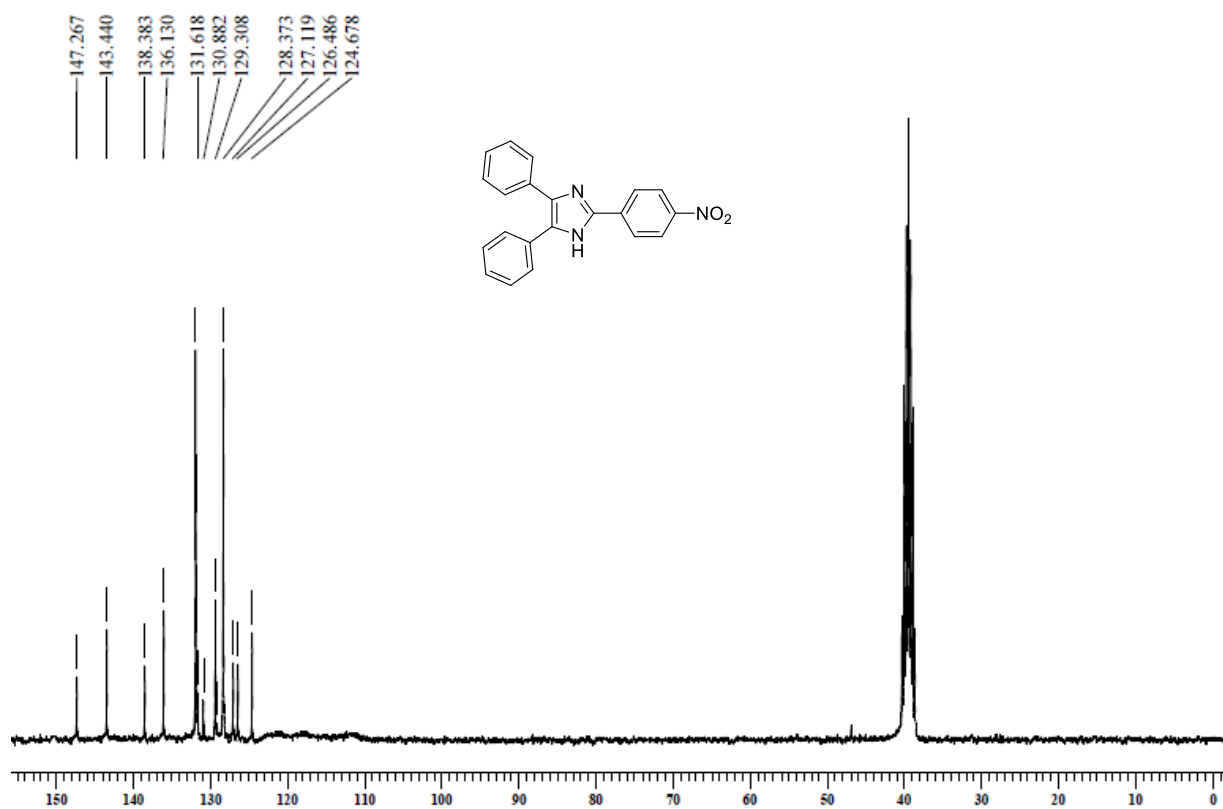


Figure S18: $^{13}\text{C-NMR}$ (75 MHz, $\text{DMSO-}d_6$) Spectrum of Compound **4i**

