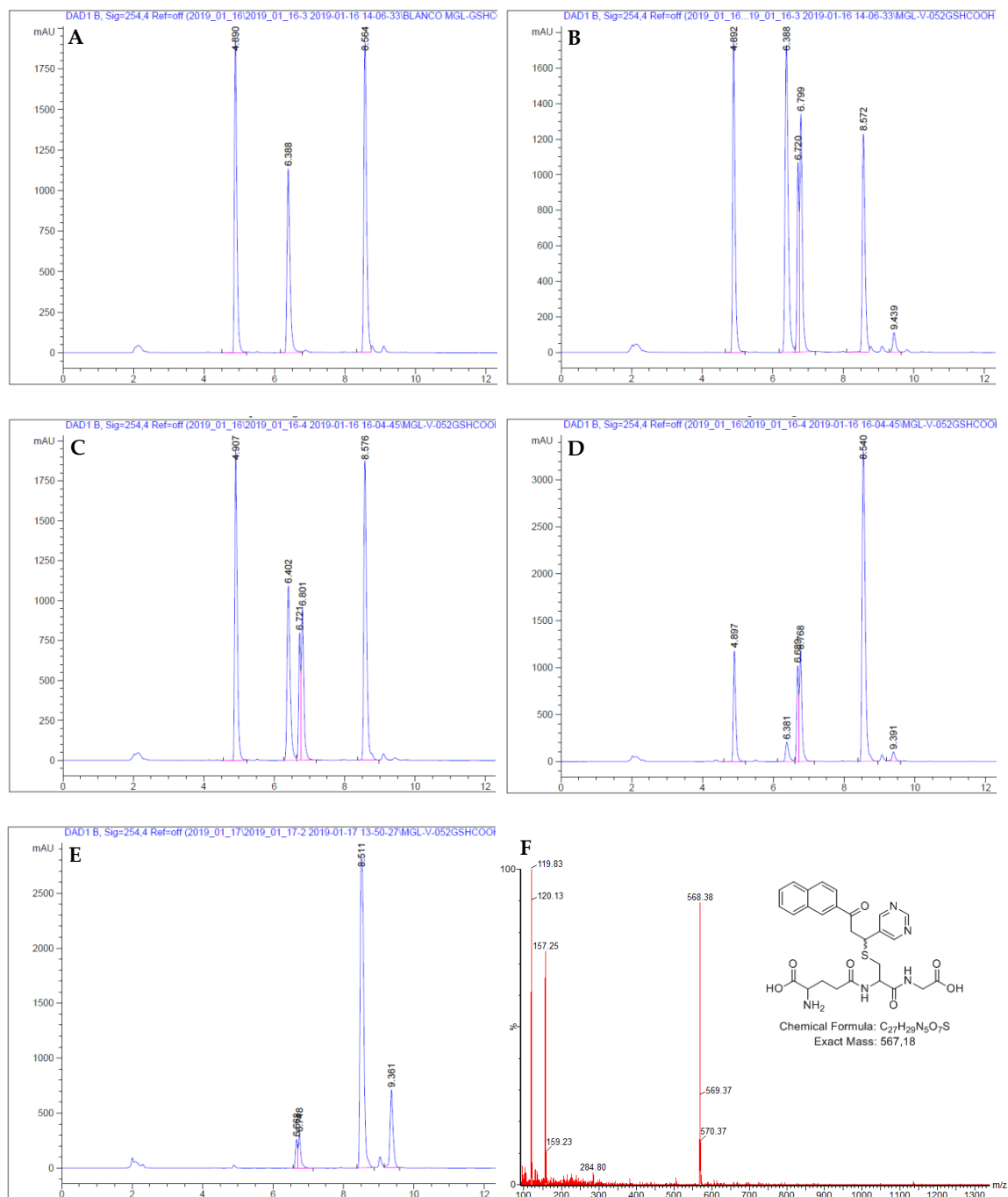
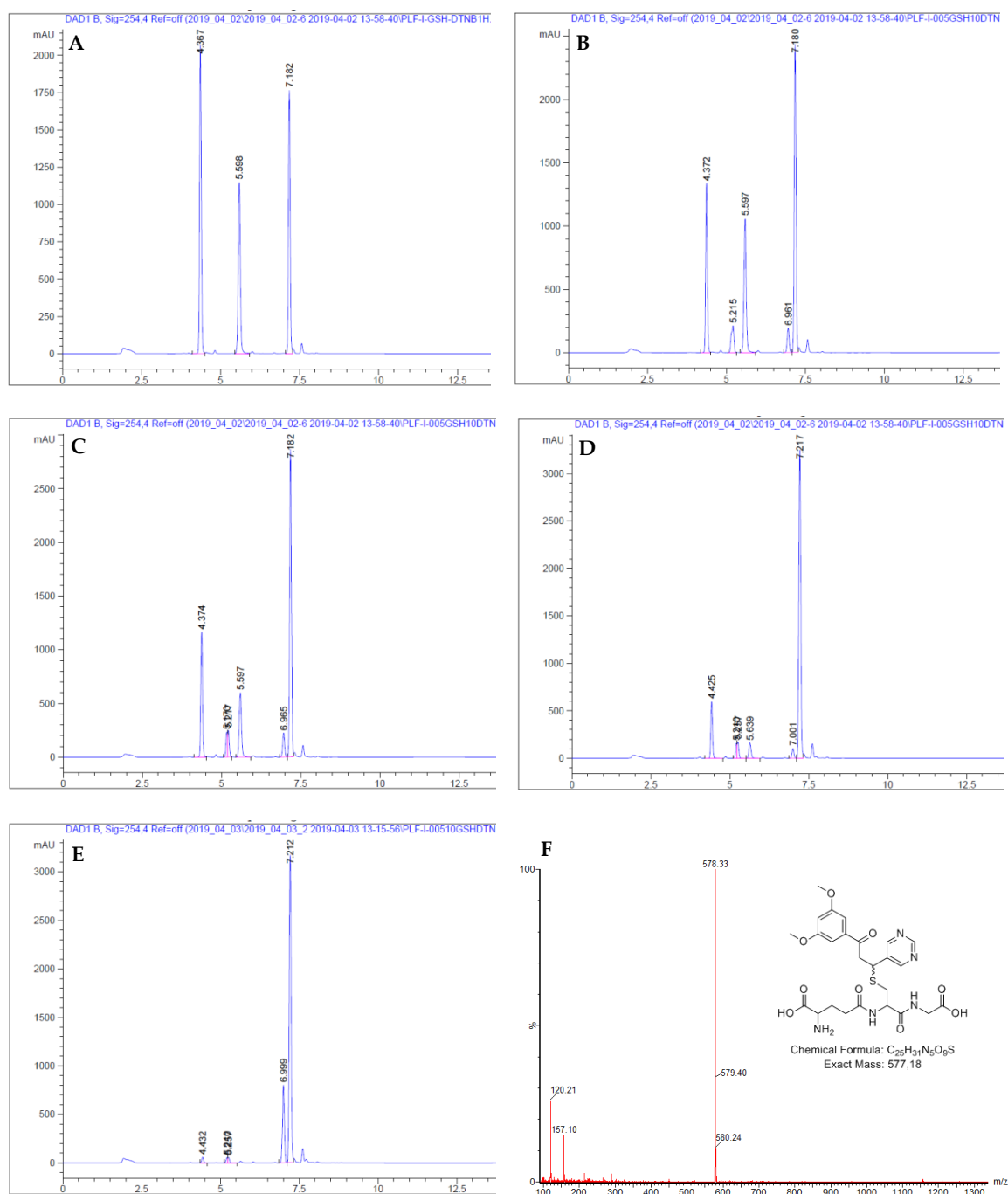


Includes:

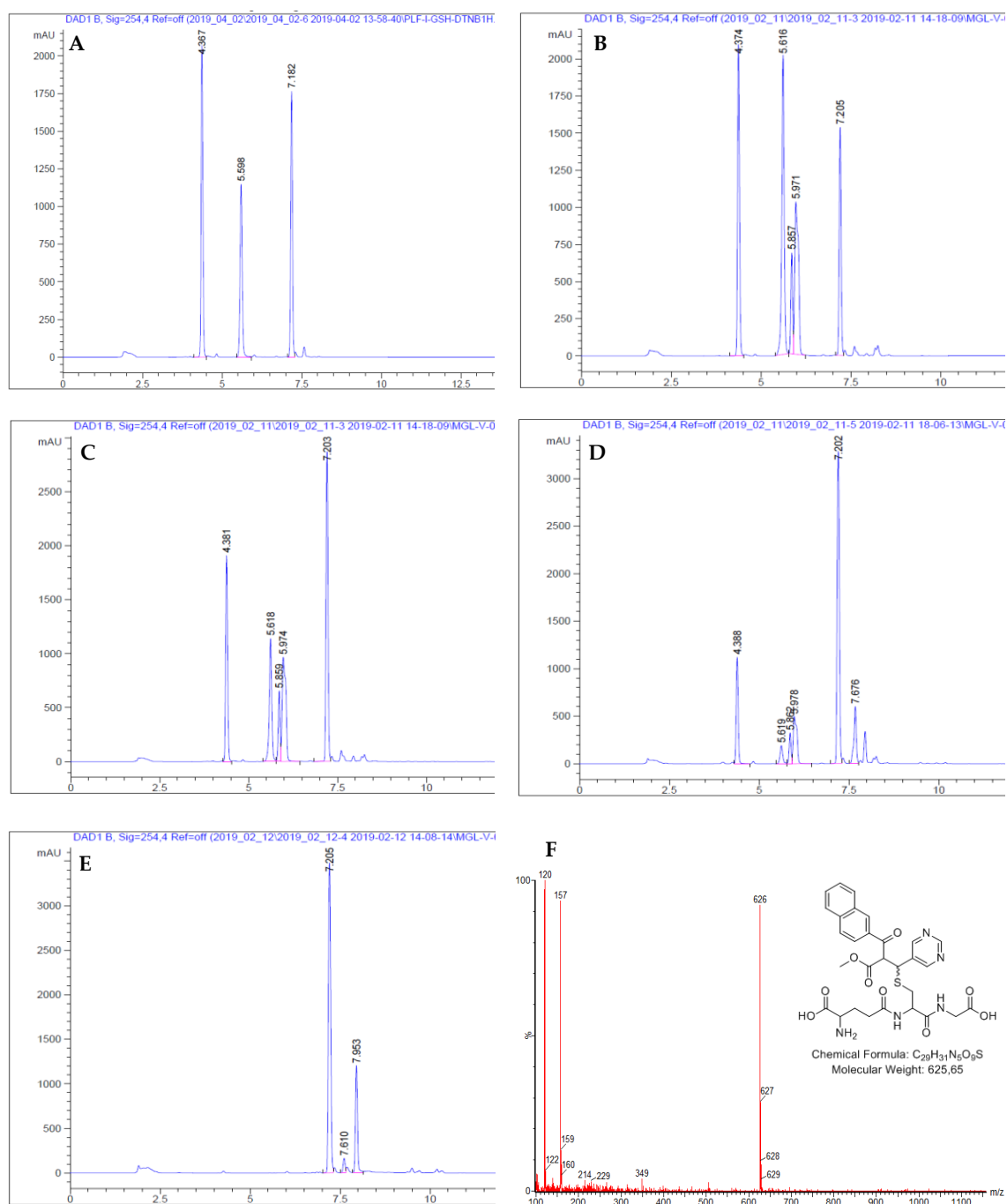
- Chromatograms of the incubations of chalcones **9**, **10**, **13** and **18** with GSH  
(Figures S1-S4) S2
- $^1\text{H}$  and  $^{13}\text{C}$  NMR spectra of the synthesized compounds S6



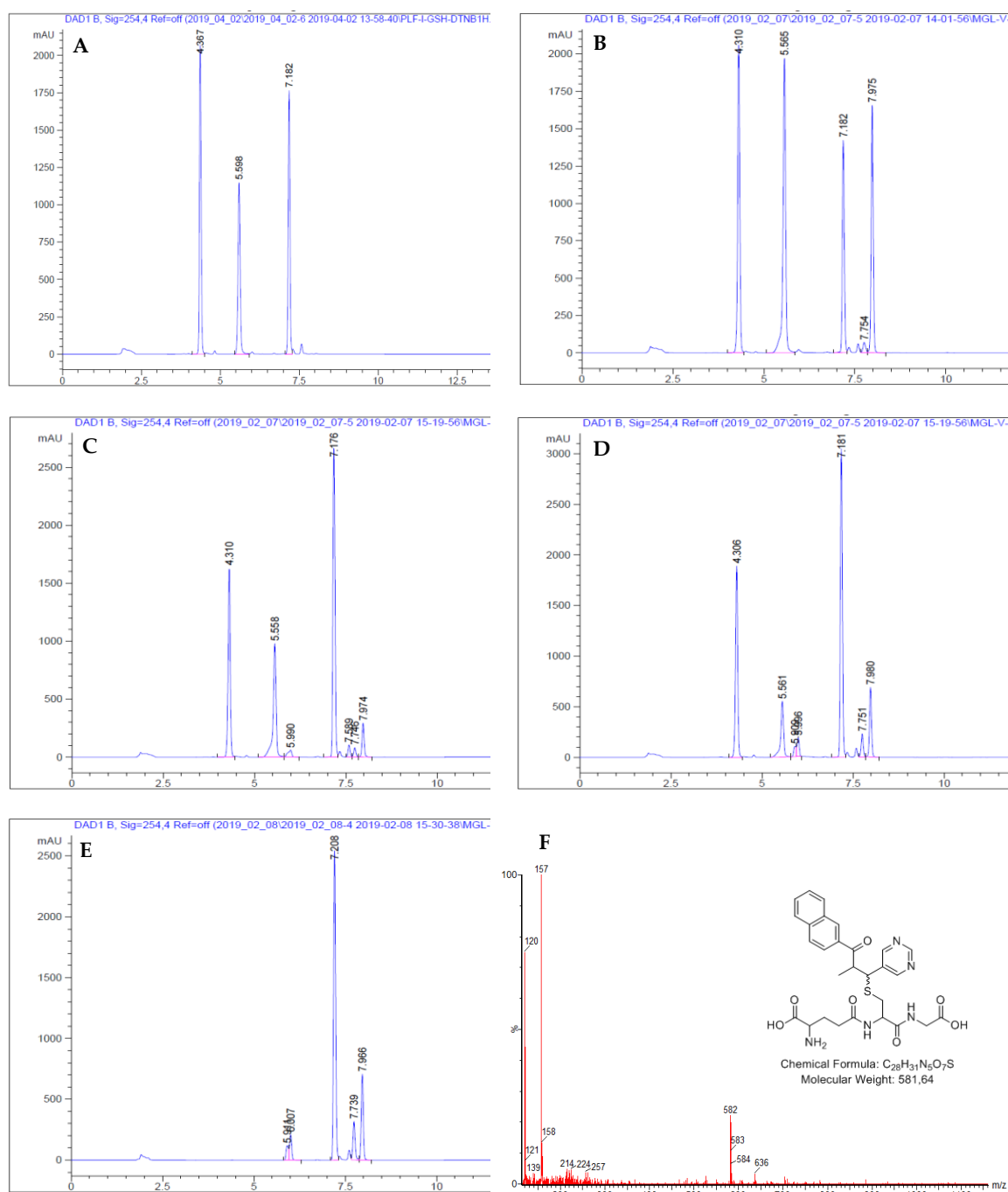
**Figure S1.** (A) Chromatogram of the incubation of GSH, in the absence of chalcone, quenched with DTNB ( $R_t = 8.5$  min), giving the reaction adduct with GSH ( $R_t = 6.4$  min) and TNB<sup>2-</sup> ( $R_t = 4.9$  min); (B-E) chromatograms of the incubation of chalcone **9** ( $R_t = 9.4$  min) and GSH quenched with DTNB after 10 min (B), 1 h (C), 4 h (D) and 24 h (E); (F) mass spectrum of the Michael addition products ( $R_t = 6.7, 6.8$  min).



**Figure S2.** (A) Chromatogram of the incubation of GSH, in the absence of chalcone, quenched with DTNB ( $R_t = 7.2$  min) giving the reaction adduct with GSH ( $R_t = 5.6$  min) and TNB<sup>2-</sup> ( $R_t = 4.4$  min); (B-E) chromatograms of the incubation of chalcone **10** ( $R_t = 7.0$  min) and GSH quenched with DTNB after 10 min (B), 1 h (C), 4 h (D) and 24 h (E); (F) mass spectrum of the Michael addition products ( $R_t = 5.21, 5.25$  min).

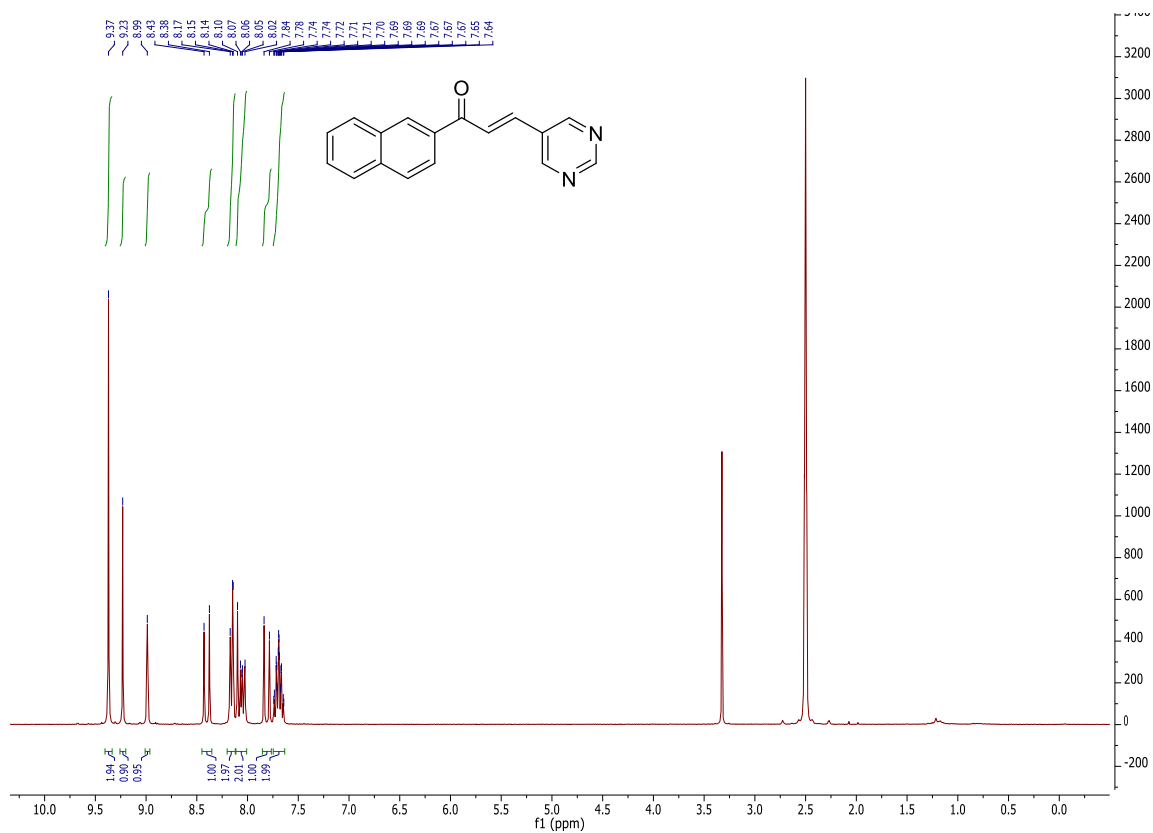
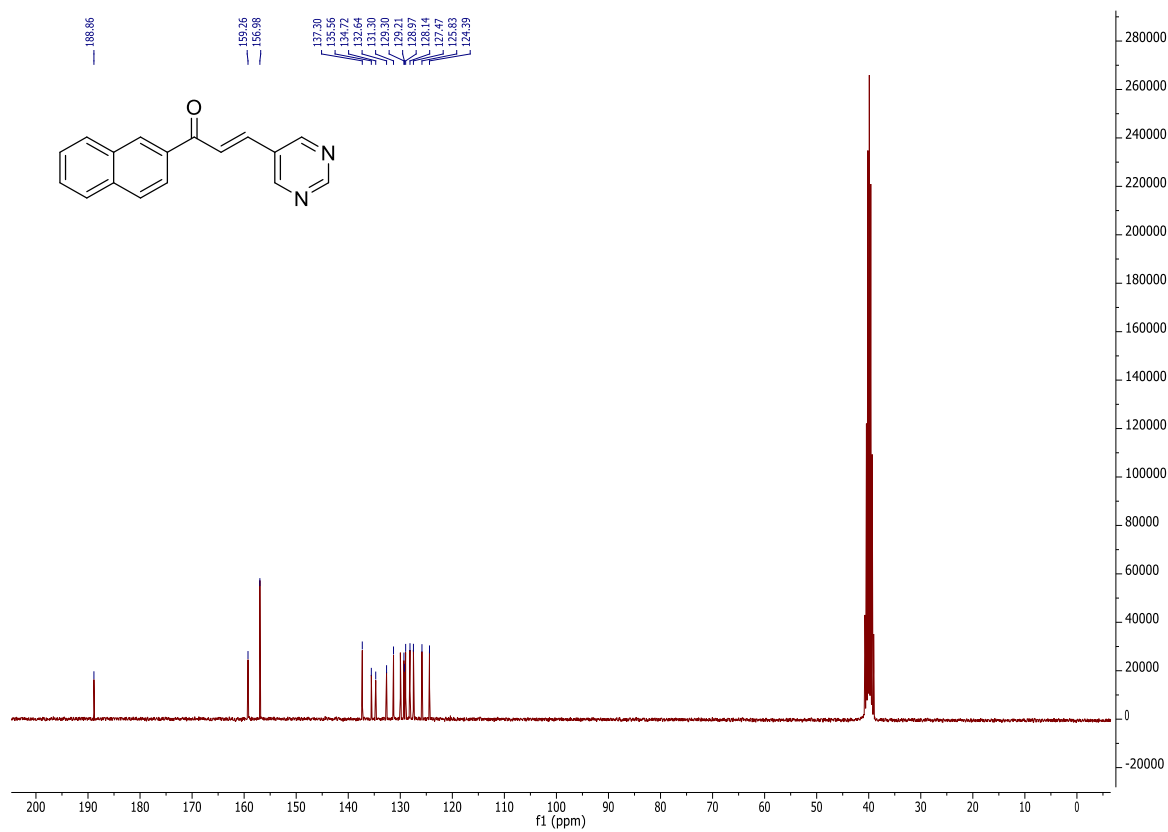


**Figure S3.** (A) Chromatogram of the incubation of GSH, in the absence of chalcone, quenched with DTNB ( $R_t = 7.2$  min) giving the reaction adduct with GSH ( $R_t = 5.6$  min) and TNB<sup>2-</sup> ( $R_t = 4.4$  min); (B-E) chromatograms of the incubation of chalcone **13** ( $R_t = 7.9$  min) and GSH quenched with DTNB after 10 min (B), 1 h (C), 4 h (D) and 24 h (E); (F) mass spectrum of the Michael addition products ( $R_t = 5.86, 5.97$  min).



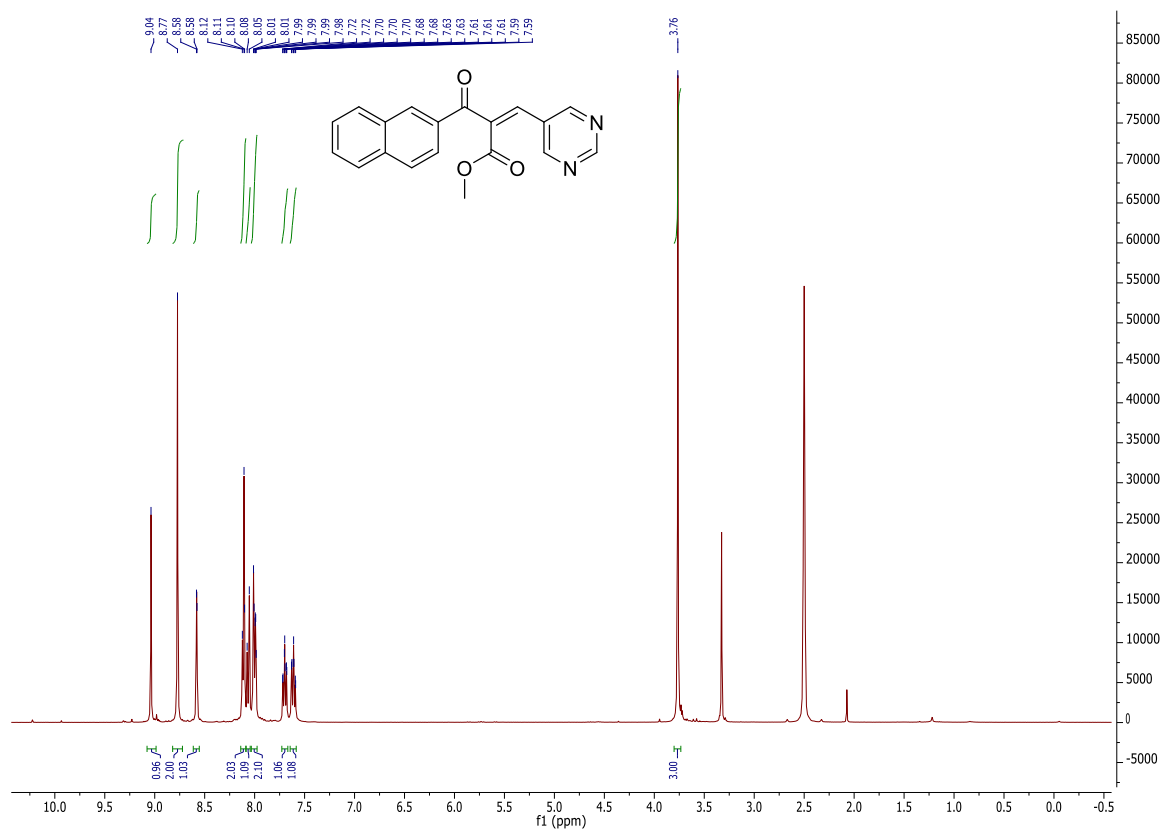
**Figure S4.** (A) Chromatogram of the incubation of GSH, in the absence of chalcone, quenched with DTNB (R<sub>t</sub> = 7.2 min) giving the reaction adduct with GSH (R<sub>t</sub> = 5.6 min) and TNB<sup>2-</sup> (R<sub>t</sub> = 4.3 min); (B-E) chromatograms of the incubation of chalcone **18** (R<sub>t</sub> = 8.0 min) and GSH quenched with DTNB after 10 min (B), 1 h (C), 2 h (D) and 24 h (E); (F) mass spectrum of the Michael addition products (R<sub>t</sub> = 5.98, 6.00 min).

### Compound 9

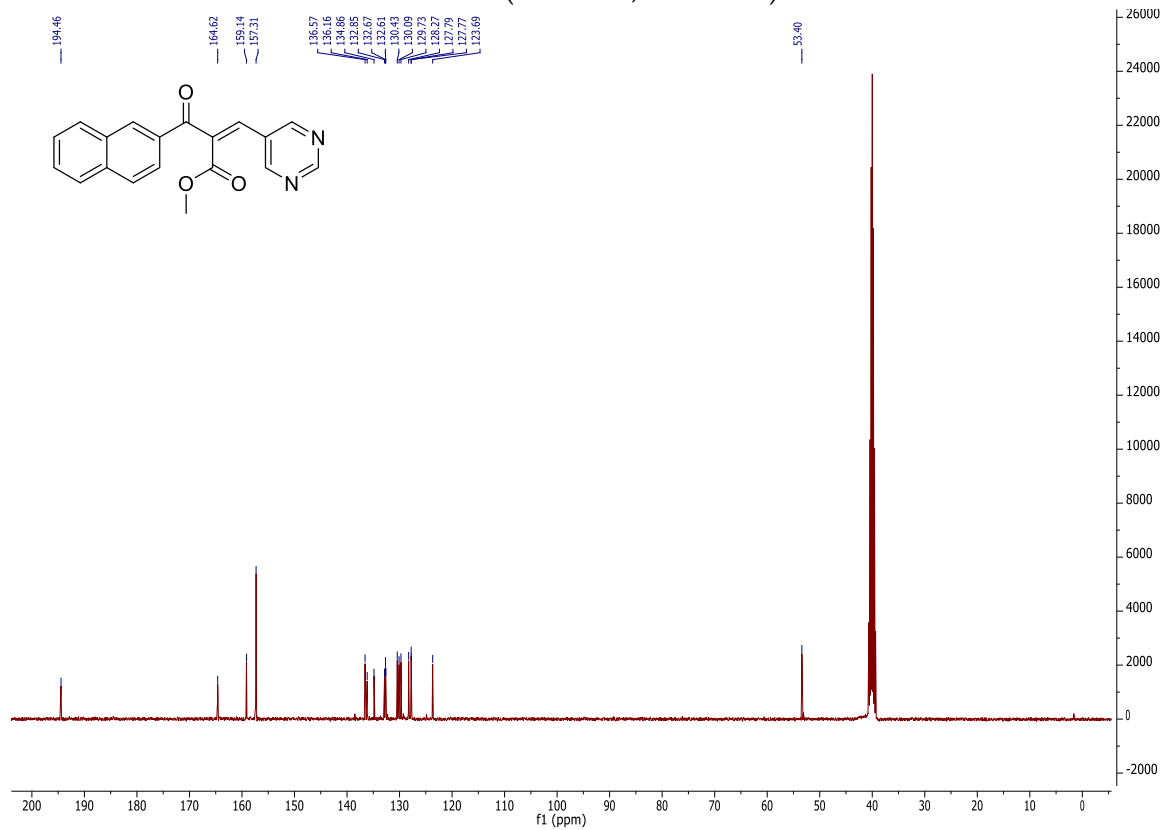
<sup>1</sup>H NMR (300 MHz, DMSO-*d*<sub>6</sub>) $^{13}\text{C}$  NMR (75 MHz, DMSO- $d_6$ )

# Compound 13

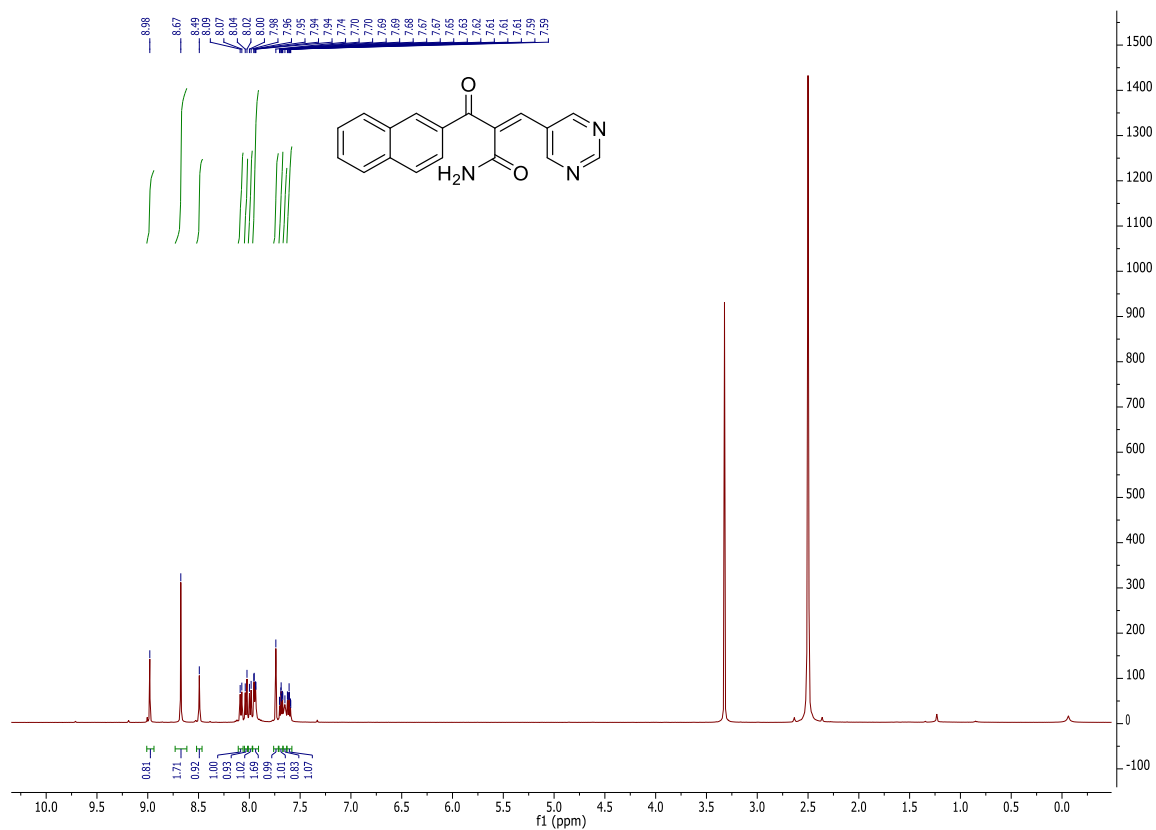
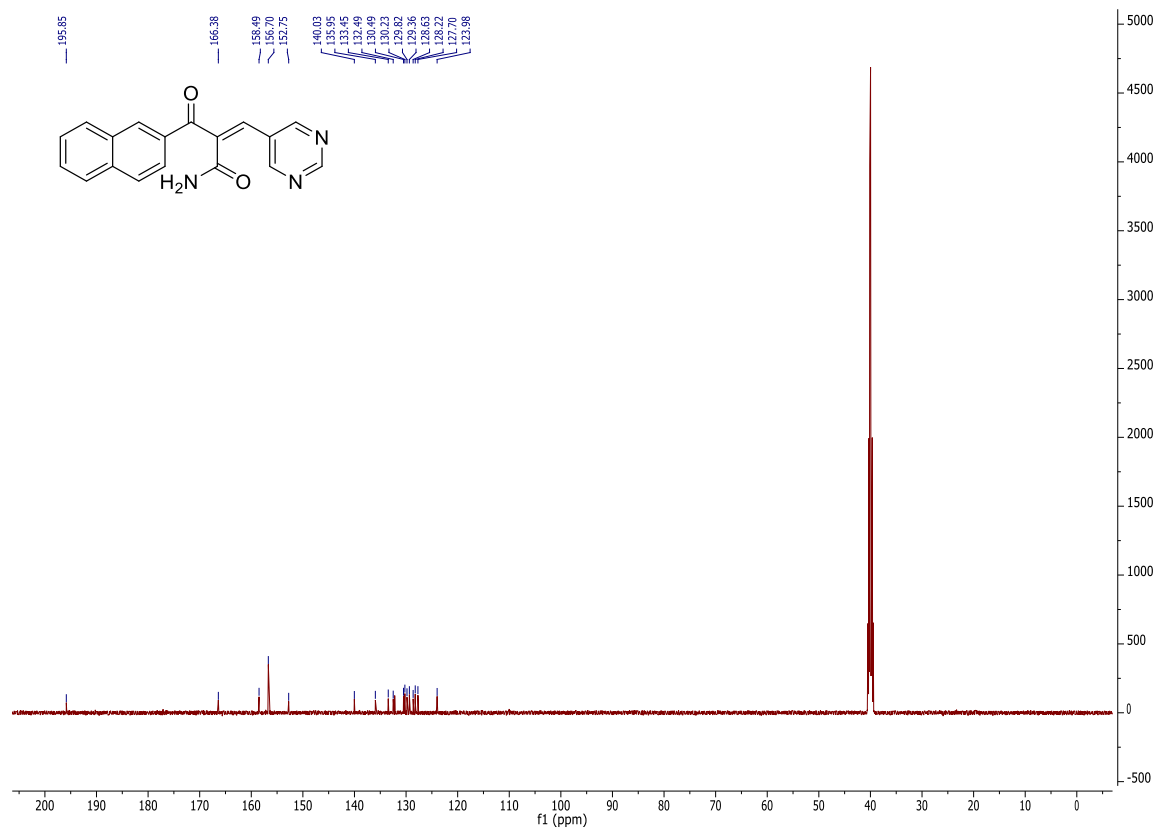
$^1\text{H-NMR}$  (400 MHz,  $\text{DMSO-}d_6$ )



$^{13}\text{C-NMR}$  (101 MHz,  $\text{DMSO-}d_6$ )



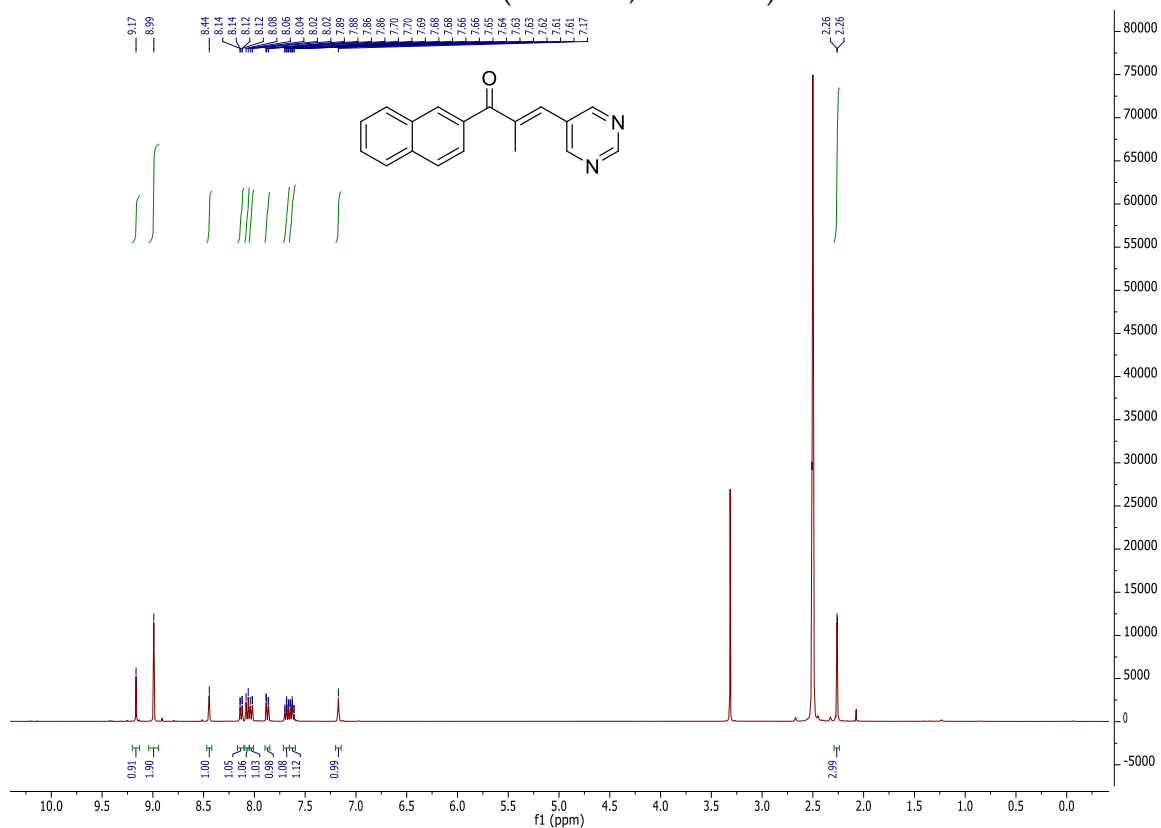
### Compound 15

<sup>1</sup>H-NMR (500 MHz, DMSO-*d*<sub>6</sub>)<sup>13</sup>C-NMR (126 MHz, DMSO-*d*<sub>6</sub>)

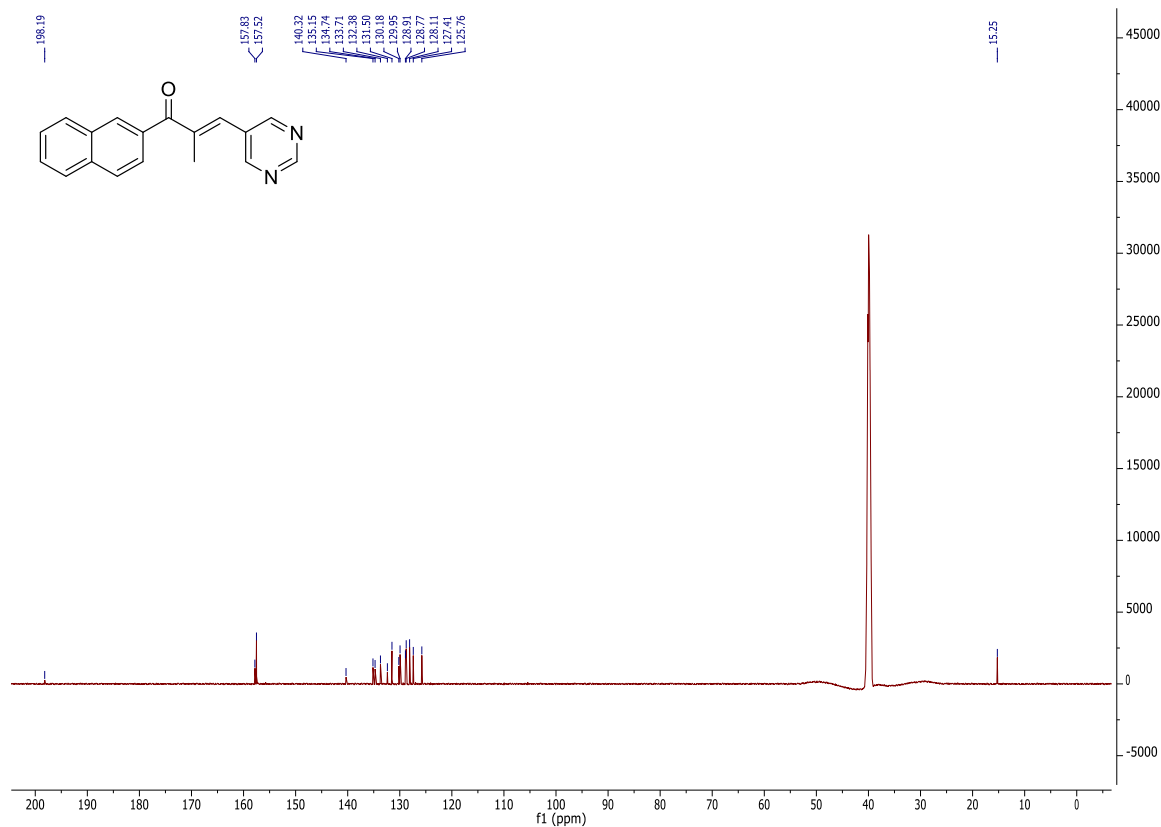


# Compound 18

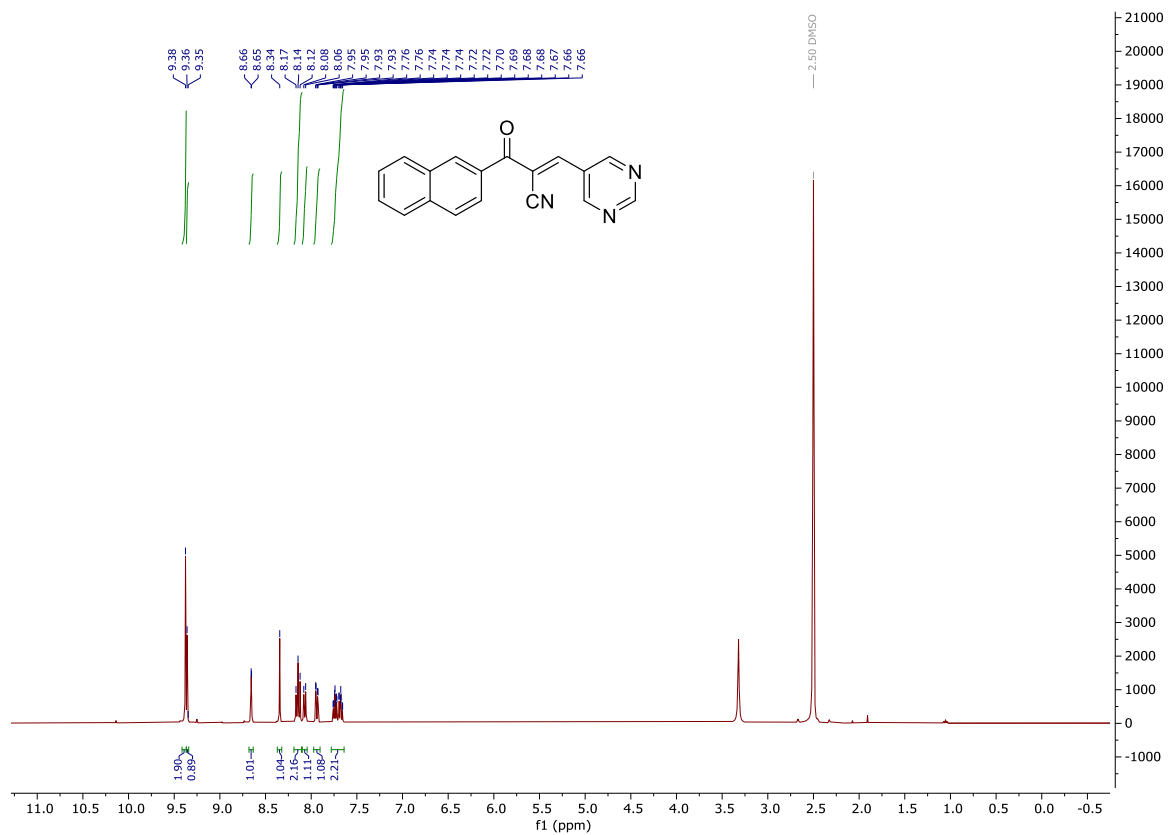
$^1\text{H}$ -NMR (400 MHz,  $\text{DMSO}-d_6$ )



$^{13}\text{C}$ -NMR (126 MHz,  $\text{DMSO}-d_6$ )

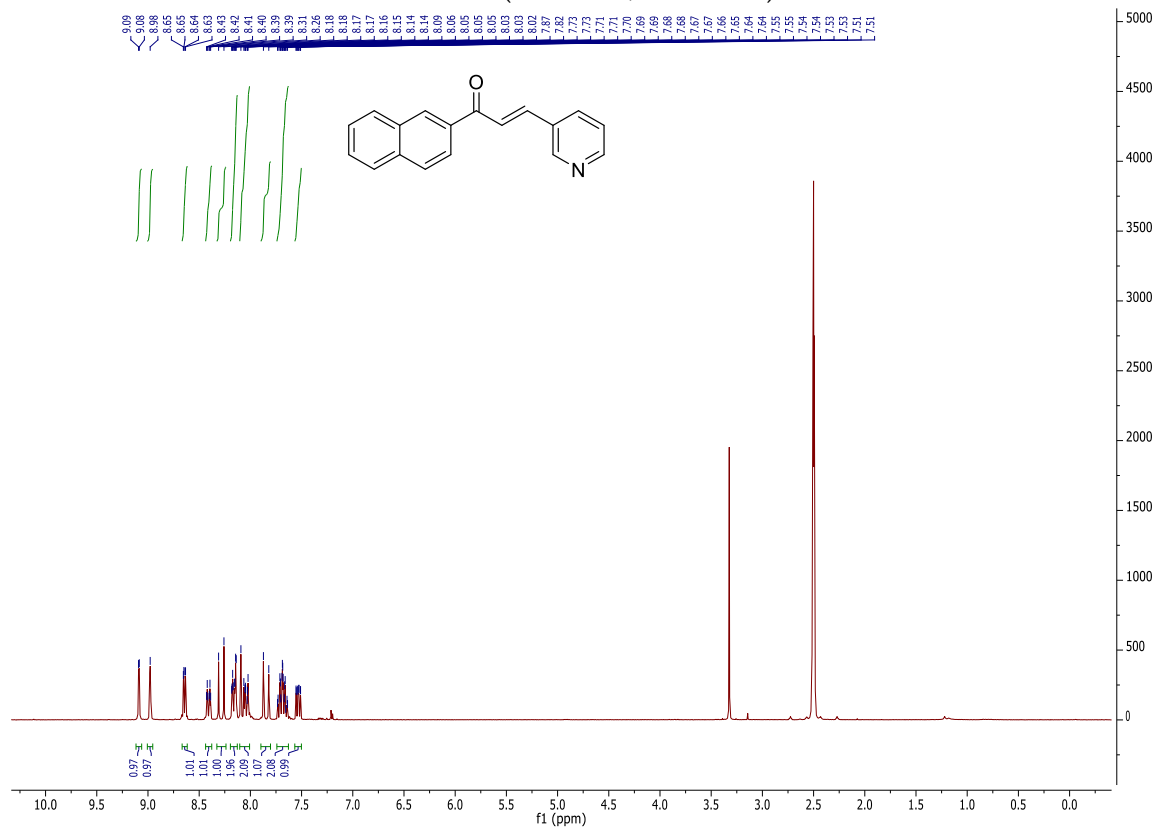


### Compound 21

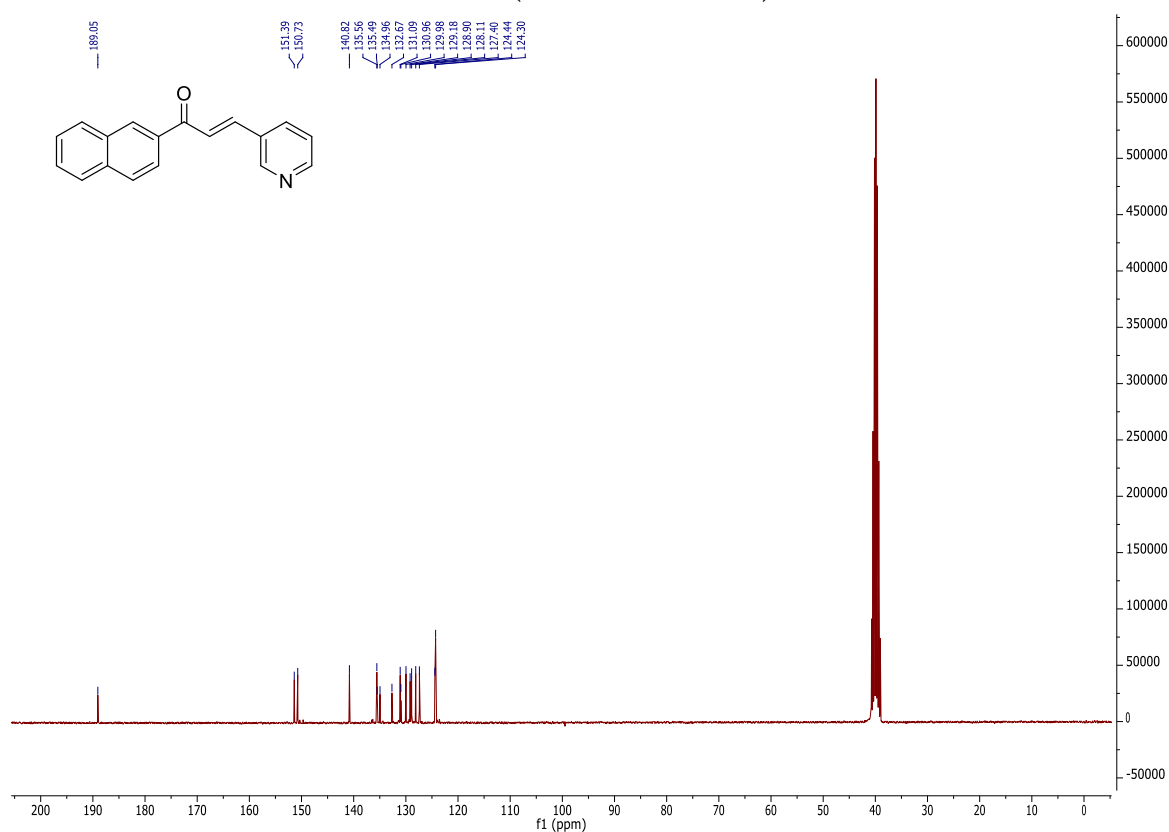
<sup>1</sup>H-NMR (400 MHz, DMSO-*d*<sub>6</sub>)

# Compound 24

$^1\text{H-NMR}$  (300 MHz,  $\text{DMSO-}d_6$ )

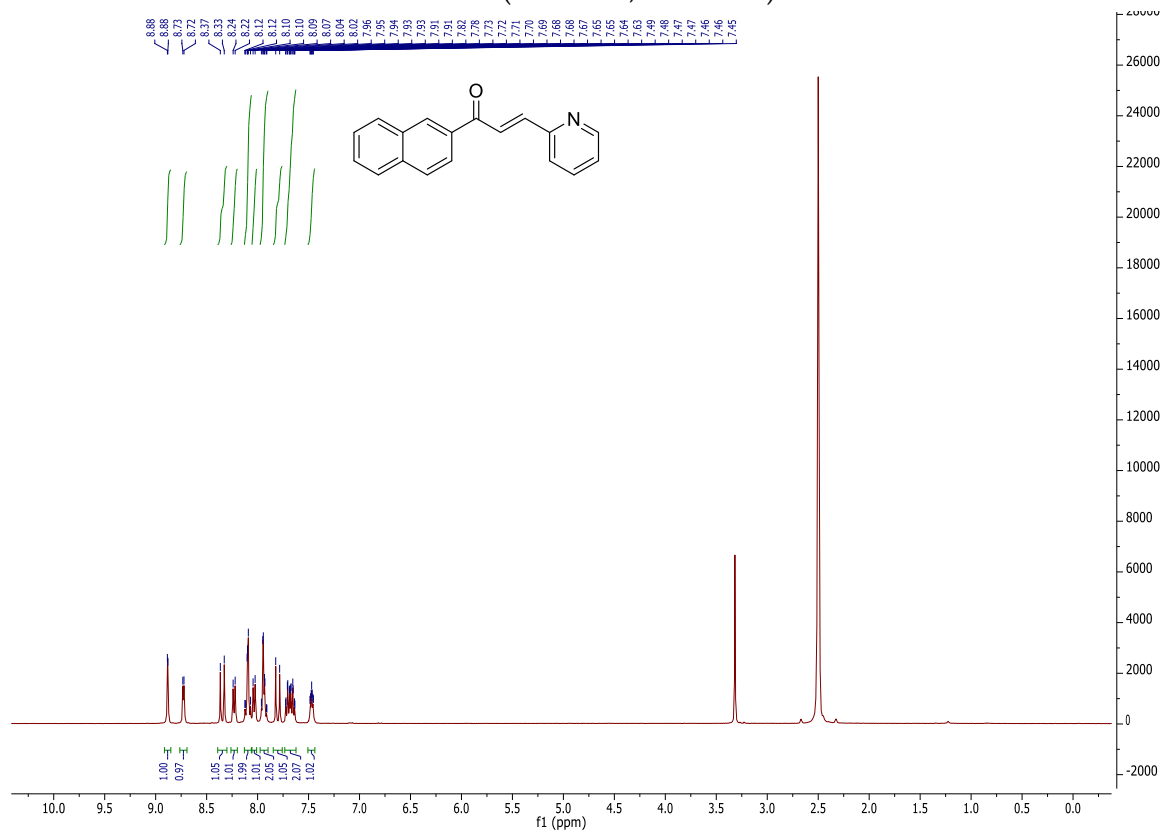


$^{13}\text{C-NMR}$  (75 MHz,  $\text{DMSO-}d_6$ )

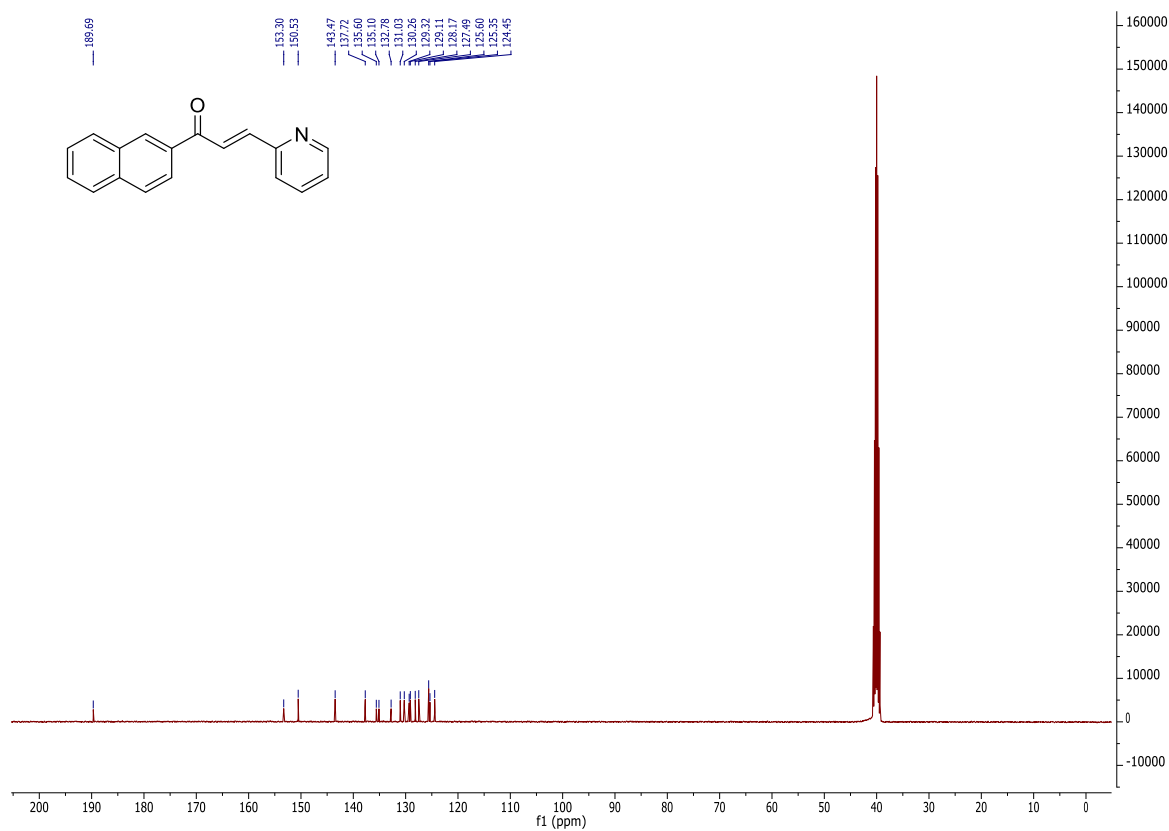


# Compound 25

$^1\text{H-NMR}$  (400 MHz,  $\text{DMSO-}d_6$ )

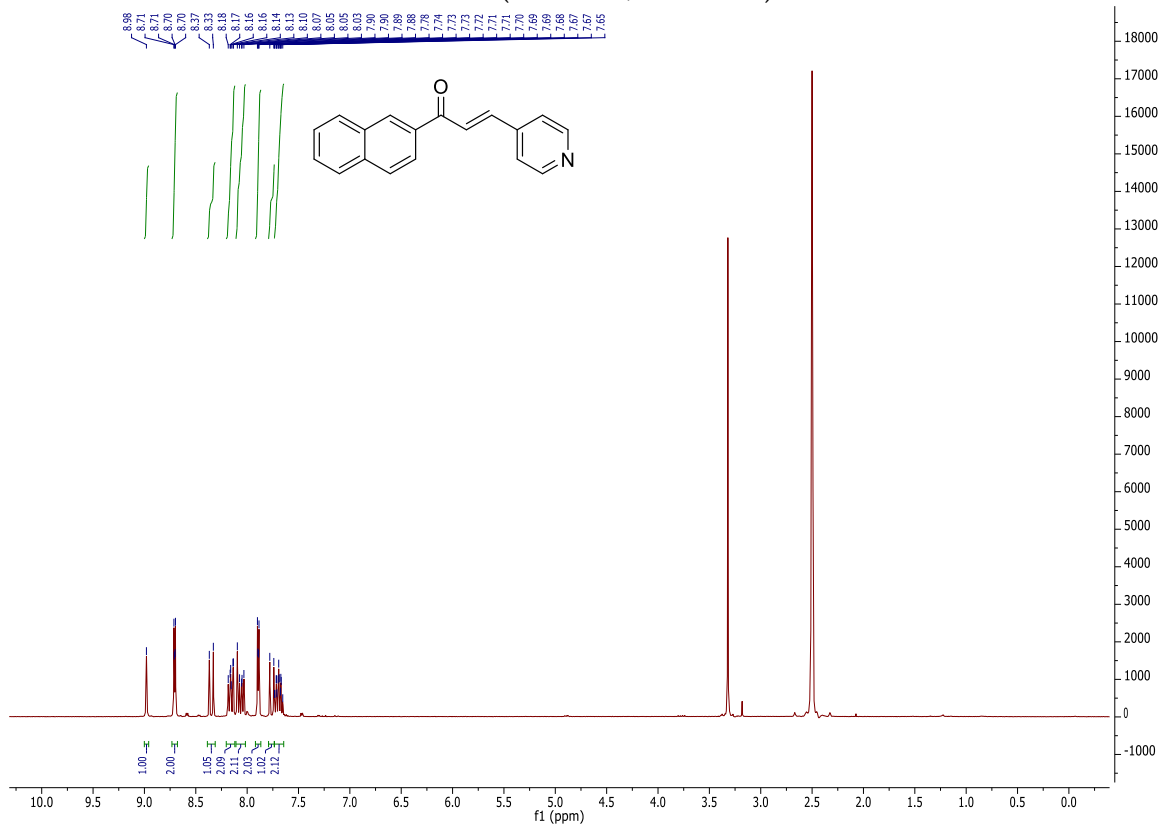


$^{13}\text{C-NMR}$  (101 MHz,  $\text{DMSO-}d_6$ )

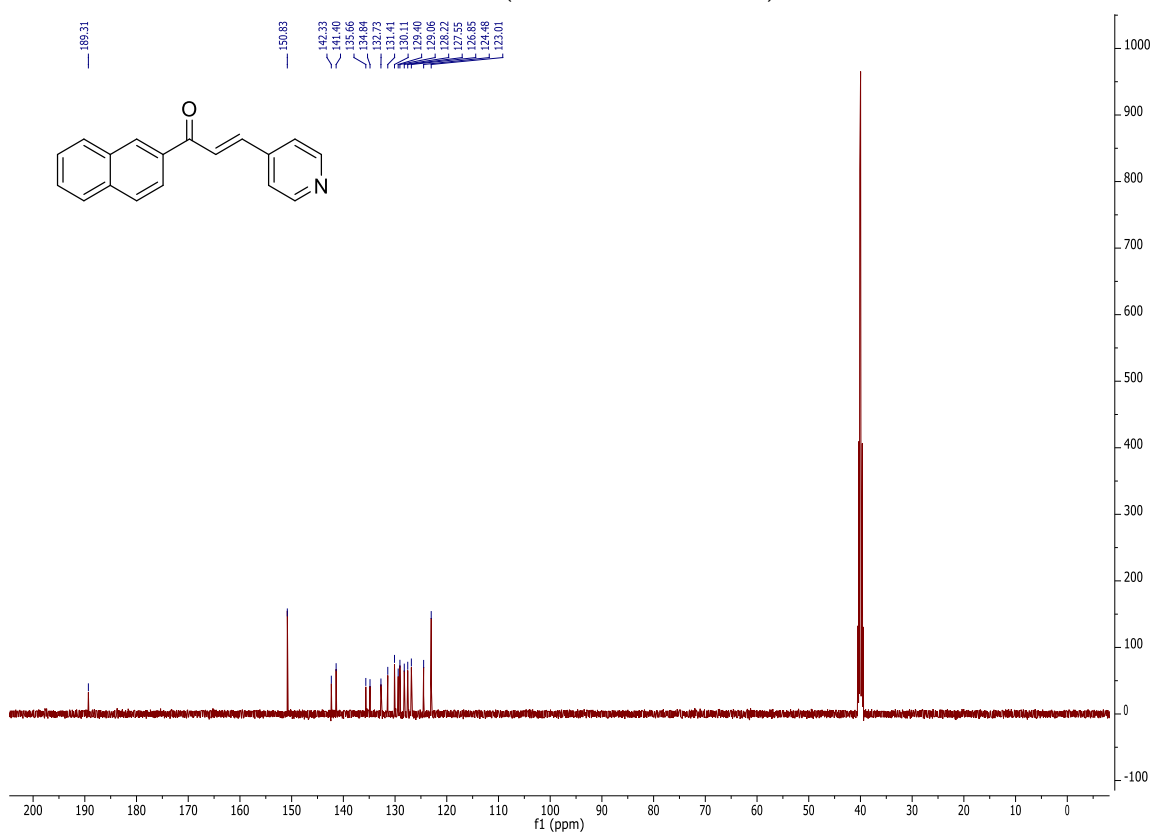


# Compound 26

$^1\text{H-NMR}$  (400 MHz,  $\text{DMSO-}d_6$ )

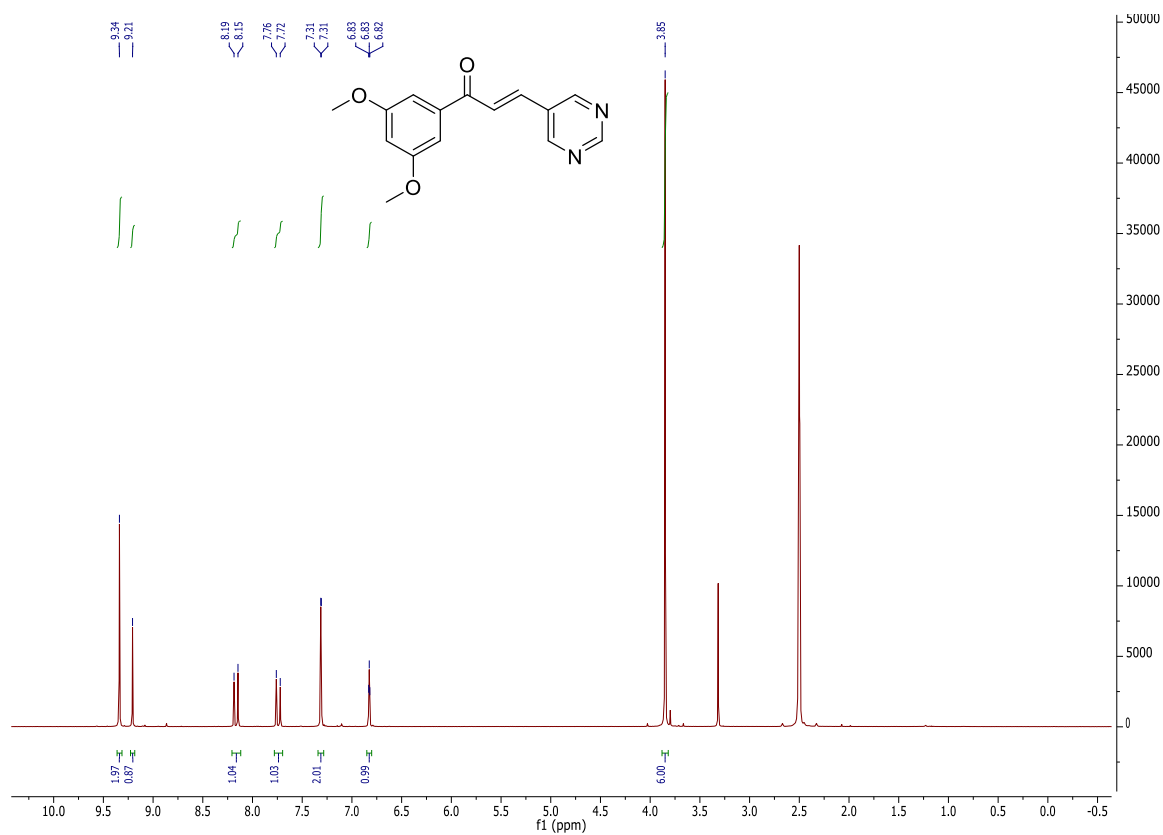


$^{13}\text{C-NMR}$  (126 MHz,  $\text{DMSO-}d_6$ )

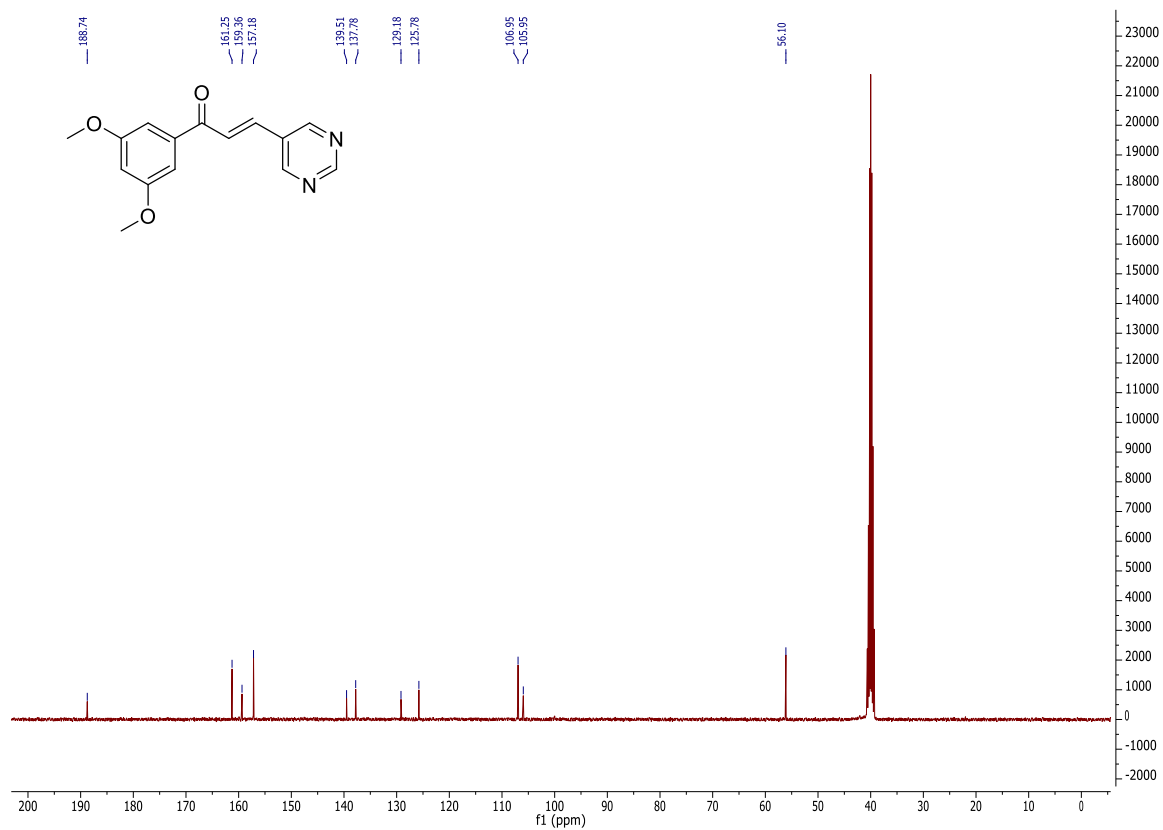


# Compound 10

$^1\text{H}$ -NMR (400 MHz,  $\text{DMSO}-d_6$ )

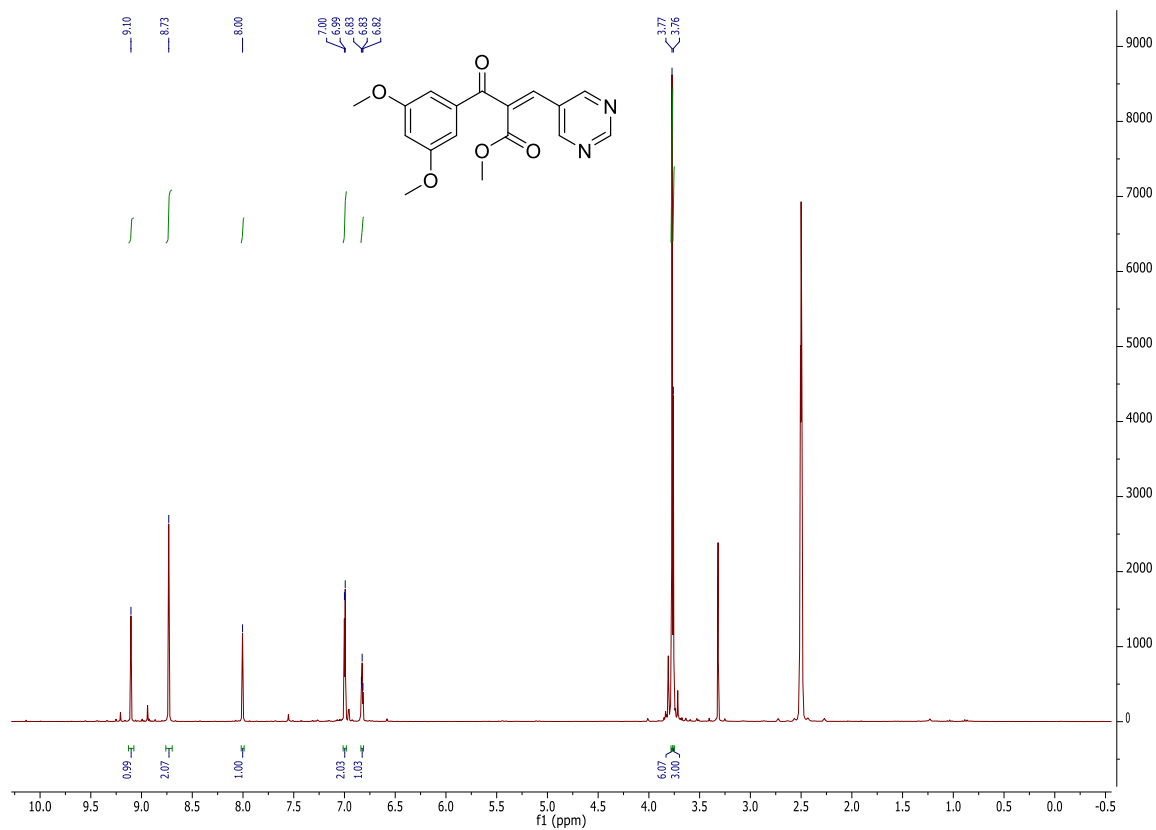


$^{13}\text{C}$ -NMR (101 MHz,  $\text{DMSO}-d_6$ )

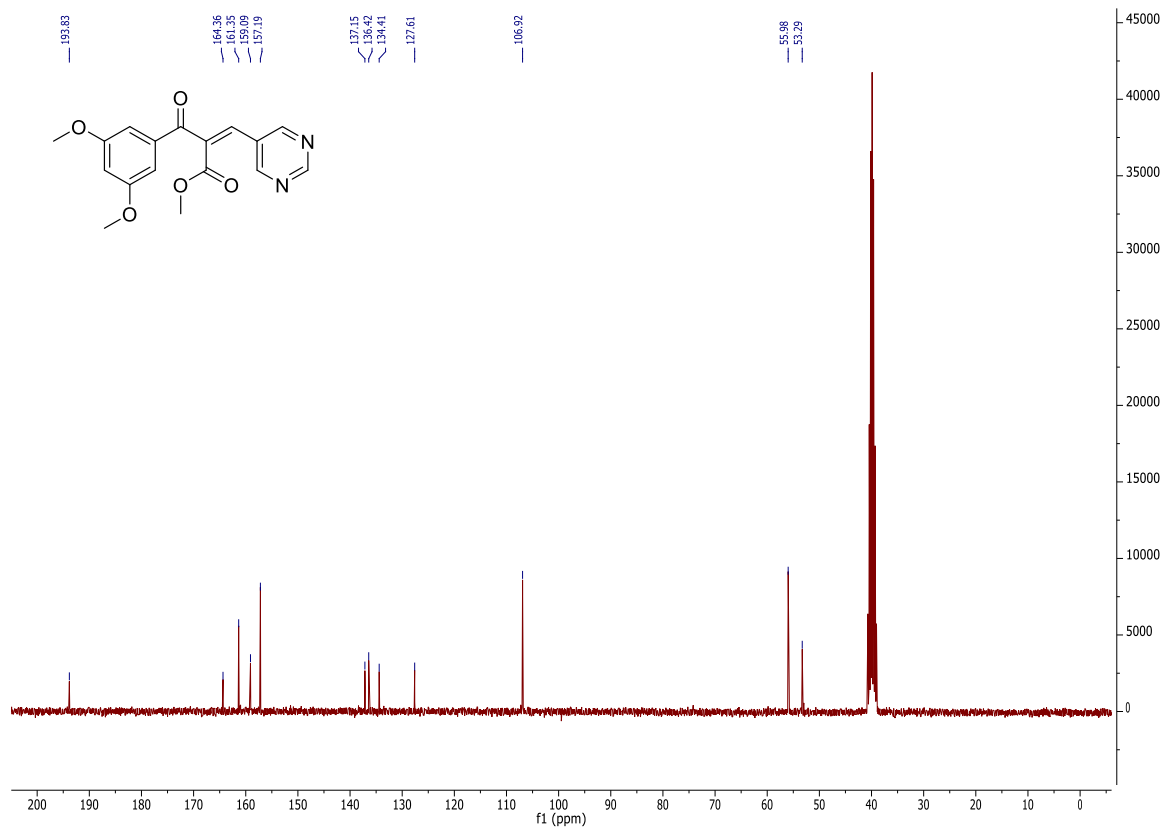


# Compound 30

$^1\text{H-NMR}$  (300 MHz,  $\text{DMSO-}d_6$ )

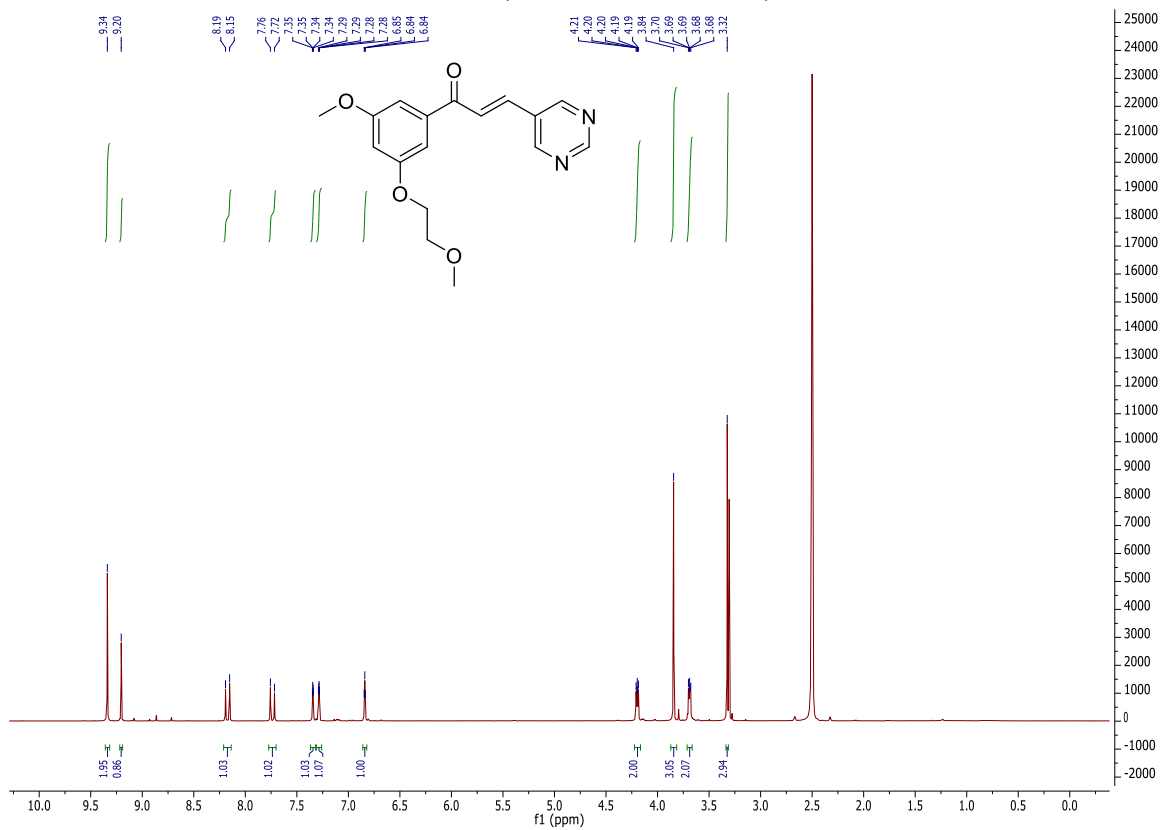


$^{13}\text{C-NMR}$  (75 MHz,  $\text{DMSO-}d_6$ )

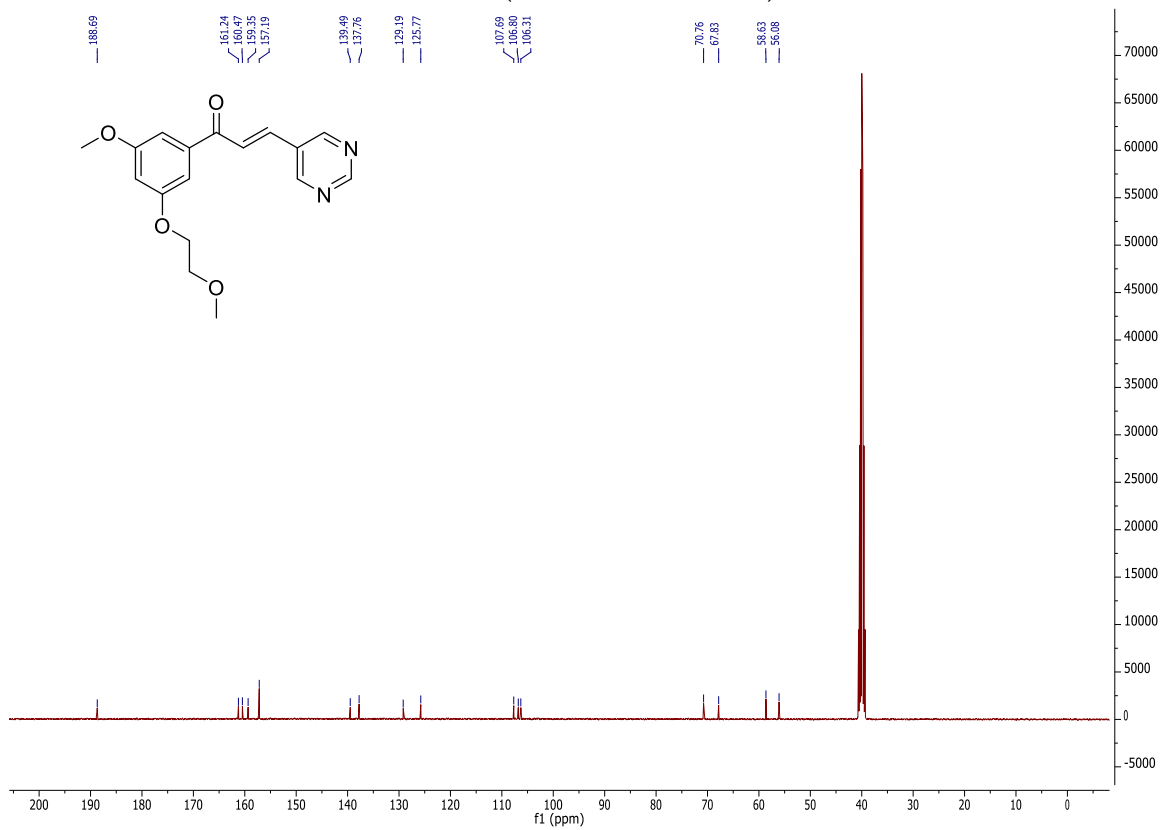


# Compound 33

$^1\text{H-NMR}$  (400 MHz,  $\text{DMSO-}d_6$ )



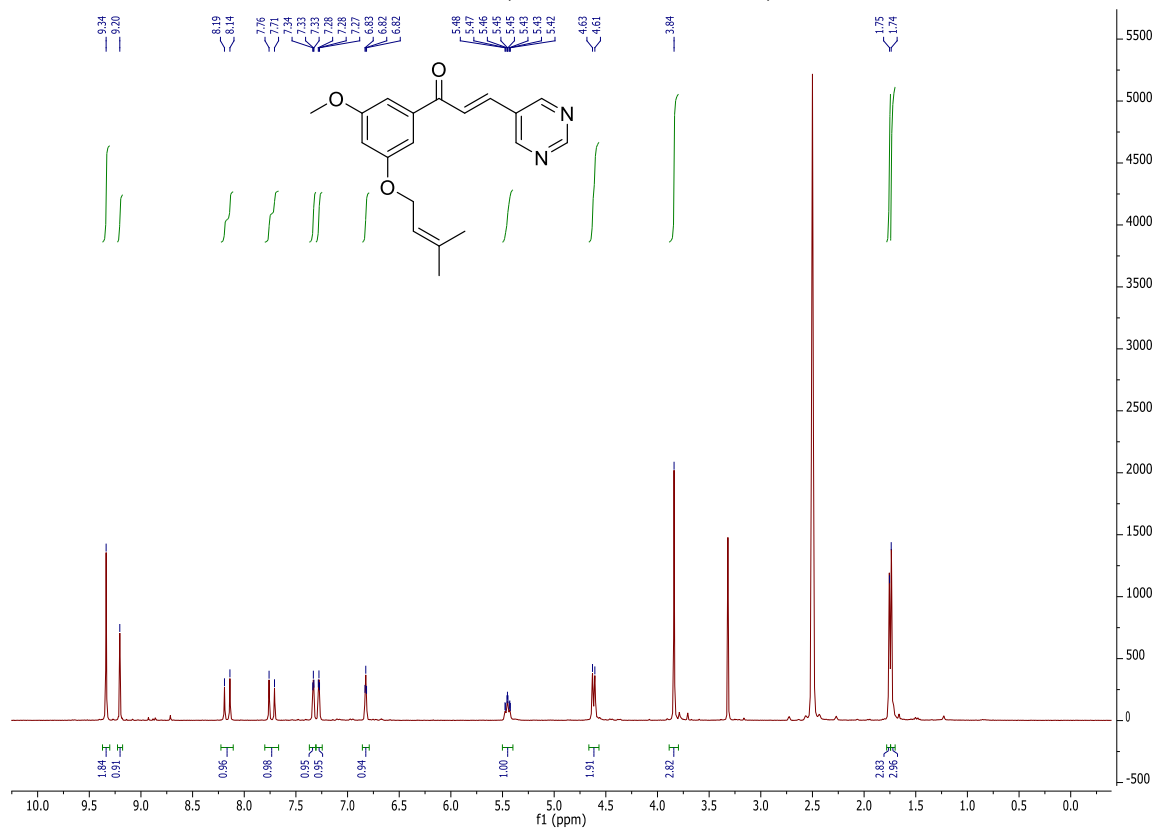
$^{13}\text{C-NMR}$  (101 MHz,  $\text{DMSO-}d_6$ )





# Compound 34

$^1\text{H-NMR}$  (300 MHz,  $\text{DMSO-}d_6$ )



$^{13}\text{C-NMR}$  (101 MHz,  $\text{DMSO-}d_6$ )

