

# Supporting information

## Spectra of Compounds

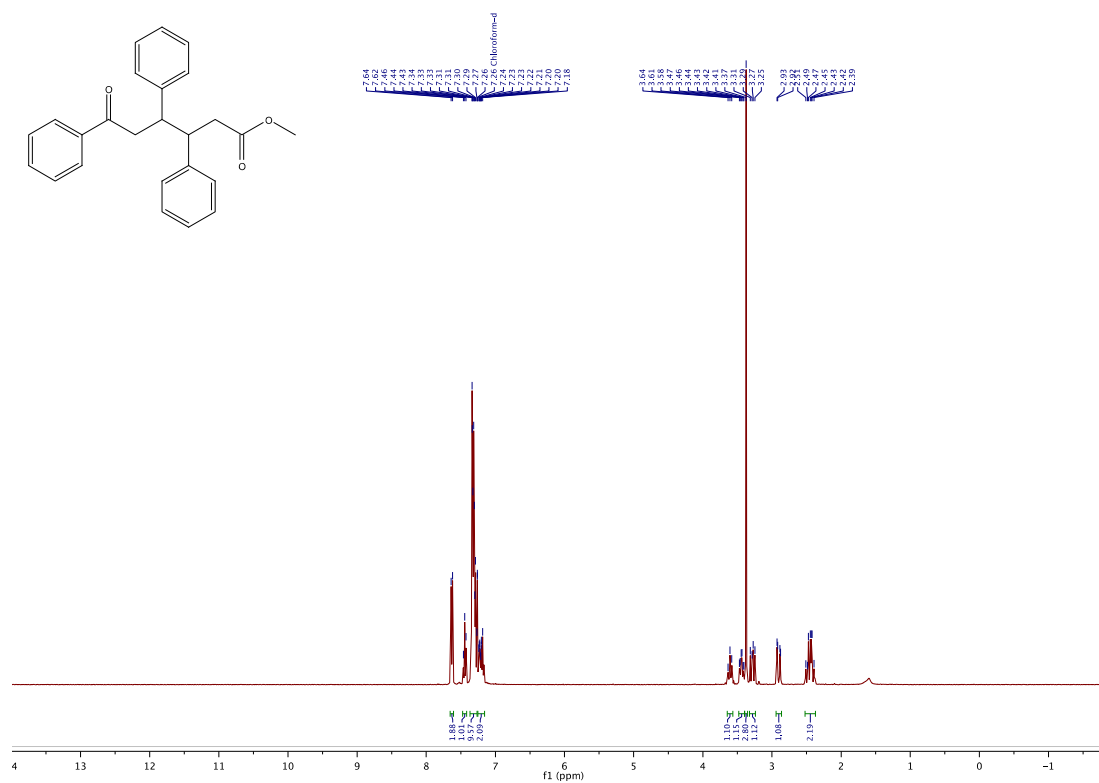


Figure S1.  $^1\text{H}$  NMR of Methyl-6-oxo-3,4,6-triphenylhexanoate ( $\text{CDCl}_3$ ).

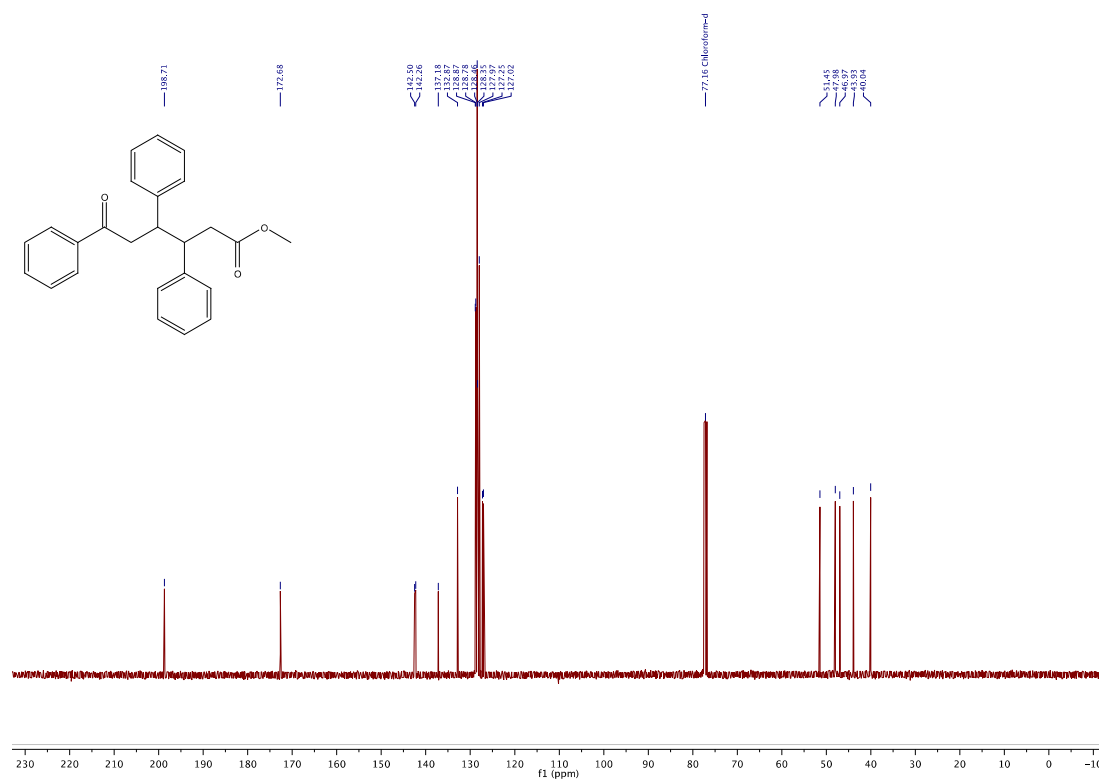
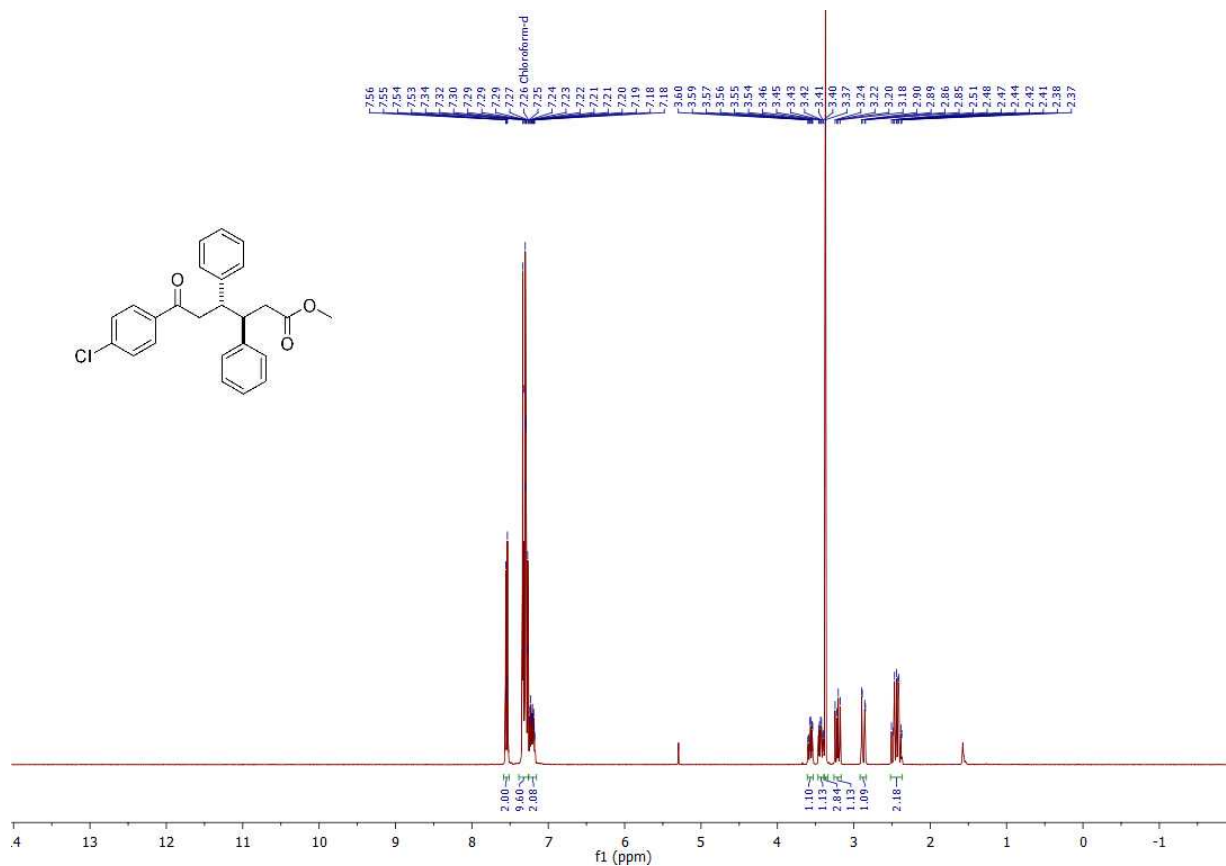
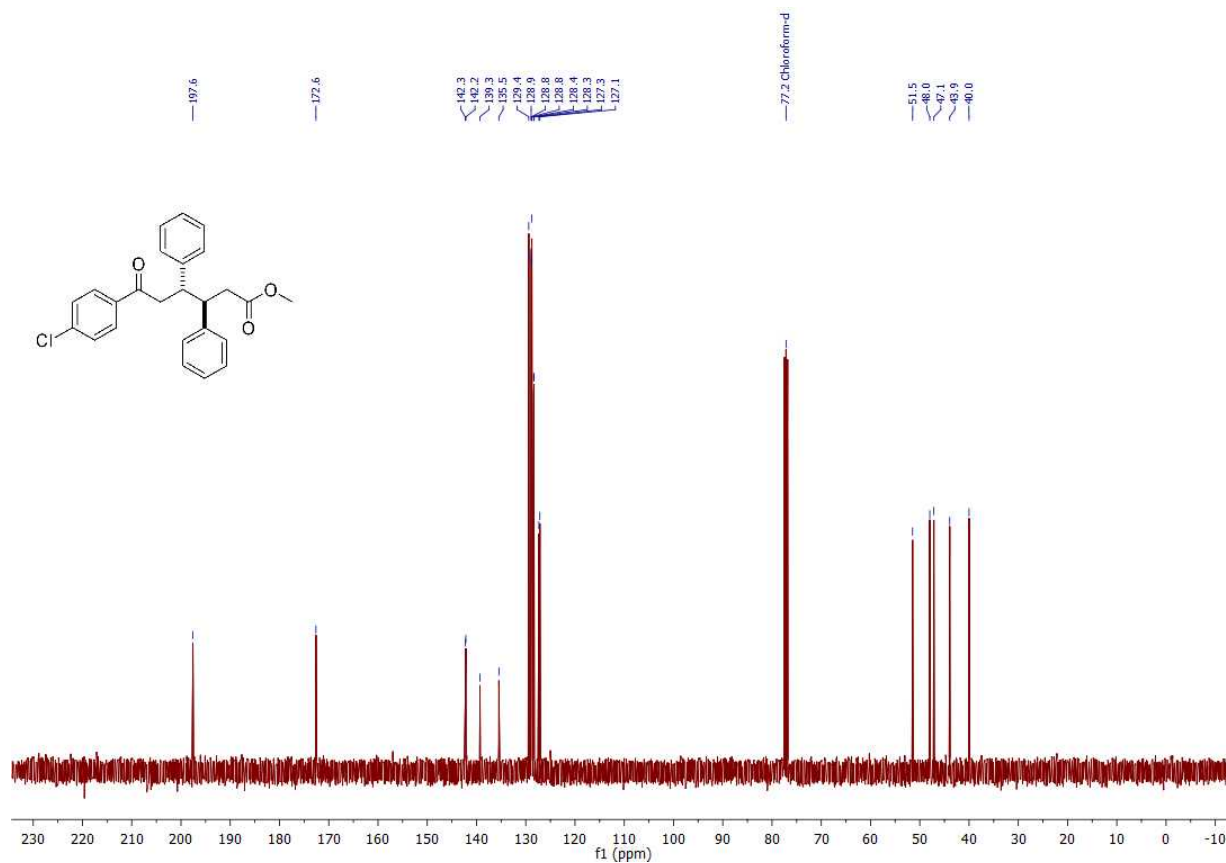


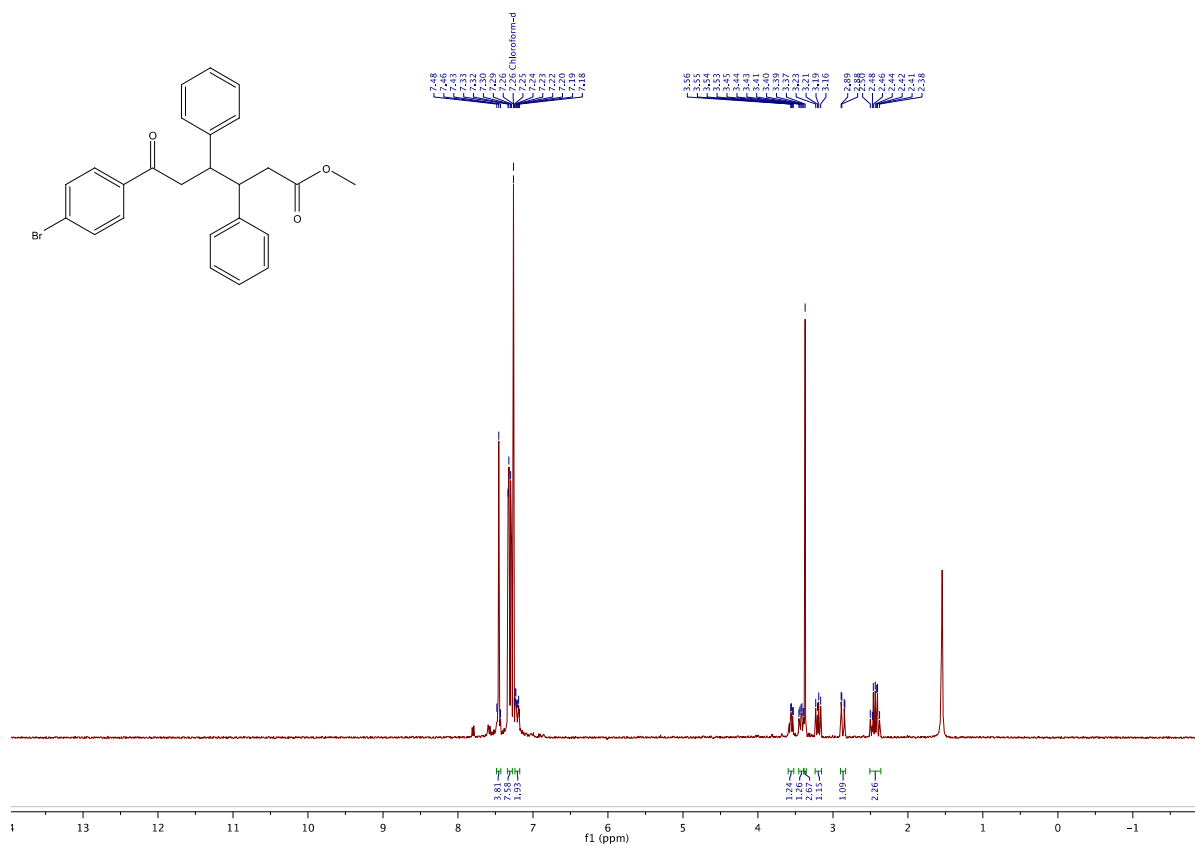
Figure S2.  $^{13}\text{C}$  NMR of Methyl-6-oxo-3,4,6-triphenylhexanoate ( $\text{CDCl}_3$ ).



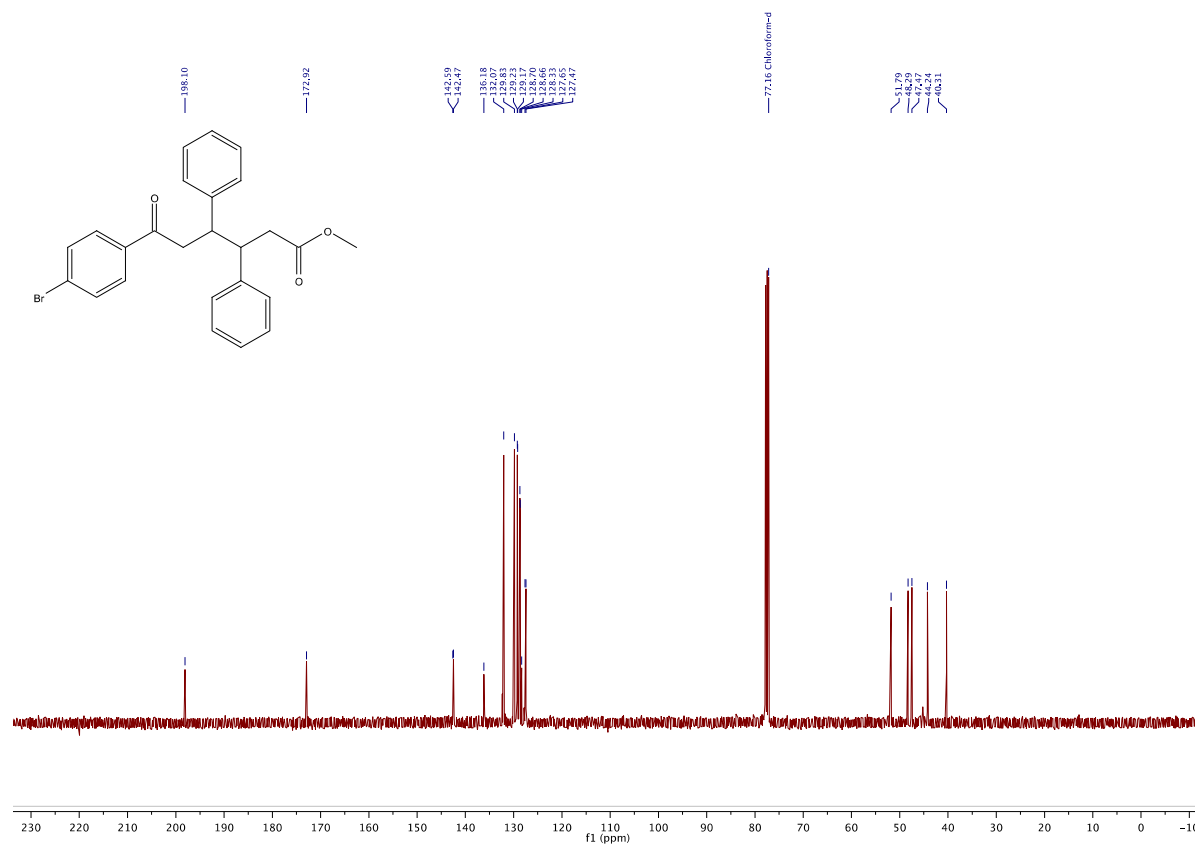
**Figure S3.**  $^1\text{H}$  NMR of Methyl 6-(4-chlorophenyl)-6-oxo-3,4-diphenylhexanoate ( $\text{CDCl}_3$ ).



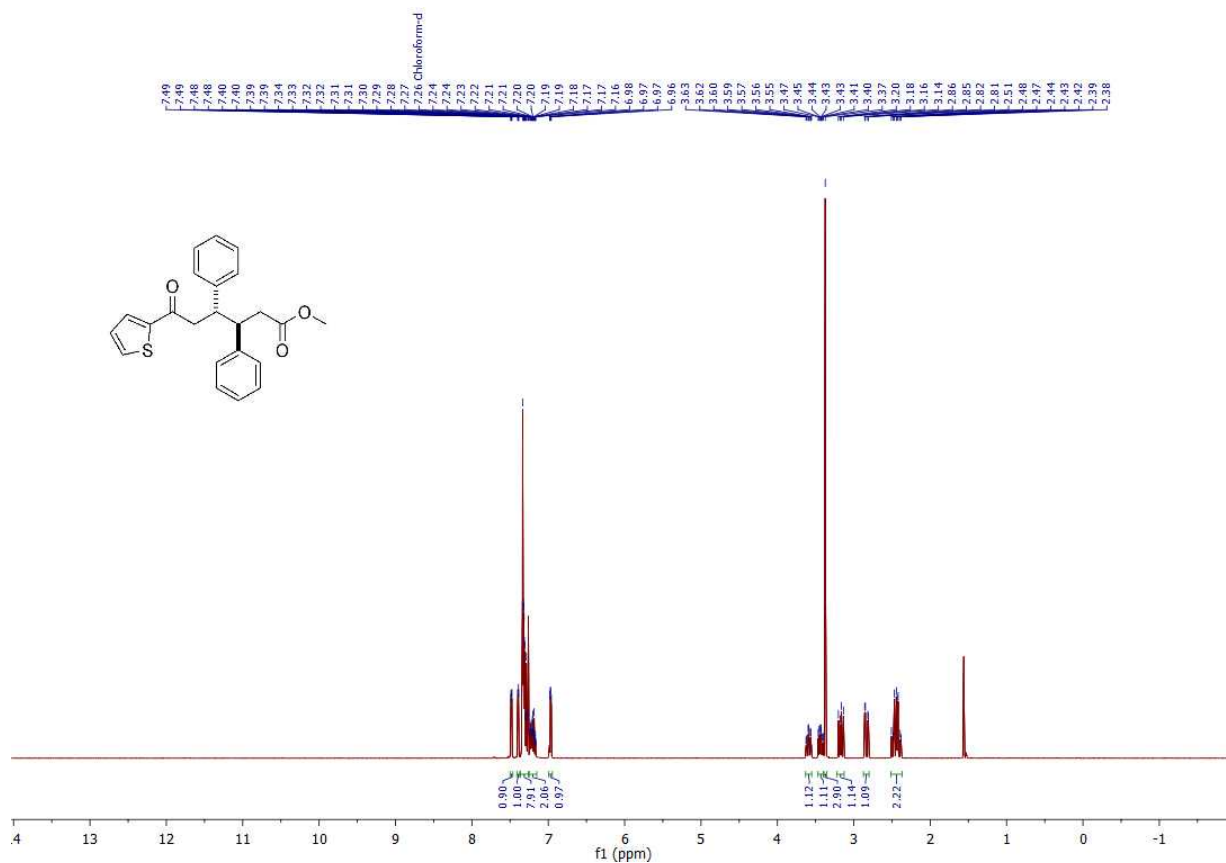
**Figure S4.**  $^{13}\text{C}$  NMR of Methyl 6-(4-chlorophenyl)-6-oxo-3,4-diphenylhexanoate ( $\text{CDCl}_3$ ).



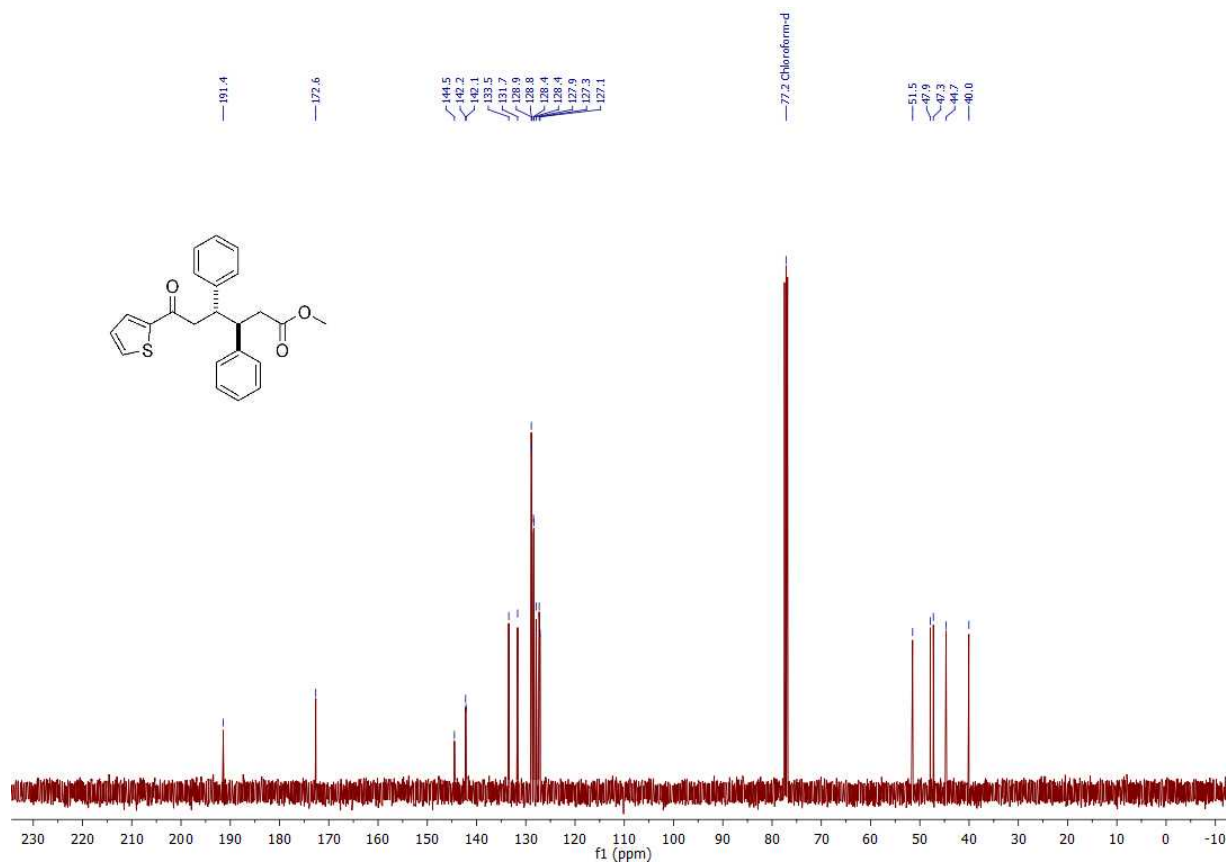
**Figure S5.** <sup>1</sup>H NMR of Methyl 6-(4-bromophenyl)-6-oxo-3,4-diphenylhexanoate (CDCl<sub>3</sub>).



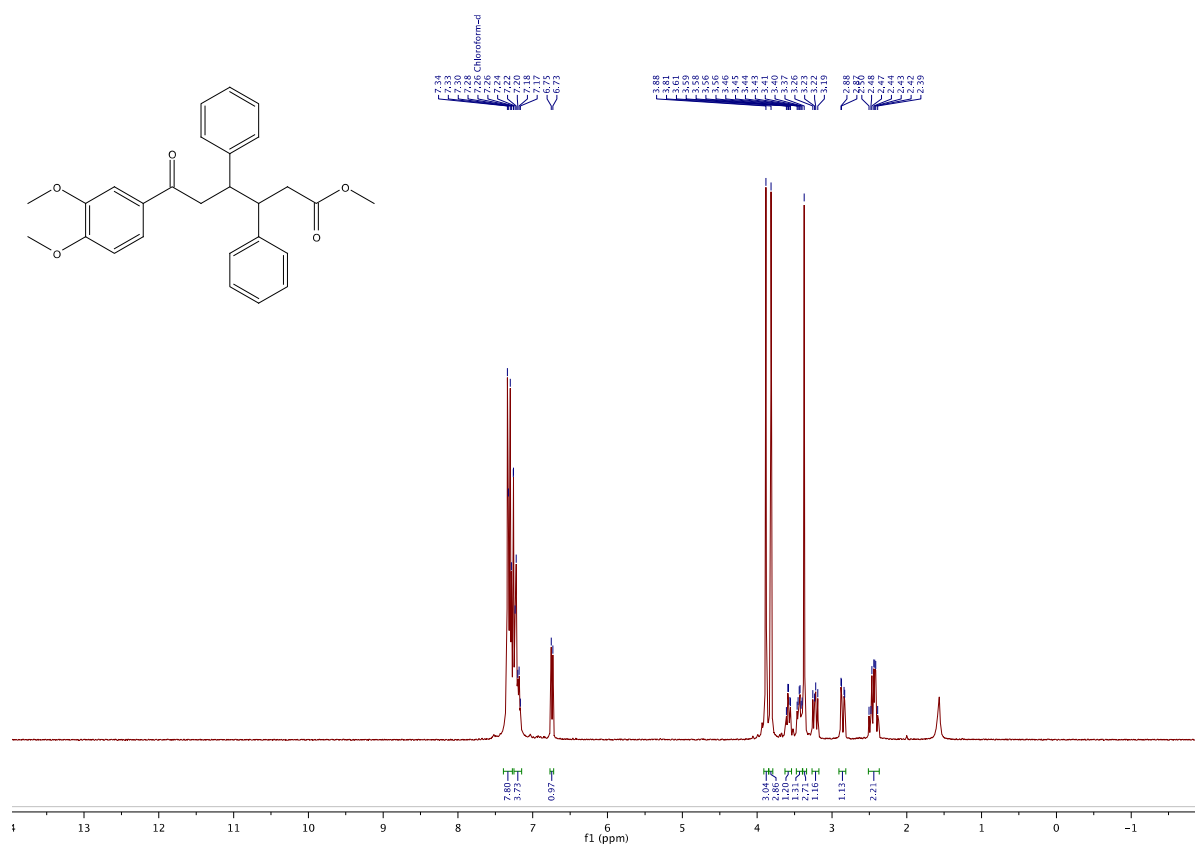
**Figure S6.** <sup>13</sup>C NMR of Methyl 6-(4-bromophenyl)-6-oxo-3,4-diphenylhexanoate (CDCl<sub>3</sub>).



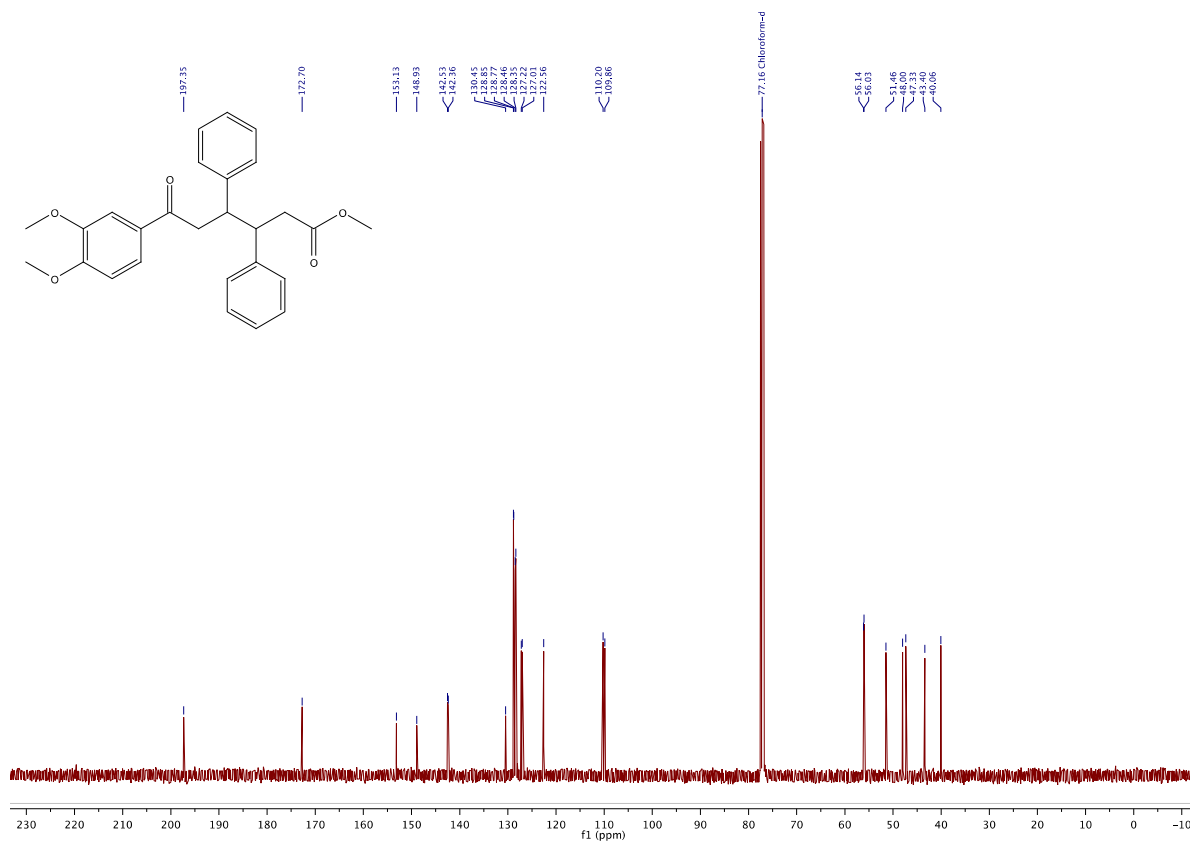
**Figure S7.** <sup>1</sup>H NMR of Methyl-6-oxo-3,4-diphenyl-6-(thiophen-2-yl)hexanoate (CDCl<sub>3</sub>).



**Figure S8.** <sup>13</sup>C NMR of Methyl-6-oxo-3,4-diphenyl-6-(thiophen-2-yl)hexanoate (CDCl<sub>3</sub>).



**Figure S9.** <sup>1</sup>H NMR of Methyl 6-(3,4-dimethoxyphenyl)-6-oxo-3,4-diphenylhexanoate (CDCl<sub>3</sub>).



**Figure S10.** <sup>13</sup>C NMR of Methyl 6-(3,4-dimethoxyphenyl)-6-oxo-3,4-diphenylhexanoate (CDCl<sub>3</sub>).

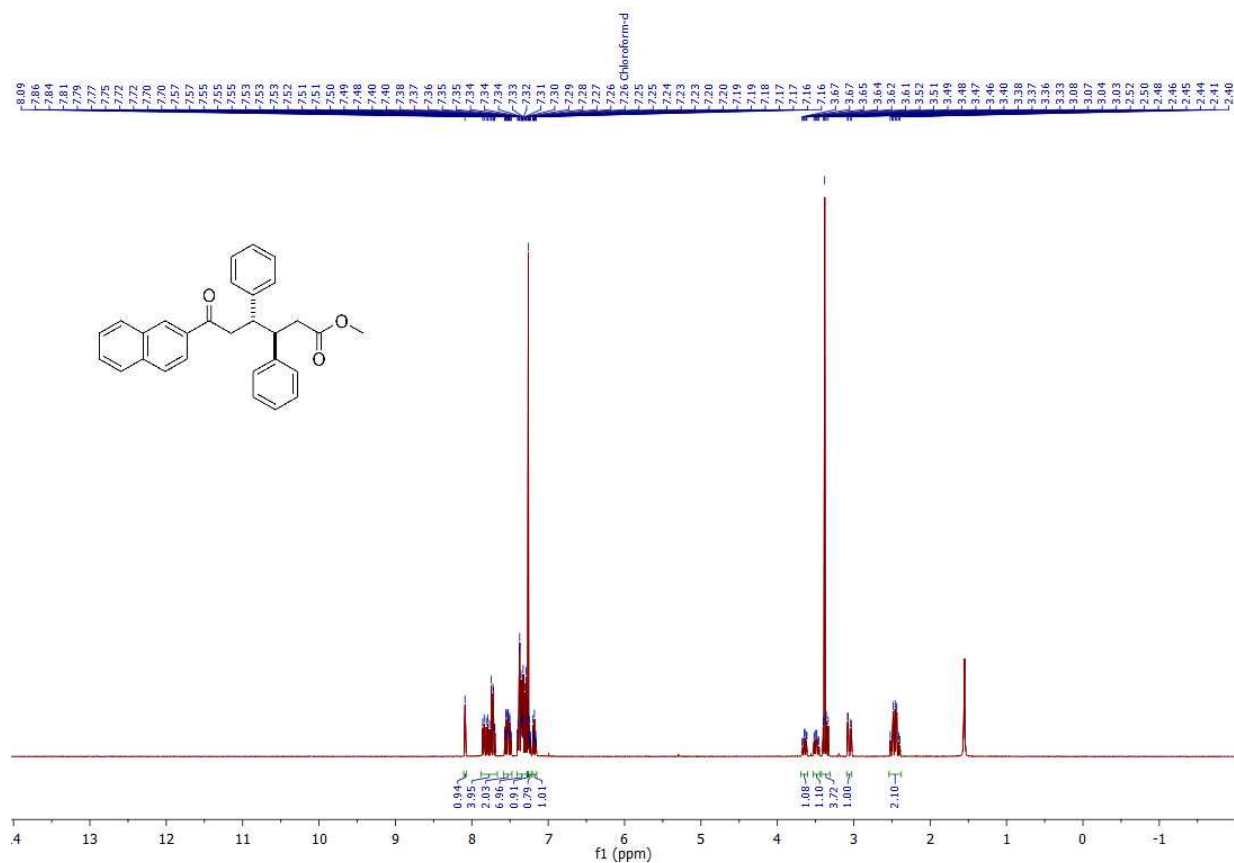


Figure S11.  $^1\text{H}$  NMR of Methyl-6-(naphthalen-2-yl)-6-oxo-3,4-diphenylhexanoate ( $\text{CDCl}_3$ ).

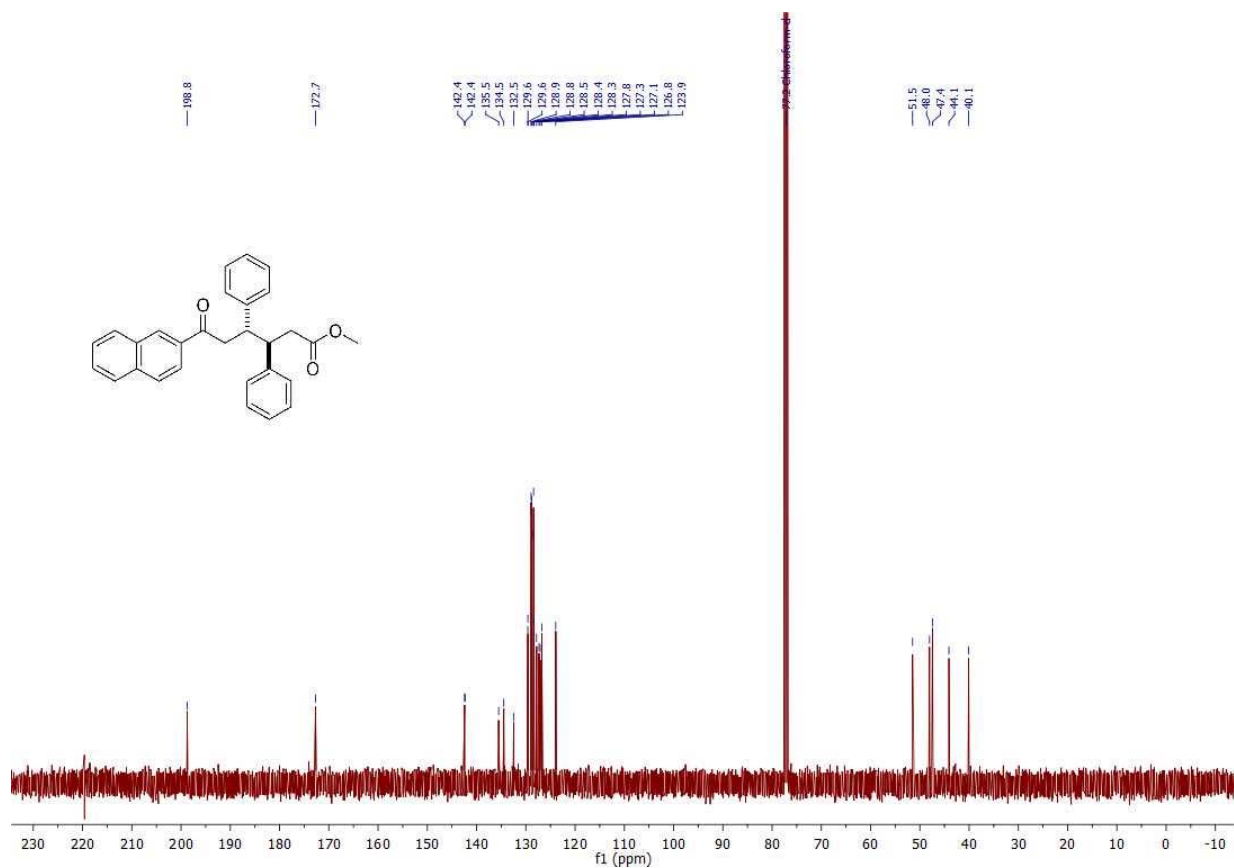
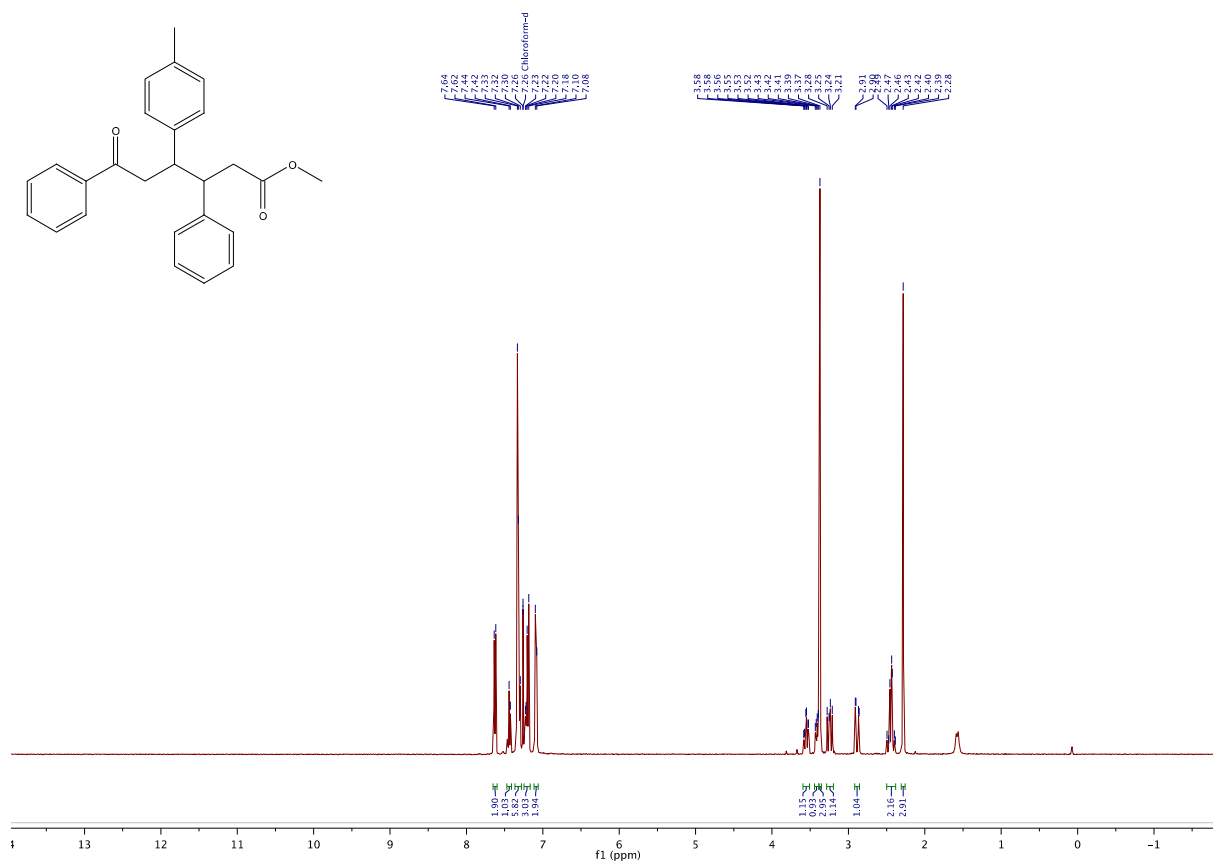
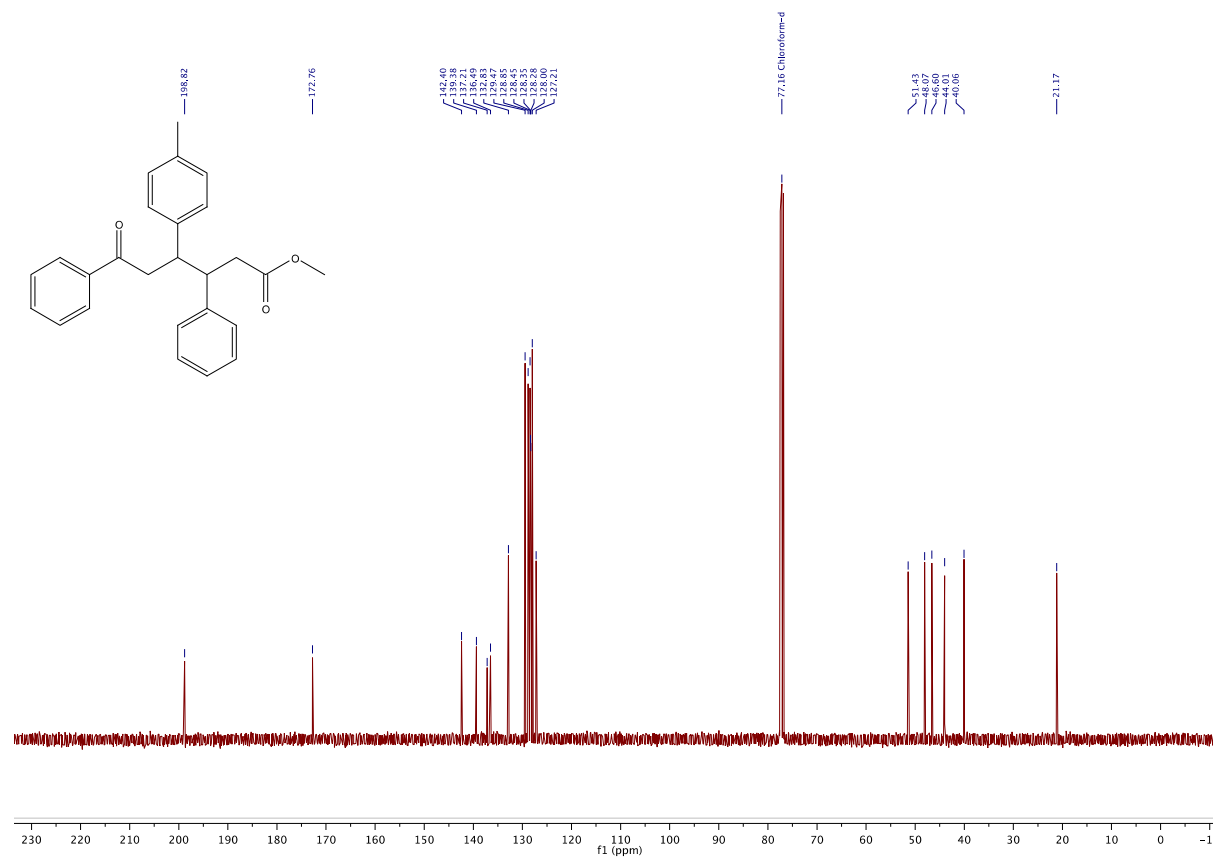


Figure S12.  $^{13}\text{C}$  NMR of Methyl-6-(naphthalen-2-yl)-6-oxo-3,4-diphenylhexanoate ( $\text{CDCl}_3$ ).



**Figure S13.**  $^1\text{H}$  NMR of Methyl 6-oxo-3,6-diphenyl-4-(p-tolyl)hexanoate ( $\text{CDCl}_3$ ).



**Figure S14.**  $^{13}\text{C}$  NMR of Methyl 6-oxo-3,6-diphenyl-4-(p-tolyl)hexanoate ( $\text{CDCl}_3$ ).

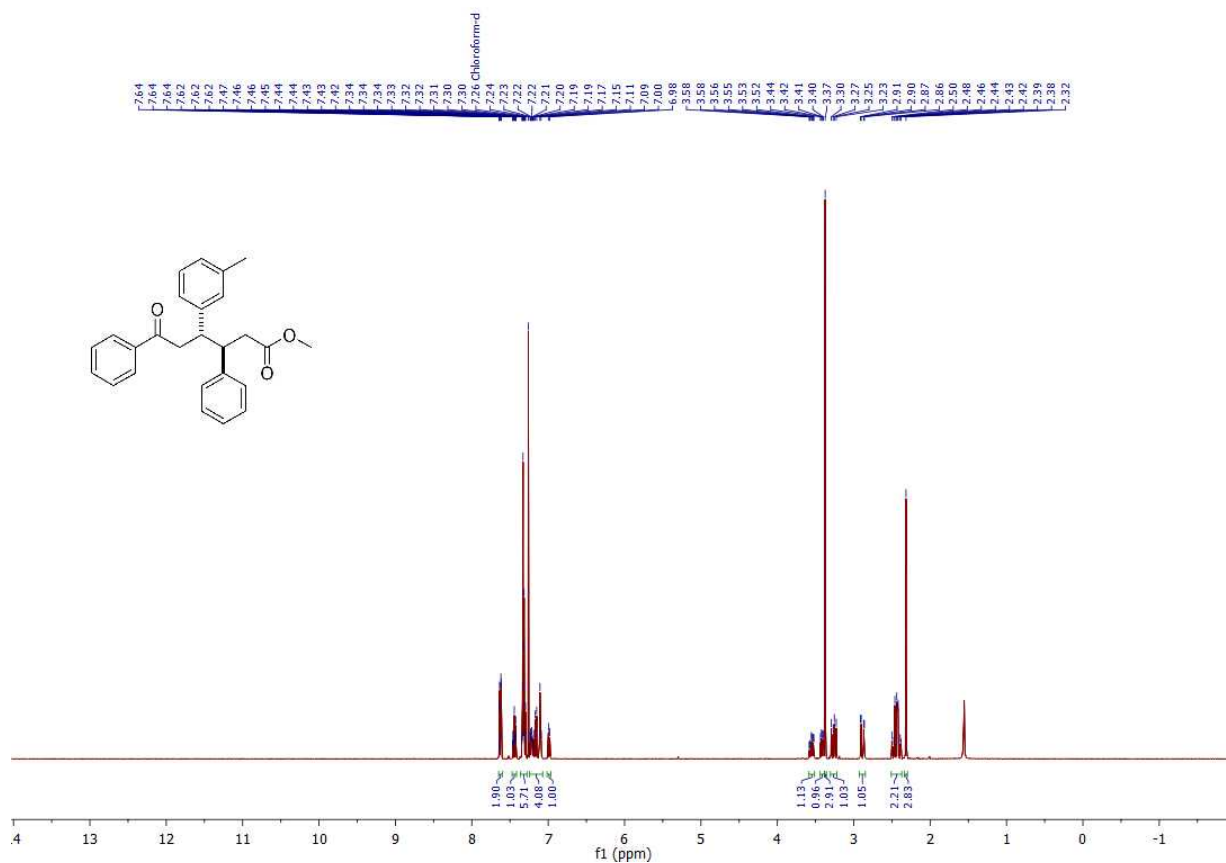


Figure S15.  $^1\text{H}$  NMR of Methyl 6-oxo-3,6-diphenyl-4-(m-tolyl)hexanoate (CDCl<sub>3</sub>).

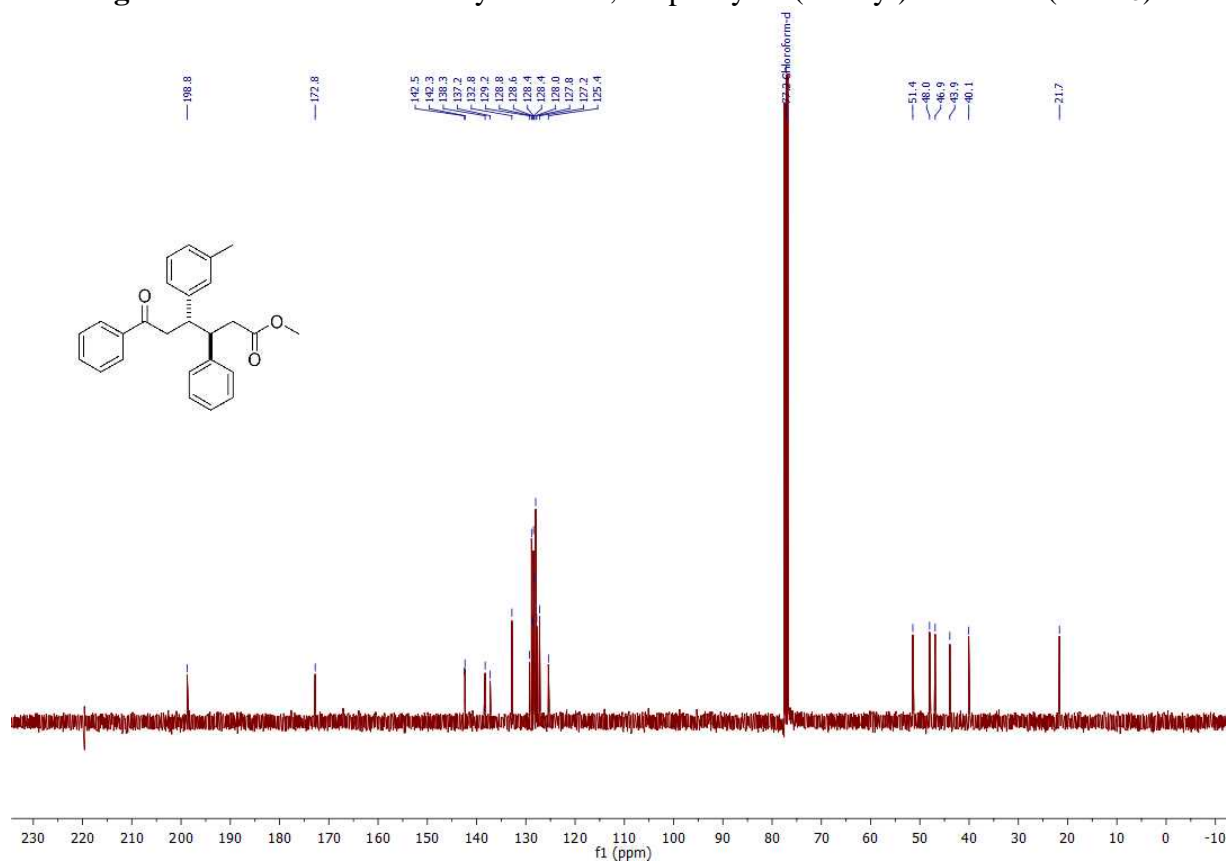
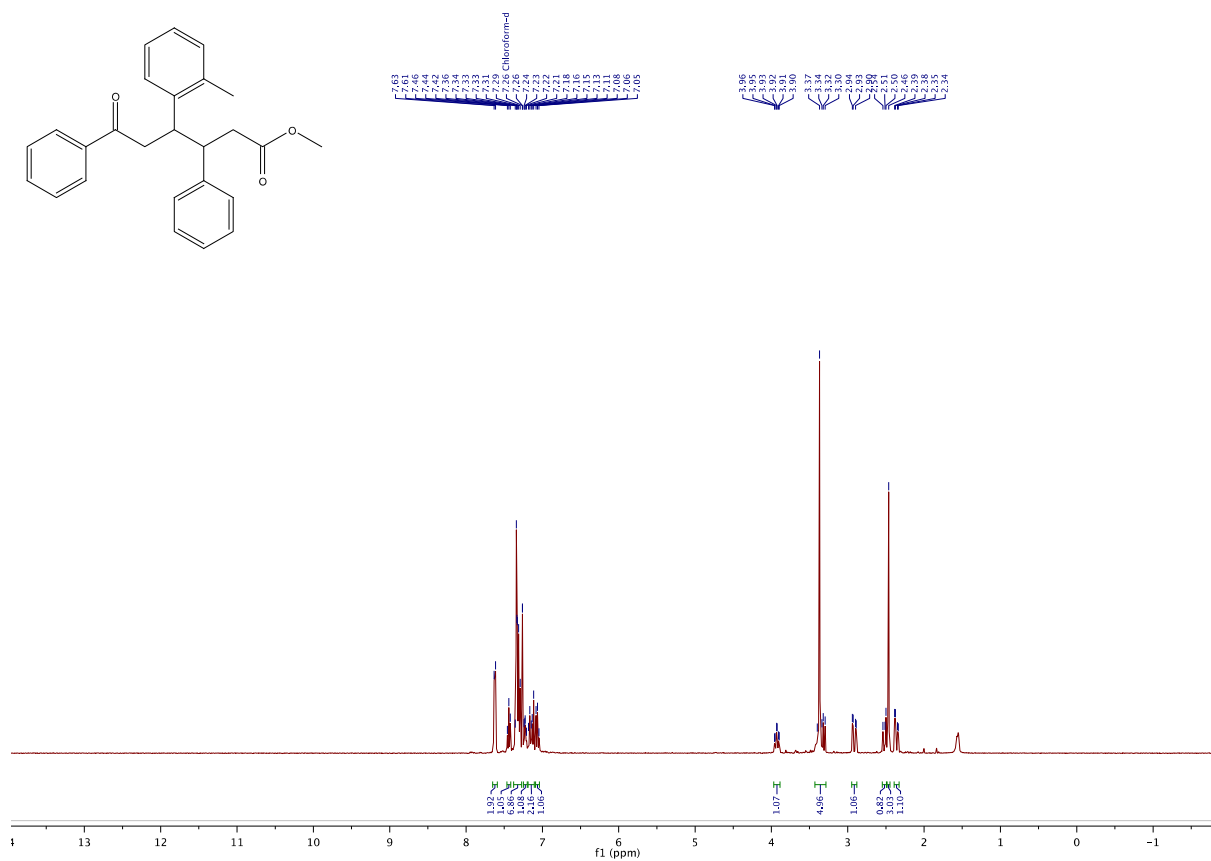
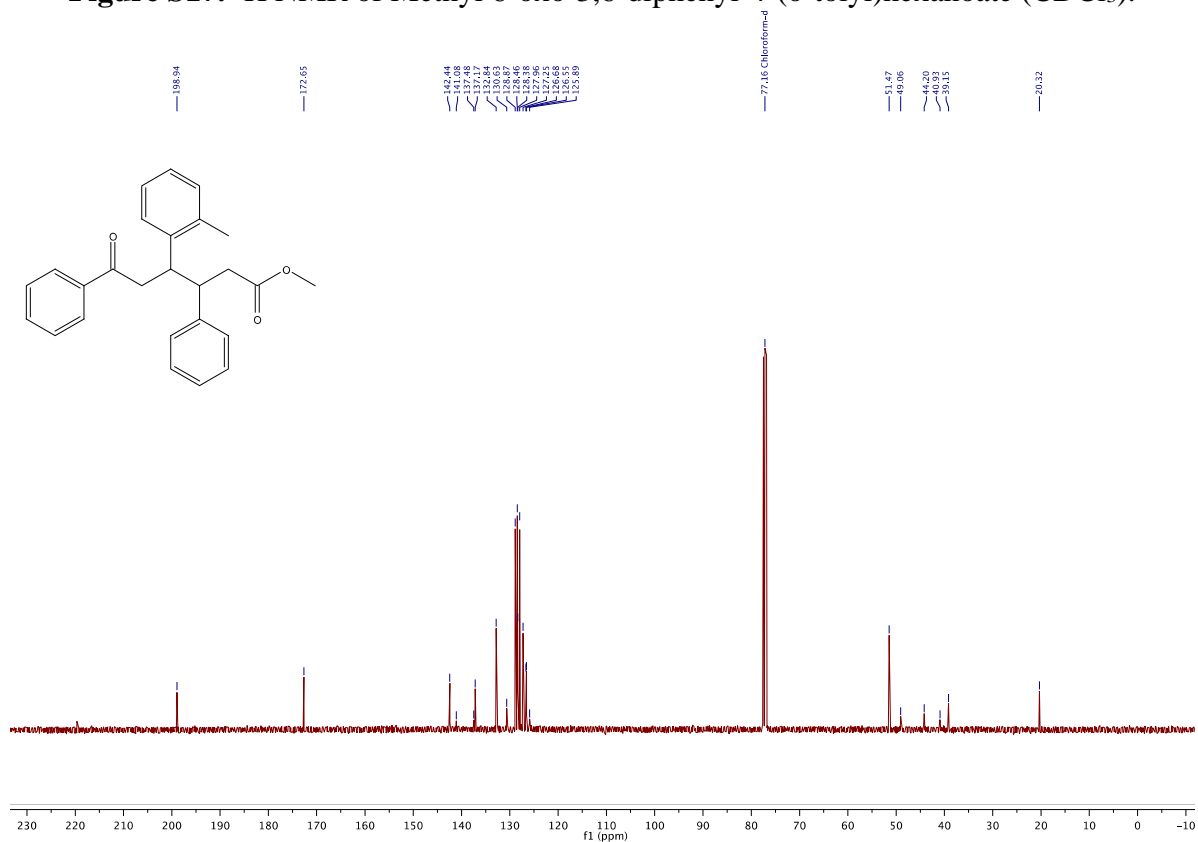


Figure S16.  $^{13}\text{C}$  NMR of Methyl 6-oxo-3,6-diphenyl-4-(m-tolyl)hexanoate (CDCl<sub>3</sub>).

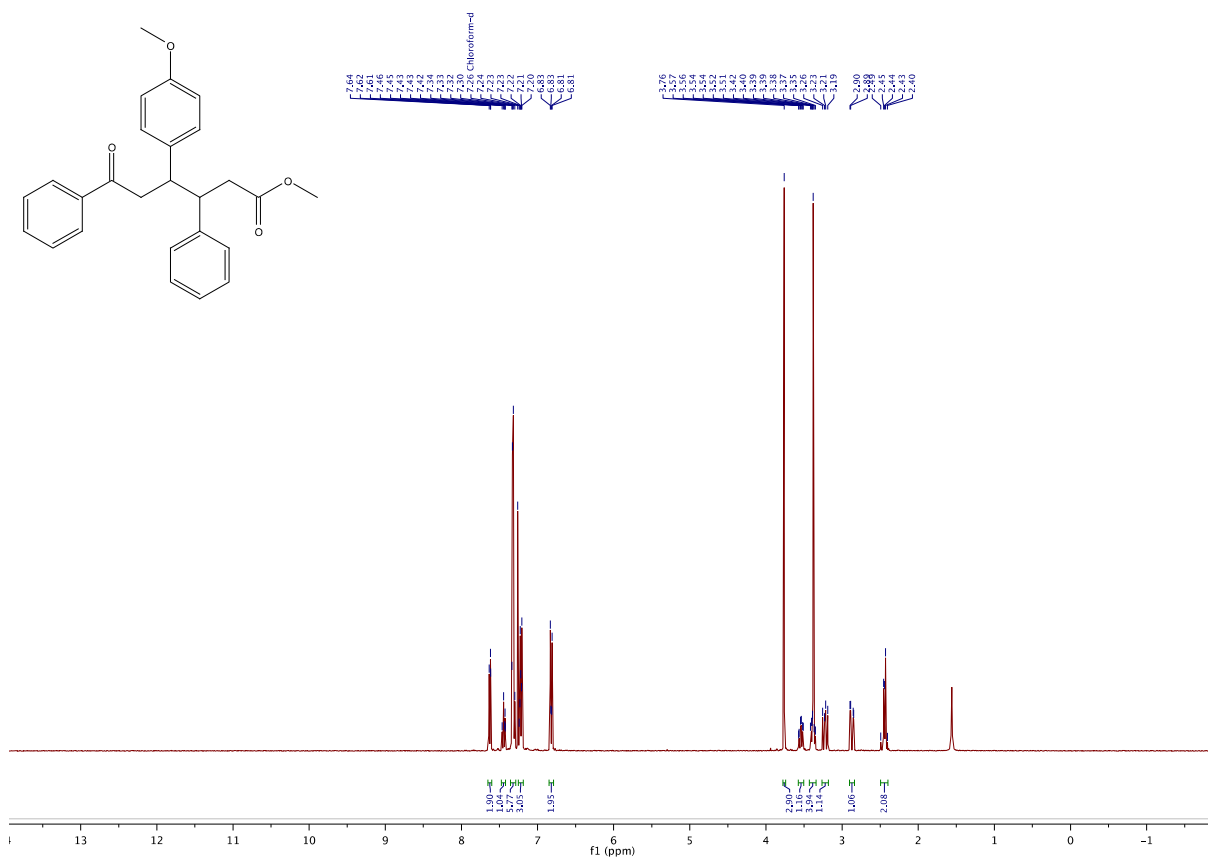




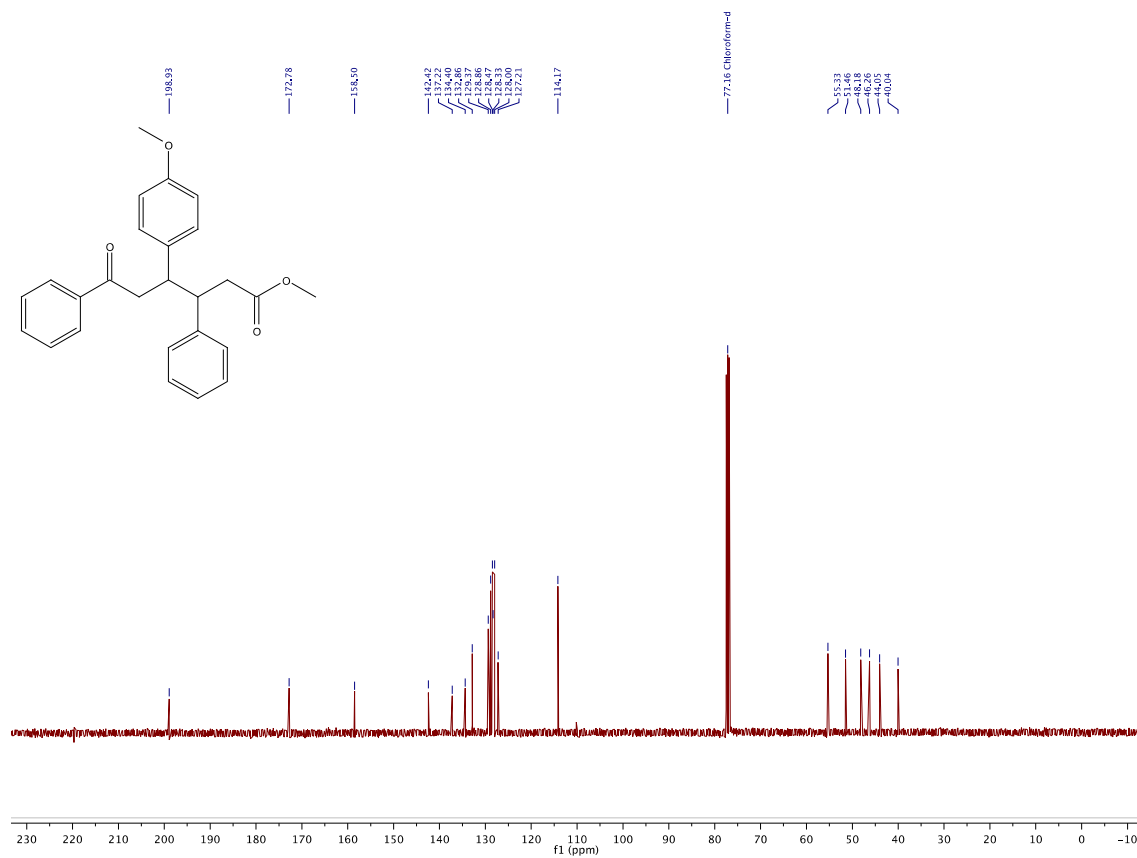
**Figure S17.  $^1\text{H}$  NMR of Methyl 6-oxo-3,6-diphenyl-4-(o-tolyl)hexanoate ( $\text{CDCl}_3$ ).**



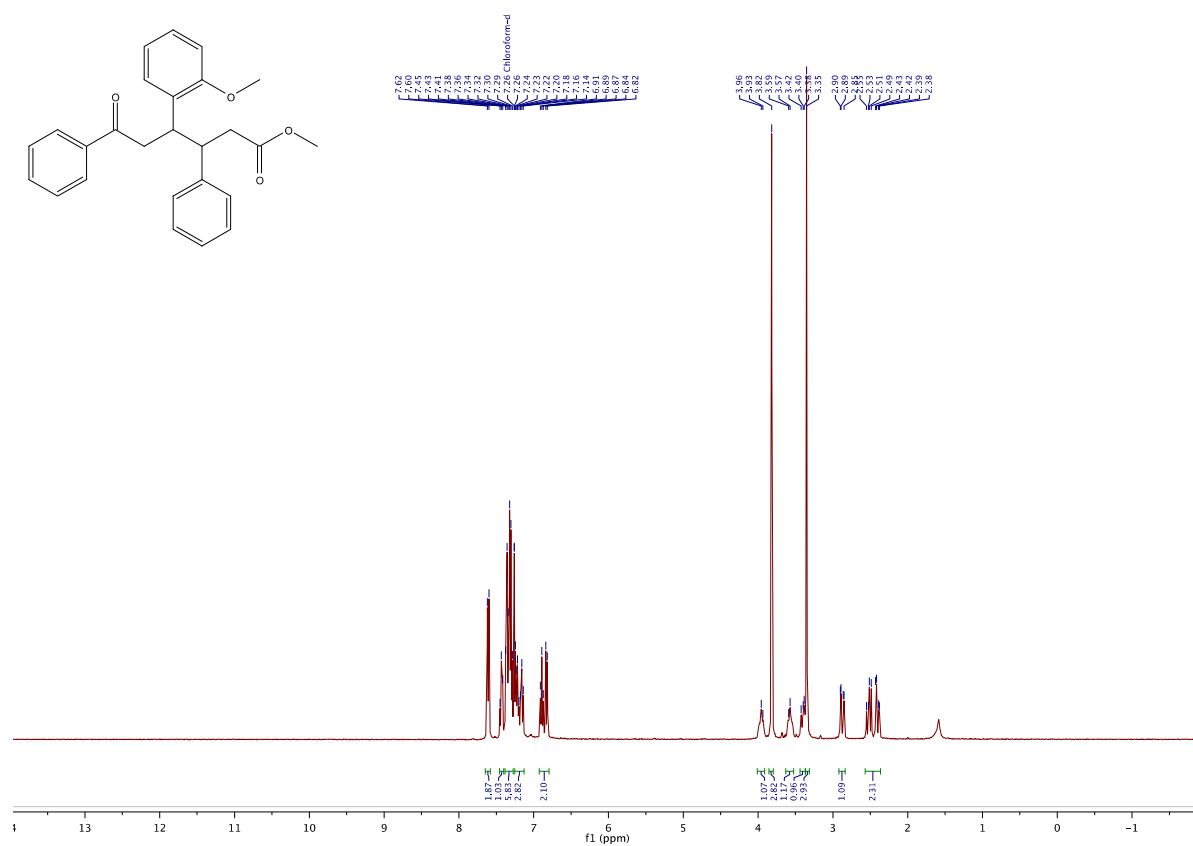
**Figure S18.  $^{13}\text{C}$  NMR of Methyl 6-oxo-3,6-diphenyl-4-(o-tolyl)hexanoate ( $\text{CDCl}_3$ ).**



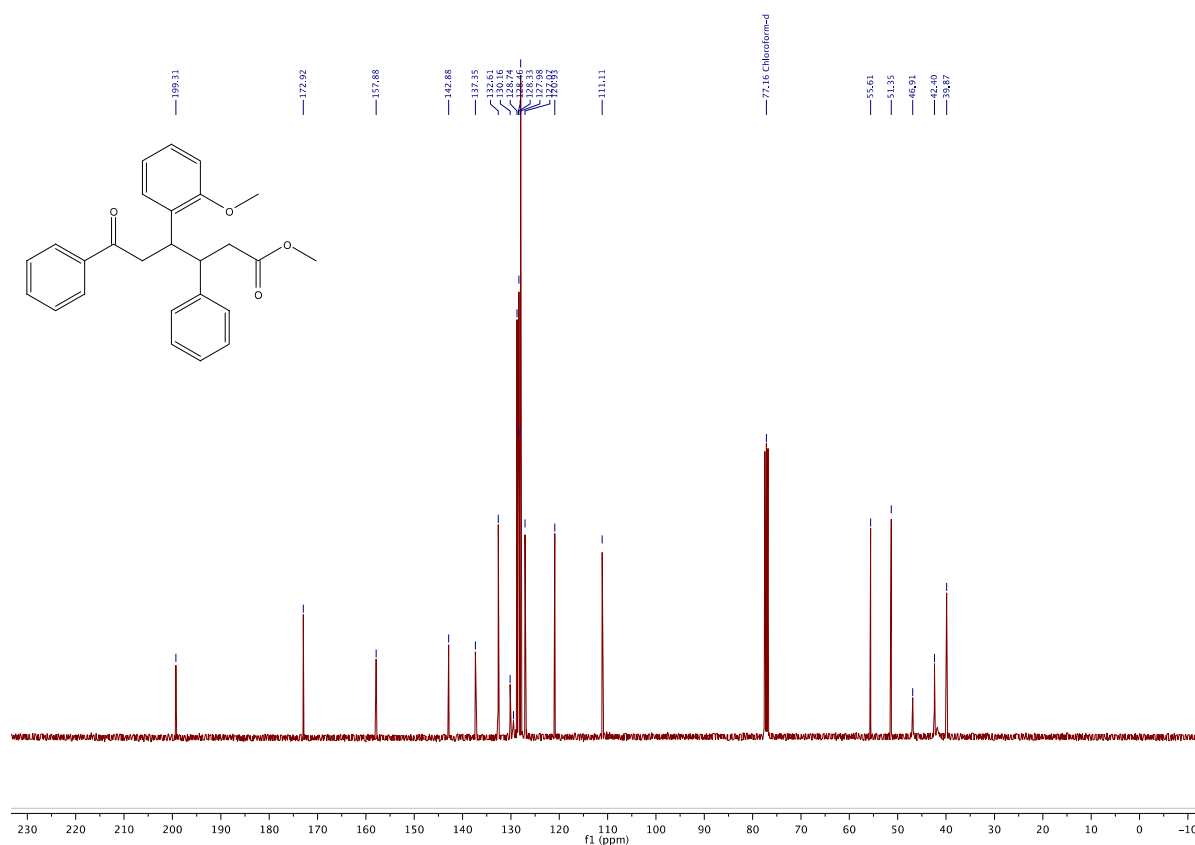
**Figure S19.** <sup>1</sup>H NMR of Methyl 4-(4-methoxyphenyl)-6-oxo-3,6-diphenylhexanoate (CDCl<sub>3</sub>).



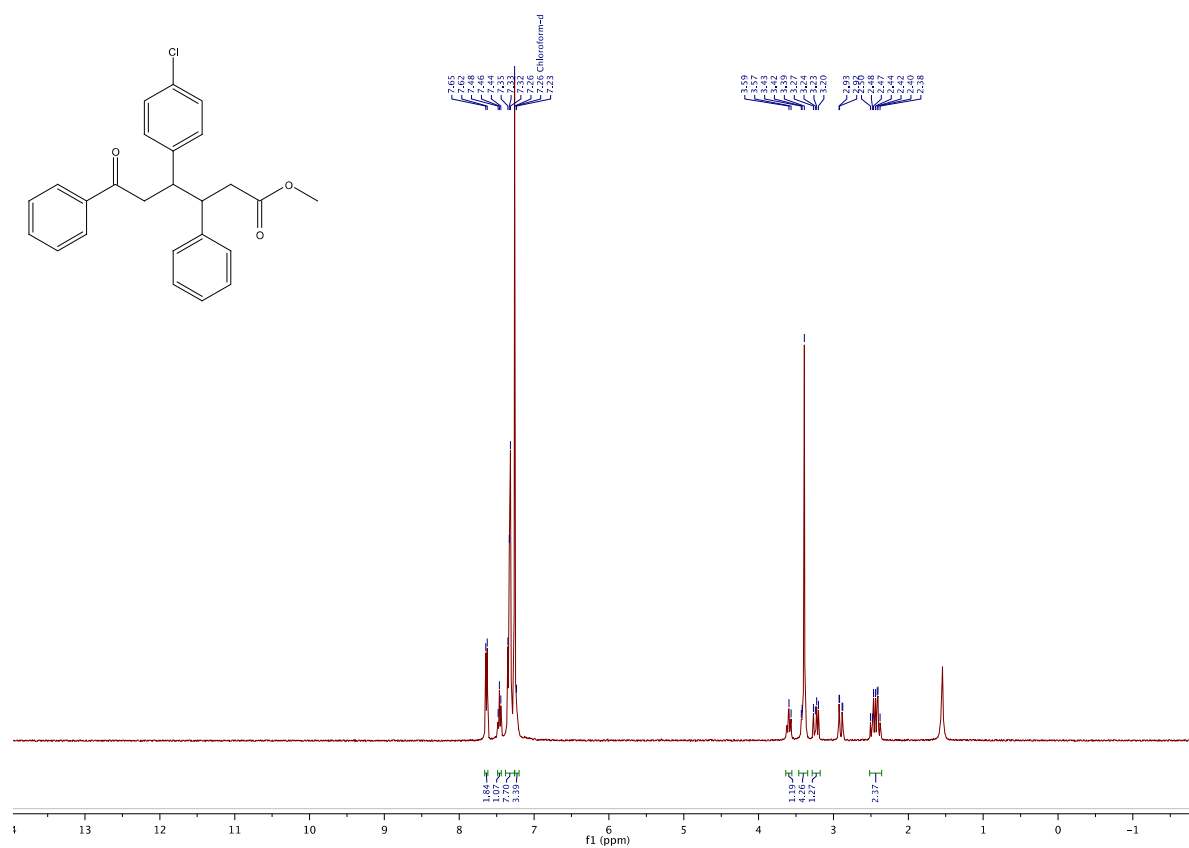
**Figure S20.** <sup>13</sup>C NMR of Methyl 4-(4-methoxyphenyl)-6-oxo-3,6-diphenylhexanoate (CDCl<sub>3</sub>).



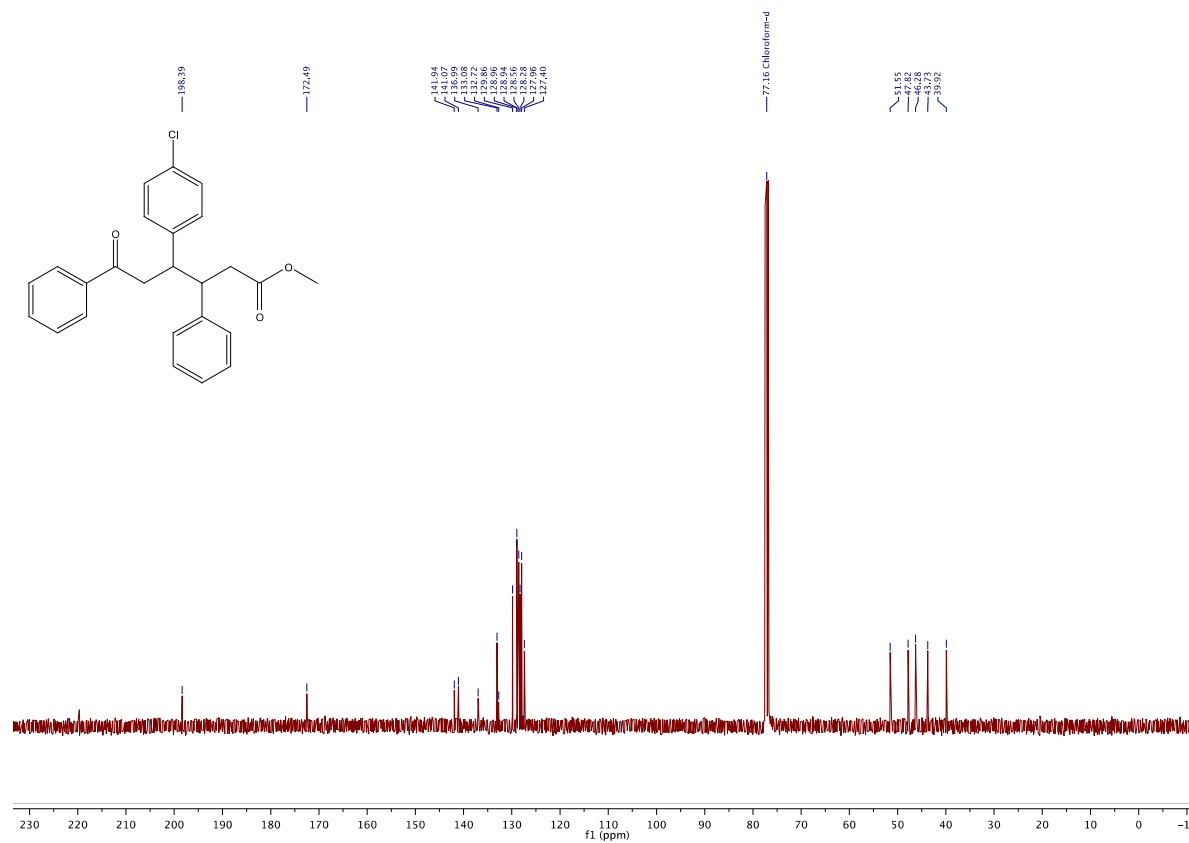
**Figure S21.** <sup>1</sup>H NMR of Methyl 4-(2-methoxyphenyl)-6-oxo-3,6-diphenylhexanoate (CDCl<sub>3</sub>).



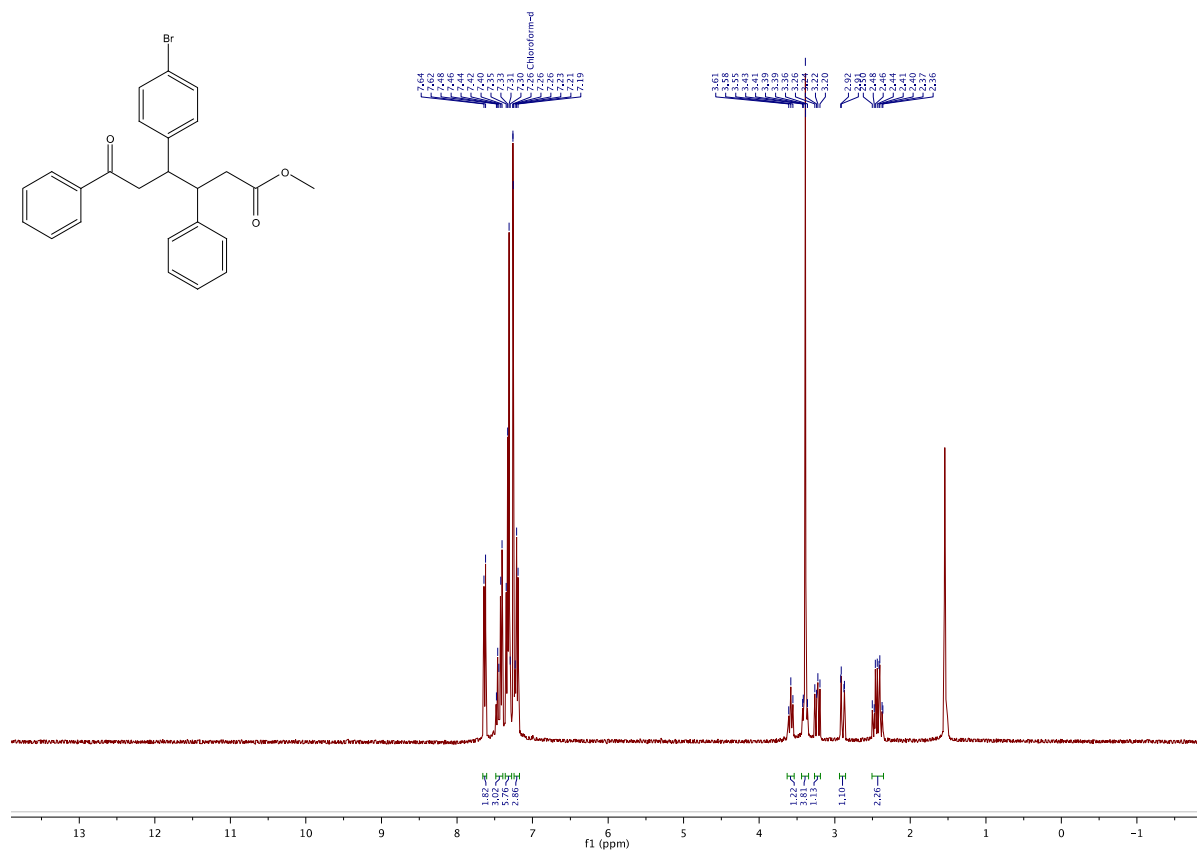
**Figure S22.** <sup>13</sup>C NMR of Methyl 4-(2-methoxyphenyl)-6-oxo-3,6-diphenylhexanoate (CDCl<sub>3</sub>).



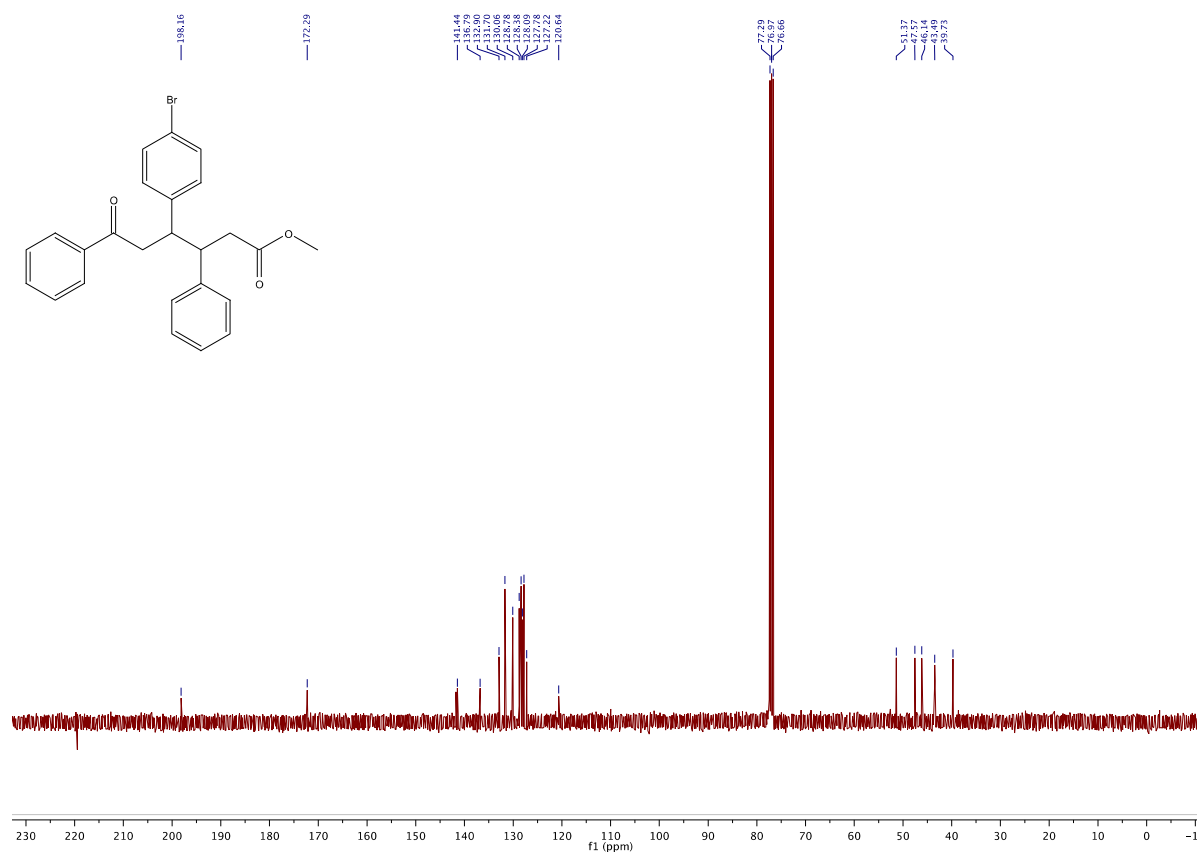
**Figure S23** <sup>1</sup>H NMR of Methyl-4-(4-chlorophenyl)-6-oxo-3,6-diphenylhexanoate (CDCl<sub>3</sub>).



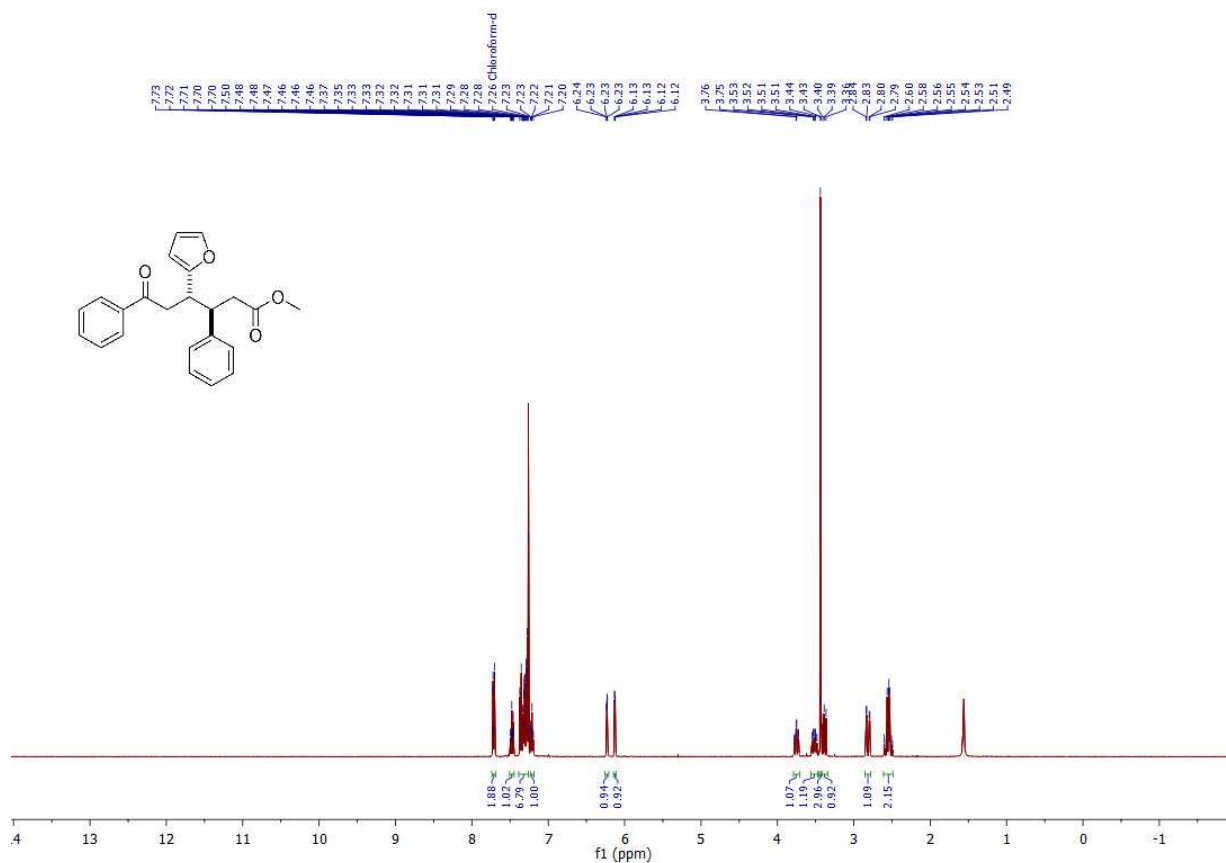
**Figure S24.** <sup>13</sup>C NMR of Methyl-4-(4-chlorophenyl)-6-oxo-3,6-diphenylhexanoate (CDCl<sub>3</sub>).



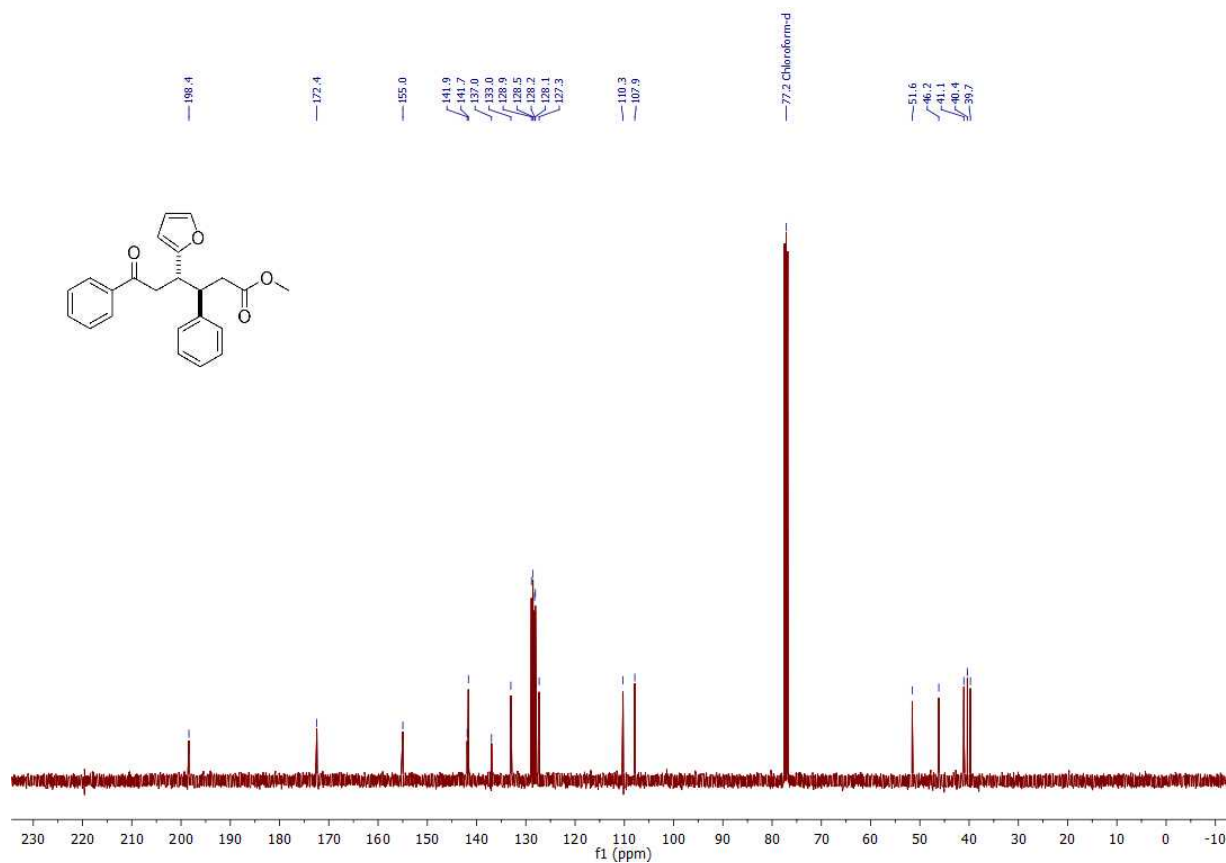
**Figure S25.**  $^1\text{H}$  NMR of Methyl-4-(4-bromophenyl)-6-oxo-3,6-diphenylhexanoate ( $\text{CDCl}_3$ ).



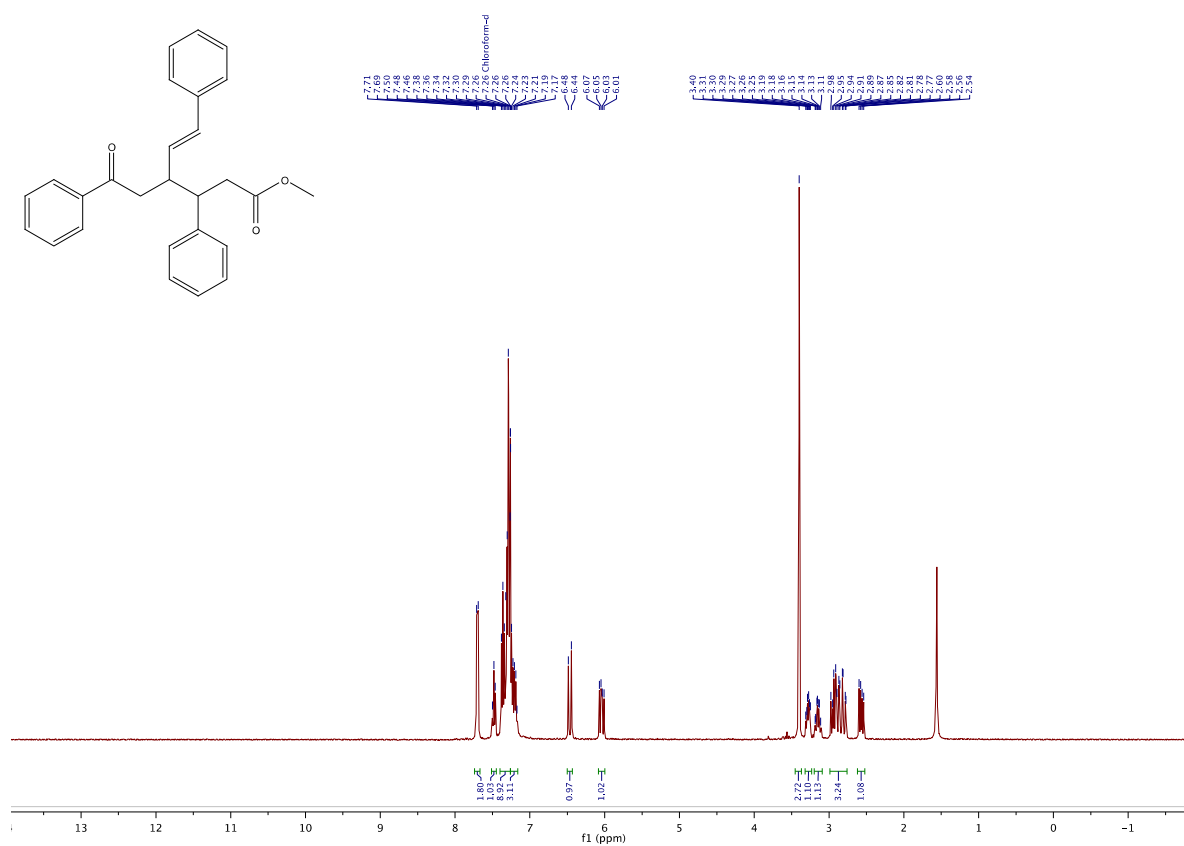
**Figure S26.**  $^{13}\text{C}$  NMR of Methyl-4-(4-bromophenyl)-6-oxo-3,6-diphenylhexanoate ( $\text{CDCl}_3$ ).



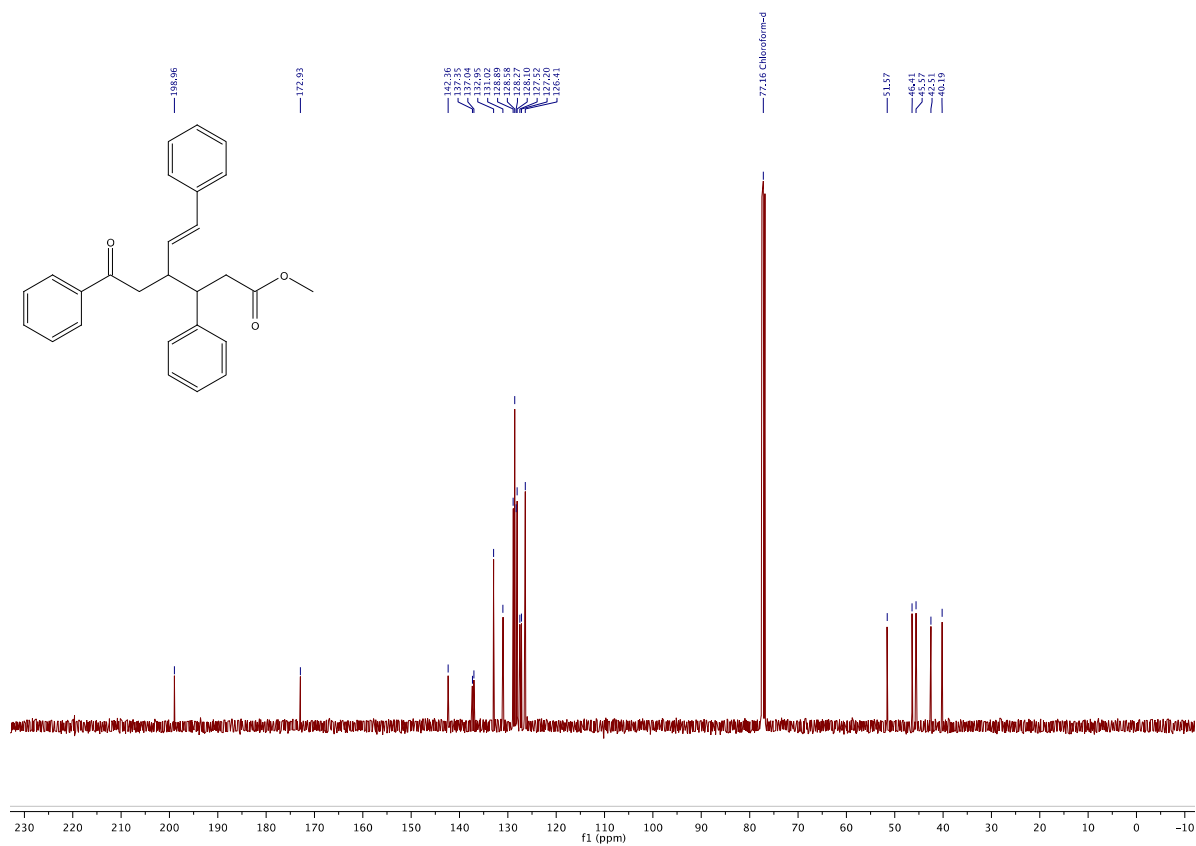
**Figure S27. <sup>1</sup>H NMR of Methyl-4-(furan-2-yl)-6-oxo-3,6-diphenylhexanoate (CDCl<sub>3</sub>).**



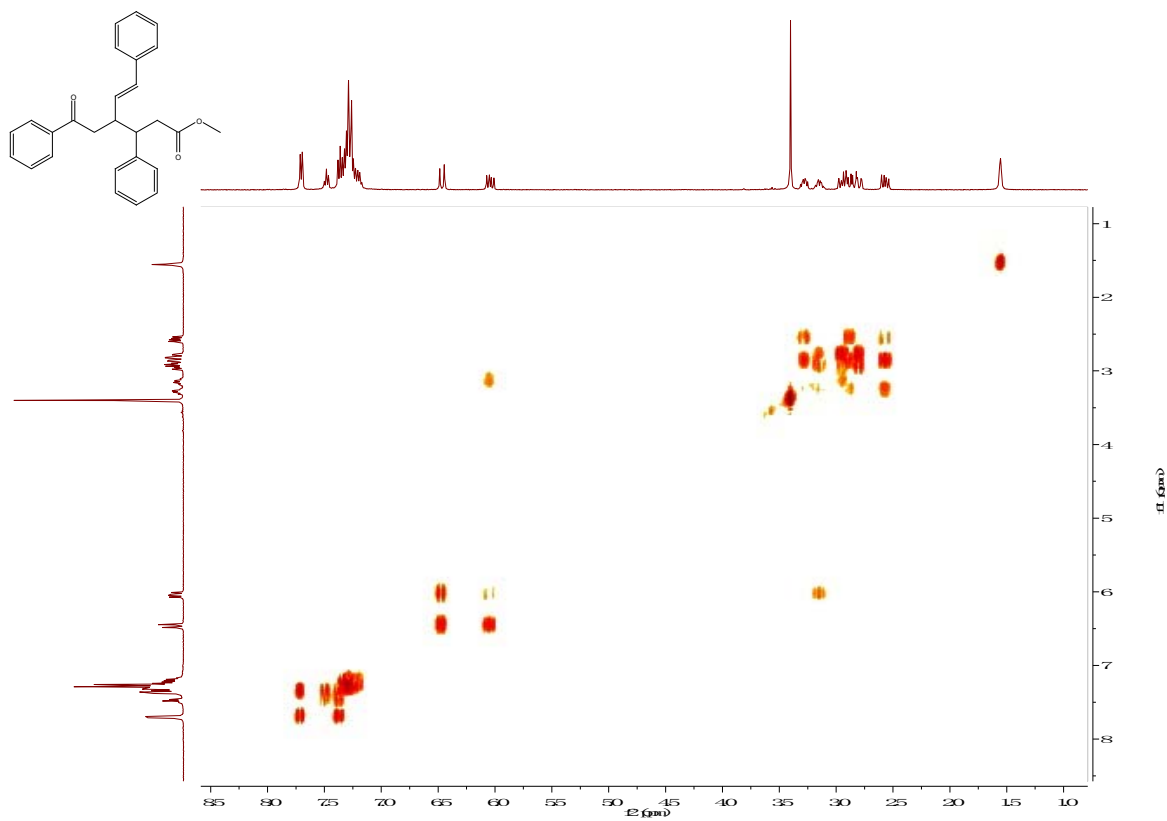
**Figure S28. <sup>13</sup>C NMR of Methyl-4-(furan-2-yl)-6-oxo-3,6-diphenylhexanoate (CDCl<sub>3</sub>).**



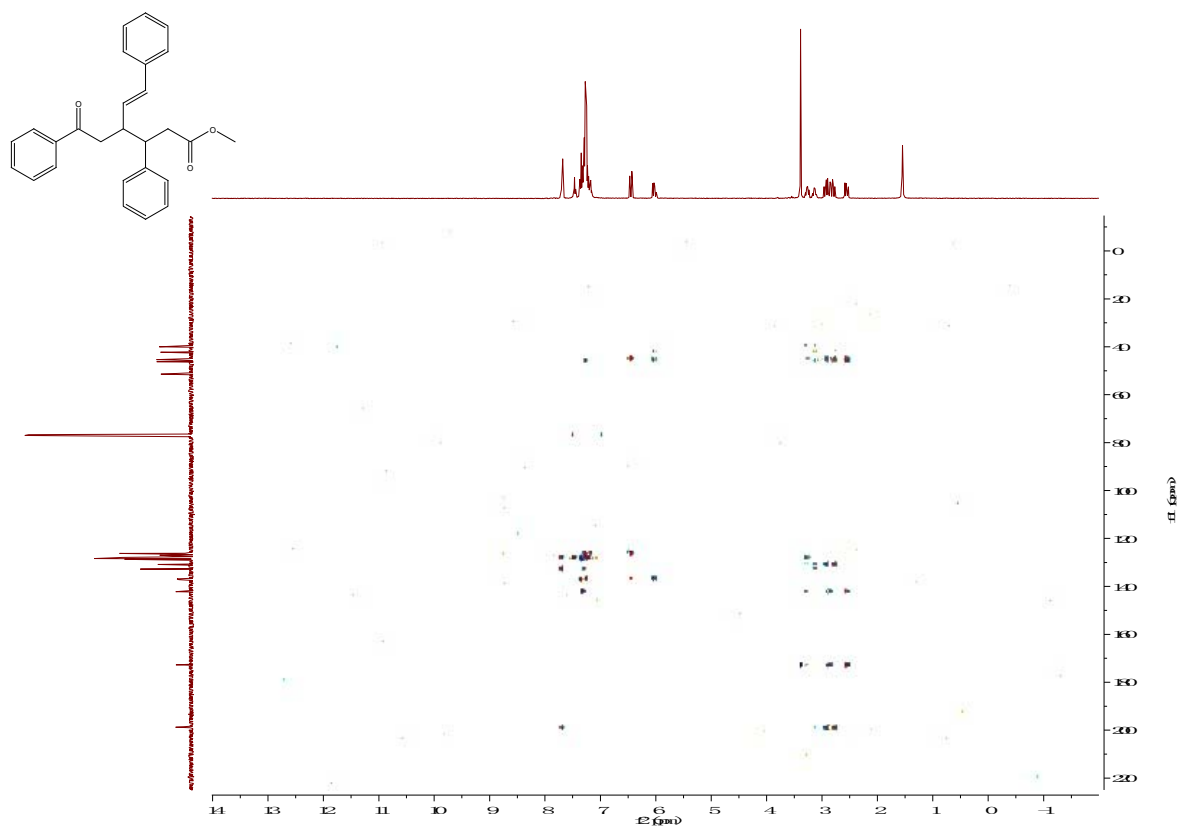
**Figure S29.**  $^1\text{H}$  NMR of Methyl (E)-4-(2-oxo-2-phenylethyl)-3,6-diphenylhex-5-enoate ( $\text{CDCl}_3$ ).



**Figure S30.**  $^{13}\text{C}$  NMR of Methyl (E)-4-(2-oxo-2-phenylethyl)-3,6-diphenylhex-5-enoate ( $\text{CDCl}_3$ ).

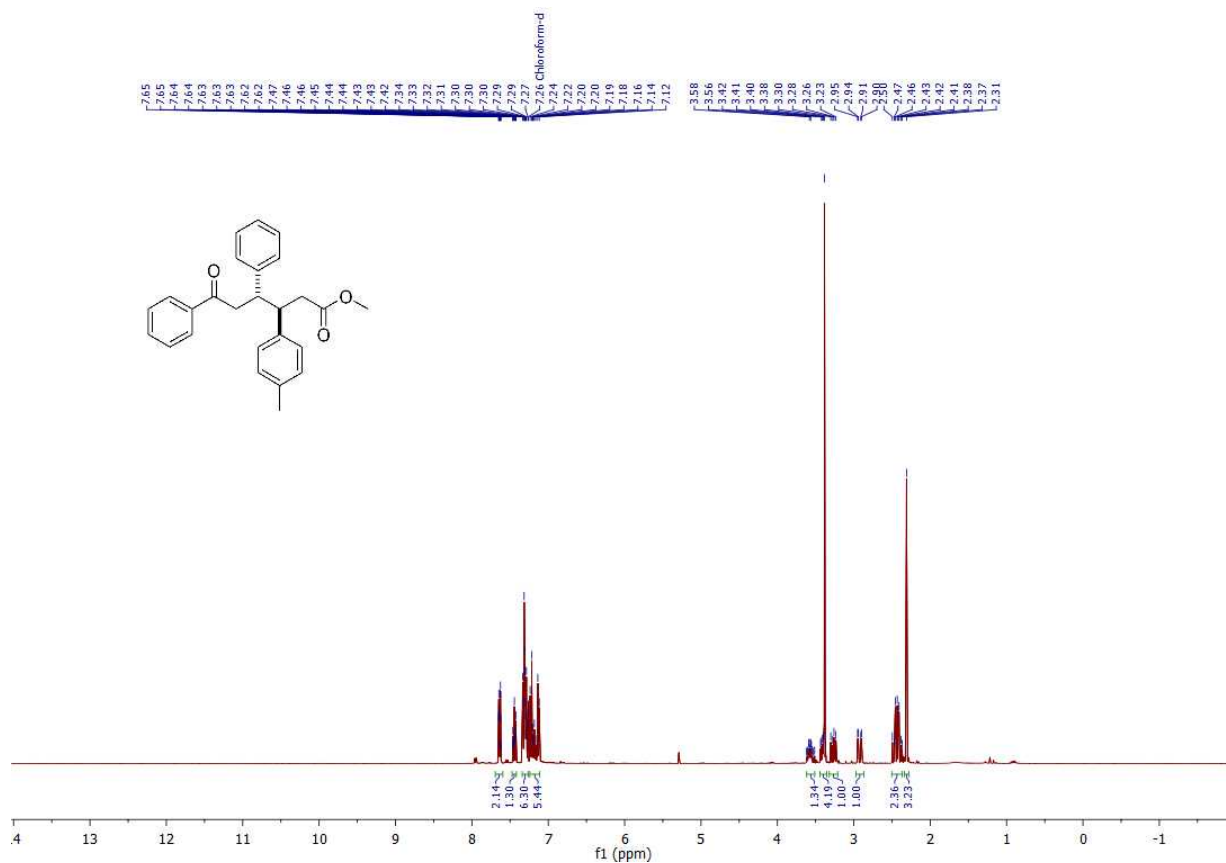


**Figure S31.** COSY NMR of Methyl (E)-4-(2-oxo-2-phenylethyl)-3,6-diphenylhex-5-enoate (CDCl<sub>3</sub>).

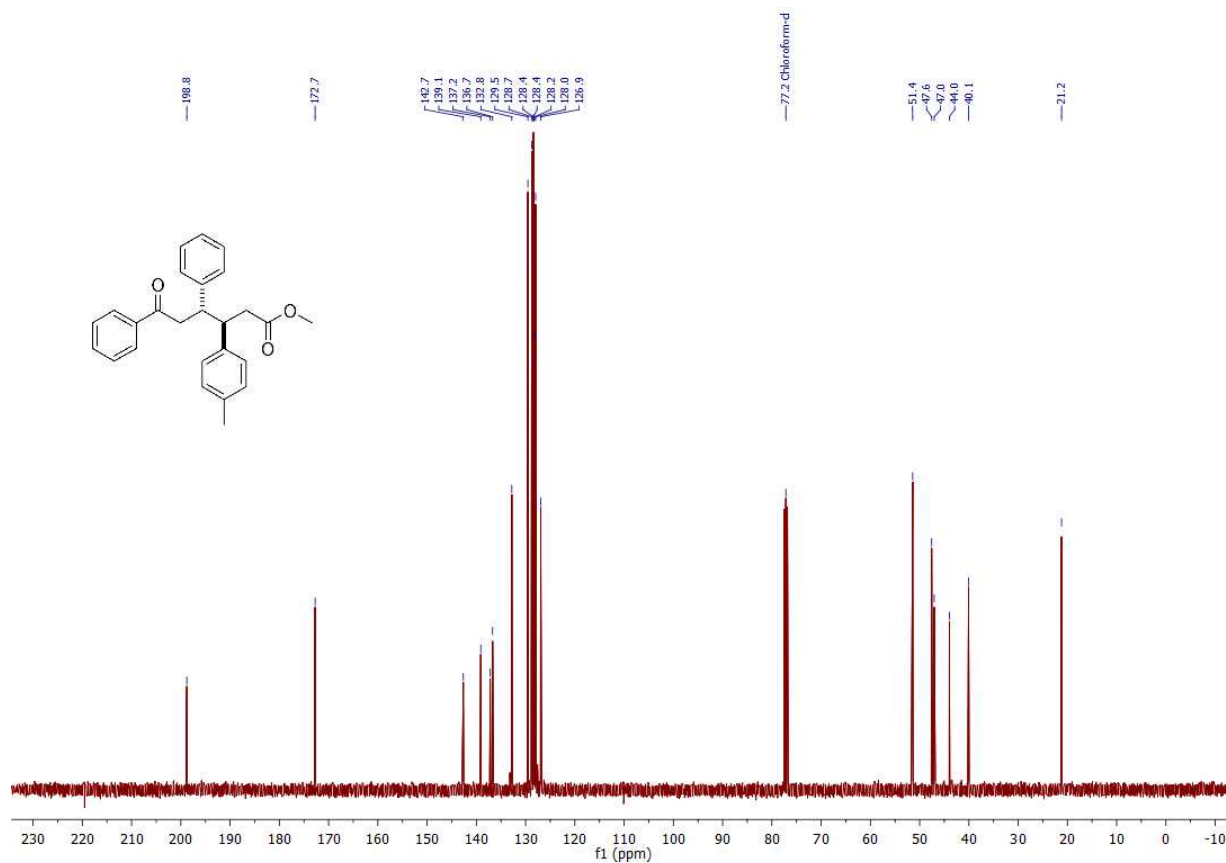


**Figure S32.** HMBC NMR of Methyl (E)-4-(2-oxo-2-phenylethyl)-3,6-diphenylhex-5-enoate (CDCl<sub>3</sub>).

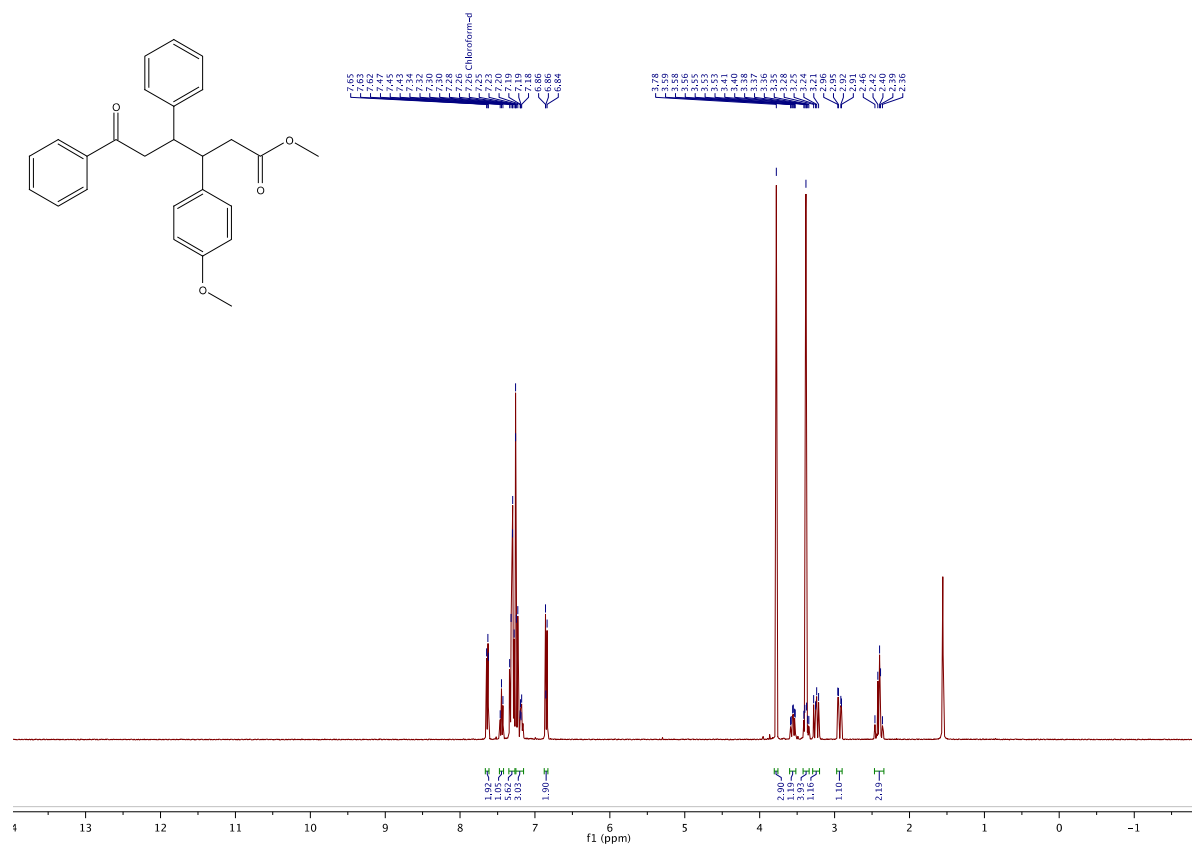




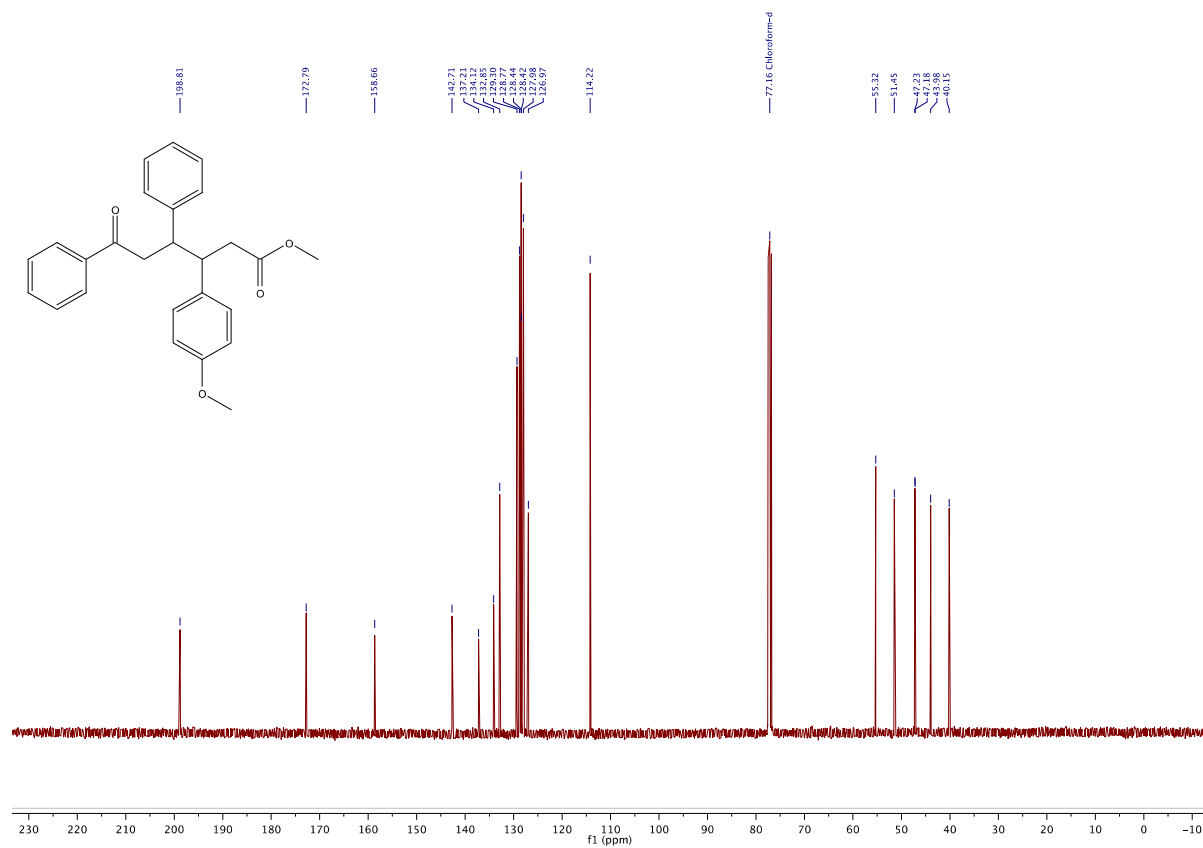
**Figure S33.**  $^1\text{H}$  NMR of Methyl-6-oxo-4,6-diphenyl-3-(p-tolyl)hexanoate ( $\text{CDCl}_3$ ).



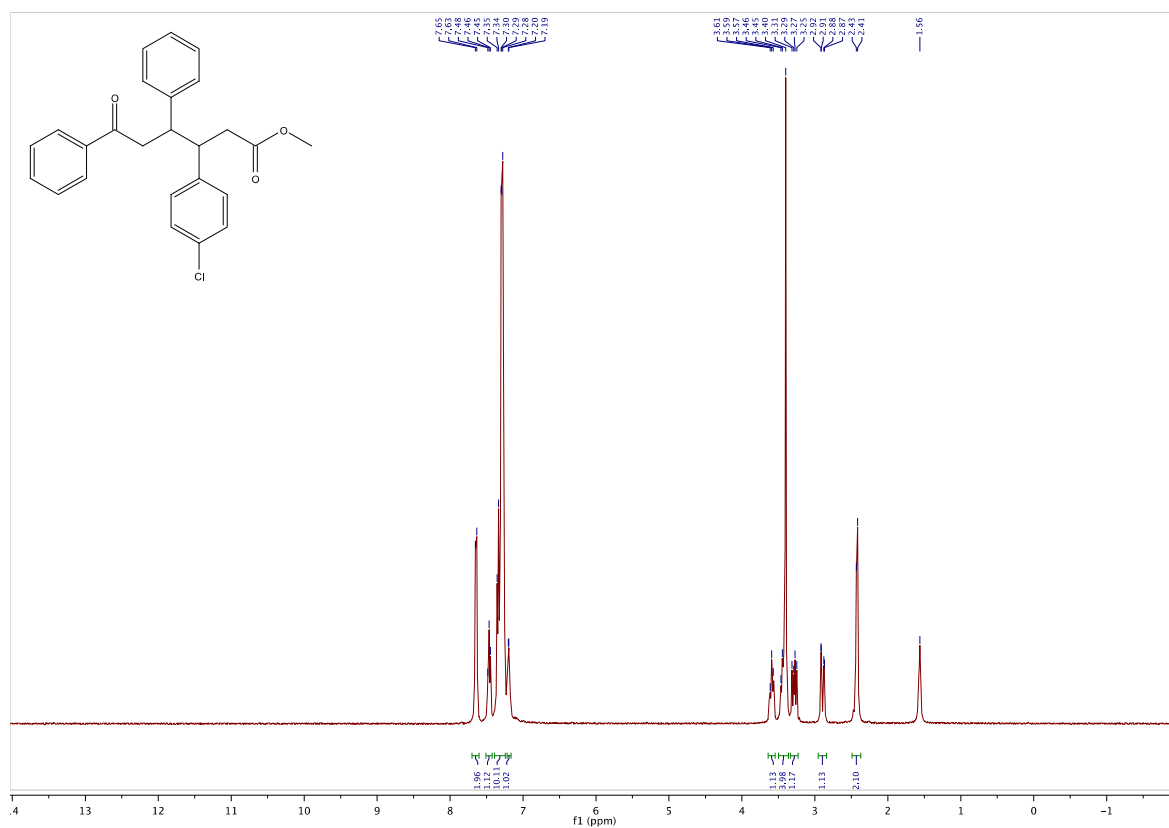
**Figure S34.**  $^{13}\text{C}$  NMR of Methyl-6-oxo-4,6-diphenyl-3-(p-tolyl)hexanoate ( $\text{CDCl}_3$ ).



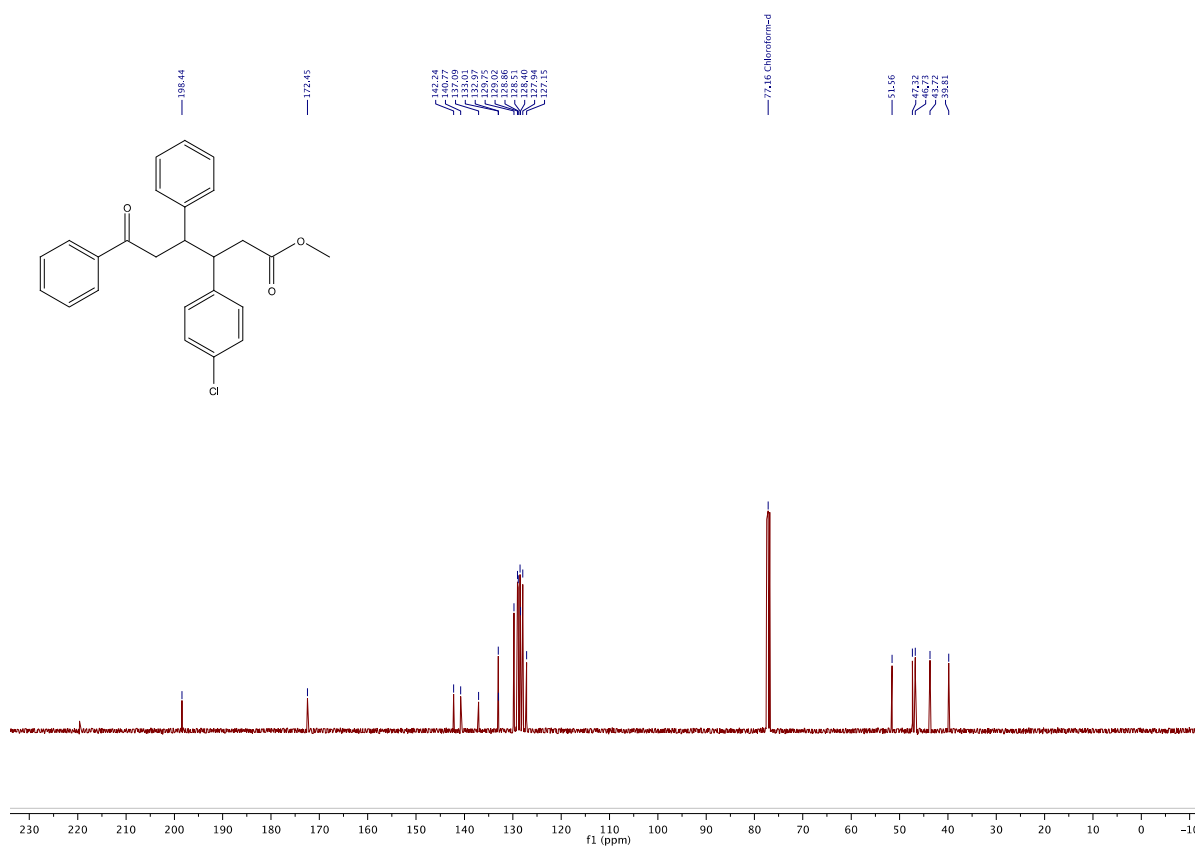
**Figure S35.** <sup>1</sup>H NMR of Methyl-3-(4-methoxyphenyl)-6-oxo-4,6-diphenylhexanoate (CDCl<sub>3</sub>).



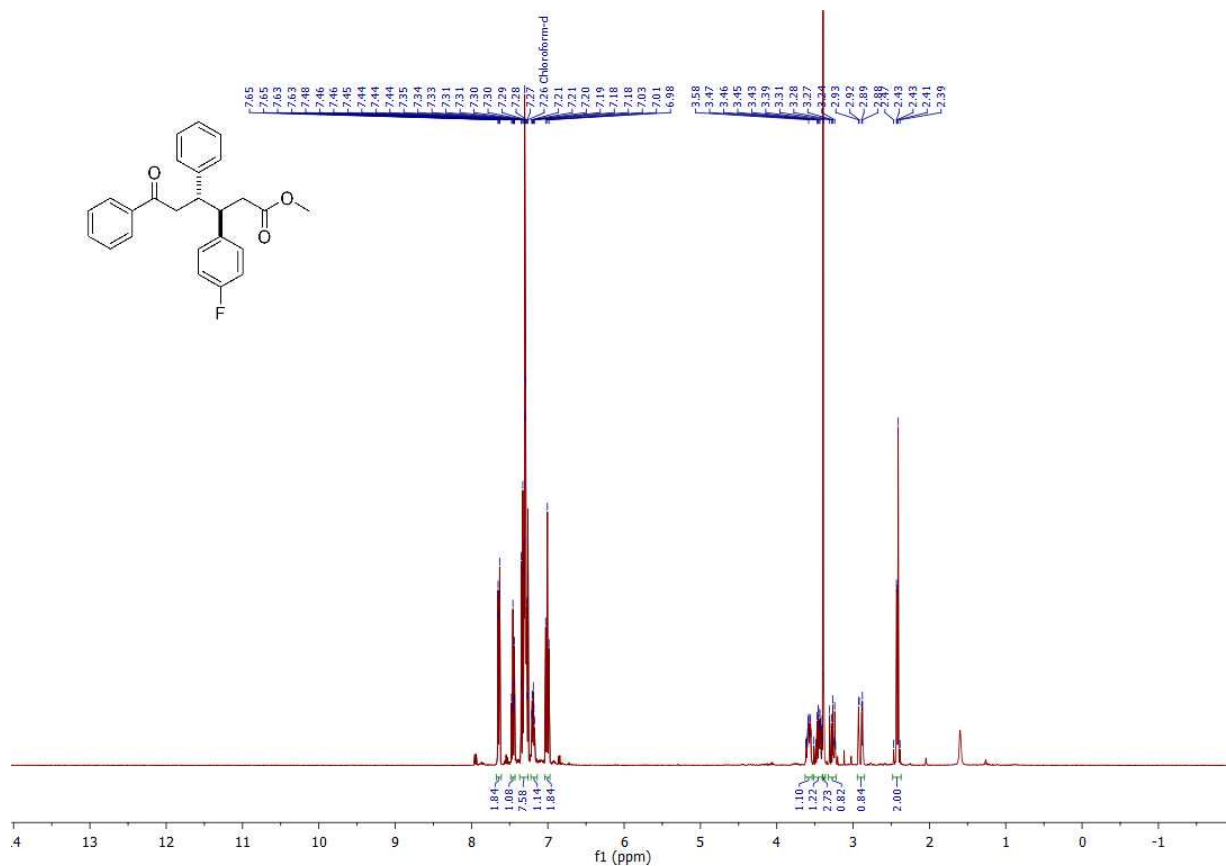
**Figure S36.** <sup>13</sup>C NMR of Methyl-3-(4-methoxyphenyl)-6-oxo-4,6-diphenylhexanoate (CDCl<sub>3</sub>).



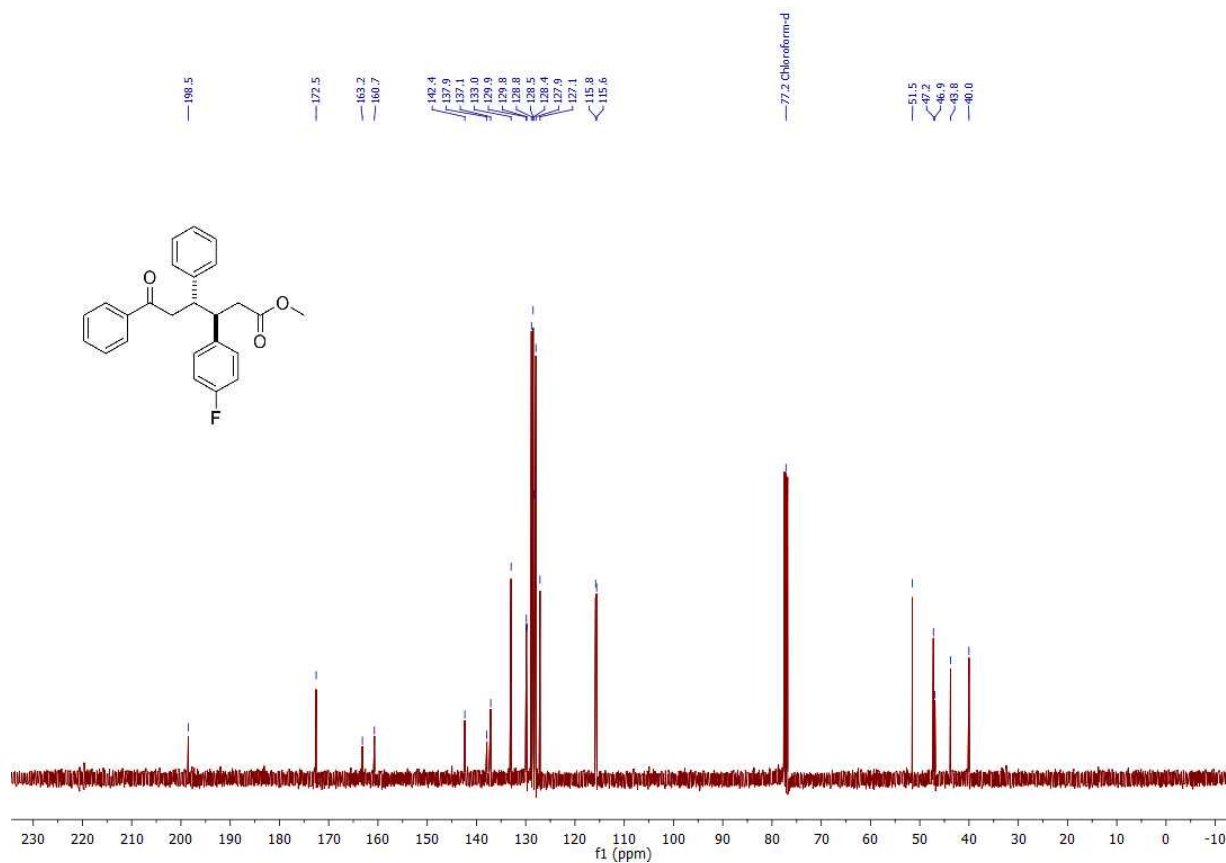
**Figure S37. <sup>1</sup>H NMR of Methyl-3-(4-chlorophenyl)-6-oxo-4,6-diphenylhexanoate (CDCl<sub>3</sub>).**



**Figure S38. <sup>13</sup>C NMR of Methyl-3-(4-chlorophenyl)-6-oxo-4,6-diphenylhexanoate (CDCl<sub>3</sub>).**



**Figure S39.**  $^1\text{H}$  NMR of Methyl-3-(4-fluorophenyl)-6-oxo-4,6-diphenylhexanoate ( $\text{CDCl}_3$ ).



**Figure S40.**  $^{13}\text{C}$  NMR of Methyl-3-(4-fluorophenyl)-6-oxo-4,6-diphenylhexanoate ( $\text{CDCl}_3$ ).

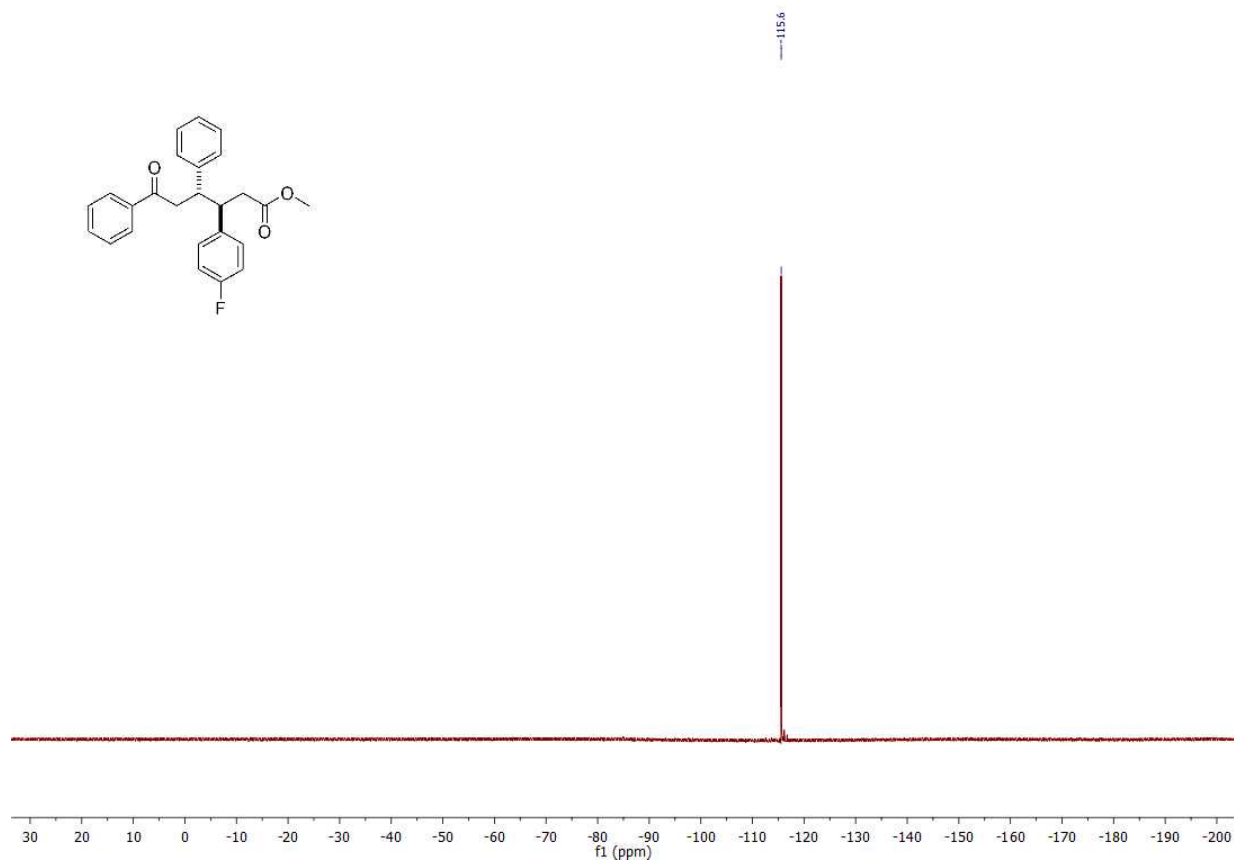


Figure S41.  $^{19}\text{F}$  NMR of Methyl-3-(4-fluorophenyl)-6-oxo-4,6-diphenylhexanoate ( $\text{CDCl}_3$ ).

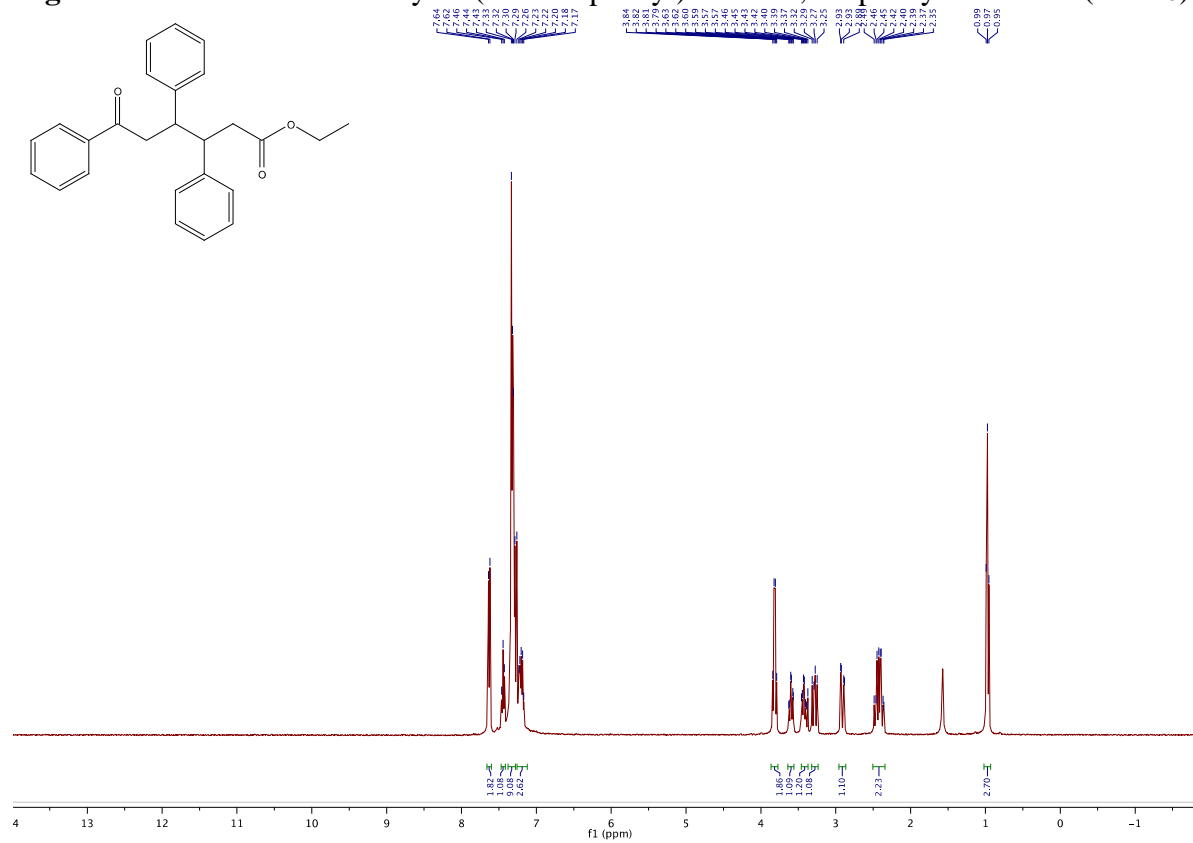
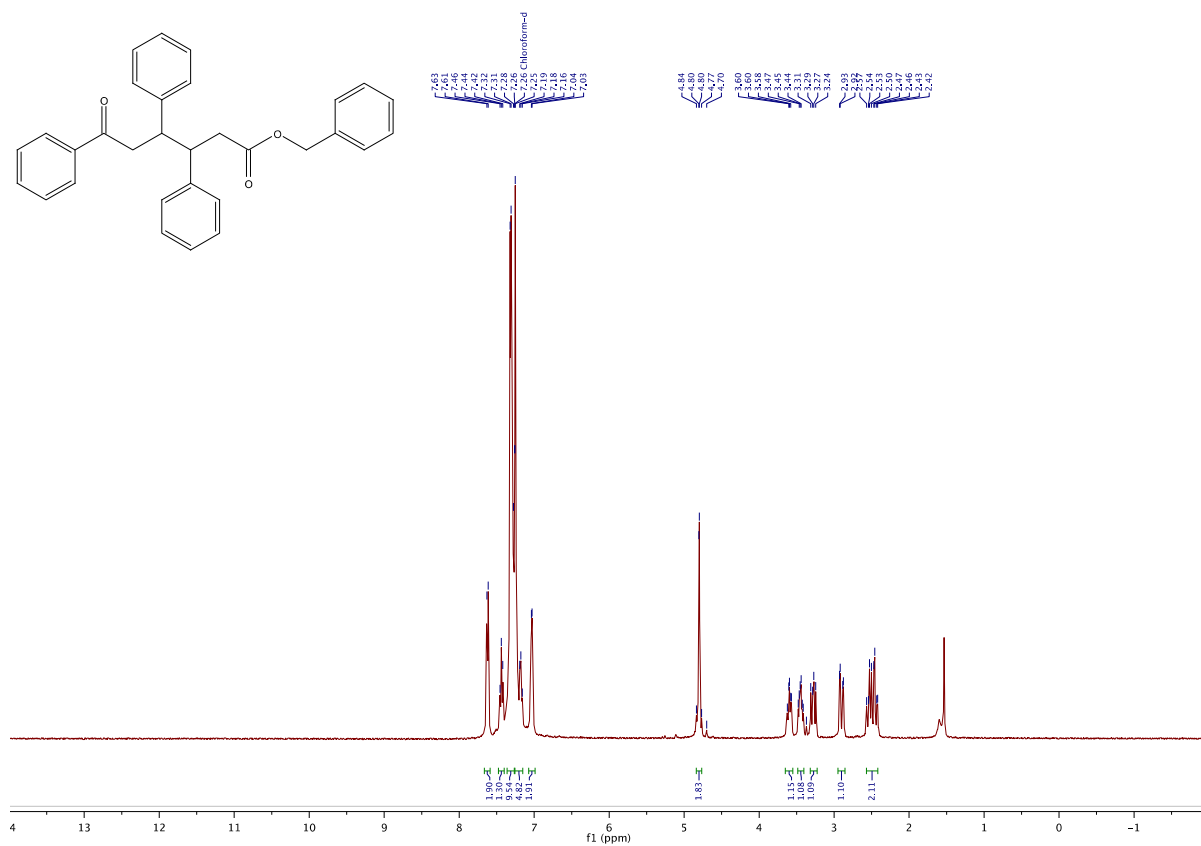
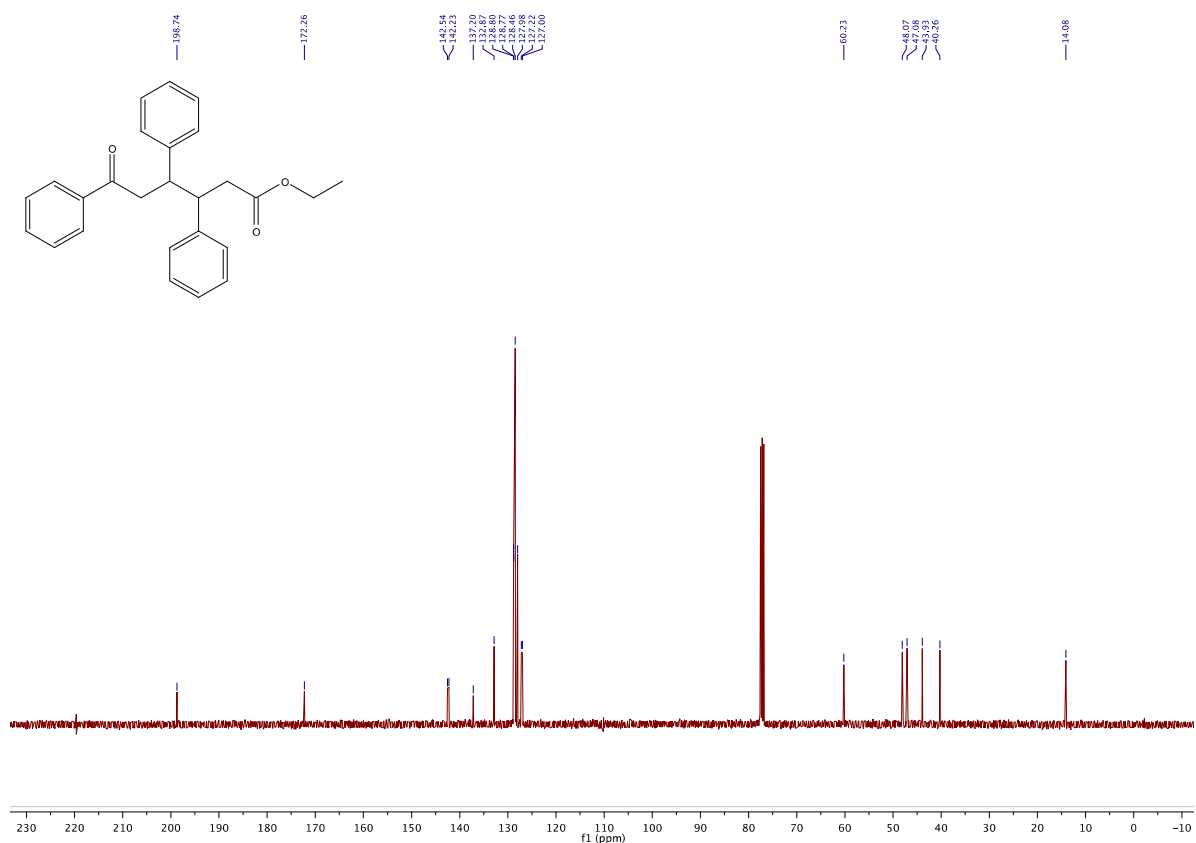
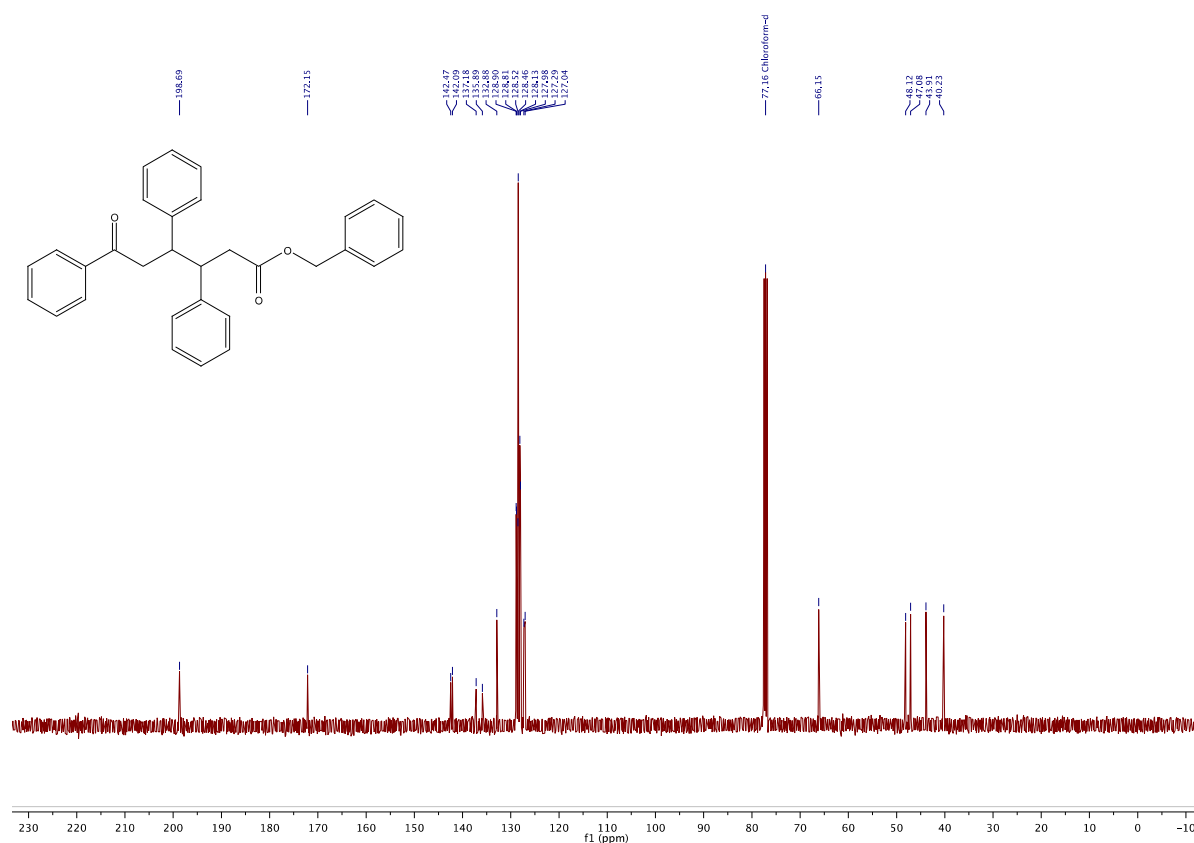


Figure S42.  $^1\text{H}$  NMR of Ethyl-6-oxo-3,4,6-triphenylhexanoate ( $\text{CDCl}_3$ ).





**Figure S45.** <sup>13</sup>C NMR of Benzyl-6-oxo-3,4,6-triphenylhexanoate (CDCl<sub>3</sub>).

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