

## Supporting Information

### **An Expedient, Efficient and Solvent-Free Synthesis of T3P®-Mediated Amidation of Benzhydrols with Poorly Reactive *N*-Nucleophiles Under MW Irradiation.**

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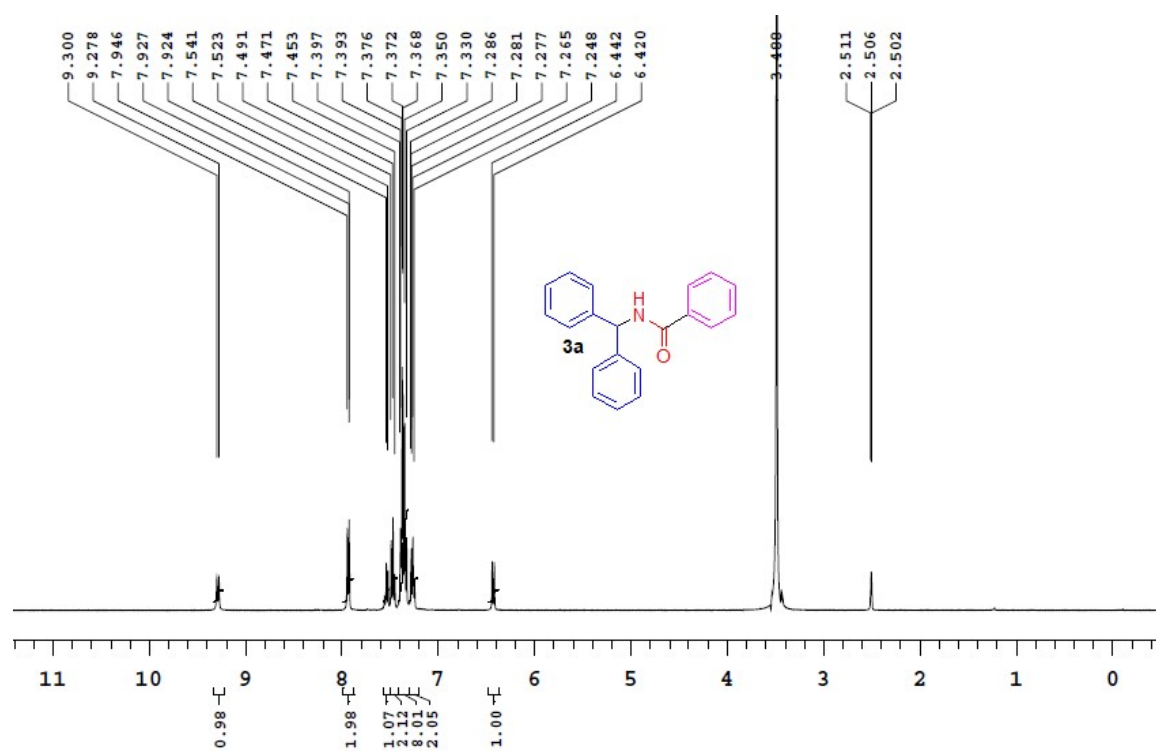
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**c. Department of Chemistry, St. Philomena's College, Mysuru, India.**

***N*-benzhydrylbenzamide (3a):**



**Figure 1.** <sup>1</sup>H NMR of *N*-benzhydrylbenzamide

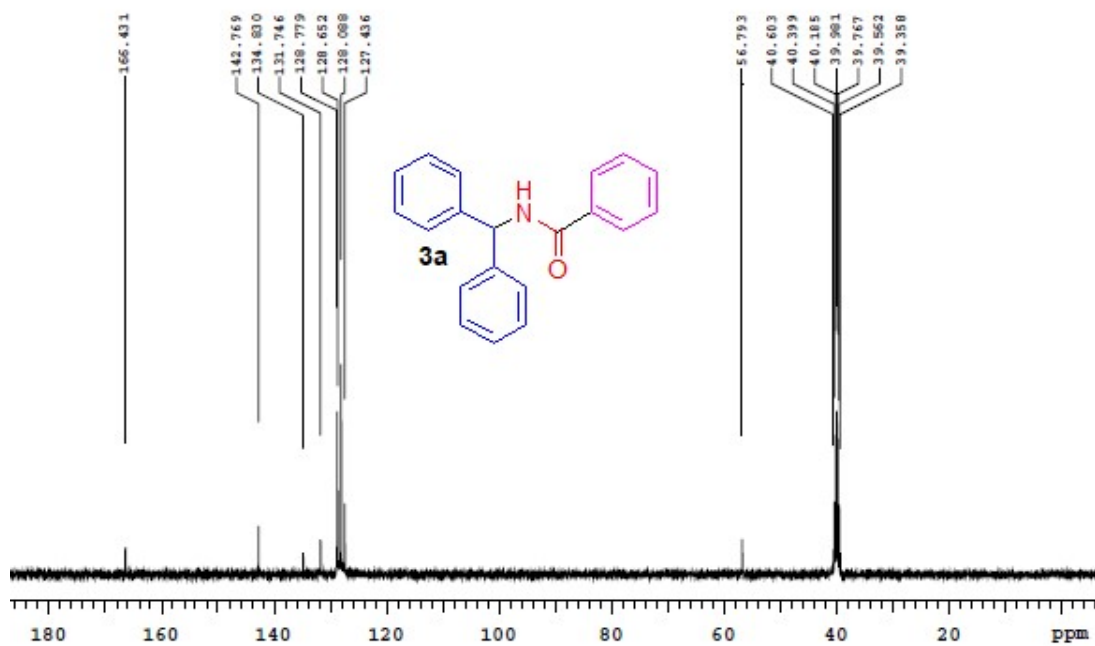


Figure 2.  $^{13}\text{C}$  NMR of *N*-benzhydrylbenzamide

*N*-benzhydryl-4-fluorobenzamide (**3b**):

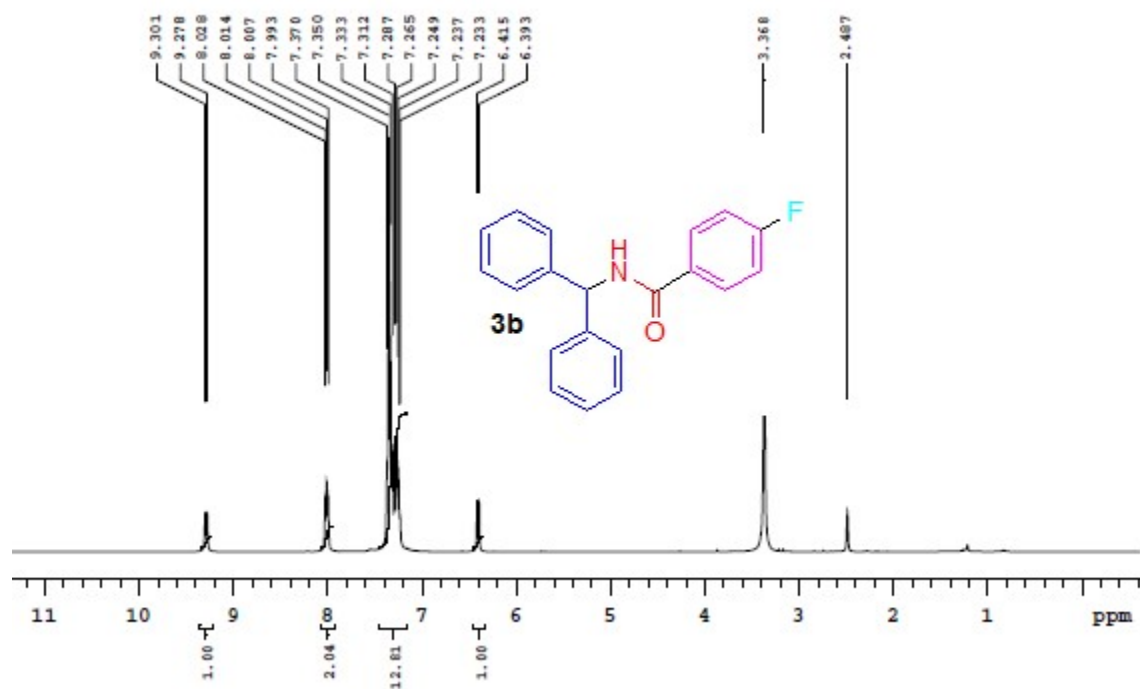


Figure 3.  $^1\text{H}$  NMR of *N*-benzhydryl-4-fluorobenzamide

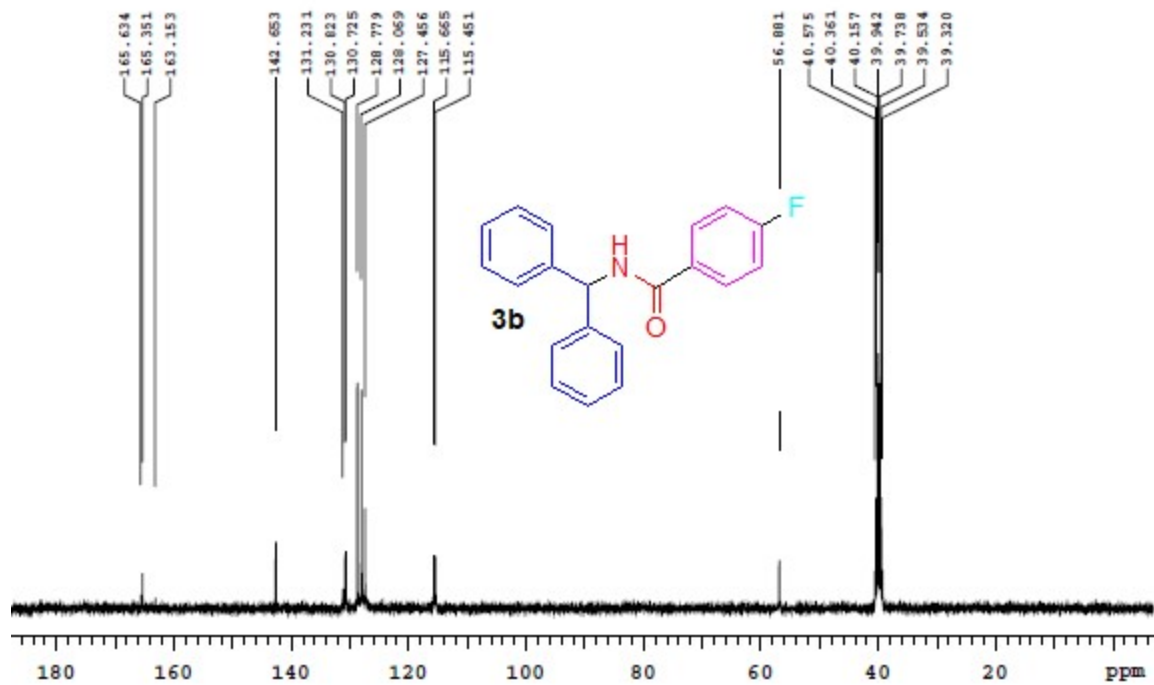


Figure 4.  $^{13}\text{C}$  NMR of *N*-benzhydryl-4-fluorobenzamide

*N*-benzhydryl-3-methoxybenzamide (**3c**):

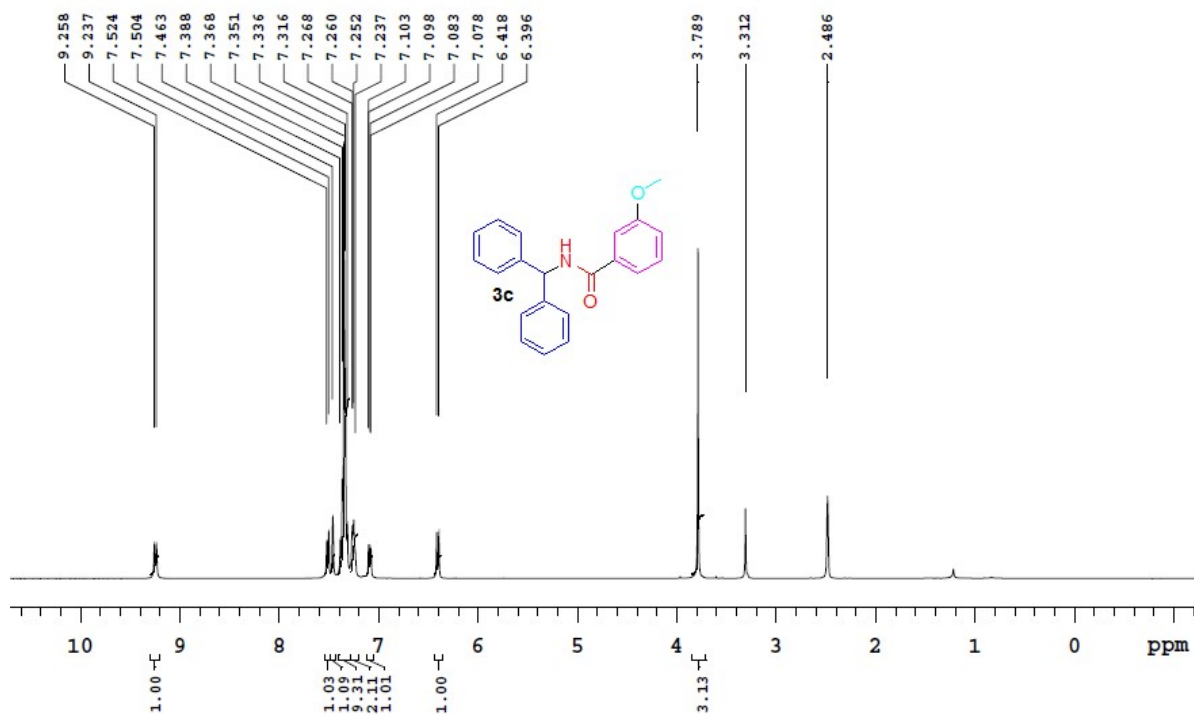
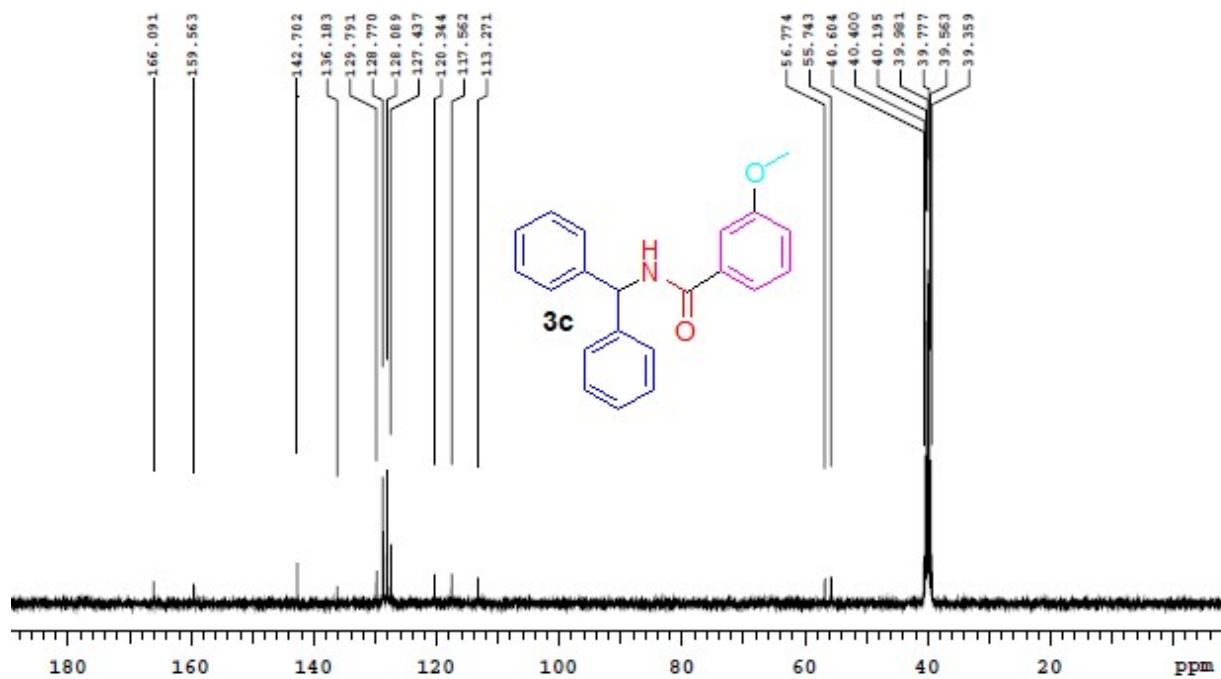
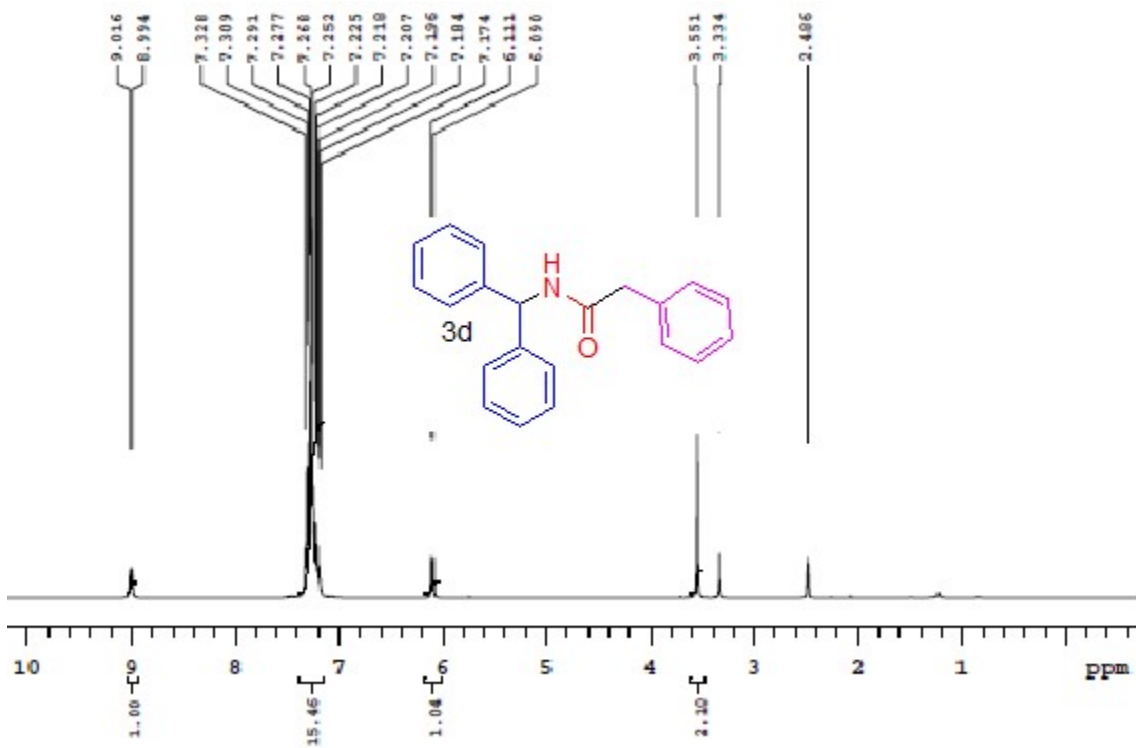


Figure 5.  $^1\text{H}$  NMR of *N*-benzhydryl-3-methoxybenzamide

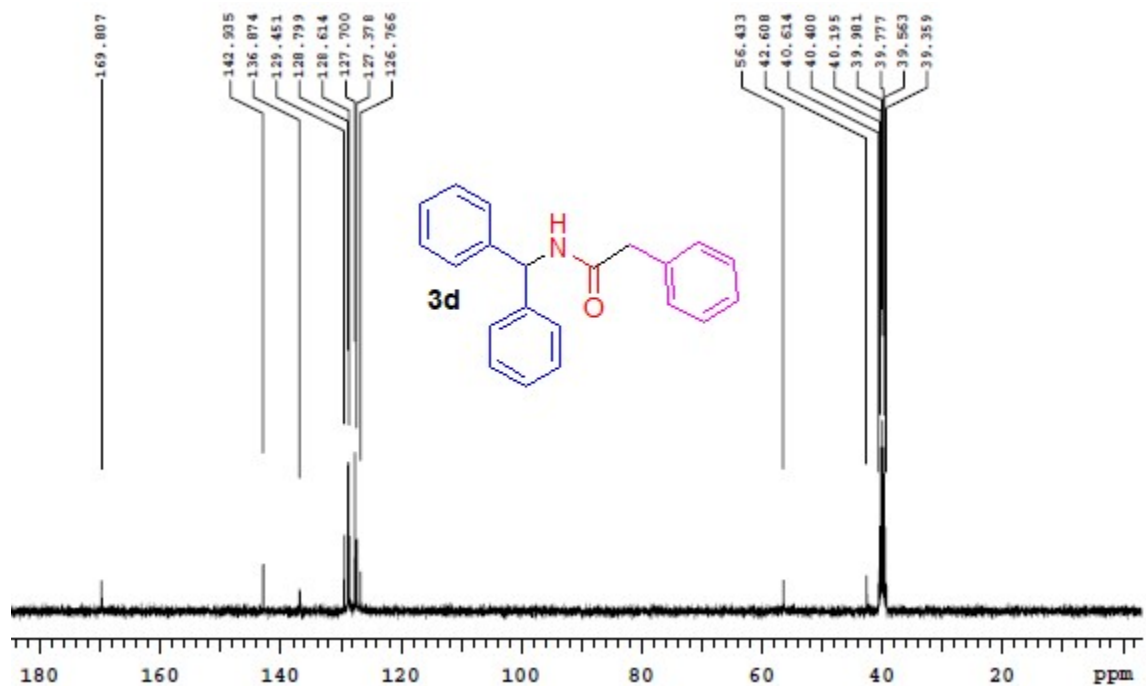


**Figure 6.**  $^{13}\text{C}$  NMR of *N*-benzhydryl-3-methoxybenzamide

*N*-benzhydryl-2-phenylacetamide (**3d**):

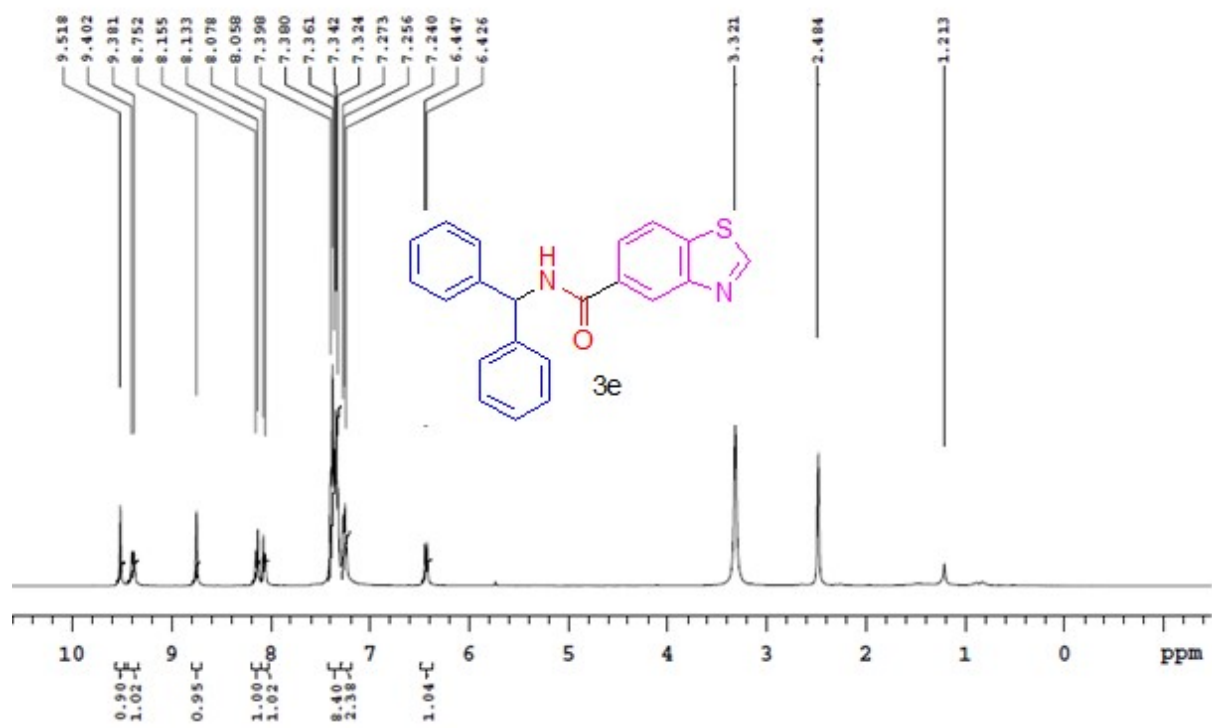


**Figure 7.**  $^1\text{H}$  NMR of *N*-benzhydryl-2-phenylacetamide



**Figure 8.**  $^{13}\text{C}$  NMR of *N*-benzhydryl-2-phenylacetamide

*N*-benzhydrylbenzo[d]thiazole-5-carboxamide (**3e**):



**Figure 9.**  $^1\text{H}$  NMR of *N*-benzhydrylbenzo[d]thiazole-5-carboxamide

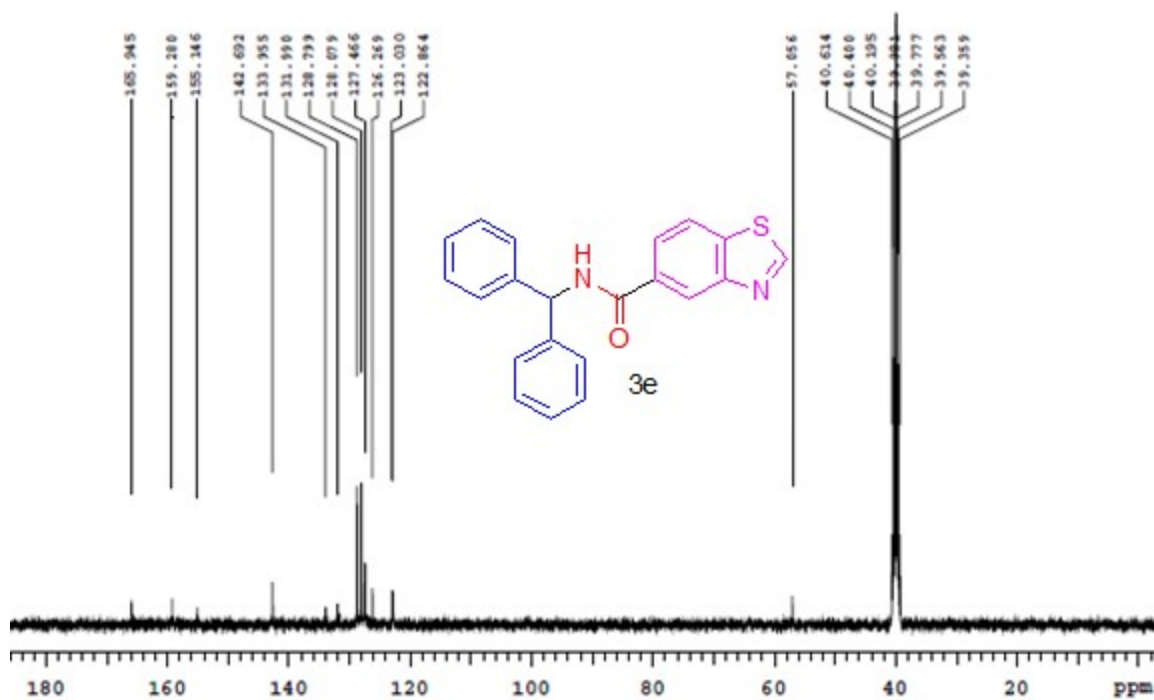


Figure 10. <sup>13</sup>C NMR of *N*-benzhydrylbenzo[d]thiazole-5-carboxamide

*N*-benzhydrylfuran-2-carboxamide (**3f**):

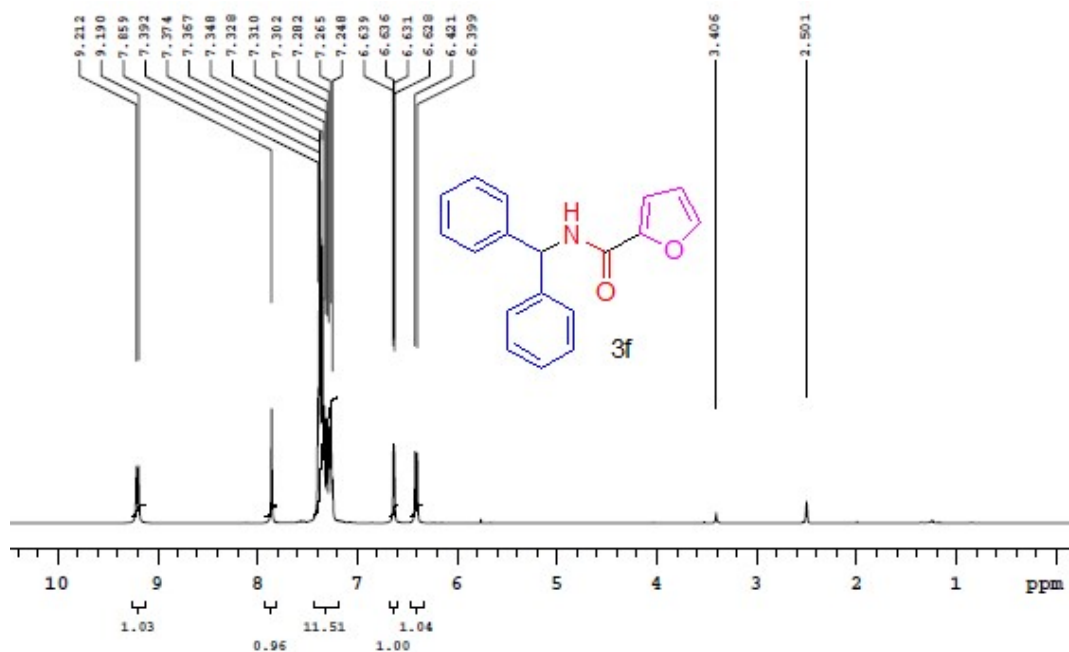


Figure 11. <sup>1</sup>H NMR of *N*-benzhydrylfuran-2-carboxamide

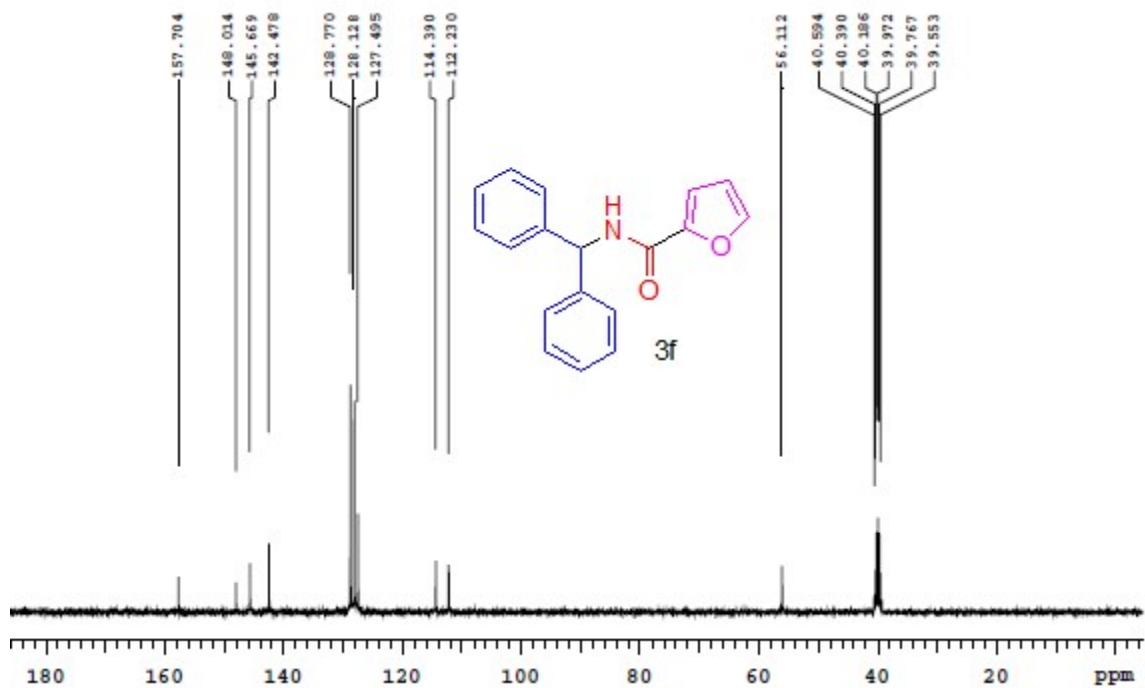


Figure 12. <sup>13</sup>C NMR of *N*-benzhydrylfuran-2-carboxamide

*N*-benzhydrylcyclohexanecarboxamide (3g):

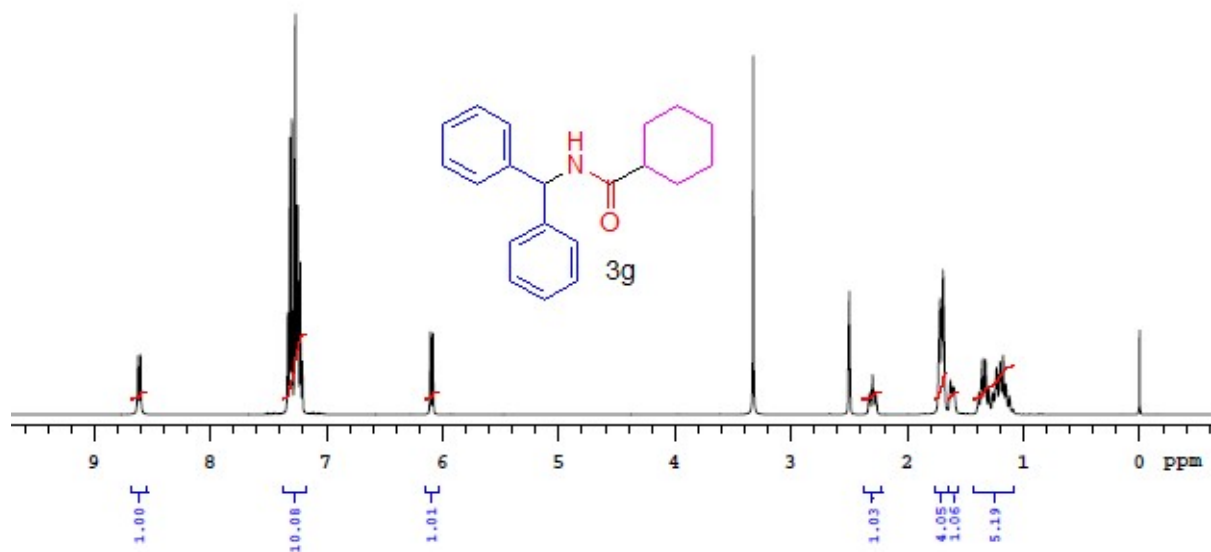
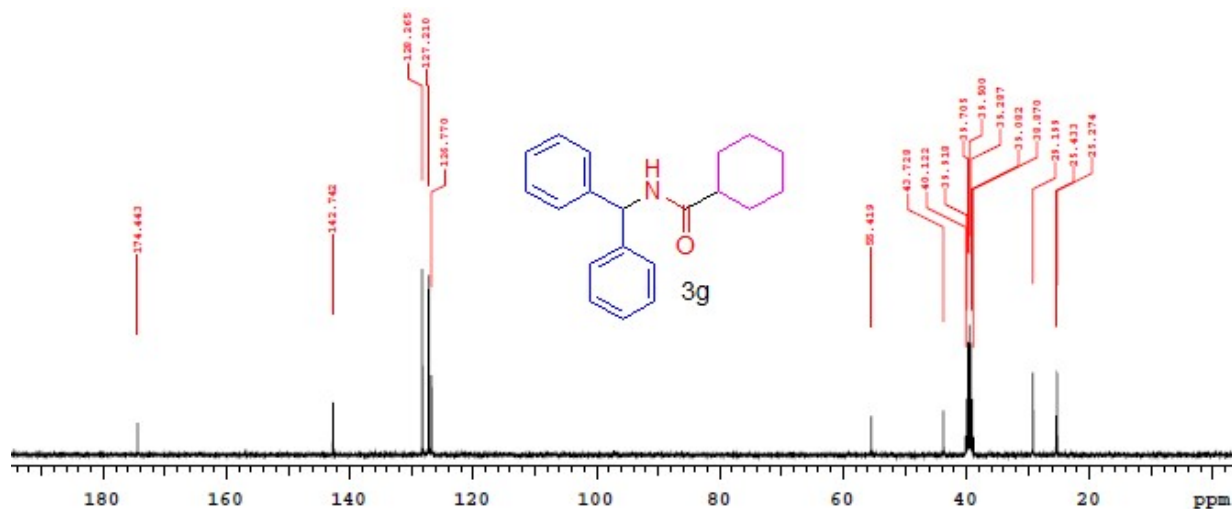


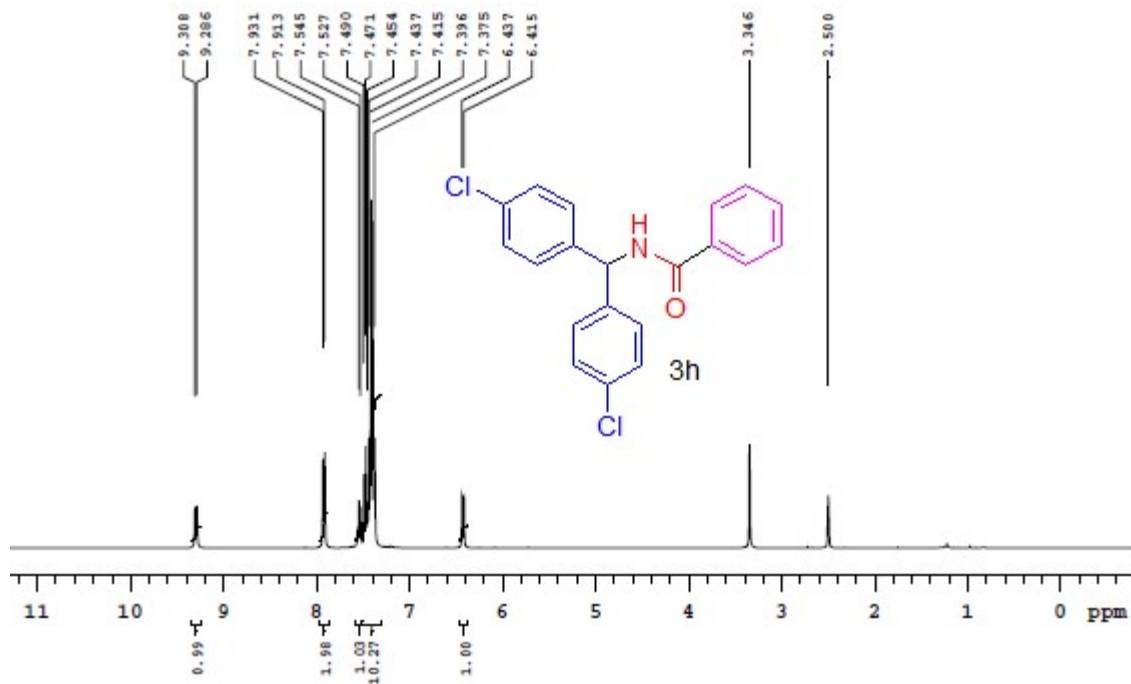
Figure 13. <sup>1</sup>H NMR of *N*-benzhydrylcyclohexanecarboxamide





**Figure 14.** <sup>13</sup>C NMR of *N*-benzhydrylcyclohexanecarboxamide

*N*-(bis(4-chlorophenyl)methyl)benzamide (**3h**):



**Figure 15.** <sup>1</sup>H NMR of *N*-(bis(4-chlorophenyl)methyl)benzamide

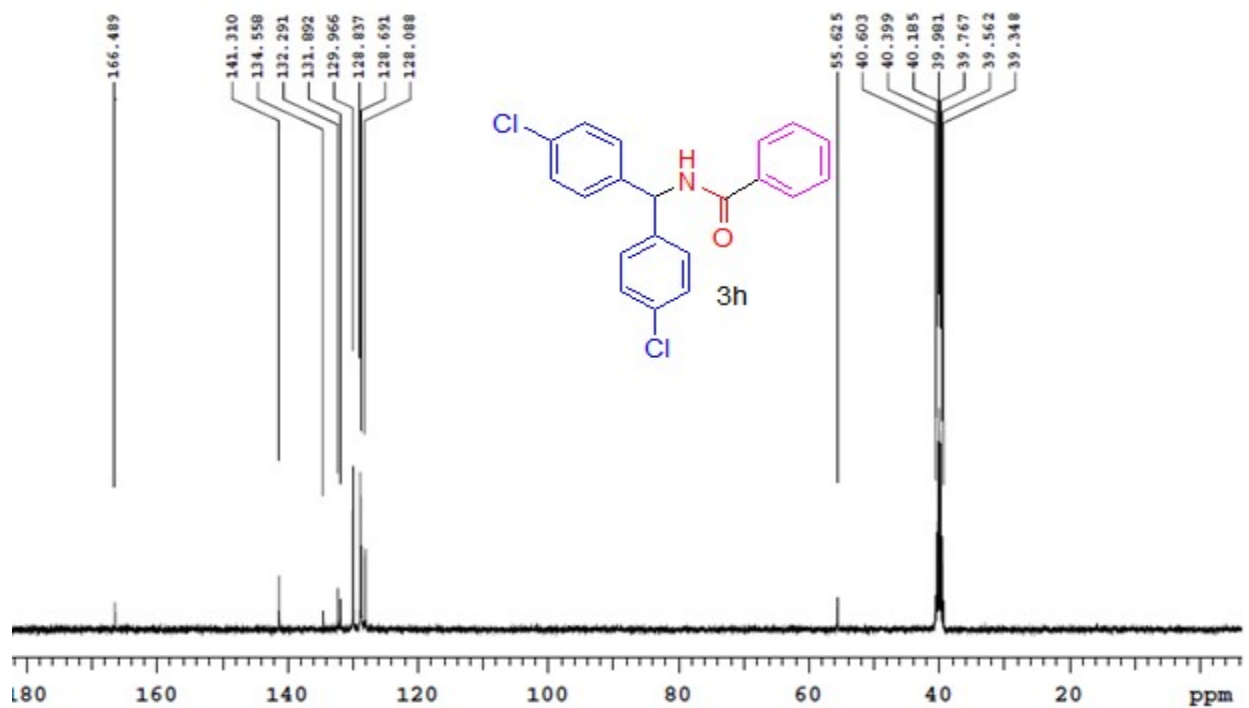


Figure 16.  $^{13}\text{C}$  NMR of *N*-(bis(4-chlorophenyl)methyl)benzamide

*N*-(bis(4-fluorophenyl)methyl)benzamide (3i):

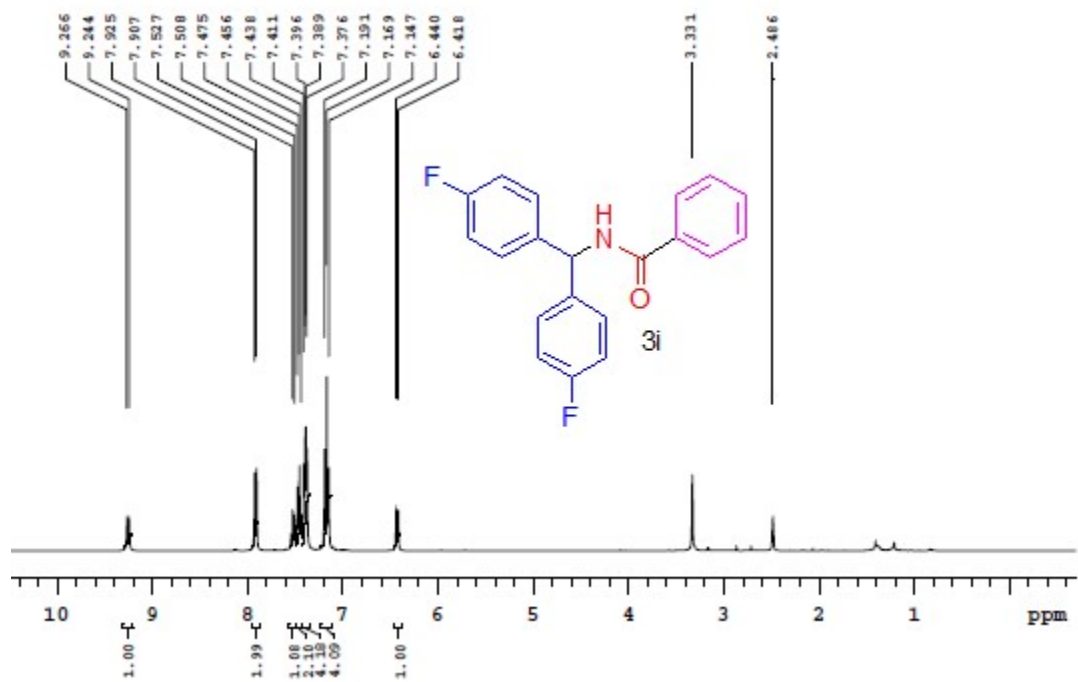


Figure 17.  $^1\text{H}$  NMR of *N*-(bis(4-fluorophenyl)methyl)benzamide

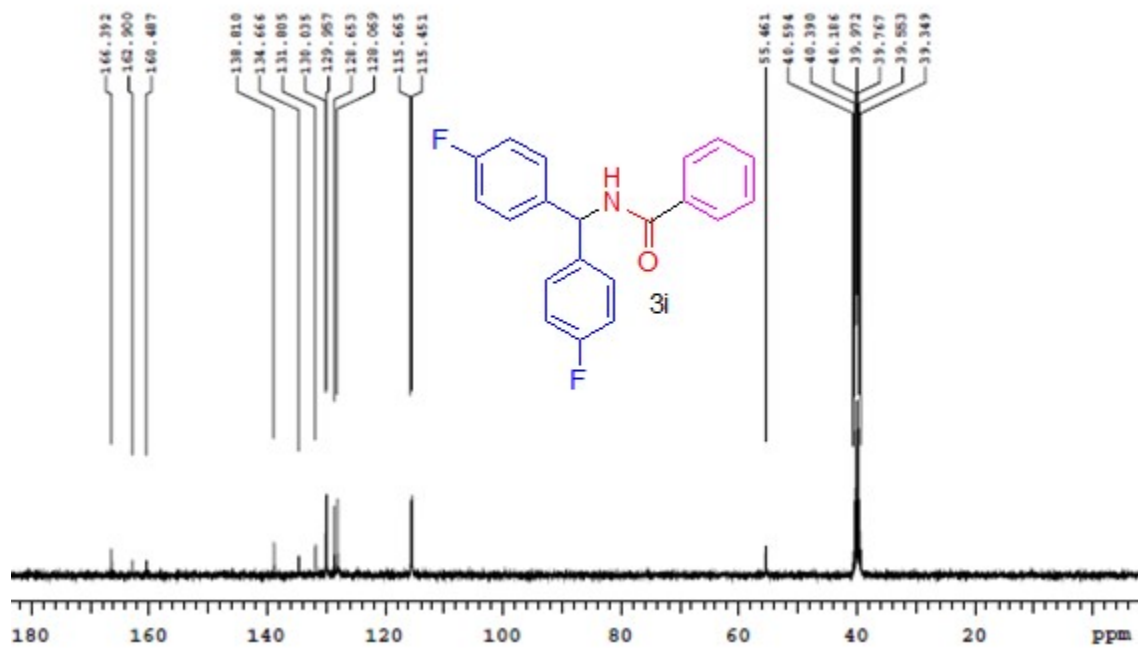


Figure 18. <sup>13</sup>C NMR of *N*-(bis(4-fluorophenyl)methyl)benzamide

*N*-(1-phenylethyl)benzamide (3j):

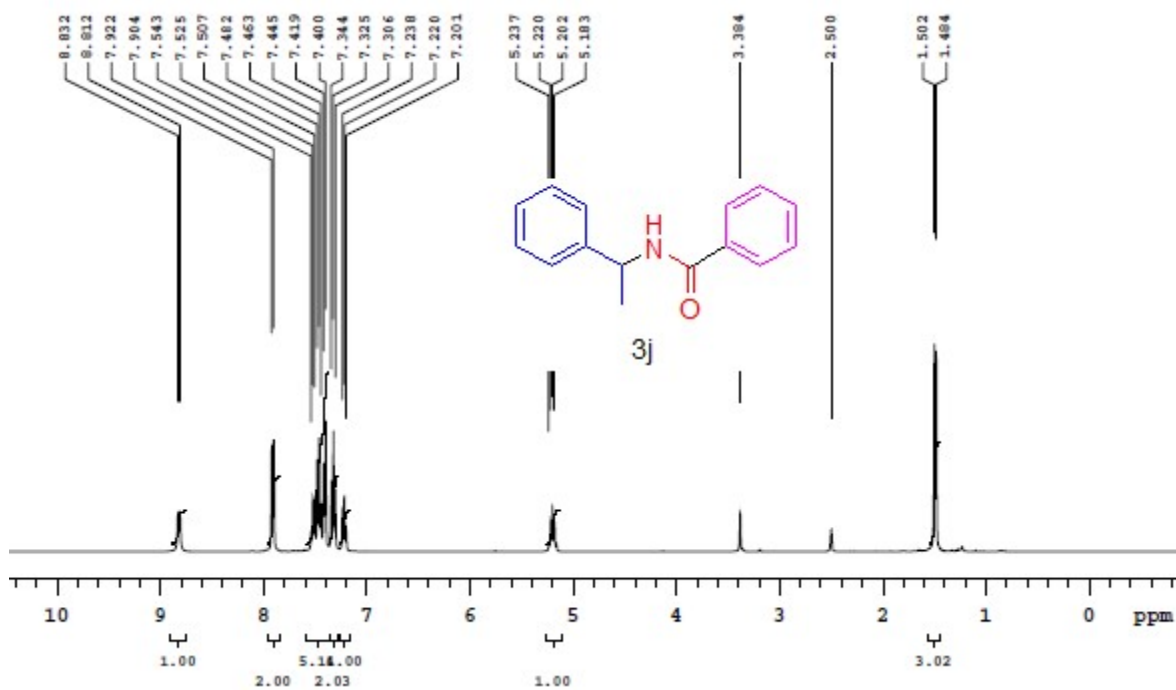
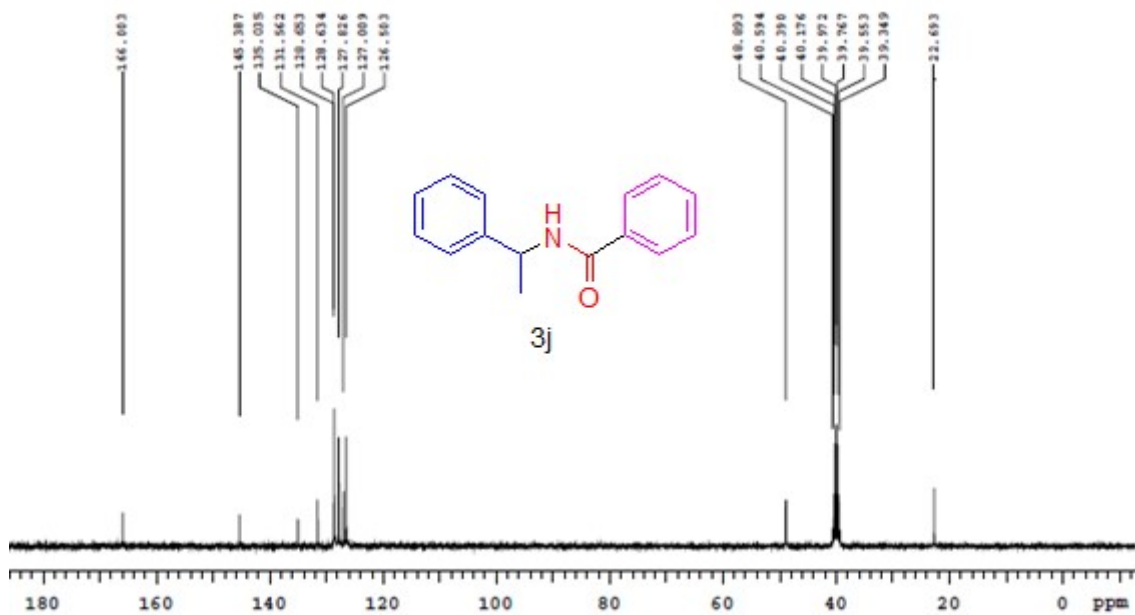
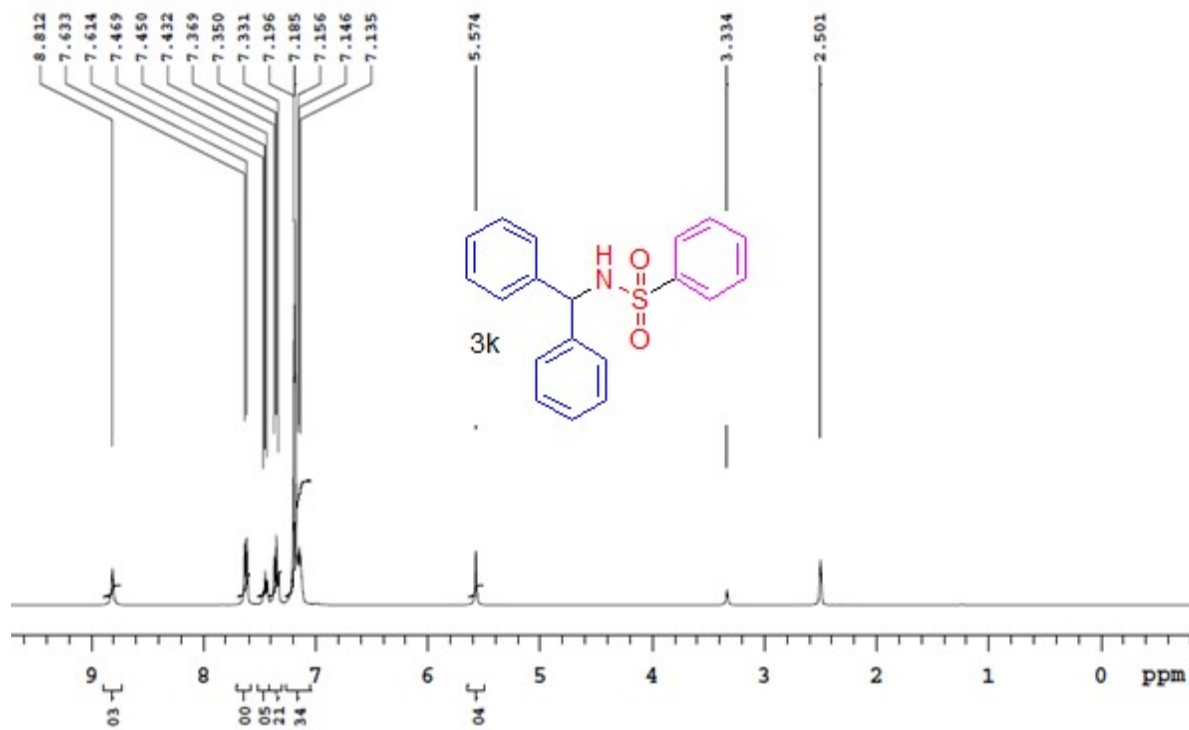


Figure 19. <sup>1</sup>H NMR of *N*-(1-phenylethyl)benzamide

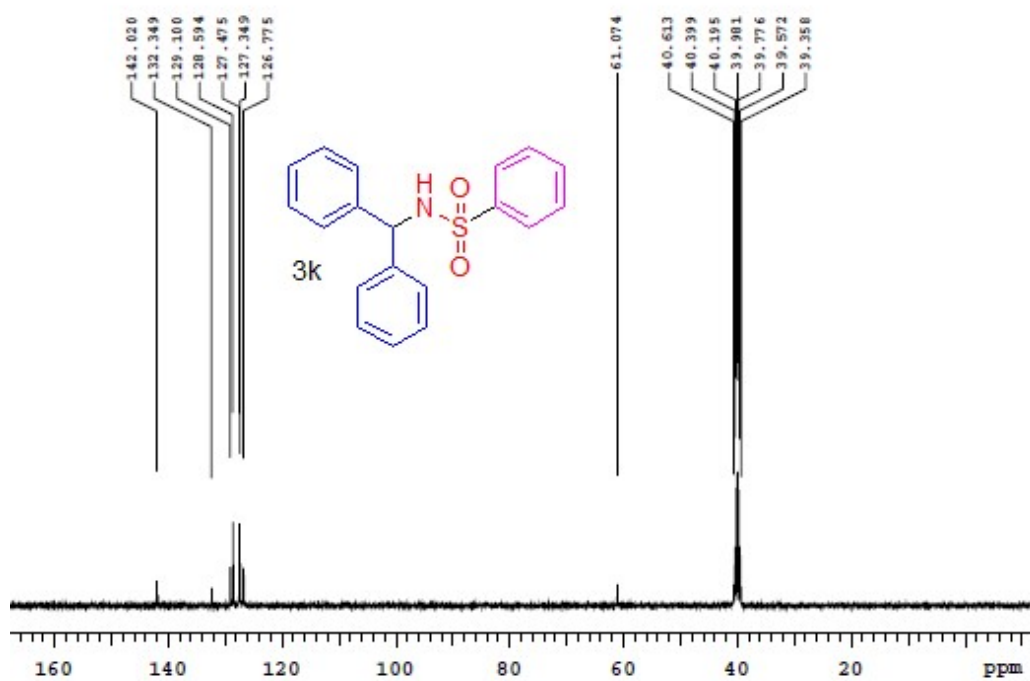


**Figure 20.**  $^{13}\text{C}$  NMR of *N*-(1-phenylethyl)benzamide

***N*-benzhydrylbenzenesulfonamide (3k):**

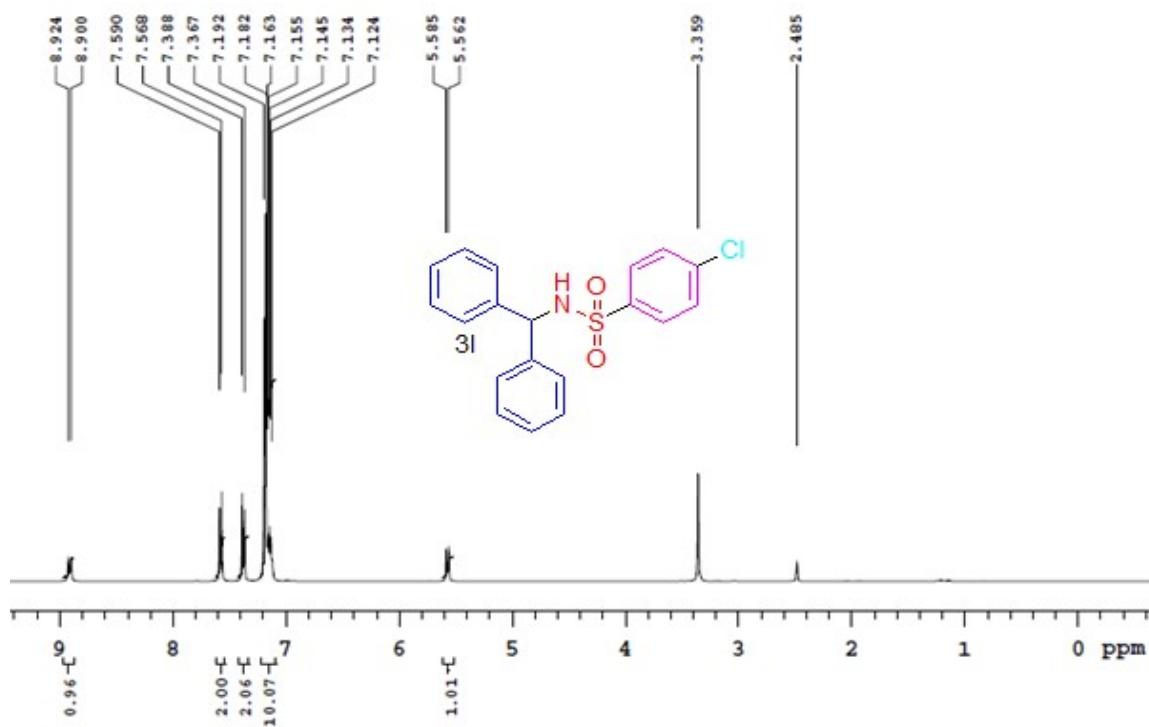


**Figure 21.**  $^1\text{H}$  NMR of *N*-benzhydrylbenzenesulfonamide

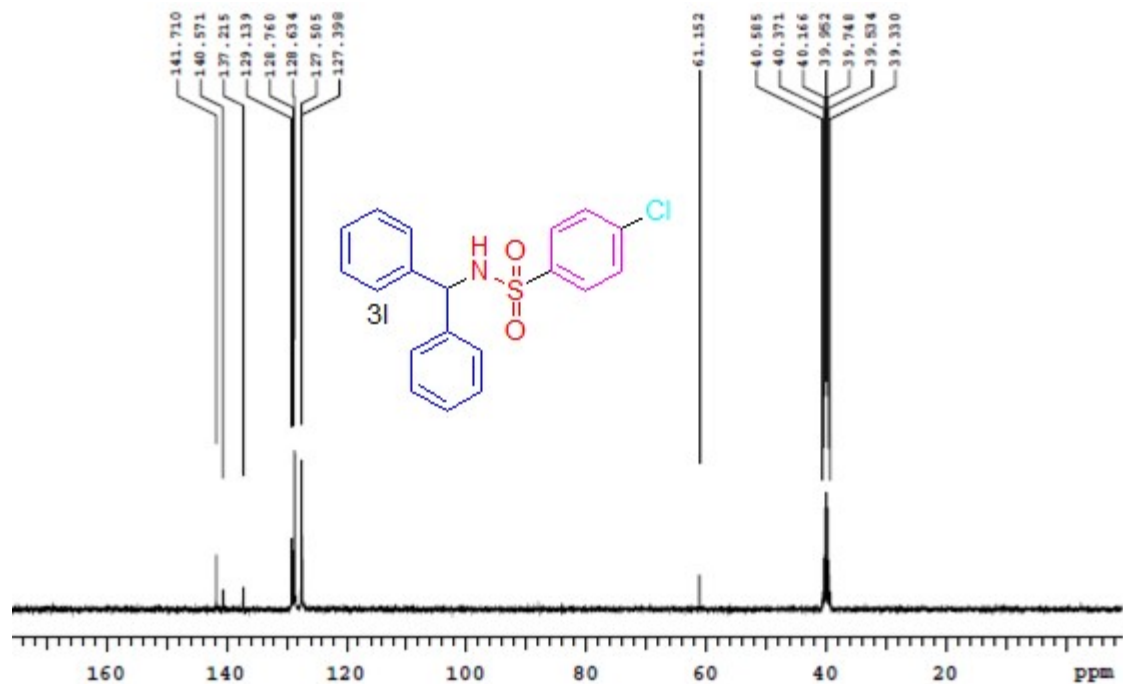


**Figure 22.**  $^{13}\text{C}$  NMR of *N*-benzhydrylbenzenesulfonamide

*N*-benzhydryl-4-chlorobenzenesulfonamide (3l):

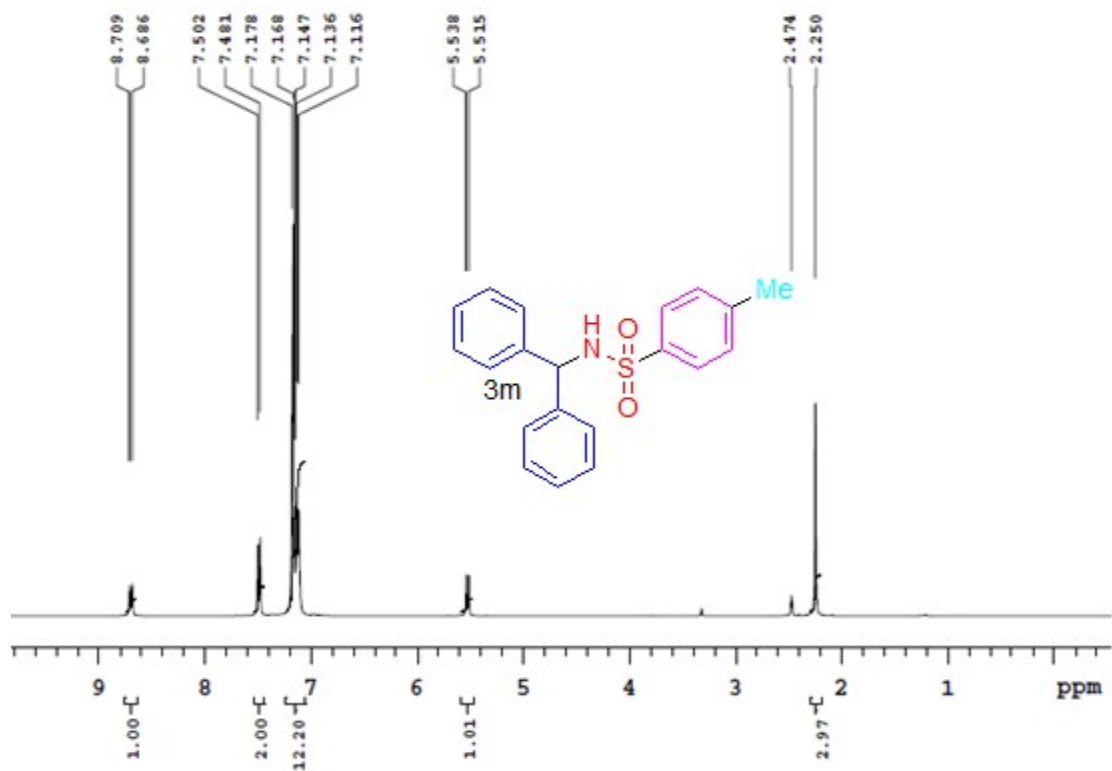


**Figure 23.**  $^1\text{H}$  NMR of *N*-benzhydryl-4-chlorobenzenesulfonamide



**Figure 24.**  $^{13}\text{C}$  NMR of *N*-benzhydryl-4-chlorobenzenesulfonamide

*N*-benzhydryl-4-methylbenzenesulfonamide (3m):



**Figure 25.**  $^1\text{H}$  NMR of *N*-benzhydryl-4-methylbenzenesulfonamide

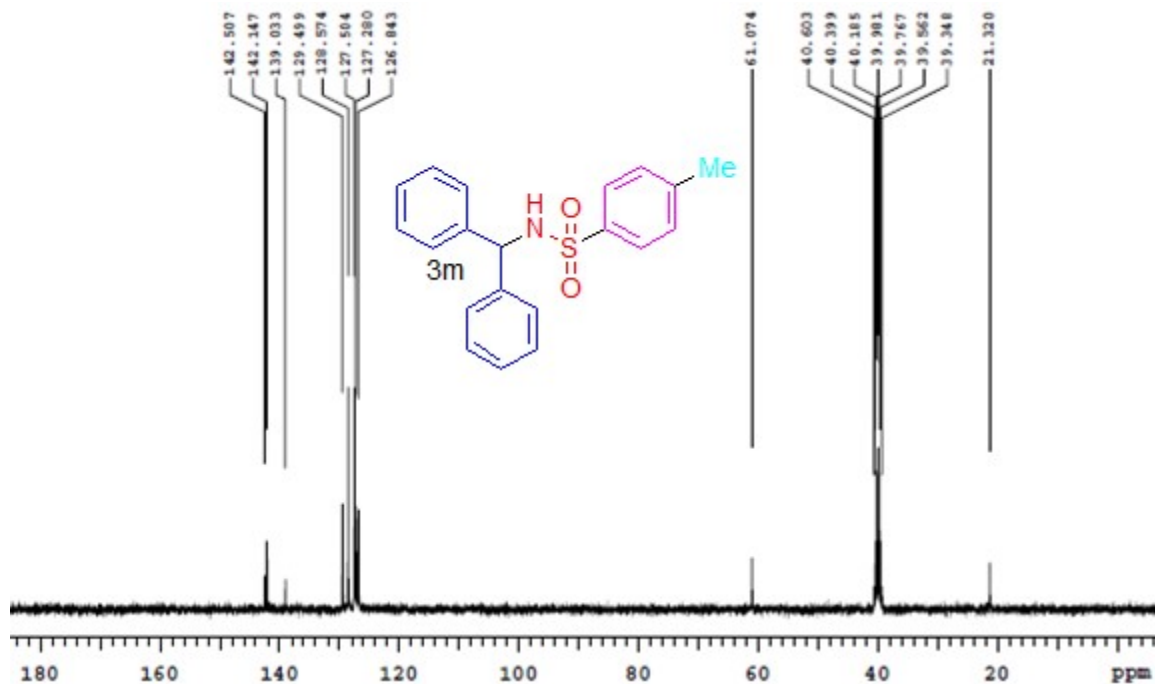


Figure 26.  $^{13}\text{C}$  NMR of *N*-benzhydryl-4-methylbenzenesulfonamide

*N*-benzhydrylmethanesulfonamide (3n):

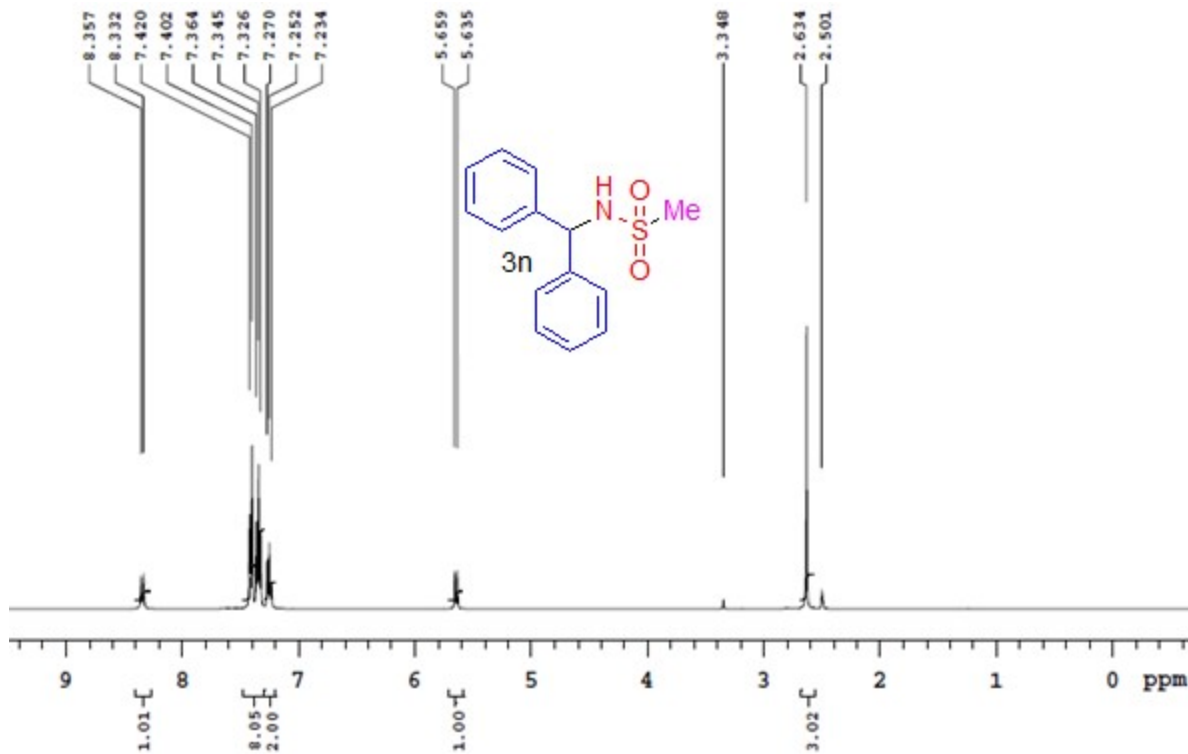


Figure 27.  $^1\text{H}$  NMR of *N*-benzhydrylmethanesulfonamide

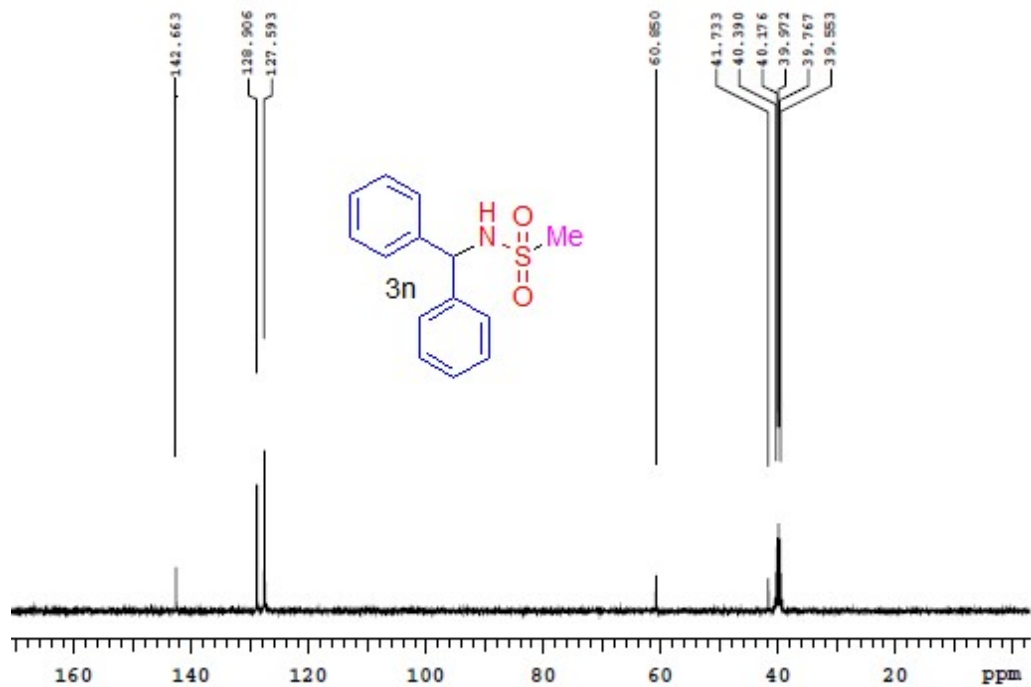


Figure 28.  $^{13}\text{C}$  NMR of *N*-benzhydrylmethanesulfonamide

*N*-(bis(4-chlorophenyl)methyl)methanesulfonamide (3o):

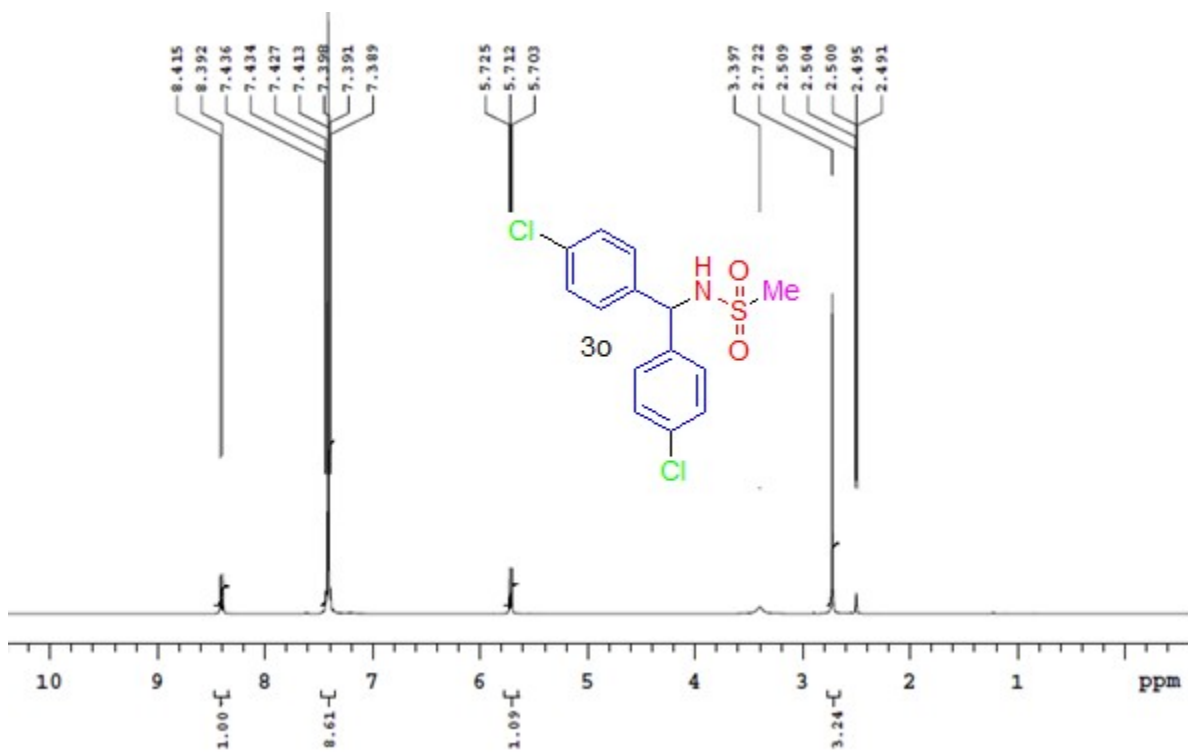
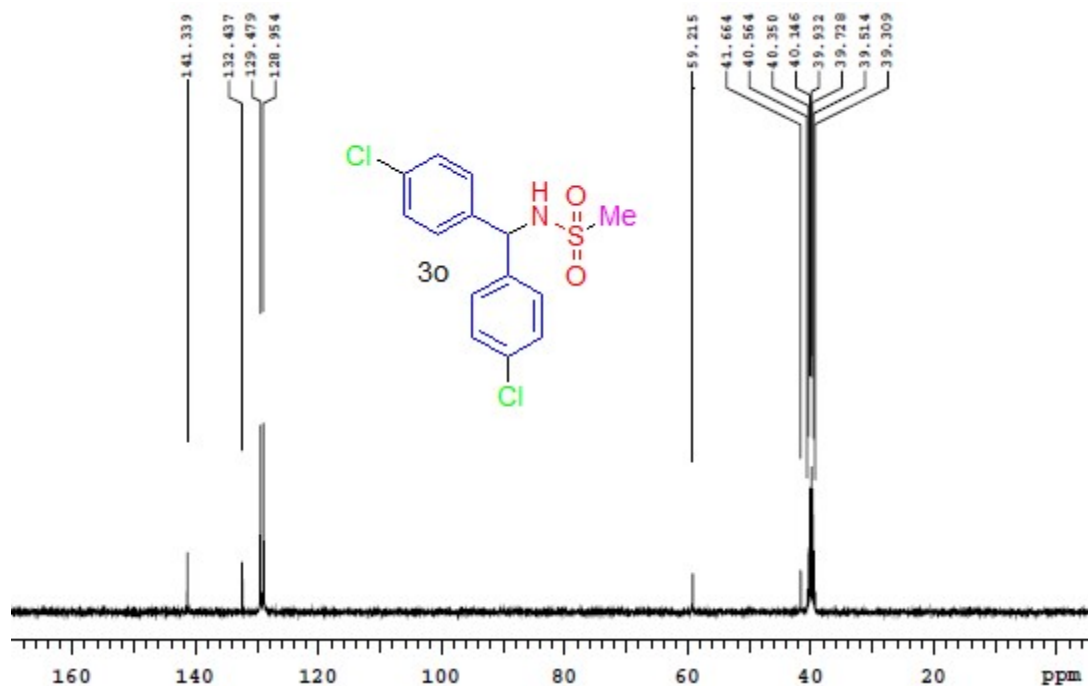
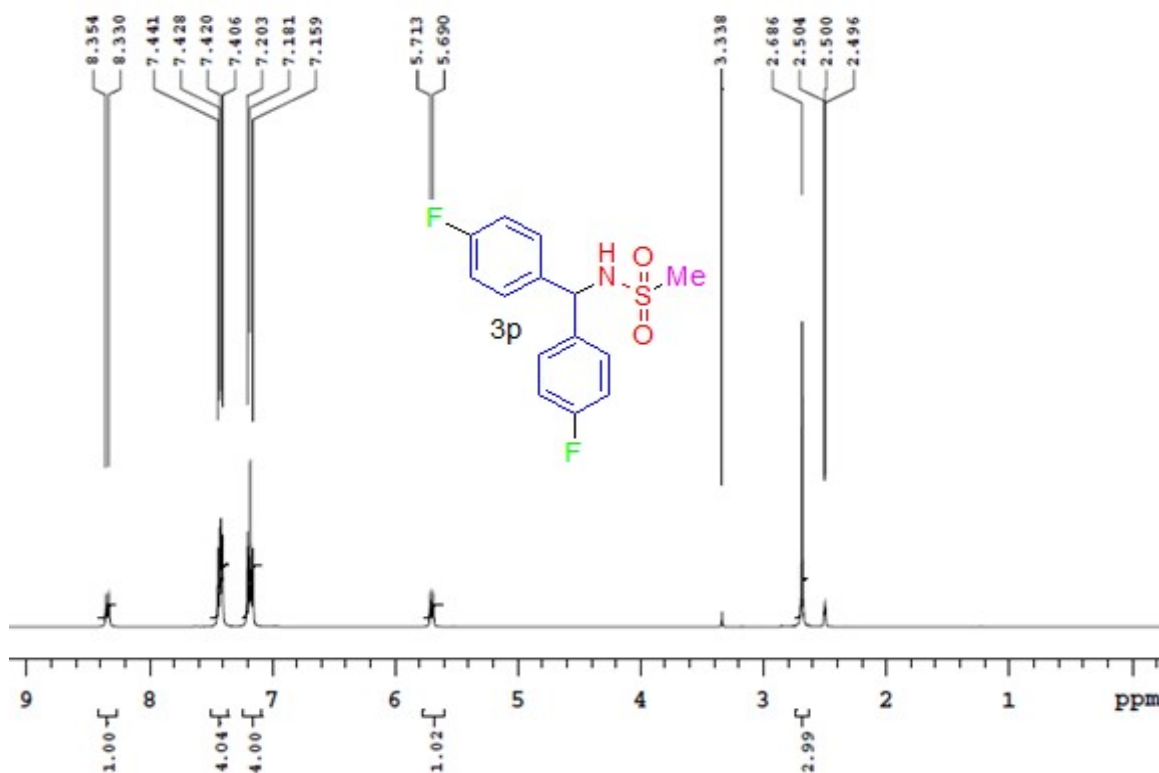


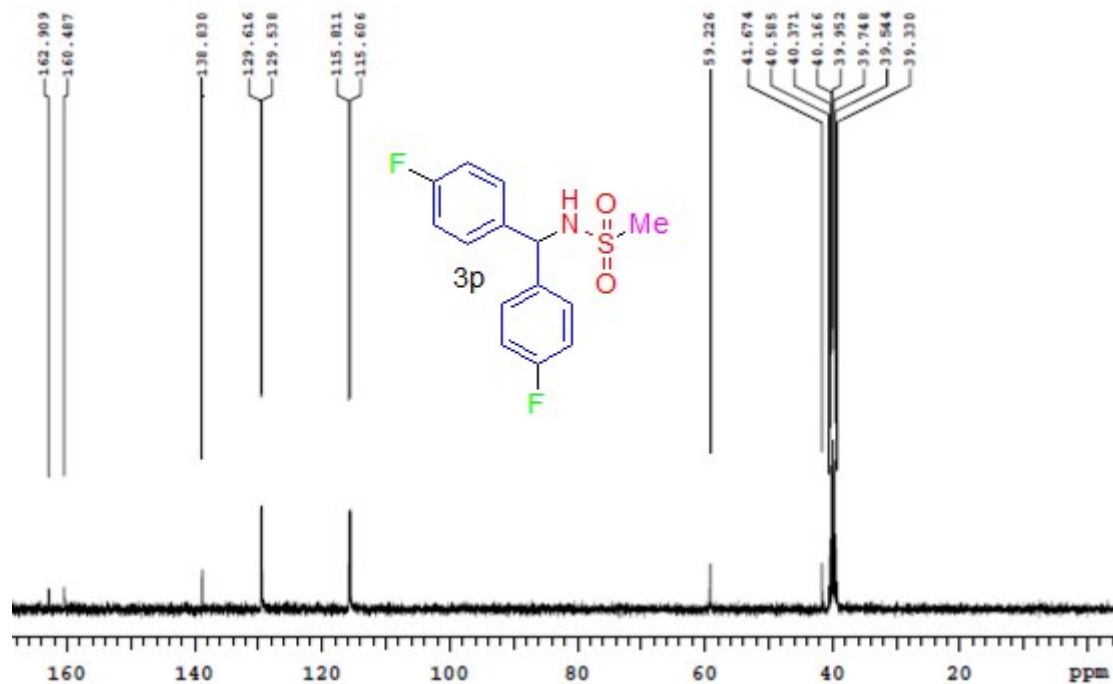
Figure 29.  $^1\text{H}$  NMR of *N*-(bis(4-chlorophenyl)methyl)methanesulfonamide



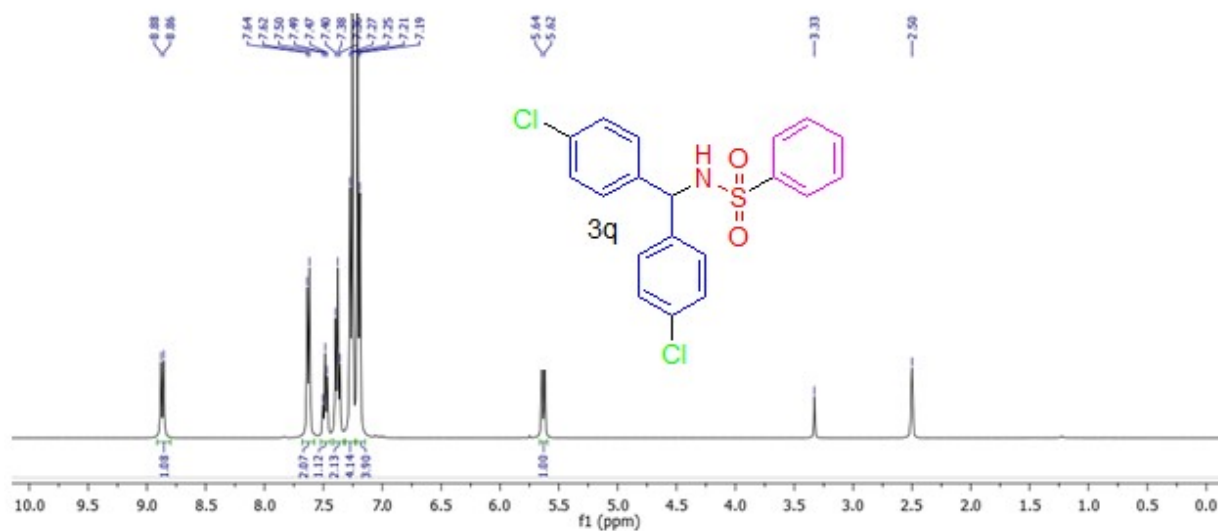


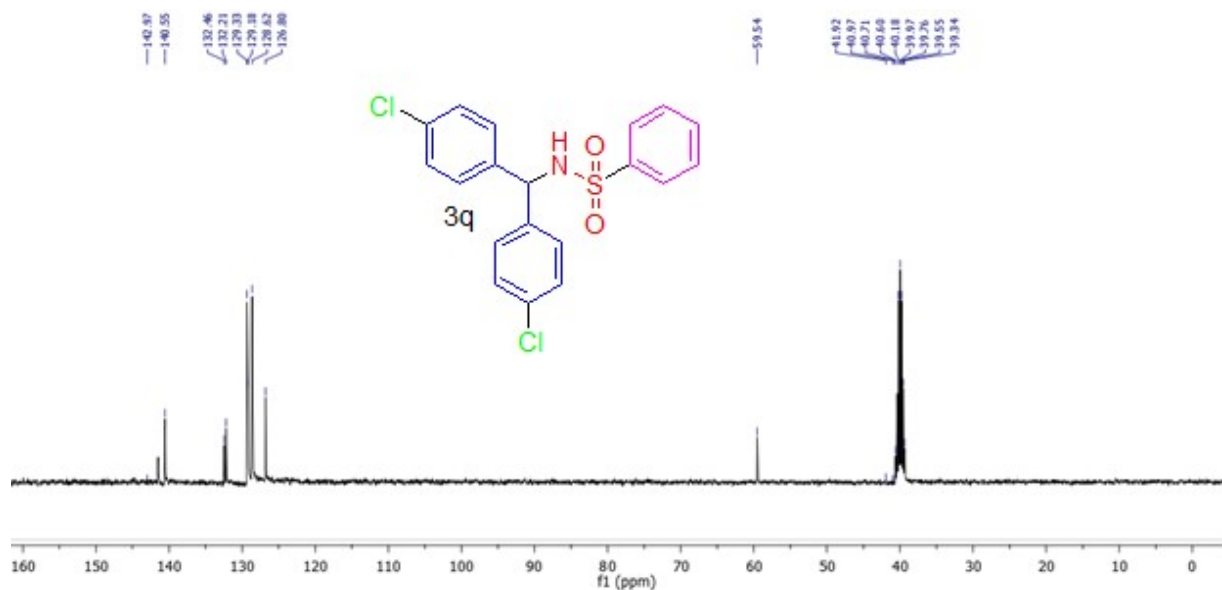
*N*-(bis(4-fluorophenyl)methyl)methanesulfonamide (3p):





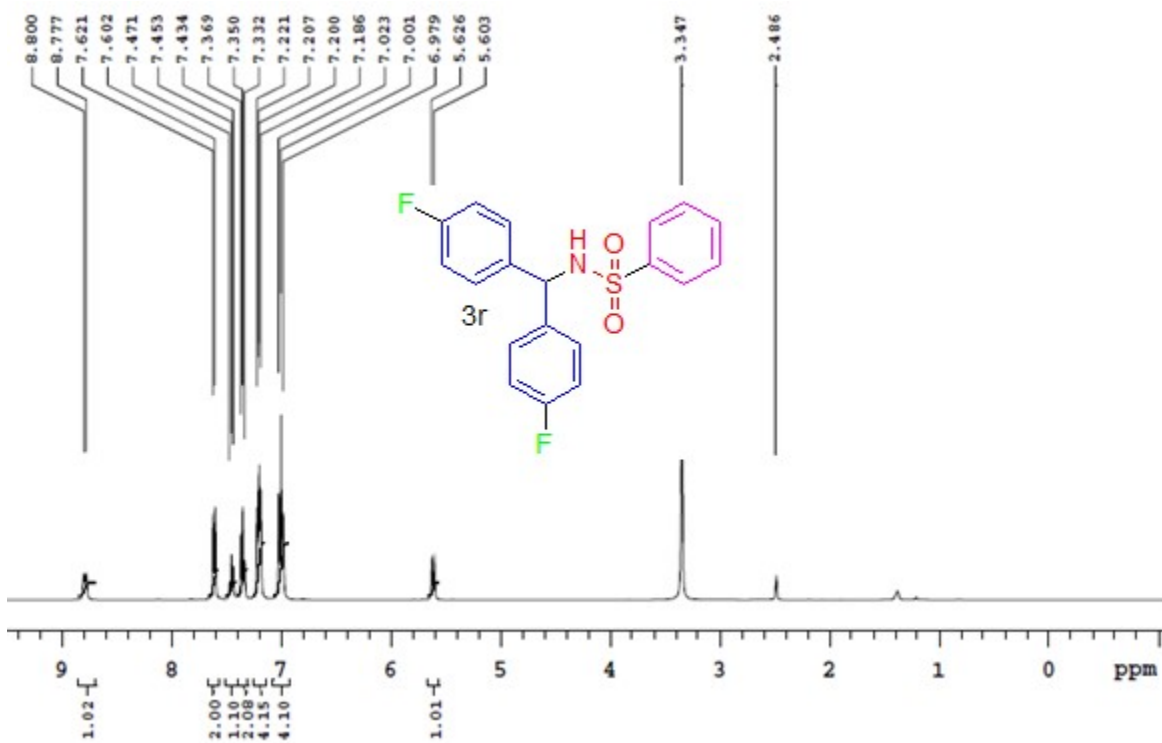
*N*-(bis(4-chlorophenyl)methyl)benzenesulfonamide (**3q**):



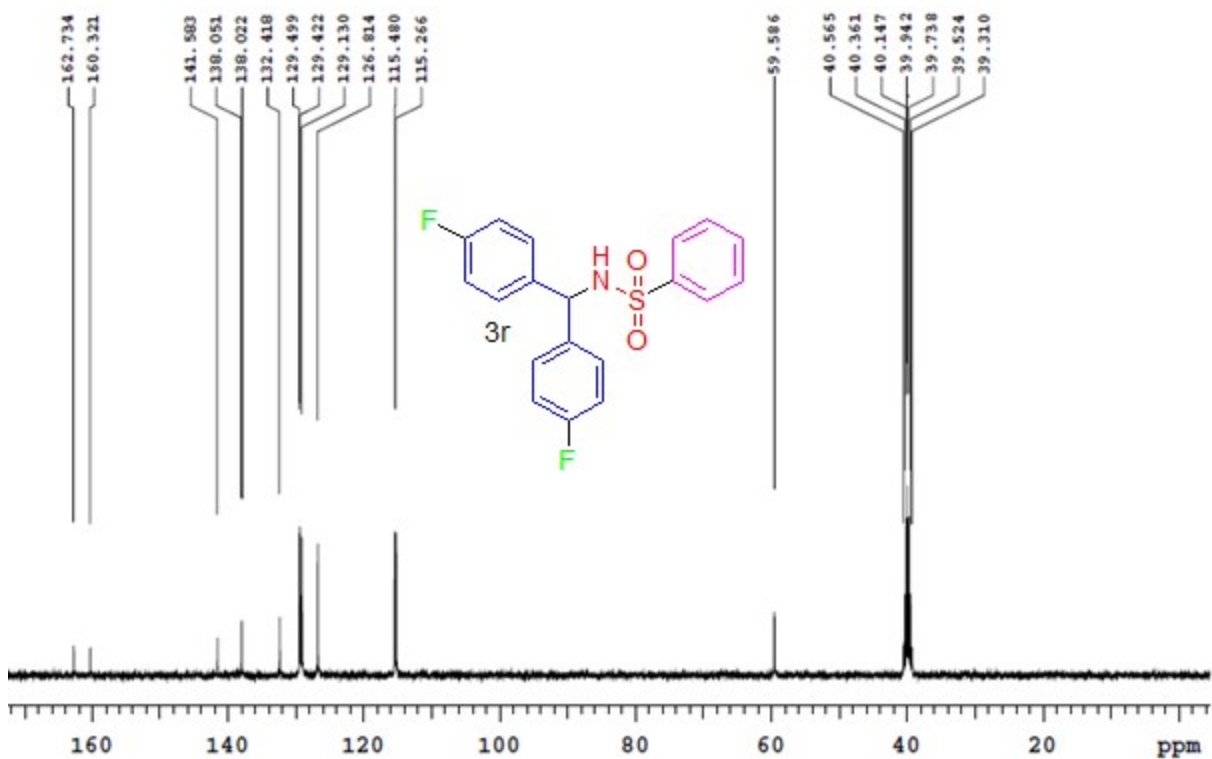


**Figure 34.** <sup>13</sup>C NMR of *N*-(bis(4-chlorophenyl)methyl)benzenesulfonamide

***N*-(bis(4-fluorophenyl)methyl)benzenesulfonamide (3r):**

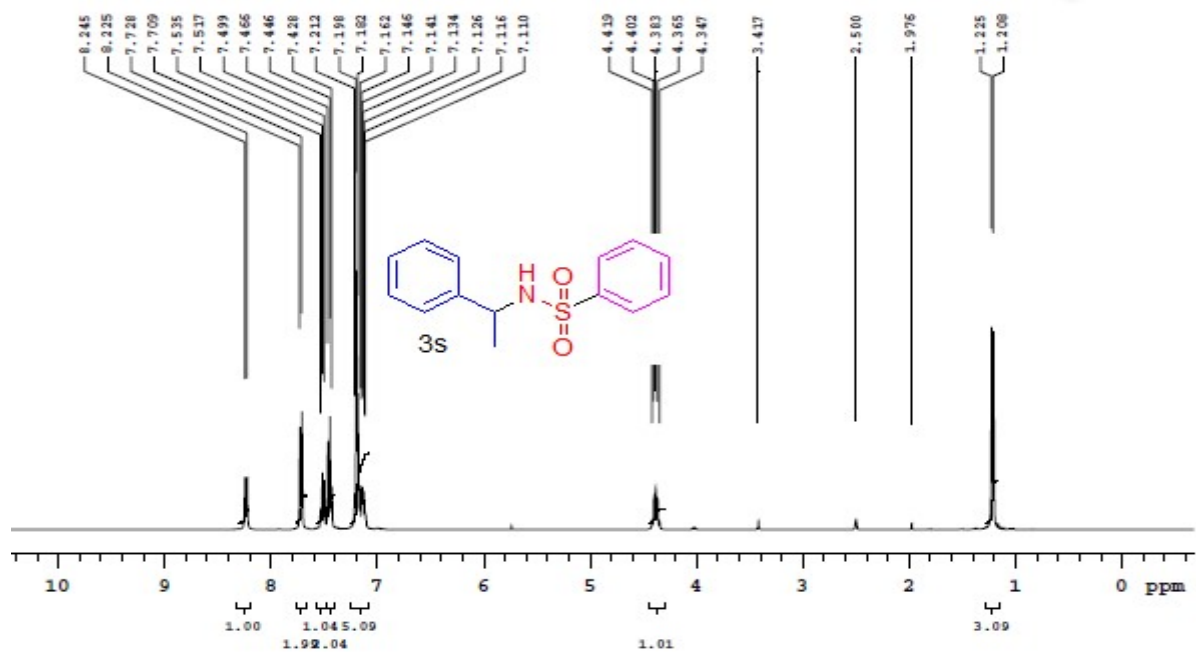


**Figure 35.** <sup>1</sup>H NMR of *N*-(bis(4-fluorophenyl)methyl)benzenesulfonamide

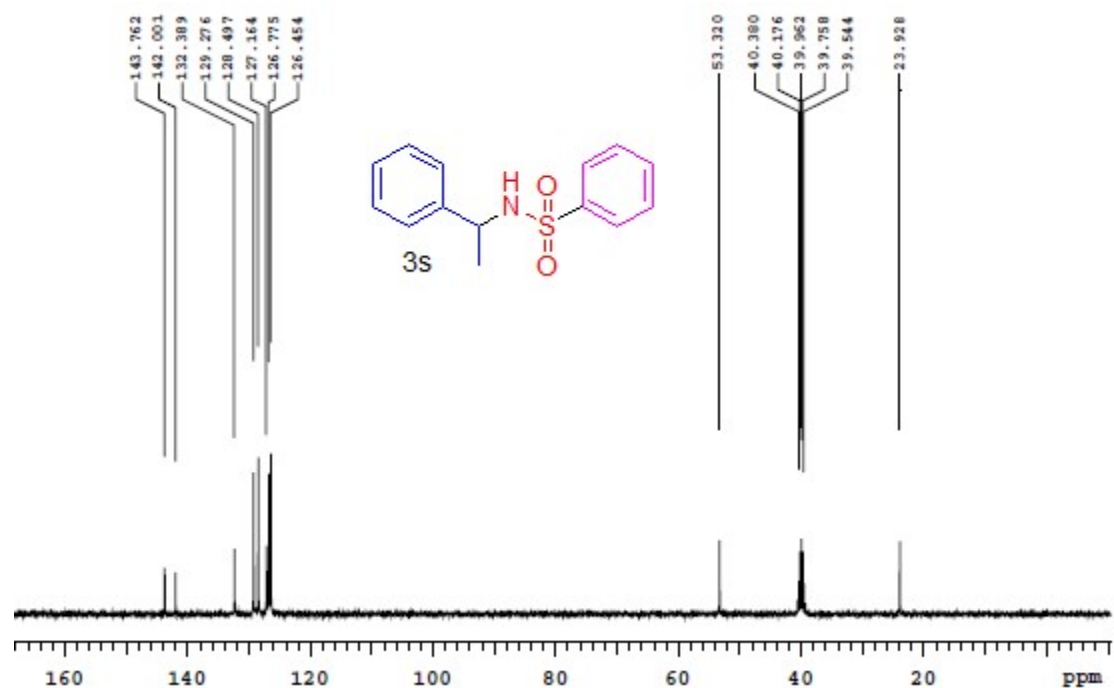


**Figure 36.**  $^{13}\text{C}$  NMR of *N*-(bis(4-fluorophenyl)methyl)benzenesulfonamide

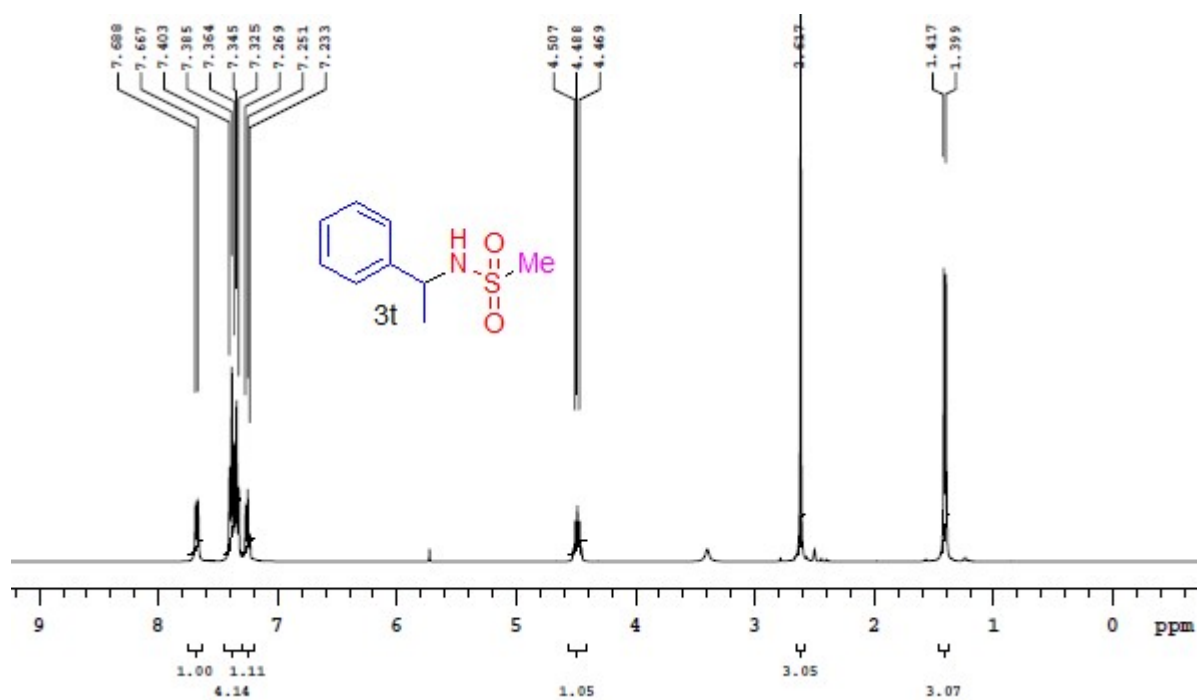
***N*-(1-phenylethyl)benzenesulfonamide (3s):**



**Figure 37.**  $^1\text{H}$  NMR of *N*-(1-phenylethyl)benzenesulfonamide



*N*-(1-phenylethyl)methanesulfonamide (**3t**):



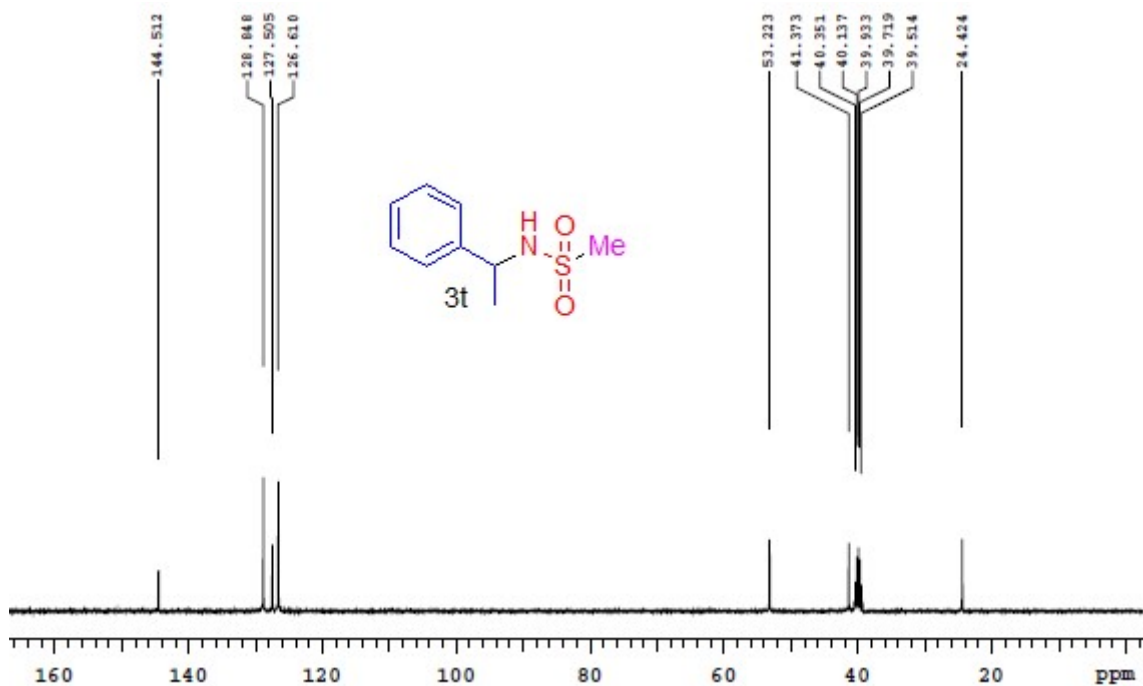


Figure 40. <sup>13</sup>C NMR of *N*-(1-phenylethyl)methanesulfonamide

**Methyl benzhydrylcarbamate (3u):**

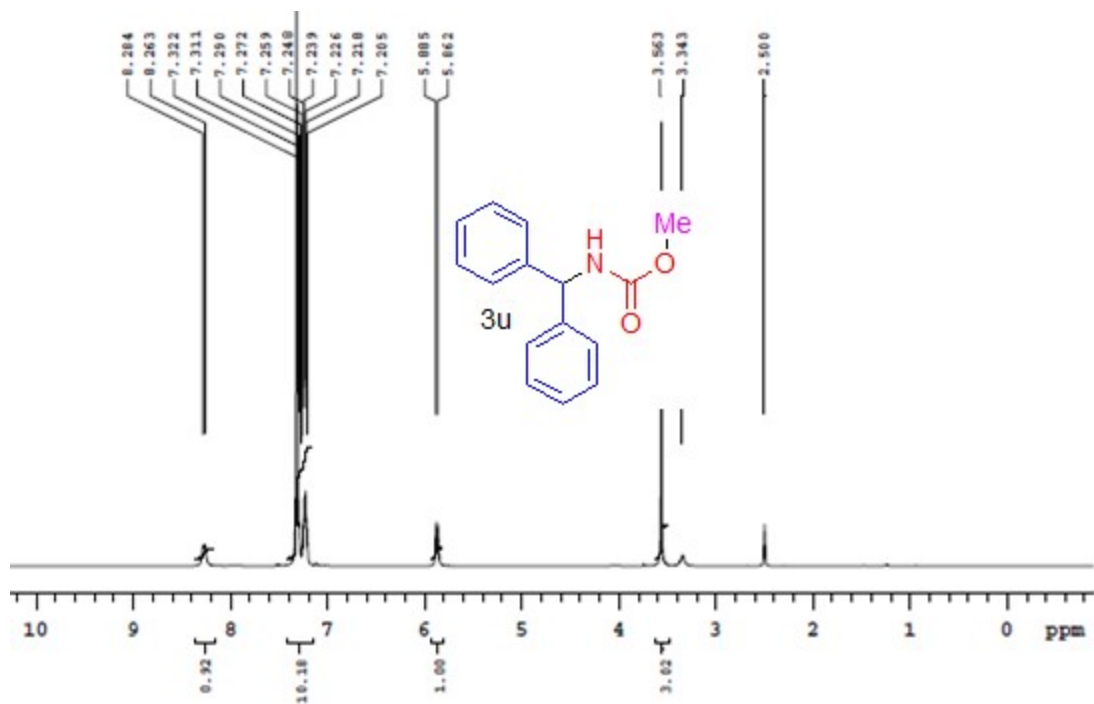


Figure 41. <sup>1</sup>H NMR of Methyl benzhydrylcarbamate

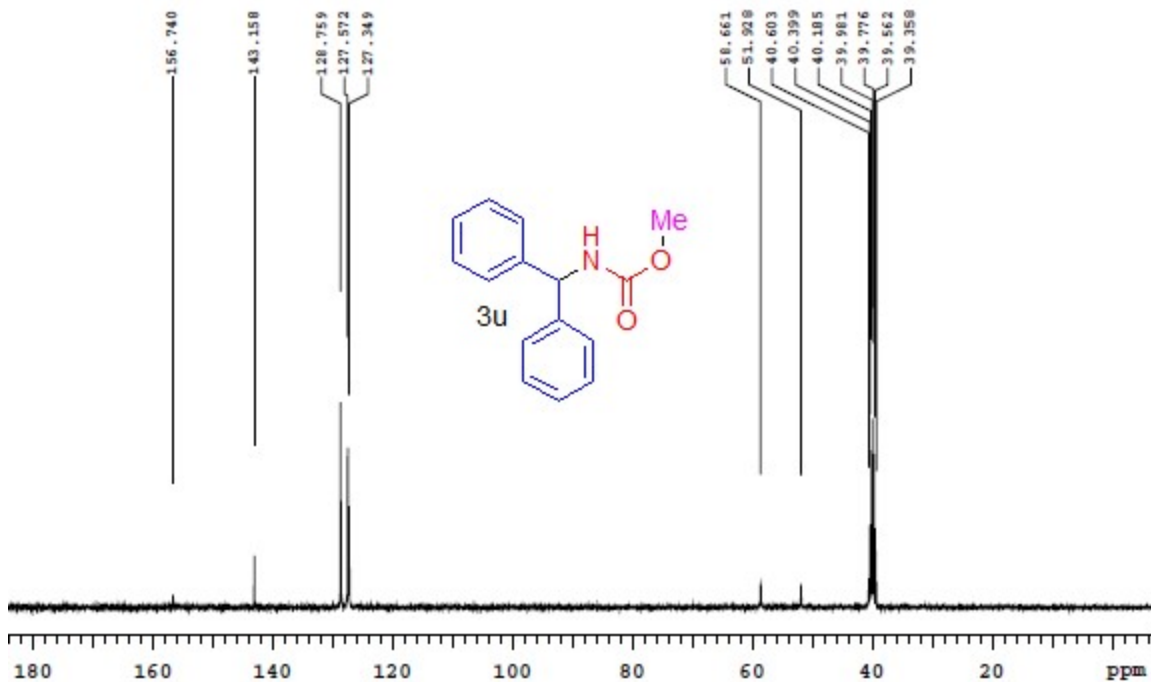


Figure 42. <sup>13</sup>C NMR of Methyl benzhydrylcarbamate

Methyl bis(4-chlorophenyl)methylcarbamate (3v):

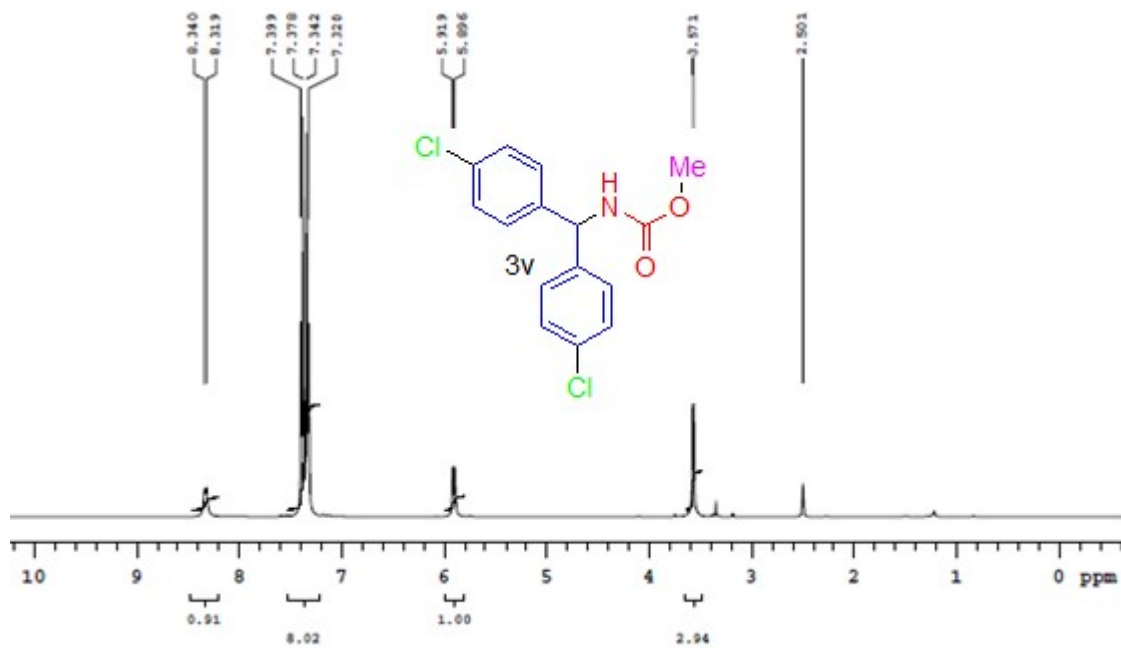
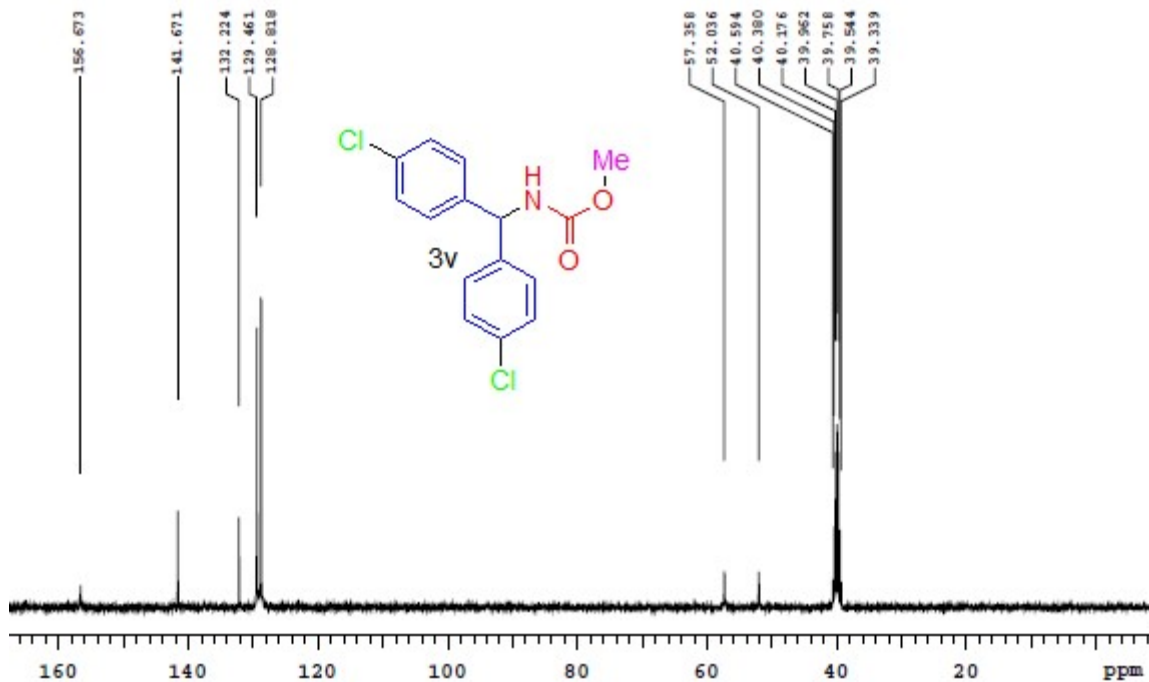
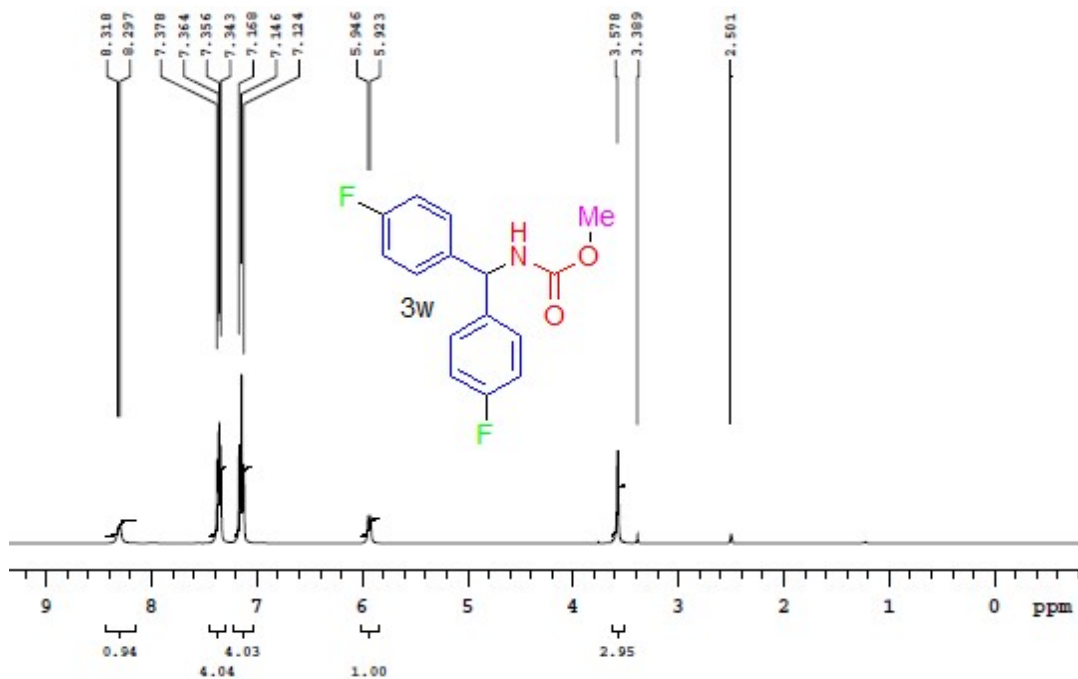


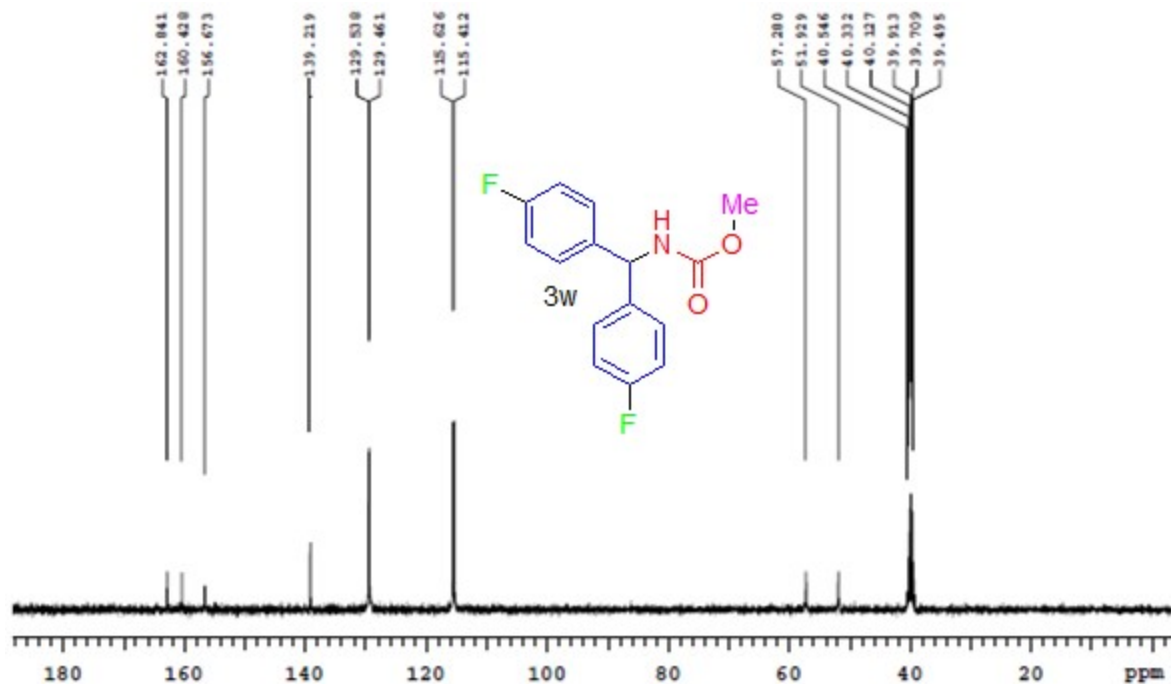
Figure 43. <sup>1</sup>H NMR of Methyl bis(4-chlorophenyl)methylcarbamate



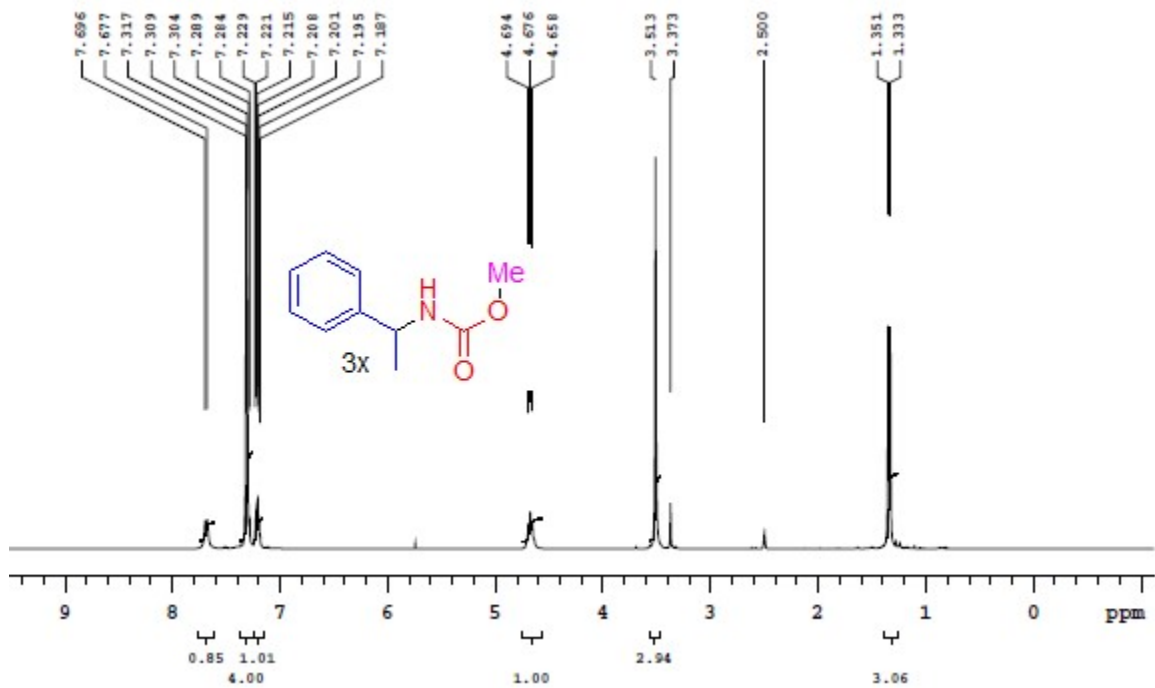
**Methyl bis(4-fluorophenyl)methylcarbamate (3w):**







**Methyl 1-phenylethylcarbamate (3x):**



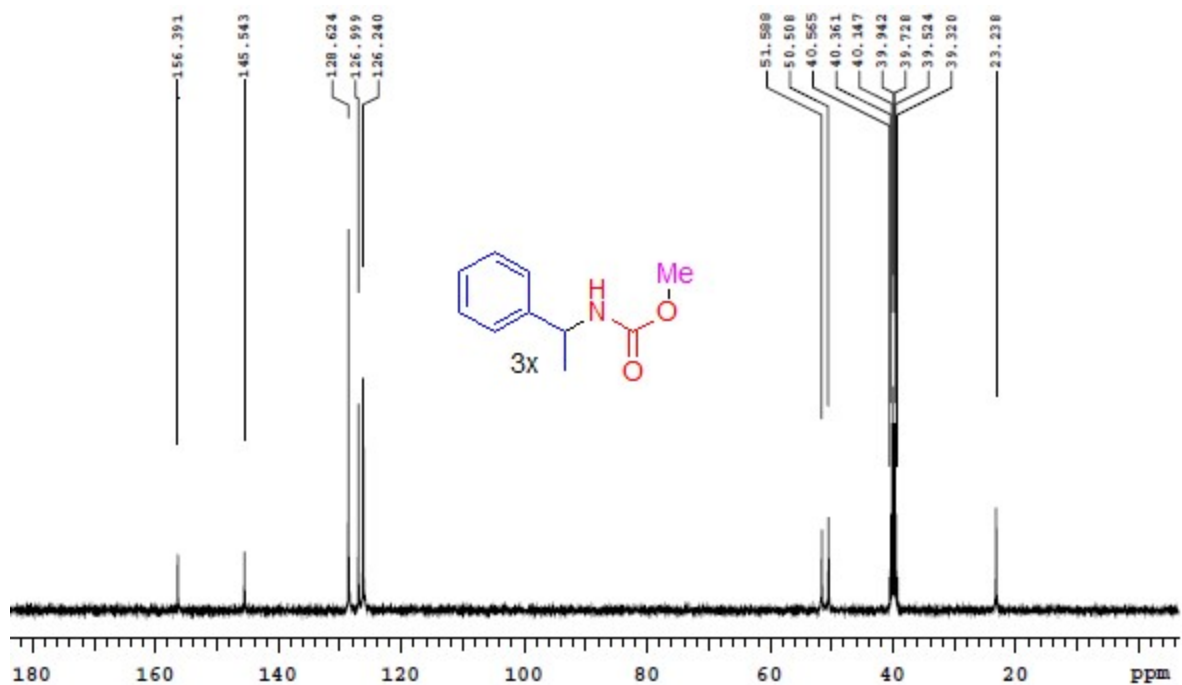


Figure 48.  $^{13}\text{C}$  NMR of Methyl 1-phenylethylcarbamate

Benzyl benzhydrylcarbamate (3y):

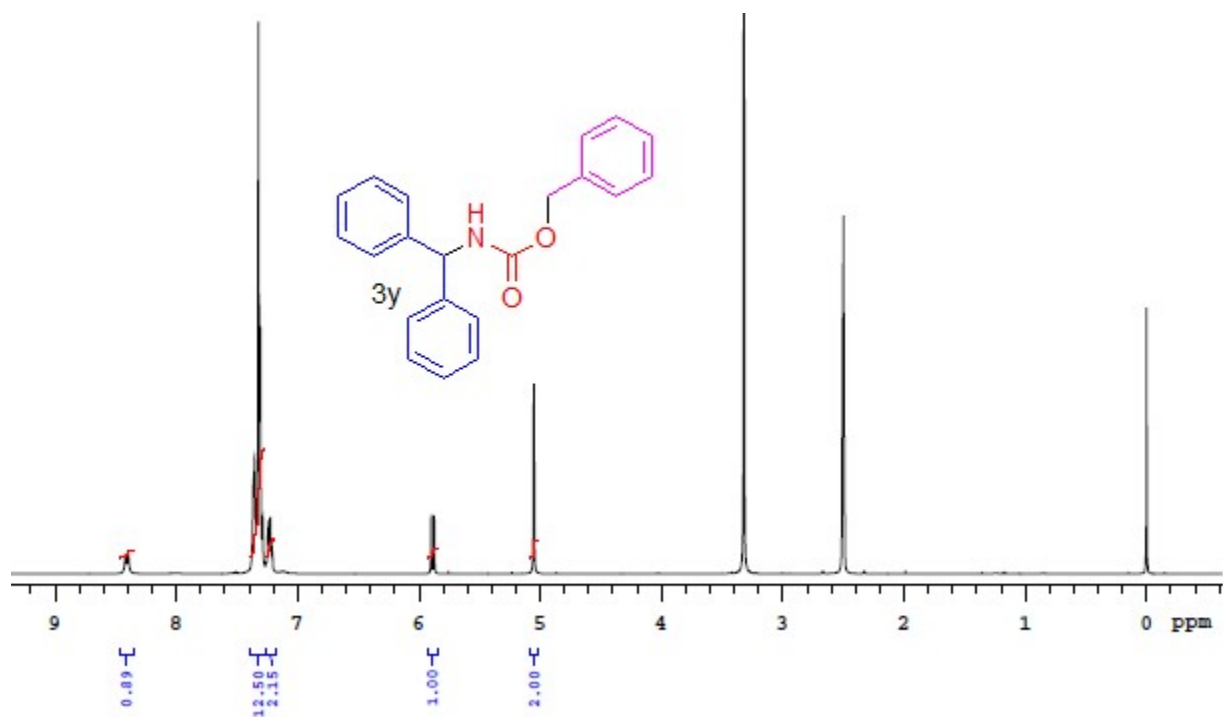
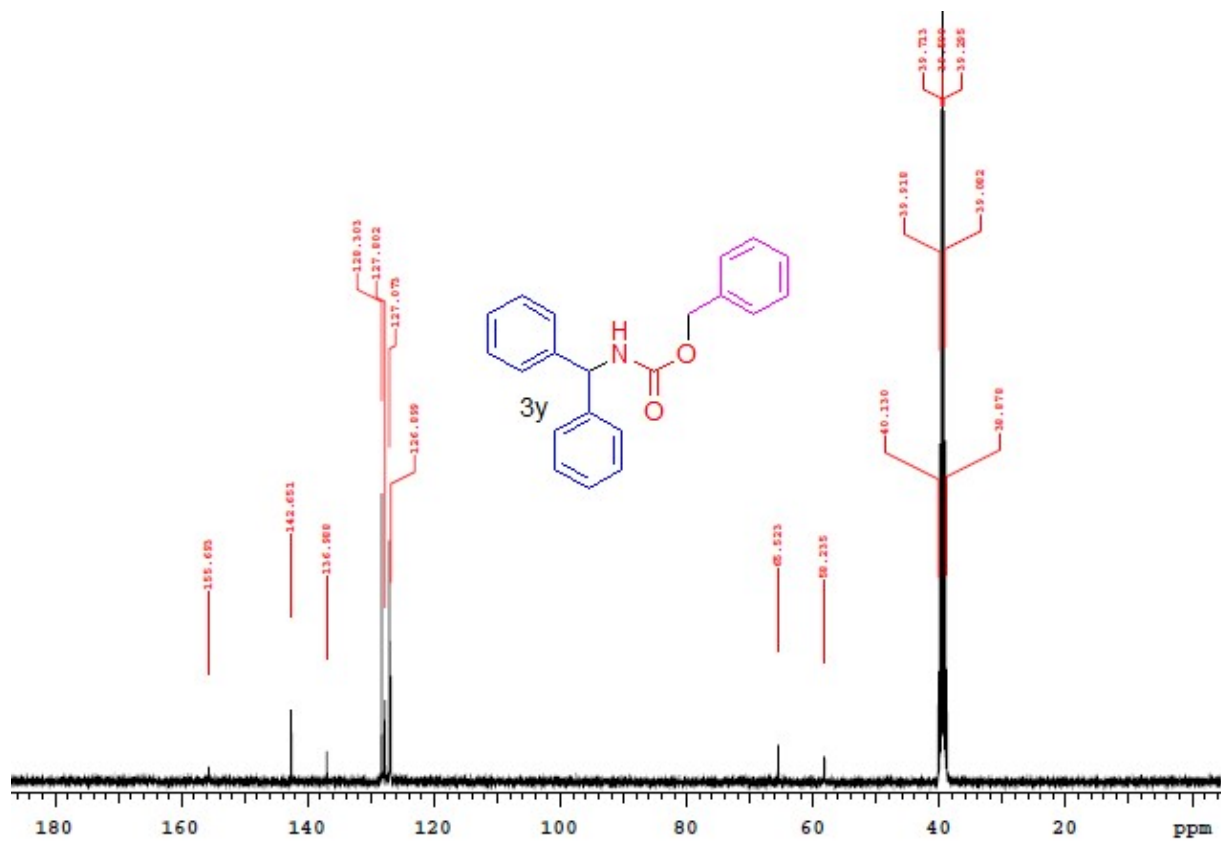
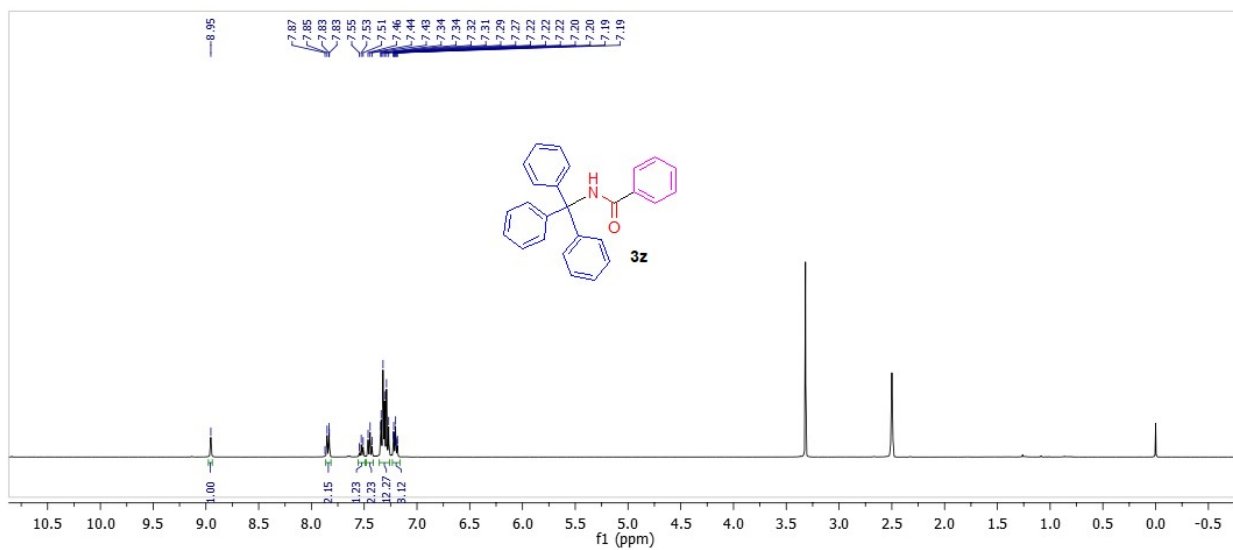


Figure 49.  $^1\text{H}$  NMR of Benzyl benzhydrylcarbamate



**Figure 50.**  $^{13}\text{C}$  NMR of Benzyl benzhydrylcarbamate

***N*-tritylbenzamide (3z):**



**Figure 51.**  $^1\text{H}$  NMR of *N*-tritylbenzamide

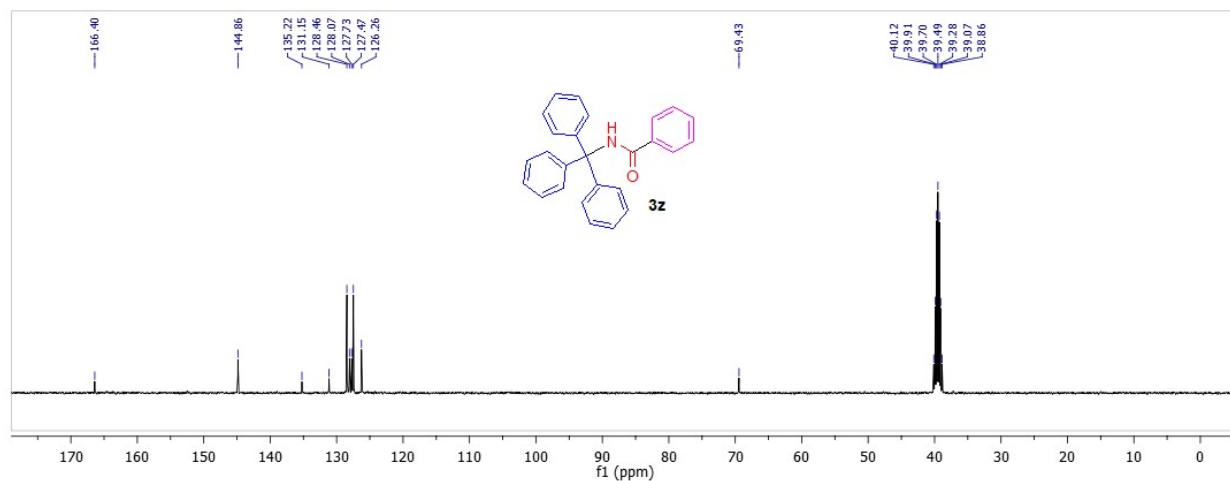


Figure 52. <sup>13</sup>C NMR of *N*-tritylbenzamide

(Benzhydryloxy)diphenylmethane **4a**:

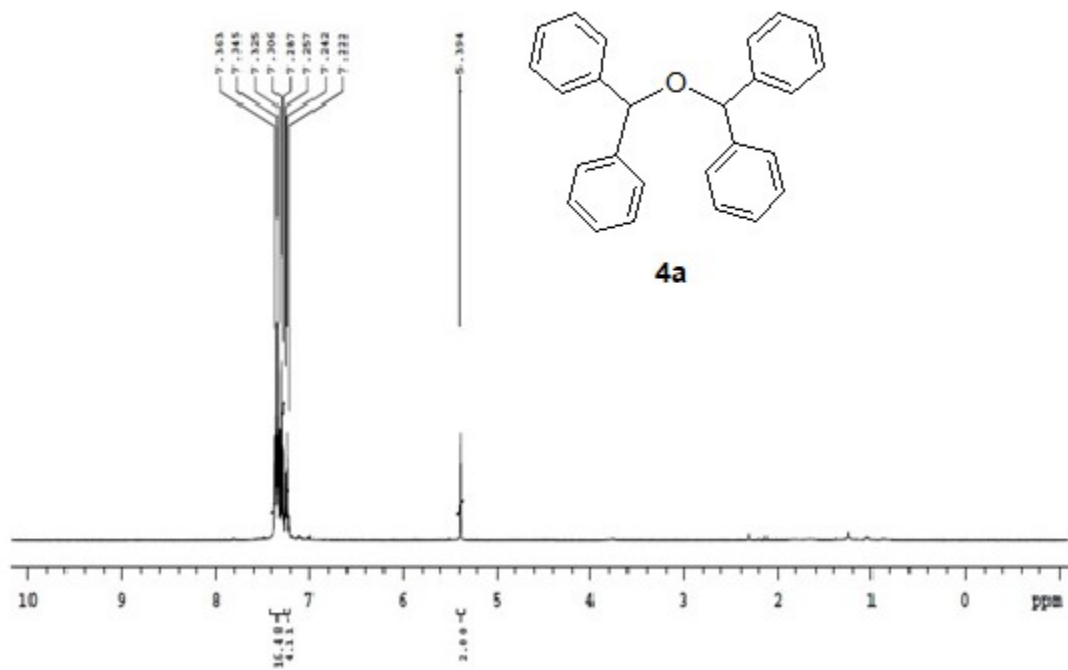


Figure 53. <sup>1</sup>H NMR of (benzhydryloxy)diphenylmethane

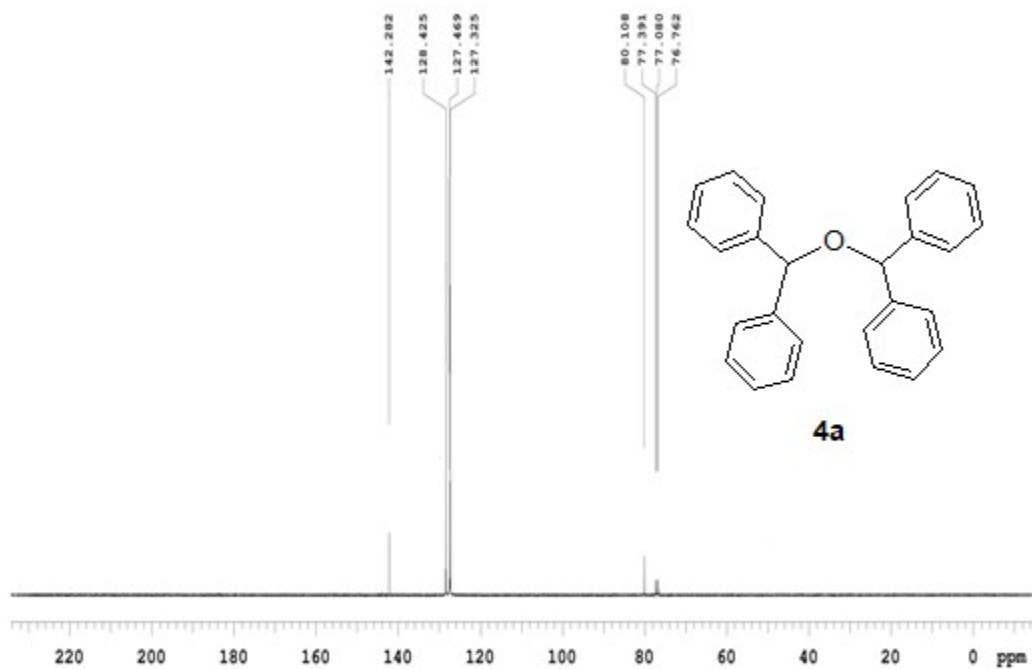


Figure 54.  $^{13}\text{C}$  NMR of (benzhydryloxy)diphenylmethane

Control experiments:

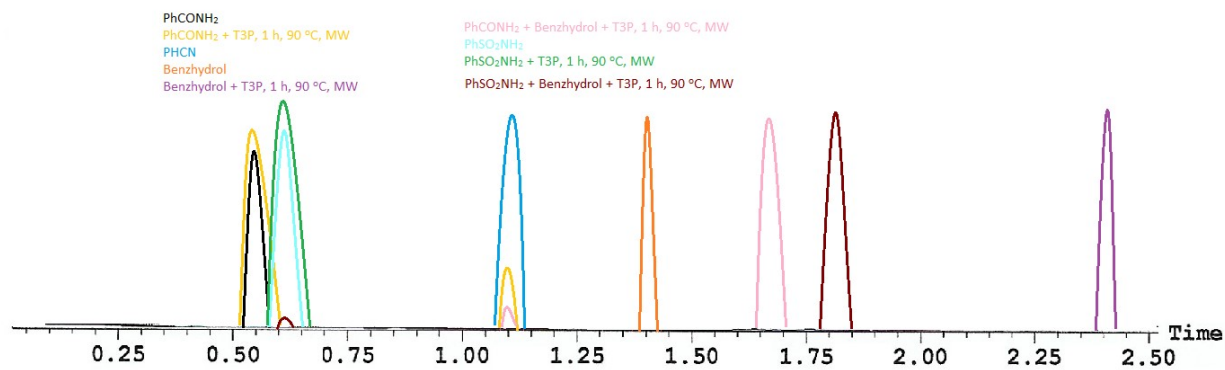


Figure 55. Control experiments