

**Method for the synthesis of *N*-alkyl, *O*-alkyl carbamates.**

Victoria A. Vaillard, Marianela González, Jesica P. Perotti, Ricardo J. A. Grau and

Santiago E. Vaillard\*

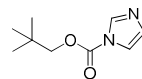
Instituto de Desarrollo Tecnológica para la Industria Química (INTEC) Centro Científico  
Tecnológica Santa Fe. CONICET-UNL. Ruta Nacional 168 Km 1. Paraje el Pozo. 3000.

Santa Fe. Argentina

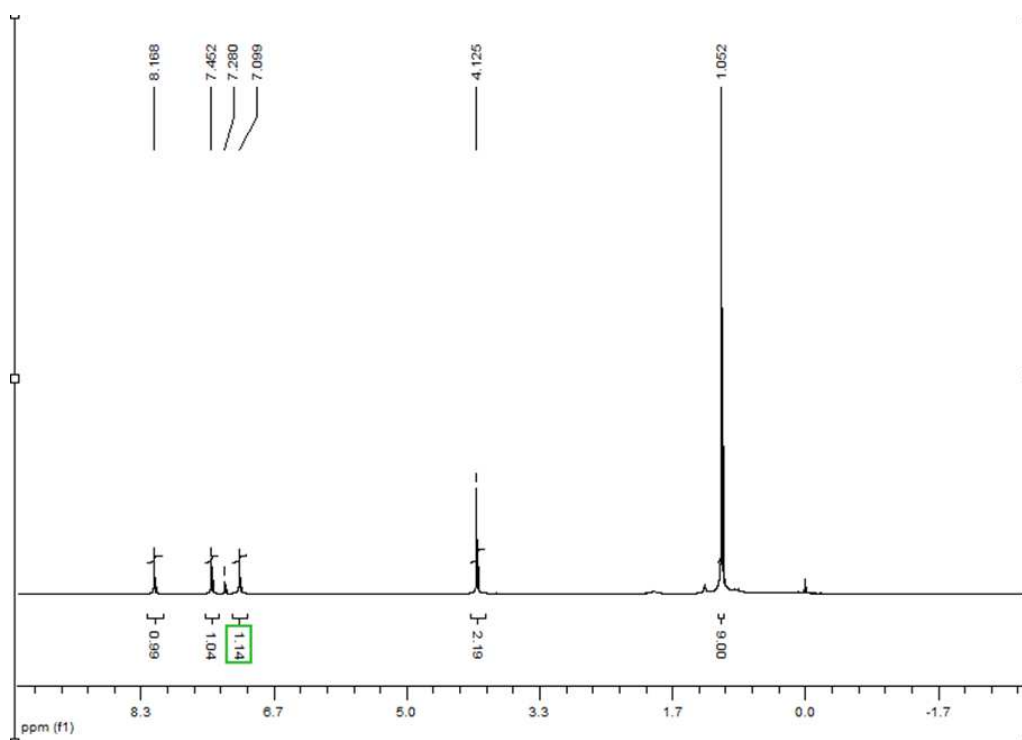
**Supporting Information**

<sup>1</sup>H and <sup>13</sup>C spectra for compounds **2a-d**, **3a-d** and **4a-t**

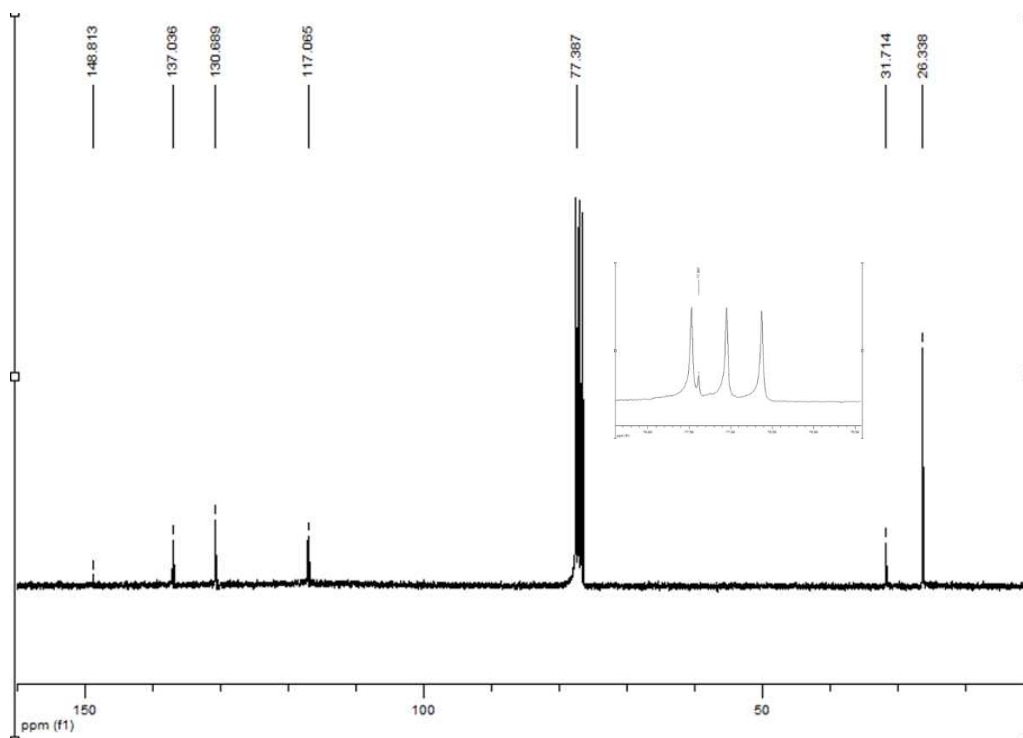
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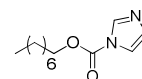


<sup>1</sup>H NMR Neopentyl *1H*-imidazole-1-carboxylate (CDCl<sub>3</sub>) **2a**

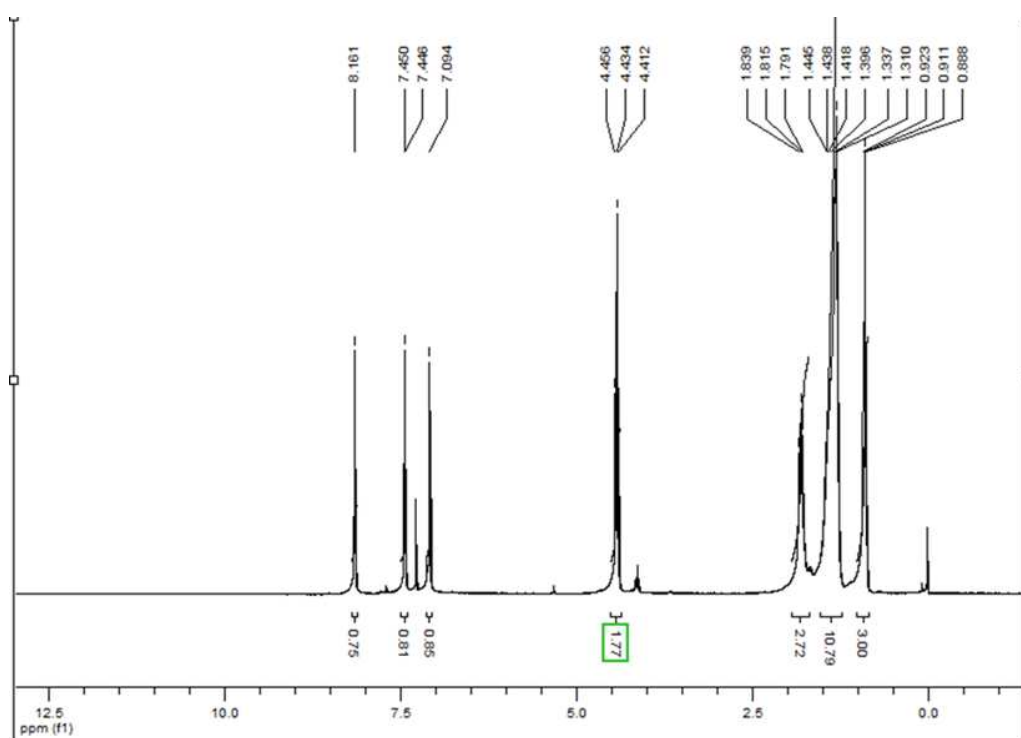


<sup>13</sup>C NMR Neopentyl *1H*-imidazole-1-carboxylate (CDCl<sub>3</sub>) **2a**

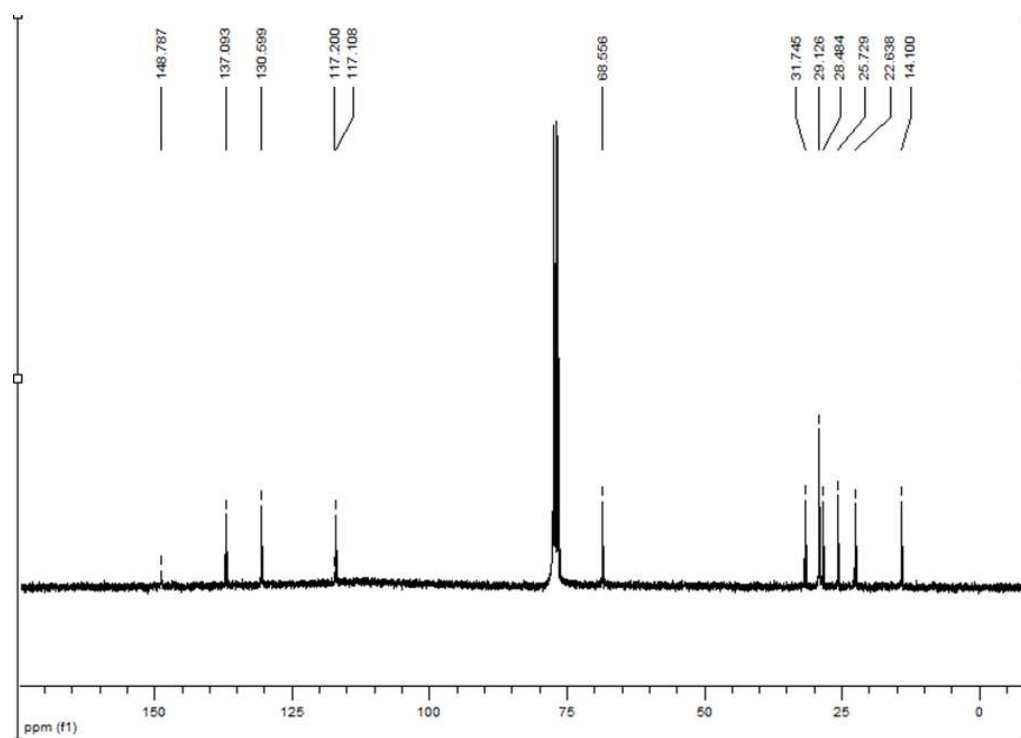


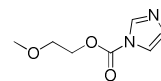


$^1\text{H}$  NMR octyl pyrrolidine-1-carboxylate ( $\text{CDCl}_3$ ) **2b**

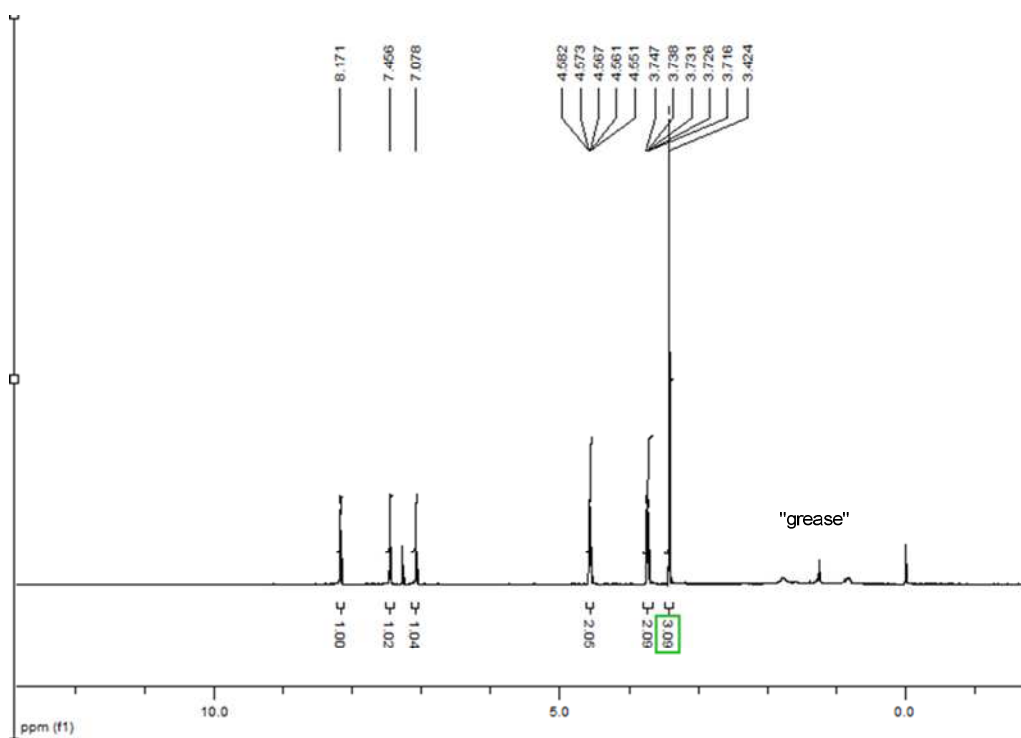


$^{13}\text{C}$  NMR octyl pyrrolidine-1-carboxylate ( $\text{CDCl}_3$ ) **2b**

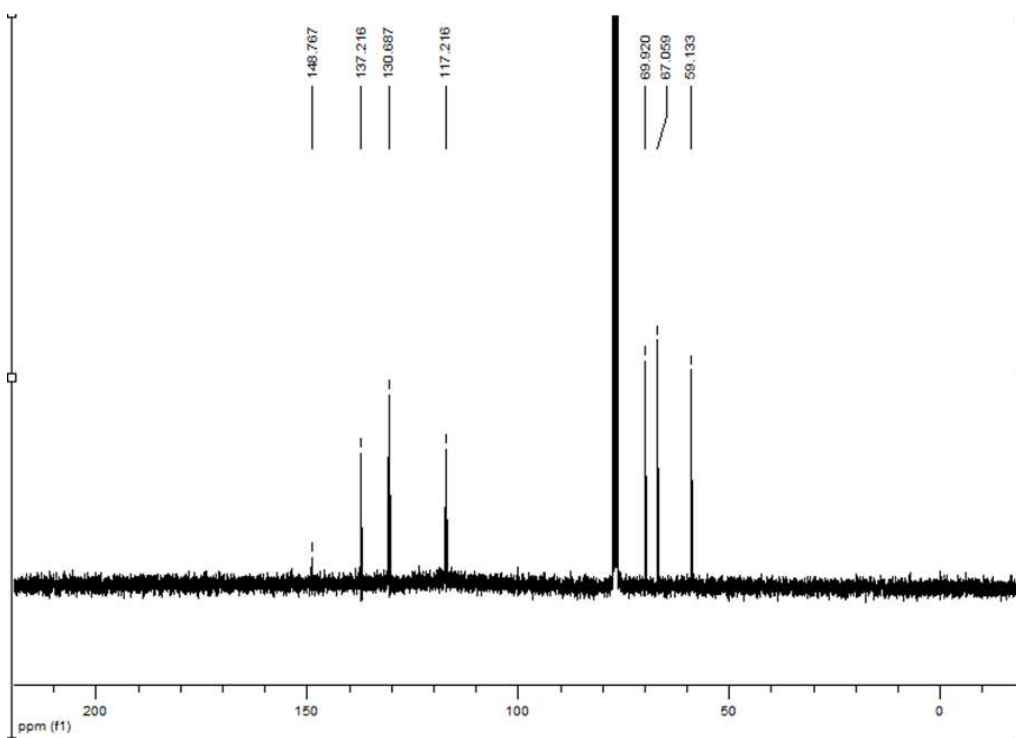


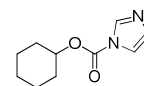


$^1\text{H}$  NMR 2-methoxyethyl 1H-imidazole-1-carboxylate ( $\text{CDCl}_3$ ) **2c**

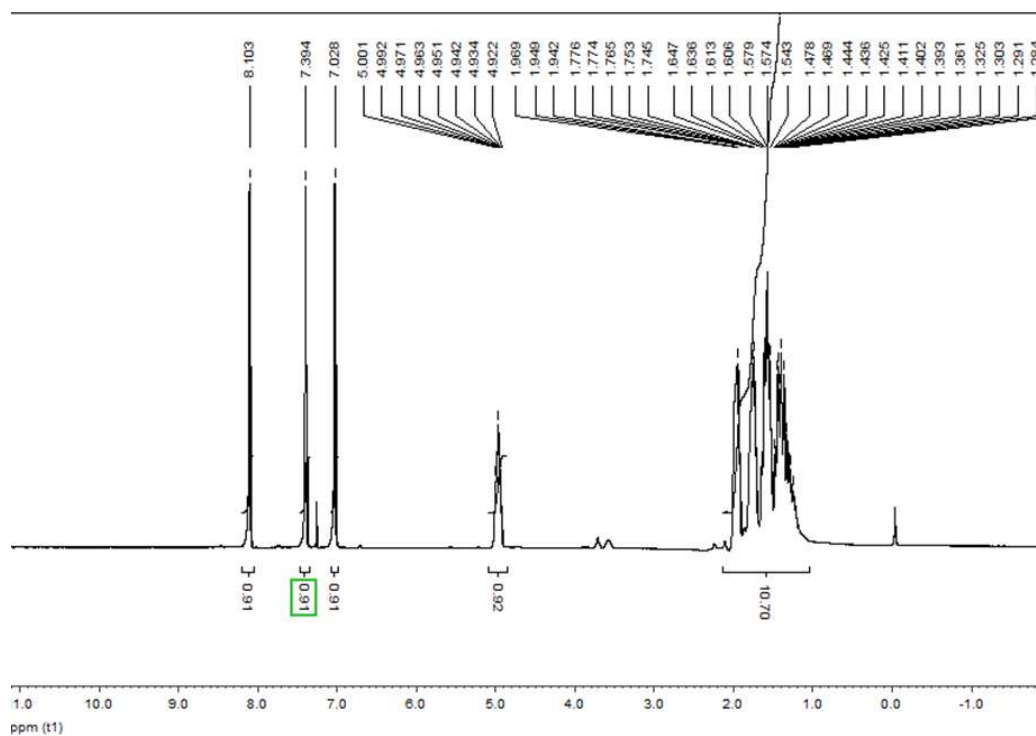


$^{13}\text{C}$  NMR 2-methoxyethyl 1H-imidazole-1-carboxylate ( $\text{CDCl}_3$ ) **2c**

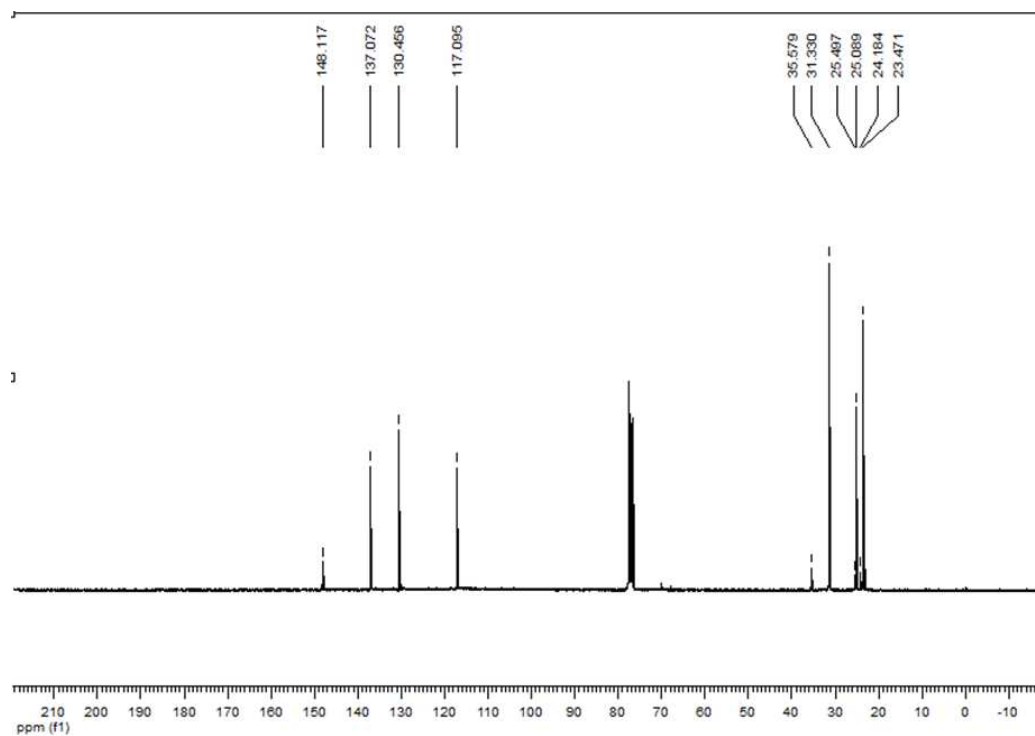


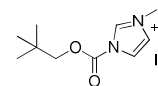


$^1\text{H}$  NMR Cyclohexyl 1*H*-imidazole-1-carboxylate ( $\text{CDCl}_3$ ) **2d**

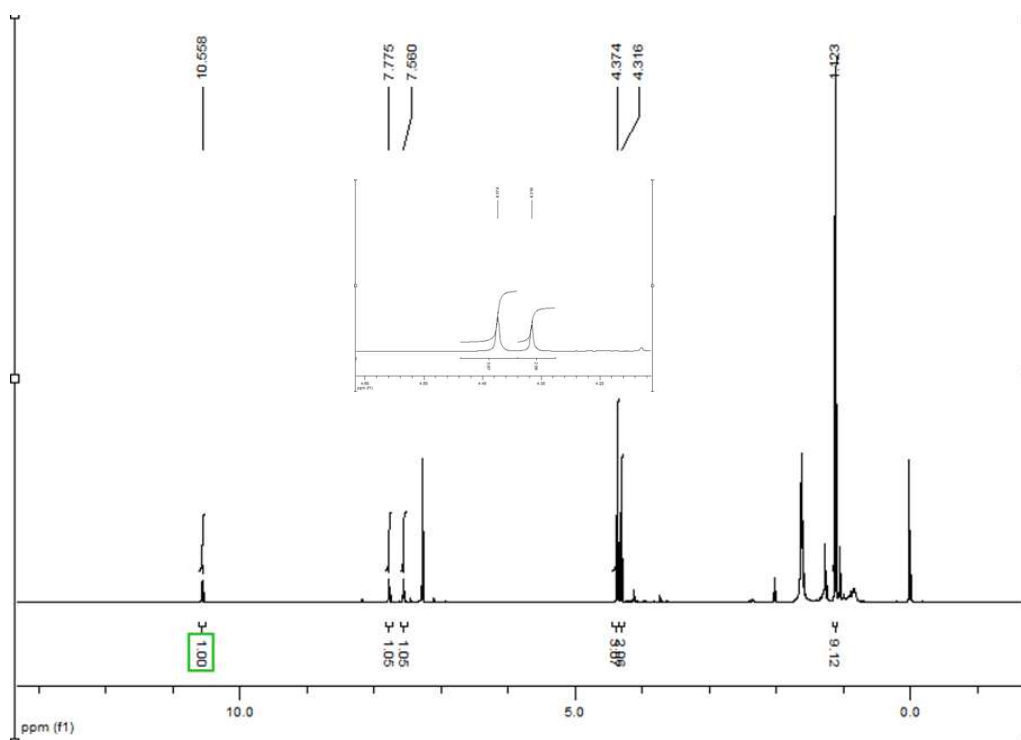


$^{13}\text{C}$  NMR Cyclohexyl 1*H*-imidazole-1-carboxylate ( $\text{CDCl}_3$ ) **2d**

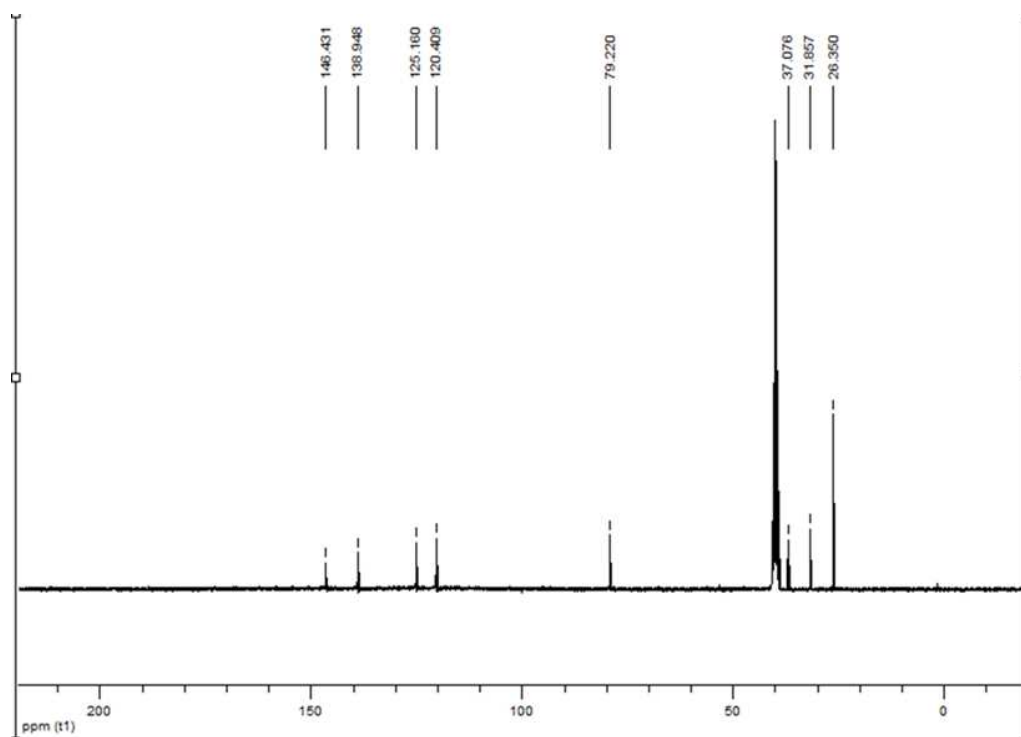


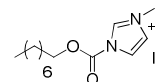


$^1\text{H}$  NMR 3-methyl-1-((neopentyloxy)carbonyl)-1H-imidazol-3-ium iodide ( $\text{CDCl}_3$ ) **3a**

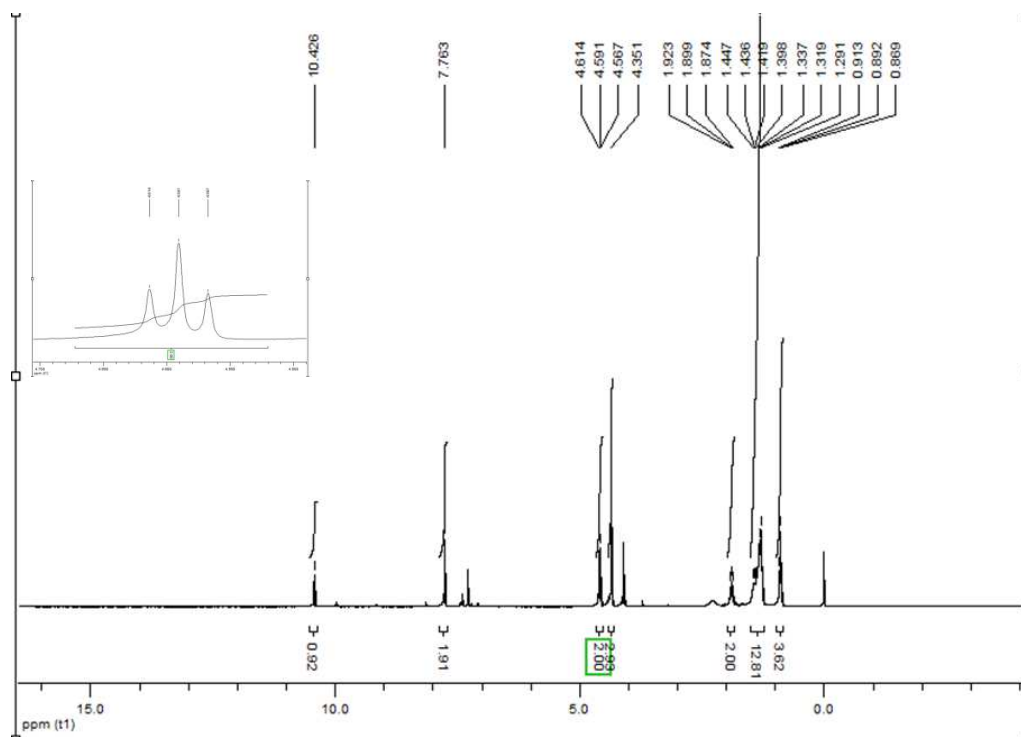


$^{13}\text{C}$  NMR 3-methyl-1-((neopentyloxy)carbonyl)-1H-imidazol-3-ium iodide ( $\text{DMSO-}d_6$ ) **3a**

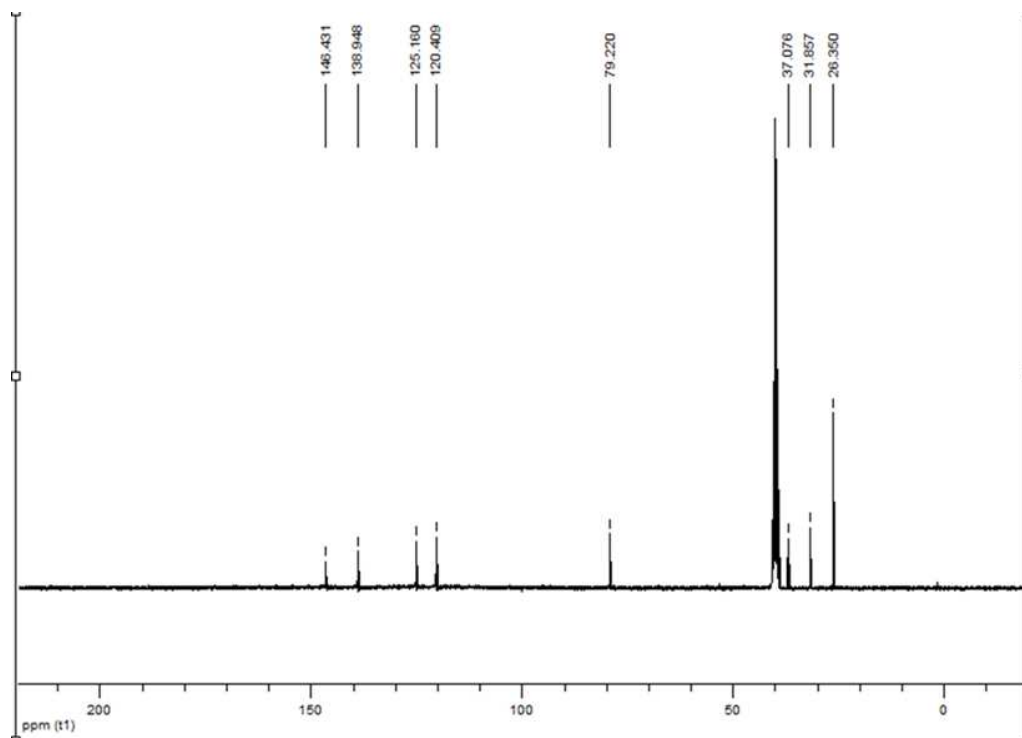


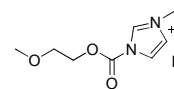


$^1\text{H}$  NMR 3-methyl-1-((octyloxy)carbonyl)-1H-imidazol-3-ium iodide ( $\text{CDCl}_3$ ) **3b**

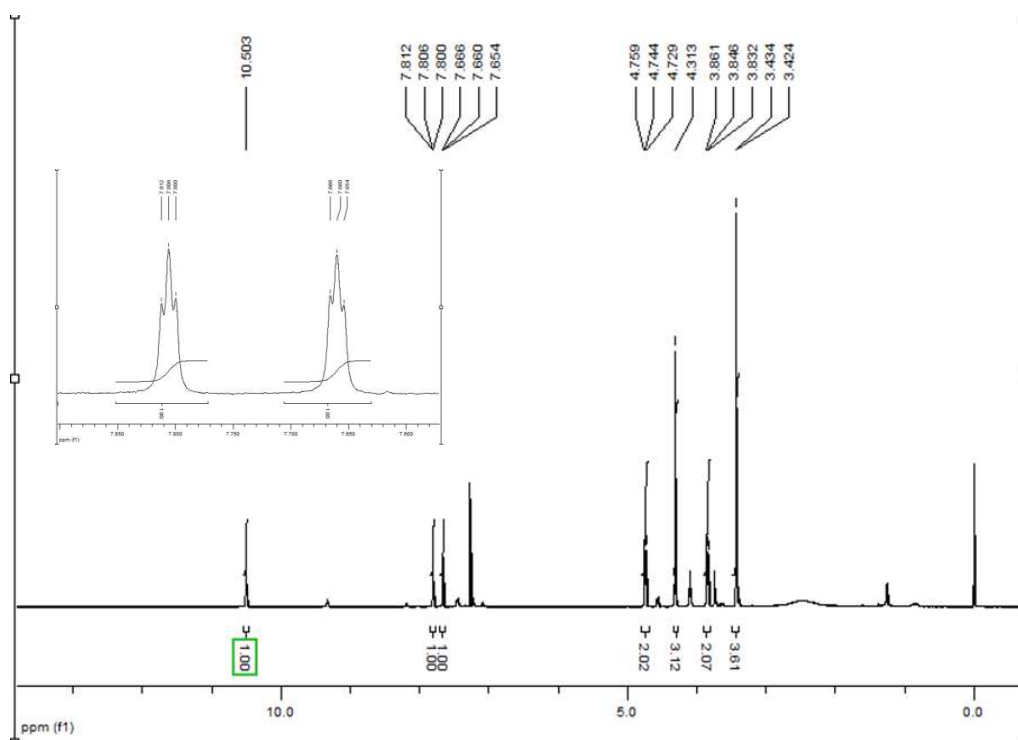


$^{13}\text{C}$  NMR 3-methyl-1-((octyloxy)carbonyl)-1H-imidazol-3-ium iodide ( $\text{CDCl}_3$ ) **3b**

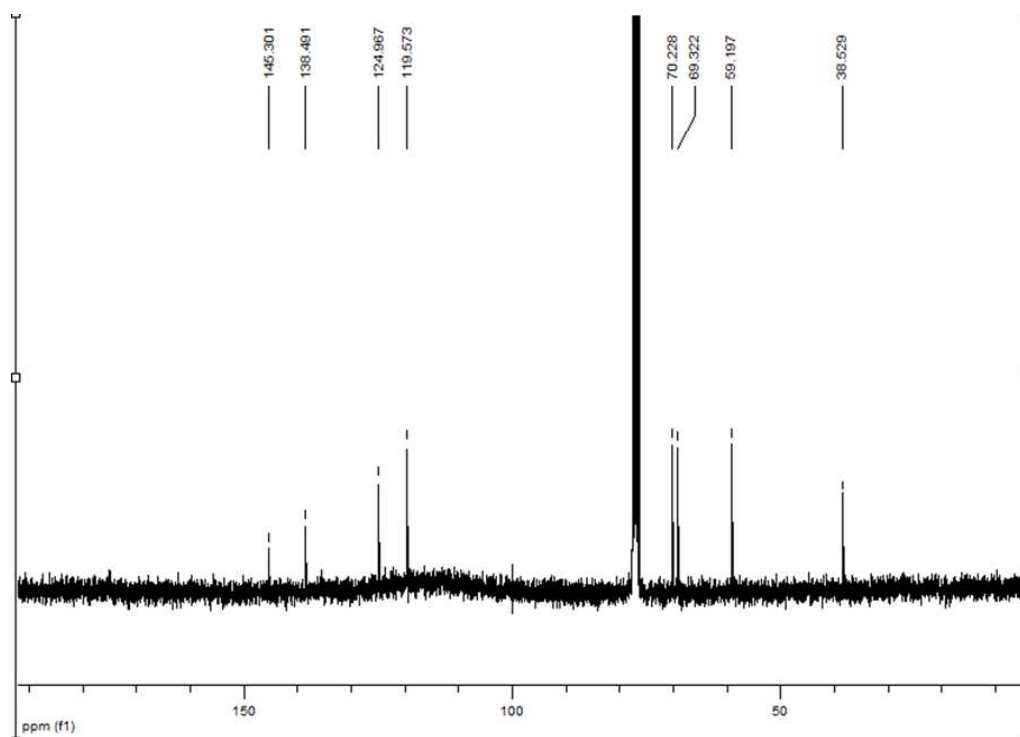




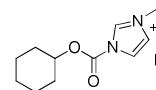
$^1\text{H}$  NMR 3-methyl-1-(2-methoxyethoxy)carbonyl-1*H*-imidazol-3-ium iodide ( $\text{CDCl}_3$ ) **3c**



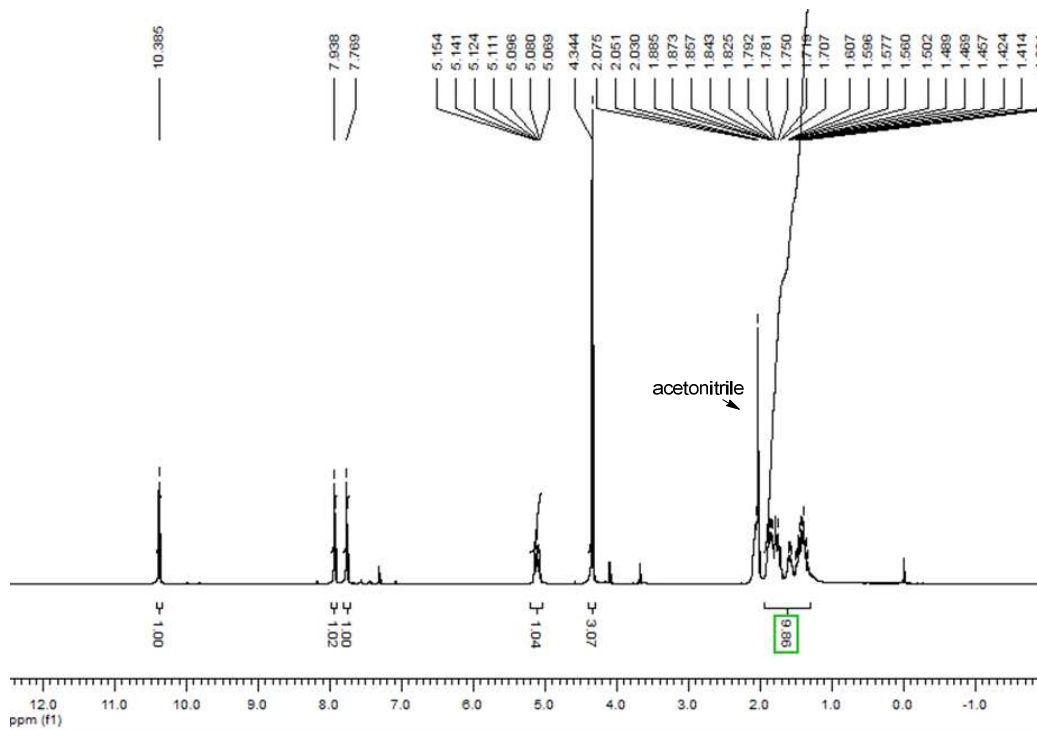
$^{13}\text{C}$  NMR 3-methyl-1-(2-methoxyethoxy)carbonyl-1*H*-imidazol-3-ium iodide ( $\text{CDCl}_3$ ) **3c**



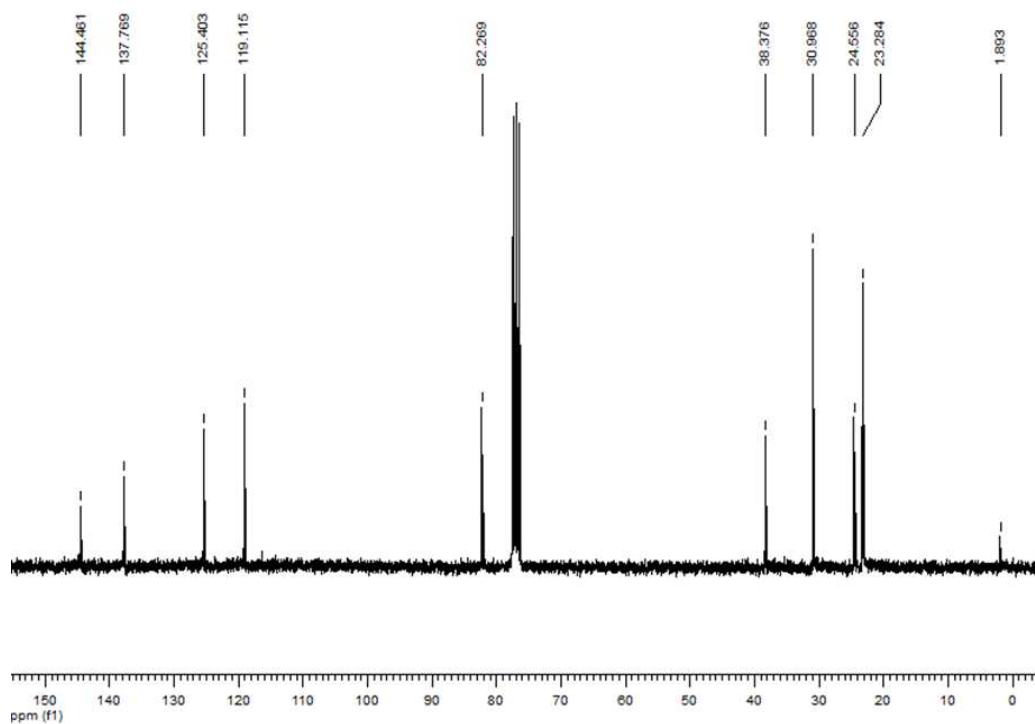


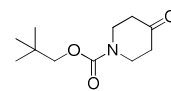


$^1\text{H}$  NMR 1-((cyclohexyloxy)carbonyl)-3-methyl-1*H*-imidazol-3-ium iodide ( $\text{CDCl}_3$ ) **3d**

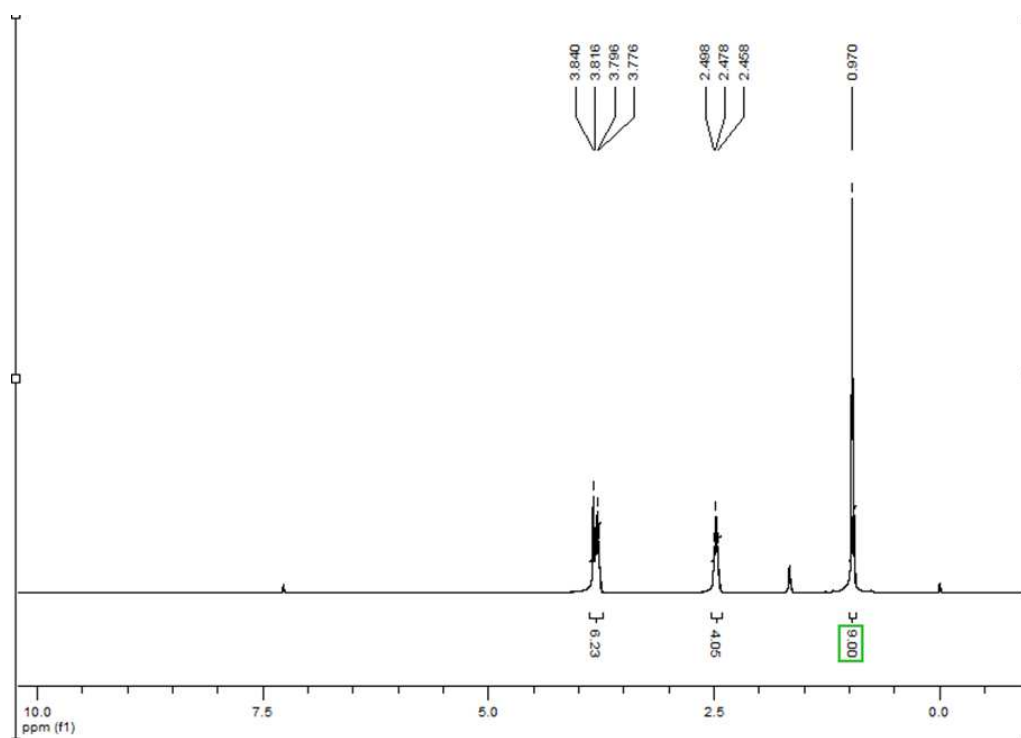


$^{13}\text{C}$  NMR 1-((cyclohexyloxy)carbonyl)-3-methyl-1*H*-imidazol-3-ium iodide ( $\text{CDCl}_3$ ) **3d**

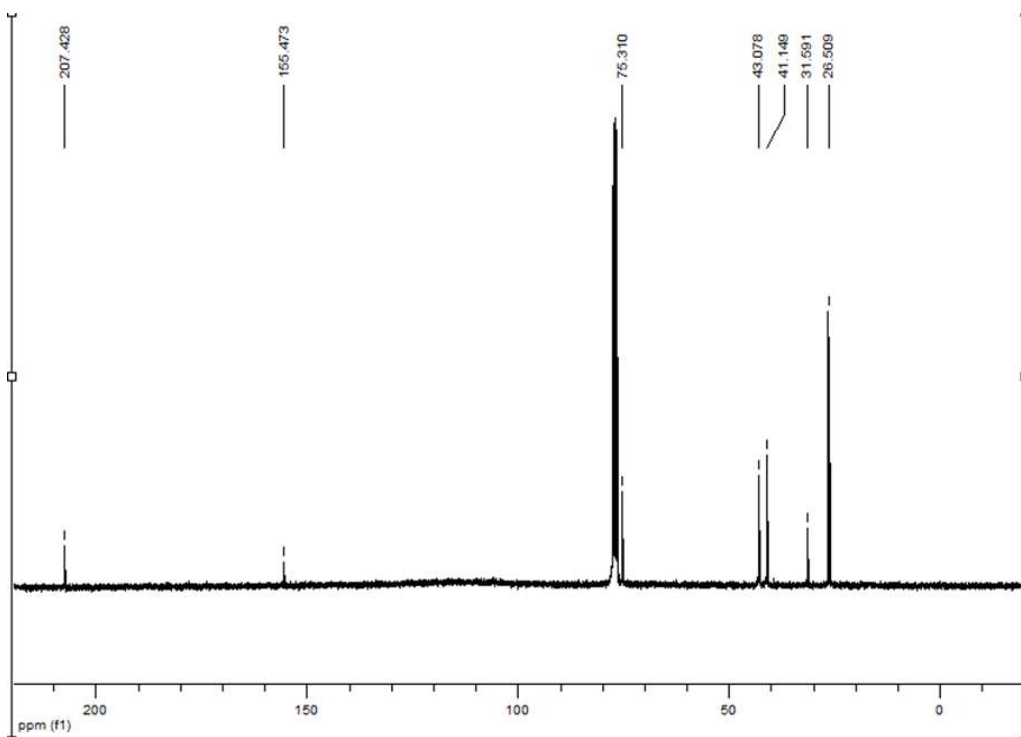


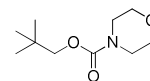


$^1\text{H}$  NMR neopentyl 4-oxopiperidine-1-carboxylate ( $\text{CDCl}_3$ ) **4a**

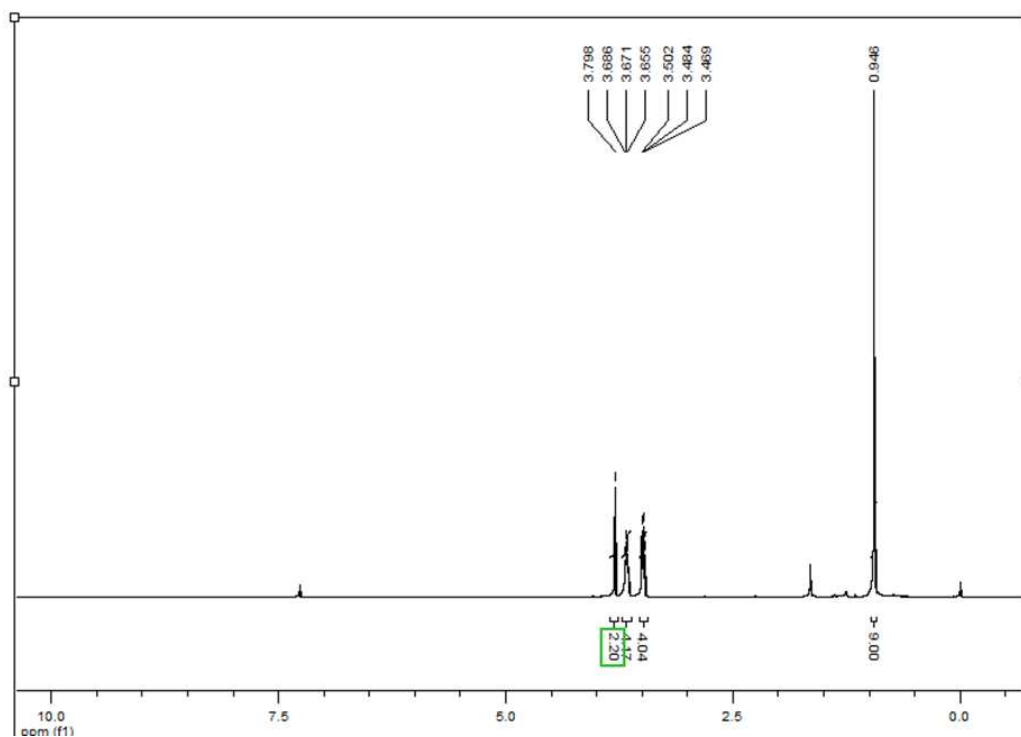


$^{13}\text{C}$  NMR neopentyl 4-oxopiperidine-1-carboxylate ( $\text{CDCl}_3$ ) **4a**

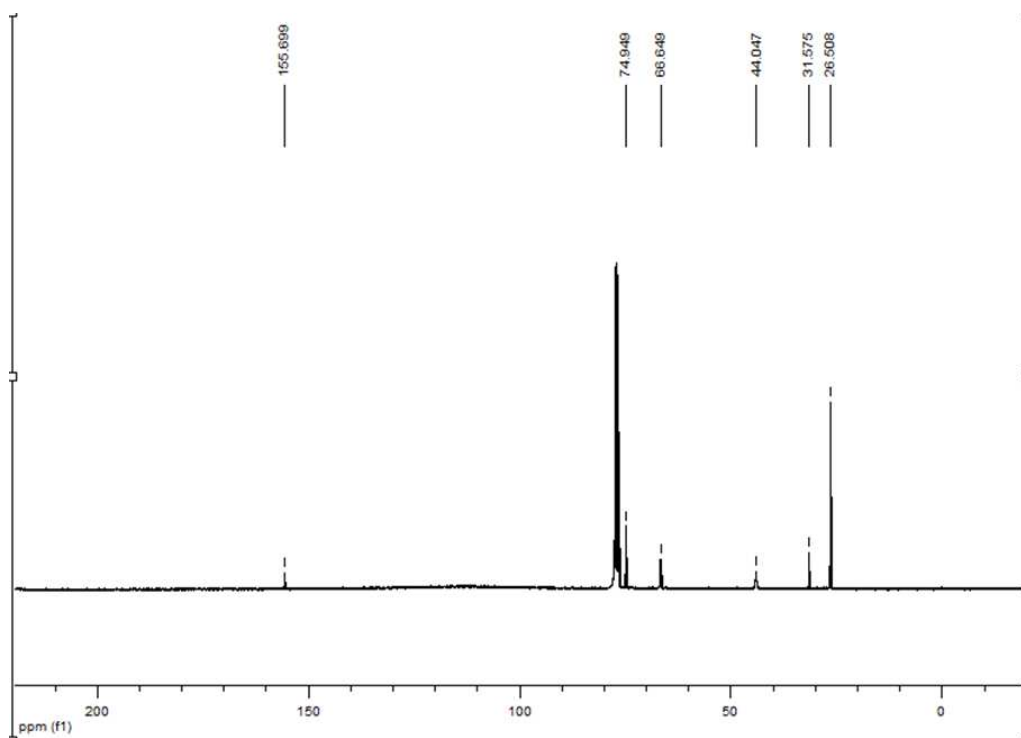


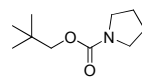


$^1\text{H}$  NMR neopentyl morpholine-4-carboxylate ( $\text{CDCl}_3$ ) **4b**

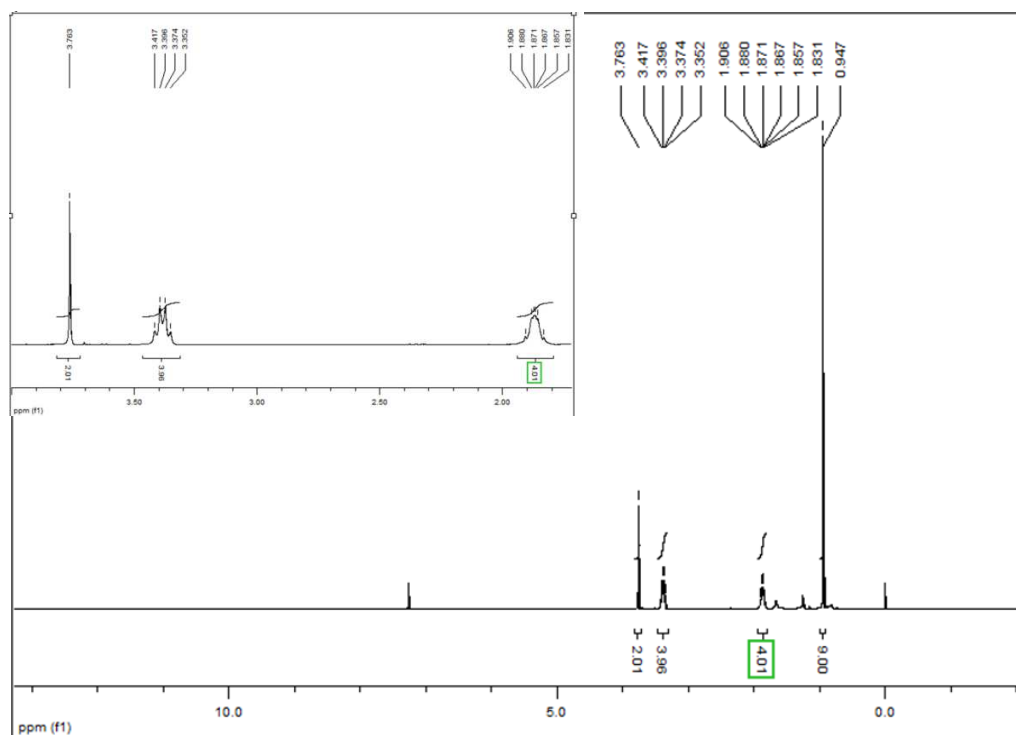


$^{13}\text{C}$  NMR neopentyl morpholine-4-carboxylate ( $\text{CDCl}_3$ ) **4b**

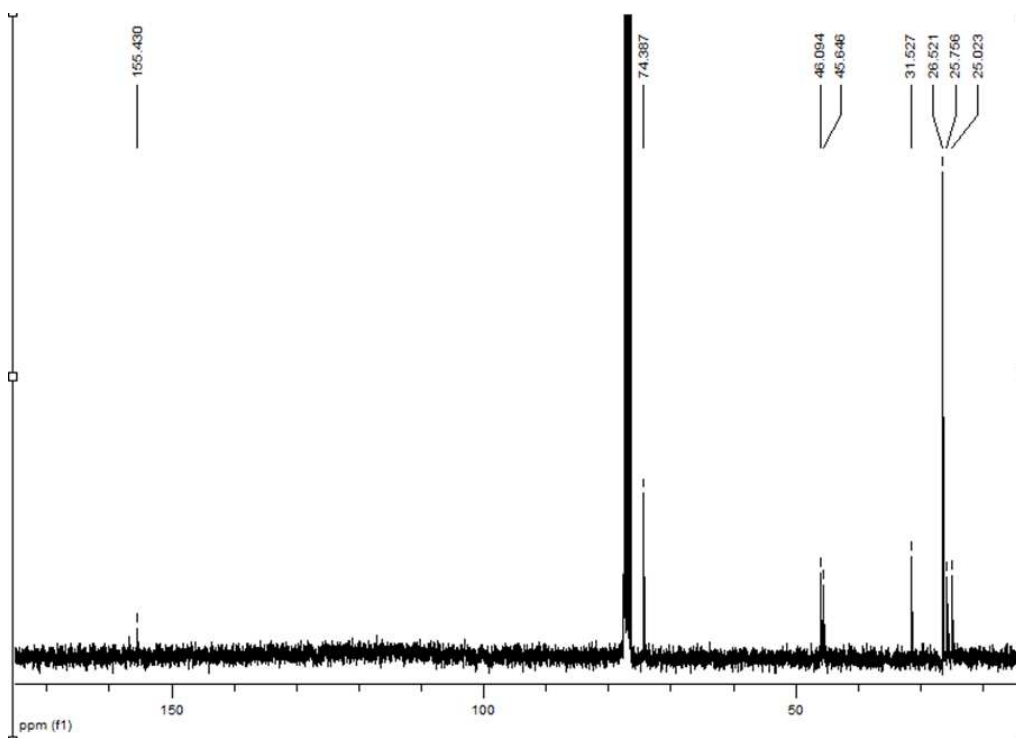




$^1\text{H}$  NMR neopentyl pyrrolidine-1-carboxylate ( $\text{CDCl}_3$ ) **4c**

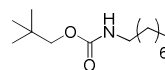


$^{13}\text{C}$  NMR neopentyl pyrrolidine-1-carboxylate ( $\text{CDCl}_3$ ) **4c**

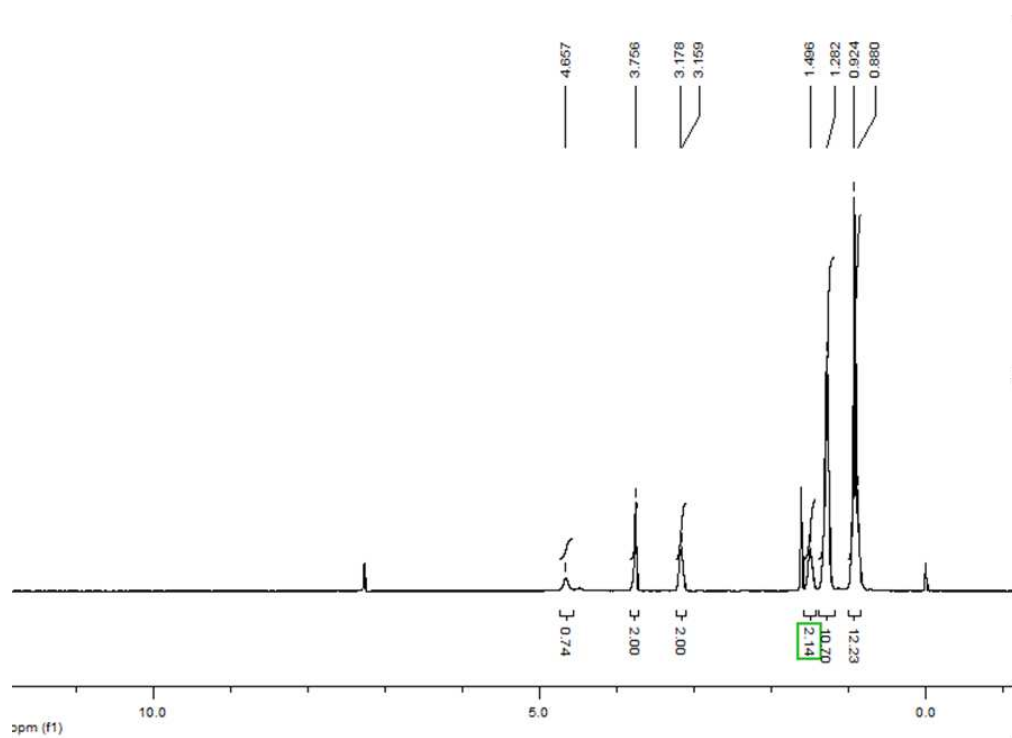


$^1\text{H}$

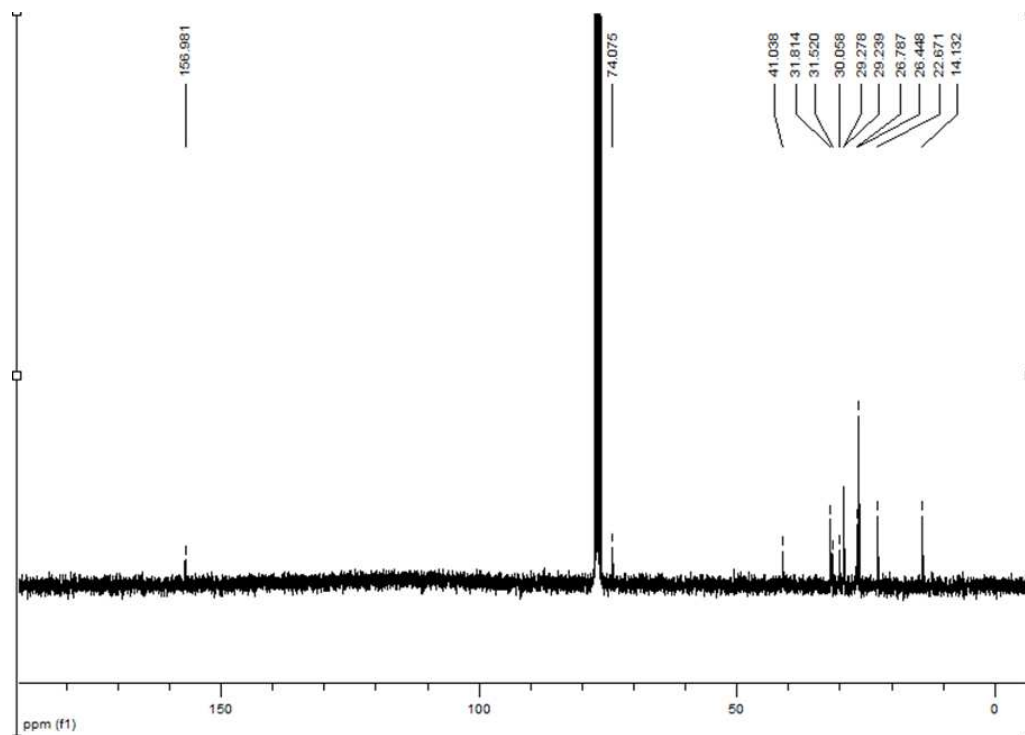
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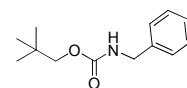


NMR neopentyl octylcarbamate (CDCl<sub>3</sub>) **4d**

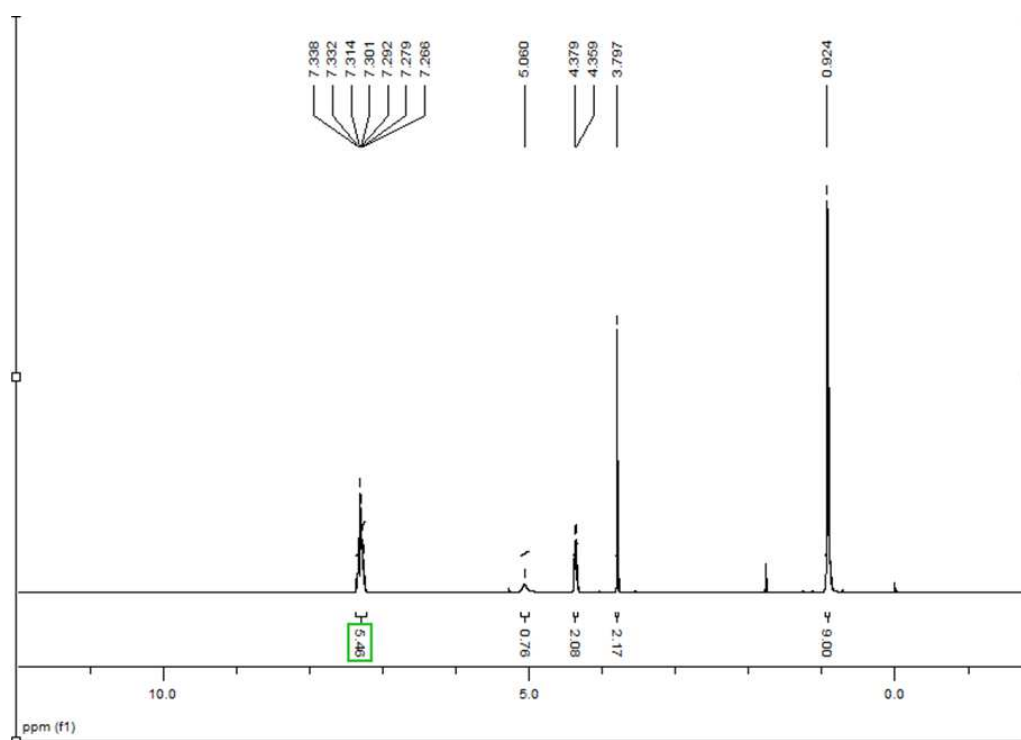


<sup>13</sup>C NMR neopentyl octylcarbamate (CDCl<sub>3</sub>) **4d**

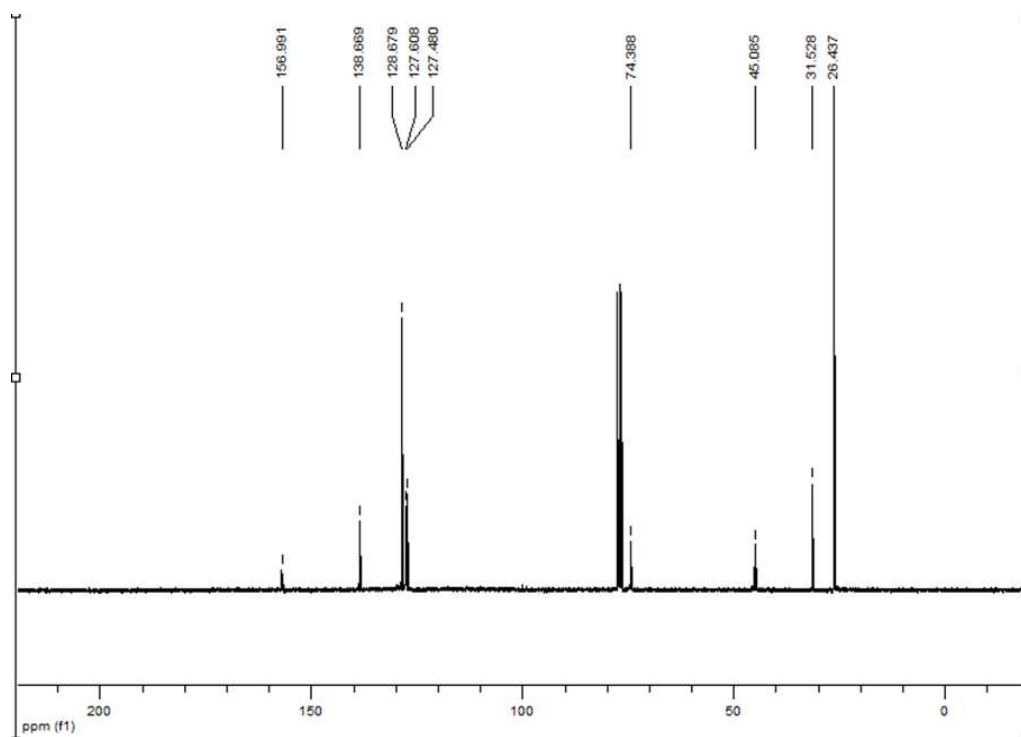


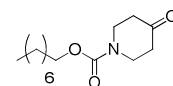


$^1\text{H}$  NMR neopentyl benzylcarbamate ( $\text{CDCl}_3$ ) **4e**

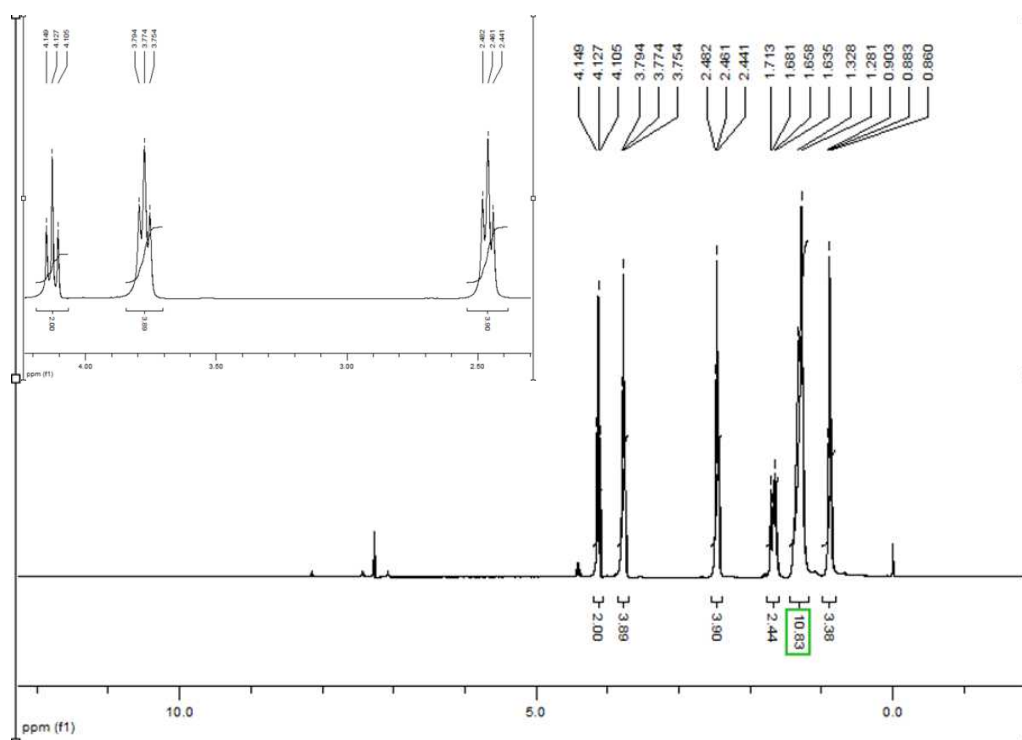


$^{13}\text{C}$  NMR neopentyl benzylcarbamate ( $\text{CDCl}_3$ ) **4d**

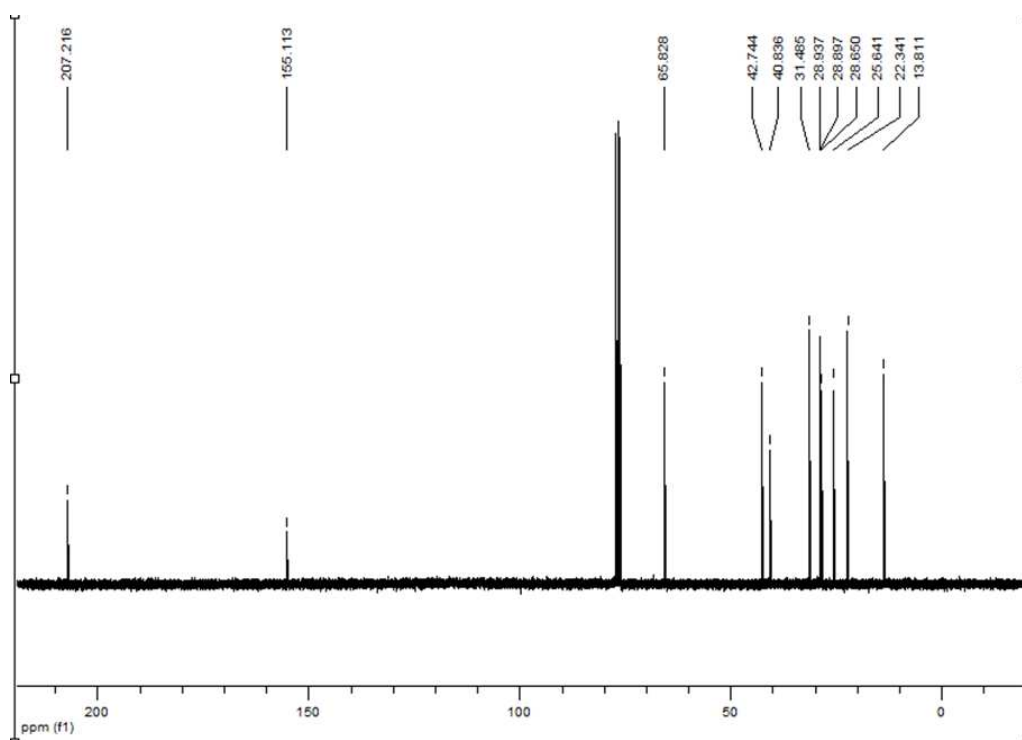


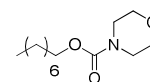


$^1\text{H}$  NMR octyl 4-oxopiperidine-1-carboxylate ( $\text{CDCl}_3$ ) **4f**

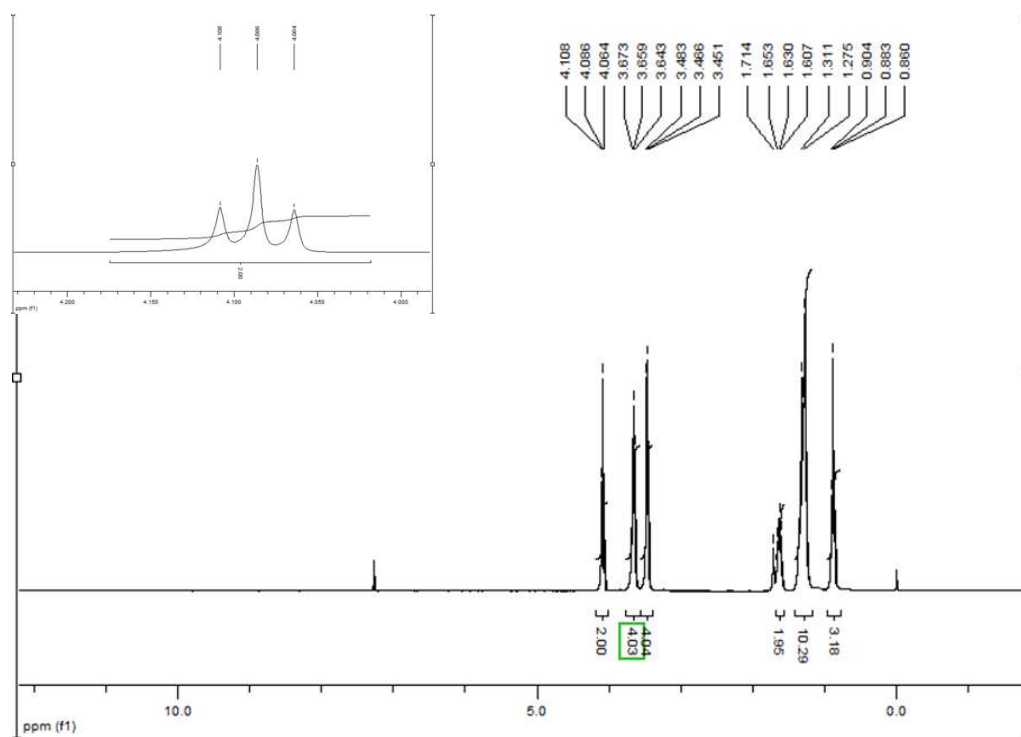


$^{13}\text{C}$  NMR octyl 4-oxopiperidine-1-carboxylate ( $\text{CDCl}_3$ ) **4f**

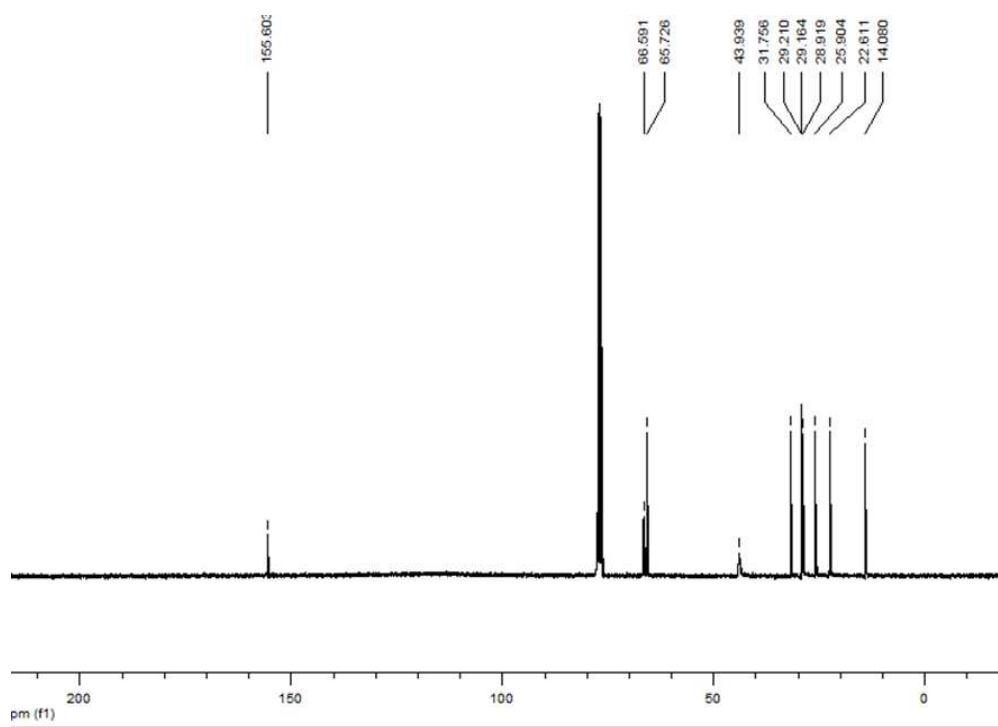




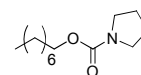
$^1\text{H}$  octyl morpholine-4-carboxylate ( $\text{CDCl}_3$ ) **4g**



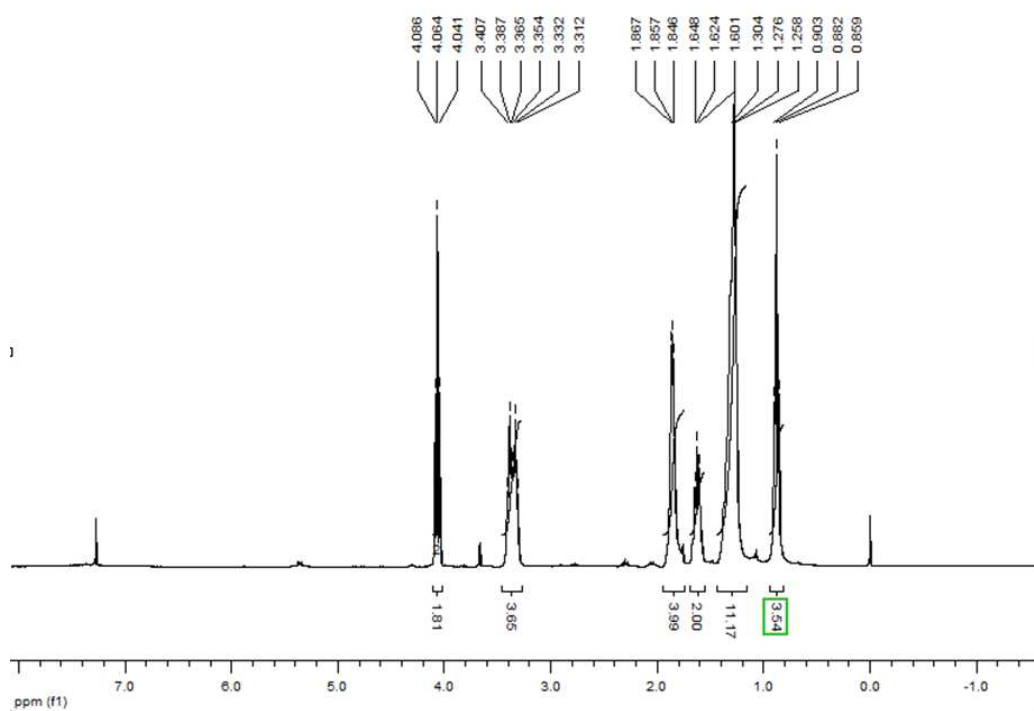
$^{13}\text{C}$  octyl morpholine-4-carboxylate ( $\text{CDCl}_3$ ) **4g**



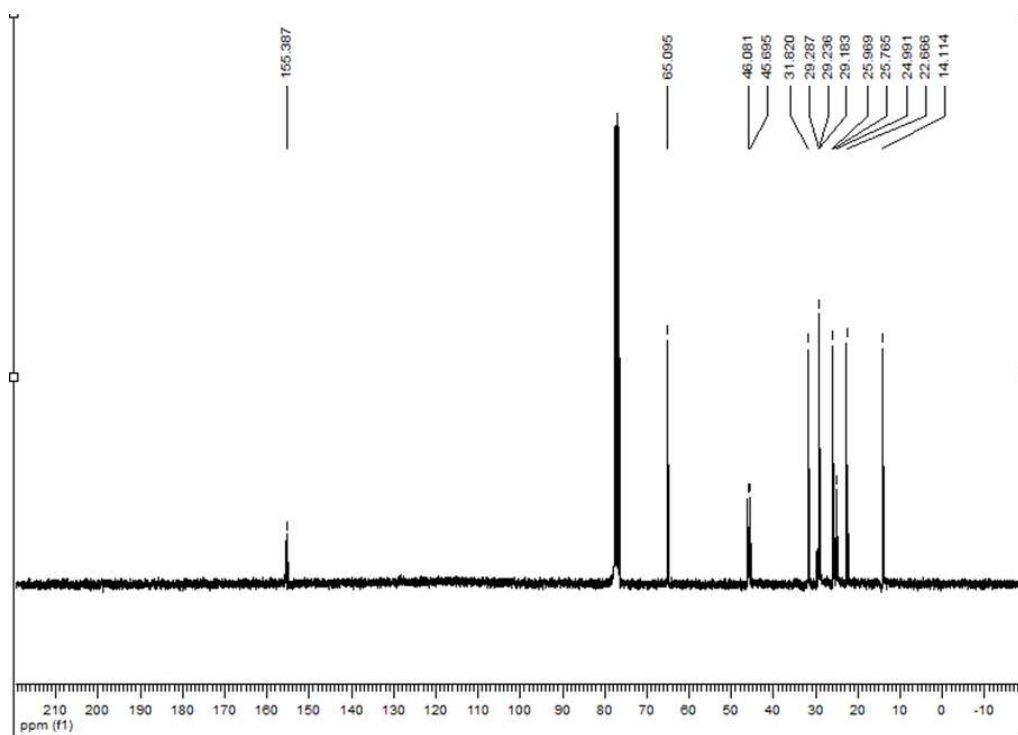


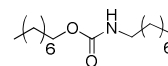


$^1\text{H}$  NMR octyl pyrrolidine-1-carboxylate ( $\text{CDCl}_3$ ) **4h**

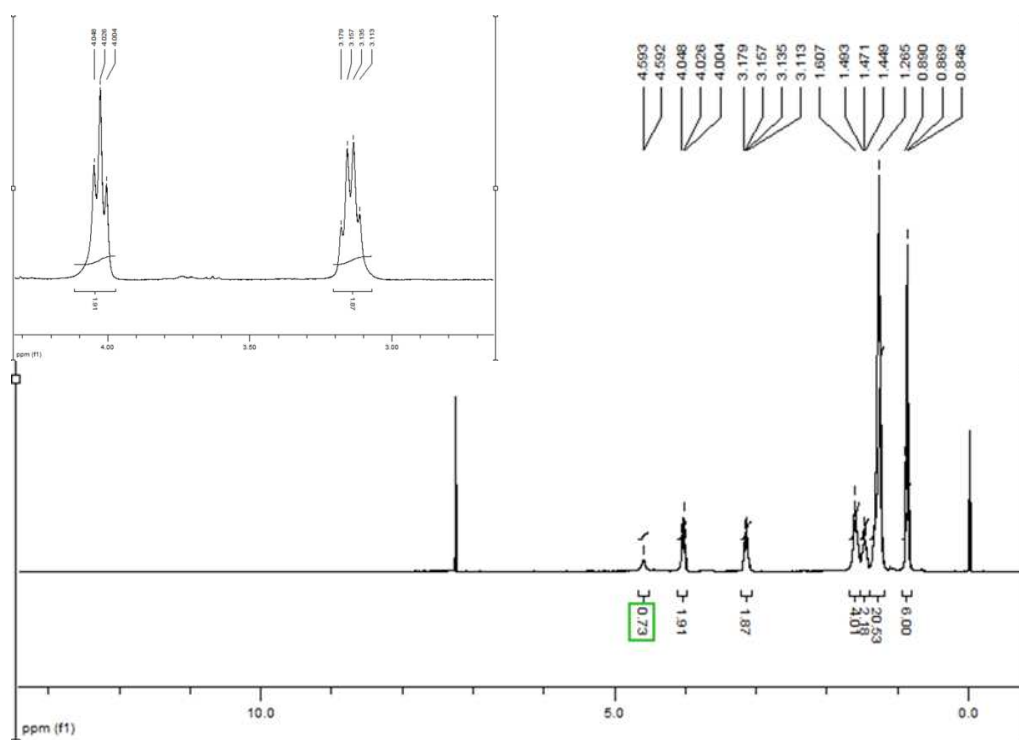


$^{13}\text{C}$  NMR octyl pyrrolidine-1-carboxylate ( $\text{CDCl}_3$ ) **4h**

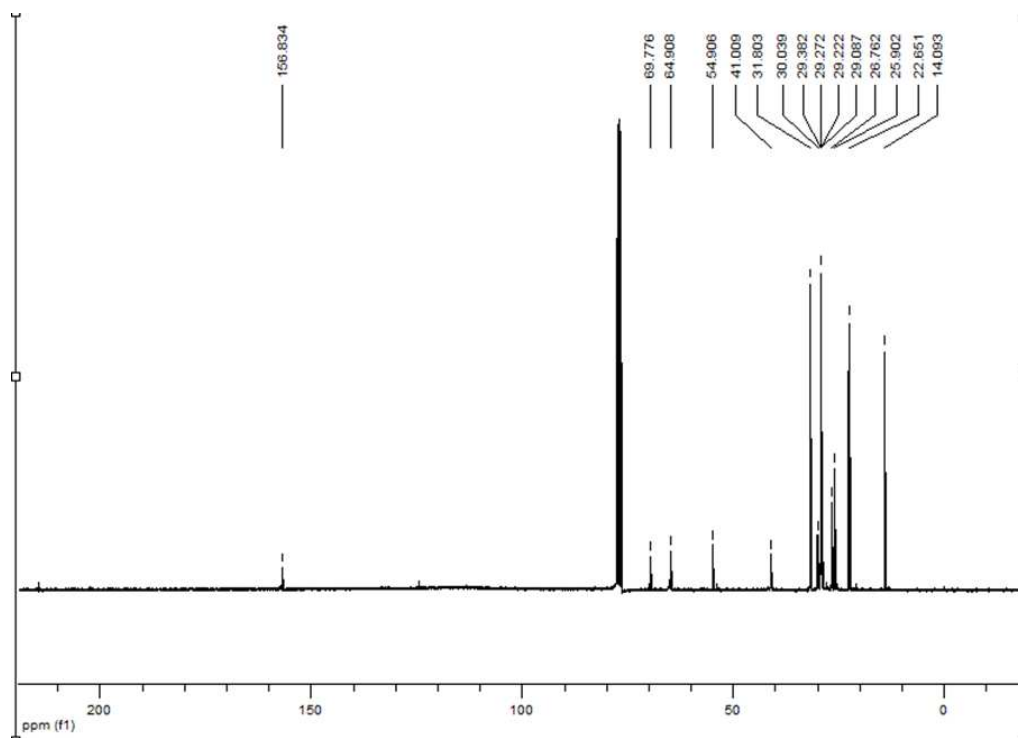


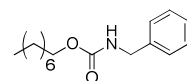


$^1\text{H}$  NMR octyl octylcarbamate ( $\text{CDCl}_3$ ) **4i**

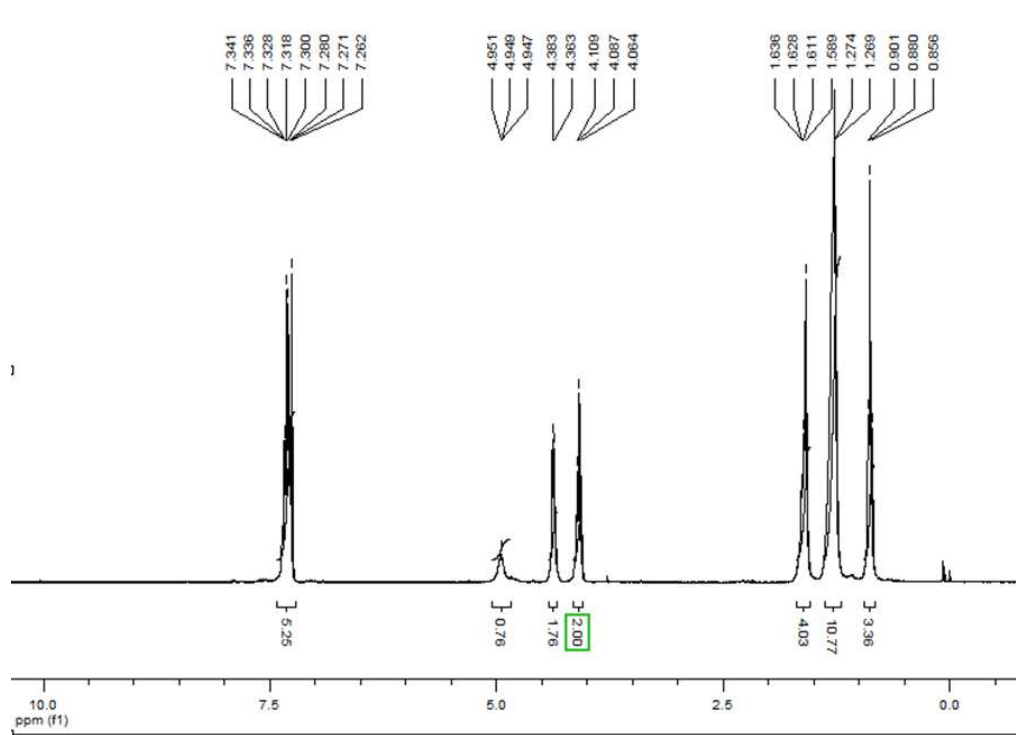


$^{13}\text{C}$  NMR octyl octylcarbamate ( $\text{CDCl}_3$ ) **4i**

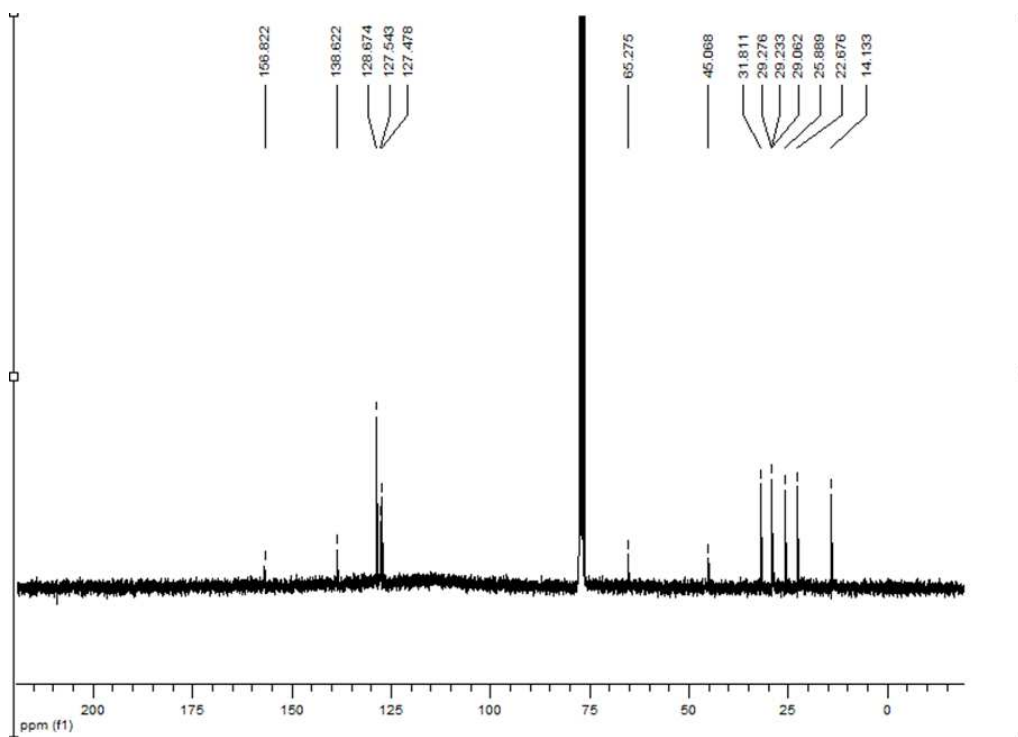


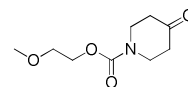


$^1\text{H}$  NMR octyl benzylcarbamate ( $\text{CDCl}_3$ ) **4j**

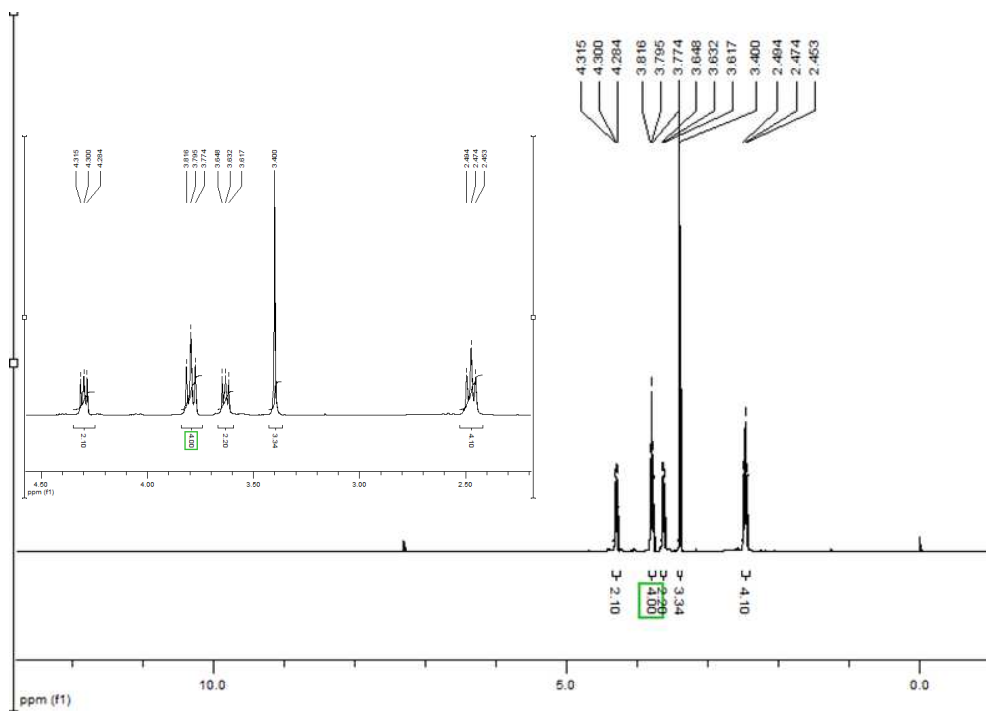


$^{13}\text{C}$  NMR octyl benzylcarbamate ( $\text{CDCl}_3$ ) **4j**

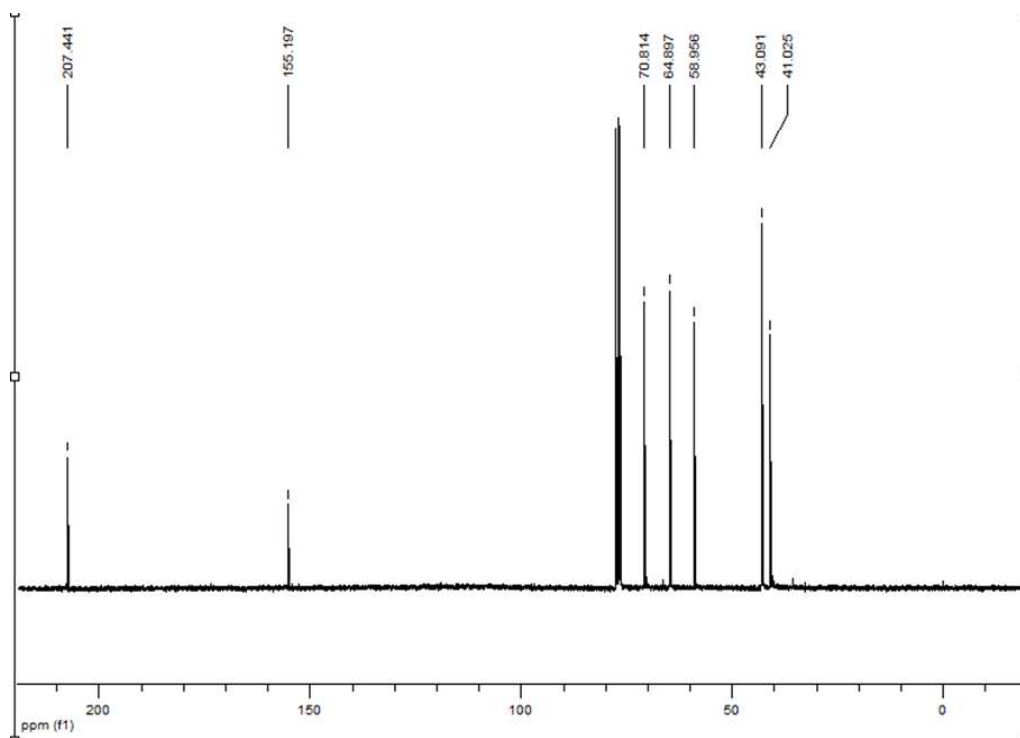


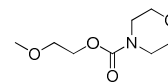


$^1\text{H}$  NMR 2-methoxyethyl 4-oxopiperidine-1-carboxylate ( $\text{CDCl}_3$ ) **4k**

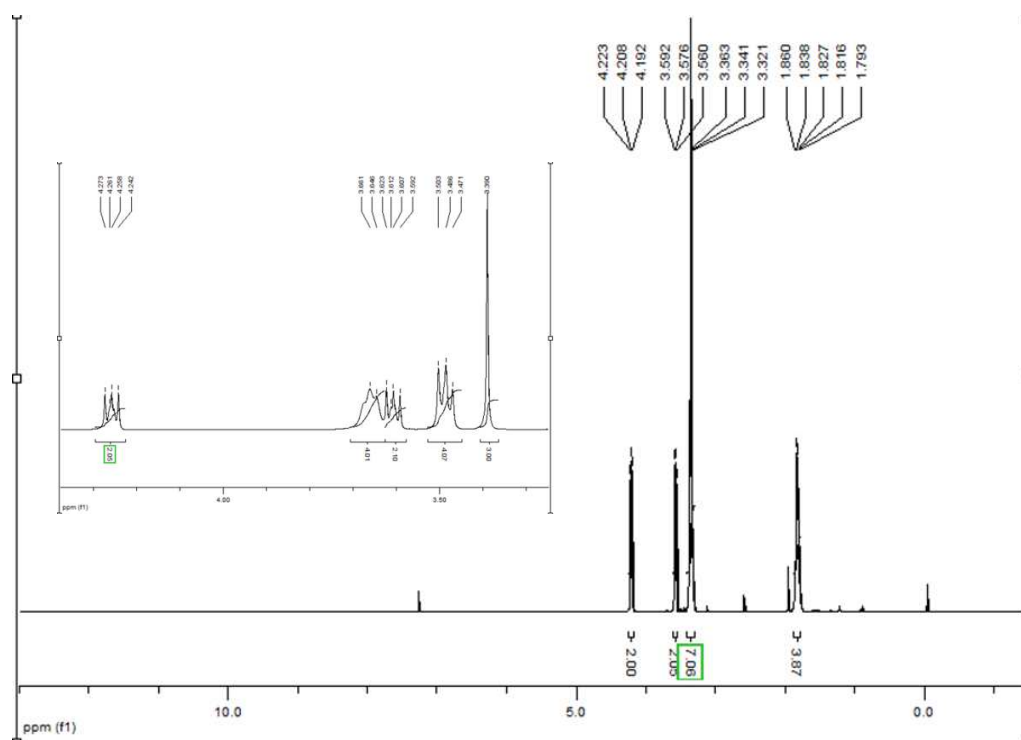


$^{13}\text{C}$  NMR 2-methoxyethyl 4-oxopiperidine-1-carboxylate ( $\text{CDCl}_3$ ) **4k**

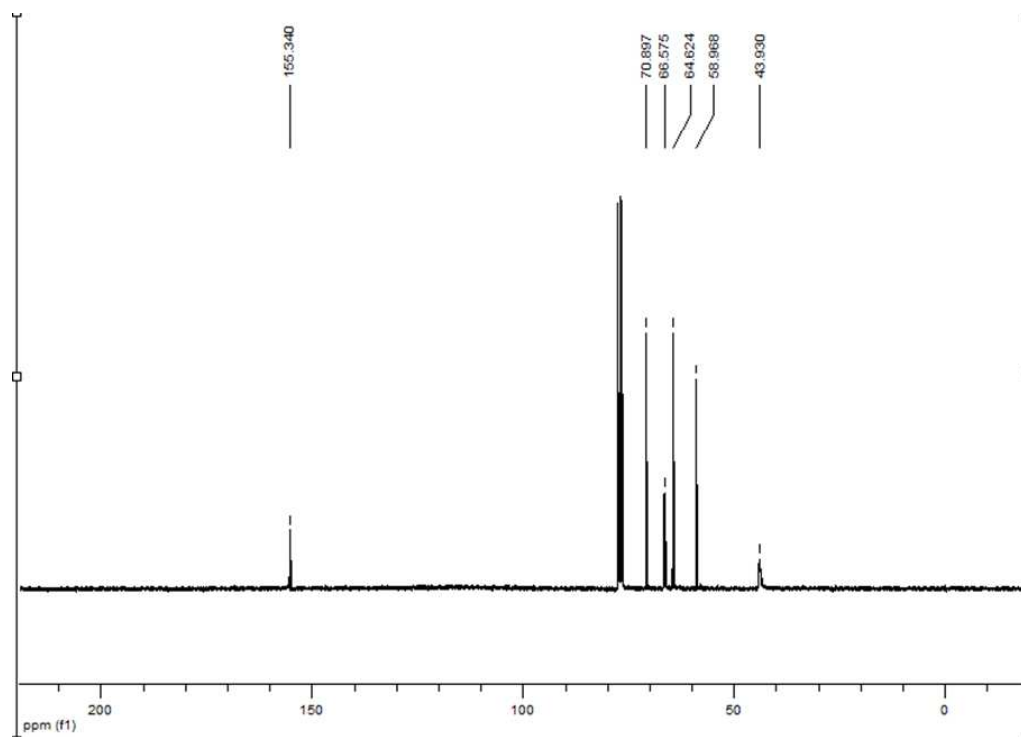


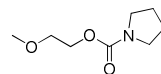


<sup>1</sup>H NMR 2-methoxyethyl morpholine-4-carboxylate (CDCl<sub>3</sub>) **4I**

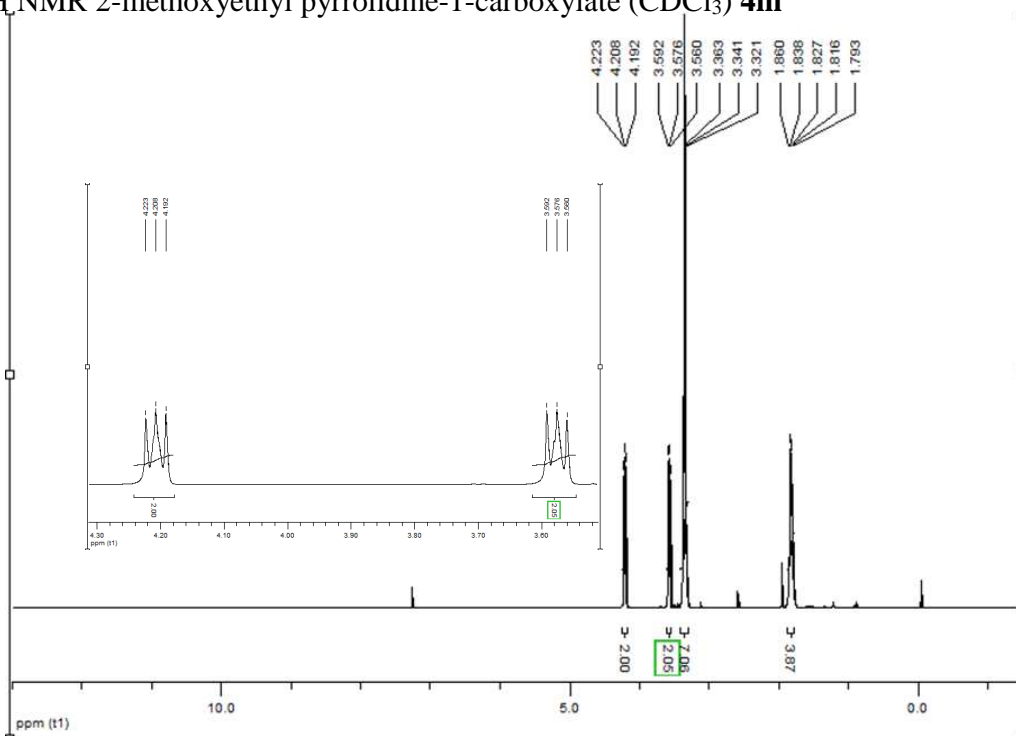


<sup>13</sup>C NMR 2-methoxyethyl morpholine-4-carboxylate (CDCl<sub>3</sub>) **4I**

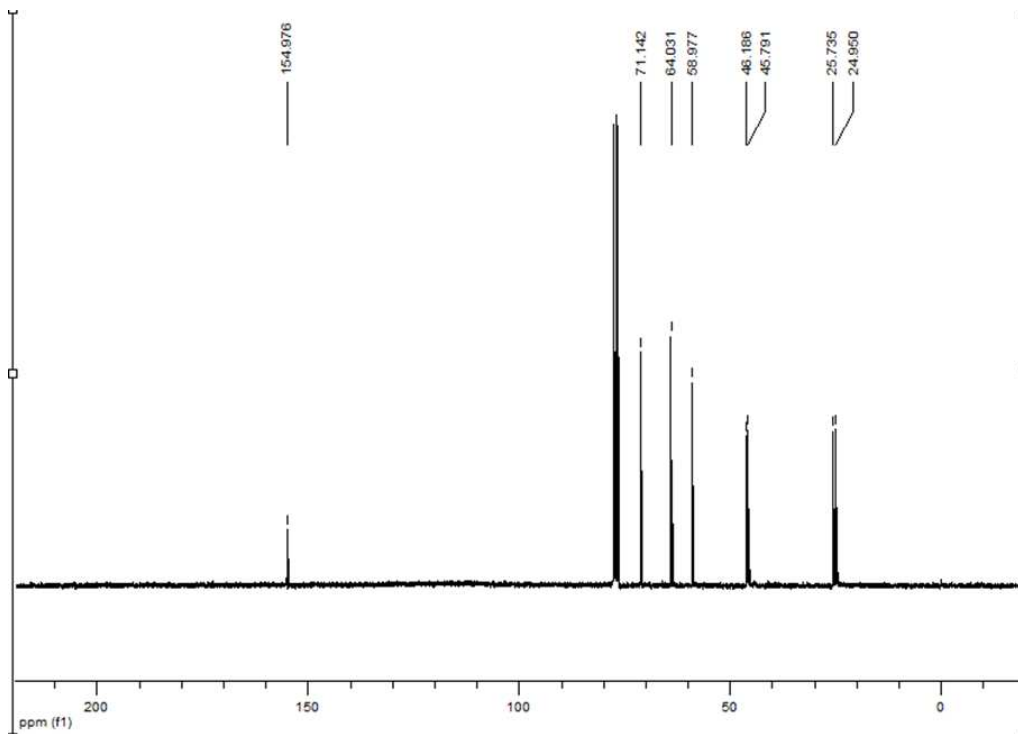


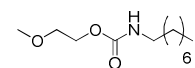


<sup>1</sup>H NMR 2-methoxyethyl pyrrolidine-1-carboxylate (CDCl<sub>3</sub>) **4m**

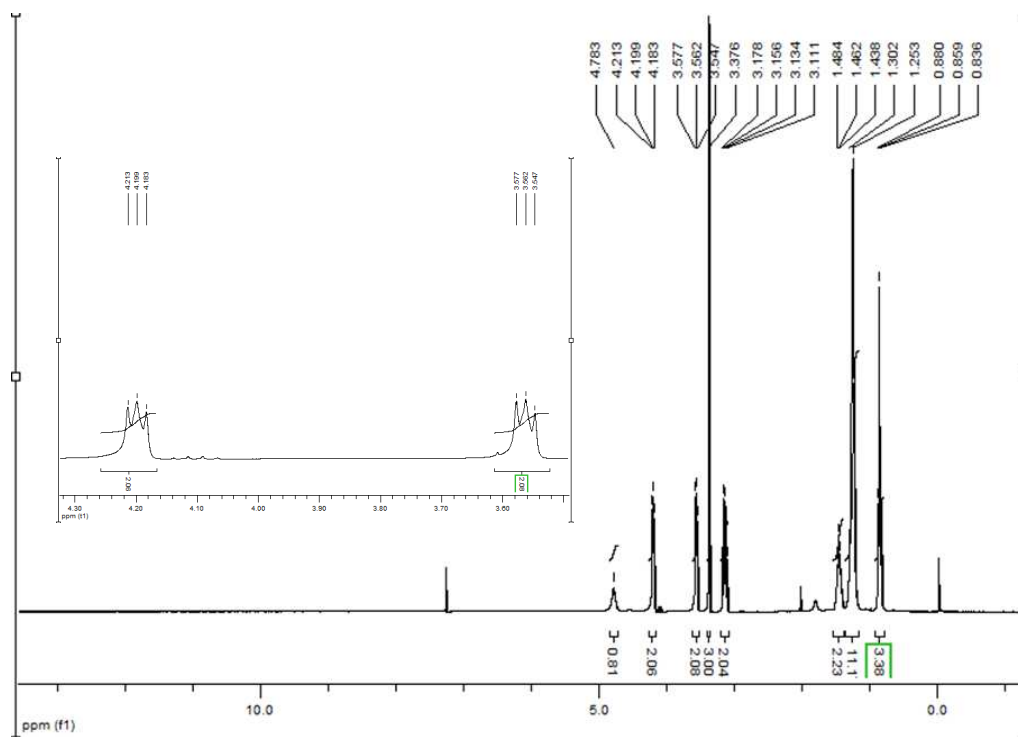


<sup>13</sup>C NMR 2-methoxyethyl pyrrolidine-1-carboxylate (CDCl<sub>3</sub>) **4m**

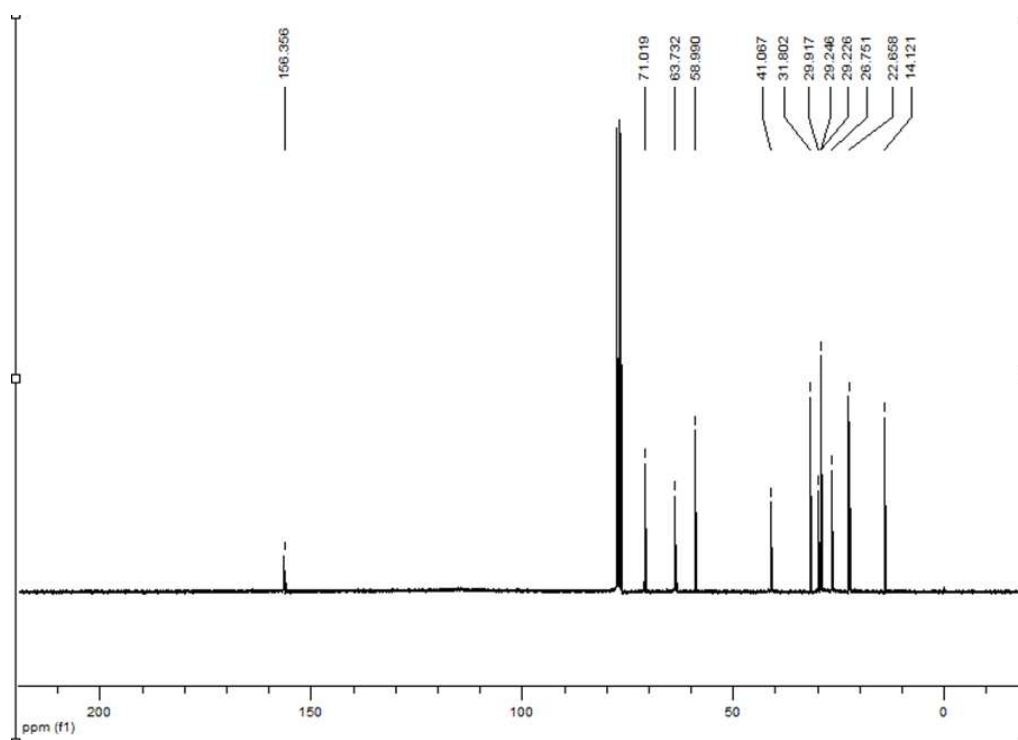


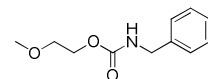


$^1\text{H}$  NMR 2-methoxyethyl octylcarbamate ( $\text{CDCl}_3$ ) **4n**

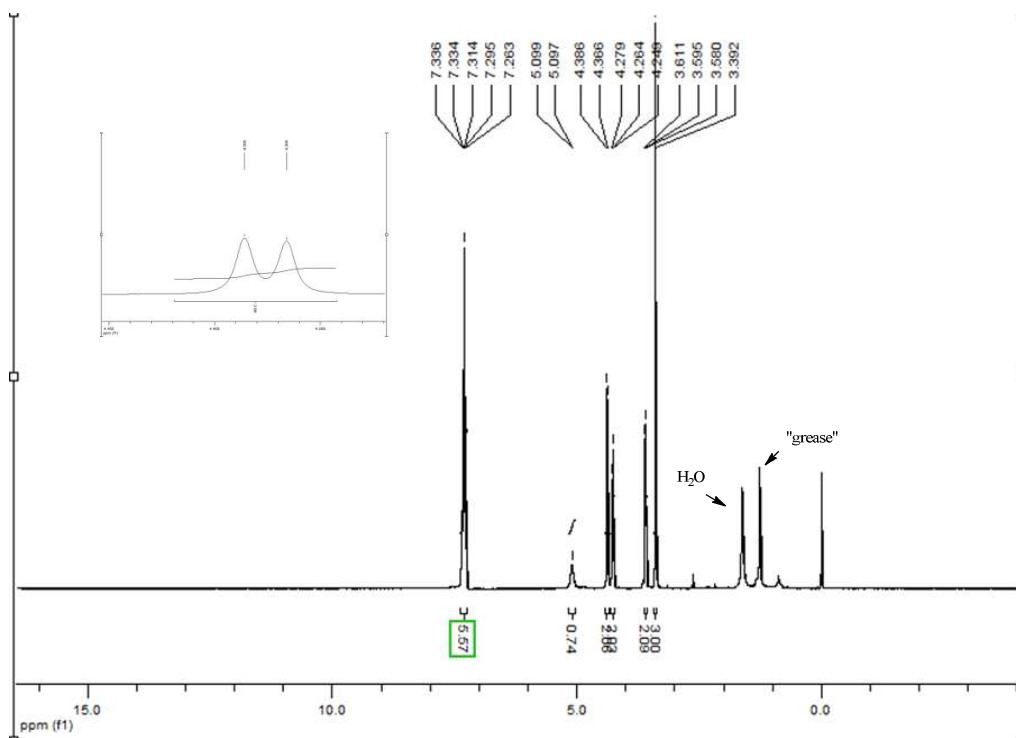


$^{13}\text{C}$  NMR 2-methoxyethyl octylcarbamate ( $\text{CDCl}_3$ ) **4n**

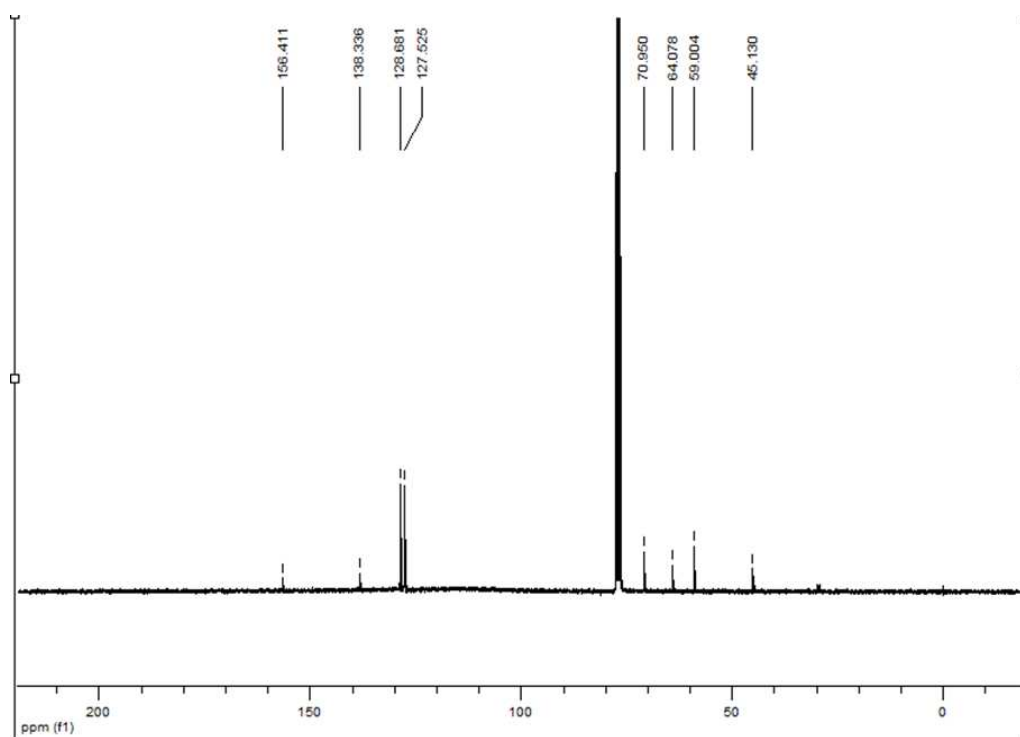




$^1\text{H}$  NMR 2-methoxyethyl benzylcarbamate ( $\text{CDCl}_3$ ) **4o**

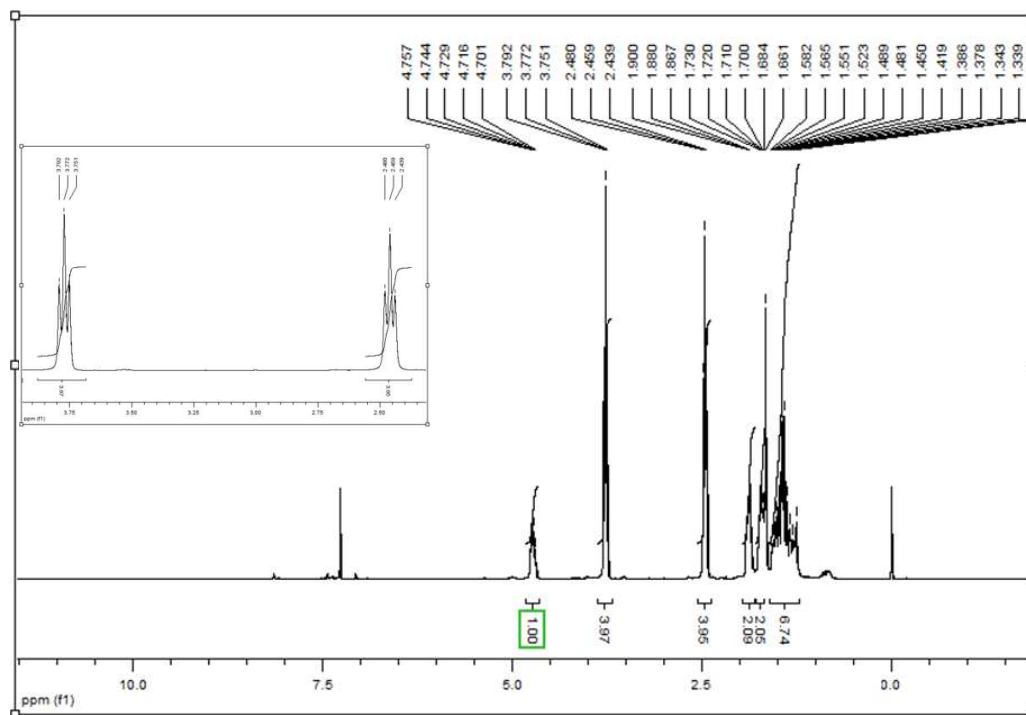
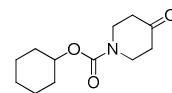


$^{13}\text{C}$  NMR 2-methoxyethyl benzylcarbamate ( $\text{CDCl}_3$ ) **4o**

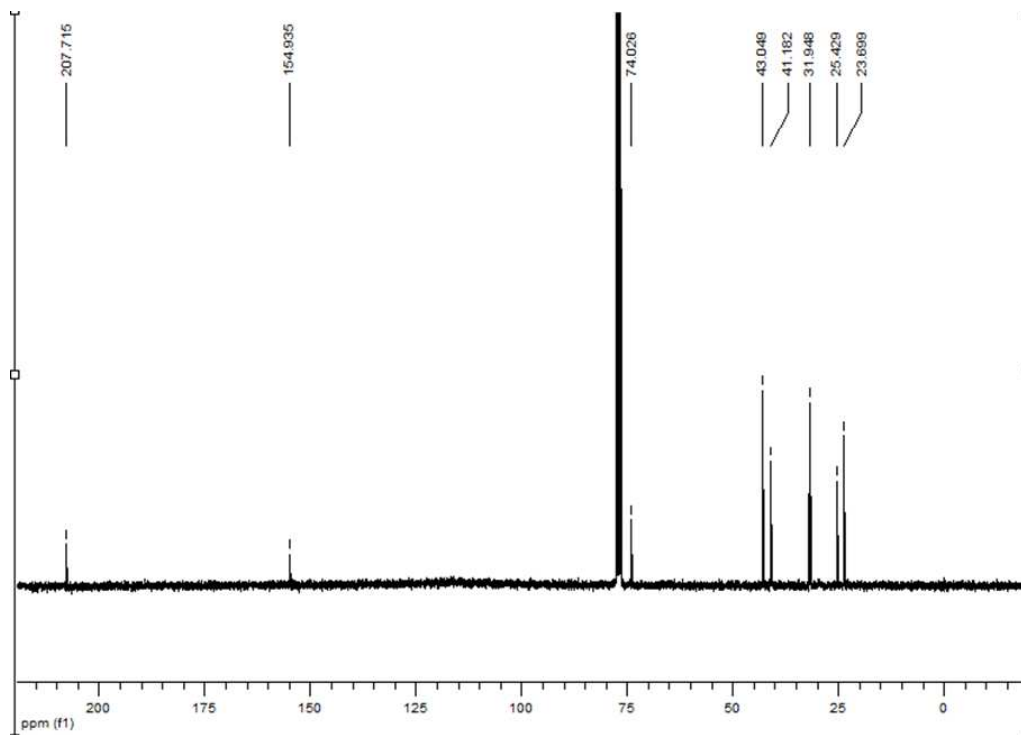


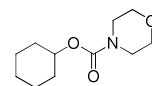


$^1\text{H}$  NMR cyclohexyl 4-oxopiperidine-1-carboxylate ( $\text{CDCl}_3$ ) **4p**

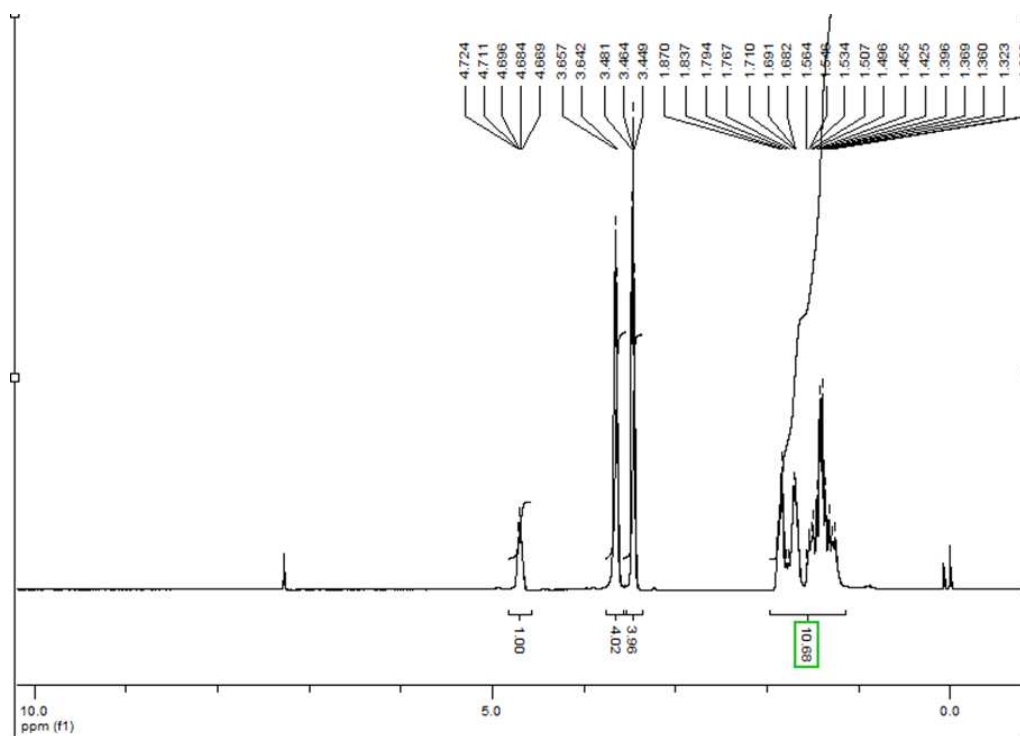


$^{13}\text{C}$  NMR cyclohexyl 4-oxopiperidine-1-carboxylate ( $\text{CDCl}_3$ ) **4p**

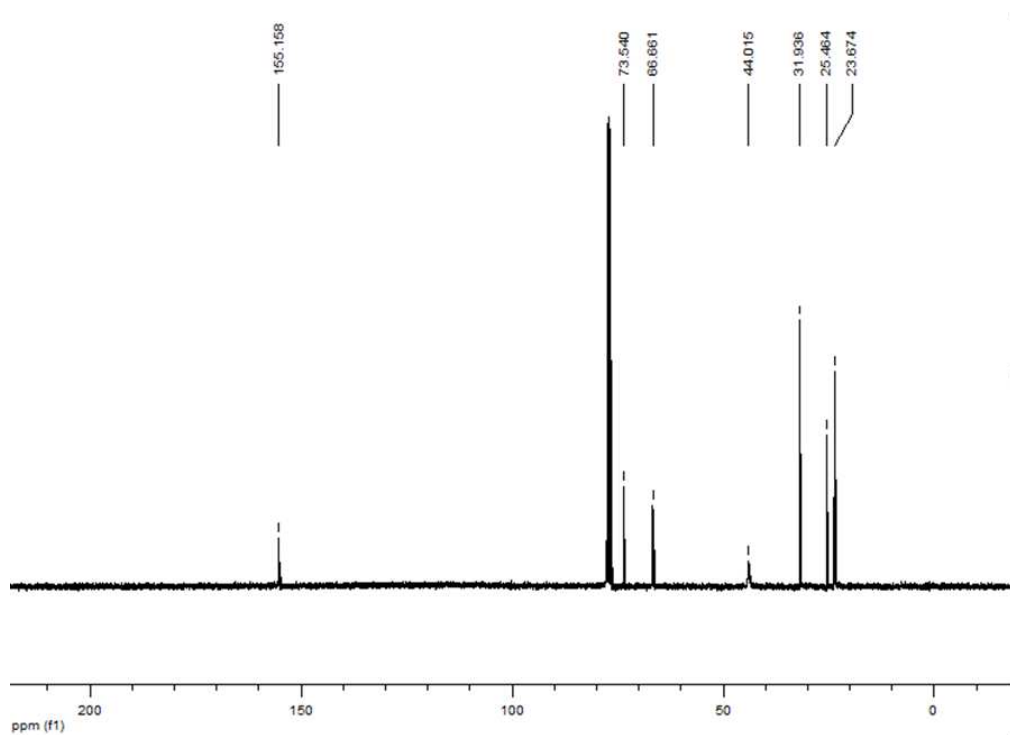


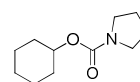


$^1\text{H}$  NMR cyclohexyl morpholine-4-carboxylate ( $\text{CDCl}_3$ ) **4q**

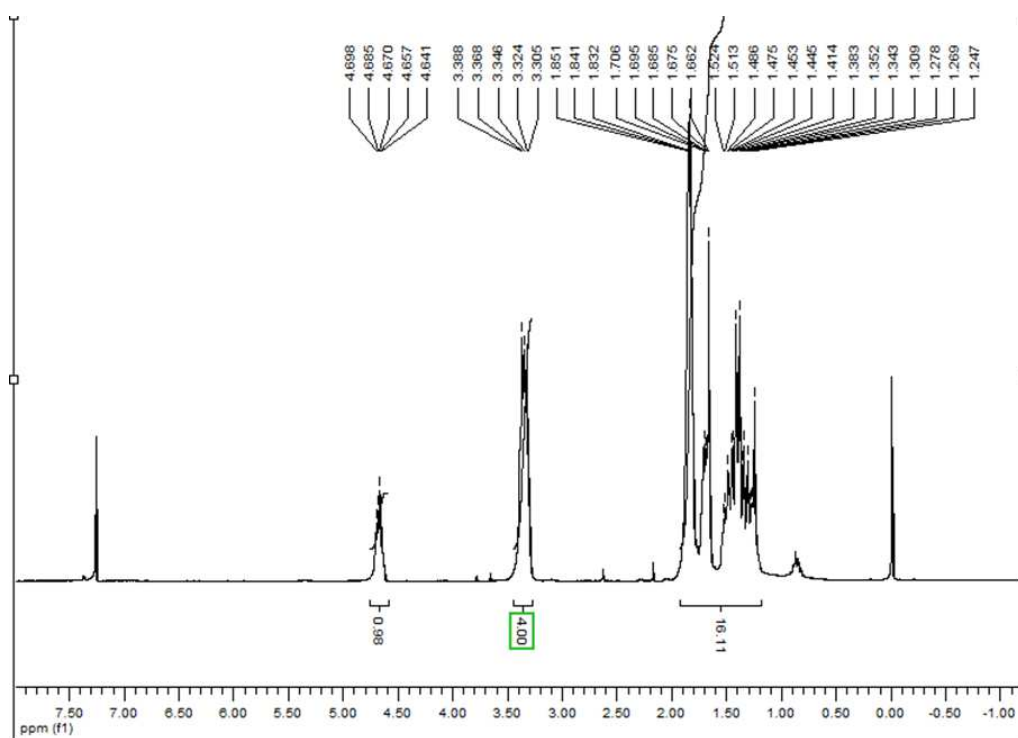


$^{13}\text{C}$  NMR cyclohexyl morpholine-4-carboxylate ( $\text{CDCl}_3$ ) **4q**

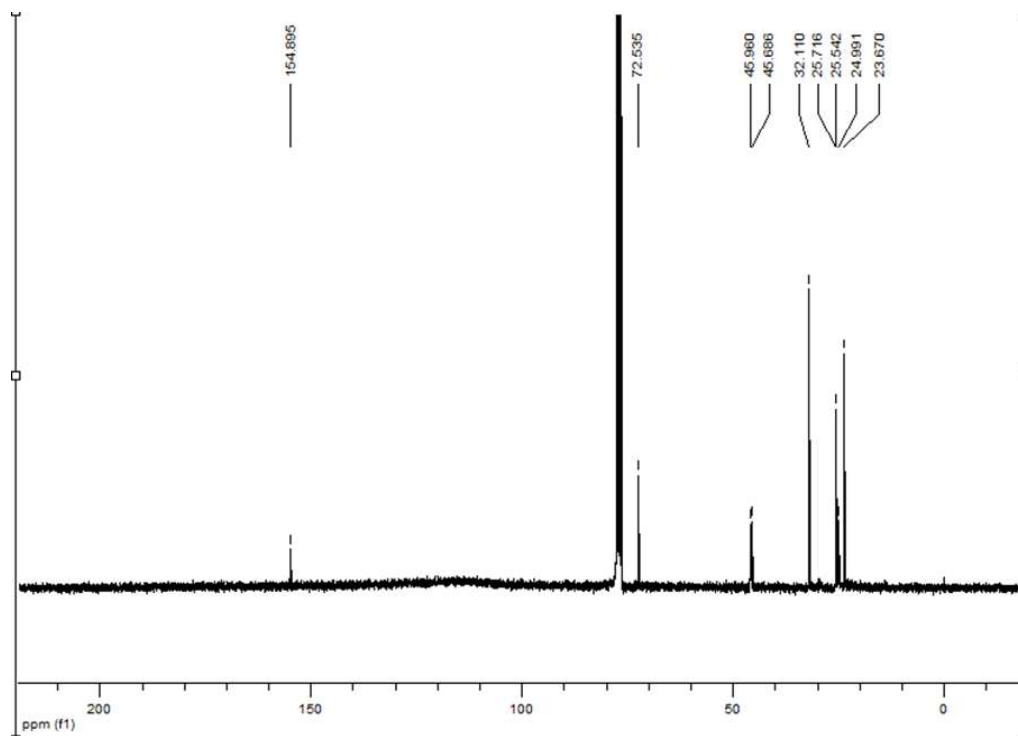


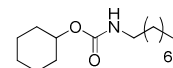


$^1\text{H}$  NMR cyclohexyl pyrrolidine-1-carboxylate ( $\text{CDCl}_3$ ) **4r**

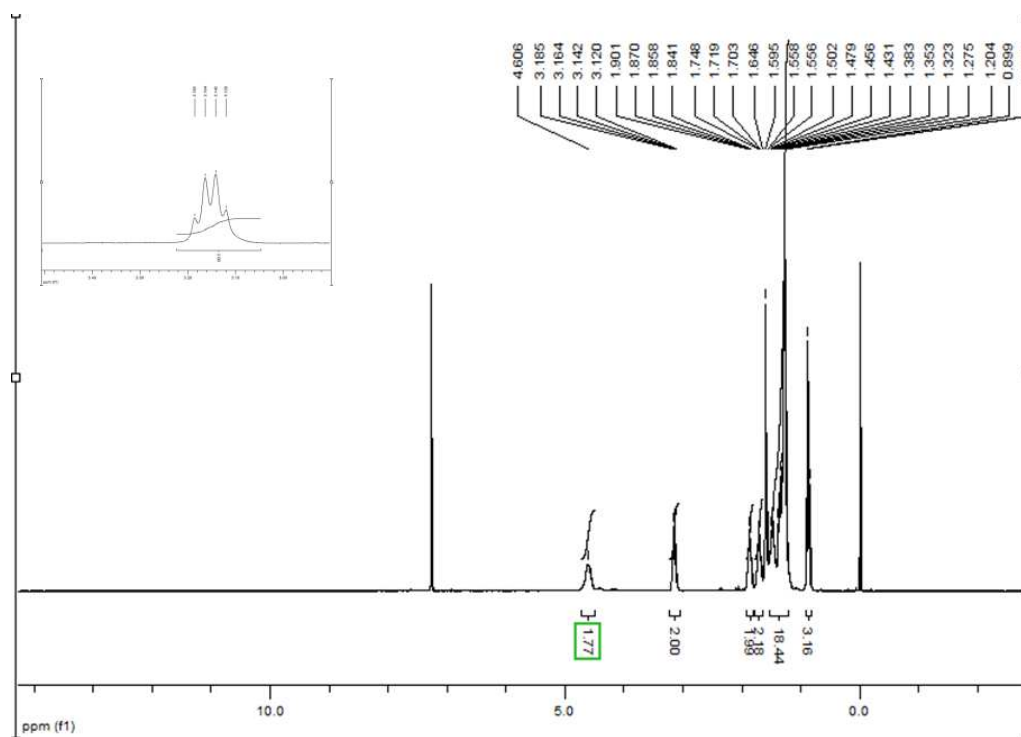


$^{13}\text{C}$  NMR cyclohexyl pyrrolidine-1-carboxylate ( $\text{CDCl}_3$ ) **4r**

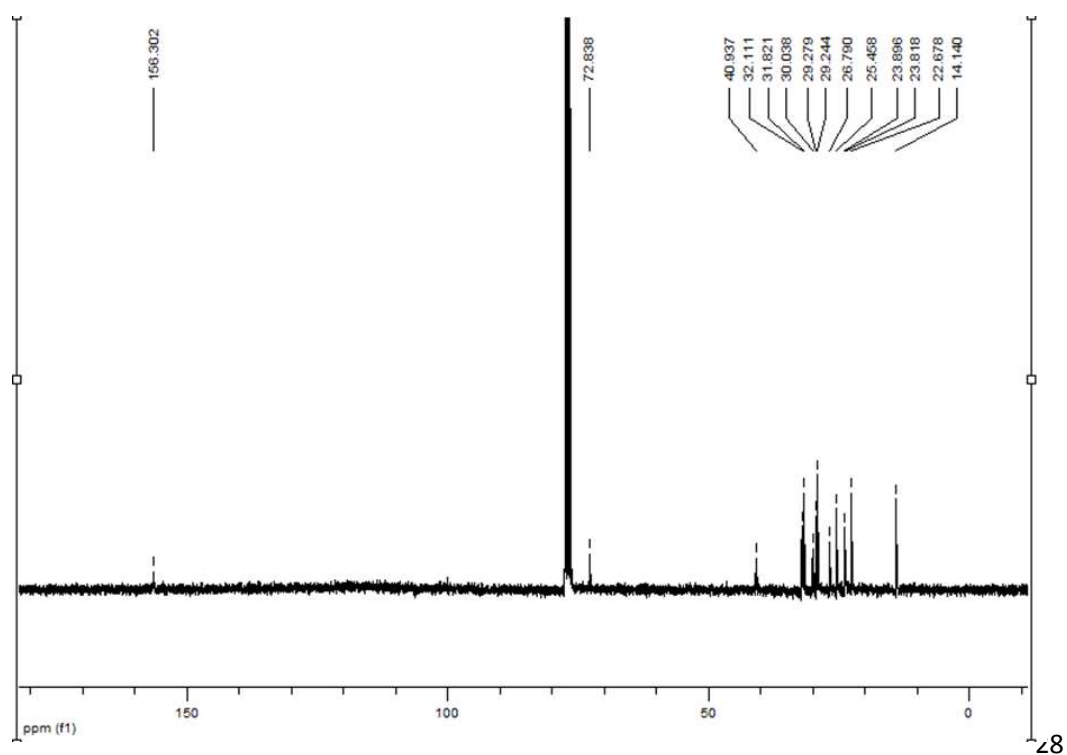


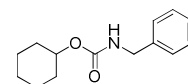


$^1\text{H}$  NMR cyclohexyl octylcarbamate ( $\text{CDCl}_3$ ) **4s**

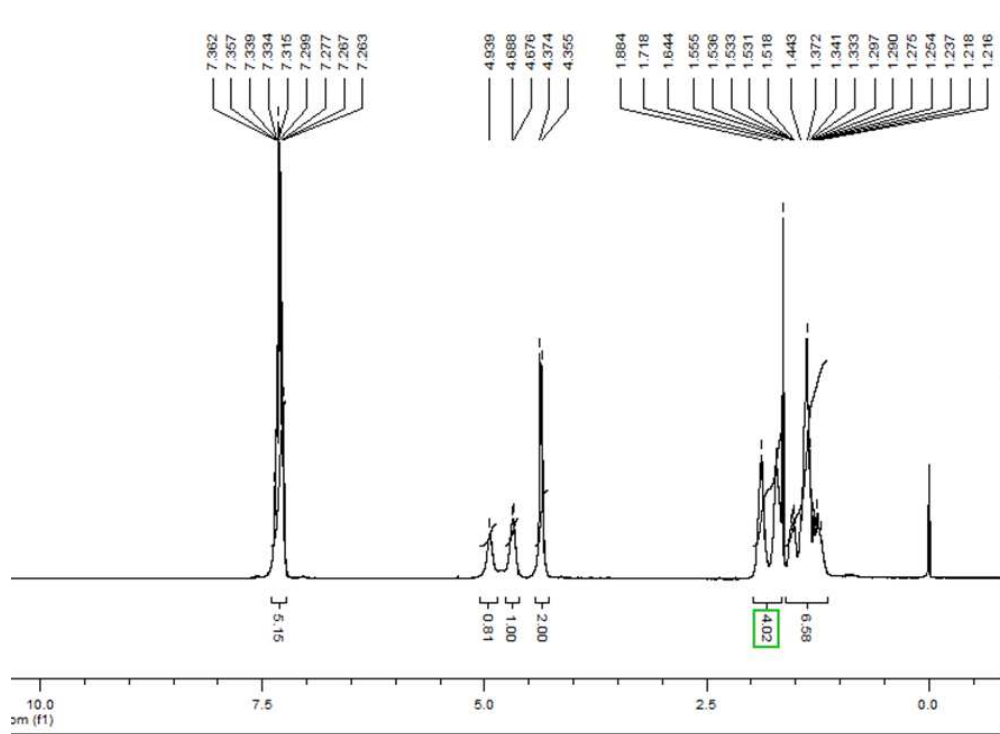


$^{13}\text{C}$  NMR cyclohexyl octylcarbamate ( $\text{CDCl}_3$ ) **4s**





$^1\text{H}$  NMR cyclohexyl benzylcarbamate ( $\text{CDCl}_3$ ) **4t**



$^{13}\text{C}$  NMR Cyclohexyl benzylcarbamate ( $\text{CDCl}_3$ ) **4t**

