

## Concise synthesis of atorvastatin lactone under high-speed vibration milling conditions

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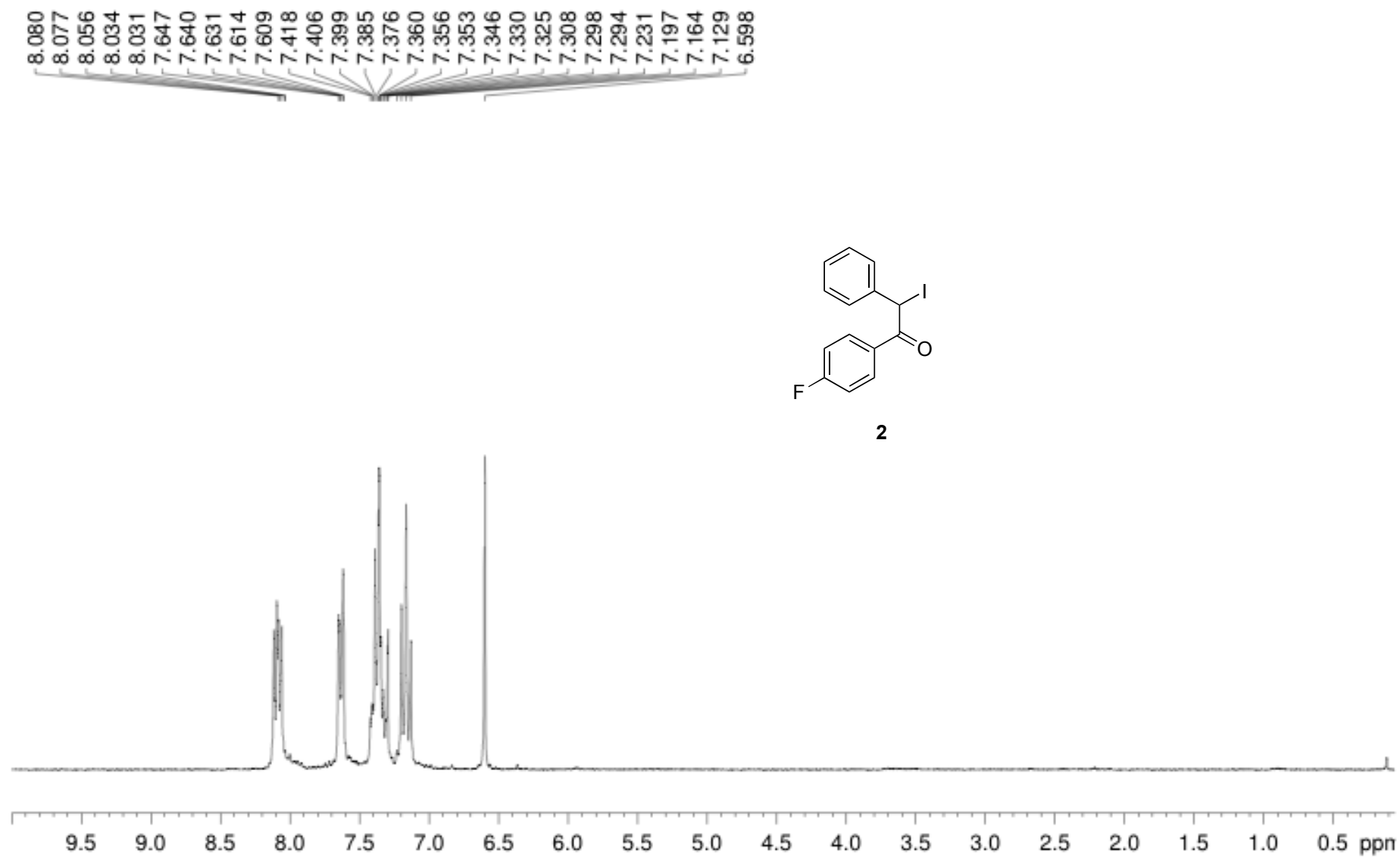
*Departamento de Química Orgánica y Farmacéutica, Facultad de Farmacia*

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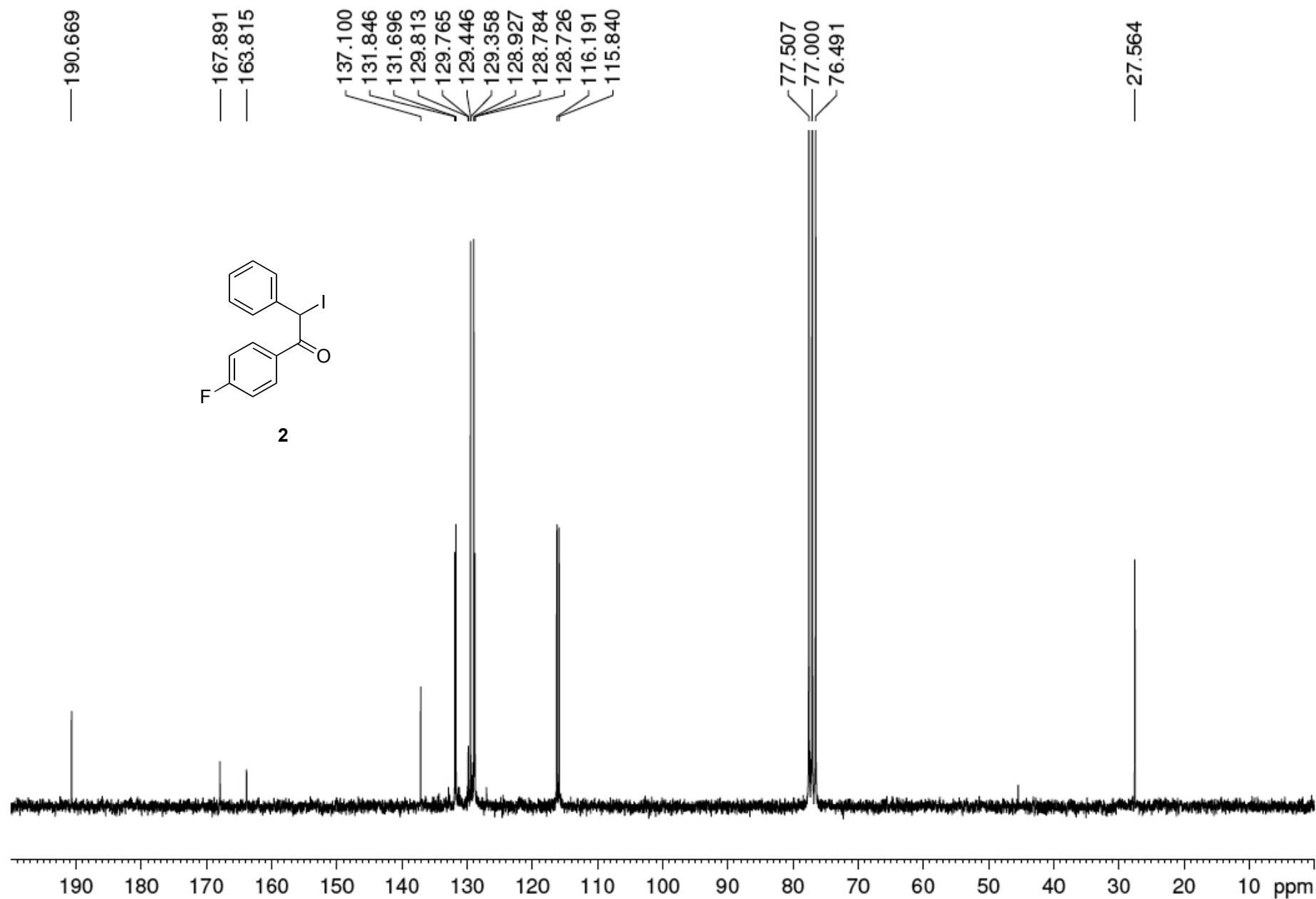
*e-mail: [josecm@farm.ucm.es](mailto:josecm@farm.ucm.es)*

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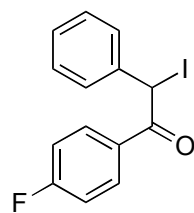
Spectra of compound <b>2</b>	S2-S5
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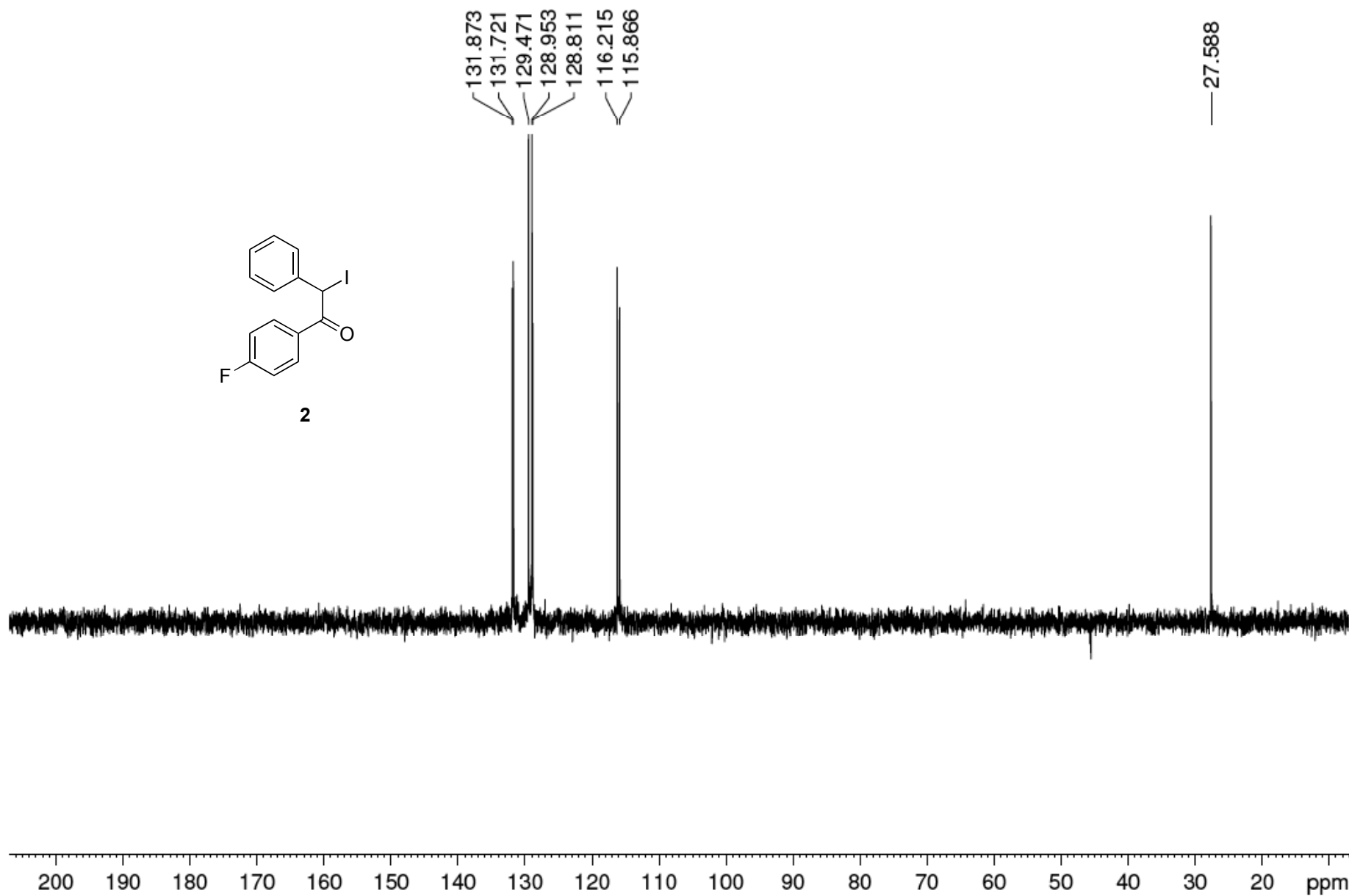
$^1\text{H}$  NMR spectrum of compound **2**



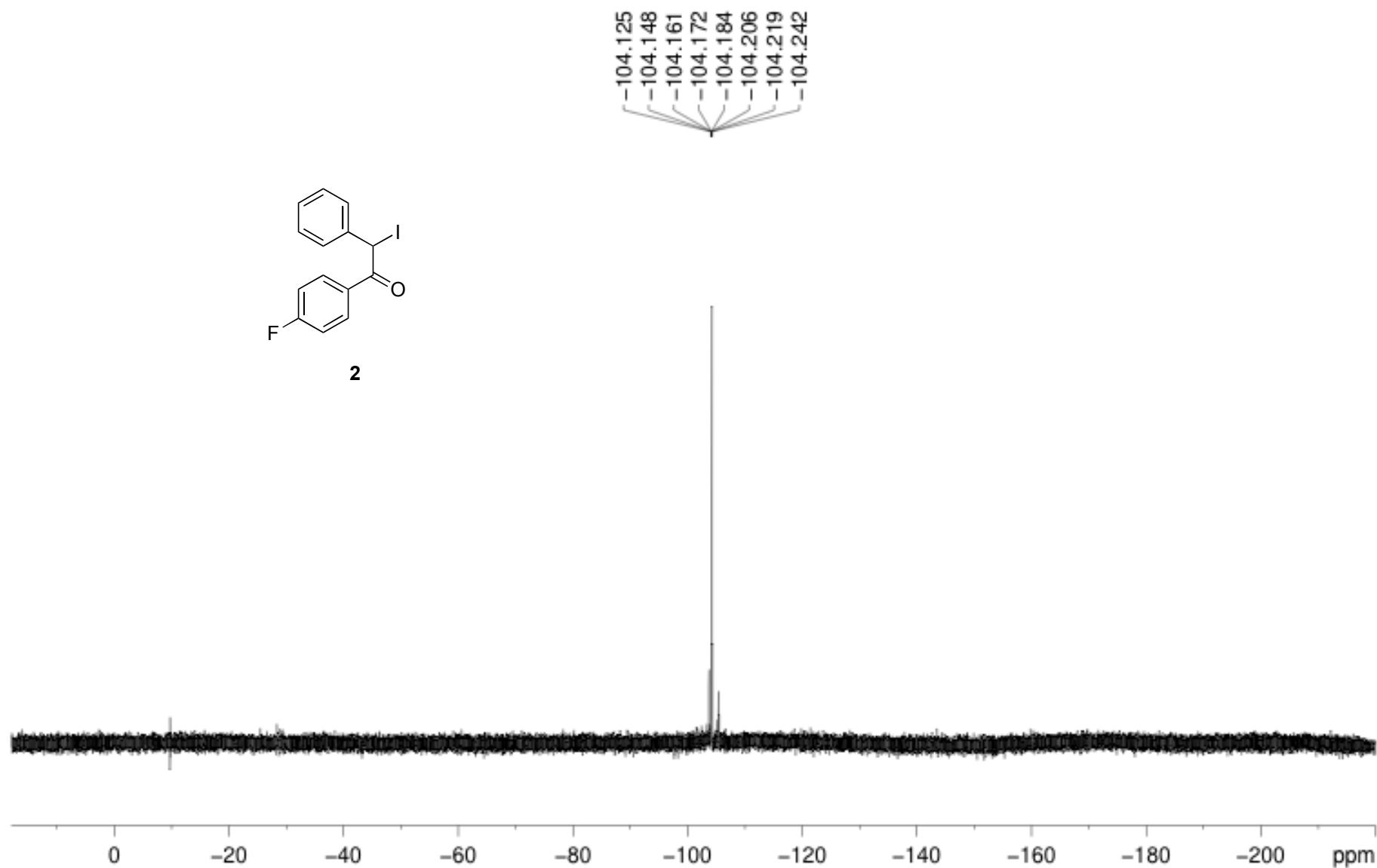
$^{13}\text{C}$  NMR spectrum of compound **2**



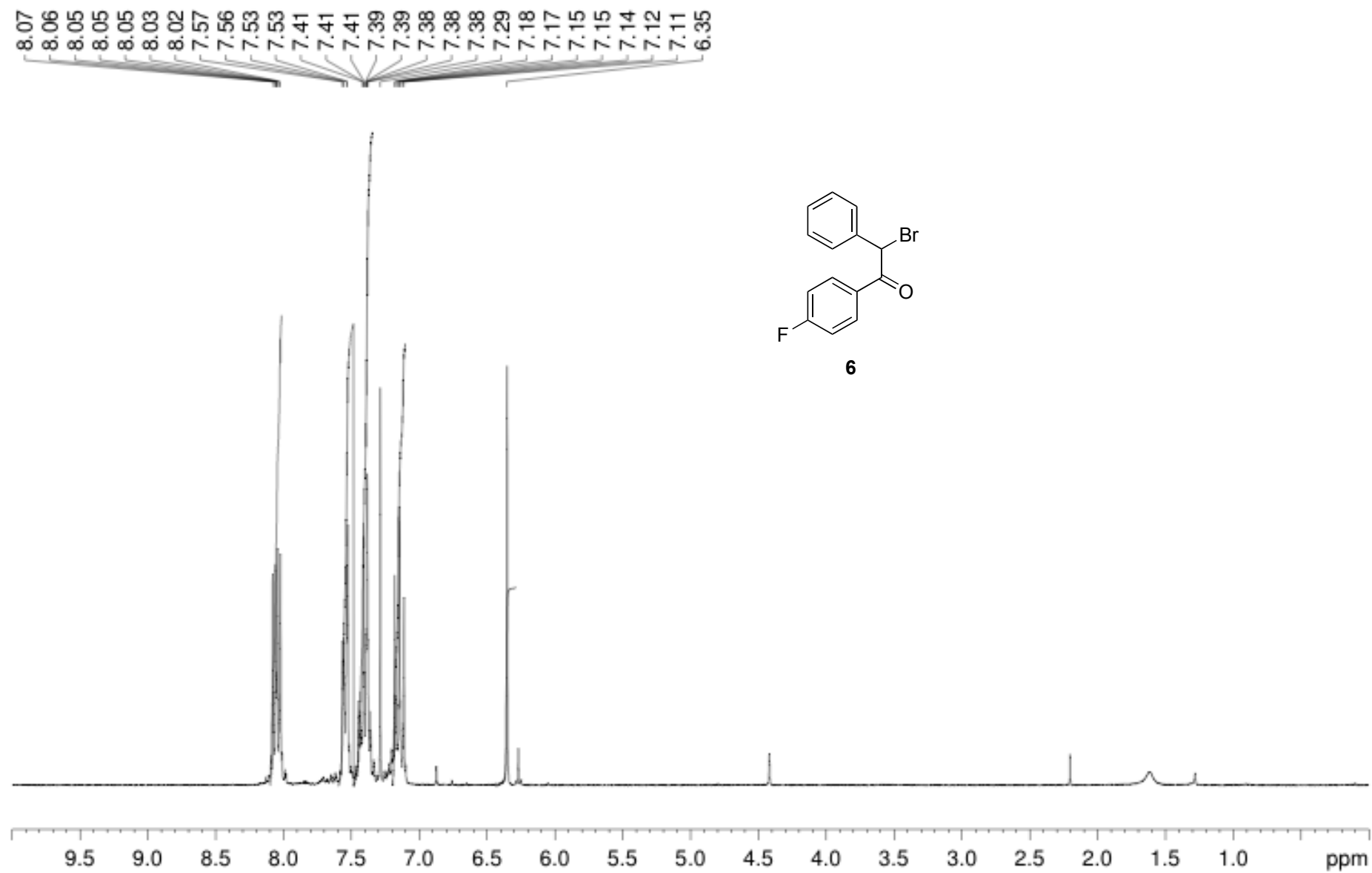
**2**



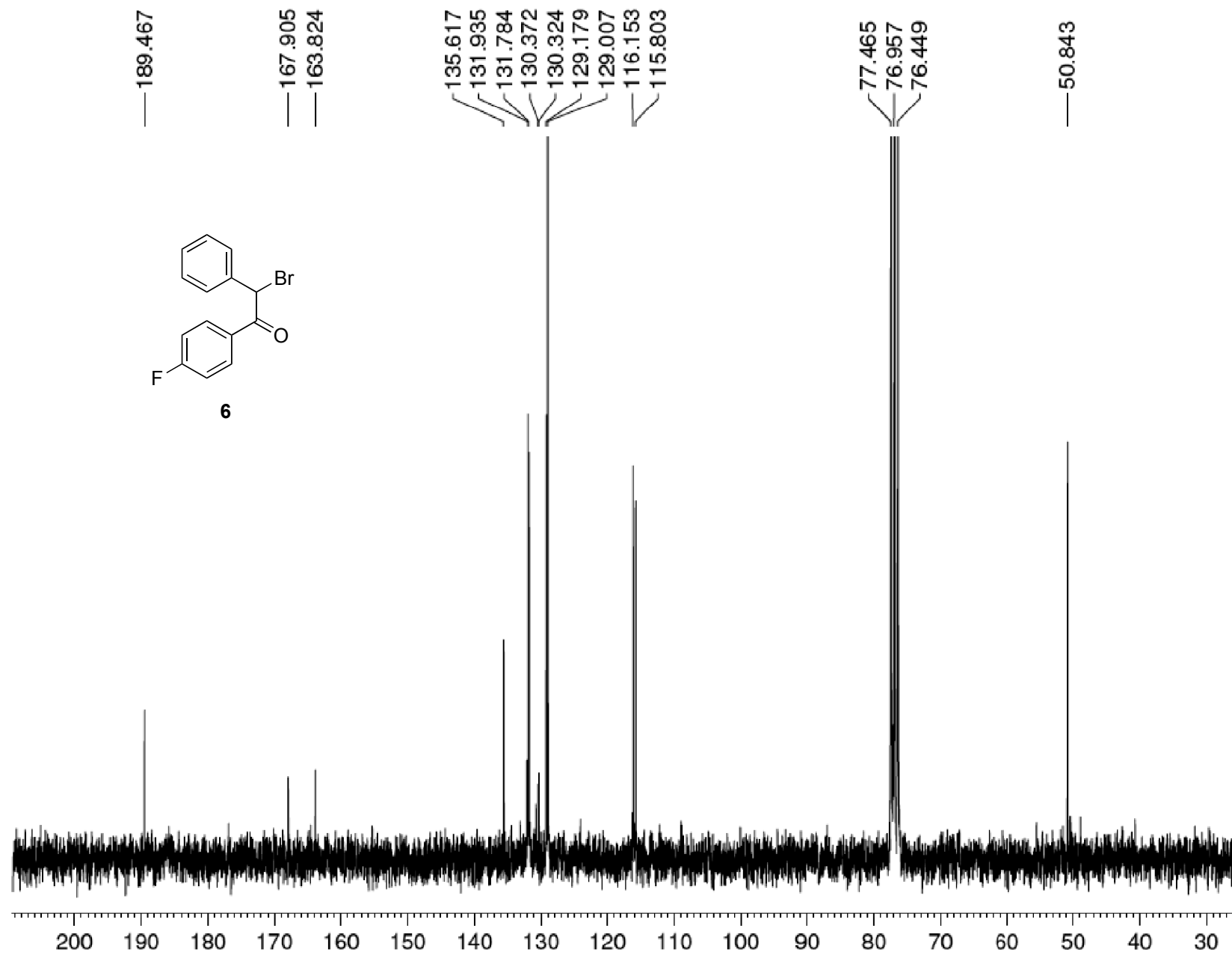
DEPT-135 spectrum of compound **2**

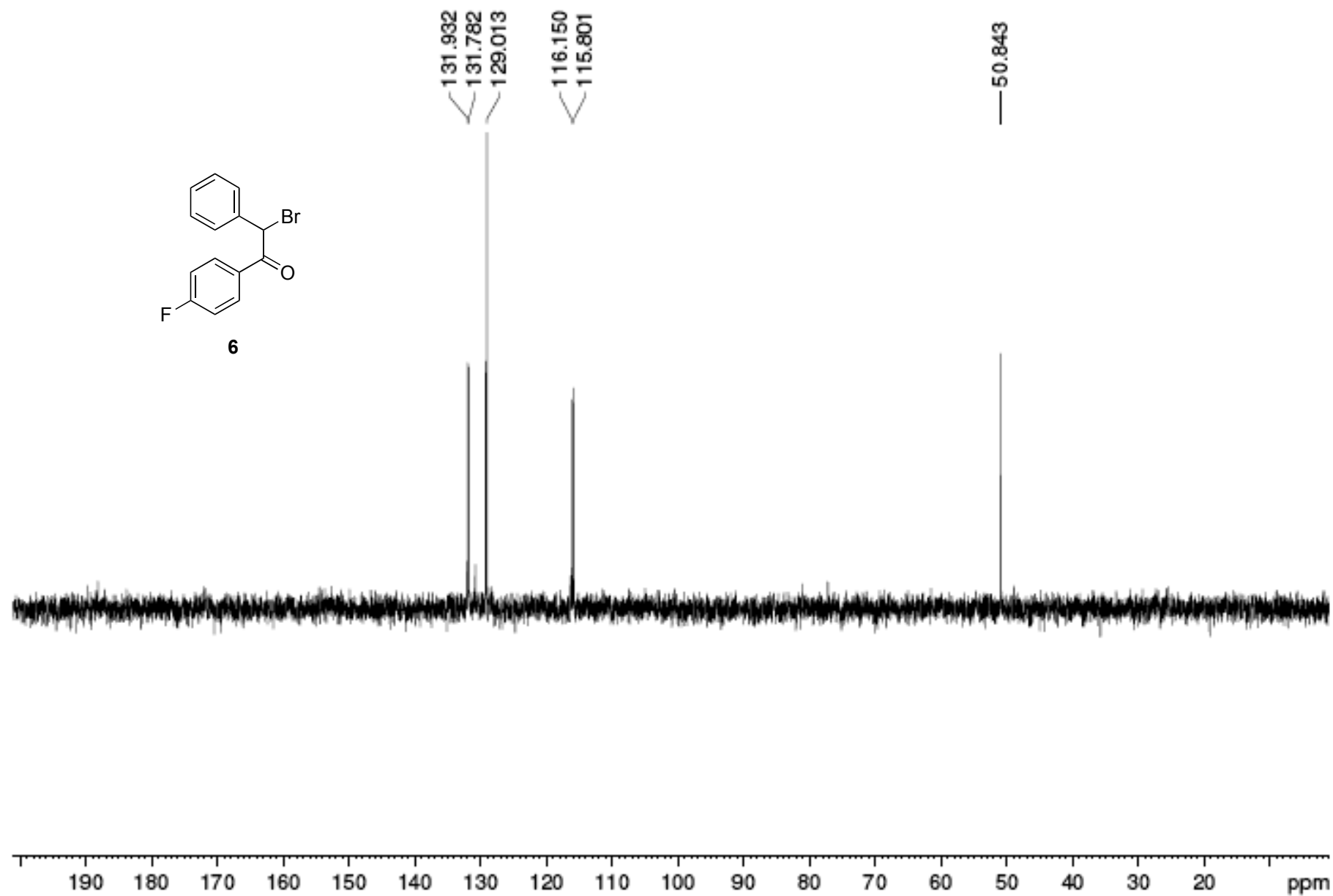


$^{19}\text{F}$  NMR spectrum of compound **2**



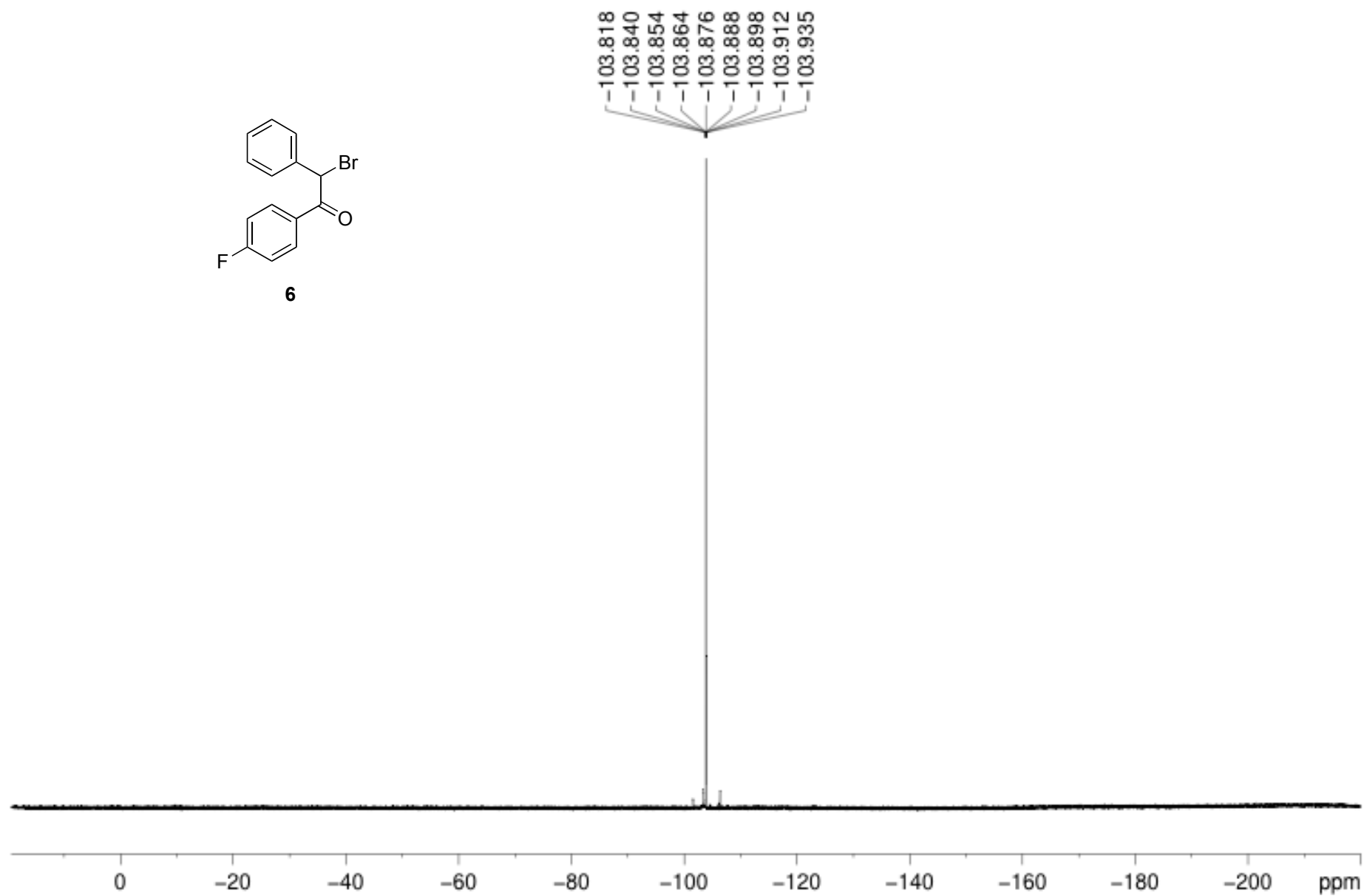
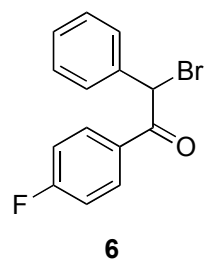
$^1\text{H}$  NMR spectrum of compound **6**



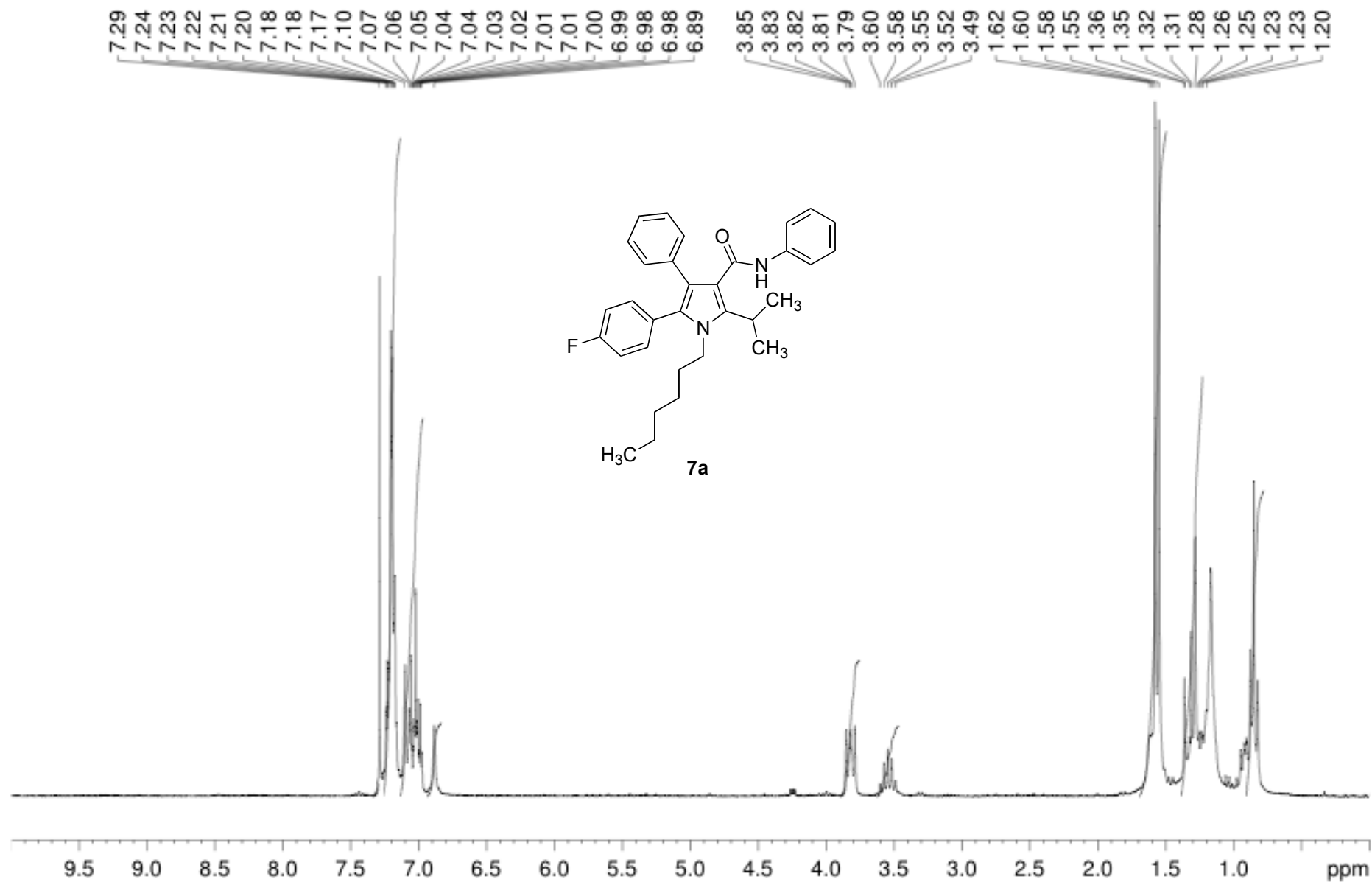


DEPT-135 spectrum of compound **6**

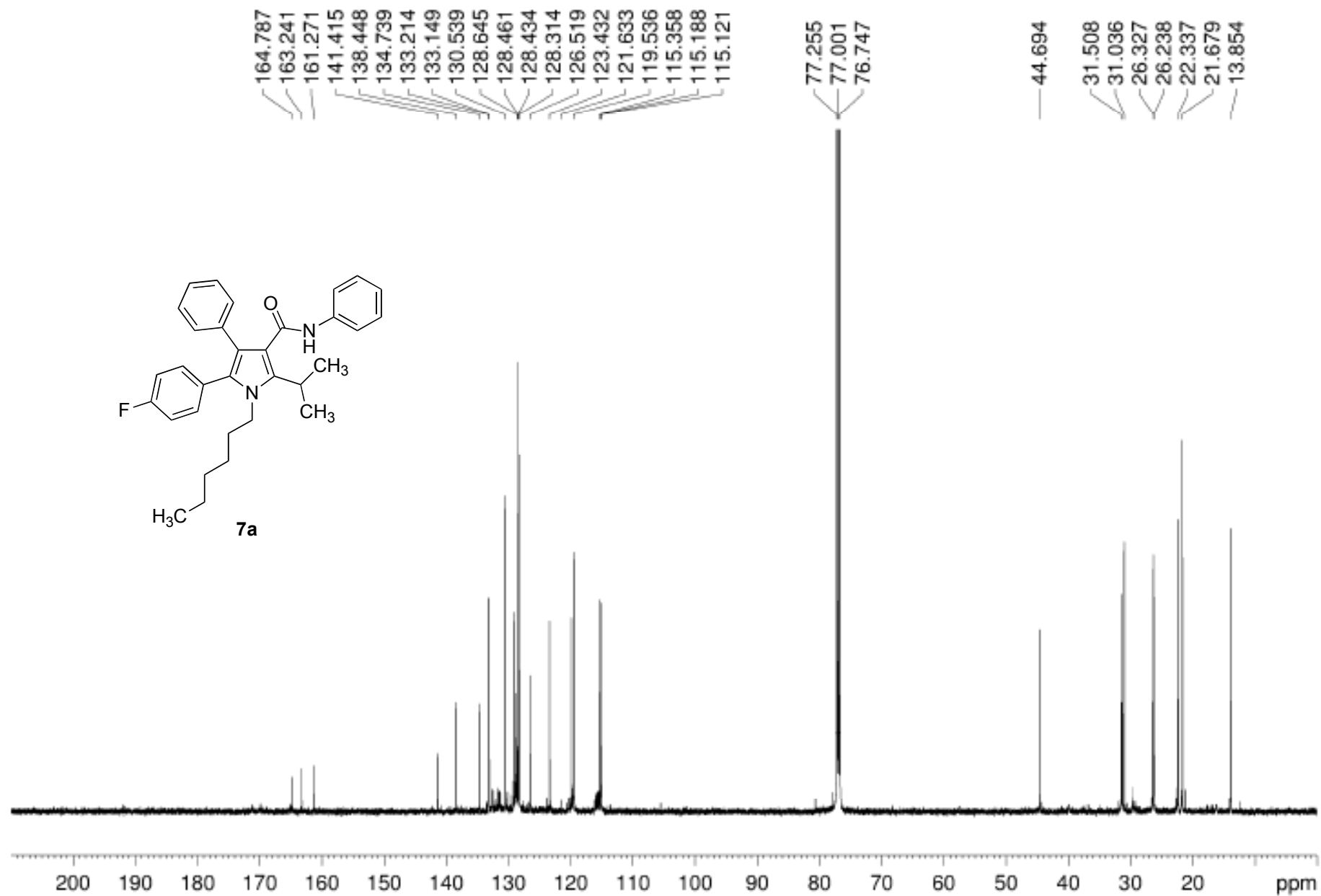




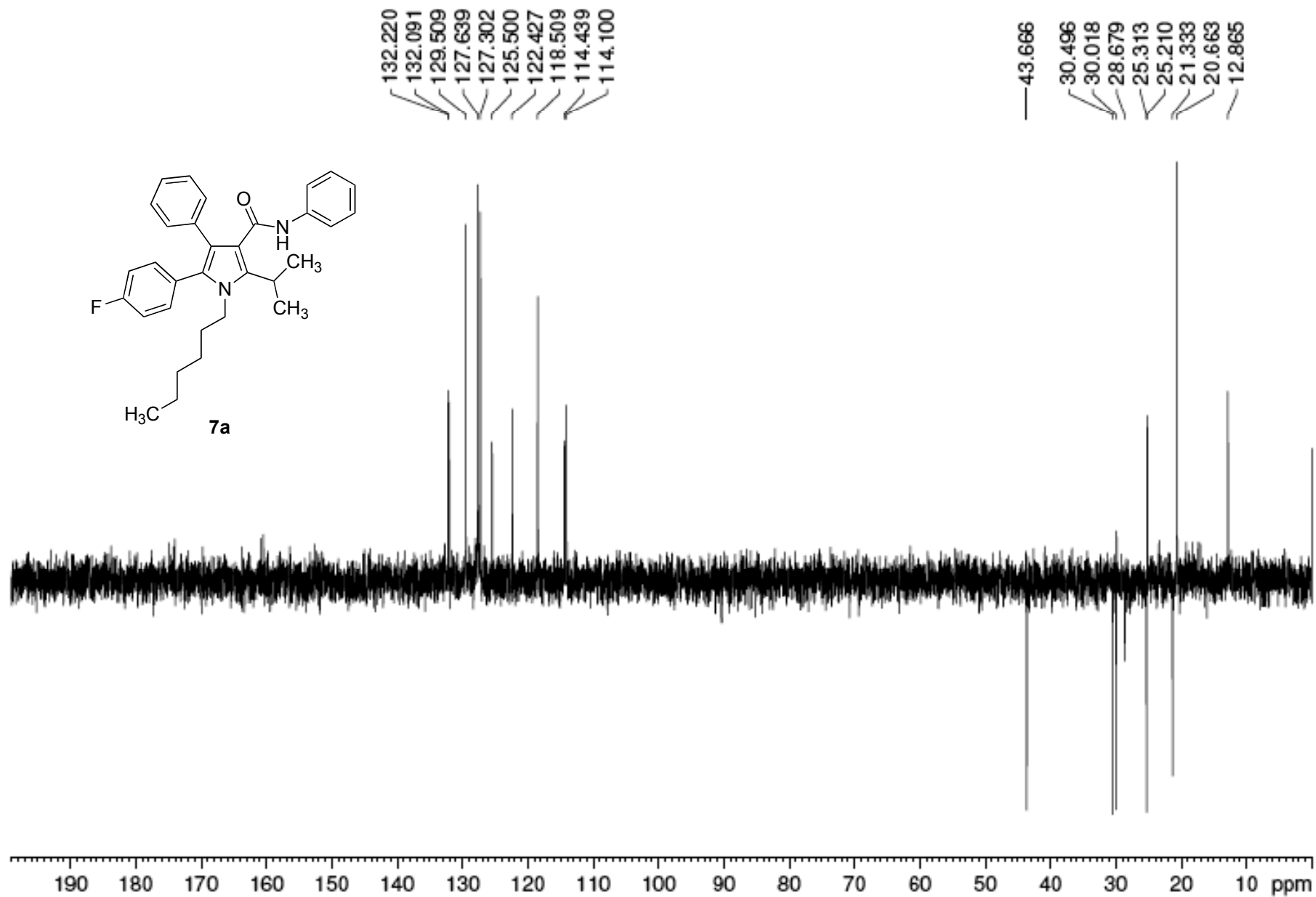
$^{19}\text{F}$  NMR spectrum of compound **6**



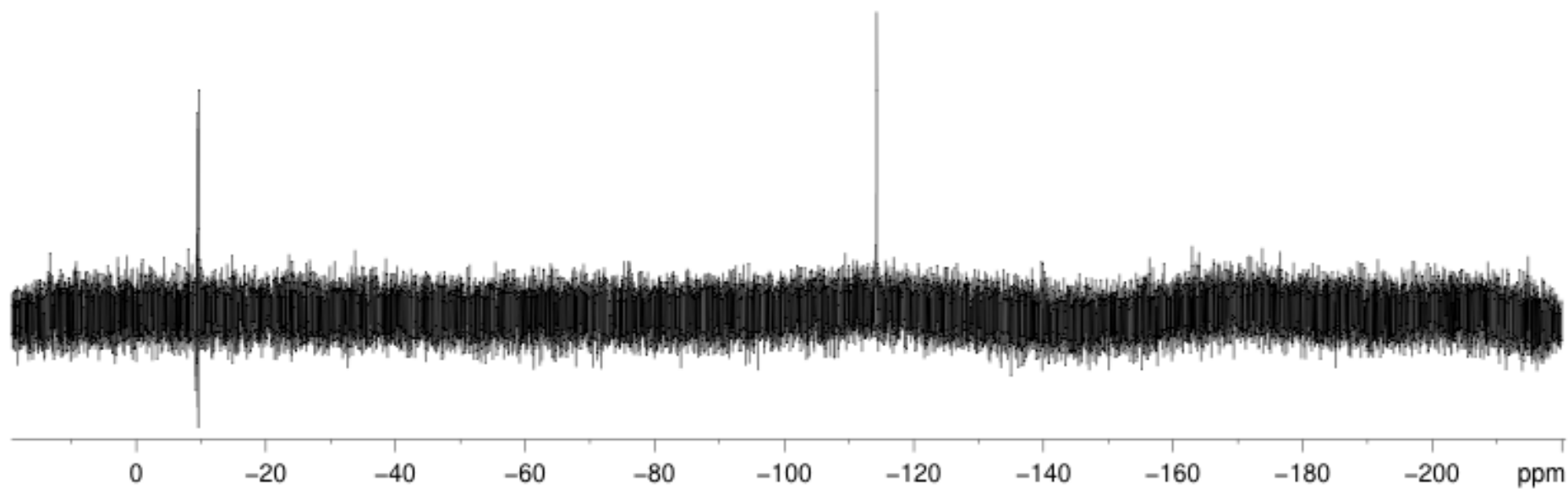
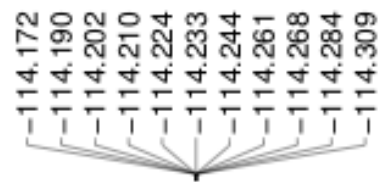
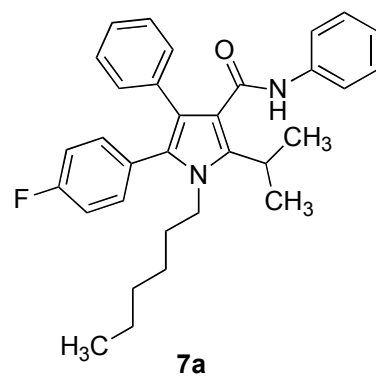
$^1\text{H}$  NMR spectrum of compound **7a**



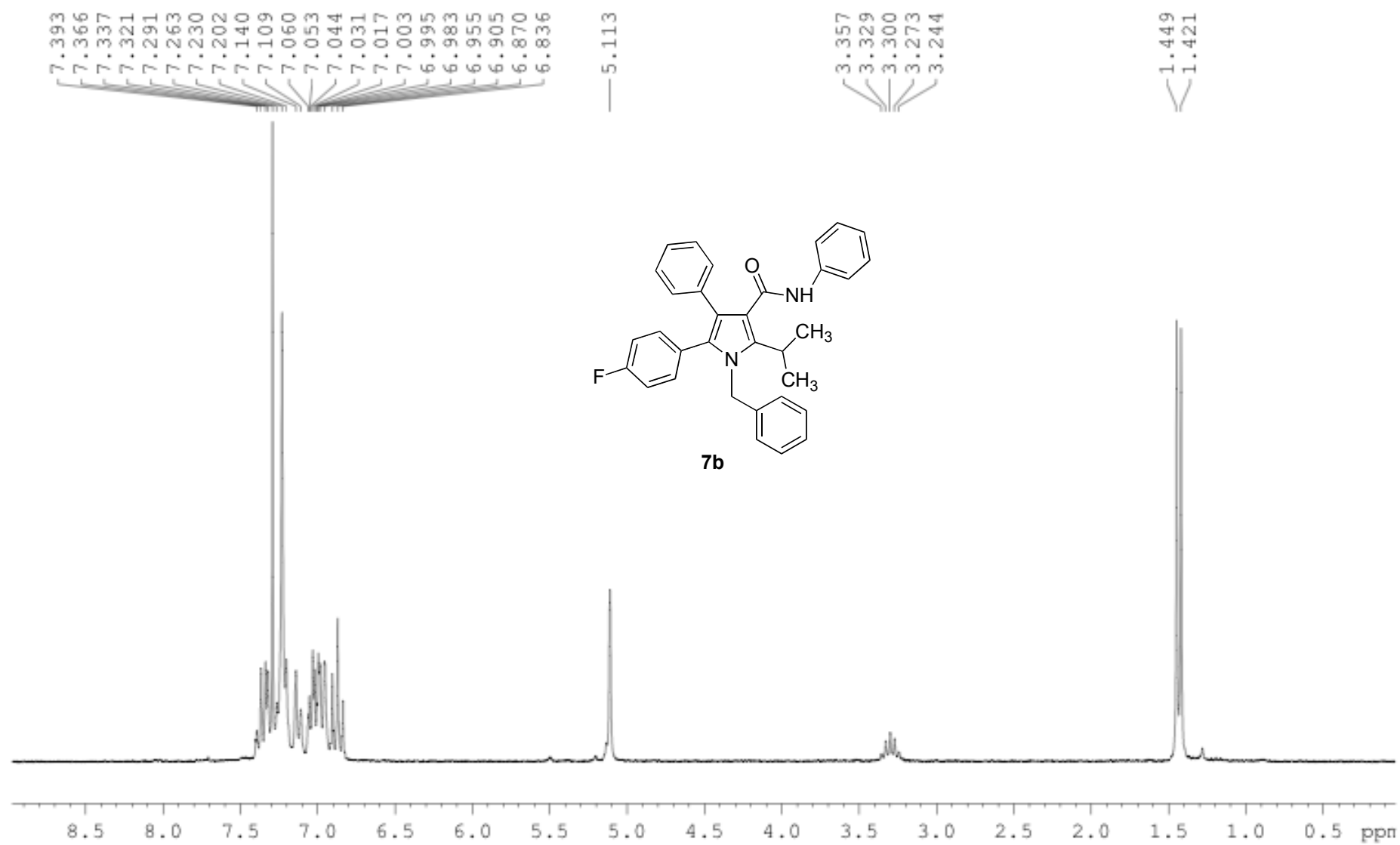
$^{13}\text{C}$  NMR spectrum of compound **7a**



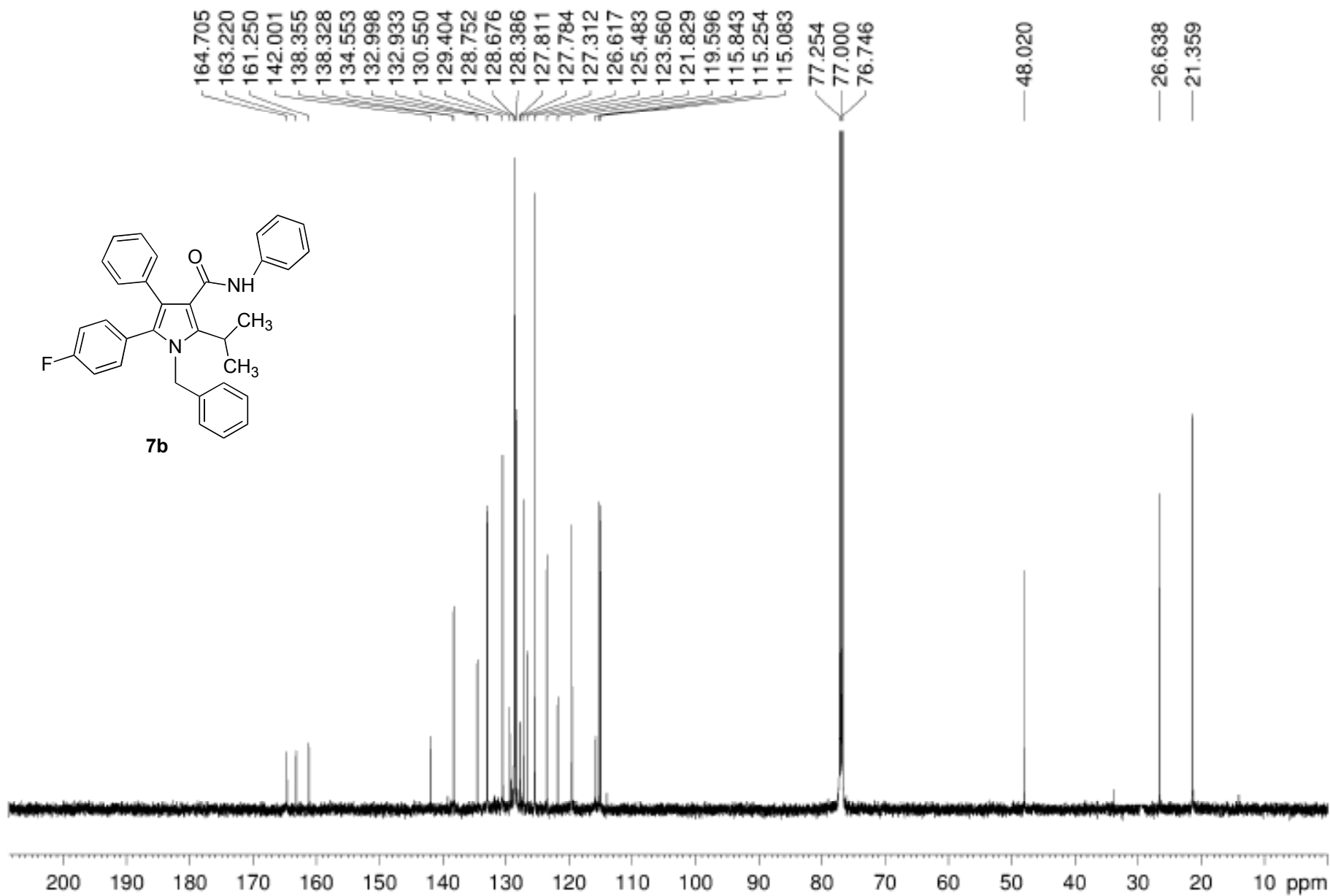
DEPT-135 spectrum of compound **7a**



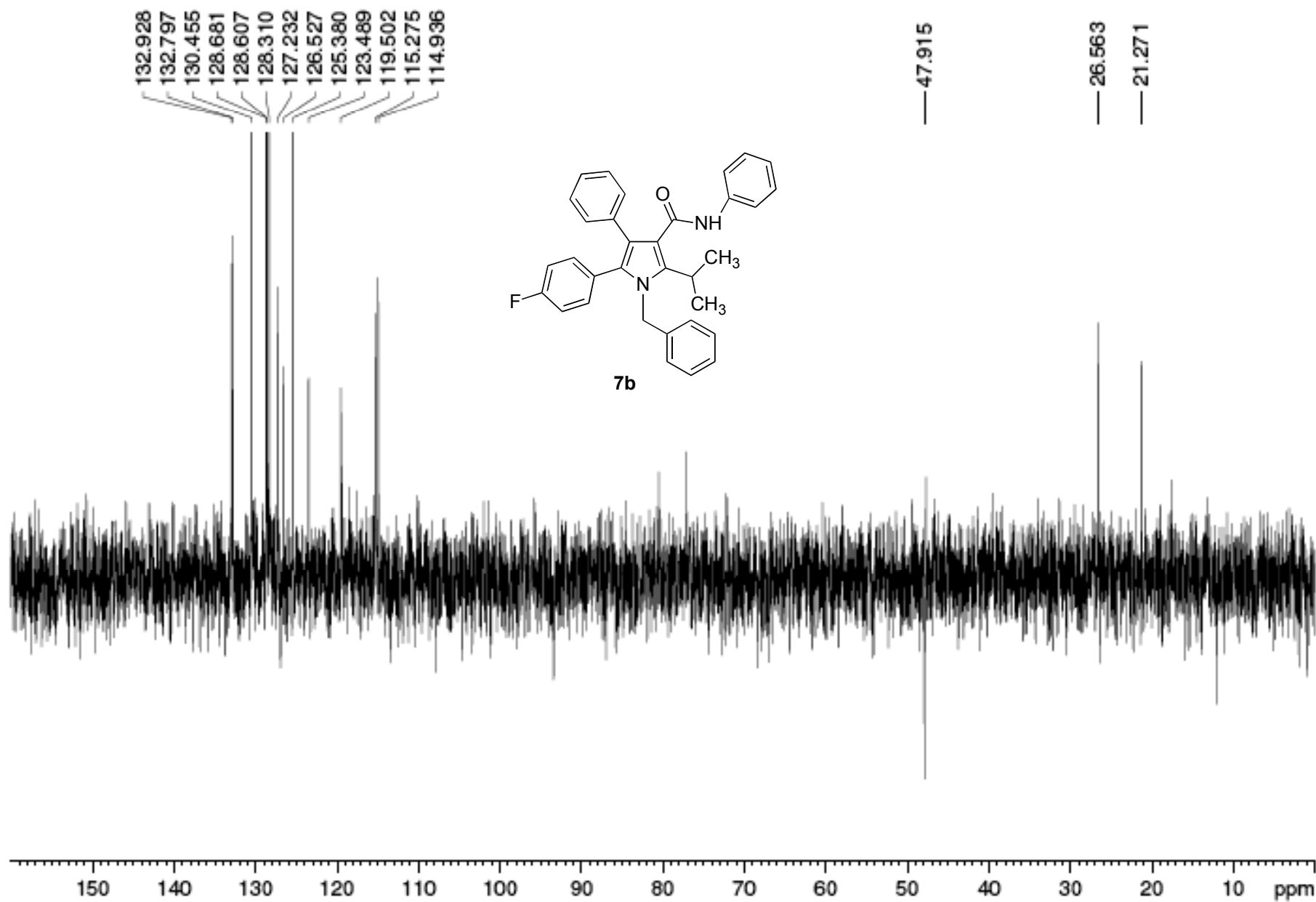
$^{19}\text{F}$  NMR spectrum of compound **7a**



<sup>1</sup>H NMR spectrum of compound **7b**

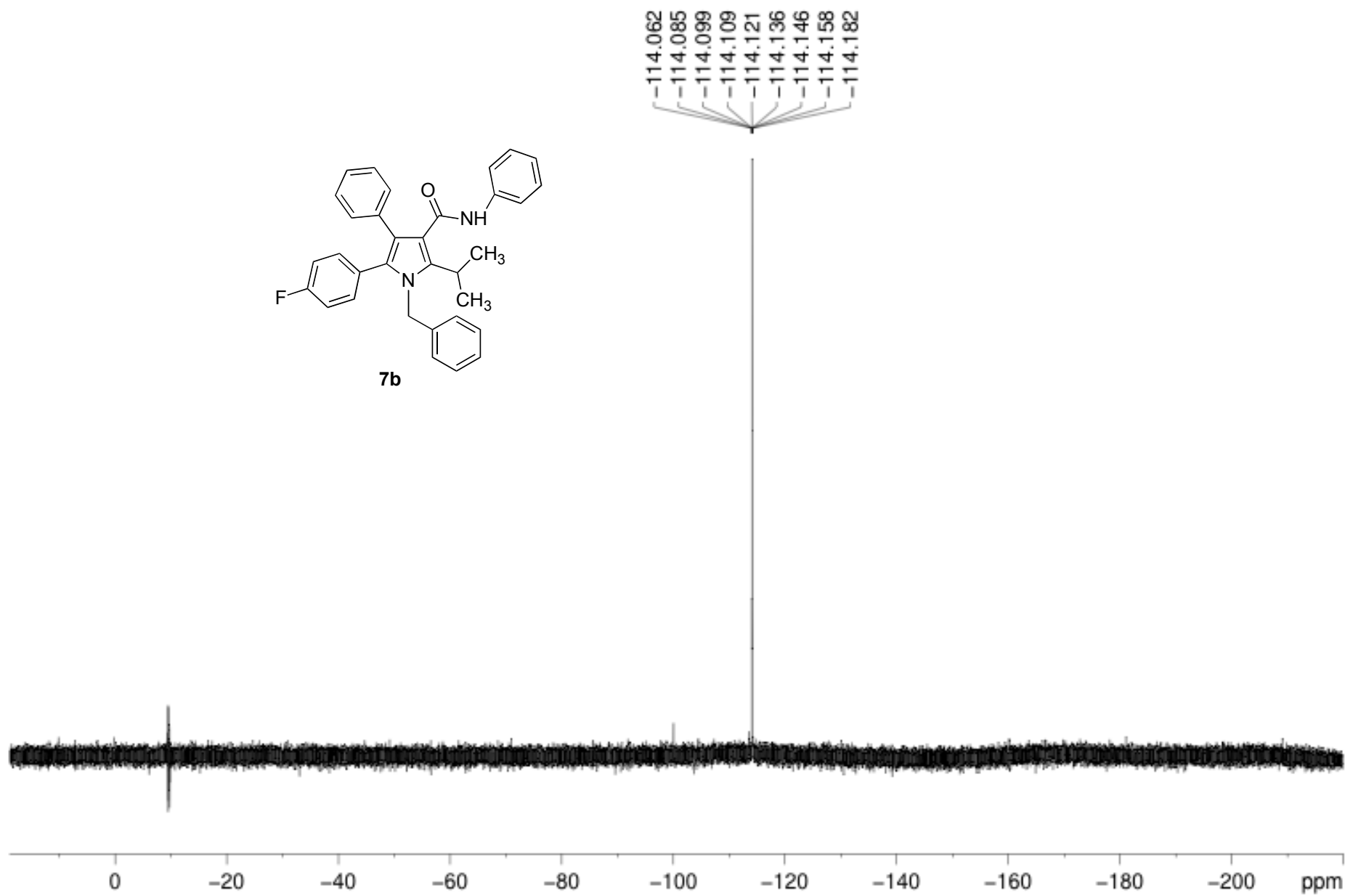


$^{13}\text{C}$  NMR spectrum of compound **7b**

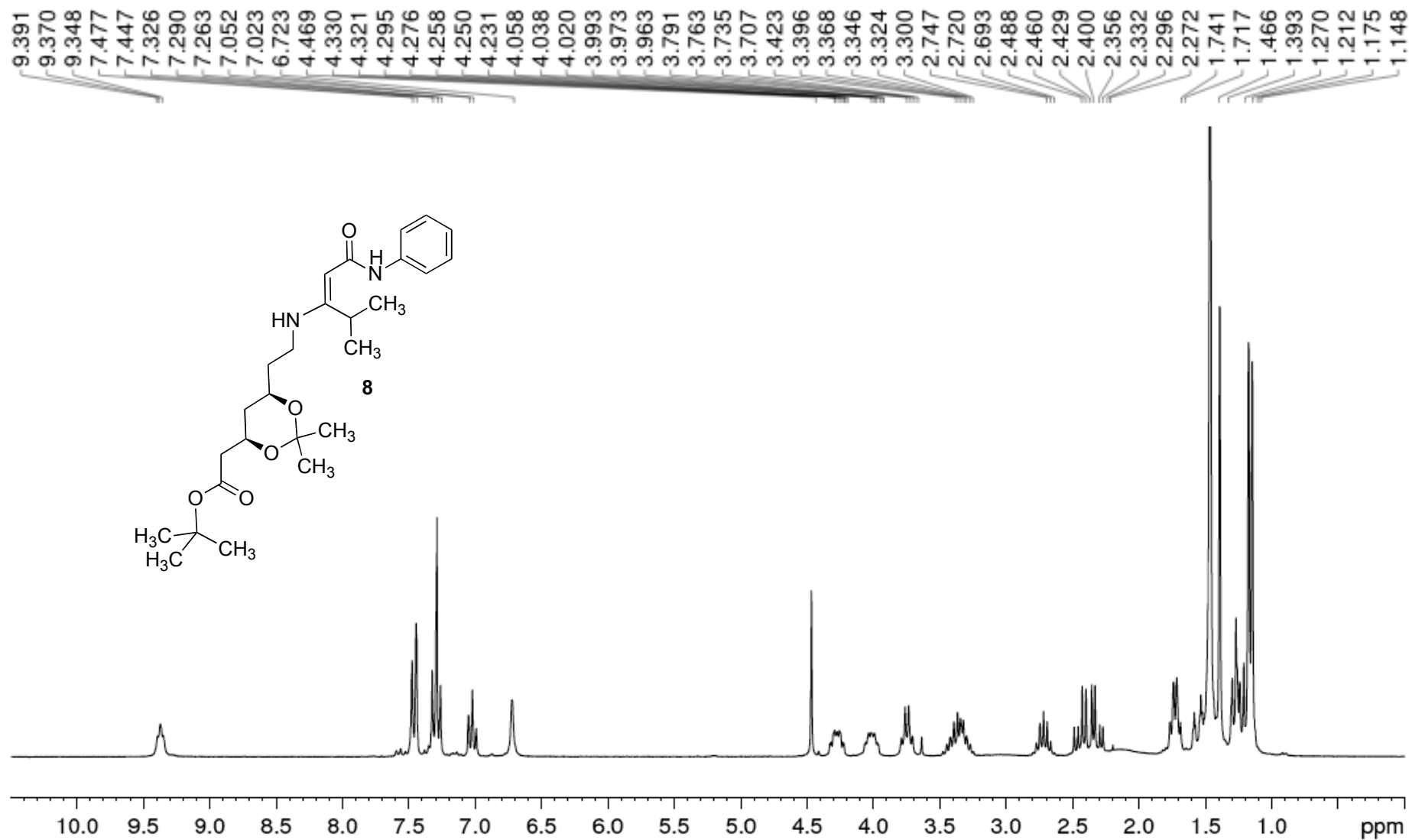


DEPT-135 spectrum of compound **7b**

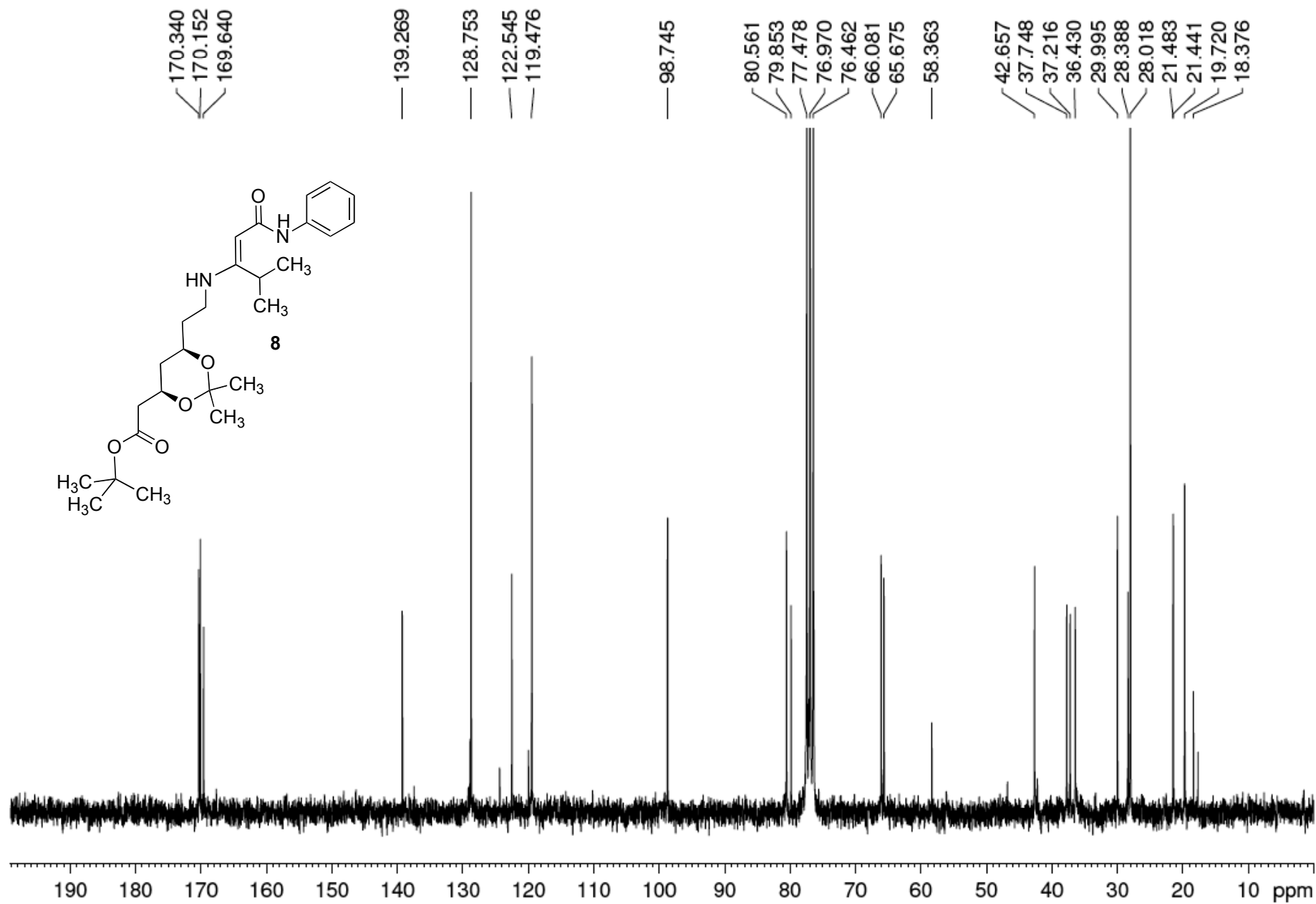




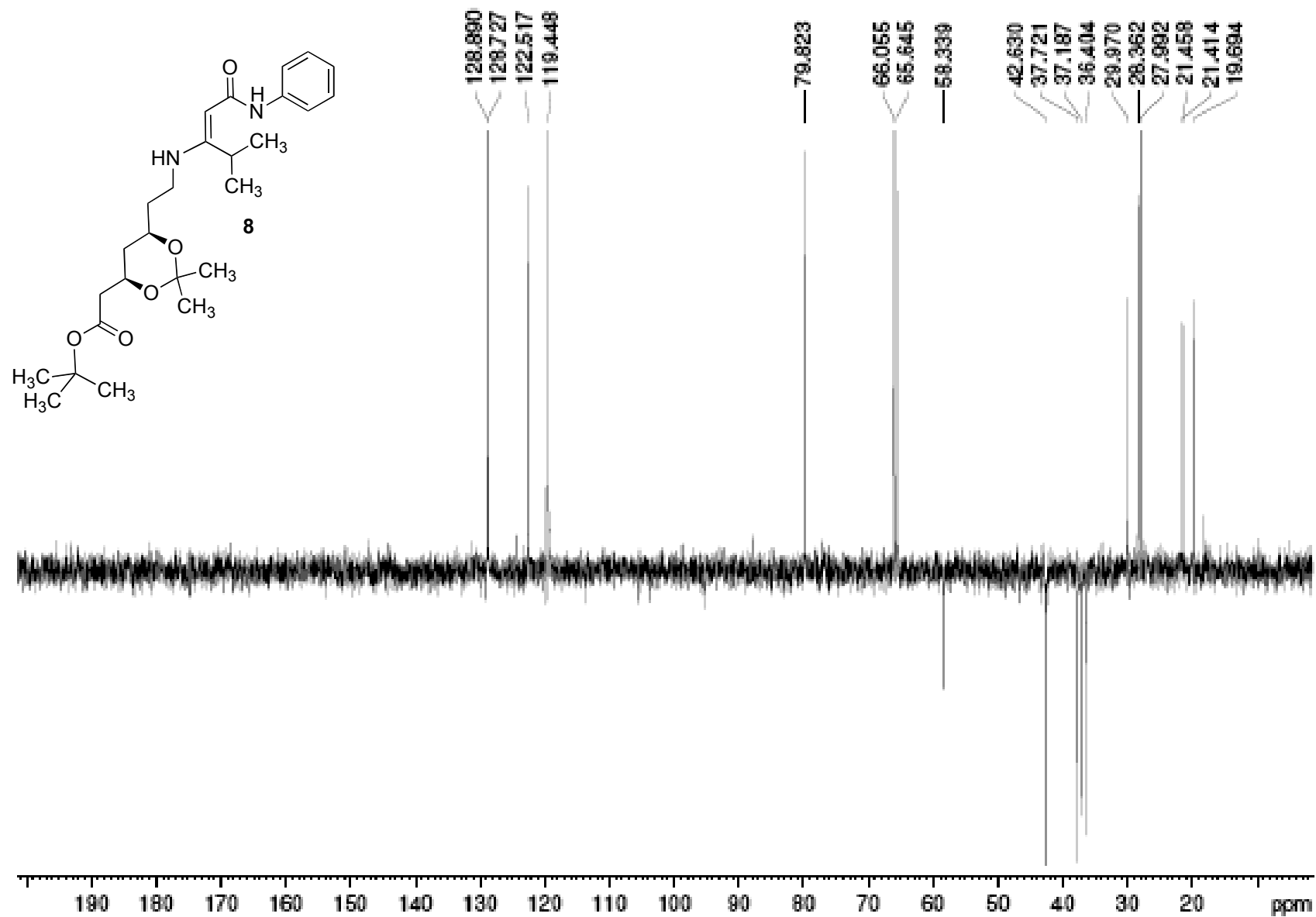
$^{19}\text{F}$  NMR spectrum of compound **7b**



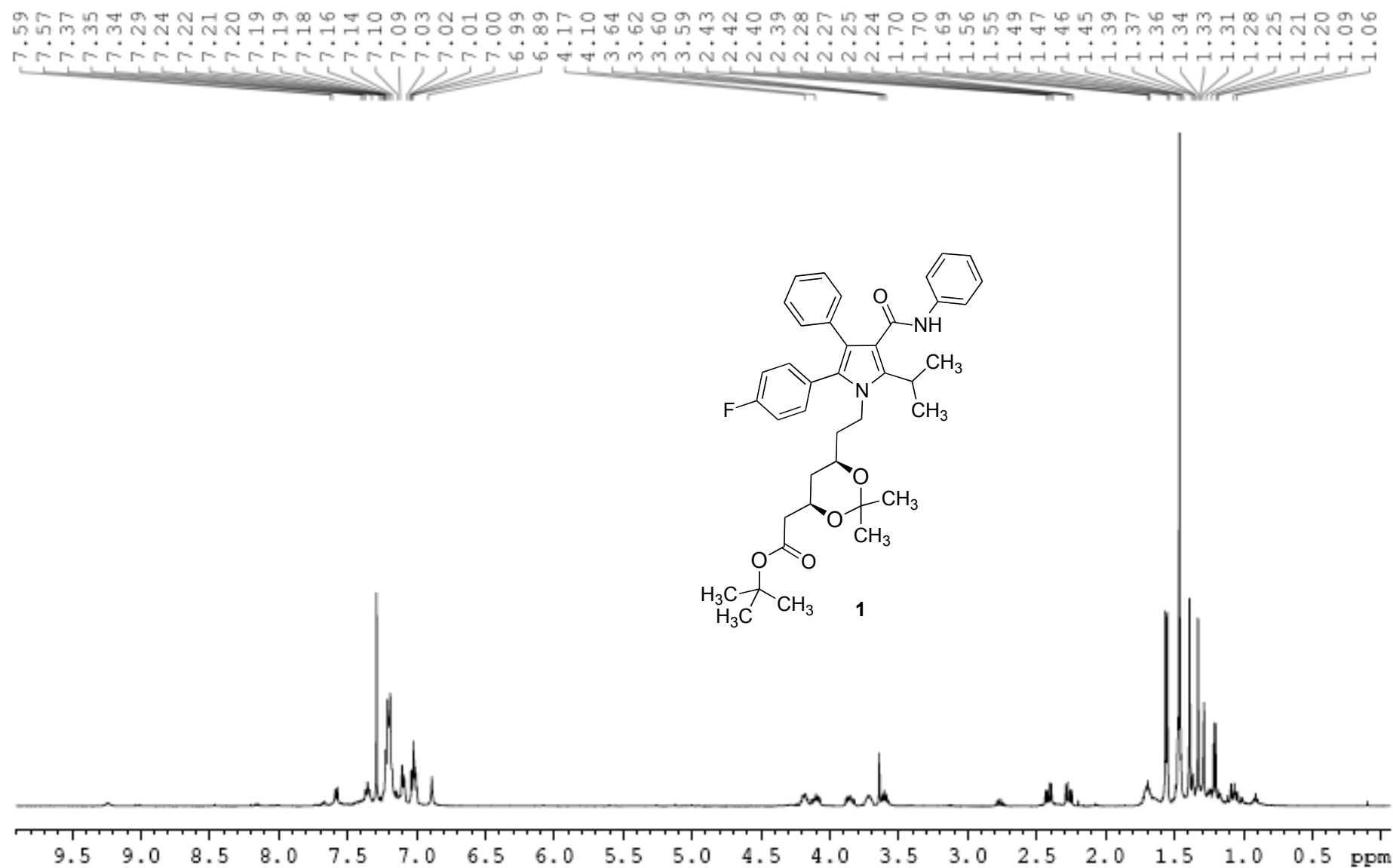
<sup>1</sup>H NMR spectrum of compound **8**



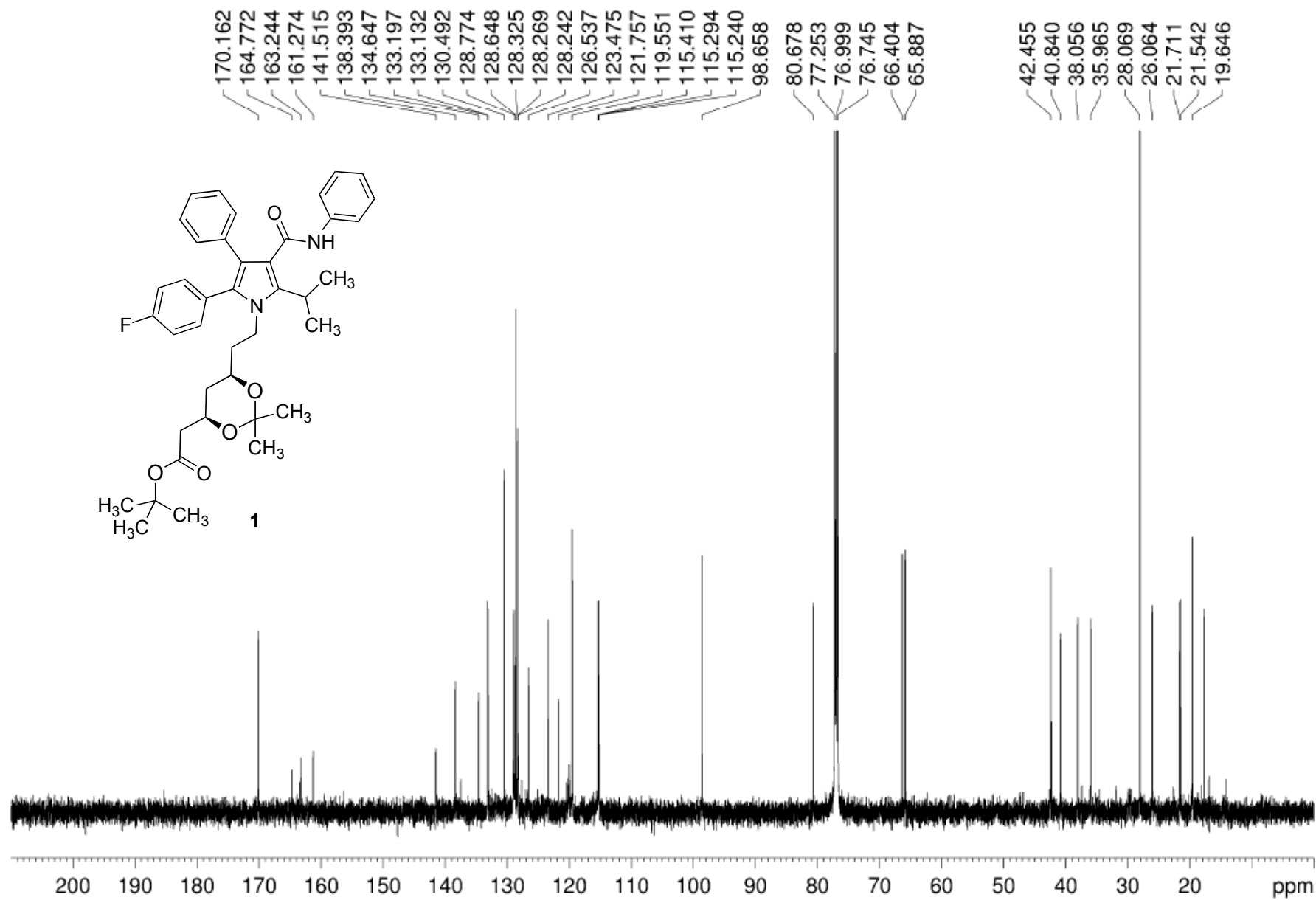
<sup>13</sup>C NMR spectrum of compound **8**



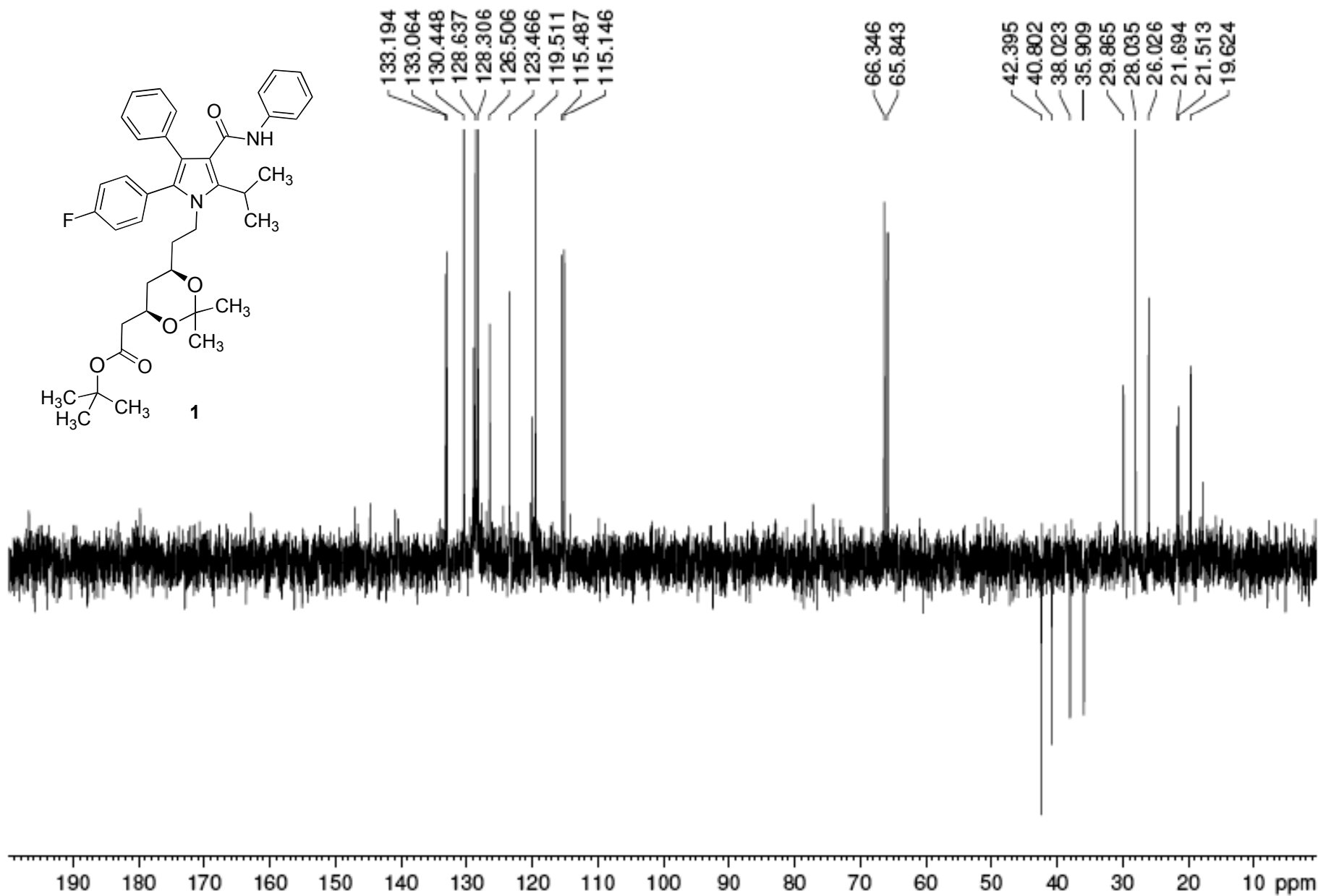
DEPT-135 spectrum of compound **8**



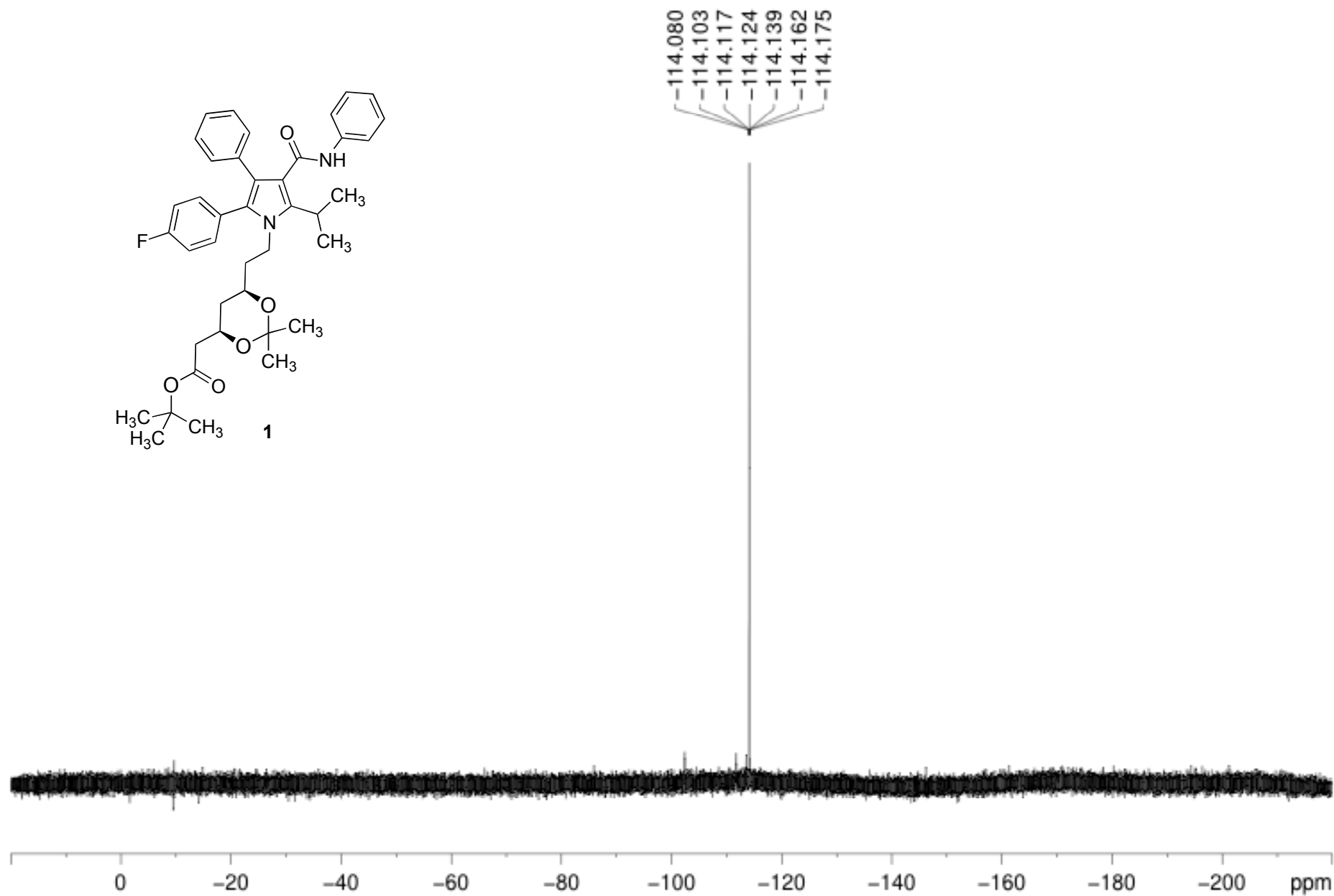
<sup>1</sup>H NMR spectrum of compound **1**



<sup>13</sup>C NMR spectrum of compound 1

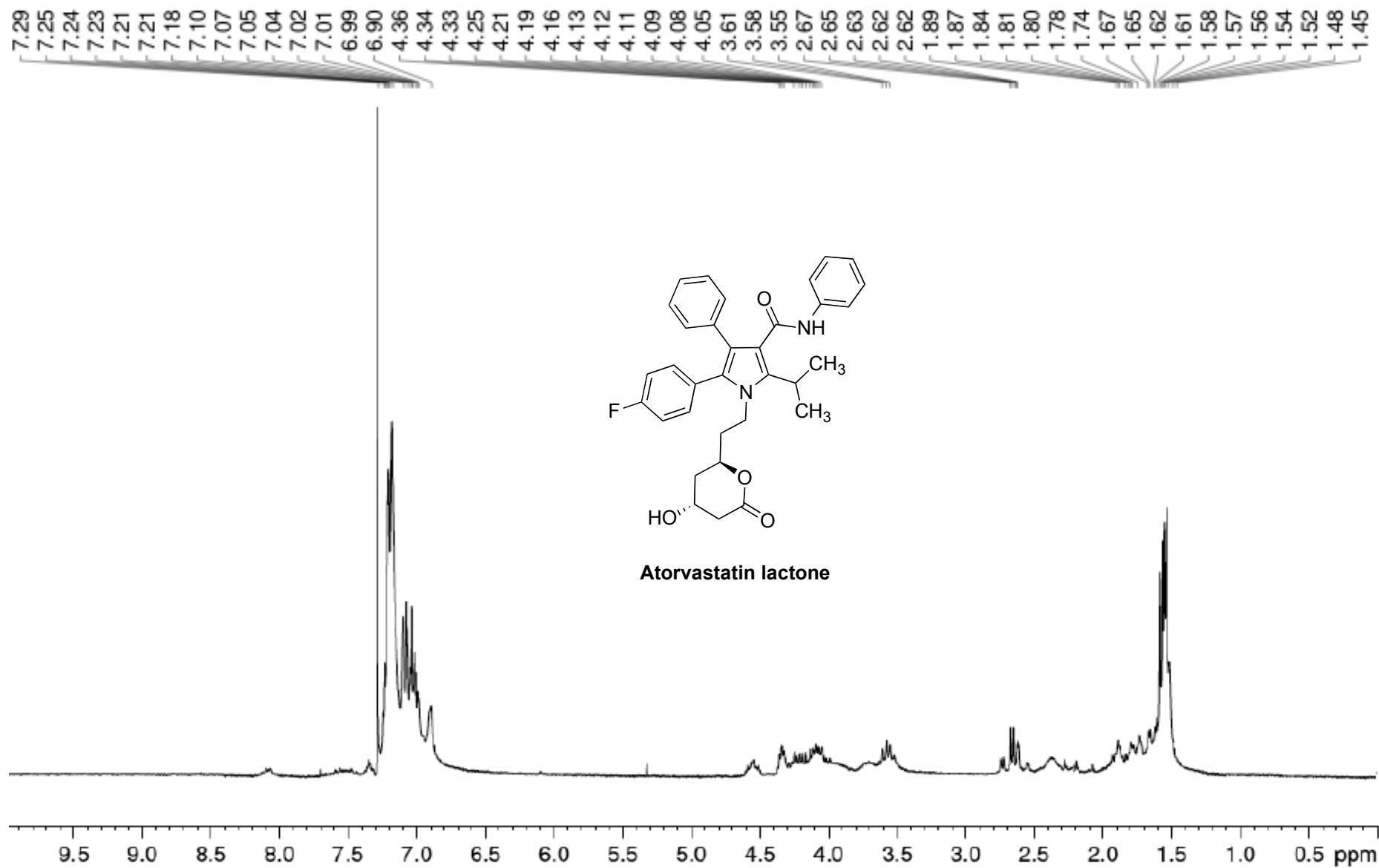


DEPT-135 spectrum of compound **1**

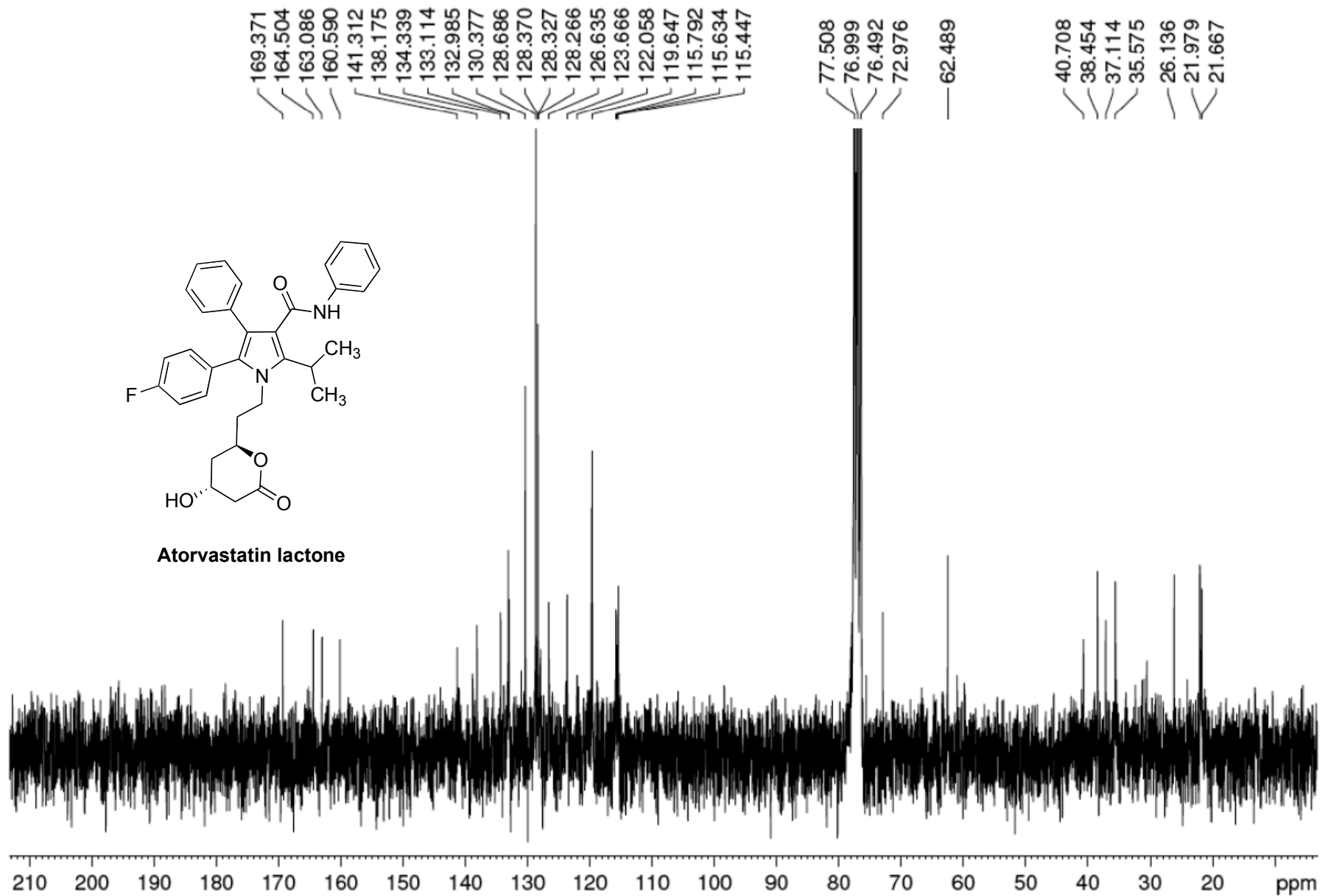


$^{19}\text{F}$  NMR spectrum of compound **1**  
S24

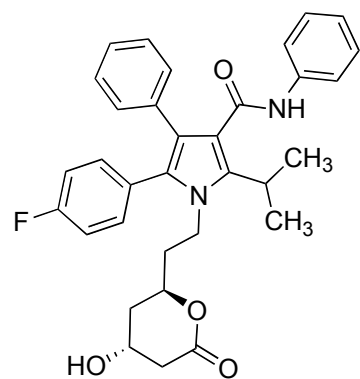




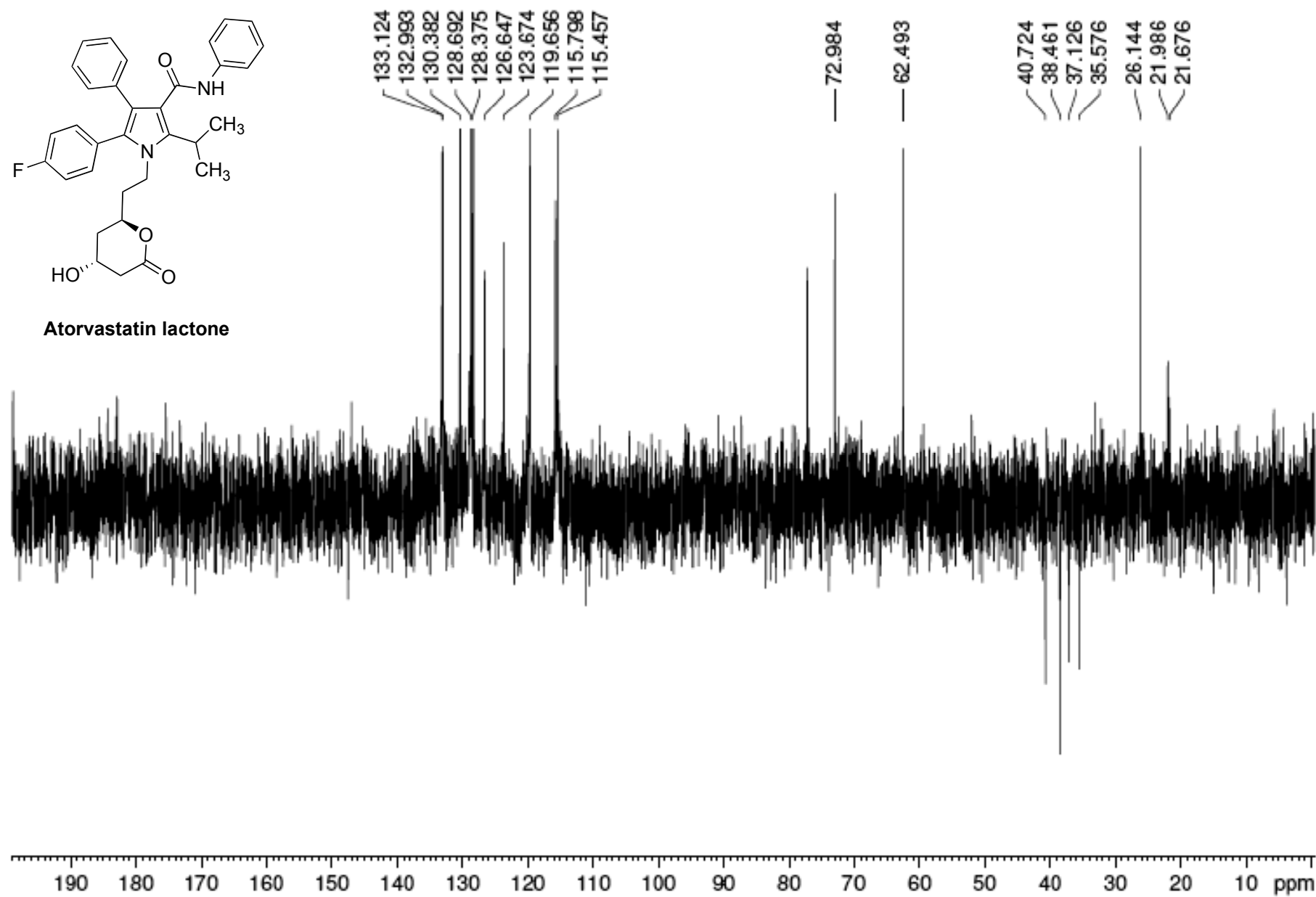
$^1\text{H}$  NMR spectrum of atorvastatin lactone (9)



$^{13}\text{C}$  NMR spectrum of **atorvastatin lactone (9)**



Atorvastatin lactone



DEPT-135 spectrum of atorvastatin lactone (9)