

## Supporting Information

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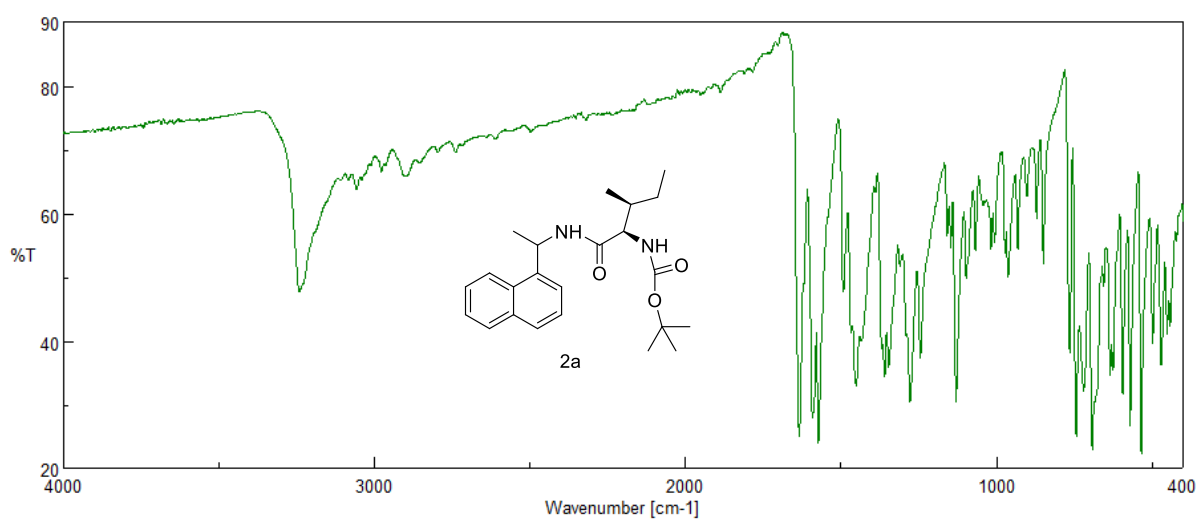
### Preparation of new mono- and bis-amide derivatives of L-isoleucine via amidation of carboxyl and amino groups

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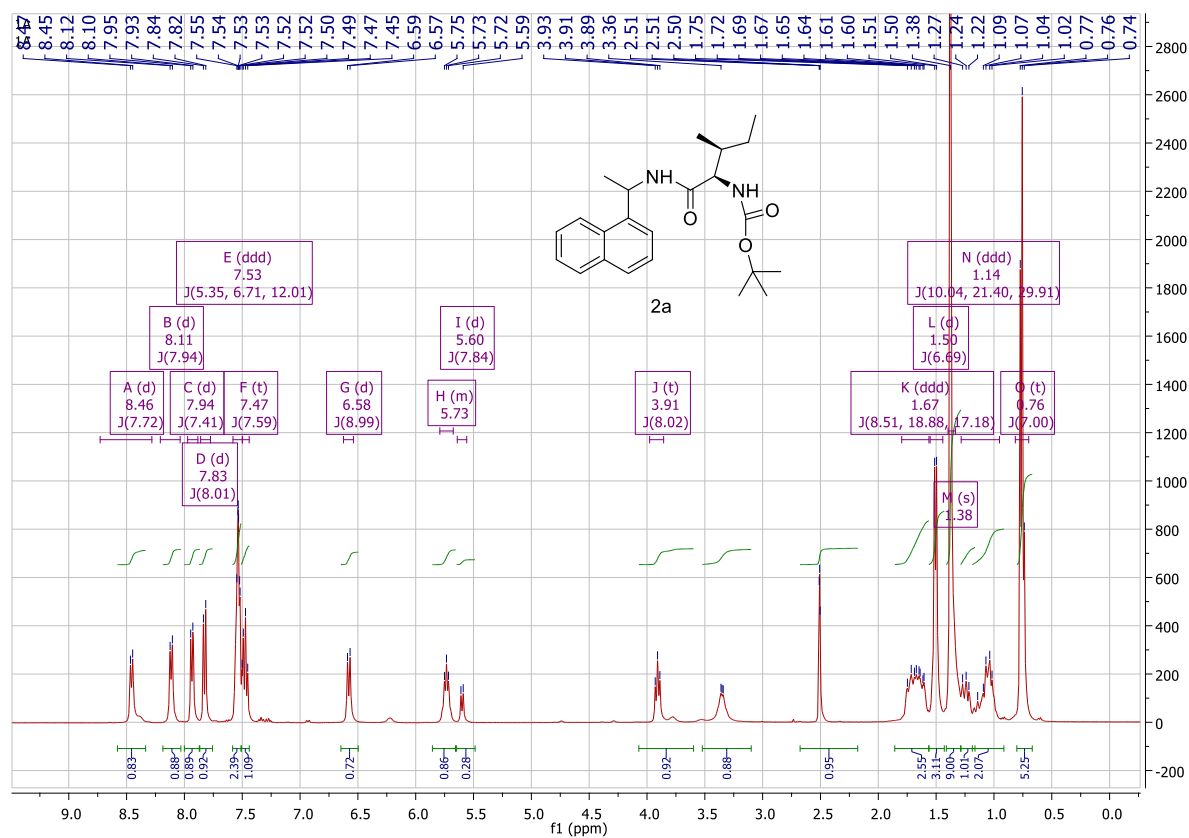
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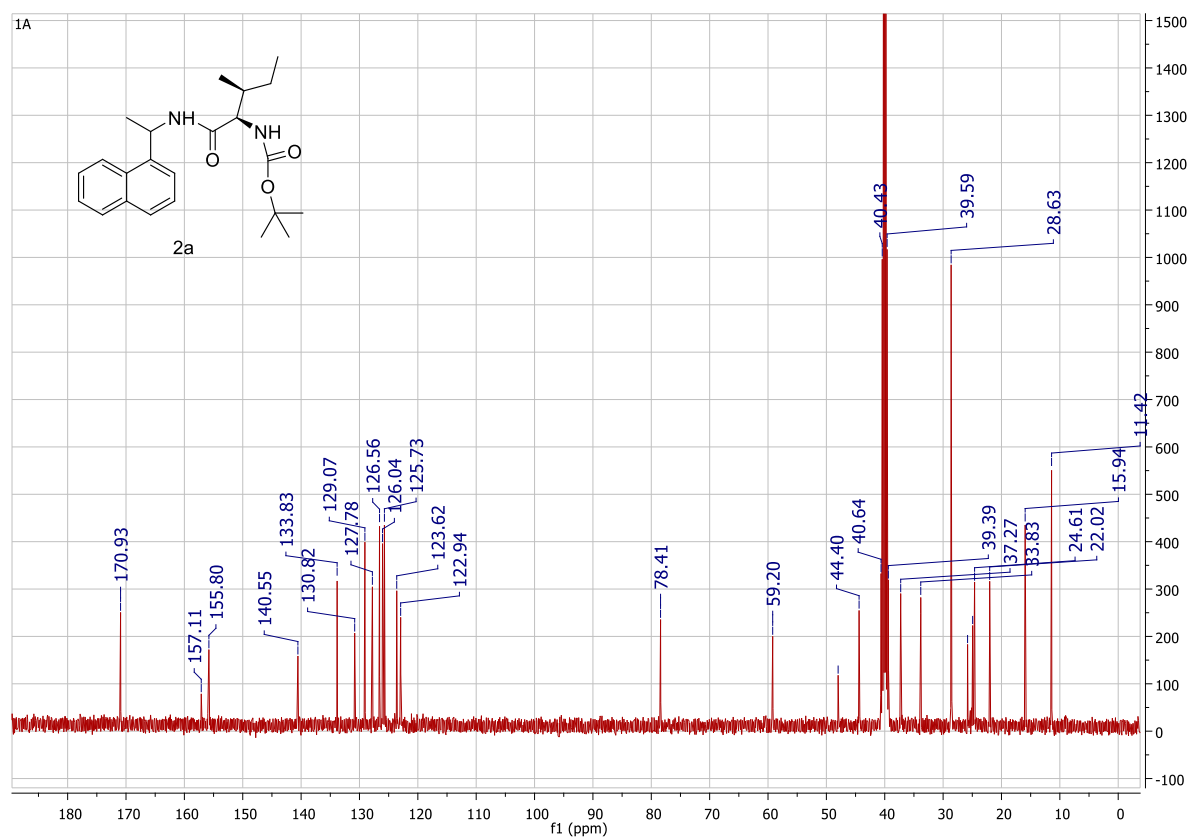
Table of contents	Page
Figure S1: FTIR spectrum of compound <b>2a</b>	2
Figure S2: <sup>1</sup> H-NMR spectrum of compound <b>2a</b> (DMSO-d <sub>6</sub> )	3
Figure S3: <sup>13</sup> C-NMR spectrum of compound <b>2a</b> (DMSO-d <sub>6</sub> )	4
Figure S4: FTIR spectrum of compound <b>2b</b>	5
Figure S5: <sup>1</sup> H-NMR spectrum of compound <b>2b</b> (DMSO-d <sub>6</sub> )	6
Figure S6: <sup>13</sup> C-NMR spectrum of compound <b>2b</b> (DMSO-d <sub>6</sub> )	7
Figure S7: FTIR spectrum of compound <b>2c</b>	8
Figure S8: <sup>1</sup> H-NMR spectrum of compound <b>2c</b> (DMSO-d <sub>6</sub> )	9
Figure S9: <sup>1</sup> H-NMR spectrum of compound <b>2c</b> (DMSO-d <sub>6</sub> ) (expanded)	10
Figure S10: <sup>13</sup> C-NMR spectrum of compound <b>2c</b> (DMSO-d <sub>6</sub> )	11
Figure S11: FTIR spectrum of compound <b>3a</b>	12
Figure S12: <sup>1</sup> H-NMR spectrum of compound <b>3a</b> (DMSO-d <sub>6</sub> )	13
Figure S13: <sup>1</sup> H-NMR spectrum of compound <b>3a</b> (DMSO-d <sub>6</sub> ) (expanded)	14
Figure S14: <sup>1</sup> H-NMR spectrum of compound <b>3a</b> (DMSO-d <sub>6</sub> ) (expanded)	15
Figure S15: <sup>13</sup> C-NMR spectrum of compound <b>3a</b> (DMSO-d <sub>6</sub> )	16
Figure S16: FTIR spectrum of compound <b>3b</b>	17
Figure S17: <sup>1</sup> H-NMR spectrum of compound <b>3b</b> (DMSO-d <sub>6</sub> )	18
Figure S18: <sup>13</sup> C-NMR spectrum of compound <b>3b</b>	19
Figure S19: FTIR spectrum of compound <b>3c</b>	20
Figure S20: <sup>1</sup> H-NMR spectrum of compound <b>3c</b> (CDCl <sub>3</sub> )	21
Figure S21: <sup>13</sup> C-NMR spectrum of compound <b>3c</b> (CDCl <sub>3</sub> )	22
Figure S22: FTIR spectrum of compound <b>4a</b>	23
Figure S23: <sup>1</sup> H-NMR spectrum of compound <b>4a</b> (DMSO-d <sub>6</sub> )	24
Figure S24: <sup>13</sup> C-NMR spectrum of compound <b>4a</b> (DMSO-d <sub>6</sub> )	25
Figure S25: <sup>13</sup> C-NMR spectrum of compound <b>4a</b> (DMSO-d <sub>6</sub> ) (expanded)	26
Figure S26: FTIR spectrum of compound <b>4b</b>	27
Figure S27: <sup>1</sup> H-NMR spectrum of compound <b>4b</b> (DMSO-d <sub>6</sub> )	28
Figure S28: <sup>1</sup> H-NMR spectrum of compound <b>4b</b> (DMSO-d <sub>6</sub> ) (expanded)	29
Figure S29: <sup>1</sup> H-NMR spectrum of compound <b>4b</b> (DMSO-d <sub>6</sub> ) (expanded)	30
Figure S30: <sup>13</sup> C-NMR spectrum of compound <b>4b</b> (DMSO-d <sub>6</sub> )	31
Figure S31: FTIR spectrum of compound <b>4c</b>	32
Figure S32: <sup>1</sup> H-NMR spectrum of compound <b>4c</b> (DMSO-d <sub>6</sub> )	33
Figure S33: <sup>13</sup> C-NMR spectrum of compound <b>4c</b> (DMSO-d <sub>6</sub> )	34



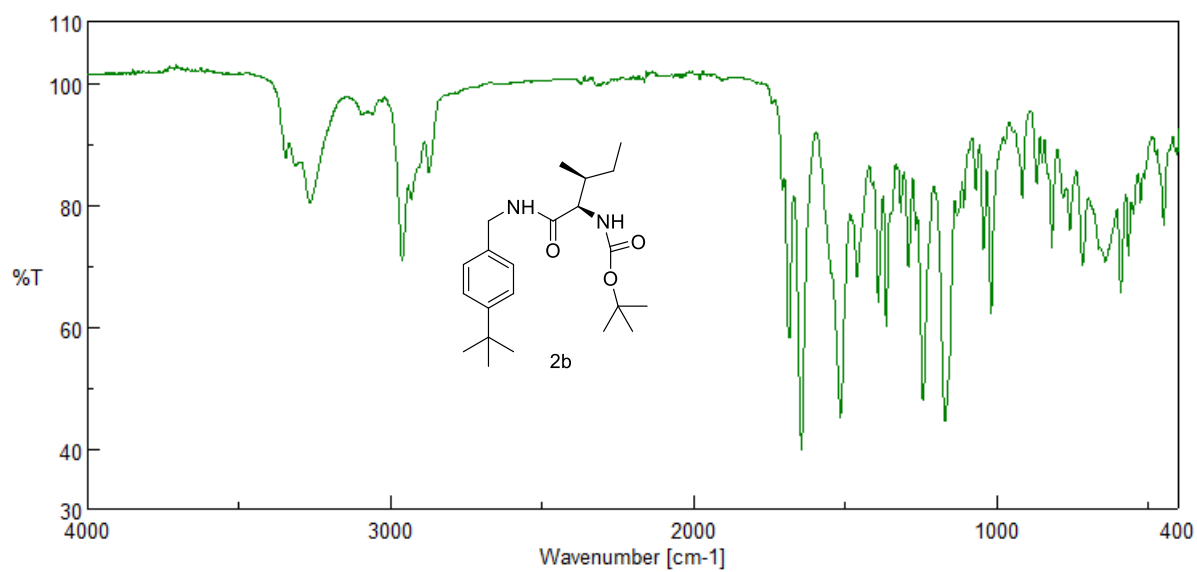
**Figure S1:** FTIR spectrum of compound **2a**



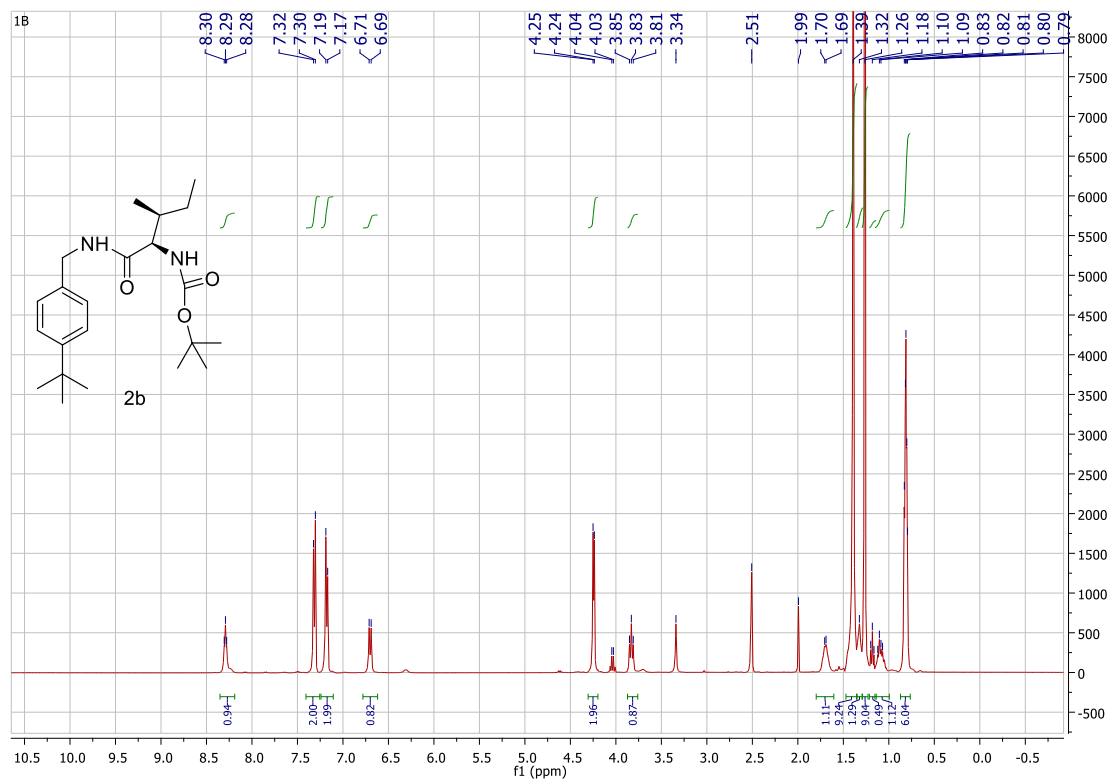
**Figure S2:**  $^1\text{H}$ -NMR spectrum of compound **2a** (DMSO- $d_6$ )



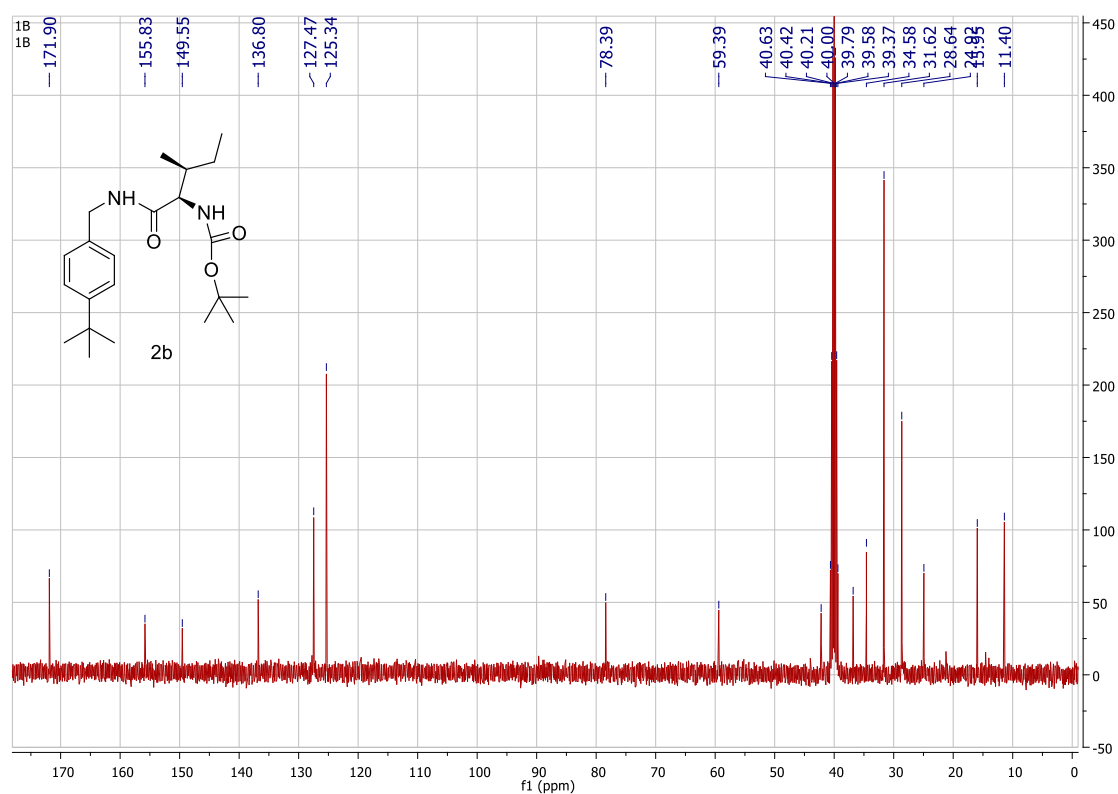
**Figure S3:** <sup>13</sup>C-NMR spectrum of compound **2a** (DMSO-d<sub>6</sub>)



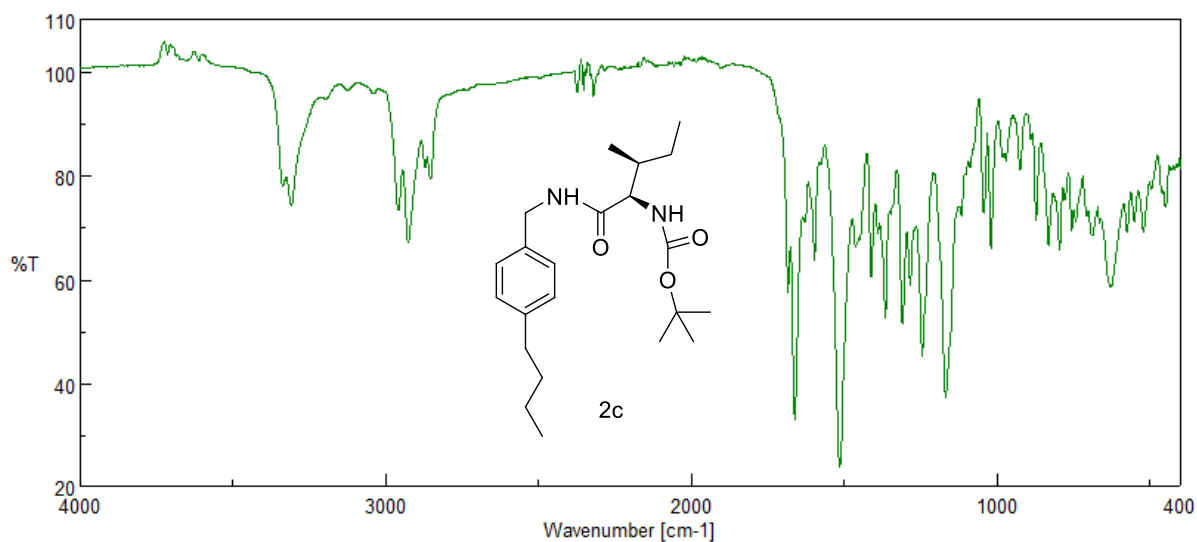
**Figure S4:** FTIR spectrum of compound **2b**



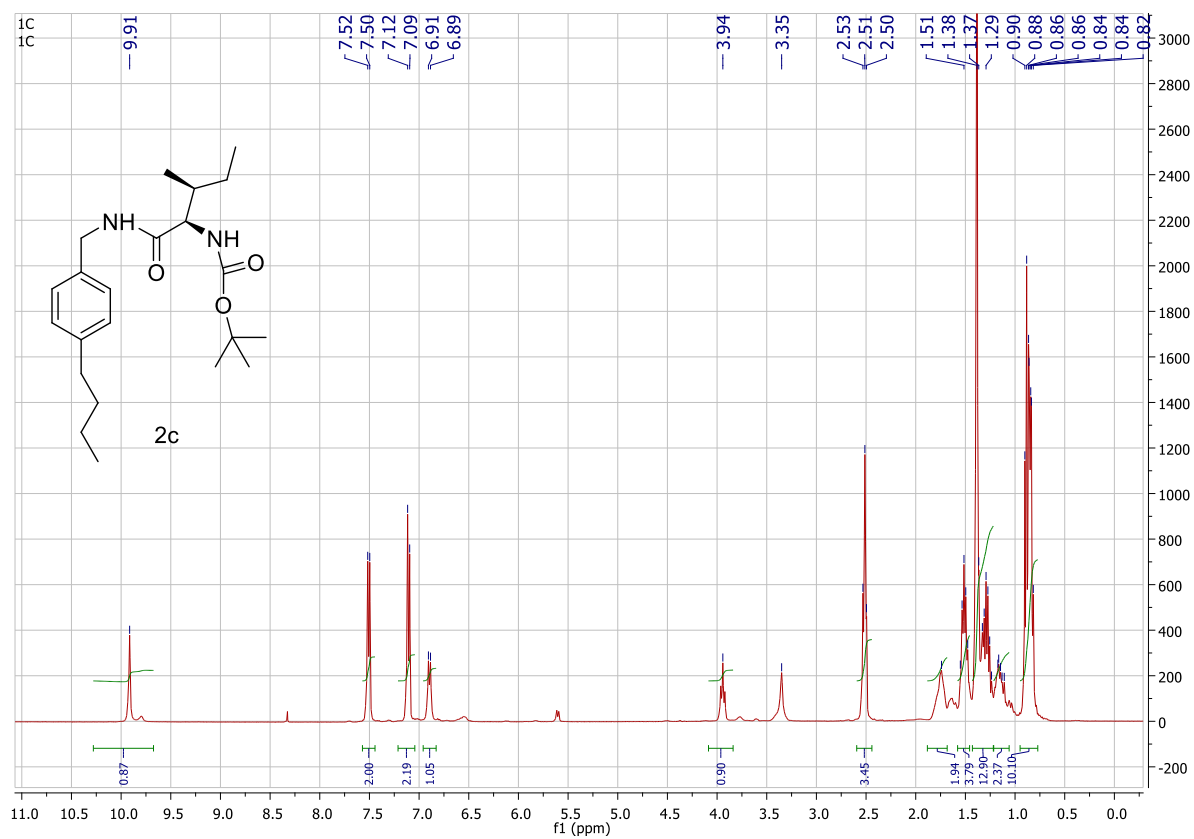
**Figure S5:**  $^1\text{H-NMR}$  spectrum of compound **2b** (DMSO- $d_6$ )



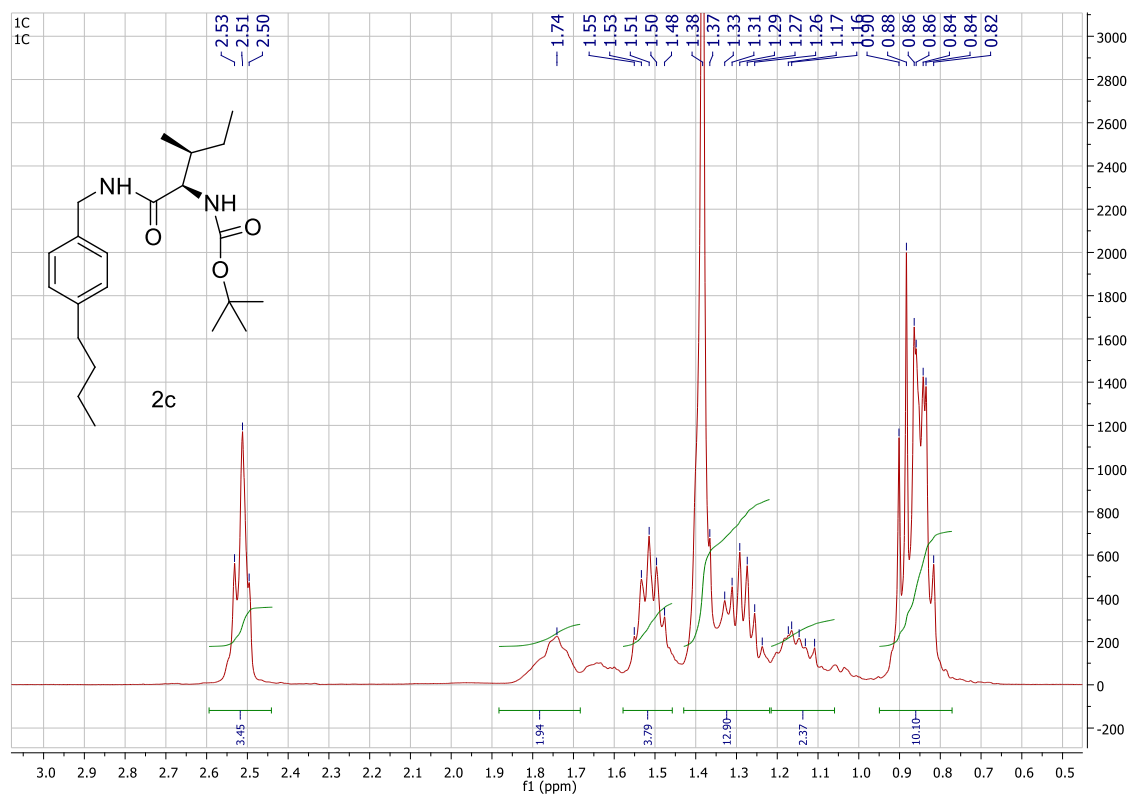
**Figure S6:**  $^{13}\text{C}$ -NMR spectrum of compound **2b** (DMSO- $d_6$ )



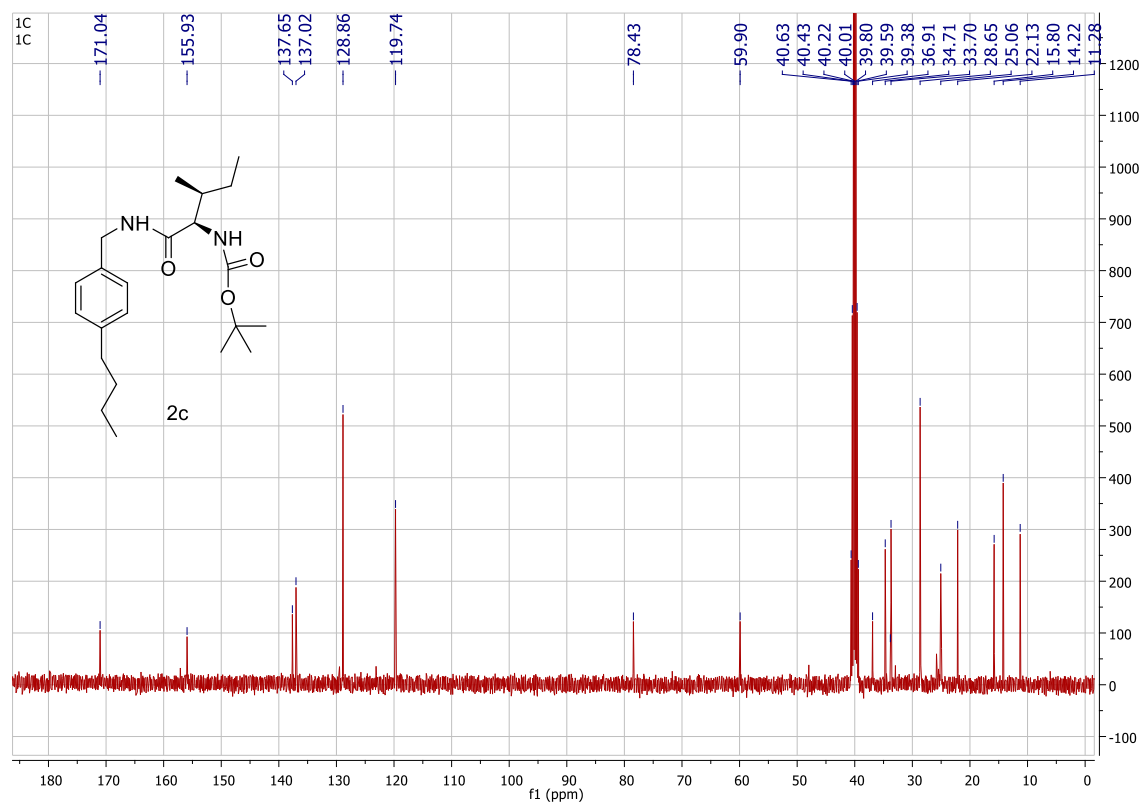
**Figure S7:** FTIR spectrum of compound **2c**



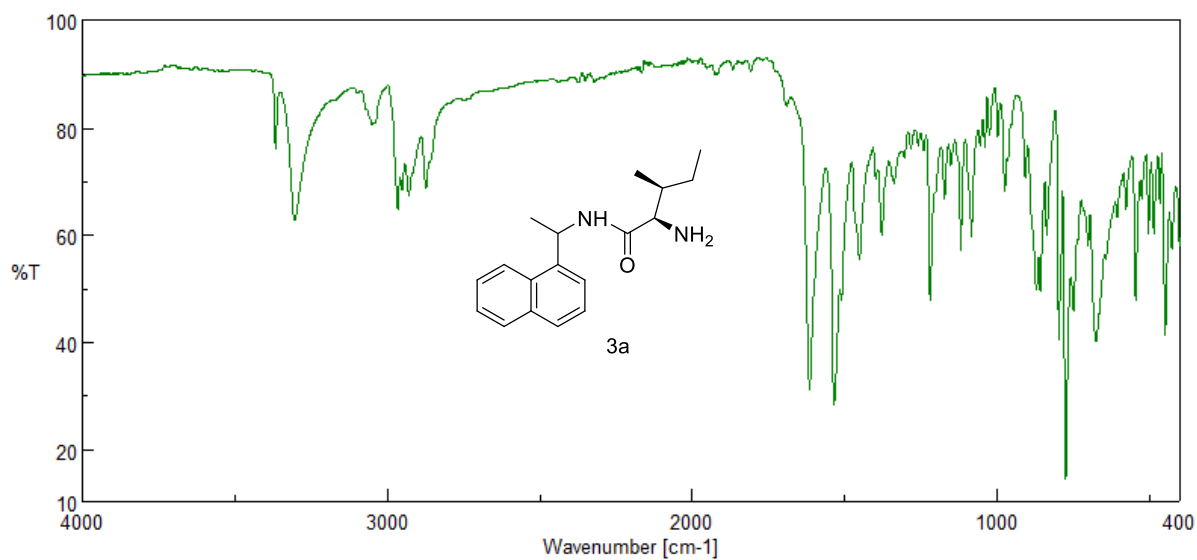
**Figure S8:**  $^1\text{H-NMR}$  spectrum of compound **2c** (DMSO- $d_6$ )



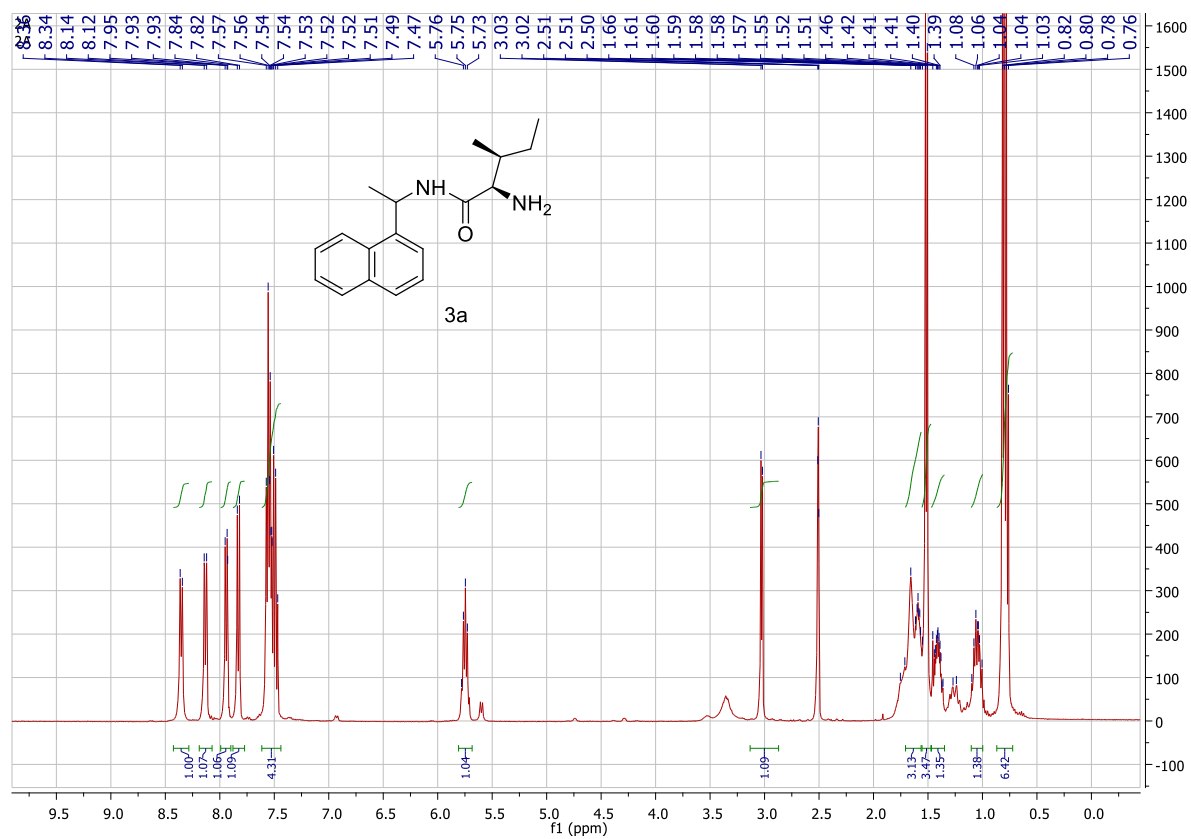
**Figure S9:** <sup>1</sup>H-NMR spectrum of compound 2c (DMSO-d<sub>6</sub>) (expanded)



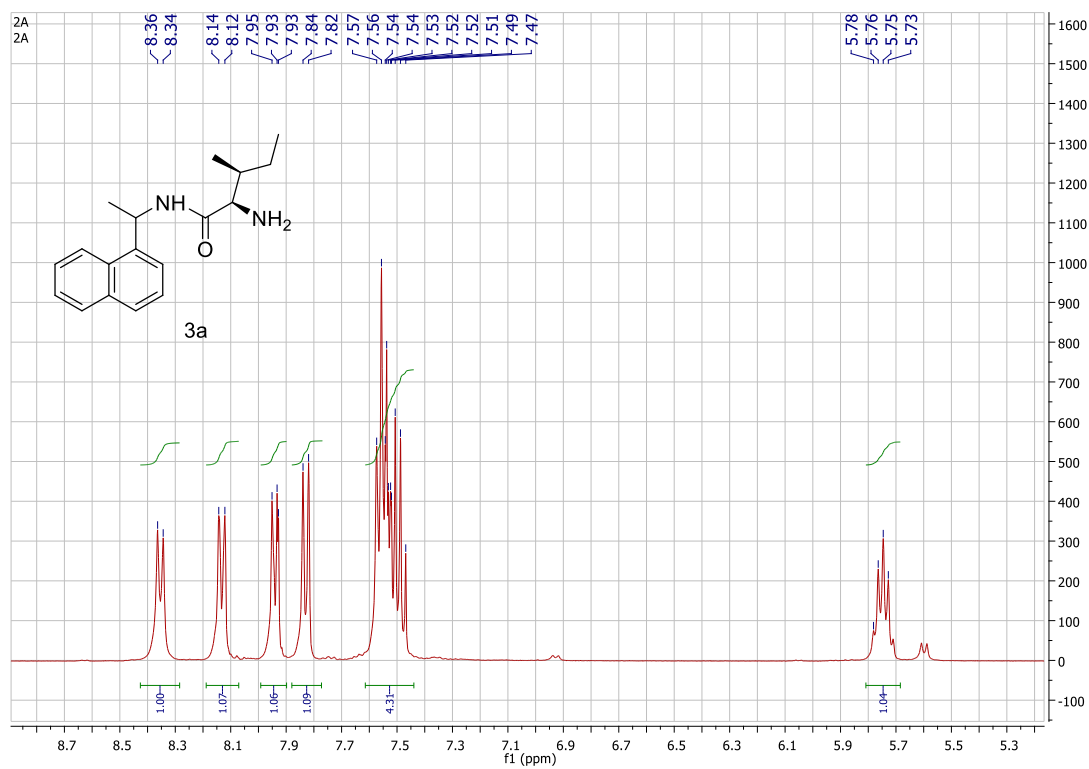
**Figure S10:** <sup>13</sup>C-NMR spectrum of compound 2c (DMSO-d<sub>6</sub>)



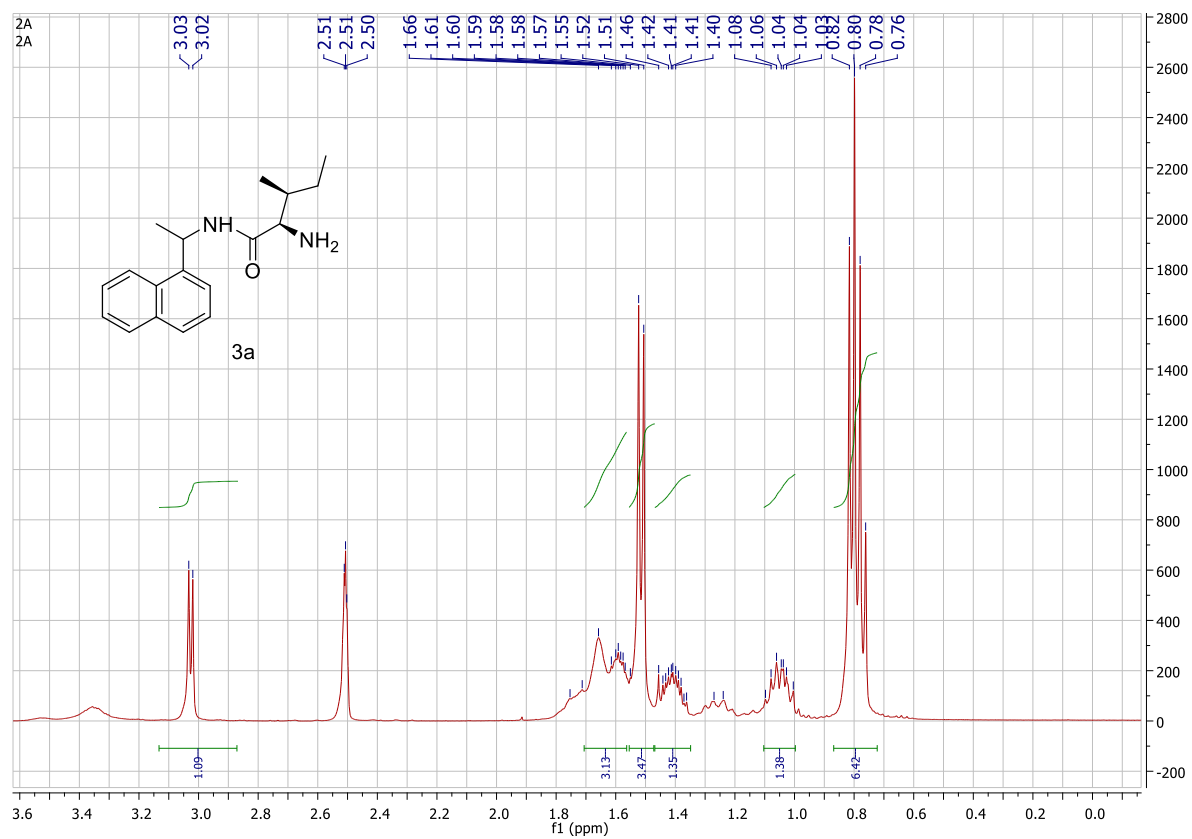
**Figure S11:** FTIR spectrum of compound **3a**



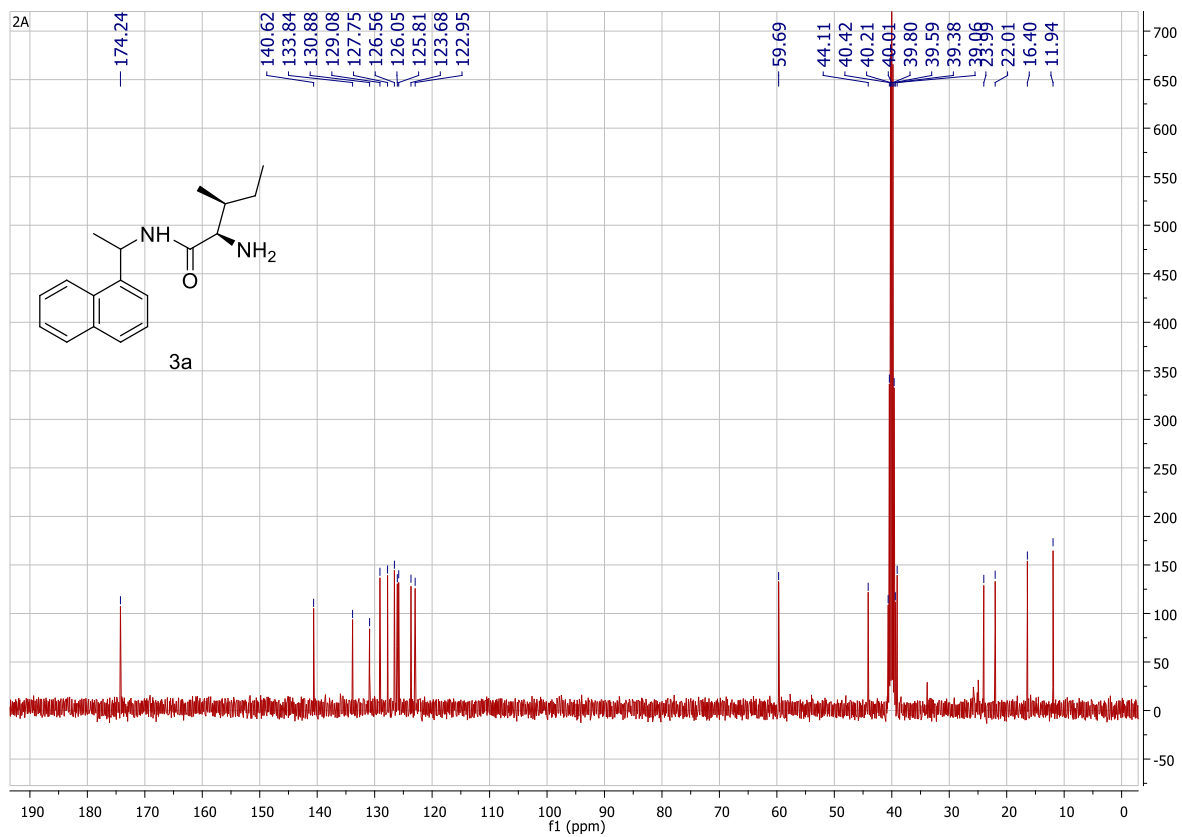
**Figure S12:** <sup>1</sup>H-NMR spectrum of compound **3a** (DMSO-d<sub>6</sub>)



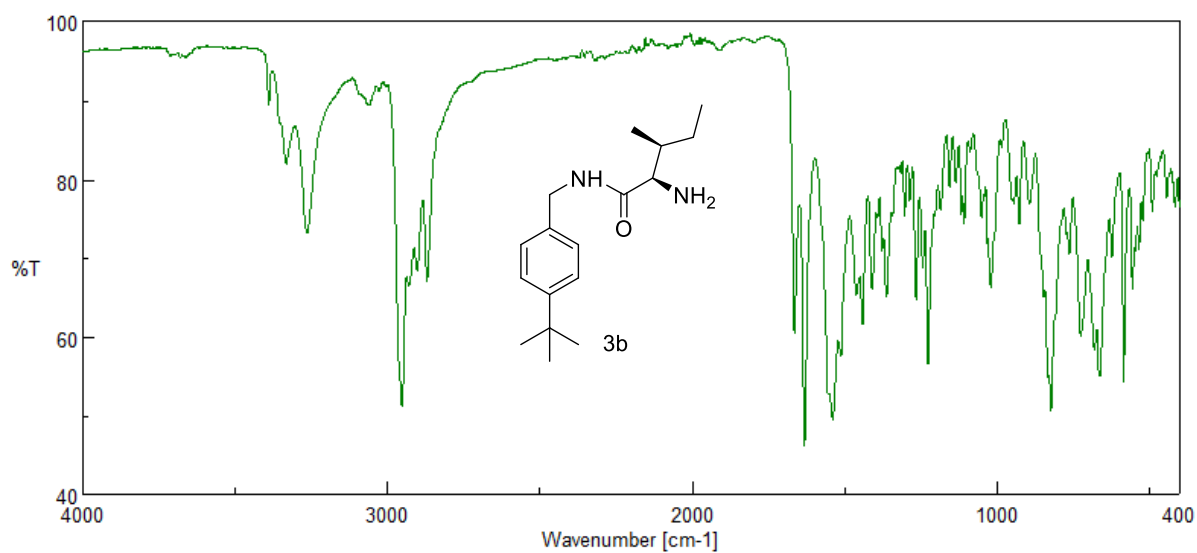
**Figure S13:** <sup>1</sup>H-NMR spectrum of compound **3a** (DMSO-d<sub>6</sub>) (expanded)



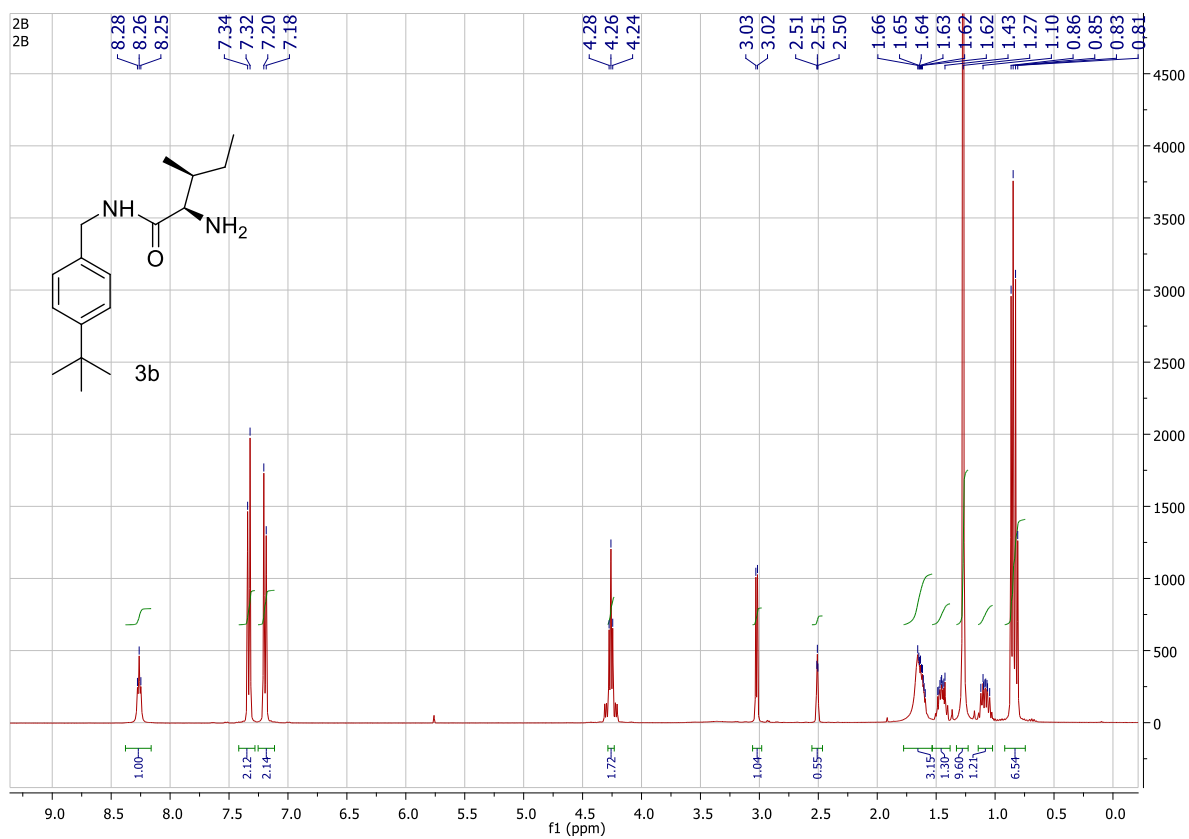
**Figure S14:**  $^1\text{H}$ -NMR spectrum of compound **3a** (DMSO- $d_6$ ) (expanded)



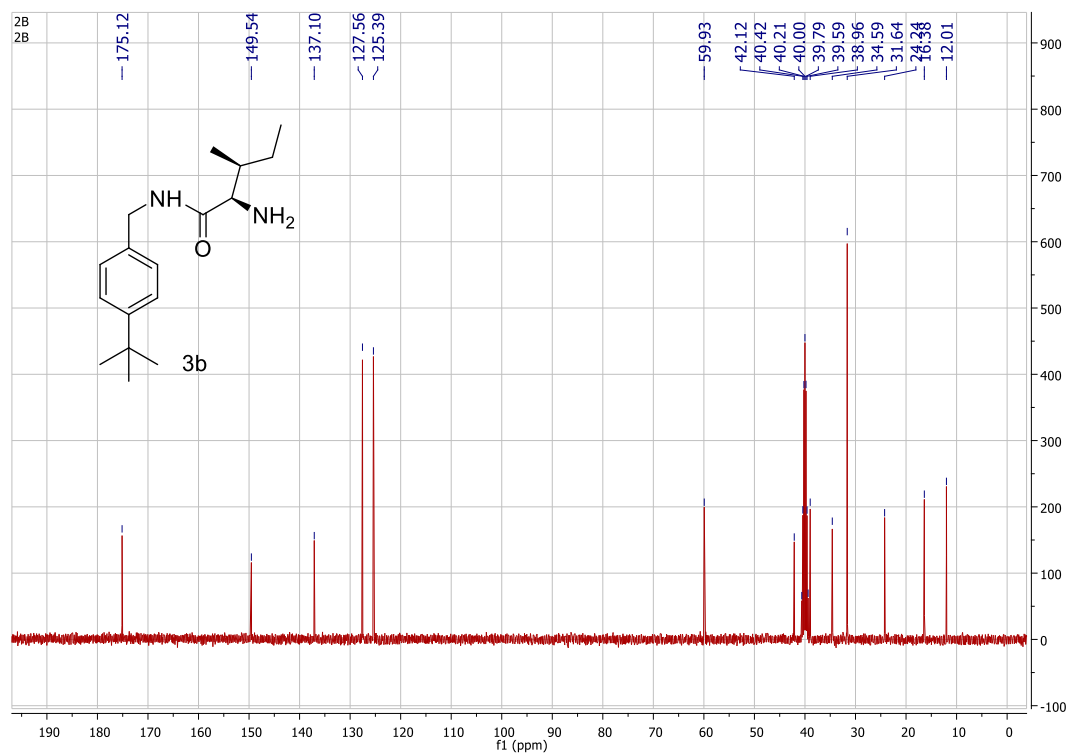
**Figure S15:**  $^{13}\text{C}$ -NMR spectrum of compound **3a** (DMSO- $d_6$ )



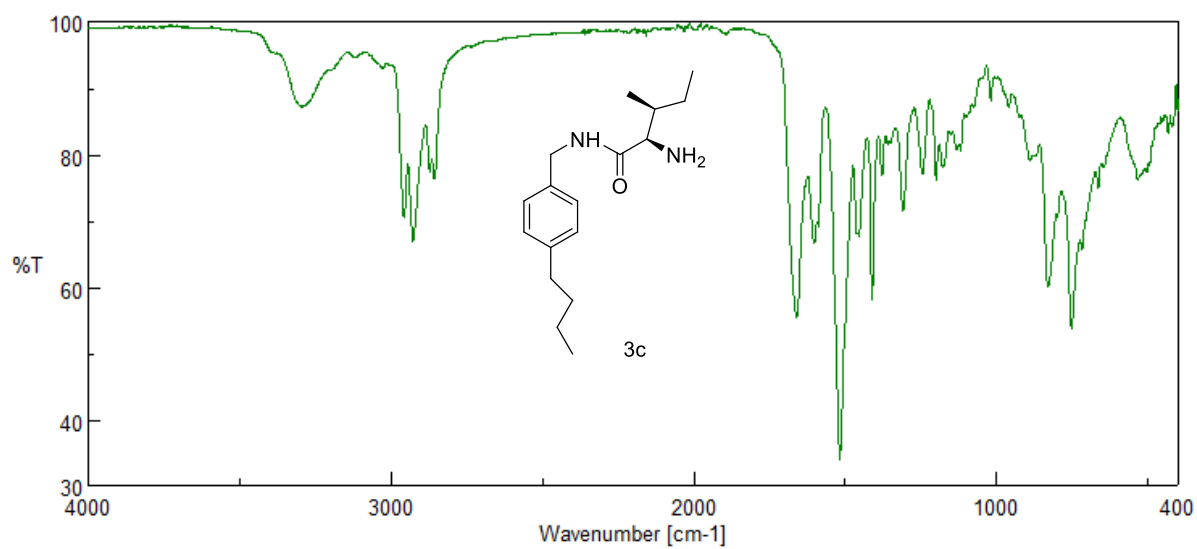
**Figure S16:** FTIR spectrum of compound **3b**



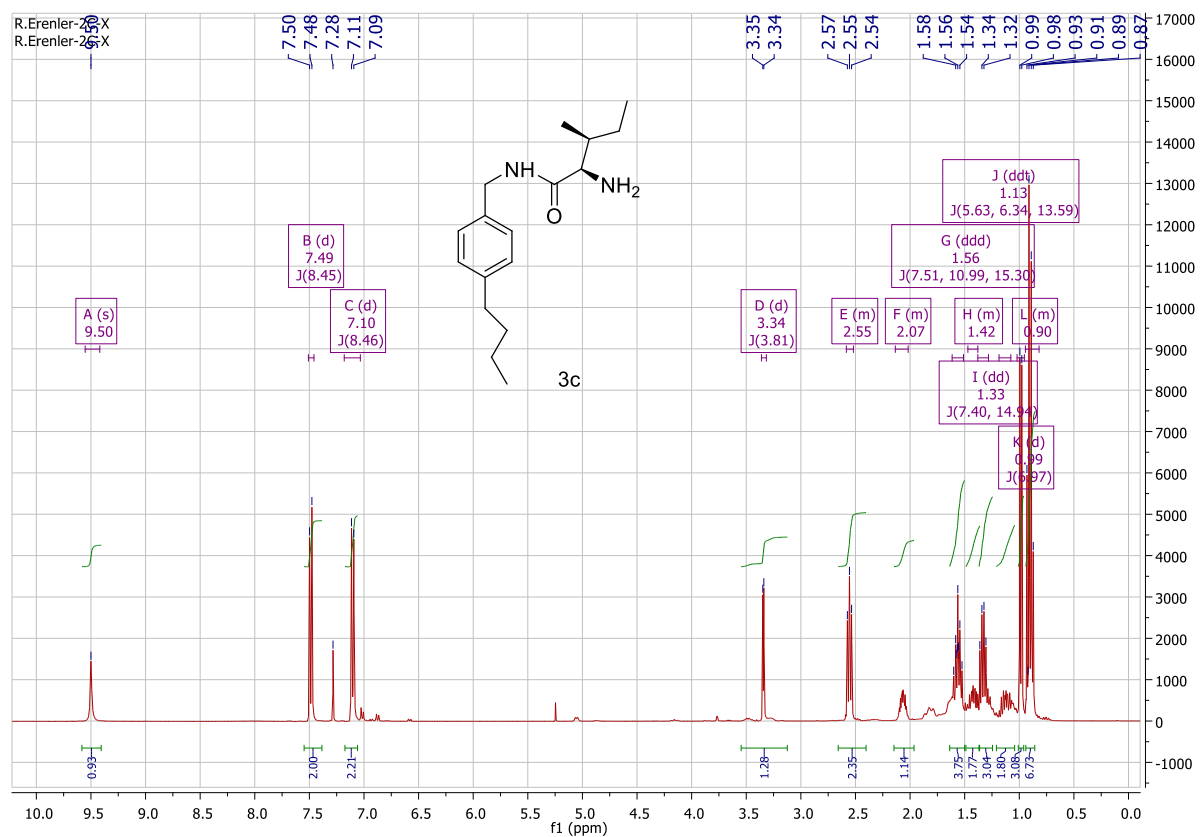
**Figure S17:** <sup>1</sup>H-NMR spectrum of compound **3b** (DMSO-d<sub>6</sub>)



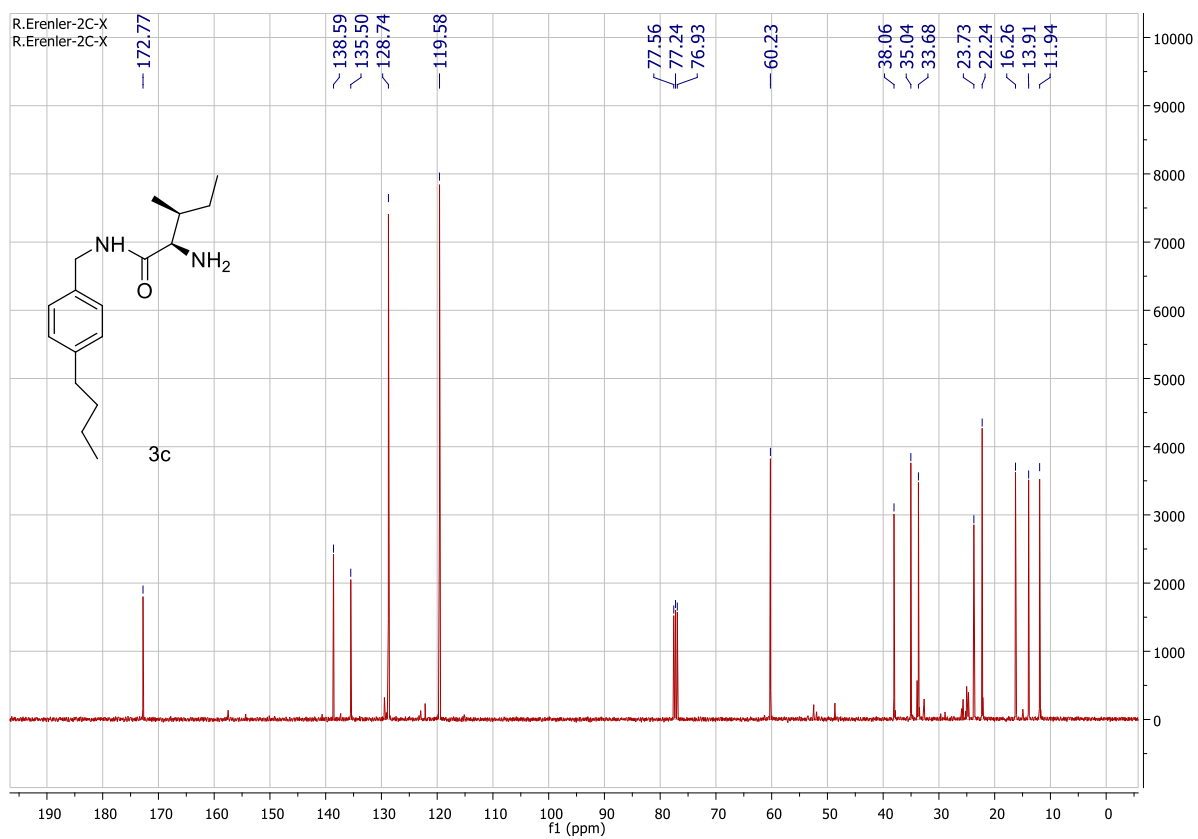
**Figure S18:** <sup>13</sup>C-NMR spectrum of compound **3b**



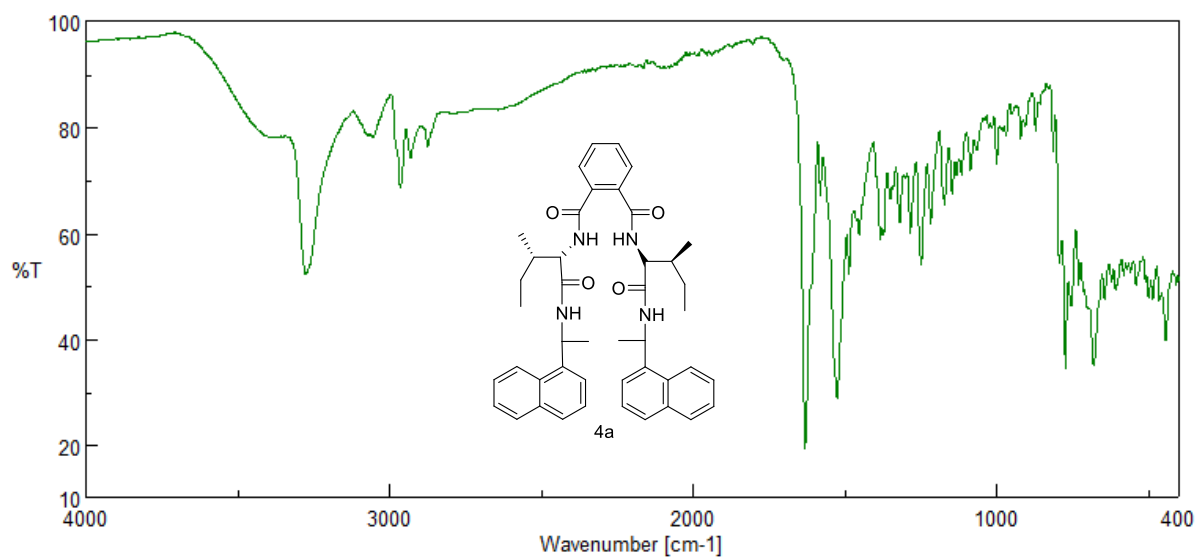
**Figure S19:** FTIR spectrum of compound **3c**



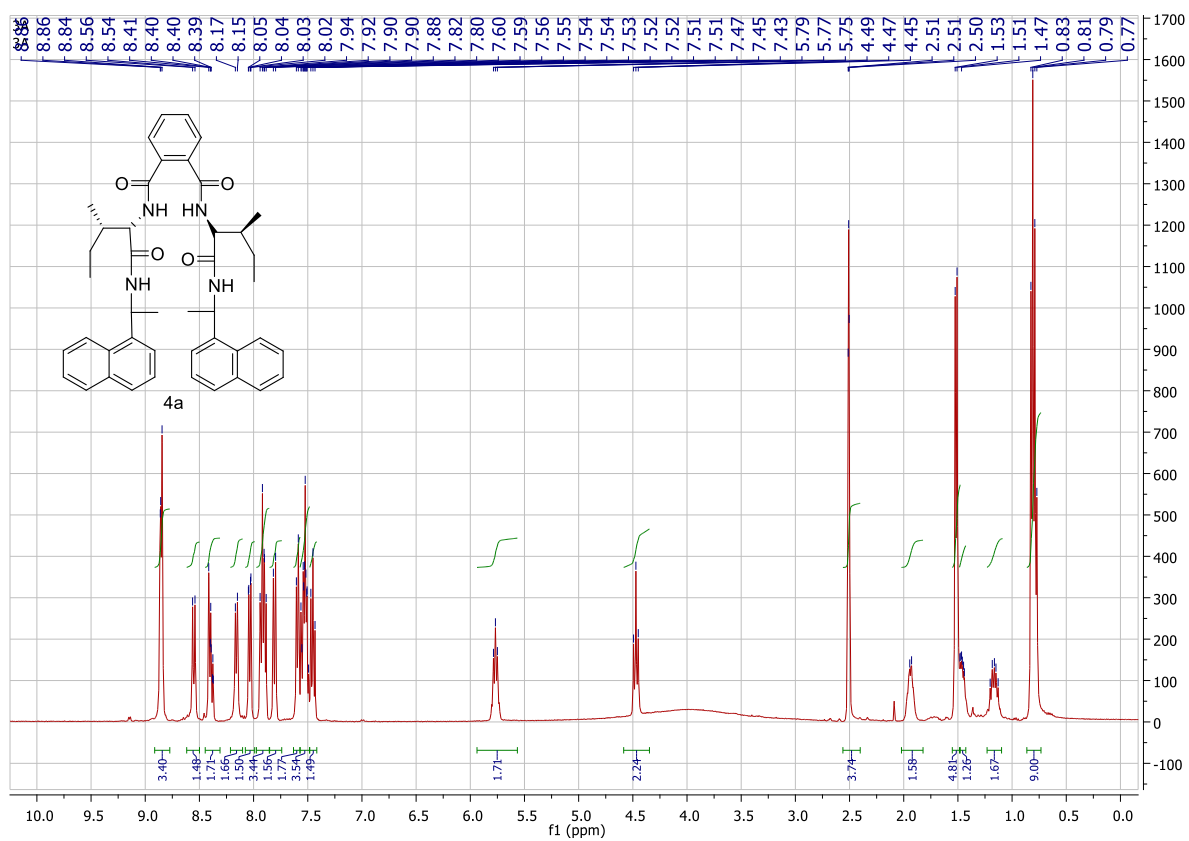
**Figure S20:**  $^1\text{H}$ -NMR spectrum of compound **3c** ( $\text{CDCl}_3$ )



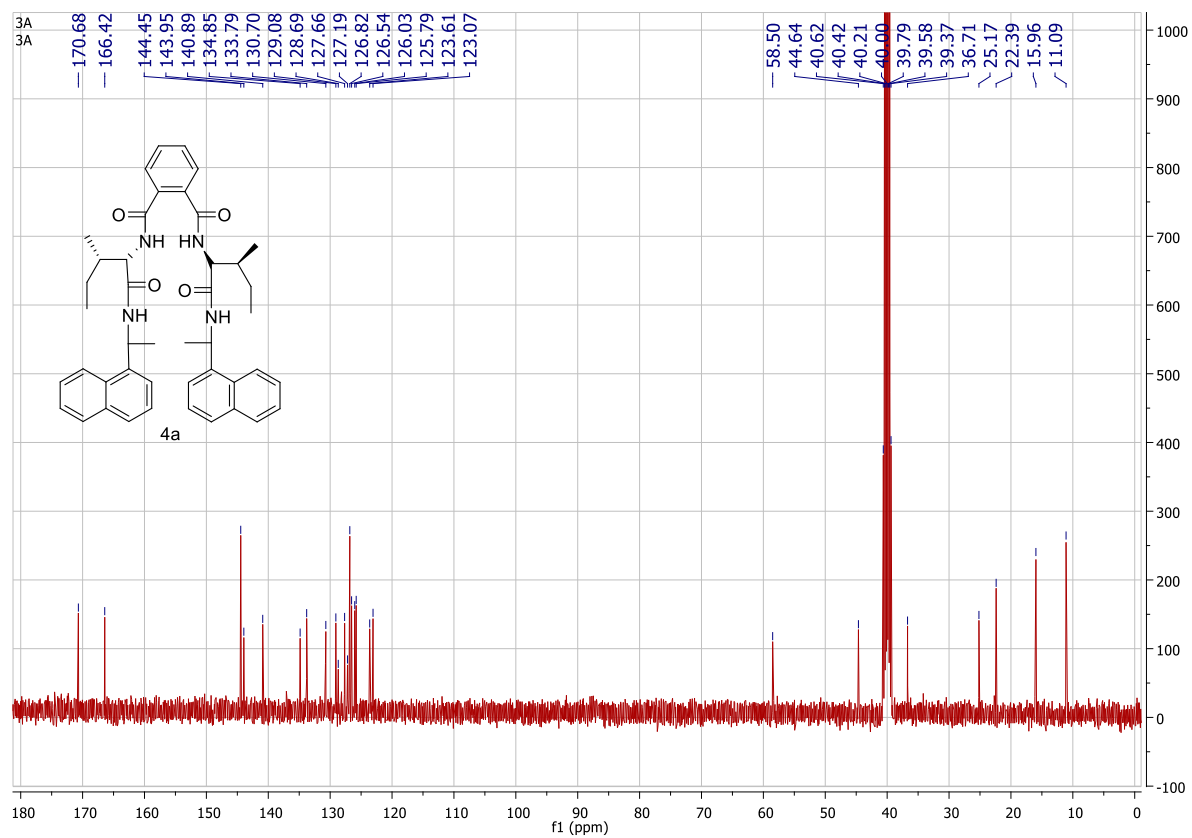
**Figure S21:**  $^{13}\text{C}$ -NMR spectrum of compound **3c** ( $\text{CDCl}_3$ )



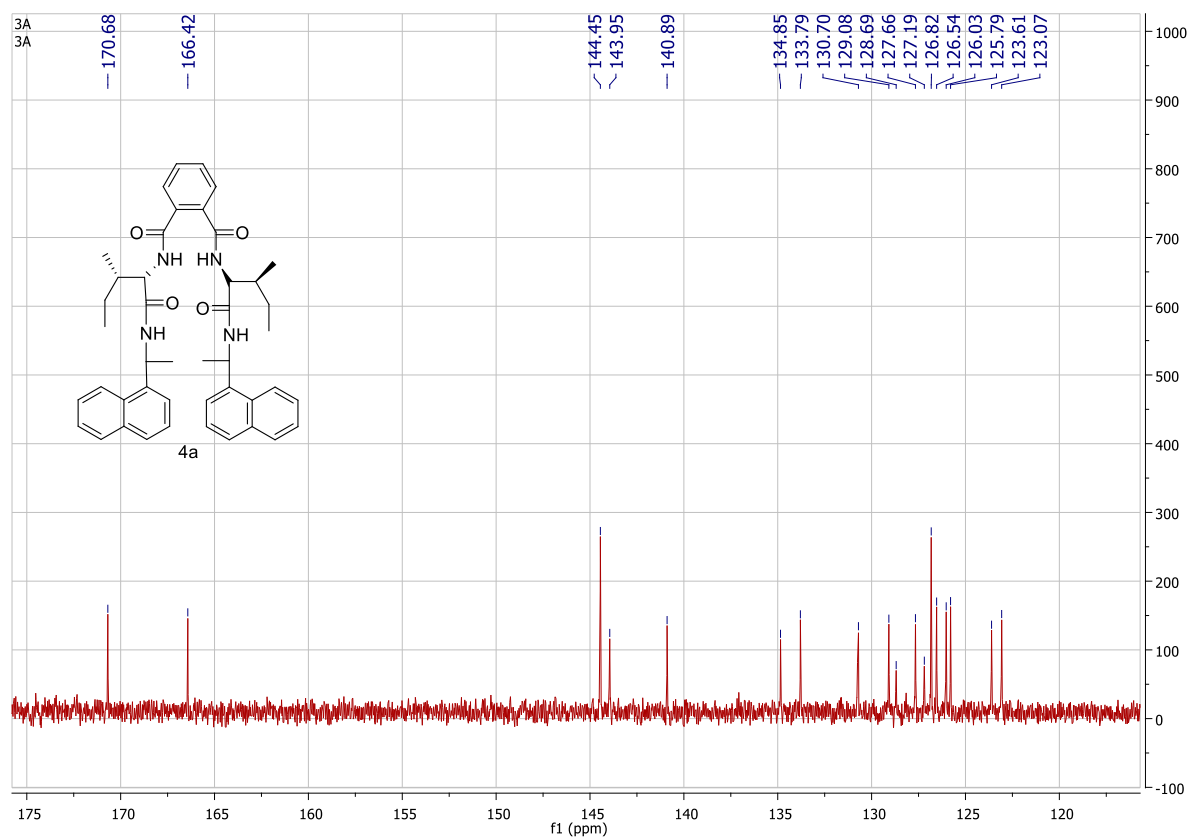
**Figure S22:** FTIR spectrum of compound **4a**



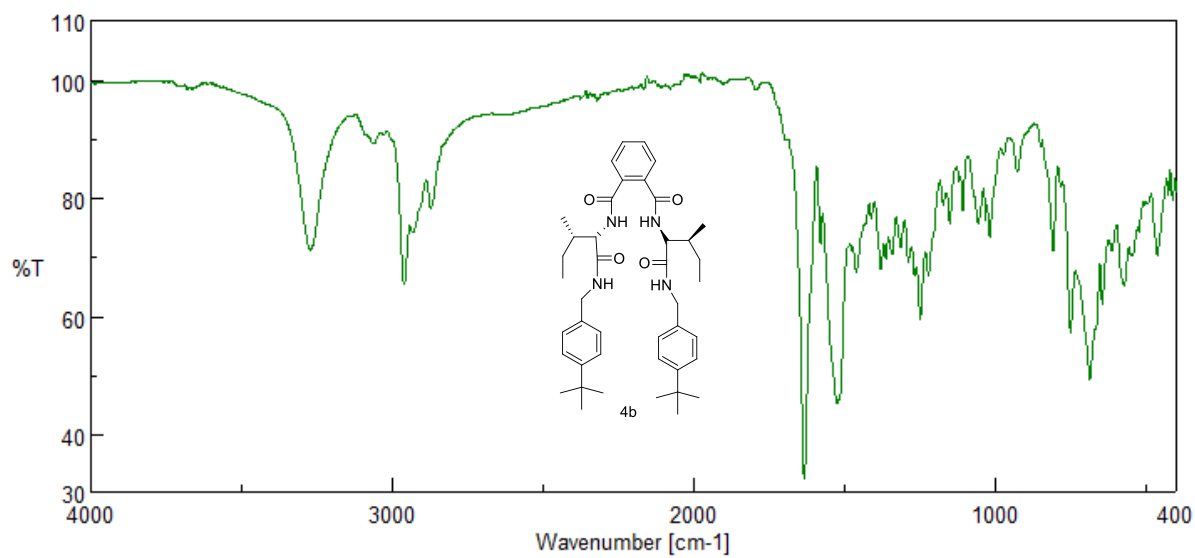
**Figure S23:**  $^1\text{H-NMR}$  spectrum of compound **4a** (DMSO- $d_6$ )



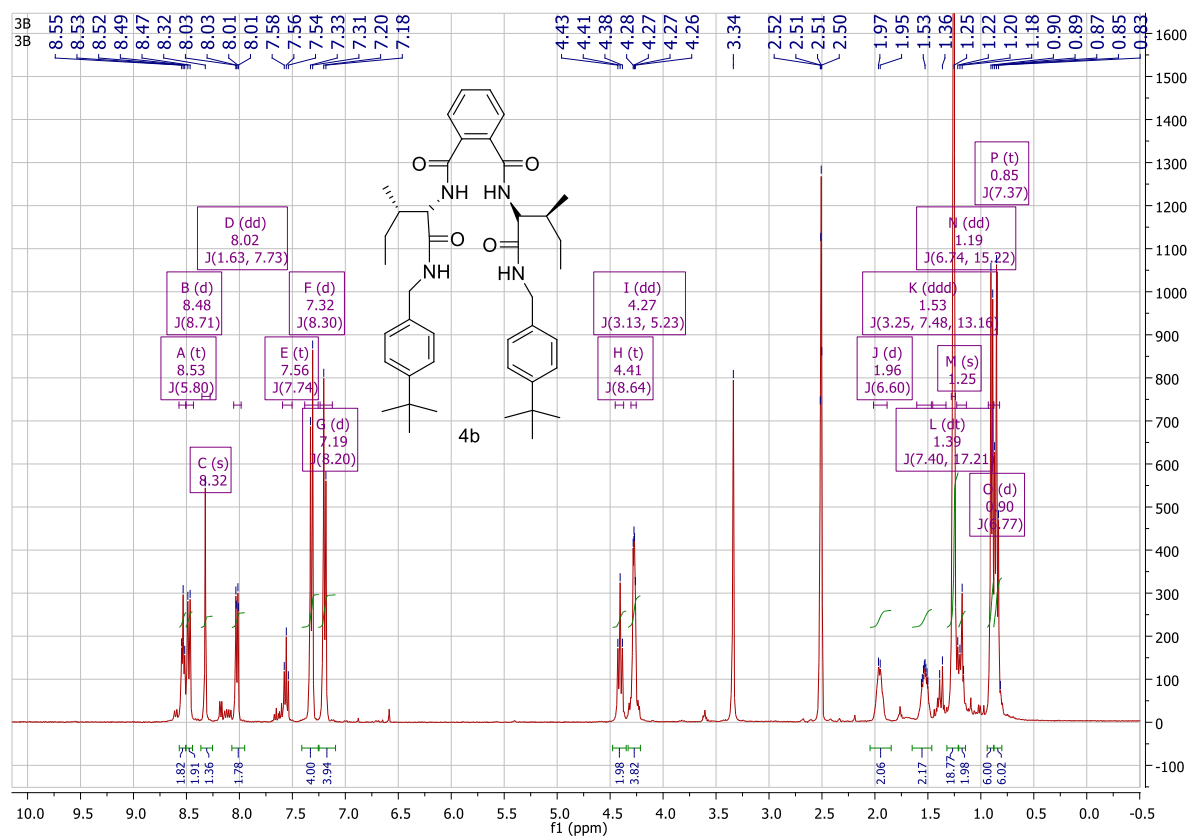
**Figure S24:**  $^{13}\text{C}$ -NMR spectrum of compound **4a** (DMSO- $d_6$ )



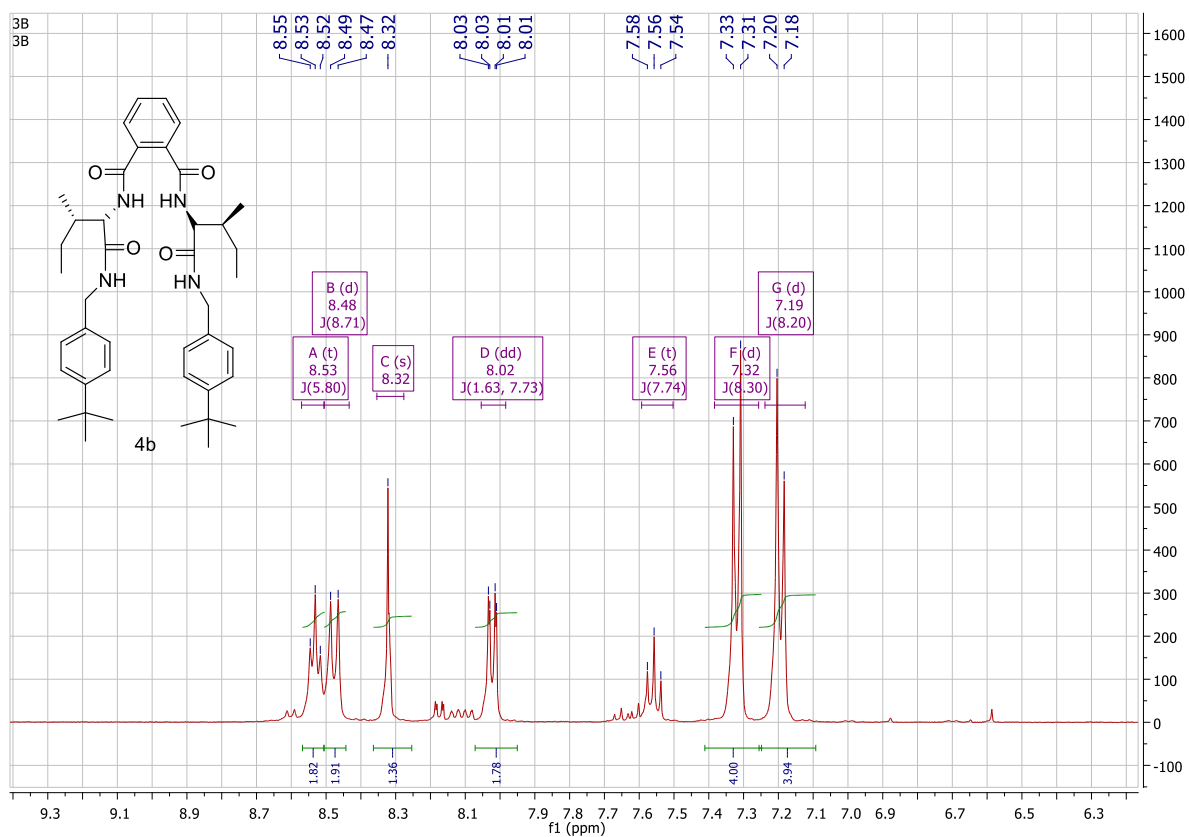
**Figure S25:** <sup>13</sup>C-NMR spectrum of compound **4a** (DMSO-d<sub>6</sub>) (expanded)



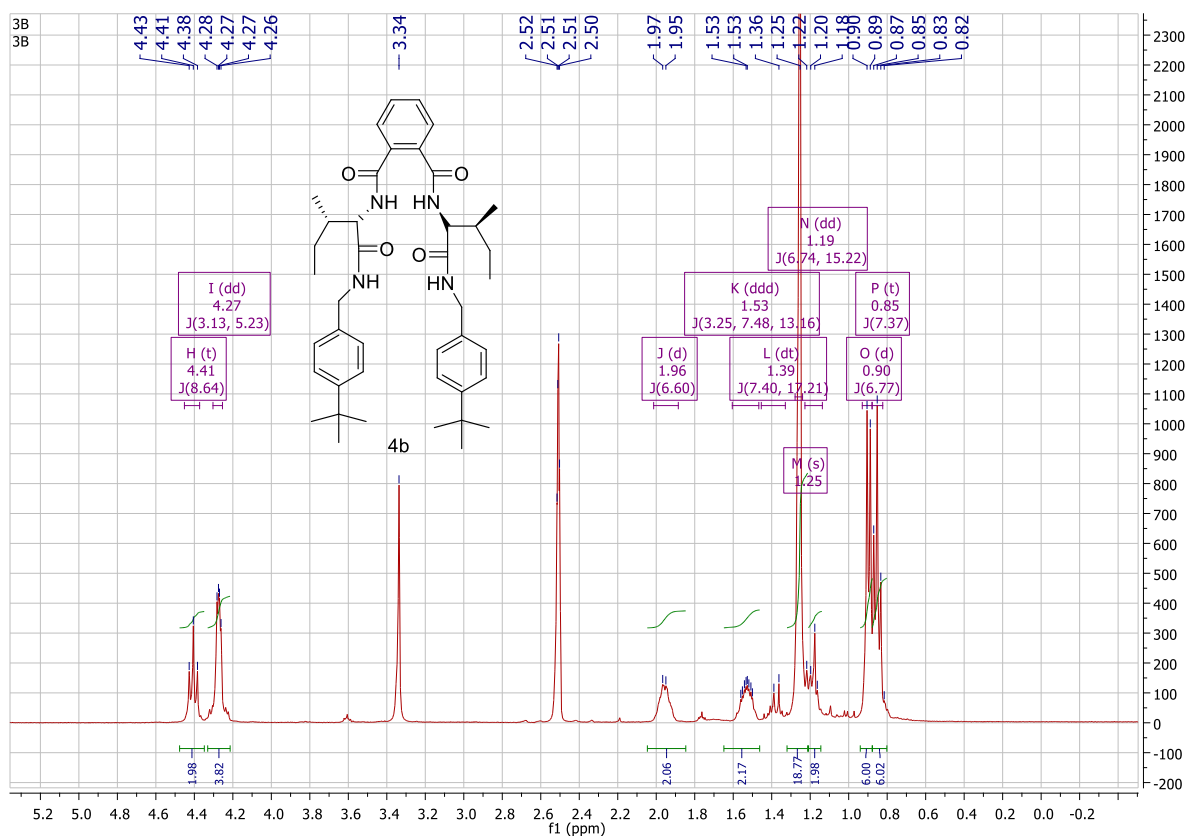
**Figure S26:** FTIR spectrum of compound **4b**



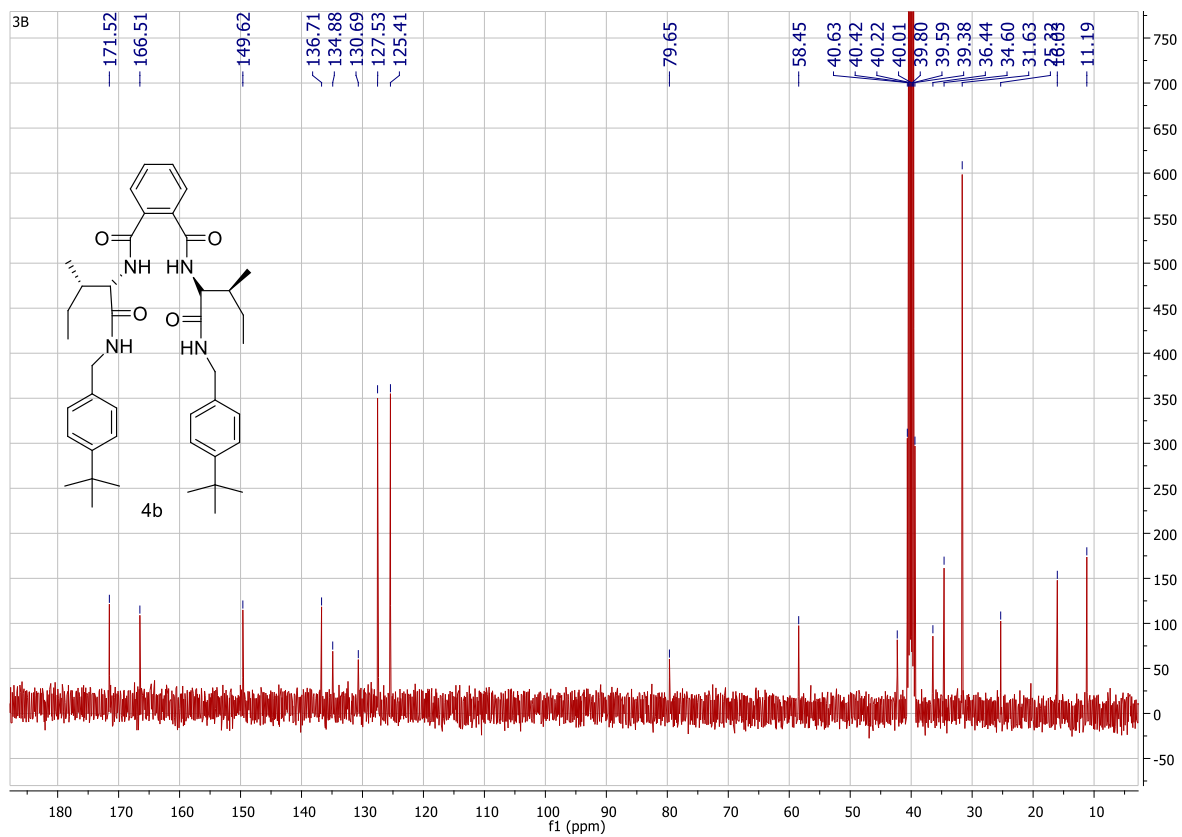
**Figure S27:**  $^1\text{H}$ -NMR spectrum of compound **4b** (DMSO- $d_6$ )



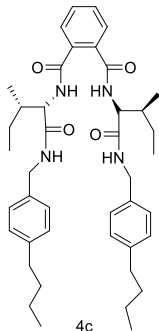
**Figure S28:** <sup>1</sup>H-NMR spectrum of compound **4b** (DMSO-d<sub>6</sub>) (expanded)



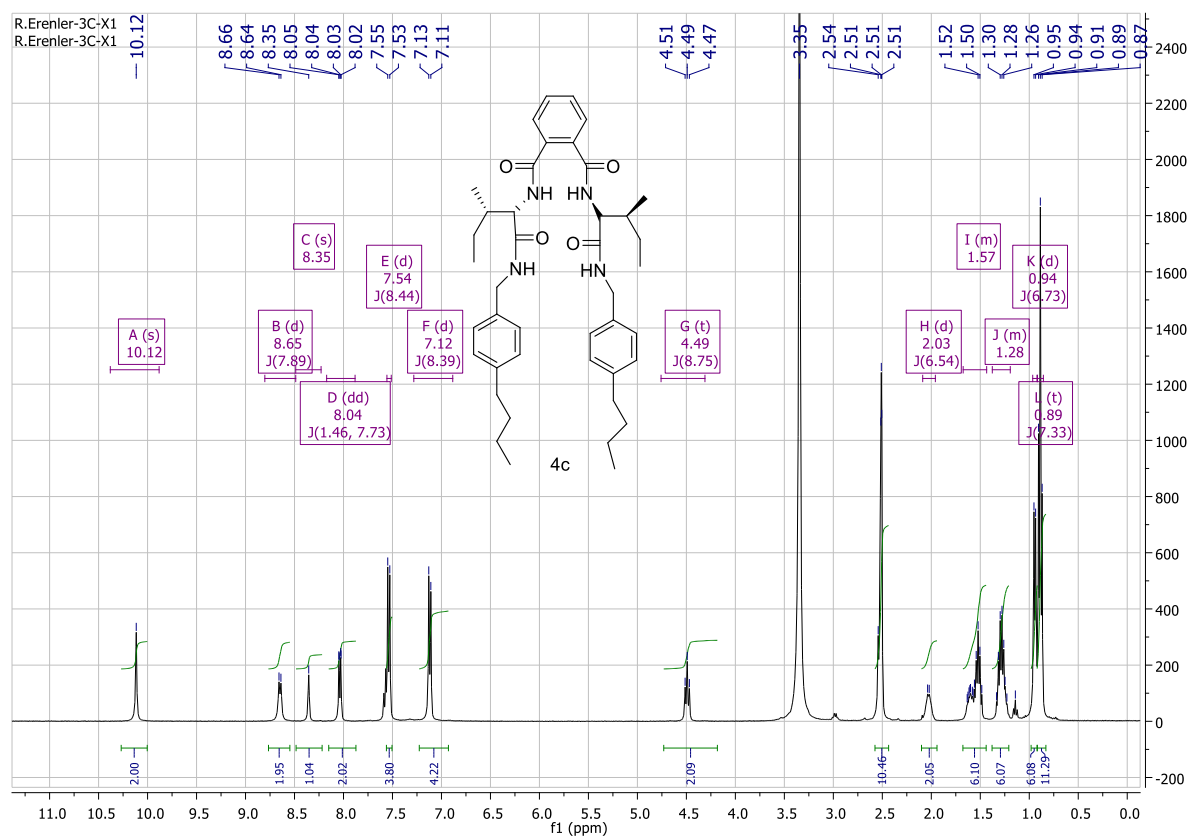
**Figure S29:**  $^1\text{H}$ -NMR spectrum of compound **4b** (DMSO- $d_6$ ) (expanded)



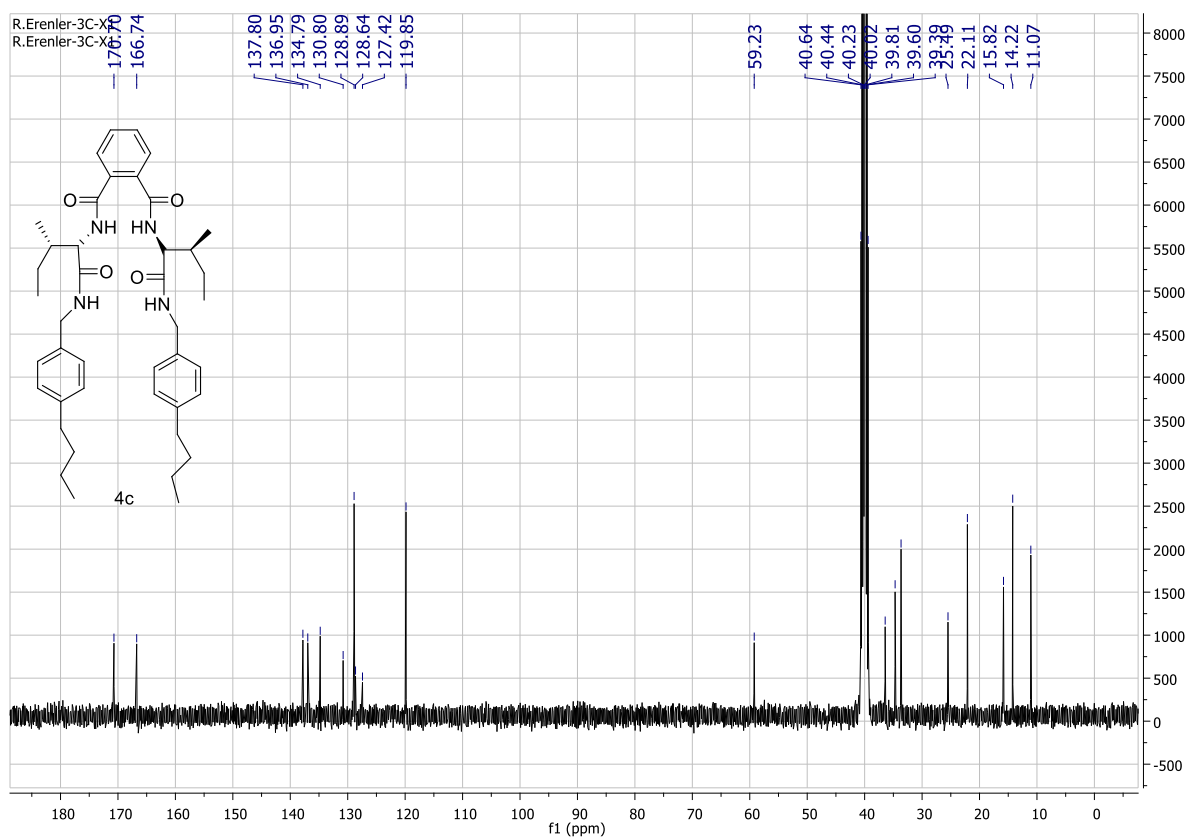
**Figure S30:**  $^{13}\text{C}$ -NMR spectrum of compound **4b** (DMSO- $d_6$ )



**Figure S31:** FTIR spectrum of compound **4c**



**Figure S32:**  $^1\text{H}$ -NMR spectrum of compound **4c** (DMSO- $d_6$ )



**Figure S33:**  $^{13}\text{C}$ -NMR spectrum of compound **4c** (DMSO- $\text{d}_6$ )