

## Supplementary Information

### **Marine Natural Products-Inspired Phenylmethylene Hydantoins with Potent *in Vitro* and *in Vivo* Antitumor Activities via Suppression of Brk and FAK Signaling**

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## Table of Contents

	Page number
Table S1. <sup>1</sup> H NMR data of compounds <b>3-7</b> .....	3
Table S2. <sup>1</sup> H NMR data of compounds <b>8-11</b> .....	4
Table S3. <sup>1</sup> H NMR data of compounds <b>12-13</b> .....	5
Table S4. <sup>13</sup> C NMR data of compounds <b>3-8</b> .....	6
Table S5. <sup>13</sup> C NMR data of compounds <b>9-13</b> .....	7
Fig. SI1. <sup>1</sup> H NMR Spectrum of <b>3</b> .....	8
Fig. SI2. <sup>13</sup> C NMR (PENDANT) Spectrum of <b>3</b> .....	9
Fig. SI3. <sup>1</sup> H NMR Spectrum of <b>4</b> .....	10
Fig. SI4. <sup>13</sup> C NMR (PENDANT) Spectrum of <b>4</b> .....	11
Fig. SI5. <sup>1</sup> H NMR Spectrum of <b>5</b> .....	12
Fig. SI6. <sup>13</sup> C NMR (PENDANT) Spectrum of <b>5</b> .....	13
Fig. SI7. <sup>1</sup> H NMR Spectrum of <b>6</b> .....	14
Fig. SI8. <sup>13</sup> C NMR (PENDANT) Spectrum of <b>6</b> .....	15
Fig. SI9. <sup>1</sup> H NMR Spectrum of <b>7</b> .....	16
Fig. SI10. <sup>13</sup> C NMR (PENDANT) Spectrum of <b>7</b> .....	17
Fig. SI11. <sup>1</sup> H NMR Spectrum of <b>8</b> .....	18
Fig. SI12. <sup>13</sup> C NMR (PENDANT) Spectrum of <b>8</b> .....	19
Fig. SI13. <sup>1</sup> H NMR Spectrum of <b>9</b> .....	20
Fig. SI14. <sup>13</sup> C NMR (PENDANT) Spectrum of <b>9</b> .....	21
Fig. SI15. <sup>1</sup> H NMR Spectrum of <b>10</b> .....	22
Fig. SI16. <sup>13</sup> C NMR (PENDANT) Spectrum of <b>10</b> .....	23
Fig. SI17. <sup>1</sup> H NMR Spectrum of <b>11</b> .....	24
Fig. SI18. <sup>13</sup> C NMR (PENDANT) Spectrum of <b>11</b> .....	25
Fig. SI19. <sup>1</sup> H NMR Spectrum of <b>12</b> .....	26
Fig. SI20. <sup>13</sup> C NMR (PENDANT) Spectrum of <b>12</b> .....	27
Fig. SI21. <sup>1</sup> H NMR Spectrum of <b>13</b> .....	28
Fig. SI22. <sup>13</sup> C NMR (PENDANT) Spectrum of <b>13</b> .....	29

**Table S1.**  $^1\text{H}$  NMR data of compounds **3-7**<sup>a</sup>

Position	$\delta_H$				
	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
6	6.25, s	6.24, s	6.38, s	6.39, s	6.41, s
7	-----	-----	-----	-----	-----
8	6.87, brs	7.73, dd (9.2, 1.1)	7.44, d (8.2)	8.07, d (2.2)	7.65, d (8.7)
9	-----	6.73, d (9.2)	7.58, d (8.2)	-----	7.68, d (8.7)
10	-----	-----	-----	-----	-----
11	-----	-----	7.58, d (8.2)	7.42, d (8.8)	7.68, d (8.7)
12	7.05, dd (2.3, 11.9)	-----	7.44, d (8.2)	7.80, dd (2.2, 8.8)	7.65, d (8.7)
1`	-----	-----	-----	5.30, 2H, s	-----
2`	-----	-----	-----	-----	7.27, t (8.7)
3`	-----	-----	-----	7.21, t (8.7)	7.73, dd (8.7, 6.0)
4`	-----	-----	-----	7.47, dd (8.7, 6.0)	-----
5`	-----	-----	-----	-----	7.73, dd (8.7, 6.0)
6`	-----	-----	-----	7.47, dd (8.7, 6.0)	7.27, t (8.7)
7`	-----	-----	-----	7.21, t (8.7)	-----
-OCH <sub>3</sub>	3.78, 3H, s	-----	-----	-----	-----
-N(CH <sub>3</sub> ) <sub>2</sub>	-----	3.10, 6H, s	-----	-----	-----
-SC(CH <sub>3</sub> ) <sub>3</sub>	-----	-----	1.21, 9H, s	-----	-----

<sup>a</sup>In DMSO, 400 MHz. Coupling constants (*J*) are in Hertz.

**Table S2.**  $^1\text{H}$  NMR data of compounds **8-11**<sup>a</sup>

Position	$\delta_H$			
	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
6	6.39, s	6.41, s	6.40, s	6.10, s
7	-----	-----	-----	-----
8	7.57, d (8.7)	7.70, d (8.7)	7.71, d (8.2)	-----
9	7.04, d (8.7)	7.27, d (8.7)	7.67, d (8.2)	-----
10	-----	-----	-----	-----
11	7.04, d (8.7)	7.27, d (8.7)	7.67, d (8.2)	-----
12	7.57, d (8.7)	7.70, d (8.7)	7.71, d (8.2)	-----
1`	5.15, 2H, s	-----	-----	-----
2`	-----	6.81, m	-----	-----
3`	-----	-----	-----	-----
4`	7.48, m	-----	-----	-----
5`	7.29, dd (9.3, 8.7)	-----	-----	-----
6`	7.39, dd (8.7, 8.2)	-----	-----	6.10, s
7`	-----	-----	-----	-----
-OCH <sub>3</sub> (C-9)	-----	-----	-----	-----
-OCH <sub>3</sub> (C-10)	-----	-----	-----	-----
-N(CH <sub>3</sub> ) <sub>2</sub>	-----	-----	-----	-----

<sup>a</sup>In DMSO, 400 MHz. Coupling constants (*J*) are in Hertz.

**Table S3.**  $^1\text{H}$  NMR data of compounds **12-13**<sup>a</sup>

Position	$\delta_H$	
	<b>12</b>	<b>13</b>
6	6.29, s	6.36, s
7	-----	-----
8	7.26, dd (6.8, 1.8)	6.98, d (12.4)
9	6.65, dd (6.8, 1.8)	-----
10	-----	-----
11	-----	7.05, d (7.3)
12	-----	-----
1`	-----	-----
2`	-----	-----
3`	-----	-----
4`	-----	-----
5`	-----	-----
6`	-----	-----
-OCH <sub>3</sub> (C-9)	-----	3.80, s
-OCH <sub>3</sub> (C-10)	-----	3.78, s
-N(CH <sub>3</sub> ) <sub>2</sub>	-----	-----

<sup>a</sup>In DMSO, 400 MHz. Coupling constants ( $J$ ) are in Hertz.

**Table S4.**  $^{13}\text{C}$  NMR data of compounds **3-8**<sup>a</sup>

Position	$\delta_{\text{C}}$					
	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
2	156.7, qC	156.0, qC	156.2, qC	156.3, qC	156.3, qC	156.2, qC
4	166.5, qC	165.7, qC	166.0, qC	165.9, qC	166.2, qC	166.2, qC
5	126.1, qC	128.5, qC	129.2, qC	126.5, qC	128.6, qC	126.6, qC
6	110.6, CH	98.8, CH	107.7, CH	106.3, CH	108.3, CH	109.0, CH
7	121.1, qC	109.8, qC	134.1, qC	128.8, qC	132.7, qC	126.9, qC
8	109.9, CH	134.4, CH	130.0, CH	125.4, CH	127.3, CH	131.7, CH
9	151.3, qC	112.5, CH	137.5, CH	140.6, qC	130.5, CH	115.4, CH
10	150.7, qC	161, qC	132.7, qC	150.5, qC	139.2, qC	160.7, qC
11	153.7, qC	154.7, qC	137.5, CH	115.9, CH	130.5, CH	115.4, CH
12	109.7, CH	163.2, qC	130.0, CH	135.4, CH	127.3, CH	131.7, CH
1`	-----	-----	-----	70.4, CH <sub>2</sub>	136.3, qC	70.4, CH <sub>2</sub>
2`	-----	-----	-----	132.6, qC	129.2, CH	136.0, qC
3`	-----	-----	-----	130.4, CH	116.4, CH	163.2, qC
4`	-----	-----	-----	116.1, CH	161.4, qC	126.6, CH
5`	-----	-----	-----	163.7, qC	116.4, CH	132.5, CH
6`	-----	-----	-----	116.1, CH	129.2, CH	132.4, CH
7`	-----	-----	-----	130.4, CH	-----	158.9, qC
-OCH <sub>3</sub>	56.7, CH <sub>3</sub>	-----	-----	-----	-----	-----
-N(CH <sub>3</sub> ) <sub>2</sub>	-----	42.8, CH <sub>3</sub>	-----	-----	-----	-----
-CN	-----	115.1, qC	-----	-----	-----	-----
-SC(CH <sub>3</sub> ) <sub>3</sub>	-----	-----	46.8, qC	-----	-----	-----
-SC(CH <sub>3</sub> ) <sub>3</sub>	-----	-----	31.2, CH <sub>3</sub>	-----	-----	-----

<sup>a</sup>In DMSO, 100 MHz. Carbon multiplicities were determined by pendant experiments.  
qC = quaternary. CH = methine, CH<sub>2</sub> = methylene, CH<sub>3</sub> = methyl carbons.

**Table S5.**  $^{13}\text{C}$  NMR data of compounds **9-13**<sup>a</sup>

Position	$\delta_{\text{C}}$				
	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
2	156.4, qC	156.3, qC	156.4, qC	156.0, qC	156.2, qC
4	166.1, qC	166.0, qC	165.6, qC	165.8, qC	166.2, qC
5	132.4, qC	122.7, qC	135.3, qC	127.8, qC	128.3, qC
6	107.9, CH	106.6, CH	91.2, CH	100.1, CH	111.5, CH
7	129.2, qC	128.5, qC	115.0, qC	111.1, qC	111.9, qC
8	131.8, CH	136.8, CH	142.7, qC	124.3, CH	100.4, CH
9	122.3, CH	131.0, CH	142.7, qC	114.3, CH	145.8, qC
10	148.1, qC	130.3, qC	115.0, qC	148.7, qC	154.3, qC
11	122.3, CH	131.0, CH	142.7, qC	142.1, qC	101.0, CH
12	131.8, CH	136.8, CH	142.7, qC	139.7, qC	150.8, qC
1`	117.0, qC	-----	-----	-----	-----
2`	108.7, CH	-----	156.4, qC	-----	-----
3`	-----	-----	-----	-----	-----
4`	-----	-----	165.6, qC	-----	-----
5`	-----	-----	135.3, qC	-----	-----
6`	-----	-----	91.2, CH	-----	-----
7`	-----	-----	-----	-----	-----
-OCH <sub>3</sub>	-----	-----	-----	-----	56.6, CH <sub>3</sub>
-N(CH <sub>3</sub> ) <sub>2</sub>	-----	-----	-----	-----	56.7, CH <sub>3</sub>
-SCF <sub>3</sub>	-----	136.7, qC	-----	-----	-----

<sup>a</sup>In DMSO, 100 MHz. Carbon multiplicities were determined by pendant experiments.  
qC = quaternary. CH = methine, CH<sub>2</sub> = methylene, CH<sub>3</sub> = methyl carbons.

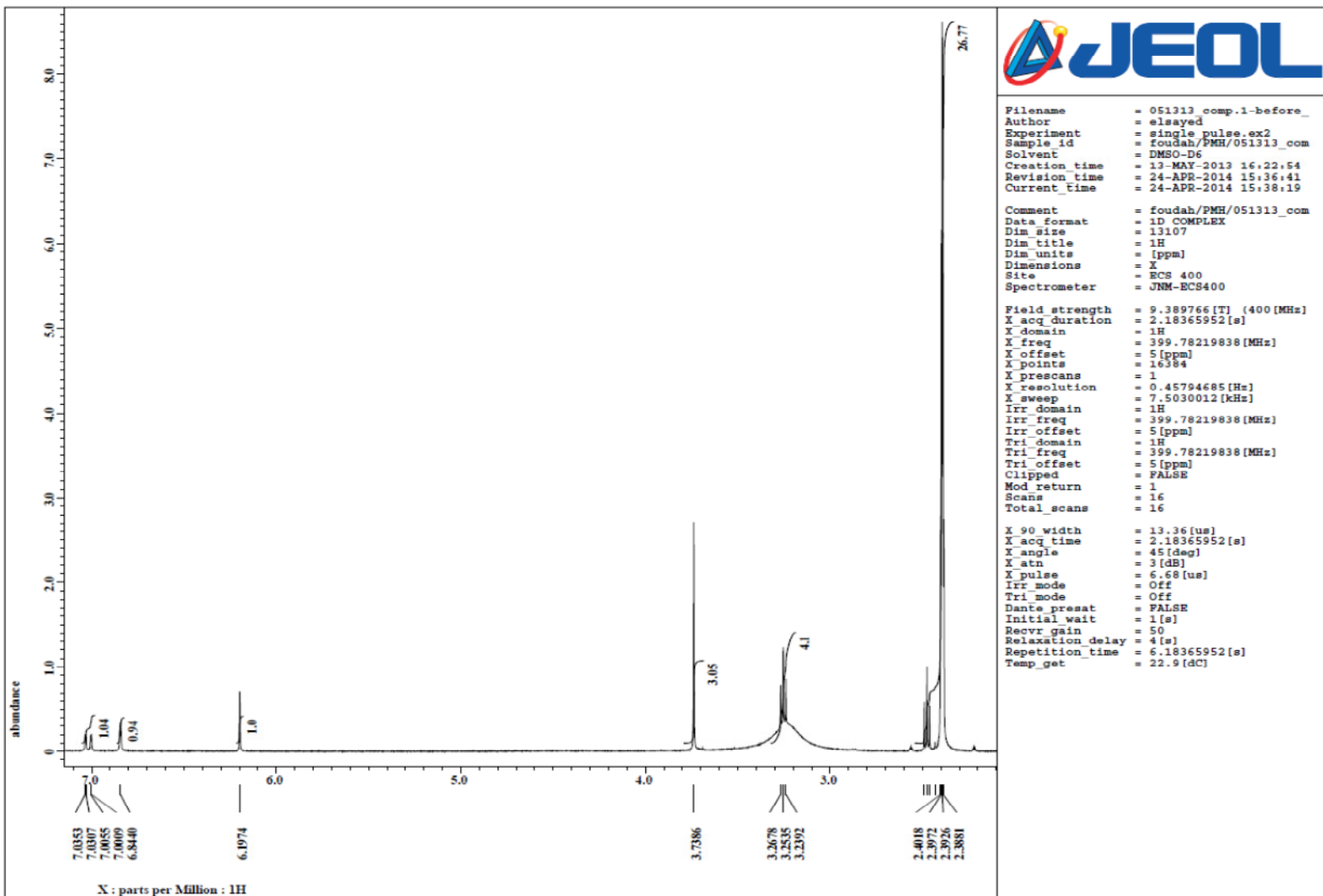


Figure S11. <sup>1</sup>H NMR Spectrum of 3.



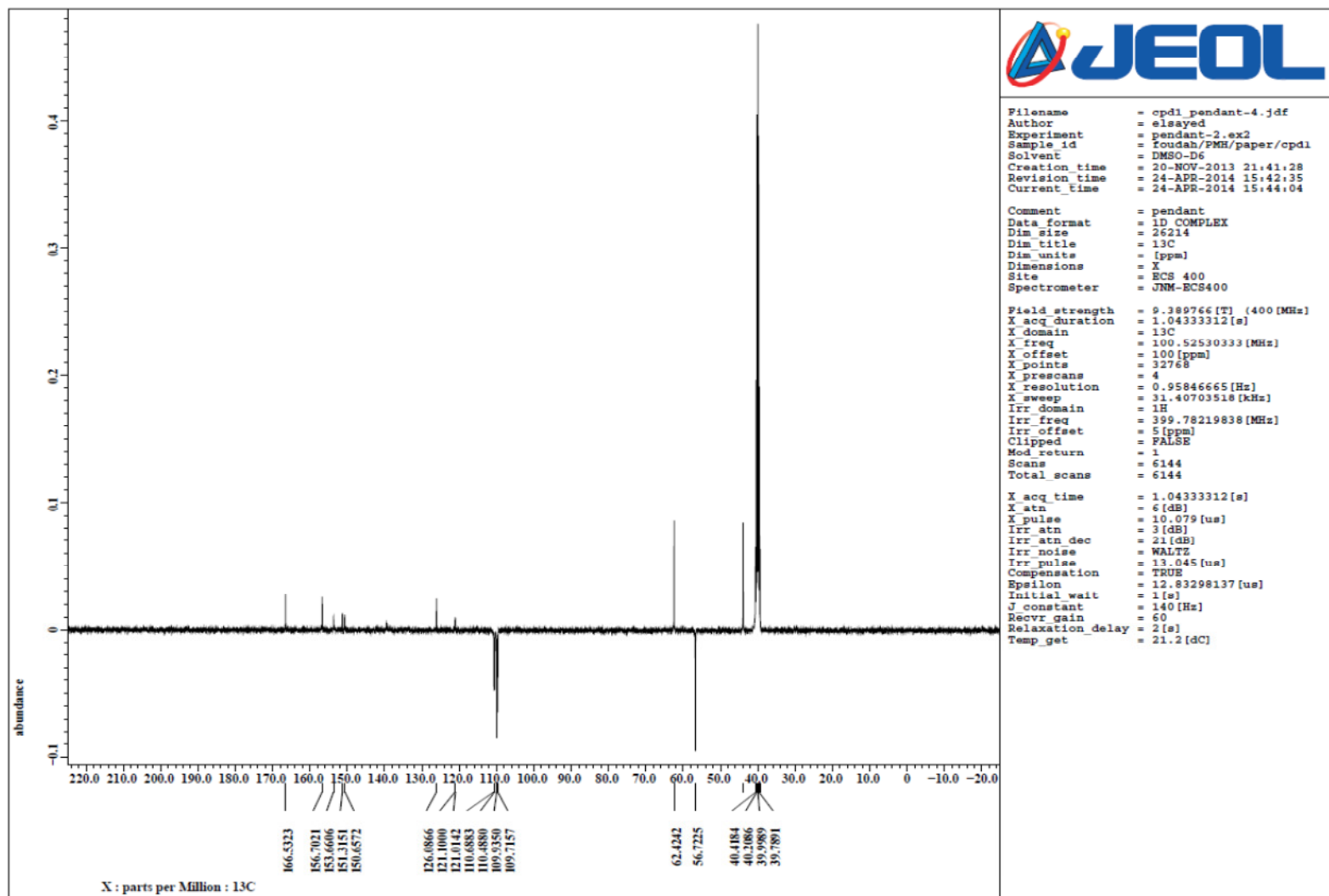


Figure SI2.  $^{13}\text{C}$  NMR (PENDANT) Spectrum of 3.

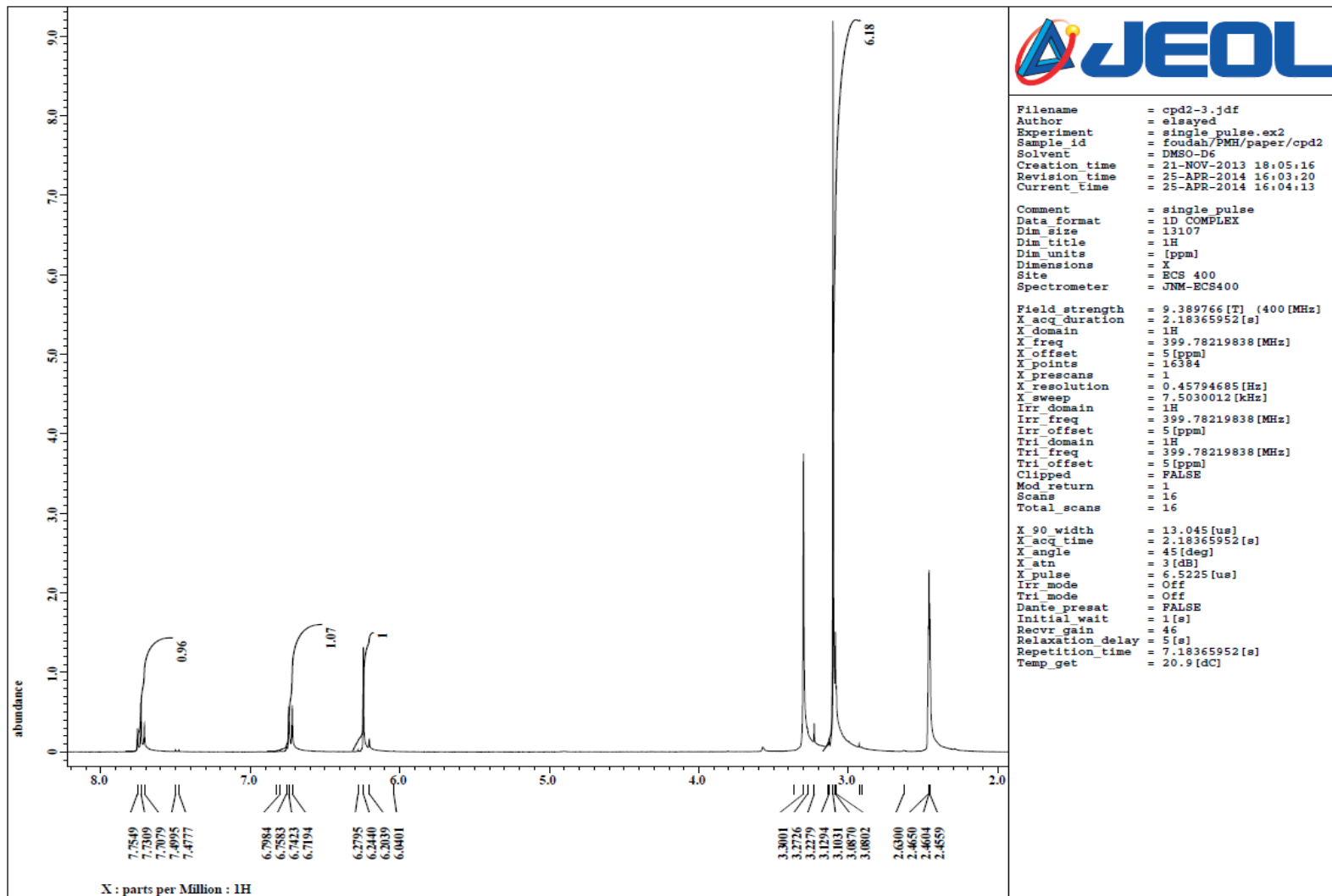


Figure SI3.  $^1\text{H}$  NMR Spectrum of **4**.

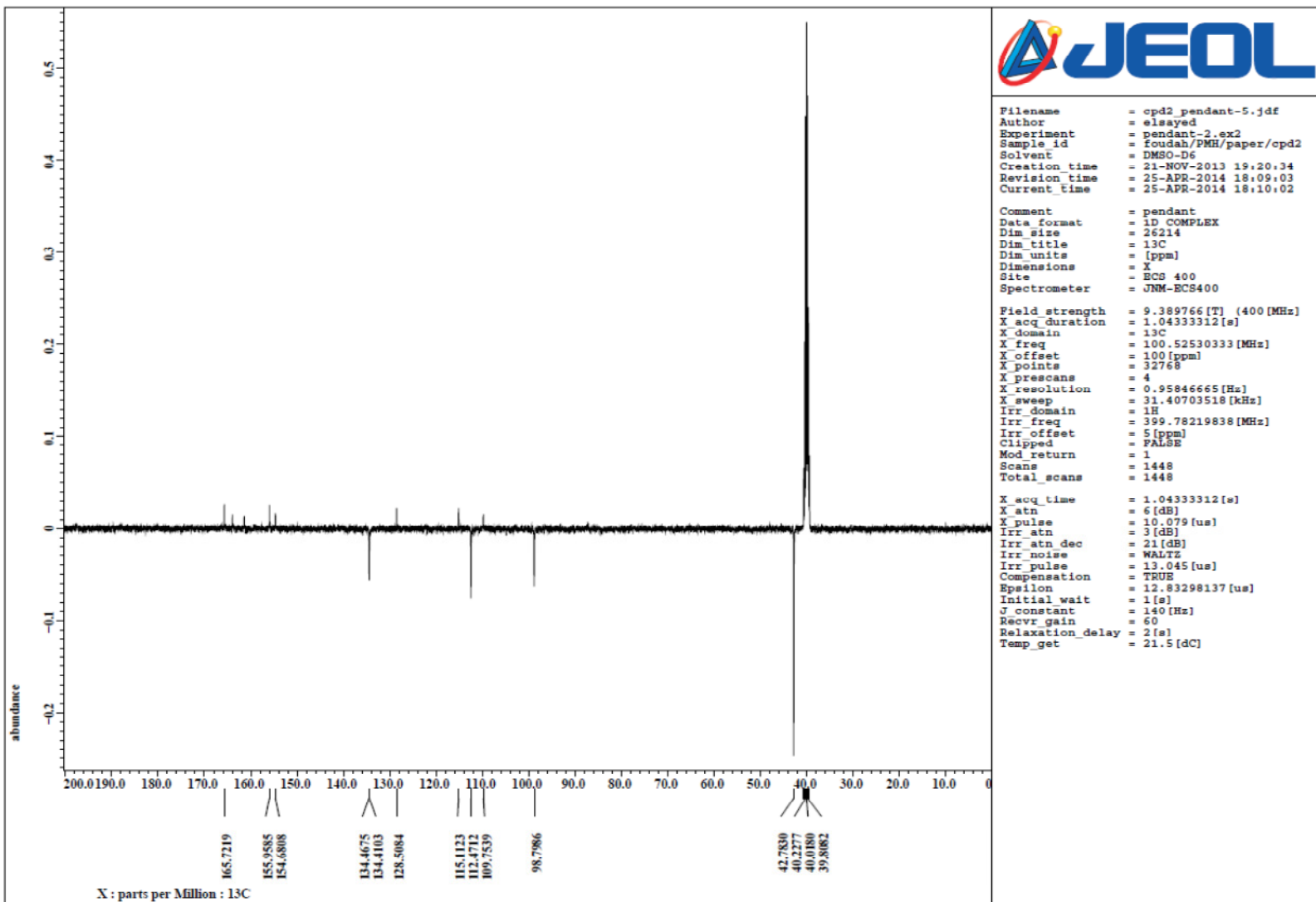


Figure SI4.  $^{13}\text{C}$  NMR (PENDANT) Spectrum of **4**.

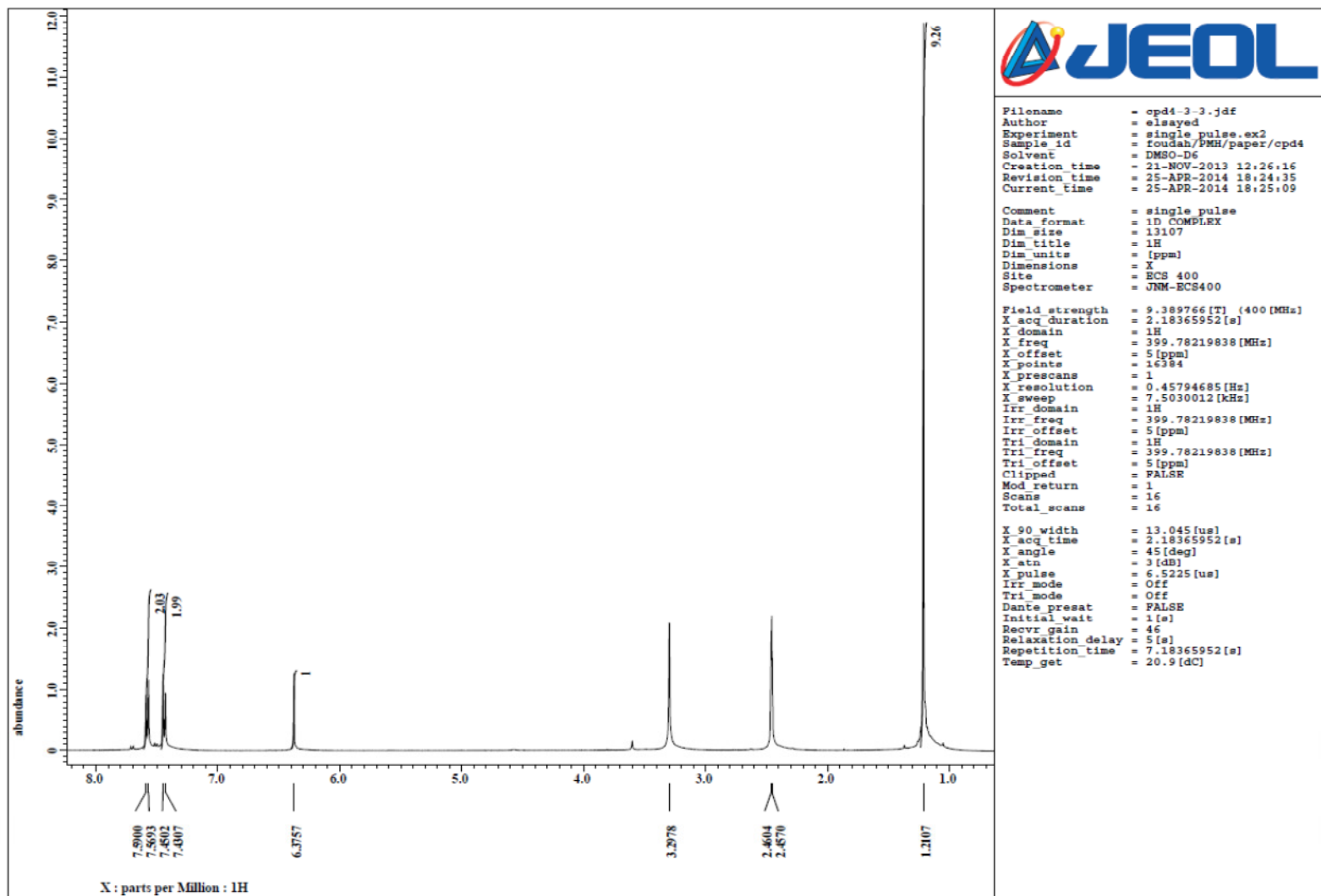


Figure SI5.  $^1\text{H}$  NMR Spectrum of **5**.

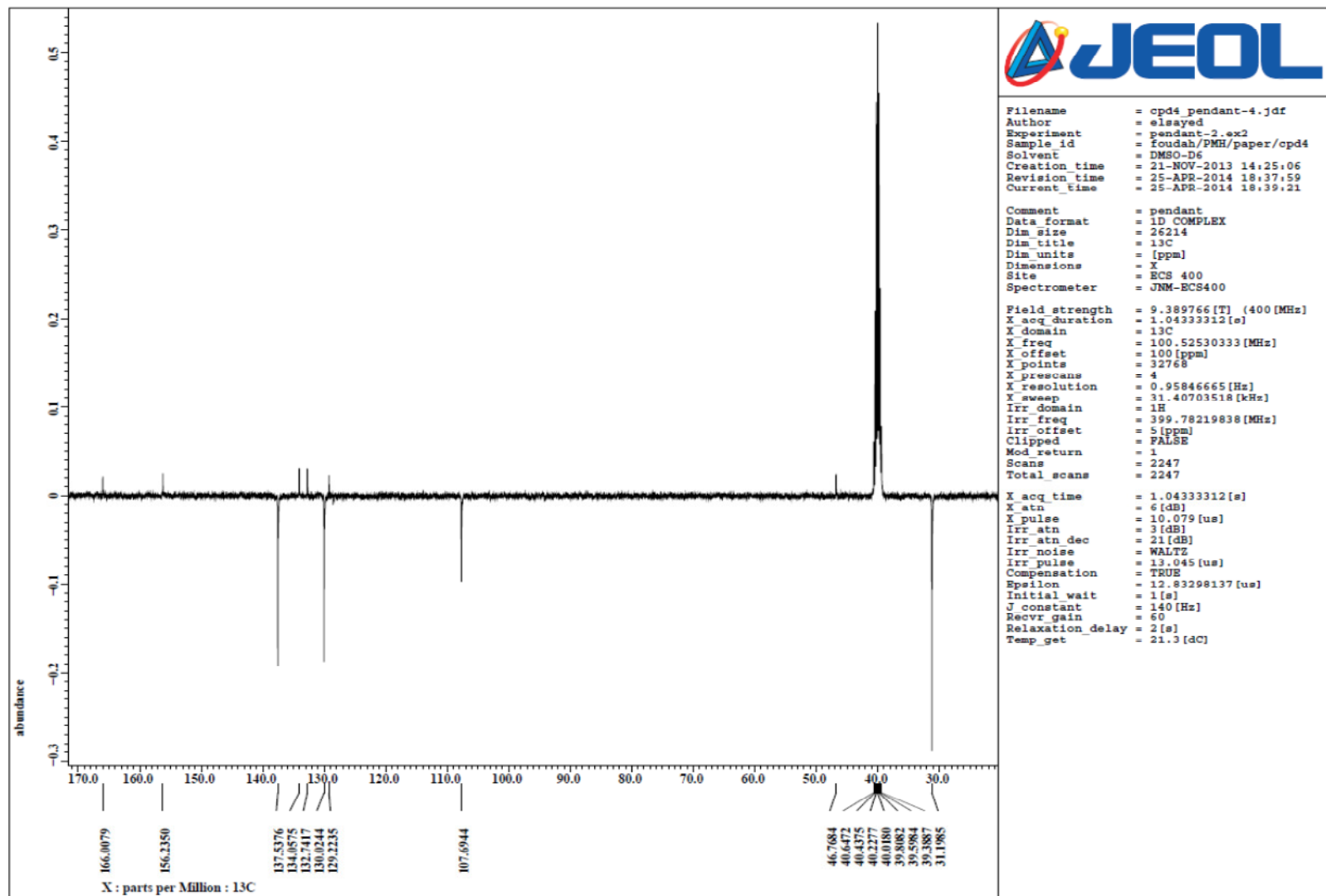


Figure SI6.  $^{13}\text{C}$  NMR (PENDANT) Spectrum of 5.

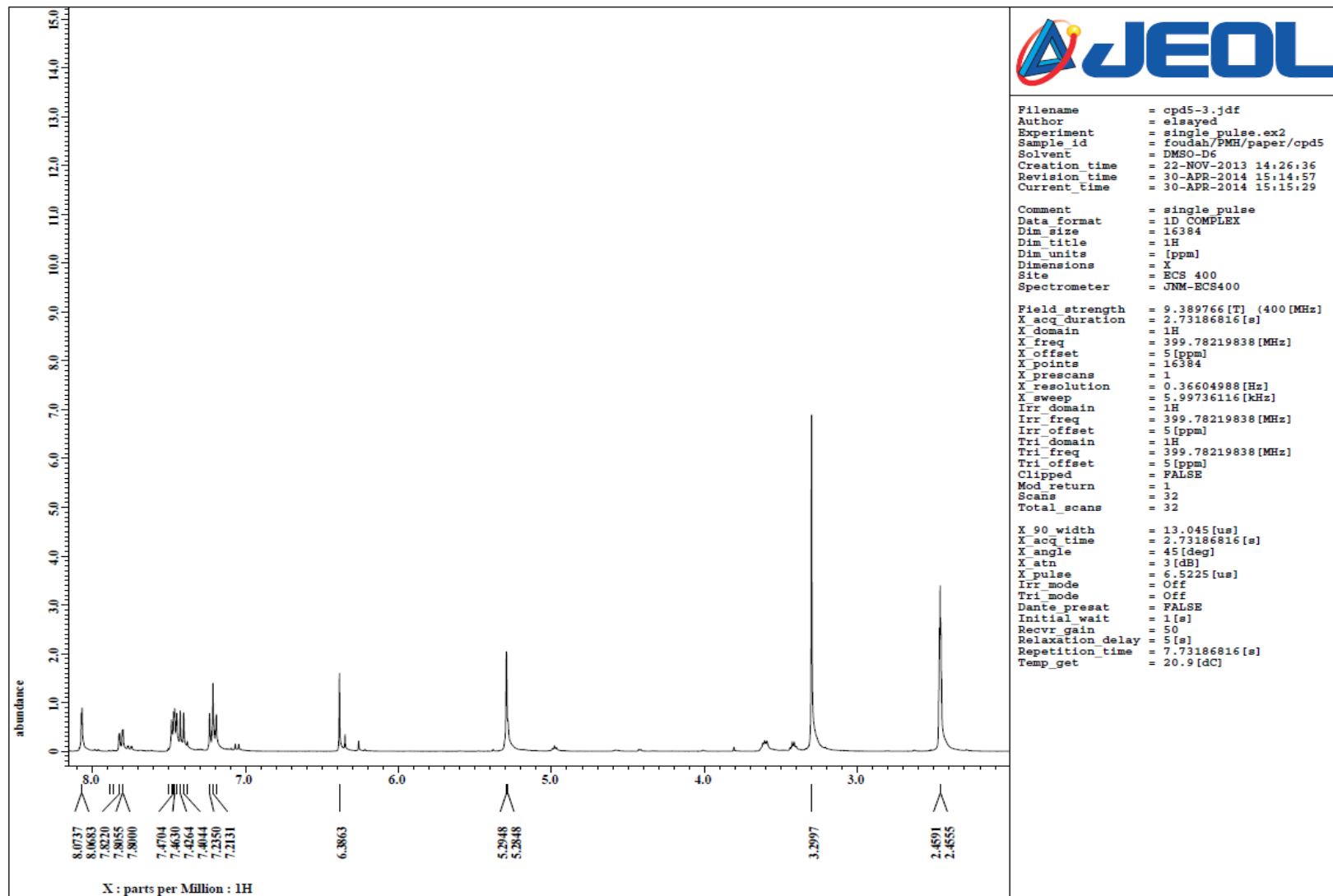


Figure SI7.  $^1\text{H}$  NMR Spectrum of 6.

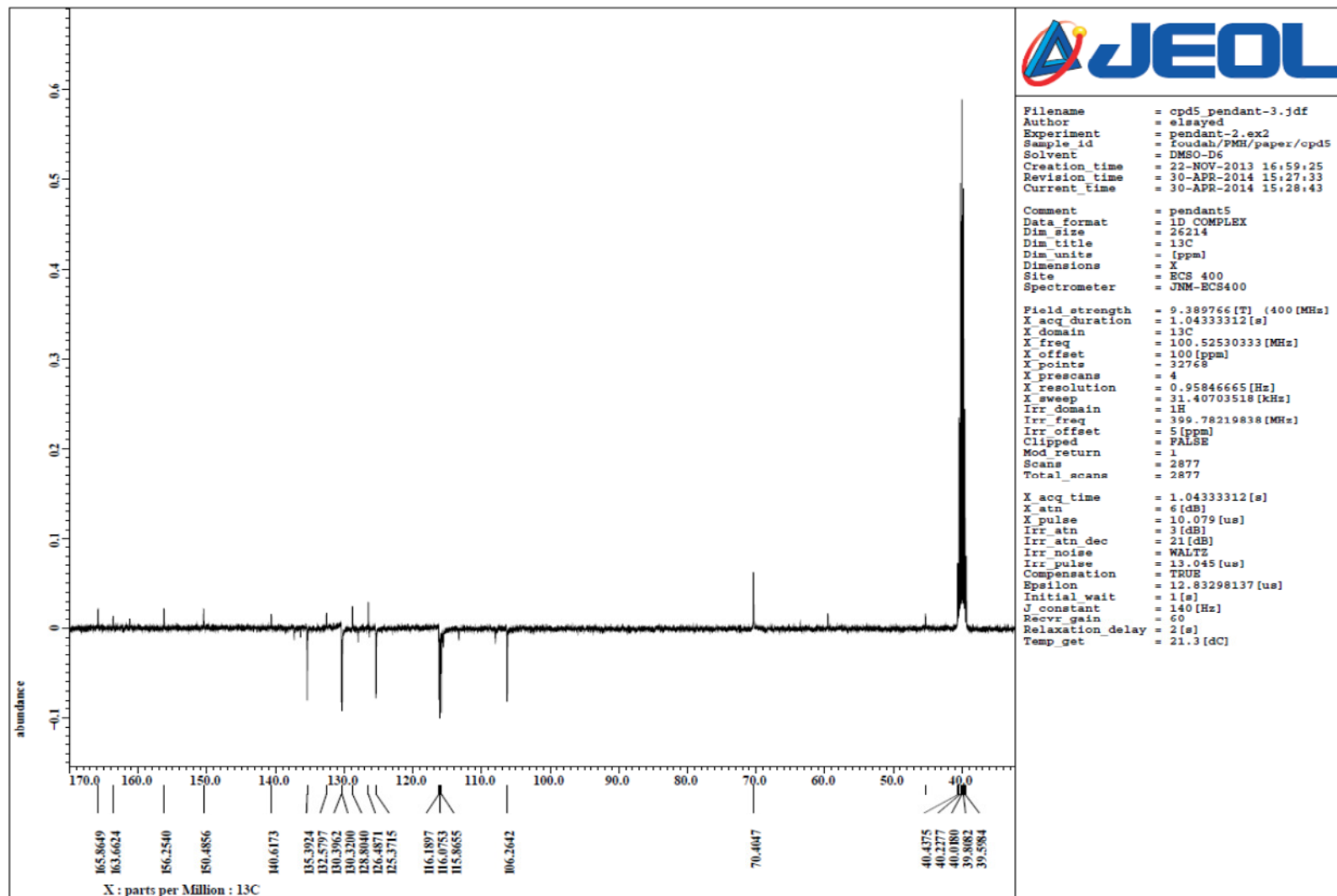


Figure S18.  $^{13}\text{C}$  NMR (PENDANT) Spectrum of **6**.

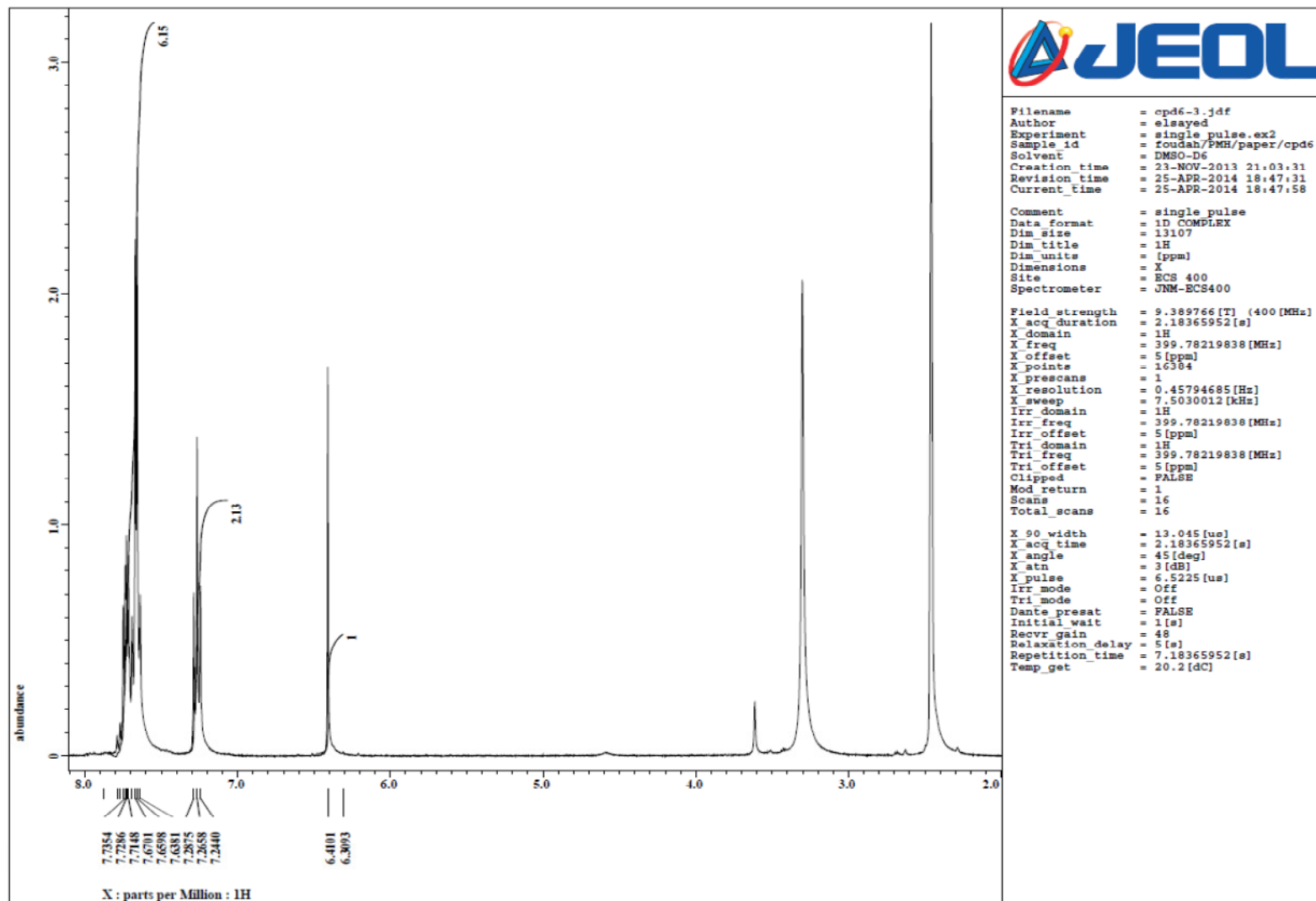


Figure SI9.  $^1\text{H}$  NMR Spectrum of 7.



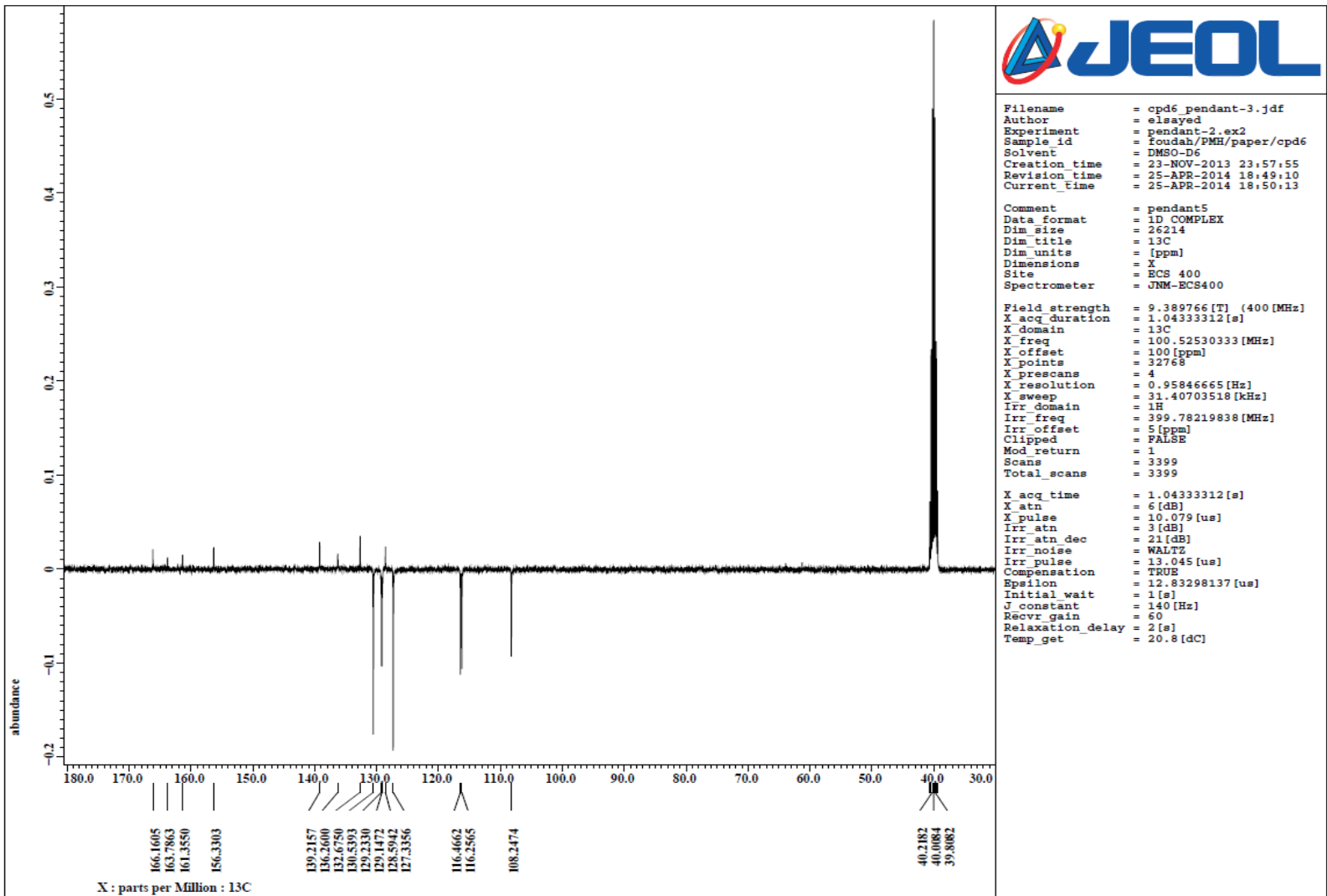


Figure SI10.  $^{13}\text{C}$  NMR (PENDANT) Spectrum of 7.

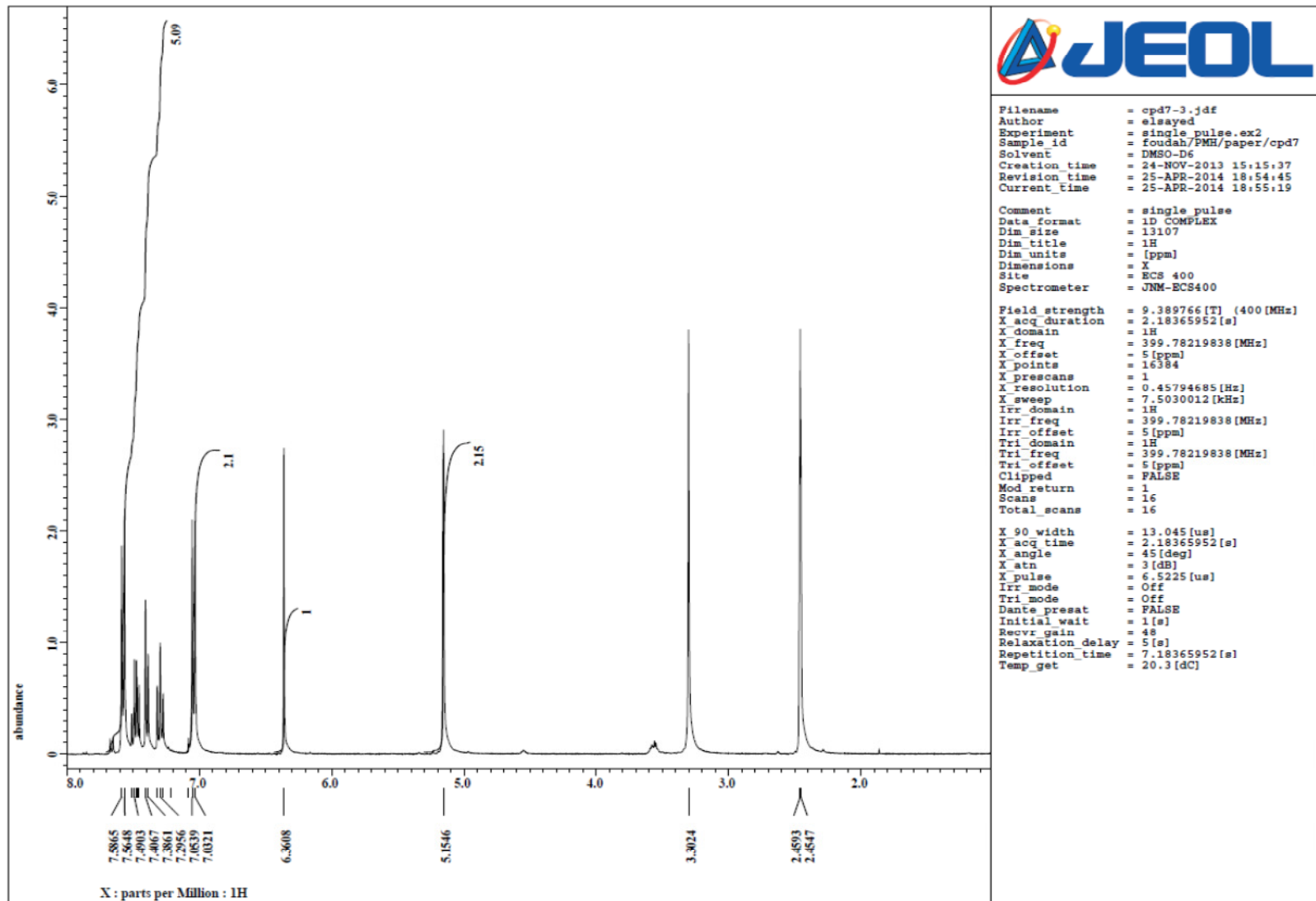


Figure SI11.  $^1\text{H}$  NMR Spectrum of **8**.

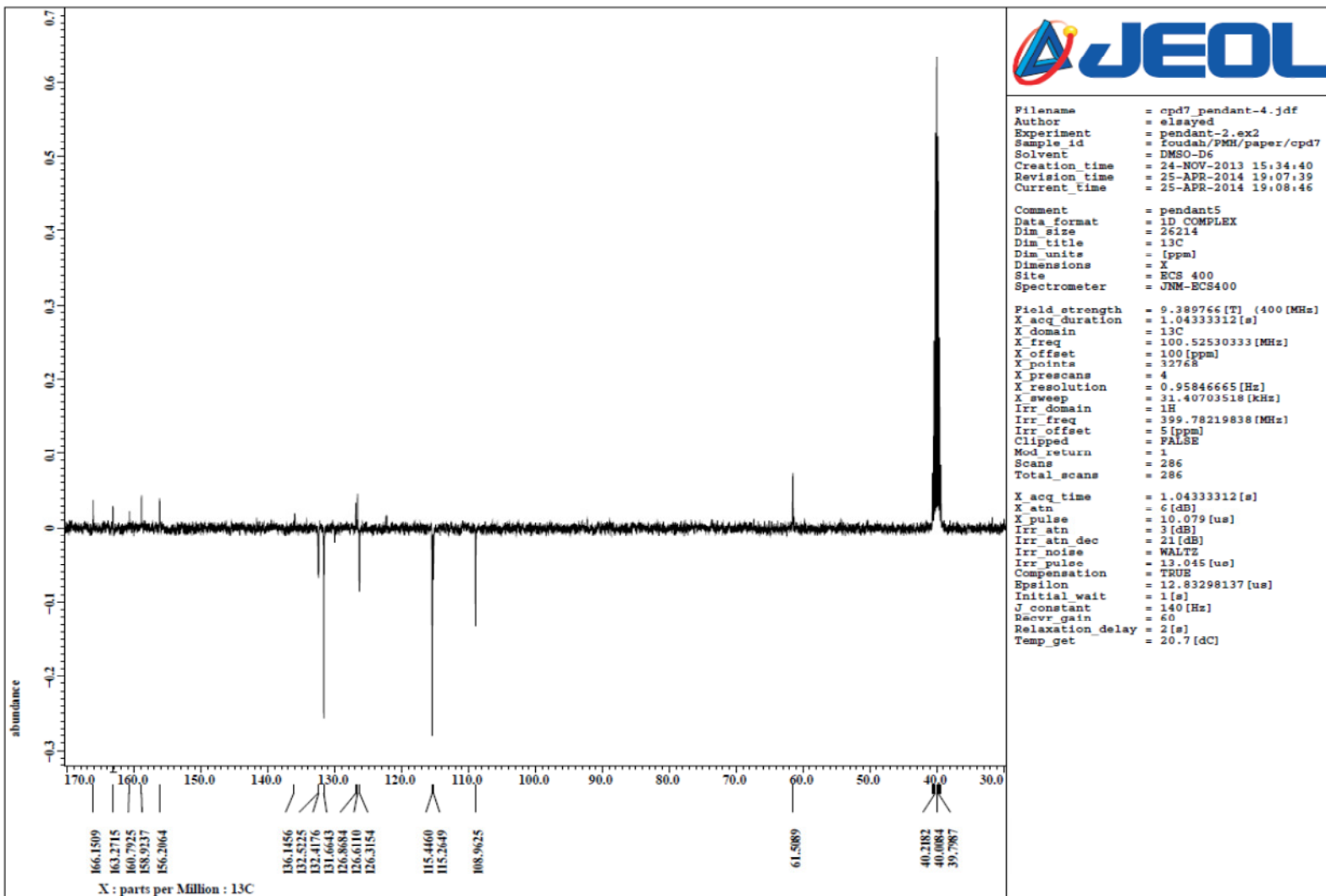


Figure SI12.  $^{13}\text{C}$  NMR (PENDANT) Spectrum of **8**.

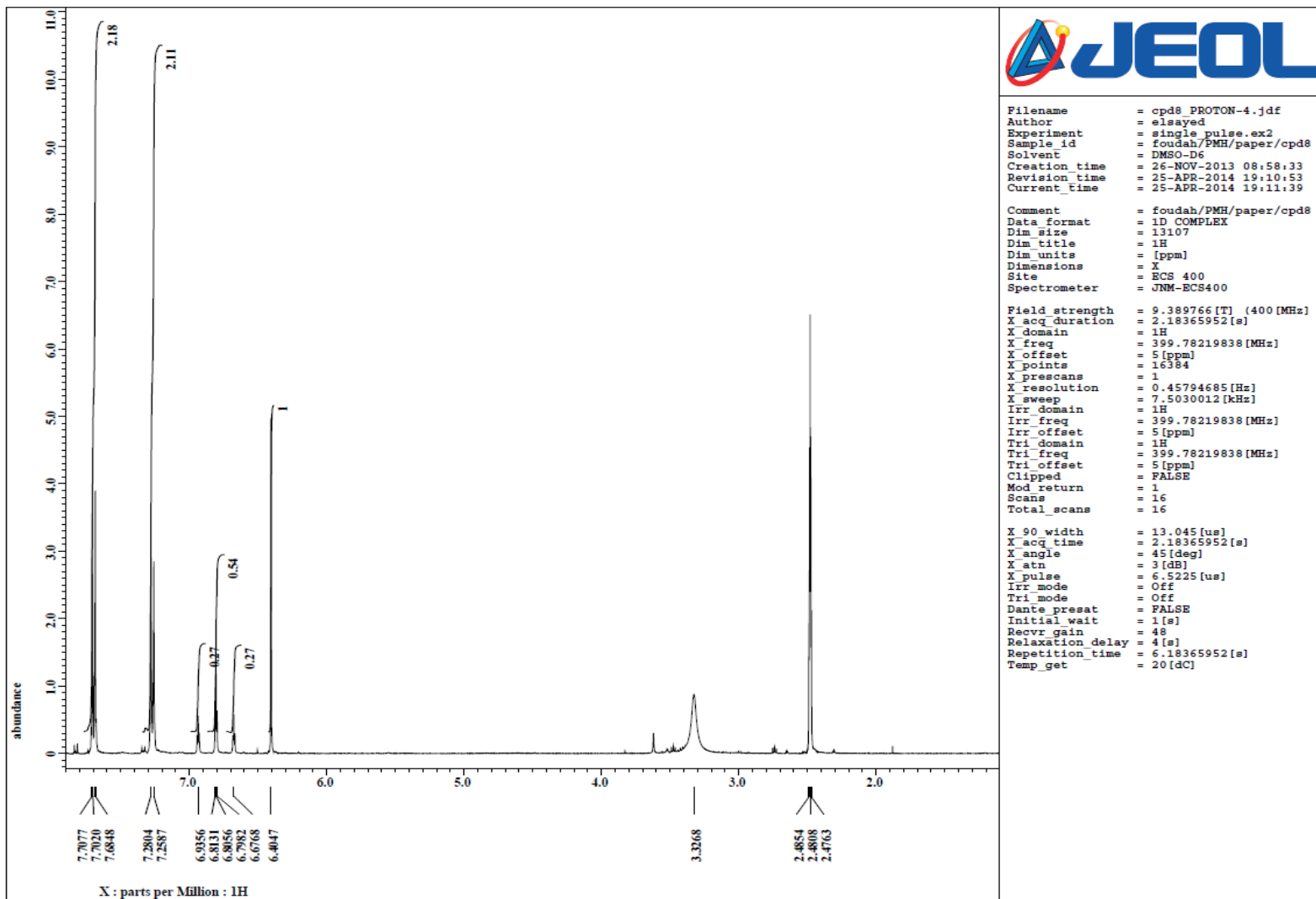


Figure SI13.  $^1\text{H}$  NMR Spectrum of **9**.

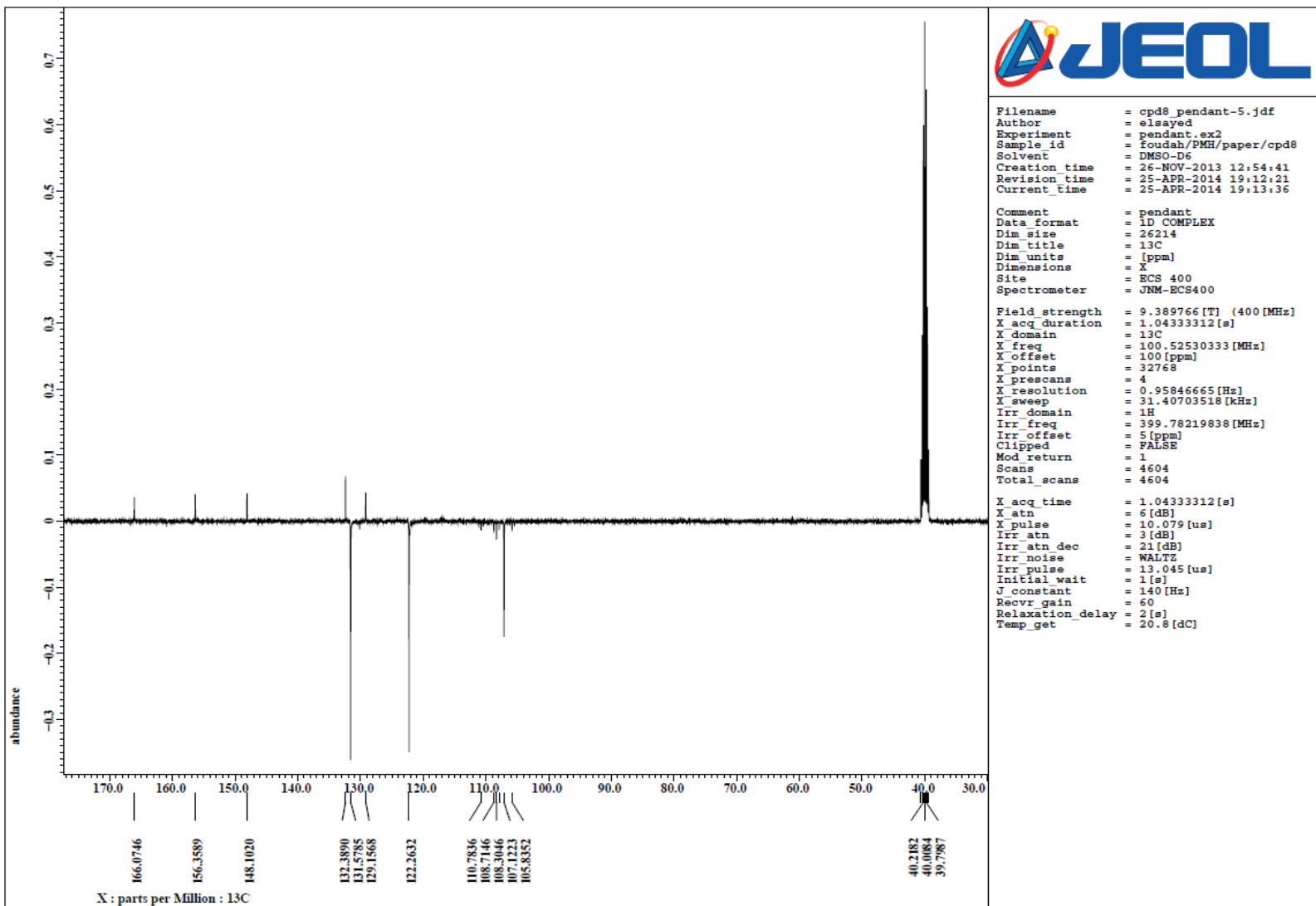


Figure SI14.  $^{13}\text{C}$  NMR (PENDANT) Spectrum of **9**.

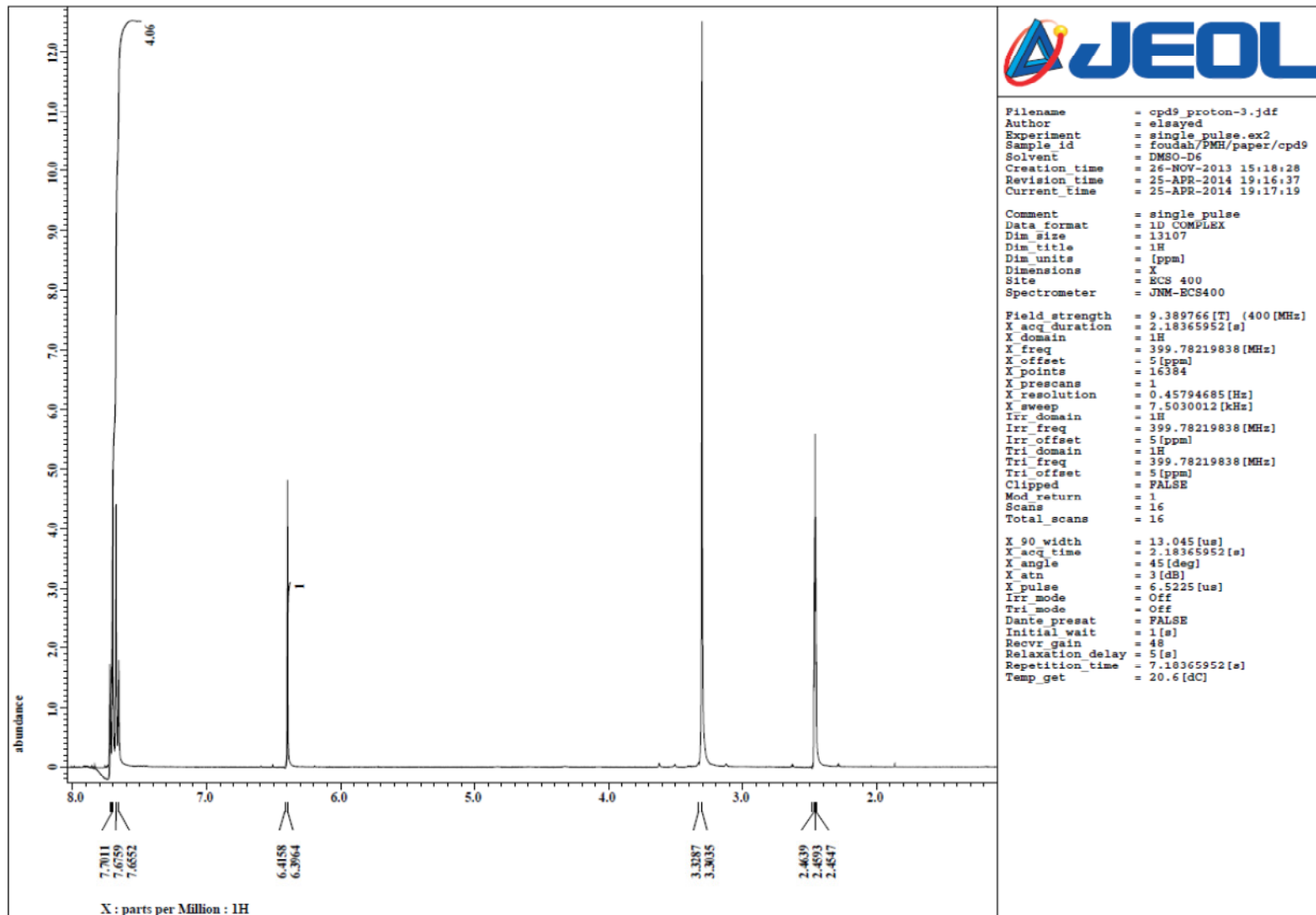


Figure SI15. <sup>1</sup>H NMR Spectrum of 10.

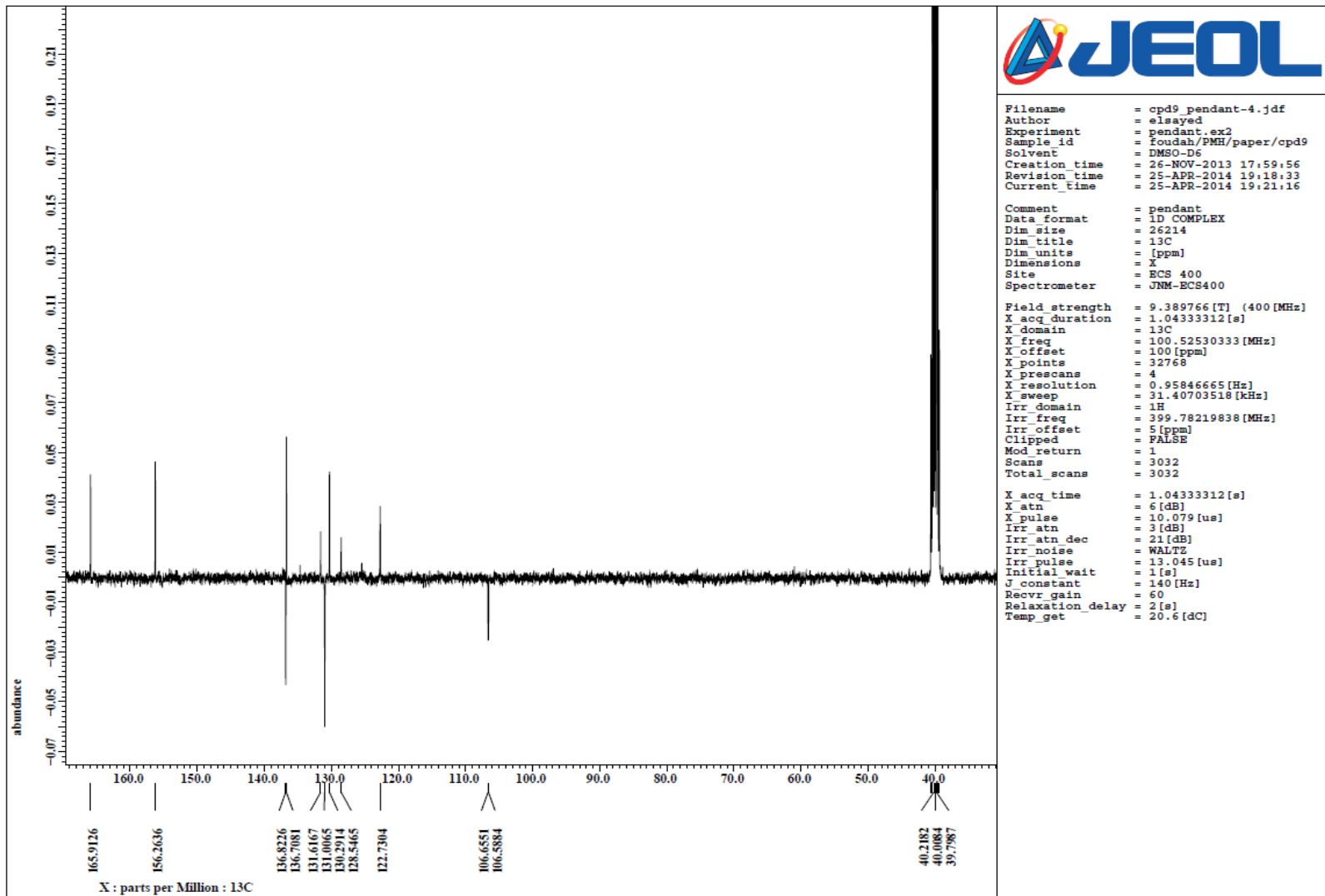


Figure SI16.  $^{13}\text{C}$  NMR (PENDANT) Spectrum of 10.

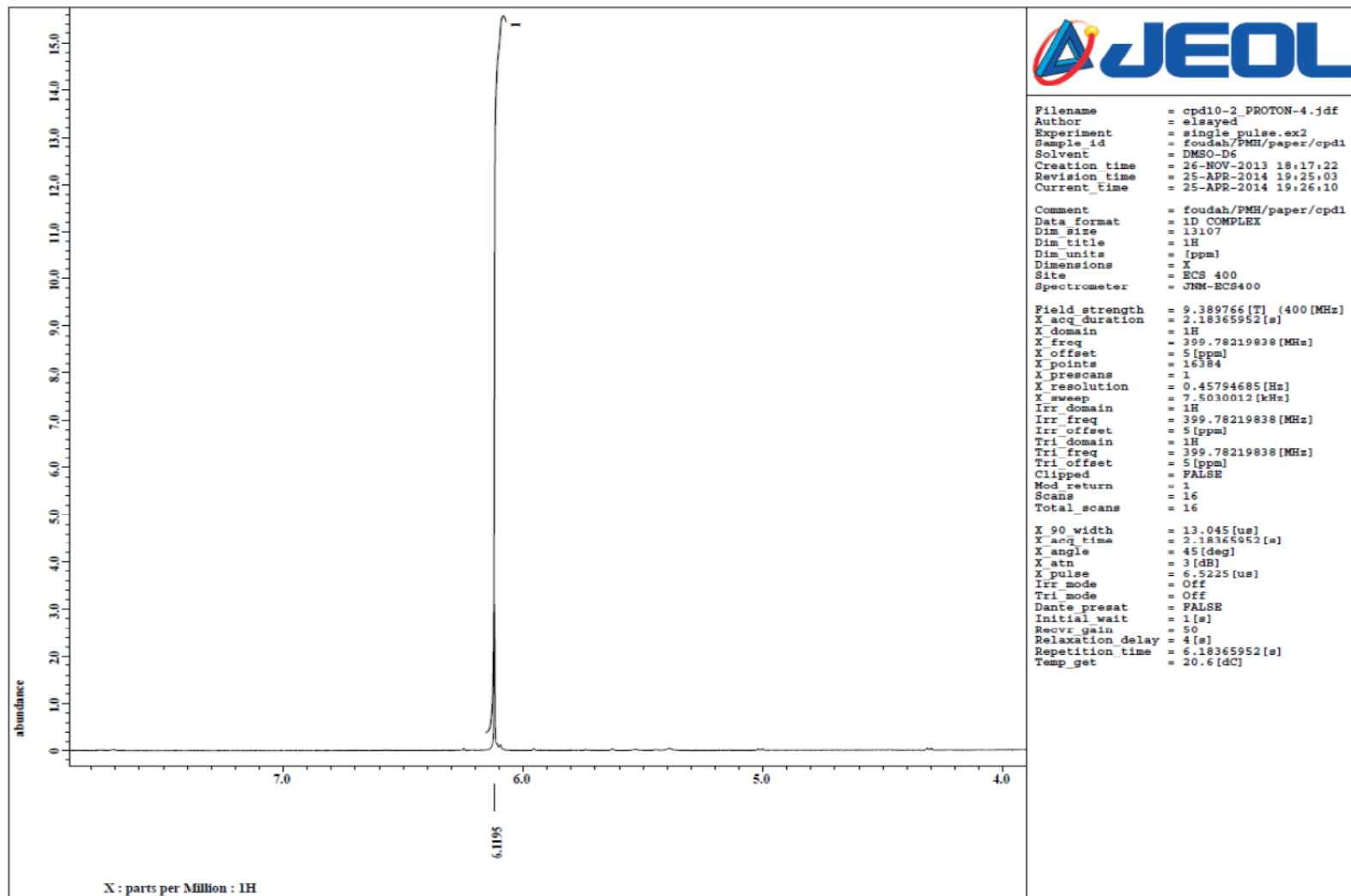


Figure SI17.  $^1\text{H}$  NMR Spectrum of 11.



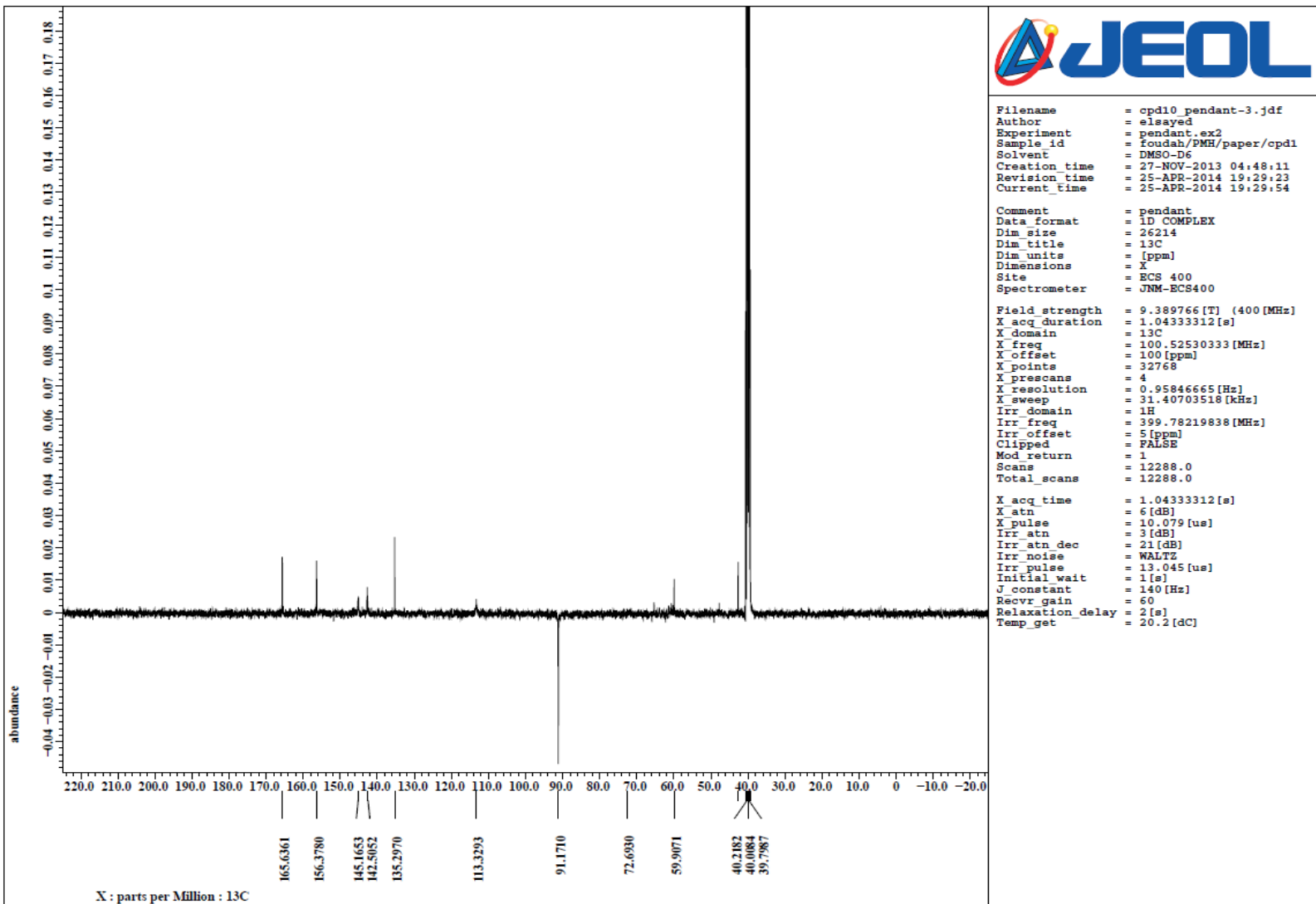


Figure SI18.  $^{13}\text{C}$  NMR (PENDANT) Spectrum of 11.

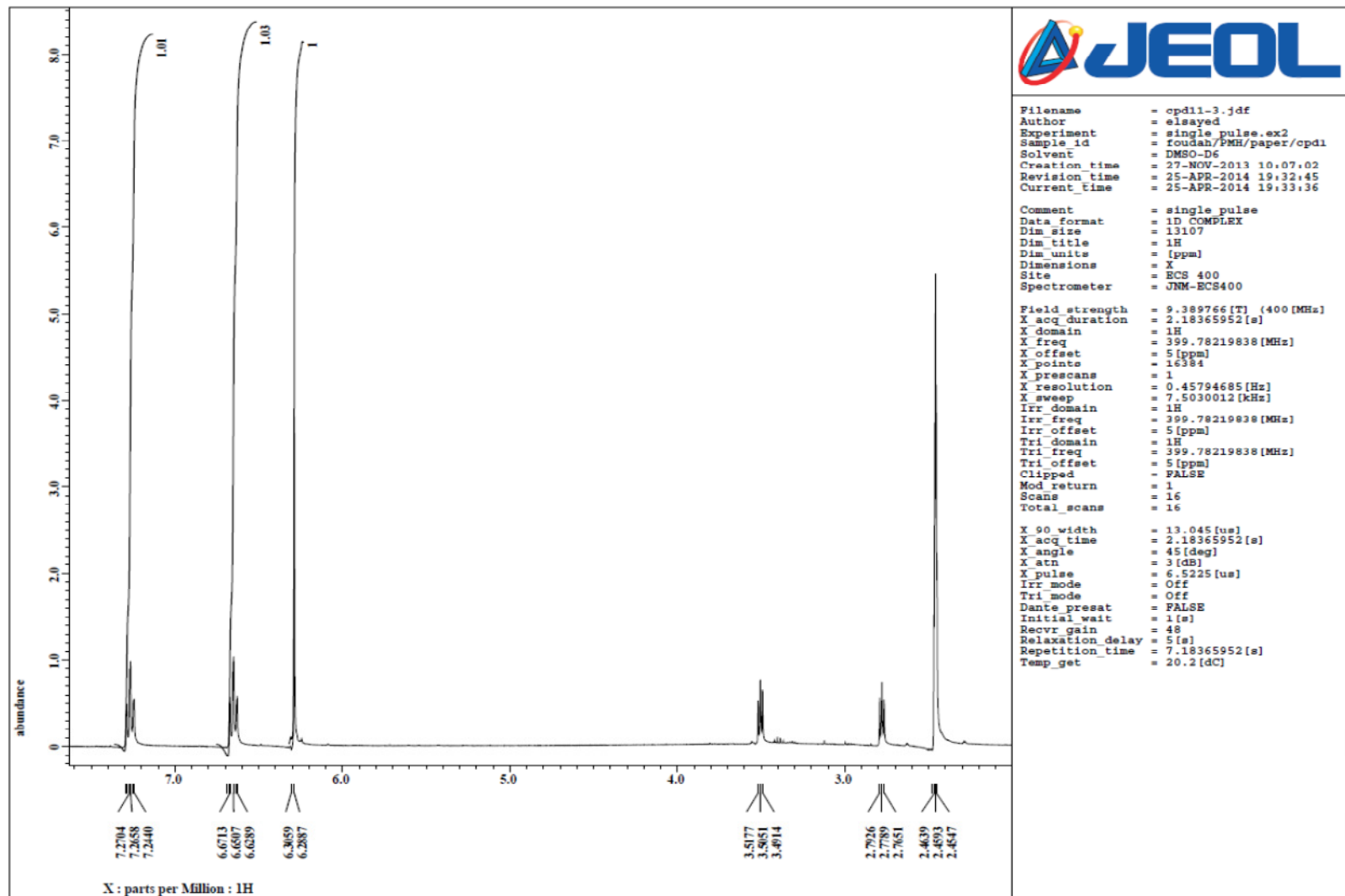


Figure SI19.  $^1\text{H}$  NMR Spectrum of **12**.

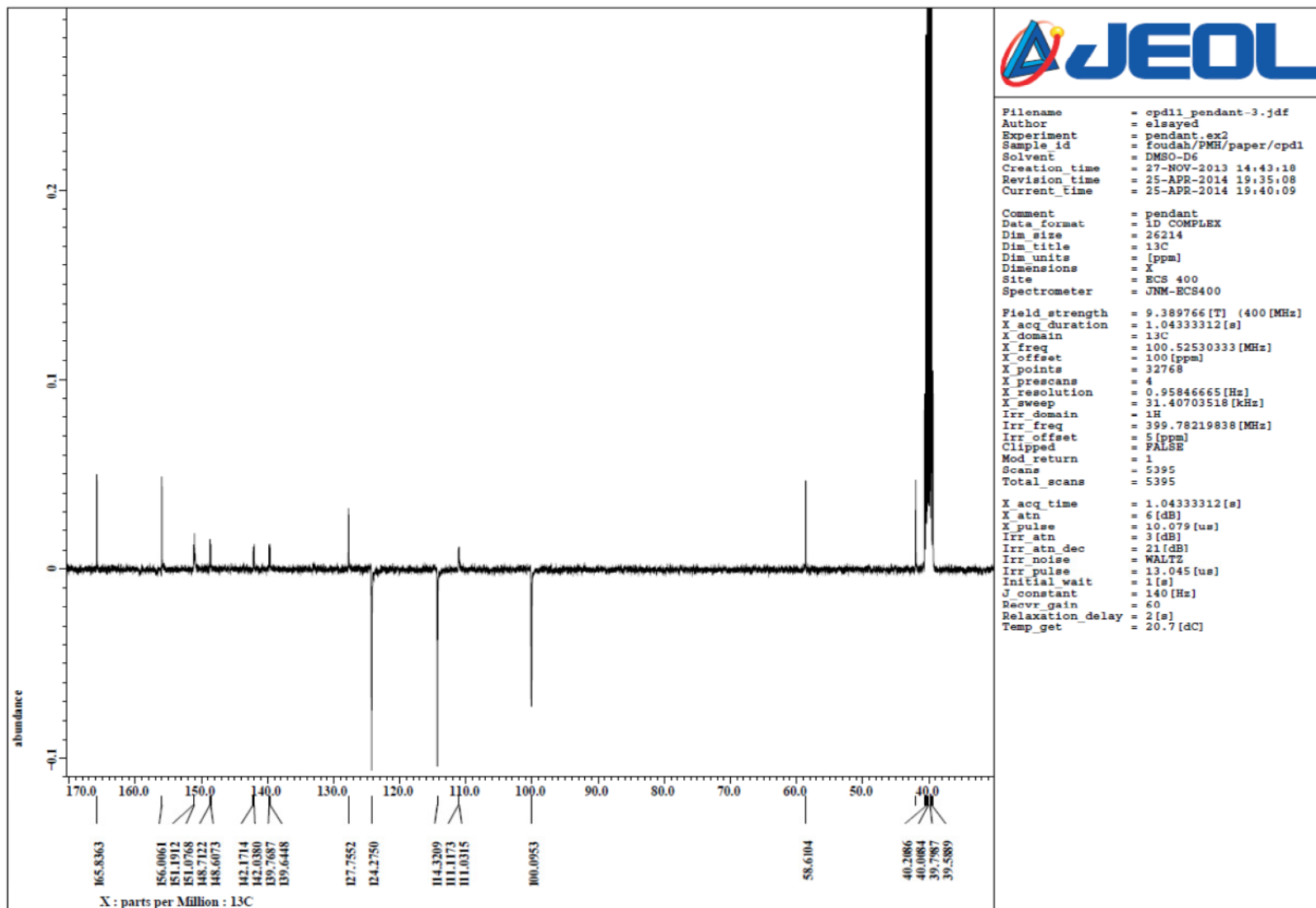


Figure SI20.  $^{13}\text{C}$  NMR (PENDANT) Spectrum of 12.

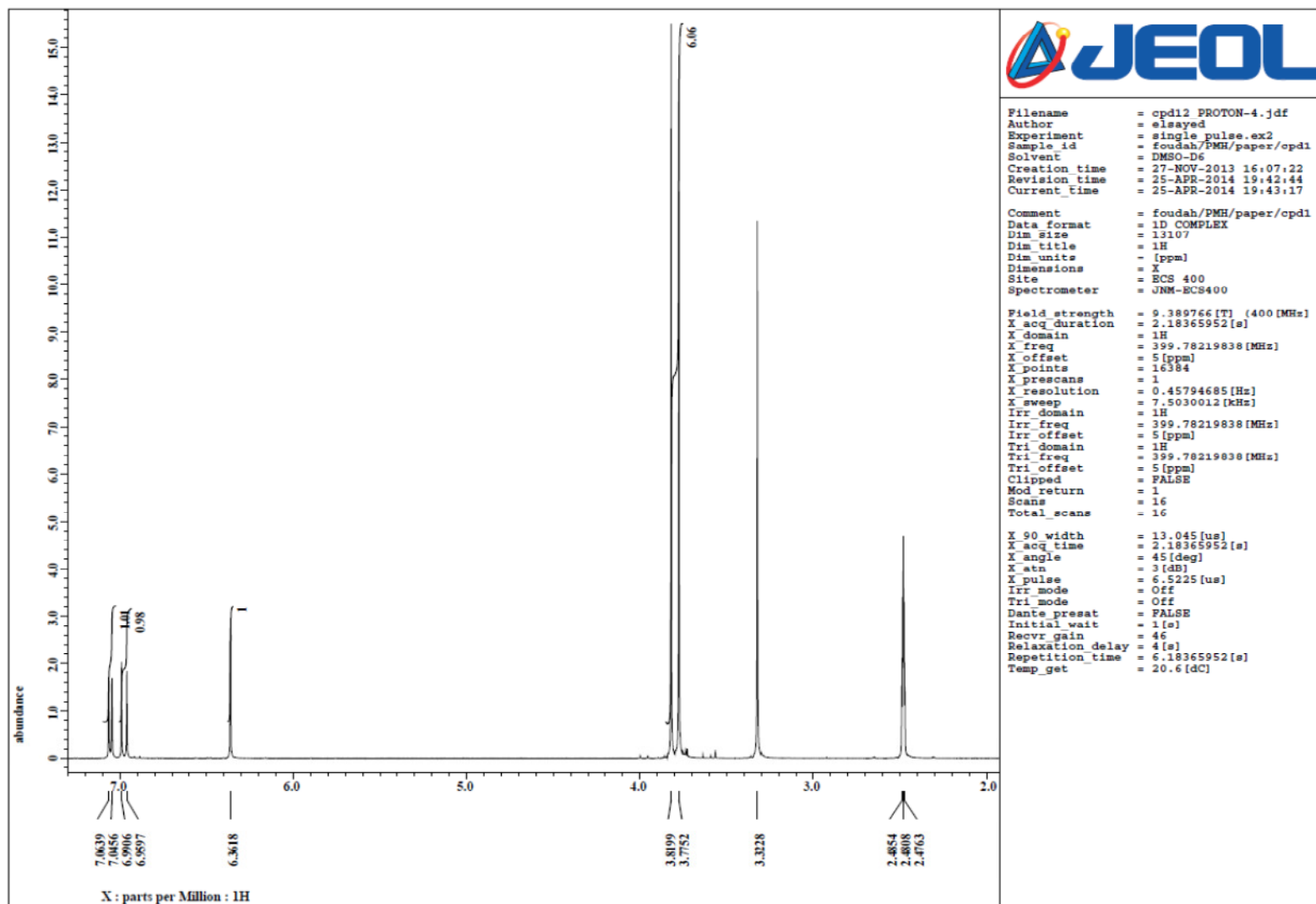


Figure SI21.  $^1\text{H}$  NMR Spectrum of 13.

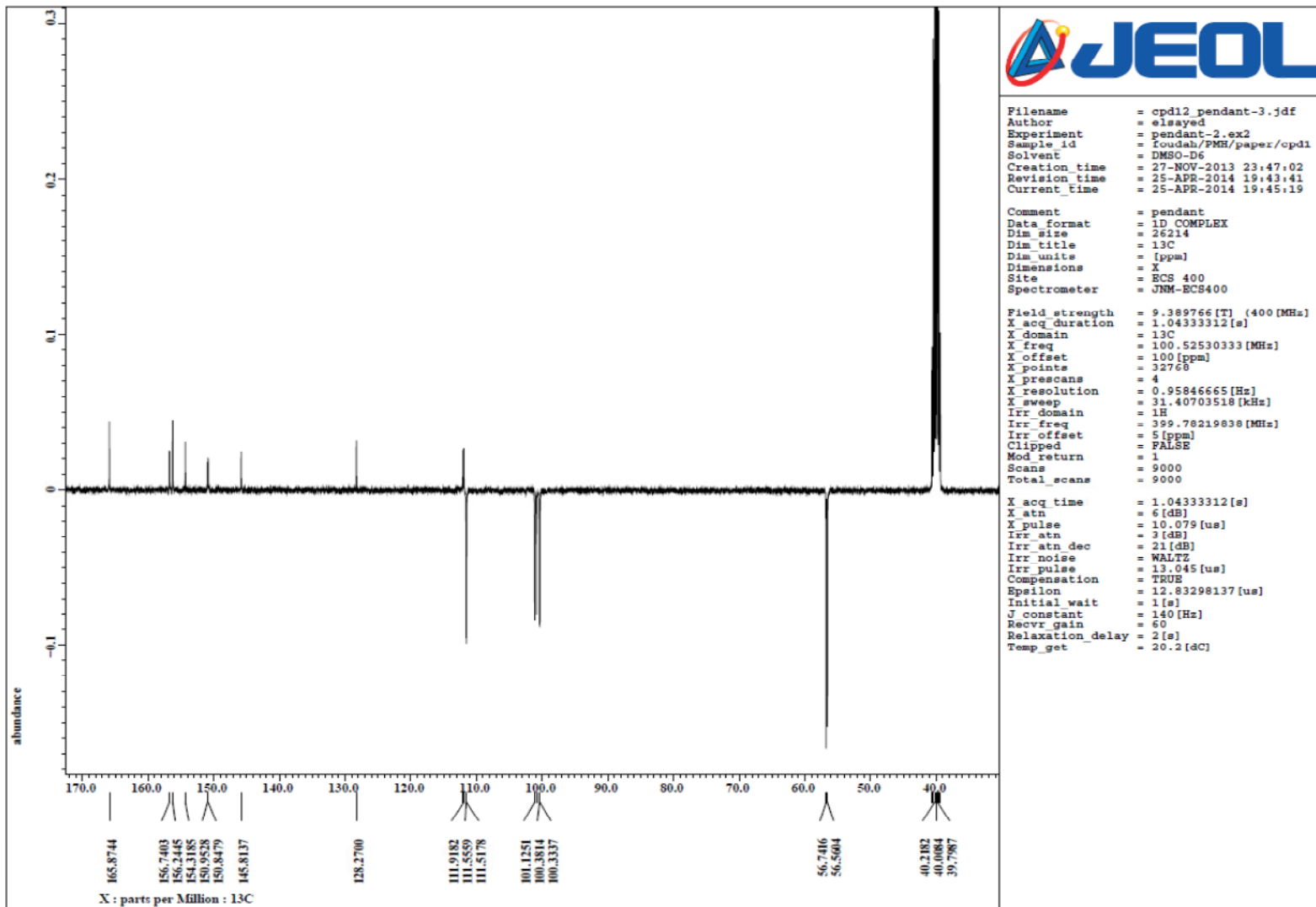


Figure SI22.  $^{13}\text{C}$  NMR (PENDANT) Spectrum of **13**.