

**Supporting Information**  
**for**  
**A new and efficient procedure for the synthesis of**  
**hexahydropyrimidine-fused 1,4-naphthoquinones**

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## General procedure for the preparation of 1,3,5-triazinanes 14–19

To a round-bottomed flask (125 mL) equipped with a reflux condenser was added the appropriate amine (0.05 mmol), toluene (40 mL) and formaldehyde (37%, 4.1 mL). The solution was brought to reflux using an external oil bath and kept stirring for 30 min. Then, the toluene was evaporated under reduced pressure, and the residue was dissolved in ethyl acetate and washed with a saturated aqueous solution of sodium chloride. After evaporation of the solvent under reduced pressure in a rotary evaporator, the residue was purified by silica gel column chromatography using hexane/ethyl acetate 9:1 as the eluent [1].

1,3,5-Tributyl-1,3,5-triazinane (**14**) was isolated as oil in 75% yield. IR  $\nu_{\text{max}}$  (cm<sup>-1</sup>, film): 2955, 2929, 2862, 2791, 1684, 1466, 1374, 1304, 1261, 1240, 1192, 1141, 1109, 1012, 969, 952, 912, 869, 802, 734, 665. <sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) δ (ppm): 0.84 (9H, t, *J* 7.2 Hz), 1.20-1.43 (12H, m), 2.28-2.36 (6H, m), 3.23 (6H, s). <sup>13</sup>C NMR (APT, 125 MHz, CDCl<sub>3</sub>) δ (ppm): 13.8, 20.5, 29.6, 52.4, 74.6.

1,3,5-Tripentyl-1,3,5-triazinane (**15**) was isolated as oil in 89% yield. IR  $\nu_{\text{max}}$  (cm<sup>-1</sup>, film): 2955, 2928, 2859, 2790, 1463, 1375, 1226, 1182, 1141, 1110, 1016, 982, 920, 900, 728. <sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) δ (ppm): 0.88 (9H, t, *J* 7.3 Hz), 1.26-1.34 (12H, m), 1.46 (6H, pent, *J* 7.3 Hz), 2.38-2.41 (6H, m), 3.29 (6H, s). <sup>13</sup>C NMR (APT, 125 MHz, CDCl<sub>3</sub>) δ (ppm): 14.1, 20.8, 29.9, 52.7, 74.0.

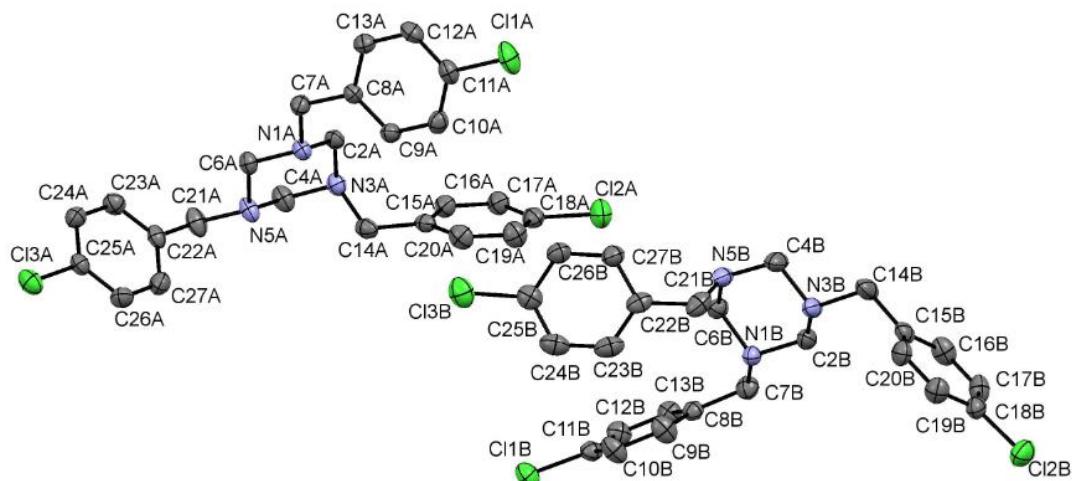
1,3,5-Tridecyl-1,3,5-triazinane (**16**) was isolated as oil in 70% yield. IR  $\nu_{\text{max}}$  (cm<sup>-1</sup>, film): 2954, 2921, 2852, 2800, 1466, 1366, 1301, 1263, 1209, 1119, 1011, 979, 918, 721. <sup>1</sup>H NMR (500 MHz, DMSO-D<sub>6</sub>) δ (ppm): 0.88 (9H, t, *J* 6.7 Hz), 1.26-1.47 (48H, m), 2.35-2.42 (6H, m), 3.29 (6H, s). <sup>13</sup>C NMR (APT, 125 MHz, DMSO-D<sub>6</sub>) δ (ppm): 14.0, 22.6, 27.4, 27.5, 29.2, 29.4, 29.5, 31.8, 52.7, 74.6.

1,3,5-Tribenzyl-1,3,5-triazinane (**17**) was isolated as white solid in 90% yield. m.p. 44-46 °C, (lit. 43-46 °C). **Fehler! Textmarke nicht definiert.** IR  $\nu_{\text{max}}$  (cm<sup>-1</sup>, KBr): 3022, 2851, 2805, 2774, 1602, 1494, 1452, 1397, 1356, 1314, 1260, 1169, 1151, 1119, 1065, 1029, 1014, 920, 907, 878, 853, 736, 704, 697. <sup>1</sup>H NMR (500 MHz,

$\text{CDCl}_3$ )  $\delta$  (ppm): 3.42 (6H, s), 3.67 (6H, s), 7.18-7.32 (15H, m).  $^{13}\text{C}$  NMR (APT, 125 MHz,  $\text{CDCl}_3$ )  $\delta$  (ppm): 56.9, 73.6, 126.8, 128.1, 128.7, 138.2.

1,3,5-Tris(4-chlorobenzyl)-1,3,5-triazinane (**18**) was isolated as white solid oil in 85% yield. m.p. 94-95 °C. IR  $\nu_{\text{max}}$  (cm $^{-1}$ , KBr): 2813, 1596, 1487, 1448, 1403, 1349, 1249, 1158, 1085, 1014, 976, 915, 882, 837, 801, 714, 655.  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ )  $\delta$  (ppm): 3.37 (6H, s), 3.59 (6H, s), 7.19-7.25 (12H, m).  $^{13}\text{C}$  NMR (APT, 125 MHz,  $\text{CDCl}_3$ )  $\delta$  (ppm): 56.4, 73.6, 128.6, 130.3, 133.1, 136.9.

**Table S1.** Crystallographic data of compound **18**:



Empirical formula	$\text{C}_{24}\text{H}_{24}\text{Cl}_3\text{N}_3$
Formula weight	460.81
Temperature/K	293(2)
Crystal system	Triclinic
Space group	P-1
a/Å	9.7908(15)
b/Å	15.489(2)
c/Å	15.519(2)
$\alpha/^\circ$	83.337(5)
$\beta/^\circ$	78.500(5)
$\gamma/^\circ$	83.738(5)
Volume/Å $^3$	2281.8(6)
Z	4
$\rho_{\text{calc}}/\text{cm}^3$	1.341
$\mu/\text{mm}^{-1}$	0.418
F(000)	960.0

Crystal size/mm <sup>3</sup>	0.60 × 0.43 × 0.12
Radiation	MoKα ( $\lambda = 0.71073$ )
2Θ range for data collection/°	3.96 to 51.596
Index ranges	-11 ≤ h ≤ 11, -18 ≤ k ≤ 18, -18 ≤ l ≤ 18
Reflections collected	40337
Independent reflections	8719 [R <sub>int</sub> = 0.0626, R <sub>sigma</sub> = 0.0435]
Data/restraints/parameters	8719/0/541
Goodness-of-fit on F <sup>2</sup>	0.996
Final R indexes [I>=2σ (I)]	R <sub>1</sub> = 0.0483, wR <sub>2</sub> = 0.1337
Final R indexes [all data]	R <sub>1</sub> = 0.0925, wR <sub>2</sub> = 0.1628
Largest diff. peak/hole / e Å <sup>-3</sup>	0.37/-0.35

1,3,5-Tris(2,4-dichlorobenzyl)-1,3,5-triazinane (**19**) was isolated as white solid in 88% yield. m.p. 102-103 °C. IR  $\nu_{\text{max}}$  (cm<sup>-1</sup>, KBr): 1586, 1469, 1383, 1336, 1251, 1202, 1163, 1097, 1014, 981, 924, 855, 819, 765, 733, 657. <sup>1</sup>H NMR (500 MHz, DMSO-D<sub>6</sub>) δ (ppm): 3.51 (6H, s), 3.76 (6H, s), 7.17 (3H, dd, *J* 1.8 and 8.2 Hz), 7.33-7.63 (6H, m). <sup>13</sup>C NMR (APT, 125 MHz, DMSO-D<sub>6</sub>) δ (ppm): 53.3, 73.6, 127.1, 129.5, 131.3, 133.6, 134.8, 135.1.

### General procedure for the preparation of 1,3-quinazoline derivatives **13** and **21–25**

An equimolar mixture of lawsone (**20**, 2.87 mmol) and the appropriate 1,3,5-triazinane (2.87 mmol) dissolved in chloroform (6 mL) was placed in a 10 mL microwave vial. The reaction was irradiated for 15 minutes at 150 °C in a microwave apparatus for synthesis. Afterwards TLC control indicated complete consumption of the starting materials and the formation of quinazolines **13** and **21–25**. The products were subsequently purified by column chromatography using hexane/ethyl acetate 98:2 as the eluent.

1,3-Dibutyl-1,2,3,4-tetrahydrobenzo[g]quinazoline-5,10-dione (**13**) was isolated as oil in 75% yield. IR  $\nu_{\text{max}}$  (cm<sup>-1</sup>, film): 2956, 2930, 2870, 1670, 1615, 1592, 1548, 1458, 1367, 1270, 1231, 1157, 1106, 932, 789, 721, 685; <sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) δ (ppm): 0.86 (3H, t, *J* 7.0 Hz), 0.91 (3H, t, *J* 7.0 Hz), 1.24-1.38 (4H, m), 1.44-1.51 (2H, m), 1.54-1.65 (2H, m), 2.44-2.49 (2H, m), 3.53-3.58 (2H, m), 3.71 (2H, s), 3.96 (2H, s), 7.50 (1H, dt, *J* 1.5 and 7.6 Hz), 7.58 (1H, dt, 1H, *J* 1.5, 7.6 Hz), 7.87-7.90

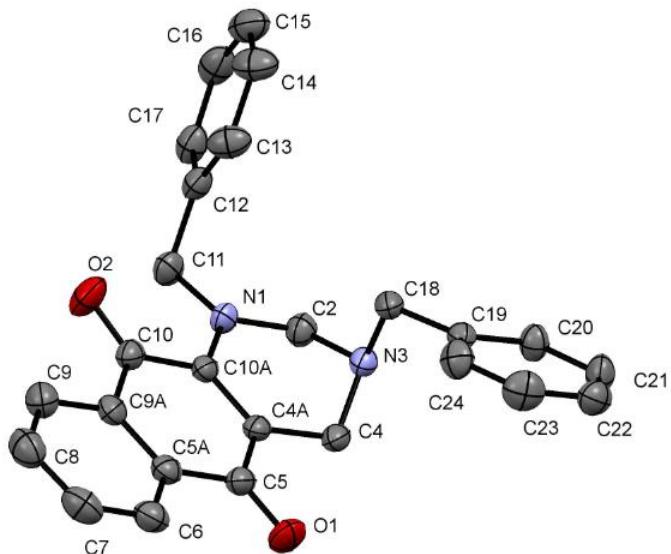
(1H, m), 7.93-7.96 (1H, m).  $^{13}\text{C}$  NMR (APT, 125 MHz,  $\text{CDCl}_3$ )  $\delta$  (ppm): 13.7, 13.8, 20.0, 20.3, 29.7, 31.6, 48.2, 51.6, 53.0, 71.0, 113.4, 125.0, 125.9, 131.6, 131.9, 132.5, 133.6, 146.4, 180.6, 182.0. HRESIMS m/z:  $(\text{M}+\text{H})^+$  327.2217 (Calculated for  $\text{C}_{20}\text{H}_{27}\text{N}_2\text{O}_2$ : 327.2073).

1,3-Pentyl-1,2,3,4-tetrahydrobenzo[*g*]quinazoline-5,10-dione (**21**) was isolated as an oil in 77% yield. IR  $\nu_{\text{max}}$  ( $\text{cm}^{-1}$ , film): 2926, 2856, 1671, 1618, 1593, 1552, 1379, 1266, 1106, 722;  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ )  $\delta$  (ppm): 0.83 (3H, t, *J* 6.8 Hz), 0.86 (3H, t, *J* 6.8 Hz), 1.24-1.34 (8H, m), 1.59-1.65 (6H, m), 2.45 (2H, m), 3.55 (2H, m), 3.71 (2H, s), 3.96 (2H, s), 7.50 (1H, dt, *J* 1.5 and 7.8Hz), 7.58 (1H, dt, 1H, *J* 1.5, 7.6 Hz), 7.87-7.89 (1H, m), 7.94-7.95 (1H, m).  $^{13}\text{C}$  NMR (APT, 125 MHz,  $\text{CDCl}_3$ )  $\delta$  (ppm): 13.9, 22.4, 22.4, 27.3, 28.9, 29.2, 29.4, 29.6, 48.3, 51.9, 53.3, 71.0, 113.5, 125.0, 126.0, 131.6, 131.9, 132.6, 133.6, 146.4, 180.7, 182.0. HRESIMS m/z:  $(\text{M}+\text{H})^+$  355.2592 (Calculated for  $\text{C}_{22}\text{H}_{30}\text{N}_2\text{O}_2$ : 355.2386).

1,3-Decyl-1,2,3,4-tetrahydrobenzo[*g*]quinazoline-5,10-dione (**22**) was isolated as an oil in 80% yield. IR  $\nu_{\text{max}}$  ( $\text{cm}^{-1}$ , film): 2921, 2851, 1670, 1619, 1592, 1551, 1465, 1370, 1335, 1267, 1109, 1024, 964, 843, 787, 685;  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ )  $\delta$  (ppm): 0.85-0.90 (6H, m), 1.34-1.26 (28H, m), 1.51-1.72 (4H, m), 2.49-2.54 (2H, m), 3.58-3.64 (2H, m), 3.78 (2H, s), 4.03 (2H, s), 7.56 (1H, ddd, *J* 1.4, 7.4and 8.9 Hz), 7.64 (1H, ddd, 1H, *J* 1.4, 7.4 and 8.9 Hz), 7.95 (ddd, 1H, *J* 0.5, 1.5 and 7.4 Hz), 8.01 (1H, ddd, *J* 0.5, 1.5 and 7.4 Hz).  $^{13}\text{C}$  NMR (APT, 125.0 MHz,  $\text{CDCl}_3$ )  $\delta$  (ppm): 14.1, 22.6, 26.9, 27.3, 27.8, 29.3, 29.4, 29.5, 29.5, 29.6, 29.6, 31.8, 48.4, 52.0, 53.4, 71.0, 113.5, 125.1, 126.0, 131.7, 132.0, 132.7, 133.7, 146.5, 180.7, 182.1. HRESIMS m/z:  $(\text{M}+\text{H})^+$  495.4422 (Calculated for  $\text{C}_{32}\text{H}_{50}\text{N}_2\text{O}_2$ : 495,3951).

1,3-Dibenzyl-1,2,3,4-tetrahydrobenzo[*g*]quinazoline-5,10-dione (**23**) was isolated as a red solid in 80% yield. m.p. 117-118 °C. IR  $\nu_{\text{max}}$  ( $\text{cm}^{-1}$ , KBr): 2949, 2930, 2837, 1657, 1623, 1588, 1556, 1453, 1381, 1357, 1293, 1272, 1250, 1232, 1209, 1108, 1080, 1065, 940, 751, 726, 720, 701.  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ )  $\delta$  (ppm): 3.60 (2H, s), 3.77 (2H, s), 3.84 (2H, s), 4.75 (2H, s), 7.16-7.27 (10H, m), 7.53 (1H, dt, *J* 1.5 and 7.8Hz), 7.60 (1H, dt, *J* 1.5 and 7.8 Hz), 7.91 (1H, dd, *J* 1.5 and 7.8 Hz), 7.97 (dd, 1H, *J* 1.5 and 7.8 Hz).  $^{13}\text{C}$  NMR (APT, 125 MHz,  $\text{CDCl}_3$ )  $\delta$  (ppm): 48.7, 54.6, 57.6, 68.9,

116.1, 125.2, 126.2, 127.3, 127.3, 127.5, 128.3, 128.5, 128.8, 132.0, 132.4, 133.7, 137.3, 137.6, 146.8, 181.2, 181.9. HRESIMS m/z: (M+H)<sup>+</sup> 395.2062 (Calculated for C<sub>26</sub>H<sub>22</sub>N<sub>2</sub>O<sub>2</sub>: 395.1760).



**Table S2.** X-Ray crystallographic data for compound **23**.

Empirical formula	C <sub>26</sub> H <sub>22</sub> N <sub>2</sub> O <sub>2</sub>
Formula weight	394.45
Temperature/K	293(2)
Crystal system	Monoclinic
Space group	P2 <sub>1</sub> /c
a/Å	16.0640(9)
b/Å	5.5113(3)
c/Å	22.5128(12)
α/°	90
β/°	93.298(2)
γ/°	90
Volume/Å <sup>3</sup>	1989.84(19)
Z	4
ρ <sub>calc</sub> g/cm <sup>3</sup>	1.317
μ/mm <sup>-1</sup>	0.084
F(000)	832.0
Crystal size/mm <sup>3</sup>	0.45 × 0.27 × 0.11
Radiation	MoKα (λ = 0.71073)
2Θ range for data collection/°	4.304 to 50.7
Index ranges	-19 ≤ h ≤ 19, -6 ≤ k ≤ 6, -27 ≤ l ≤ 27
Reflections collected	55863

Independent reflections	3647 [R <sub>int</sub> = 0.0624, R <sub>sigma</sub> = 0.0209]
Data/restraints/parameters	3647/0/271
Goodness-of-fit on F <sup>2</sup>	1.100
Final R indexes [I>=2σ (I)]	R <sub>1</sub> = 0.0429, wR <sub>2</sub> = 0.1065
Final R indexes [all data]	R <sub>1</sub> = 0.0624, wR <sub>2</sub> = 0.1200
Largest diff. peak/hole / e Å <sup>-3</sup>	0.20/-0.15

1,3-Di-(4-chlorobenzyl)-1,2,3,4-tetrahydrobenzo[*g*]quinazoline-5,10-dione (24)

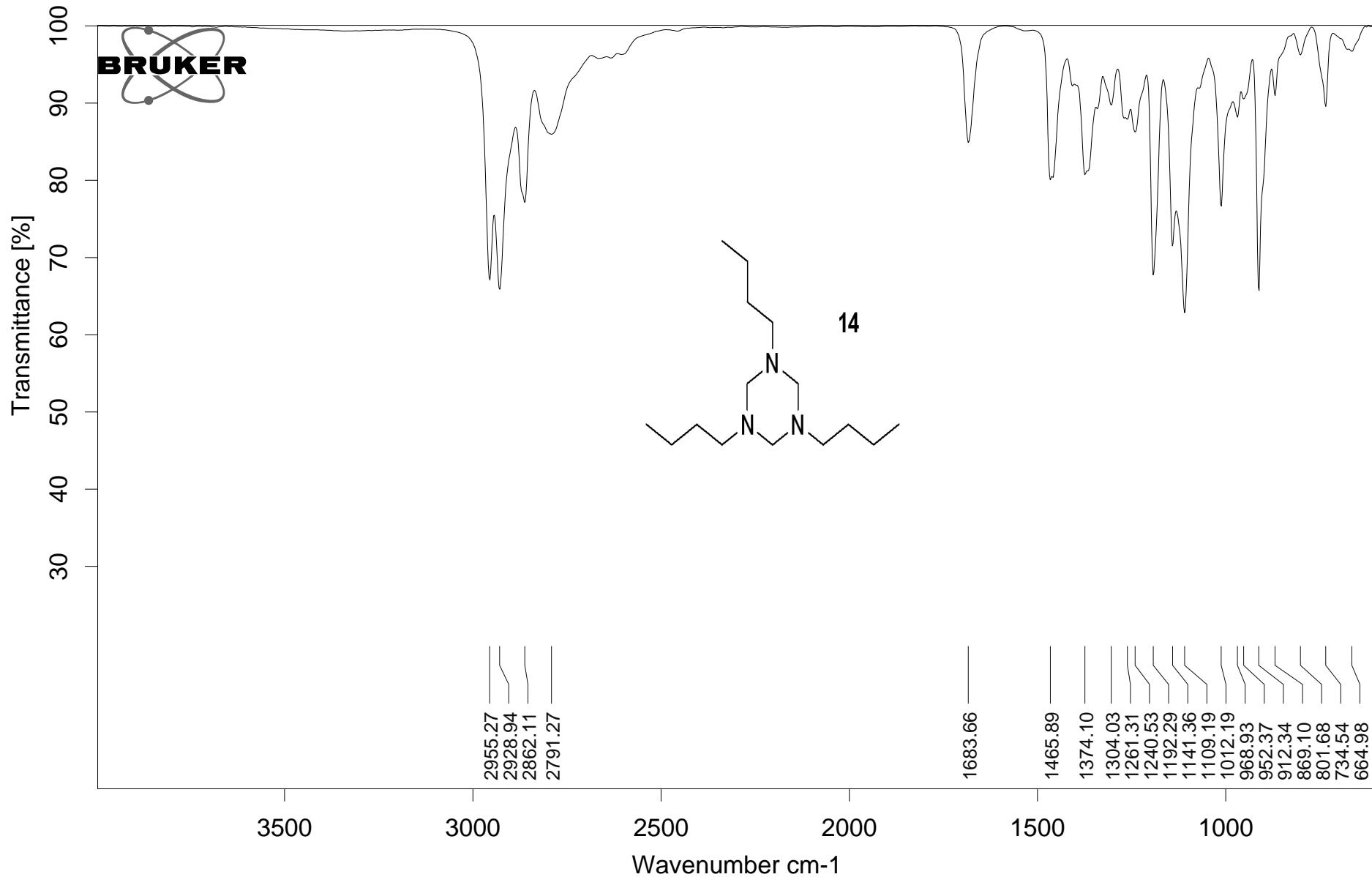
was isolated as oil in 75 % yield (995 mg). IR ν<sub>max</sub> (cm<sup>-1</sup>, filme): 2921, 2847, 1667, 1618, 1592, 1551, 1487, 1381, 1349, 1289, 1268, 1250, 1088, 1011, 950, 921, 838, 799, 721, 686. <sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) δ (ppm): 3.61 (2H, s), 3.81 (2H, s), 3.84 (2H, s), 4.73 (2H, s), 7.38 (2H, d, *J* 8.6 Hz), 7.22(2H, d, *J* 8.6 Hz), 7.26 (2H, d, *J* 8.6 Hz), 7.29 (2H, d, *J* 8.6 Hz), 7.62 (1H, dt, *J* 1.4 and 7.5 Hz), 7.68 (1H, dt, *J* 1.4 and 7.5 Hz), 7.98 (dd, 1H, *J* 1.4 and 7.5 Hz), 8.04 (1H, dd, *J* 1.4 and 7.5 Hz). <sup>13</sup>C NMR (APT, 125 MHz, CDCl<sub>3</sub>) δ (ppm): 48.8, 54.1, 56.9, 68.6, 116.8, 125.4, 126.3, 128.6, 128.7, 129.1, 130.1, 132.0, 132.3, 133.2, 133.4, 133.9, 135.8, 136.1, 146.7, 181.4, 182.0. HRESIMS m/z: (M+H)<sup>+</sup> 463.1484 (Calculated for C<sub>26</sub>H<sub>20</sub>Cl<sub>2</sub>N<sub>2</sub>O<sub>2</sub>: 463.0980).

1,3-Di-(2,4-dichlorobenzyl)-1,2,3,4-tetrahydrobenzo[*g*]quinazoline-5,10-dione (25)

was isolated as an oil in 80% yield. IR ν<sub>max</sub> (cm<sup>-1</sup>, film): 2948, 2821, 1677, 1587, 1471, 1384, 1337, 1257, 1202, 1163, 1138, 1098, 1045, 1014, 982, 946, 856, 824, 763, 732, 696, 659. <sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) δ (ppm): 3.77 (2H, s), 3.83 (2H, s), 3.97 (2H, s), 4.89 (2H, s), 7.20-7.24 (2H, m), 7.33-7.39 (4H, m), 7.61 (1H, dt, 1H, *J* 1.1 and 7.6 Hz), 7.69(1H, dt, 1H, *J* 1.1 and 7.6 Hz), 7.95 (dd, 1H, *J* 1.1 and 7.6 Hz), 8.04 (1H, dd, 1H, *J* 1.1 and 7.6 Hz). <sup>13</sup>C NMR (APT, 125.0 MHz, CDCl<sub>3</sub>) δ (ppm): 48.3, 52.0, 54.1, 69.9, 116.5, 125.4, 126.3, 127.0, 127.3, 129.2, 129.2, 129.3, 129.6, 130.9, 131.7, 132.2, 132.2, 133.3, 133.5, 133.6, 133.7, 133.8, 133.9, 134.6, 146.6, 181.3, 181.7. HRESIMS m/z: (M+CH<sub>3</sub>OH<sub>2</sub>)<sup>+</sup> 561.9746 (Calculated for C<sub>27</sub>H<sub>22</sub>Cl<sub>4</sub>N<sub>2</sub>O<sub>3</sub>: 562.0385).

## References

1. Barluenga, M.; Bayon, A. M.; Campos, P.; Asensio, G.; Gonzalez-Nuiiez, E.; Molina, Y. *J. Chem. Soc. Perkin Trans. 1* **1988**, 1631-1636.  
[doi:10.1039/P19880001631](https://doi.org/10.1039/P19880001631)

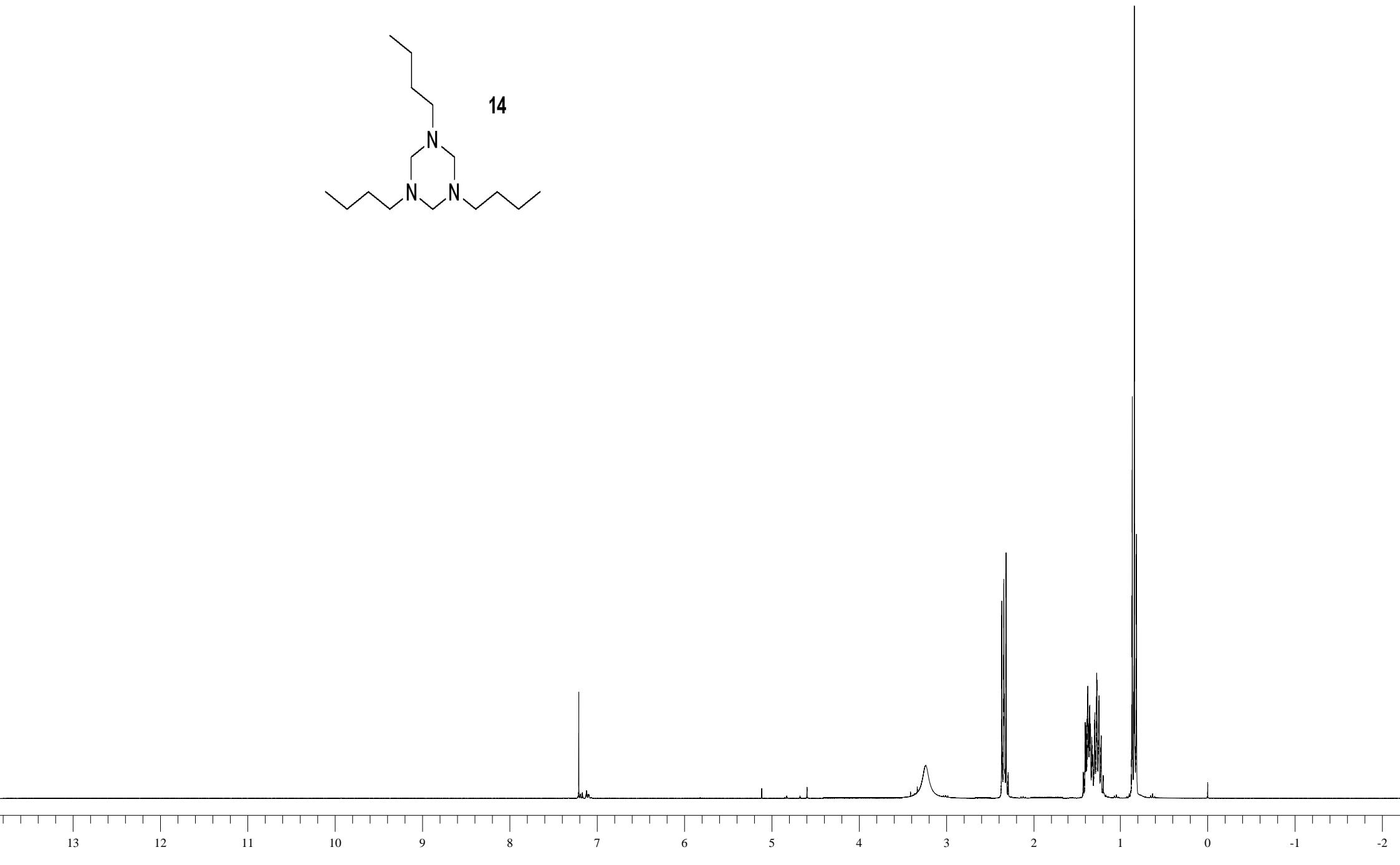
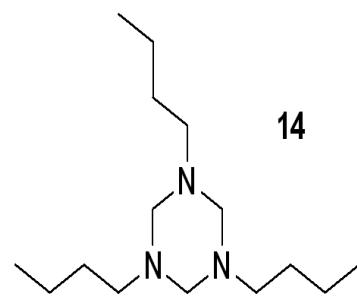


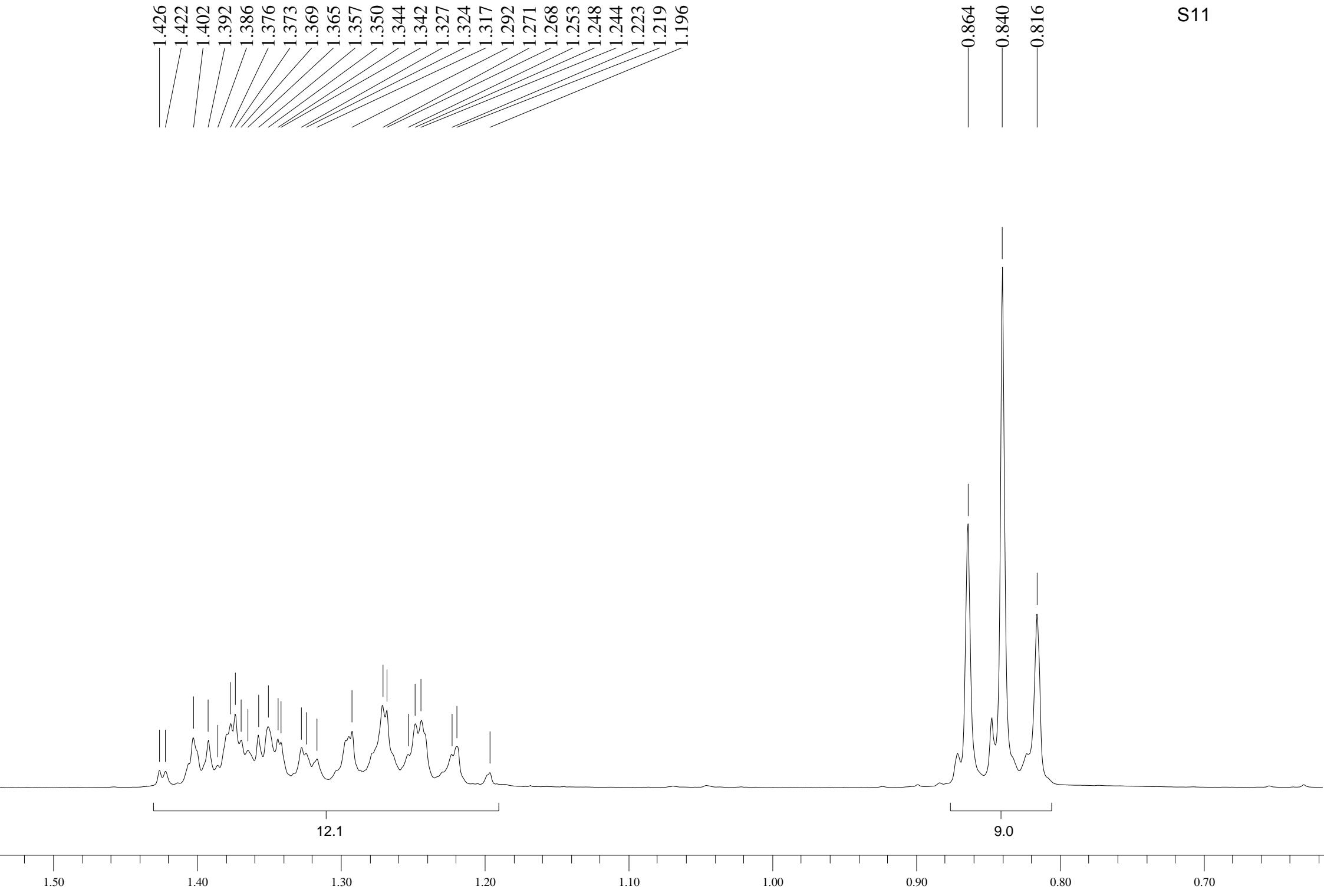
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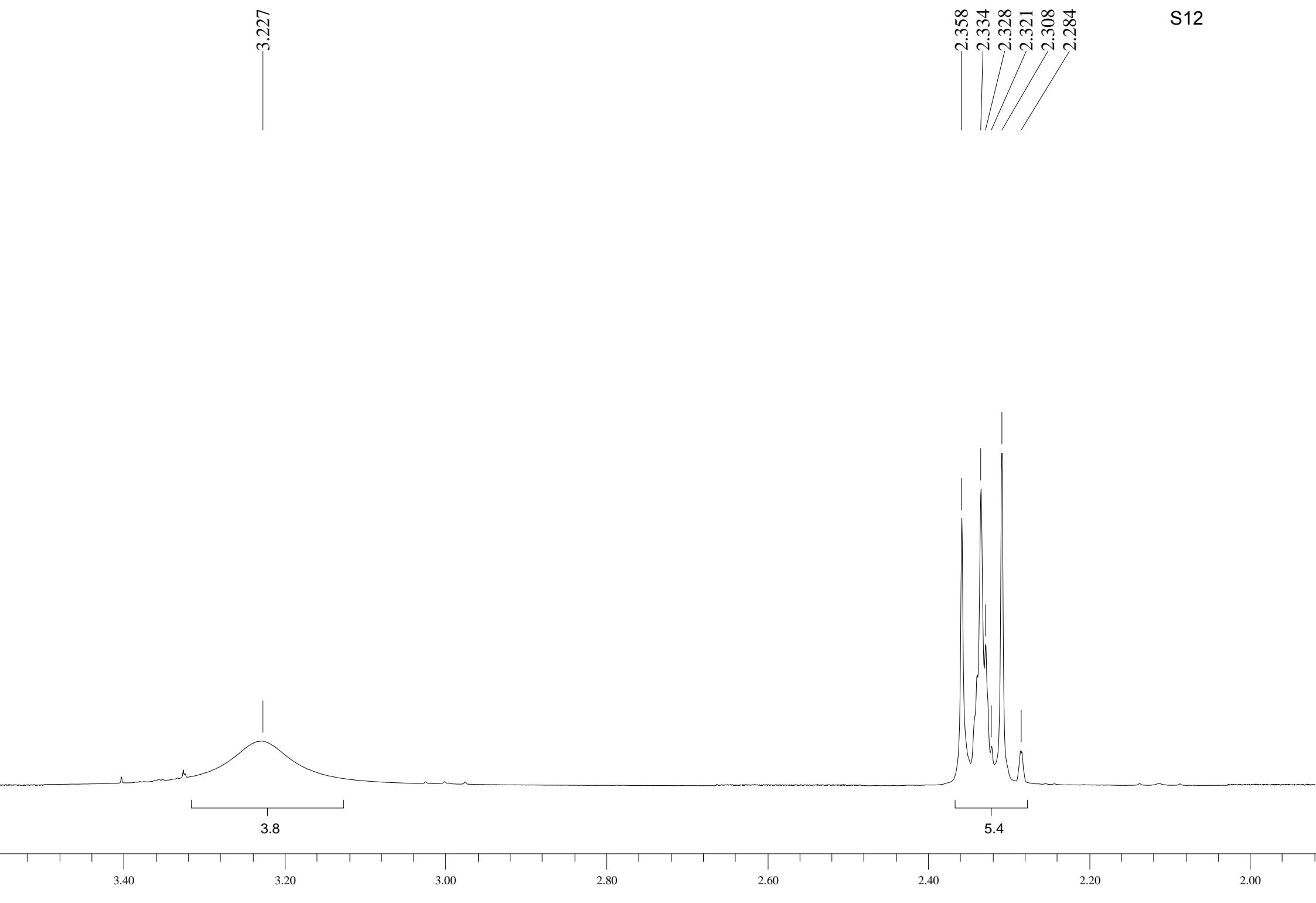
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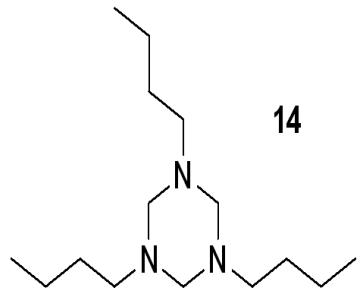
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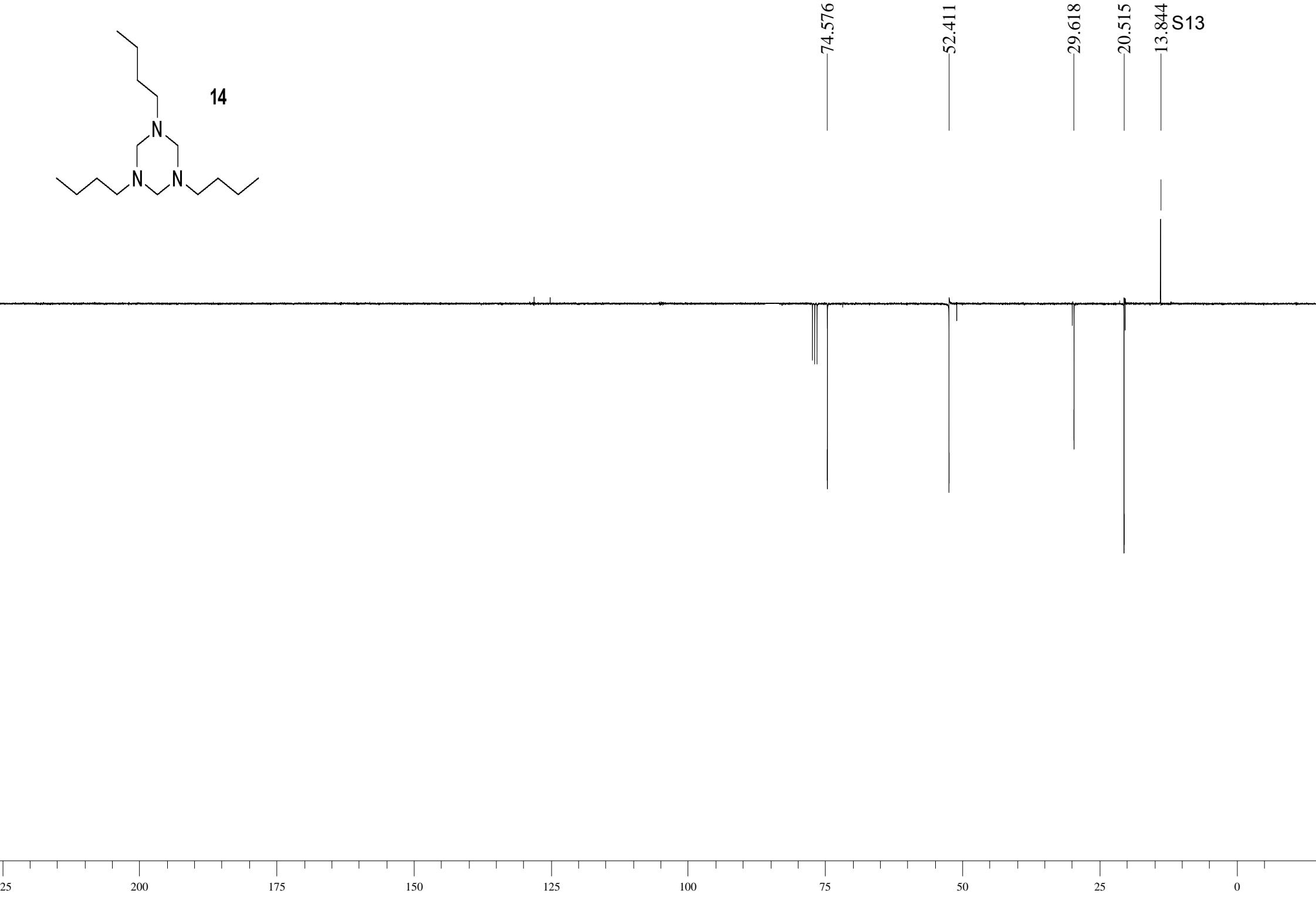


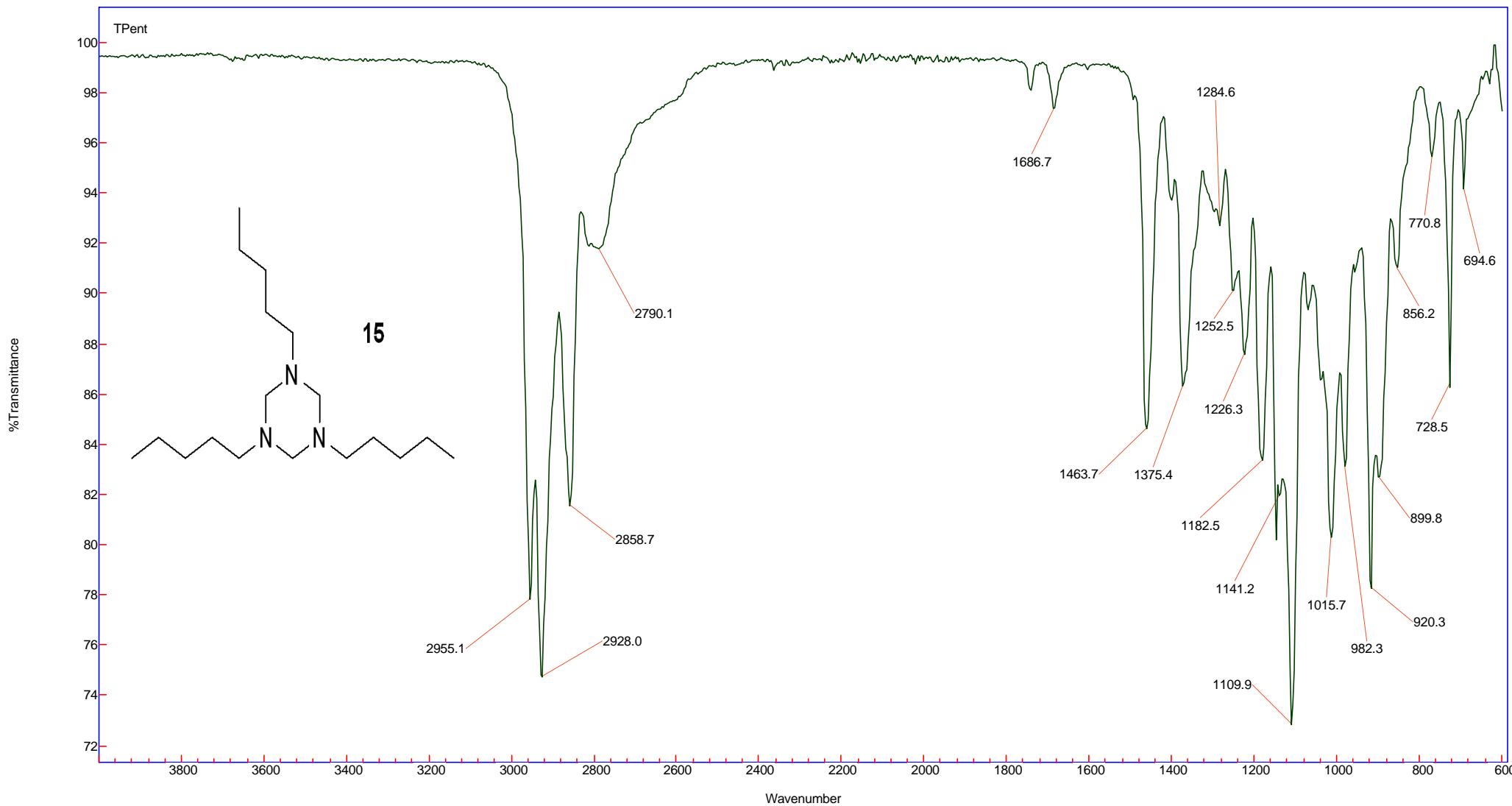




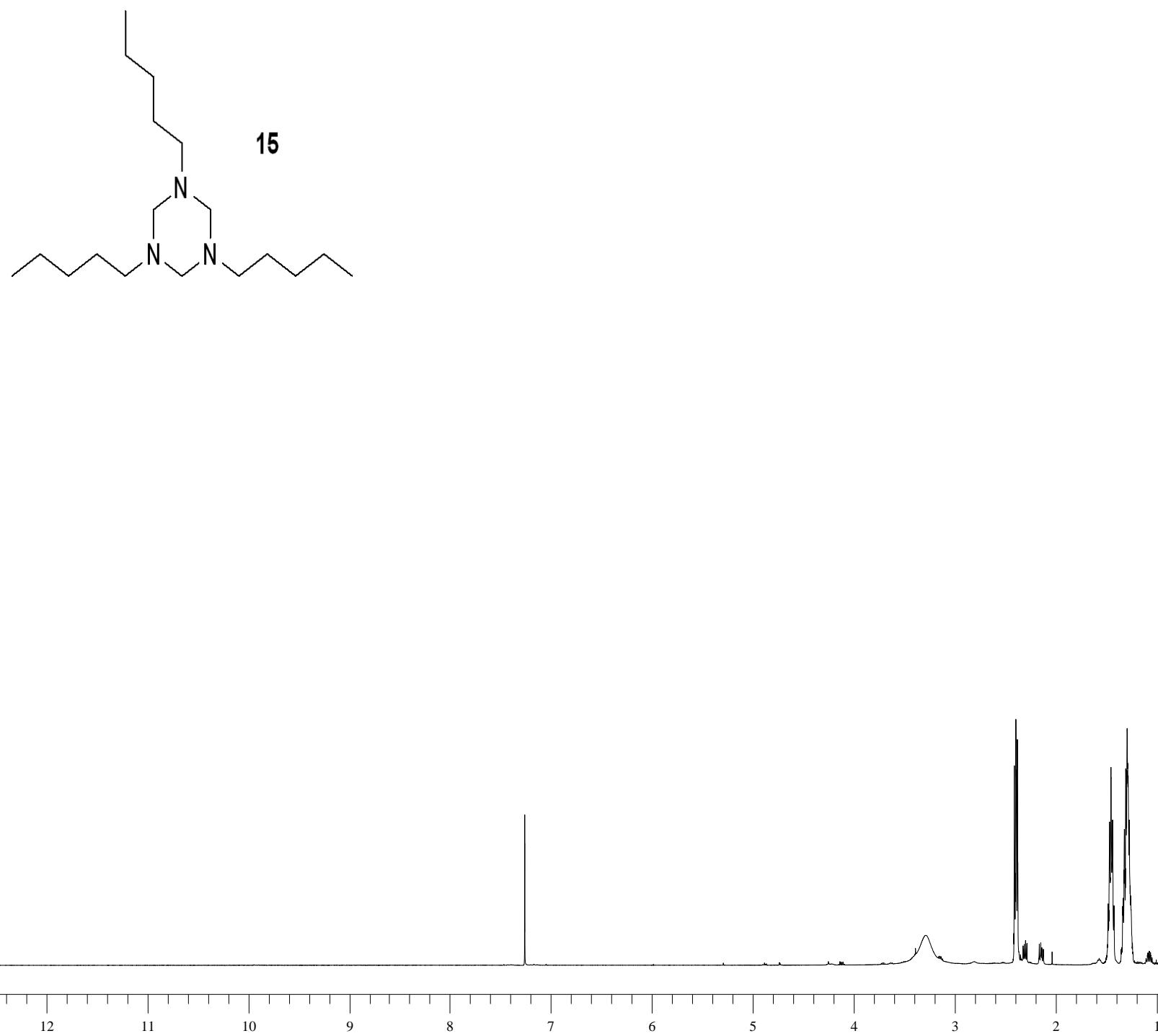


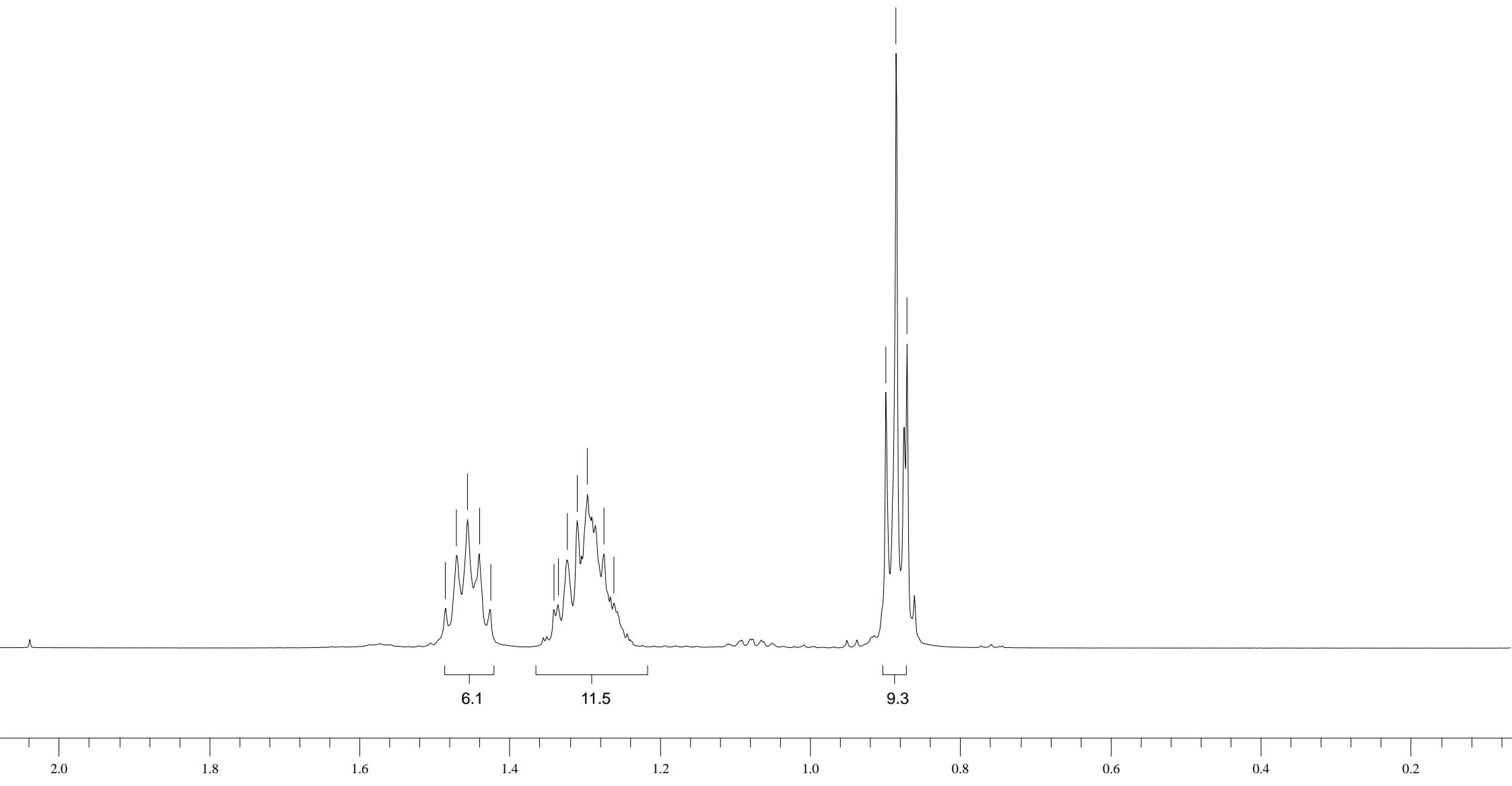
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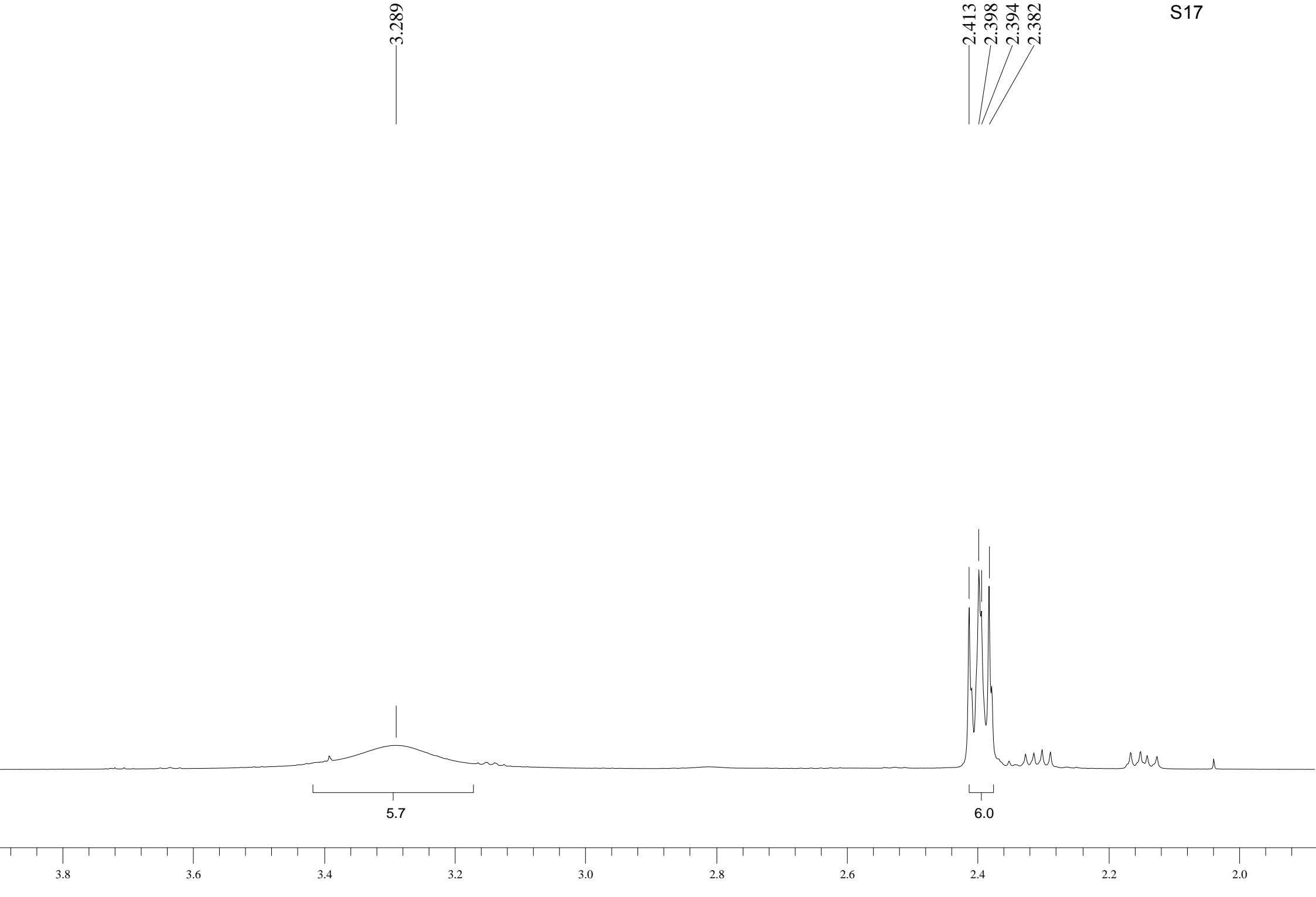


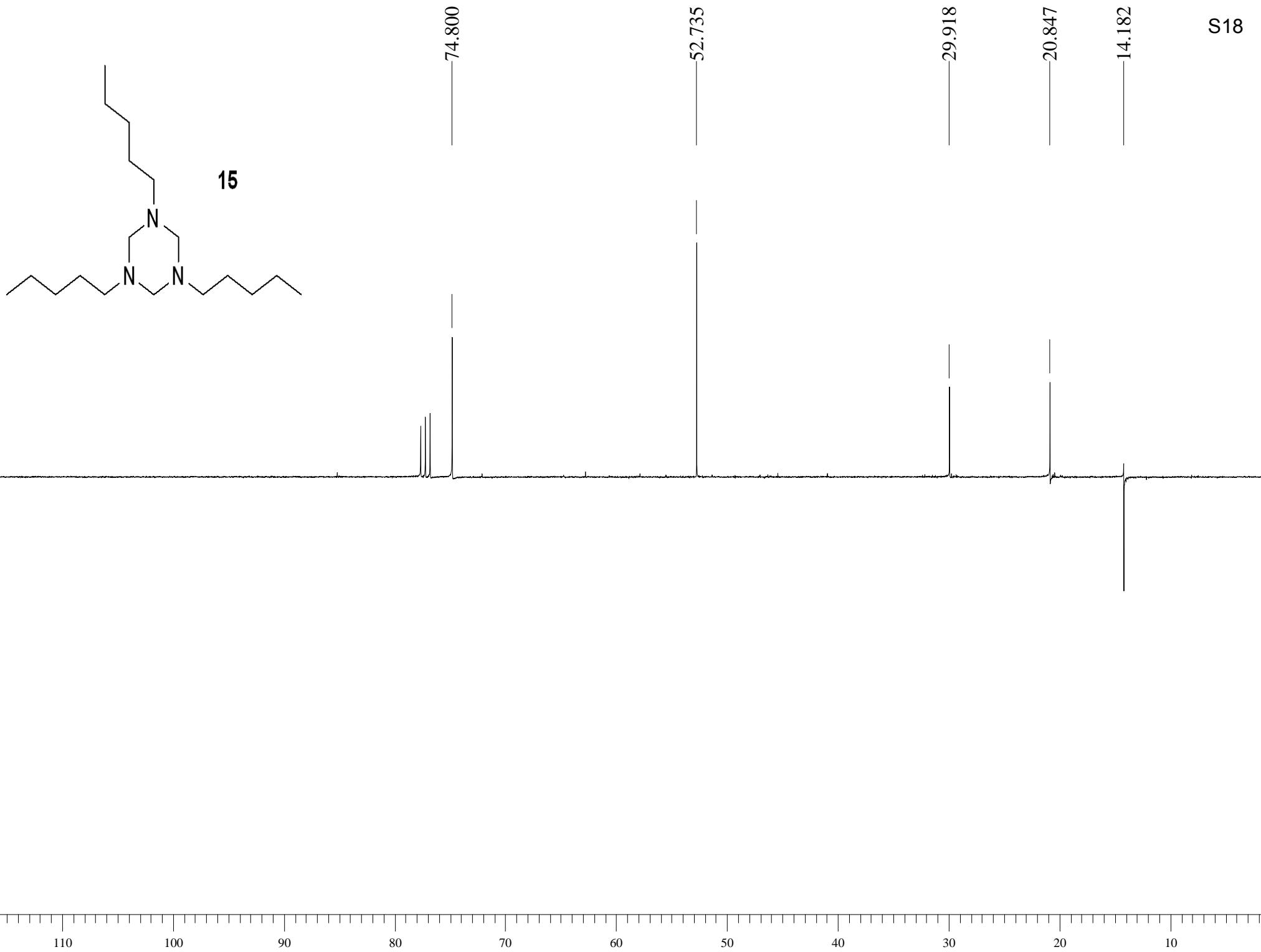


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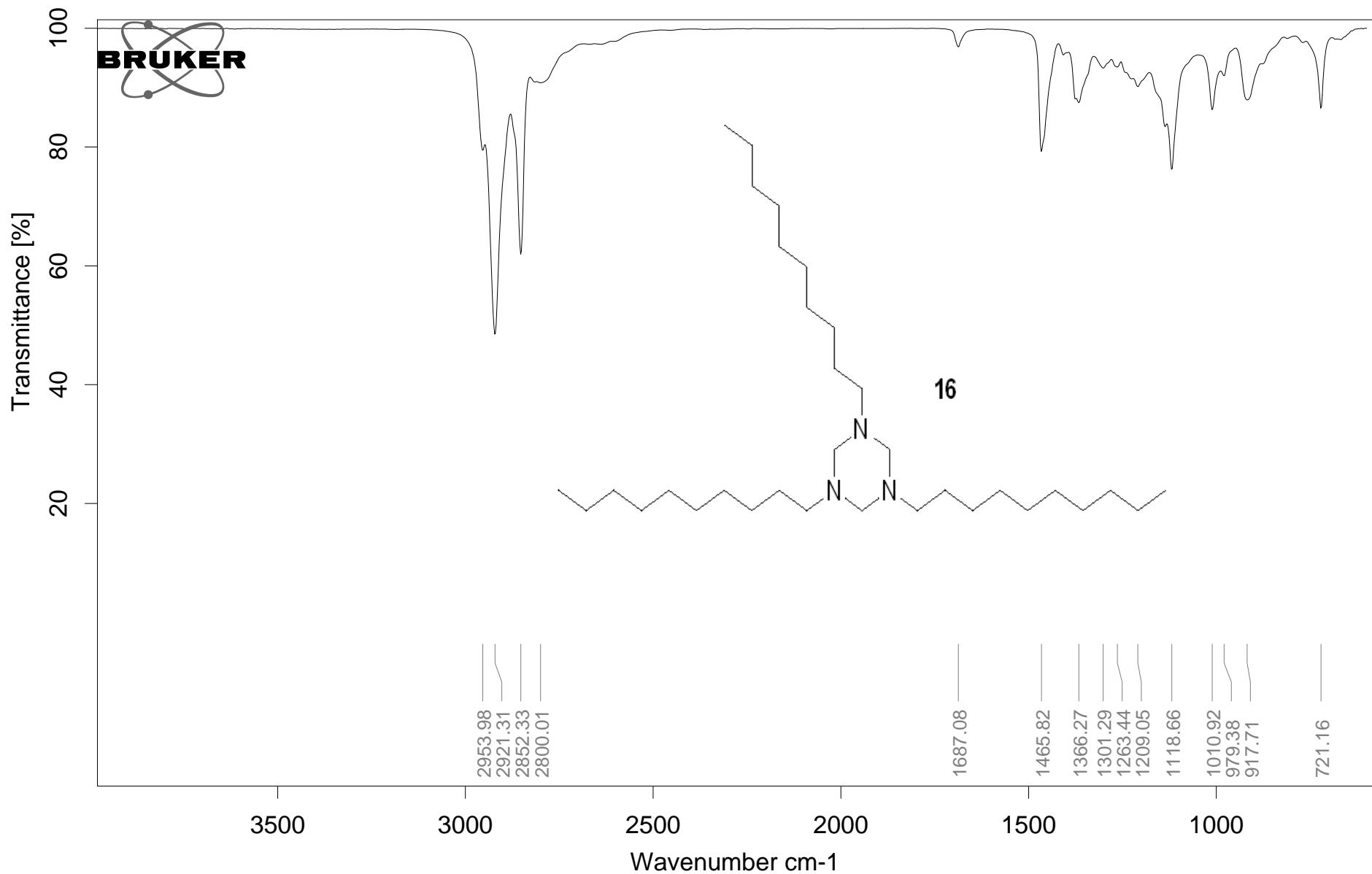








S18

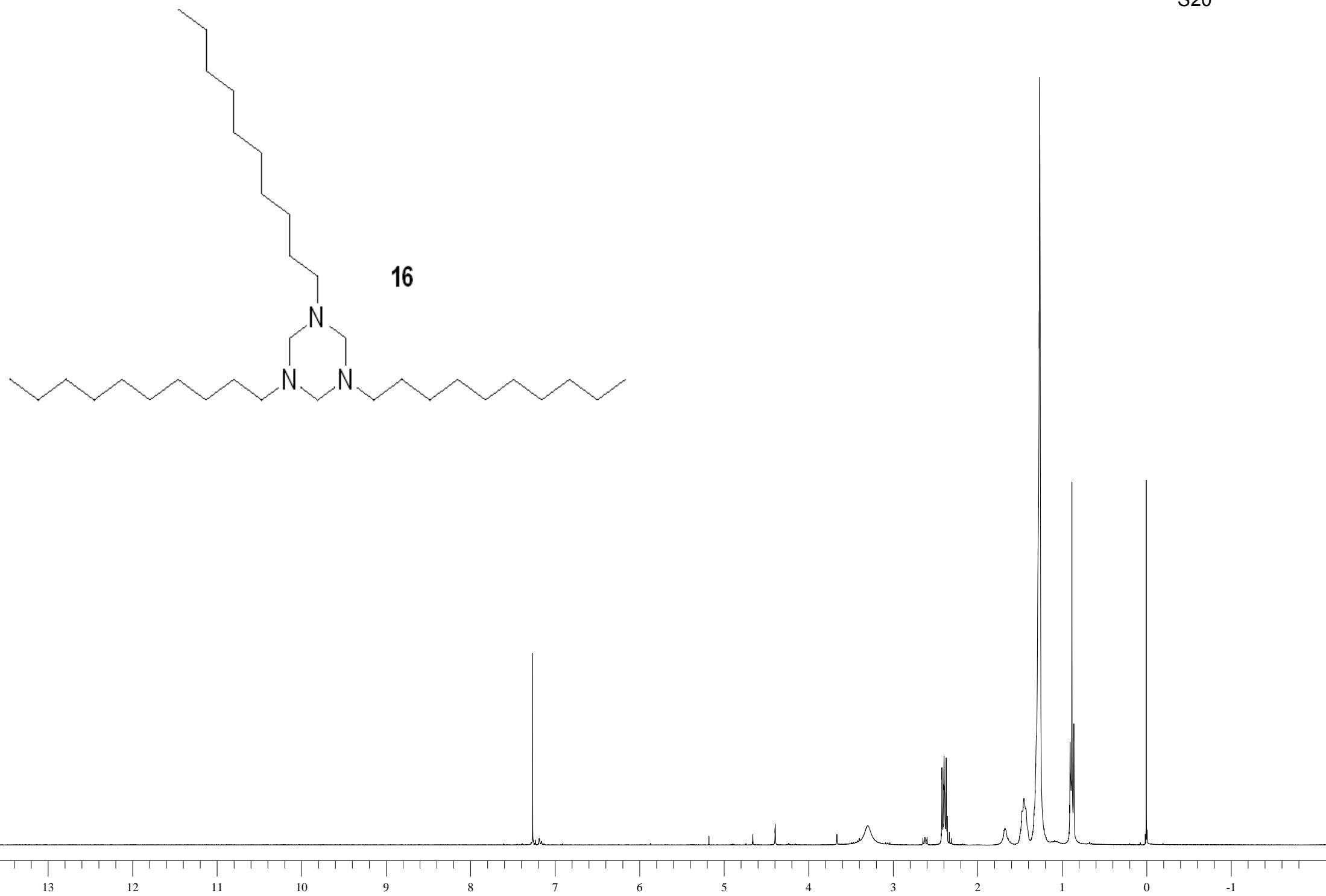


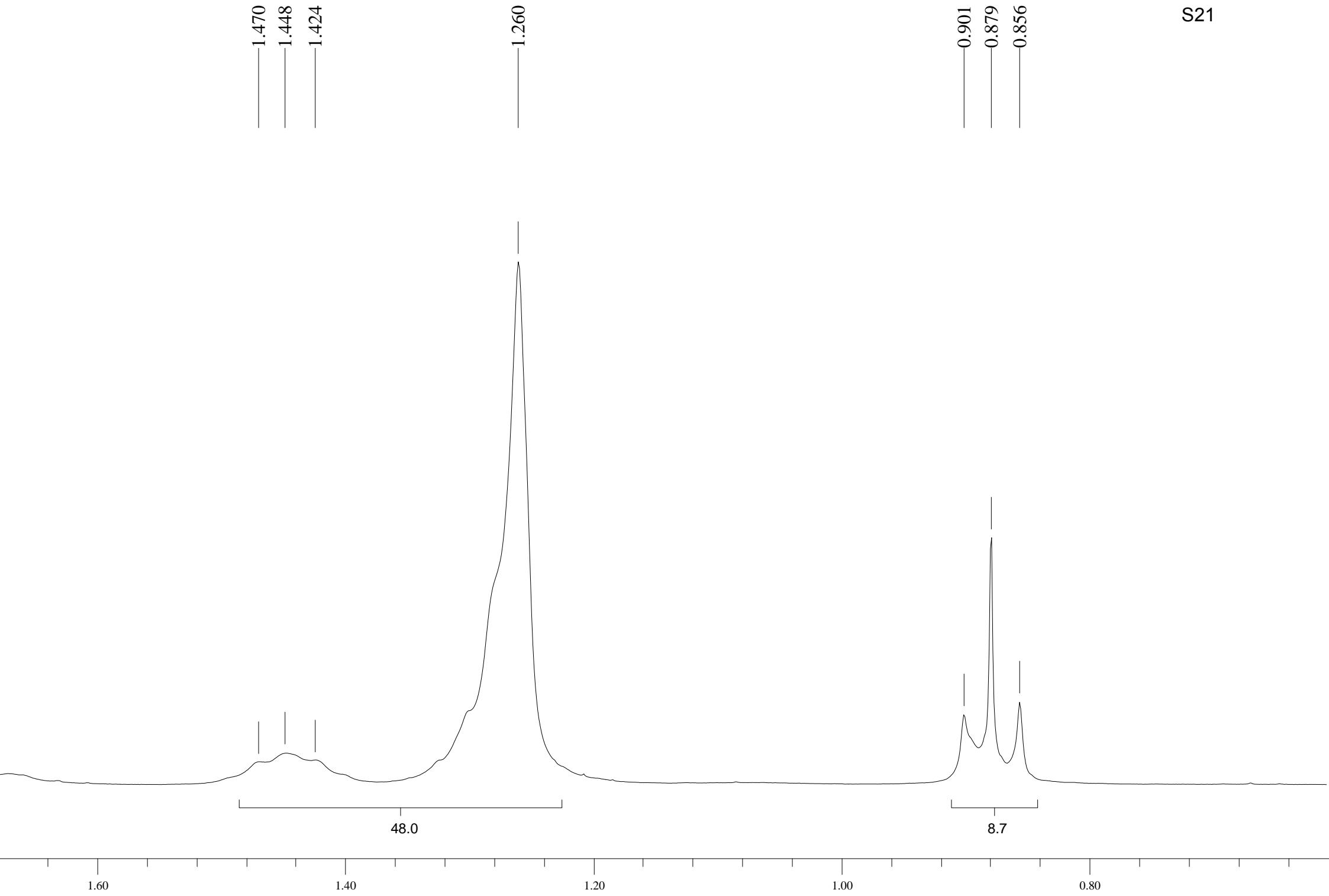
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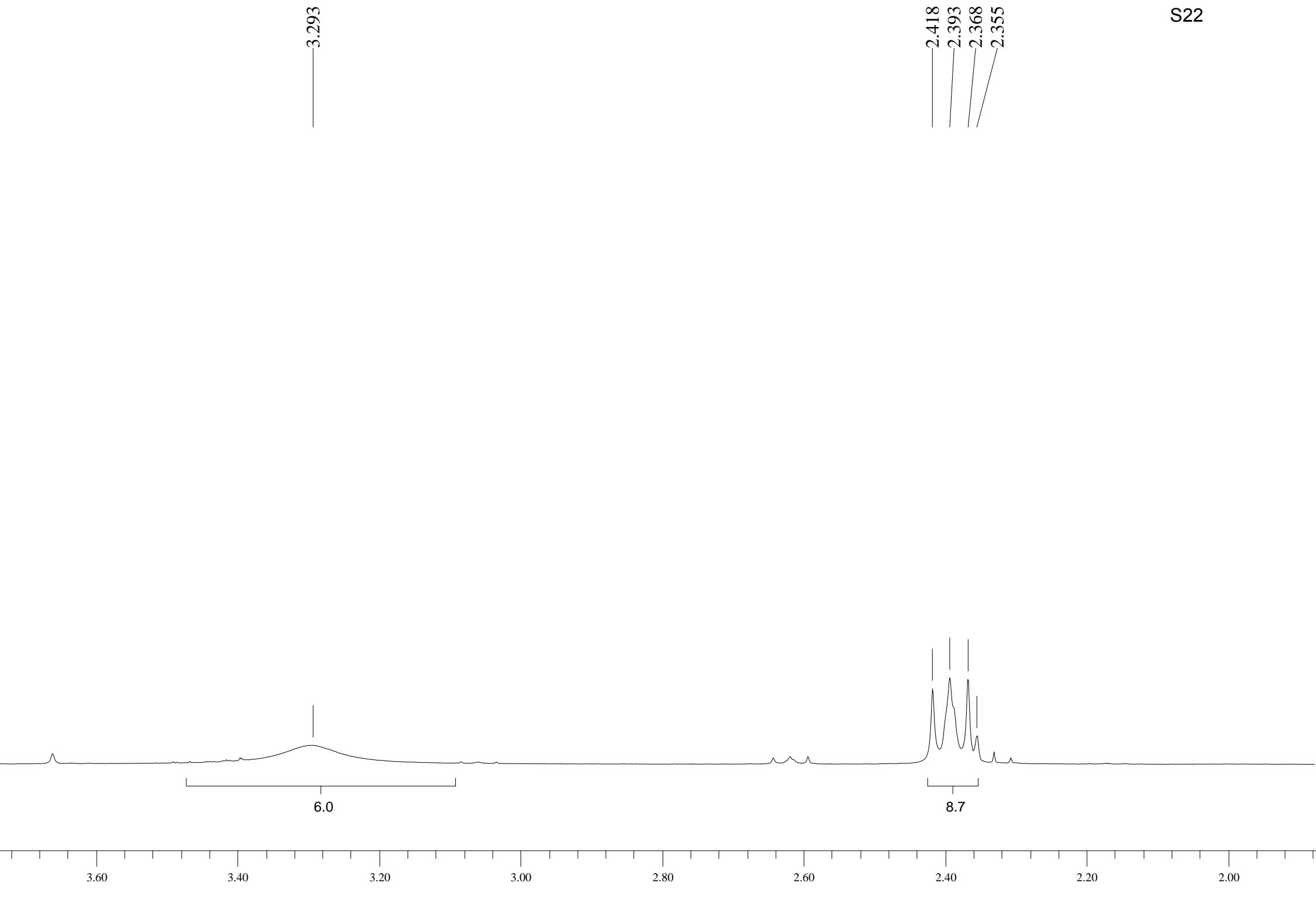
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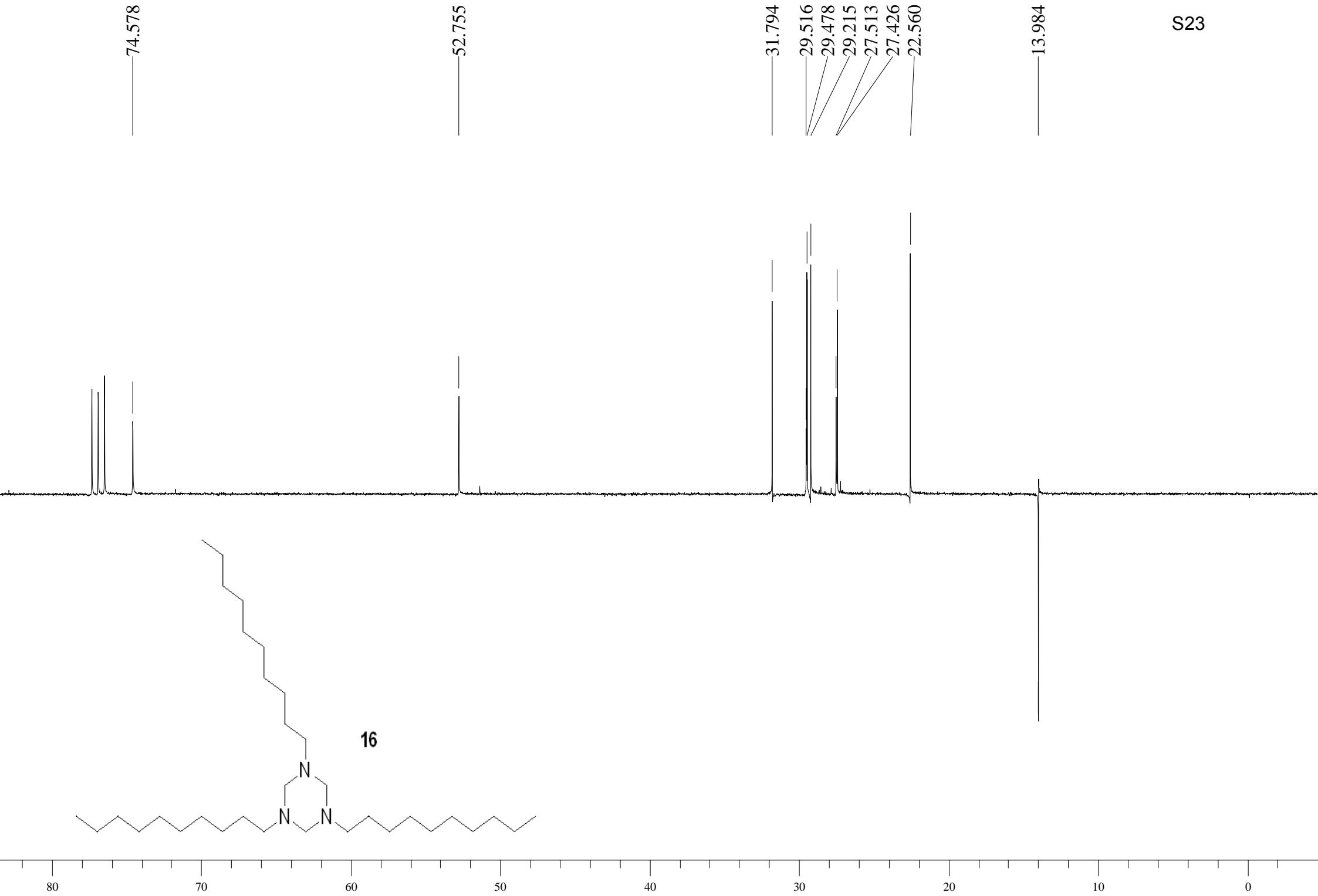
Instrument type and / or accessory

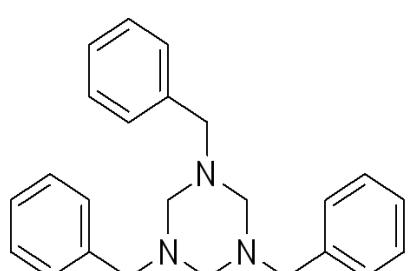
11/08/2014









3430,06 cm<sup>-1</sup>3083,87 cm<sup>-1</sup>3060,68 cm<sup>-1</sup>2952,47 cm<sup>-1</sup>2888,82 cm<sup>-1</sup>3022,58 cm<sup>-1</sup>2850,79 cm<sup>-1</sup>2773,73 cm<sup>-1</sup>2805,94 cm<sup>-1</sup>1951,93 cm<sup>-1</sup>1601,89 cm<sup>-1</sup>1201,07 cm<sup>-1</sup>1229,12 cm<sup>-1</sup>822,89 cm<sup>-1</sup>878,57 cm<sup>-1</sup>853,25 cm<sup>-1</sup>1397,85 cm<sup>-1</sup>1131,83 cm<sup>-1</sup>1313,91 cm<sup>-1</sup>1118,61 cm<sup>-1</sup>1064,59 cm<sup>-1</sup>1260,08 cm<sup>-1</sup>919,74 cm<sup>-1</sup>907,02 cm<sup>-1</sup>1014,26 cm<sup>-1</sup>985,56 cm<sup>-1</sup>1028,81 cm<sup>-1</sup>1150,85 cm<sup>-1</sup>1355,79 cm<sup>-1</sup>1494,08 cm<sup>-1</sup>1452,44 cm<sup>-1</sup>1168,65 cm<sup>-1</sup>704,42 cm<sup>-1</sup>697,14 cm<sup>-1</sup>736,46 cm<sup>-1</sup>

17

3500

3000

2500

2000

1500

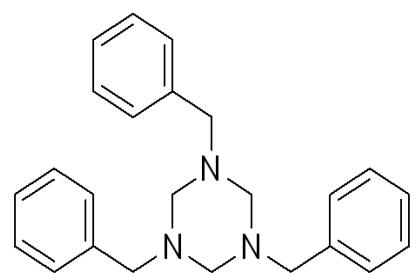
1000

cm<sup>-1</sup>

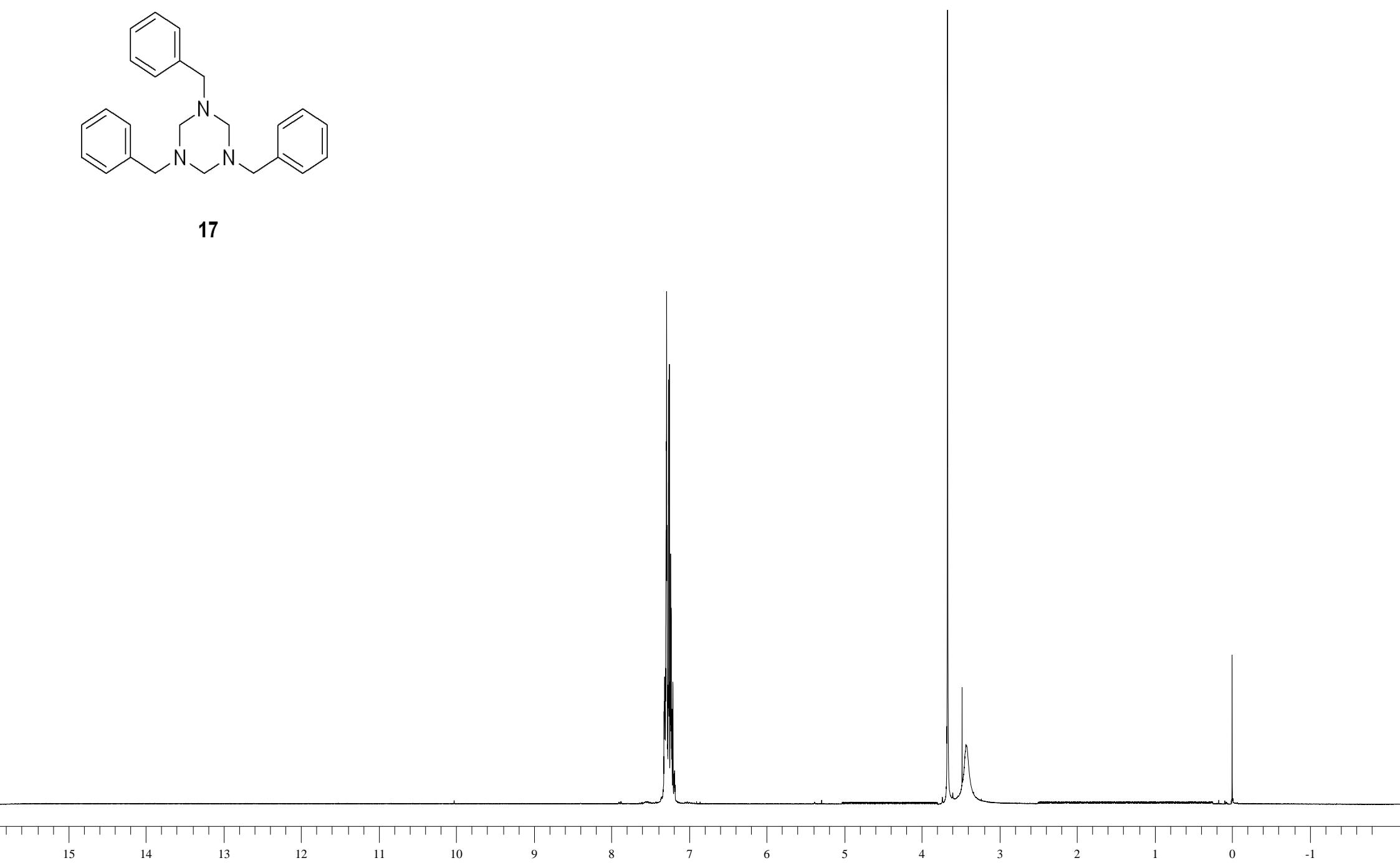
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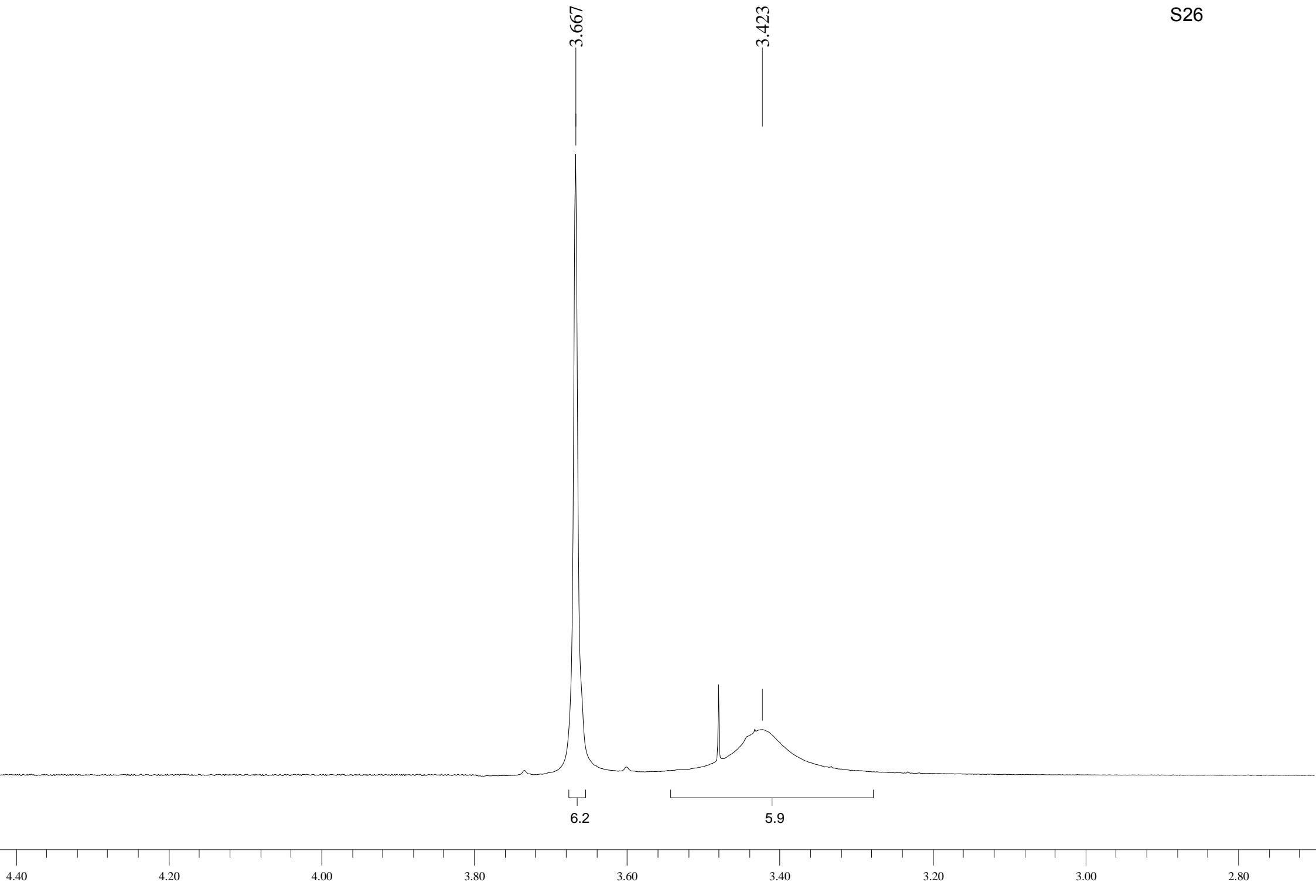
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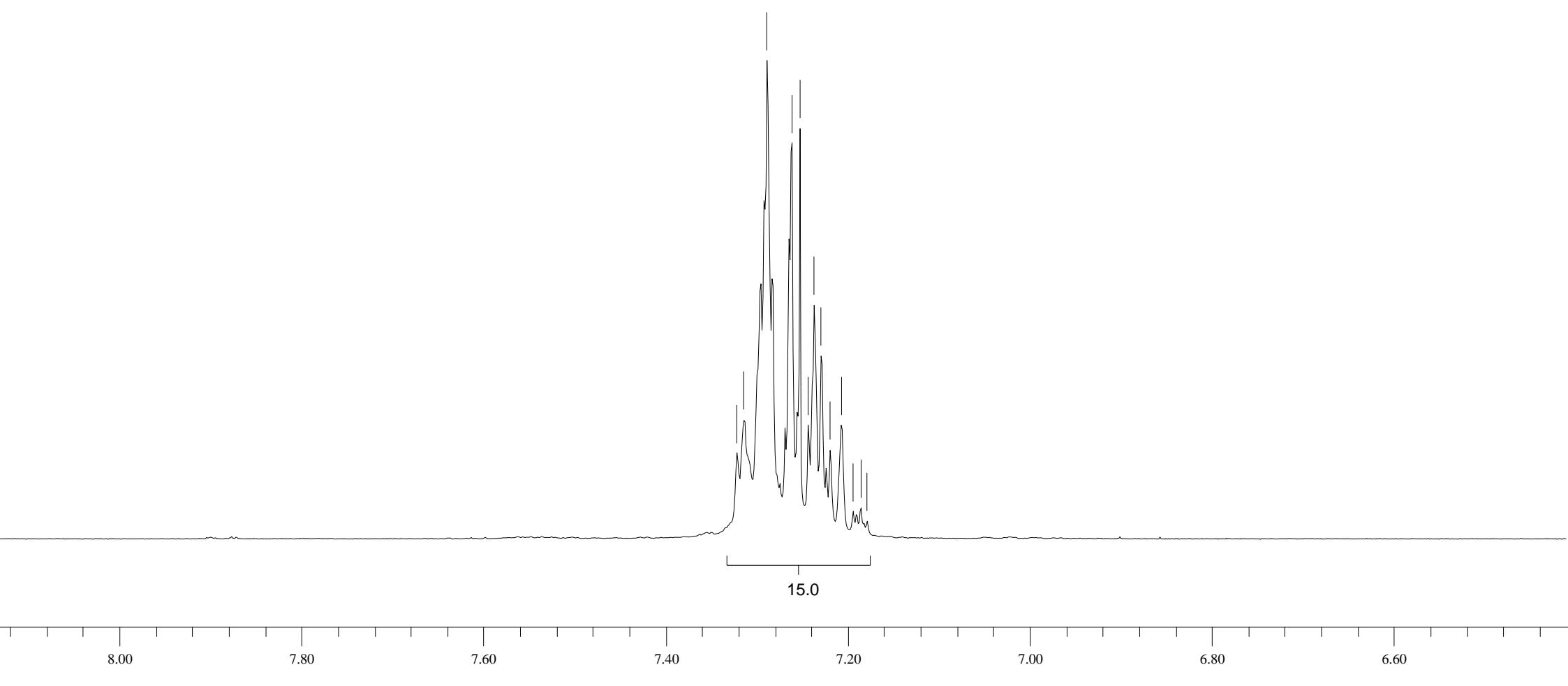
Op. Vania\_1

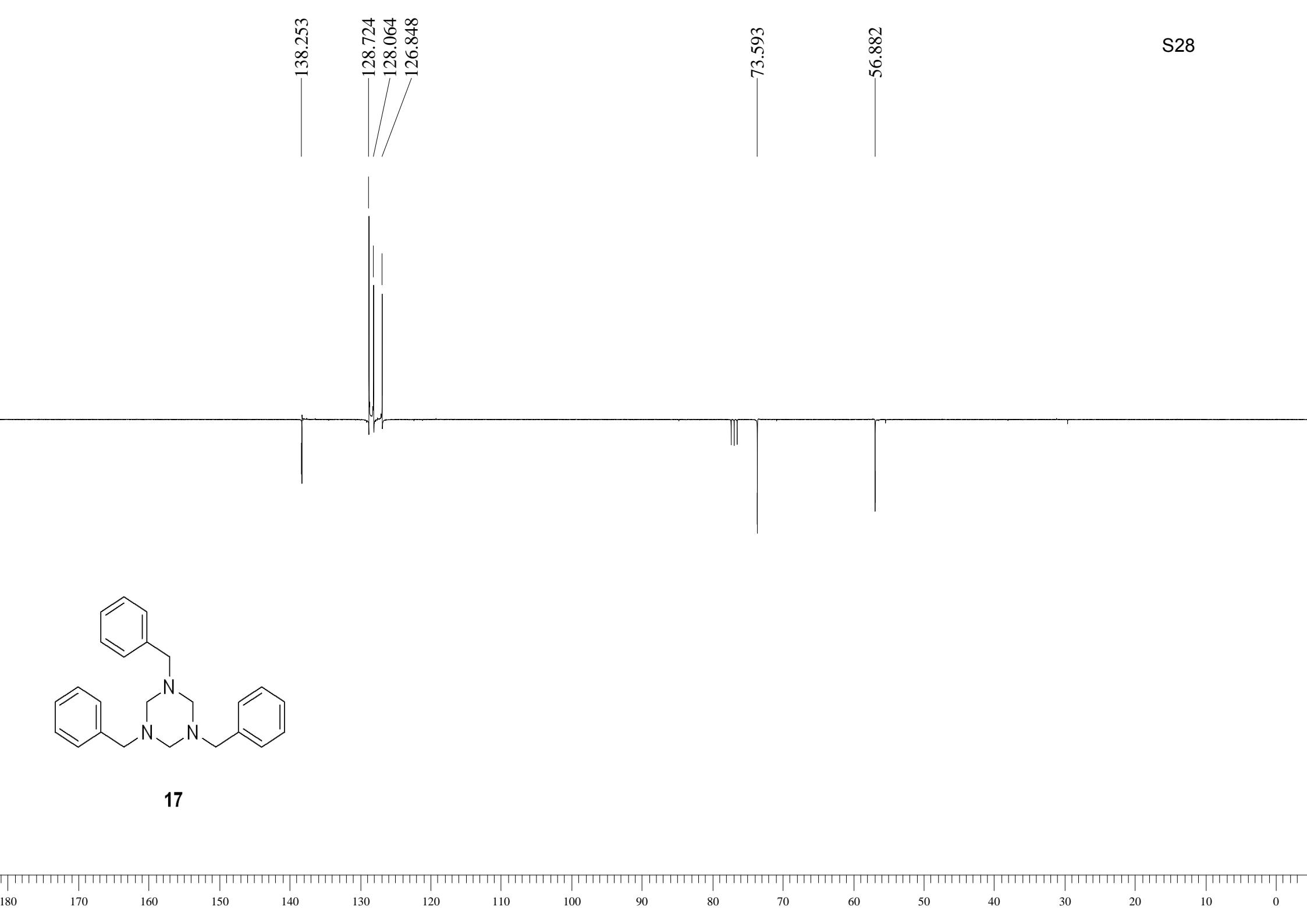


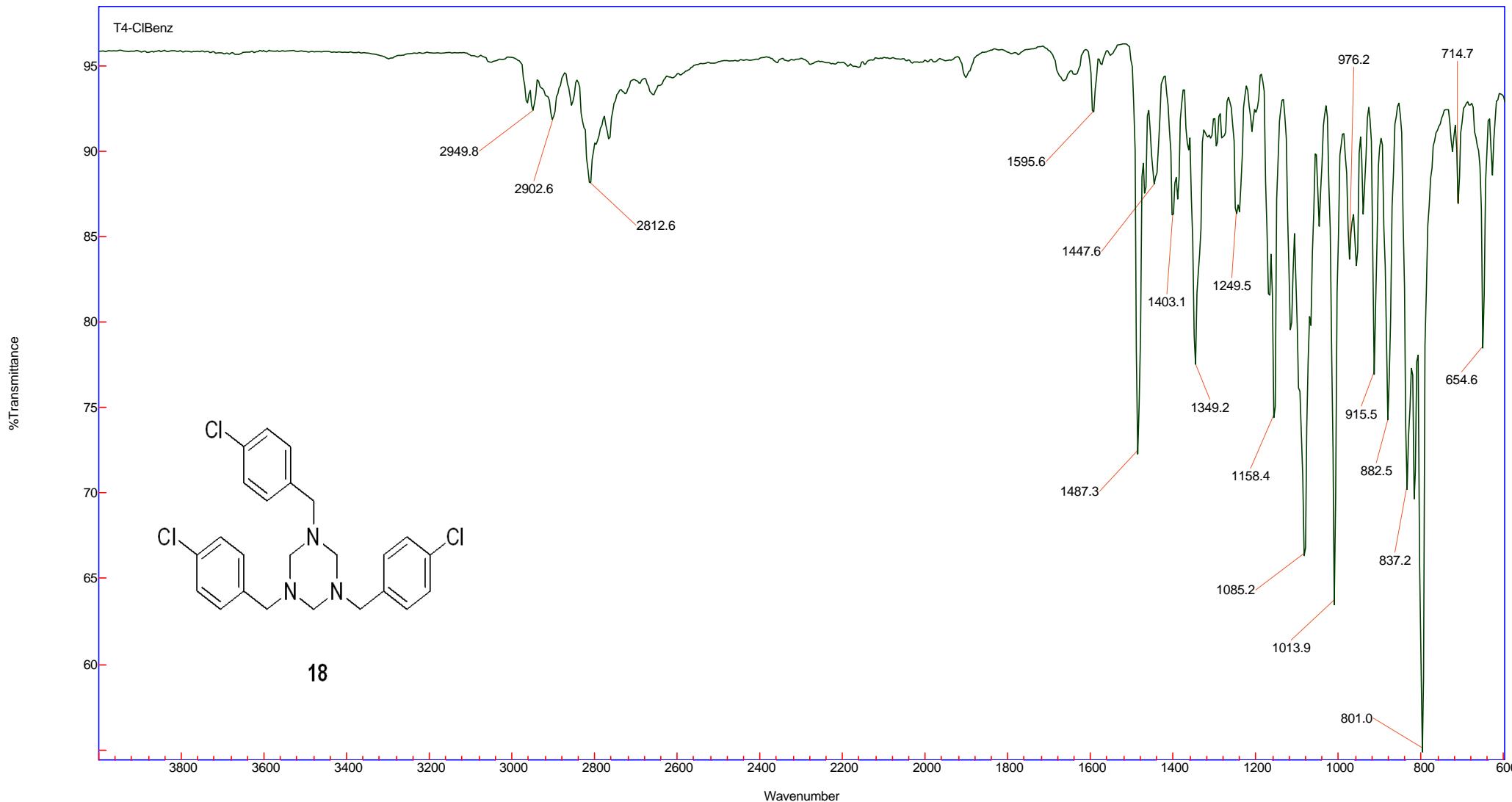
**17**



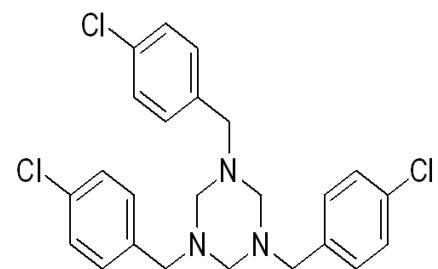
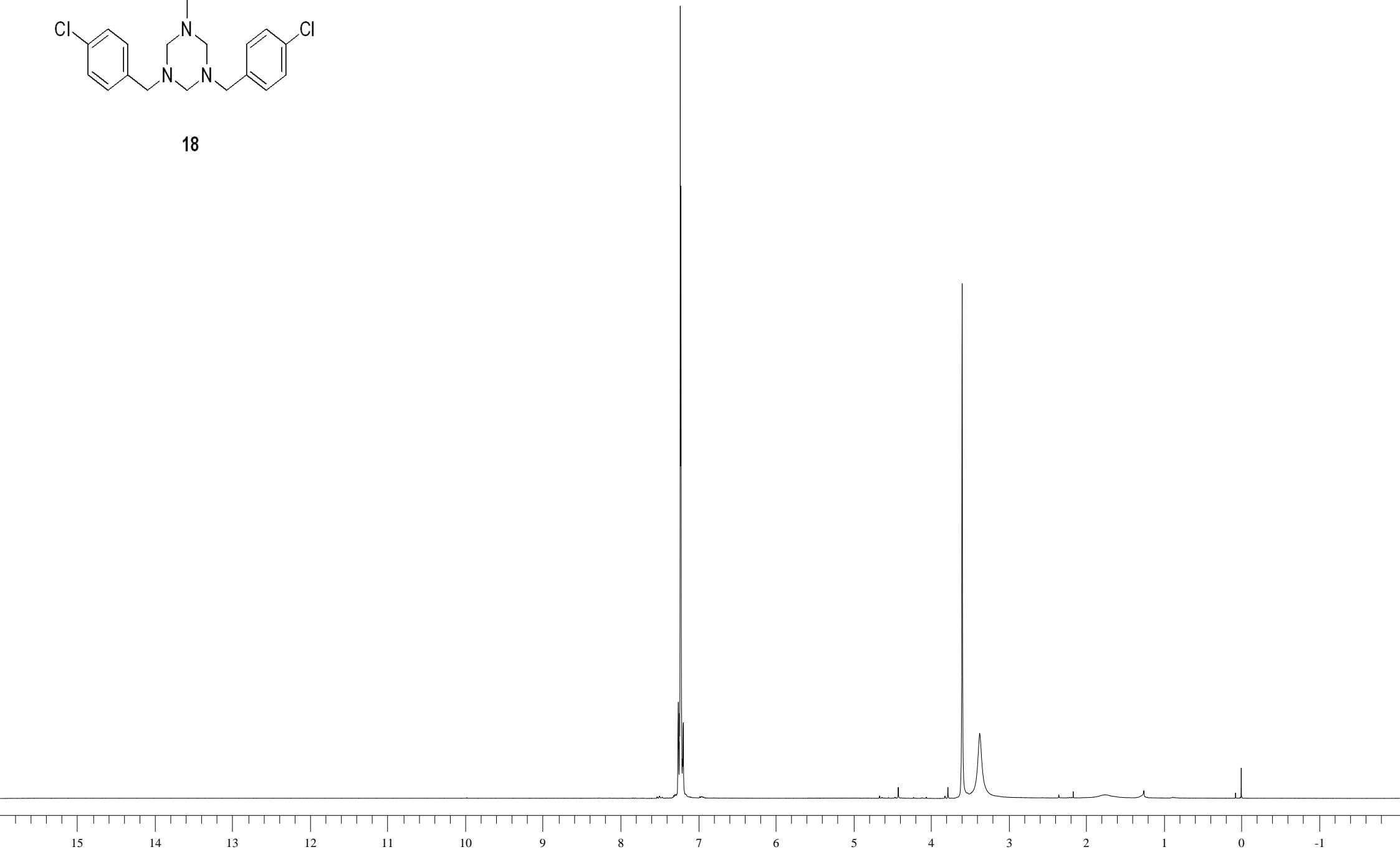


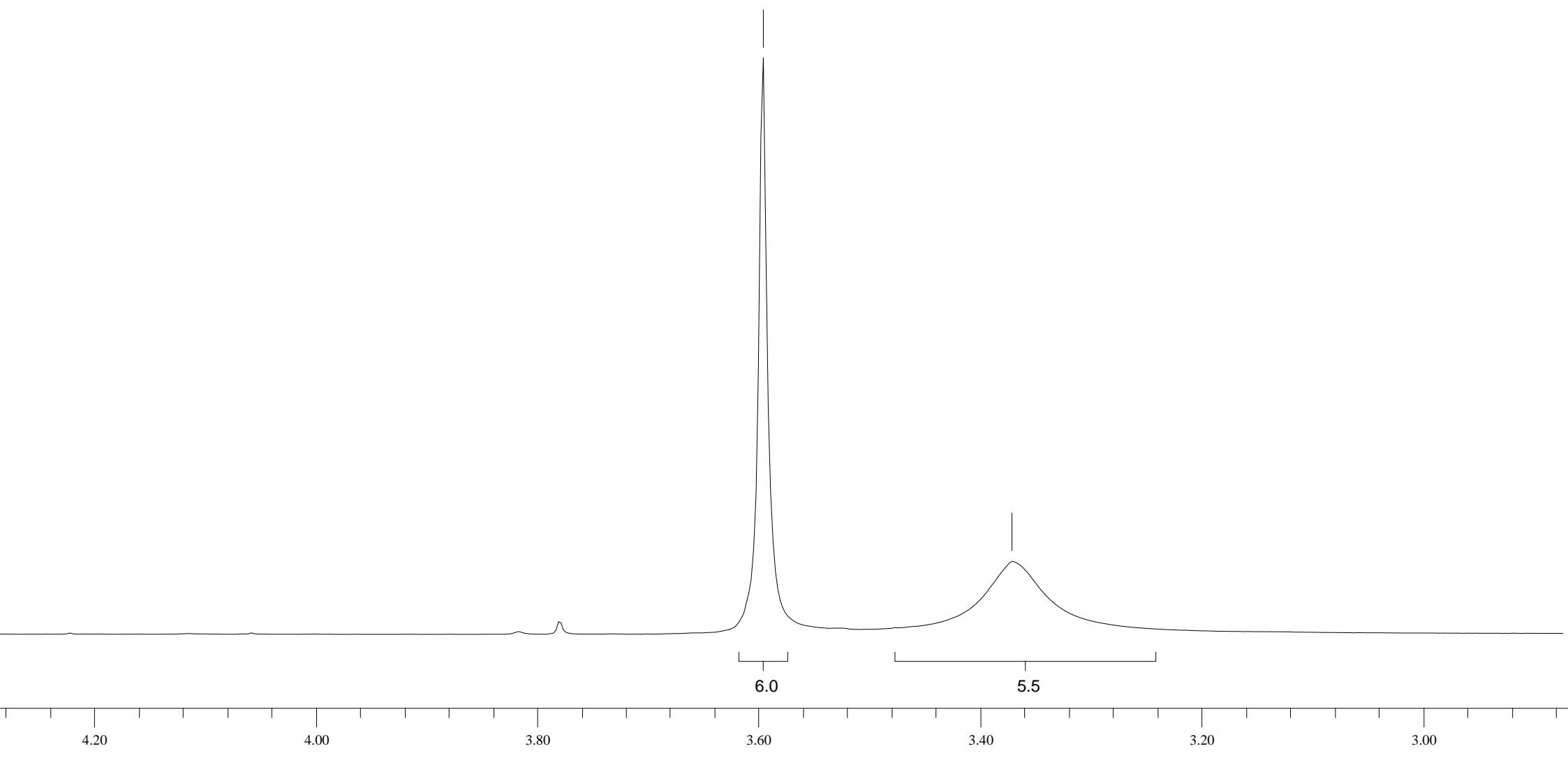


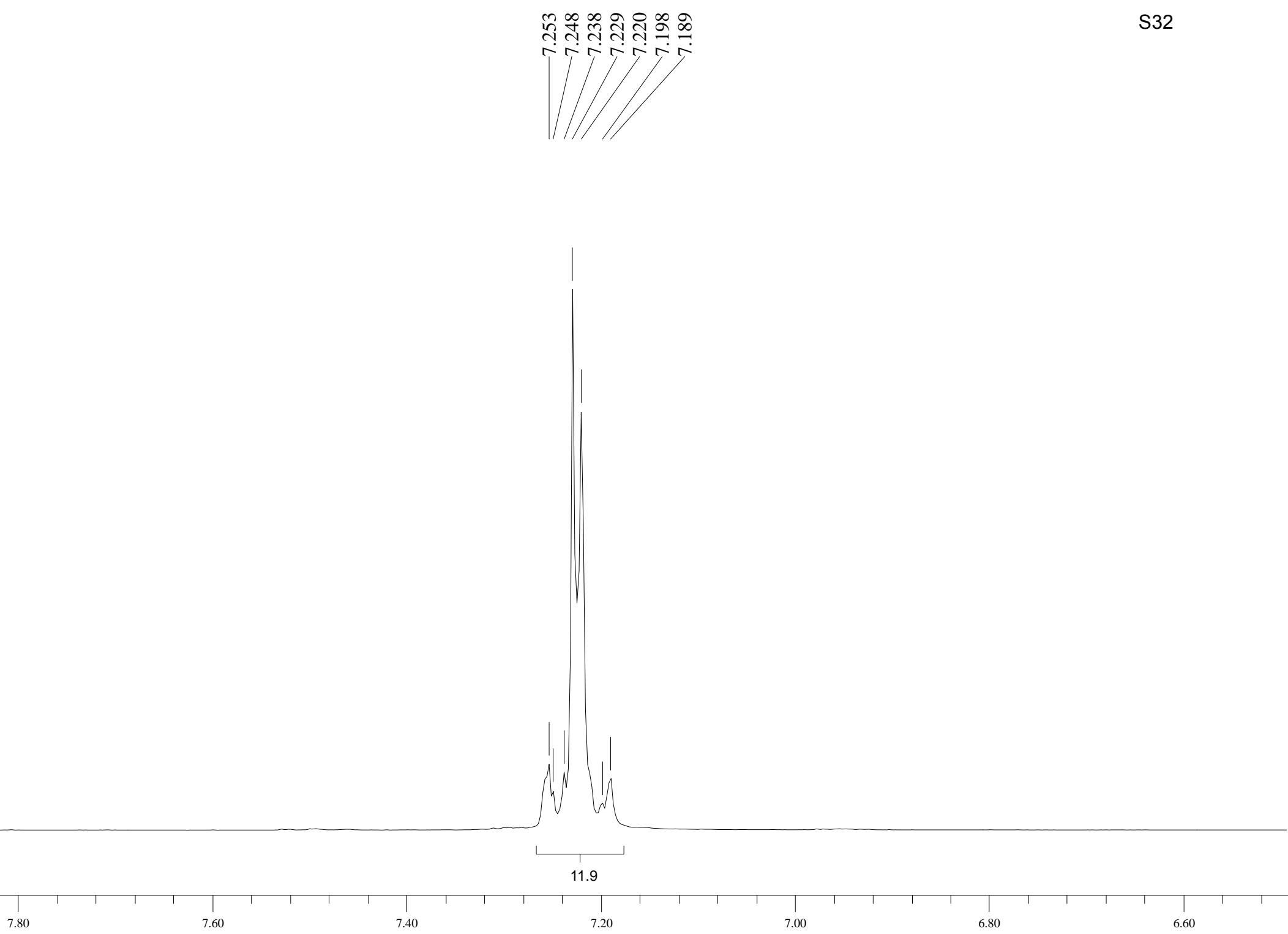


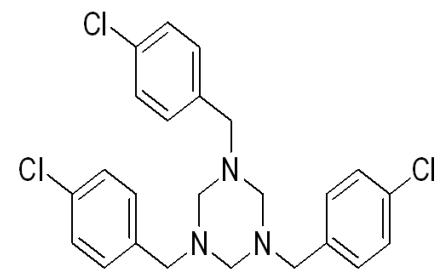


Name
T4-ClBenz

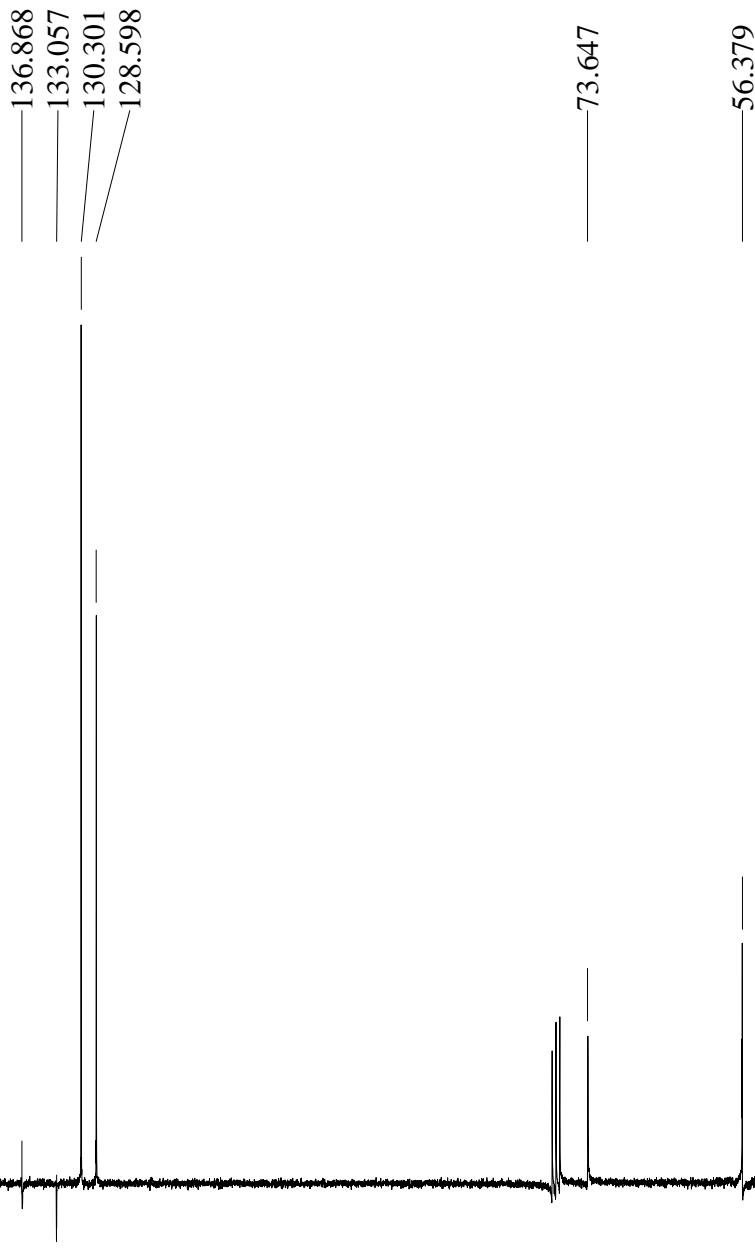
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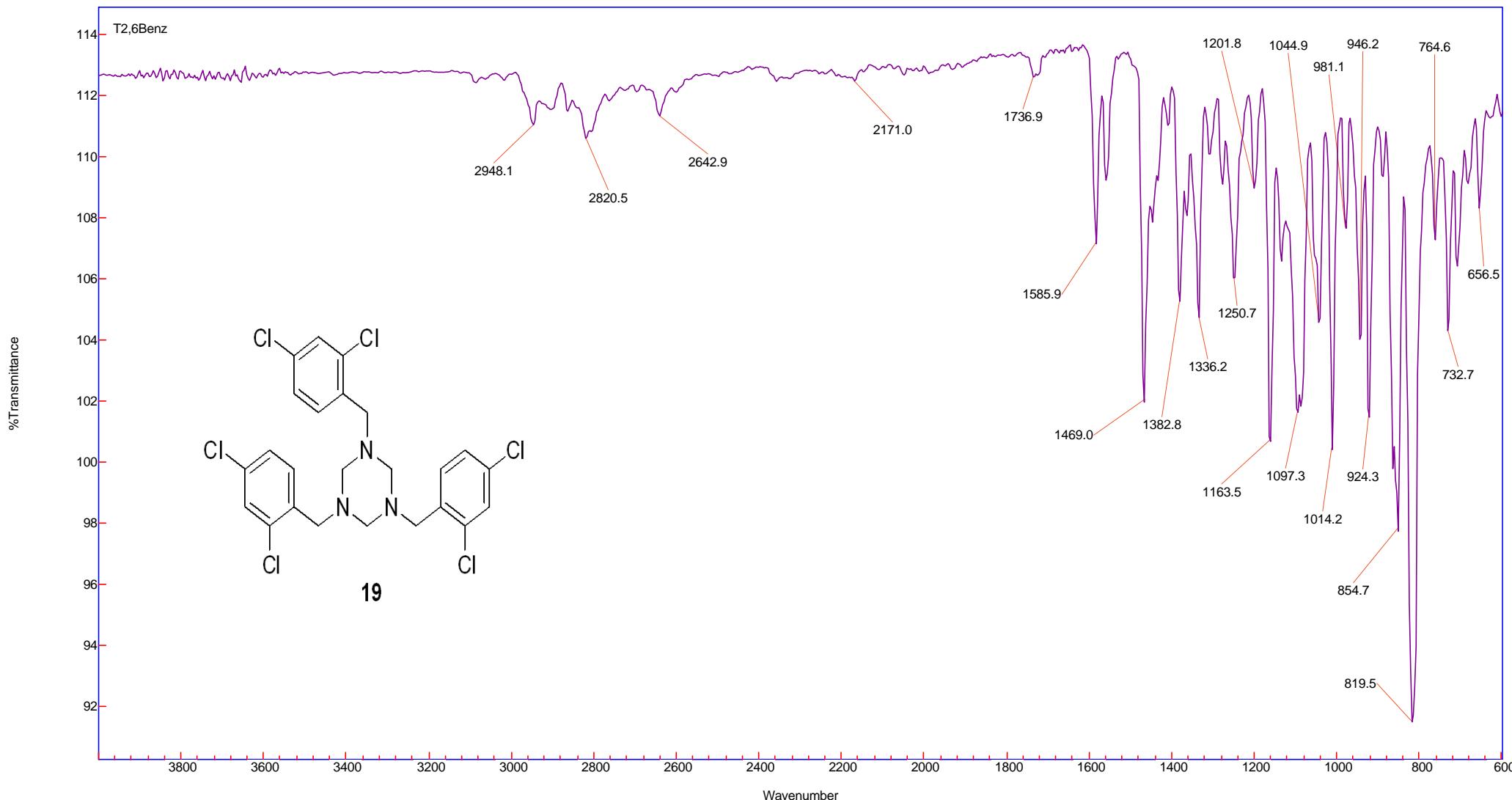




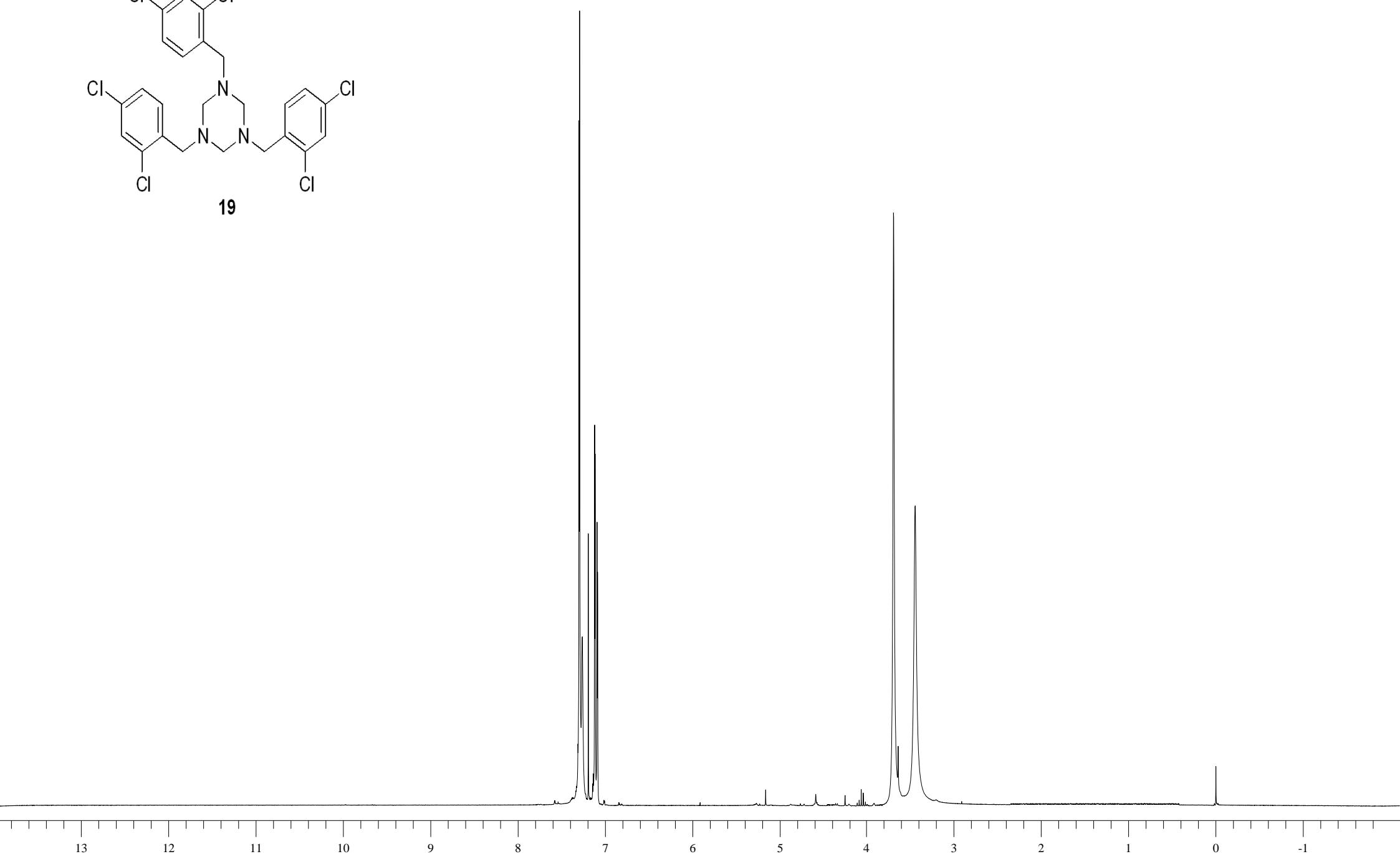
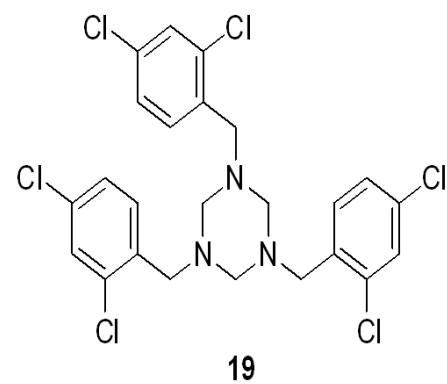


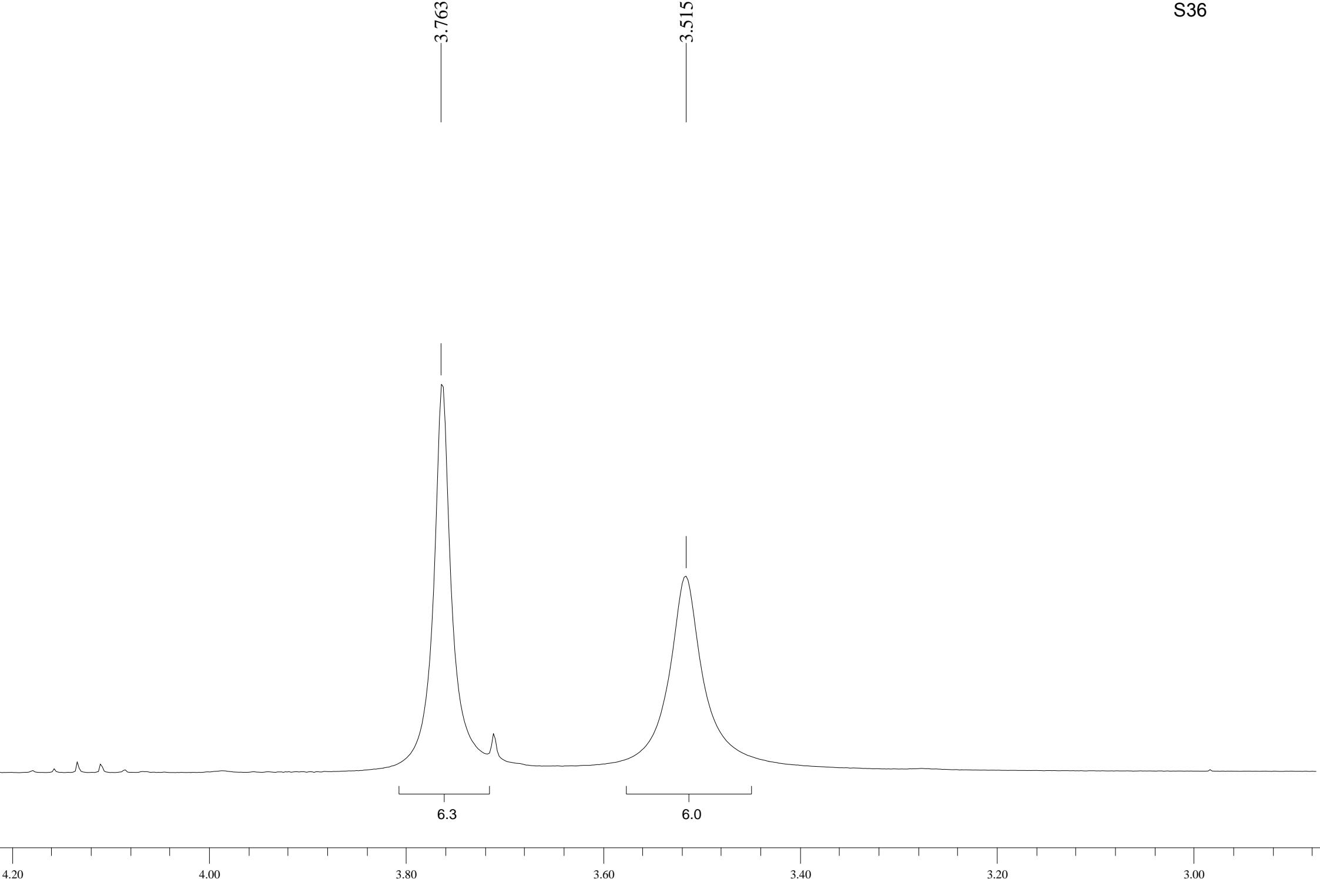
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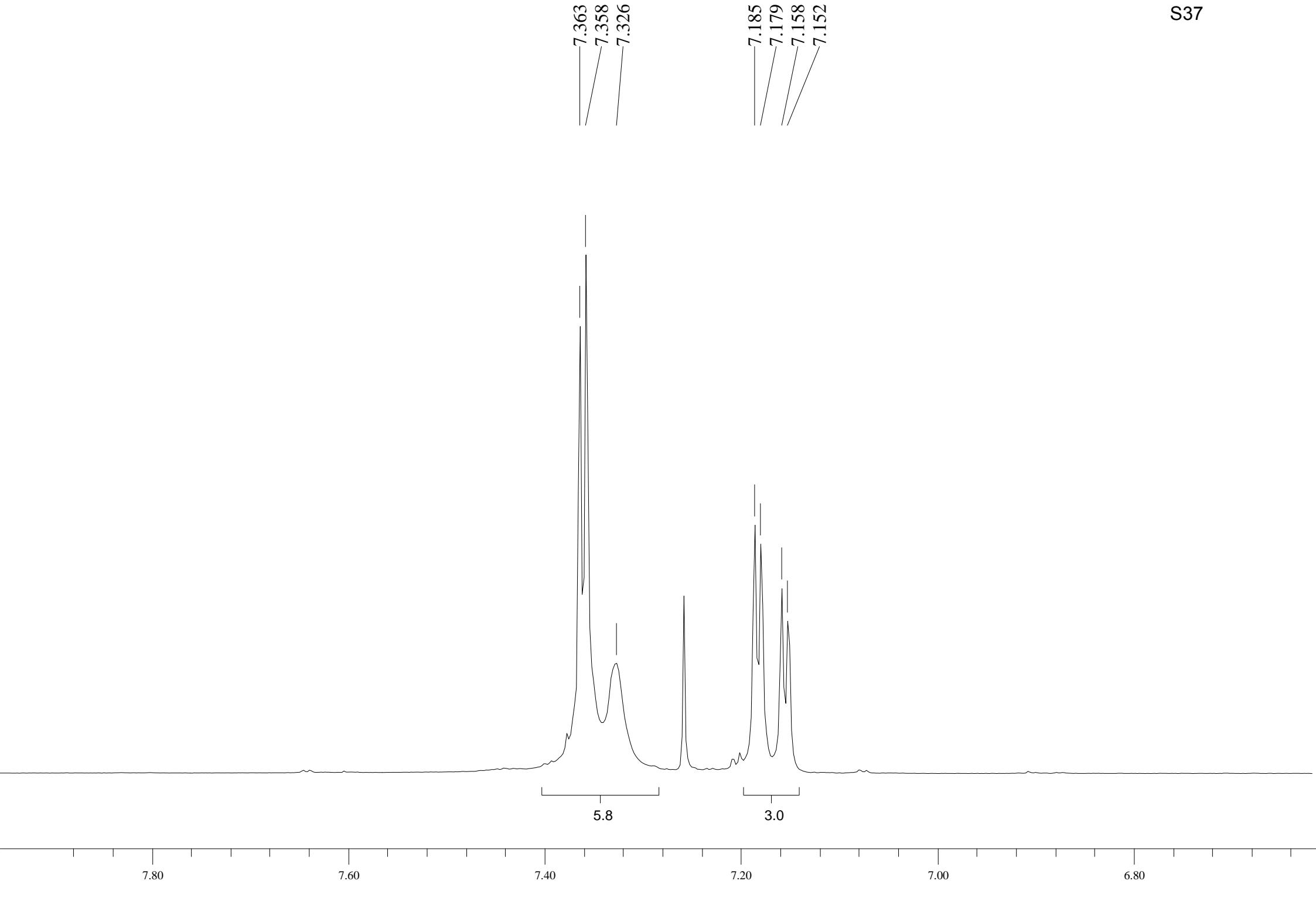


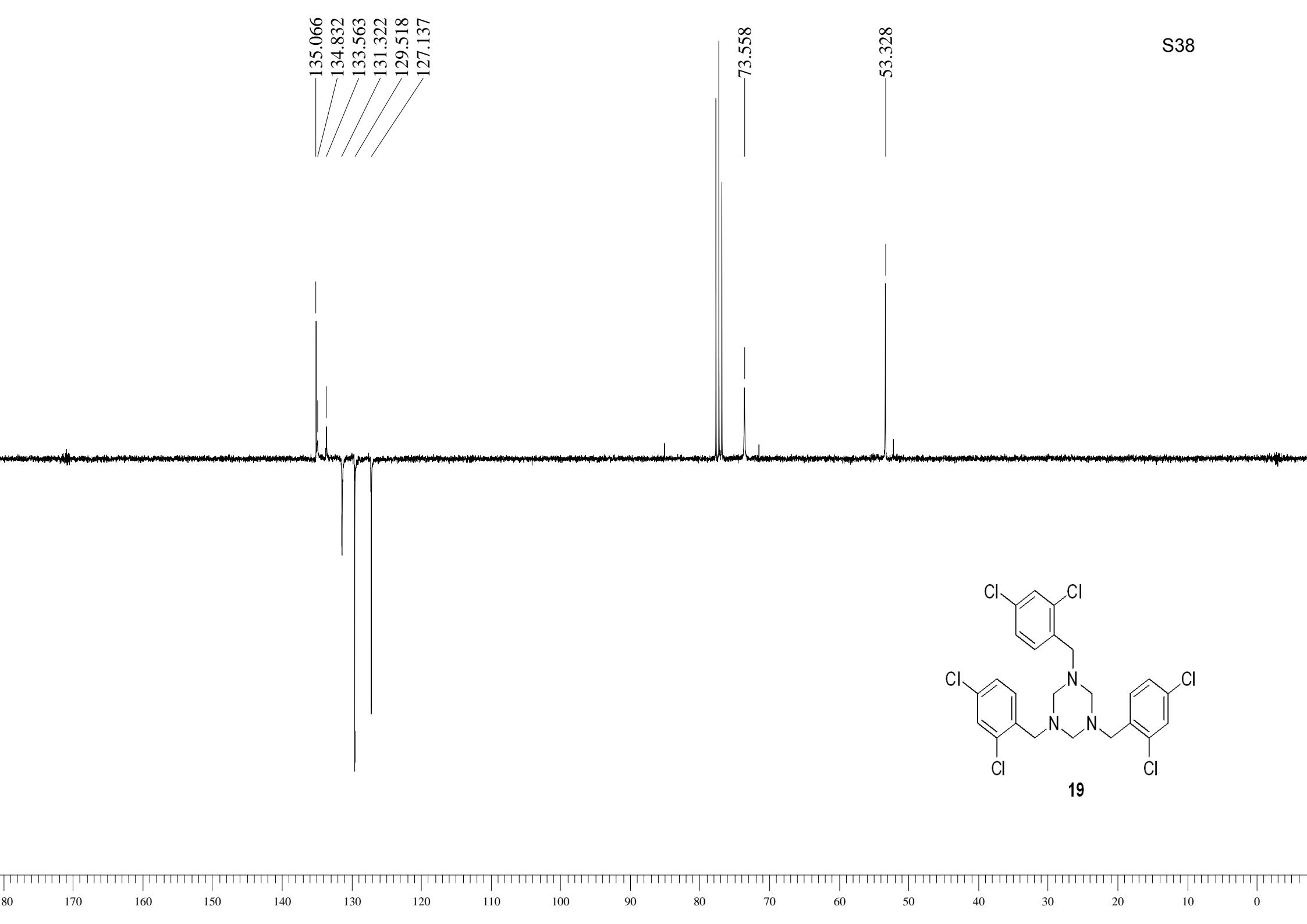


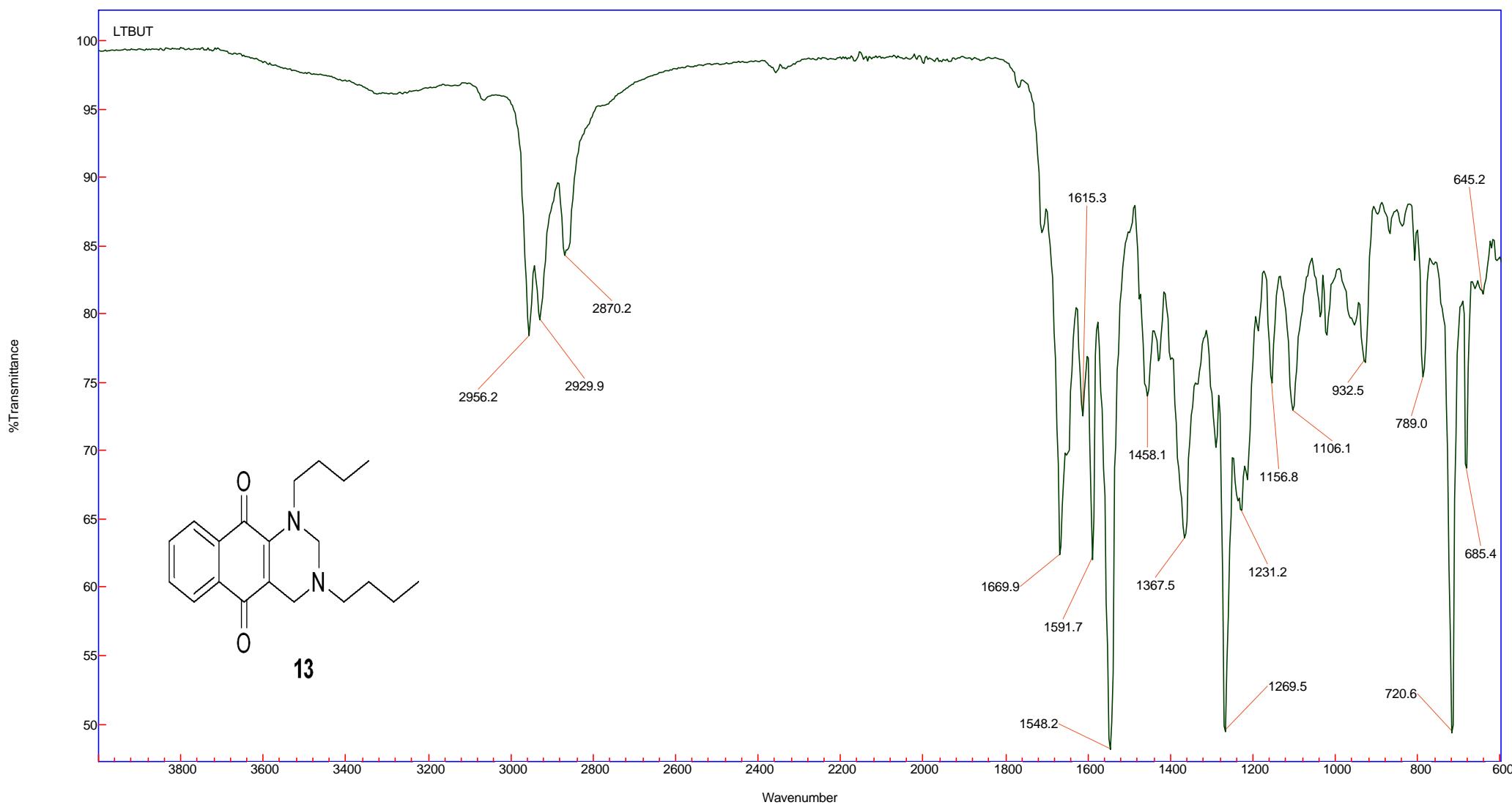
Name
T2 , 6Benz



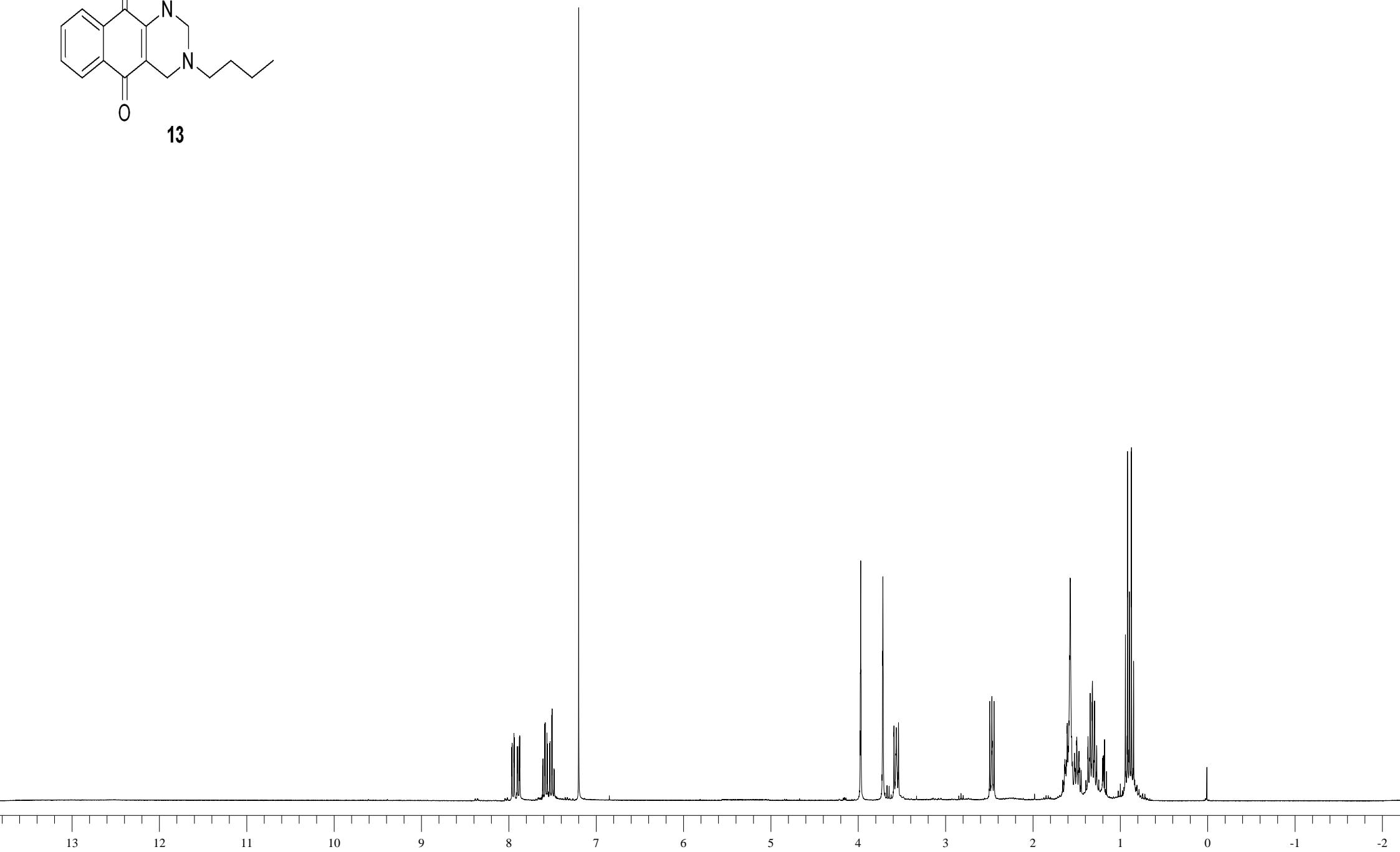
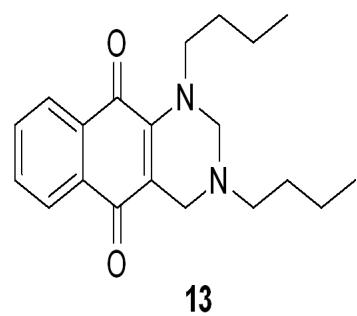


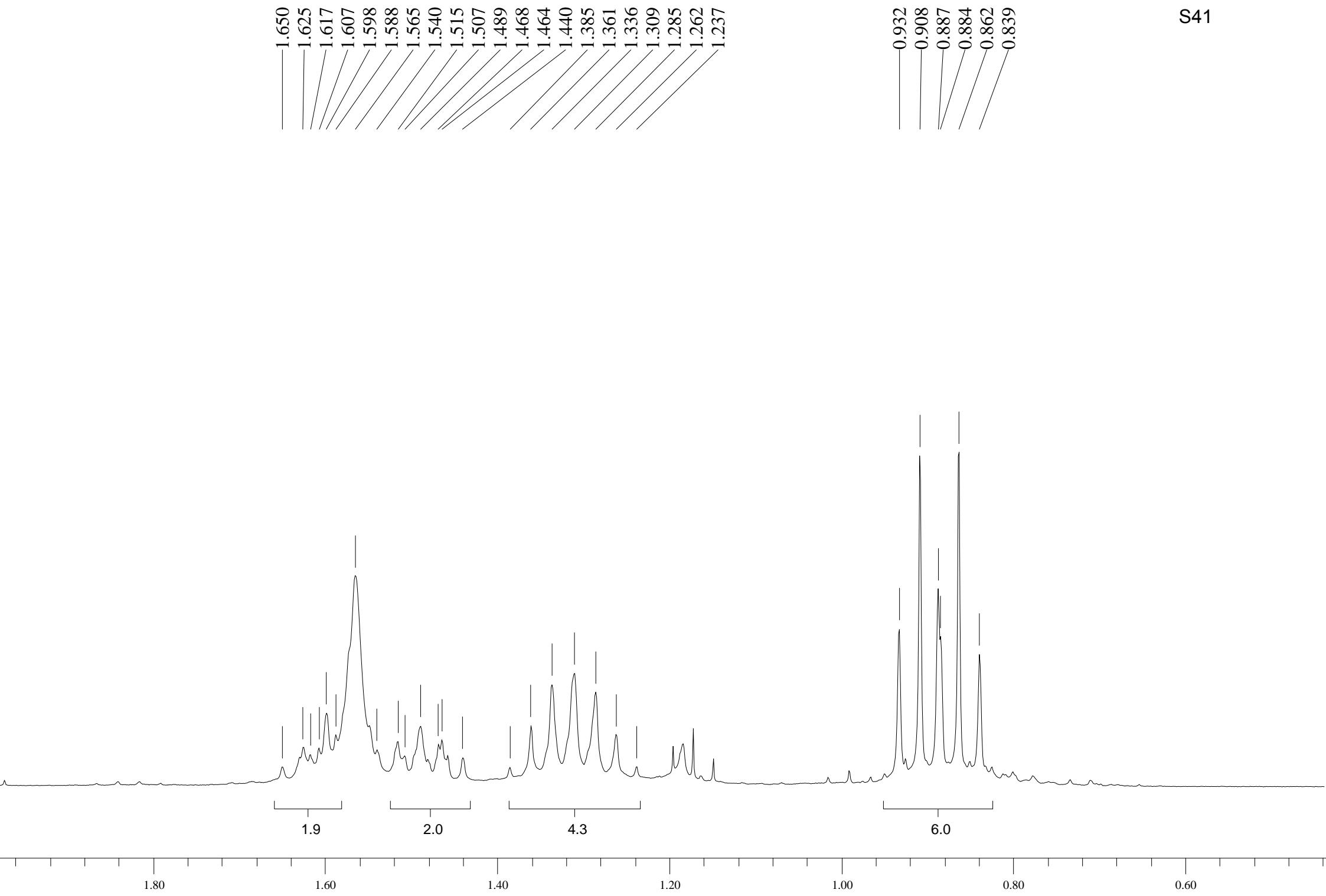


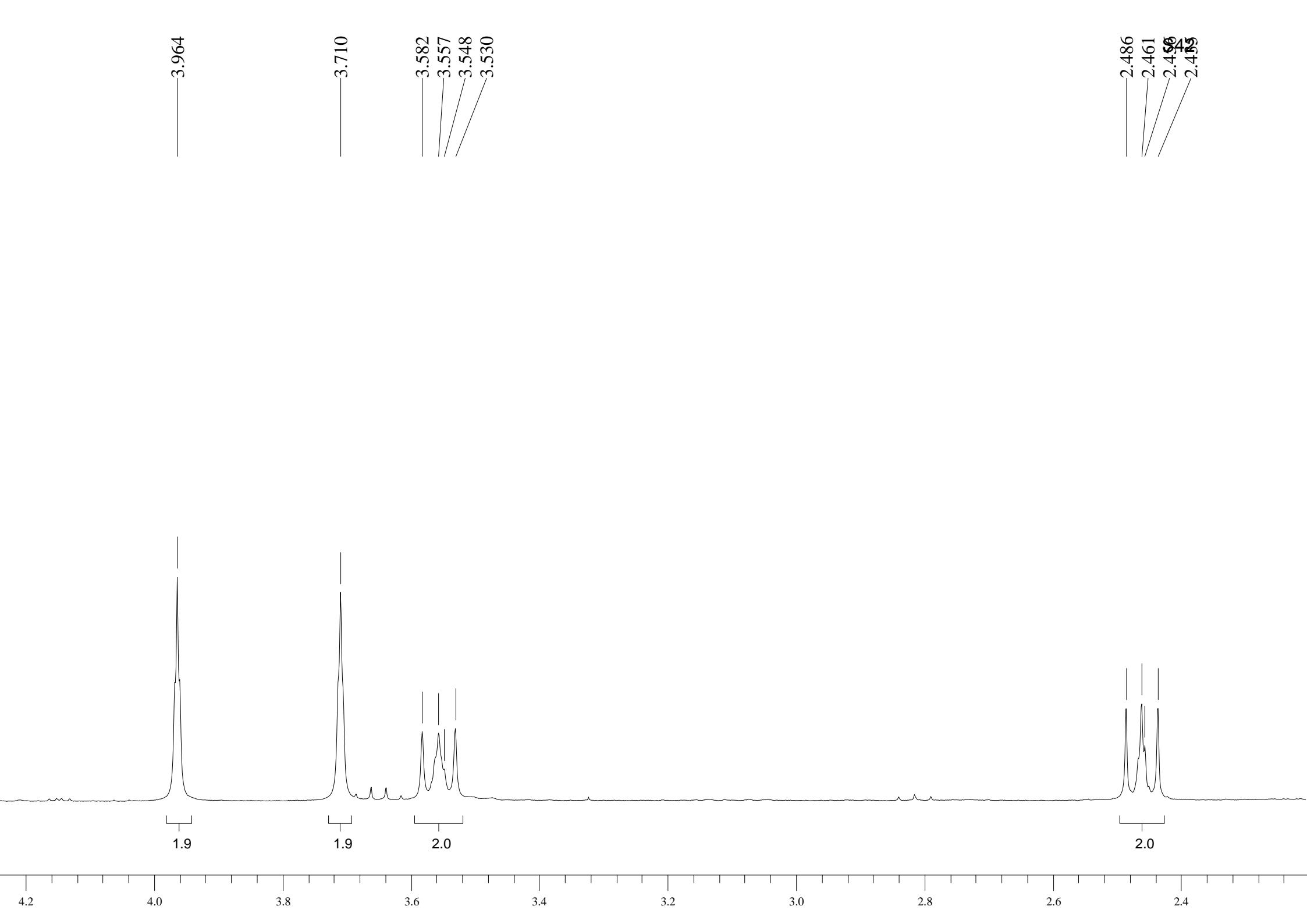


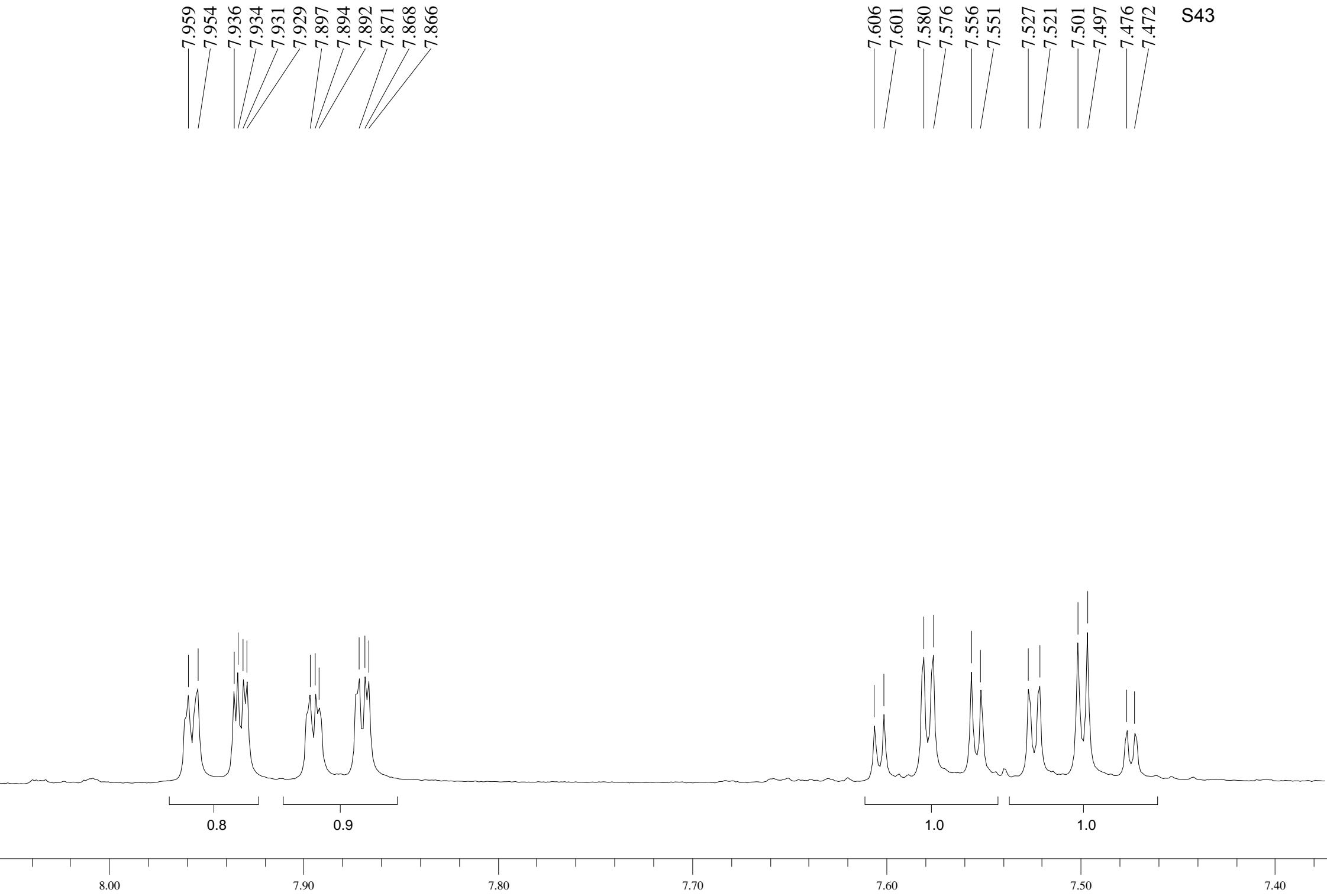


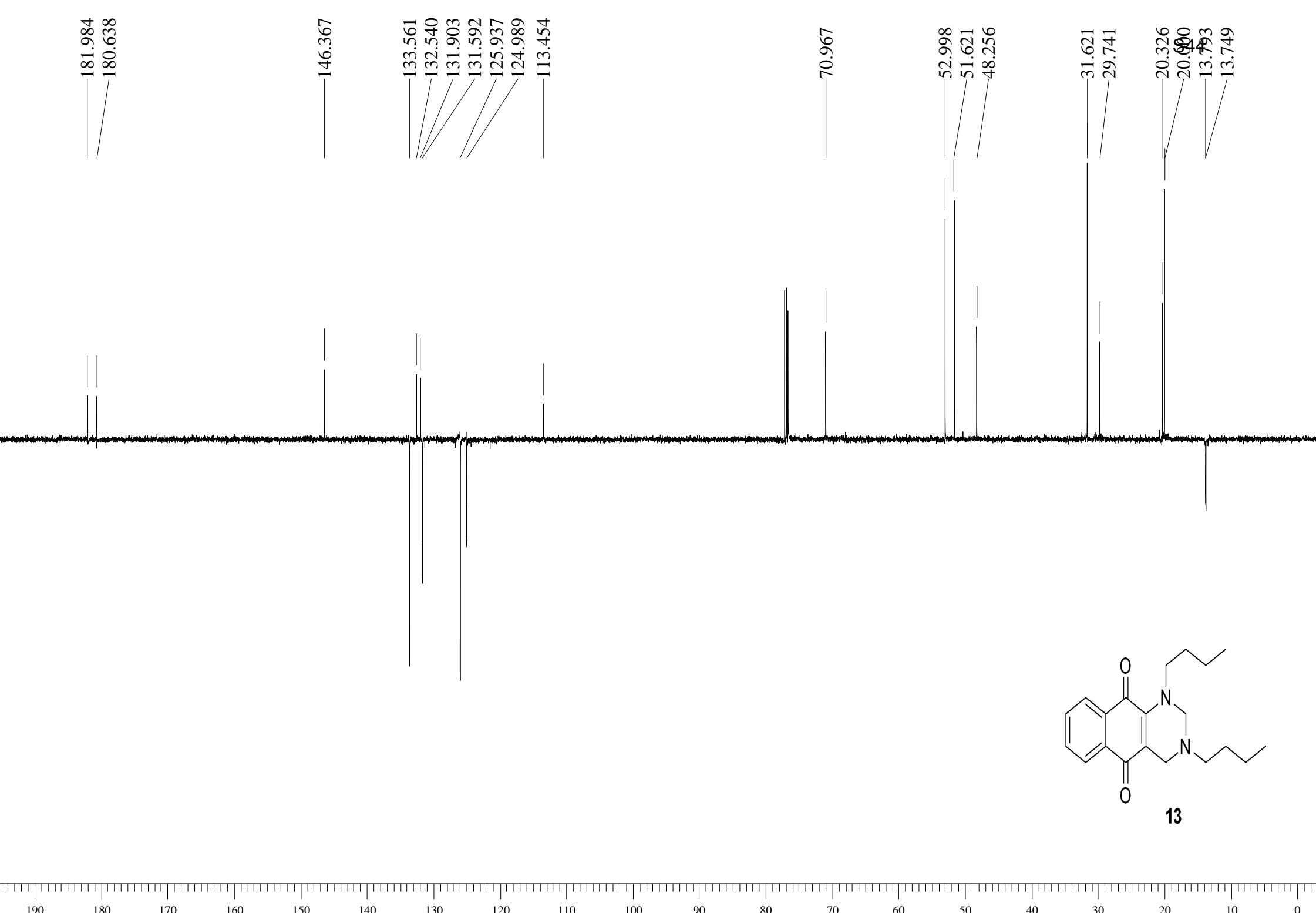
Name
LTBUT











327.2217

328.2347

213.6774

254.2806

329.2403

209.2199

426.3466

389.2756

431.3397

566.3477

584.3601

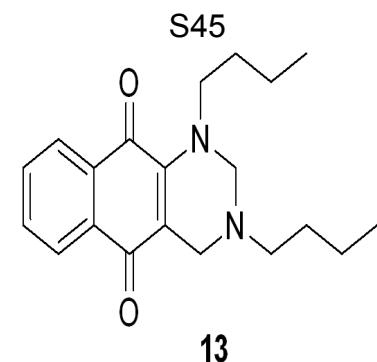
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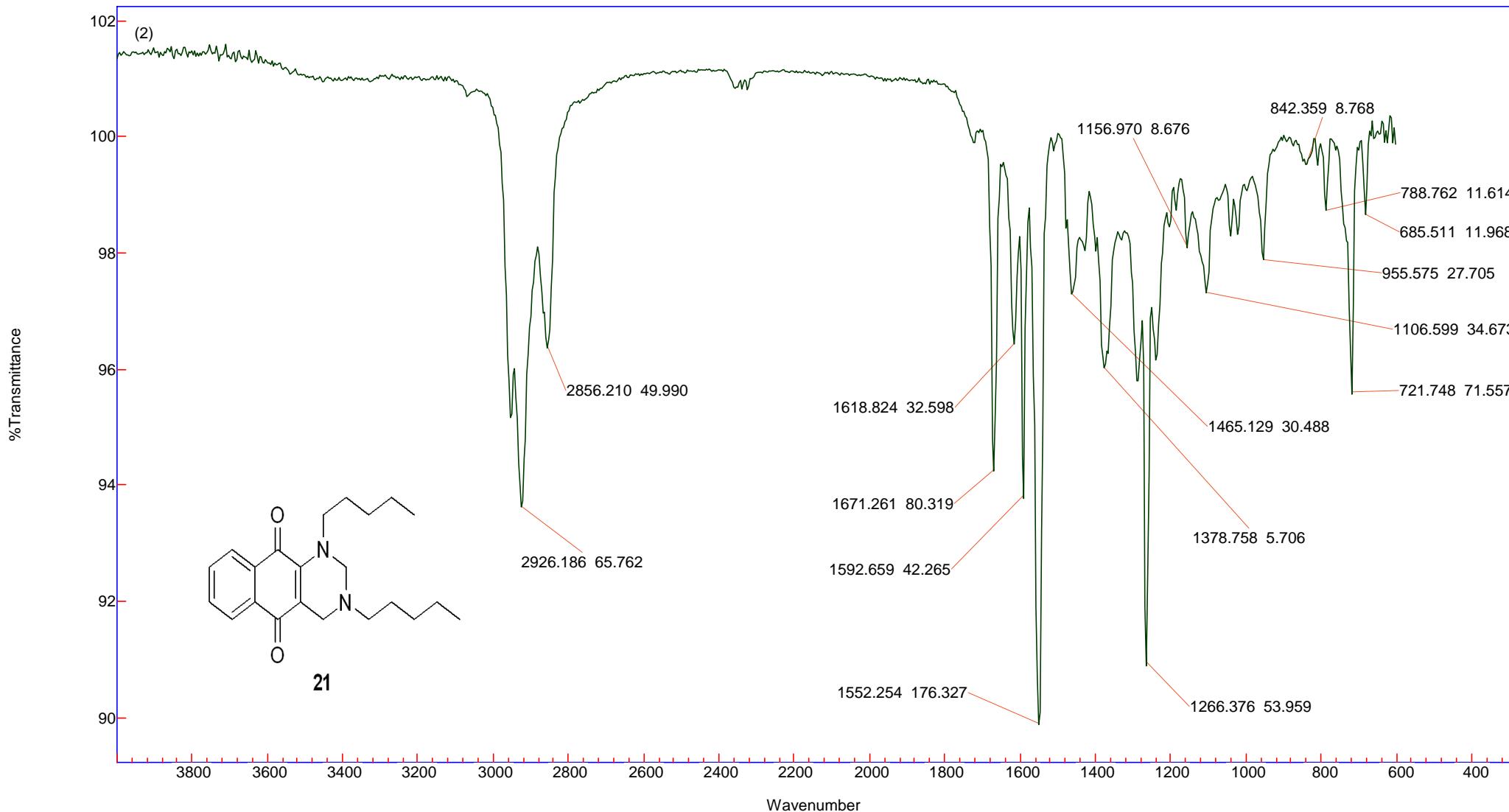
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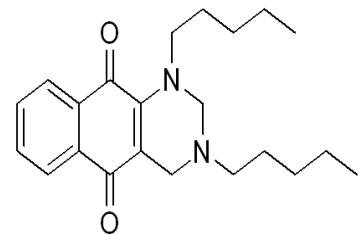
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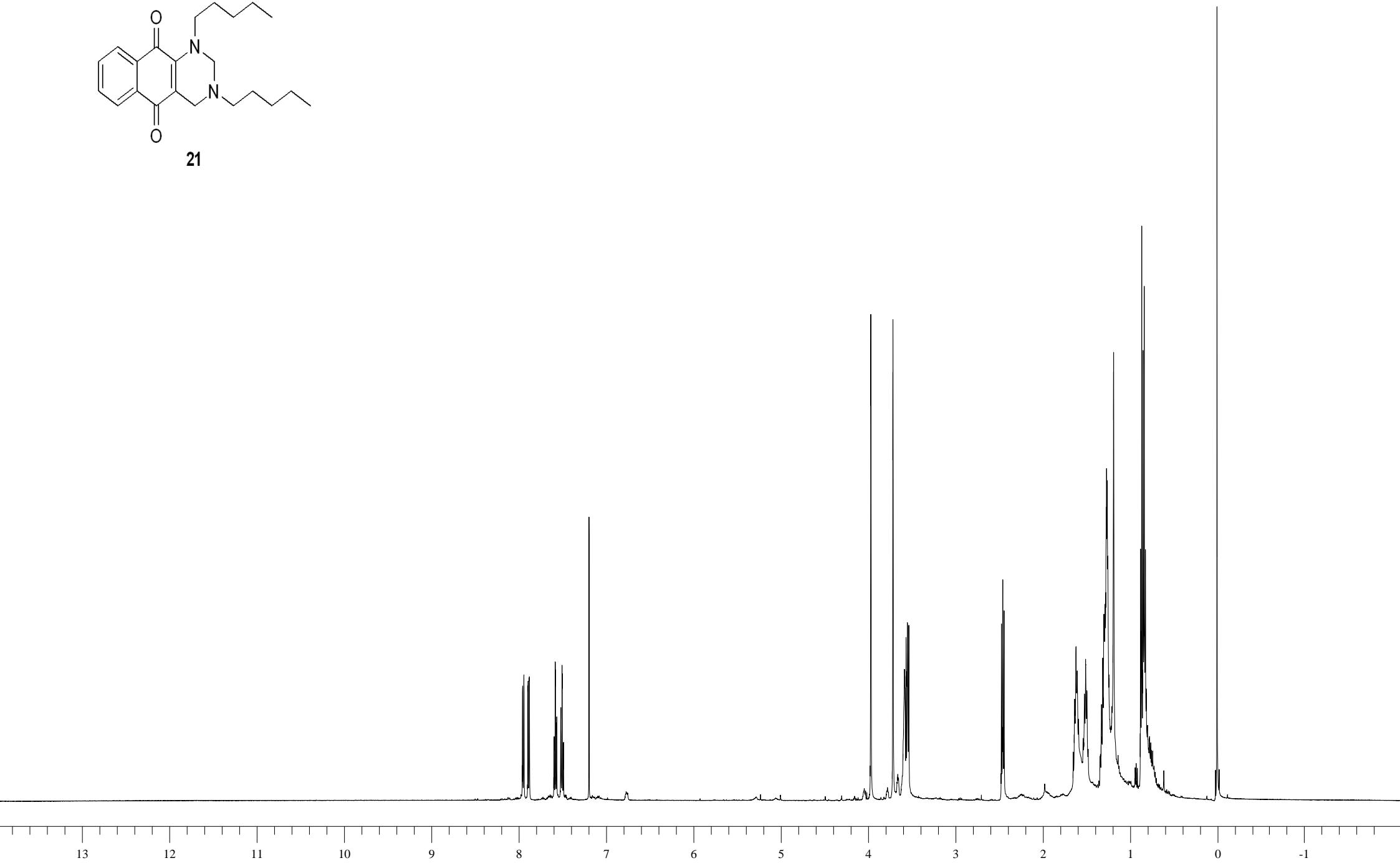


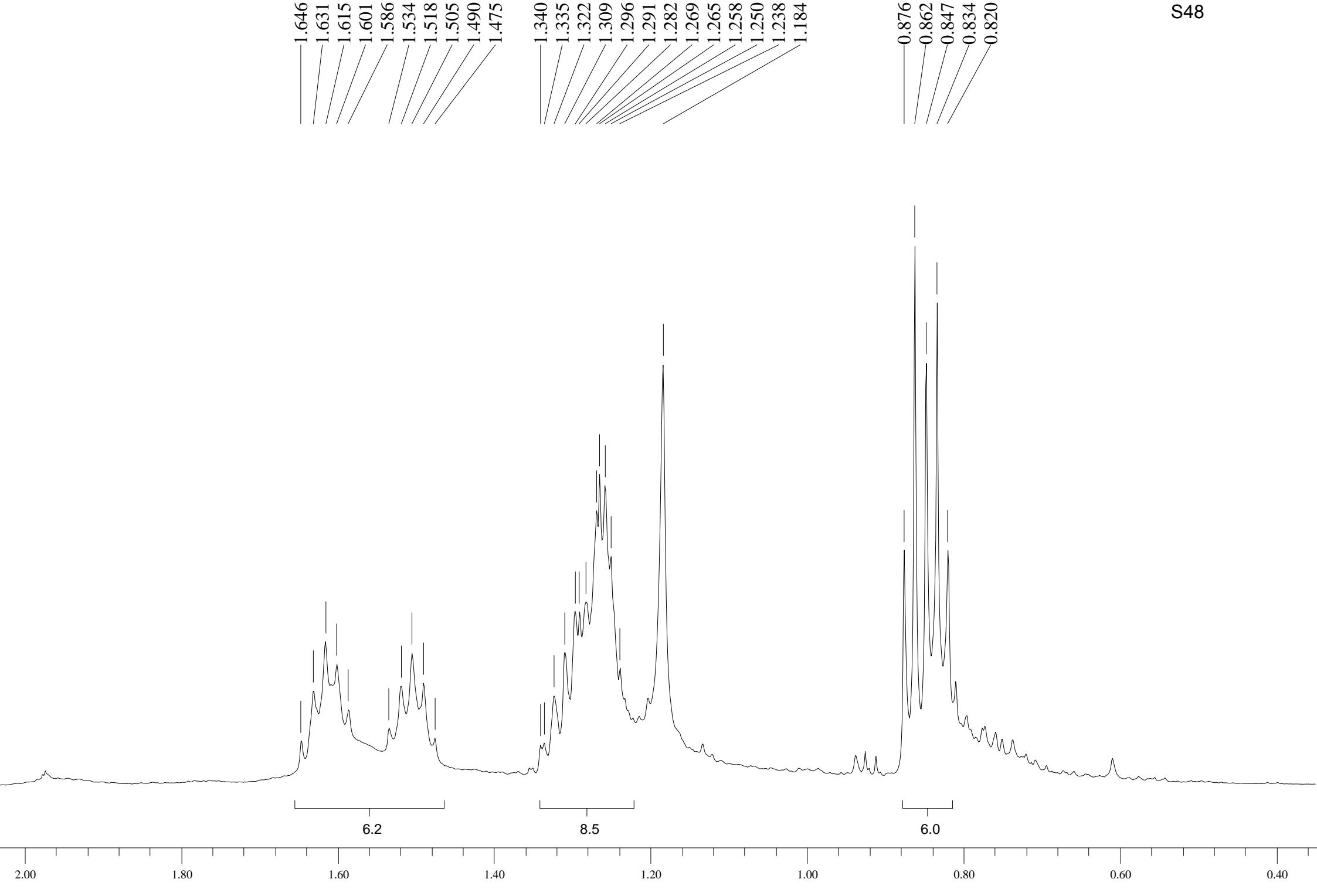


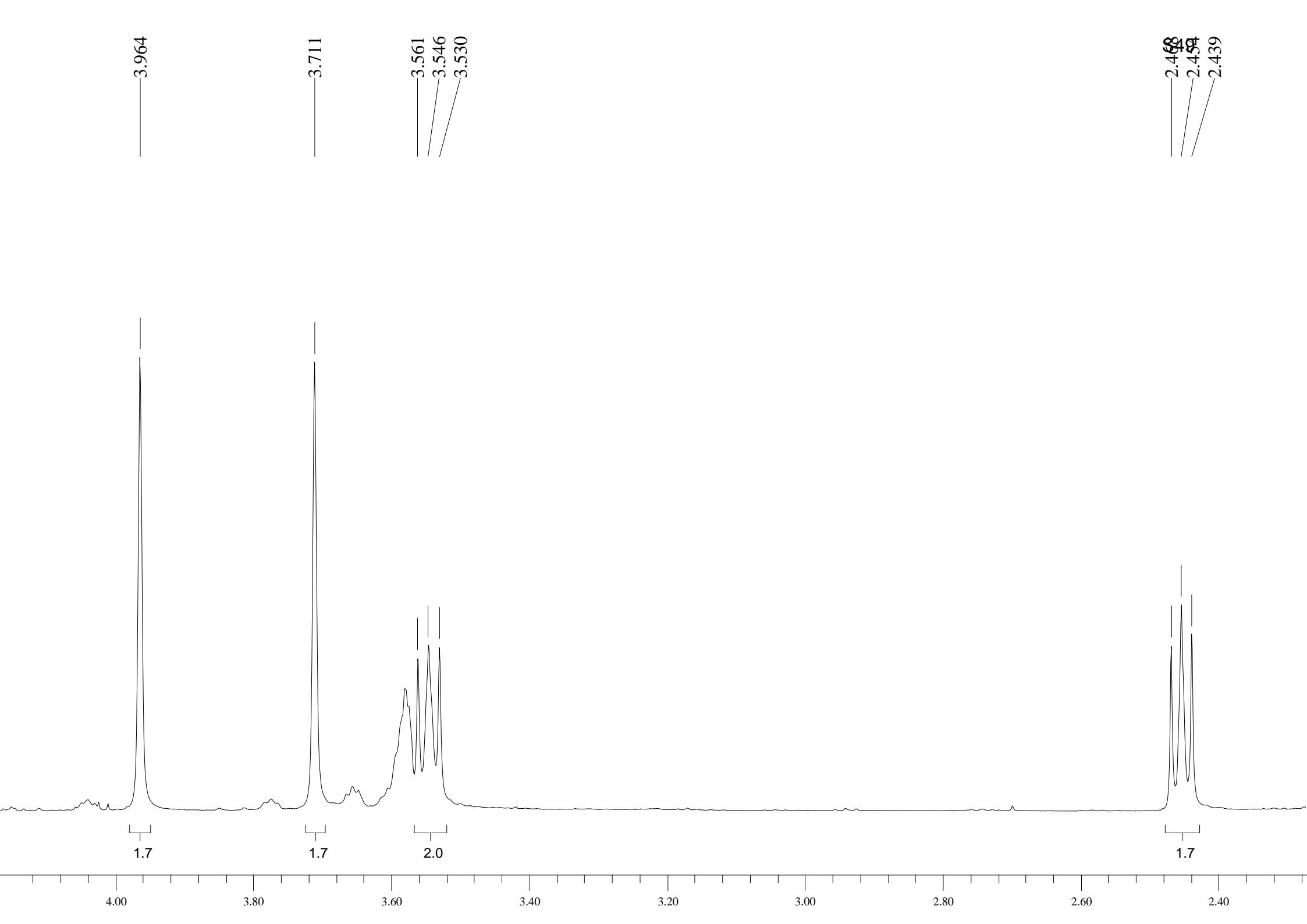
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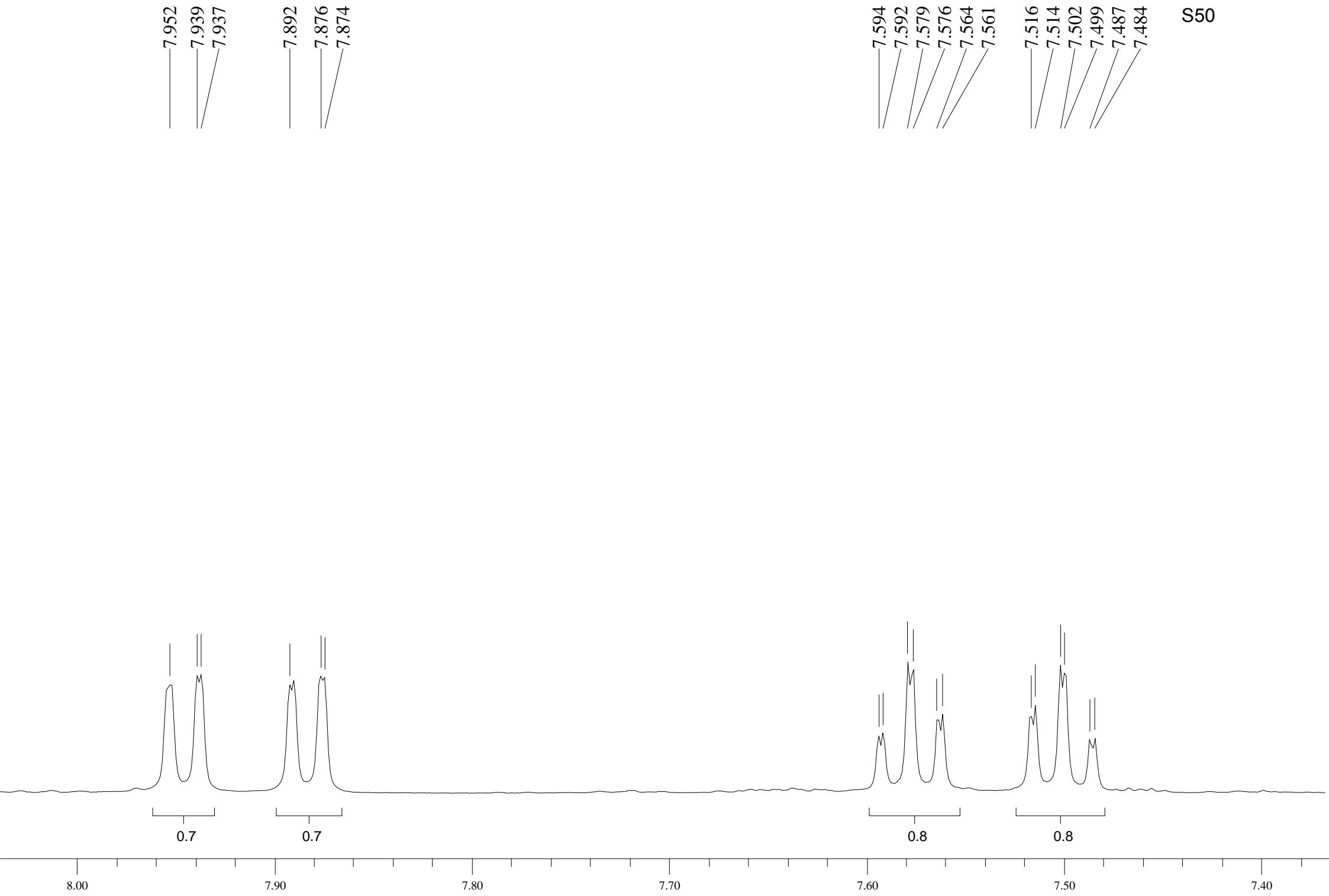
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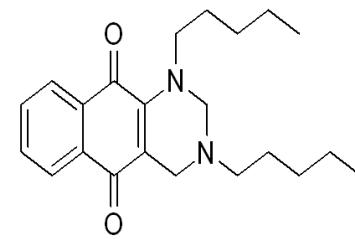
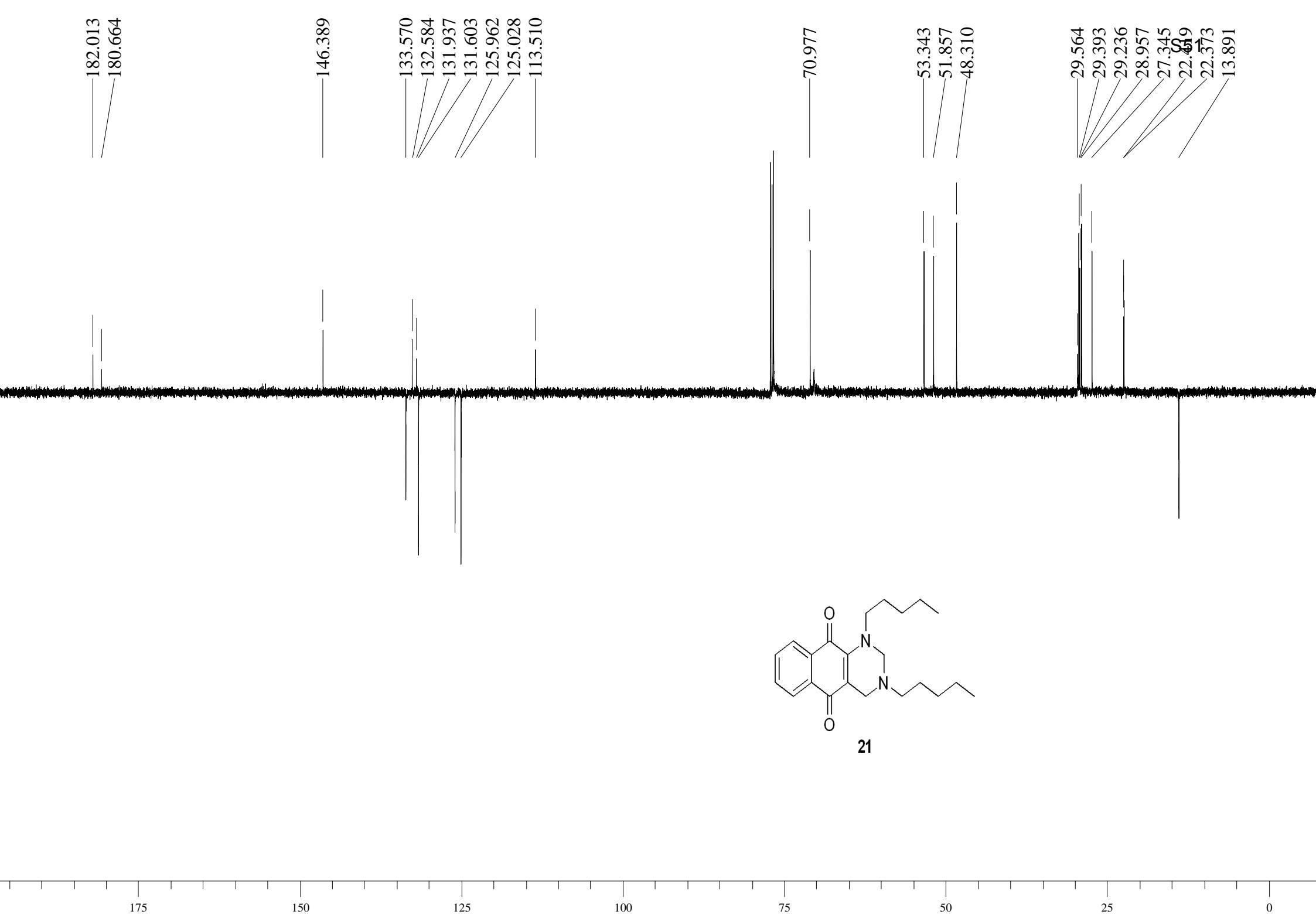




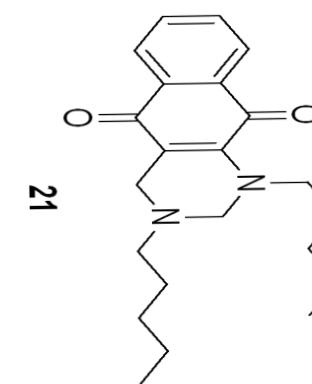
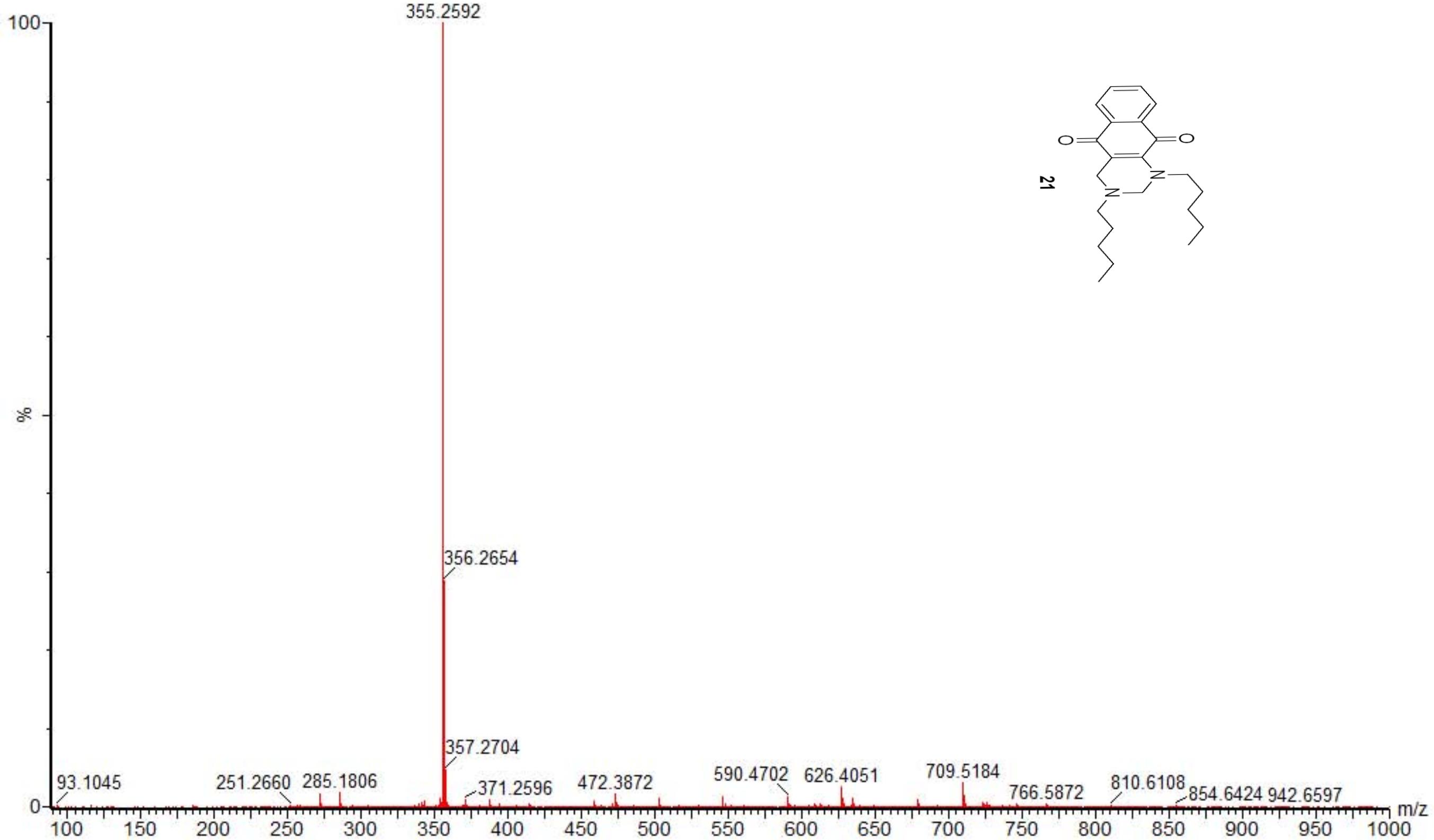


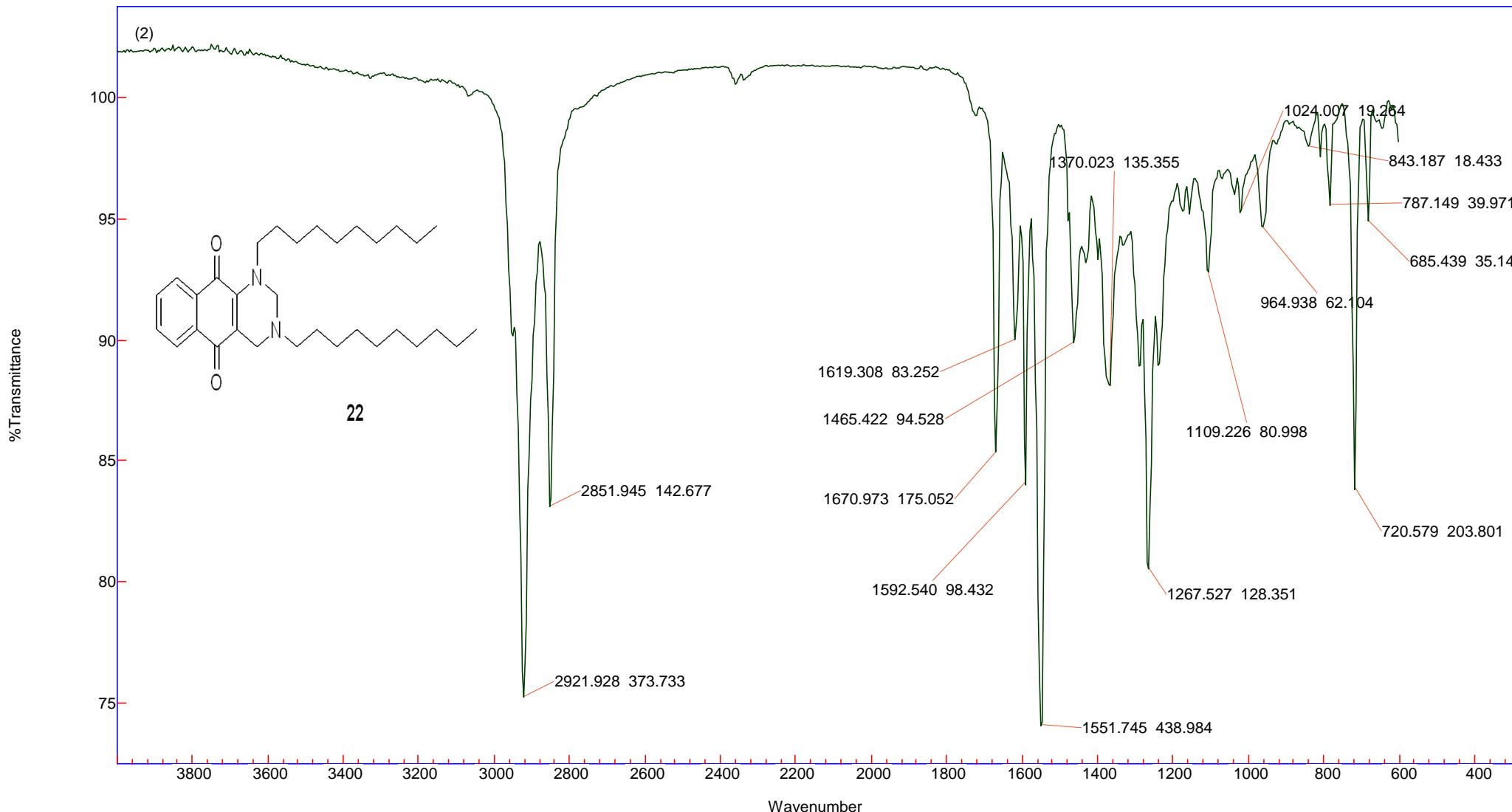
S50



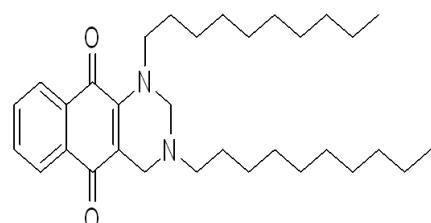


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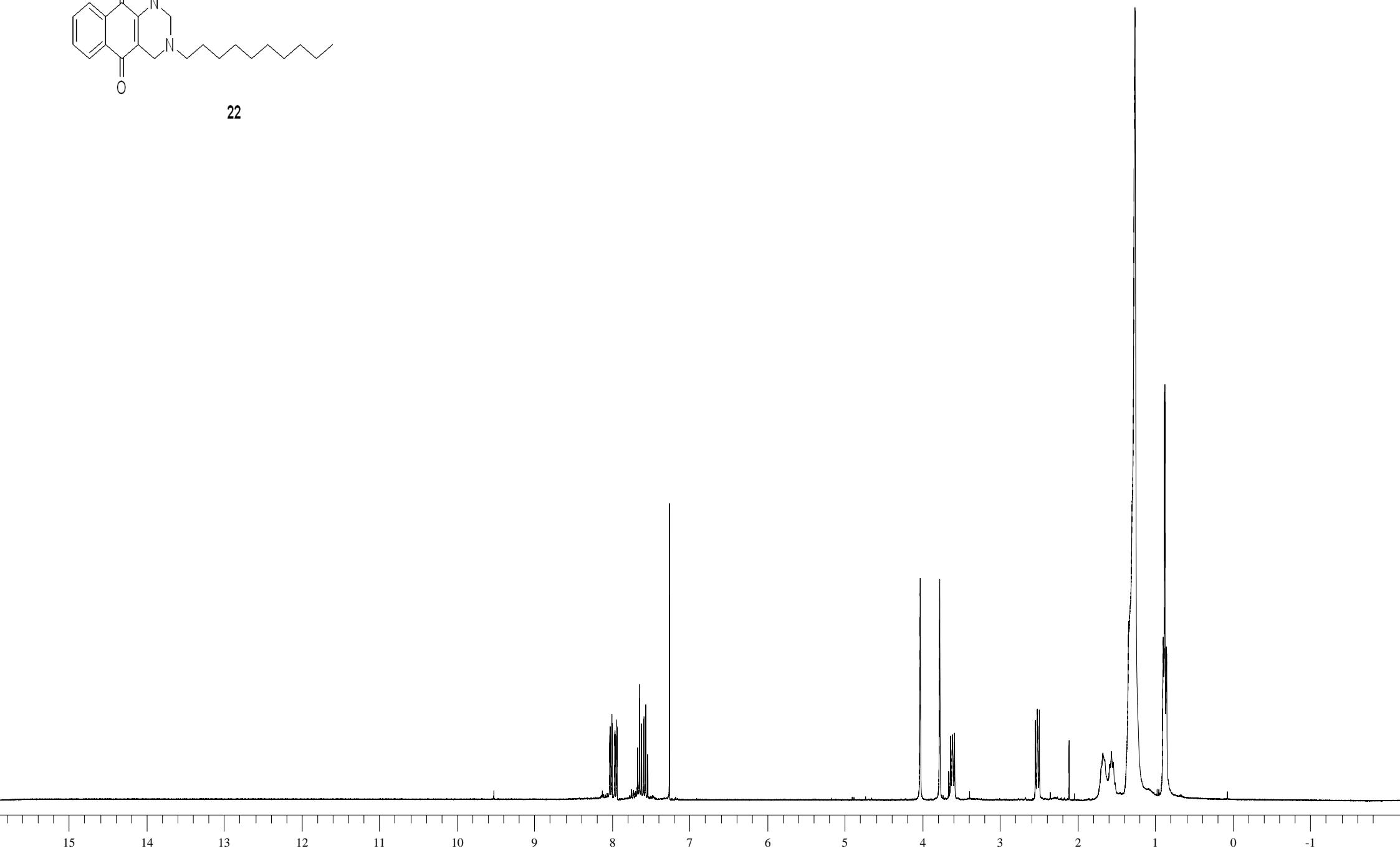


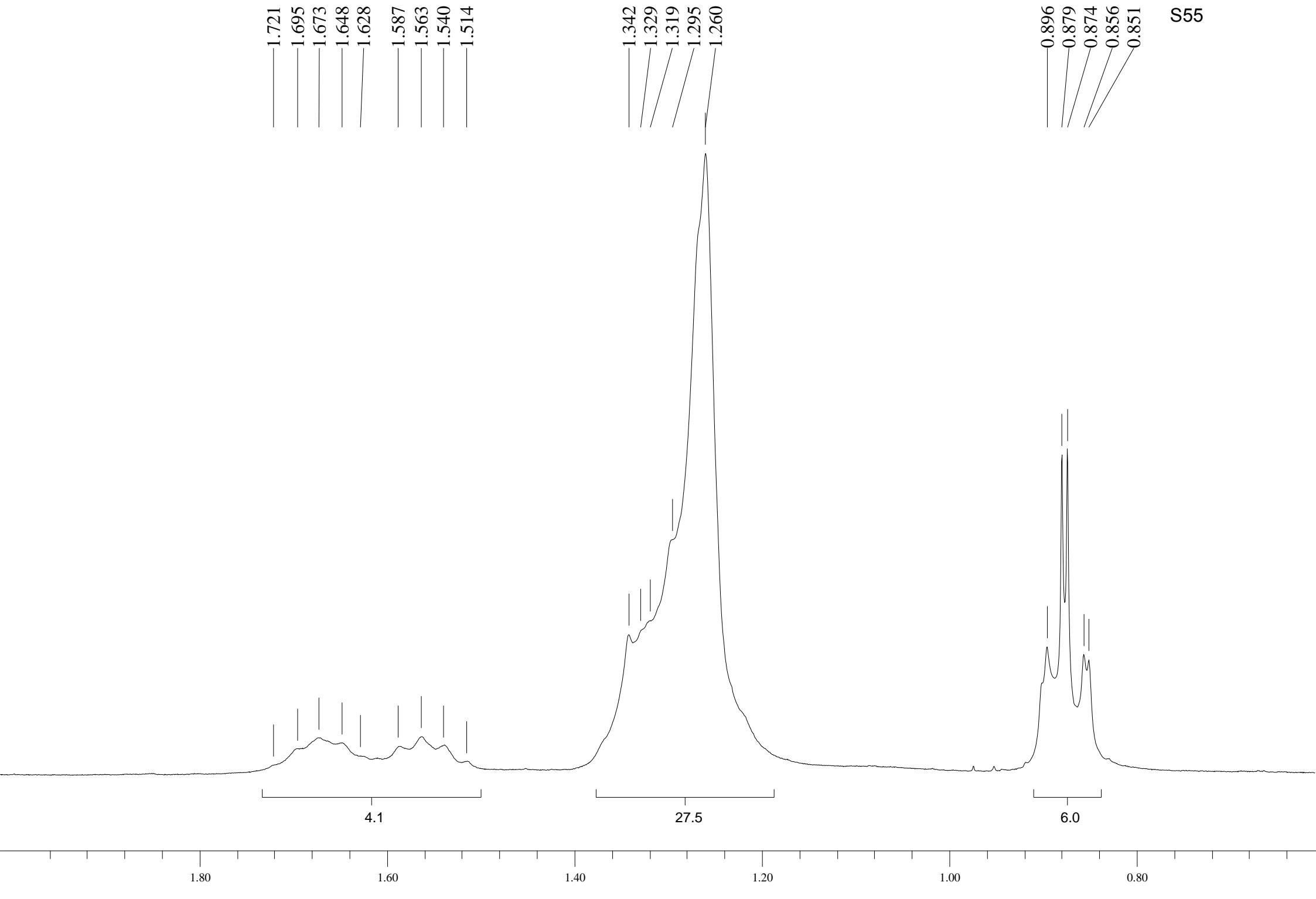


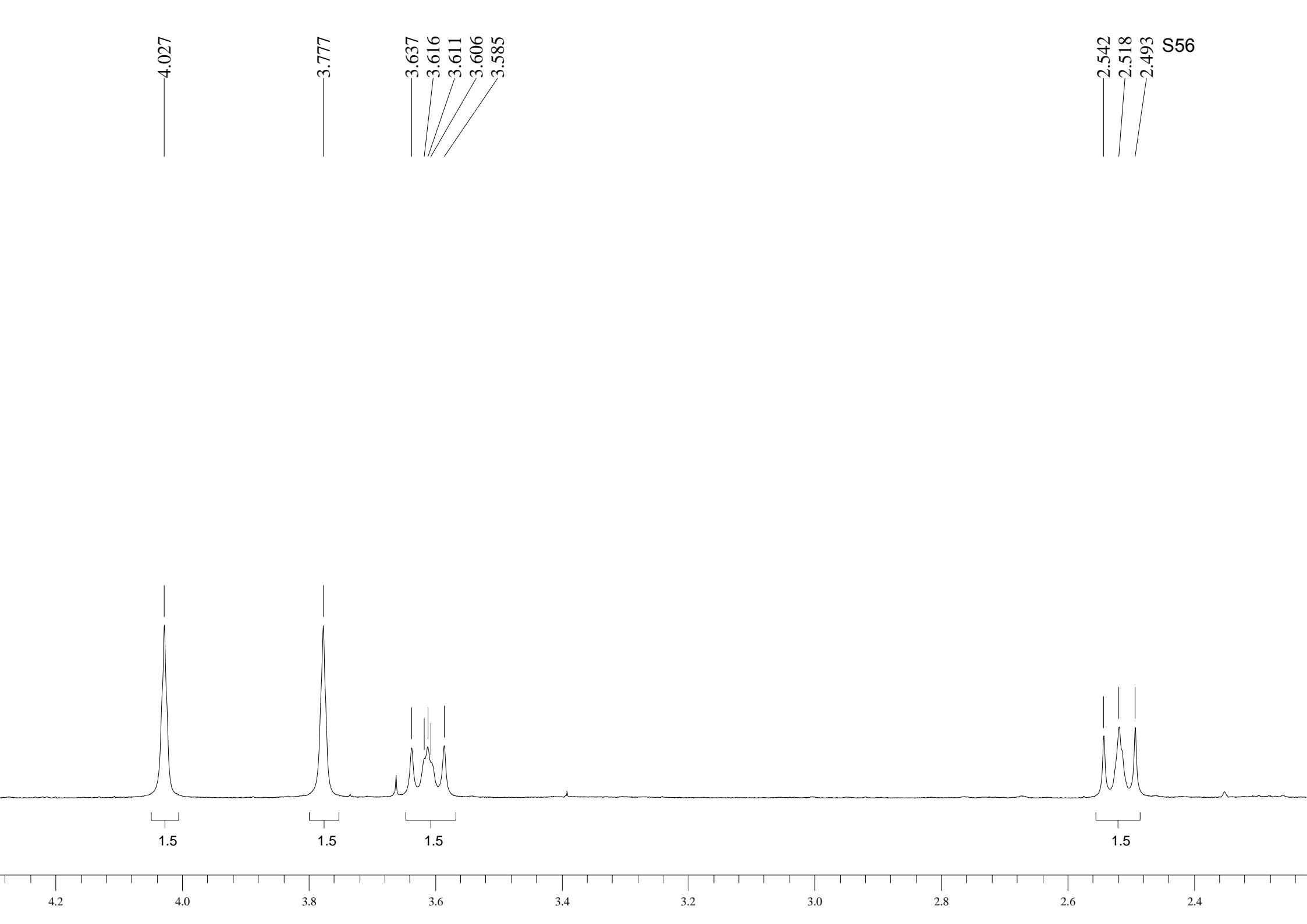
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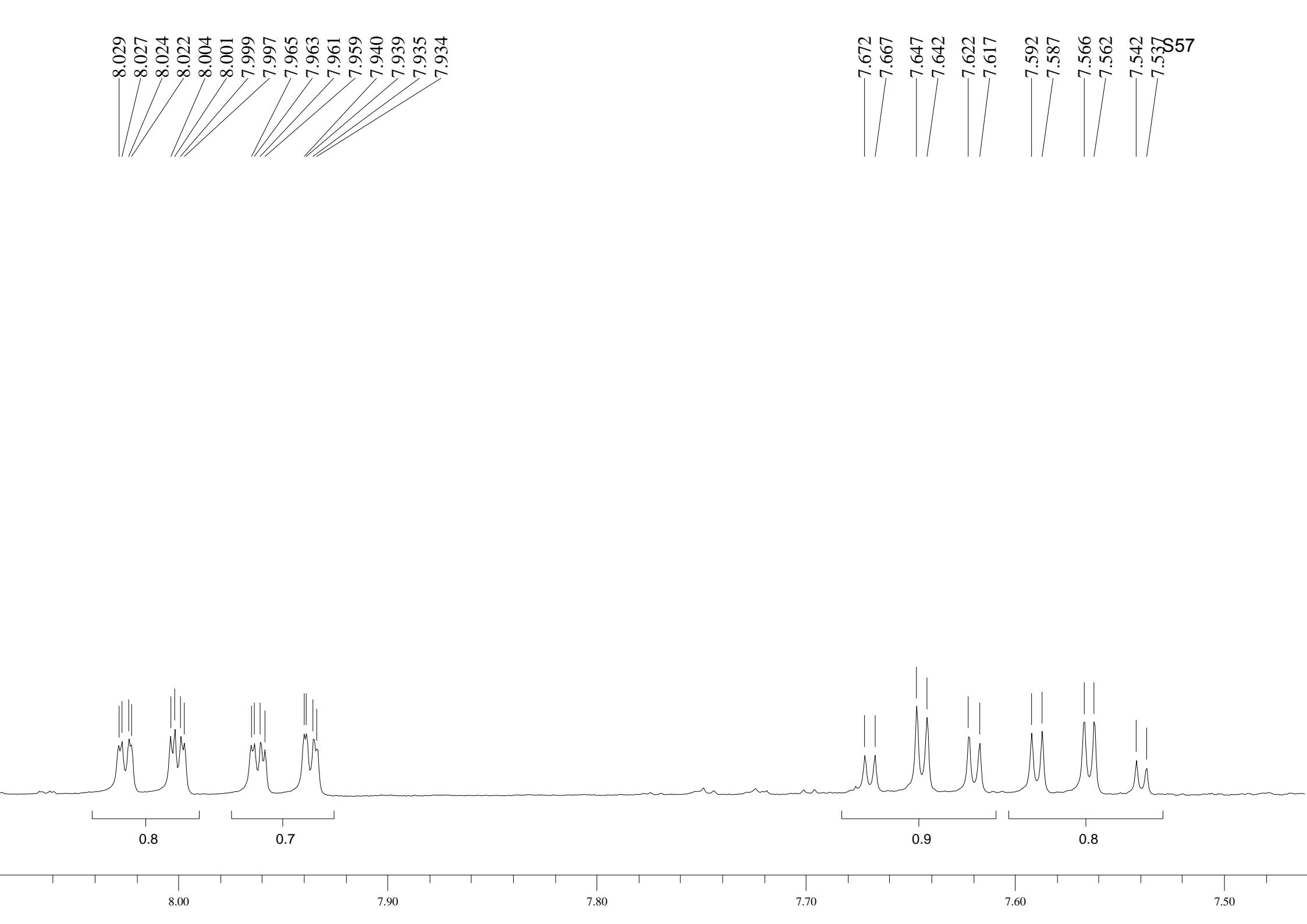


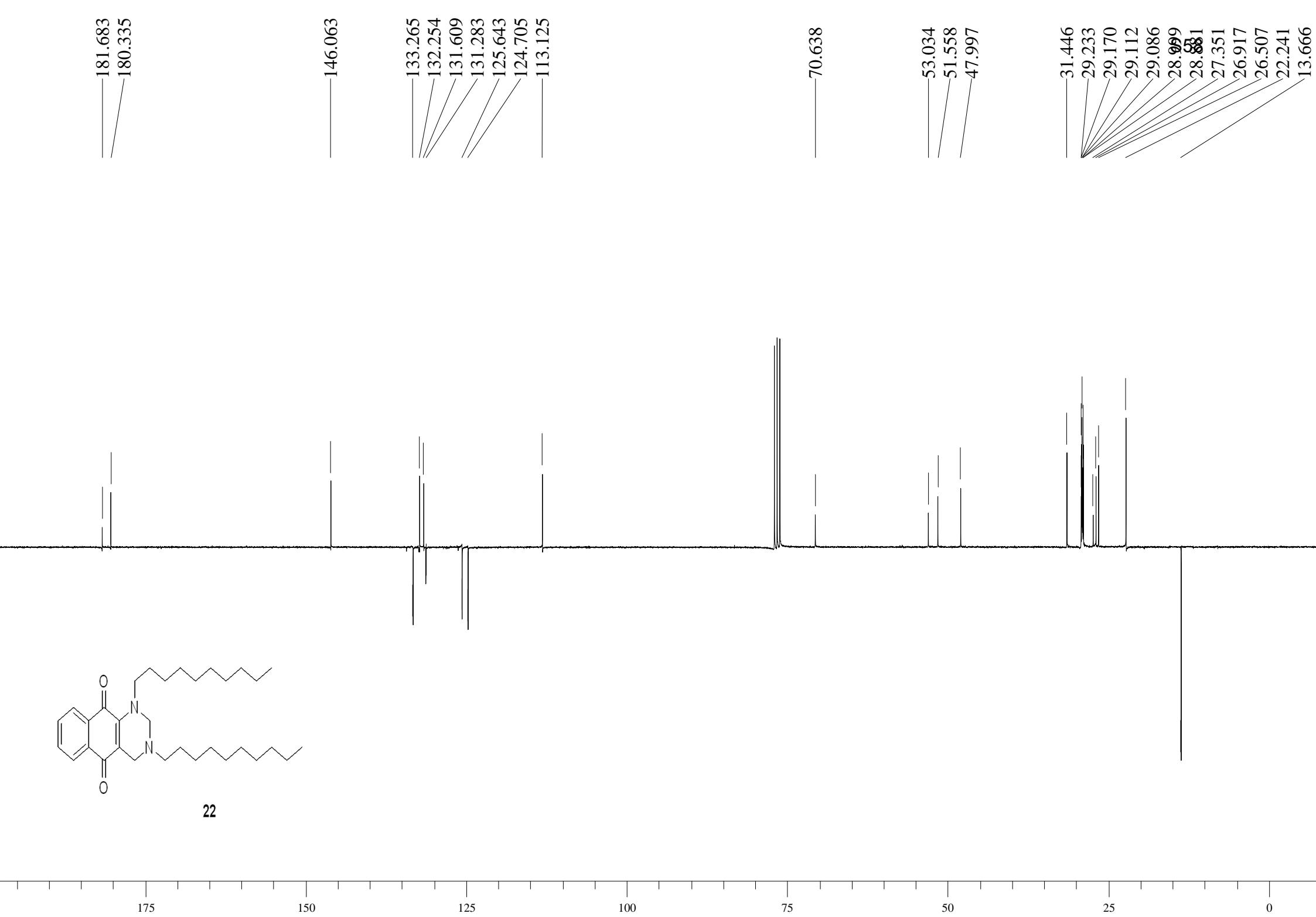
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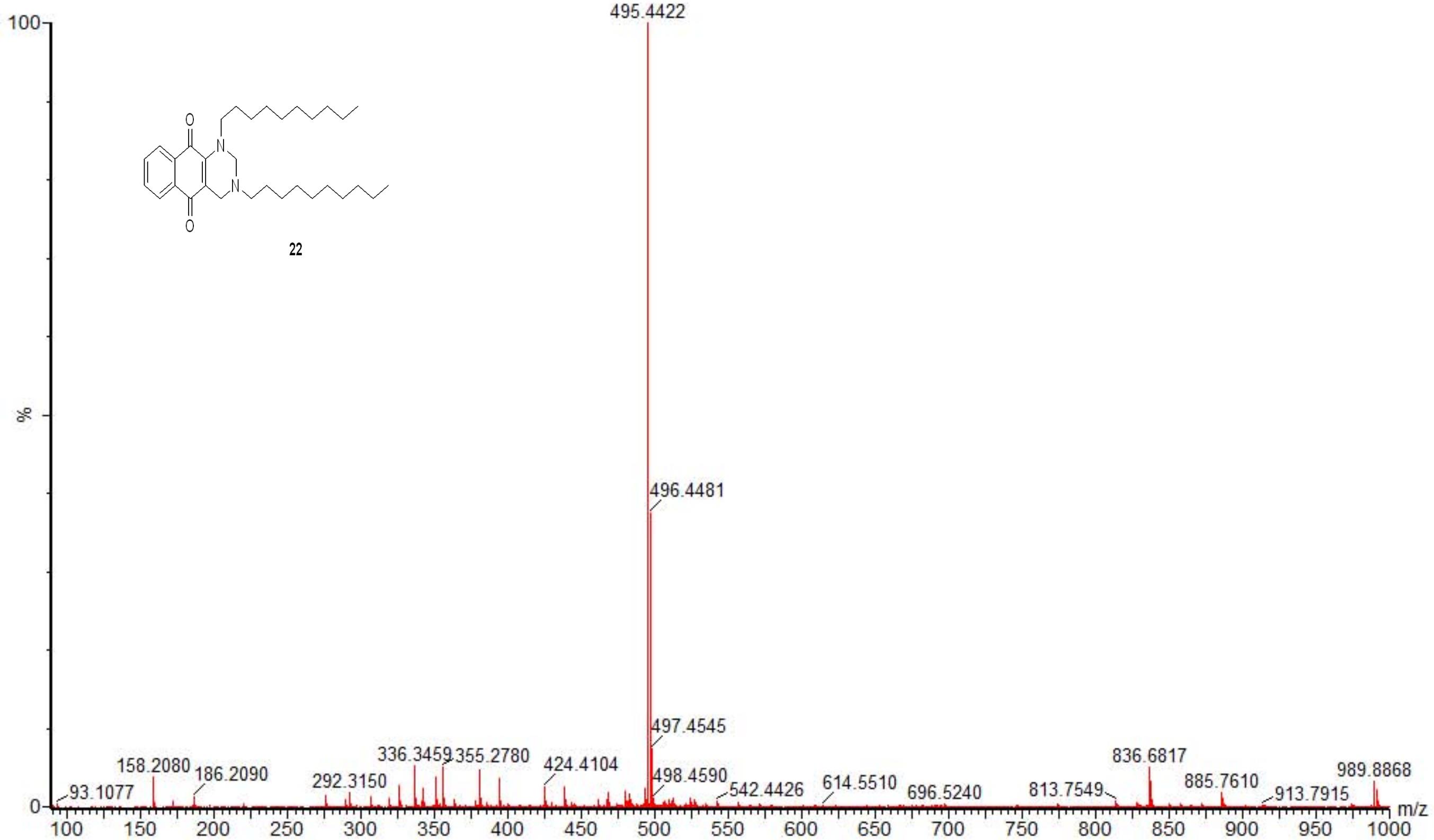


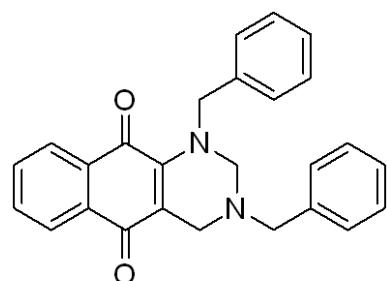




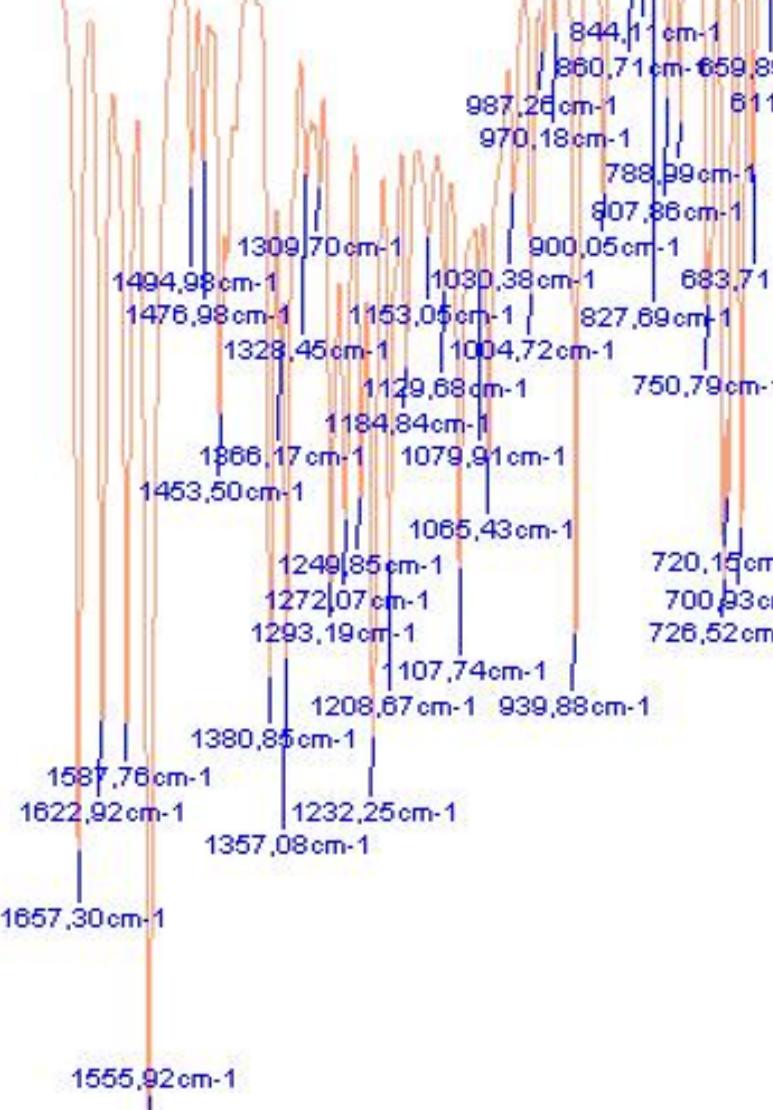






3395,57 cm<sup>-1</sup>2949,95 cm<sup>-1</sup>2930,09 cm<sup>-1</sup>3021,31 cm<sup>-1</sup>2837,33 cm<sup>-1</sup>

23



3500

3000

2500

cm<sup>-1</sup>

2000

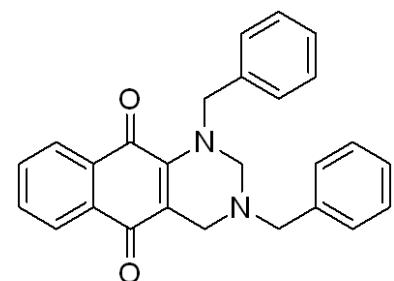
1500

1000

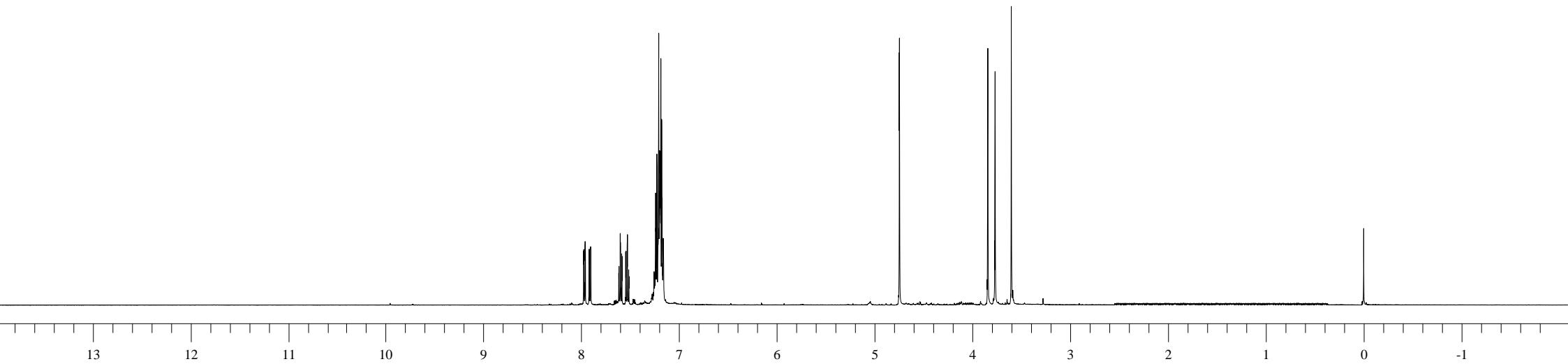
Descrição

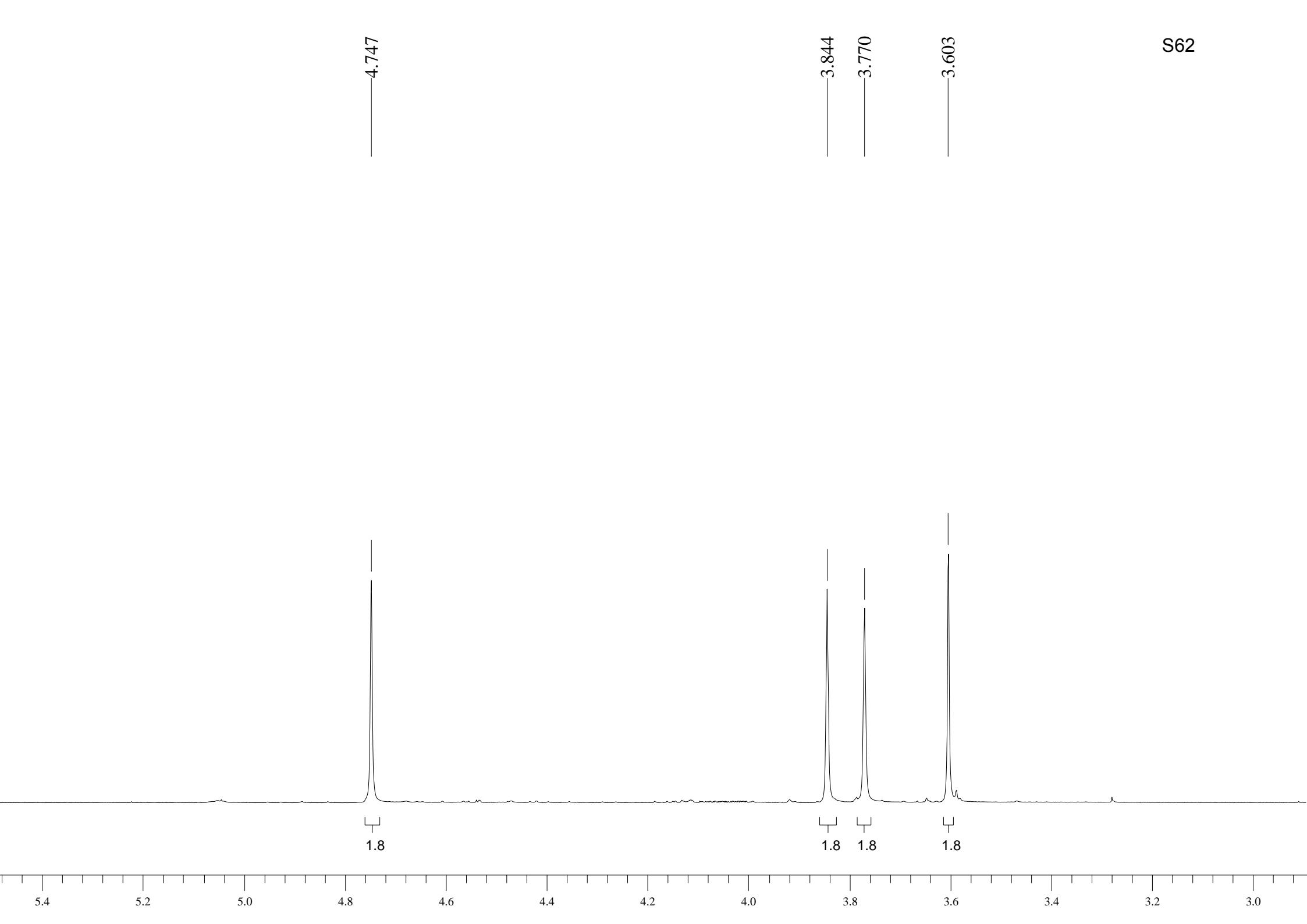
Marcelo

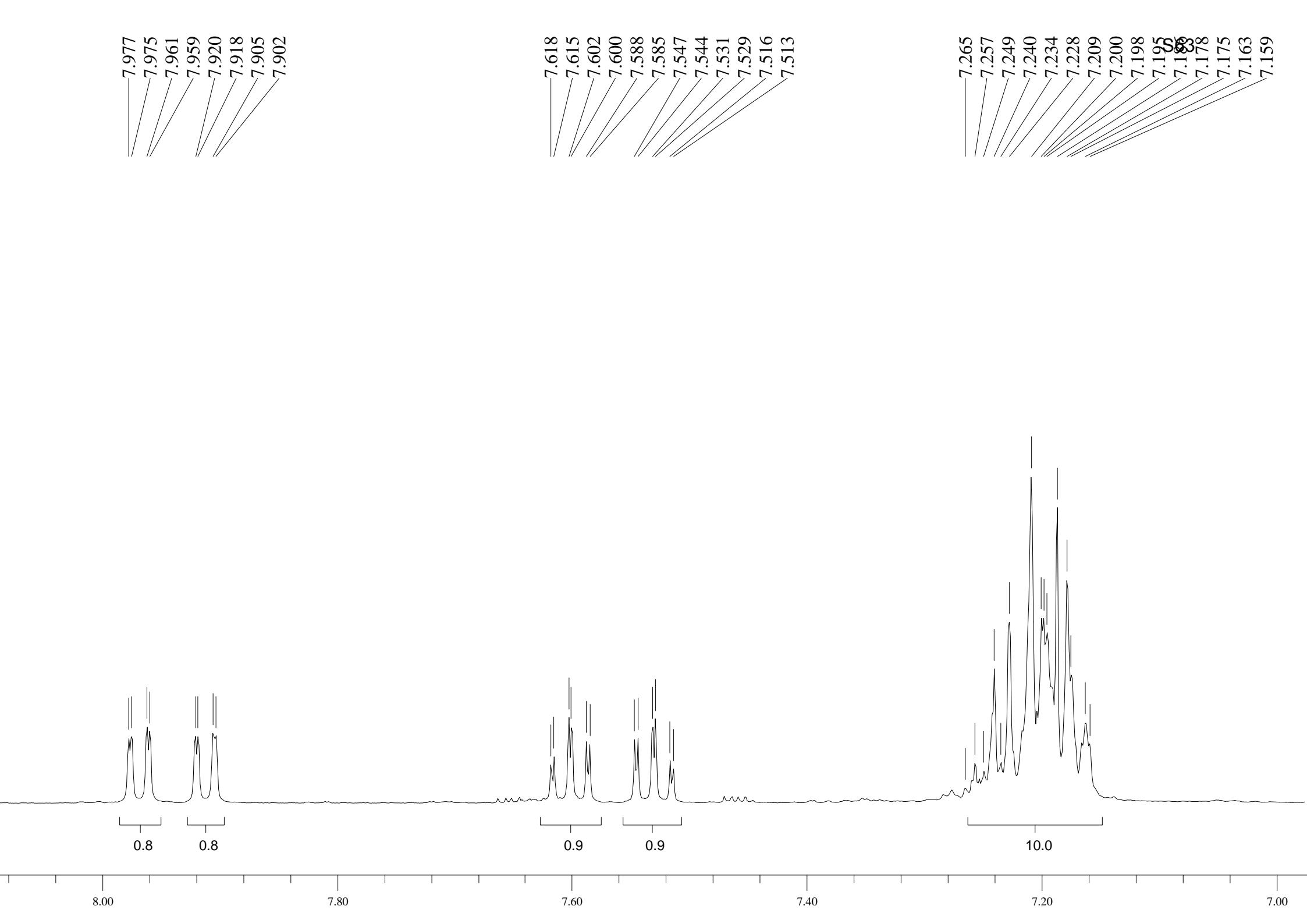
Op Vania\_1

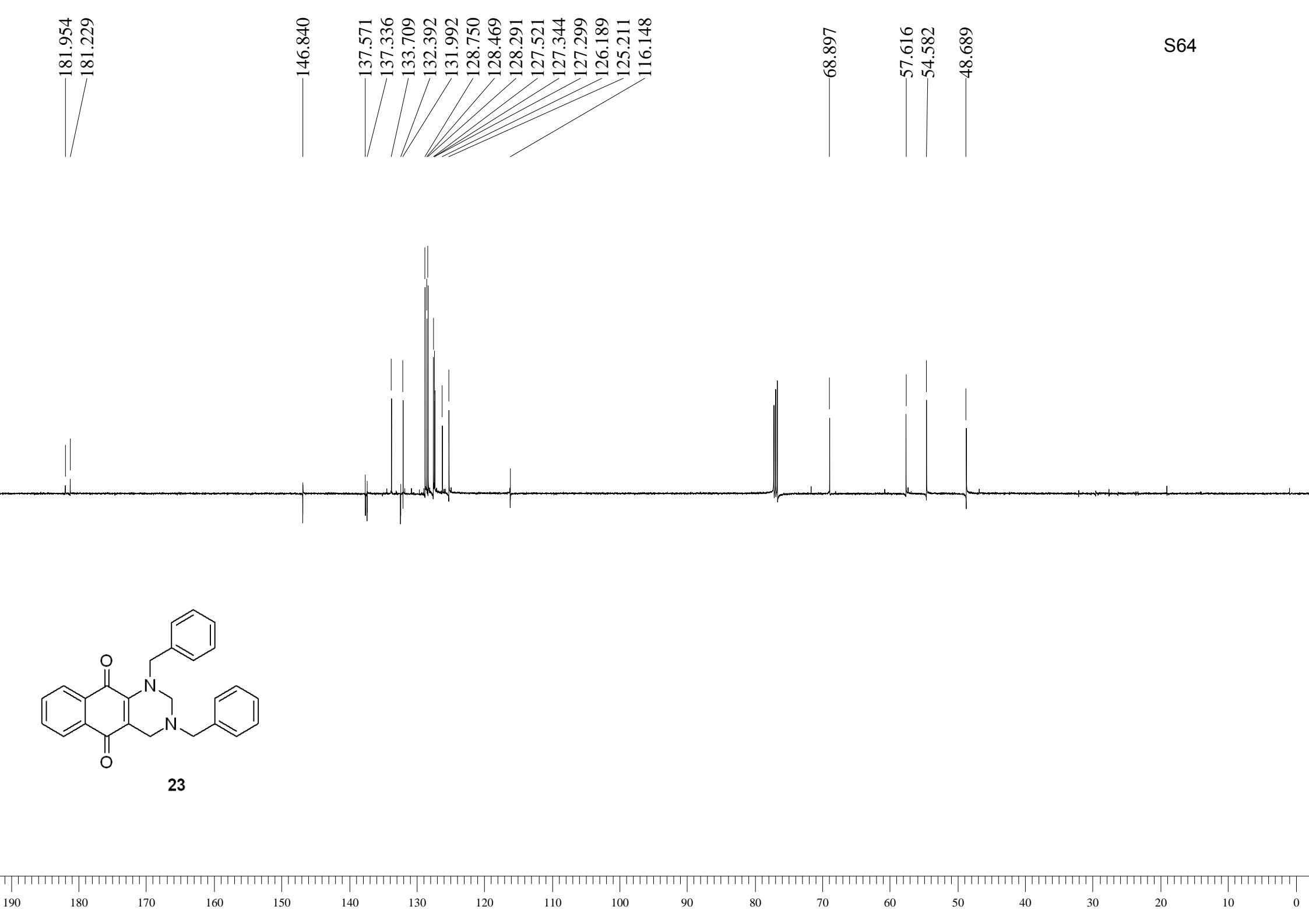


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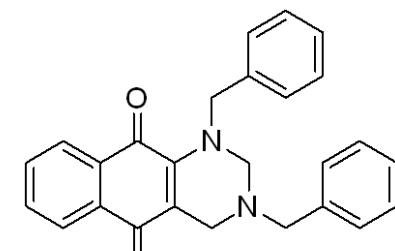
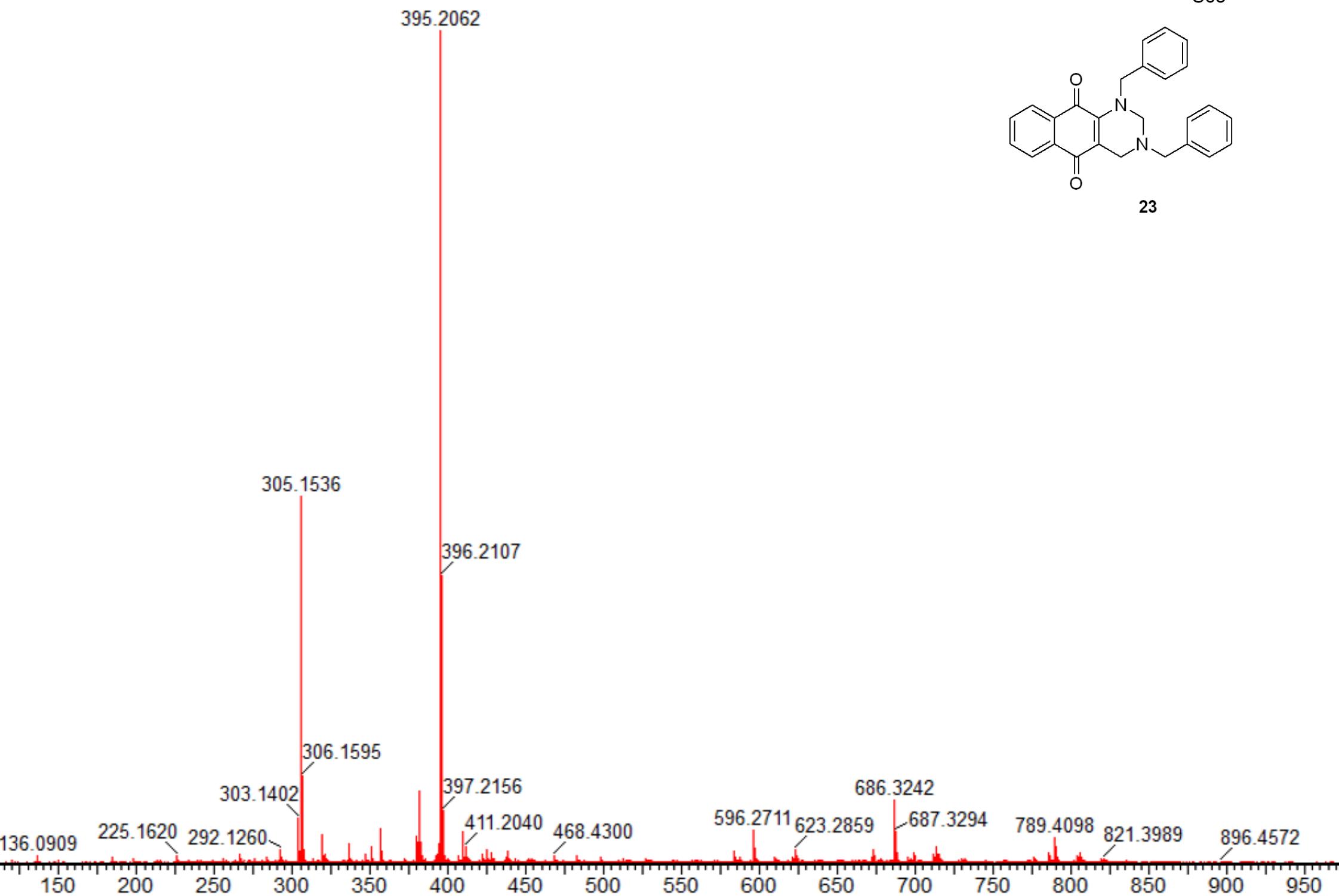


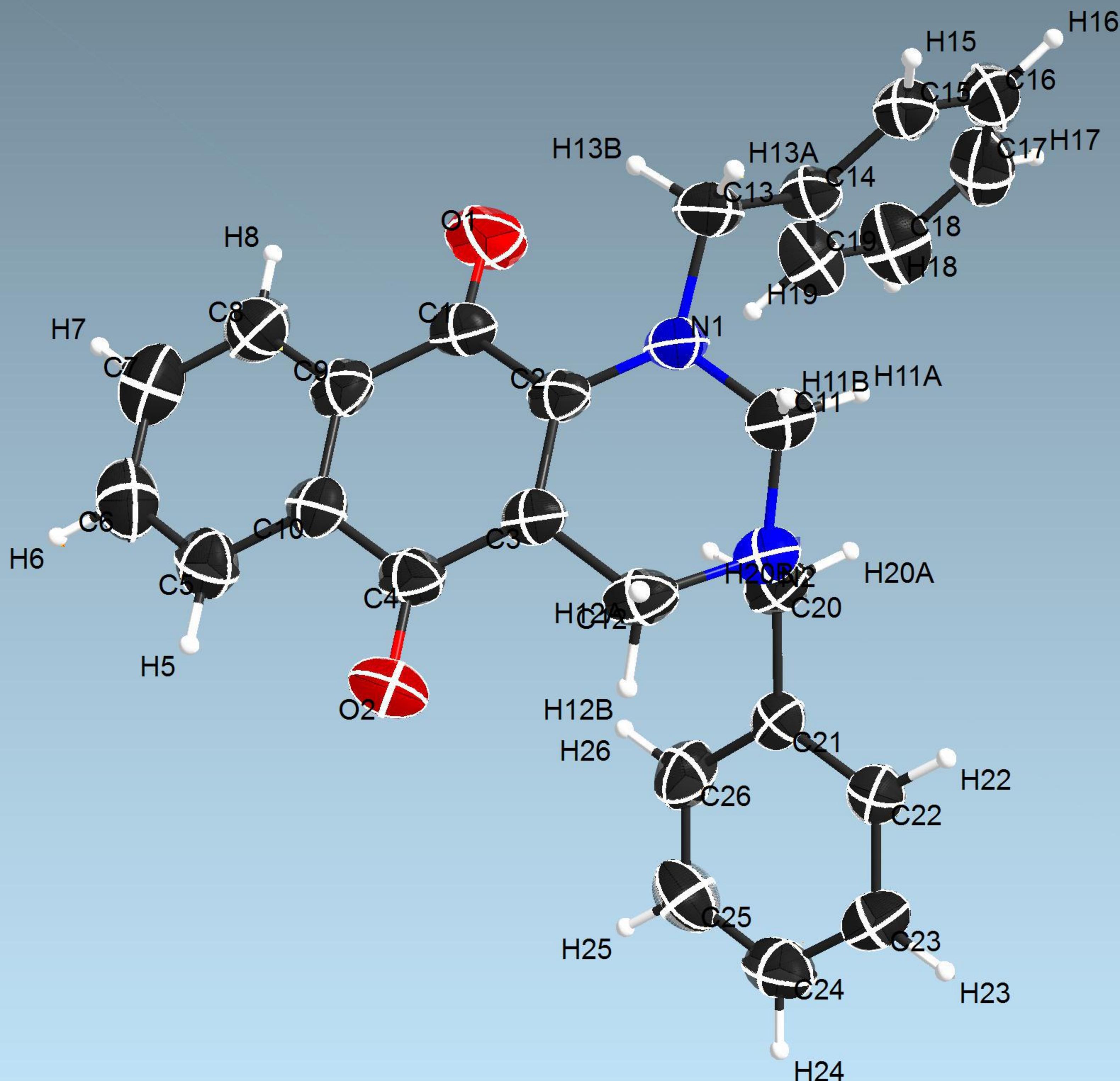


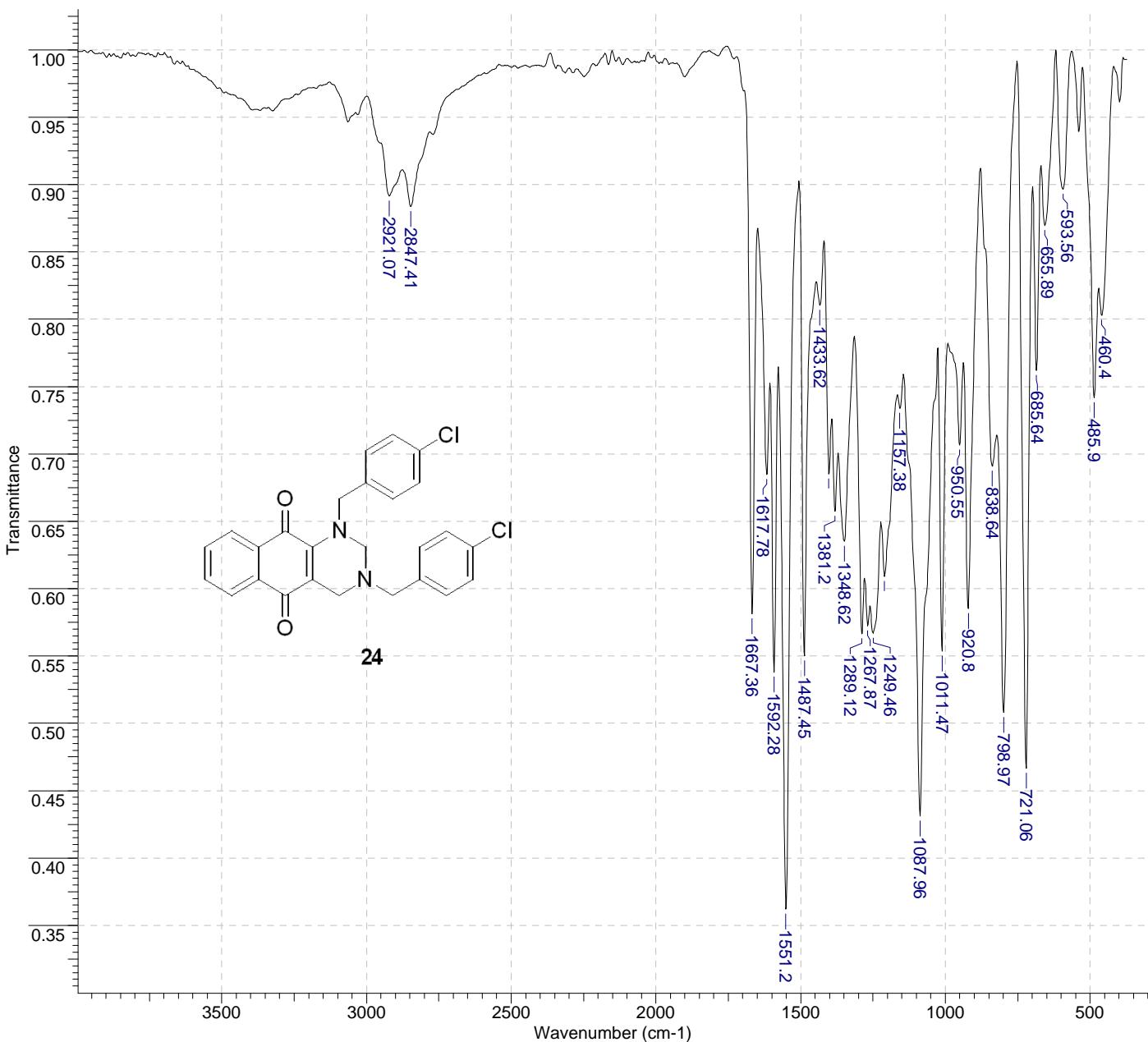




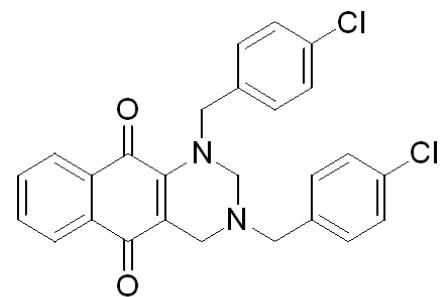
S65

**23**

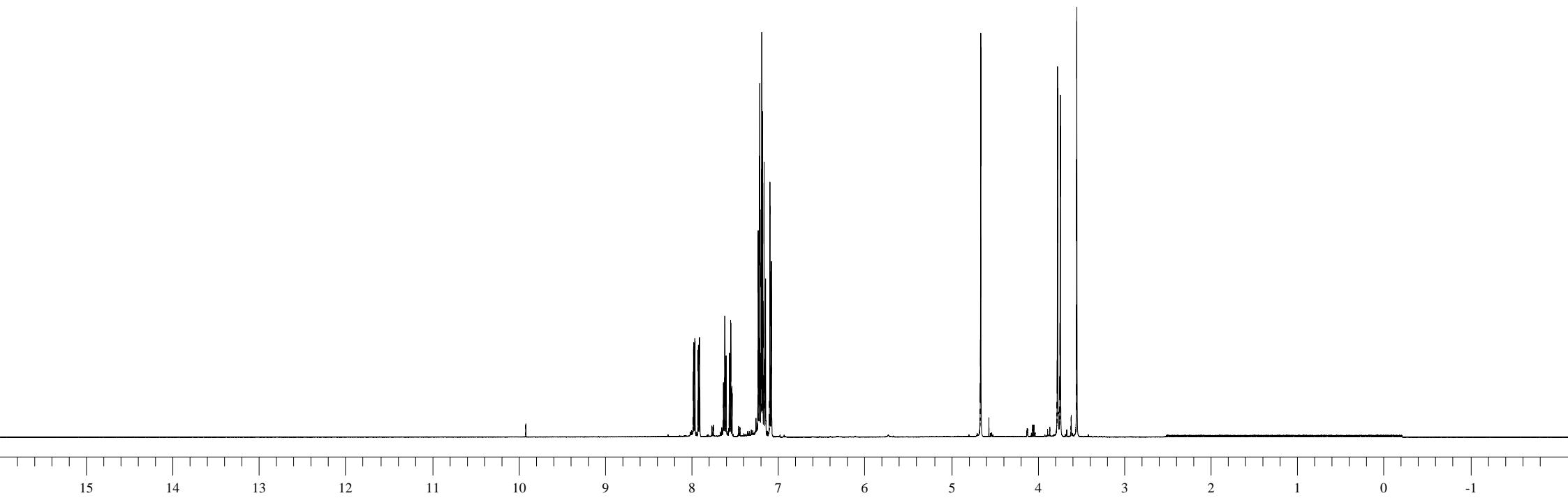


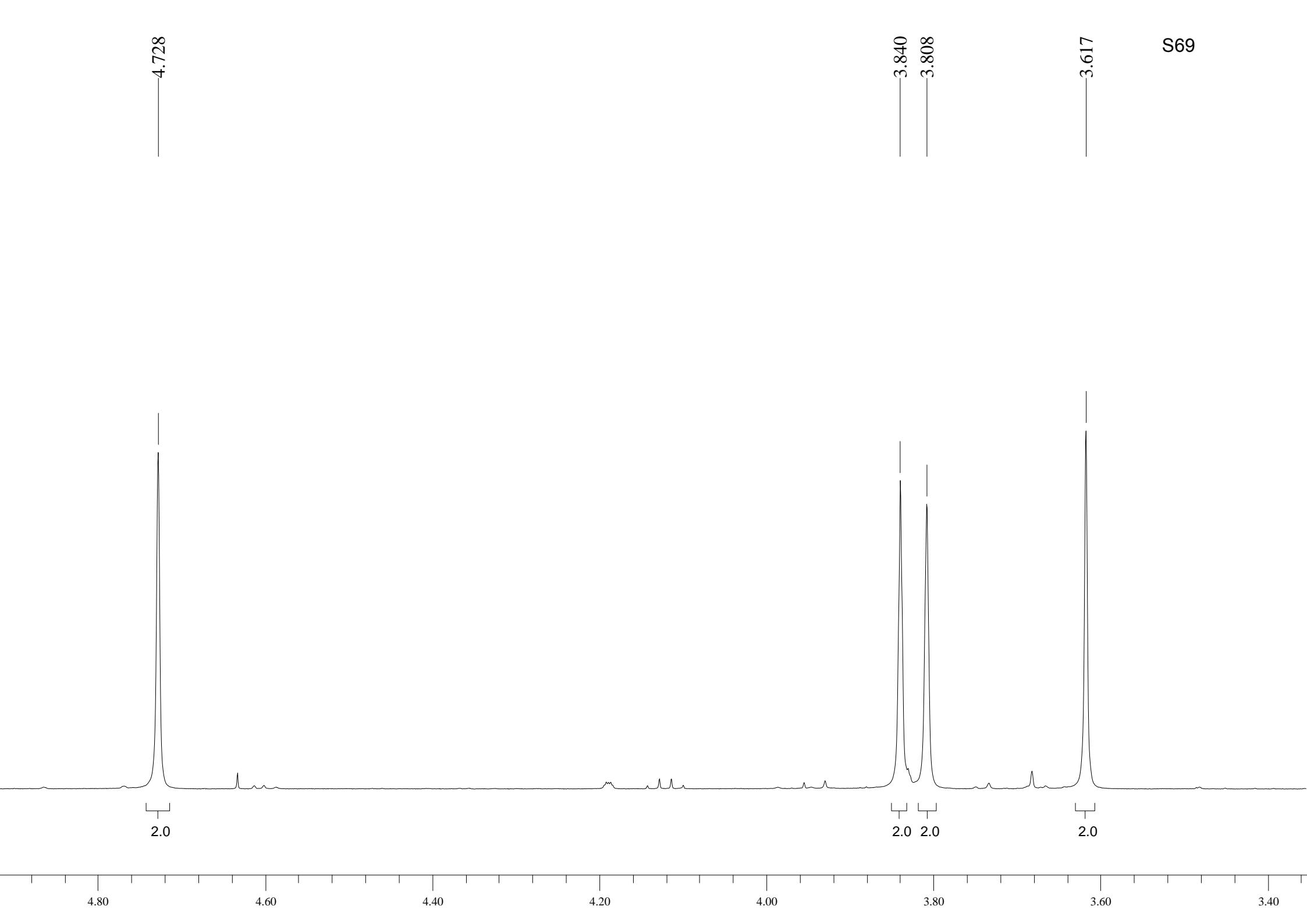


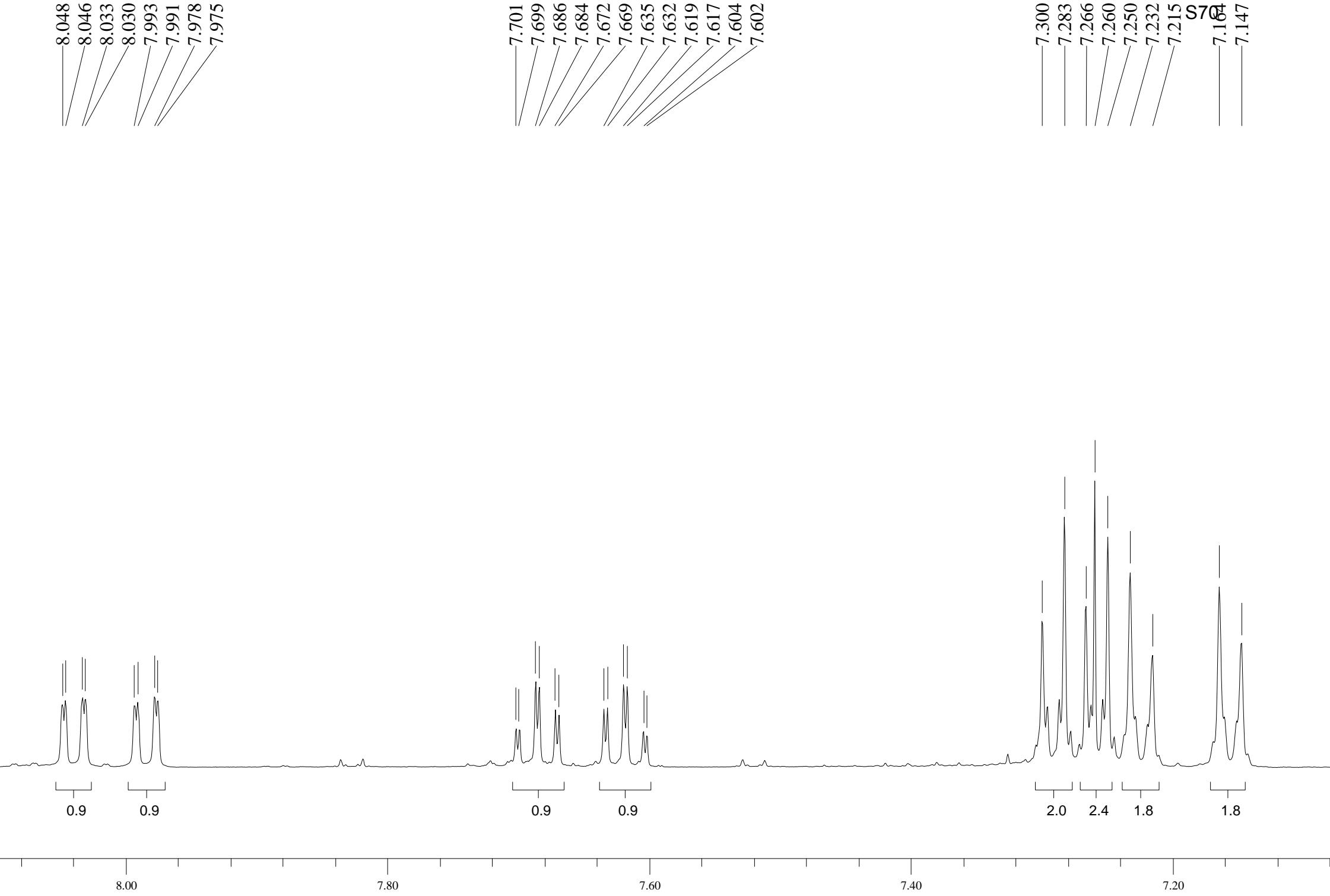
No	cm <sup>-1</sup>	T	FWHH	Asym	Intensity	No	cm <sup>-1</sup>	T	FWHH	Asym	Intensity
1	460.40	0.803	-	-	M	15	1249.46	0.567	-	-	S
2	485.90	0.742	-	-	M	16	1267.87	0.572	-	-	S
3	593.56	0.897	-1.00	0.00	W	17	1289.12	0.567	-	-	S
4	655.89	0.870	-	-	W	18	1348.62	0.635	-	-	M
5	685.64	0.762	-1.00	0.00	M	19	1381.20	0.657	-	-	M
6	721.06	0.467	-1.00	0.00	S	20	1402.45	0.685	-	-	M
7	798.97	0.508	-1.00	0.00	S	21	1433.62	0.810	-	-	M
8	838.64	0.691	-	-	M	22	1487.45	0.550	-1.00	0.00	S
9	920.80	0.585	-1.00	0.00	S	23	1551.20	0.362	-1.00	0.00	VS
10	950.55	0.706	-	-	M	24	1592.28	0.538	-1.00	0.00	S
11	1011.47	0.554	-1.00	0.00	S	25	1617.78	0.685	-	-	M
12	1087.96	0.431	-1.00	0.00	S	26	1667.36	0.581	-1.00	0.00	S
13	1157.38	0.734	-	-	M	27	2847.41	0.884	-	-	W
14	1209.79	0.609	-	-	S	28	2921.07	0.892	-	-	W

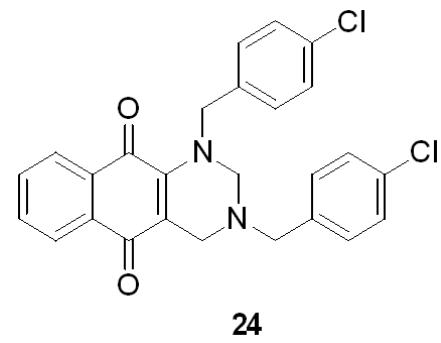
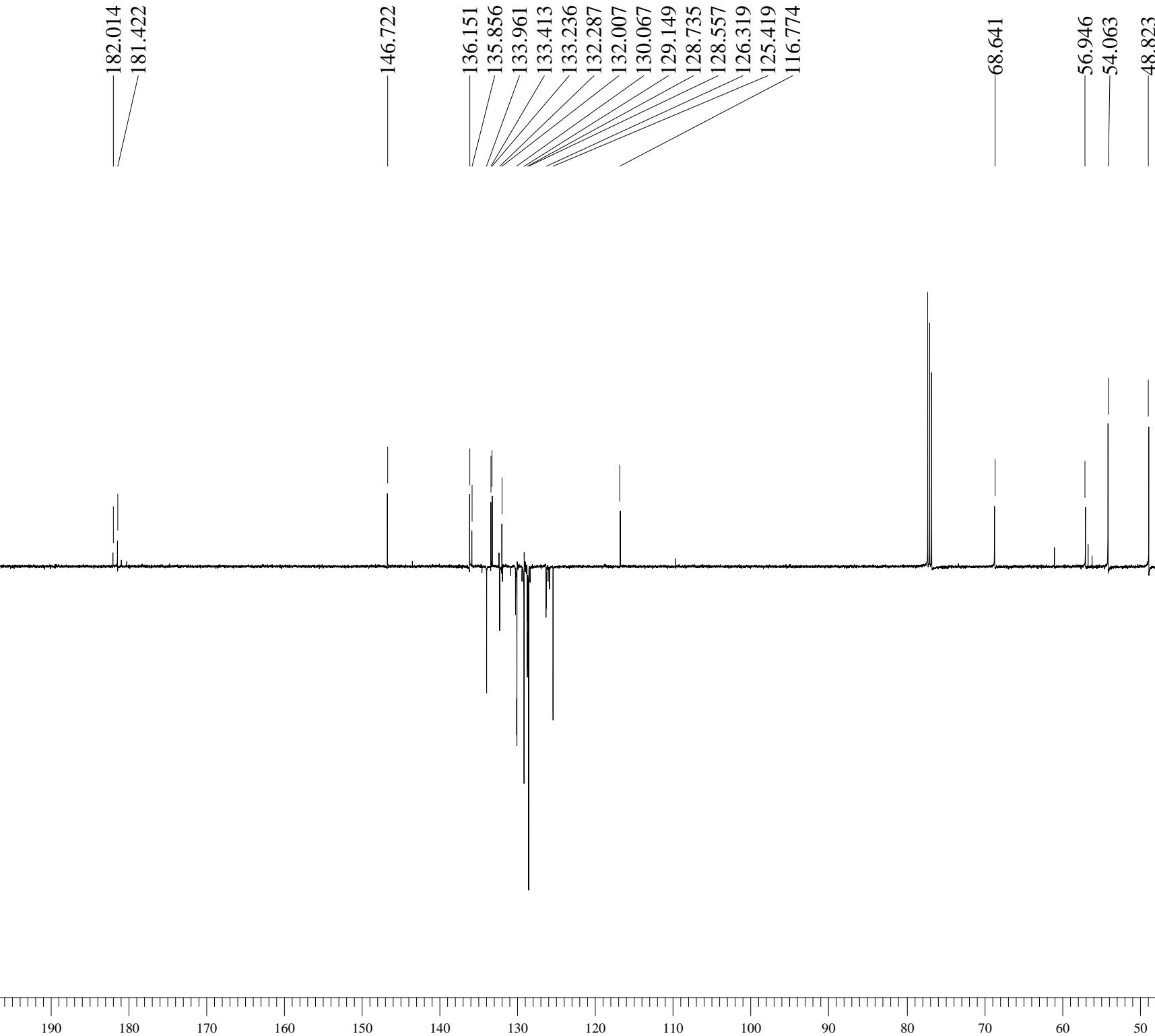


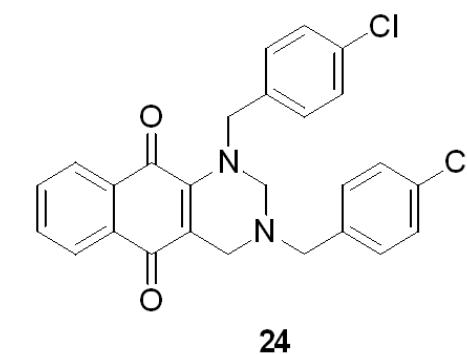
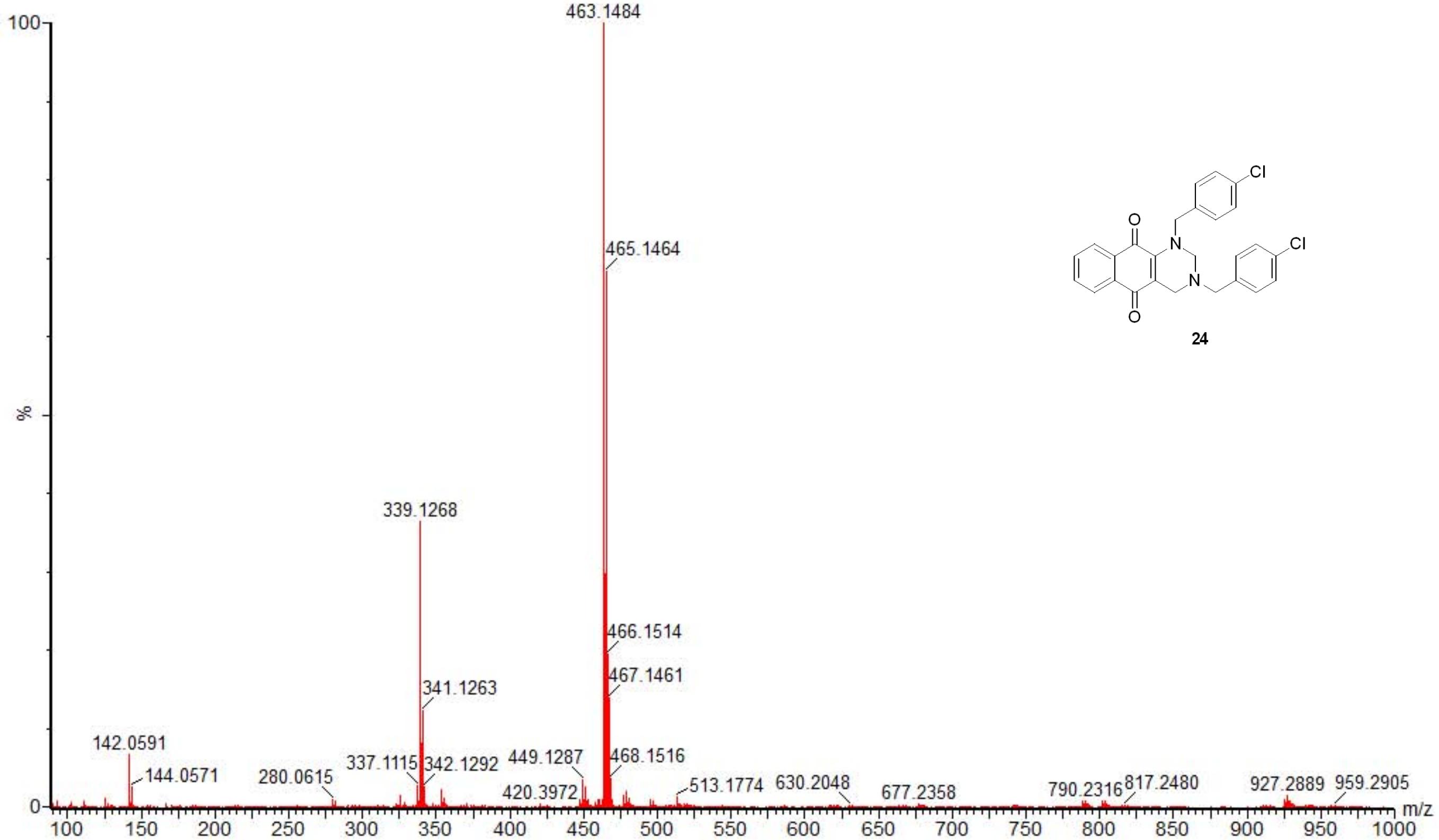
**24**

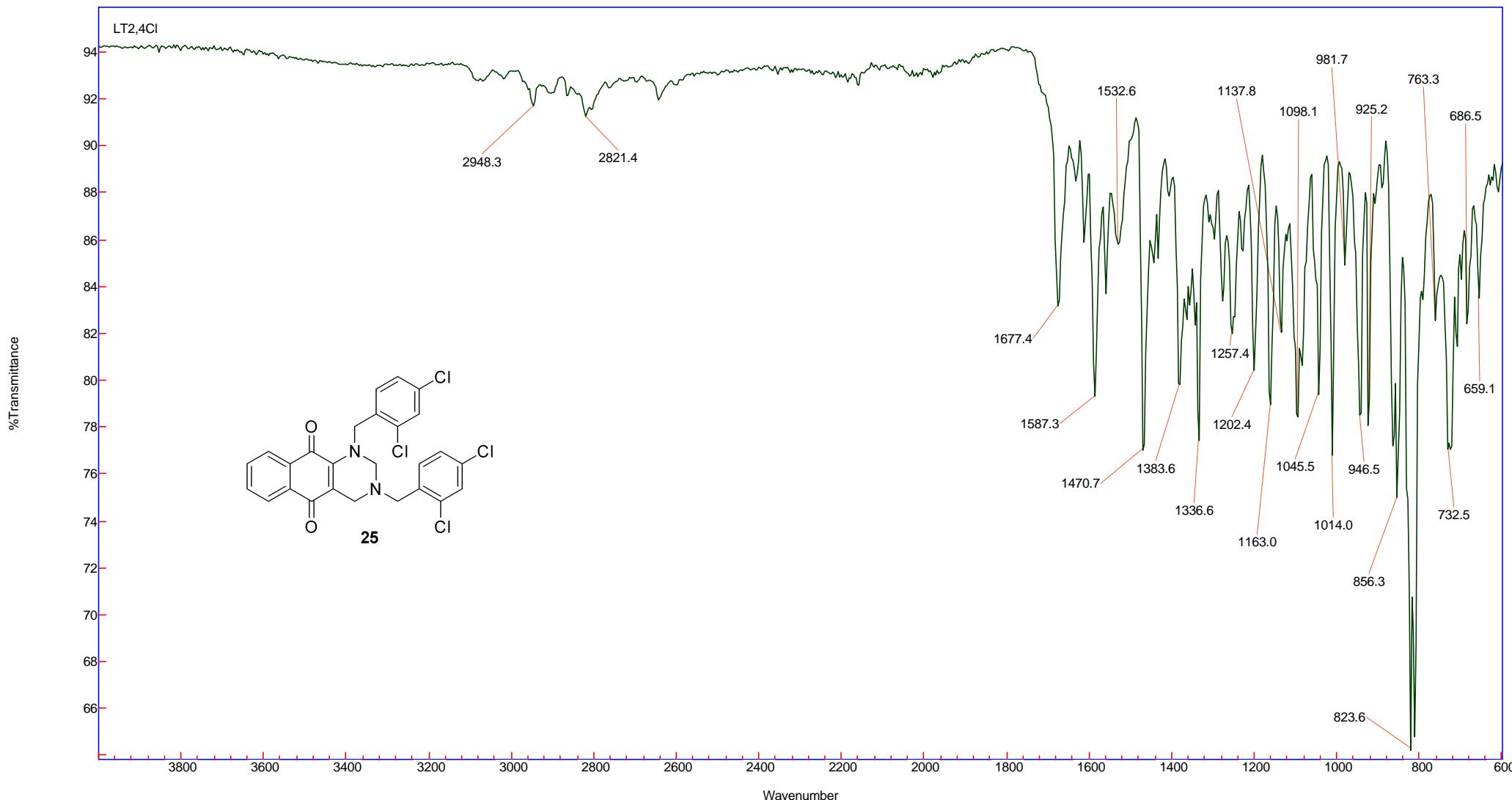






**24**





Name
LT2,4Cl

