Electronic Supplementary Information (ESI):

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Contents

Experimental procedures and characterization data of all compounds. Copies of the spectra of compounds **2, 4, 6** and **8.**

Experimental section:

General: All reactions were conducted using oven-dried glassware under an atmosphere of nitrogen. Dichloromethane was distilled before used from P_2O_5, and DMF was distilled from $MgSO_4$. The solvents used in column chromatography, hexane and ethyl acetate, were obtained from commercial suppliers and used without further distillation. TLC was performed on aluminium-backed plates coated with silica gel 60 with F_{254} indicator (Merck). Flash chromatography was carried out on neutral, activated aluminium oxide (50-200 micron). NMR spectra were measured at room temperature on a Bruker AC-200 MHz or Bruker DPX-300 MHz spectrometers. 2D NMR experiments were recorded on a Bruker AMX-400 MHz. Chemical shifts are reported in ppm with the solvent resonance as the internal standard (deuterochloroform: δ 7.26 ppm in ^{1}H spectra, δ 77.00 ppm in ^{13}C spectra). Carbon multiplicities were assigned by DEPT techniques and/or phase-sensitive HSQC experiments. Infra-red spectra was obtained on a Unicam Mattson 3000 FTIR spectrometer. Elemental analyses were carried out on a Perkin-Elmer 2400 and Carlo Erba 1108 microanalyzers. Melting point were measured on a Büchi-Totoli apparatus and were not corrected.

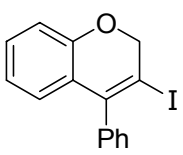
Starting materials: Propargyl ethers and sulphonamides were prepared according to web established methods: a) Tietze, L.

F.; Fischer, T. in *Reactions and Synthesis in the Organic Chemistry* Laboratory, University Science Books: Mill Valley, CA, **1989**. b) Manhas, M. S.; Hoffman, W. H.; Lal, B.; Bose, A. K. *J. Chem. Soc. Perkin Trans. I* **1975**, 461.

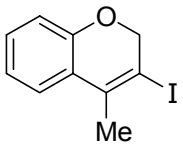
All commercially available compounds were used as received.

General procedure for the synthesis of iodochromenes and dihydroquinolines 2 using IPy_2BF_4 and HBF_4: IPy_2BF_4 (1 mmol, 372 mg, 1 equiv.) is stirred in dichloromethane (10 ml) at room temperature under nitrogen atmosphere for 5 minutes until a homogeneous solution is obtained. The solution was then cooled to −40 °C and HBF_4 (a commercially available 54% ethereal solution was used; for the amount added see in each case, see Schemes 2 and 4) was added. After stirring the mixture for ten additional minutes, the mixture was cooled to -80 °C and the corresponding substrate **1** was added (-85 °C for **1j**). The reaction was monitored by tlc until disappearance of **1** (see Schemes 2 and 4 for reaction times). The reaction mixture was poured onto crushed ice/water, sodium tiosulfate (5% aqueous solution, 20 ml) was added, and the product was extracted from dichloromethane (20 ml, three times). The combined organic layers were washed with water and dried over sodium sulfate. After removing the solvents under reduced pressure, the crude was subjected to purification through a column of silica gel, first with hexanes to remove the traces of starting material and then with a mixture of hexanes/ethyl acetate.

Spectroscopic data of compounds 2:

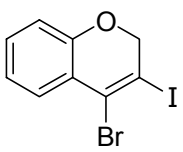


3-Iodo-4-phenyl-2*H*-chromene. 2a Yellow solid. Melting point = 80-82 °C. R_f = 0.79 (Hexane: EtOAc, 3:1). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.57-7.48 (m, 3H), 7.28-7.18 (m, 3H), 6.92 (dd, *J* = 7.9, 1.3 Hz, 1H), 6.83 (td, *J* = 7.4, 1.3 Hz, 1H), 6.71 (dd, *J* = 7.7, 1.8 Hz, 1H), 5.13 (s, 2H). ^{13}C-NMR ($CDCl_3$, 75 MHz): 153.4 (C), 142.0 (C), 140.1 (C), 129.8 (CH), 129.6 (CH), 128.8 (CH), 128.4 (CH), 126.6 (CH), 124.3 (C), 121.8 (CH), 116.2 (CH), 91.4 (C), 75.2 (CH_2) IR (CH_2Cl_2, cm^{-1}) 3057, 2925, 2833, 1950, 1650, 1596, 1480, 1452, 1224, 756, 699. HRMS (IE) Calcd for $C_{15}H_{11}IO$ (M+H) 333.9857, Found 333.9854. Anal. Calcd for $C_{15}H_{11}IO$: C, 53.41%; H, 3.52%, Found: C, 53.91%; H, 3.32%.



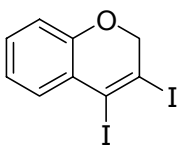
3-Iodo-4-methyl-2*H*-chromene 2b. Yellow oil. R_f = 0.80 (hexanes/ethyl acetate : 50/1. ^{1}H-NMR ($CDCl_3$, 200 MHz): 7.25-7.15 (m, 2H), 6.95 (td, *J* = 15.1, 1.3 Hz, 1H), 6.81 (dd, *J* = 8.4, 0.8 Hz, 1H), 4.90 (c, J = 1.8 Hz, 2H), 2.25 (t, *J* = 1.8 Hz, 3H). ^{13}C-NMR ($CDCl_3$, 75 MHz): 153.3 (C), 134.8 (C), 129.3 (CH), 123.8 (CH), 123.4 (C), 121.6 (CH), 115.9 (CH), 90.8 (C), 74.7 (CH_2), 22.1 (CH_3). IR (CH_2Cl_2, cm^{-1}) 3061, 2961, 2832, 1629, 1599, 1571, 1485, 749. EM (IE, m/z): 272 (M+), 145 (M+-I),

115, 91. HRMS (IE) Calcd for $C_{10}H_9IO$ (M+) 271.9699, Found 271.9698.



4-Bromo-3-iodo-2*H*-chromene. 2c. Yellow oil. R_f = 0.79 (Hexane: EtOAc, 3:1). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.48 (dd, *J* = 7.7, 1.6 Hz, 1H), 7.24 (td, *J* = 8.9, 1.41 Hz, 1H), 6.98 (t, *J* = 7.7 Hz, 1H), 6.75 (d, *J* = 8.4 Hz, 1H), 4.95 (s, 2H).

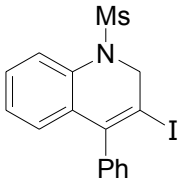
^{13}C-NMR ($CDCl_3$, 75 MHz): 152.6 (C), 130.4 (CH), 127.8 (CH), 122.0 (CH), 121.4 (C), 115.7 (CH), 114.5 (C), 94.0 (C), 75.5 (CH_2). IR (CH_2Cl_2, cm^{-1}) 3311, 1620, 1485, 1435, 1255, 1127, 865, 751. EM (IE, m/z): 337 (M+), 210 (M+-I), 130 (M+-I-Br), 115, 91. HRMS (IE) Calcd for C_9H_6OBrI (M+H) 335.8647, Found 335.8655.



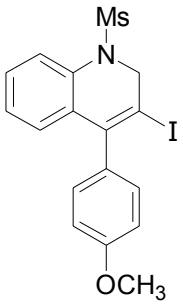
3,4-Diiodo-2*H*-chromene. 2d Yellow oil. R_f = 0.78 (Hexane: EtOAc, 3:1). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.40 (dd, *J* = 7.8, 1.6 Hz, 1H), 7.16 (td, *J* = 7.9,1.4 Hz, 1H), 6.95 (td, *J* = 7.7, 1.4 Hz, 1H), 6.75 (dd, *J* = 7.9, 1.1 Hz, 1H), 4.92 (s, 2H).

^{13}C-NMR ($CDCl_3$, 75 MHz): 151.6 (C), 132.9 (CH), 130.3 (CH), 124.7 (C), 122.3 (CH), 115.7 (CH), 108.2 (C), 103.8 (C) 75.6 (CH_2). IR (CH_2Cl_2, cm^{-1}) 3060, 2922, 2847, 1650, 1609, 1477, 1229, 755. EM (IE, m/z): 384 (M+), 257 (M+-I), 130 (M+-2I),

115. HRMS (IE) Calcd for $C_9H_6I_2O$ (M+H) 383.8508, Found 383.8509.

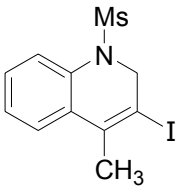


3-Iodo-1-methanesulfonyl-4-phenyl-1,2-dihydro-quinoline. 2e. White solid mp = 112-114°C. R_f = 0.60 (Hexane: EtOAc, 2:1). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.63 (d, J = 7.9 Hz, 1H), 7.49-7.48 (m, 3H), 7.34 (t, J = 7.4 Hz, 1H), 7.18-7.13 (m, 3H), 6.82 (d, J = 7.7 Hz, 1H), 4.84 (s, 2H), 2.91 (s, 3H). ^{13}C-NMR ($CDCl_3$, 75 MHz): 144.3 (C), 140.6 (C), 134.9 (C), 131.1 (C), 129.6 (2xCH), 129.4 (CH), 129.2 (2xCH), 128.9 (CH), 127.6 (CH), 127.5 (CH), 127.3 (CH), 92.4 (C), 57.1 (CH_2), 38.9 (CH_3). IR (CH_2Cl_2, cm^{-1}) 3050, 1625, 1475, 1150, 490. HRMS (EI) Calcd for $C_{16}H_{14}INO_2S$ (M+) 410.9790, Found. 410.9792.



3-Iodo-1-methanesulfonyl-4-(4-methoxy-phenyl)-1,2-dihydro-quinoline. 2f. White solid mp = 114-116°C. R_f = 0.51 (Hexane: EtOAc, 3:1). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.58 (d, J = 8.0 Hz, 1H), 7.30 (td, J = 7.7, 1.4 Hz, 1H), 7.14 (td, J = 7.7, 1.1 Hz, 1H), 7.08 (dd, J = 8.8, 1.1 Hz, 2H), 6.97 (dd, J = 8.8, 1.4 Hz, 2H), 6.83 (d, J = 8.0 Hz, 1H), 4.77 (s, 2H), 3.85 (s, 3H), 2.85 (s, 3H).

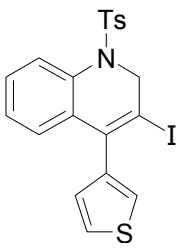
^{13}C-NMR ($CDCl_3$, 75 MHz): 159.3 (C), 143.2 (C), 134.3 (C), 132.1 (C), 128.6 (2xCH), 134.2 (C), 129.8 (C), 128.5 (CH), 127.1 (CH), 130.7 (C), 130.3 (2xCH), 128.6 (CH), 127.0 (CH), 126.9 (CH), 126.5 (CH), 113.8 (2xCH), 91.7 (C), 56.5 (CH_2), 55.1 (CH_3), 38.3 (CH_3).**IR** (CH_2Cl_2, cm^{-1}) 3080, 1625, 1475, 1100, 570. HRM



3-Iodo-1-methanesulfonyl-4-methyl-1,2-dihydro-quinoline. 2g.White solid mp = 108-110°C. R_f = 0.55 (Hexane: EtOAc, 3:1). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.54 (dd, *J* = 6.8, 1.5 Hz, 1H), 7.41-7.38 (m, 1H), 7.36-7.27 (m, 2H), 4.60 (s, 2H), 2.71 (s, 3H), 2.33 (s, 3H).

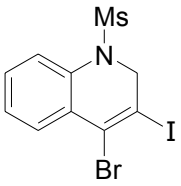
^{13}C-NMR ($CDCl_3$, 75 MHz): 136.6 (C), 134.2 (C), 129.8 (C), 128.5 (CH), 127.1 (CH), 126.7 (CH), 124.1 (CH), 92.0 (C), 56.3 (CH_2), 38.1 (CH_3), 23.0 (CH_3).**IR** (CH_2Cl_2, cm^{-1}) 3100, 1624, 1352, 1155, 465. HRMS (EI) Calcd for $C_{11}H_{12}NO_2Si$ (M+1) 349.9667, Found. 349.9659.

S (EI) $C_{17}H_{16}NO_3Si$ (M+) 440.9896, Found. 440.9894.

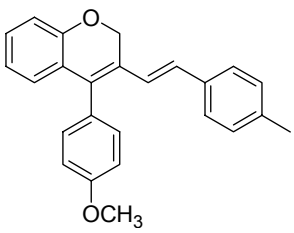


3-Iodo-4-thiophen-3-yl-1-(toluene-4-sulfonyl)-1,2-dihydroquinoline. 2h. White solid (**mp** = 120-122°C). R_f = 0.62 (Hexane: EtOAc, 3:1). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.75 (d, *J* = 8.0 Hz, 1H), 7.37-7.32 (m, 3H), 7.17-7.08 (m, 4H), 6.65-6.61 (m, 2H), 6.23 (dd, *J* = 5.1, 1.4 Hz, 1H), 4.83 (s, 2H), 2.38 (s, 3H).

^{13}C-NMR ($CDCl_3$, 75 MHz): 143.7 (C), 141.3 (C), 139.5 (C), 138.5 (C), 135.4 (C), 134.0 (C), 130.7 (C), 129.2 (2xCH), 128.5 (CH), 128.0 (CH), 127.4 (2xCH), 127.3 (CH), 127.0 (CH), 126.2 (CH), 125.1 (CH), 124.8 (CH), 93.3 (C), 56.8 (CH_2), 21.4 (CH_3). **IR** (CH_2Cl_2, cm^{-1}) 3150, 1620, 1470, 750. HRMS (EI) $C_{20}H_{16}INO_2S_2$ (M+) 493.9712, Found. 493.9722.

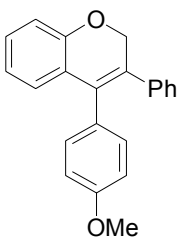


4-Bromo-3-iodo-1-methanesulfonyl-1,2-dihydro-quinoline. 2i. White solid (**mp** = 110-112°C). R_f = 0.47 (Hexane: EtOAc, 3:1). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.73 (dd, *J* = 7.7, 1.8 Hz, 1H), 7.58 (dd, *J* = 7.8, 1.4 Hz, 1H), 7.40 (td, *J* = 7.6, 1.7 Hz, 1H), 7.35 (td, *J* = 7.6, 1.4 Hz, 1H), 4.69 (s, 2H), 2.77 (s, 3H). ^{13}C-NMR ($CDCl_3$, 75 MHz): 134.1 (C), 129.9 (CH), 128.7 (C), 128.5 (CH), 127.9 (C), 127.6 (CH), 126.6 (CH), 95.7 (C), 57.4 (CH_2), 38.4 (CH_3). **IR** (CH_2Cl_2, cm^{-1}) 3120, 1625, 1470, 420. HRMS (EI) $C_{10}H_9BrINO_2S$ (M+) 412.8582, Found. 412.8589.

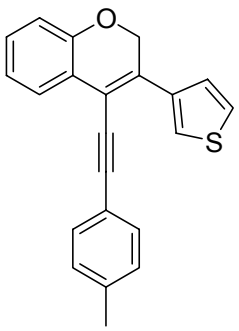


4-(4-Methoxy-phenyl)-3-(2-*p*-tolyl-vinyl)-2*H*-chromene. 4a. Yellow solid. mp = 97-99 °C. R_f = 0.59 (Hexane: EtOAc, 20:1). ^{1}H-NMR ($CDCl_3$, 200 MHz): 7.4-6.84 (m, 13H), 6.52 (d, *J* = 16.7 Hz, 1H), 5.22 (s, 2H), 3.95 (s, 3H), 2.38 (s, 3H). ^{13}C-NMR ($CDCl_3$, 75 MHz): 158.7 (C), 153.9 (C), 138.4 (C), 134.1 (C), 133.7 (CH), 132.0 (C), 131.0 (2xCH), 129.8 (C), 129.8 (C), 129.4 (2xCH), 128.6 (CH), 127.4 (CH), 127.1 (C),

126.6 (2xCH), 125.3 (C), 124.2 (CH), 121.8 (CH), 115.4 (CH), 113.8 (2xCH), 66.7 (CH_2), 57.4 (CH_3), 21.1 (CH_3). IR (CH_2Cl_2, cm^{-1}) 3056, 2947, 1727, 1083. HRMS (IE) Calcd for $C_{25}H_{22}O_2$ 354.1620, Found 354.1616.



4-(4-Methoxy-phenyl)-3-phenyl-2H-chromene. 4b. Orange solid. mp = 100-102 °C. R_f = 0.64 (Hexane: EtOAc, 10:1). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.30 (dd, J = 8.8, 1.1 Hz, 1H), 7.19-7.15 (m, 7H), 7.07-7.01 (m, 3H), 6.88 (t, J = 6.5 Hz, 1H), 6.86 (d, J = 8.0 Hz, 1H), 5.12 (s, 2H), 3.82 (s, 3H). ^{13}C-NMR (CD_2Cl_2, 75 MHz): 161.2 (C), 156.3 (C), 140.9 (C), 138.8 (C), 132.1 (2xCH), 131.3 (CH), 130.7 (2xCH), 130.5 (2xCH), 129.5 (C), 128.8 (CH), 127.4 (C), 126.3 (C), 123.6 (CH), 121.8 (CH), 118.0 (CH), 116.0 (2xCH), 72.0 (CH_2), 57.5 (CH_3). **IR** (CH_2Cl_2, cm^{-1}) 2960, 1728, 1032. HRMS (IE) Calcd for $C_{25}H_{18}O_2$ 314.1301, Found 314.1307.

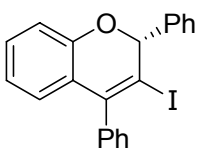


4-(2-(4-Methoxyphenyl)ethynyl)-3-(3-thiophenyl)-2*H*-chromene. 4c. Pale Yellow solid. mp= 115-117°C (dec). R_f = 0.8 (Hexane: EtOAc, 3:1). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.83 (dd, J = 7.1, 1.7 Hz, 1H), 7.53-7.51 (m, 3H), 7.48-7.44 (m, 3H), 7.32 (t, J = 7.7 Hz, 1H),7.23 (d, J = 7.7 Hz, 2H), 7.17 (t, J = , 1H), 5.21 (s, 2H), 2.45 (s, 3H).

^{13}C-NMR ($CDCl_3$, 75 MHz): 160.8 (C), 153.0 (C), 138.5 (C), 137.0 (C), 131.3 (2xCH), 130.0 (CH), 129.4 (CH), 129.4 (CH), 129.0 (CH), 128.6 (C), 128.3 (2xCH), 126.2 (CH), 122.6 (C), 121.7 (CH), 119.9 (C), 115.6 (CH), 95.3 (C), 84.4 (C), 68.6 (CH_2), 21.4 (CH_3). HRMS (EI) Calcd for $C_{22}H_{16}OS$ 328.0922, Found. 328.0925.

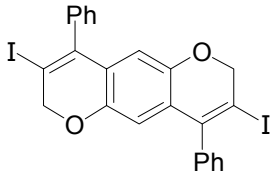
Synthesis of (*R*)-(1,3-diphenylprop-2-ynyloxy)benzene (1j)

(R)-(+)-1-phenyl-2-propyn-1-ol (5.0 mmol) was treated with phenol (5.3 mmol) in 25 mL of THF, then triphenylphosphine (5.0 mmol) was added. The solution was cooled to 0°C and diisopropyl azodicarboxylate (6.0 mmol) was added dropwise via sryringe. The ice bath was removed and the mixture was stirred under nitrogen atmosphere, for 18 h. Removal of solvent and purification by column chromatography (hexanes:EtOAc = 20:1) yields (S)-(1-Phenylprop-2-ynyloxy)benzene as a colorless oil in 35%. This product was then subjected to conventional Sonogashira cross-coupling reaction with iodobenzene using $PdCl_2(PPh_3)_2$ (5 mol%) as catalyst in presence of CuI (10 mol%), in triethylamine as solvent, at room temperature for 2 hours, resulting in (*R*)-(1,3-diphenylprop-2-ynyloxy)benzene in 66 % yield and 88% ee, as determined by HPLC analysis (Chiracel OJ, 5% *i*PrOH in Hexanes, 225nm) rt = 34.89 min. (minor), tr = 28.45 min. (major).



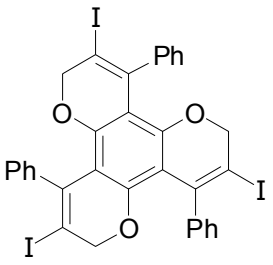
(*R*)-3-Iodo-2,4-diphenyl-2*H*-chromene 2j. Pale oil. 85% ee as determined by HPLC analysis (Chiracel OJ, 5% *i*PrOH in Hexanes, 225nm) tr = 25,91 min. (minor), tr = 20.23 min. (major). R_f = 0.50 (Hexane: EtOAc, 20:1). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.59-7.49 (m, 5H), 7.44-7.40 (m, 4H), 7.27 (m, 1H), 7.16 (td, *J* = 8.4, 1.14 Hz, 1H), 6.82-6.76 (m, 2H), 6.69 (dd, J = 7.6, 1.7 Hz, 1H), 6.19 (s, 1H).

^{13}C-NMR ($CDCl_3$, 75 MHz): 151.5 (C), 142.3 (C), 140.3 (C), 137.6 (C), 129.9 (CH), 128.9 (CH), 128.6 (2xCH), 128.5 (2xCH), 128.1 (CH), 128.0 (2xCH), 127.9 (2xCH), 126.3 (CH), 123.4 (C), 121.2 (CH), 116.5 (CH), 94.8 (C), 84.8 (CH).76.4 (C). IR (CH_2Cl_2, cm^{-1}) 3057, 2927, 2835, 1950, 1498,1224, 753, 690. HRMS (70 eV, EI) Calcd for $C_{21}H_{15}IO$ (M+H) 410.0168, Found 410.0167.



3,8-Diiodo-4,9-diphenyl-2,7-dihydro-pyran[2,3-g]chromene. 6. White solid mp = dec. at 210°C. R_f = 0.80 (Hexane: EtOAc, 10:1). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.47-7.41 (m, 6H), 7.20-7.17 (m, 4H), 6.18 (s, 2H), 4.92 (s, 4H. ^{13}C-NMR ($CDCl_3$, 75 MHz): 147.4 (C), 141.5 (C), 139.4 (C), 129.1 (2xCH), 128.6 (2xCH), 128.2 (CH), 124.7 (C), 113.4 (CH), 92.4 (C), 74.9 (CH_2).

IR (CH_2Cl_2, cm^{-1}) 3056, 2925, 1652, 1594, 1480. HRMS (EI) Calcd for $C_{24}H_{16}I_2O_2$ 590.9318, Found. 590.9309.



3,7,11-Triiodo-4,8,12-triphenyl-2H,6H,10H-dipyran[2,3-f;2',3'-h]chromene. 8. Pale solid. mp = dec. at 250 °C. R_f = 0.70 (Hexane: EtOAc, 3:1). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.41-7.33 (m, 9H), 7.16-7.13 (m, 6H), 4.28 (s,6H).

^{13}C-NMR ($CDCl_3$, 75 MHz): 151.6 (C), 142.7 (C), 139.0 (C), 128.2 (2xCH), 127.6 (2xCH), 127.1 (CH), 109.2 (C), 87.9 (C), 74.5 (CH_2). IR (CH_2Cl_2, cm^{-1}) 3050, 2920, HRMS (EI) Calcd for $C_{33}H_{21}I_3O_3$ 845.8625, Found. 845.8629.

General Procedure for Cyclizations using NaI/H_2O/H^+.

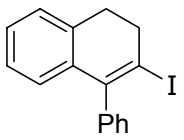
The 1-aryl-ω-alkyne (1 mmol, 1 equiv) was added to a solution of NaI (1 mmol, 1. equiv, 0.15 g) in water (15 mL). The flask was cooled down in an ice-water-bath and H_2SO_4 (4 mmol, 8 equiv, 0.22 mL) and H_2O_2 33 % solution (6 mmol, 6 equiv, 0.3 mL) were sequentially added. The resulting mixture was heated in an oil bath (40°C) (5 h for **1a** and 20 h for **1k**). The reaction mixture was then allowed to cool, transferred to a separation funnel and extracted with ethyl acetate (3x25 mL). The combined organic layers were washed with H_2O (2x50 mL) and $Na_2S_2O_3$ 5 % solution in water (2x50 mL)

and dried over anhydrous sodium sulfate. Concentration of solvents and further purification gave **2a** (50%) and **2k** (52%).

General Procedure for Cyclization using I_2.

The 1-aryl-w-alkyne (1 mmol, 1 equiv) was added to a heterogeneous solution of I_2 (3 mmol, 3 equiv, 0.76 g for **1a** and 2 mmol, 2 equiv, 0.51g for **1k**, **1l**,**1m** and **1n**) in 15 mL of water. For **1n** H_2SO_4 (5 mmol, 10 equiv, 0.27 mL) or 1 g of Amberlyst® -15-wet The reaction mixture was stirred for 2 h at room temperature and then transferred to a separation funnel and extracted with ethyl acetate (3x25 mL). The combined organic layers were washed with H_2O (2x50 mL) and $Na_2S_2O_3$ 5 % solution in water (2x50 mL) and dried over anhydrous sodium sulfate. Concentration of solvents and further purification gave **2a** (75%), **2k** (90%), **9** (95%), **2m** (35%) and **2n** (90%)

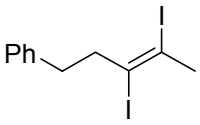
Spectroscopic data of compounds 2k, 9, 2m, 10 and 2n:



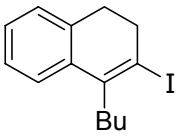
1,2-dihydro-3-iodo-4-phenylnaphtalene. 2k. Yellow oil. R_f = 0.61 (Hexane). ^{1}H-NMR ($CDCl_3$, 400 MHz): 7.5 (m, 3H), 7.2-7.1 (m, 5H), 6.7 (d, J = 7.4 Hz, 1H), 3.25 (m, 2H), 3.1 (m, 2H).

^{13}C-NMR ($CDCl_3$, 100 MHz): 144.4 (C), 143.1 (C), 135.1 (C), 134.5 (C), 129.5 (CH x 2), 128.3 (CH x 2), 127.4 (CH), 127.3 (CH), 127.2 (CH), 126.4 (CH), 126.2 (CH), 100.9 (C), 39.6

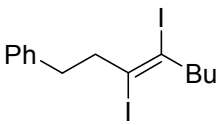
(CH_2), 29.9 (CH_2) HRMS (IE) Calcd for $C_{16}H_{13}I$ (M+H) 332.0062, Found 332.0017. Anal. Calcd for $C_{16}H_{13}I$: C, 57.85%; H, 3.94%, Found: C, 57.98%; H, 3.81%.



1-((E)-3,4-diiodopent-3-enyl)benzene. 9 Yellow oil. R_f = 0.8 (Hexane). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.4-7.2 (m, 5H), 3.1-2.9 (m, 4H), 2.65 (s, 3H). ^{13}C-NMR ($CDCl_3$, 75 MHz): 139.2 (C), 128.6 (CH x 2), 128.3 (CH x 2), 126.2 (CH), 101.0 (C), 94.2 (C), 53.1 (CH_2), 40.2 (CH_2), 34.1 (CH_3) HRMS (IE) Calcd for $C_{11}H_{12}I_2$ (M+H) 397.9028, Found 397.9032.



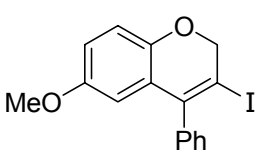
1-butyl-3,4-dihydro-2-iodonaphthalene. 2m Yellow oil. R_f = 0.8 (Hexane). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.4-7.1 (m, 4H), 3.1-2.4 (m, 6H), 1.7-1.3 (m, 4H), 1 (t, J = 7.1 Hz, 3H). ^{13}C-NMR ($CDCl_3$, 75 MHz): 140.0 (C), 135.6 (C), 133.4 (C), 127.4 (CH), 126.9 (CH), 126.5 (CH), 123.3 (CH), 100.9 (C), 40.1 (CH_2), 37.4 (CH_2), 30.4 (CH_2), 30.3 (CH_2), 22.7 (CH_2), 14.1 (CH_3) HRMS (IE) Calcd for $C_{14}H_{17}I$ (M+H) 312.0375, Found 312.0370.



1-((E)-3,4-diiodooct-3-enyl)benzene. 10 Yellow oil. R_f = 0.75 (Hexane). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.4-7.1 (m, 5H), 3.1-2.4 (m, 6H), 1.7-1.3 (m, 4H), 1

(t, J = 7.1 Hz, 3H).

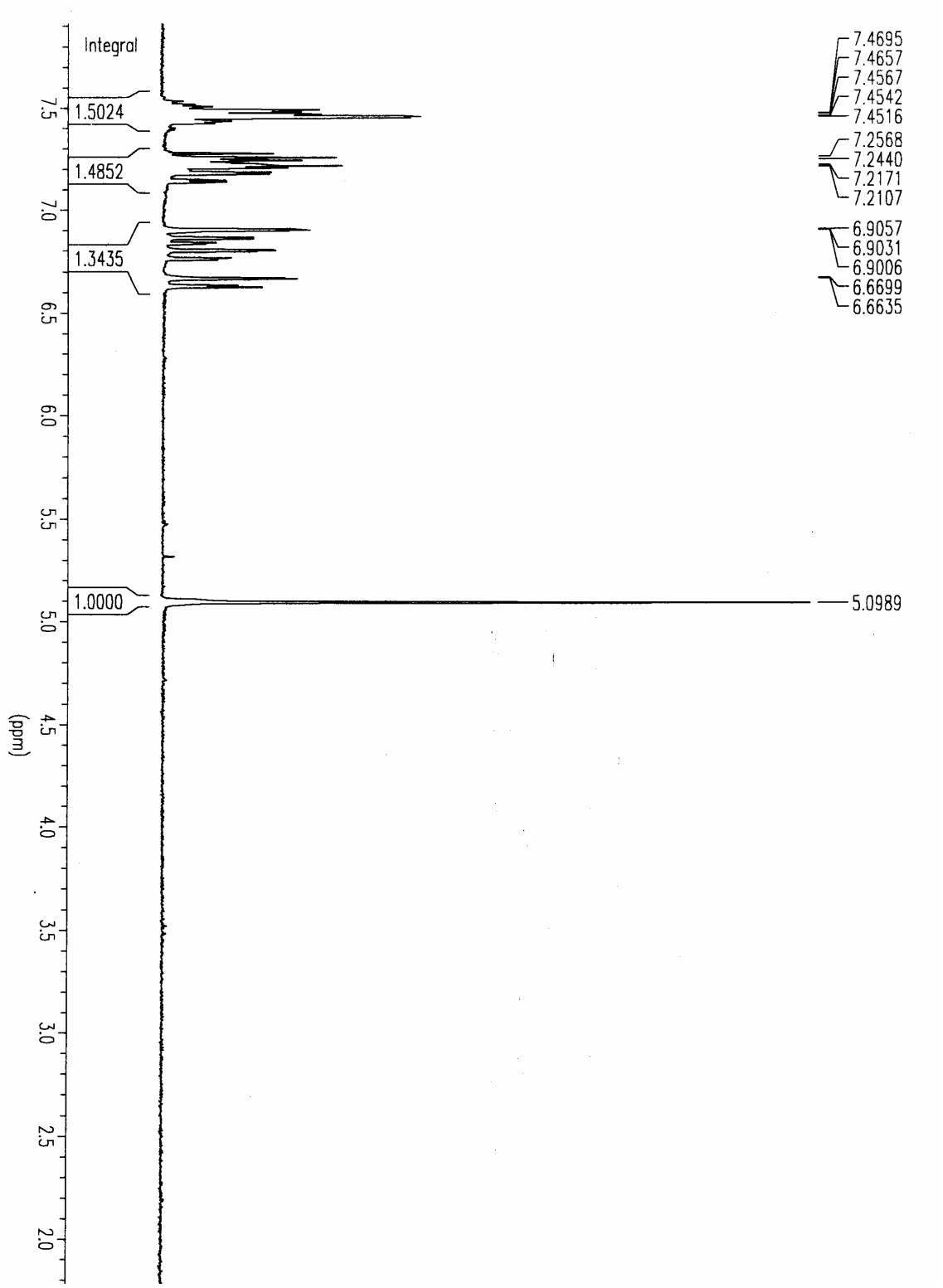
^{13}C-NMR ($CDCl_3$, 75 MHz): 139.8 (C), 128.7 (CH x 2), 128.1 (CH x 2), 126.1 (CH), 103.1 (C), 99.9 (C), 53.0 (CH_2), 50.5 (CH_2), 34.5 (CH_2), 30.2 (CH_2), 21.4 (CH_2), 14.0 (CH_3) HRMS (IE) Calcd for $C_{14}H_{18}I_2$ (M+H) 439.9488, Found 439.9481.



3-iodo-6-methoxy-4-phenyl-2H-chromene. 2n Yellow oil. R_f = 0.37 (Hexane: dichloromethane, 3:1). ^{1}H-NMR ($CDCl_3$, 300 MHz): 7.5 (m, 3H), 7.2 (m, 2H), 6.85 (d, J = 8.8 Hz, 1H), 6.75 (dd, J = 8.8, 2.9 Hz, 1H), 6.2 (d, J = 2.9 Hz, 1H), 5.1 (s, 2H), 3.6 (s, 3H).

^{13}C-NMR ($CDCl_3$, 75 MHz): 154.0 (C), 147.1 (C), 141.8 (C), 139.7 (C), 129.2 (CH x 2), 128.5 (CH x 2), 128.1 (CH), 124.9 (C), 116.3 (CH), 114.1 (CH), 112.3 (CH), 92.1 (C), 75.0 (CH_2), 55.5 (CH_3) HRMS (IE) Calcd for $C_{16}H_{13}IO_2$ (M+H) 363.9960, Found 363.9956. Anal. Calcd for $C_{16}H_{13}IO_2$: C, 52.77%; H, 3.60%, Found: C, 52.52%; H, 3.68%.

2a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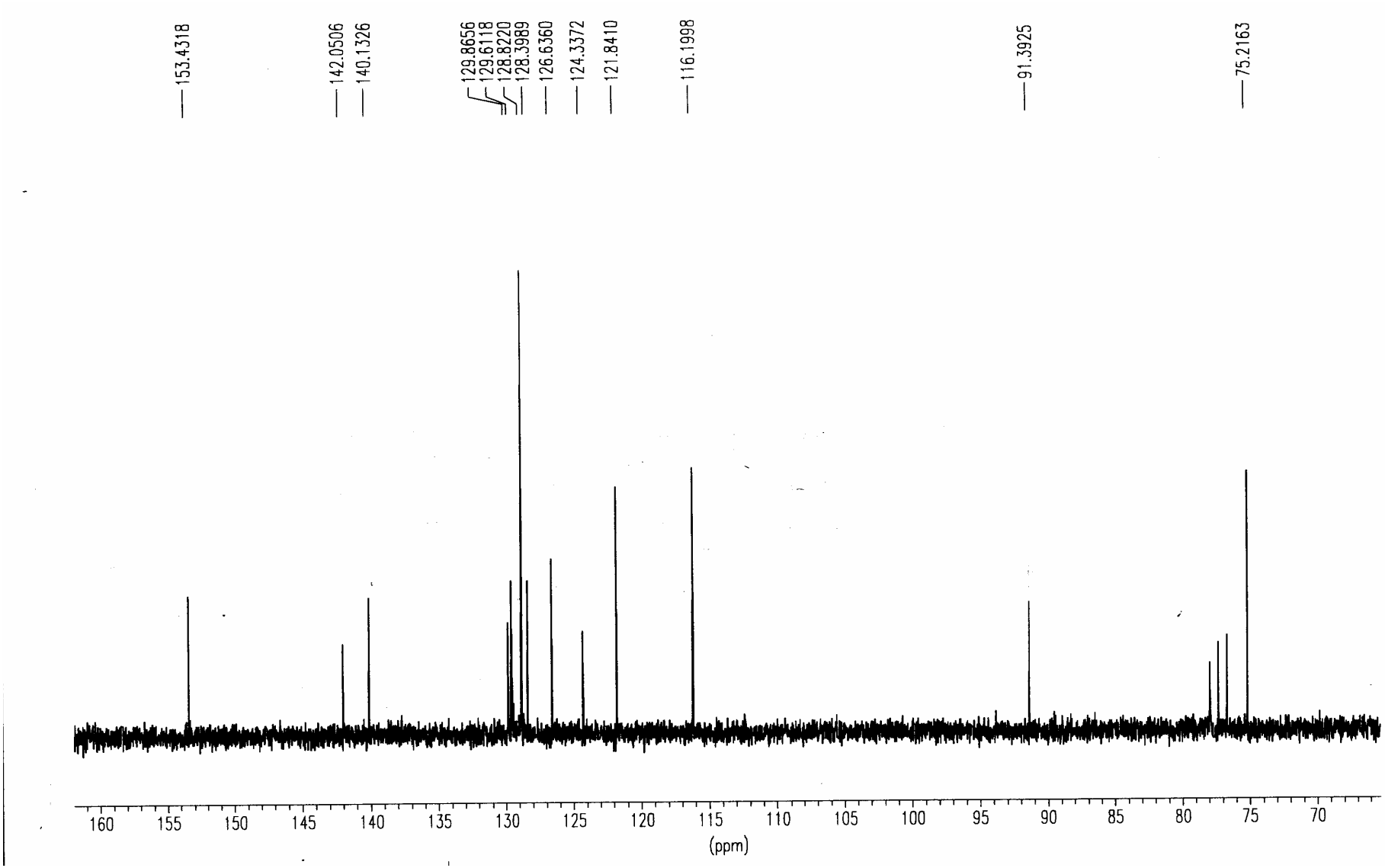
1.0000
7.4695
7.4657
7.4567
7.4542
7.4516
7.2568
7.2440
7.2171
7.2107
6.9057
6.9031
6.9006
6.6699
6.6635
5.0989
(ppm)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142.0506
140.1326
129.8656
129.6118
128.8220
128.3989
126.6360
124.3372
121.8410
116.1998
91.3925
75.2163
160
155
150
145
140
135
130
125
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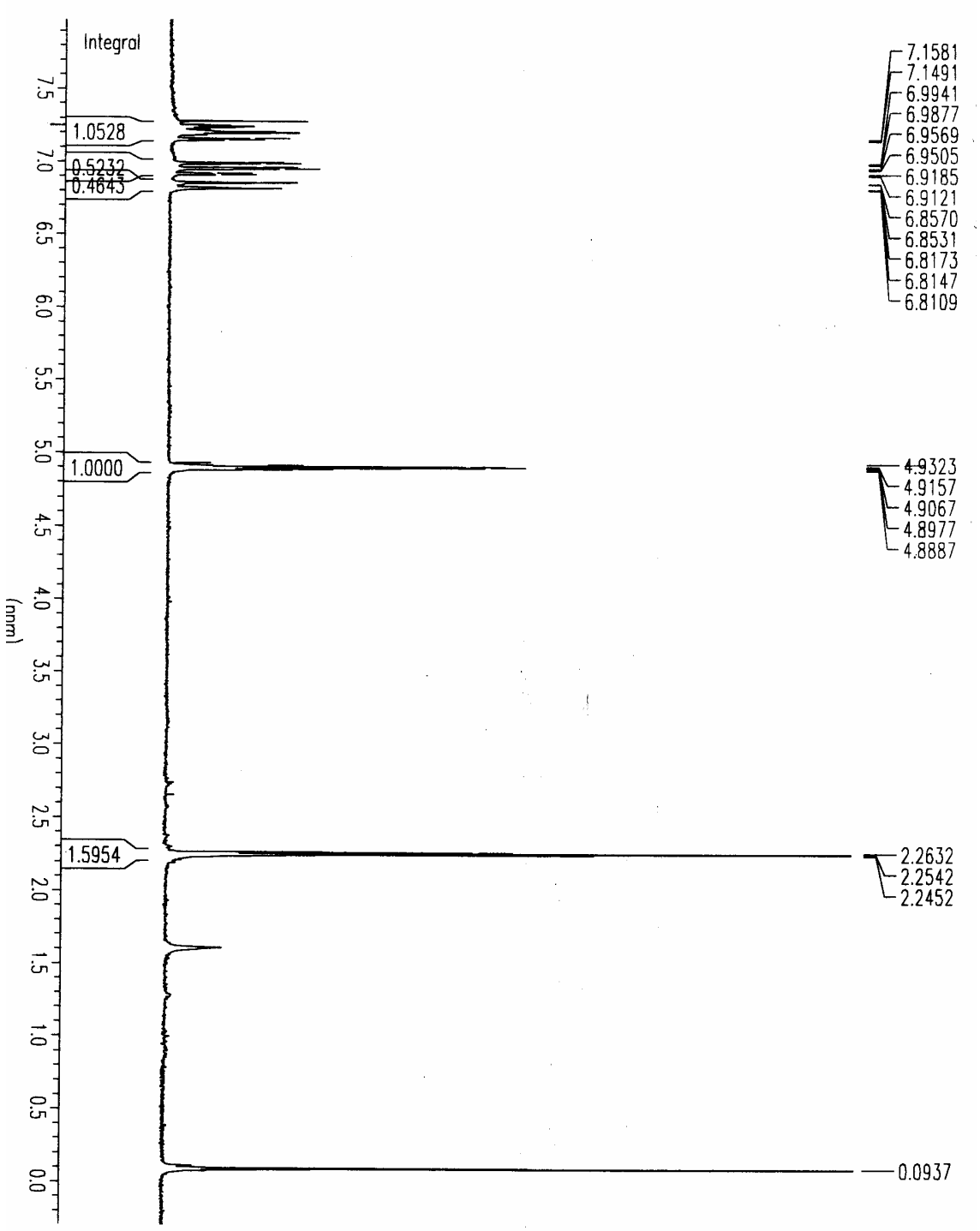
100
95
90
85
80
75
70
(ppm)

2b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7.1491
6.9941
6.9877
6.9569
6.9505
6.9185
6.9121
6.8570
6.8531
6.8173
6.8147
6.8109
4.9323
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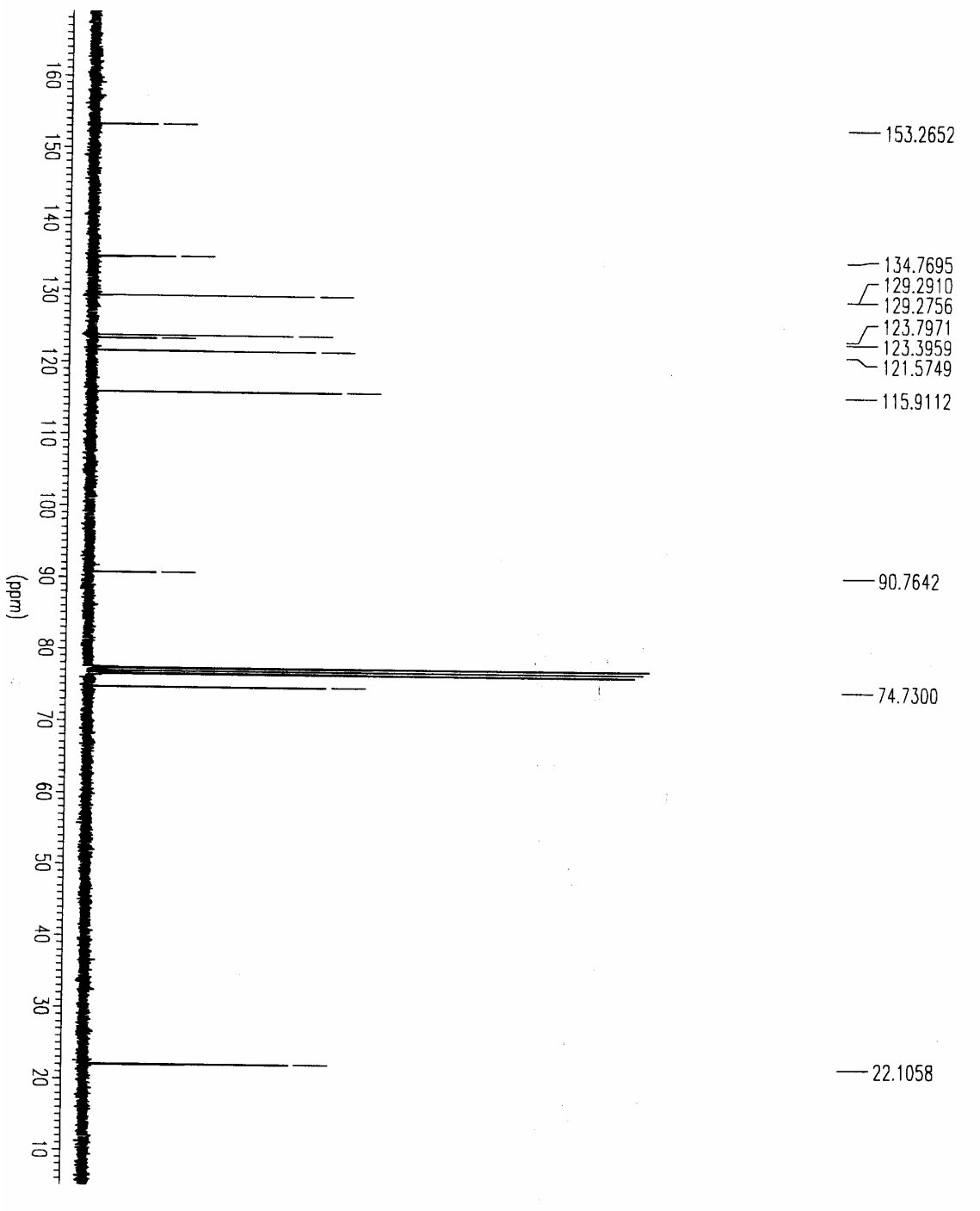
4.9067
4.8977
4.8887
2.2632
2.2542
2.2452
0.0937
(ppm)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134.7695
129.2910
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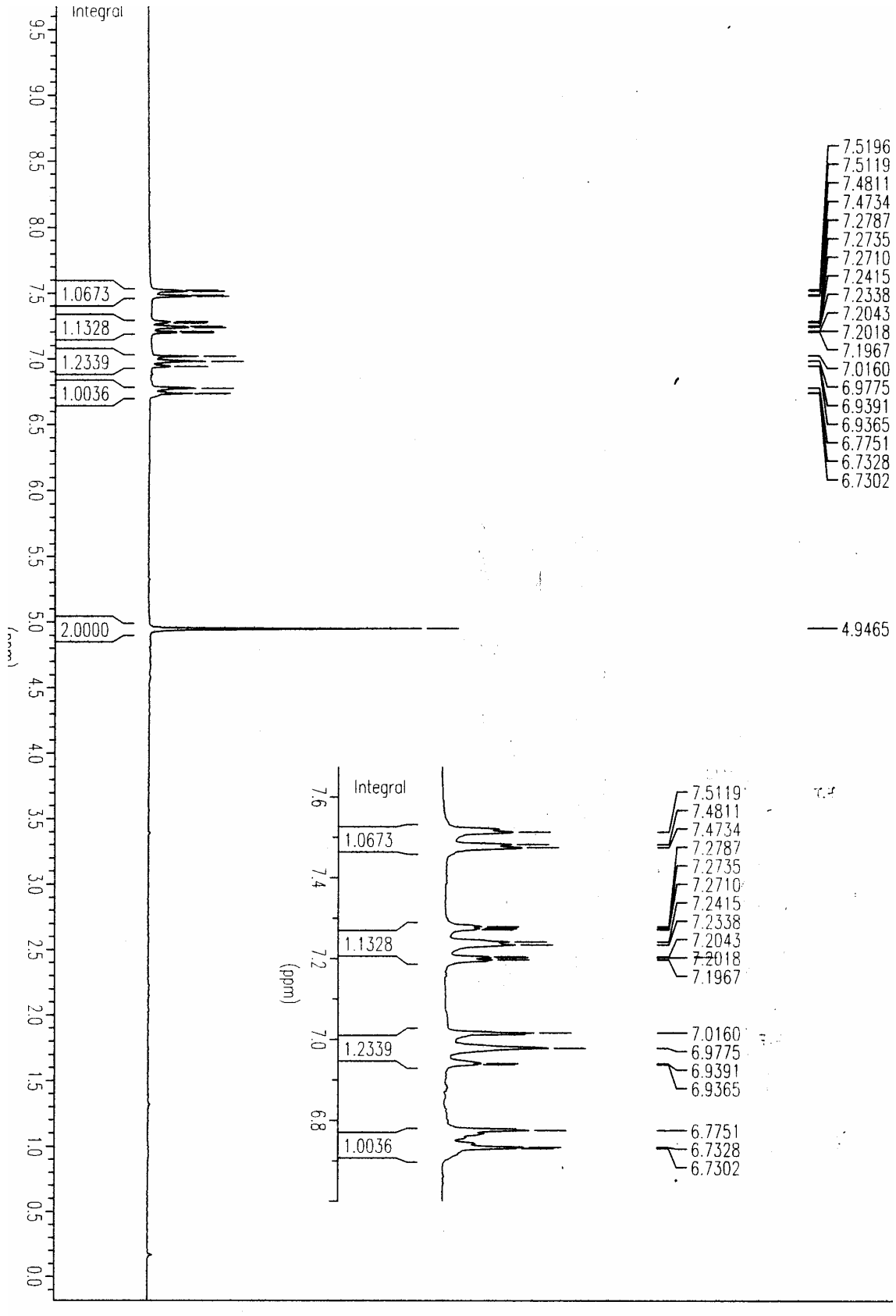
123.7971
123.3959
121.5749
115.9112
90.7642
74.7300
22.1058
(ppm)

2c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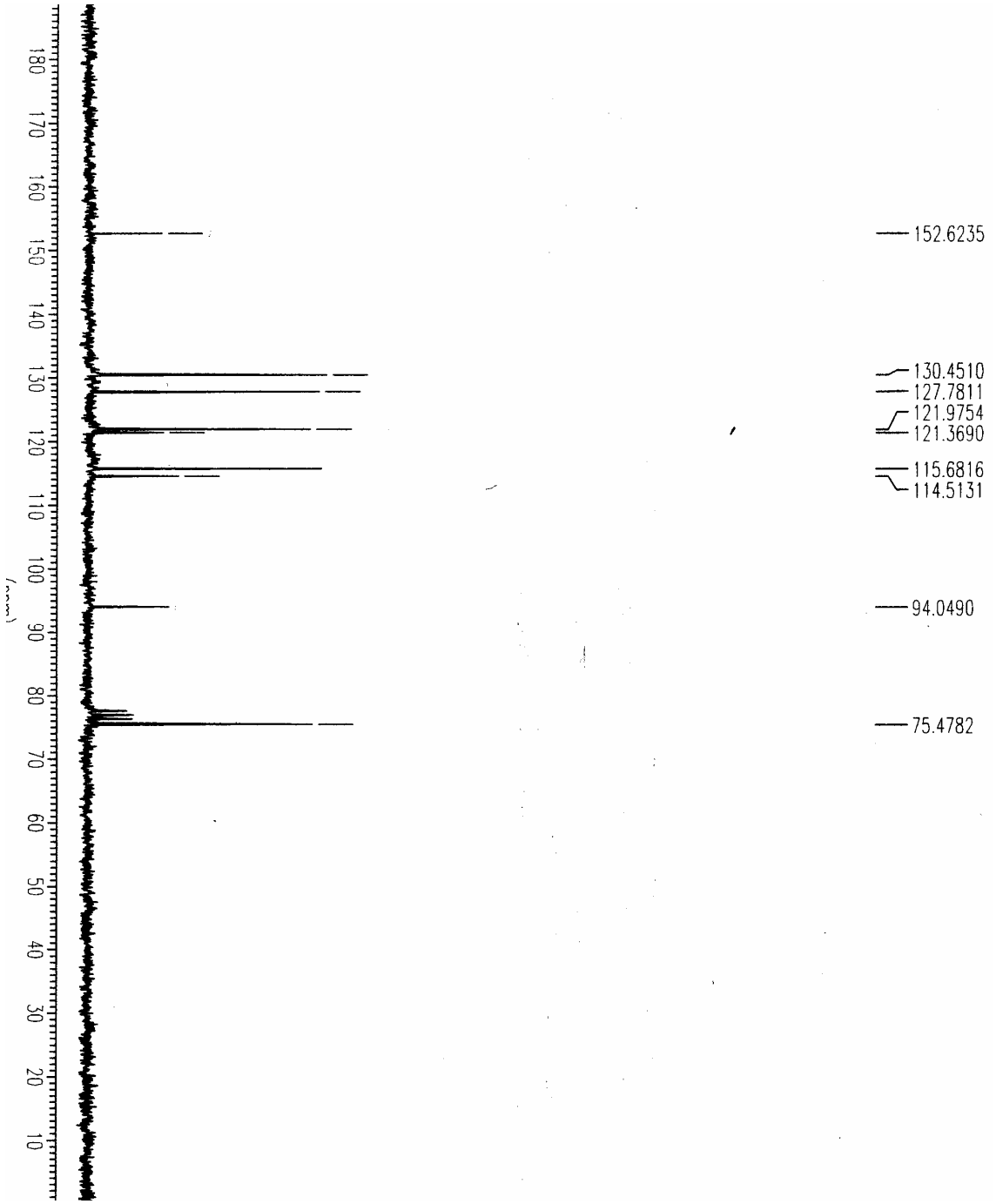
7.5119
7.4811
7.4734
7.2787
7.2735
7.2710
7.2415
7.2338
7.2043
7.2018
7.1967
7.0160
6.9775
6.9391
6.9365
6.7751
6.7328
6.7302
4.9465
(ppm)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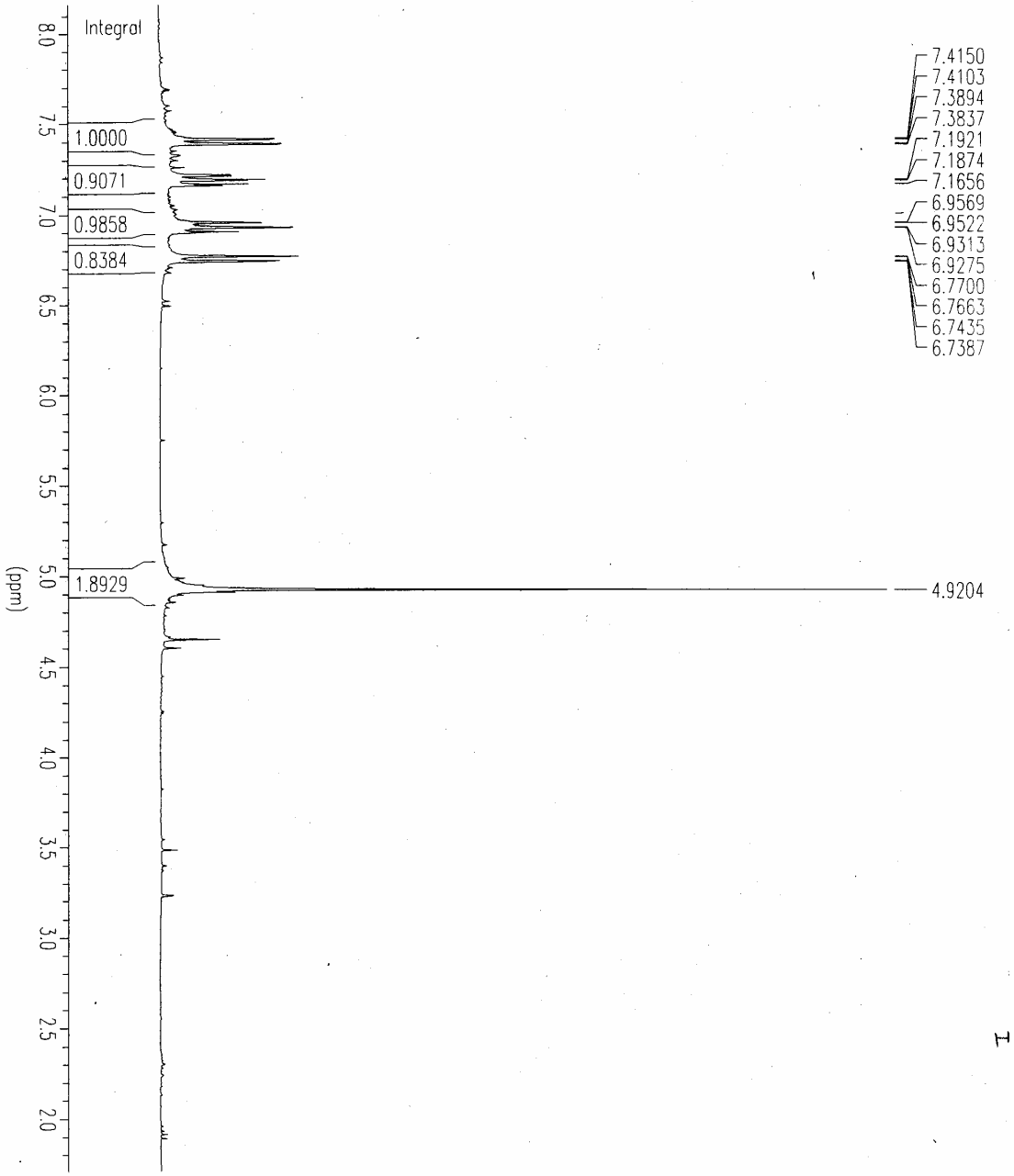
130.4510
127.7811
121.9754
121.3690
115.6816
114.5131
94.0490
75.4782
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10

2d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0.9858
0.8384
1.8929
4.9204
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7.4103
7.3894
7.3837
7.1921
7.1874
7.1656
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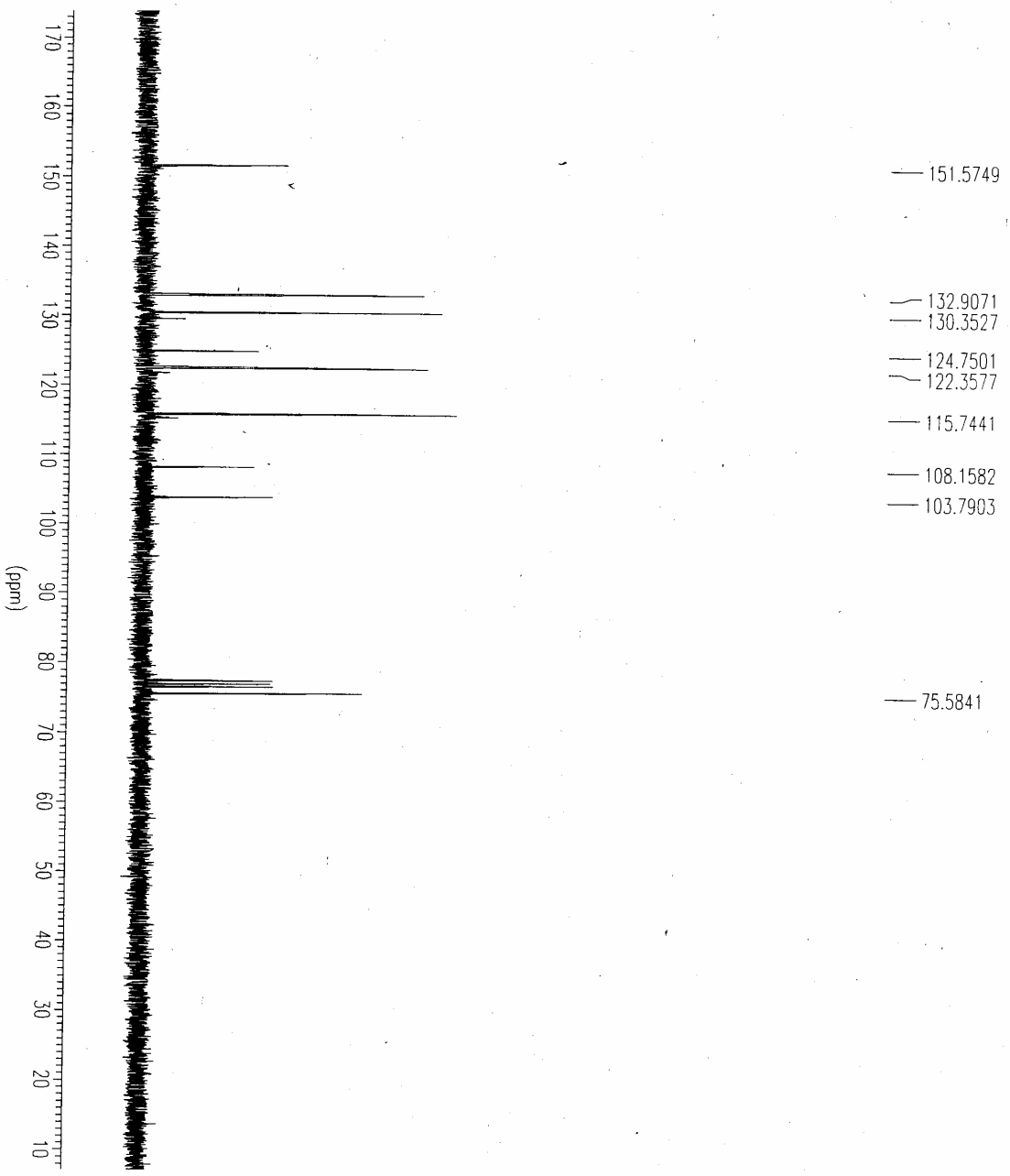
6.9522
6.9313
6.9275
6.7700
6.7663
6.7435
6.7387
(ppm)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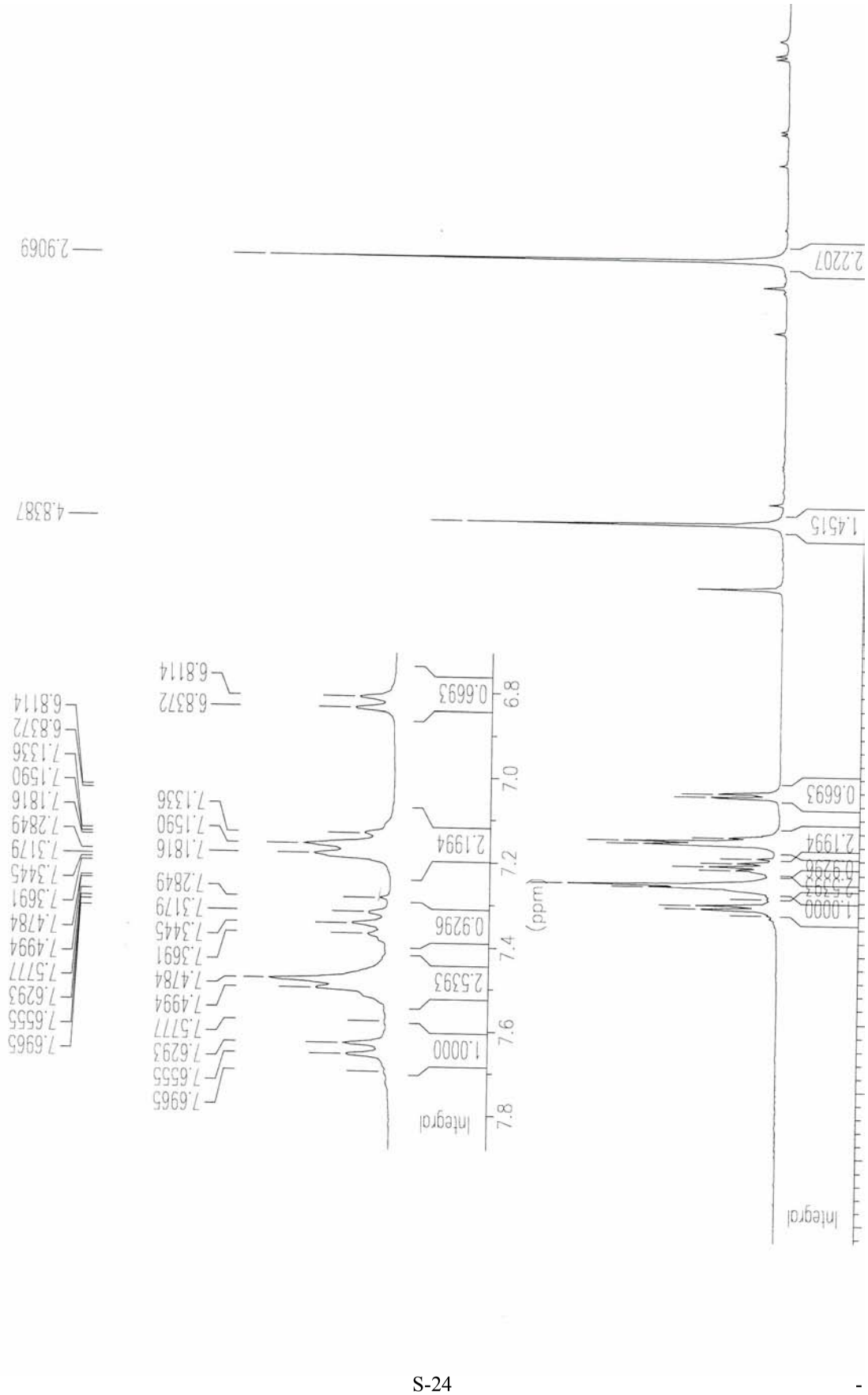
130.3527
124.7501
122.3577
115.7441
108.1582
103.7903
75.5841
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
(ppm)

2e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2.2207
4.8387
1.4515
0.6693
2.1994
0.9296
2.5393
1.0000
Integral
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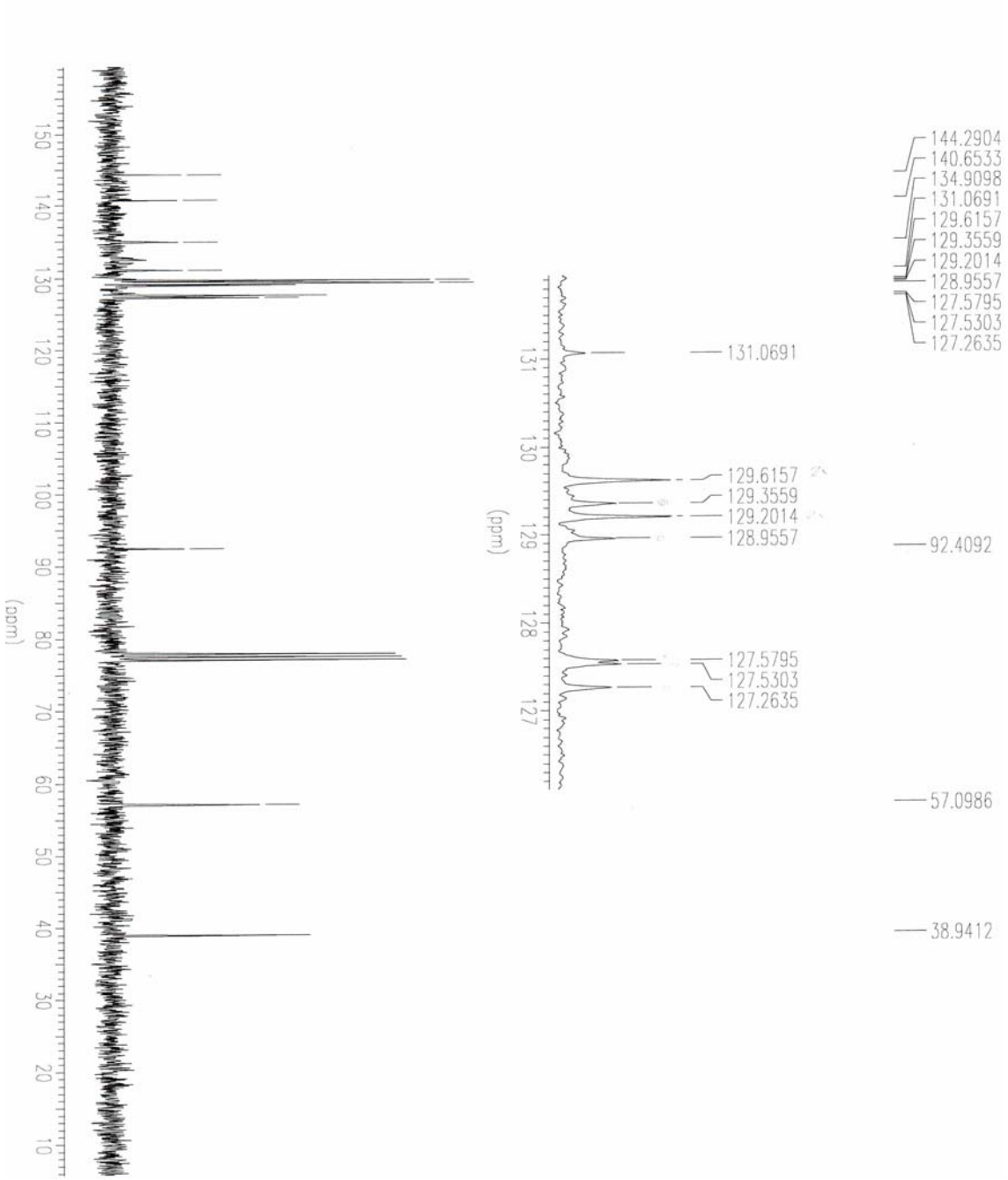
7.6
7.4
7.2
7.0
6.8
(ppm)
6.8114
6.8372
7.6965
7.6555
7.6293
7.5777
7.4994
7.4784
7.3691
7.3445
7.3179
7.2849
7.1816
7.1590
7.1336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129.6157
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129.2014
128.9557
127.5795
127.5303
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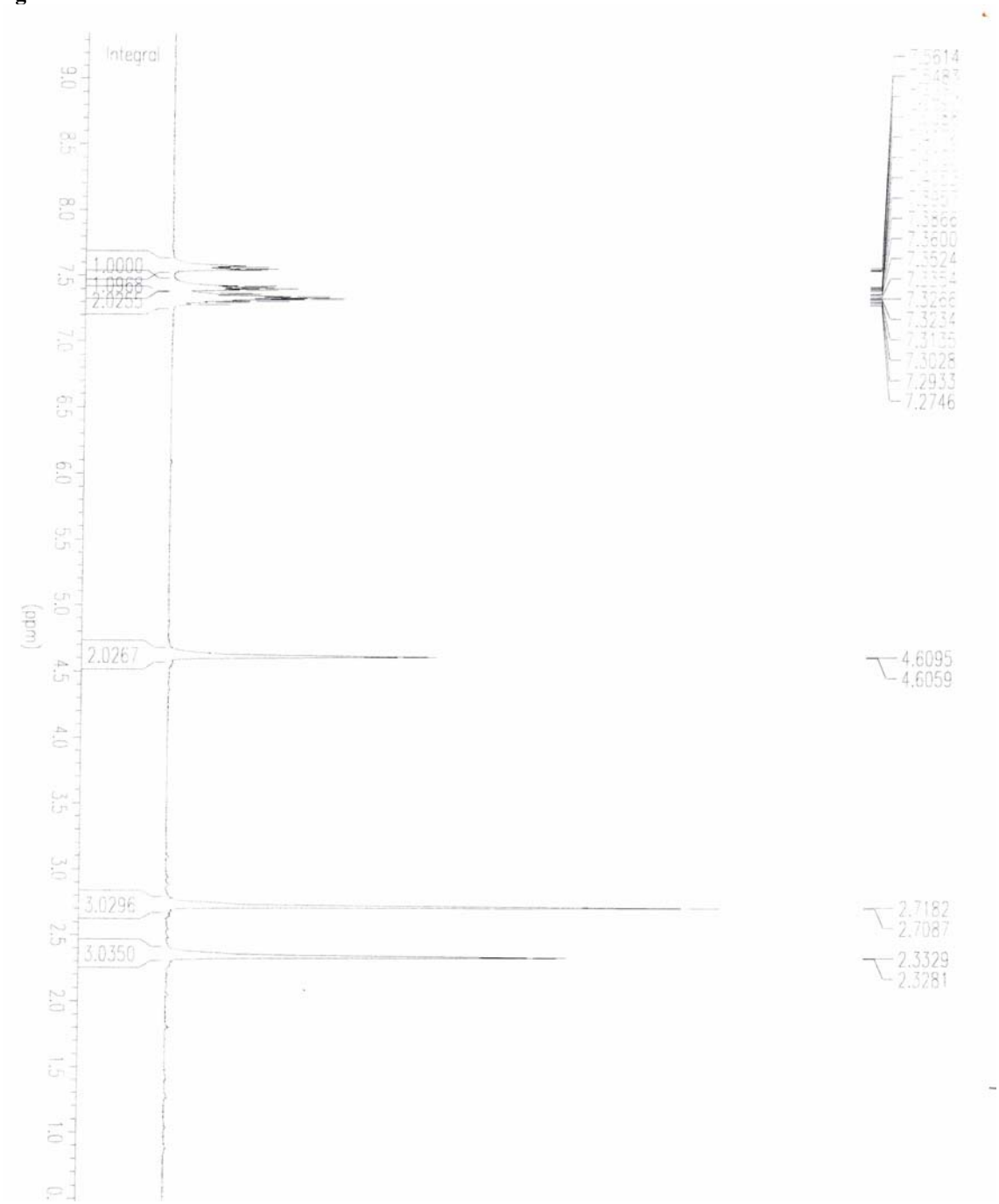
131.0691
129.6157
129.3559
129.2014
128.9557
127.5795
127.5303
127.2635
92.4092
57.0986
38.9412
(ppm)
(ppm)

2g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3.0350
(ppm)
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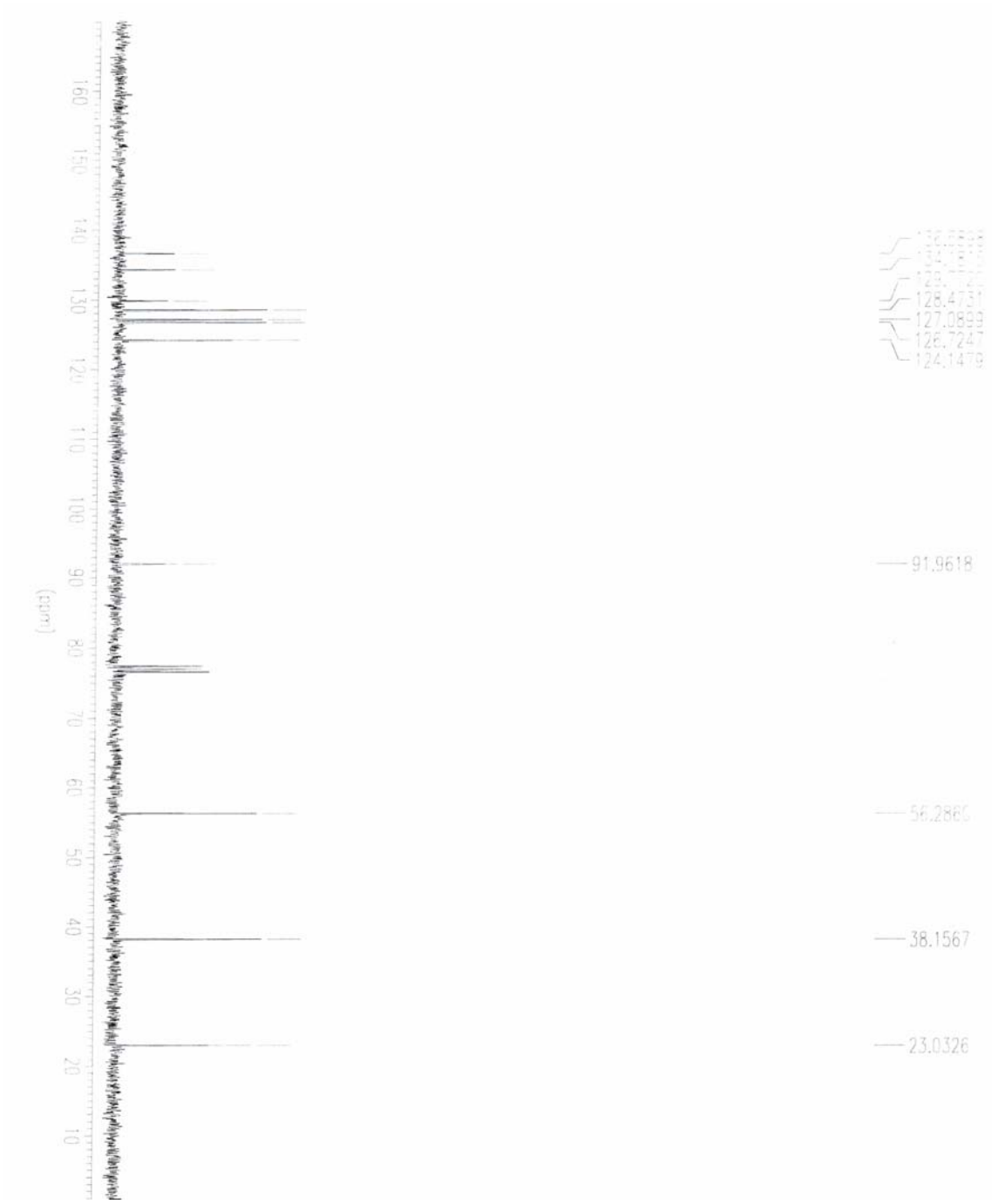
7.3524
7.3266
7.3234
7.3028
7.2933
7.2746
4.6095
4.6059
2.7182
2.7087
2.3329
2.3281


160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
(ppm)
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127.0899
125.7247
124.1479
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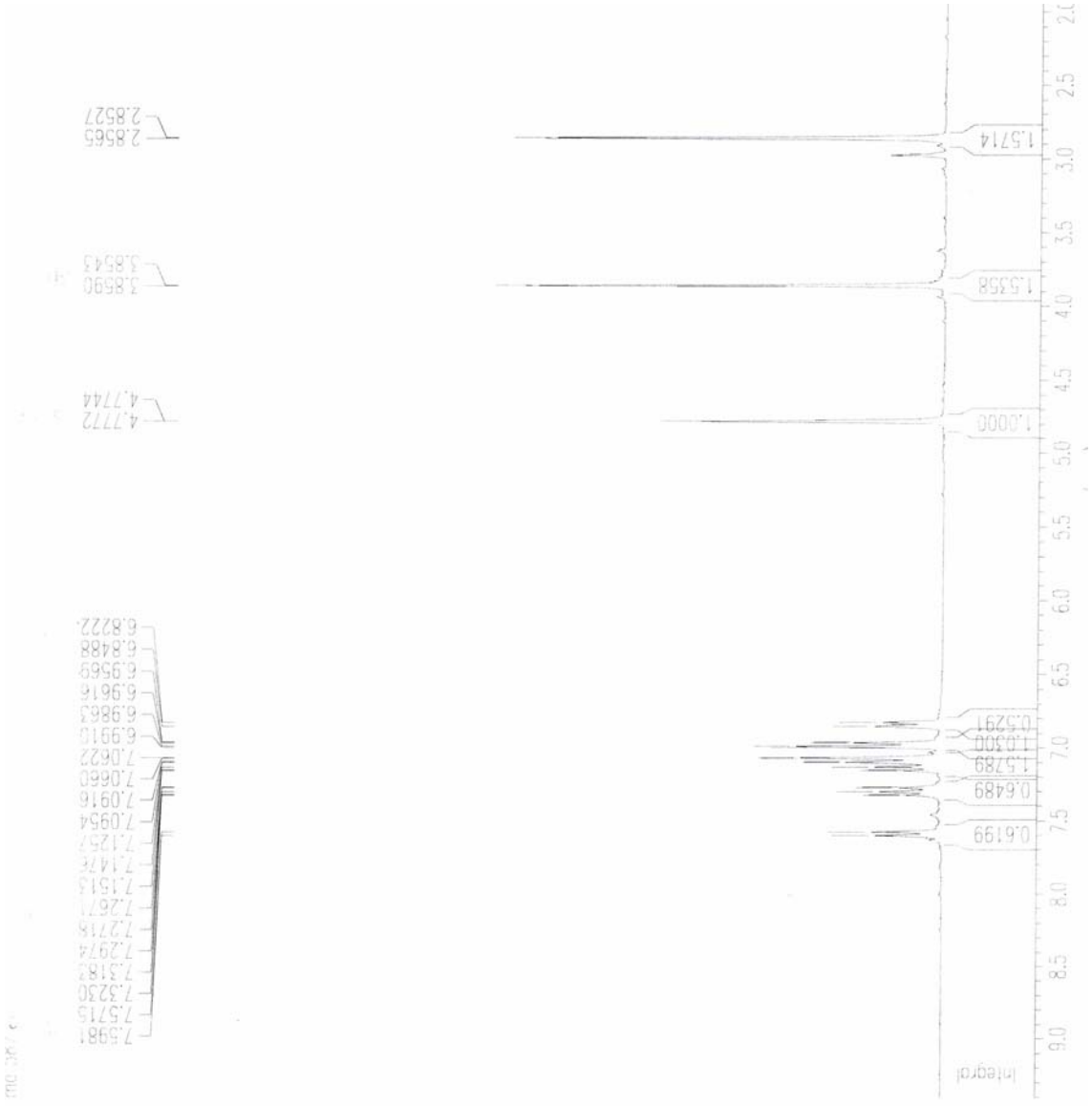
56.2886
38.1567
23.0326

2f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2.8527
3.8590
3.8543
4.7772
4.7744
7.5981
7.5715
7.3230
7.3182
7.2974
7.2719
7.2671
7.1513
7.1476
7.1257
7.0954
7.0916
7.0660
7.0622
6.9910
6.9863
6.9616
6.9569
6.8488
6.8222
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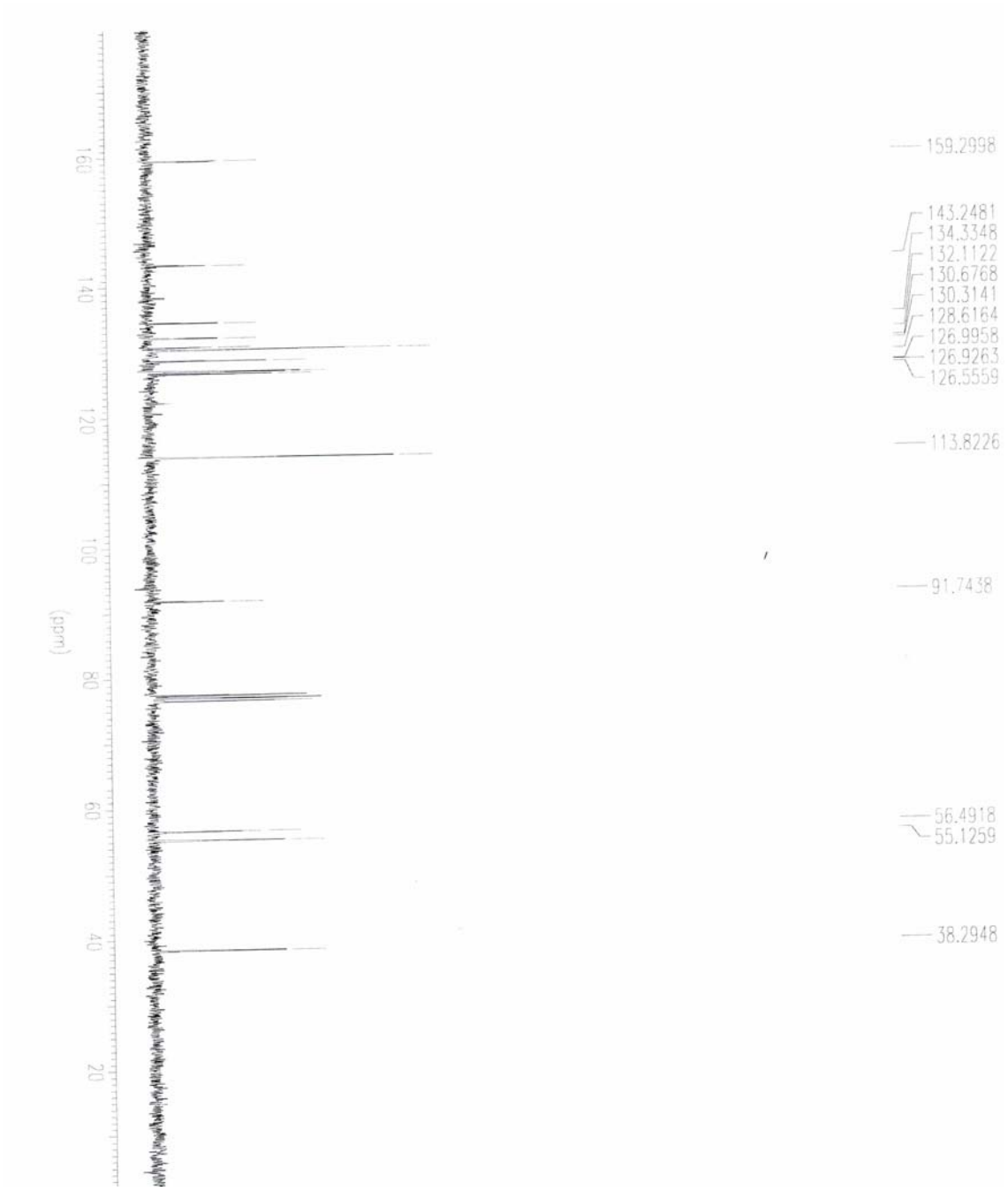
1.5358
1.0000
0.5291
1.0300
1.5789
0.6489
0.6199
Integral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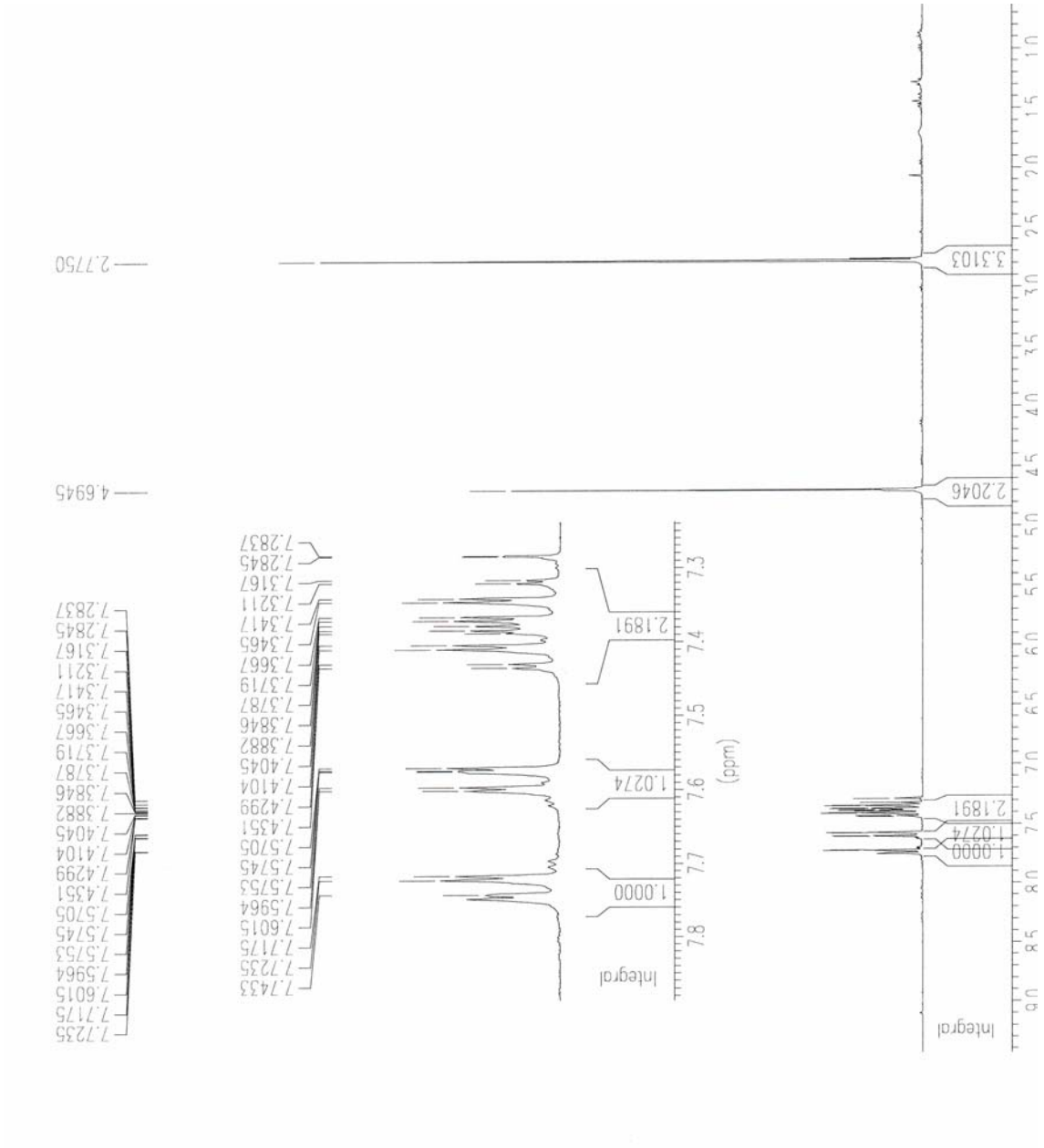
143.2481
134.3348
132.1122
130.6768
130.3141
128.6164
126.9958
126.9263
126.5559
113.8226
91.7438
56.4918
55.1259
38.2948
160
140
120
100
80
60
40
20
(ppm)

2h

2i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2.1891
1.0274
1.0000
Integral
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7.3167
7.3211
7.3417
7.3465
7.3667
7.3719
7.3787
7.3846
7.3882
7.4045
7.4104
7.4299
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7.5745
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7.5964
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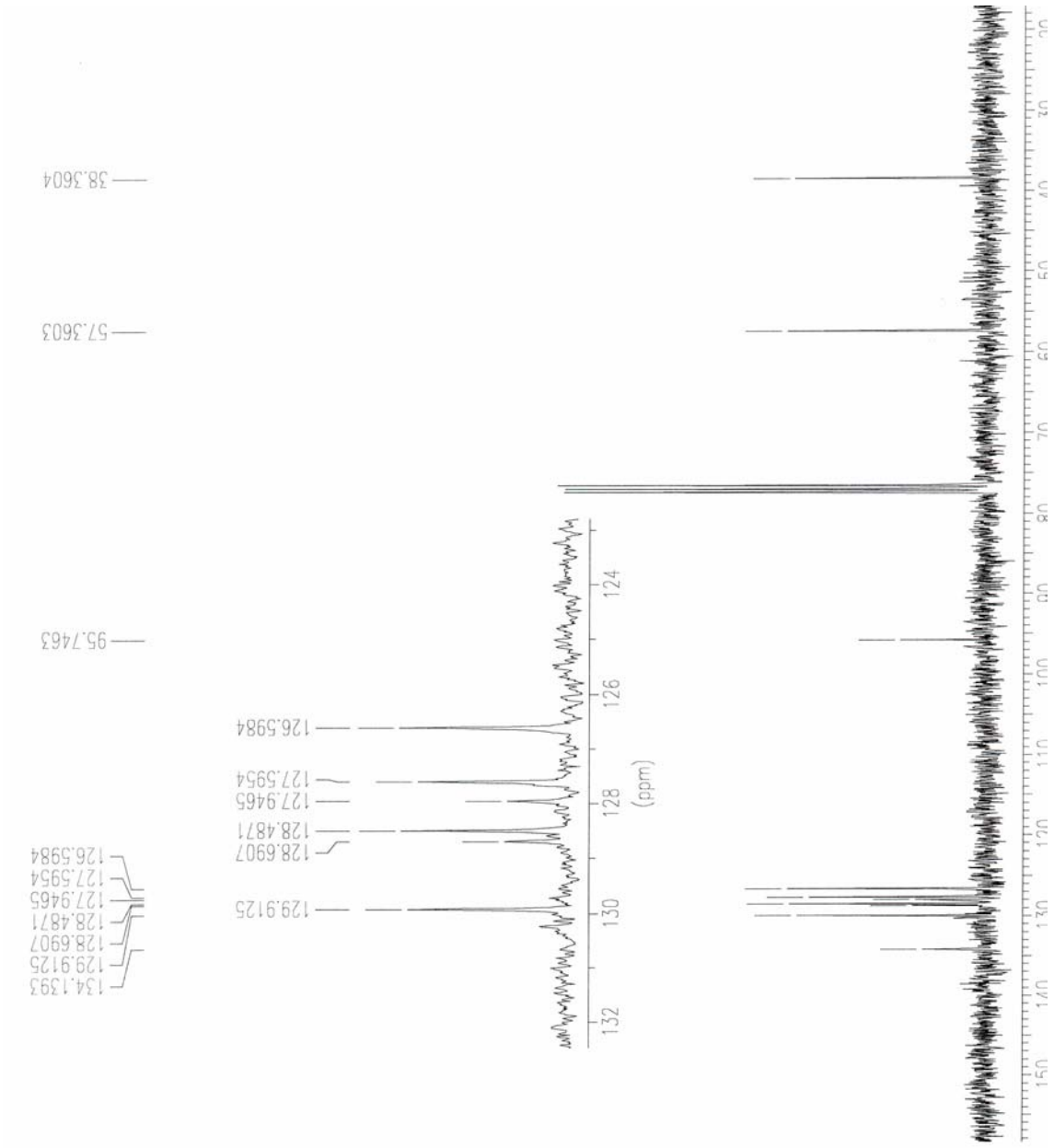
7.7175
7.7235
7.7433
(ppm)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127.5954
127.9465
128.4871
128.6907
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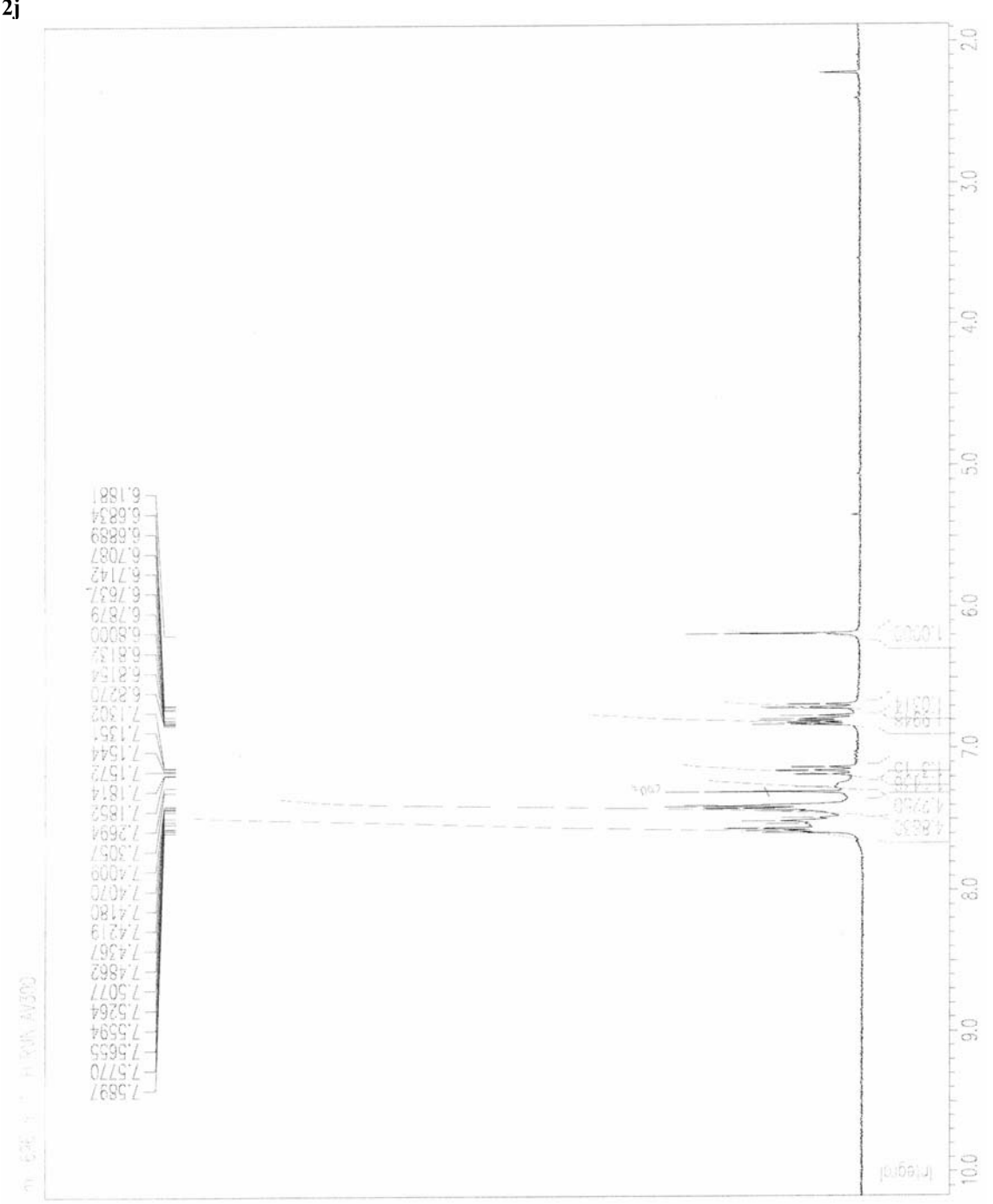
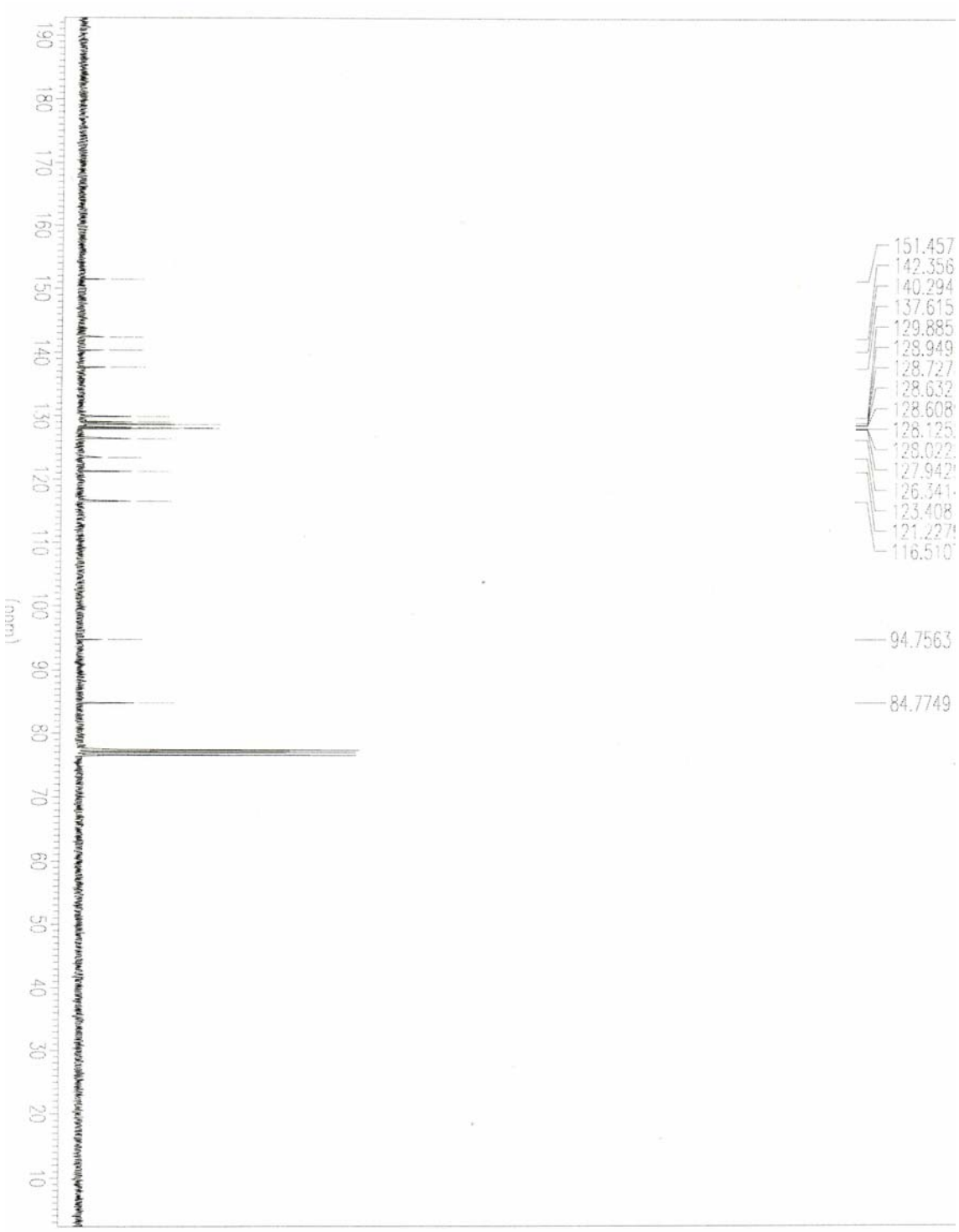
128.4871
128.6907
129.9125
(ppm)

2j

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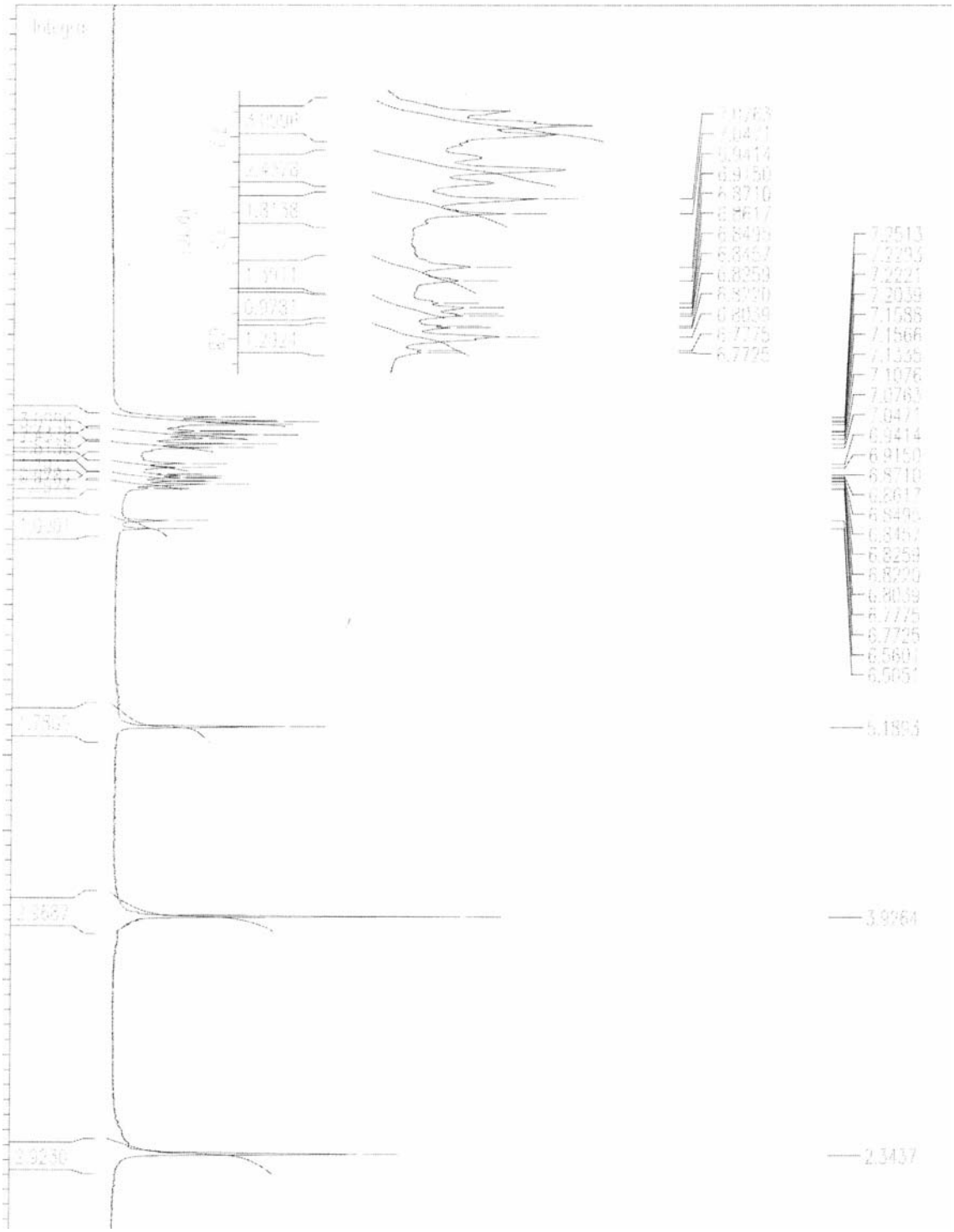
128.632
128.608
128.125
128.022
127.942
126.341
123.408
121.227
116.510
94.7563
84.7749
(ppm)

4a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7.2221
7.2039
7.1585
7.1566
7.1335
7.1076
7.0763
7.0471
6.9414
6.9150
6.8710
6.8617
6.8495
6.8457
6.8259
6.8220
6.8039
6.7775
6.7725
6.5601
6.5051
5.1854
3.9764
2.3437

158.7546
153.9951
138.4384
136.1457
133.7273
131.9819
131.0574
129.7632
129.4230
128.6168
127.4483
127.1007
126.6347
125.3553
124.1868
121.7683
115.3636
113.7735
66.7216
57.3734
21.0602
138.4384
136.1457
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129.4230
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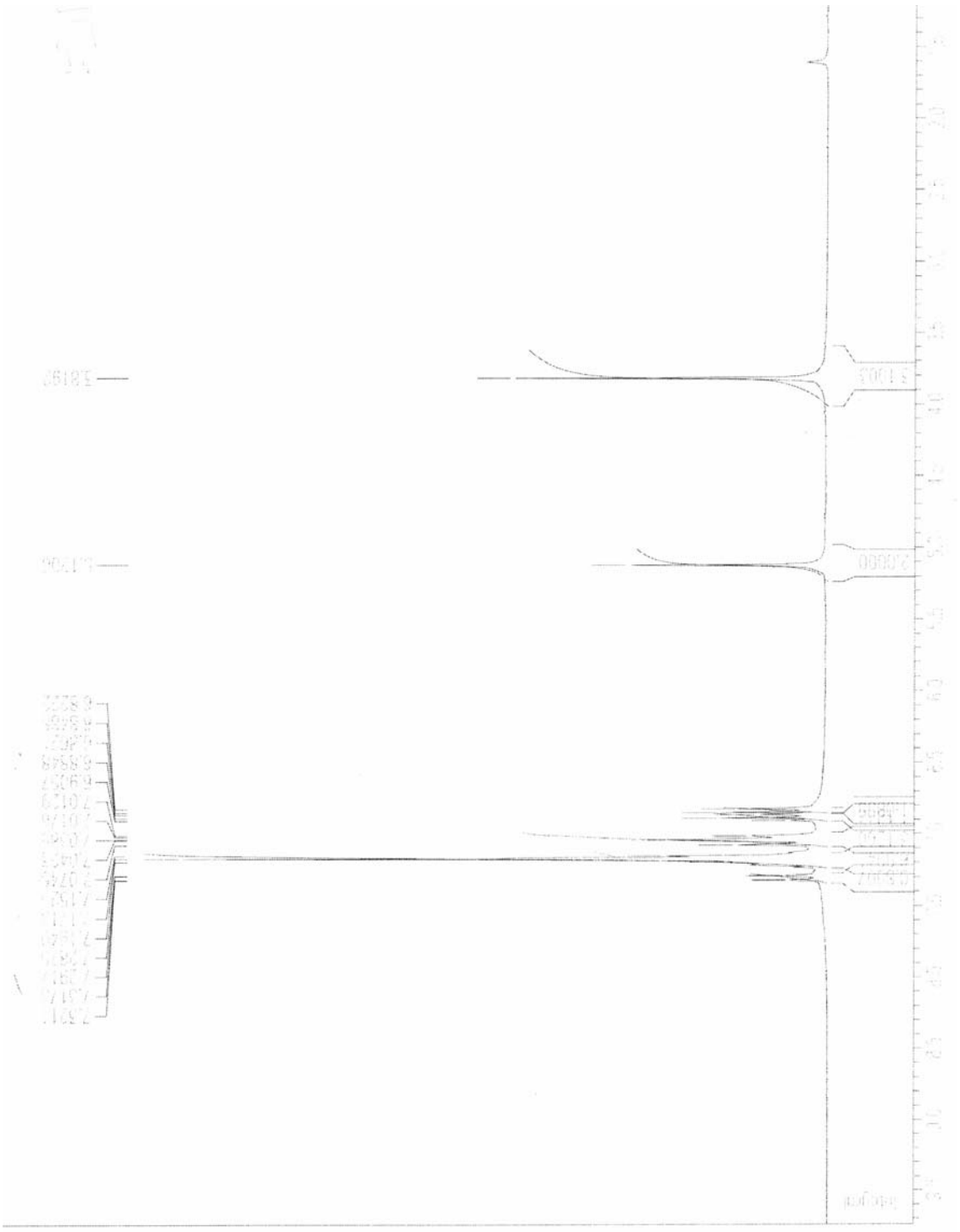
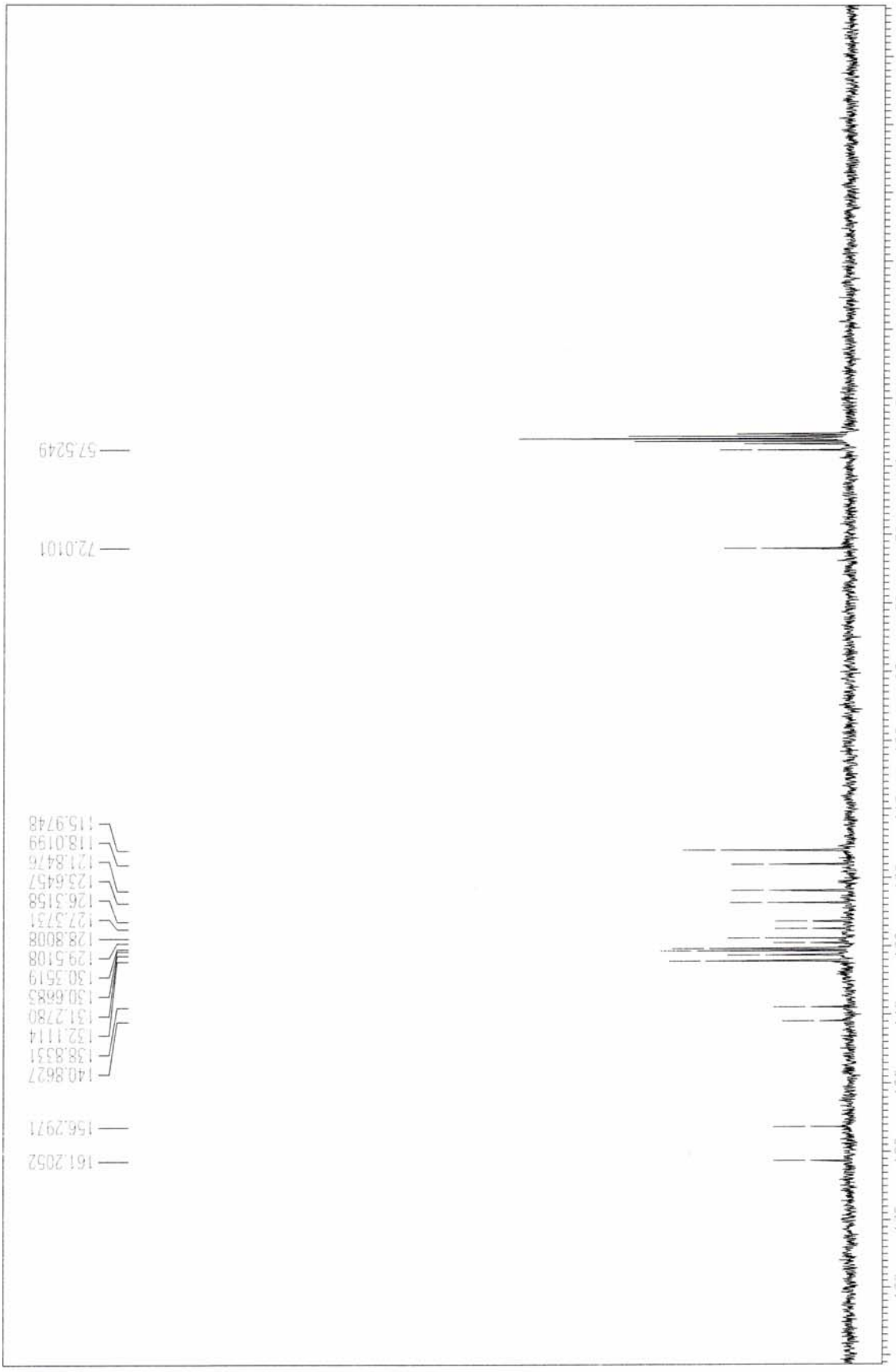
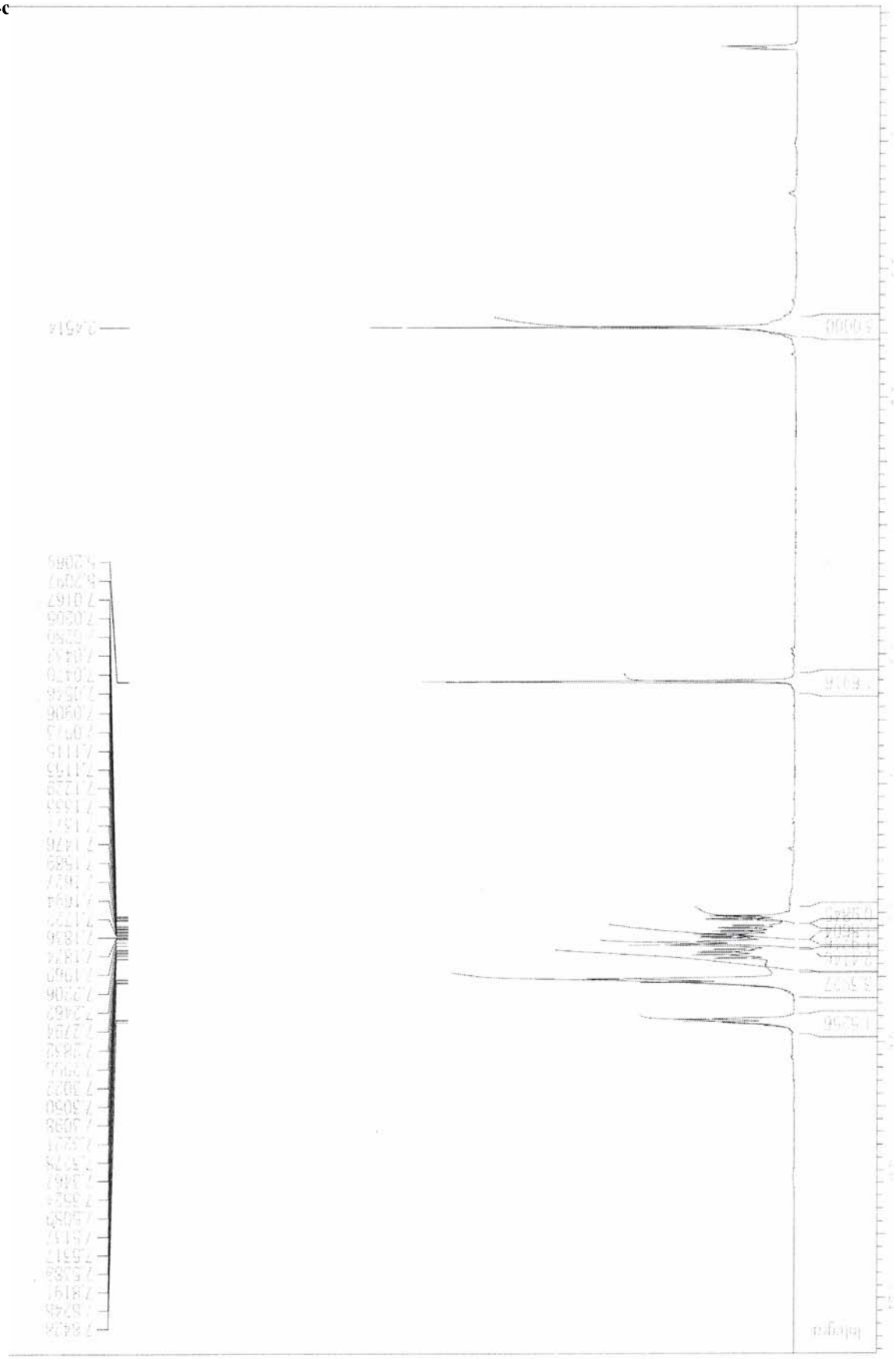
121.7683
140
136
132
128
124
120
(ppm)
180
160
140
120
100
80
60
40
20
0

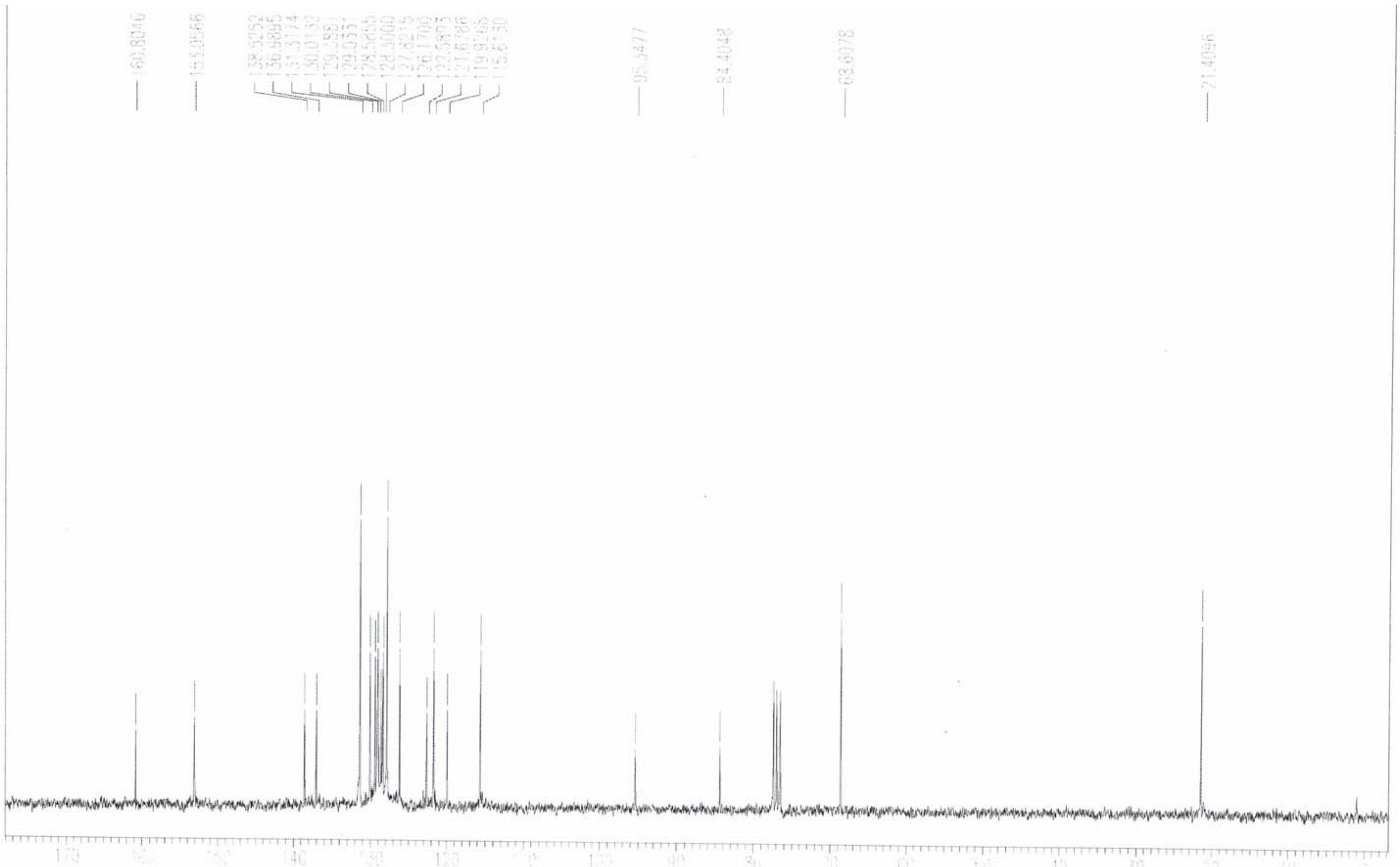
4b



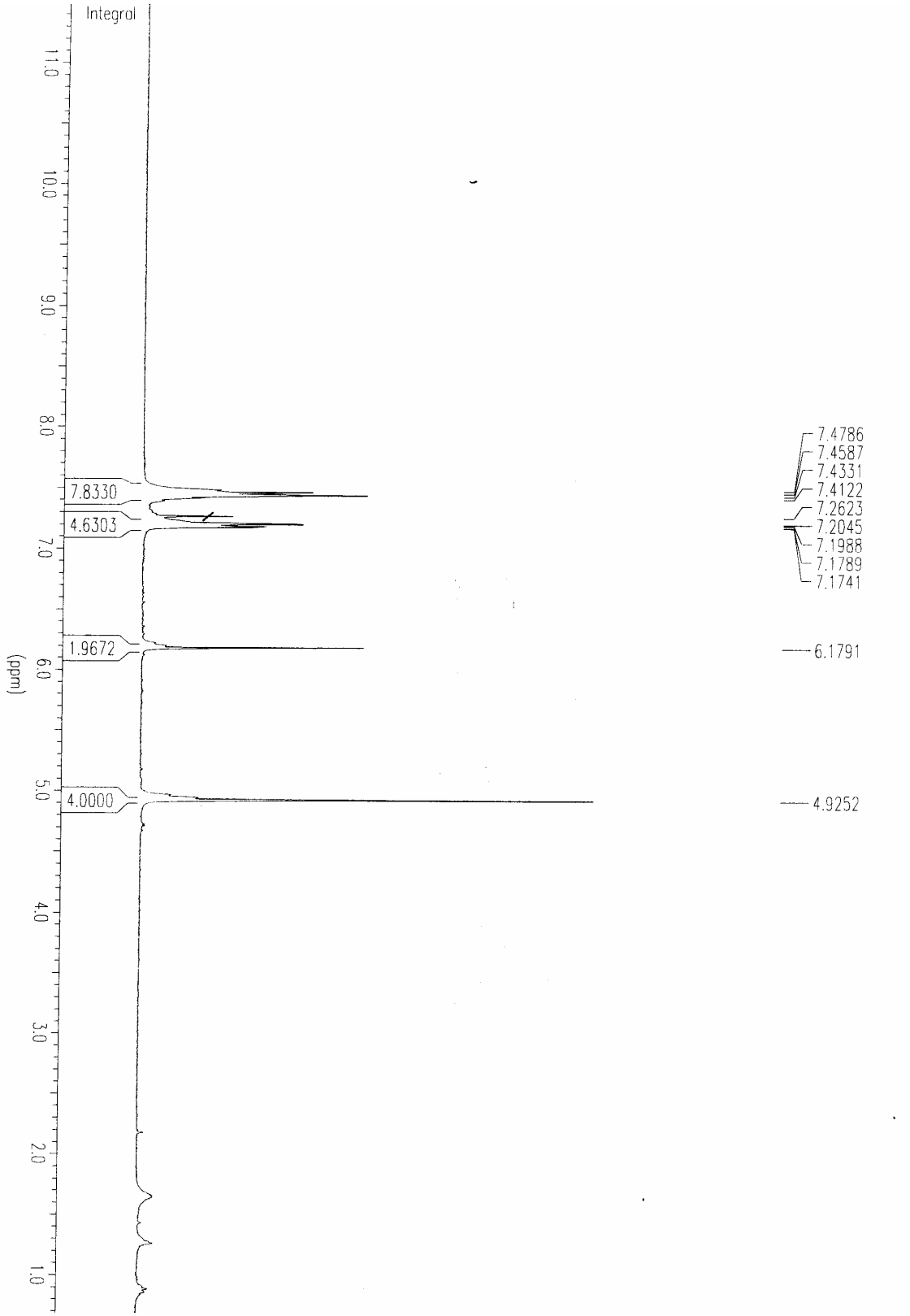

57.5249
72.0101
115.9748
118.0199
121.8476
123.6457
126.3158
127.3731
128.8008
129.5108
130.3519
130.6885
131.2780
132.1114
138.8331
140.8627
156.2971
161.2052

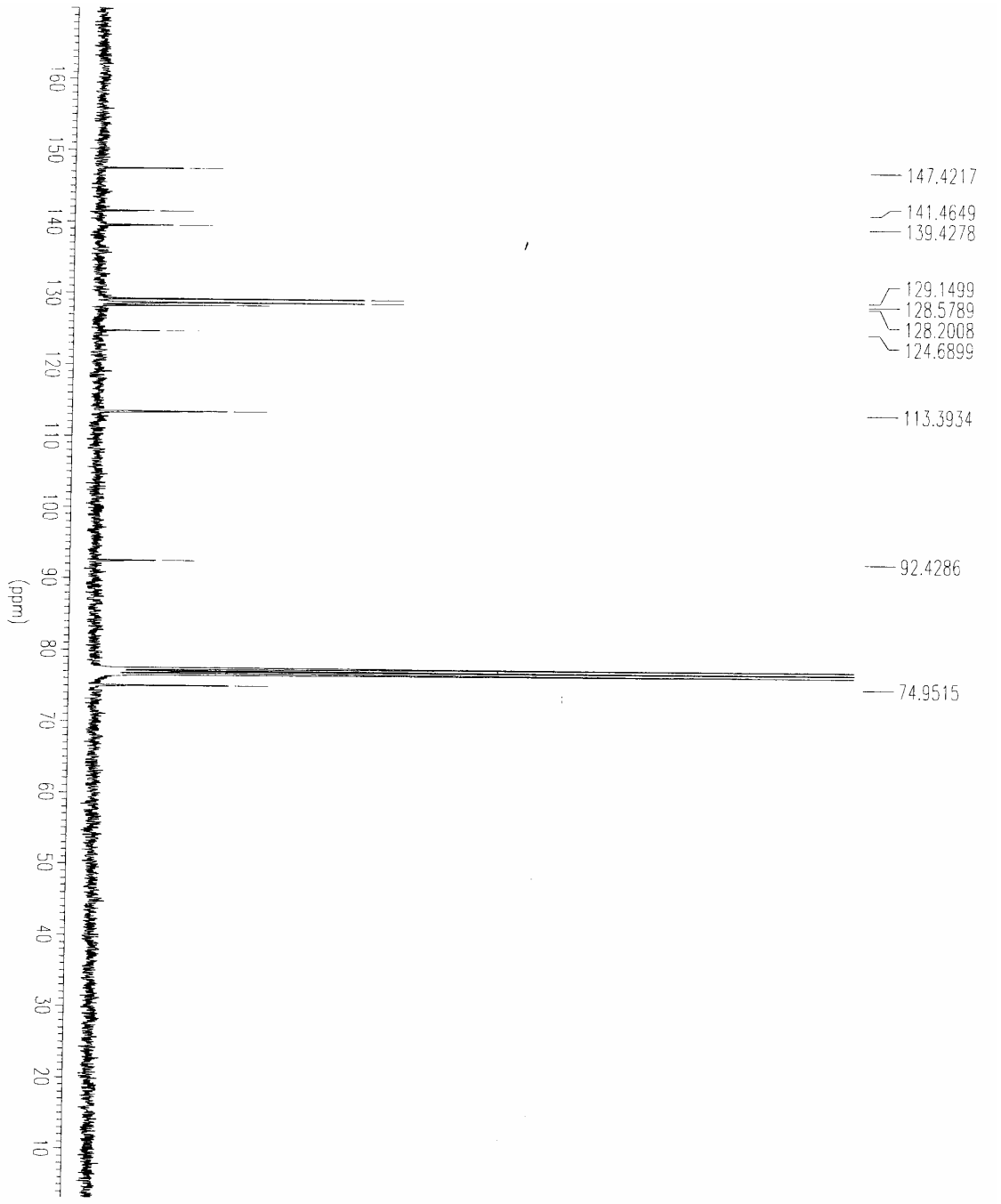
4c



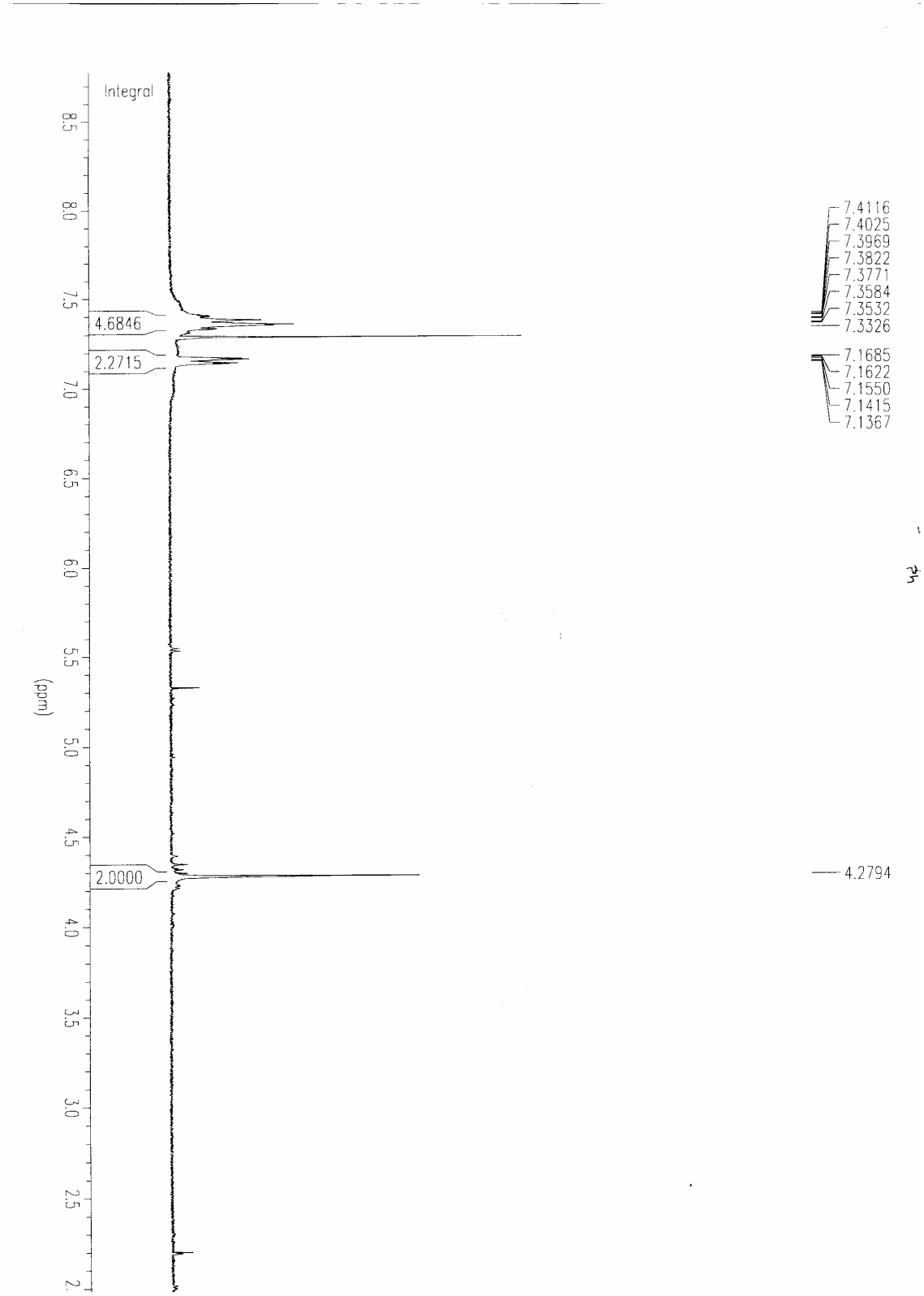

160.8046
153.0566
138.5252
136.9885
131.3774
130.0132
84.4048
68.6078
21.4096

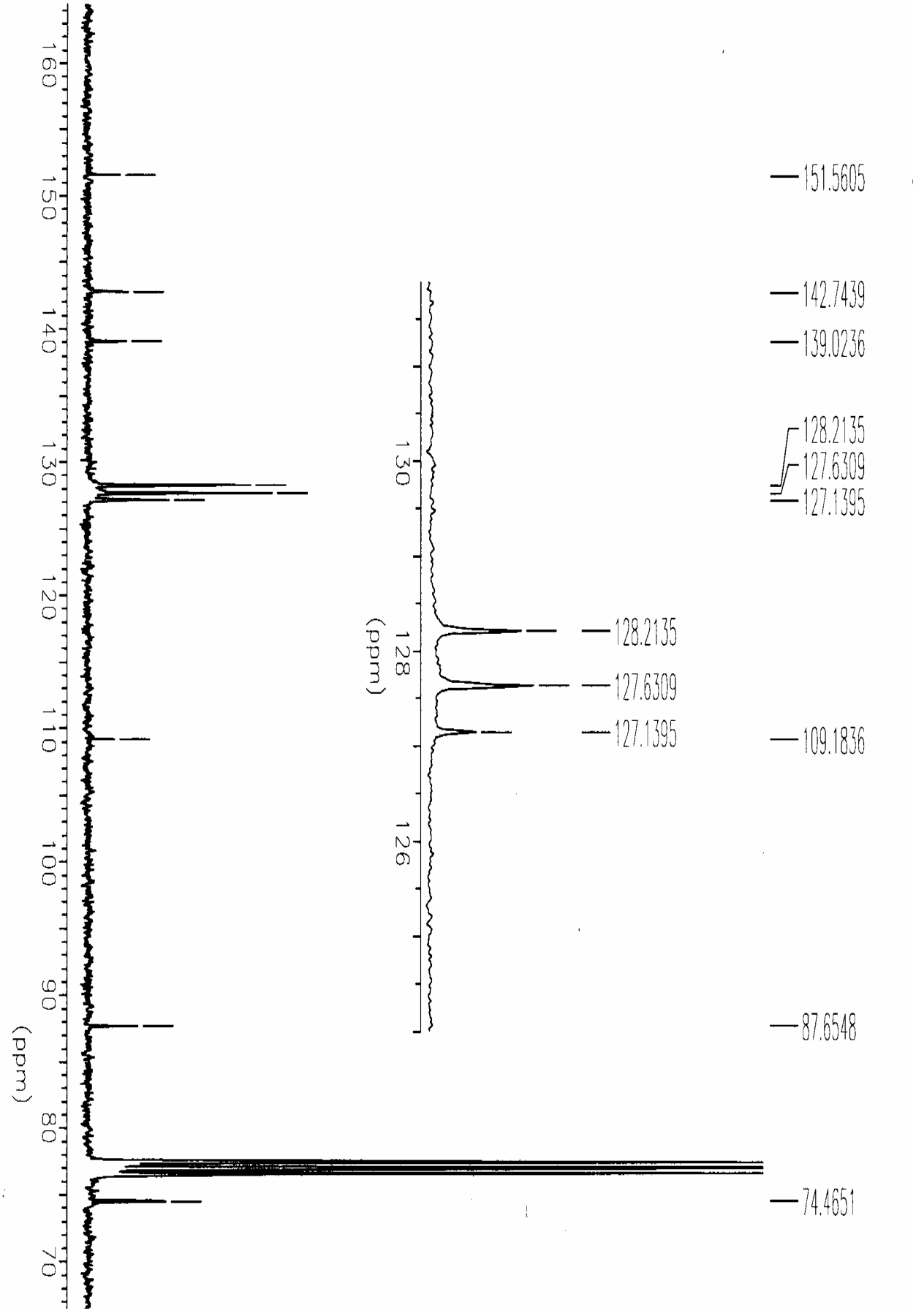
6


Integral
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
(ppm)
7.8330
4.6303
1.9672
4.0000
7.4786
7.4587
7.4331
7.4122
7.2623
7.2045
7.1988
7.1789
7.1741
6.1791
4.9252

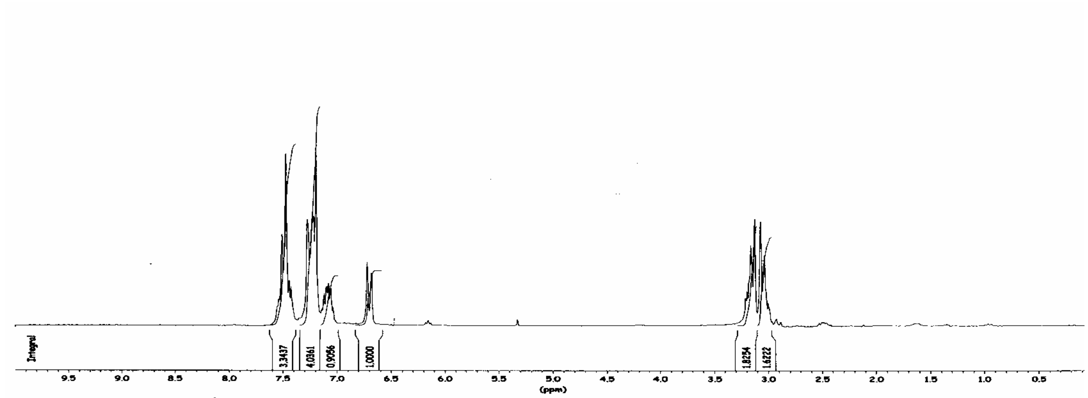

147.4217
141.4649
139.4278
129.1499
128.5789
128.2008
124.6899
113.3934
92.4286
74.9515
(ppm)

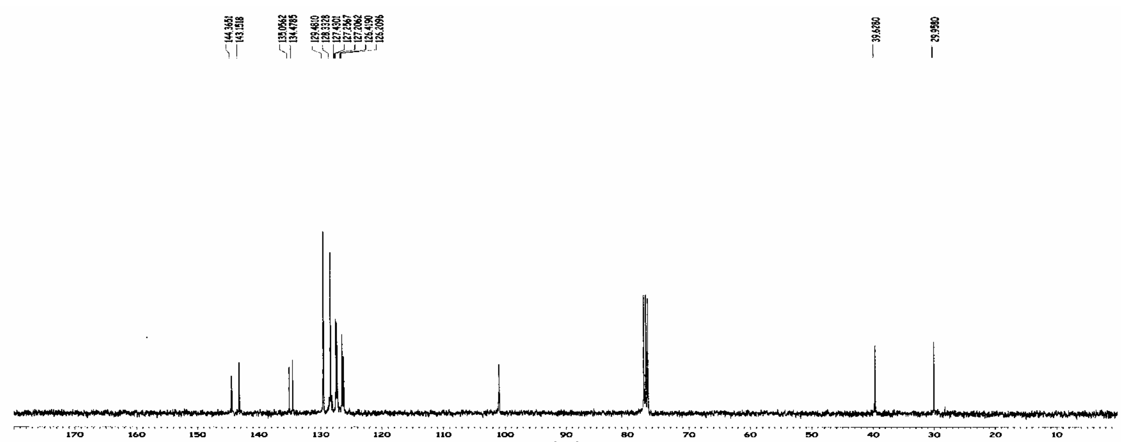
8


Integral
4.6846
2.2715
2.0000
7.4116
7.4025
7.3969
7.3822
7.3771
7.3584
7.3532
7.3326
7.1685
7.1622
7.1550
7.1415
7.1367
4.2794
(ppm)

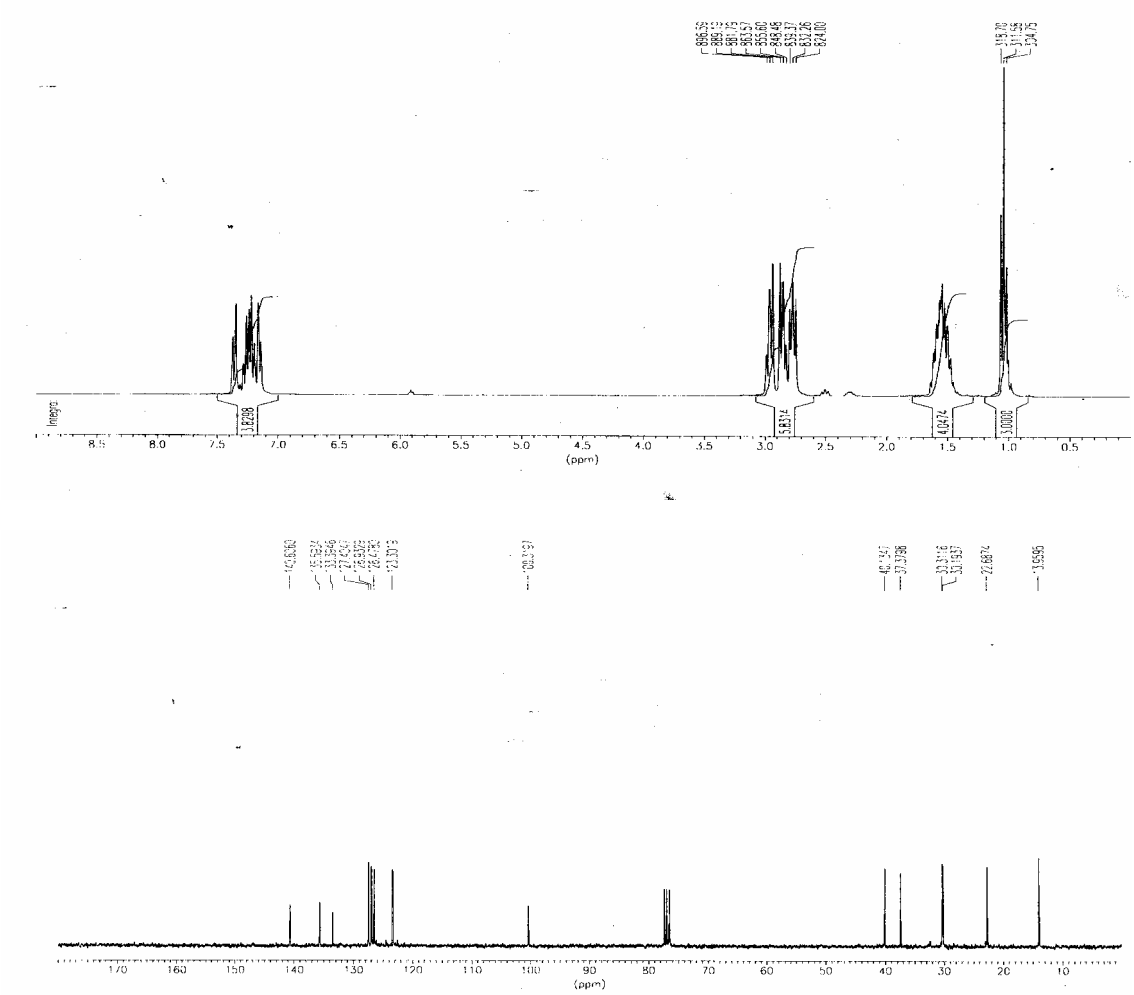

160
150
140
130
120
110
100
90
80
70
(ppm)
151.5605
142.7439
139.0236
128.2135
127.6309
127.1395
109.1836
87.6548
74.4651
130
128
126
(ppm)
128.2135
127.6309
127.1395

2k

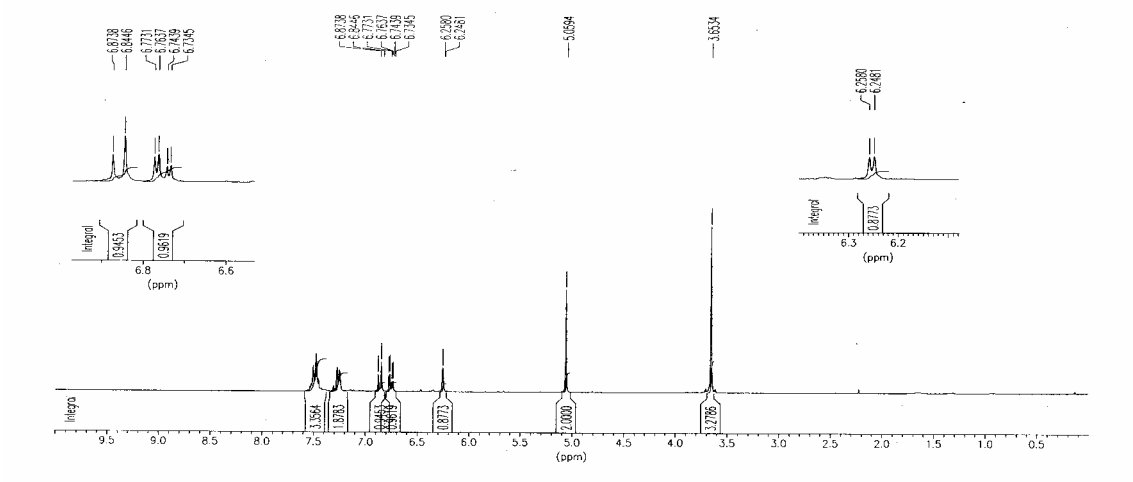


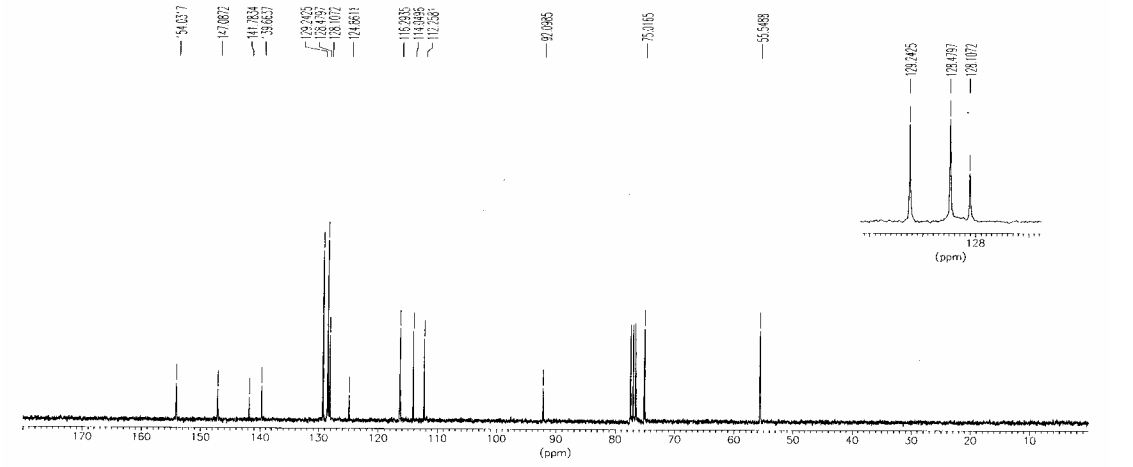


2m



2n


6.6738
6.6446
6.7731
6.7637
6.7439
6.7345
6.7580
6.7481
5.0594
3.6534
Integral
0.9453
0.9819
0.8773
2.0000
3.2786
(ppm)


54.0377
147.0872
141.7834
139.2425
128.4797
128.1072
124.9611
116.2935
114.0496
112.2567
92.0985
75.0165
55.5488
(ppm)