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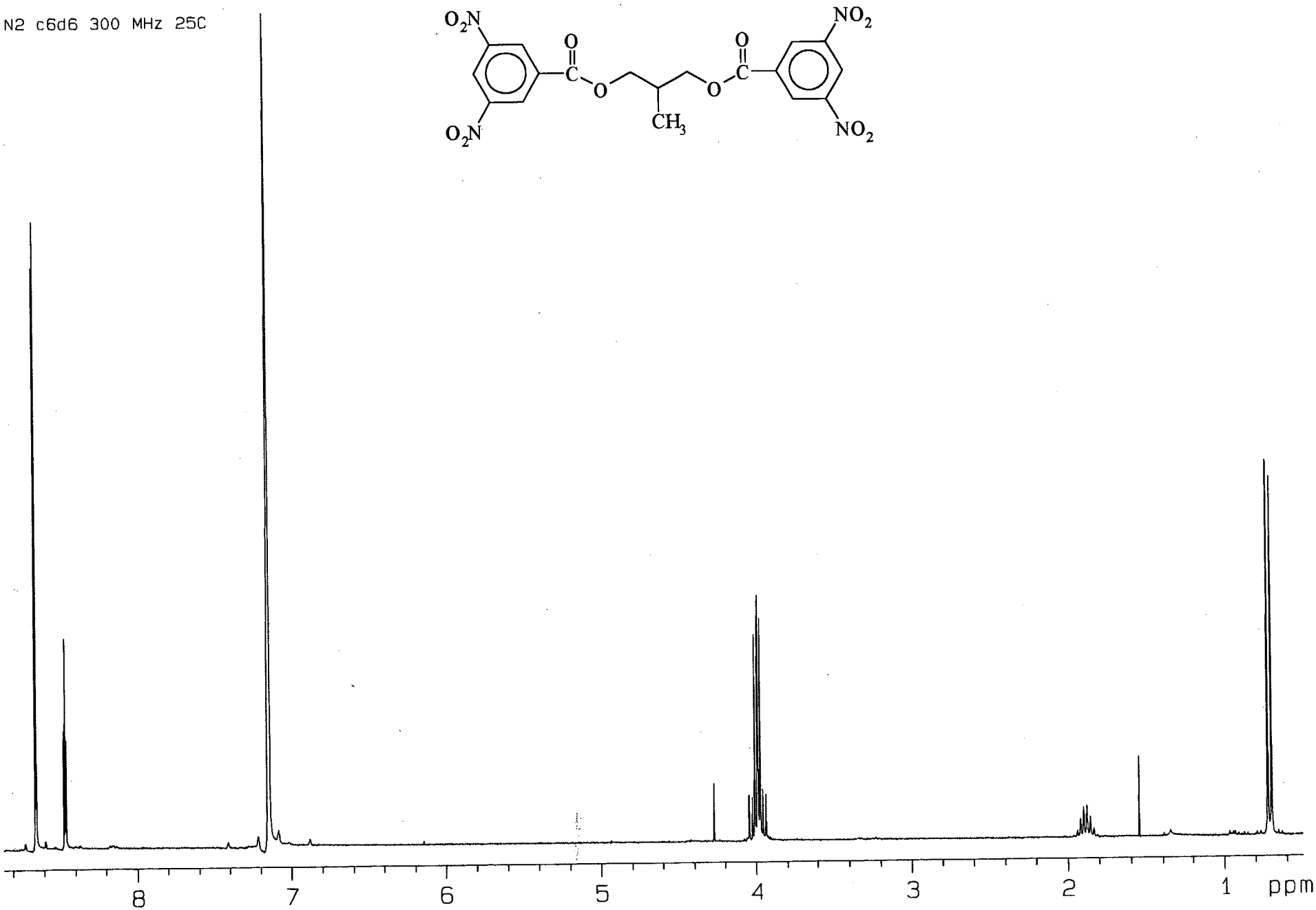

^{1}H-NMR spectrum of **N2** (300 MHz , C_6D_6, 298 K)

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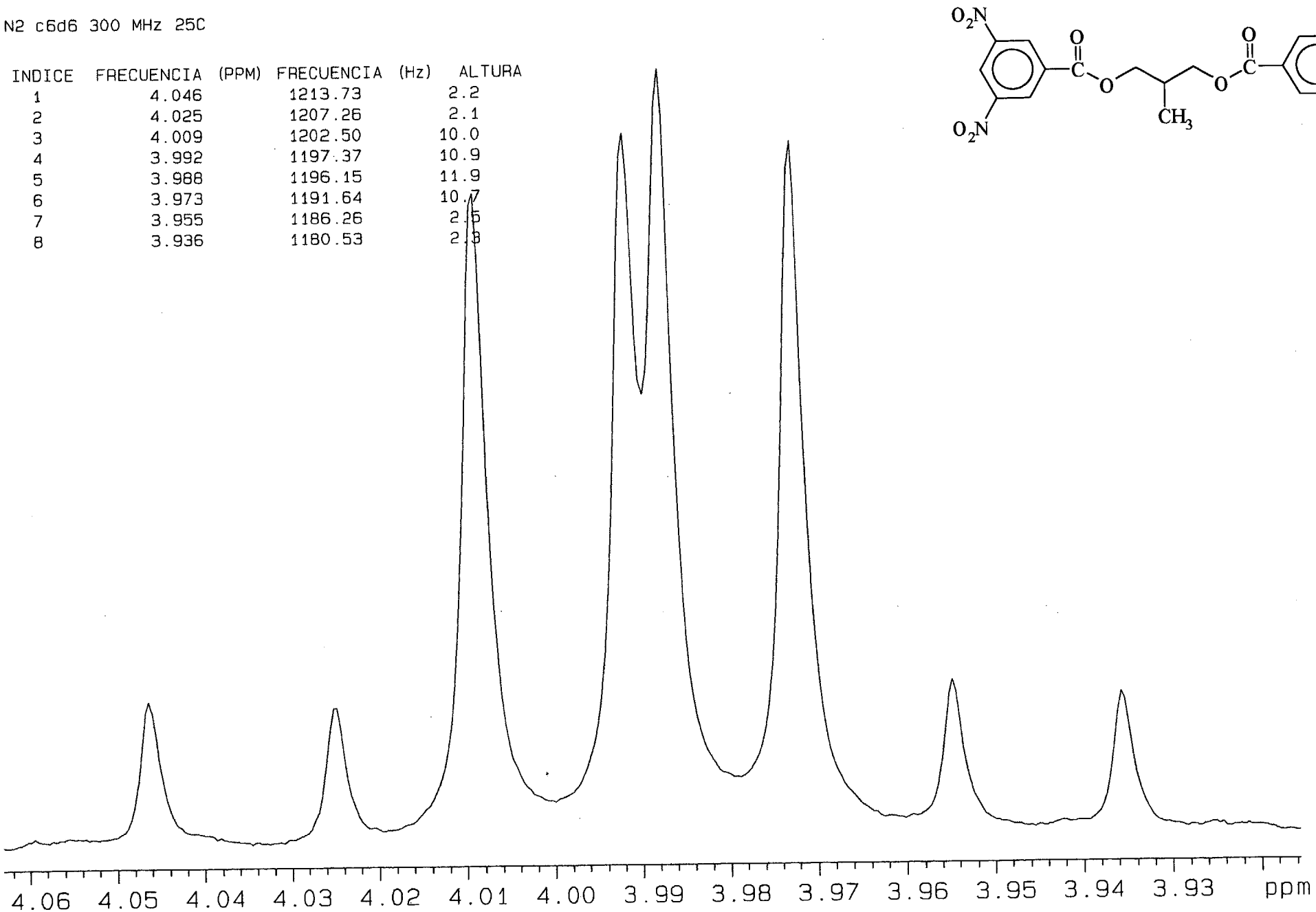

AB parts of the ABX multiplets due to the methylene groups of **N2** (300 MHz, C_6D_6)

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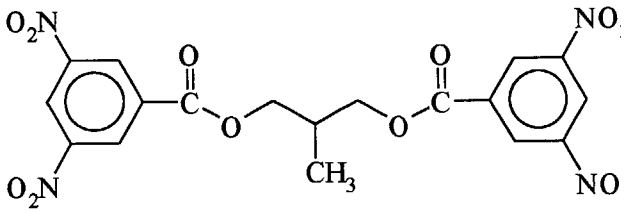
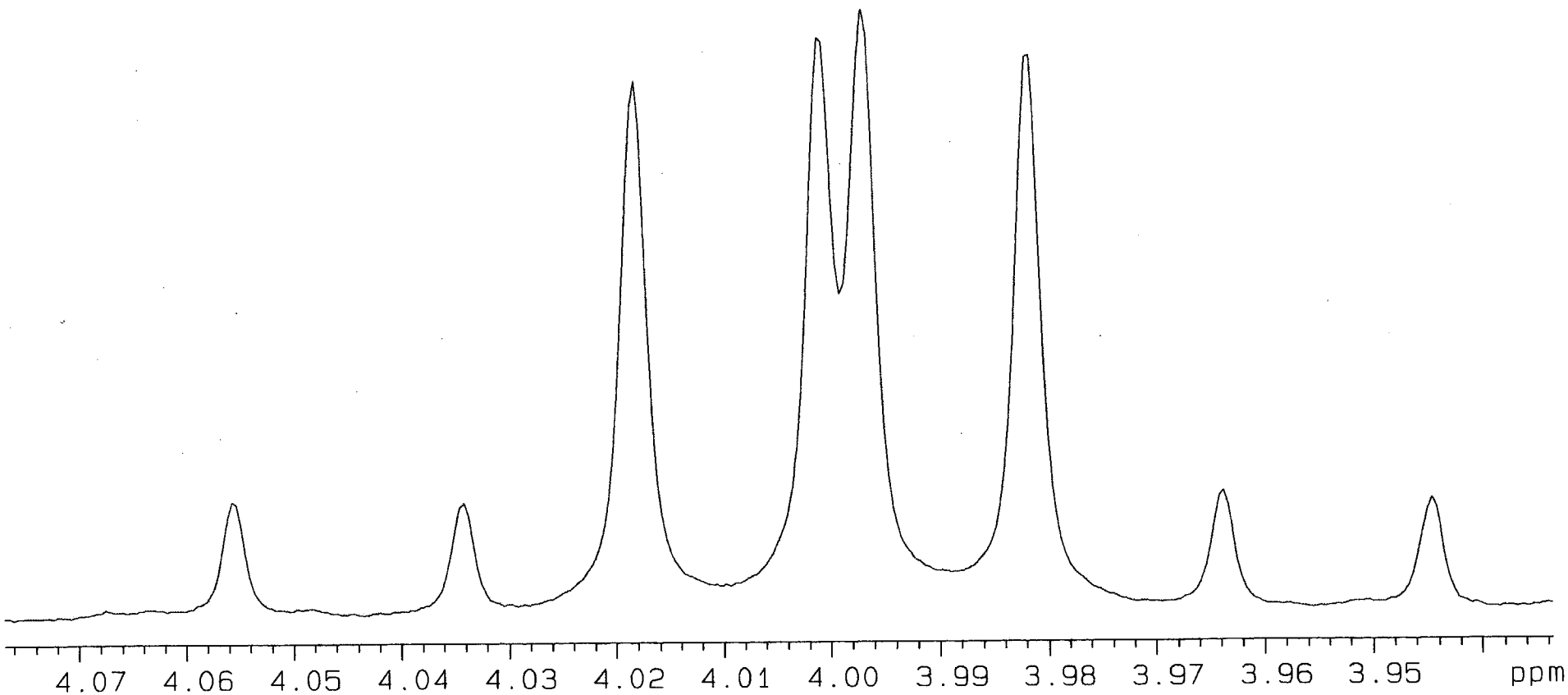
N2 300 Mhz C6D6 35C

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.056	1216.54	1.4
2	4.034	1210.07	1.3
3	4.018	1205.31	6.2
4	4.001	1200.18	6.7
5	3.997	1198.96	7.0
6	3.982	1194.32	6.5
7	3.964	1188.95	1.4
8	3.945	1183.21	1.3





AB parts of the ABX multiplets due to the methylene groups of **N2** (300 MHz, C_6D_6)

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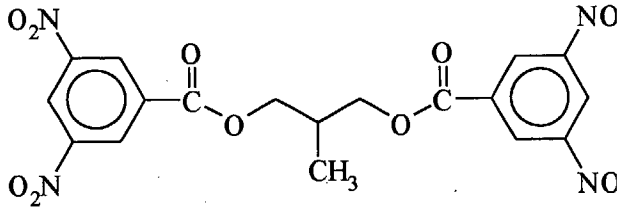
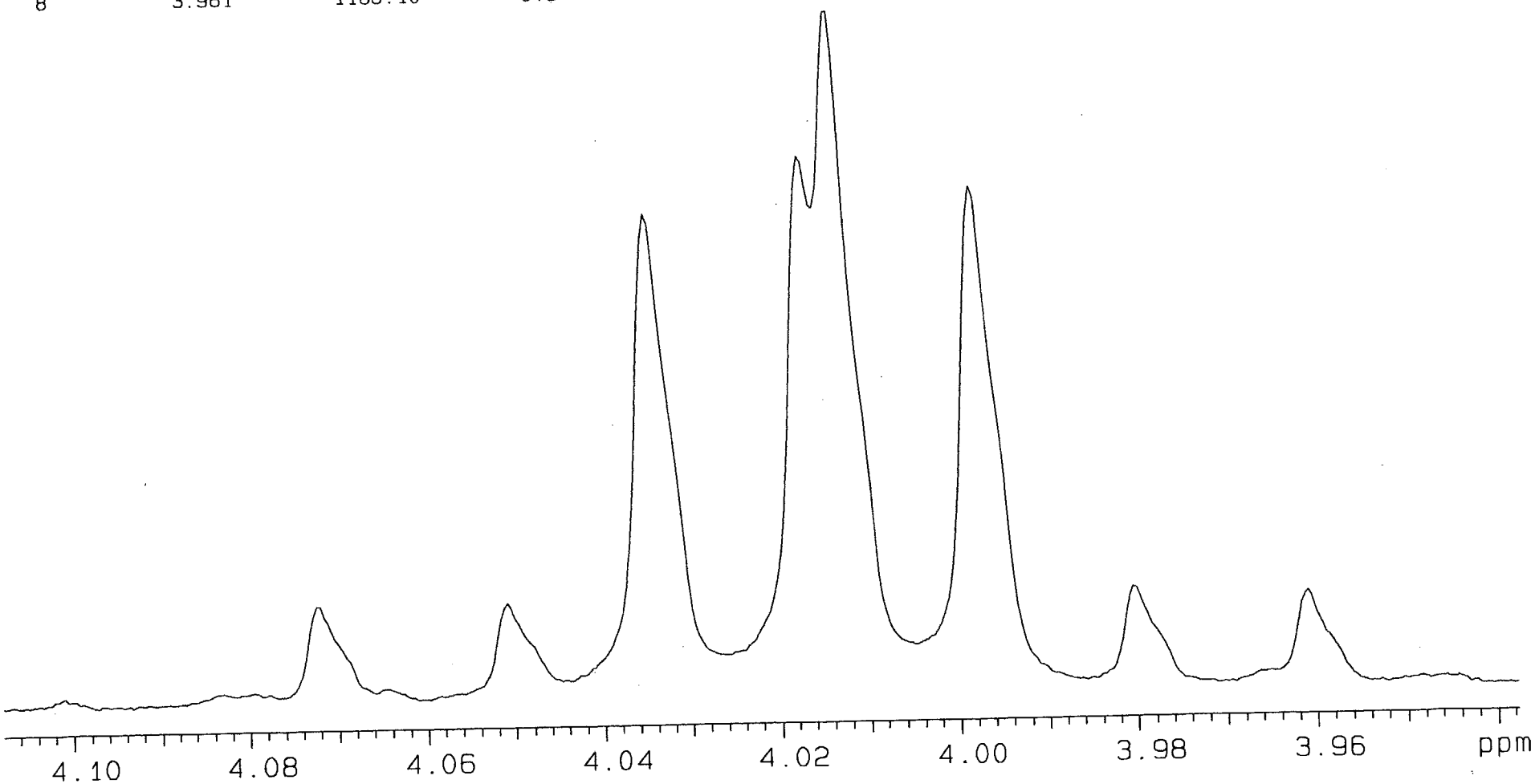


N2 300 Mhz C6D6 50C

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.072	1221.54	0.9
2	4.051	1215.07	0.9
3	4.035	1210.31	4.5
4	4.018	1205.06	5.0
5	4.014	1203.97	6.4
6	3.998	1199.33	4.7
7	3.980	1193.96	1.0
8	3.961	1188.10	0.9



AB parts of the ABX multiplets due to the methylene groups of **N2** (300 MHz, C_6D_6)

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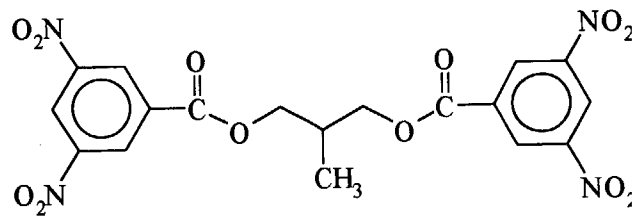
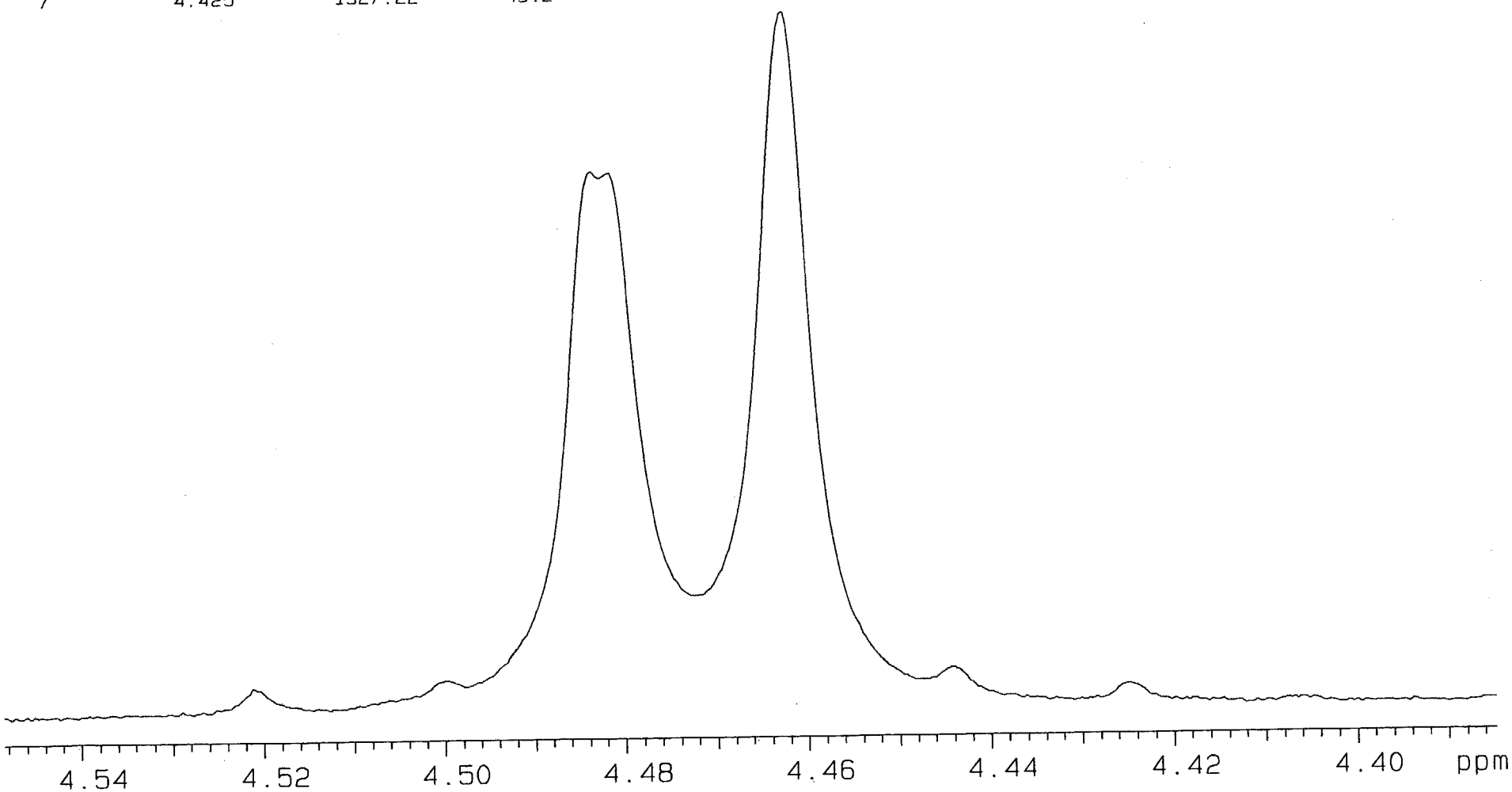


N2 DMSO-d6 300 MHz 25C

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.521	1356.15	57.2
2	4.500	1349.68	67.6
3	4.483	1344.80	1028.7
4	4.481	1344.19	1026.4
5	4.462	1338.45	1327.3
6	4.444	1333.08	83.3
7	4.425	1327.22	49.2



AB parts of the ABX multiplets due to the methylene groups of **N2** (300 MHz, DMSO-d_6)

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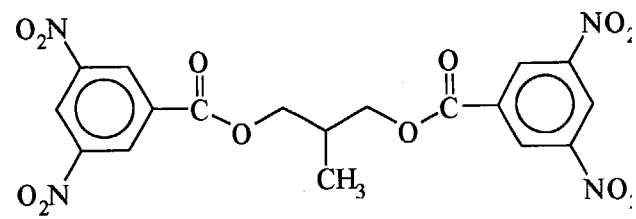
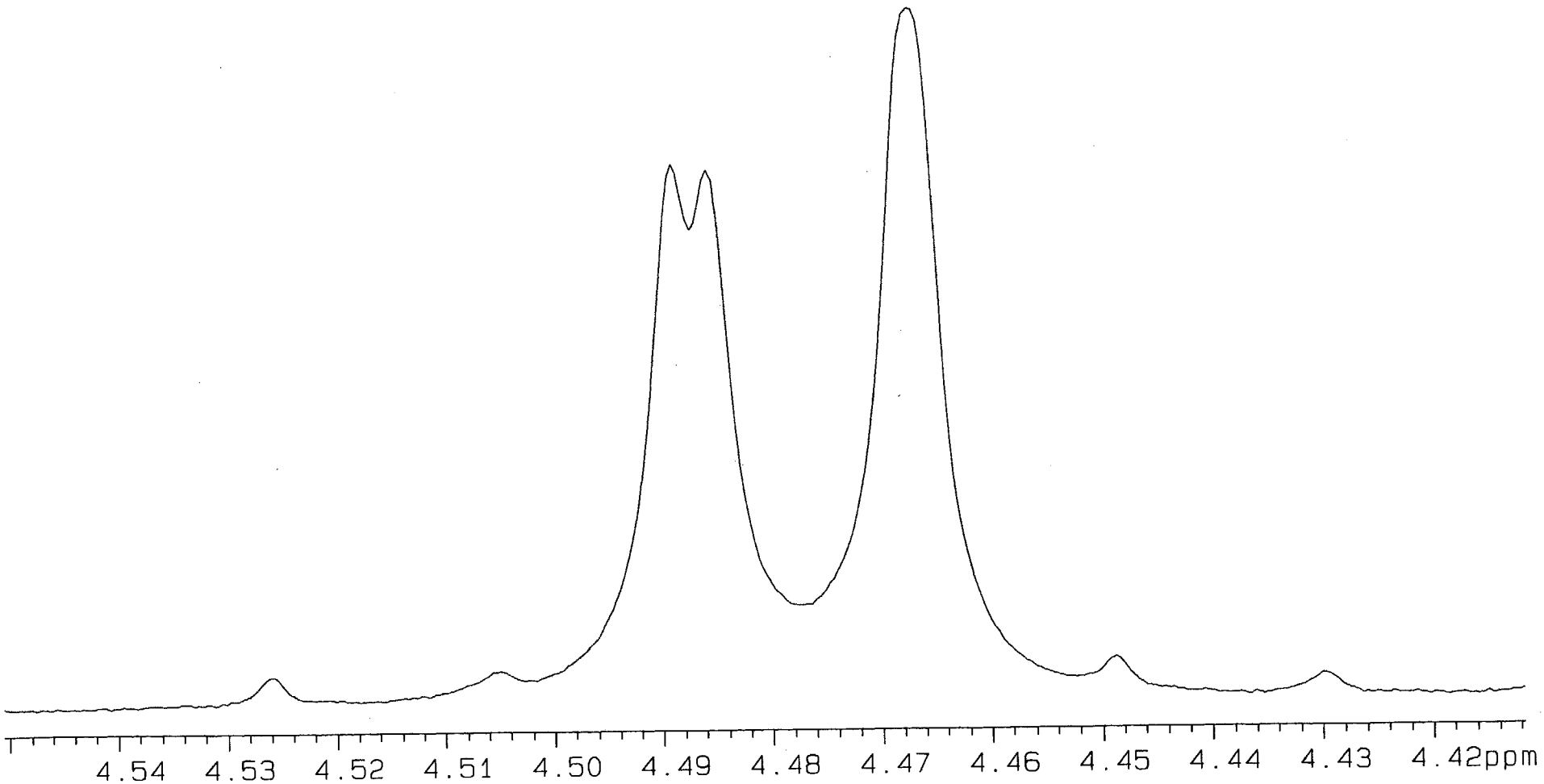
N2 DMSO-d6 300 MHz 35C

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.526	1357.62	56.0
2	4.505	1351.27	63.6
3	4.489	1346.51	944.1
4	4.486	1345.53	932.4
5	4.467	1340.04	1210.8
6	4.449	1334.42	80.7
7	4.430	1328.81	48.3





AB parts of the ABX multiplets due to the methylene groups of **N2** (300 MHz, DMSO-d_6)

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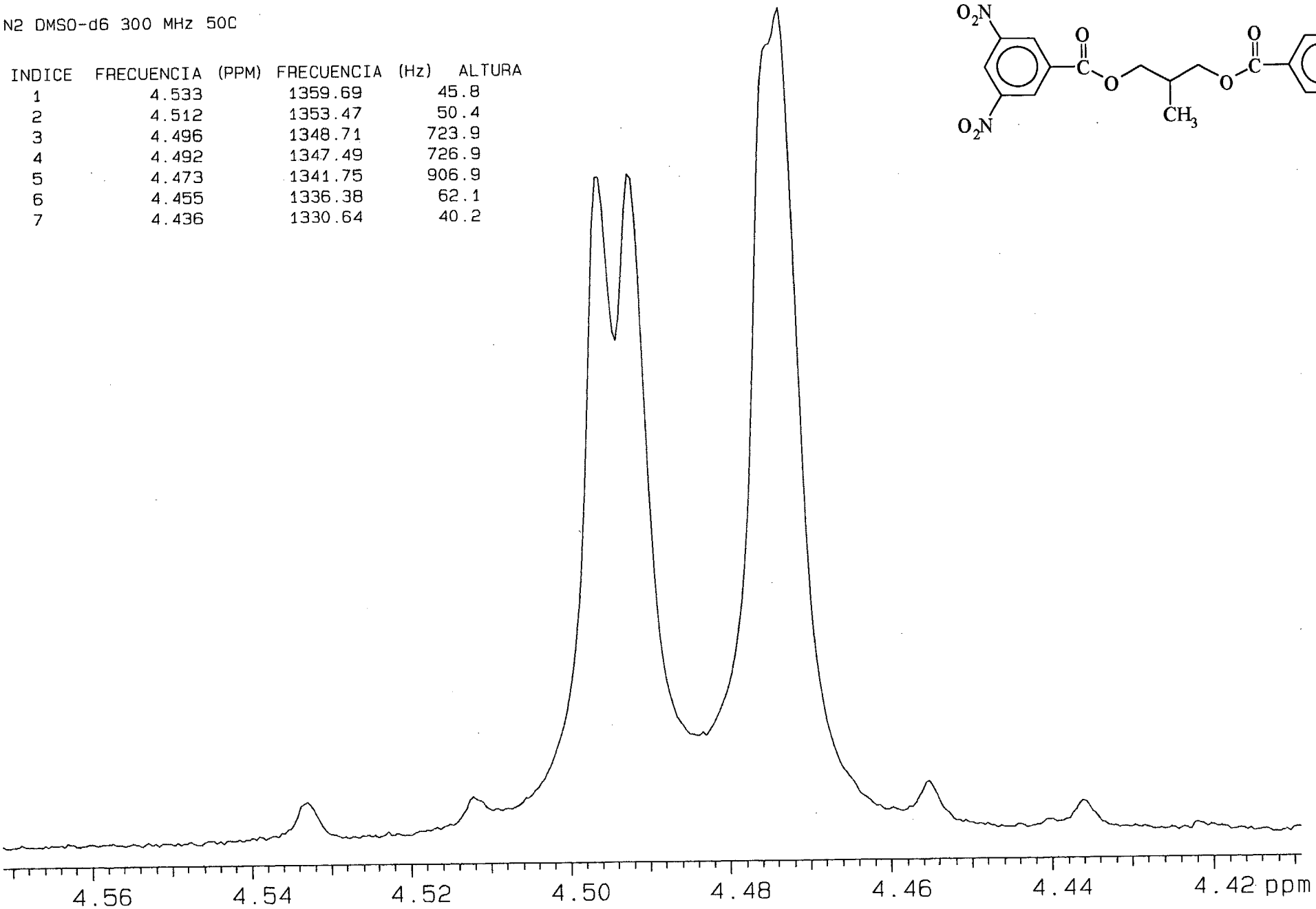
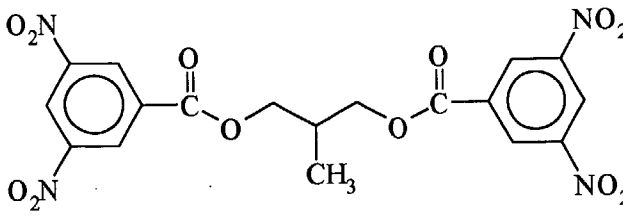
N2 DMSO-d6 300 MHz 50C

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.533	1359.69	45.8
2	4.512	1353.47	50.4
3	4.496	1348.71	723.9
4	4.492	1347.49	726.9
5	4.473	1341.75	906.9
6	4.455	1336.38	62.1
7	4.436	1330.64	40.2





AB parts of the ABX multiplets due to the methylene groups of **N2** (300 MHz, DMSO-d_6)

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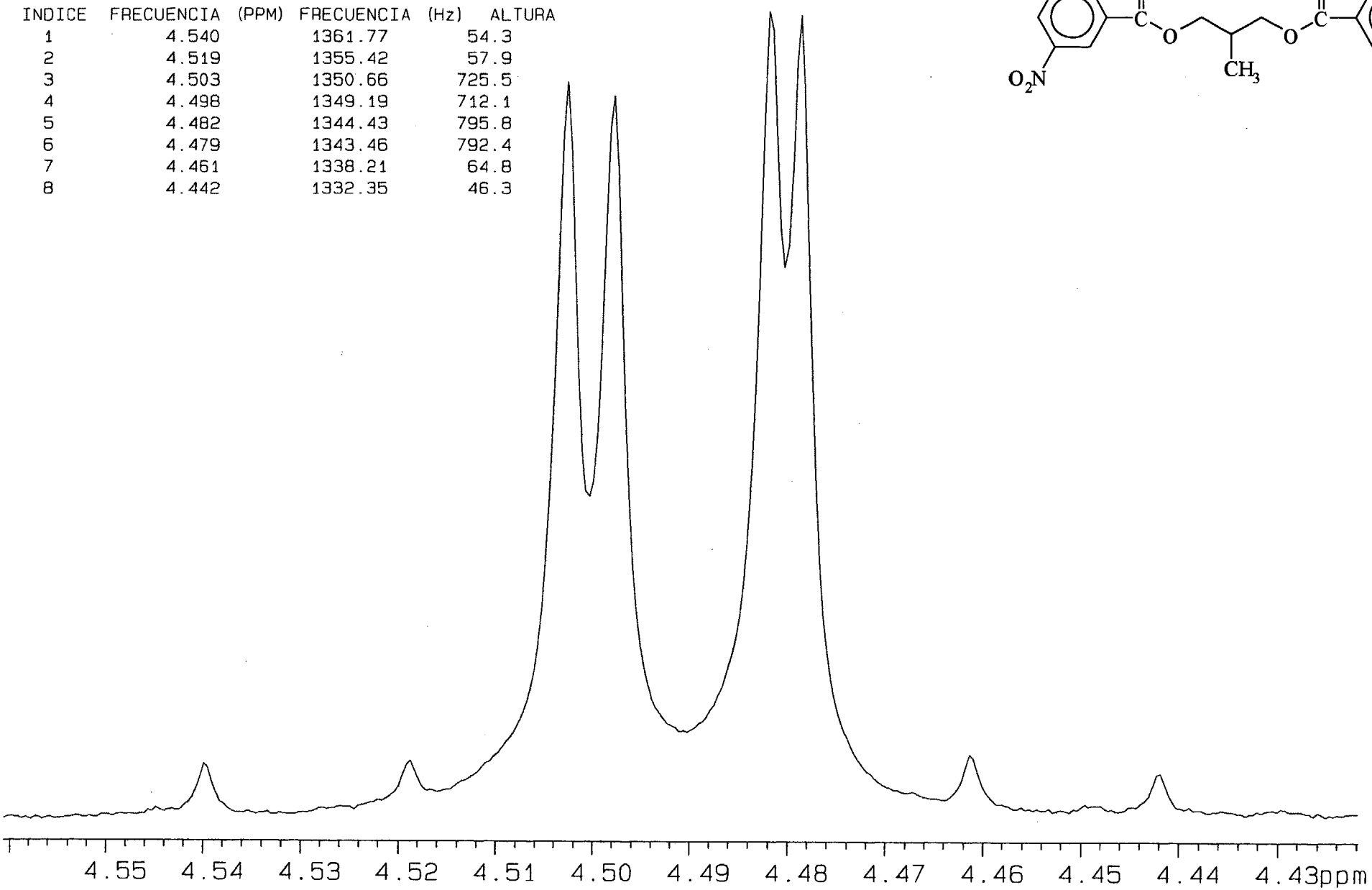
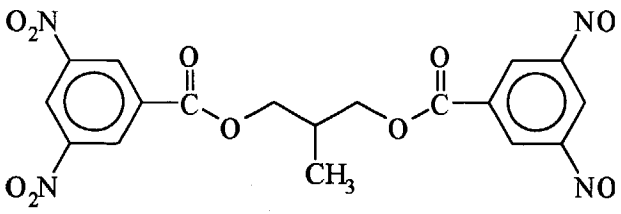
N2 DMSO-d6 300 MHz 65C

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.540	1361.77	54.3
2	4.519	1355.42	57.9
3	4.503	1350.66	725.5
4	4.498	1349.19	712.1
5	4.482	1344.43	795.8
6	4.479	1343.46	792.4
7	4.461	1338.21	64.8
8	4.442	1332.35	46.3

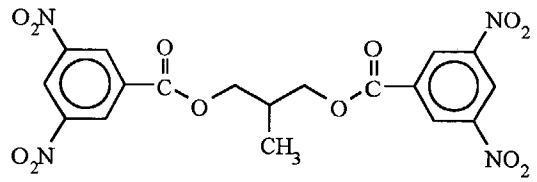


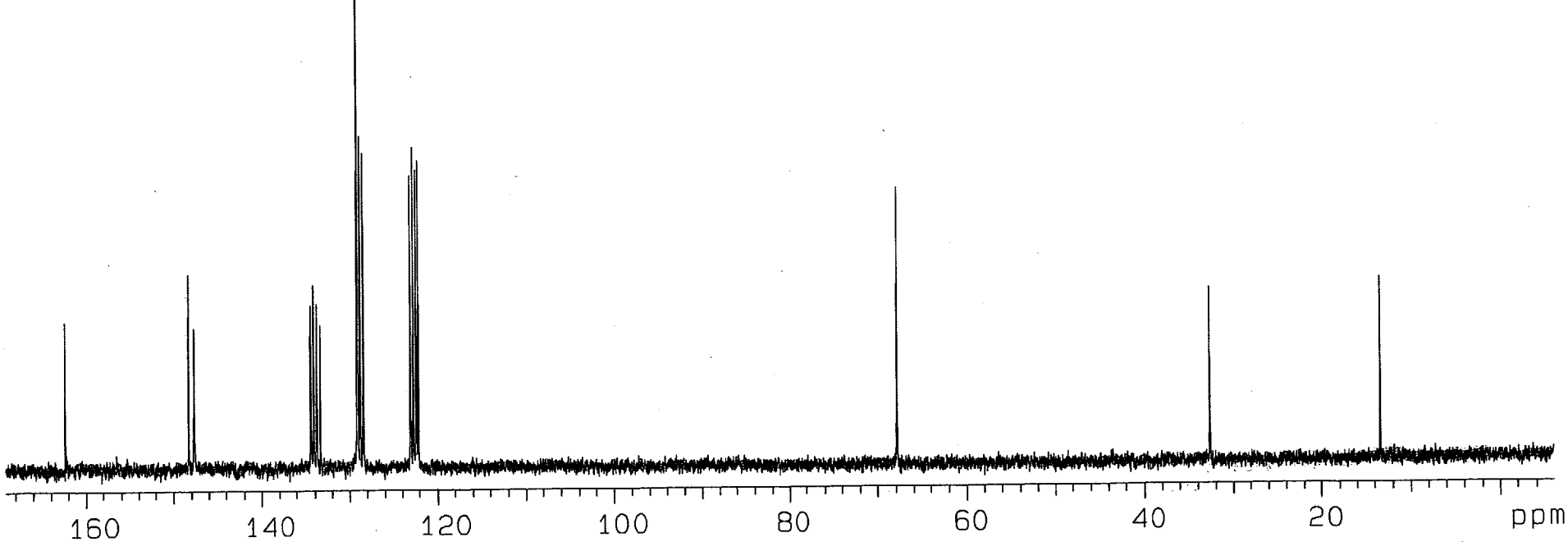


AB parts of the ABX multiplets due to the methylene groups of **N2** (300 MHz, DMSO-d_6)

N2 nitrobenzene-d5 75.4 MHz

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	162.386	12248.88	1.2
2	148.339	11189.29	1.6
3	147.711	11141.95	1.1
4	134.425	10139.77	1.3
5	134.098	10115.10	1.5
6	133.771	10090.42	1.3
7	133.370	10060.20	1.2
8	129.057	9734.88	2.9
9	128.997	9730.34	6.3
10	128.724	9709.70	2.7
11	128.390	9684.51	2.6
12	123.042	9281.13	2.4
13	122.702	9255.44	2.6
14	122.361	9229.76	2.4
15	122.121	9211.63	2.5
16	67.895	5121.34	2.3
17	32.677	2464.82	1.4
18	13.362	1007.89	1.5





^{13}C-NMR spectrum of **N2** (75.4 MHz, nitrobenzene-d_5)

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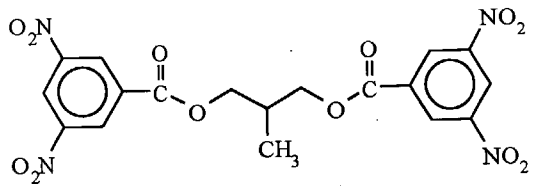
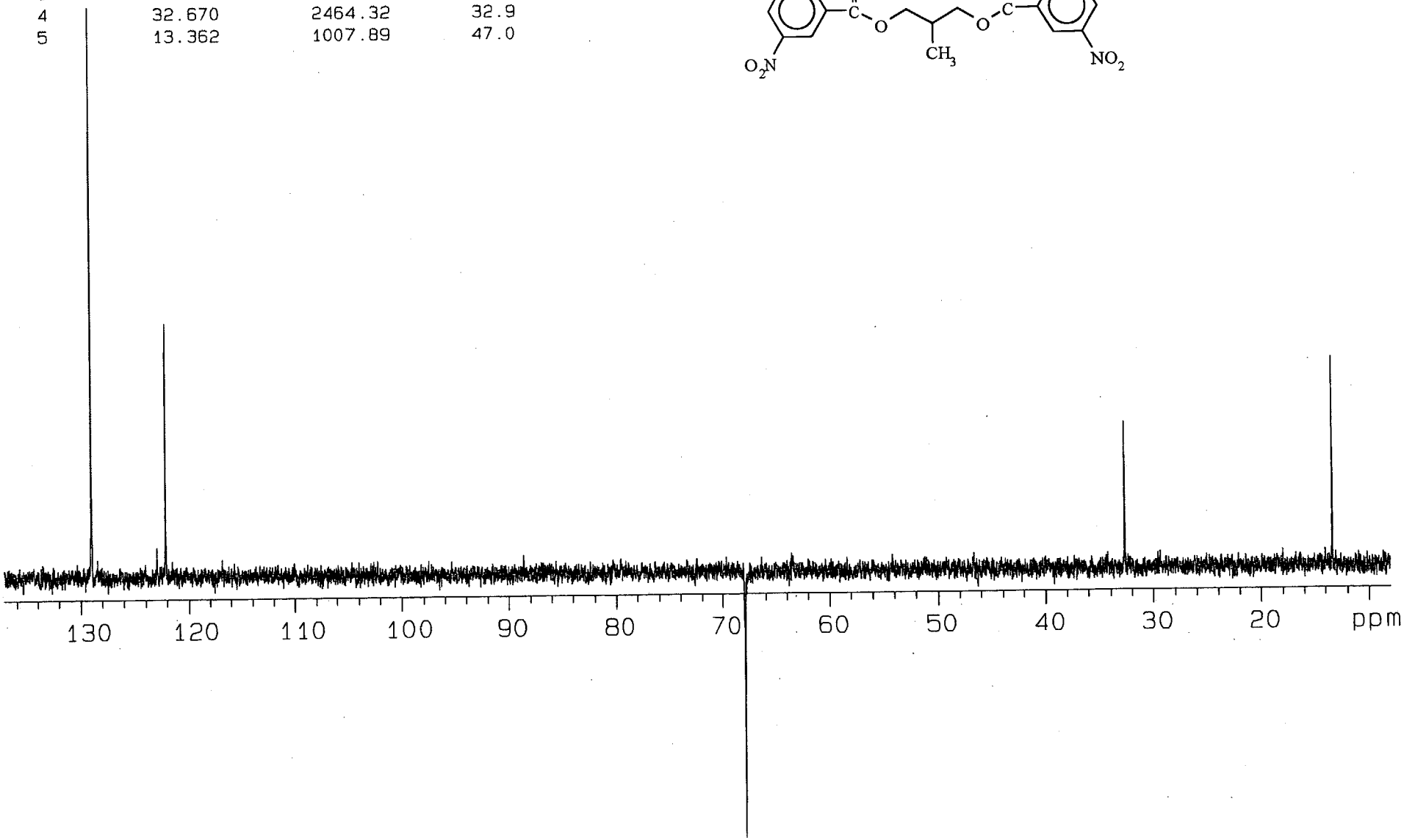
N2 DEPT nitrobenzene-d5 75.4 MHz

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	128.991	9729.84	128.5
2	122.114	9211.13	57.3
3	67.881	5120.34	-76.3
4	32.670	2464.32	32.9
5	13.362	1007.89	47.0





^{13}C-NMR **(DEPT)** spectrum of **N2** (75.4 MHz, nitrobenzene-d_5)

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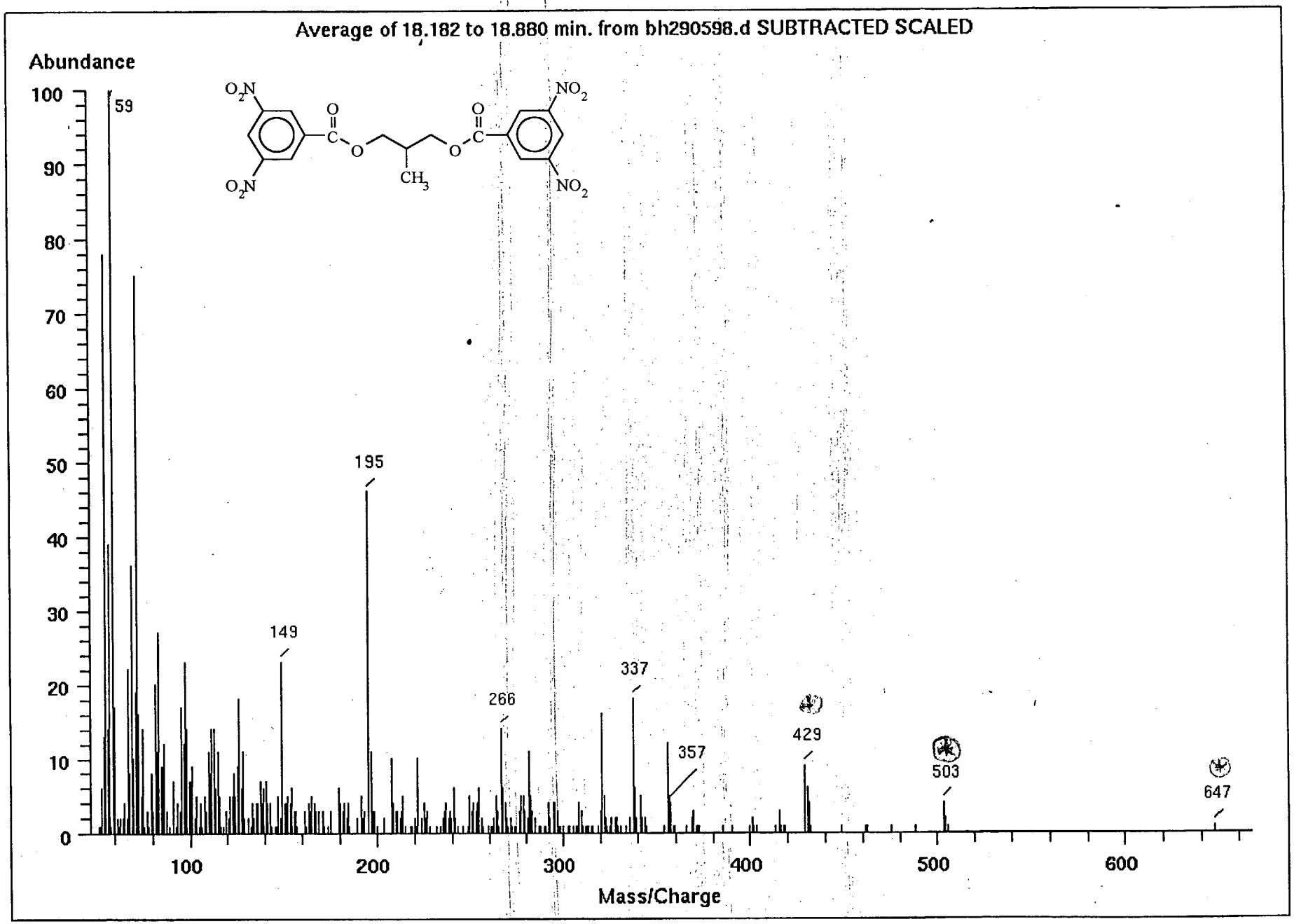

Mass spectrum of **N2** (EI, 70 EV). The peaks at m/e 647, 503 and 429 correspond to unidentifical impurities from the source

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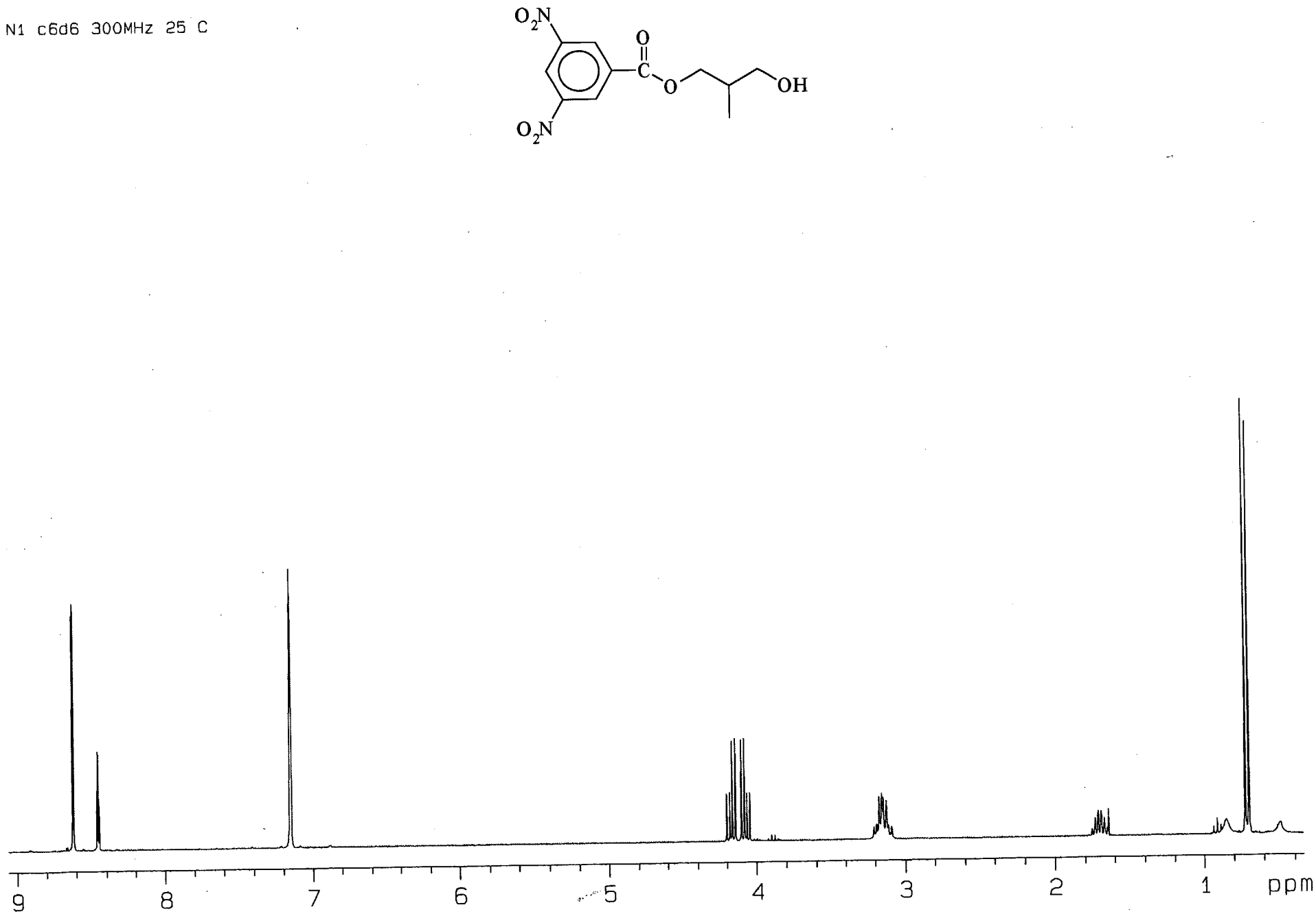

^{1}H-NMR spectrum of **N1** (300 MHz , C_6D_6, 298 K)

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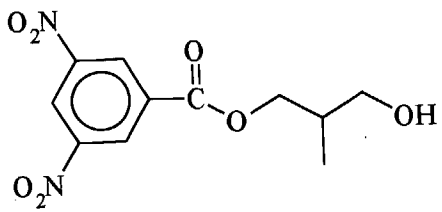
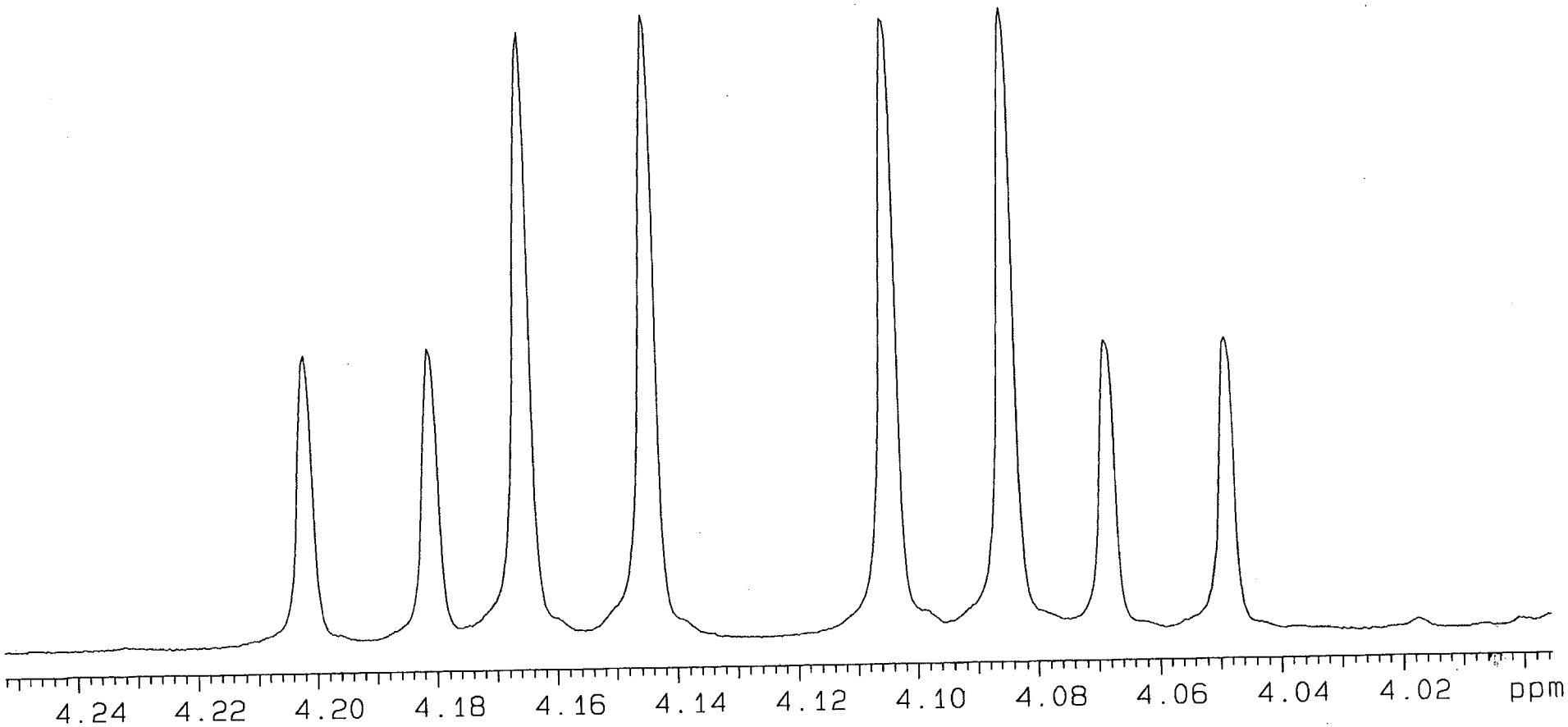


N1 c6d6 300MHz 25 C

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.202	1260.37	129.9
2	4.181	1254.14	132.2
3	4.166	1249.50	271.8
4	4.145	1243.28	278.6
5	4.105	1231.31	275.4
6	4.085	1225.33	279.0
7	4.069	1220.45	131.0
8	4.049	1214.47	131.4



AB parts of the ABX multiplets due to the methylene groups of **N1** (300 MHz, C_6D_6)

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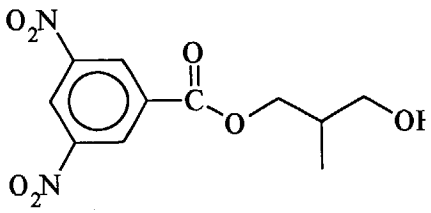
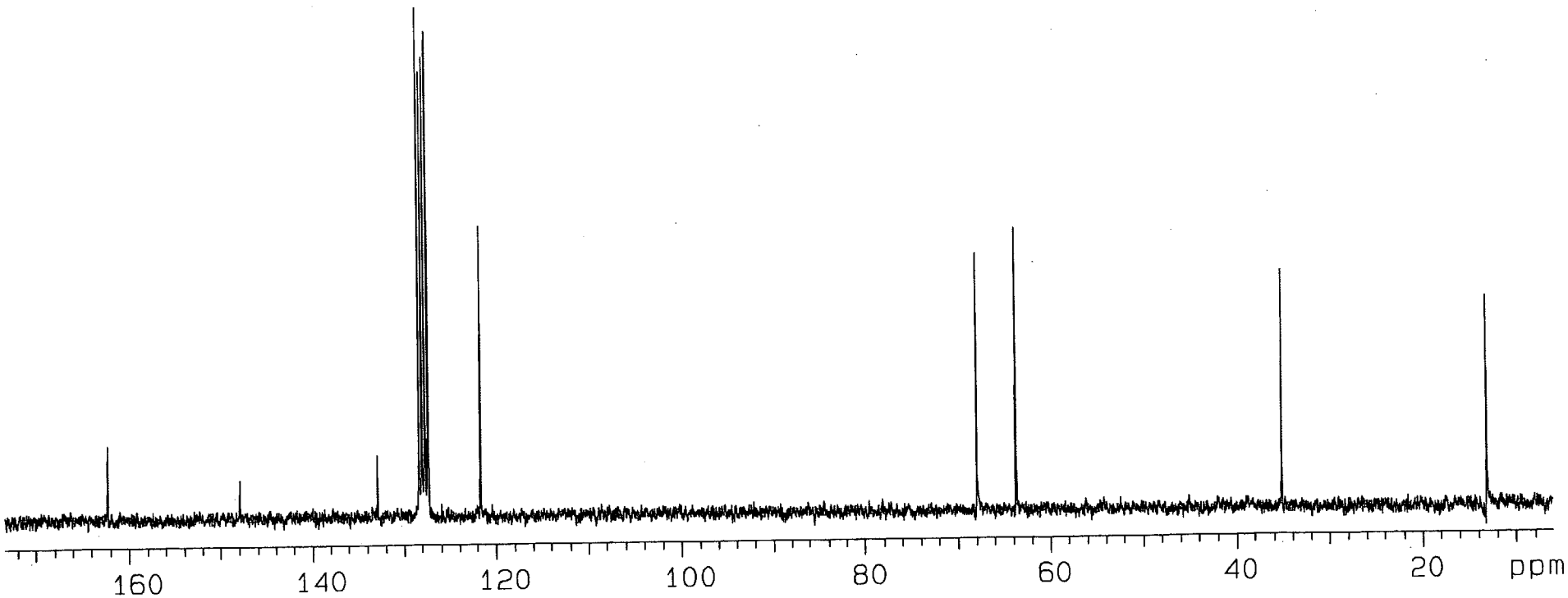


13C OBSERVE

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	162.274	12240.39	0.4
2	147.966	11161.16	0.2
3	132.971	10030.06	0.3
4	128.324	9679.55	2.5
5	128.004	9655.38	2.1
6	127.683	9631.21	2.2
7	127.363	9607.03	2.3
8	121.641	9175.44	1.4
9	67.976	5127.46	1.2
10	63.776	4810.69	1.4
11	35.181	2653.75	1.1
12	13.169	993.36	1.0



^{13}C-NMR spectrum of **N1** (75.4 MHz , C_6D_6)

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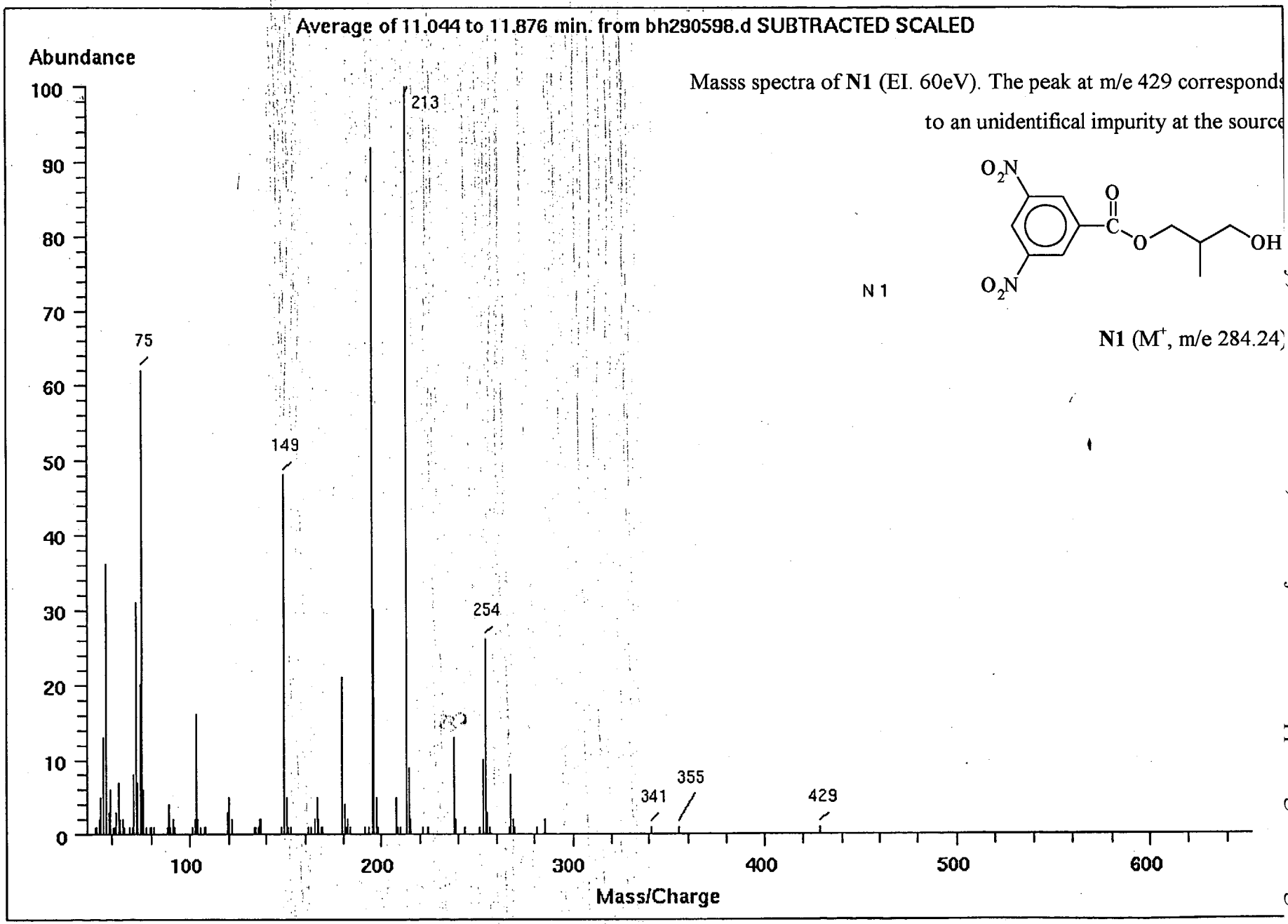

Masss spectra of **N1** (EI. 60eV). The peak at m/e 429 corresponds to an unidentifical impurity at the source

N 1

N1 (M^+, m/e 284.24)

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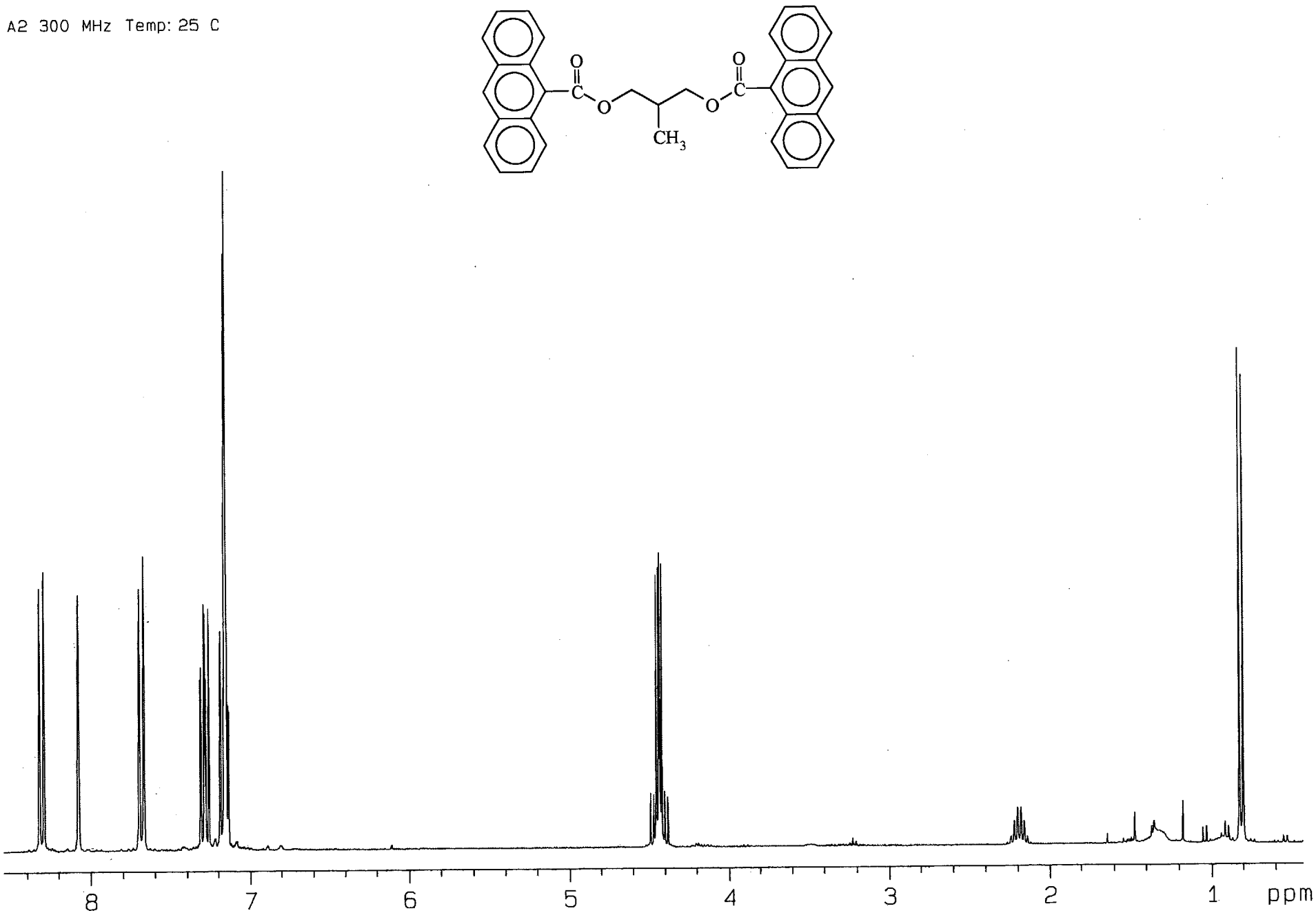

^{1}H-NMR spectrum of **A2** (300 MHz , C_6D_6, 298 K)

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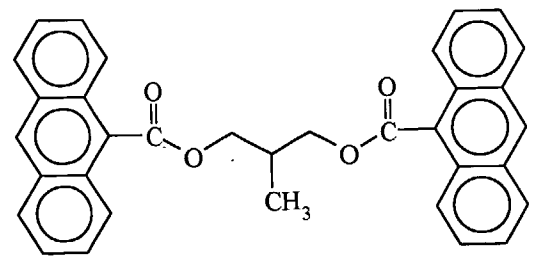
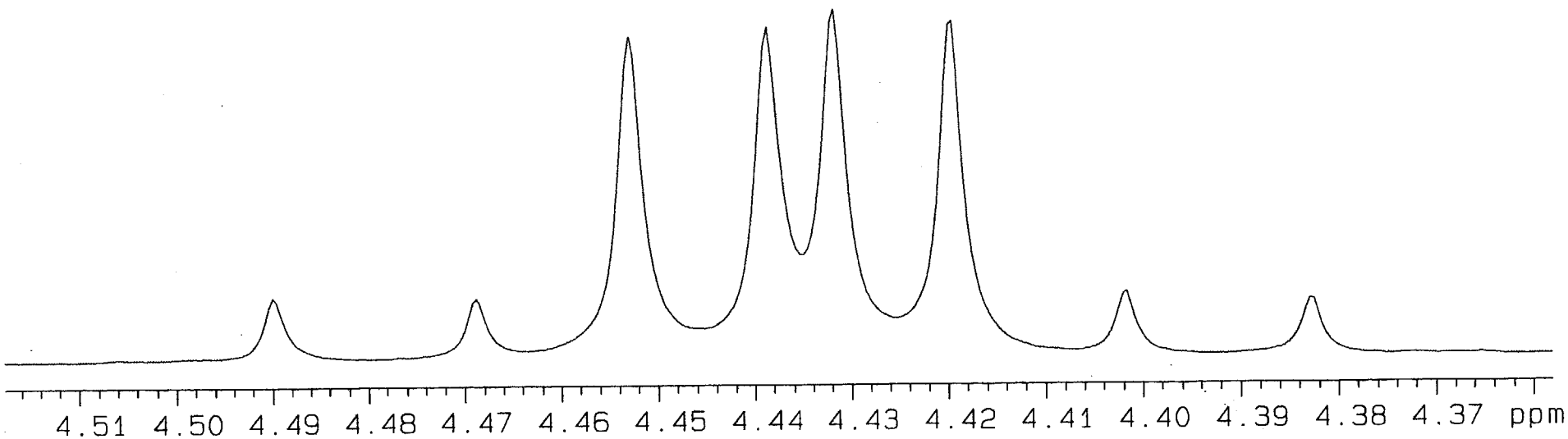
A2 300 MHz Temp: 25 C

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.490	1346.80	11.3
2	4.469	1340.45	11.0
3	4.453	1335.69	56.6
4	4.439	1331.42	58.1
5	4.432	1329.34	61.2
6	4.420	1325.68	58.9
7	4.402	1320.31	11.7
8	4.383	1314.69	10.4





AB parts of the ABX multiplets due to the methylene groups of **A2** (300 MHz , 298 K, C_6D_6)

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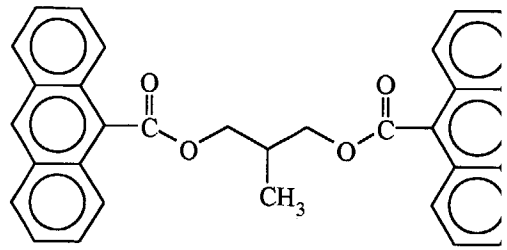
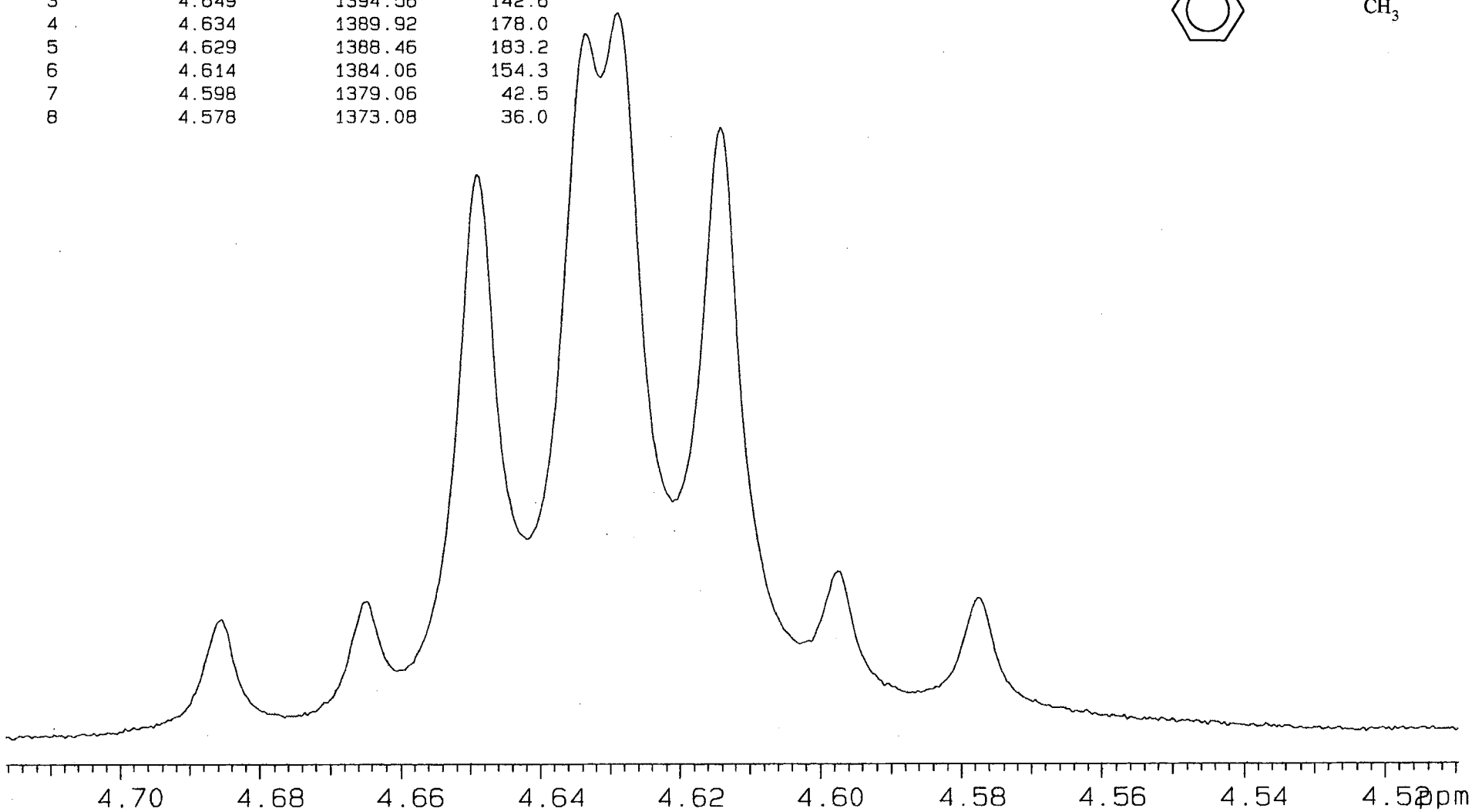
A2 DMSO-d6 300 MHz 25C

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.685	1405.43	30.6
2	4.665	1399.20	35.0
3	4.649	1394.56	142.6
4	4.634	1389.92	178.0
5	4.629	1388.46	183.2
6	4.614	1384.06	154.3
7	4.598	1379.06	42.5
8	4.578	1373.08	36.0





AB parts of the ABX multiplets due to the methylene groups of **A2** (300 MHz, DMSO-d_6)

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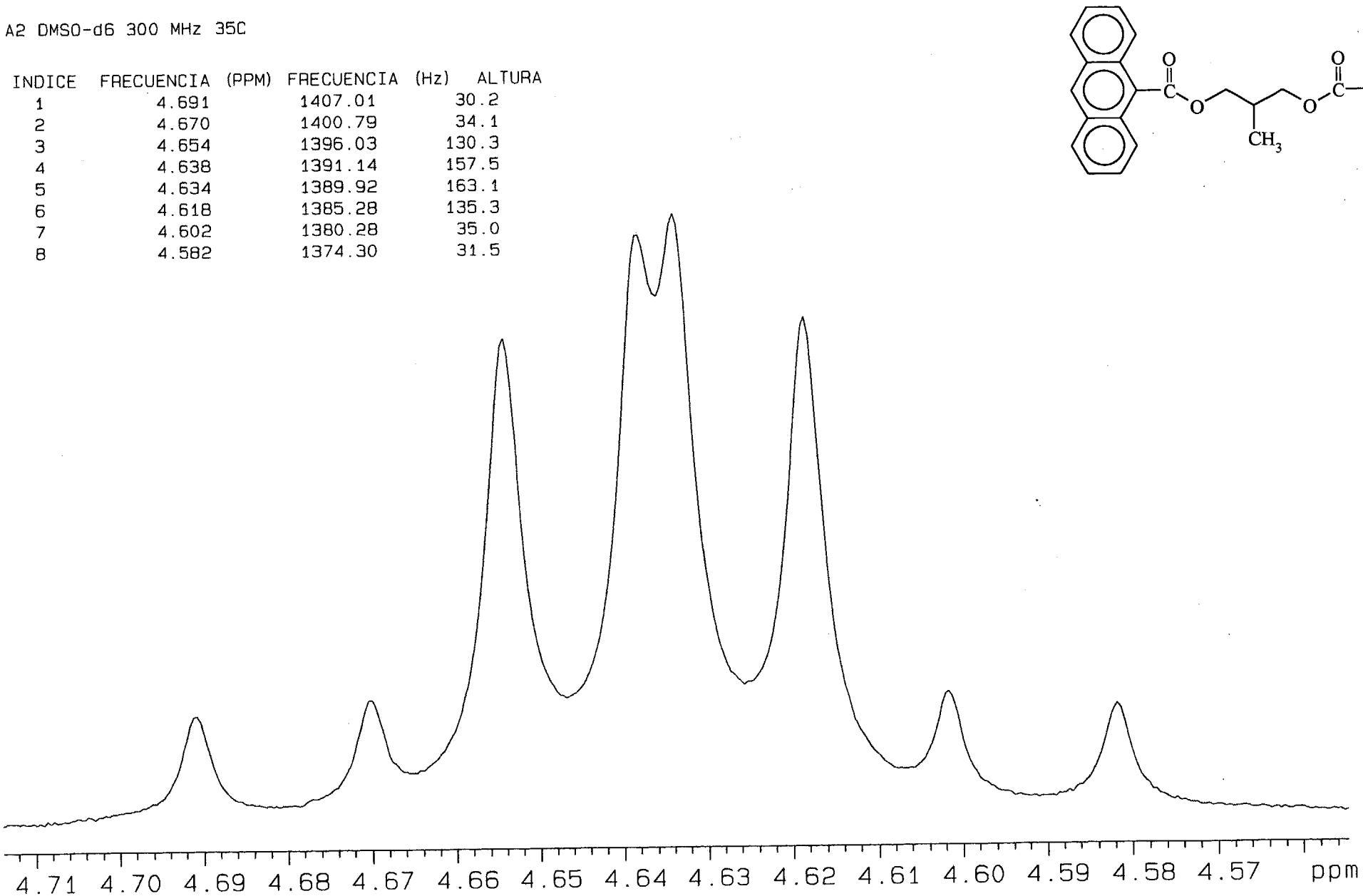
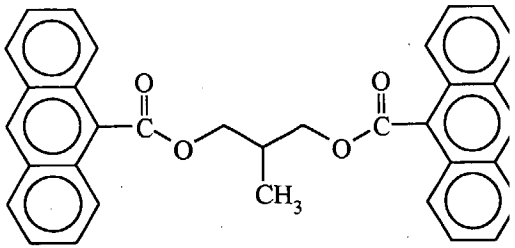
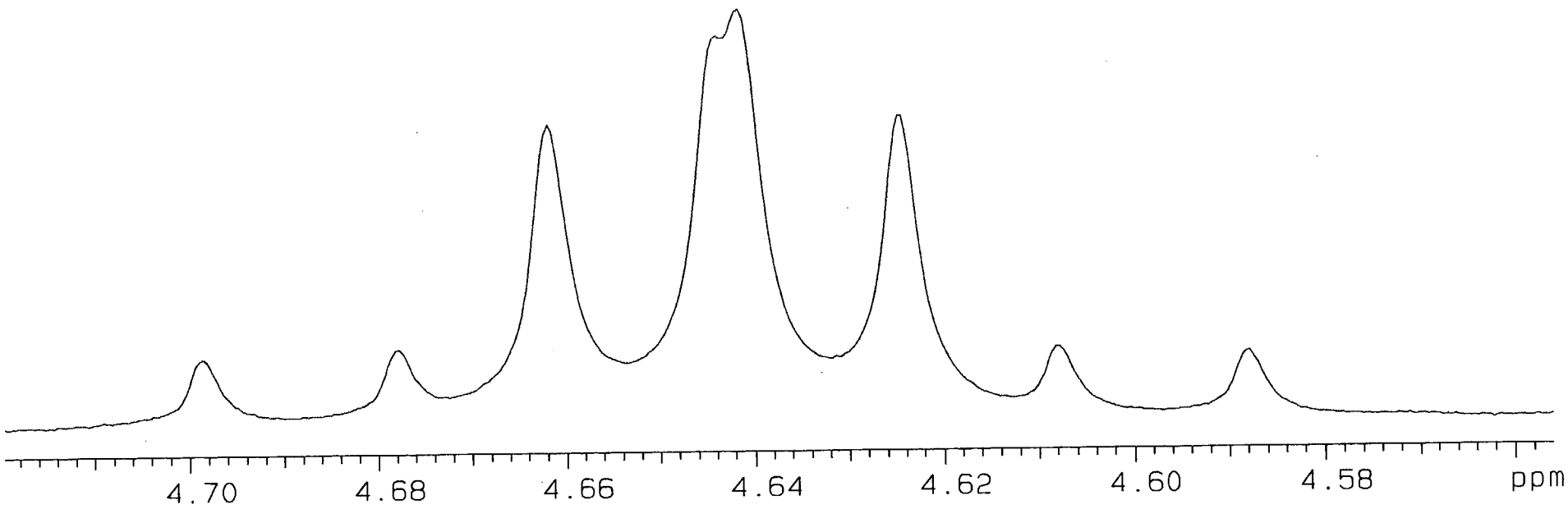




AB parts of the ABX multiplets due to the methylene groups of **A2** (300 MHz, DMSO-d_6)

A2 DMSO-d6 300 MHz 50C

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.698	1409.33	16.4
2	4.678	1403.11	18.3
3	4.662	1398.34	69.6
4	4.641	1392.24	95.6
5	4.625	1387.24	71.1
6	4.608	1382.23	17.7
7	4.588	1376.13	16.5



AB parts of the ABX multiplets due to the methylene groups of **A2** (300 MHz, DMSO-d_6)

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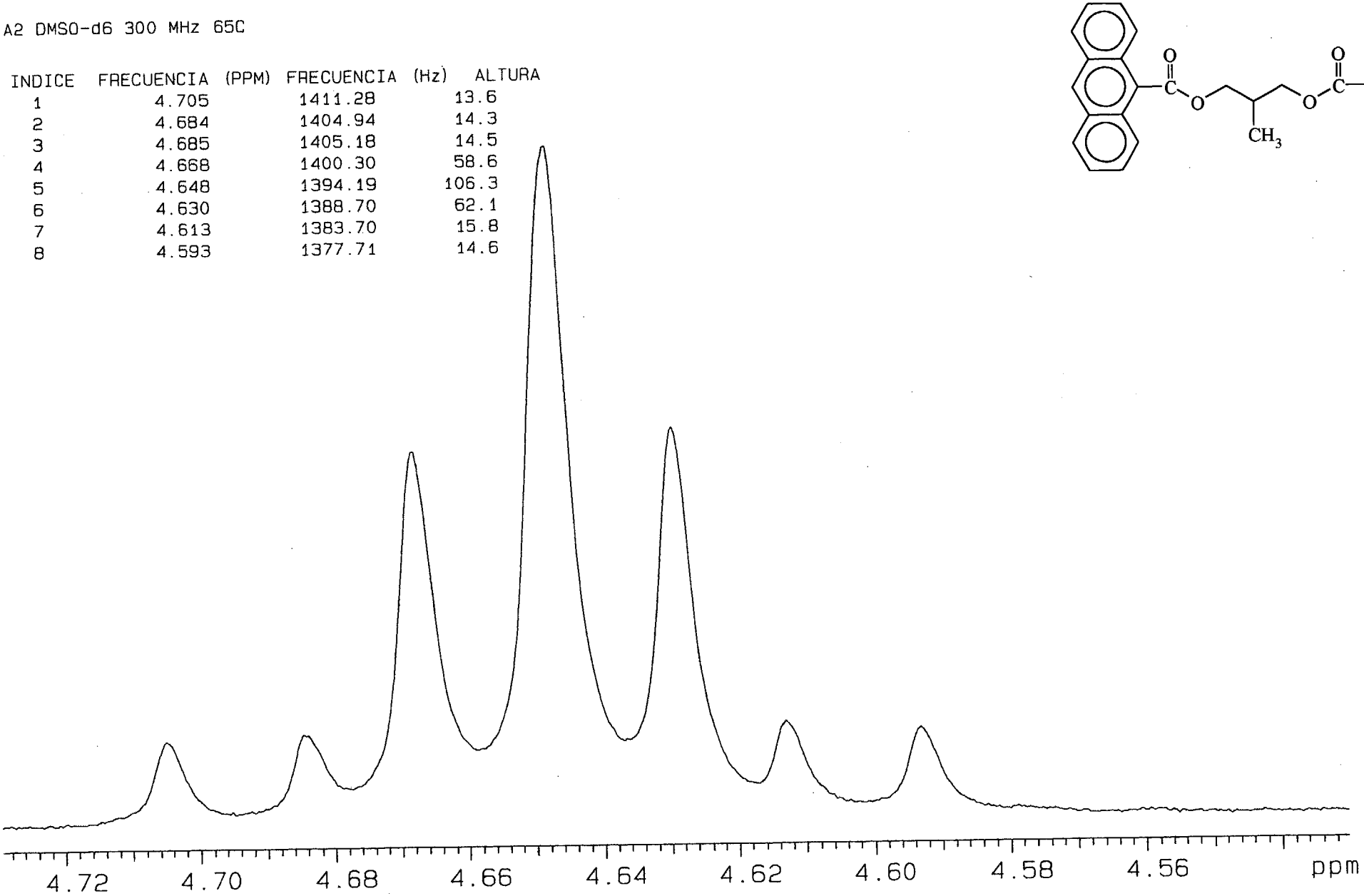
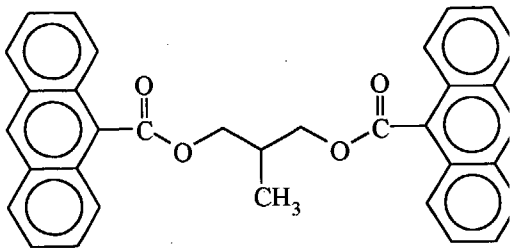
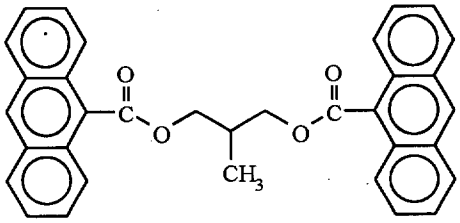
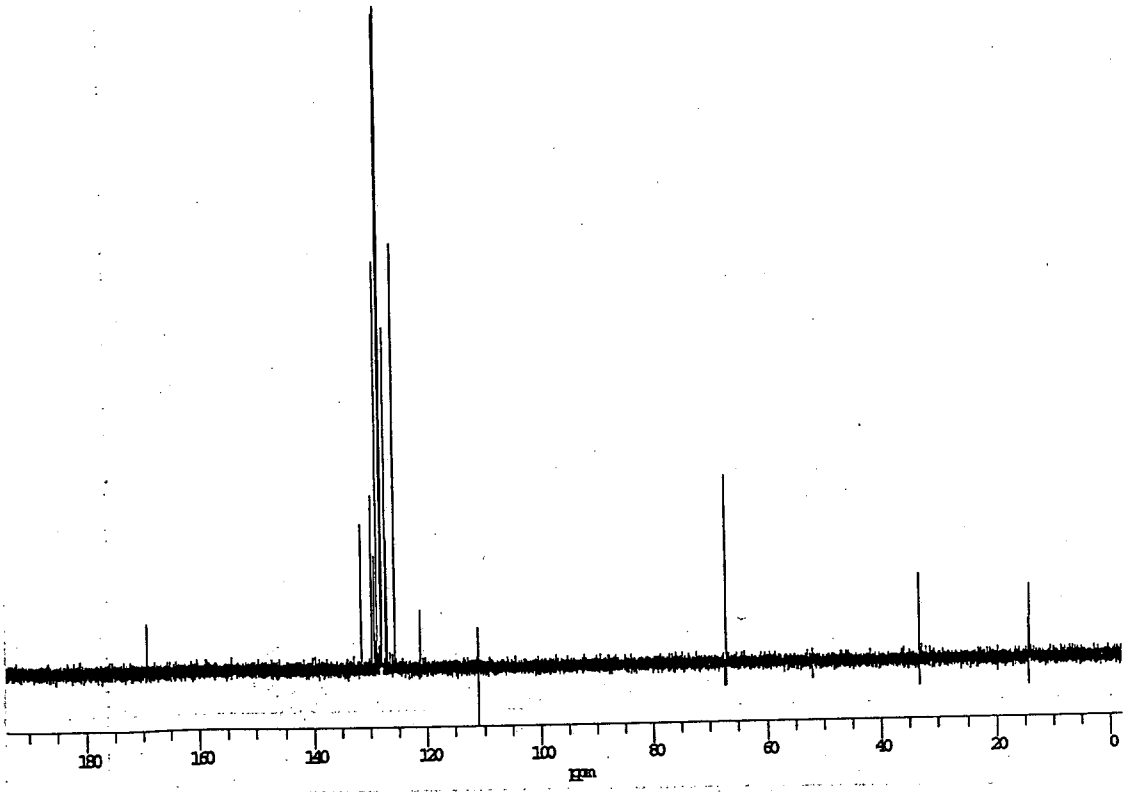


INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.705	1411.28	13.6
2	4.684	1404.94	14.3
3	4.685	1405.18	14.5
4	4.668	1400.30	58.6
5	4.648	1394.19	106.3
6	4.630	1388.70	62.1
7	4.613	1383.70	15.8
8	4.593	1377.71	14.6



AB parts of the ABX multiplets due to the methylene groups of **A2** (300 MHz, DMSO-d_6)





^{13}C-NMR spectrum of **A2** (75.4 MHz , C_6D_6, 298 K)

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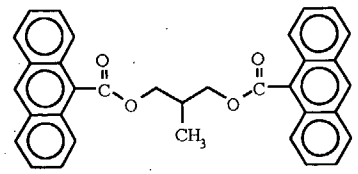
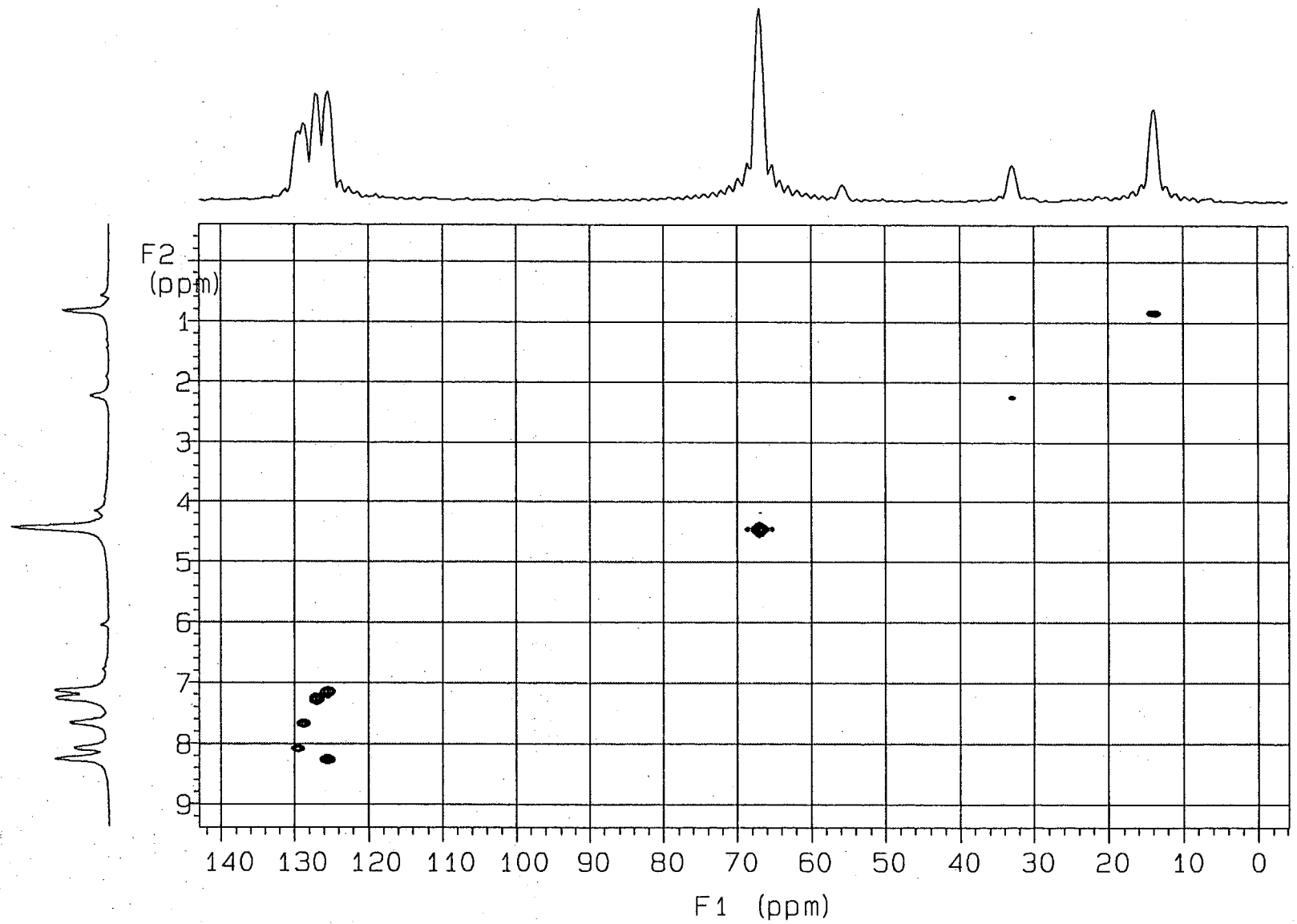


A2-ghsqc- 323 K C_6D_6



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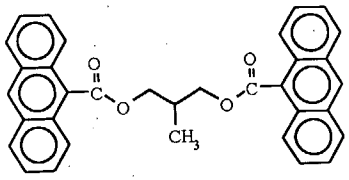
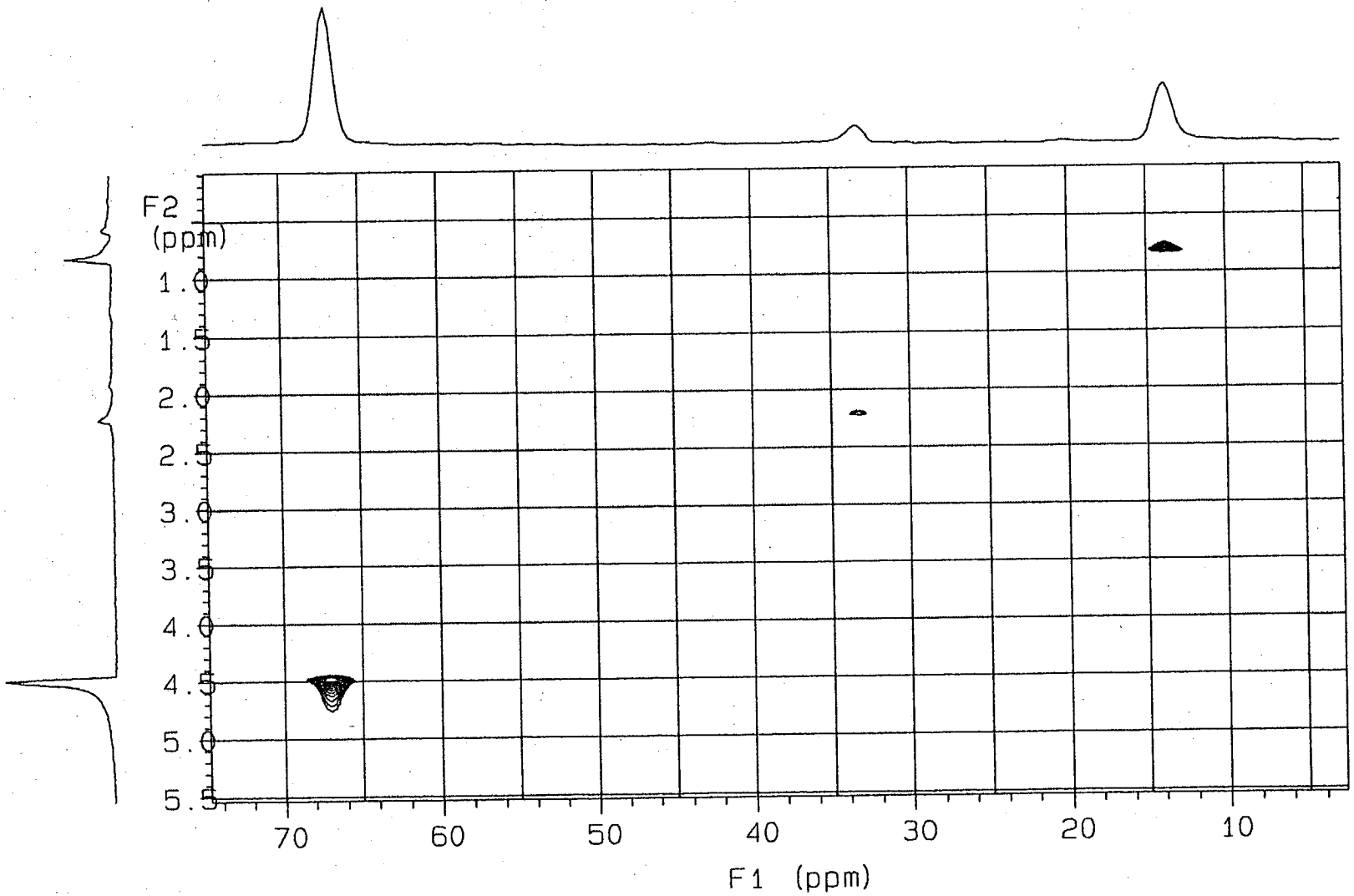


A2-ghsqc- 323 K C_6D_6



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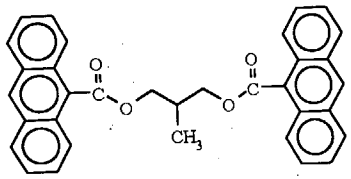
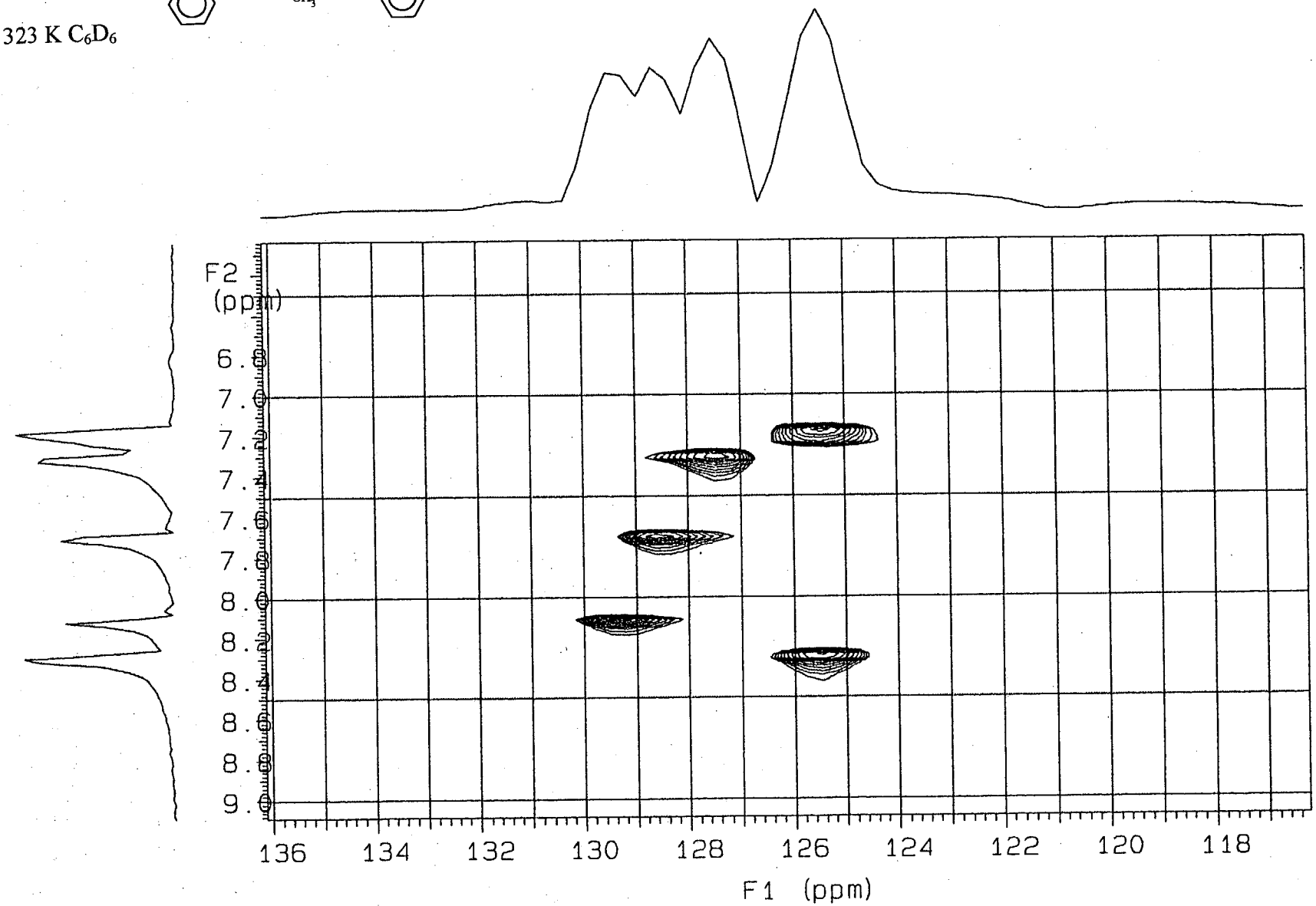
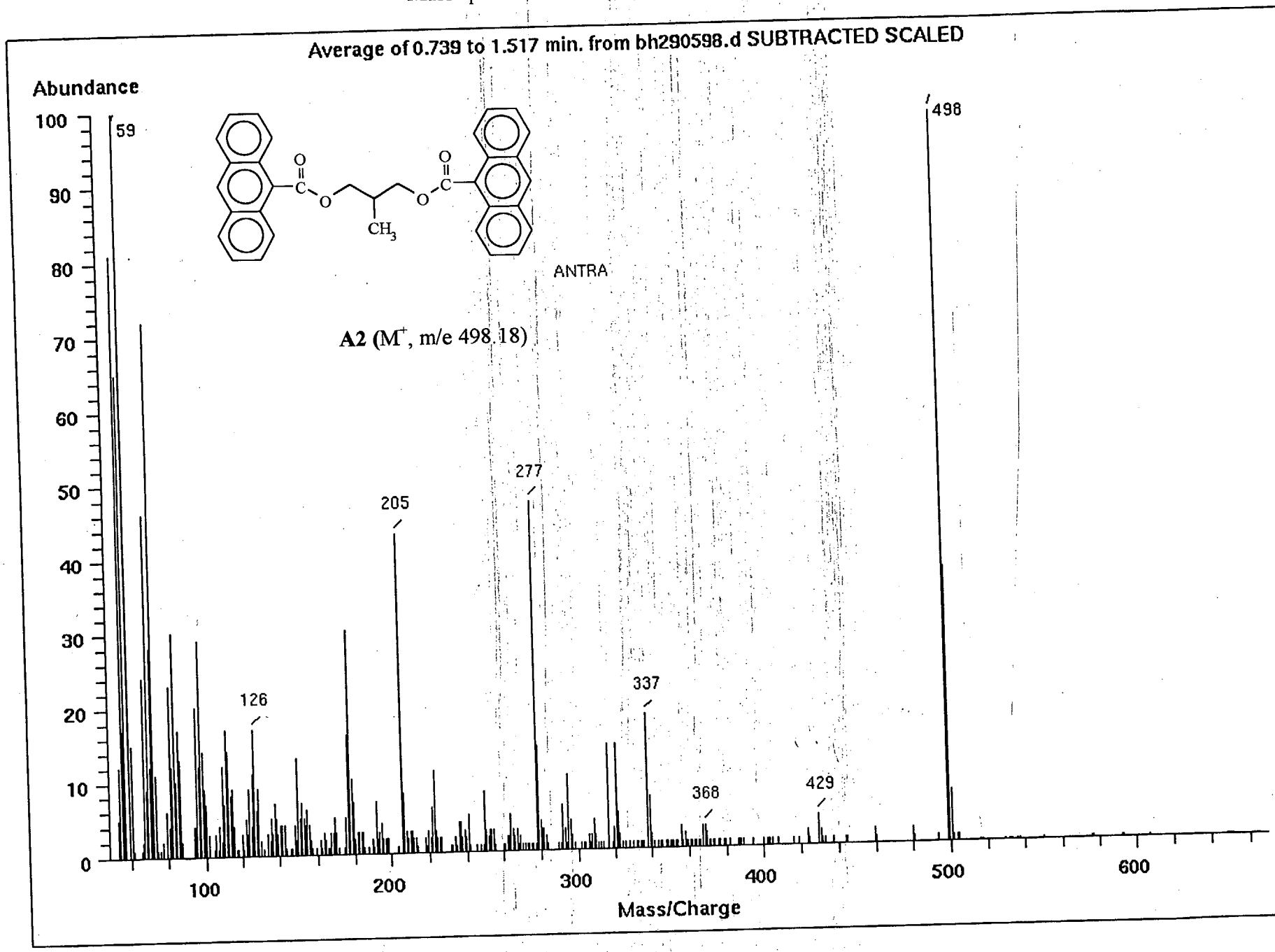


A2-ghsqc- 323 K C_6D_6



Mass spectrum of **A2** (EI, 70 EV)



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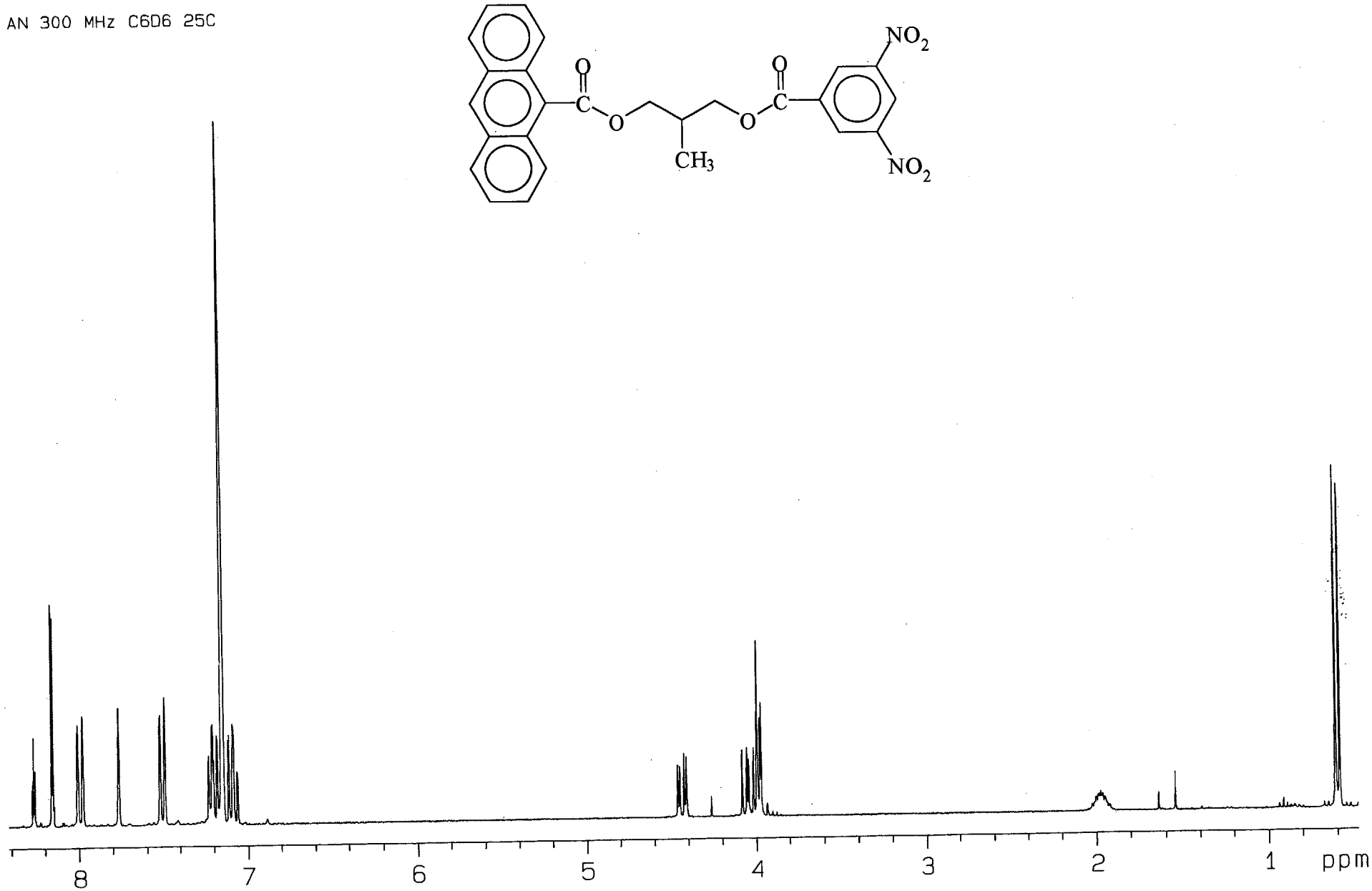
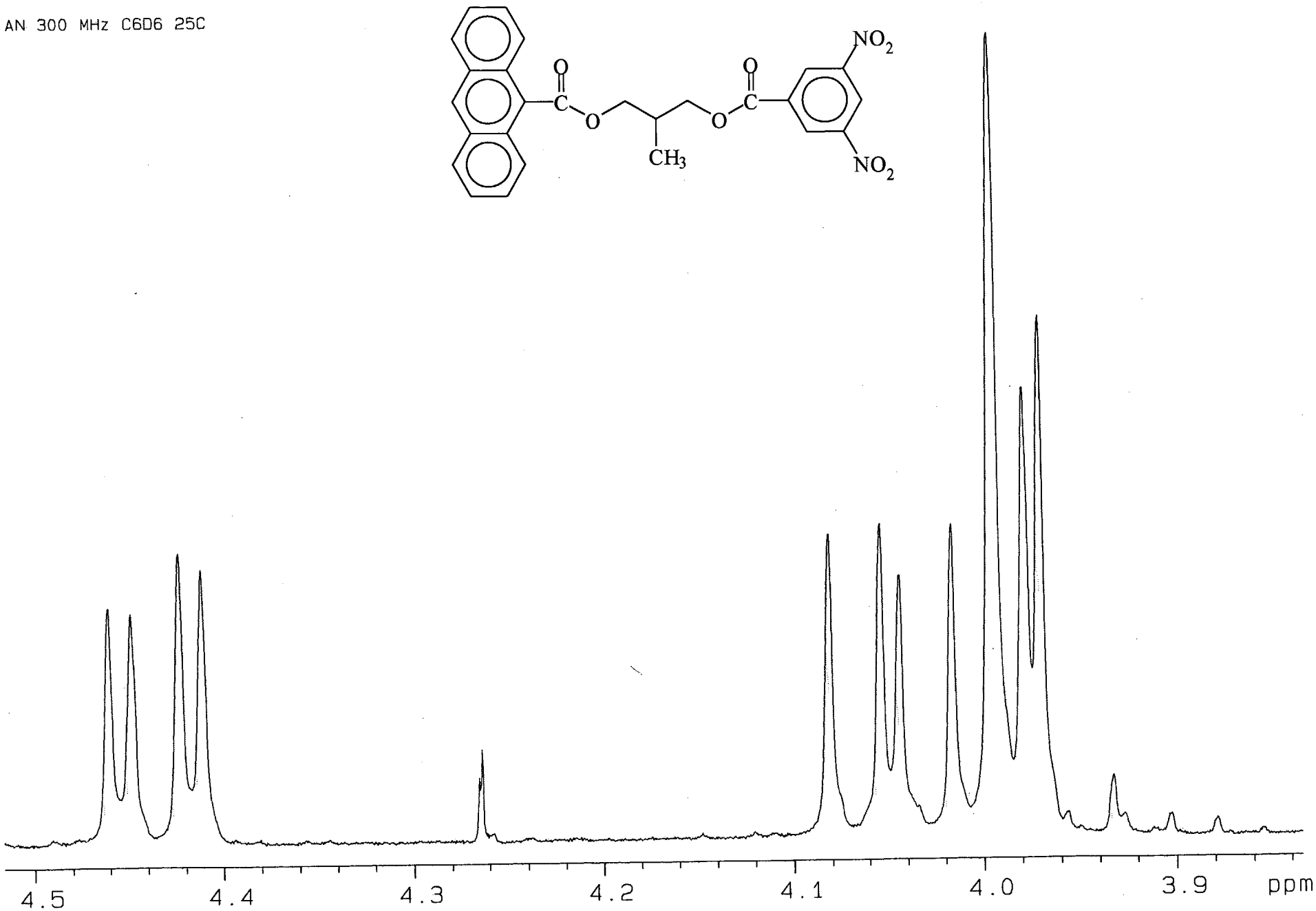


^{1}H-NMR spectrum of **AN** (300 MHz , C_6D_6, 298 K)



AB parts of the ABX multiplets due to the methylene groups of **AN**.(300 MHz , C_6D_6)

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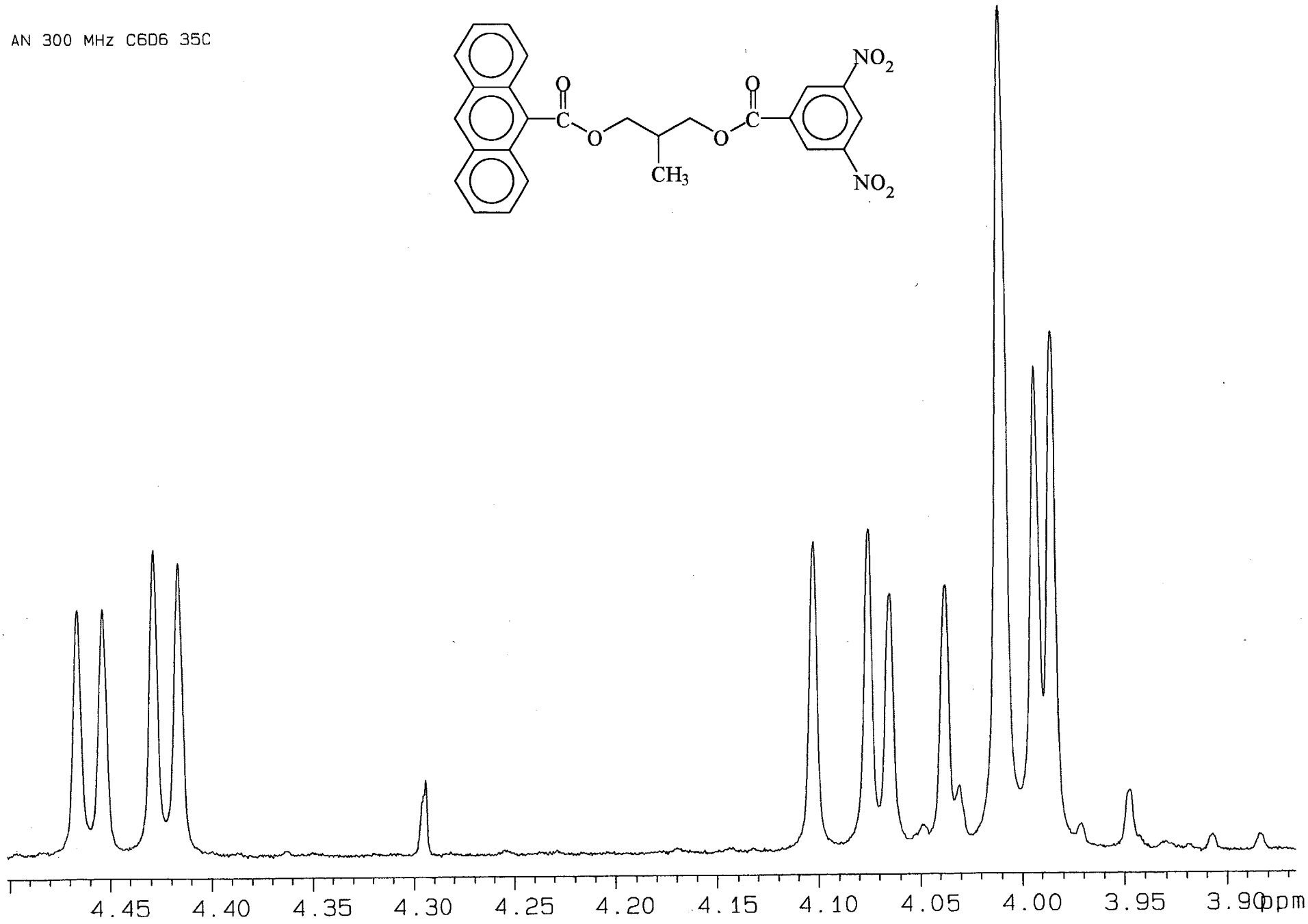

AB parts of the ABX multiplets due to the methylene groups of **AN**.(300 MHz , C_6D_6)

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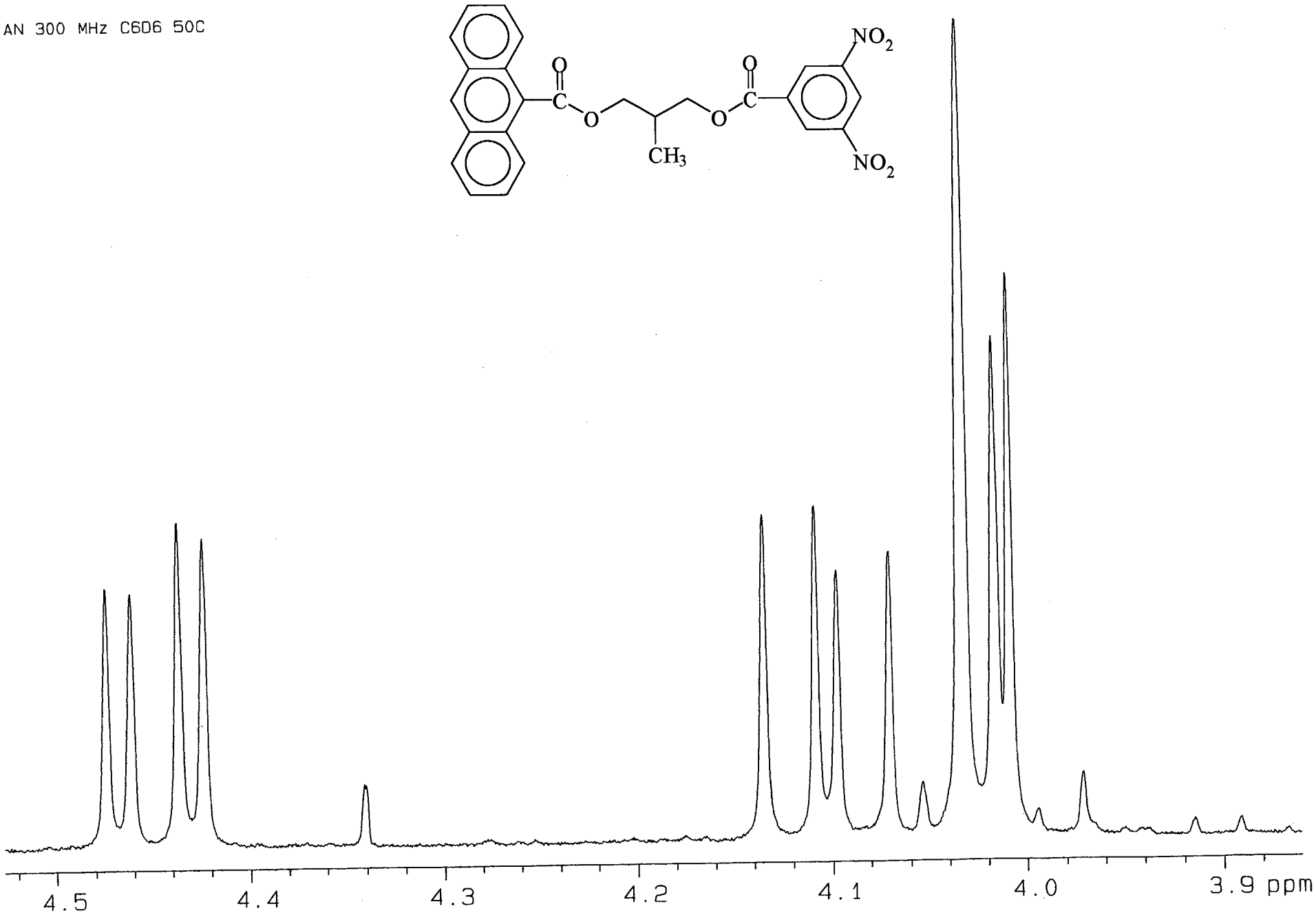

AB parts of the ABX multiplets due to the methylene groups of **AN**.(300 MHz , C_6D_6)

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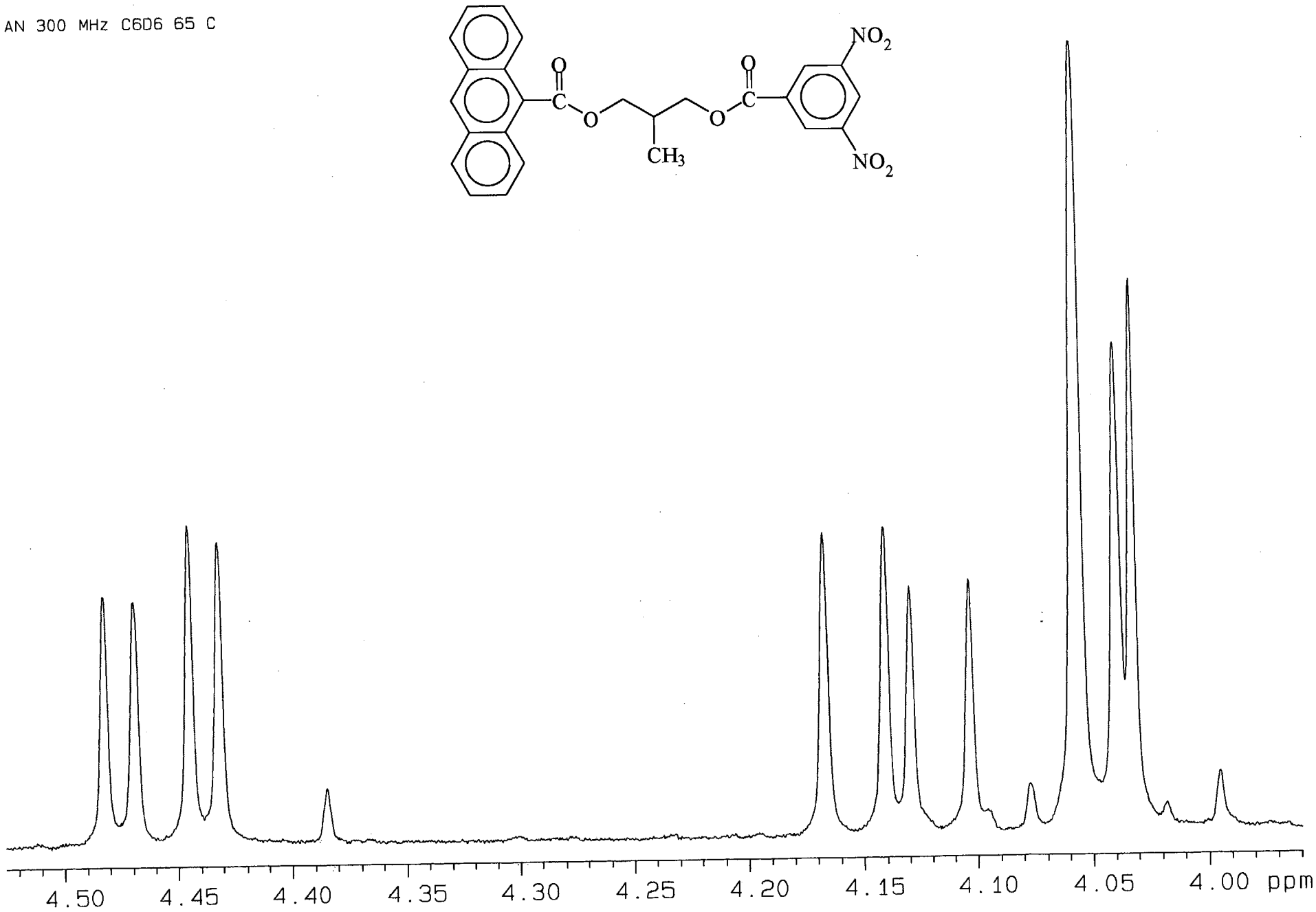

AB parts of the ABX multiplets due to the methylene groups of **AN**.(300 MHz , C_6D_6)

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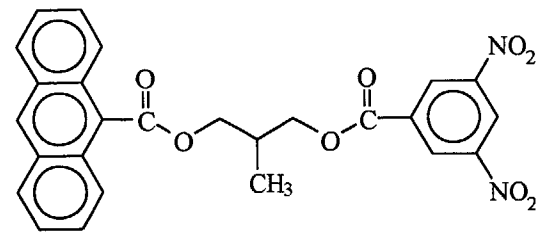
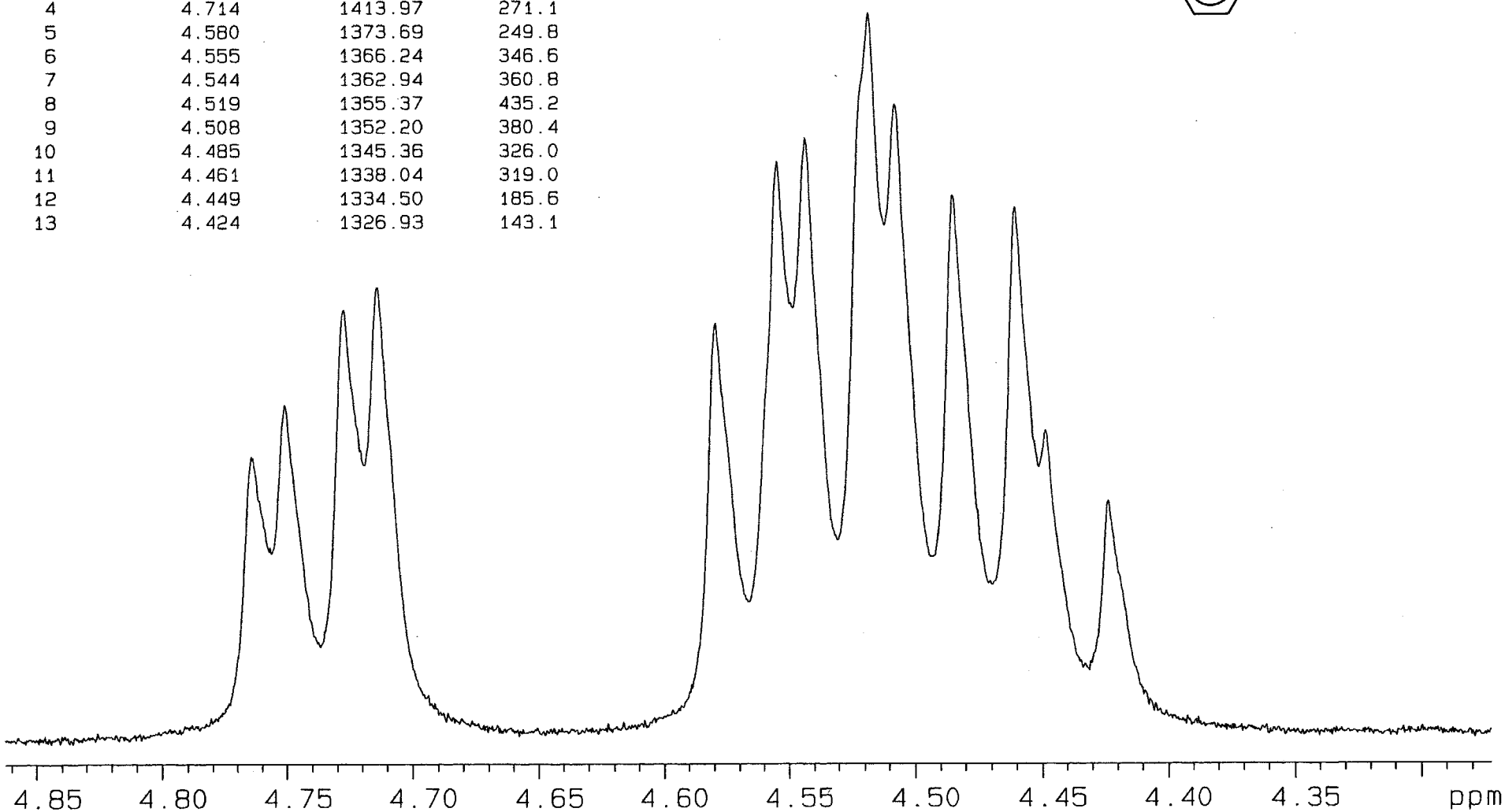
AN DMSO-d6 300 MHz 25 c

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.765	1429.23	170.2
2	4.751	1425.08	201.2
3	4.727	1418.00	257.9
4	4.714	1413.97	271.1
5	4.580	1373.69	249.8
6	4.555	1366.24	346.6
7	4.544	1362.94	360.8
8	4.519	1355.37	435.2
9	4.508	1352.20	380.4
10	4.485	1345.36	326.0
11	4.461	1338.04	319.0
12	4.449	1334.50	185.6
13	4.424	1326.93	143.1





AB parts of the ABX multiplets due to the methylene groups of **AN**.(300 MHz , DMSO-d_6)

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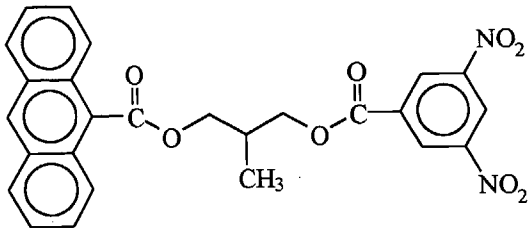
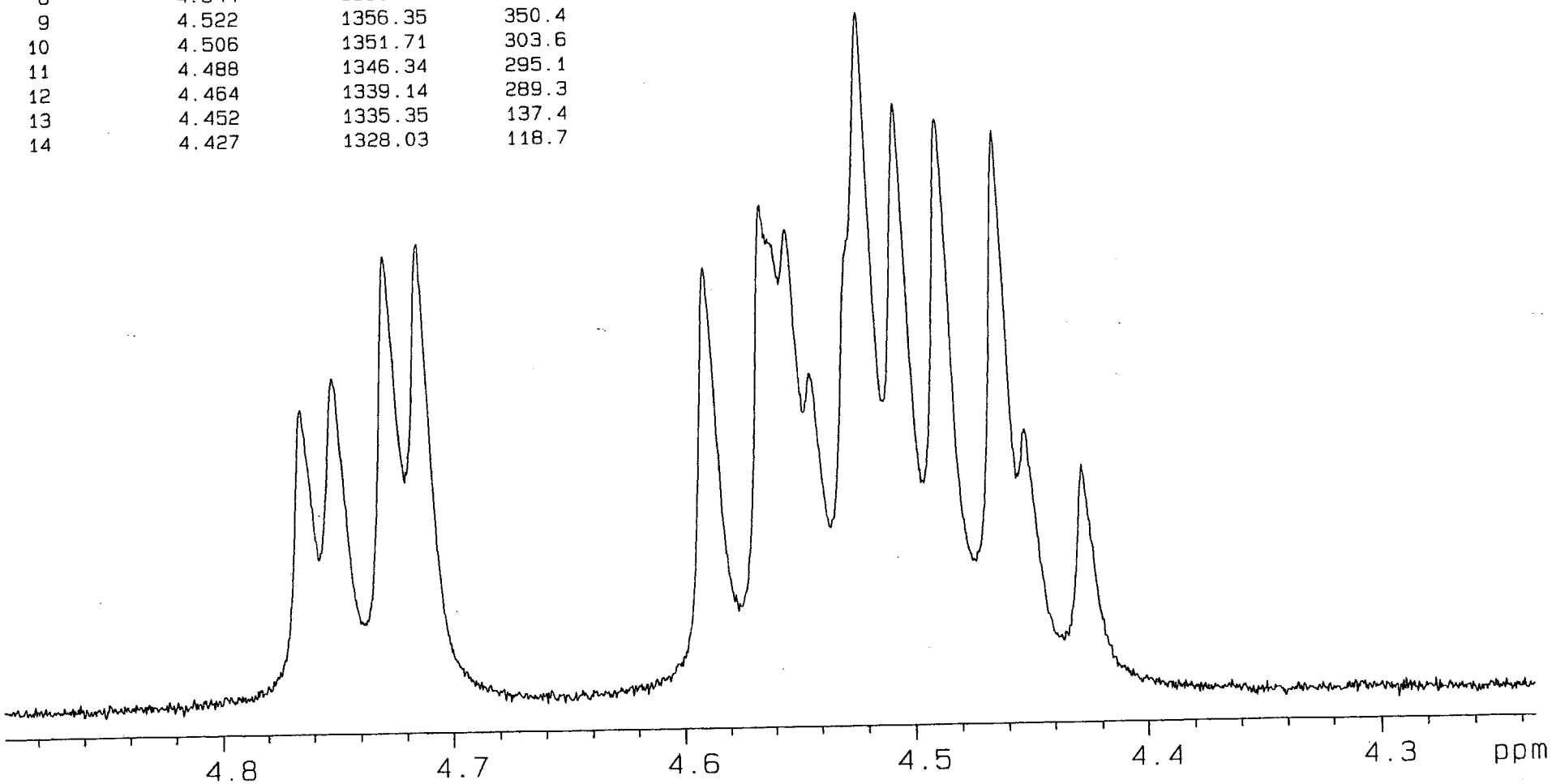


AN DMSO-d6 300 MHz 35 C

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.765	1429.23	152.5
2	4.751	1425.08	168.6
3	4.728	1418.24	229.9
4	4.714	1413.85	236.2
5	4.590	1376.74	221.9
6	4.565	1369.17	253.0
7	4.554	1366.00	240.6
8	4.544	1363.07	167.3
9	4.522	1356.35	350.4
10	4.506	1351.71	303.6
11	4.488	1346.34	295.1
12	4.464	1339.14	289.3
13	4.452	1335.35	137.4
14	4.427	1328.03	118.7



AB parts of the ABX multiplets due to the methylene groups of **AN**.(300 MHz , DMSO-d_6)

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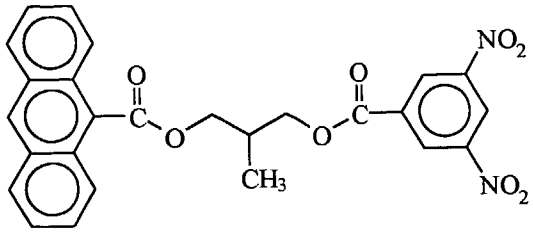
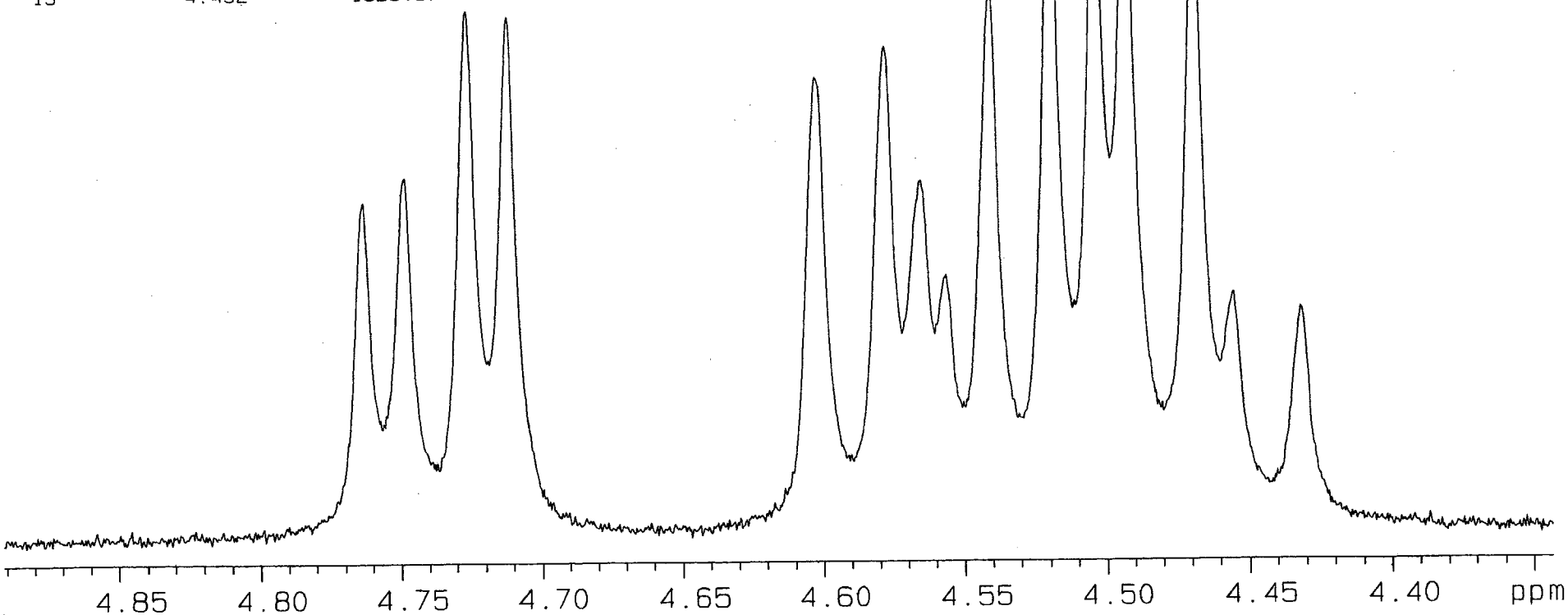


AN DMSO-d6 300 MHz 50 C

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.763	1428.74	112.5
2	4.749	1424.35	120.6
3	4.727	1417.75	176.5
4	4.712	1413.36	174.4
5	4.603	1380.64	153.2
6	4.578	1373.20	163.7
7	4.565	1369.41	119.0
8	4.556	1366.73	87.3
9	4.541	1362.09	185.7
10	4.519	1355.62	228.5
11	4.504	1350.86	233.7
12	4.493	1347.56	231.4
13	4.469	1340.48	213.0
14	4.456	1336.45	81.0
15	4.432	1329.37	76.3



AB parts of the ABX multiplets due to the methylene groups of **AN**.(300 MHz , DMSO-d_6)

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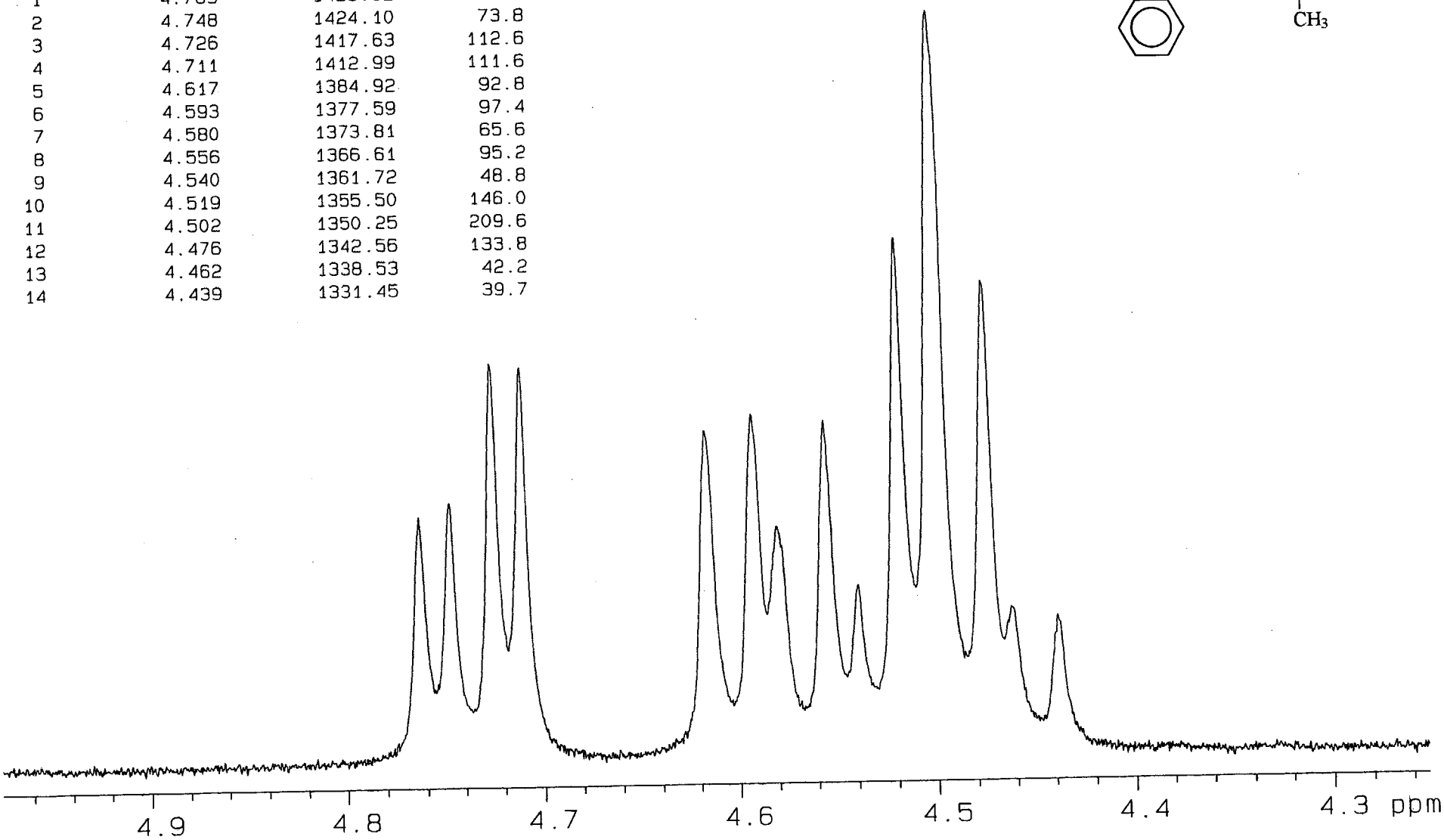
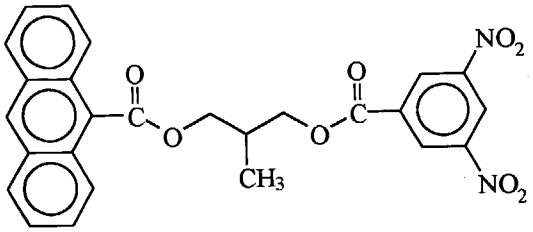
AN DMSO-d6 300 MHz 65 C

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	4.763	1428.62	69.9
2	4.748	1424.10	73.8
3	4.726	1417.63	112.6
4	4.711	1412.99	111.6
5	4.617	1384.92	92.8
6	4.593	1377.59	97.4
7	4.580	1373.81	65.6
8	4.556	1366.61	95.2
9	4.540	1361.72	48.8
10	4.519	1355.50	146.0
11	4.502	1350.25	209.6
12	4.476	1342.56	133.8
13	4.462	1338.53	42.2
14	4.439	1331.45	39.7





AB parts of the ABX multiplets due to the methylene groups of **AN**.(300 MHz , DMSO-d_6)

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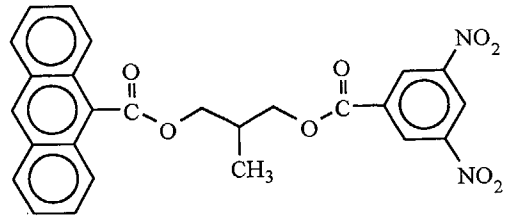
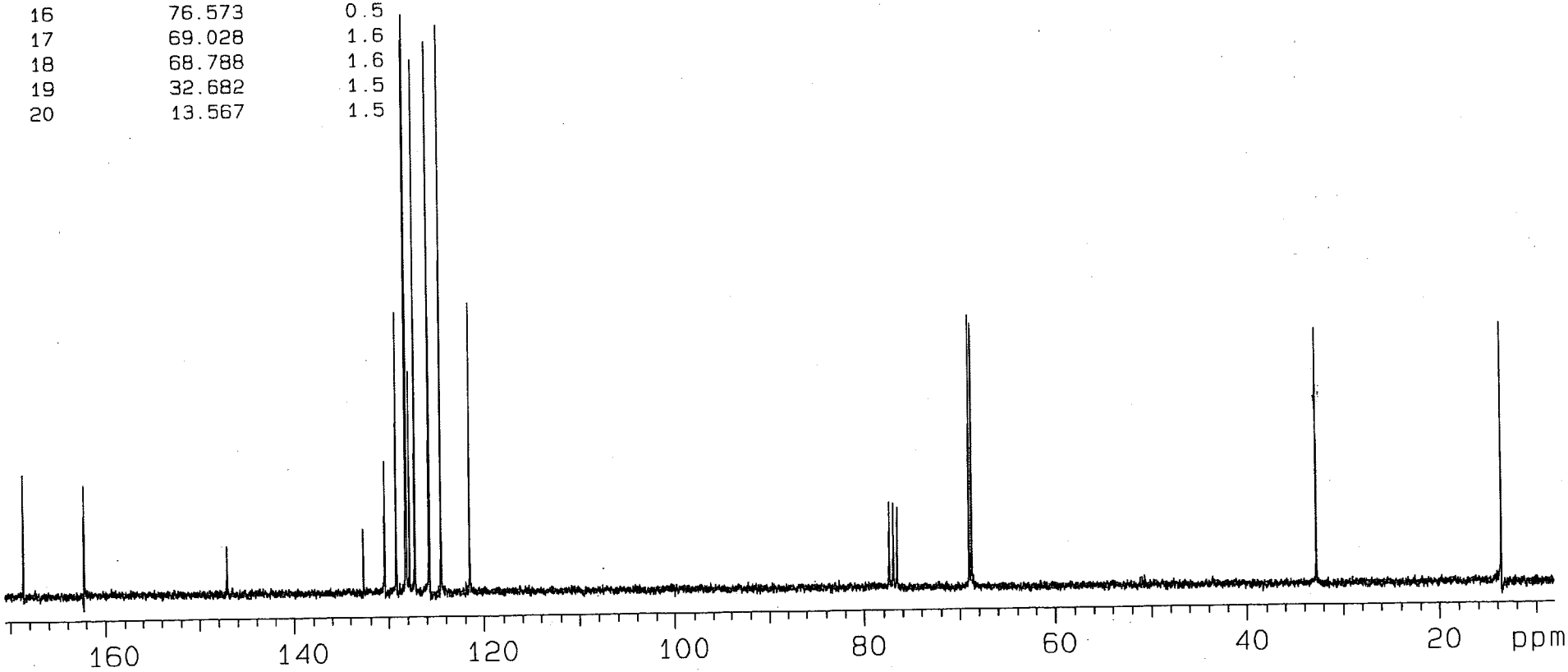
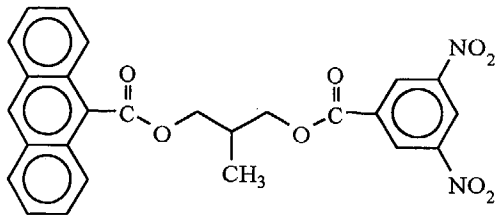


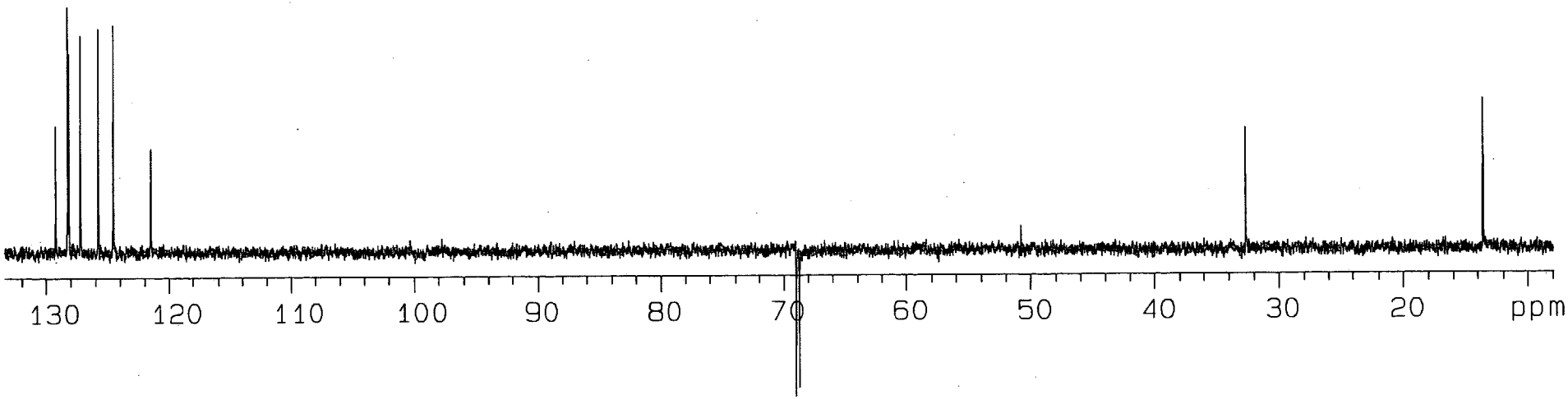
INDEX	FREQUENCY (PPM)	HEIGHT
1	168.607	0.7
2	162.265	0.7
3	147.129	0.3
4	132.728	0.4
5	130.431	0.8
6	129.203	1.7
7	128.228	3.3
8	128.141	3.5
9	127.801	1.3
10	127.213	3.2
11	125.751	3.3
12	124.549	3.4
13	121.505	1.7
14	77.421	0.5
15	77.000	0.5
16	76.573	0.5
17	69.028	1.6
18	68.788	1.6
19	32.682	1.5
20	13.567	1.5



^{13}C-NMR spectrum of **AN** (75.4 Mhz, $CDCl_3$, 323 K)

INDEX	FREQUENCY (PPM)	HEIGHT
1	129.203	25.8
2	128.228	49.7
3	128.141	40.3
4	127.213	44.0
5	125.751	45.3
6	124.549	46.0
7	121.505	21.0
8	69.028	-29.5
9	68.781	-27.6
10	32.682	24.5
11	13.561	30.1





^{13}C-NMR (DEPT) spectrum of **AN** (75.4 Mhz, $CDCl_3$, 323 K)

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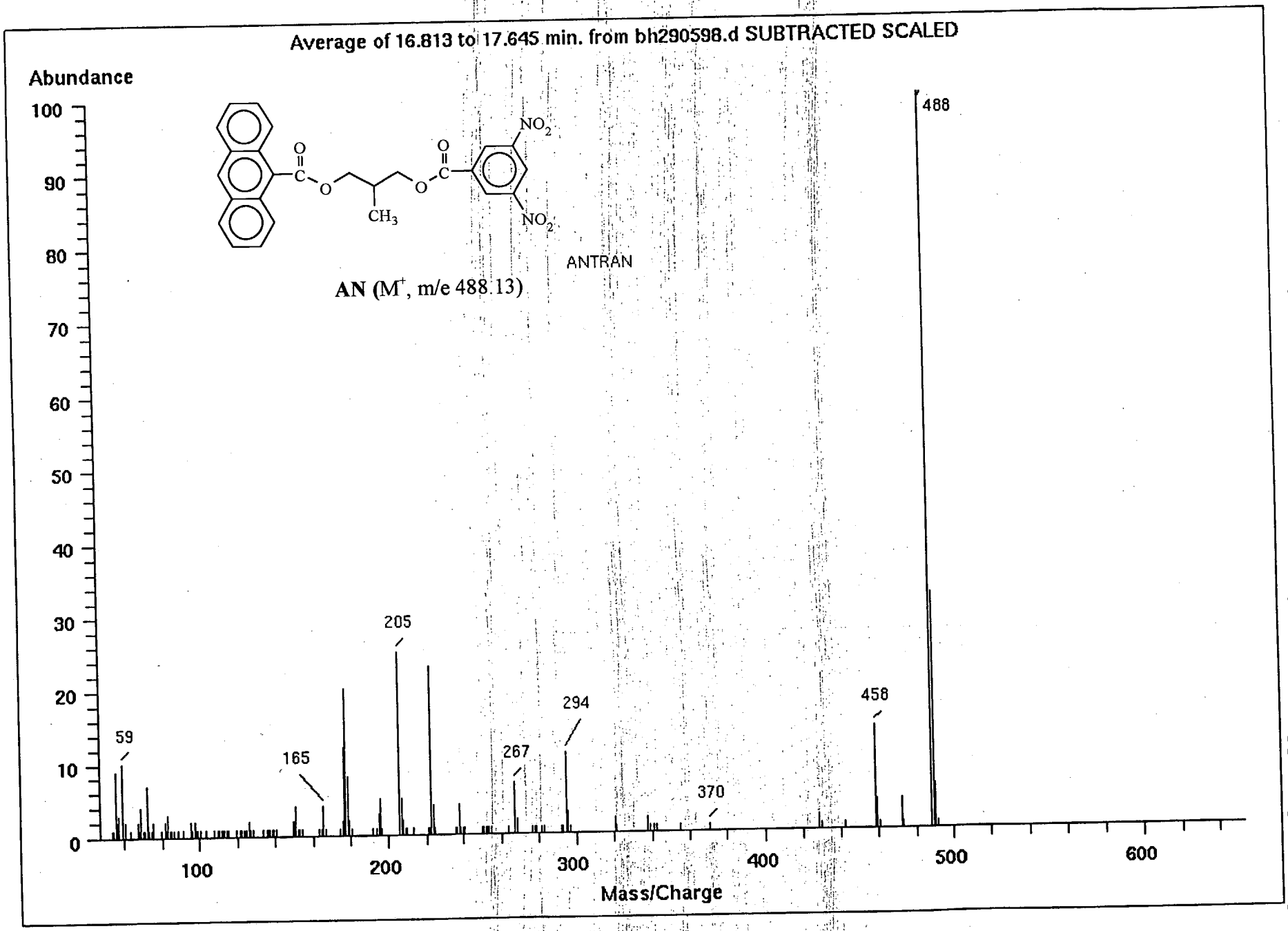

Mass spectrum of **AN** (EI, 70 EV)

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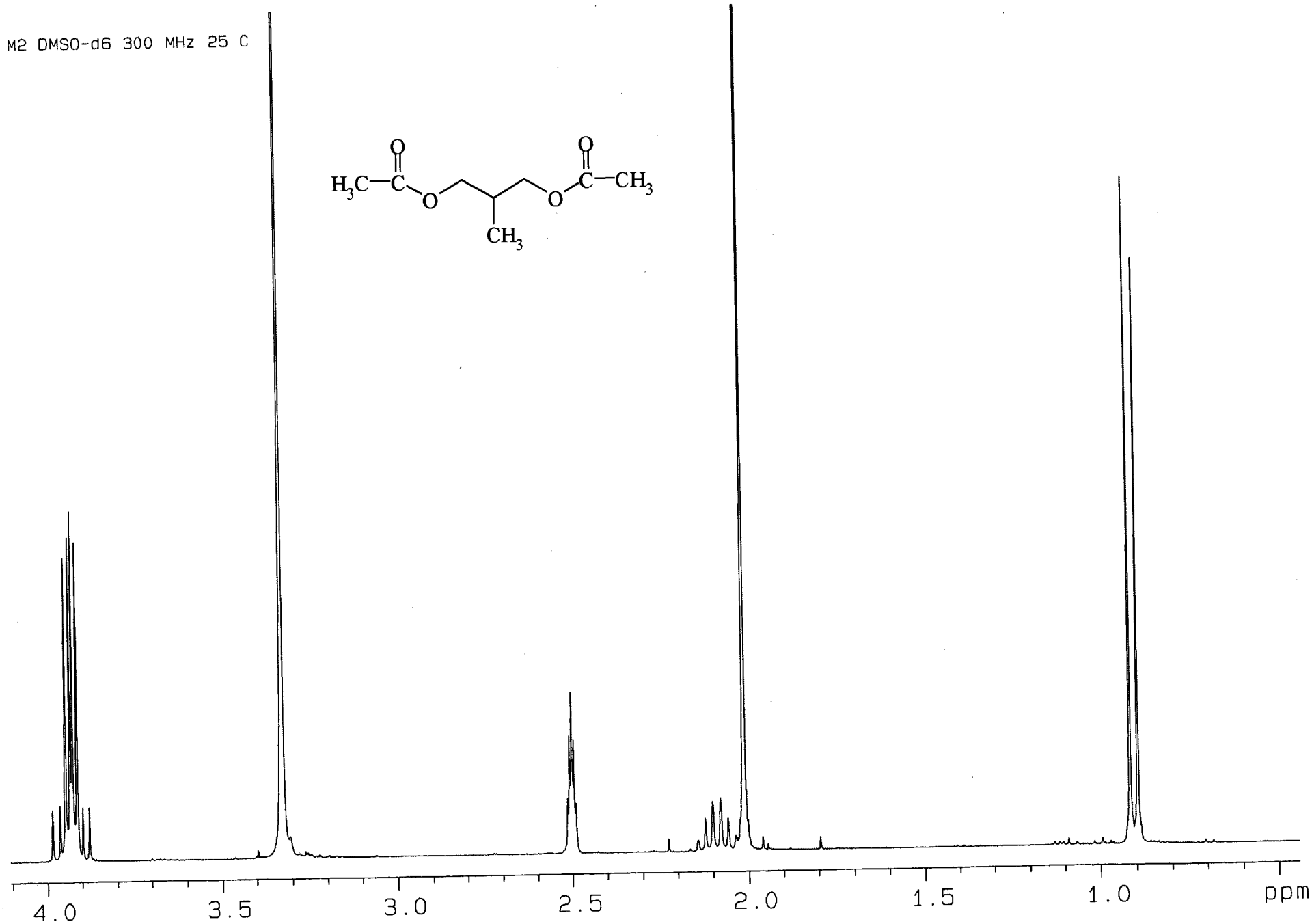
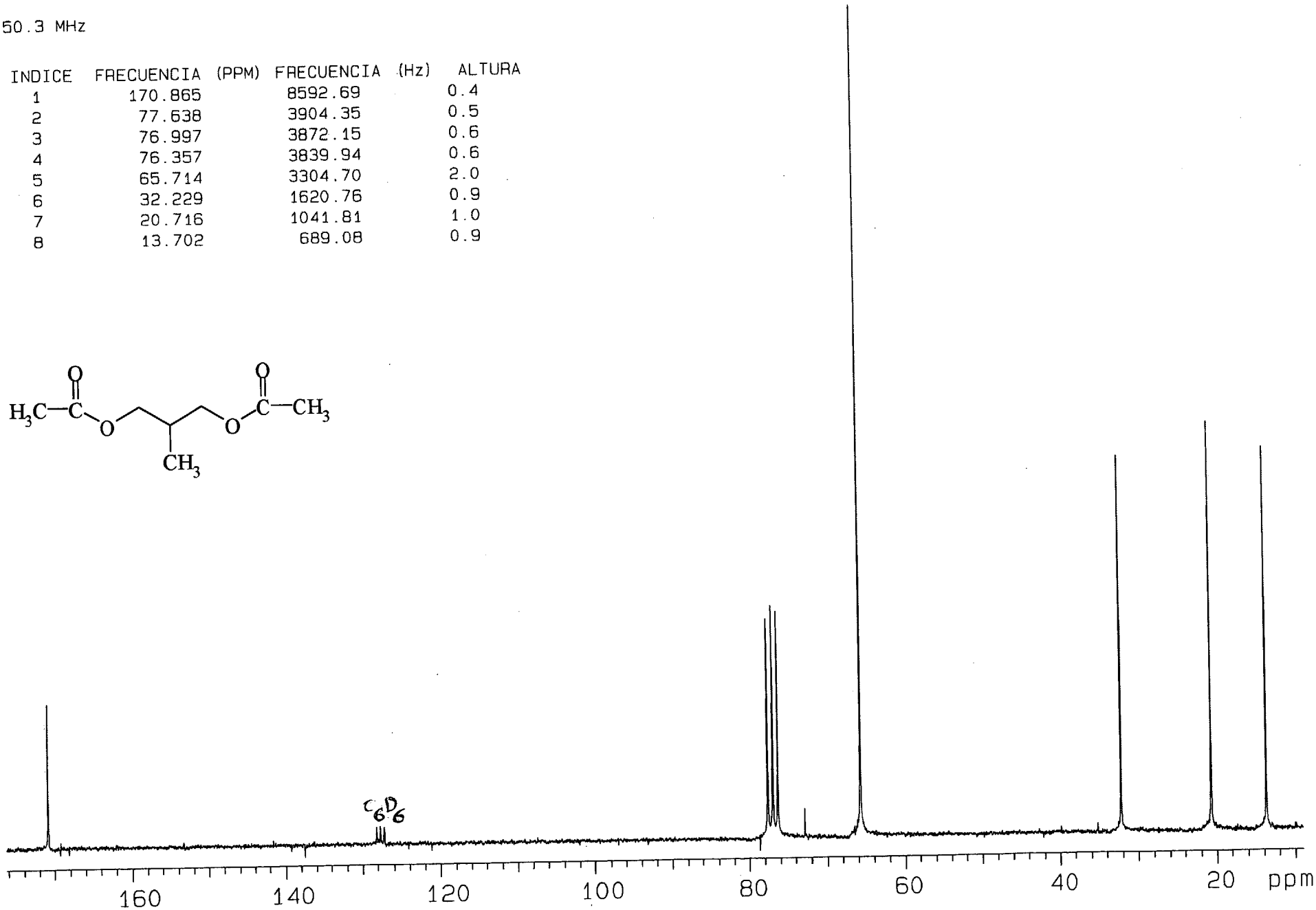


^{1}H-NMR spectrum of **M2** (300 MHz , DMSO-d_6, 298 K)

50.3 MHz

INDICE	FRECUENCIA (PPM)	FRECUENCIA (Hz)	ALTURA
1	170.865	8592.69	0.4
2	77.638	3904.35	0.5
3	76.997	3872.15	0.6
4	76.357	3839.94	0.6
5	65.714	3304.70	2.0
6	32.229	1620.76	0.9
7	20.716	1041.81	1.0
8	13.702	689.08	0.9



^{13}C-NMR spectrum of **M2** (50.3 MHz , $CDCl_3$)

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