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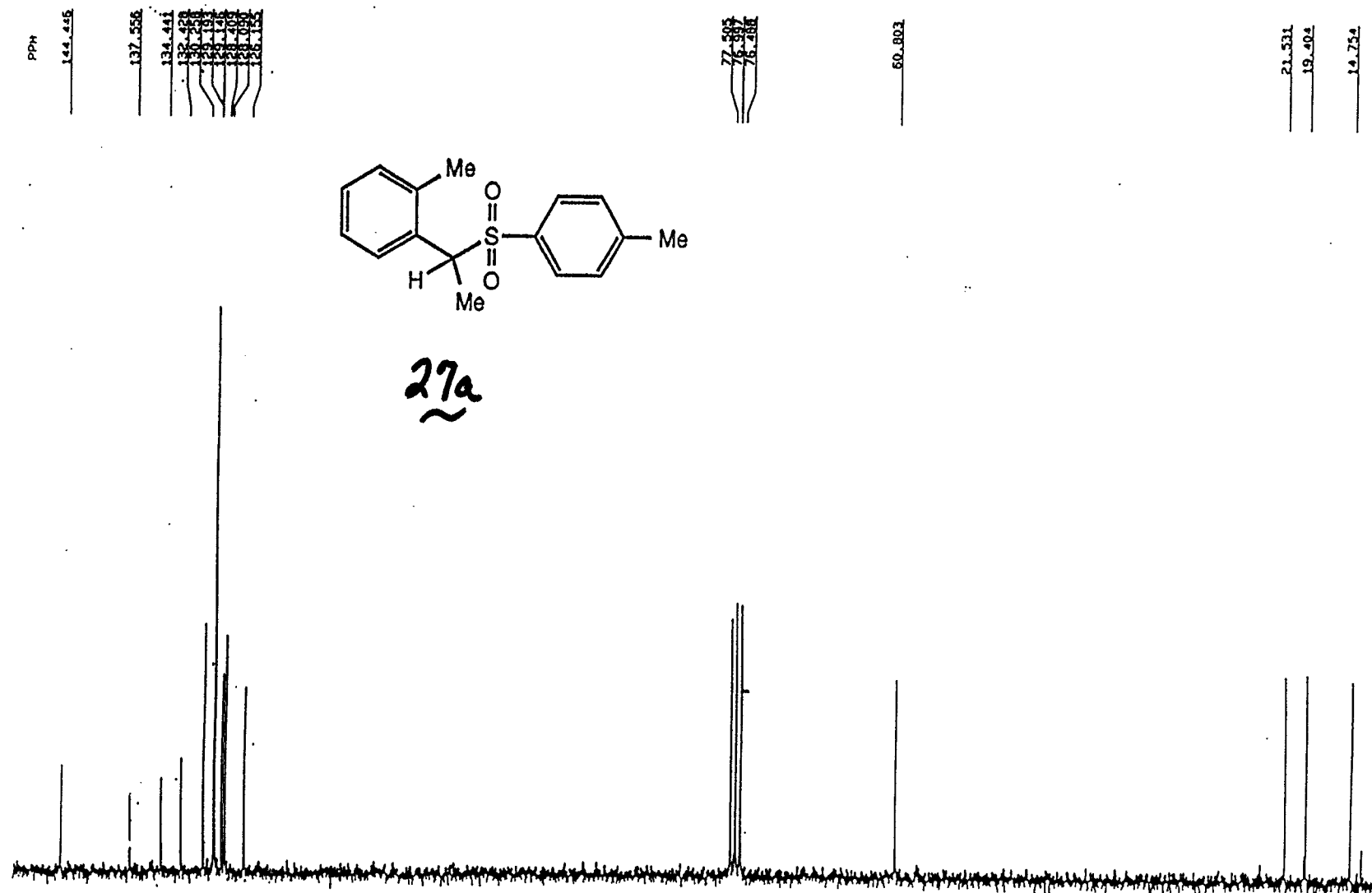
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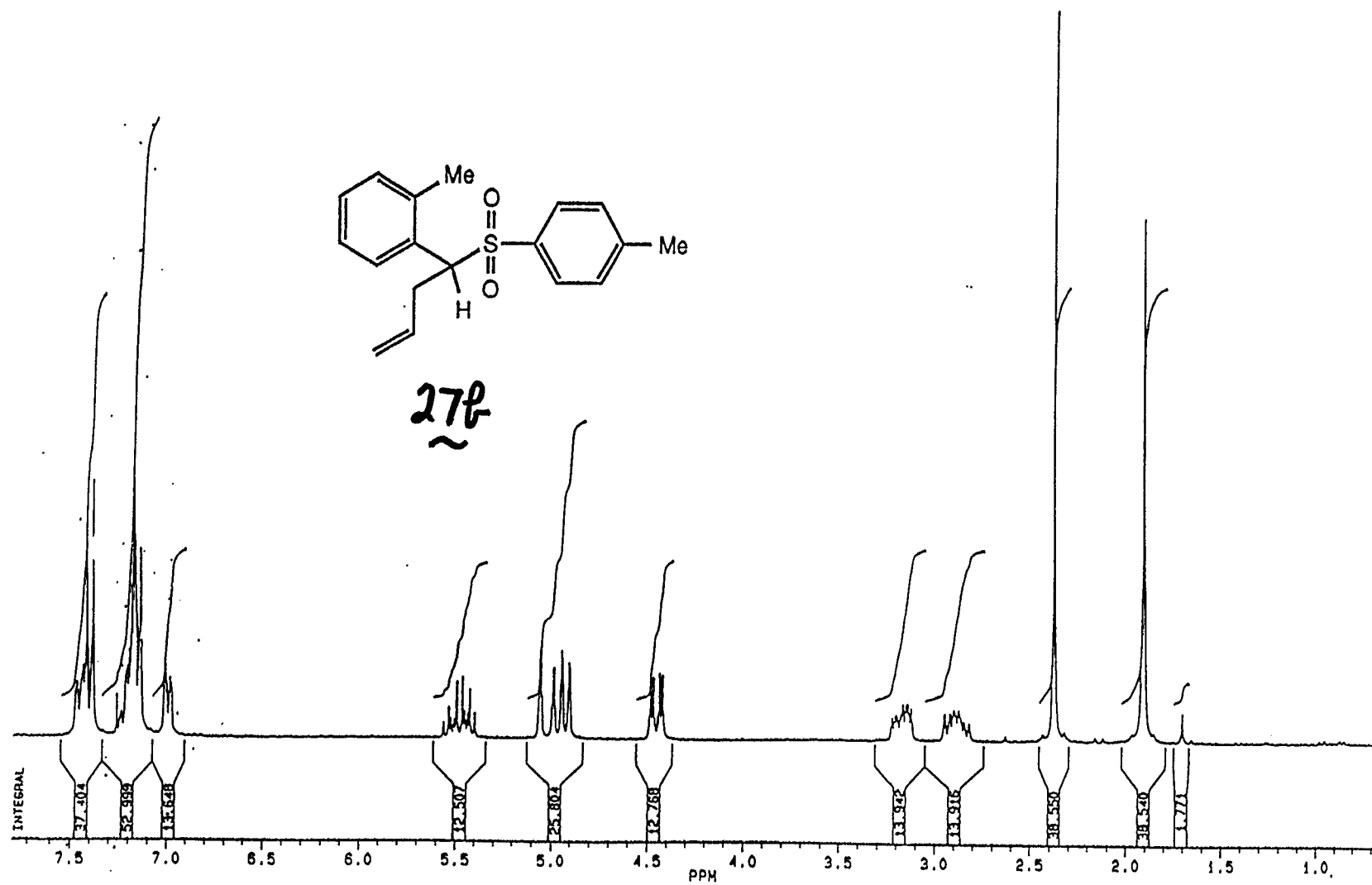
MOST TRUSTED. MOST CITED. MOST READ.

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63 MHz ^{13}C NMR of *o*, α -Dimethylbenzyl *p*-Tolyl Sulfone (**27a**).

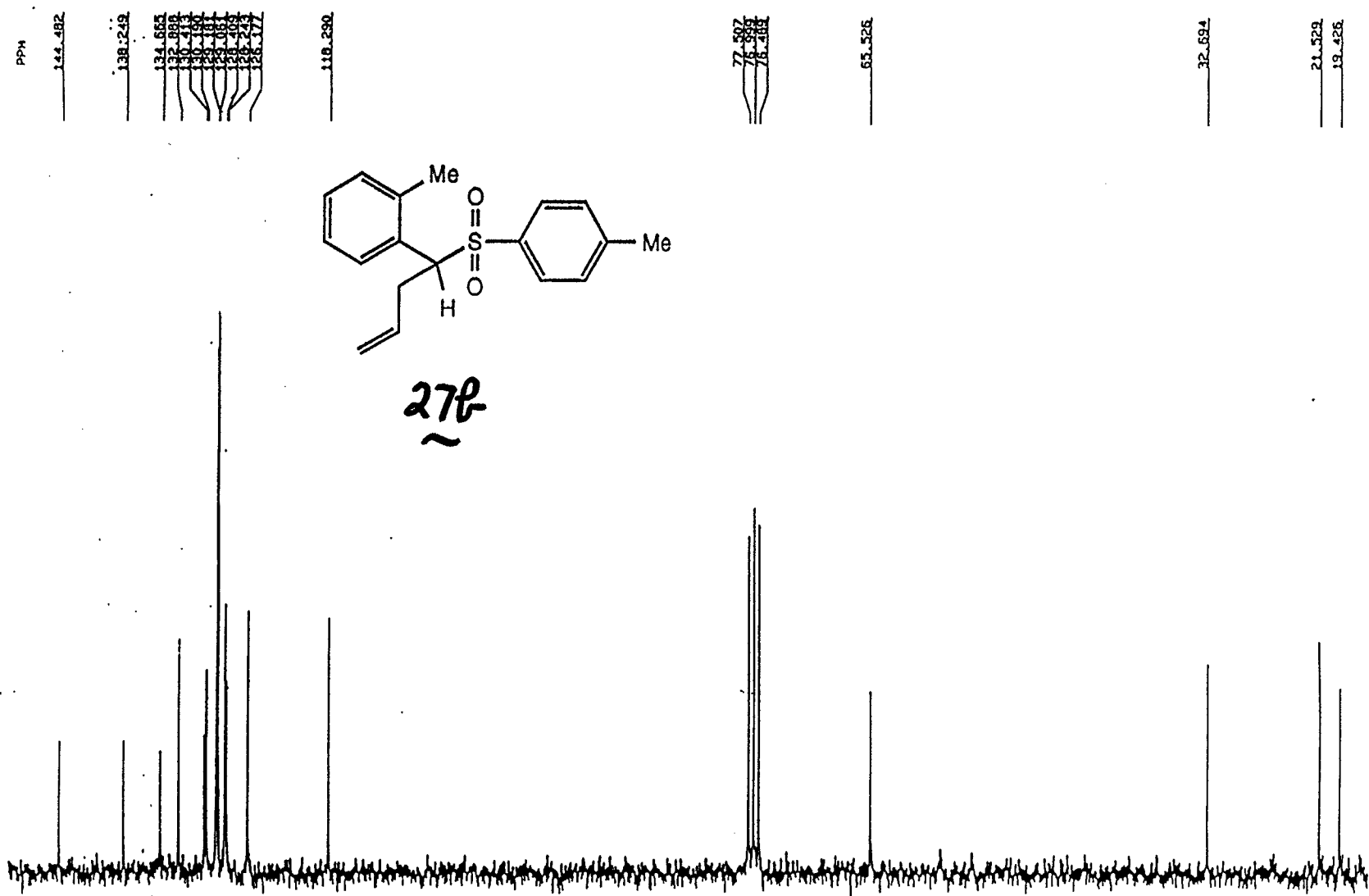
42



250 MHz ^1H NMR of *p*-Tolyl 1-*o*-Tolyl-3-butenyl Sulfone (**27f**).

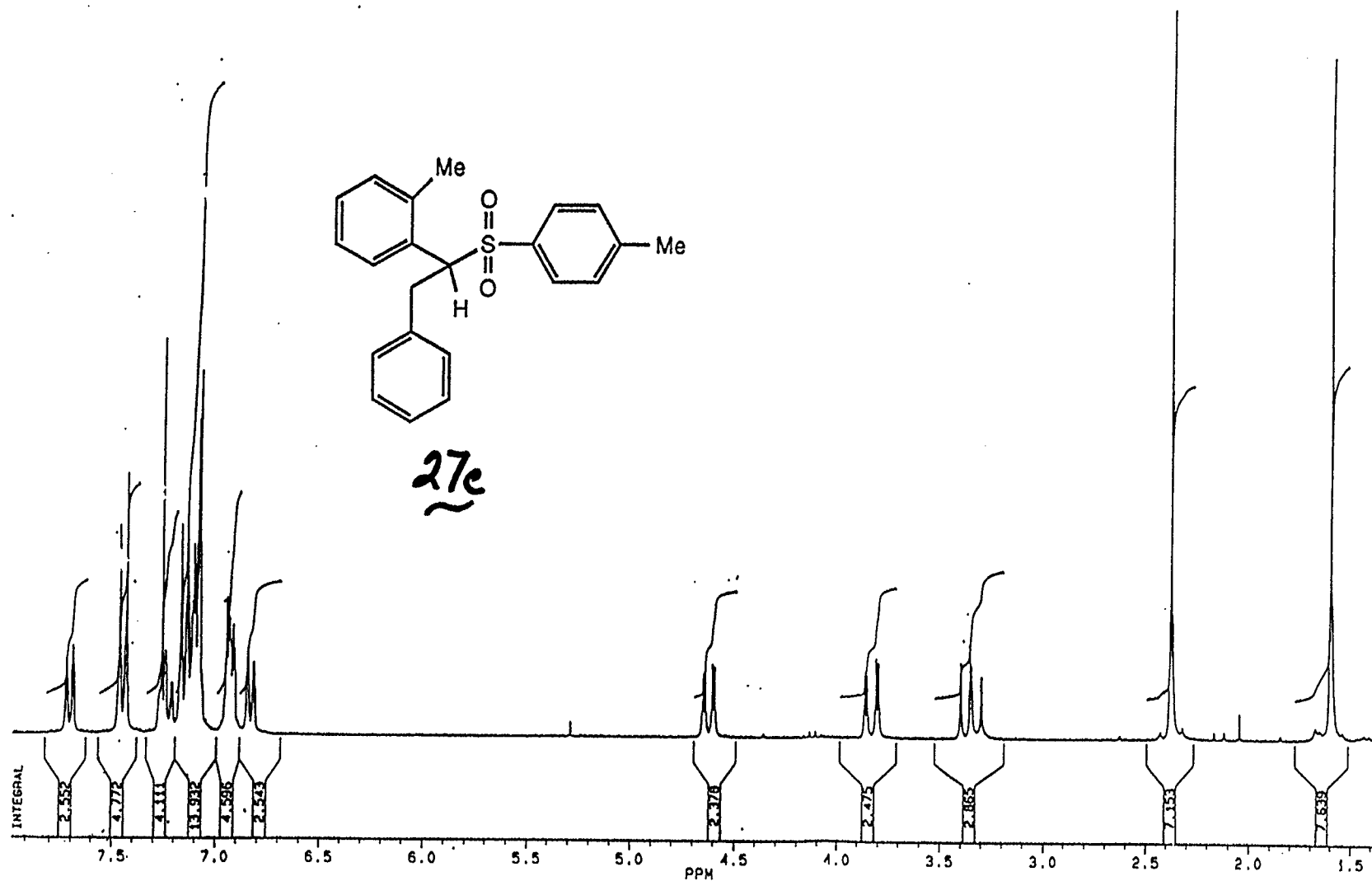
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42

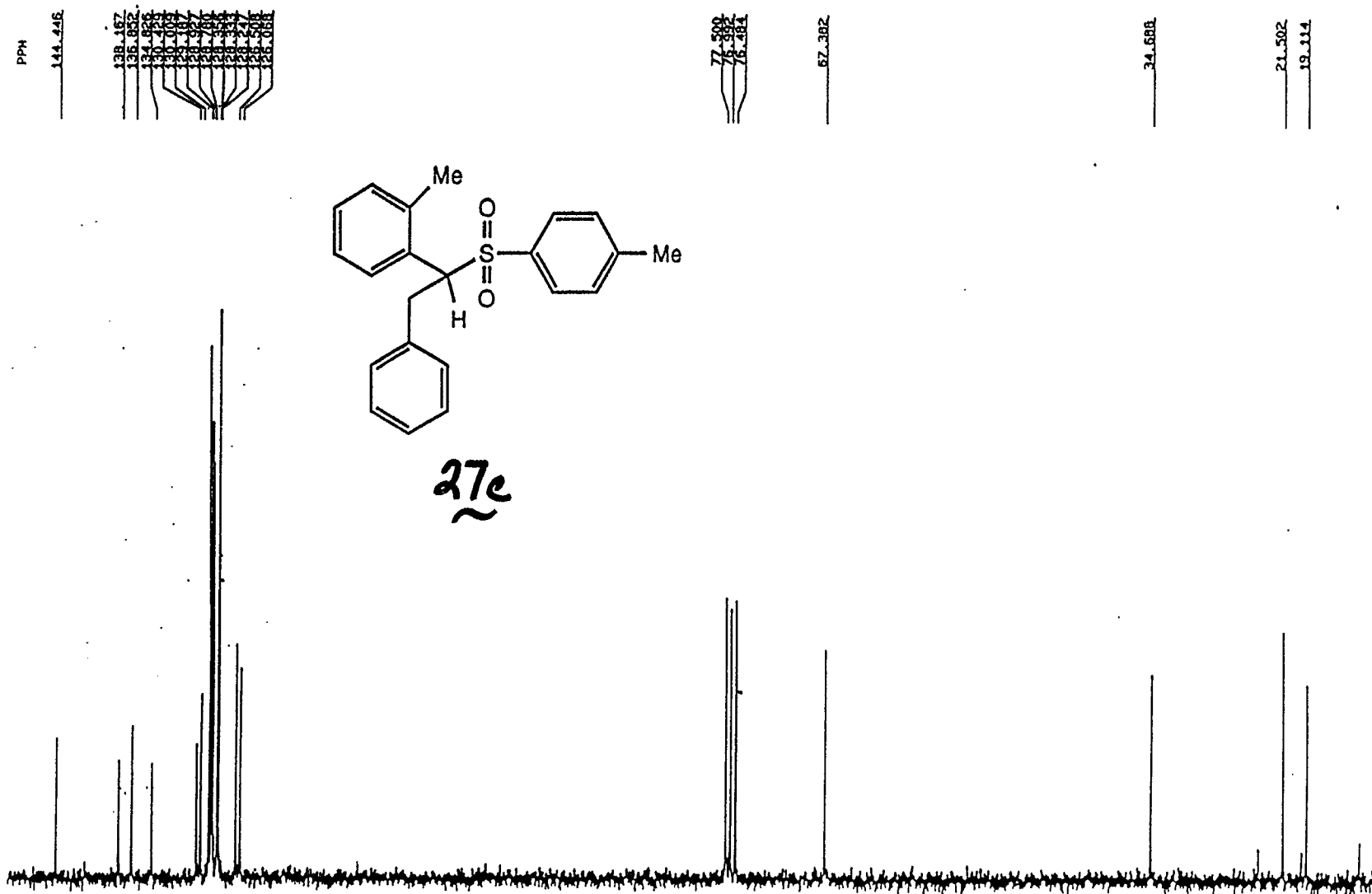


63 MHz ^{13}C NMR of *p*-Tolyl 1-*o*-Tolyl-3-butenyl Sulfone (27⁸).

231



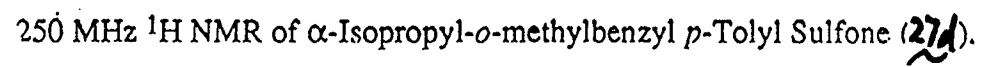
250 MHz ¹H NMR of *p*-Tolyl α-*o*-Tolylphenethyl Sulfone (**27c**).

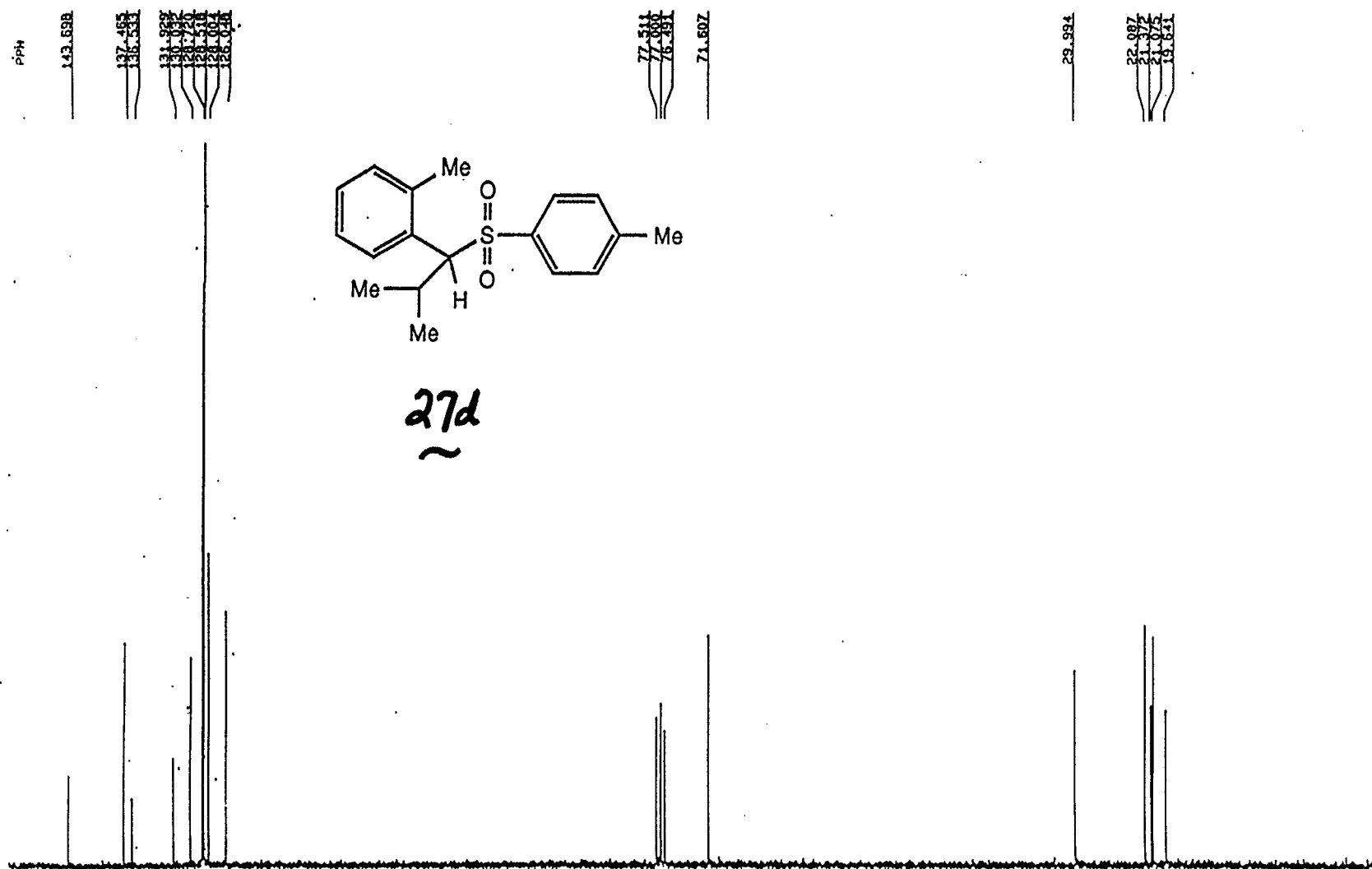


63 MHz ^{13}C NMR of *p*-Tolyl α-*o*-Tolylphenethyl Sulfone (**27c**).

233

45





63 MHz ^{13}C NMR of α -Isopropyl-*o*-methylbenzyl *p*-Tolyl Sulfone (**27d**).

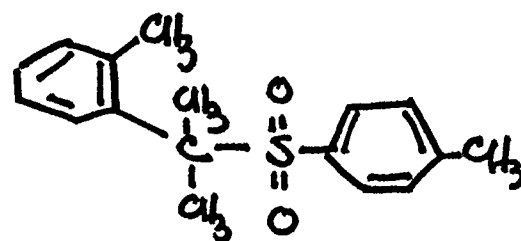
235

47

4P

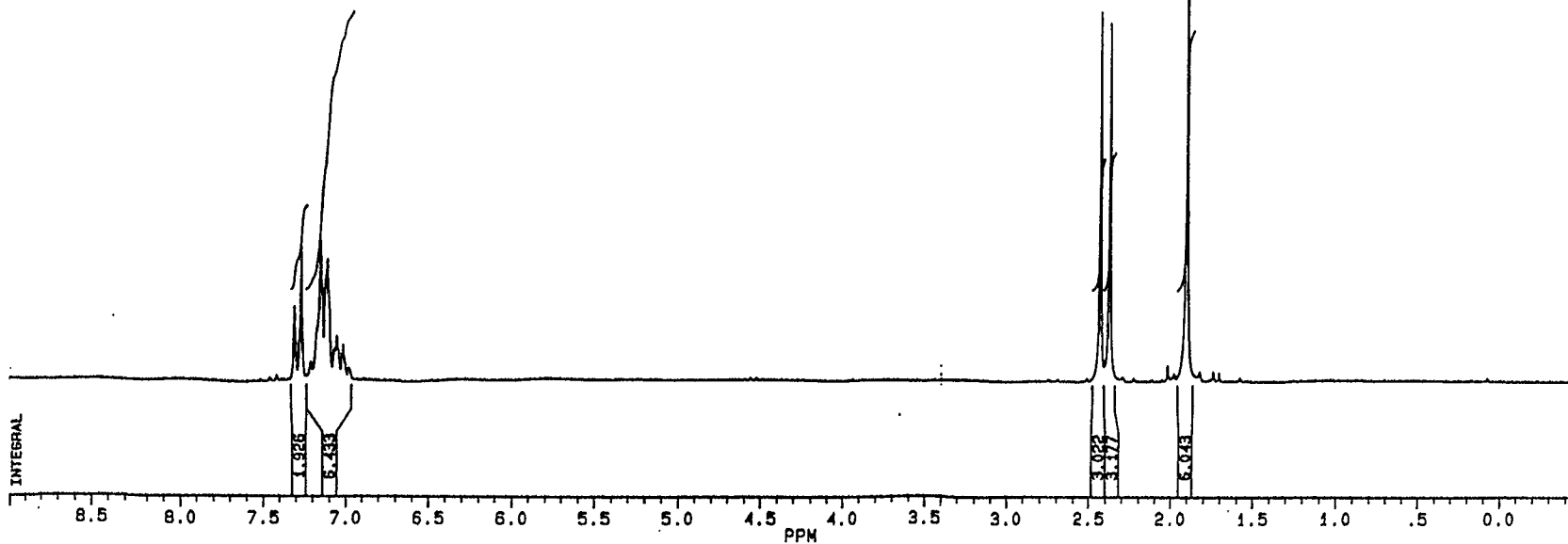
200 MHz ^1H NMR of *p*-Tolyl 2-(*o*-Tolyl)-2-propyl sulfone (33a).

~~BRUKER~~



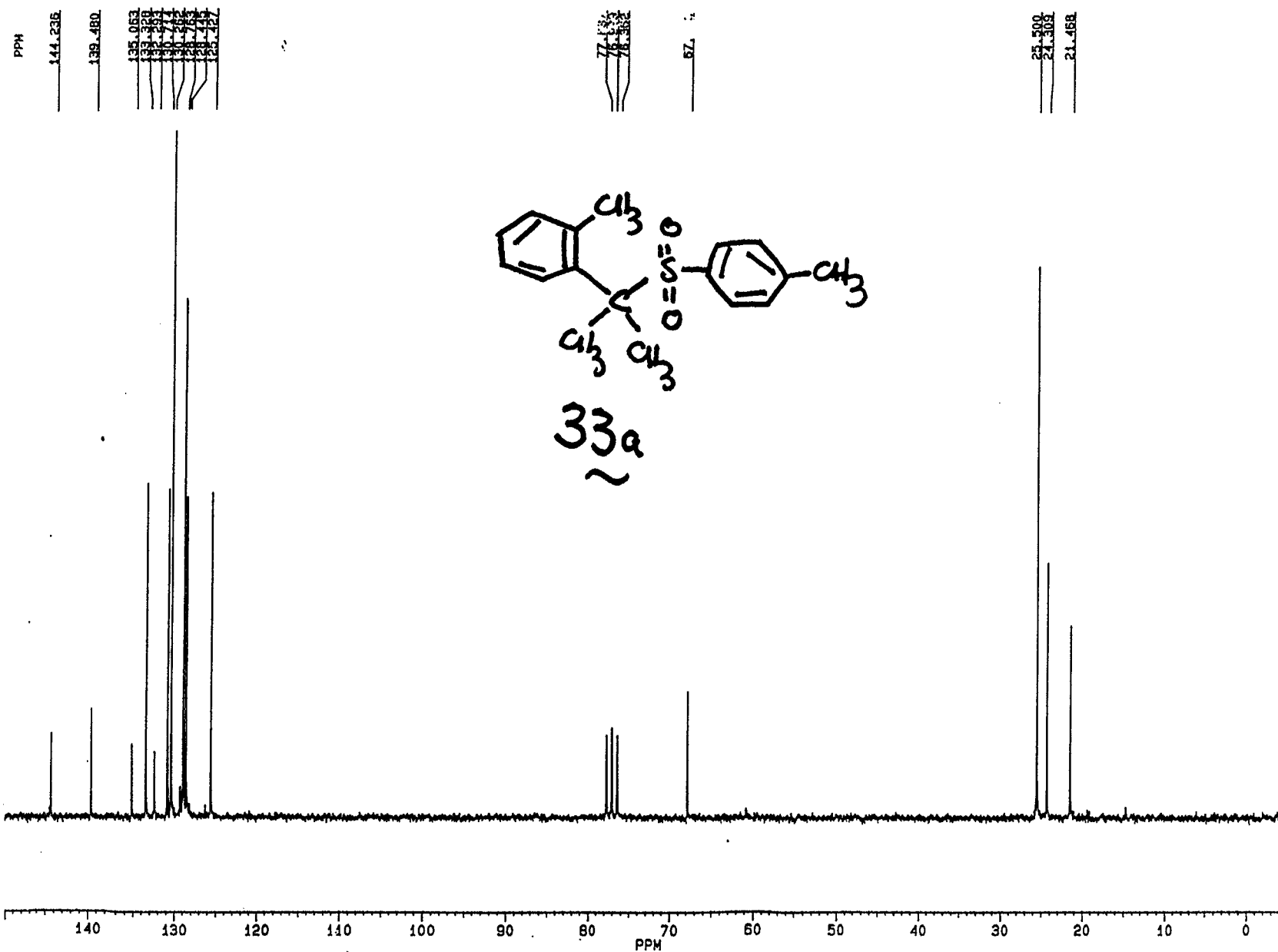
33a
~

SF	200.132
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SFO2	200.130
SY	200.0
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SI	32768
TD	32768
HZ/PT	.220
PW	3.2
RD	0.0
AQ	4.555
RG	10
NS	22
TE	297
O2	50000.000
HZ/CM	55.908
PPM/CM	.279
SR	2340.75



4P

50 MHz ^{13}C NMR of *p*-Tolyl 2-(*o*-Tolyl)-2-propyl sulfone (33a).



~~BRUKER~~

SF 50.323
SF0 50.320
SF02 200.130
SY 50.0
O1 9359.265
SI 32768
TD 32768
HZ/PT .872

PW 2.0
RD 0.0
AQ 1.147
RG 400
NS 1240
TE 297

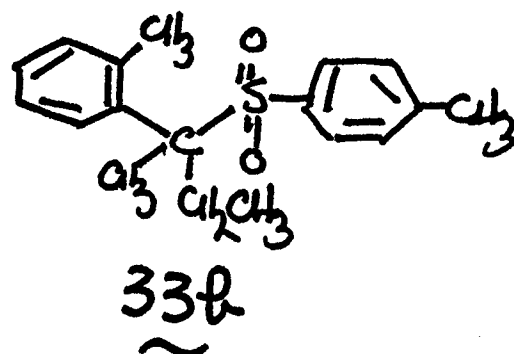
O2 3400.000

HZ/CM 229.395
PPM/CM 4.558
SR 3322.85

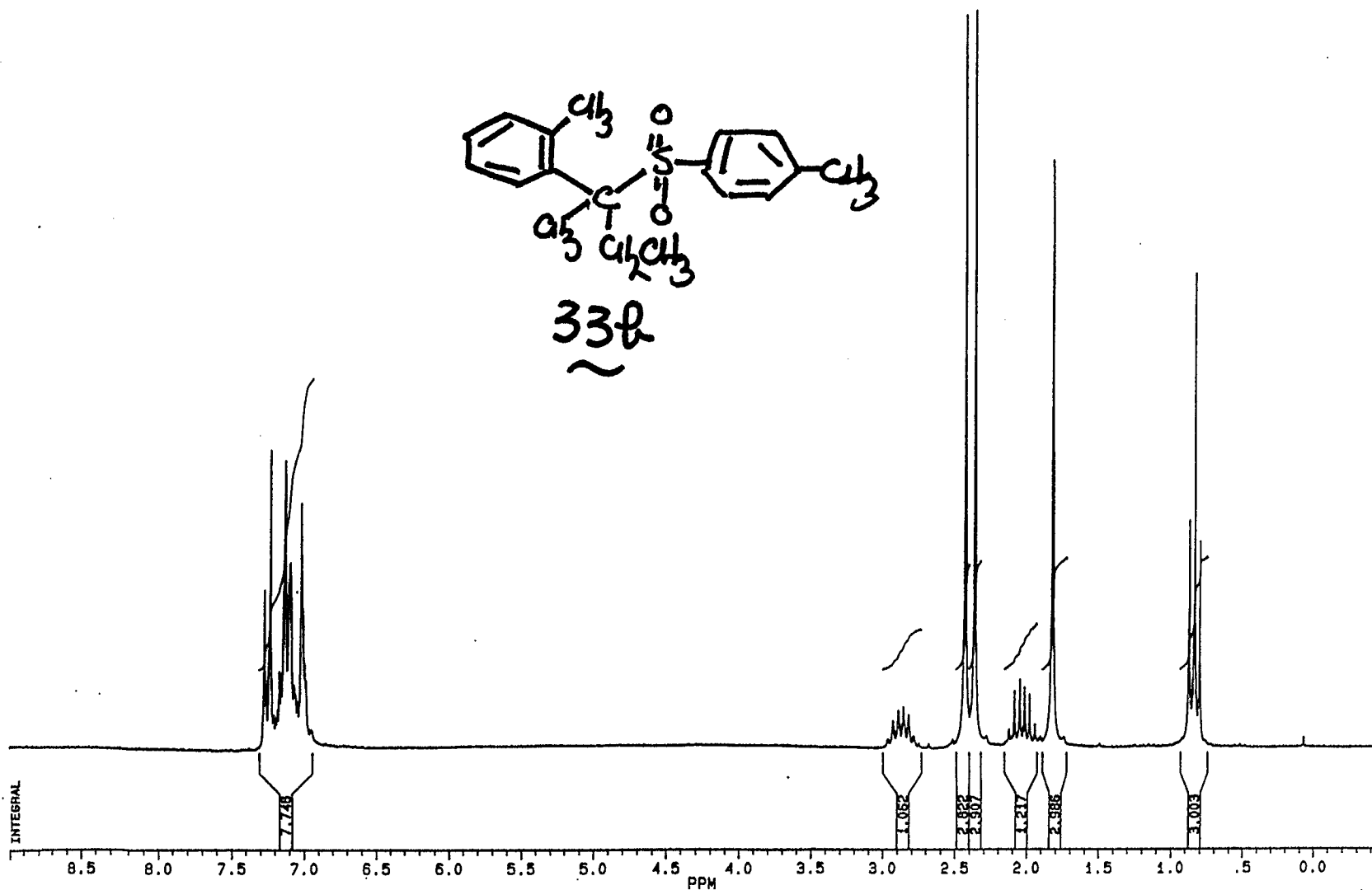
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~~BRUKER~~

200 MHz ^1H NMR of *p*-Tolyl 2-(*o*-Tolyl)-2-butyl sulfone (33b).



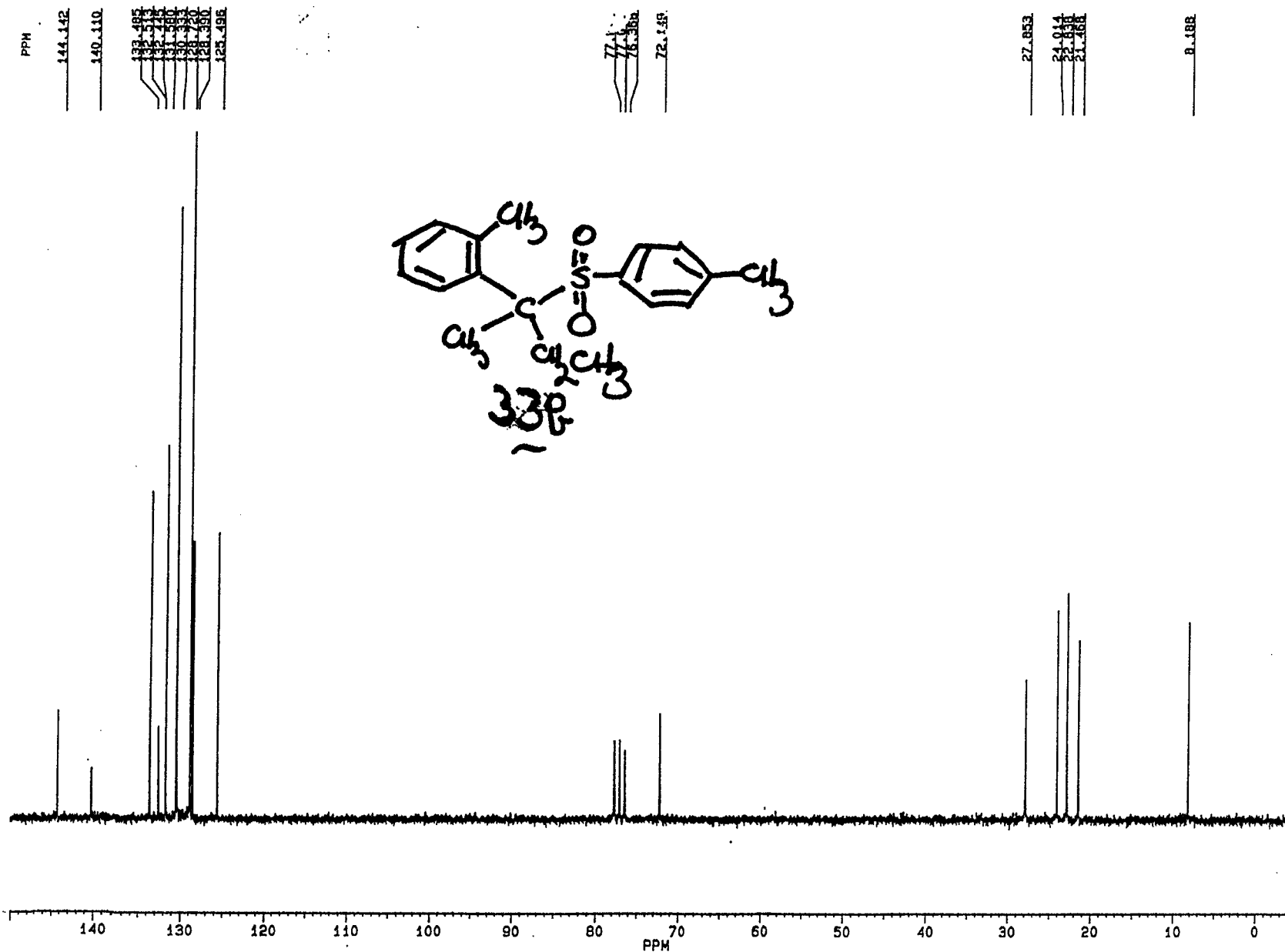
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AQ 4.555
RG 10
NS 20
TE 297
Q2 50000.000
HZ/CM 55.908
PPM/CM .279
SR 2340.75



50

51

50 MHz ^{13}C NMR of *p*-Tolyl 2-(*o*-Tolyl)-2-butyl sulfone (33b).

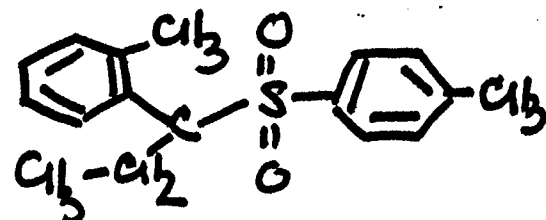


BAUKER

SF 50.323
 SF0 50.320
 SF02 200.130
 SY 50.0
 O1 9359.265
 S1 32768
 TD 32768
 HZ/PT .872
 PW 2.0
 RD 0.0
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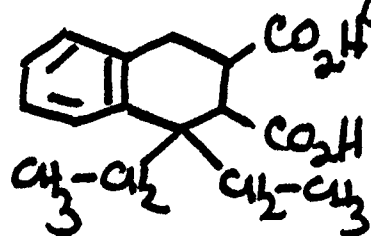
15

250 MHz ^1H NMR of *p*-Tolyl 3-(*o*-Tolyl)-3-pentyl sulfone (33c) containing Diethyl 1,2,3,4-tetrahydro-2,3-naphthalenedicarboxylate (48b).



33c

containing



48b

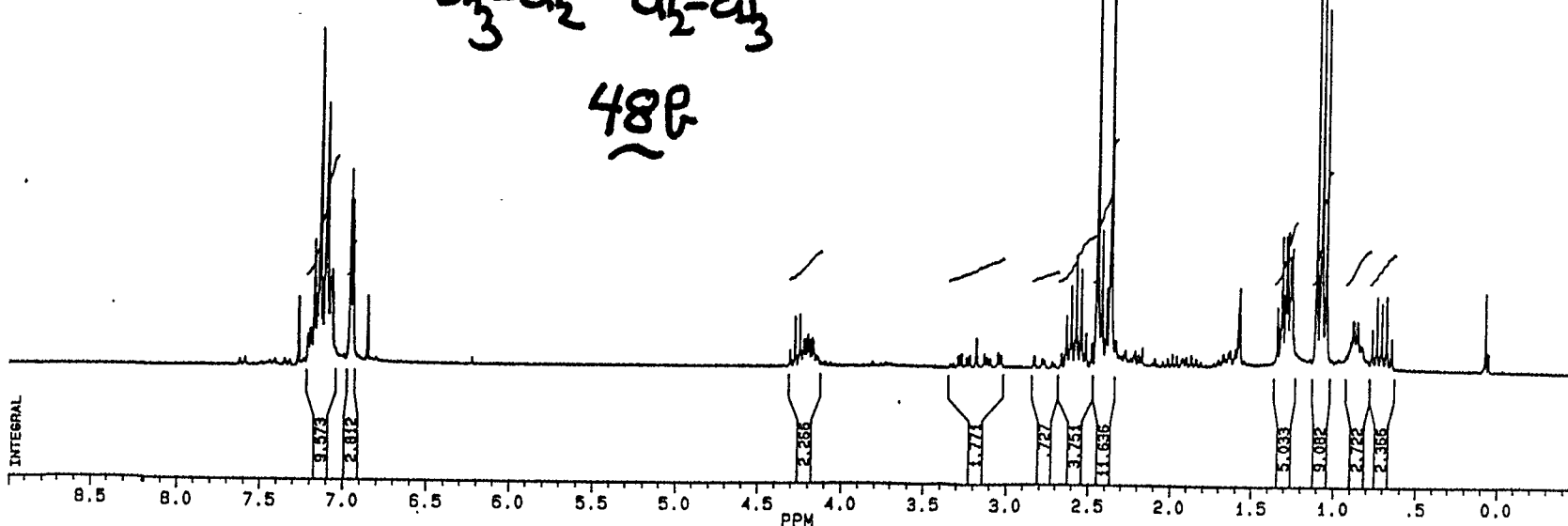
~~BRUKER~~

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O1 4100.000
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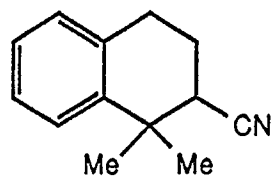
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NS 54
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O2 0.0

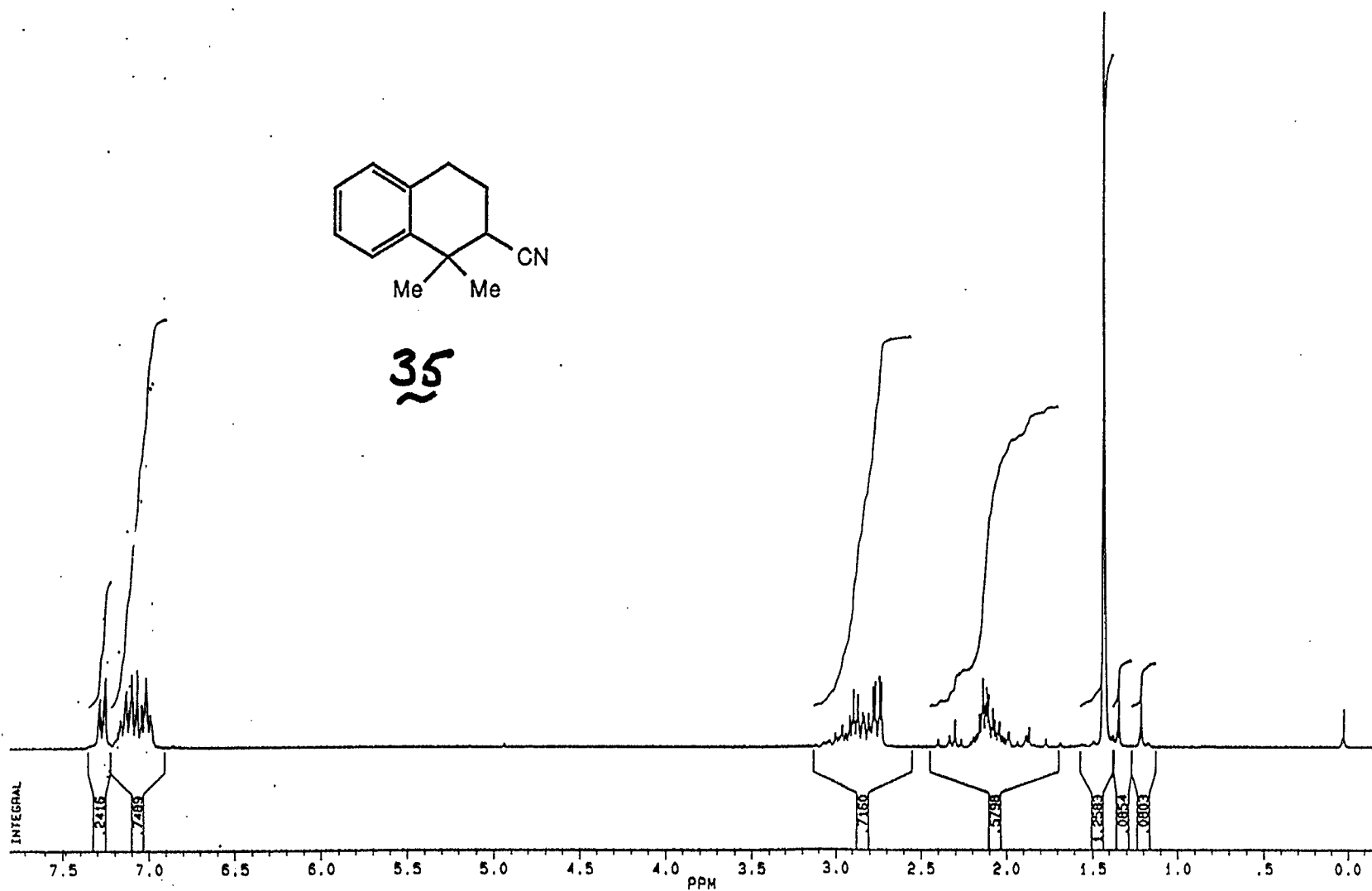
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PPM/CM .279
SR 2853.27



52

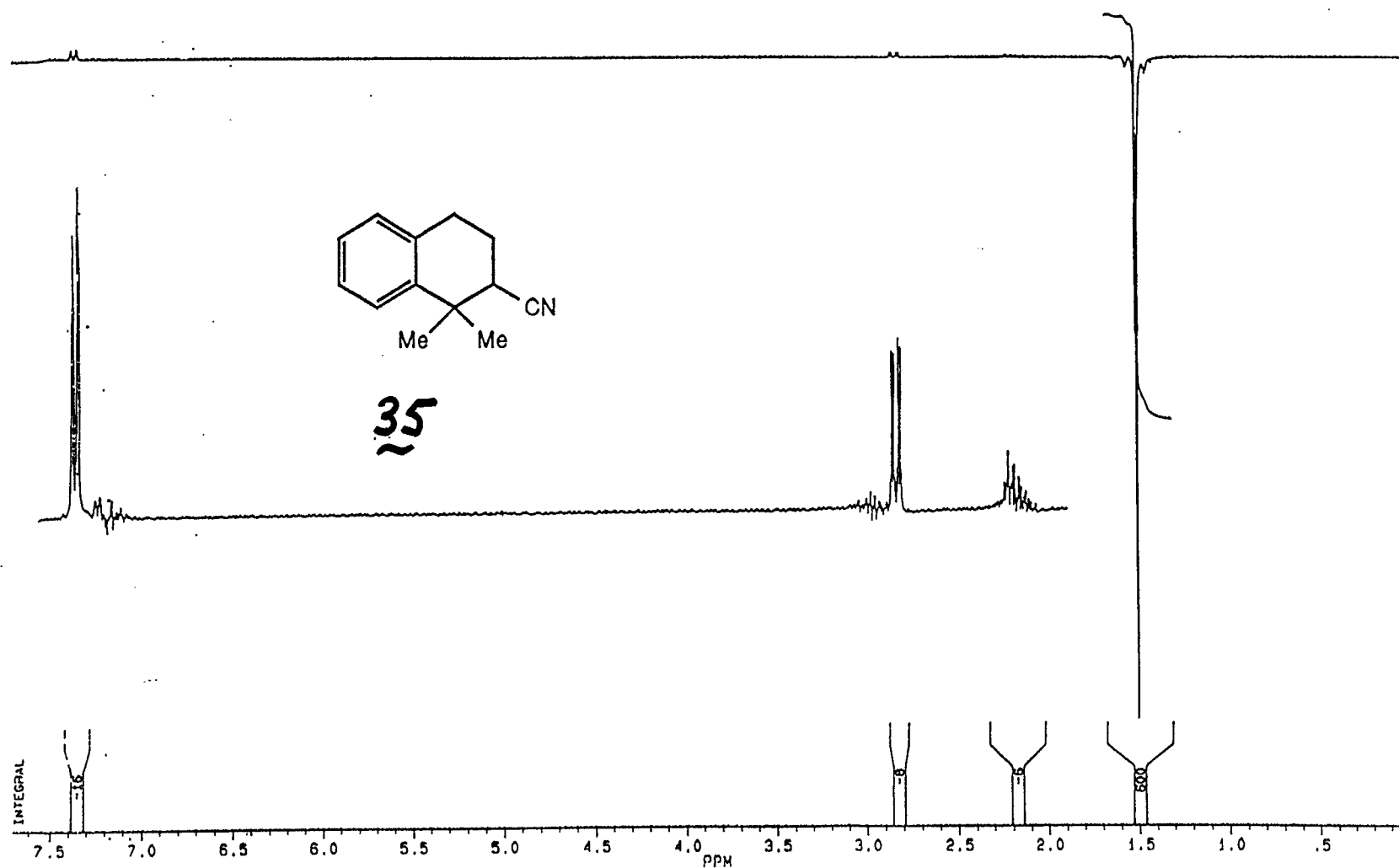


35



250 MHz ^1H NMR of 1,2,3,4-Tetrahydro-1,1-dimethyl-2-naphthonitrile (35).

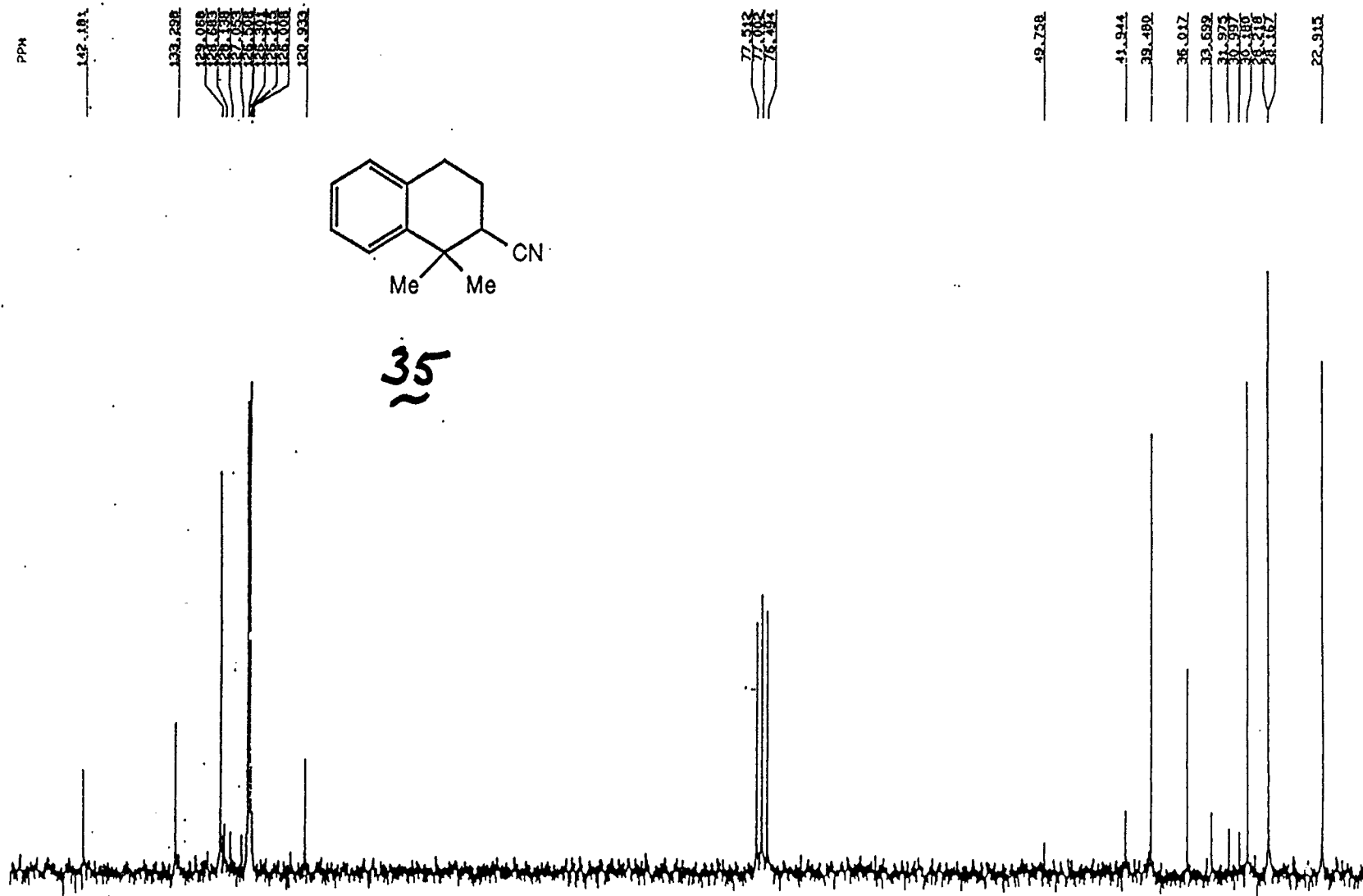
54



250 MHz ¹H NMR (NOE Irradiation at δ 1.5) of 1,2,3,4-Tetrahydro-1,1-dimethyl-2-naphthonitrile (35).

237

54

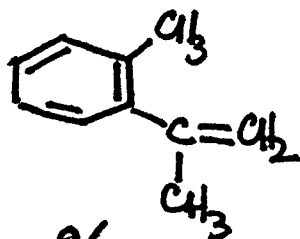


63 MHz ^{13}C NMR of 1,2,3,4-Tetrahydro-1,1-dimethyl-2-naphthonitrile (35).

238

55

200 MHz ^1H NMR of 2-(*o*-Tolyl)propene (36).



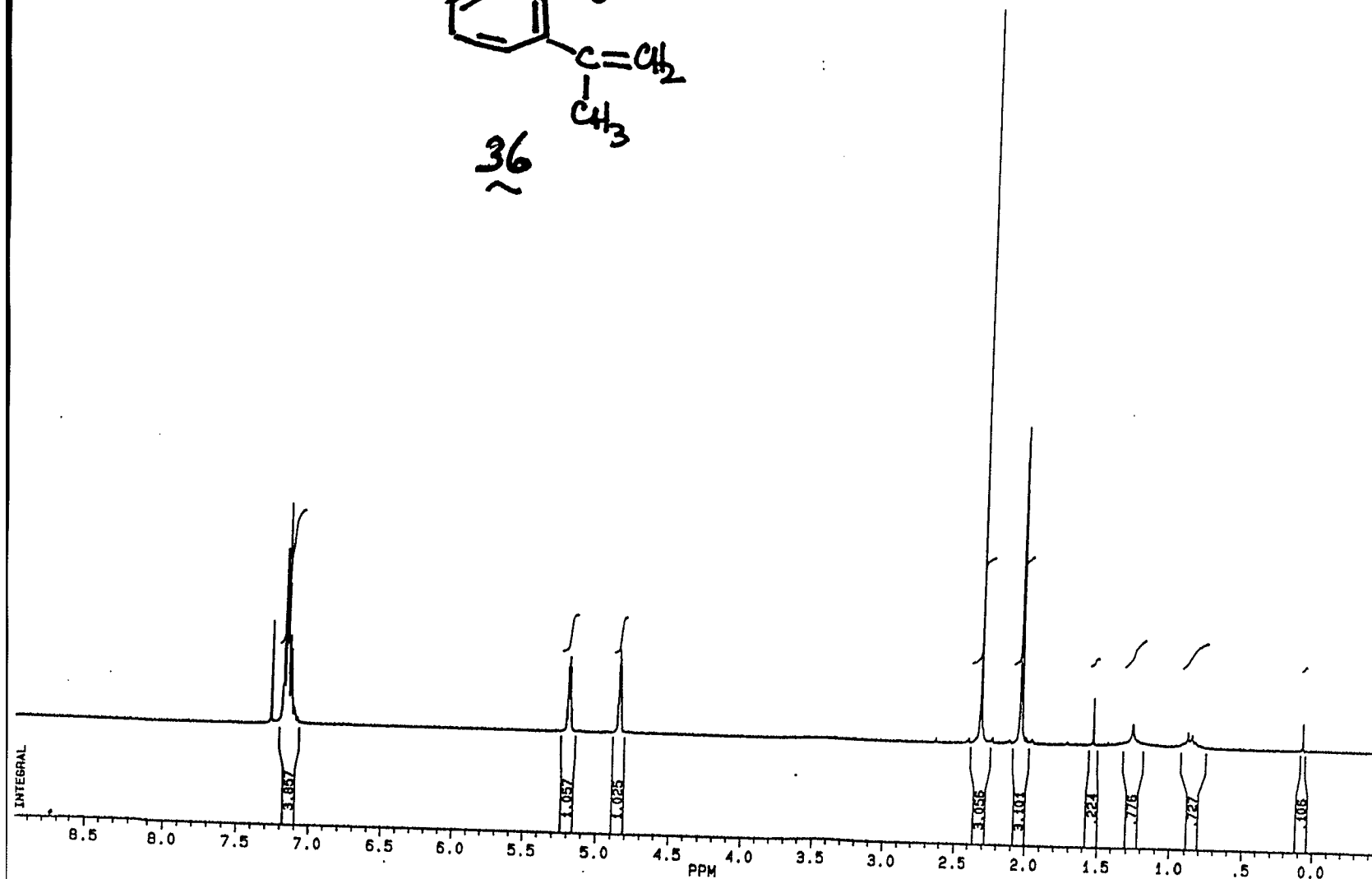
~~BRUKER~~

SF 200.132
SY 200.0
O1 3740.000
SI 32768
TD 32768
SW 3597.122
HZ/PT .220

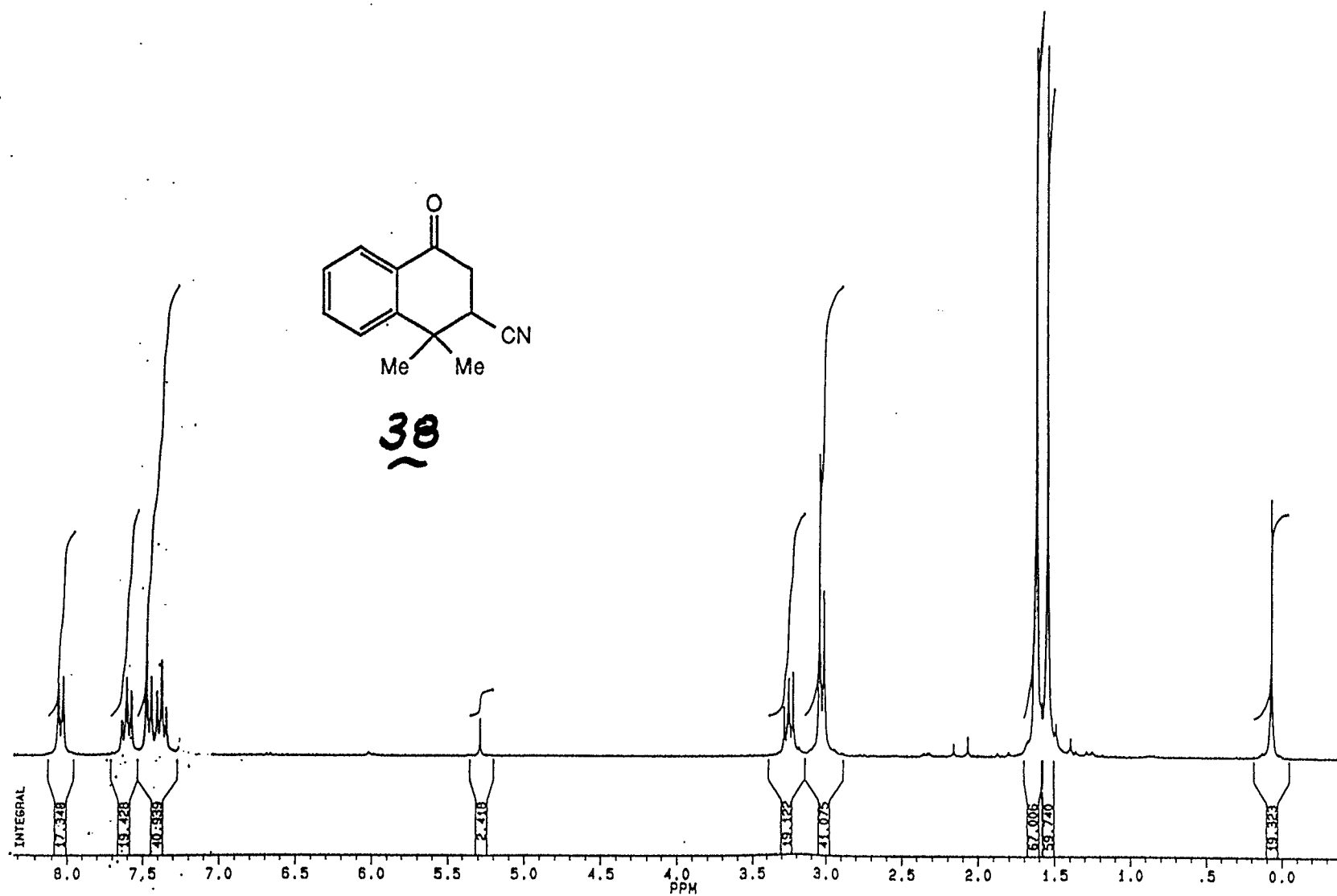
PW 3.2
RD 0.0
AQ 4.555
RG 40
NS 26
TE 297

FW 4500
O2 50000.000
DP 30L P0

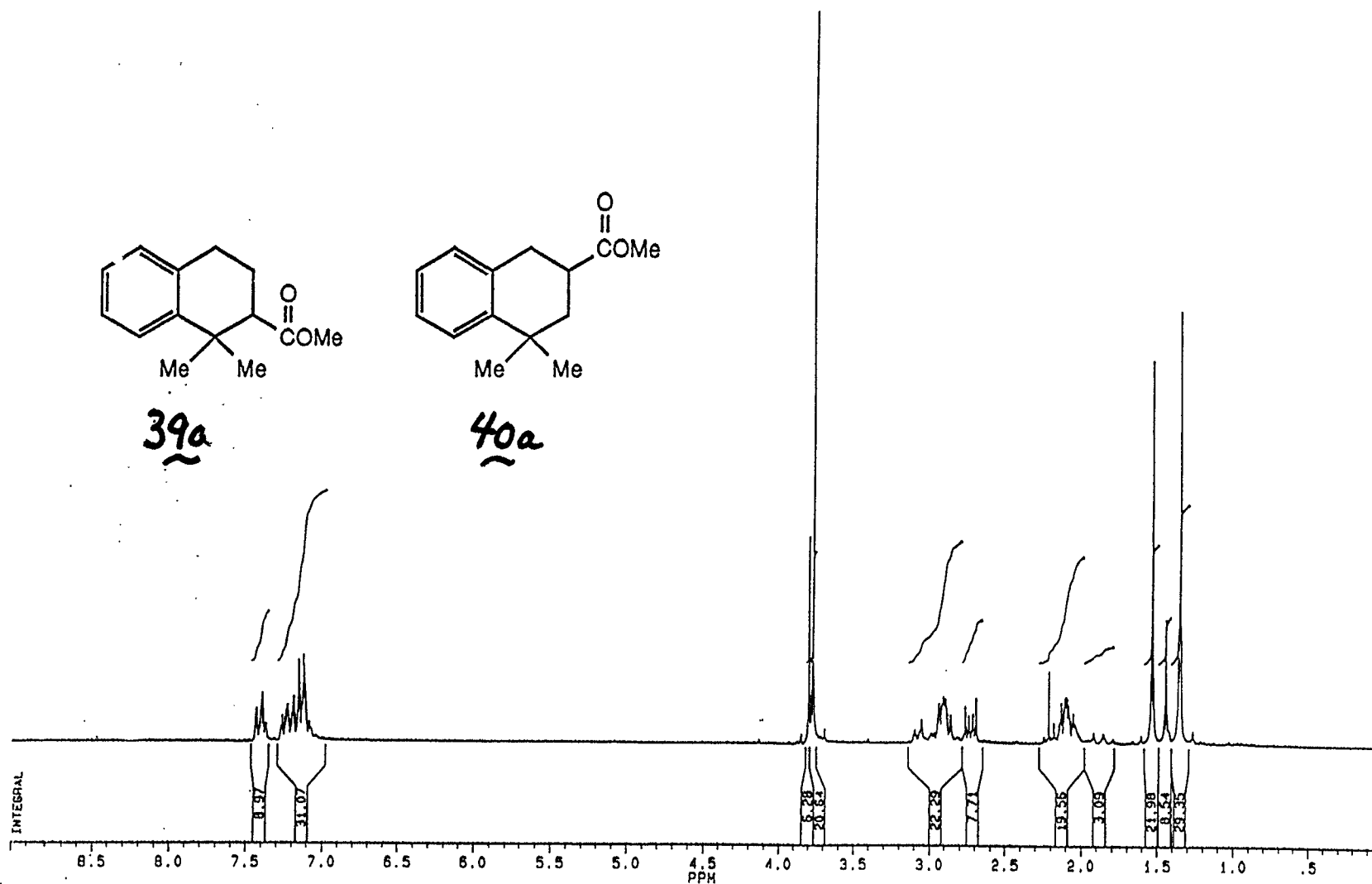
LB 0.0
GB 0.0
CX 34.00
CY 18.00
F1 9.000P
F2 -4.999P
HZ/CM 55.914
PPM/CM .279
SR 2340.75



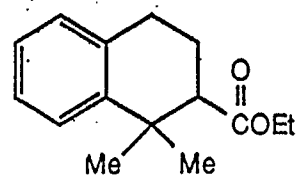
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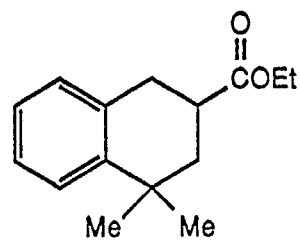
250 MHz ¹H NMR of 1,2,3,4-Tetrahydro-1,1-dimethyl-4-oxo-2-naphthonitrile (**38**).



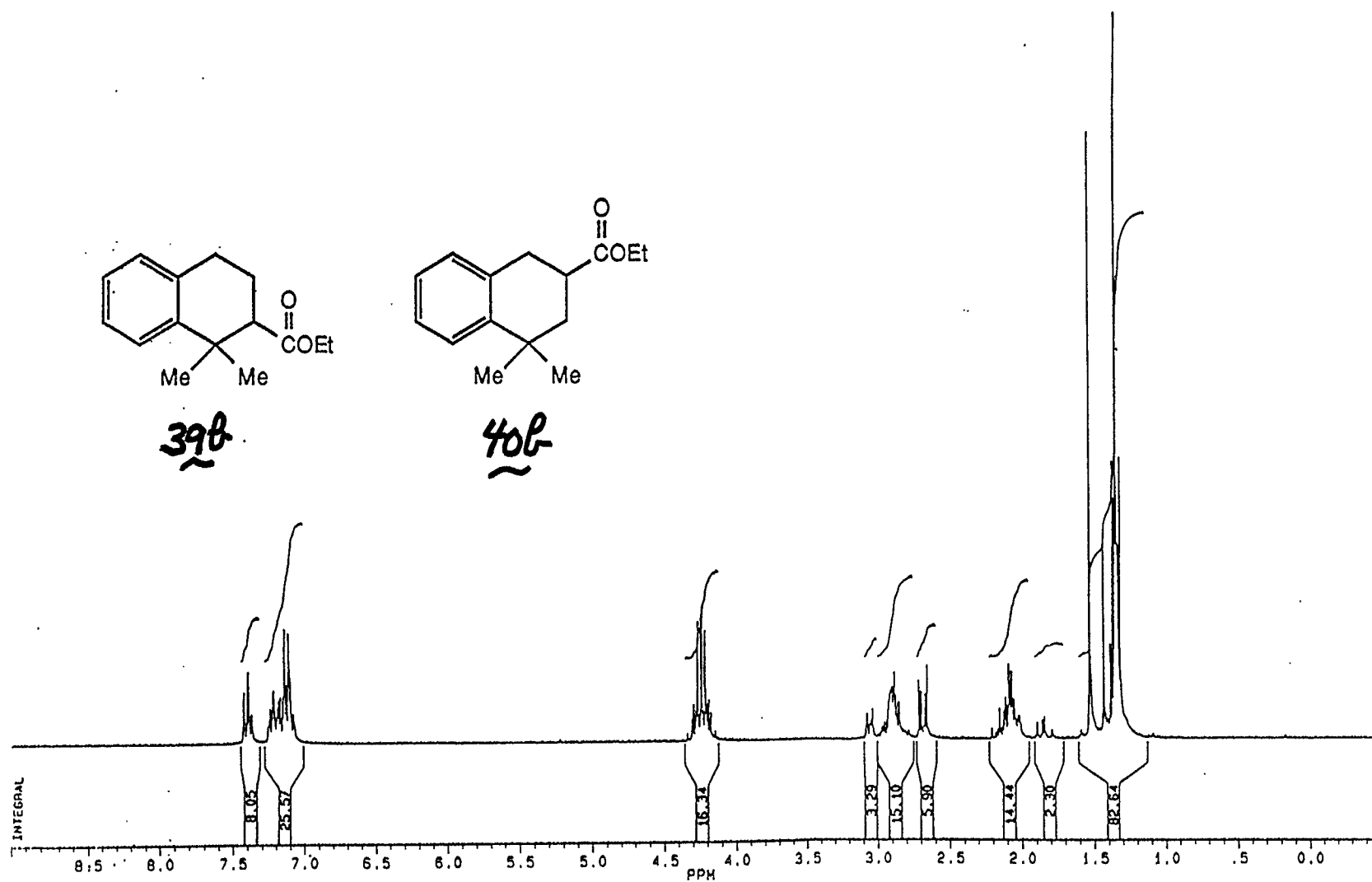
200 MHz ^1H NMR of Methyl 1,2,3,4-Tetrahydro-1,1-dimethyl-2-naphthoate (**39a**) and Methyl 1,2,3,4-Tetrahydro-4,4-dimethyl-2-naphthoate (**40a**).



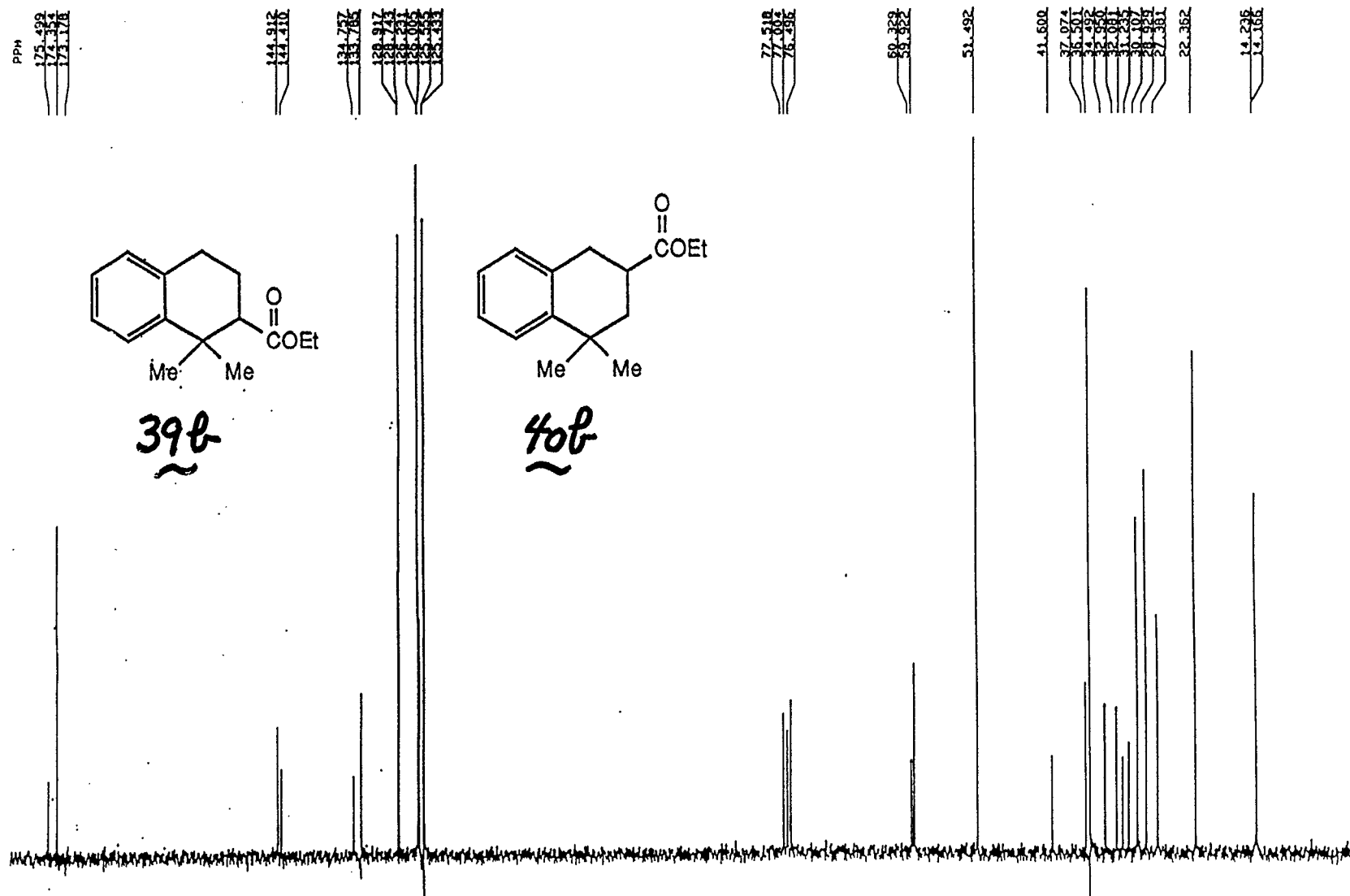
39b



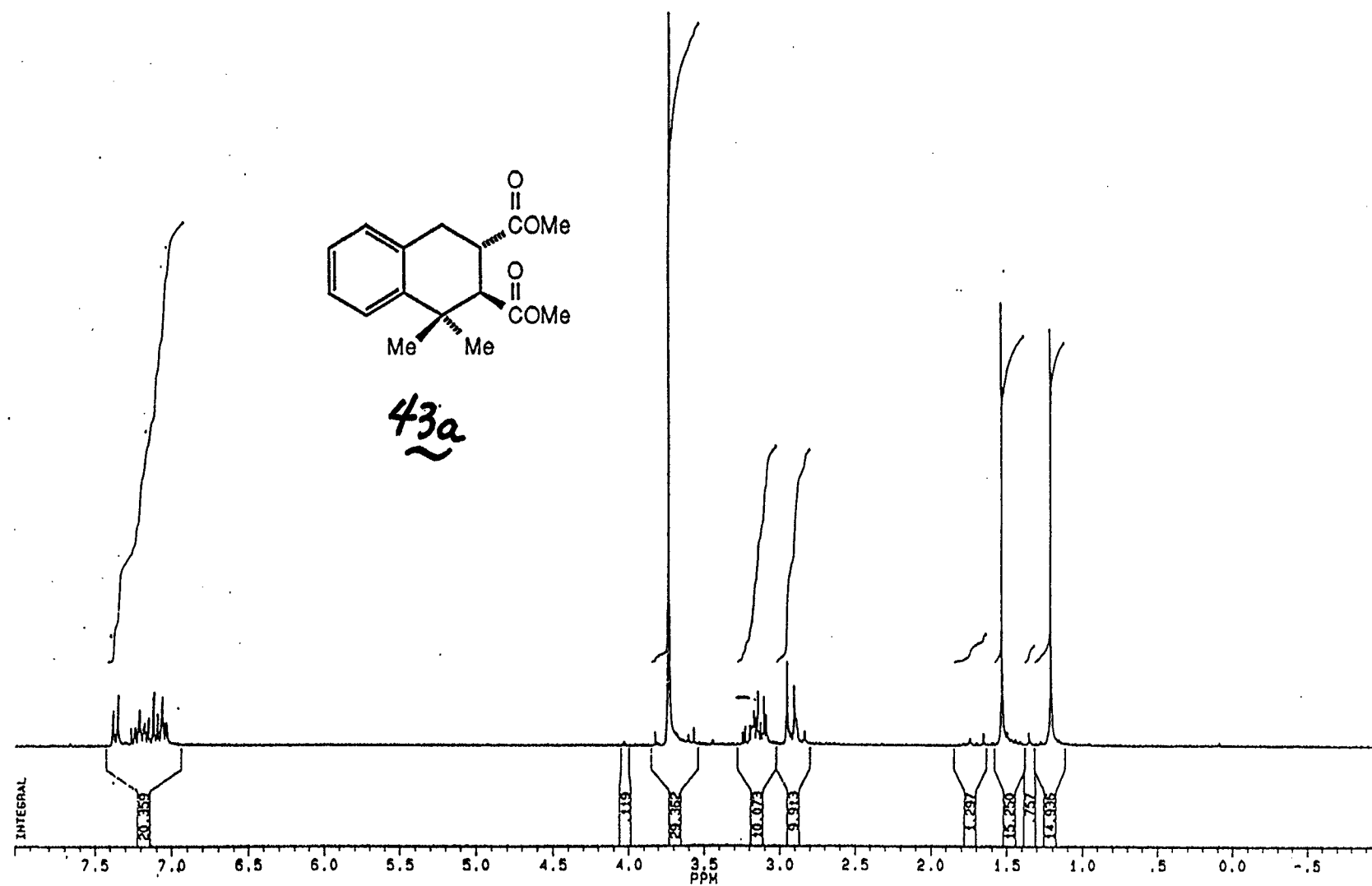
40b



250 MHz ¹H NMR of Ethyl 1,2,3,4-Tetrahydro-1,1-dimethyl-2-naphthoate (**39b**) and Ethyl 1,2,3,4-Tetrahydro-4,4-dimethyl-2-naphthoate (**40b**).

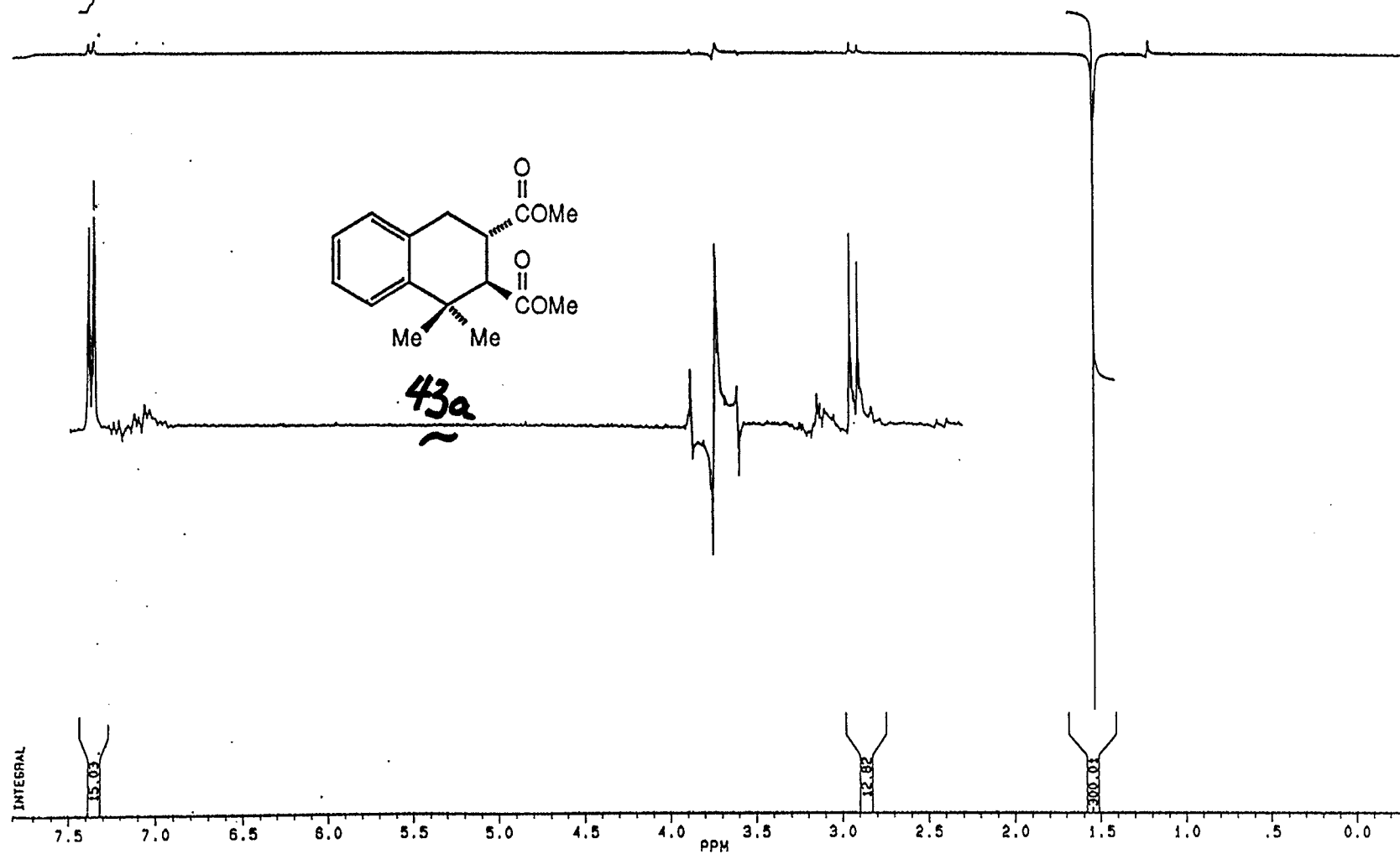


63 MHz ^{13}C NMR of Ethyl 1,2,3,4-Tetrahydro-1,1-dimethyl-2-naphthoate (39b) and Ethyl 1,2,3,4-Tetrahydro-4,4-dimethyl-2-naphthoate (40b).



250 MHz ^1H NMR of Dimethyl *trans*-1,2,3,4-Tetrahydro-1,1-dimethyl-2,3-naphthalenedicarboxylate (43a).

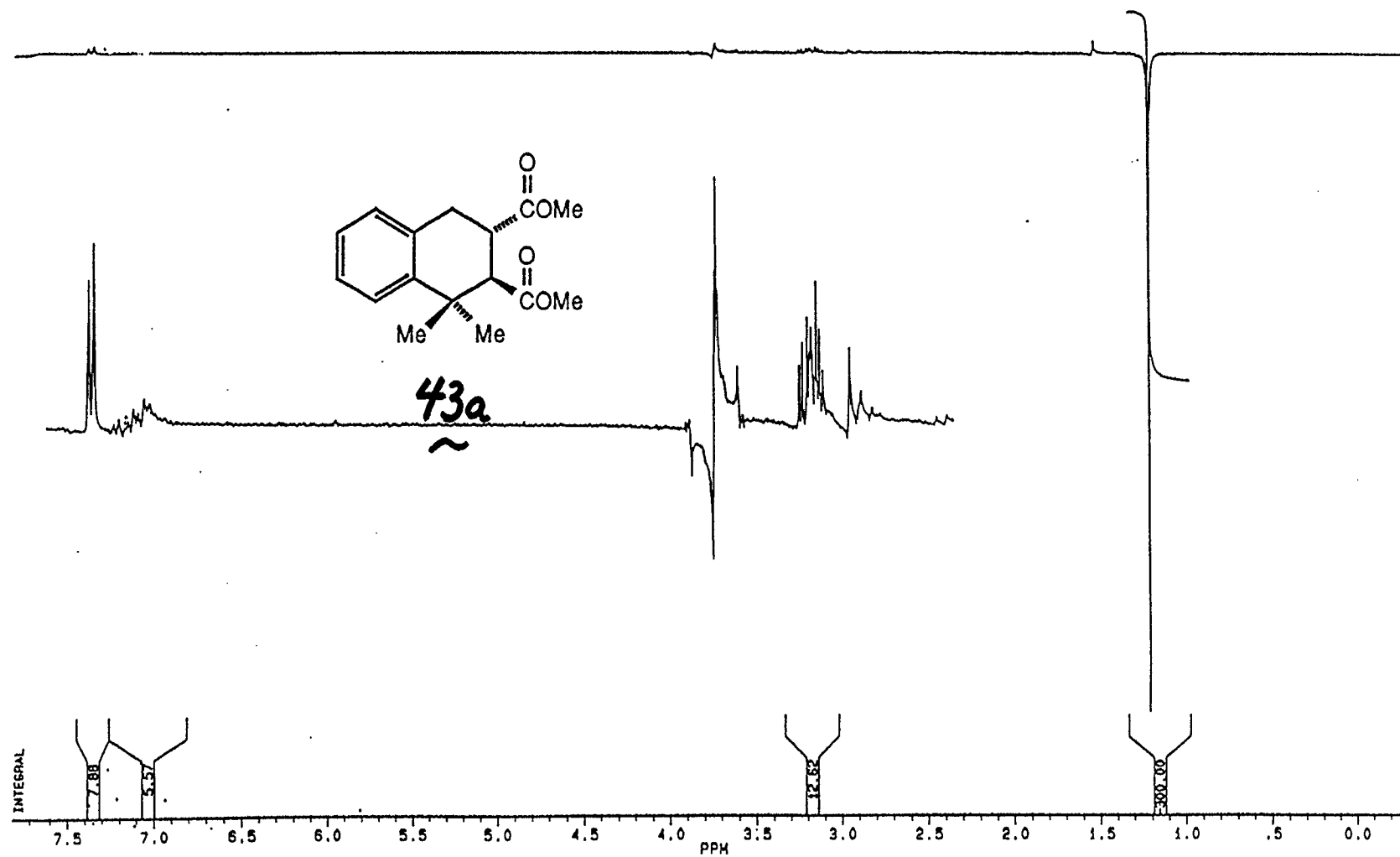
62



250 MHz ^1H NMR (NOE Irradiation at δ 1.53) of Dimethyl *trans*-1,2,3,4-Tetrahydro-1,1-dimethyl-2,3-naphthalenedicarboxylate (43a).

240

62



250 MHz ¹H NMR (NOE Irradiation at δ 1.21) of Dimethyl *trans*-1,2,3,4-Tetrahydro-1,1-dimethyl-2,3-naphthalenedicarboxylate (**43a**).

64

PPM
S 175.395
S 173.787

S 144.015

S 132.493
0 128.559
0 126.789
0 126.487
0 125.951

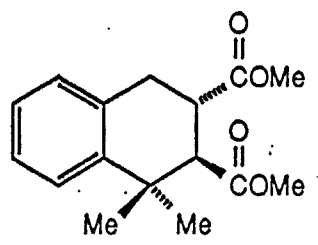
77.511
77.001
76.481

0 53.456
0 51.921
0 51.468

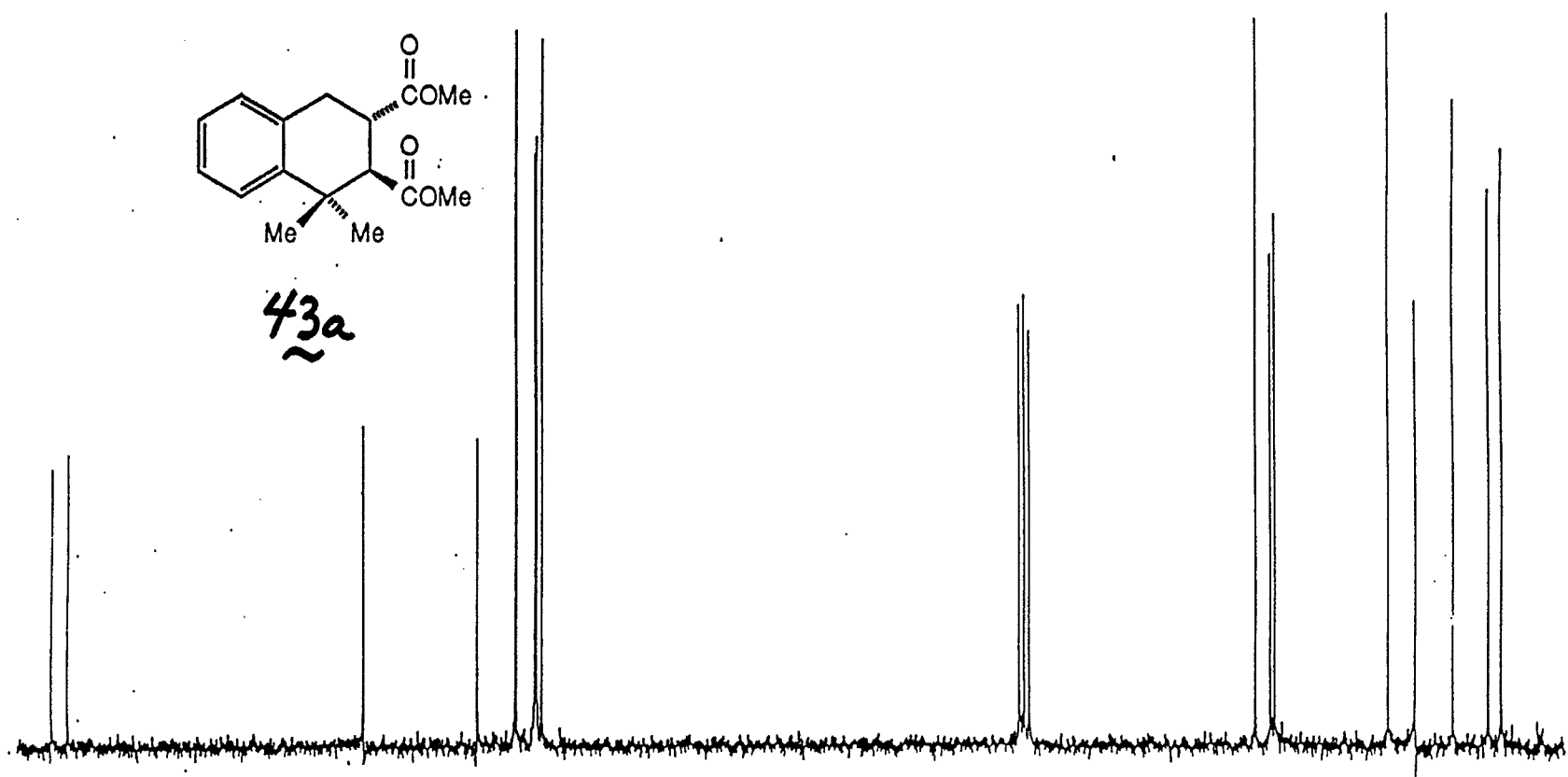
0 39.883
S 37.104

T 33.276

0 29.612
0 28.261



43a
~

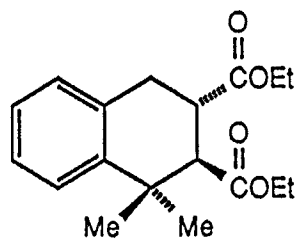
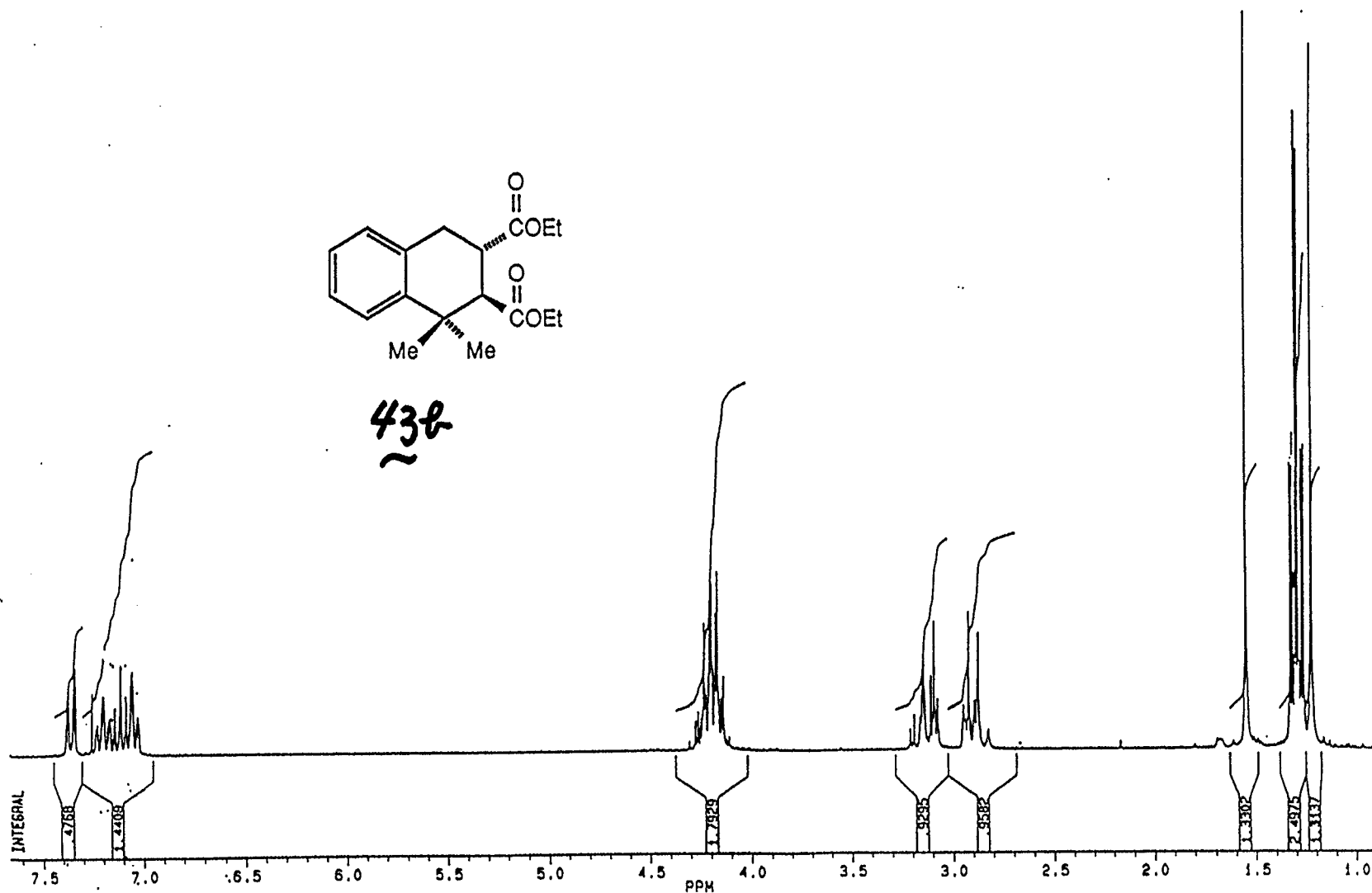


63 MHz ^{13}C NMR of Dimethyl *trans*-1,2,3,4-Tetrahydro-1,1-dimethyl-2,3-naphthalenedicarboxylate (43a).

242

64

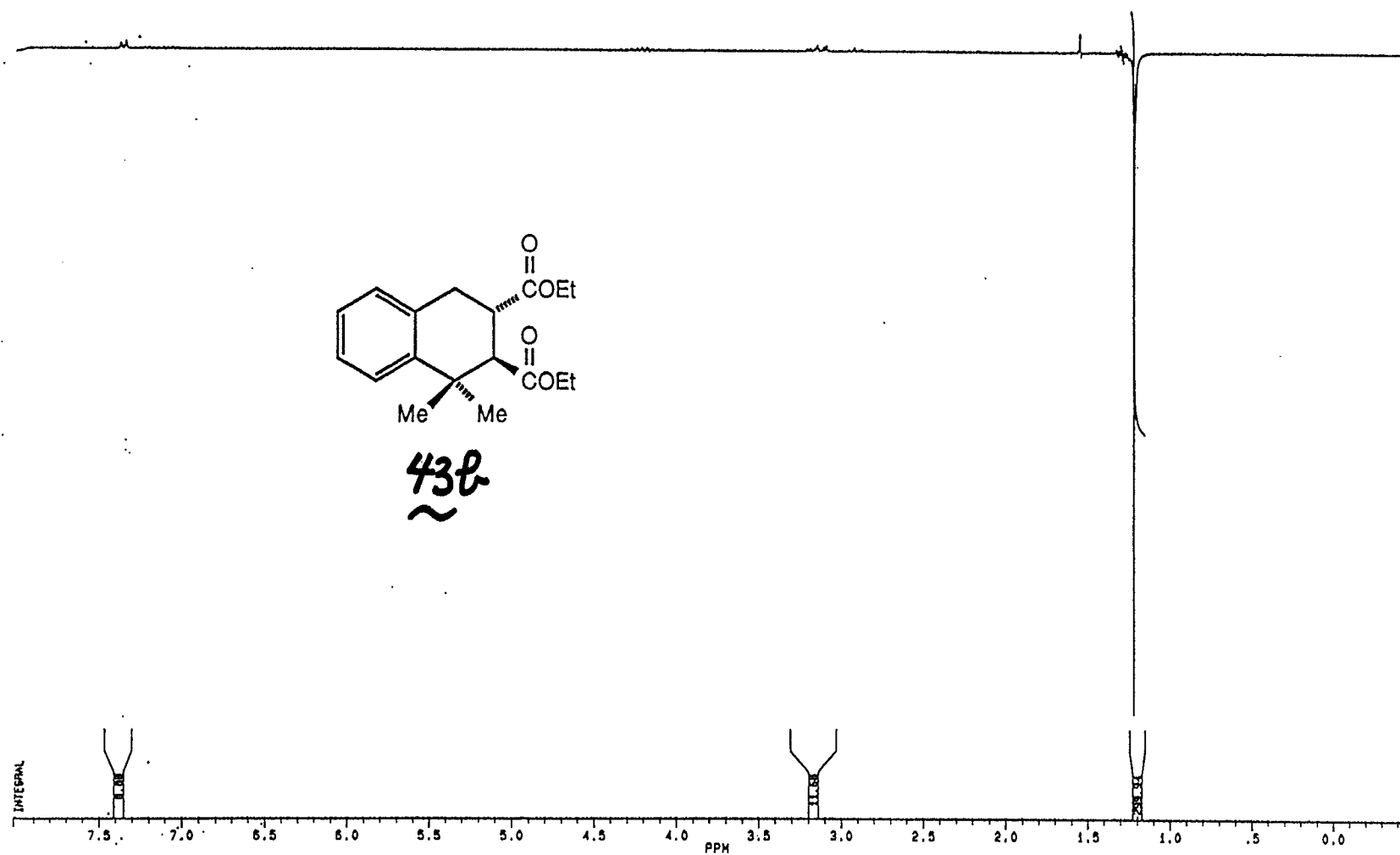
65

43b
~250 MHz ^1H NMR of Diethyl *trans*-1,2,3,4-Tetrahydro-1,1-dimethyl-2,3-naphthalenedicarboxylate (43b).

243

65

66

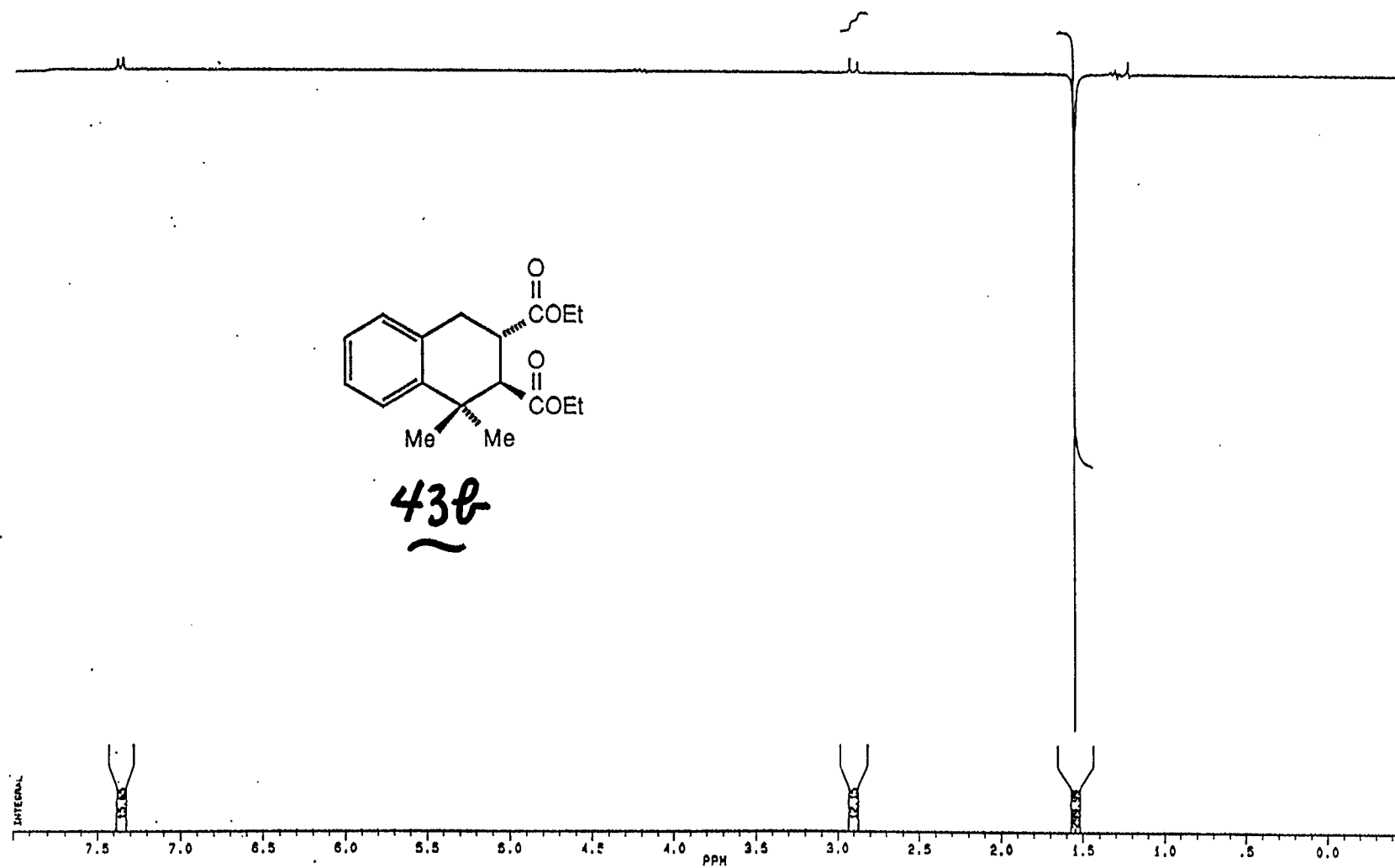


250 MHz ¹H NMR (NOE Irradiation at δ 1.22) of Diethyl *trans*-1,2,3,4-Tetrahydro-1,1-dimethyl-2,3-naphthalenedicarboxylate (43b).

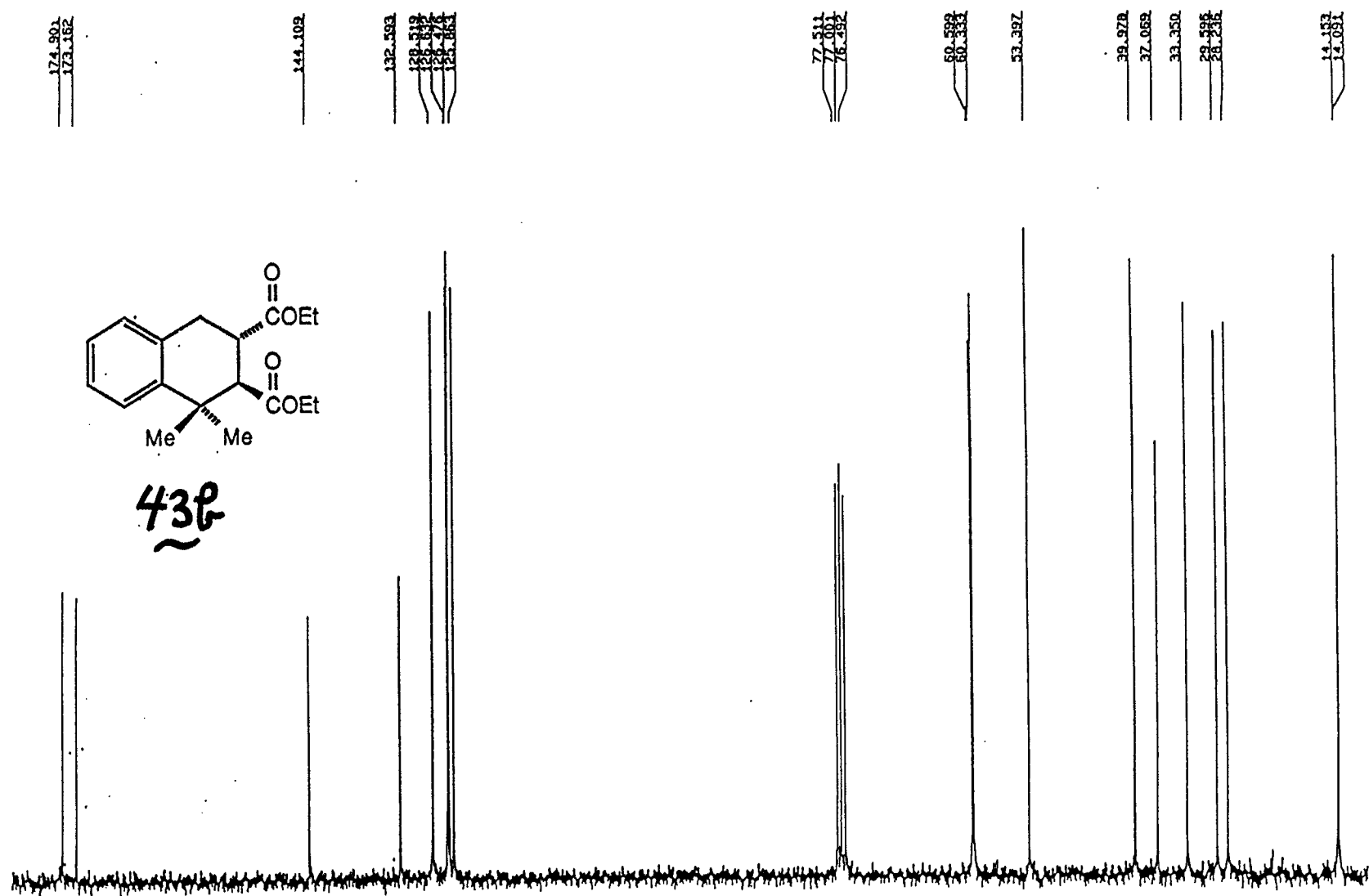
2,3-

244

2

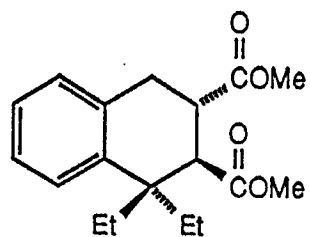


250 MHz ^1H NMR (NOE Irradiation at δ 1.54) of Diethyl *trans*-1,2,3,4-Tetrahydro-1,1-dimethyl-2,3-naphthalenedicarboxylate (43b).

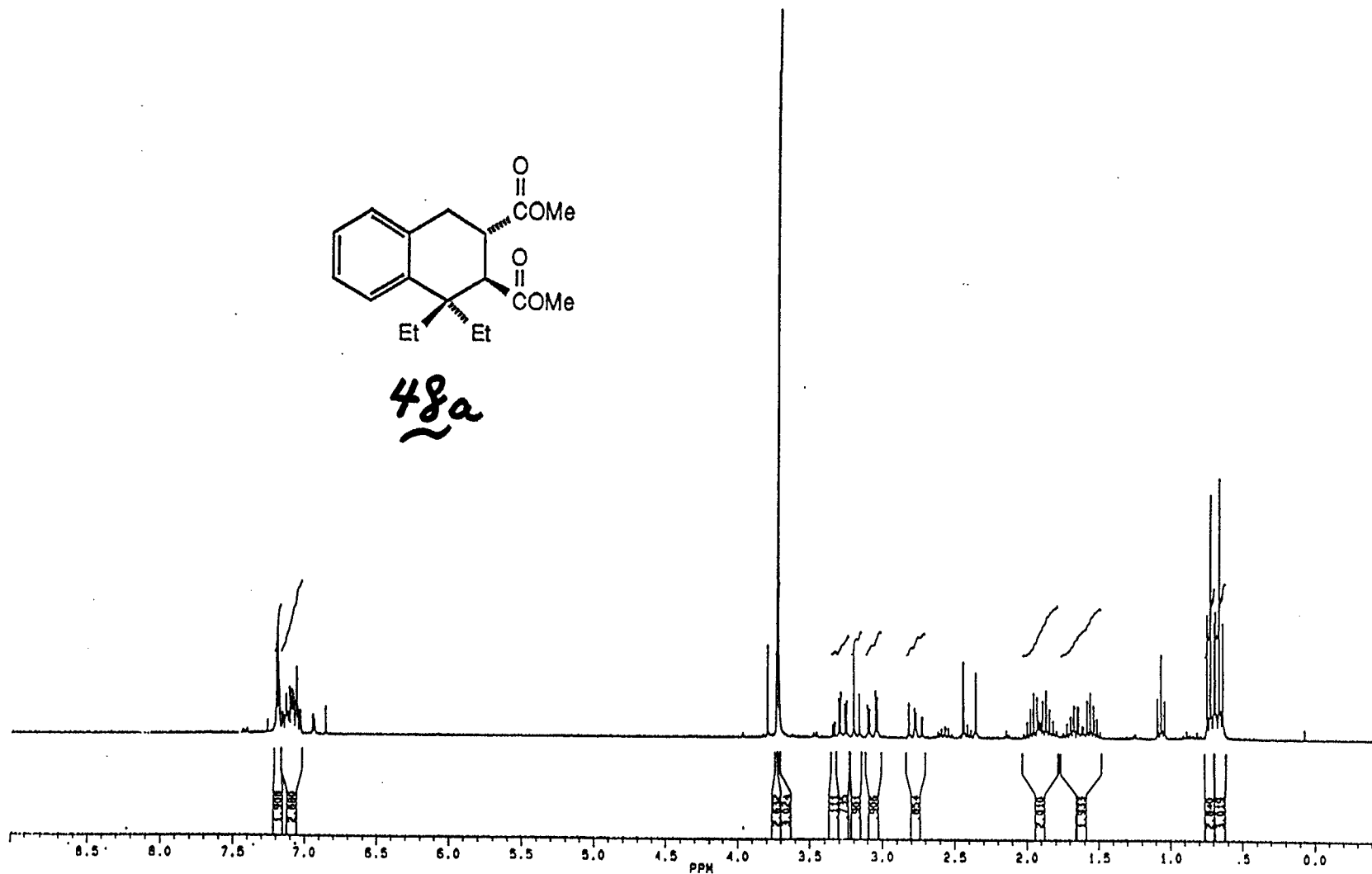


63 MHz ^{13}C NMR of Diethyl *trans*-1,2,3,4-Tetrahydro-1,1-dimethyl-2,3-naphthalenedicarboxylate (43b).

69



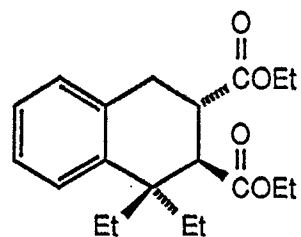
48a



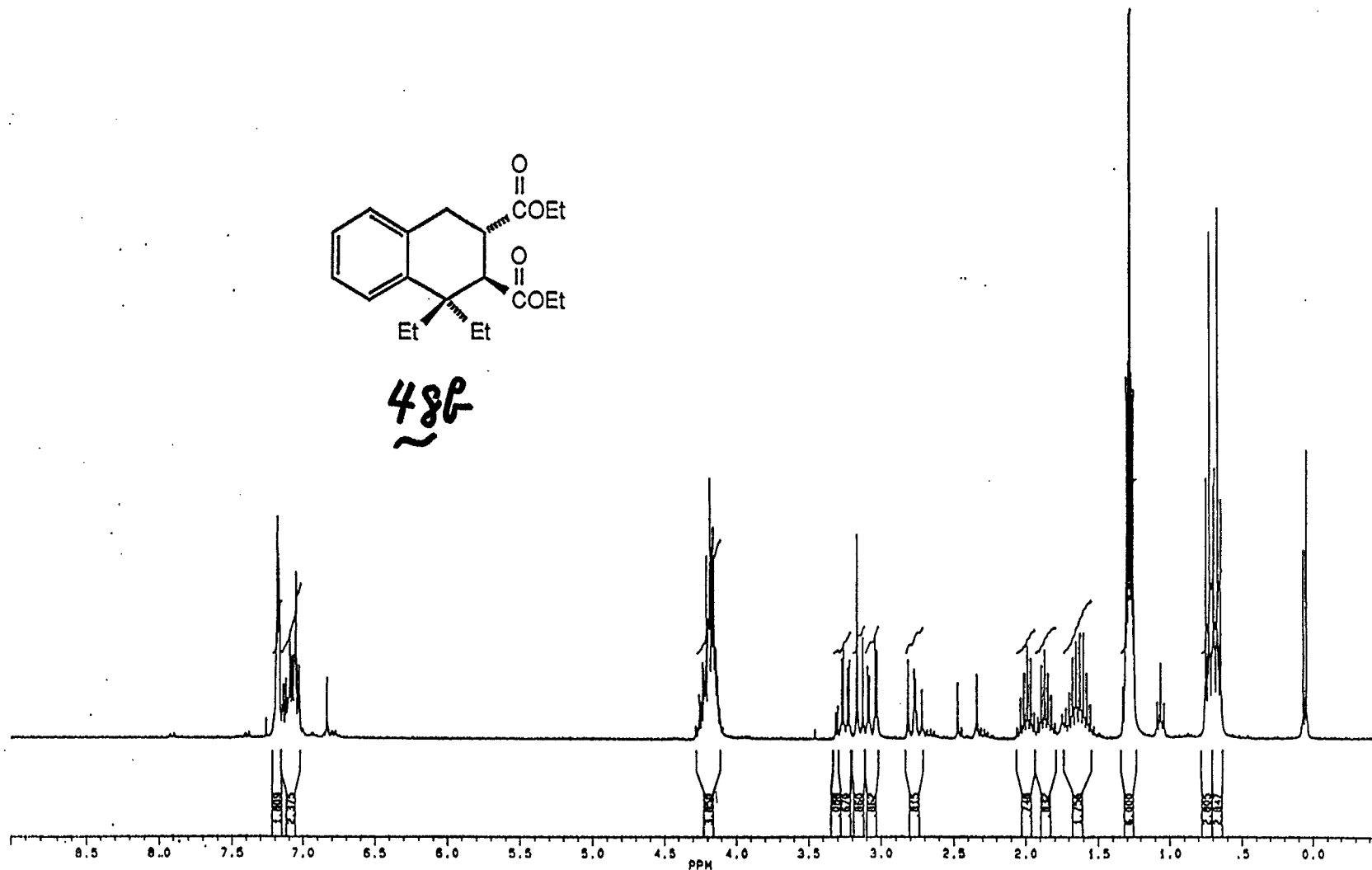
300 MHz ^1H NMR of Dimethyl *trans*-1,1-Diethyl-1,2,3,4-tetrahydro-2,3-naphthalenedicarboxylate (**48a**).

268

29



486



300 MHz ^1H NMR of Diethyl *trans*-1,1-Diethyl-1,2,3,4-tetrahydro-2,3-naphthalenedicarboxylate (486).

PPH
125.269
173.381

139.192
135.493

128.489
126.748
126.489
123.678

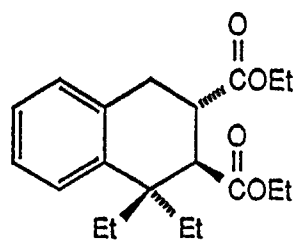
77.514
77.006
76.398

80.392
80.298

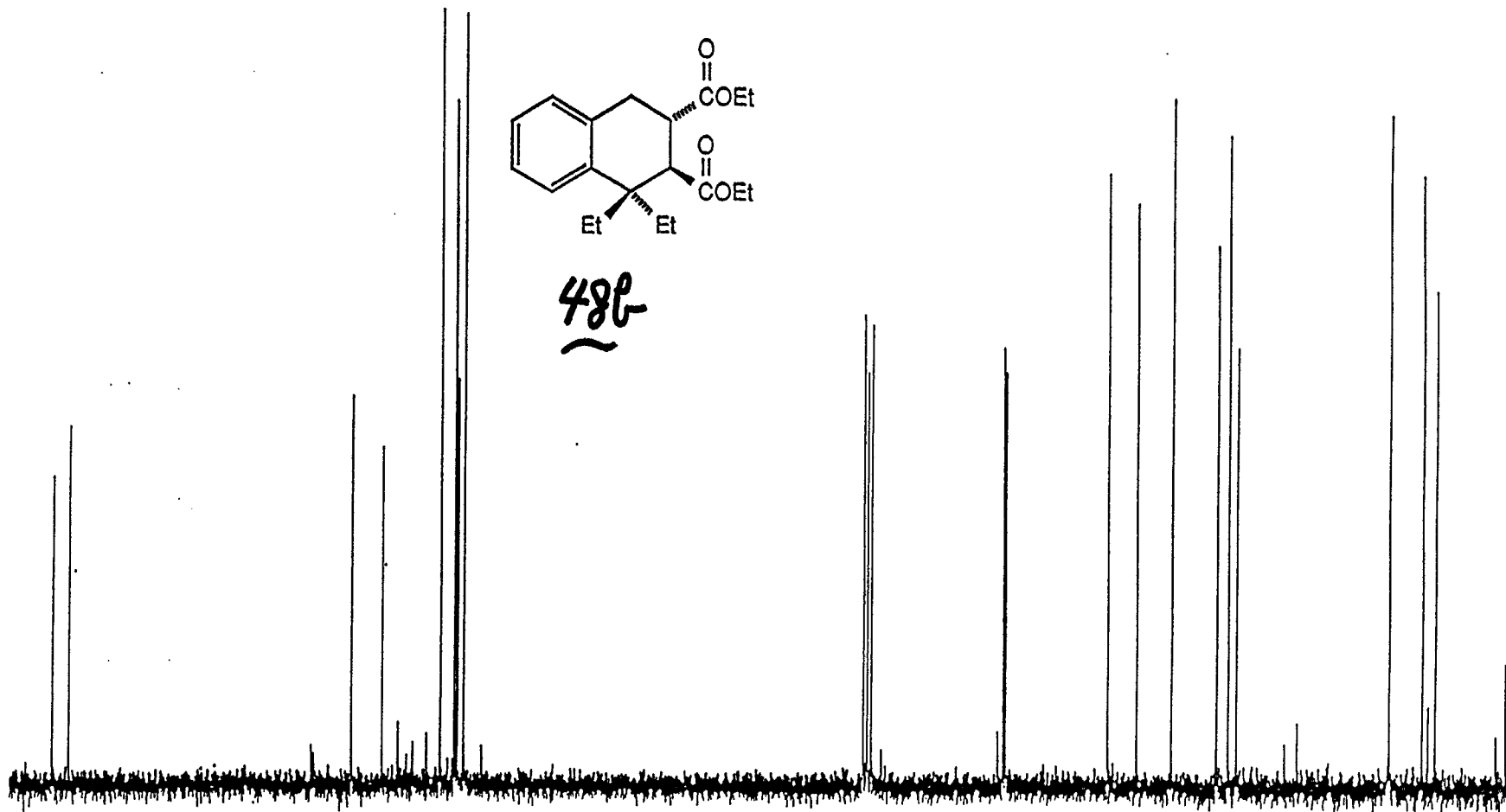
47.972
44.519
40.267

34.858
33.460
32.457

14.125
10.042
8.432



486

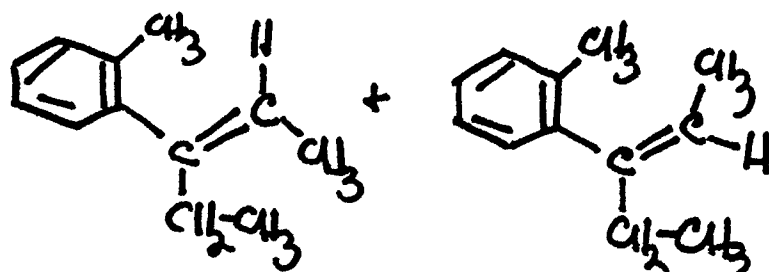
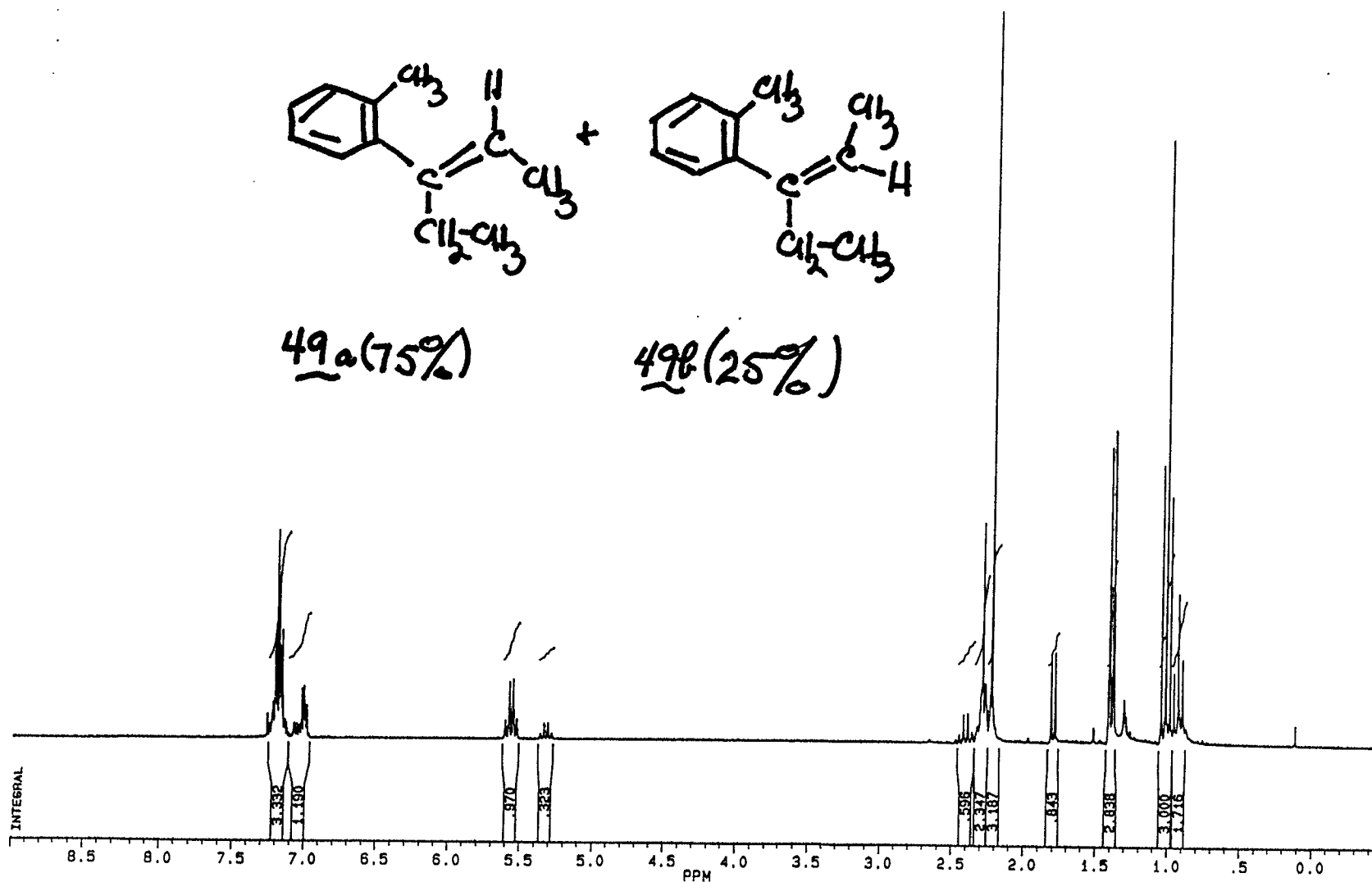


63 MHz ^{13}C NMR of Diethyl *trans*-1,1-Diethyl-1,2,3,4-tetrahydro-2,3-naphthalenedicarboxylate (486).

270

71

72

49a (75%)49b (25%)

250 MHz ^1H NMR of E (**49a**, 75%) and Z (**49b**, 25%)-3-(*o*-Tolyl)-3-pentenes.

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TIME 19:43

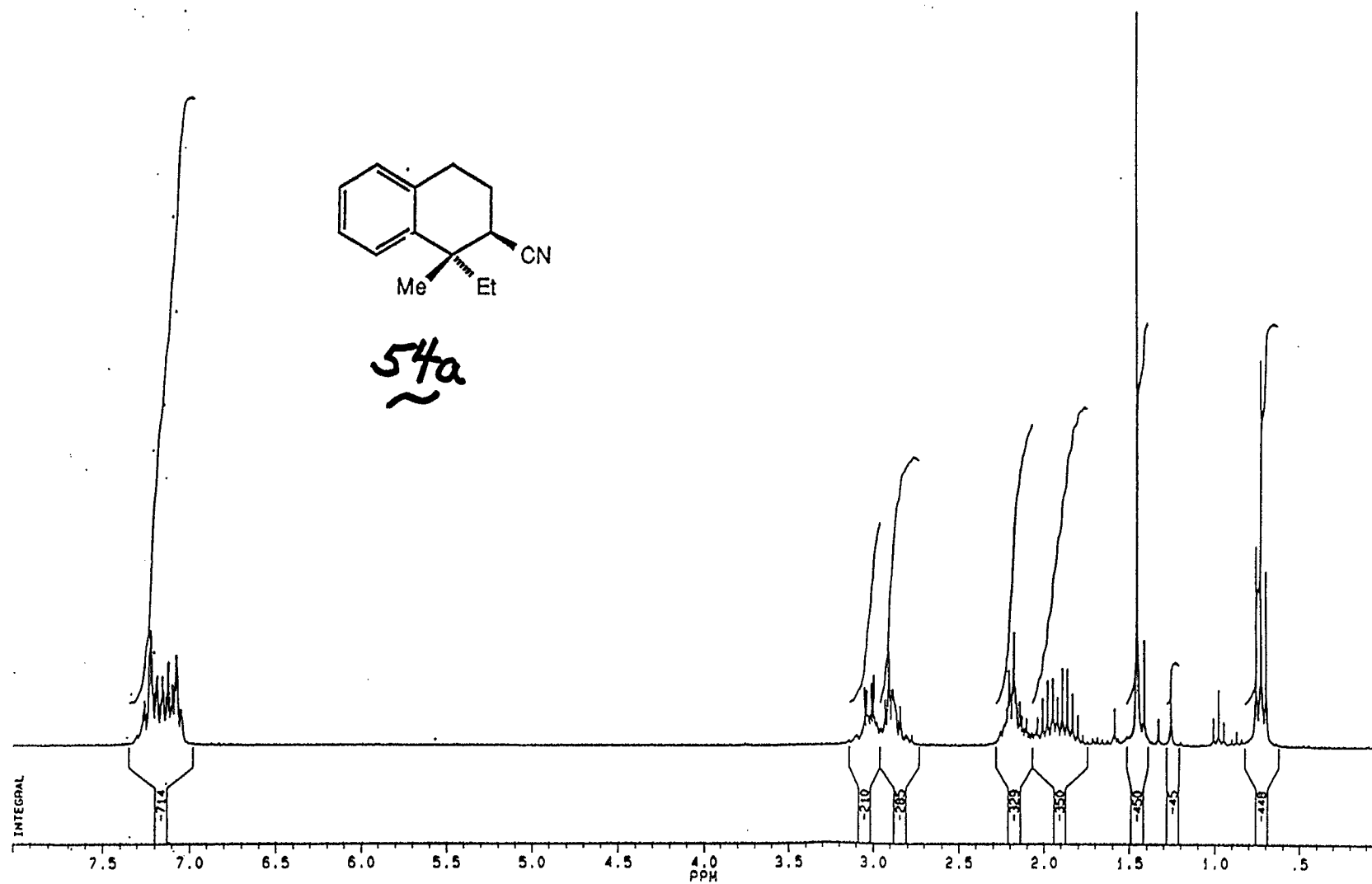
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TD 32768
HZ/PT .183

PW 7.0
RD 0.0
AQ 5.472
RG 16
NS 68
TE 303

O2 0.0

HZ/CM 69.887
PPM/CM .279
SR 2853.27

72



250 MHz ^1H NMR of 1-Ethyl-1,2,3,4-tetrahydro-1-methyl-2-naphthonitrile. (**54a**).

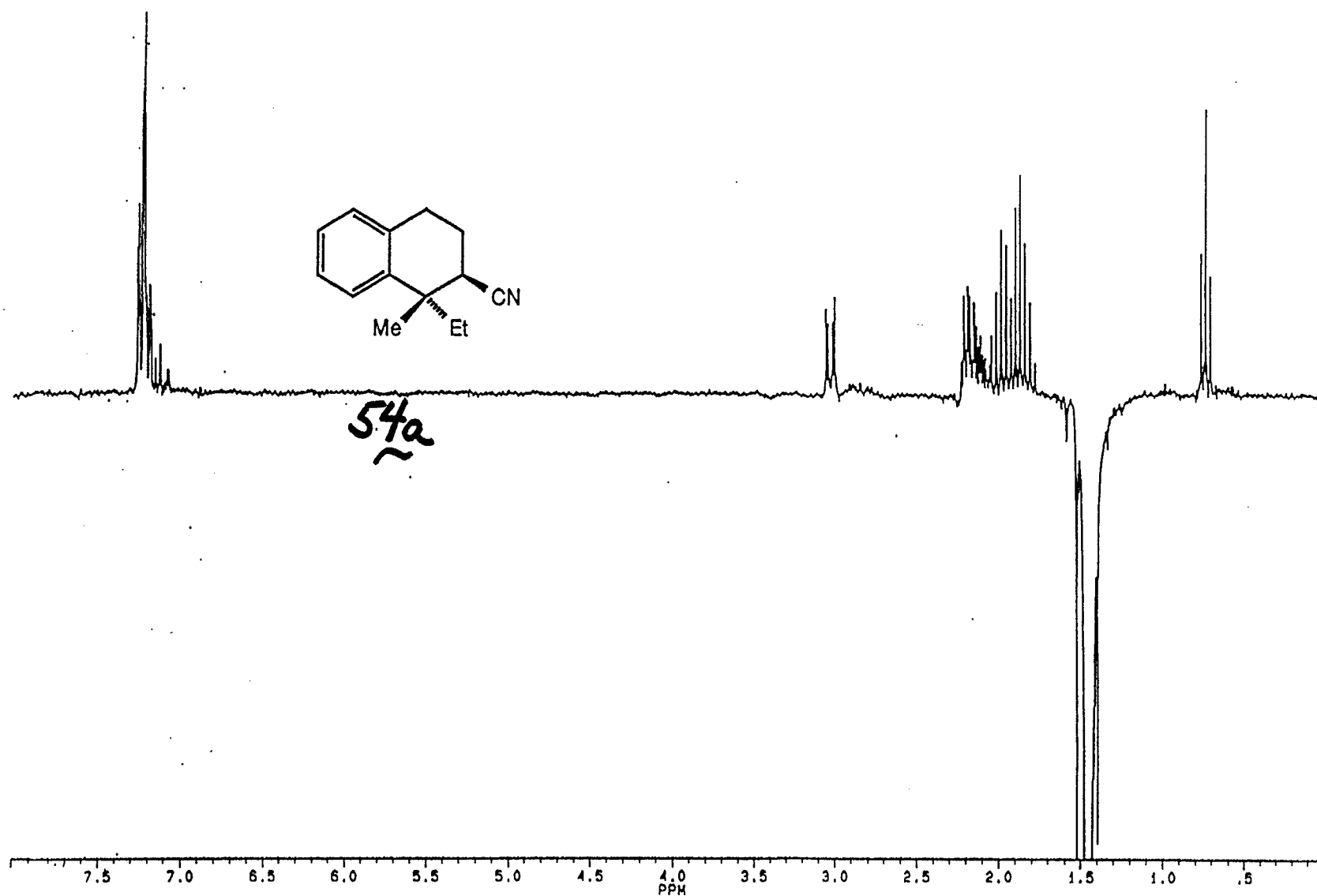


Figure 82. 250 MHz ^1H NMR (NOE Irradiation at δ 1.45) of 1-Ethyl-1,2,3,4-tetrahydro-1-methyl-2-naphthonitrile. (54a).

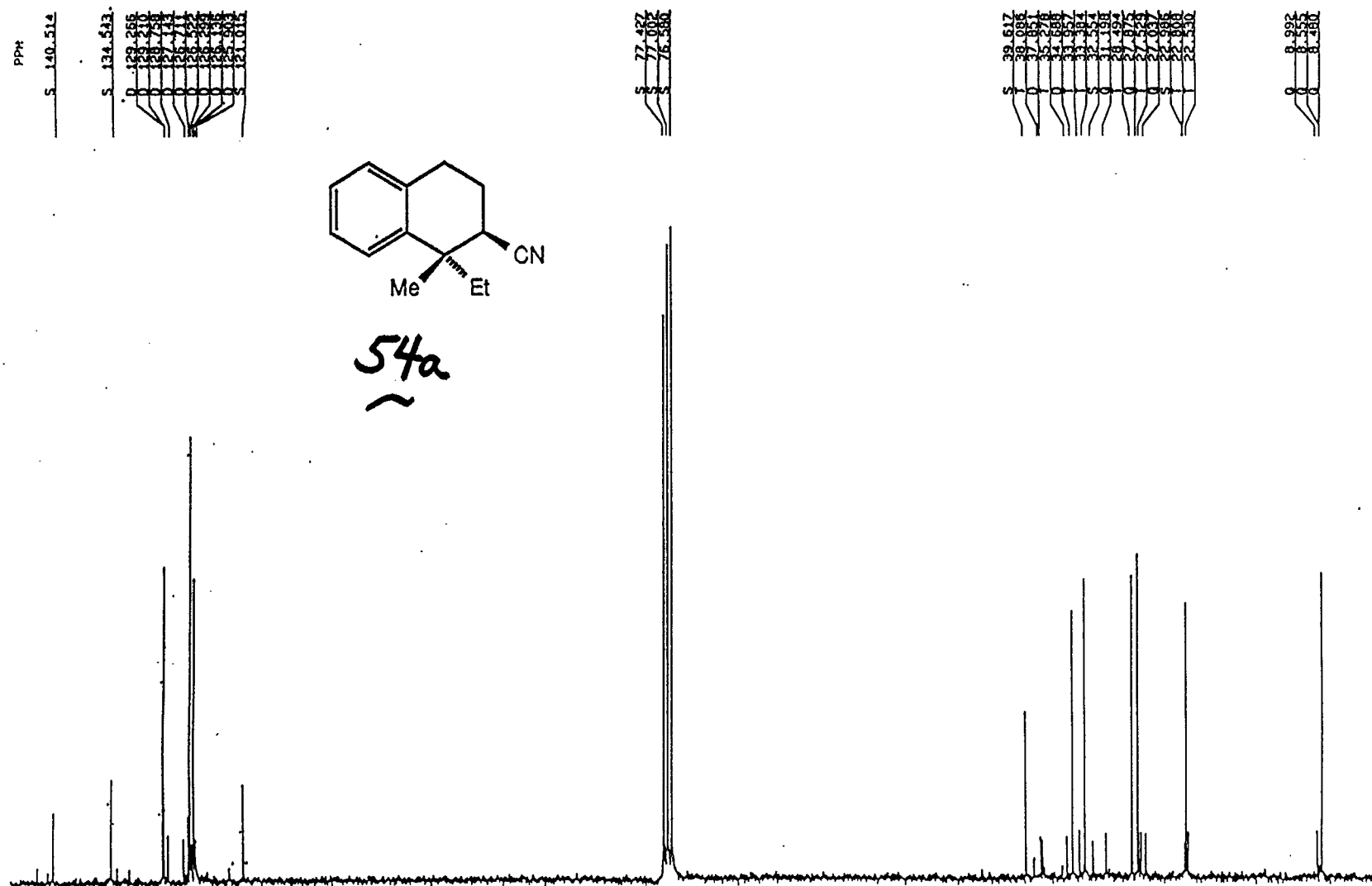


Figure 83. 75 MHz ¹³C NMR of 1-Ethyl-1,2,3,4-tetrahydro-1-methyl-2-naphthonitrile. (54a).

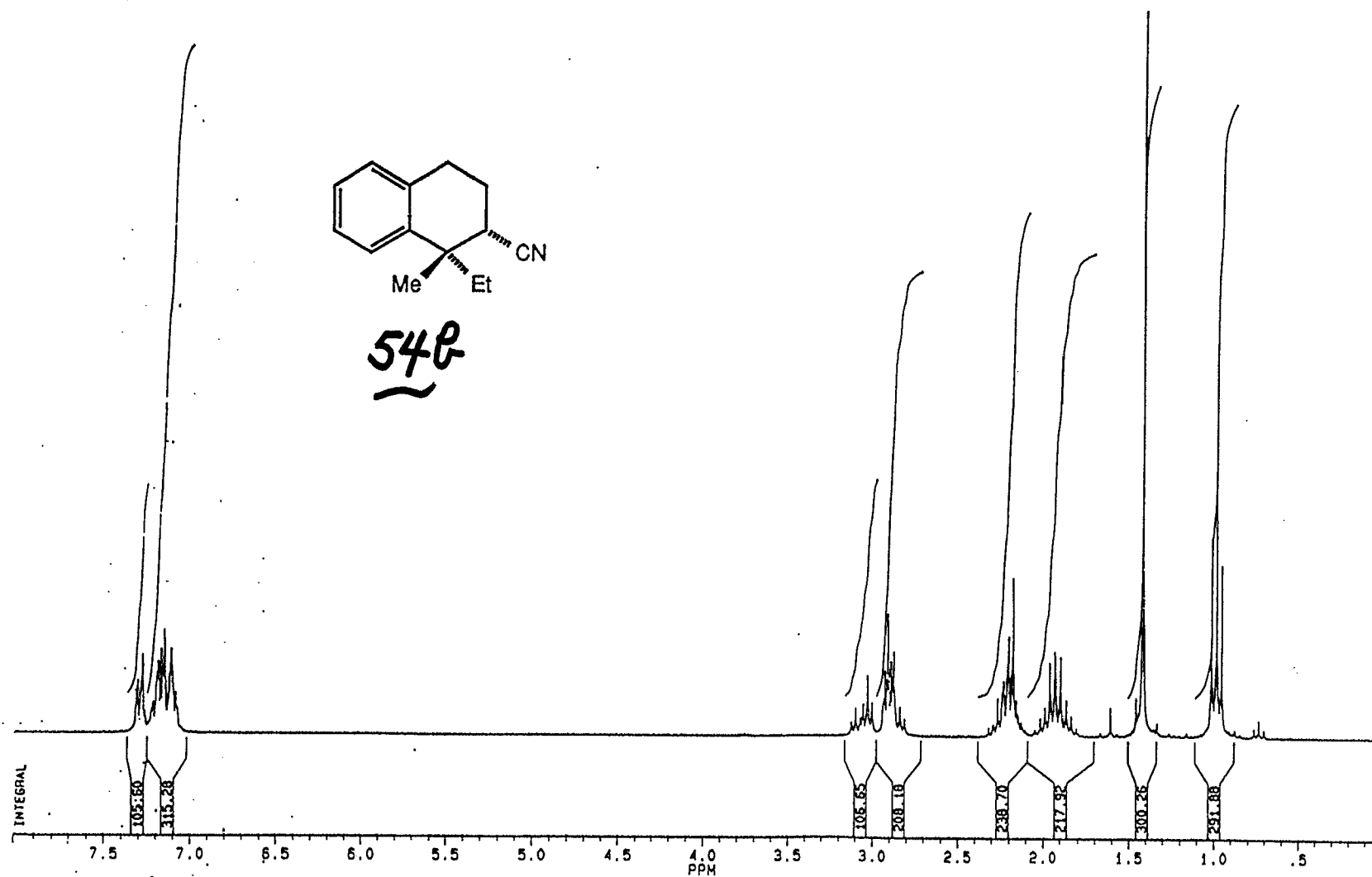


Figure 84. 250 MHz ^1H NMR of 1-Ethyl-1,2,3,4-tetrahydro-1-methyl-2-naphthonitrile. (54b).

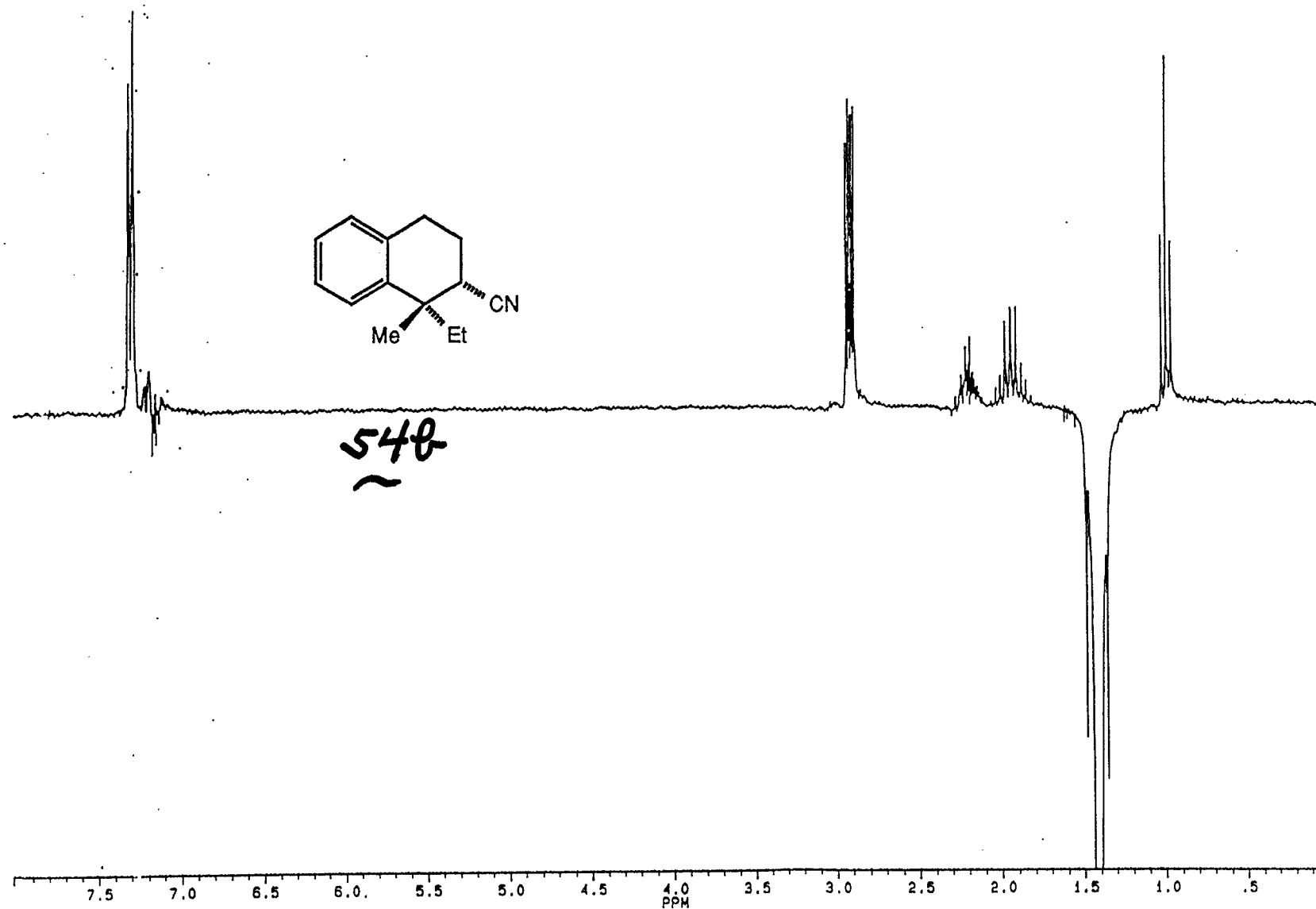
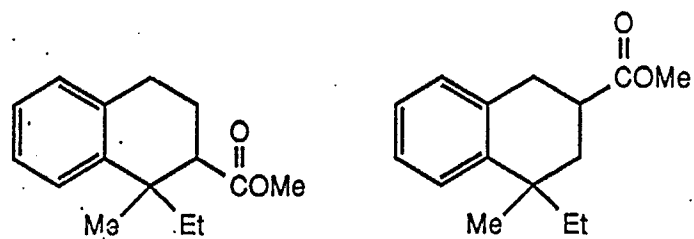
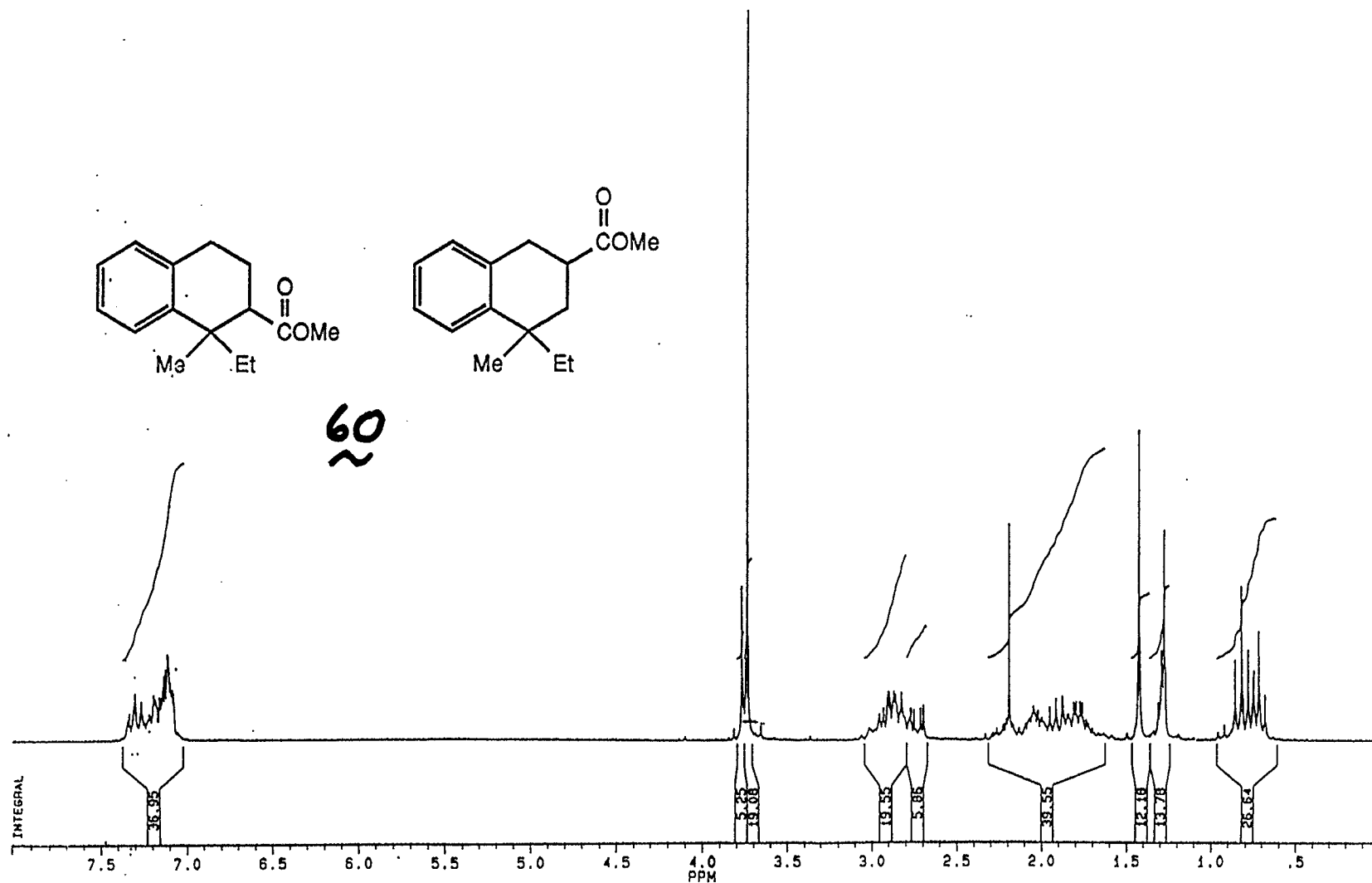


Figure 85. 250 MHz ¹H NMR (NOE Irradiation at δ 1.41) of 1-Ethyl-1,2,3,4-tetrahydro-1-methyl-2-naphthonitrile. (548).

78

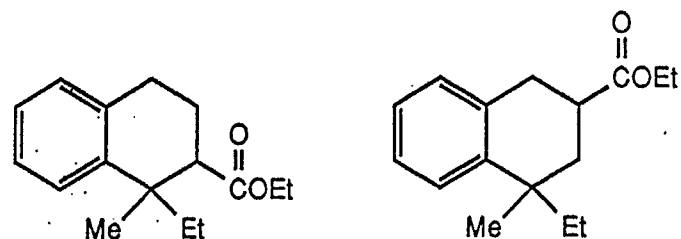


60

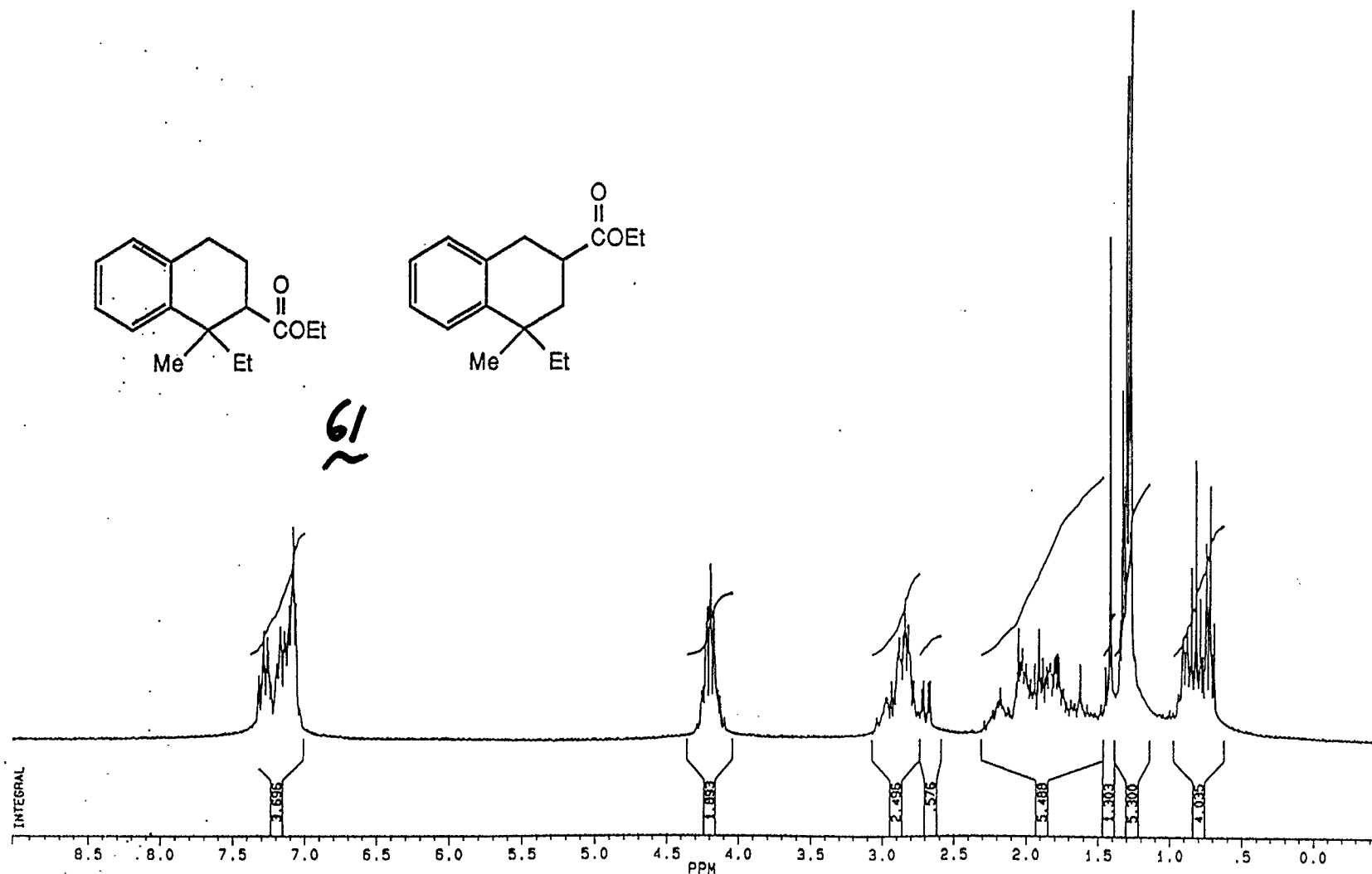


200 MHz ^1H NMR of the Mixture of Methyl 1-Ethyl-1,2,3,4-tetrahydro-1-methyl-2-naphthoate (60) and Methyl 4-Ethyl-1,2,3,4-tetrahydro-4-methyl-2-naphthoate (60)

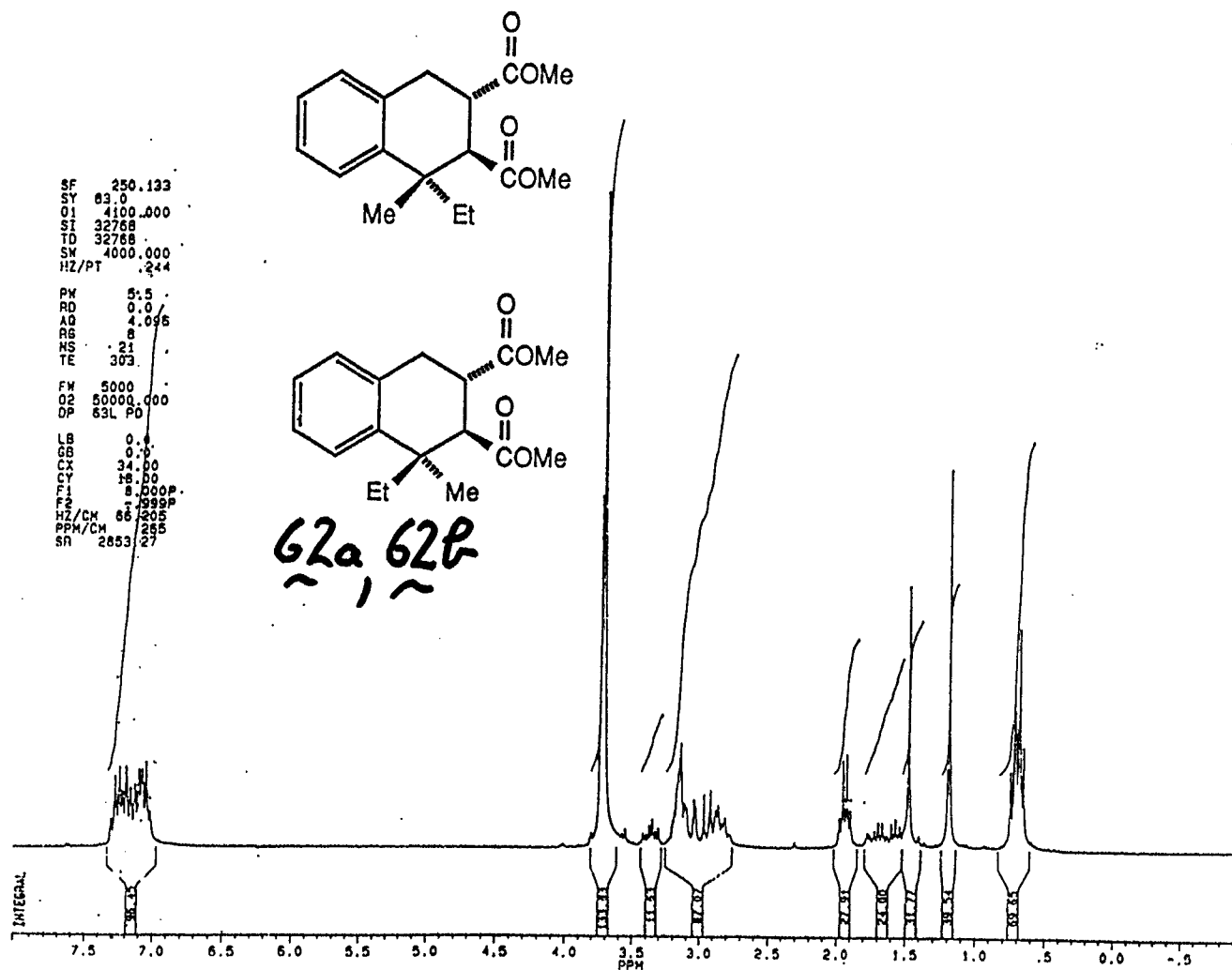
78



61



250 MHz ^1H NMR of the Mixture of Ethyl 1-Ethyl-1,2,3,4-tetrahydro-1-methyl-2-naphthoate (61) and Ethyl 4-Ethyl-1,2,3,4-tetrahydro-4-methyl-2-naphthoate (61).



250 MHz ^1H NMR of the Diastereomeric Mixture of Dimethyl 1-Ethyl-1,2,3,4-tetrahydro-1-methyl-2,3-naphthalenedicarboxylate (62a, 62b).