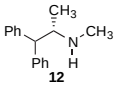
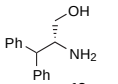
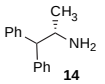
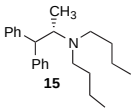
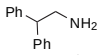
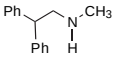
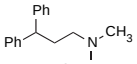
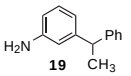
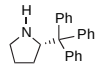
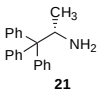
Supporting Information:

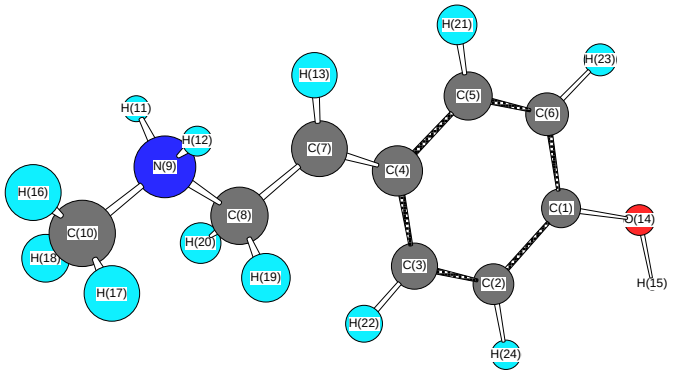
Materials and Methods: amino alcohols were purchased from Aldrich and used as received. Triflic acid was purchased from 3M and distilled immediately prior to use. SbF_5 and FSO_3H were purchased from Aldrich and the SO_2ClF was prepared using the method of Laali and coworkers (see, *J. Org. Chem.* **2001** 66, 780). **Low Temperature NMR experiments:** 0.3 mL of FSO_3H is combined with 0.3 mL of SbF_5 and cooled to about –40°C and 0.5 mL of SO_2ClF is added. The solution is then mixed thoroughly on a vortex mixer and cooled to –78°C. To the superacid solution, approximately 25 mg of the amino alcohol is directly added and the solution is vigorously mixed. The resulting mixture is then transferred to an NMR tube and an external NMR standard is placed in the NMR tube. **Preparation of amino alcohol products:** 1.0 mL of benzene and 4.0 mL of CF_3SO_3H are combined in a vial and 0.2 g of the amino alcohol is added. The mixture is stirred for 3-6 hours and then poured over about 20 g of ice. The resulting solution is neutralized with 50% NaOH, extacted into $CHCl_3$, and the organic phase is washed with water, then brine, and dried with $MgSO_4$. Concentration under reduced pressure provide crude products. In most cases, the crude products show a high level of purity by NMR and GC analysis. If necessary, the product(s) can be further purified by column chromatography or distillation. This procedure has not been optimized.

Table 1. Spectroscopic data for selected products:

Product	^{1}H NMR ($CHCl_3$, 125 MHz), δ:	^{13}C NMR ($CHCl_3$, 125 MHz), δ:	MS:
 **12**	1.02 (d, *J*=6.3 Hz, 3H), 1.59 (s, 1H), 2.38 (s, 3H), 3.36 (dq, *J*=6.0, 10.2 Hz, 1H), 3.75 (d, *J*=10.2 Hz, 1H), 7.15-7.40 (m, 10H)	18.1, 34.2, 58.1, 59.6, 126.6, 126.9, 128.4, 128.5, 128.8, 129.1, 142.9, 143.5	210 (M-15)
 **13**	3.29 (m,1H), 3.55 (m, 1H), 3.68 (m,1H), 3.78 (m, 1H), 7.16-7.38 (m, 10 H)	55.8, 56.8, 65.0, 126.9, 127.0, 128.1, 128.5, 129.0, 129.2, 142.4	196 (M-31)
 **14**	1.05 (d, 3H, *J*=6.3 Hz), 3.58 (d, 1H, *J*=9.9 Hz), 3.75 (m, 1H), 7.14-7.39 (m, 10H)	22.3, 50.2, 62.4, 126.6, 126.8, 128.2, 128.5, 128.8, 129.0, 143.3, 143.7	196 (M-15)
 **15**	0.87 (m, 9H), 1.11-1.20 (m, 6H), 1.32 (m, 2H), 2.30 (m, 2H), 2.45 (m, 2H), 3.63 (m, 1H), 3.89 (d, 1H, 11.4 Hz), 7.14-7.38 (m, 10H)	11.4, 14.5, 20.8, 31.4, 49.9, 58.1, 58.4, 125.8, 126.3, 127.9, 128.6, 128.7, 128.8, 144.7, 144.8	156 (M-167)
 **16**	1.60 (s, 2H), 3.34 (d, 2H, *J*=7.8 Hz), 4.00 (t, 1H, *J*=7.8 Hz)	47.1, 55.2, 126.8, 128.3, 128.9, 142.9	197 (M+)
 **17**	2.47 (s, 3H), 3.24 (d, 2H, *J*=7.5 Hz), 4.25 (t, 1H, *J*=7.8 Hz), 7.20-7.38 (m, 10H)	36.7, 51.3, 57.0, 126.8, 128.3, 128.9, 143.2	211 (M+)
 **18**	2.25-2.32 (m, 2H), 2.38 (s, 3H), 2.56 (m, 2H), 4.00 (t, 1H, *J*=8.1 Hz)	35.3, 36.1, 49.3, 50.3, 126.5, 128.2, 128.8, 144.8	225 (M+)
 **19**	1.60 (d, 3H, *J*=7.2 Hz), 3.59 (s, 2H), 4.05 (q, 1H, *J*=7.8 Hz), 6.52 (m, 2H), 6.64 (d, 1H, *J*=7.8 Hz), 7.08 (m, 1H), 7.18-7.29 (m, 5H)	22.0, 44.9, 113.2, 114.8, 118.3, 126.2, 127.9, 128.6, 129.5, 146.6, 146.7, 147.9	197 (M+)
 **20**	1.07 (m, 1H), 1.60 (m, 2H), 2.10 (m, 1H), 2.65 (m, 1H), 2.78 (m, 1H), 4.86 (t, 1H, *J*=7.8 Hz), 7.18-7.31 (m, 9H), 7.36-7.40 (m, 6H)	25.7, 29.3, 46.9, 61.4, 63.8, 126.3, 128.0, 130.4, 146.2	314 (M-1)
 **21**	0.93 (d, 3H, *J*=6.3 Hz), 4.77 (q, 1H, *J*=6.0), 7.16-7.48 (m, 15 H)	19.9, 49.0, 63.6, 126.2, 128.0-131.0 cluster, 145.0- 147.0 cluster	272 (M-15)
 **23**	See: Klumpp, et. al. *J. Org. Chem.* **1999**, *64*, 6702.		
 **25**	2.54 (m, 2H), 3.10-3.23 (m, 2H), 3.56-3.73 (m, 2H), 4.09 (d, 1H, *J*=16.7 Hz), 4.66 (d, 1H, *J*=16.8 Hz)	41.1, 50.4, 53.7, 60.5, 61.7, 125.9, 126.1, 126.6, 126.9, 127.5, 128.1, 128.3, 128.4, 142.0, 145.1	265 (M+)

COMPUTATIONAL RESULTS

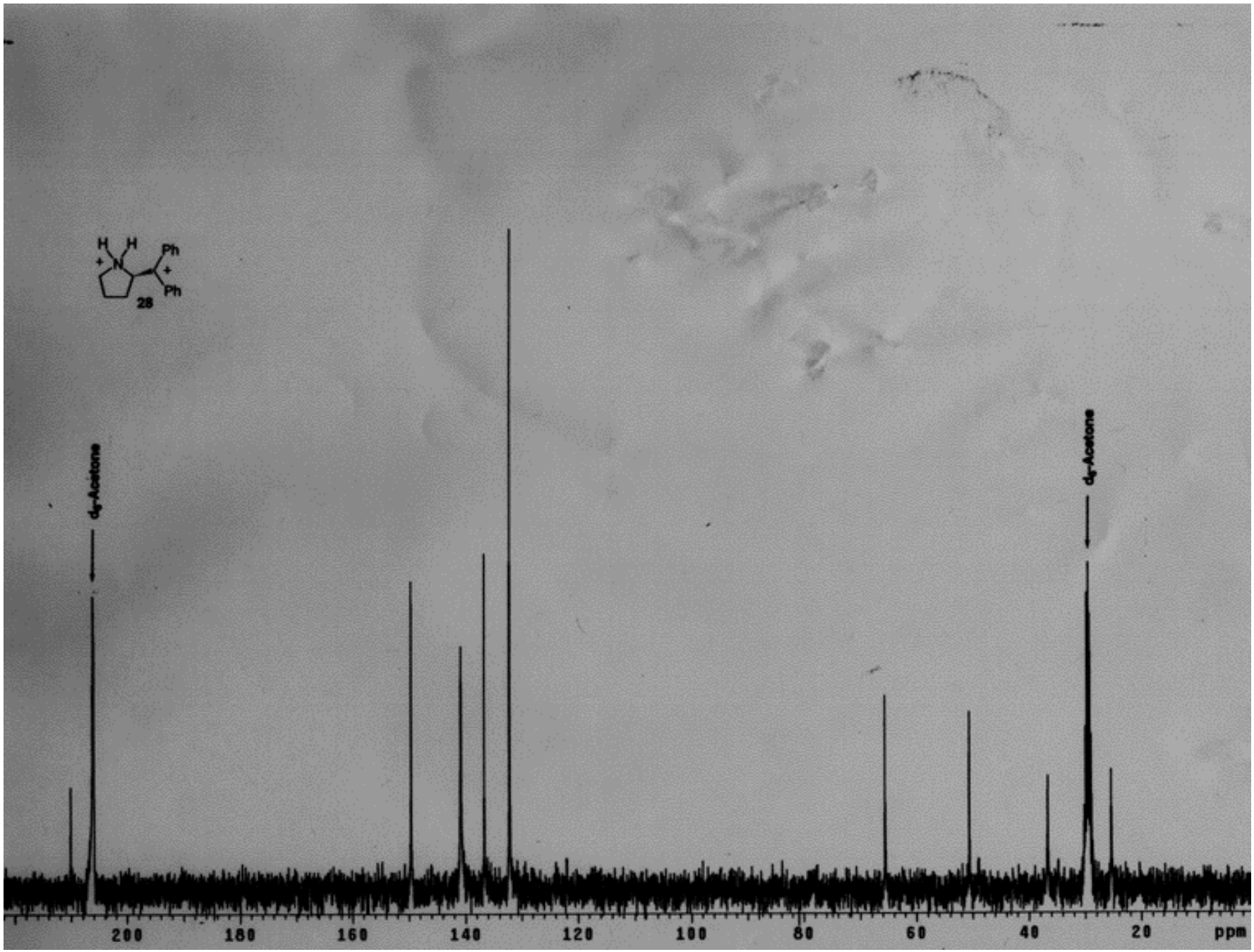
	Bond Lengths, Å
C(1)-C(2)	1.435
C(1)-C(6)	1.427
C(1)-O(14)	1.324
C(2)-C(3)	1.361
C(2)-H(24)	1.082
C(3)-C(4)	1.458
C(3)-H(22)	1.081
C(4)-C(5)	1.460
C(4)-C(7)	1.367
C(5)-C(6)	1.361
C(5)-H(21)	1.082
C(6)-H(23)	1.080
C(7)-C(8)	1.505
C(7)-H(13)	1.087
C(8)-N(9)	1.525
C(8)-H(19)	1.091
C(8)-H(20)	1.092
N(9)-C(10)	1.533
N(9)-H(11)	1.025
N(9)-H(12)	1.025
C(10)-H(16)	1.086
C(10)-H(17)	1.086
C(10)-H(18)	1.086
O(14)-H(15)	0.979



	Bond Angle, °
C(2)-C(1)-C(6)	121.297
C(2)-C(1)-O(14)	123.112
C(6)-C(1)-O(14)	115.592
C(1)-C(2)-C(3)	119.445
C(1)-C(2)-H(24)	119.715
C(3)-C(2)-H(24)	120.841
C(2)-C(3)-C(4)	121.038
C(2)-C(3)-H(22)	118.832
C(4)-C(3)-H(22)	120.131
C(3)-C(4)-C(5)	117.587
C(3)-C(4)-C(7)	123.586
C(5)-C(4)-C(7)	118.828
C(4)-C(5)-C(6)	121.316
C(4)-C(5)-H(21)	118.889
C(6)-C(5)-H(21)	119.795
C(1)-C(6)-C(5)	119.318
C(1)-C(6)-H(23)	118.162
C(5)-C(6)-H(23)	122.519
C(4)-C(7)-C(8)	126.417
C(4)-C(7)-H(13)	116.915
C(8)-C(7)-H(13)	116.665
C(7)-C(8)-N(9)	112.200
C(7)-C(8)-H(19)	112.044
C(7)-C(8)-H(20)	111.925
N(9)-C(8)-H(19)	106.377
N(9)-C(8)-H(20)	106.368
H(19)-C(8)-H(20)	107.555
C(8)-N(9)-C(10)	113.509
C(8)-N(9)-H(11)	109.834
C(8)-N(9)-H(12)	109.832
C(10)-N(9)-H(11)	108.313
C(10)-N(9)-H(12)	108.325
H(11)-N(9)-H(12)	106.791
N(9)-C(10)-H(16)	108.264
N(9)-C(10)-H(17)	108.648
N(9)-C(10)-H(18)	108.640
H(16)-C(10)-H(17)	110.231
H(16)-C(10)-H(18)	110.236
H(17)-C(10)-H(18)	110.759
C(1)-O(14)-H(15)	118.729

	Dihedral Angles, °
C(6)-C(1)-C(2)-C(3)	0.00
C(6)-C(1)-C(2)-H(24)	-179.000
O(14)-C(1)-C(2)-C(3)	180.000
O(14)-C(1)-C(2)-H(24)	0.000
C(2)-C(1)-C(6)-C(5)	0.000
C(2)-C(1)-C(6)-H(23)	180.000
O(14)-C(1)-C(6)-C(5)	180.000
O(14)-C(1)-C(6)-H(23)	0.000
C(2)-C(1)-O(14)-H(15)	0.000
C(6)-C(1)-O(14)-H(15)	-179.000
C(1)-C(2)-C(3)-C(4)	0.000
C(1)-C(2)-C(3)-H(22)	-179.000
H(24)-C(2)-C(3)-C(4)	-179.000
H(24)-C(2)-C(3)-H(22)	0.000
C(2)-C(3)-C(4)-C(5)	0.000
C(2)-C(3)-C(4)-C(7)	180.000
H(22)-C(3)-C(4)-C(5)	180.000
H(22)-C(3)-C(4)-C(7)	0.000
C(3)-C(4)-C(5)-C(6)	0.000
C(3)-C(4)-C(5)-H(21)	-179.000
C(7)-C(4)-C(5)-C(6)	-179.000
C(7)-C(4)-C(5)-H(21)	0.000
C(3)-C(4)-C(7)-C(8)	0.000
C(3)-C(4)-C(7)-H(13)	-179.000
C(5)-C(4)-C(7)-C(8)	180.000
C(5)-C(4)-C(7)-H(13)	0.000
C(4)-C(5)-C(6)-C(1)	0.000
C(4)-C(5)-C(6)-H(23)	180.000
H(21)-C(5)-C(6)-C(1)	-179.000
H(21)-C(5)-C(6)-H(23)	0.000
C(4)-C(7)-C(8)-N(9)	179.051
C(4)-C(7)-C(8)-H(19)	59.474
C(4)-C(7)-C(8)-H(20)	-61.440
H(13)-C(7)-C(8)-N(9)	-1.096
H(13)-C(7)-C(8)-H(19)	-120.678

	Dihedral Angles, °
H(13)-C(7)-C(8)-H(20)	118.407
C(7)-C(8)-N(9)-C(10)	180.000
C(7)-C(8)-N(9)-H(11)	58.469
C(7)-C(8)-N(9)-H(12)	-58.696
H(19)-C(8)-N(9)-C(10)	-57.271
H(19)-C(8)-N(9)-H(11)	-178.694
H(19)-C(8)-N(9)-H(12)	64.154
H(20)-C(8)-N(9)-C(10)	57.182
H(20)-C(8)-N(9)-H(11)	-64.227
H(20)-C(8)-N(9)-H(12)	178.584
C(8)-N(9)-C(10)-H(16)	180.000
C(8)-N(9)-C(10)-H(17)	60.261
C(8)-N(9)-C(10)-H(18)	-60.307
H(11)-N(9)-C(10)-H(16)	-57.764
H(11)-N(9)-C(10)-H(17)	-177.488
H(11)-N(9)-C(10)-H(18)	61.950
H(12)-N(9)-C(10)-H(16)	57.714
H(12)-N(9)-C(10)-H(17)	-62.001
H(12)-N(9)-C(10)-H(18)	177.428\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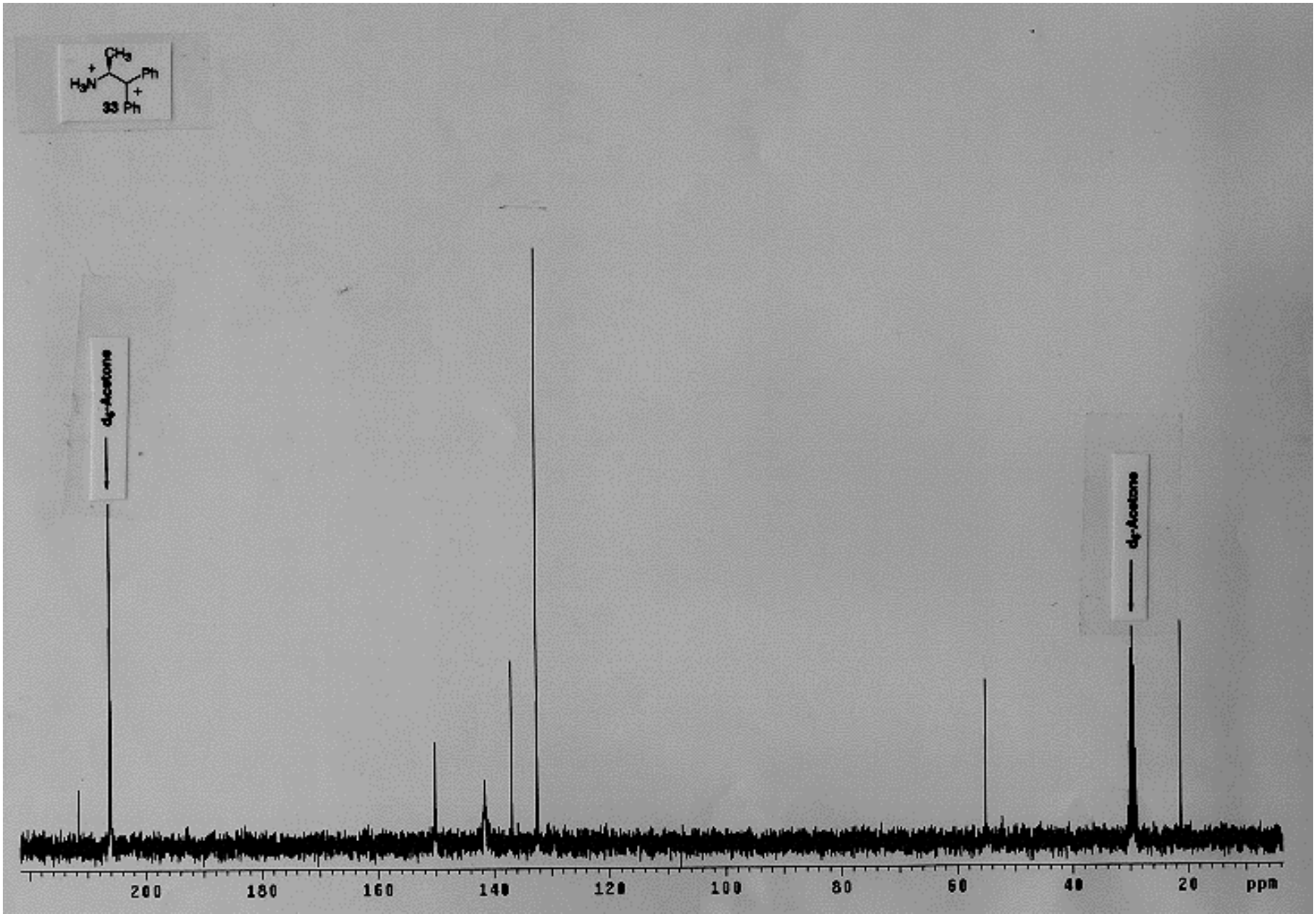
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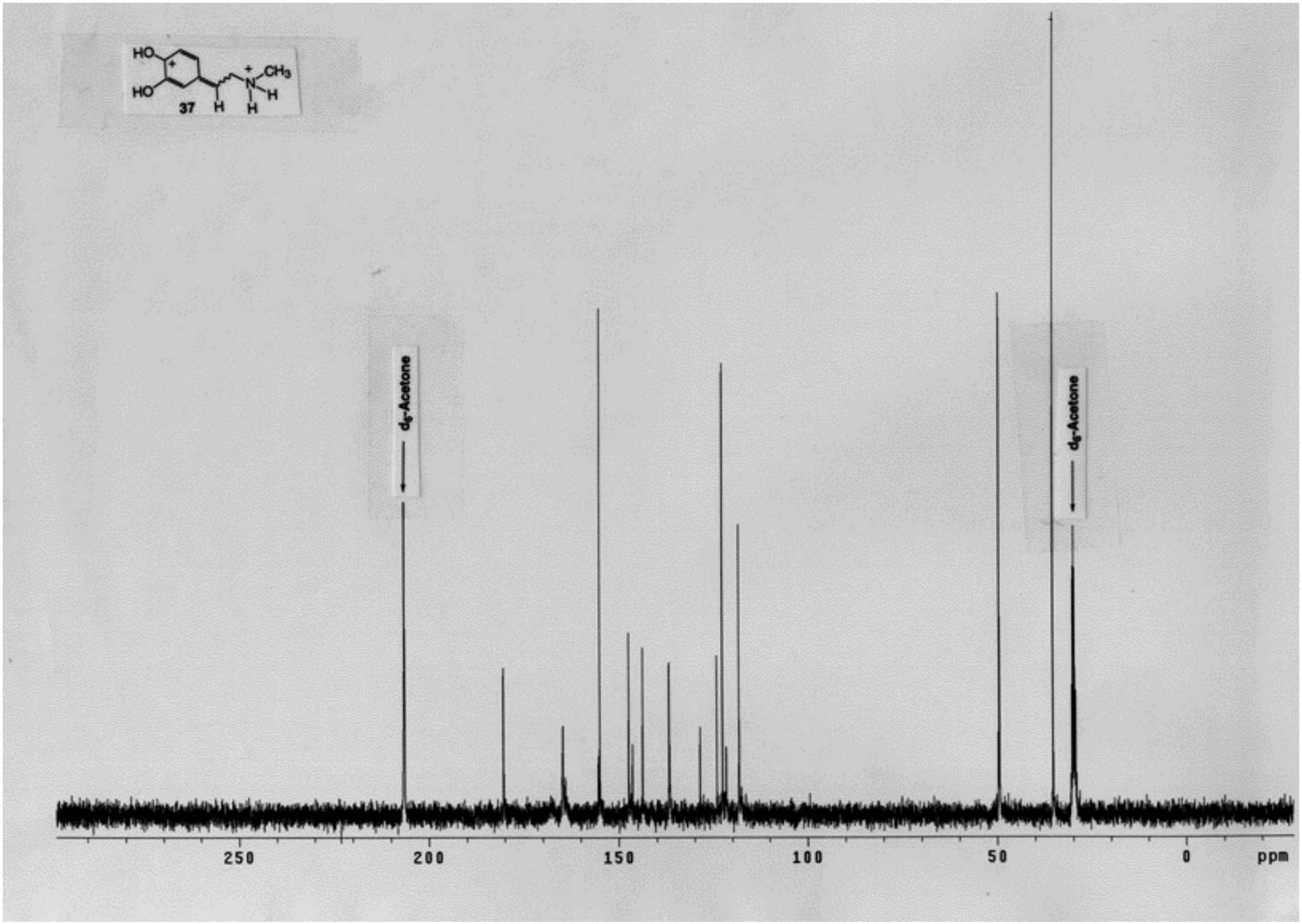
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