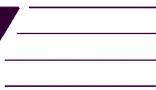


CHEMISTRY 
A EUROPEAN JOURNAL

Supporting Information

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**1,4-Pentenyne as a Five-Carbon Synthone for Efficient and Selective
Syntheses of Natural Products Containing
2,4-Dimethyl-1-penten-1,5-ylidene and Related Moieties via
Zr-Catalyzed Carboalumination of Alkynes and Alkenes**

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Details of Compounds **13b**, **14**, **16-18**, **20-27**, **28b**, **29**, **33-37** were shown in Experimental Section of manuscript.

1,4-Pentenyne (12). To a solution of 0.5 M ethynylmagnesium bromide in THF (400 mL, 200 mmol) were added CuBr (1.4 g, 10 mmol) and allyl bromide (17.8 mL, 210 mmol) at 0 °C. After stirring overnight at 23 °C, the reaction mixture was quenched with aqueous NH₄Cl, extracted with decalin (150 mL×3), washed with brine, and dried over MgSO₄. The filtrate was subjected to fractionally distillation to give a mixture of **12** and THF. This resultant mixture was added with decalin (300 mL), washed with water (100 mL×5), brine, dried over MgSO₄, filtered, and then fractionally distillation gave **12**^[2] (6.6 g, 50%, b.p. 39-43 °C). ¹H NMR (300 MHz, CDCl₃) δ = 2.13 (t, *J* = 2.7 Hz, 1 H), 2.95-3.0 (m, 2 H), 5.16 (dd, *J* = 9.9, 2.7, 1.8 Hz, 1 H), 5.37 (ddd, *J* = 17.1, 3.6, 1.8 Hz, 1 H), 5.75-5.9 (m, 1 H).

5-Trimethylsilyl-1-penten-4-yne (13a). This compound was prepared according to the procedure used for the preparation of **13b** in experimental section of manuscript, yield: 81%. ¹H NMR (300 MHz, CDCl₃) δ = 0.16 (s, 9 H), 3.0-3.1 (m, 2 H), 5.1-5.4 (m, 2 H), 5.75-5.9 (m, 1 H).

2-Iodo-4-methoxy-5-methylbenzaldehyde. This compound was prepared by a literature method^[19] except that longer lithiation time (48 h) was used to produce the desired compound as a white solid, yield: 64%. ¹H NMR (300 MHz, CDCl₃) δ = 2.16 (s, 3 H), 3.89 (s, 3 H), 7.25 (s, 1 H), 7.63 (s, 1 H), 9.85 (s, 1 H); ¹³C NMR (75 MHz, CDCl₃) δ = 15.83, 55.83, 99.68, 120.99, 127.70, 127.81, 131.35, 162.54, 194.46.

(2*R*,4*E*)-7-(*tert*-Butyldiphenylsilyloxy)-2,4-dimethyl-4-heptenal. This compound was

prepared by Dess-Martin oxidation, yield: 92%. ¹H NMR (300 MHz, CDCl₃) δ = 1.06 (d, *J* = 6.6 Hz, 3 H), 1.11 (s, 9 H), 1.61 (s, 3 H), 2.02 (dd, *J* = 13.2, 7.2 Hz, 1 H), 2.33 (q, *J* = 6.9 Hz, 2 H), 2.45-2.55 (m, 2 H), 3.71 (td, *J* = 6.9, 1.2 Hz, 2 H), 5.26 (t, *J* = 1.2 Hz, 1 H), 7.4-7.5 (m, 6 H), 7.7-7.8 (m, 4 H), 9.65 (d, *J* = 1.8 Hz, 1 H); ¹³C NMR (75 MHz, CDCl₃) δ = 13.02, 15.88, 19.09, 26.75 (3 C), 31.49, 40.70, 44.18, 63.44, 123.66, 127.53 (4 C), 129.47 (2 C), 133.23, 133.85 (2 C), 135.48 (4 C), 204.93.

(3*R*,5*E*)-8-(*tert*-Butyldiphenylsilyloxy)-3,5-dimethyl-5-octen-1-yne (23). To a mixture of PPh₃ (4.7 g, 18 mmol) and K₂CO₃ (830 mg, 6 mmol) in CH₂Cl₂ (10 mL) was added CBr₄ (3.0 g, 9 mmol) at 0 °C. After stirring at 0 °C for 15 min, a solution of (2*R*,4*E*)-7-*tert*-butyldiphenylsilyloxy-2,4-dimethyl-4-heptenal (1.78 g, 4.5 mmol) in CH₂Cl₂ (5 mL) was added. After stirring overnight, the reaction mixture was purified by column chromatography (silica gel, hexanes-EtOAc 95:5) to afford the desired product as a yellow oil. To a solution of the 1,1-dibromide thus formed in THF (10 mL) was added 2.5 M ^{*n*}BuLi in hexanes (4 mL, 10 mmol) at -78 °C. It was warmed to 23 °C over 2 h, then quenched with saturated aqueous NH₄Cl, extracted with ether, washed with brine, dried over MgSO₄, and concentrated. Purification by column chromatography (silica gel, hexanes/EtOAc 95:5) afforded **23** (1.3 g, 75%, 2 steps) as a colorless oil. ¹H NMR (300 MHz, CDCl₃) δ = 1.17 (s, 9 H), 1.67 (s, 3 H), 2.1-2.5 (m, 5 H), 2.65-2.75 (m, 1 H), 3.7-3.9 (m, 2 H), 5.3-5.45 (m, 1 H), 7.4-7.6 (m, 6 H), 7.75-7.9 (m, 4 H); ¹³C NMR (75 MHz, CDCl₃) δ = 15.88, 19.14, 20.35, 24.00, 26.83 (3 C), 31.55, 46.88, 63.61, 68.21, 88.96, 123.32 (2 C), 127.56 (4 C), 129.50 (2 C), 133.99 (2 C), 135.56 (4 C).

(2*S*)-2-Methyl-5-trimethylsilyl-4-pentyn-1-ol (28a). This compound was prepared according to Representative Procedure A (experimental section of manuscript) to provide **28a** (647 mg, 76%) as a yellow oil. ¹H NMR (300 MHz, CDCl₃) δ = 0.15 (s, 9 H), 0.99 (d, *J* = 6.3 Hz, 3 H), 1.85-1.95 (m, 1 H), 2.25-2.3 (m, 2 H), 3.58 (d, *J* = 6.9 Hz, 2 H); ¹³C

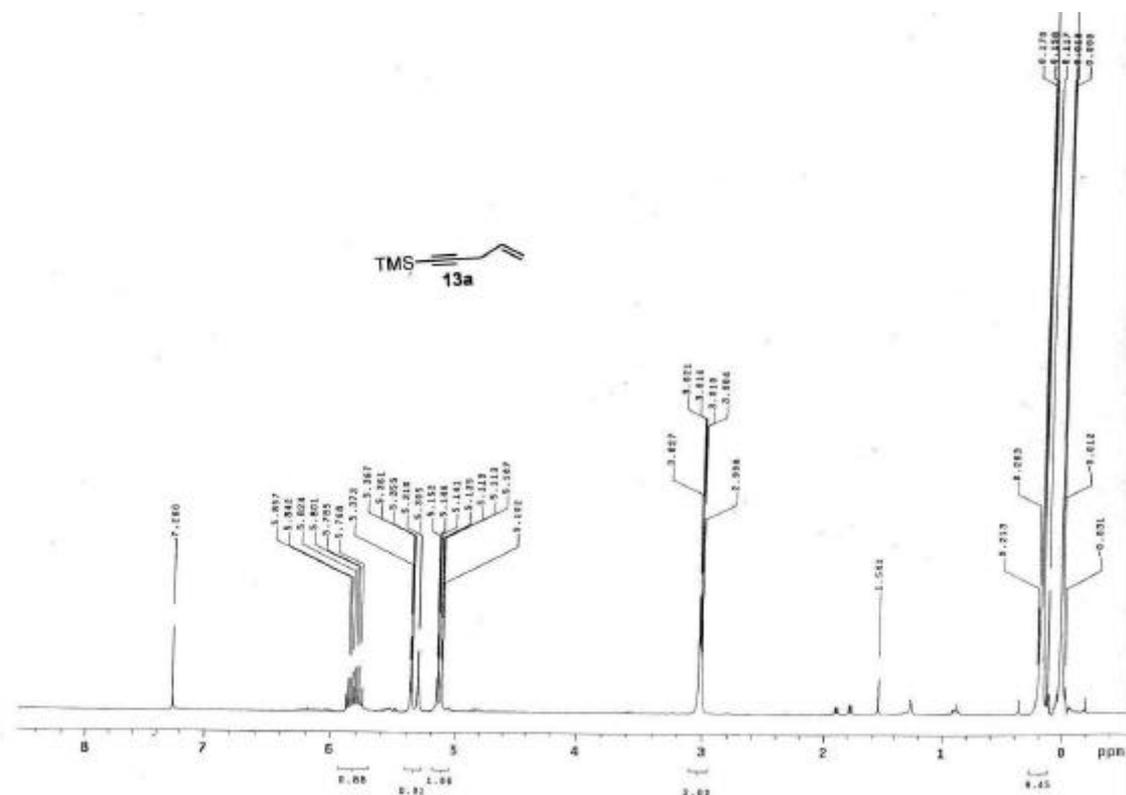
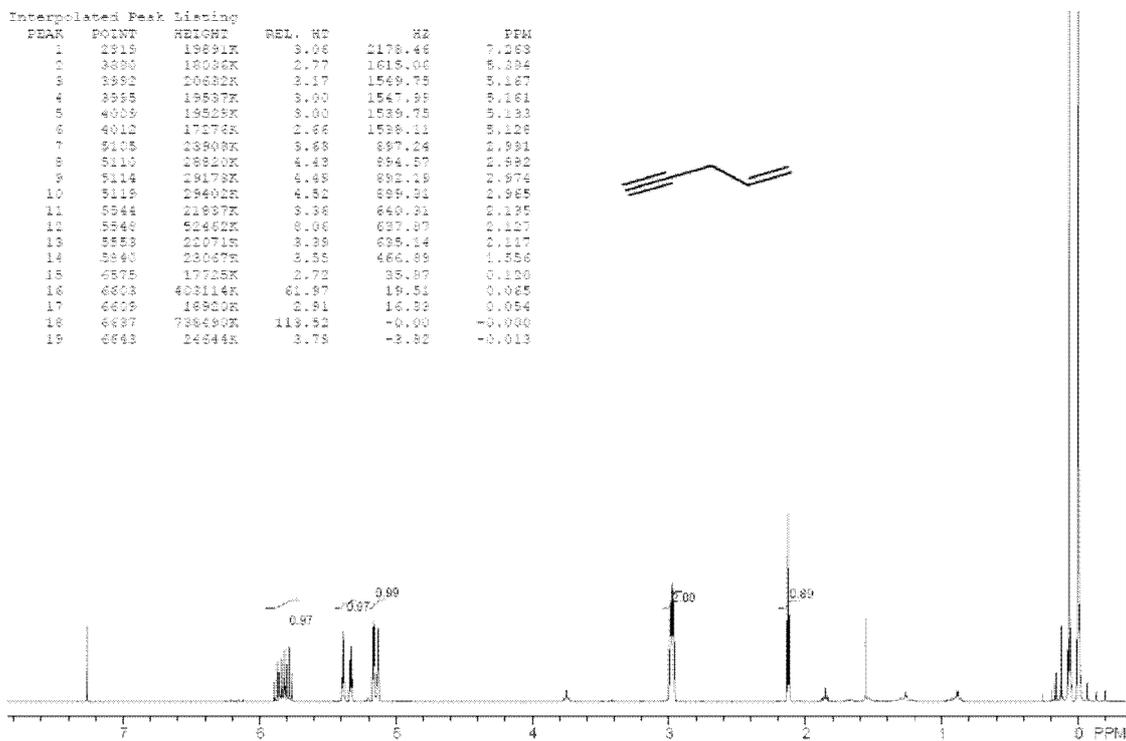
NMR (75 MHz, CDCl₃) δ = -0.06 (3 C), 15.94, 23.49, 34.92, 66.47, 85.68, 105.44.

(2S,4E)-2,4-Dimethyl-5-iodo-4-petenal (30). To a solution of **27** (420 mg, 1.75 mmol) in CH₂Cl₂ (6 mL) and H₂O (2 mL) were added TEMPO (6 mg, 0.035 mmol) and PhI(OAc)₂ (564 mg, 1.9 mmol). After stirring for 2 h at 23 °C, the reaction mixture was quenched with aqueous NaHCO₃, washed with brine, extracted with ether, dried over MgSO₄, and concentrated. Purification by column chromatography (silica gel, hexanes/Et₂O 95:5) provided **30** (312 mg, 75%). ¹H NMR (300 MHz, CDCl₃) δ = 1.07 (d, *J* = 7.2 Hz, 3 H), 1.84 (s, 3 H), 2.21 (dd, *J* = 13.5, 8.1 Hz, 1 H), 2.5-2.7 (m, 2 H), 5.99 (q, *J* = 1.2 Hz, 1 H), 9.64 (d, *J* = 0.9 Hz, 1 H); ¹³C NMR (75 MHz, CDCl₃) δ = 13.07, 23.65, 40.05, 44.12, 77.00, 144.44, 203.55.

Compound 31. To a solution of **33** (1.54 g, 5 mmol) in THF (10 mL) was added 1.0 M TBAF in THF (6 mL, 6 mmol). After stirring overnight at 23 °C, the reaction mixture was quenched with aqueous NH₄Cl, extracted with ether, washed with brine, dried over MgSO₄, and concentrated. Purification by column chromatography (silica gel, hexanes/EtOAc 90:10) provided the desilylated product (730 mg, 96%).

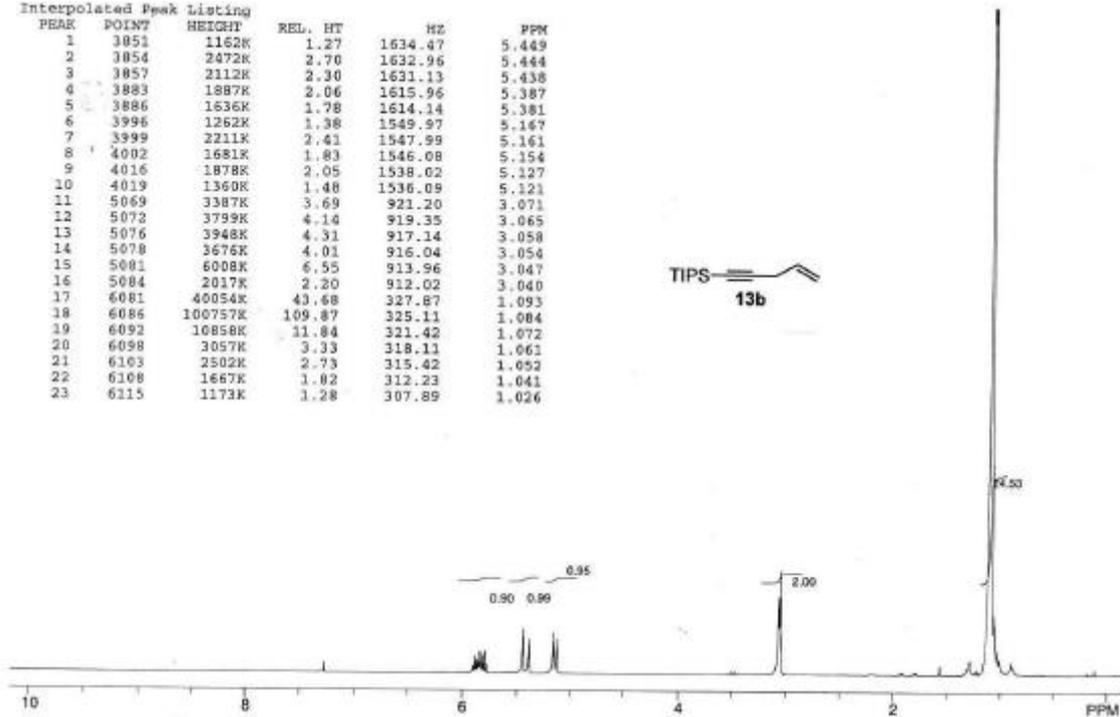
The above product thus formed was subjected the Representative Procedure D to generate compound **31**, yield: 88% (2 steps). ¹H NMR (300 MHz, CDCl₃) δ = 0.83 (d, *J* = 6.9 Hz, 3 H), 1.03 (d, *J* = 6.9 Hz, 3 H), 1.7-1.8 (m, 1 H), 1.79 (s, 3 H), 2.05 (dd, *J* = 13.5, 10.5 Hz, 1 H), 2.3-2.55 (m, 2 H), 3.16 (q, *J* = 4.8 Hz, 1 H), 5.1-5.2 (m, 2 H), 5.78 (ddd, *J* = 18.9, 10.5, 8.1 Hz, 1 H), 5.88 (s, 1 H); ¹³C NMR (75 MHz, CDCl₃) δ = 16.14, 16.98, 23.66, 33.66, 40.79, 41.38, 75.37, 78.71, 116.56, 139.55, 146.82.

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5	4009	19539K	3.00	1559.75	5.193
6	4012	17276K	2.62	1538.11	5.128
7	5105	23809K	3.68	397.24	2.991
8	5110	23820K	4.49	494.57	3.092
9	5114	29179K	6.48	692.15	3.075
10	5118	29402K	4.52	495.91	3.085
11	5544	23837K	3.38	360.91	2.125
12	5548	62462K	6.00	627.87	2.157
13	5553	22071K	3.39	365.14	2.117
14	5540	23067K	3.55	380.89	1.856
15	6575	17785K	2.72	29.87	0.126
16	6503	40314K	61.87	19.51	0.005
17	6205	18920K	2.81	16.39	0.054
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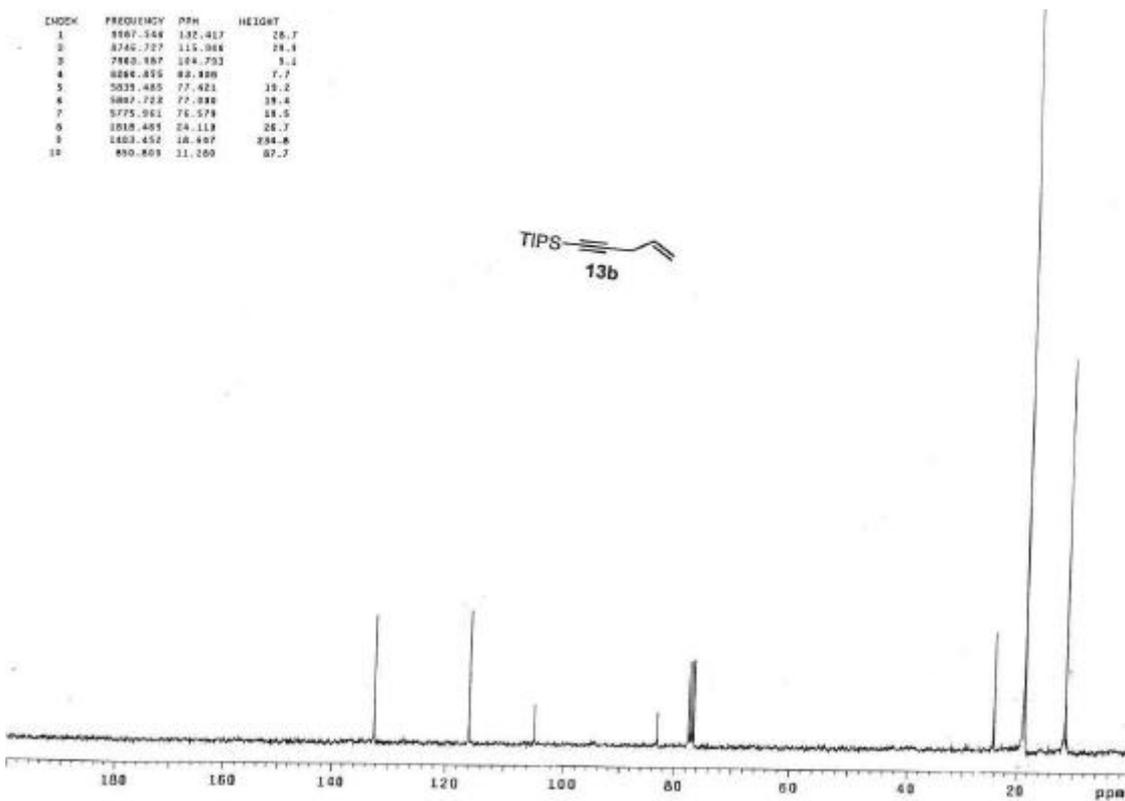


Interpolated Peak Listing

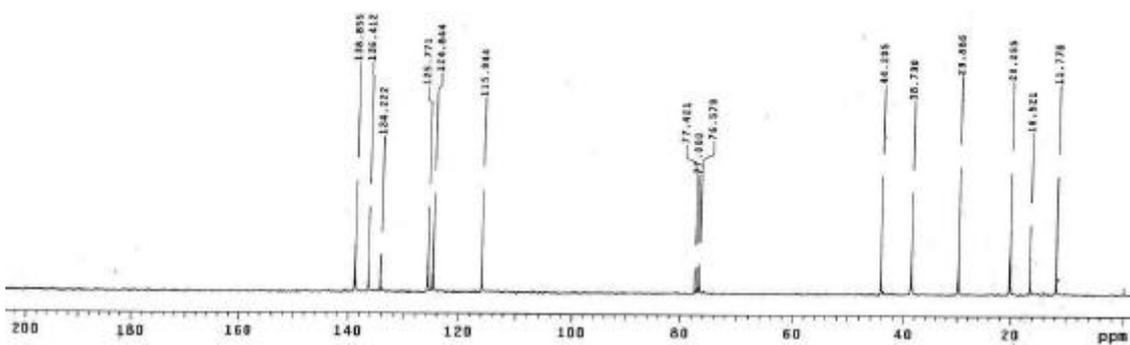
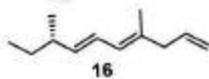
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6	3996	1262K	1.38	1549.97	5.167
7	3999	2211K	2.41	1547.99	5.161
8	4002	1681K	1.83	1546.08	5.154
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11	5069	3387K	3.69	921.20	3.071
12	5072	3799K	4.14	919.35	3.065
13	5076	3948K	4.31	917.14	3.058
14	5078	3676K	4.01	916.04	3.054
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16	5084	2017K	2.20	912.02	3.040
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19	6092	10858K	11.84	321.42	1.072
20	6098	3057K	3.33	318.11	1.061
21	6103	2502K	2.73	315.42	1.052
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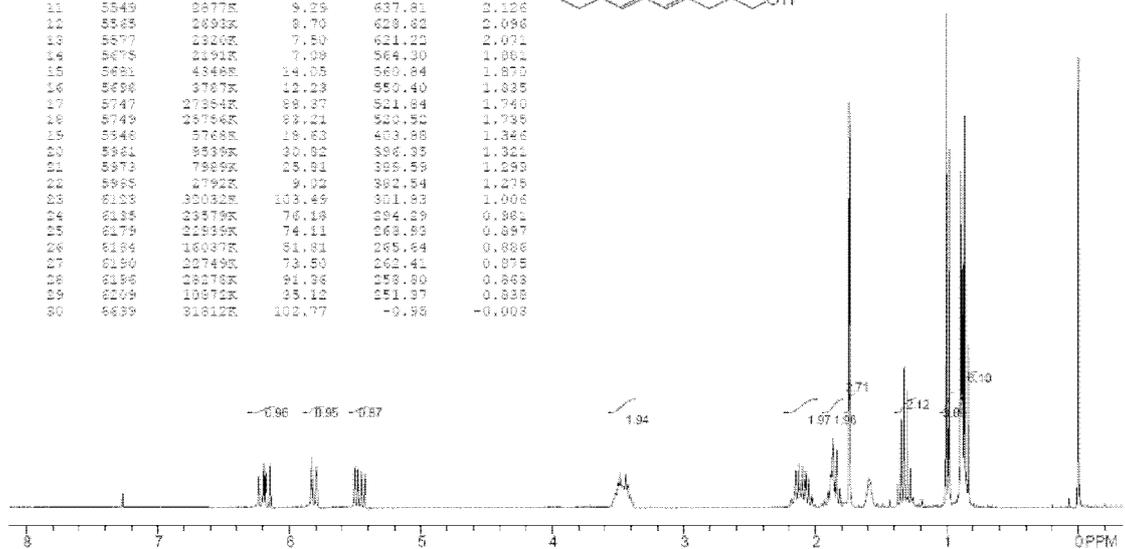
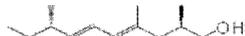
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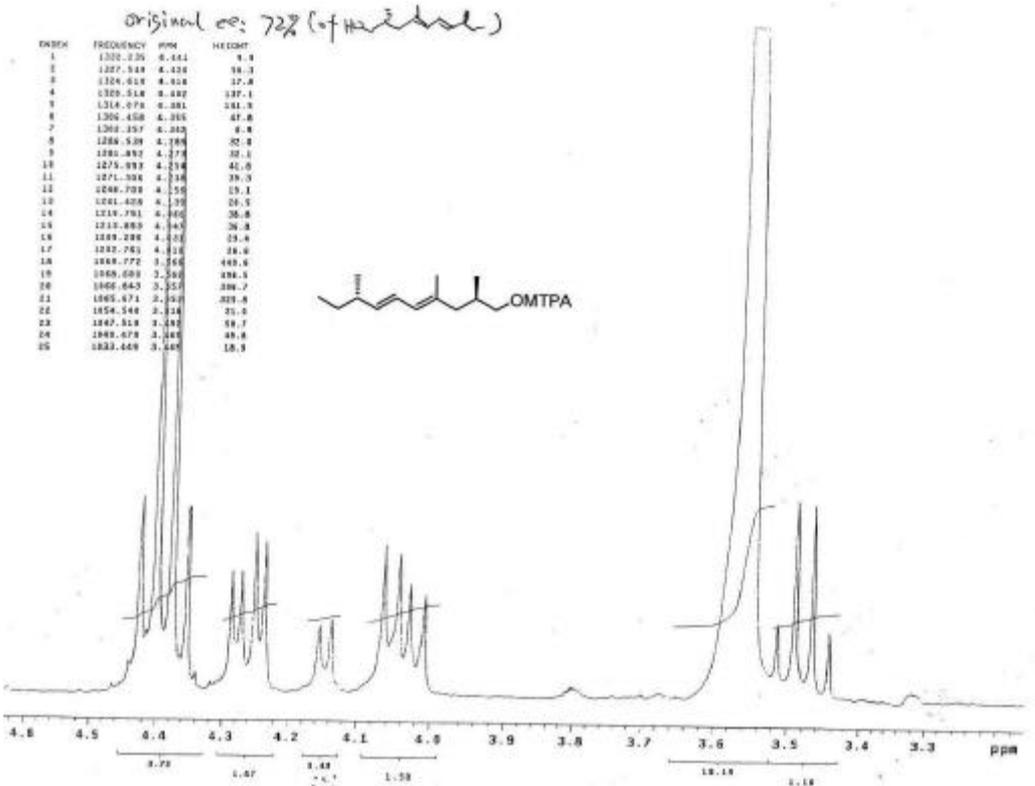
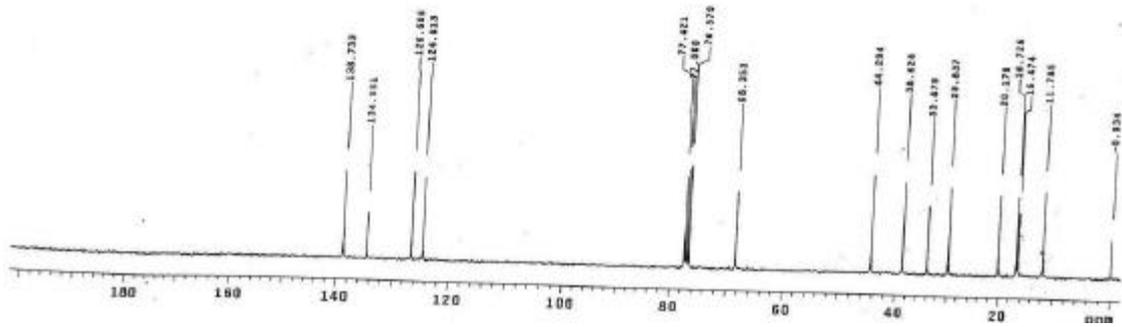
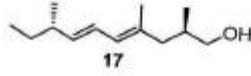
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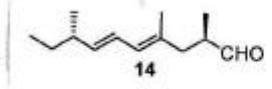
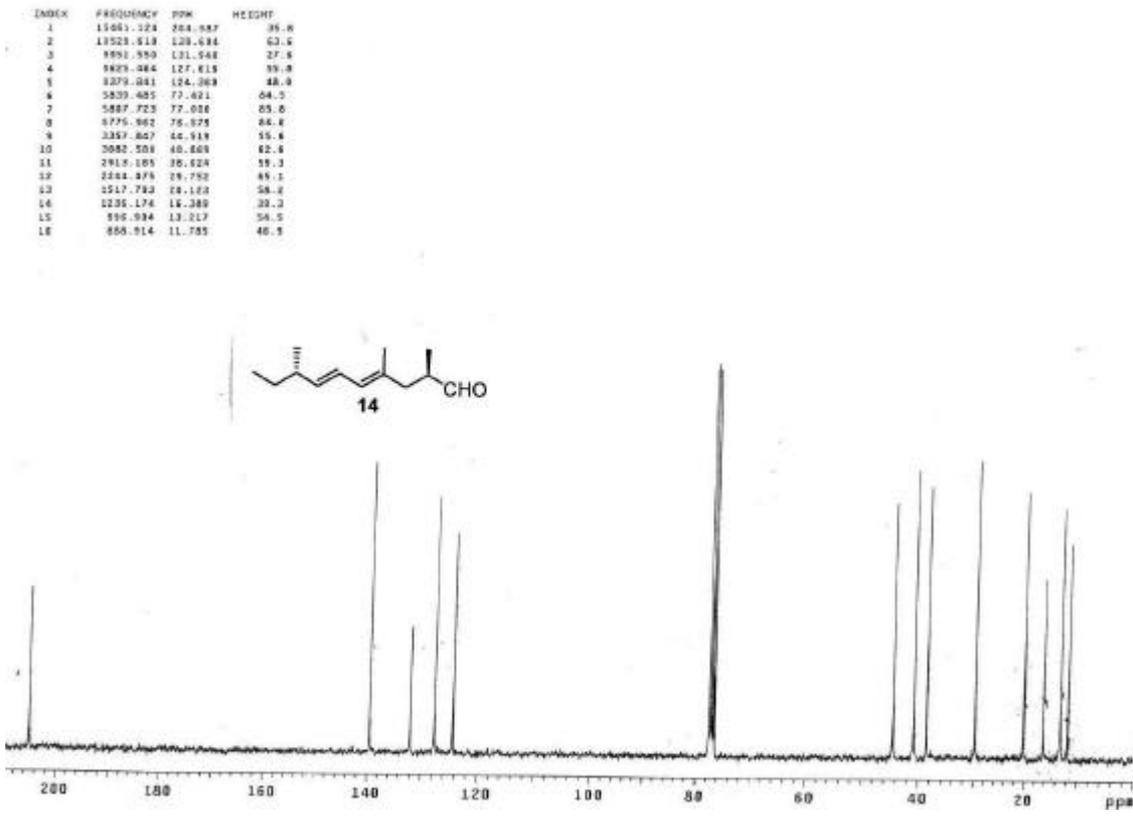
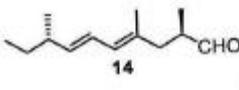
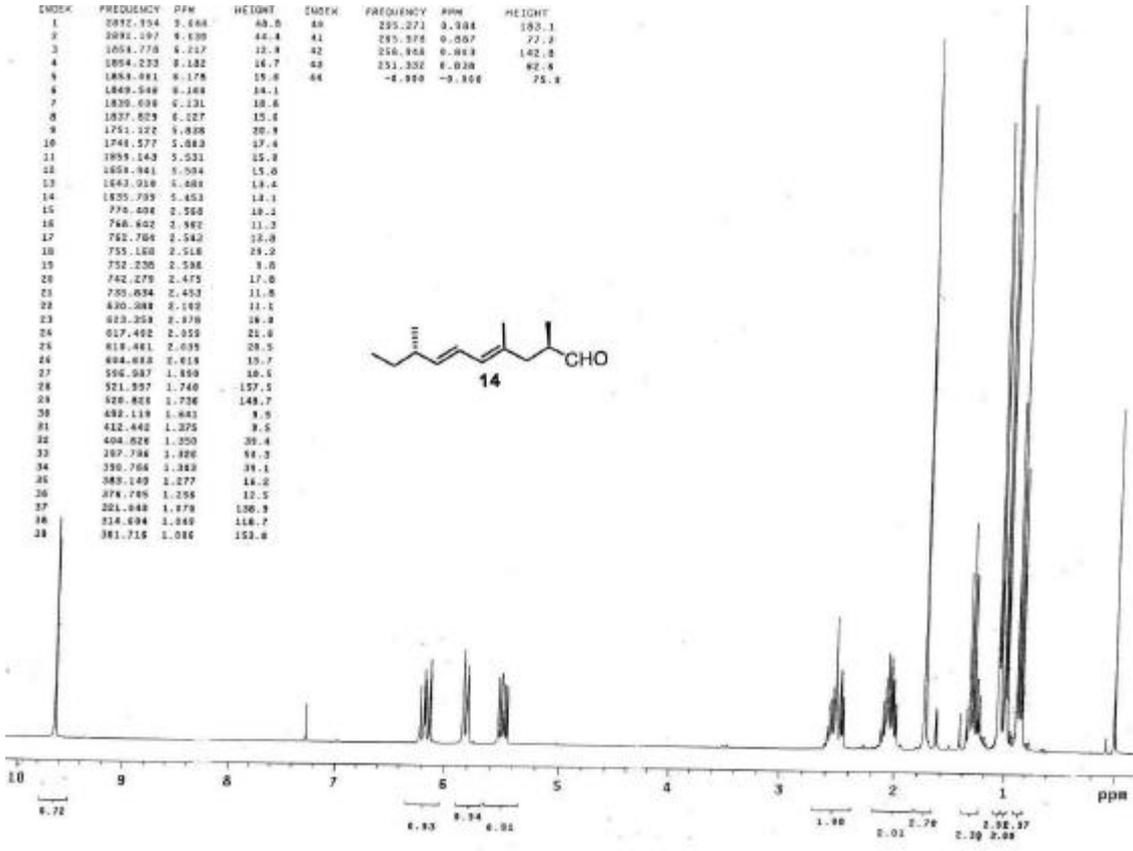


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3	3478	2293N	7.73	100	100	134.222
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6	3478	2603N	8.41	100	100	115.944
7	3821	1701N	8.73	100	100	77.461
8	3833	2611N	8.43	100	100	76.378
9	3847	1202N	7.31	100	100	46.289
10	5538	2388N	9.68	100	100	36.736
11	5543	2077N	9.29	100	100	29.886
12	5563	2093N	8.70	100	100	24.885
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18	5749	2576N	8.87	100	100	0
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20	5561	3598N	20.92	100	100	0
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22	5976	4792N	9.32	100	100	0
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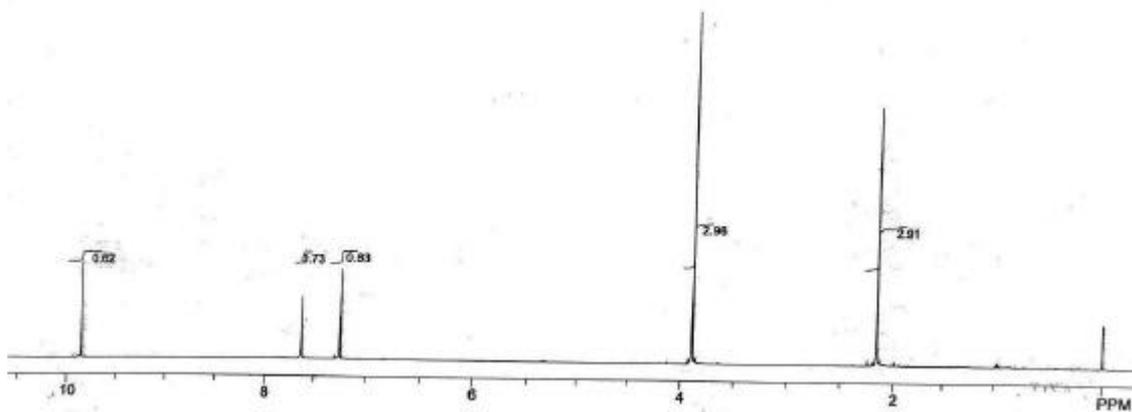
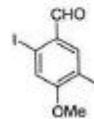
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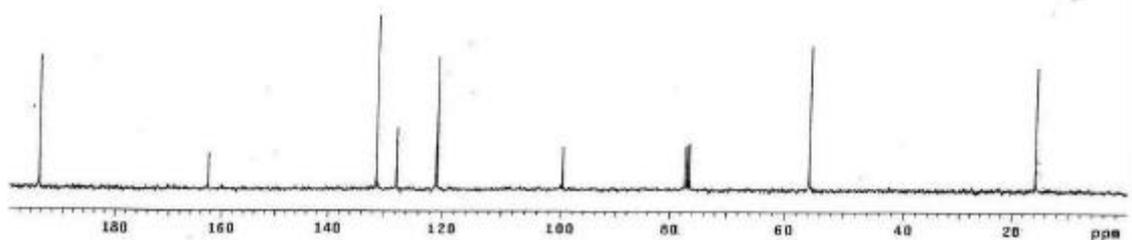
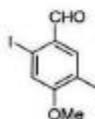


Interpolated Peak Listing

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3	2948	25334K	27.59	2174.30	7.249
4	4667	94555K	102.96	1166.73	3.890
5	5553	68281K	74.35	647.59	2.159
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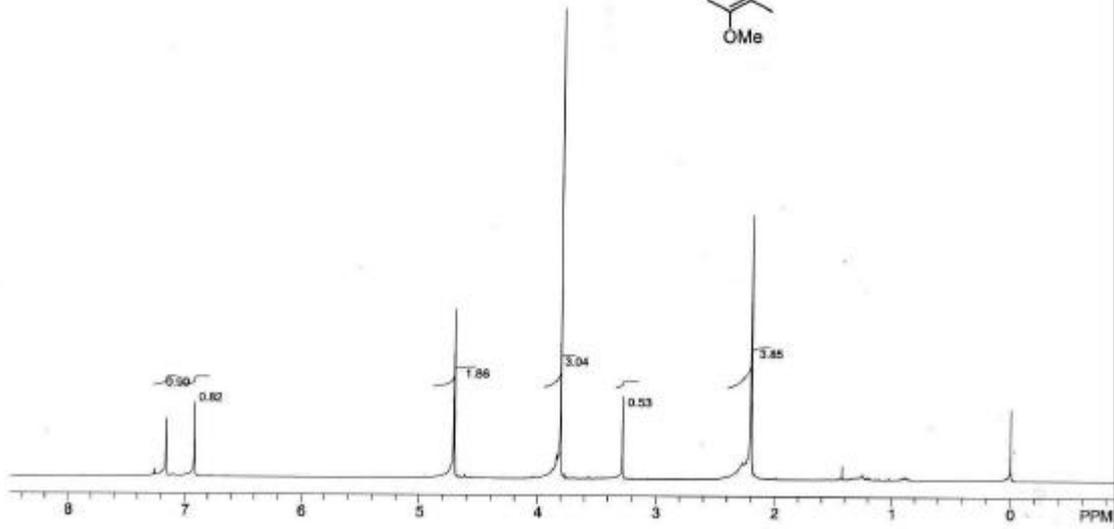
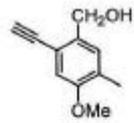


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6	3125.750	120.893	28.1
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8	5828.484	77.421	5.5
9	5007.724	77.009	18.4
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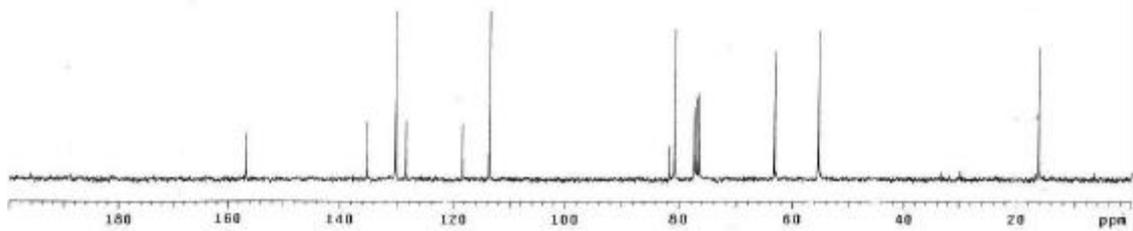
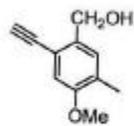


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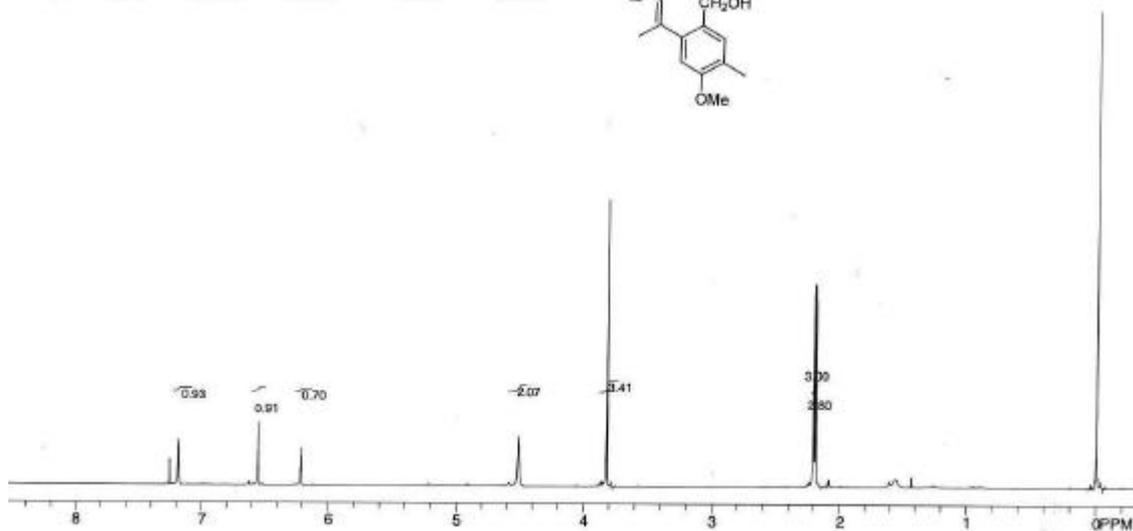
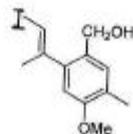


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7	6289.243	88.734	35.9
8	5839.485	77.421	16.5
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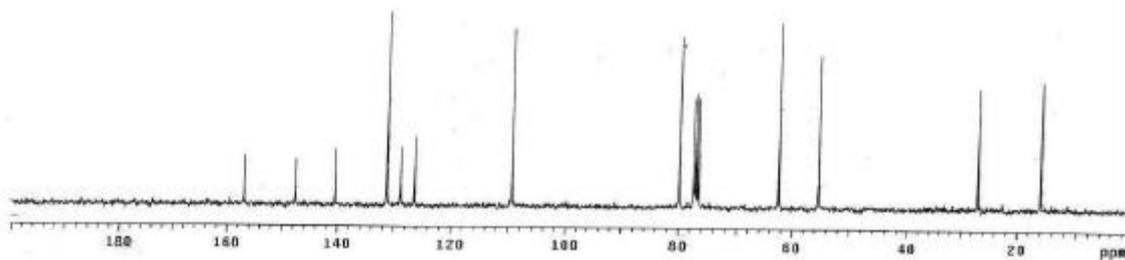
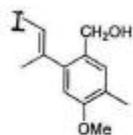


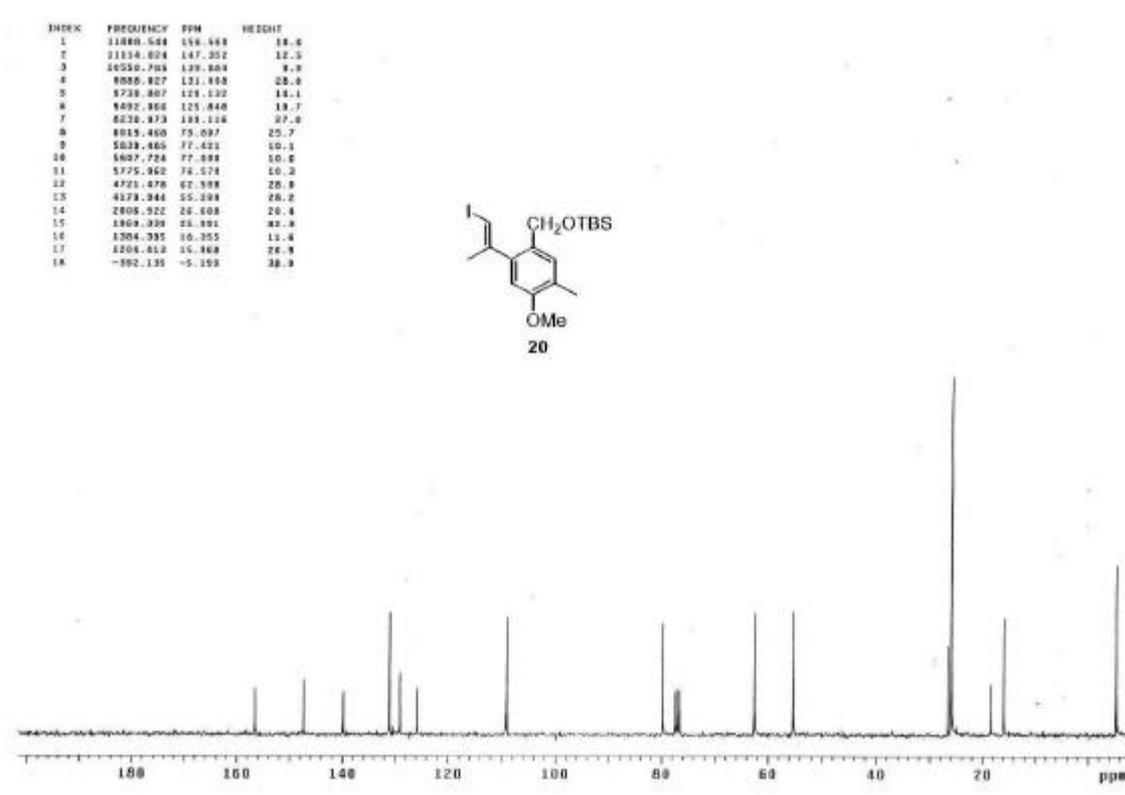
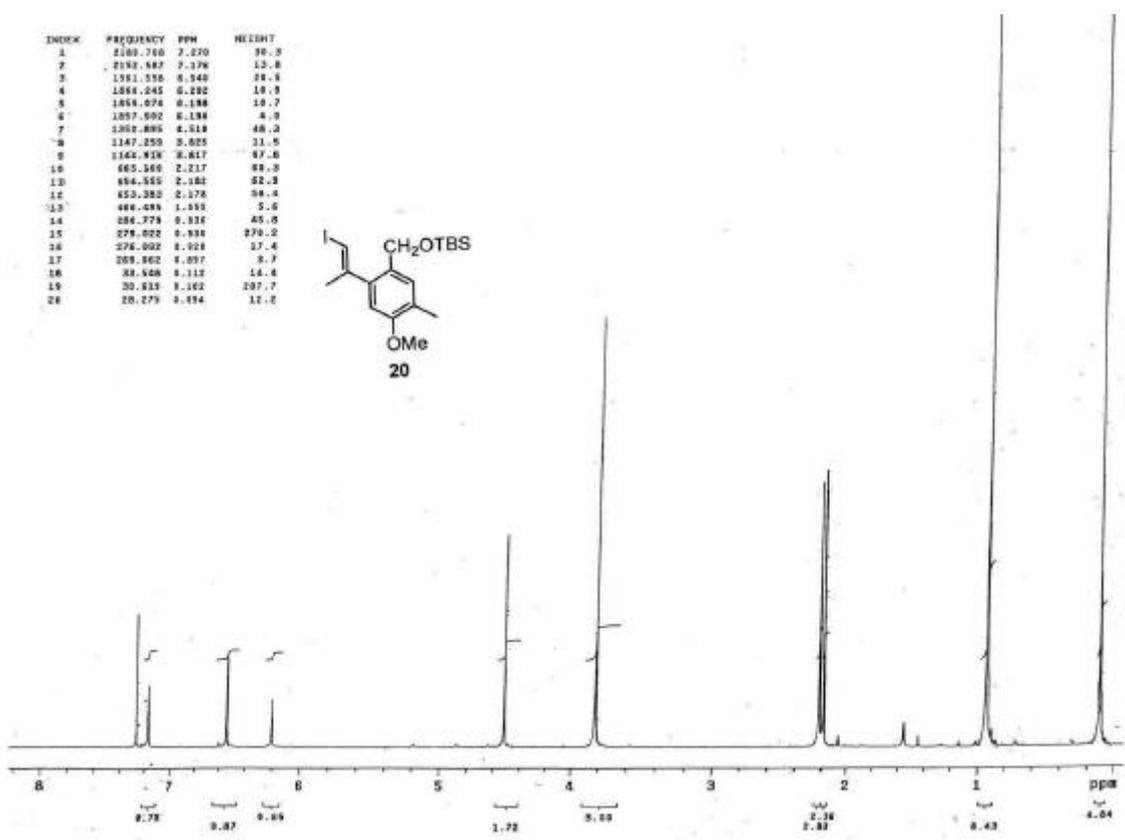
Interpolated Peak Listing

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2	3279	11125K	14.38	1965.53	6.553
3	3454	6741K	8.71	1063.07	6.211
4	4323	8048K	10.40	1353.65	4.513
5	4681	54122K	69.95	1144.11	3.814
6	5505	34304K	44.44	661.10	2.204
7	5511	38873K	50.24	657.86	2.193
8	5513	32786K	42.37	656.81	2.190
9	6632	5551K	7.17	0.77	0.003
10	6635	83584K	108.02	-0.54	-0.002



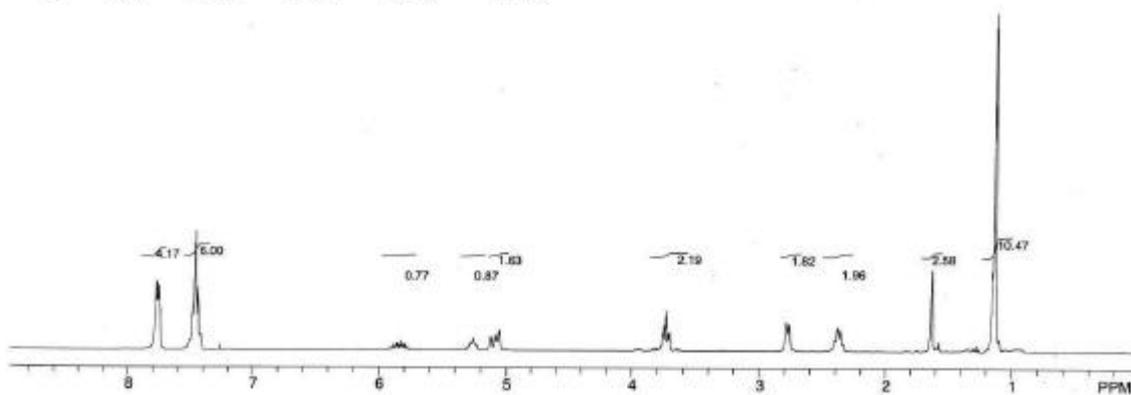
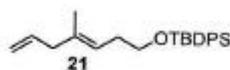
INDEX	FREQUENCY	PPM	HEIGHT
1	11820.953	156.657	11.1
2	11125.040	147.549	18.3
3	10592.134	140.446	17.7
4	9998.732	131.260	43.7
5	8718.639	126.852	18.2
6	8125.945	120.237	15.8
7	8051.007	119.297	48.1
8	6829.702	79.863	26.4
9	6839.485	77.421	24.8
10	5887.723	77.860	25.7
11	5795.882	76.579	24.8
12	4785.056	42.432	45.7
13	4177.295	55.383	34.4
14	2628.894	28.659	27.2
15	1195.943	15.658	28.9



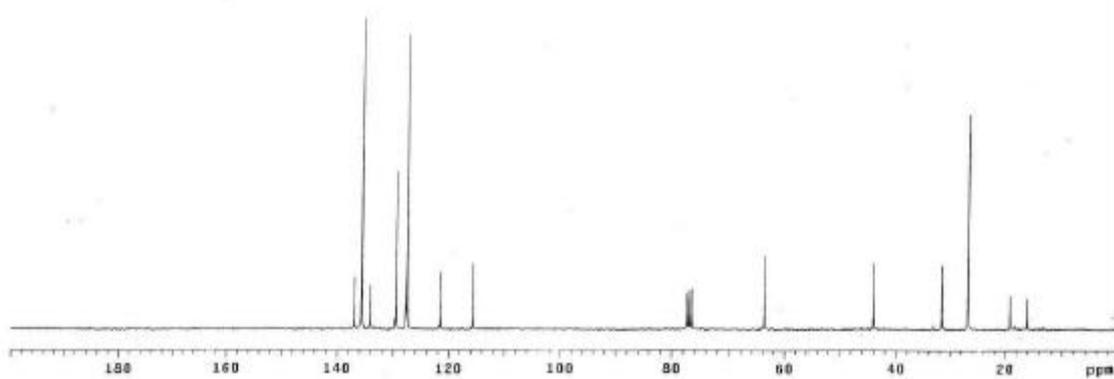
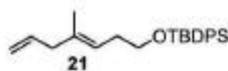


Interpolated Peak Listing

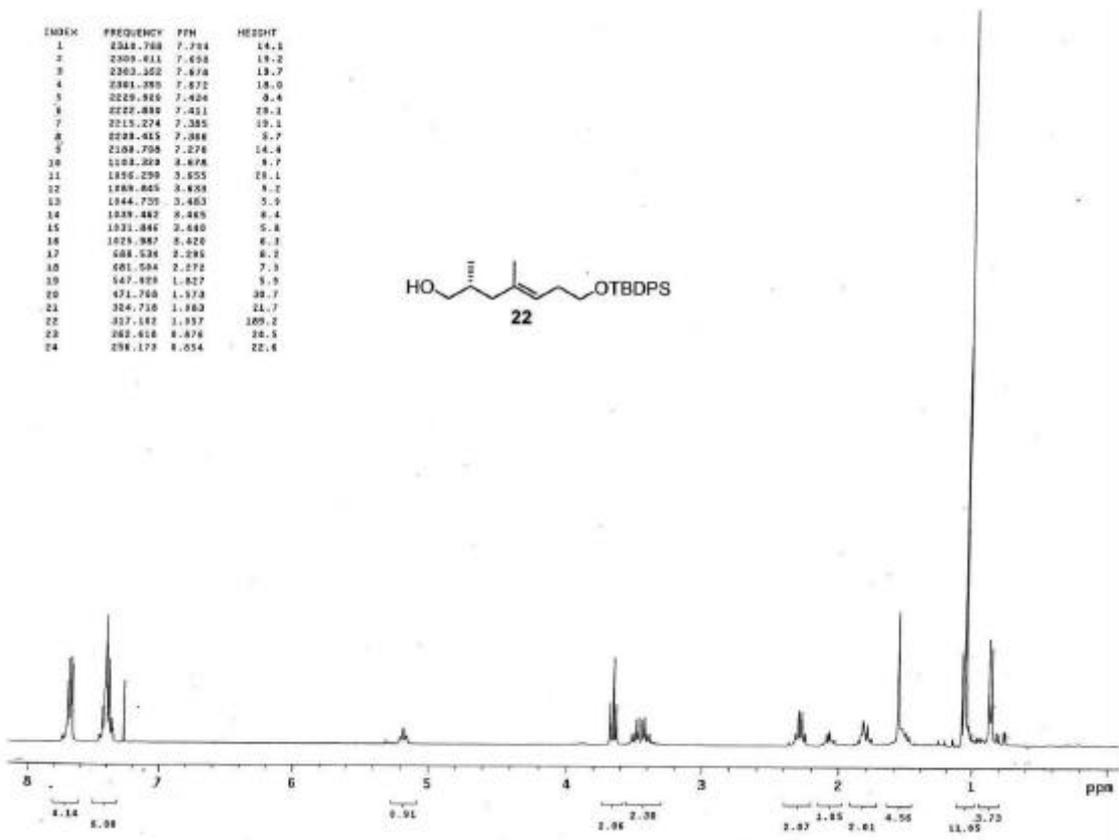
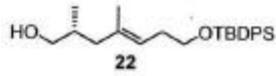
PEAK	POINT	HEIGHT	REL. RT	RZ	PPM
1	2660	3088K	20.84	2332.65	7.776
2	2663	3007K	20.29	2331.00	7.771
3	2666	2267K	15.30	2328.88	7.764
4	2670	2786K	18.80	2326.93	7.757
5	2672	2849K	19.23	2325.72	7.753
6	2676	1931K	13.04	2323.09	7.745
7	2810	1990K	13.43	2244.77	7.484
8	2817	4754K	32.08	2240.37	7.469
9	2820	5570K	37.59	2238.69	7.463
10	2830	2815K	19.00	2232.93	7.444
11	4732	1895K	12.79	1118.64	3.729
12	5806	3553K	23.98	488.95	1.630
13	6050	3658K	24.69	346.07	1.154
14	6052	3433K	23.17	345.09	1.150
15	6056	11612K	78.37	342.55	1.142
16	6058	14949K	100.89	341.72	1.139
17	6060	14385K	97.09	340.46	1.135
18	6063	16483K	111.25	338.51	1.129



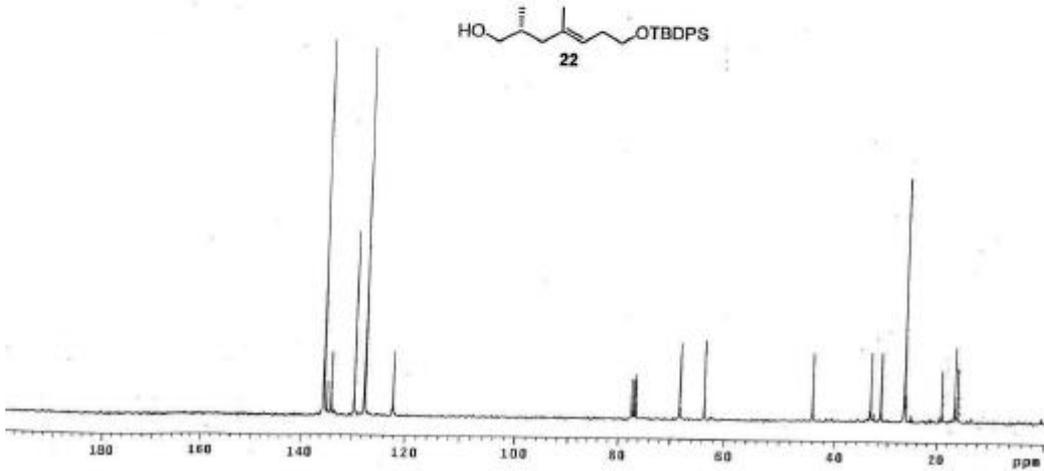
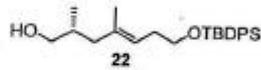
INDEX	FREQUENCY	PPM	HEIGHT
1	18204.218	136.581	12.6
2	18204.617	136.588	70.8
3	18210.259	135.448	9.2
4	18210.358	139.065	10.1
5	9767.233	129.457	35.8
6	9828.452	127.757	5.7
7	9825.347	127.588	67.1
8	9188.863	121.488	19.8
9	9722.426	115.657	15.8
10	8899.485	77.421	8.2
11	5287.723	77.866	8.9
12	5775.882	76.579	5.1
13	4894.358	63.682	14.0
14	3539.321	46.154	15.2
15	2884.828	33.689	14.6
16	2023.081	26.823	69.9
17	1447.958	19.137	7.7
18	1215.698	18.188	7.2

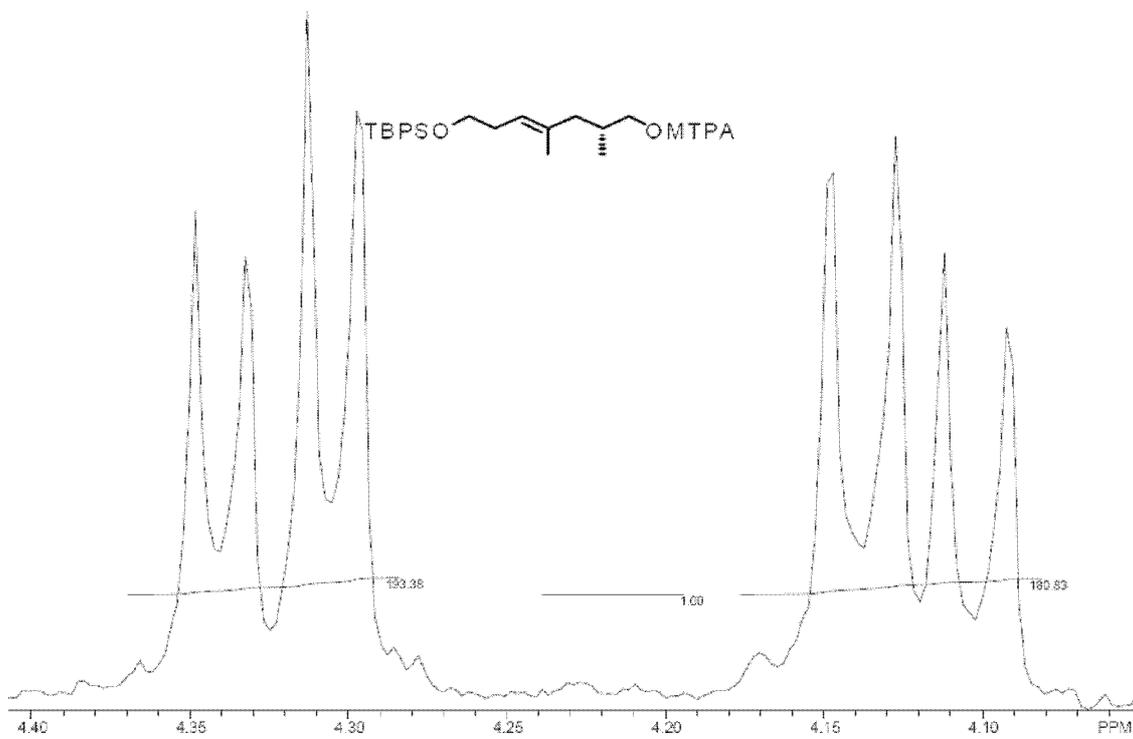
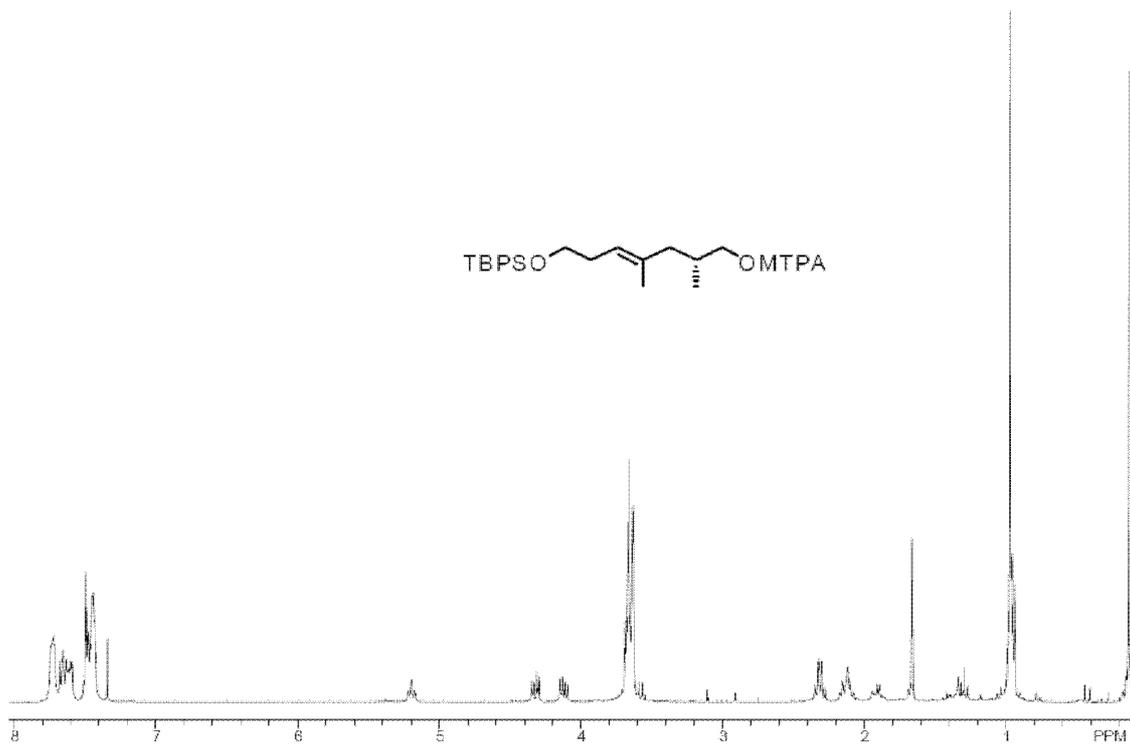


INDEX	FREQUENCY PPM	HEIGHT	
1	2349.788	7.794	14.8
2	2309.611	7.698	19.2
3	2262.252	7.678	19.7
4	2261.280	7.672	18.0
5	2229.920	7.424	9.4
6	2222.880	7.411	29.1
7	2213.274	7.385	19.1
8	2202.615	7.368	5.7
9	2108.708	7.276	14.4
10	1108.229	8.878	8.7
11	1856.299	3.655	28.1
12	1889.829	3.858	8.1
13	1844.729	3.463	5.9
14	1839.887	9.469	9.4
15	1031.846	2.680	5.8
16	1029.987	8.426	6.3
17	688.536	2.295	6.2
18	681.594	2.272	7.3
19	547.828	1.827	9.9
20	471.760	4.978	32.7
21	324.710	1.163	21.7
22	317.182	1.937	109.2
23	282.618	8.878	20.5
24	256.178	8.054	22.6

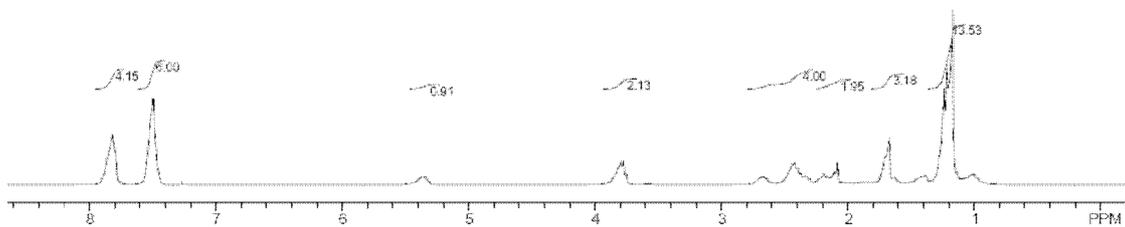


INDEX	FREQUENCY PPM	HEIGHT	
1	1329.465	135.595	16.6
2	13105.412	136.775	8.2
3	10101.089	133.920	15.4
4	9745.216	133.449	66.3
5	8825.113	127.922	60.9
6	8771.488	122.034	18.7
7	8841.430	77.449	8.8
8	5897.704	77.389	9.8
9	5779.901	76.579	18.7
10	5147.983	68.241	18.5
11	4091.941	63.695	19.2
12	3039.221	44.196	16.9
13	2325.977	39.498	16.6
14	2377.474	31.921	16.8
15	2818.427	26.777	58.5
16	1441.996	19.113	12.4
17	1348.879	15.550	18.3
18	1302.238	15.000	12.9

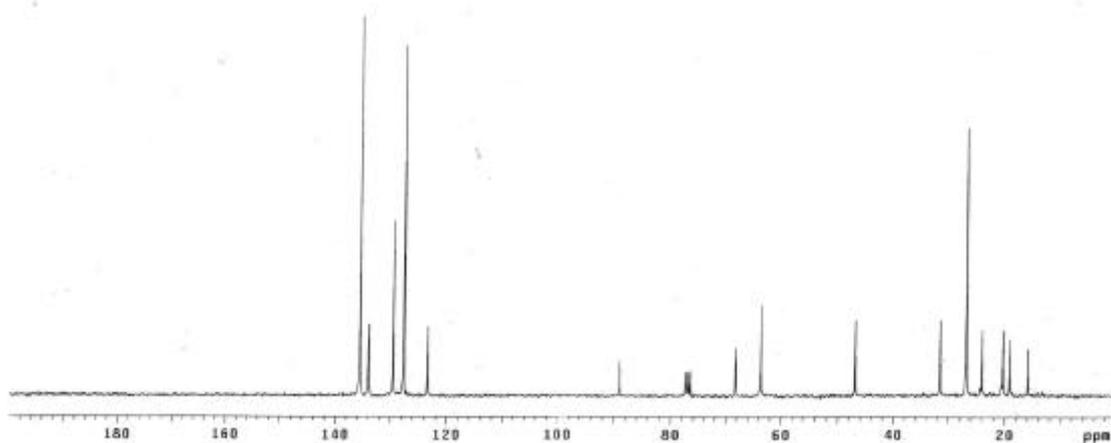
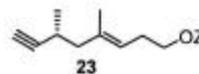




PEAK	POINT	HEIGHT	REL. HT	H3	PPM
1	3637	3749E	26.16	2345.66	7.522
2	3641	4356E	29.06	2349.49	7.513
3	3644	4023E	28.28	2341.77	7.507
4	3653	3698E	18.83	2338.38	7.489
5	3657	3508E	13.81	2334.06	7.481
6	3664	7060E	49.45	2347.93	7.494
7	3667	7042E	48.84	2346.13	7.468
8	3686	3423E	23.96	2341.13	7.472
9	3683	3378E	9.66	2336.78	7.457
10	4634	1340E	9.35	1146.46	3.522
11	4636	1368E	13.83	1138.52	3.796
12	4706	1644E	11.47	1133.73	3.780
13	4710	2167E	15.12	1131.93	3.770
14	5390	1618E	11.23	732.88	2.443
15	5401	1827E	12.75	728.70	2.429
16	5413	1437E	10.02	719.33	2.388
17	5572	1030E	8.69	624.29	2.088
18	5575	1065E	13.16	624.30	2.083
19	5579	1361E	9.50	622.37	2.078
20	5767	2368E	15.74	512.12	1.707
21	5765	3903E	27.23	501.57	1.672
22	6095	8459E	43.04	372.68	1.543
23	6096	6103E	36.54	371.05	1.537
24	6016	9360E	65.31	366.14	1.523
25	6020	9899E	69.01	363.93	1.513
26	6036	12068E	84.21	359.34	1.476
27	6042	14570E	101.68	351.19	1.471

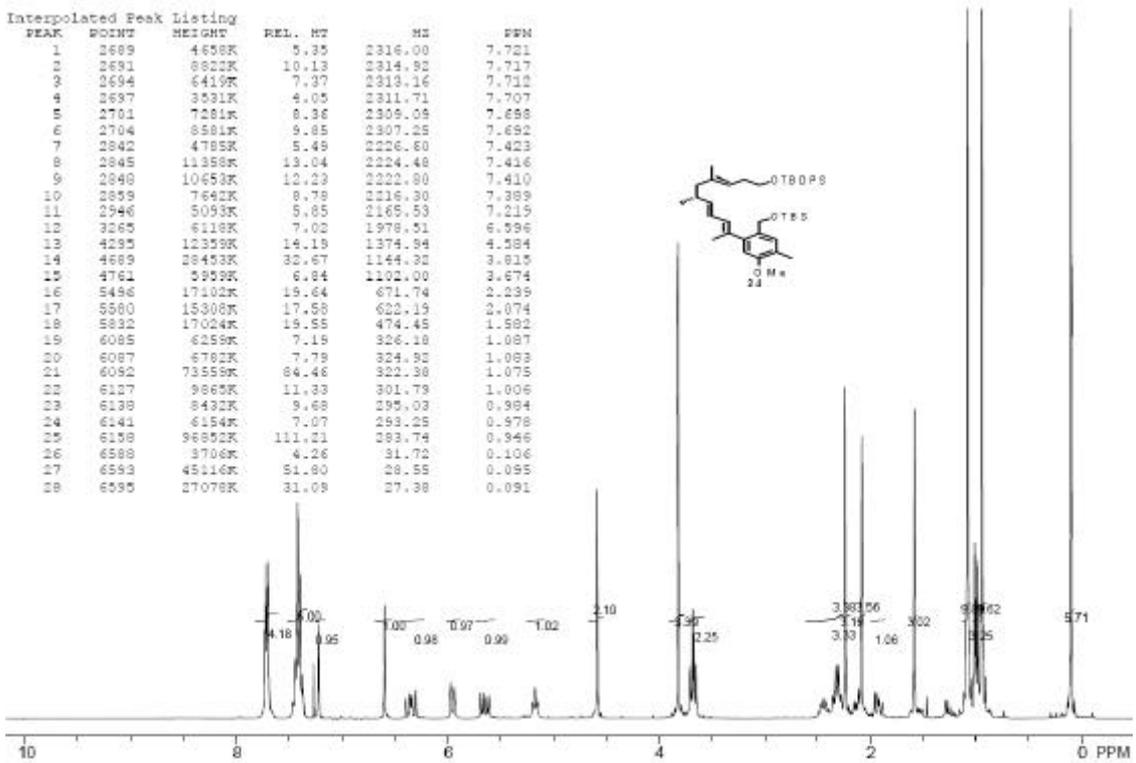


INDEX	FREQUENCY PPM	HEIGHT	
1	13226.709	135.561	86.5
2	13188.592	133.888	18.3
3	9267.353	129.497	38.7
4	9221.230	127.588	78.8
5	9381.497	123.821	13.8
6	6789.752	88.359	7.9
7	5839.406	77.421	5.6
8	5887.724	77.869	5.4
9	9778.845	76.551	5.7
10	5144.966	68.233	10.9
11	4797.734	68.889	39.9
12	2636.713	46.827	17.1
13	2379.532	33.548	17.2
14	2823.882	28.838	68.8
15	1818.091	23.937	15.8
16	1934.734	28.048	14.9
17	1443.604	19.141	12.3
18	1199.461	19.884	16.7

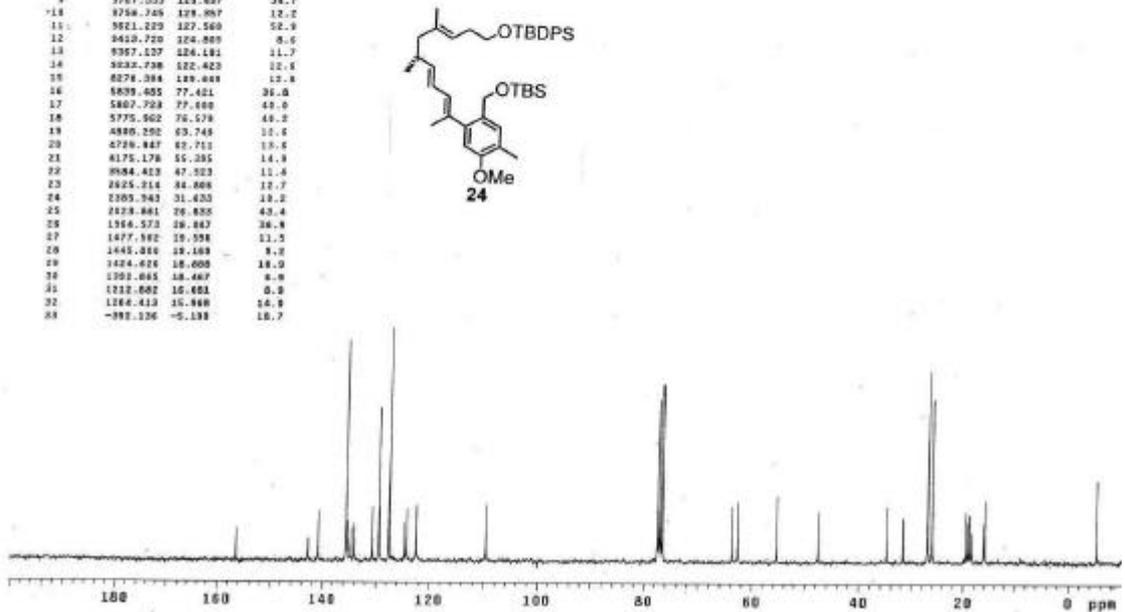


Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	Hz	PPM
1	2689	4658K	5.35	2316.00	7.721
2	2691	8822K	10.13	2314.92	7.717
3	2694	6419K	7.37	2313.16	7.712
4	2697	3031K	4.05	2311.71	7.707
5	2701	7281K	8.36	2309.09	7.698
6	2704	8581K	9.85	2307.25	7.692
7	2842	4785K	5.49	2226.80	7.423
8	2845	11358K	13.04	2224.48	7.416
9	2848	10653K	12.23	2222.80	7.410
10	2859	7642K	8.78	2216.30	7.389
11	2946	5093K	5.85	2165.53	7.219
12	3265	6118K	7.02	1978.51	6.996
13	4295	12359K	14.19	1374.94	4.584
14	4669	28453K	32.67	1144.32	3.815
15	4761	5959K	6.84	1102.00	3.674
16	5496	17102K	19.64	671.74	2.239
17	5580	15308K	17.58	622.19	2.074
18	5832	17024K	19.55	474.45	1.582
19	6085	6258K	7.19	326.18	1.087
20	6087	6782K	7.79	324.92	1.083
21	6092	73558K	84.46	322.38	1.075
22	6127	9865K	11.33	301.79	1.006
23	6138	8432K	9.68	295.03	0.984
24	6141	6154K	7.07	293.25	0.978
25	6198	98852K	111.21	283.74	0.946
26	6588	3706K	4.26	31.72	0.106
27	6593	45116K	51.80	28.55	0.095
28	6595	27078K	31.09	27.38	0.091

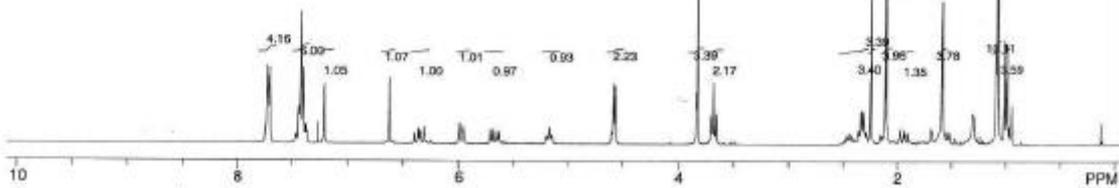
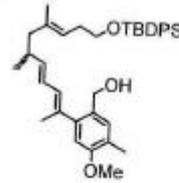


INDEX	FREQUENCY	PPM	HEIGHT
1	11689.873	158.468	7.4
2	10768.801	142.770	5.1
3	10627.513	140.805	11.2
4	10216.817	135.888	49.8
5	10281.487	135.252	9.8
6	10159.958	134.881	7.3
7	10112.475	134.079	8.4
8	9869.588	132.758	12.7
9	9767.333	129.407	34.7
10	9758.745	129.397	12.2
11	9821.229	127.560	52.9
12	9419.720	124.889	8.6
13	9387.127	124.181	11.7
14	9232.738	122.423	12.4
15	8278.384	113.408	12.8
16	8039.455	77.421	36.8
17	5807.724	77.180	49.9
18	5775.962	76.578	46.2
19	4880.292	63.748	12.4
20	4738.847	62.711	18.5
21	4175.178	55.285	14.3
22	3984.423	47.523	11.4
23	2925.214	34.868	12.7
24	2393.943	31.433	19.2
25	2228.881	28.855	43.4
26	1364.573	18.847	36.8
27	1477.382	19.958	11.5
28	1445.880	19.189	9.2
29	1424.824	18.880	18.9
30	1381.865	18.467	8.8
31	1212.802	16.681	8.8
32	1164.413	16.060	14.9
33	-992.136	-5.138	18.7

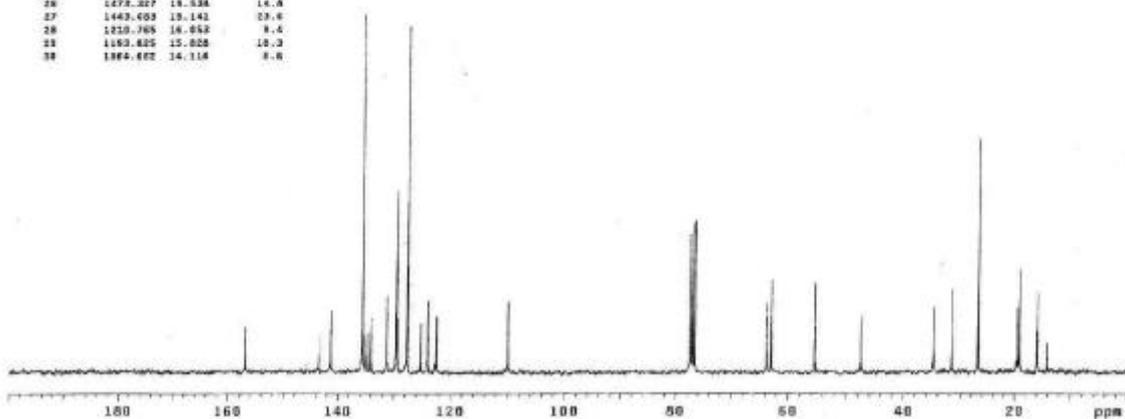
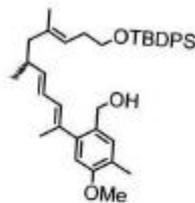


Interpolated Peak Listing

PK#	POINT	HEIGHT	REL. HT	HZ	PPM
1	2683	1331K	8.29	2318.79	7.730
2	2686	1908K	11.88	2317.48	7.726
3	2688	1660K	10.34	2315.88	7.721
4	2696	1685K	10.49	2311.46	7.706
5	2699	1919K	11.95	2309.68	7.700
6	2831	925343	5.76	2232.39	7.442
7	2842	3318K	20.66	2225.83	7.420
8	2855	1811K	11.28	2217.97	7.394
9	2948	1483K	9.24	2163.78	7.214
10	3248	1665K	10.37	1987.87	6.627
11	4294	1507K	9.38	1374.97	4.584
12	4303	1430K	8.91	1370.04	4.567
13	4675	1348K	8.40	1151.75	3.840
14	4680	8102K	50.46	1148.87	3.830
15	4743	724071	4.51	1112.03	3.707
16	4755	1539K	9.58	1105.15	3.684
17	4767	734119	4.57	1098.25	3.661
18	5446	820437	5.11	700.28	2.335
19	5458	806427	5.02	693.13	2.311
20	5492	5713K	35.58	673.07	2.244
21	5562	4609K	28.70	632.06	2.107
22	5829	3442K	21.43	475.42	1.585
23	5973	746002	4.65	391.10	1.304
24	5977	688199	4.29	388.94	1.297
25	6081	2463K	15.34	327.92	1.093
26	6087	17711K	110.29	324.65	1.082
27	6122	2709K	16.87	303.91	1.013
28	6132	2495K	15.54	297.92	0.993
29	6157	1022K	6.36	283.39	0.945

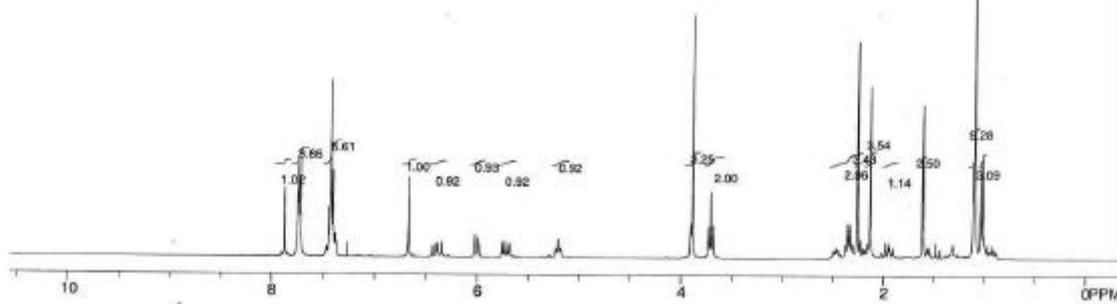
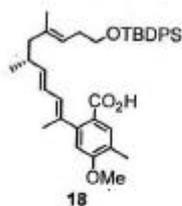


INDEX	FREQUENCY	POW	HEIGHT
1	11820.932	156.697	19.2
2	10821.817	143.478	8.8
3	10858.774	161.218	14.1
4	10224.698	188.161	81.9
5	10195.655	125.168	8.5
6	10181.176	124.719	9.1
7	10119.388	136.845	12.7
8	10084.375	121.182	17.4
9	9787.588	129.497	41.8
10	8752.515	129.301	10.8
11	8421.238	127.599	76.5
12	8408.082	129.289	11.4
13	8352.215	122.885	14.5
14	8207.573	122.479	13.9
15	8211.478	189.888	18.4
16	8029.485	77.421	21.4
17	8007.723	77.408	24.5
18	5775.982	76.579	24.8
19	4856.213	62.708	15.8
20	4742.552	62.479	21.2
21	4175.176	58.365	28.4
22	3588.178	47.487	13.2
23	2618.061	34.721	19.4
24	2382.021	31.495	15.9
25	2023.051	28.035	12.9
26	1478.327	18.338	14.8
27	1443.409	19.142	29.6
28	1210.765	16.852	8.4
29	1180.825	15.828	10.2
30	1084.602	14.114	9.6

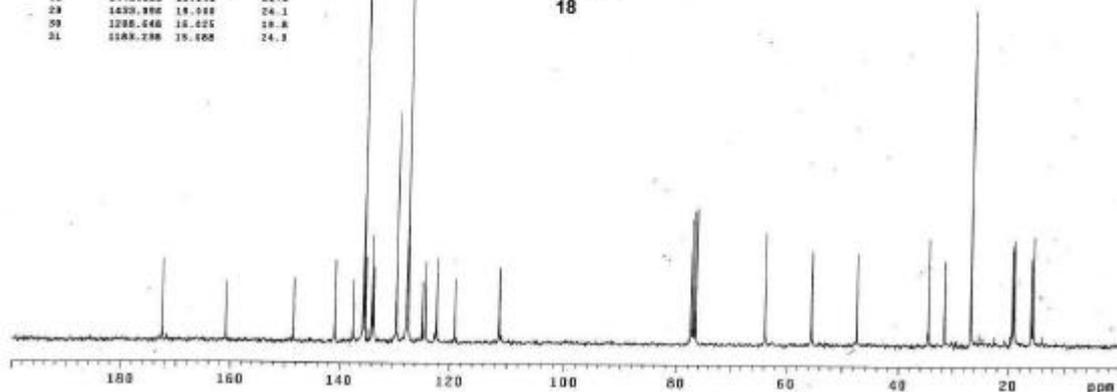
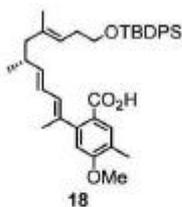


Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	2609	4766K	10.69	2361.31	7.872
2	2672	4372K	9.80	2324.07	7.748
3	2675	6620K	14.84	2322.50	7.743
4	2679	3787K	8.49	2320.05	7.735
5	2685	5293K	11.87	2316.53	7.723
6	2688	6849K	15.36	2315.10	7.718
7	2825	3521K	7.89	2234.60	7.450
8	2835	12759K	28.61	2228.81	7.430
9	2847	5904K	13.24	2221.69	7.407
10	3225	5516K	12.37	2000.52	6.669
11	4648	17502K	39.24	1166.66	3.889
12	4741	4601K	10.32	1111.89	3.707
13	5483	14674K	32.90	677.03	2.257
14	5547	11692K	26.22	639.95	2.133
15	5814	10434K	23.40	483.54	1.612
16	6068	6664K	14.94	334.41	1.115
17	6077	46501K	104.26	329.10	1.097
18	6107	6882K	15.43	311.79	1.039
19	6118	7549K	16.93	305.15	1.017

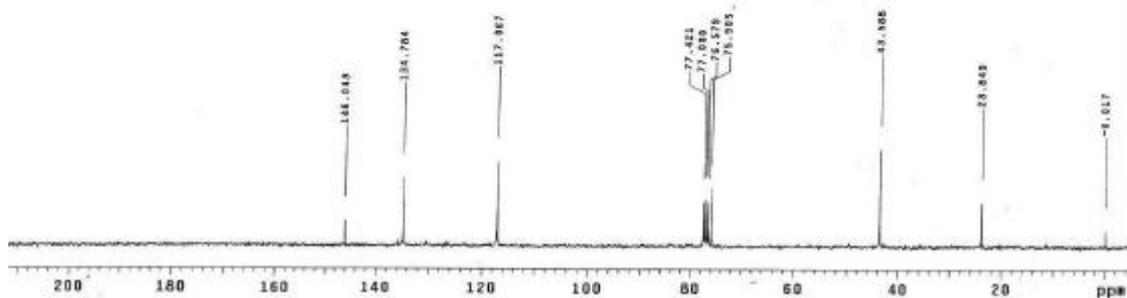
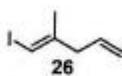
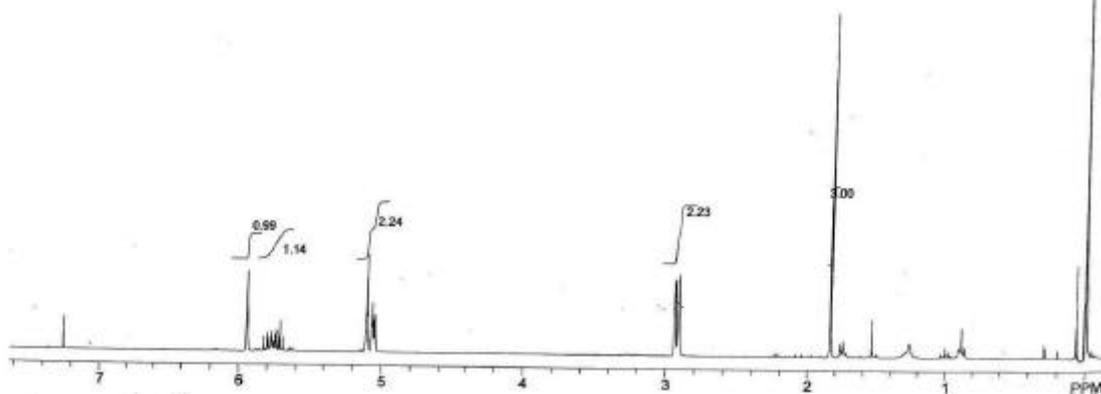
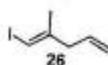


INDEX	FREQUENCY	PPM	HEIGHT
1	12019.483	177.582	10.6
2	12146.981	169.946	13.7
3	13192.969	148.991	14.4
4	13927.013	149.059	18.5
5	14372.929	137.528	14.4
6	15224.799	125.101	184.2
7	16189.099	129.324	19.2
8	16196.249	134.817	24.2
9	16887.968	132.736	17.9
10	17765.216	129.489	52.2
11	18211.236	127.368	329.4
12	18608.515	127.292	21.6
13	19424.008	124.908	13.4
14	19861.953	124.305	18.3
15	19235.854	127.481	19.1
16	19955.950	119.120	14.4
17	18897.950	115.354	17.0
18	18239.485	77.421	26.4
19	18977.725	77.909	26.8
20	1775.942	76.979	36.9
21	4898.293	62.740	25.6
22	4183.549	55.460	21.4
23	3246.578	67.447	29.9
24	2612.589	34.637	24.2
25	2288.828	31.695	19.2
26	2423.052	26.823	74.4
27	1642.708	19.393	22.9
28	1445.603	13.141	22.9
29	1439.892	13.018	24.1
30	1286.446	18.425	19.8
31	1188.288	15.088	24.1



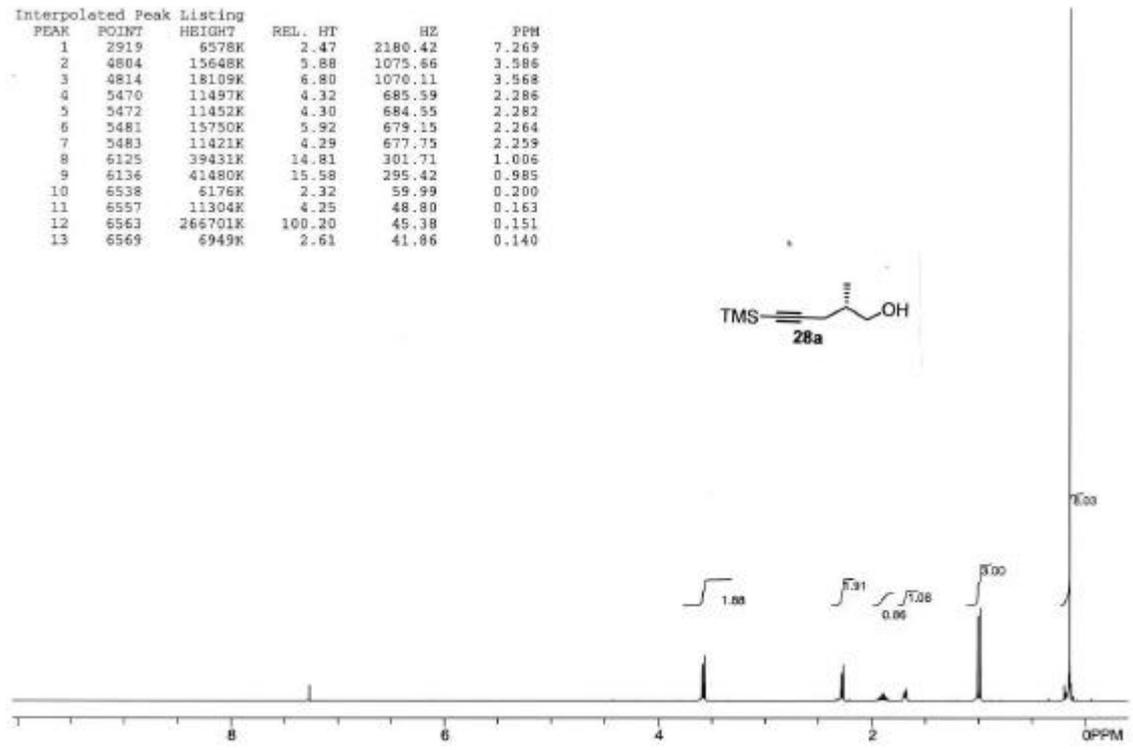
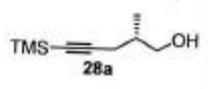
Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. WT	H2	PPM
1	3591	13033K	4.44	1784.06	5.948
2	3593	11936K	4.07	1783.07	5.944
3	4023	12064K	4.11	1530.95	5.104
4	4025	15584K	5.31	1529.88	5.100
5	5132	10954K	3.73	880.78	2.936
6	5135	11214K	3.82	879.01	2.930
7	5144	13037K	4.44	873.97	2.914
8	5146	12442K	4.24	873.00	2.910
9	5698	53825K	18.33	549.46	1.832
10	6603	16272K	5.54	19.27	0.064
11	6631	9751K	3.32	2.06	0.010
12	6637	294042K	100.16	-0.48	-0.002
13	6642	11972K	4.08	-3.68	-0.012

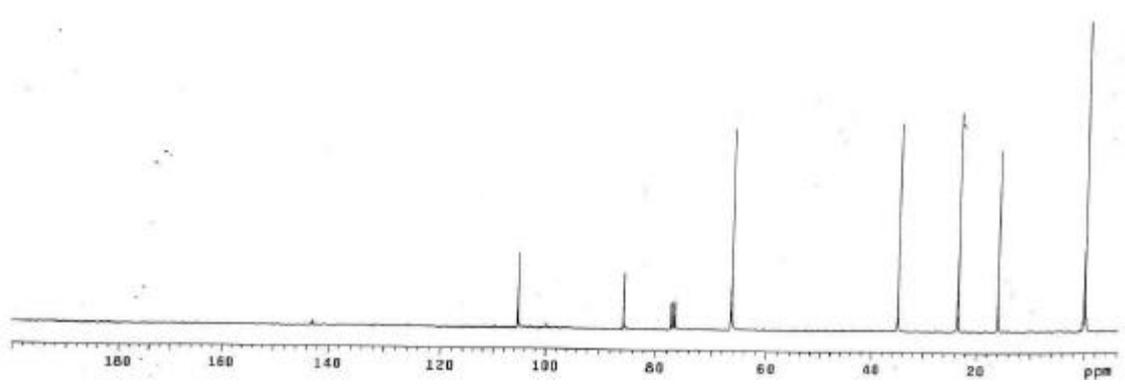
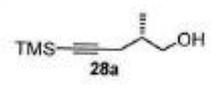


Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	2919	6578K	2.47	2180.42	7.269
2	4804	15648K	5.88	1075.66	3.588
3	4814	18109K	6.80	1070.11	3.568
4	5470	11497K	4.32	685.59	2.288
5	5472	11452K	4.30	684.55	2.282
6	5481	15750K	5.92	679.15	2.264
7	5483	11421K	4.29	677.75	2.259
8	6125	39431K	14.81	301.71	1.006
9	6136	41480K	15.58	295.42	0.985
10	6538	6176K	2.32	59.99	0.200
11	6557	11304K	4.25	48.80	0.163
12	6563	266701K	100.20	45.38	0.151
13	6569	6949K	2.61	41.86	0.140

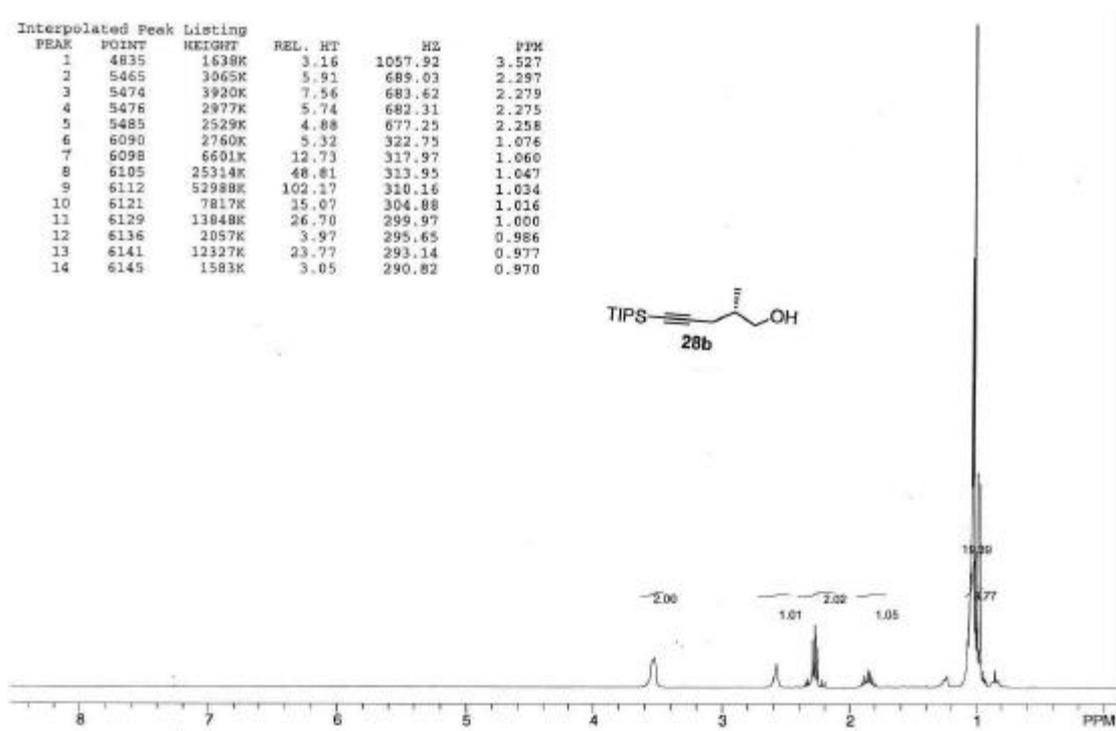


INDEX	FREQUENCY	PPM	HEIGHT
1	7362.808	109.408	17.1
2	8062.912	85.075	12.9
3	8639.485	77.425	9.7
4	8867.729	77.689	6.4
5	8779.982	78.579	6.4
6	5913.886	89.525	89.2
7	2839.884	34.316	67.8
8	1771.088	21.492	99.3
9	1292.296	15.948	41.6
11	-4.844	-0.162	71.6

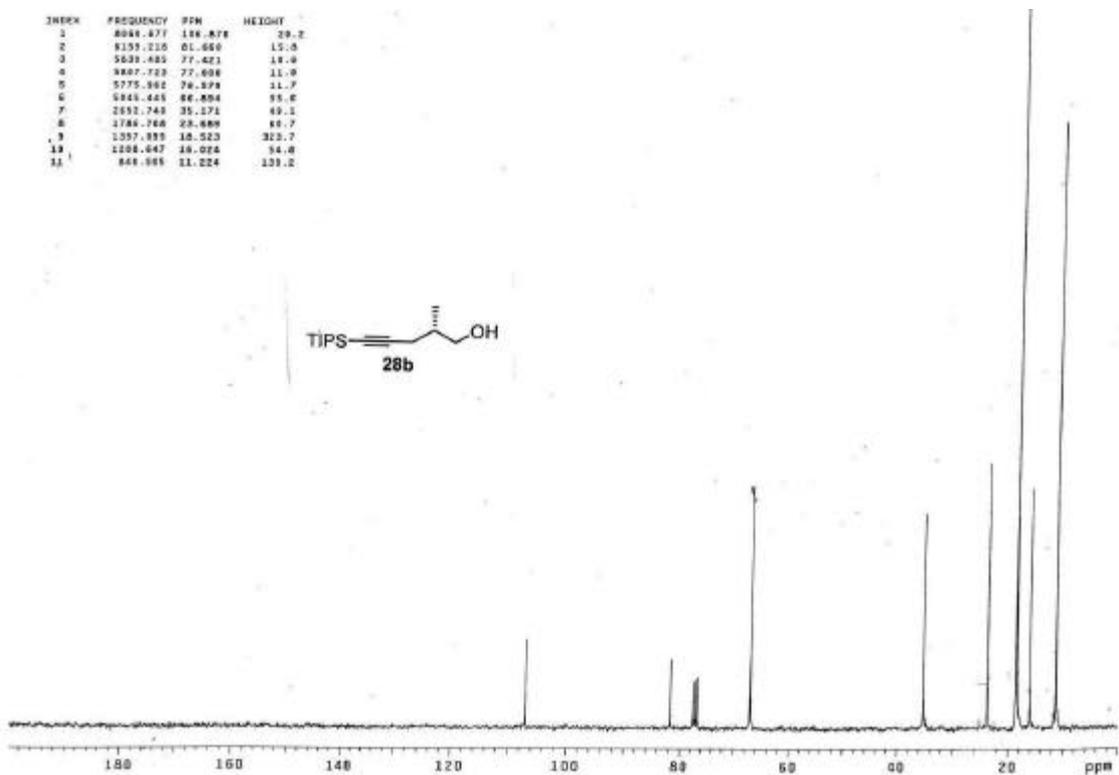
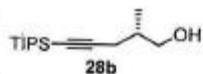


Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	4835	1638K	3.16	1057.92	3.527
2	5465	3065K	5.91	689.03	2.297
3	5474	3920K	7.56	683.62	2.279
4	5476	2977K	5.74	682.31	2.275
5	5485	2529K	4.88	677.25	2.258
6	6090	2760K	5.32	322.75	1.076
7	6098	6601K	12.73	317.97	1.060
8	6105	25314K	48.81	313.95	1.047
9	6112	52988K	102.17	310.16	1.034
10	6121	7817K	15.07	304.88	1.016
11	6129	13848K	26.70	299.97	1.000
12	6136	2057K	3.97	295.65	0.986
13	6141	12327K	23.77	293.14	0.977
14	6145	1583K	3.05	290.82	0.970

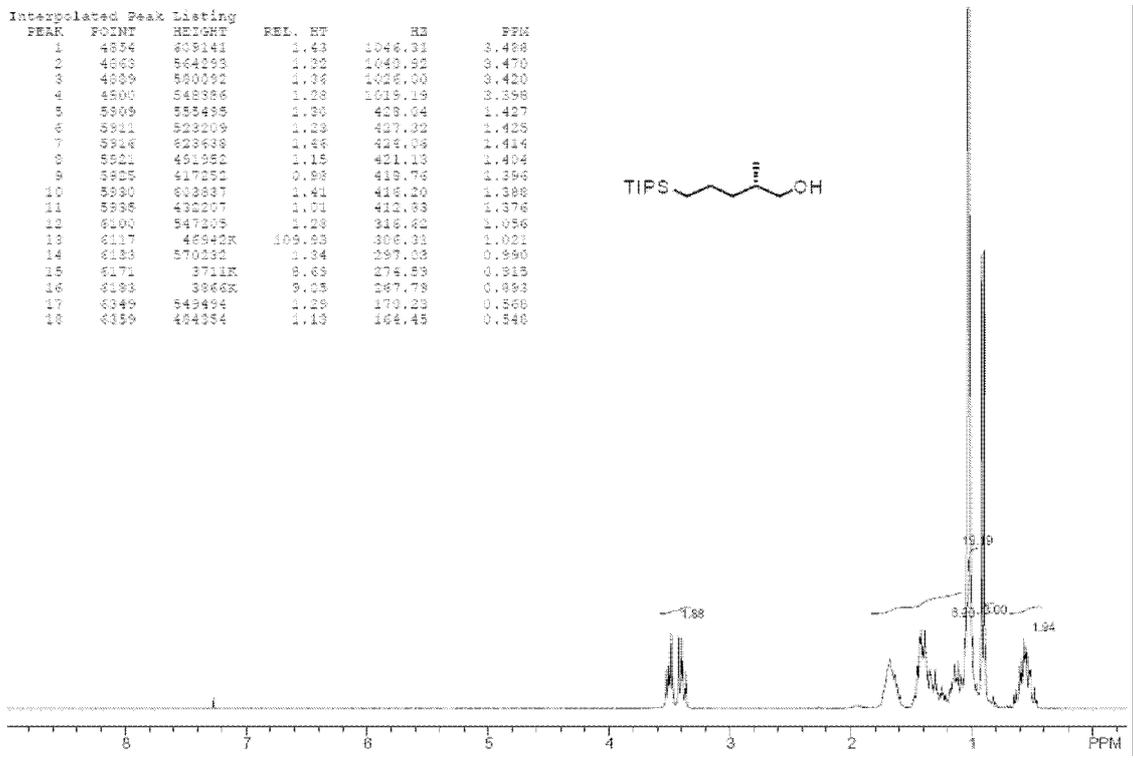
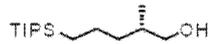


INPK	FREQUENCY	PPM	HEIGHT
1	8046.871	116.878	29.2
2	8155.210	81.450	15.0
3	5639.485	77.421	18.0
4	8807.723	77.606	11.0
5	5775.992	76.579	11.7
6	5241.443	86.494	35.0
7	2652.749	35.174	69.1
8	1786.768	28.889	61.7
9	1357.889	18.523	323.7
10	1208.647	19.028	94.0
11	849.995	11.224	139.2

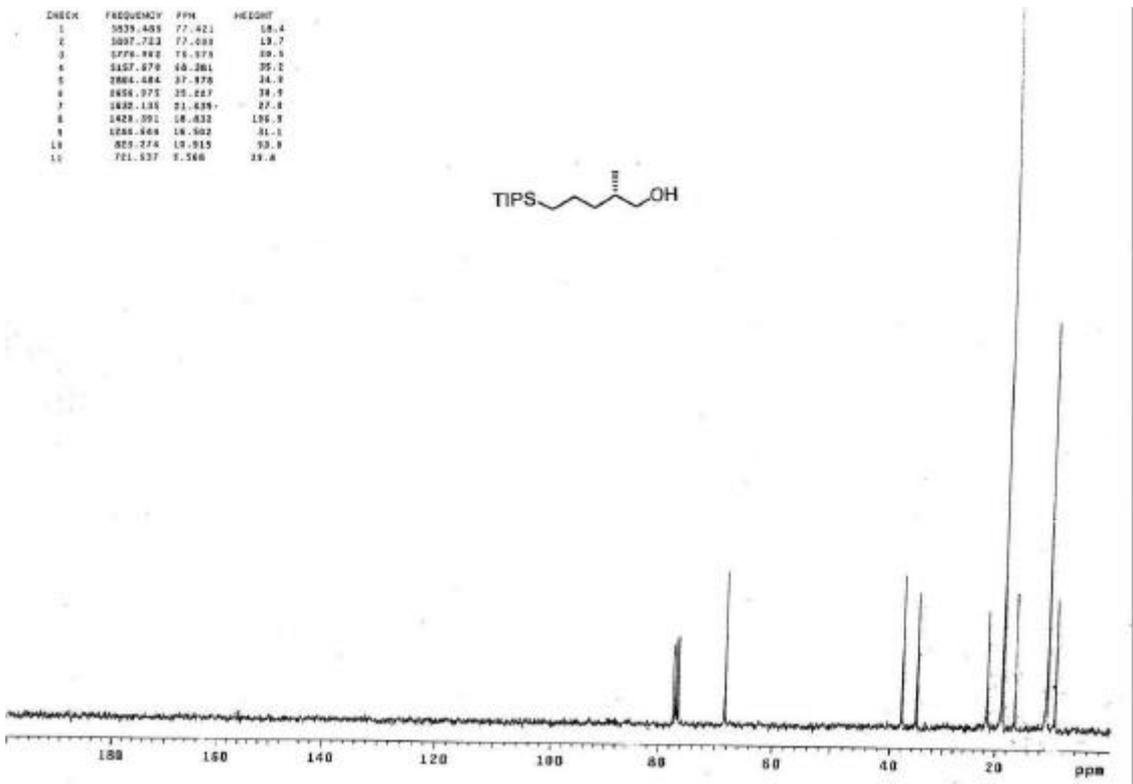


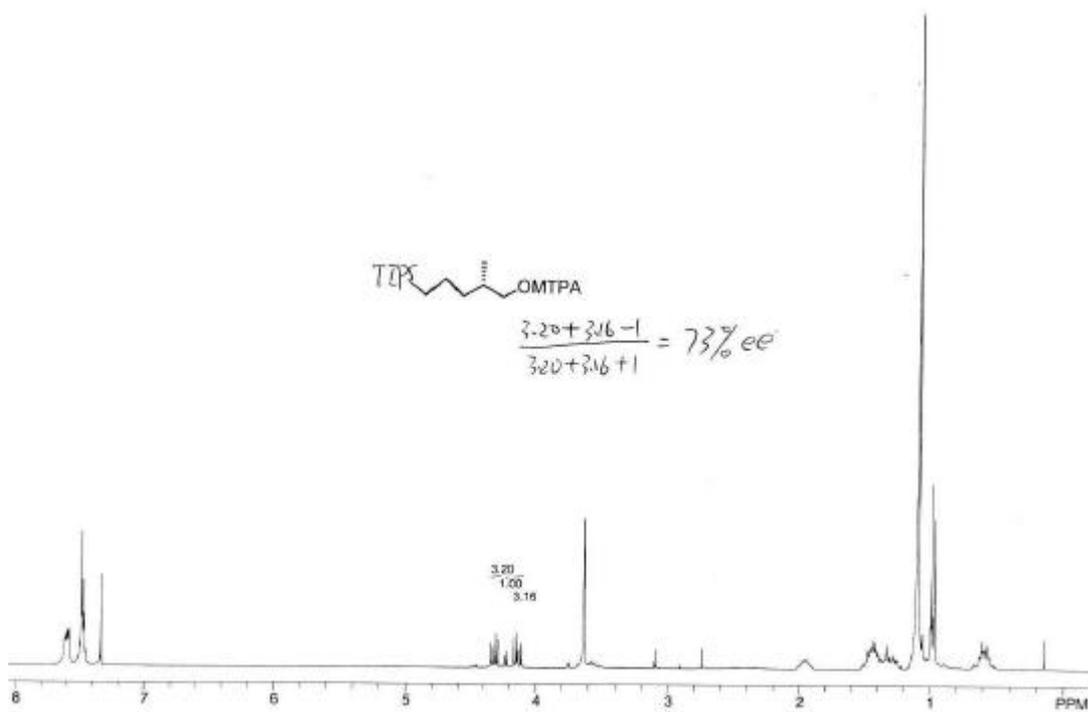
Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	Hz	PPM
1	4854	409241	1.43	1046.31	3.468
2	4860	564093	1.32	1040.92	3.470
3	4869	560032	1.31	1038.00	3.420
4	4900	548386	1.28	1019.19	3.358
5	5309	555455	1.30	428.04	1.427
6	5311	523209	1.23	427.32	1.425
7	5316	623638	1.46	424.06	1.414
8	5321	451952	1.15	421.13	1.404
9	5325	417052	0.98	419.78	1.394
10	5330	603337	1.41	418.20	1.388
11	5336	432207	1.01	412.33	1.376
12	6100	547205	1.28	318.42	1.056
13	6117	469428	1.09	308.31	1.021
14	6133	570232	1.34	297.03	0.990
15	6171	37118	0.65	274.53	0.815
16	6183	38668	0.65	267.78	0.803
17	6345	545494	1.26	170.23	0.560
18	6350	484354	1.13	164.45	0.540



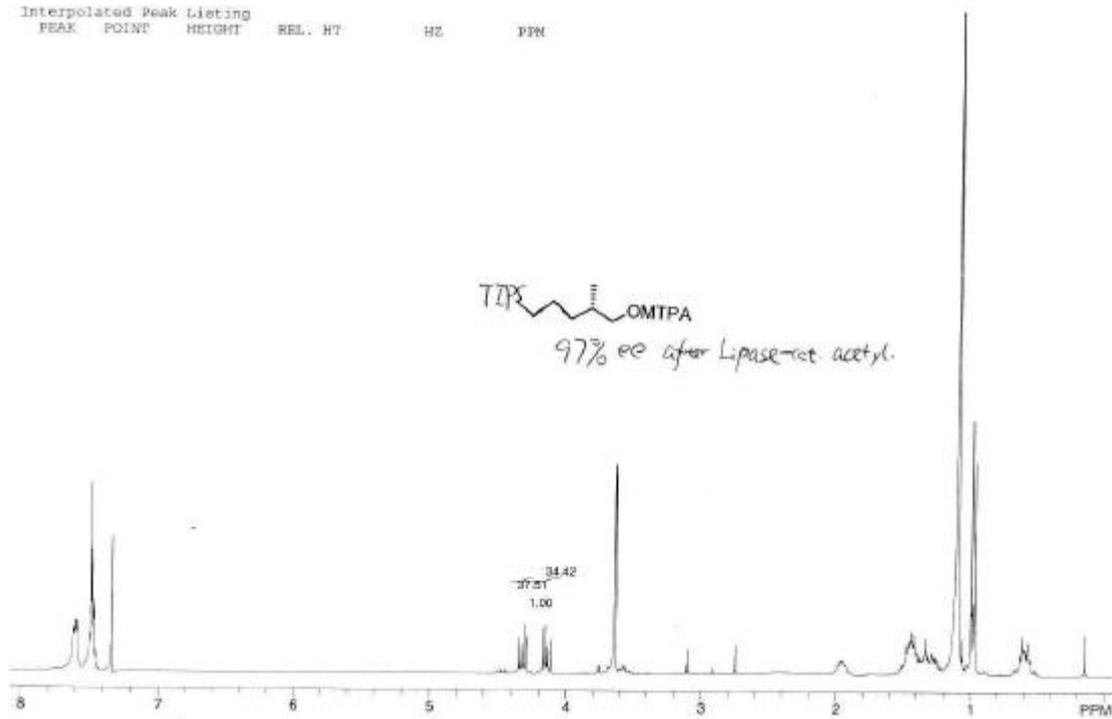
CHCK	FREQUENCY	PPM	HEIGHT
1	5539.455	77.421	18.4
2	5007.723	77.488	19.7
3	5778.888	76.578	39.5
4	5157.878	80.281	35.2
5	7884.884	37.878	14.3
6	8456.875	35.227	34.3
7	1422.135	21.639	27.8
8	1422.091	21.632	136.3
9	1286.868	18.502	31.3
10	825.214	19.515	53.3
11	721.527	8.568	28.8





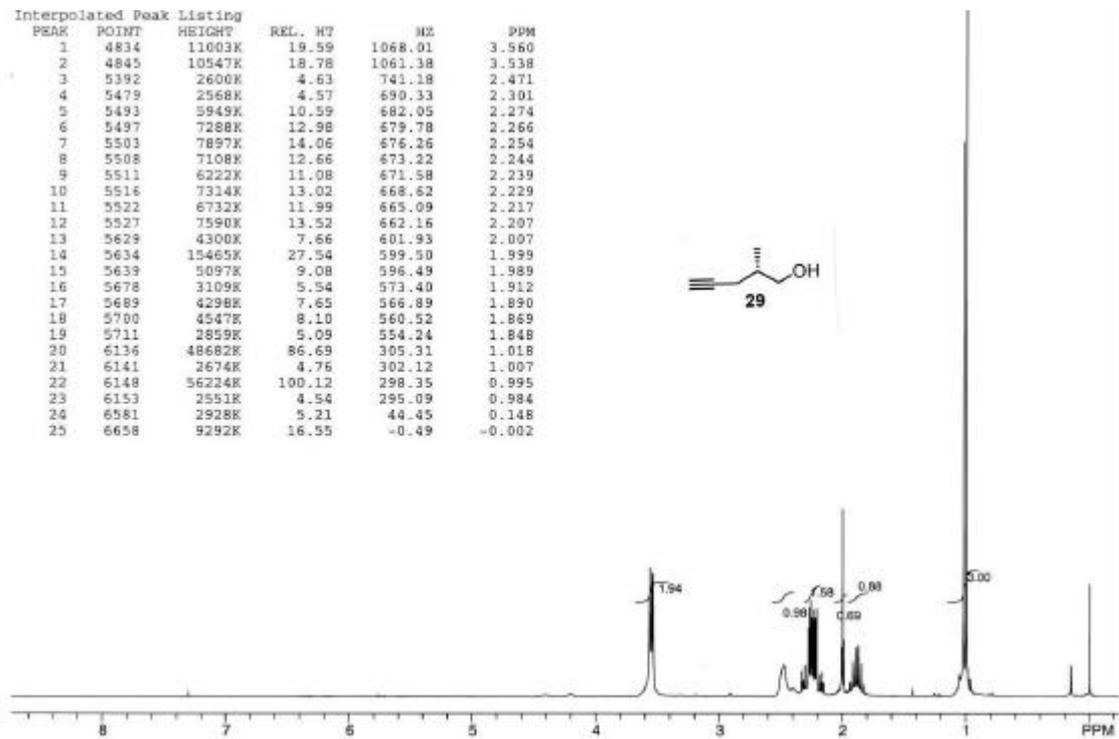
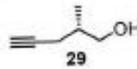
Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
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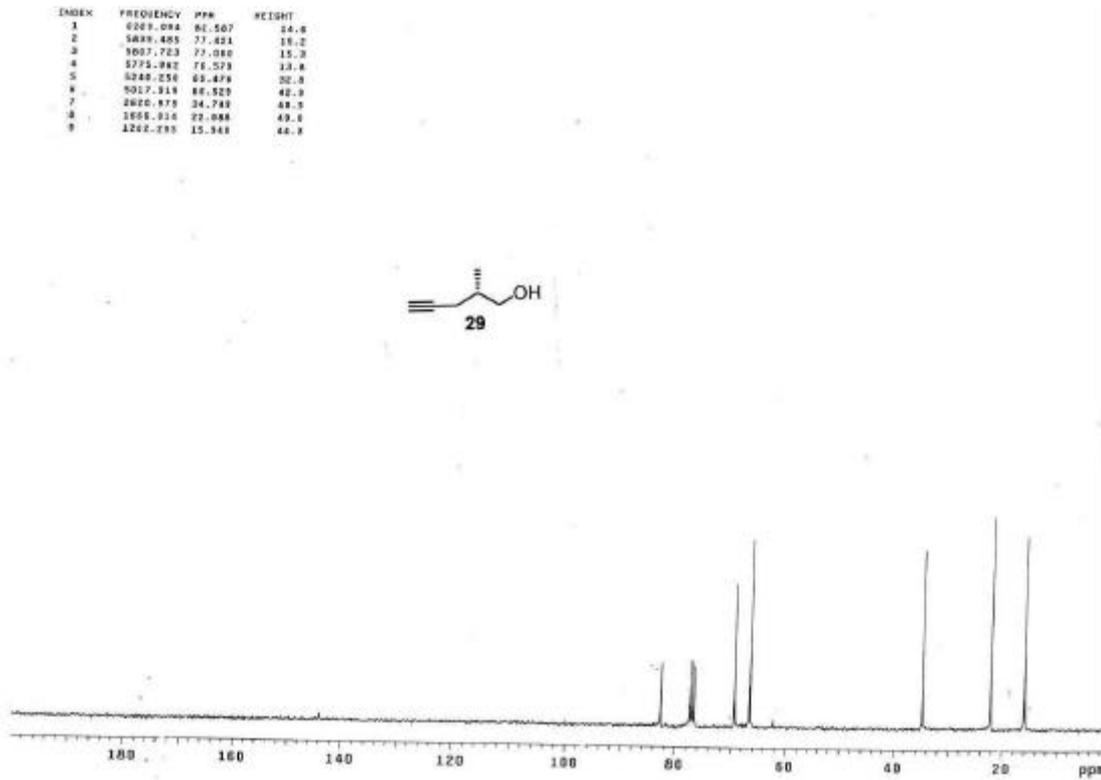
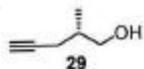


Interpolated Peak Listing

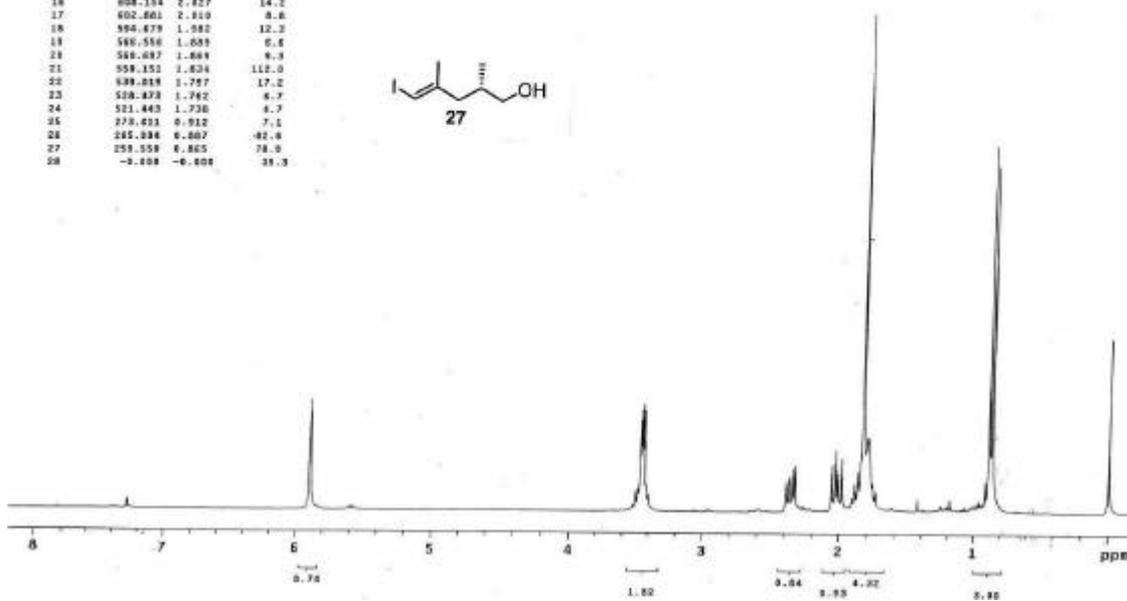
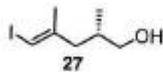
PEAK	POINT	HEIGHT	REL. HT	FREQ	PPM
1	4834	11003K	19.59	1068.01	3.560
2	4845	10547K	18.78	1061.38	3.538
3	5392	2600K	4.63	741.18	2.471
4	5479	2568K	4.57	690.33	2.301
5	5493	3949K	10.59	682.05	2.274
6	5497	7288K	12.98	679.78	2.266
7	5503	7897K	14.06	676.26	2.254
8	5508	7108K	12.66	673.22	2.244
9	5511	6222K	11.08	671.58	2.239
10	5516	7314K	13.02	668.62	2.229
11	5522	6732K	11.99	665.09	2.217
12	5527	7590K	13.52	662.16	2.207
13	5629	4300K	7.66	601.93	2.007
14	5634	15465K	27.54	599.50	1.999
15	5639	5097K	9.08	596.49	1.989
16	5678	3109K	5.54	573.40	1.912
17	5689	4298K	7.65	566.89	1.890
18	5700	4547K	8.10	560.52	1.869
19	5711	2859K	5.09	554.24	1.848
20	6136	48682K	86.69	305.31	1.018
21	6141	2674K	4.76	302.12	1.007
22	6148	56224K	100.12	298.35	0.995
23	6153	2551K	4.54	295.09	0.984
24	6581	2928K	5.21	44.45	0.148
25	6658	9292K	16.55	-0.49	-0.002



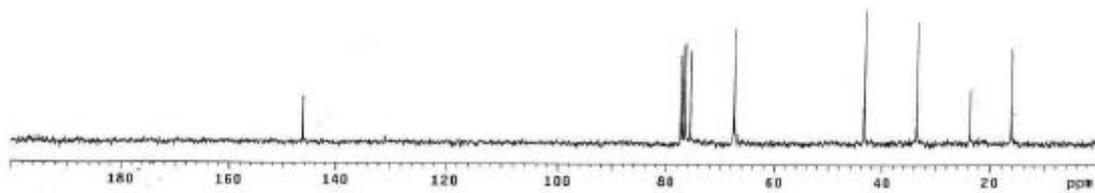
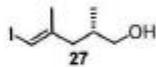
INDEX	FREQUENCY PPM	HEIGHT
1	6201.074	14.4
2	5889.485	18.2
3	5007.723	15.3
4	5775.982	13.8
5	6248.258	32.8
6	5017.519	42.9
7	2620.879	48.0
8	1855.916	49.6
9	1262.785	46.7



INDEX	FREQUENCY	PPM	HEIGHT
1	1768.388	5.056	24.9
2	1758.218	5.004	22.4
3	1698.002	3.502	4.0
4	1688.663	3.462	5.2
5	1628.956	3.467	29.8
6	1627.826	3.467	28.8
7	1624.937	3.467	24.4
8	1620.188	3.437	22.8
9	1624.488	3.422	6.1
10	1628.621	3.402	4.1
11	717.718	2.393	7.1
12	711.271	2.371	8.2
13	704.241	2.346	9.9
14	637.740	2.326	18.7
15	616.697	2.355	18.8
16	608.194	2.327	14.2
17	602.661	2.319	8.6
18	596.678	1.982	12.2
19	590.556	1.959	6.8
20	588.697	1.869	8.3
21	558.151	1.824	112.0
22	538.018	1.797	17.2
23	528.878	1.762	6.7
24	521.463	1.736	6.7
25	278.821	0.912	7.1
26	265.888	0.867	85.8
27	258.558	0.865	78.8
28	-2.408	-0.808	38.3

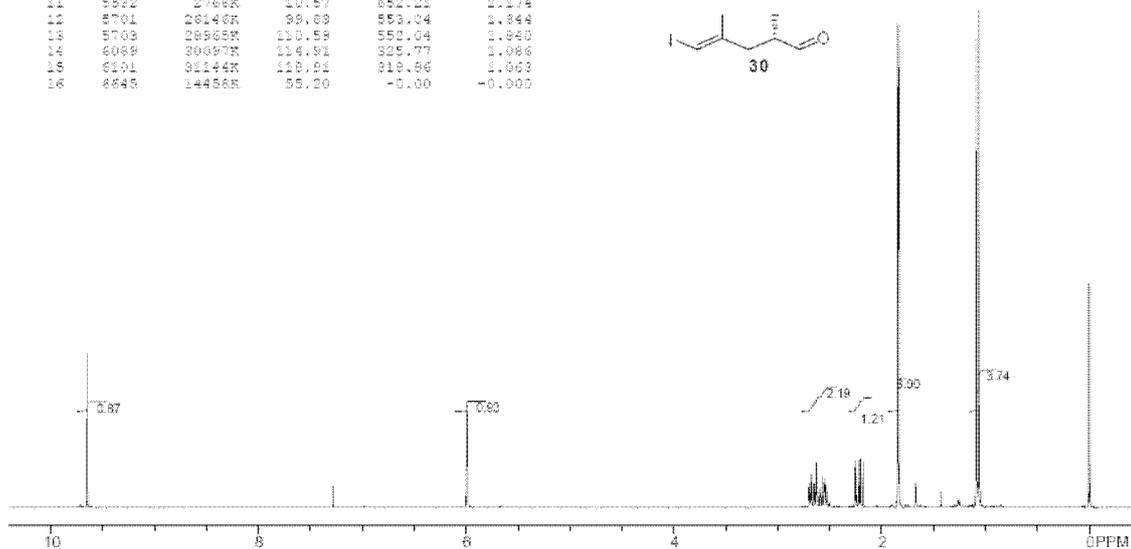
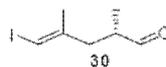


INDEX	FREQUENCY	PPM	HEIGHT
1	17847.808	148.452	18.7
2	1809.878	77.422	26.8
3	5080.162	77.688	22.8
4	5774.888	76.578	23.6
5	8792.287	75.588	21.8
6	1602.232	47.918	28.9
7	3083.628	45.531	31.1
8	2542.364	33.704	28.4
9	1786.832	28.708	12.9
10	1277.988	16.268	22.4

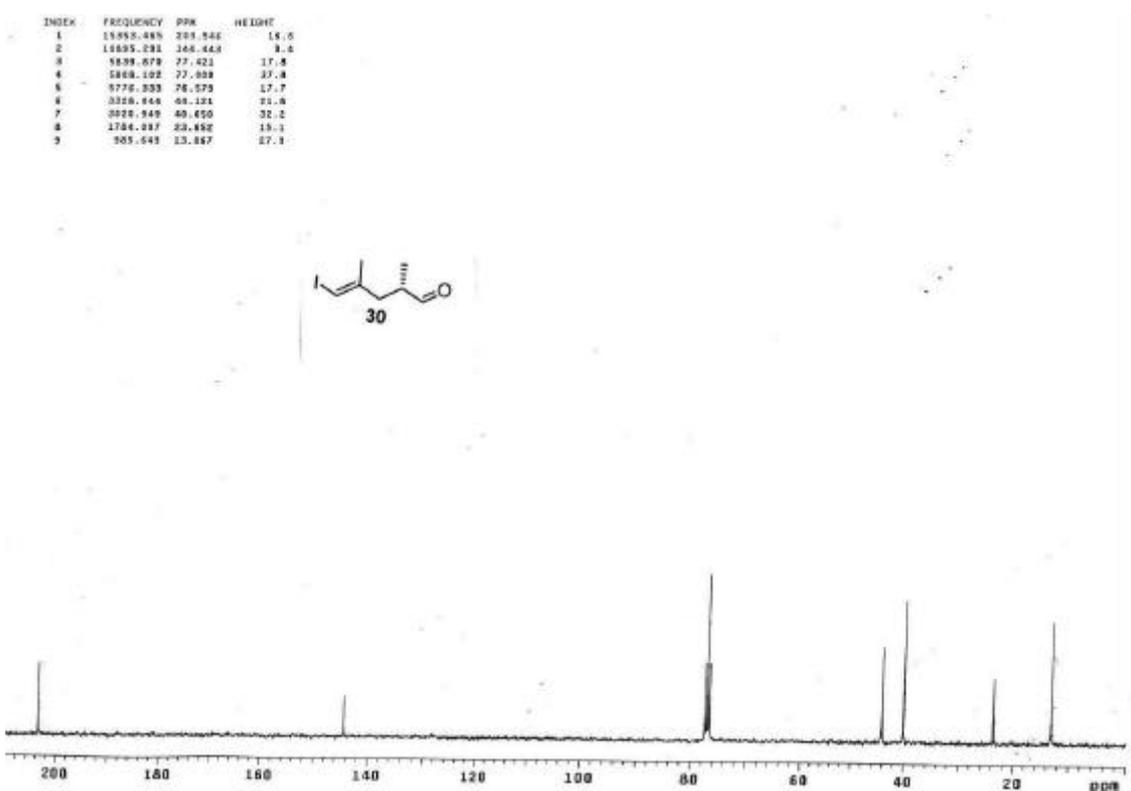
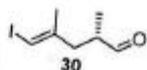


Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HE	HE	FM
1	1796	5532K	21.04	2853.89	5.847
2	1799	8976K	34.27	2892.36	6.842
3	3575	3957K	11.67	2798.48	5.6398
4	3577	5977K	22.44	2797.70	5.693
5	3579	5581K	21.19	2796.82	5.688
6	5295	2400K	9.16	789.77	2.030
7	5495	2788K	10.64	673.70	2.026
8	5507	2789K	10.65	666.67	2.023
9	5509	2624K	10.06	655.51	2.018
10	5516	2378K	9.08	640.38	2.014
11	5522	2788K	10.57	652.21	2.0174
12	5701	26146K	99.69	563.34	1.844
13	5703	26565K	110.59	552.04	1.820
14	6086	30697K	114.91	325.77	1.086
15	6101	32144K	119.91	319.86	1.063
16	6645	14456K	55.20	-0.00	-0.000

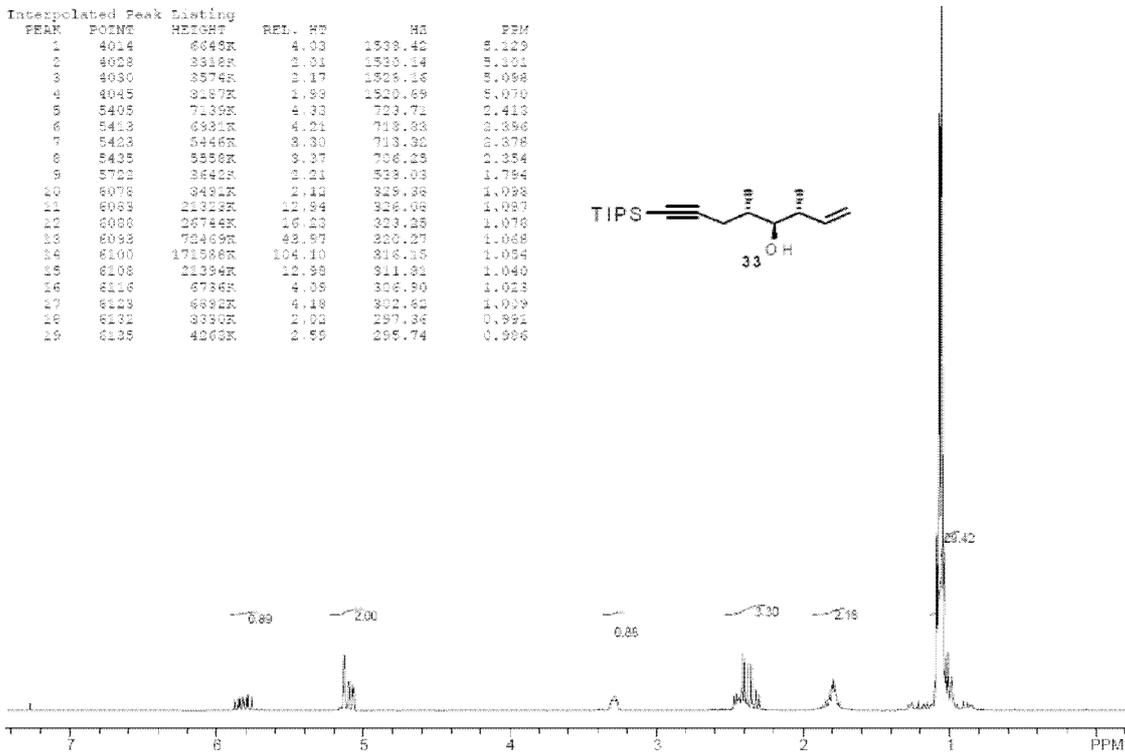
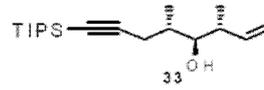


INDEX	FREQUENCY	PPM	HEIGHT
1	18930.889	233.845	15.5
2	18895.281	146.443	8.4
3	5839.879	77.421	17.8
4	5838.102	77.339	27.8
5	5776.333	76.579	17.7
6	3356.144	66.121	21.8
7	3028.949	40.450	32.2
8	1784.237	23.652	19.1
9	305.643	13.887	27.3

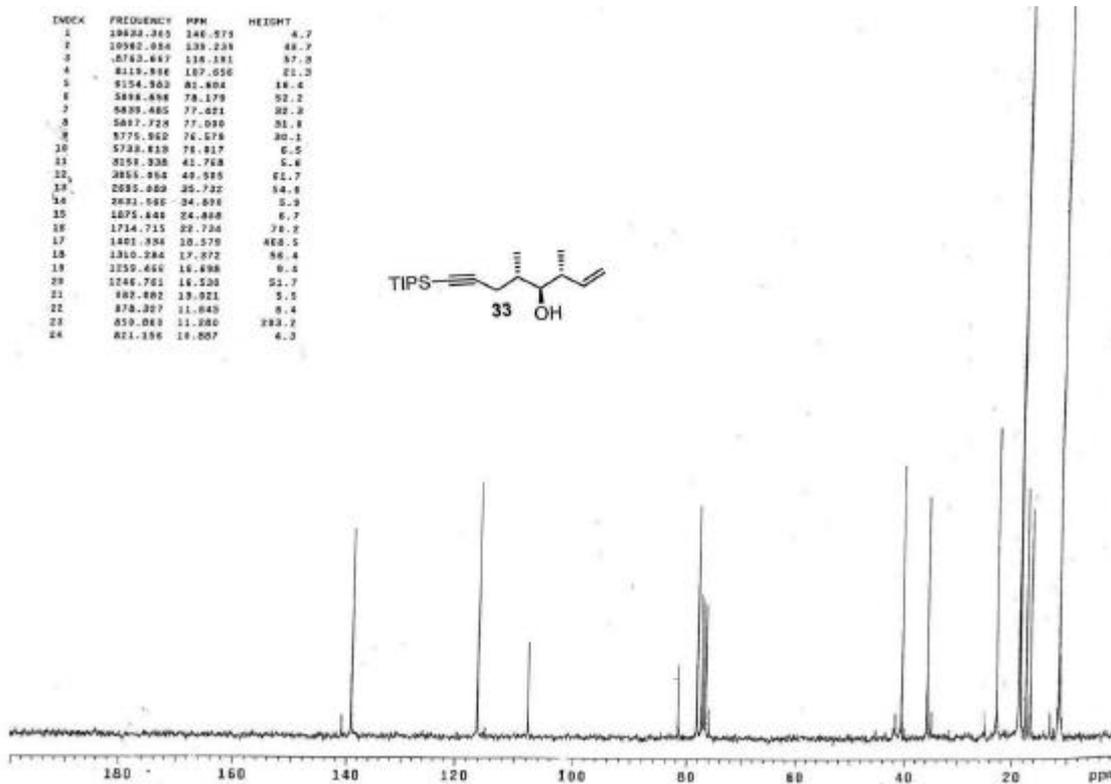
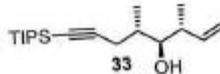


Interpolated Peak Listing

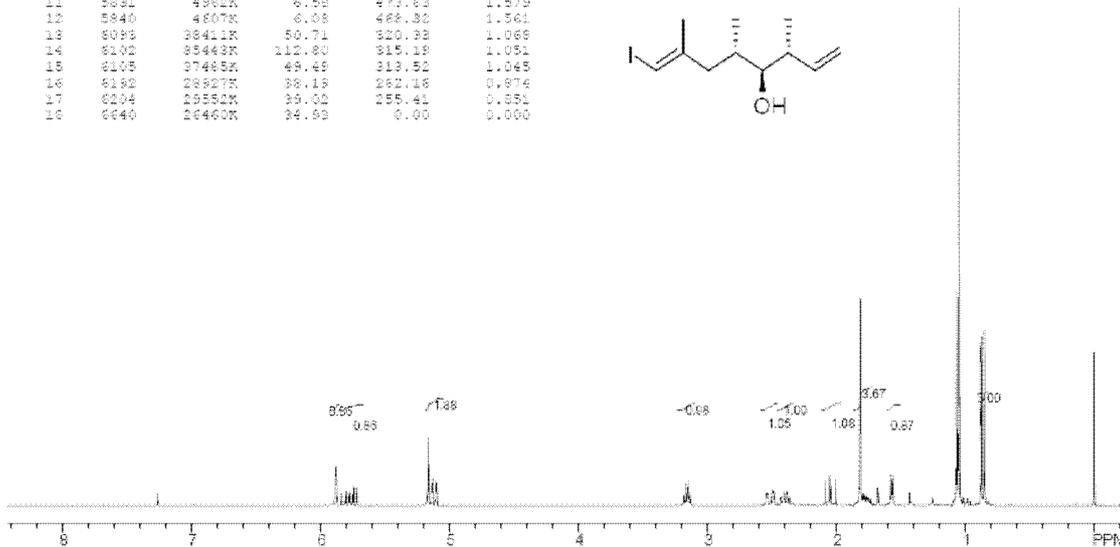
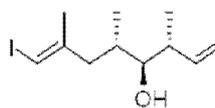
PEAK	POINT	HEIGHT	REL. HT	MS	PPM
1	4014	6040K	4.33	1530.40	0.129
2	4028	8310K	2.31	1530.14	0.101
3	4030	8574K	2.17	1528.16	0.098
4	4045	9167K	1.99	1520.69	0.070
5	5405	7139K	4.33	720.71	1.410
6	5413	6931K	4.21	718.93	1.356
7	5423	5446K	3.30	713.92	1.378
8	5435	5550K	3.37	708.23	1.354
9	5722	3642K	2.21	538.03	1.754
10	6078	3491K	2.12	329.38	1.098
11	6083	2102K	1.04	328.06	1.087
12	6086	2674K	16.23	323.28	1.076
13	6093	7046K	43.97	320.27	1.068
14	8100	17158K	104.10	318.15	1.054
15	8108	21394K	12.98	311.91	1.040
16	8116	6736K	4.35	308.90	1.023
17	8123	6892K	4.18	302.62	1.009
18	8132	3330K	1.02	297.36	0.991
19	8135	4003K	2.55	295.74	0.986



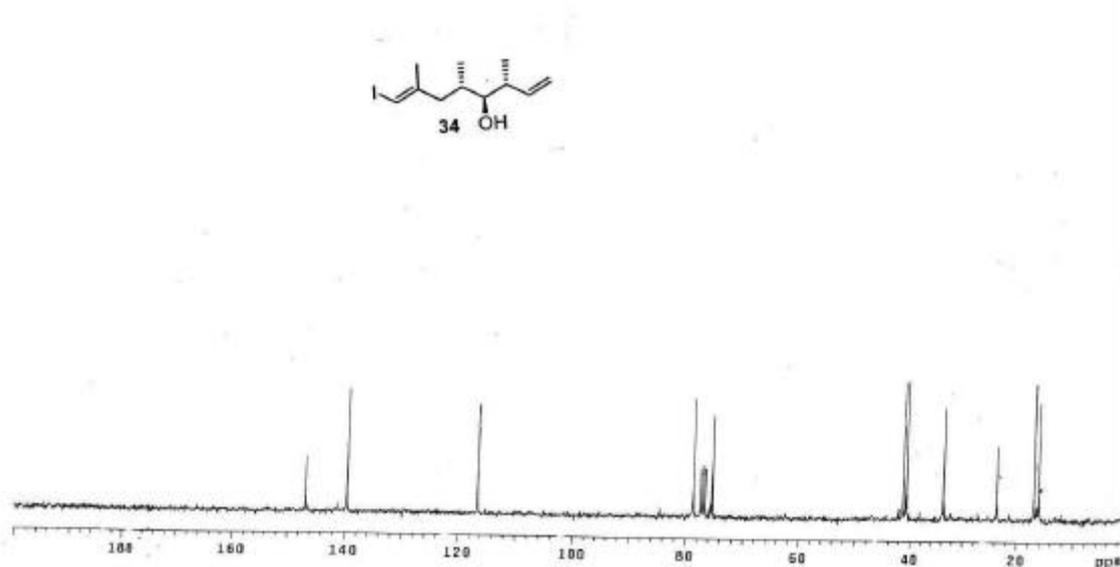
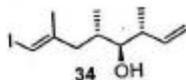
INDEX	FREQUENCY	PPM	HEIGHT
1	10002.365	140.579	4.7
2	10002.004	139.238	48.7
3	8762.647	136.181	87.8
4	8119.896	107.050	21.2
5	8154.503	81.804	18.4
6	5894.898	78.179	52.2
7	5829.485	77.021	82.8
8	5807.724	77.000	31.8
9	5775.562	76.578	30.1
10	5738.819	76.017	6.5
11	3259.338	41.768	5.8
12	2855.964	40.935	61.7
13	2825.809	35.722	84.9
14	2632.586	34.639	5.3
15	1875.448	24.888	6.7
16	1714.715	22.734	78.2
17	1401.894	10.579	460.5
18	1310.284	17.872	86.4
19	1159.459	16.498	6.4
20	1046.761	14.530	51.7
21	887.882	13.021	5.5
22	878.307	11.645	8.4
23	859.063	11.080	283.2
24	821.156	10.007	4.3



Interpolated Peak Listing					
PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	3329	5971K	6.01	1763.20	5.380
2	3585	11264K	14.67	1549.70	5.166
3	4013	4827K	8.71	1536.79	5.139
4	4024	4400K	8.00	1532.53	5.105
5	4026	3715K	4.90	1531.49	5.102
6	5027	3871K	5.11	944.89	3.150
7	5871	3894K	9.22	626.29	2.088
8	5589	5611K	6.62	615.51	2.052
9	5612	4194K	5.54	602.92	2.007
10	5710	10003K	43.61	544.70	1.816
11	5631	4901K	6.59	473.03	1.579
12	5840	4807K	6.08	468.80	1.561
13	6093	3641K	50.71	320.39	1.065
14	6102	39449K	112.80	315.19	1.051
15	6105	37485K	49.49	313.52	1.045
16	6182	28827K	38.19	282.16	0.874
17	6204	29550K	39.00	255.41	0.853
18	6240	20460K	34.63	0.00	0.000

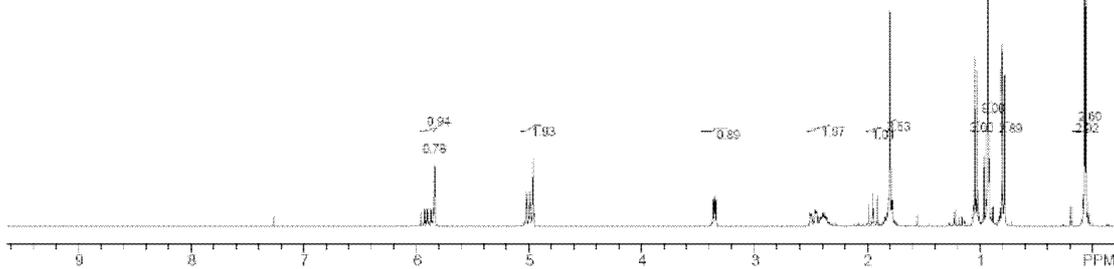
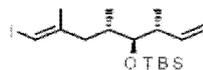


INDEX	FREQUENCY	PPM	HEIGHT
1	21973.789	140.819	20.6
2	18925.376	139.508	27.8
3	8791.184	118.995	74.8
4	8696.005	76.712	24.9
5	5539.405	77.471	13.2
6	5007.724	77.030	11.9
7	5775.862	76.079	11.0
8	5684.812	75.072	23.6
9	3129.595	81.975	31.3
10	3074.789	49.785	31.4
11	2538.289	39.850	28.4
12	1784.581	23.604	10.9
13	1266.441	18.975	20.3
14	1217.110	14.137	28.7

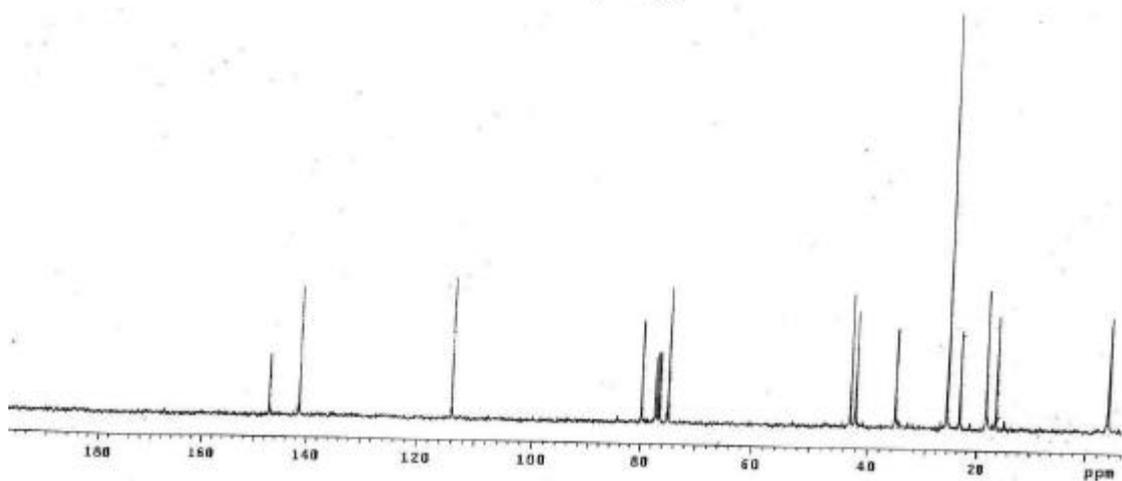
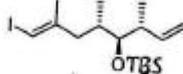


Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	HE	PPM
1	3651	3147K	4.65	1751.33	5.036
2	4069	2905K	2.53	1506.57	5.021
3	4071	2907K	2.29	1505.14	5.016
4	4093	2722K	2.46	1497.31	4.994
5	4300	5490K	4.56	1469.43	4.962
6	4816	2202K	2.04	1310.30	3.368
7	4922	2309K	2.22	1206.59	3.256
8	4925	2678K	2.42	1204.79	3.250
9	4931	2344K	2.03	1201.55	3.239
10	5642	2325K	2.54	986.80	1.950
11	5665	2500K	2.29	971.05	1.904
12	5721	3749K	28.79	939.50	1.799
13	5739	3045K	1.85	934.06	1.780
14	5730	2135K	1.93	932.89	1.777
15	6106	14949K	19.41	912.22	1.642
16	6209	9236K	2.02	810.87	1.094
17	6217	22562K	21.26	806.14	1.021
18	6248	8366K	8.75	808.38	0.961
19	6282	9214K	8.32	879.93	0.931
20	6287	212363K	101.44	877.49	0.926
21	6272	5446K	1.92	874.47	0.915
22	6230	18060K	14.49	840.33	0.861
23	6242	12371K	11.89	822.98	0.777
24	6601	9637K	2.39	22.78	0.076
25	6606	33721K	30.45	20.09	0.067
26	6613	28729K	28.94	16.36	0.054

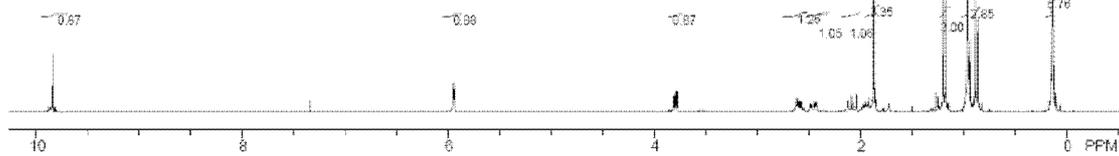
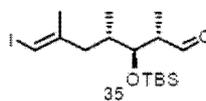


INDEX	FREQUENCY	PPM	HEIGHT
1	11991.234	147.154	13.8
2	14007.244	141.423	22.1
3	8598.507	114.551	31.5
4	9327.837	78.928	22.8
5	9439.485	77.421	14.7
6	5897.723	77.804	29.8
7	5775.592	76.579	19.9
8	9463.737	75.951	28.3
9	3243.506	49.082	29.9
10	3171.513	42.649	25.9
11	3967.982	35.107	22.4
12	1978.915	36.131	32.3
13	1978.238	23.576	21.9
14	1382.277	18.927	31.2
15	1229.822	18.099	28.2
16	-278.549	-3.627	23.8
17	-126.244	-3.795	23.0

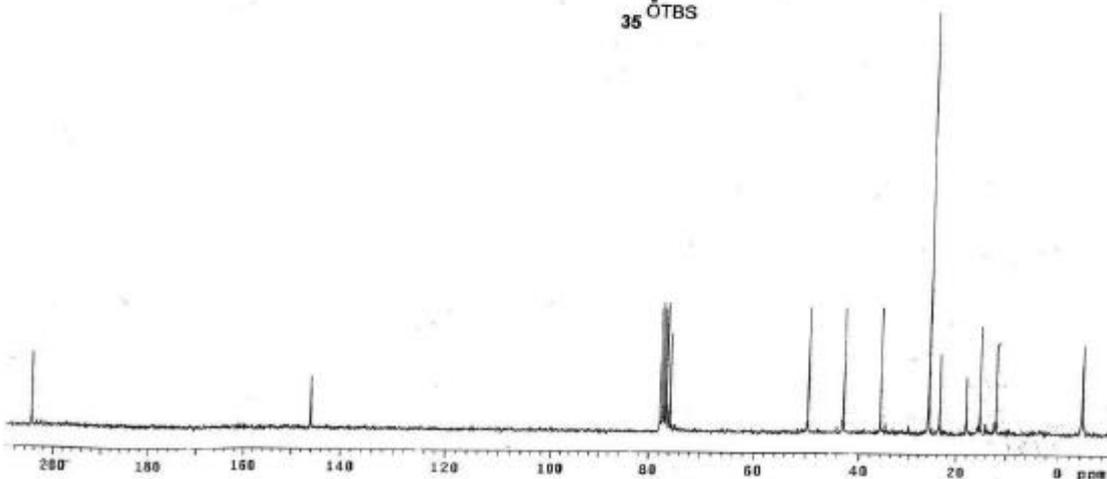
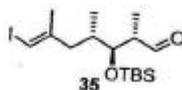


Interpolated Peak Listing

PEAK	POINT	HEIGHT	RET. HT	RI	RFM
1	1638	2860K	2.78	2951.97	9.839
2	1642	3779K	6.10	2949.55	9.835
3	3631	2903K	3.06	1793.79	3.947
4	4727	3012K	2.12	1141.88	2.806
5	4734	1972K	1.98	1137.80	3.792
6	4736	2365K	2.50	1136.43	3.789
7	4742	1943K	2.05	1133.20	3.778
8	5608	1874K	1.77	625.87	2.086
9	5631	1676K	1.77	611.74	2.089
10	5717	13509K	14.29	561.51	1.872
11	5719	18030K	13.57	560.32	1.868
12	5723	2241K	2.37	557.21	1.858
13	6025	1809K	1.91	381.45	1.072
14	6081	1570K	1.86	359.92	1.060
15	6064	19060K	15.90	358.44	1.055
16	6071	1886K	1.94	354.05	1.060
17	6073	1603K	1.69	353.01	1.077
18	6076	19162K	13.89	351.07	1.071
19	6180	3683K	10.23	290.11	0.967
20	6185	87386K	102.69	287.88	0.959
21	6190	5969K	6.39	284.52	0.949
22	6197	6962K	7.38	280.87	0.939
23	6217	1722K	1.62	268.53	0.935
24	6219	1450K	1.59	267.77	0.933
25	6223	13349K	14.09	265.27	0.934
26	6234	10456K	11.04	259.50	0.922
27	6601	3851K	4.11	43.88	0.146
28	6605	23270K	24.57	41.58	0.139
29	6608	24670K	25.94	39.94	0.132
30	6613	2076K	2.19	33.93	0.143
31	6624	1727K	1.82	30.27	0.102

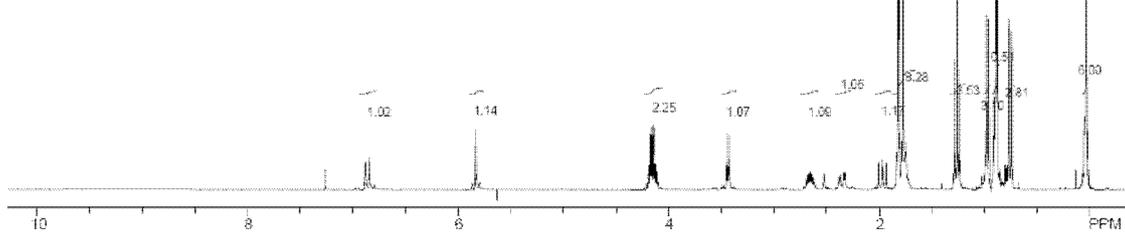
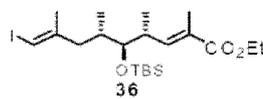


INERK	FREQUENCY	PPM	HEIGHT
2	15831.688	204.516	17.4
2	11022.979	148.149	11.8
3	5875.461	77.030	27.9
4	5841.802	77.483	23.4
5	5807.723	77.889	28.2
6	5773.882	78.379	23.2
7	3743.826	78.877	22.5
8	3709.849	48.544	26.8
9	3229.271	42.547	28.8
10	2729.816	36.947	28.5
11	1949.751	25.016	99.8
12	1779.294	22.978	38.2
13	1387.455	18.139	11.8
14	1189.711	15.222	24.6
18	807.371	12.608	29.8
16	-819.358	-8.188	13.3
17	-926.449	-4.929	24.4

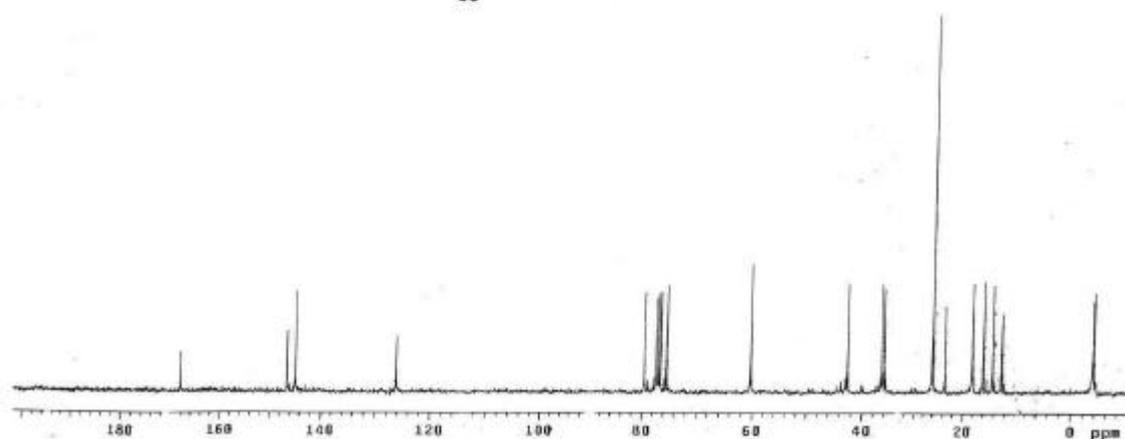
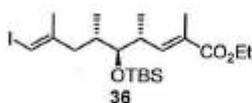


Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HD	HD	PPM
1	3964	667710	4.28	1749.57	6.933
2	5038	698538	4.48	1261.49	4.172
3	5048	755518	4.82	1242.35	4.162
4	5053	808878	5.18	1244.89	4.149
5	5060	777198	4.98	1241.34	4.138
6	5515	828378	4.03	1030.39	3.435
7	6589	32198	20.63	545.78	1.819
8	6592	30478	19.53	542.09	1.815
9	6581	55378	3.55	538.31	1.798
10	6589	30808	19.74	531.67	1.773
11	6591	30038	19.25	530.64	1.770
12	6607	586794	3.44	523.89	1.746
13	6904	15388	9.88	393.09	1.287
14	6919	33918	21.73	378.98	1.263
15	6935	18138	9.68	371.46	1.238
16	7100	20988	13.45	285.10	0.984
17	7115	20848	13.03	283.15	0.981
18	7148	11348	7.27	272.92	0.910
19	7152	828609	4.01	270.88	0.903
20	7157	15928	12.51	269.64	0.896
21	7162	175998	112.76	266.30	0.886
22	7170	24348	15.63	262.38	0.875
23	7240	20618	13.21	236.04	0.767
24	7255	18268	11.75	223.26	0.744
25	7700	816290	5.23	18.54	0.655
26	7702	796096	5.10	18.76	0.652
27	7704	788558	5.12	18.69	0.649
28	7706	810170	5.18	18.21	0.644
29	7714	48448	29.77	13.29	0.634
30	7717	48878	29.46	9.00	0.630

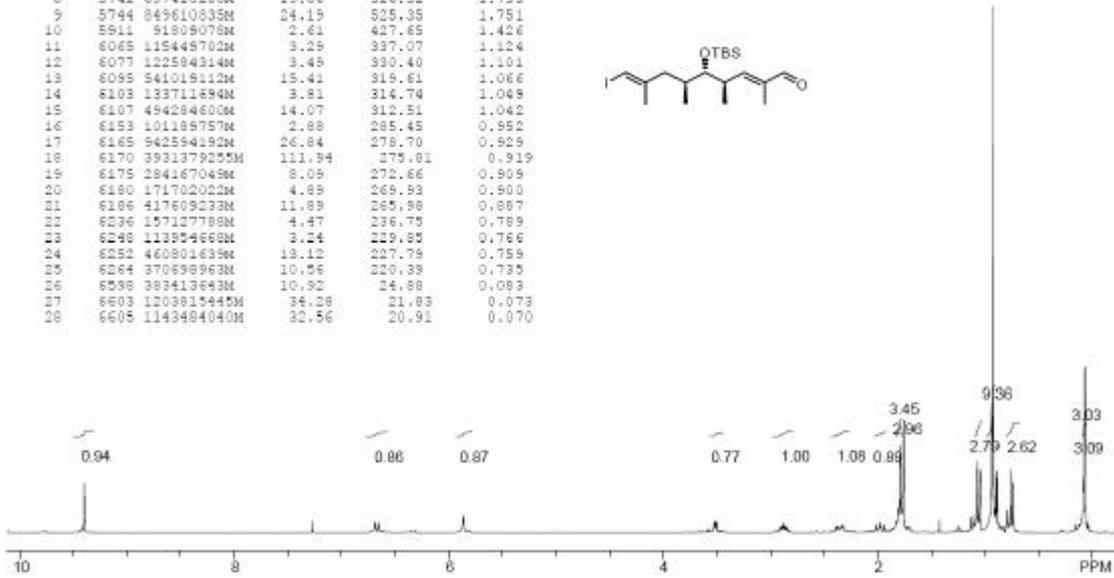
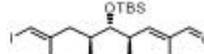


INDEX	FREQUENCY	PPM	HEIGHT
1	17694.183	159.153	6.9
2	11955.853	148.594	13.0
3	13829.608	144.918	20.3
4	3519.593	126.218	12.5
5	8889.528	79.503	22.4
6	5839.485	77.421	21.2
7	5847.733	77.606	22.8
8	5735.982	76.679	22.8
9	5884.912	75.273	24.8
10	4545.730	69.289	29.1
11	3731.744	62.582	24.7
12	2751.143	35.490	24.6
13	2735.751	35.928	23.7
14	1884.338	25.981	65.4
15	1967.532	25.422	12.0
16	1778.121	23.549	18.9
17	1379.643	18.379	10.7
18	1367.455	18.330	24.8
19	1304.413	15.989	25.2
20	1488.897	14.173	24.2
21	826.733	12.453	18.0
22	-284.148	-0.767	23.0
23	-284.851	-0.535	23.8



Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	1829	366112352M	10.48	2019.33	9.399
2	3639	113061021M	3.22	1758.34	5.662
3	5719	171634376M	4.89	539.80	1.800
4	5726	598668915M	17.05	538.58	1.785
5	5732	161235555M	4.59	532.47	1.775
6	5734	173802663M	4.95	531.13	1.771
7	5738	252818962M	7.20	528.55	1.762
8	5742	897410280M	19.86	526.52	1.755
9	5744	845610835M	24.19	525.35	1.751
10	5911	8189078M	2.61	427.65	1.426
11	6065	115448702M	3.29	337.07	1.124
12	6077	122594814M	3.48	330.40	1.101
13	6095	541018112M	15.41	319.61	1.066
14	6103	133711894M	3.81	314.74	1.049
15	6107	494294600M	14.07	312.51	1.042
16	6153	101189757M	2.88	285.45	0.952
17	6165	942594192M	26.84	278.70	0.929
18	6170	3931379255M	111.94	275.81	0.919
19	6175	284167045M	8.09	272.66	0.909
20	6180	171702022M	4.89	269.93	0.900
21	6186	417609233M	11.89	269.98	0.887
22	6236	157127788M	4.47	236.75	0.789
23	6248	113954668M	3.24	229.85	0.766
24	6252	460801635M	13.12	227.79	0.759
25	6264	370698963M	10.96	220.39	0.735
26	6598	383413643M	10.92	24.88	0.093
27	6603	1203819445M	34.28	21.83	0.073
28	6605	1143484040M	32.56	20.91	0.070



INDEX	FREQUENCY	PK	HEIGHT
1	14738.491	195.272	14.7
2	11825.710	156.969	14.7
3	11822.974	146.149	19.9
4	89394.491	137.418	9.2
5	5974.768	78.182	22.1
6	5889.489	77.421	12.0
7	5887.726	77.899	11.7
8	5775.853	76.579	11.8
9	5761.857	76.592	22.7
10	3651.975	43.115	17.4
11	2714.878	18.518	23.1
12	2710.821	38.153	19.9
13	1351.104	26.938	89.4
14	1769.709	23.444	14.7
15	1284.512	18.382	21.0
16	1373.638	18.214	14.6
17	1047.489	18.351	17.1
18	702.560	9.318	14.0
19	-192.518	-3.888	24.0

