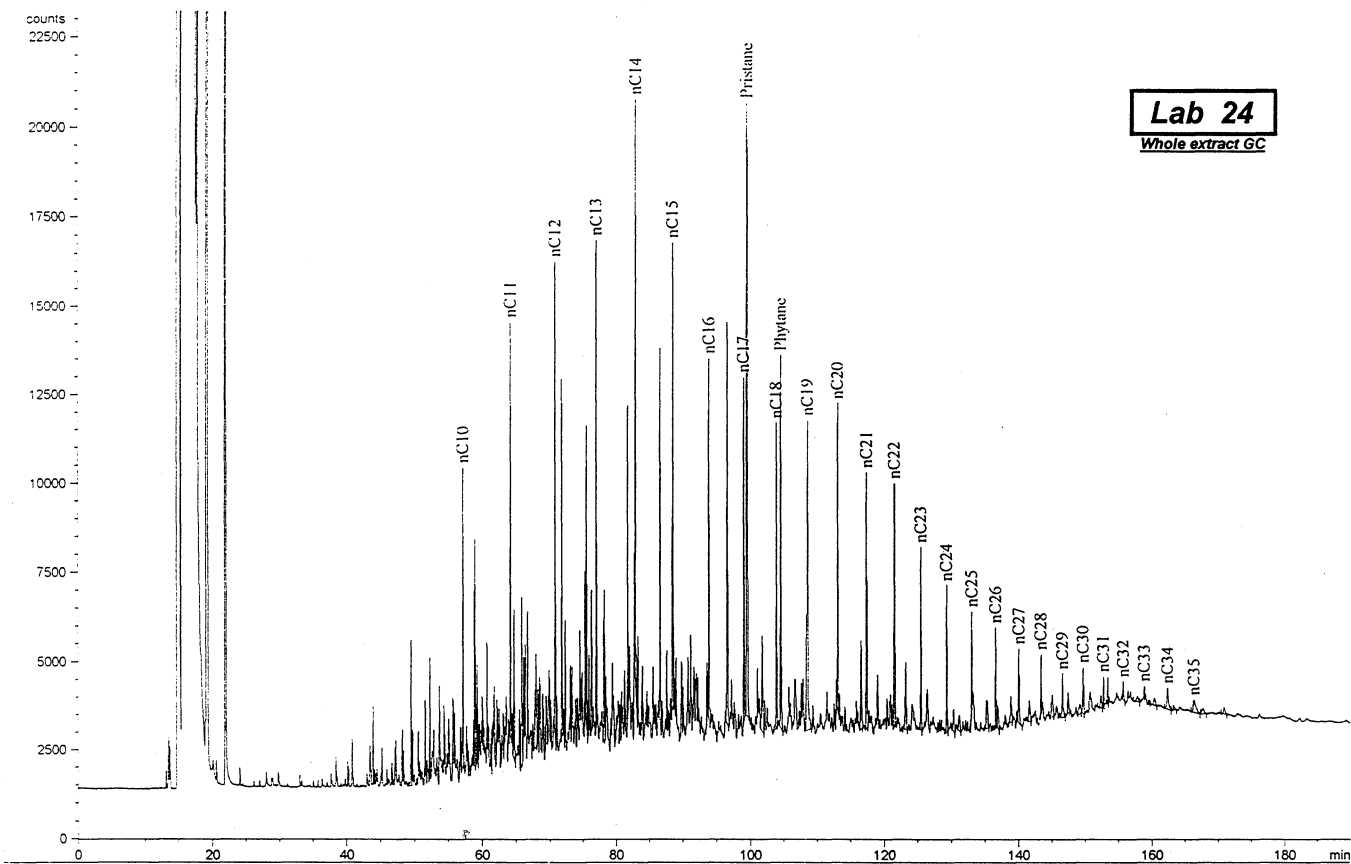
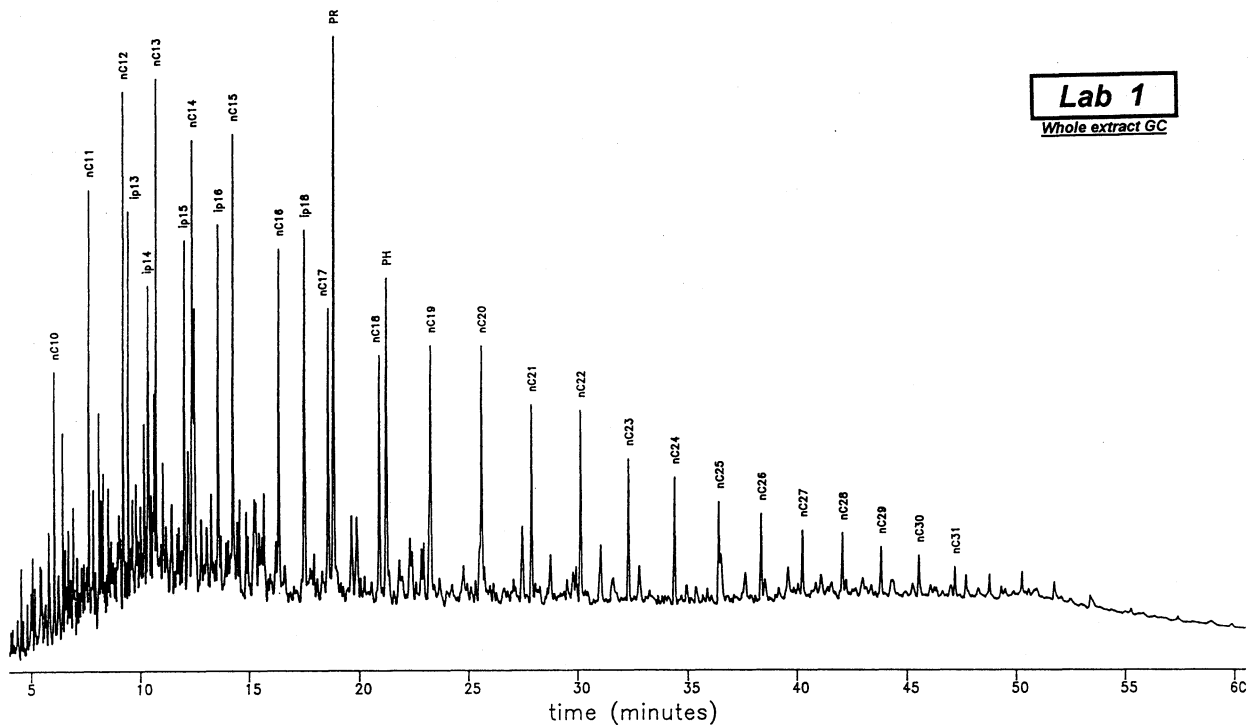
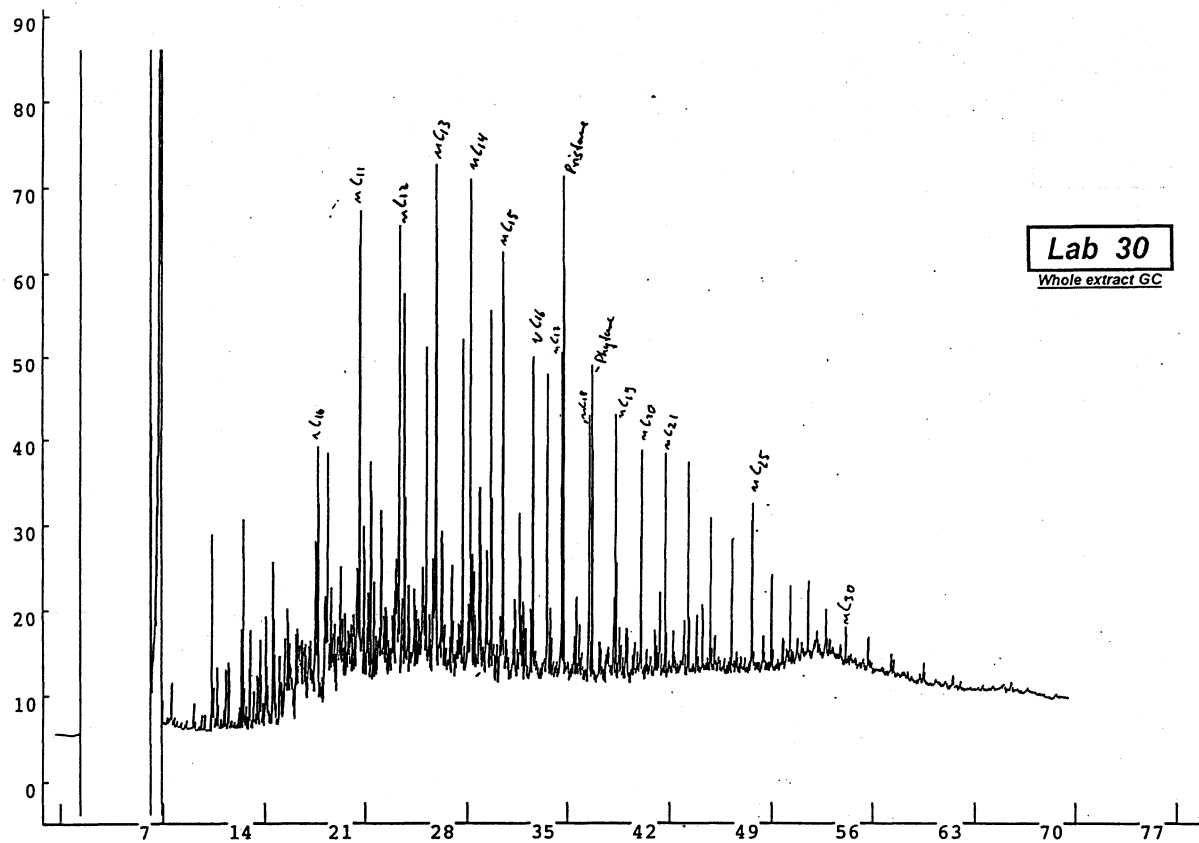


NGS SR-1

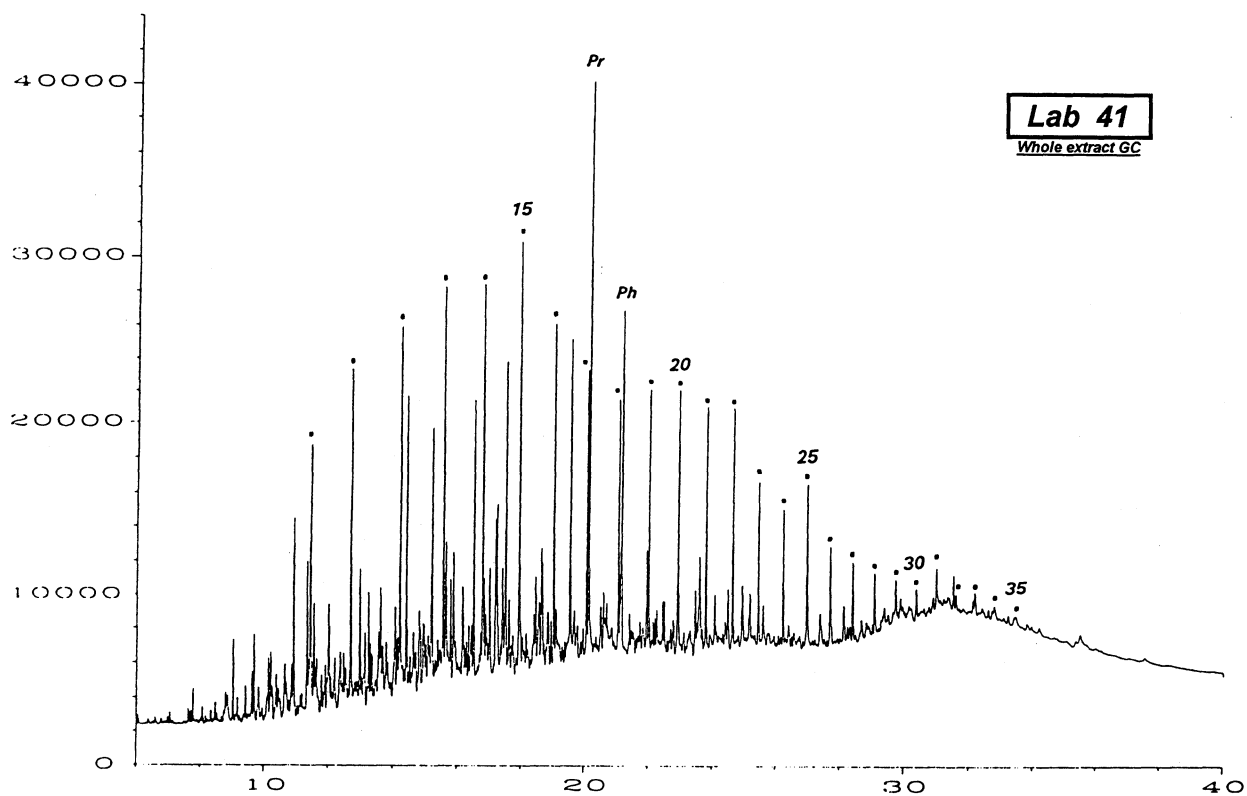
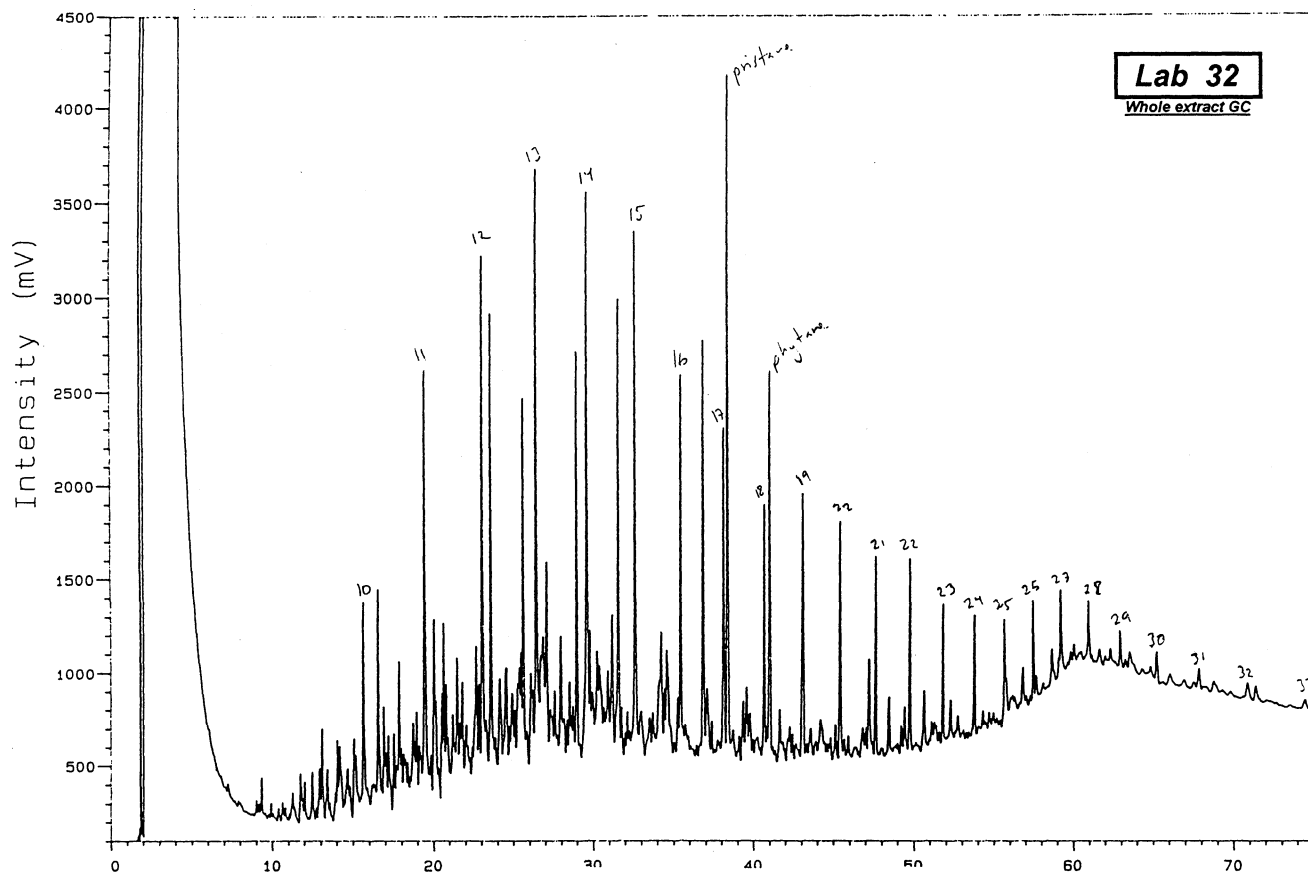
Appendix A5.3a

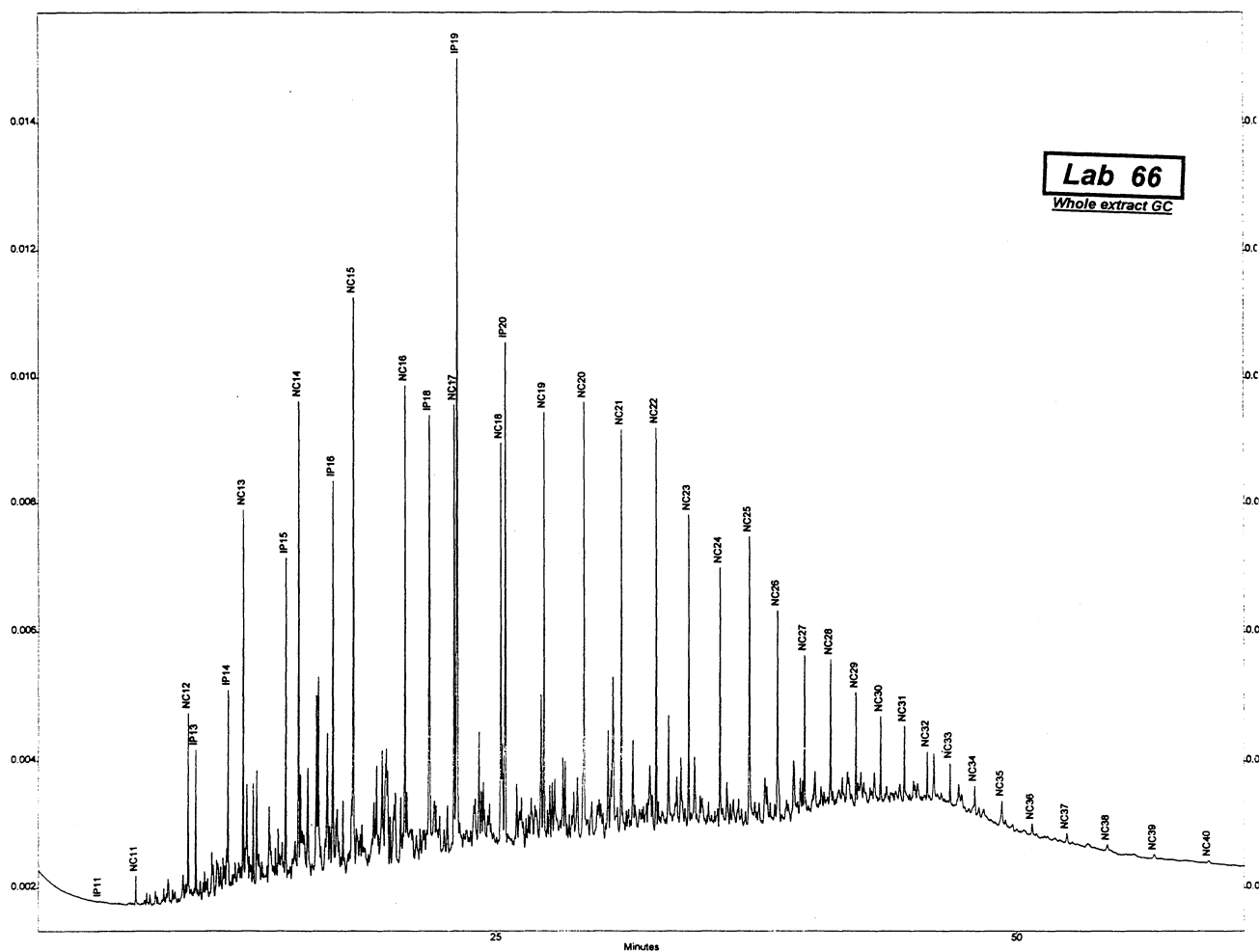
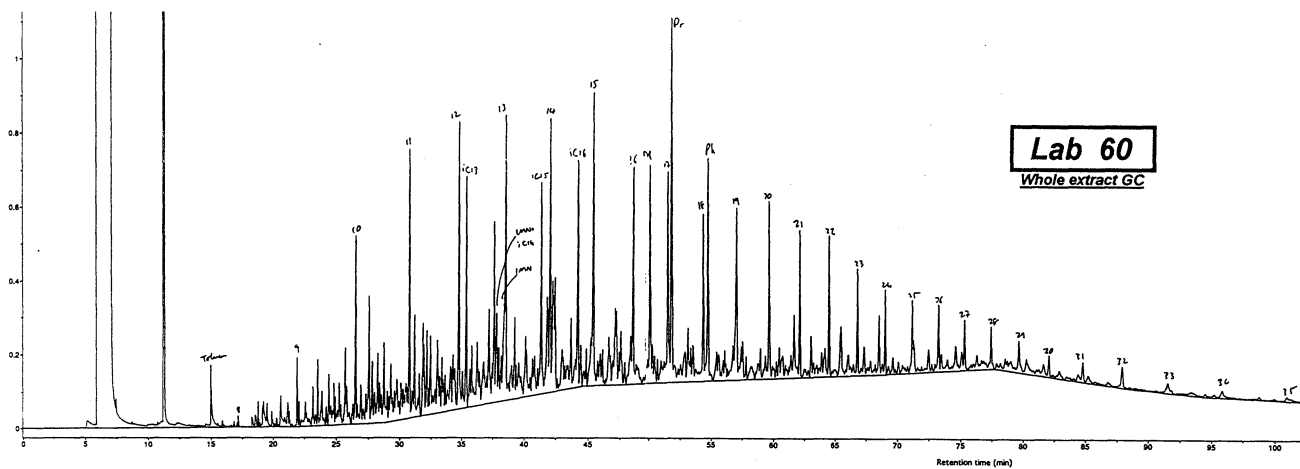
Whole extract GC chromatograms

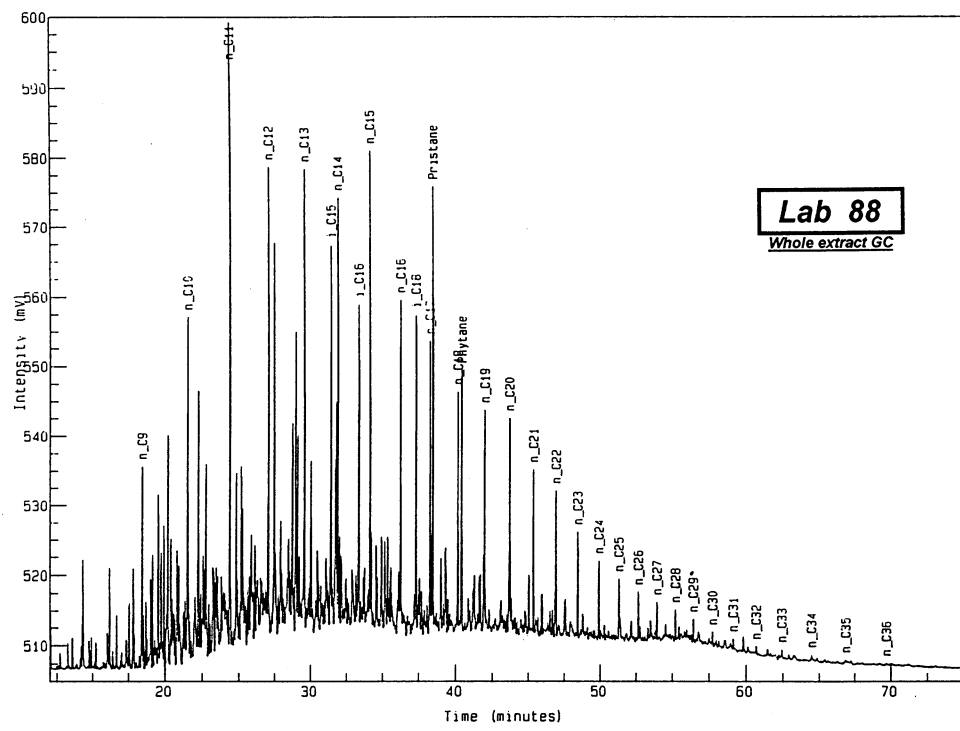
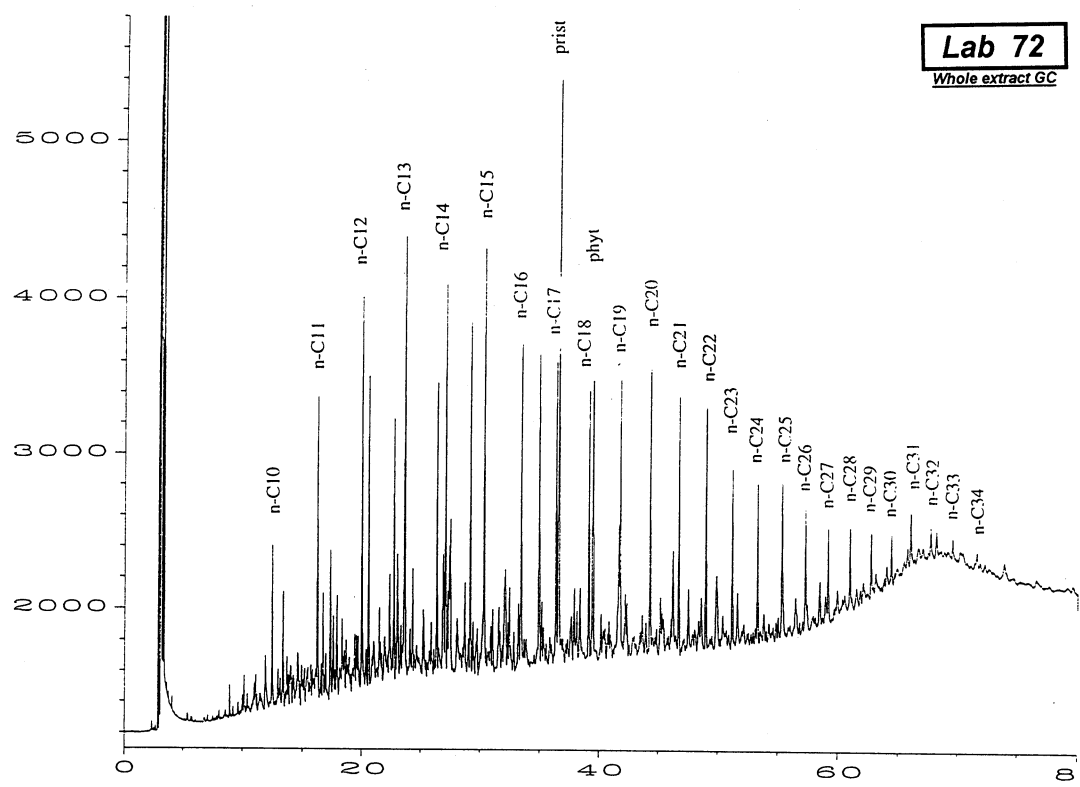


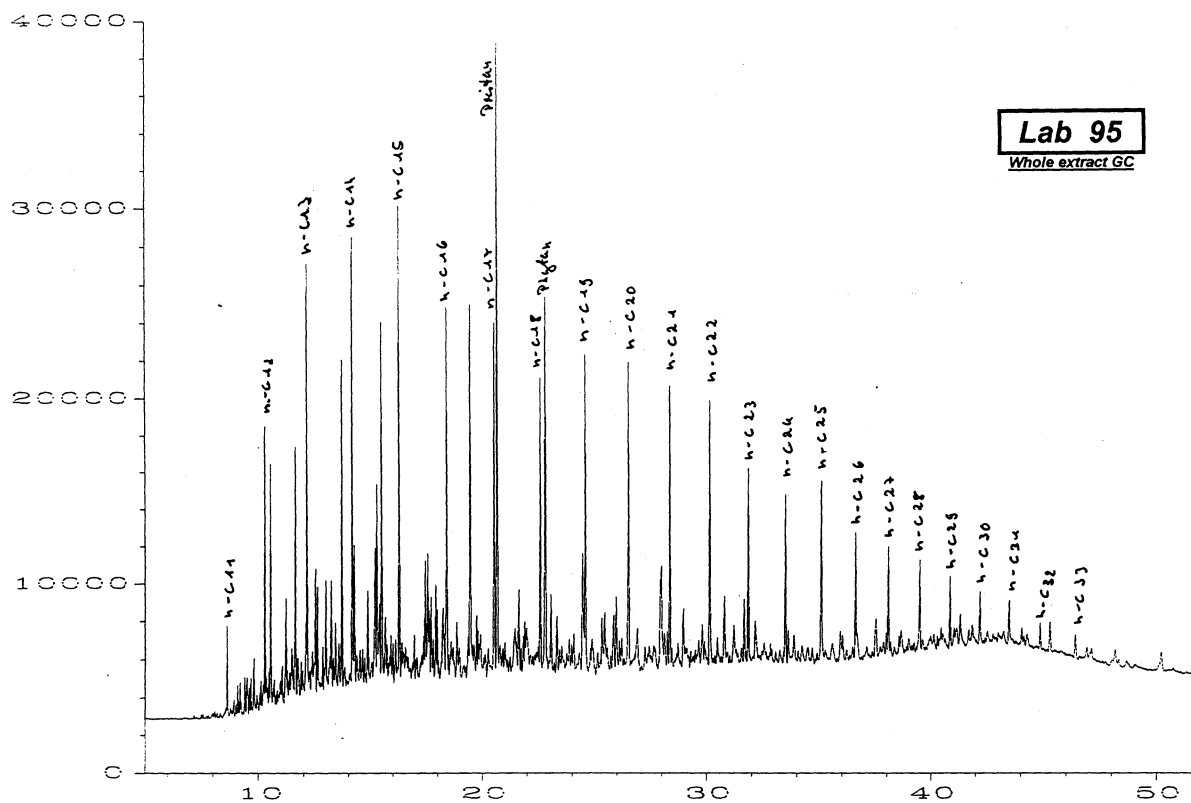


Lab 30
Whole extract GC







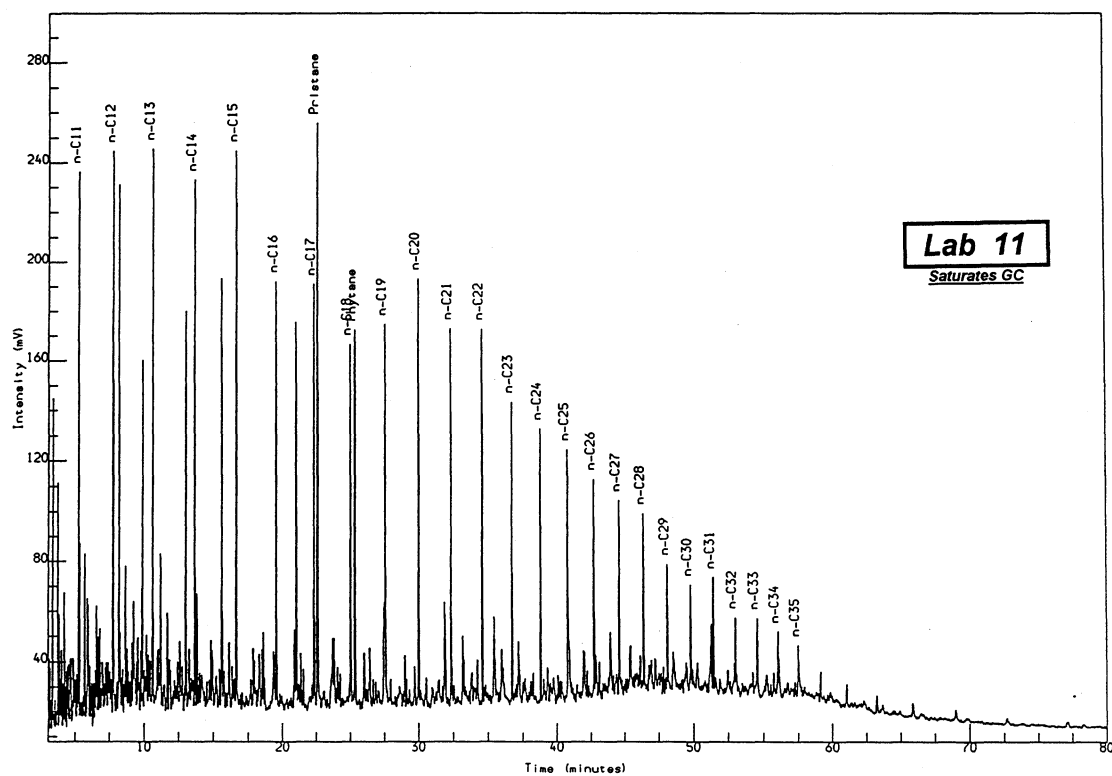
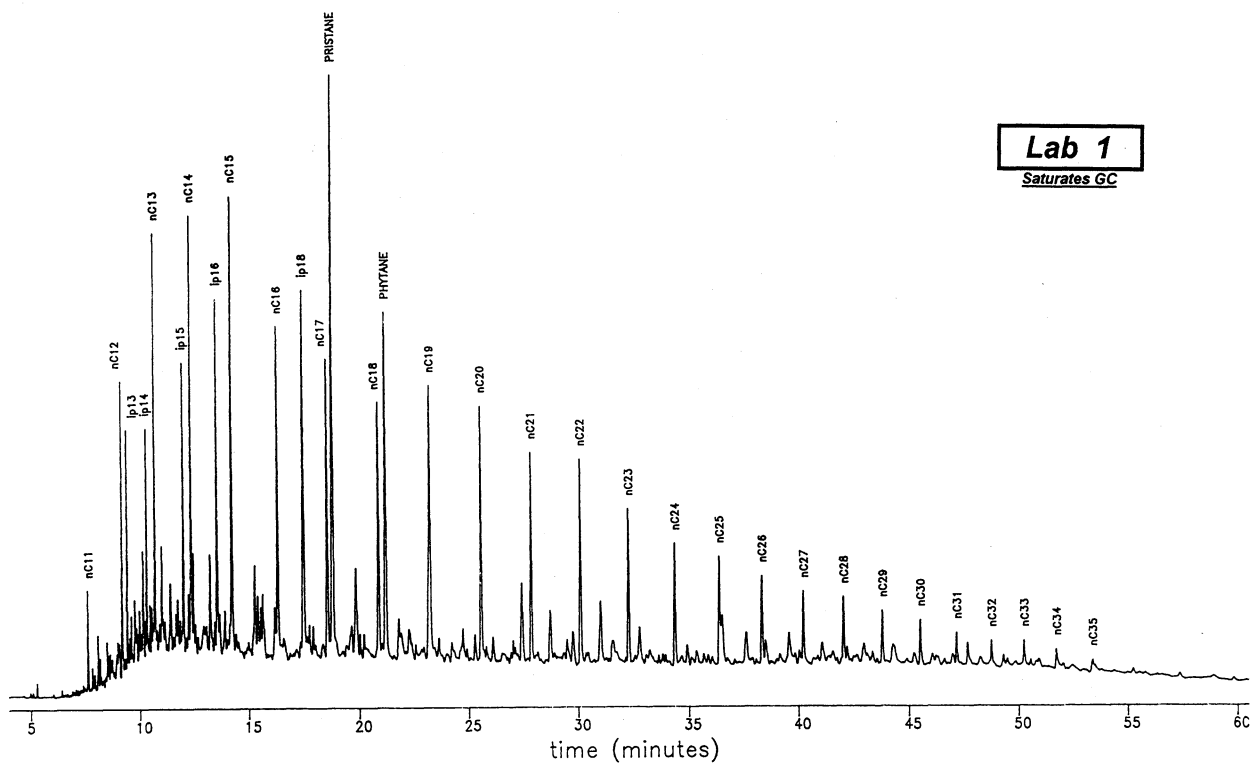


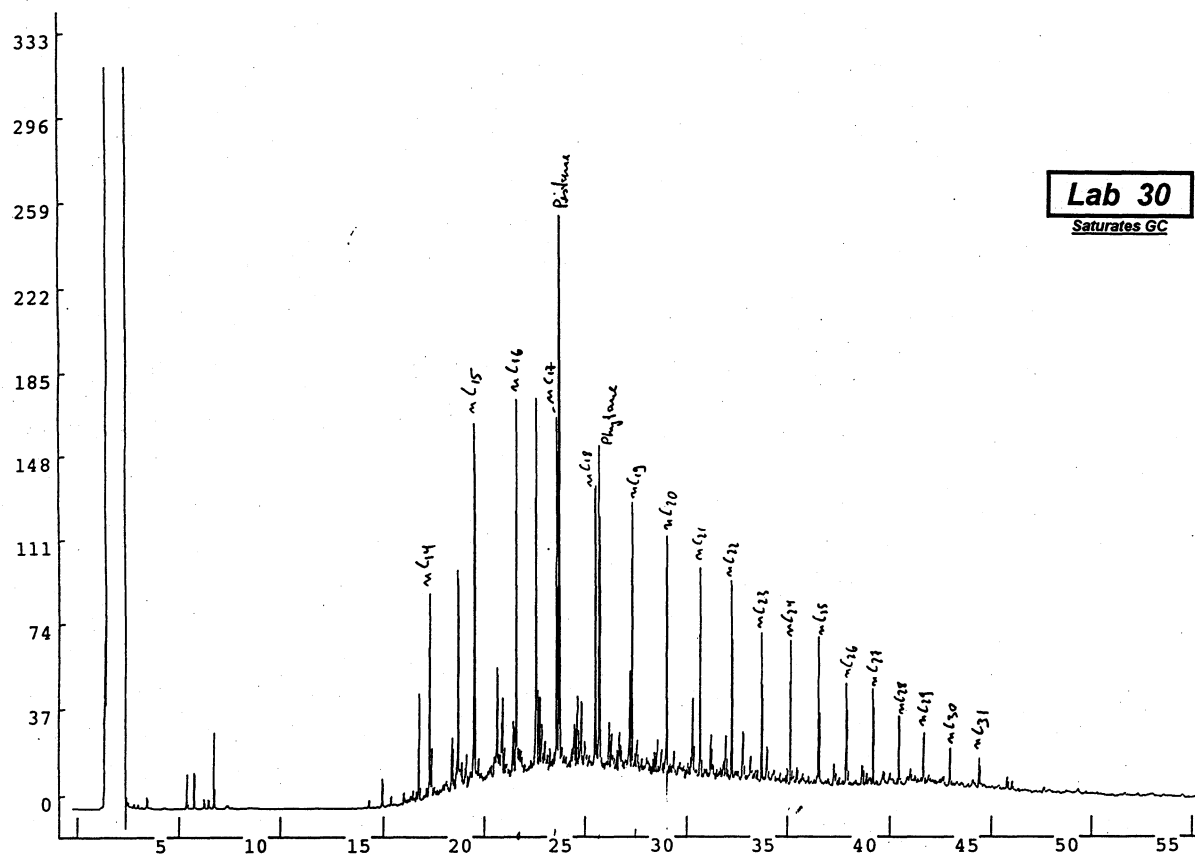
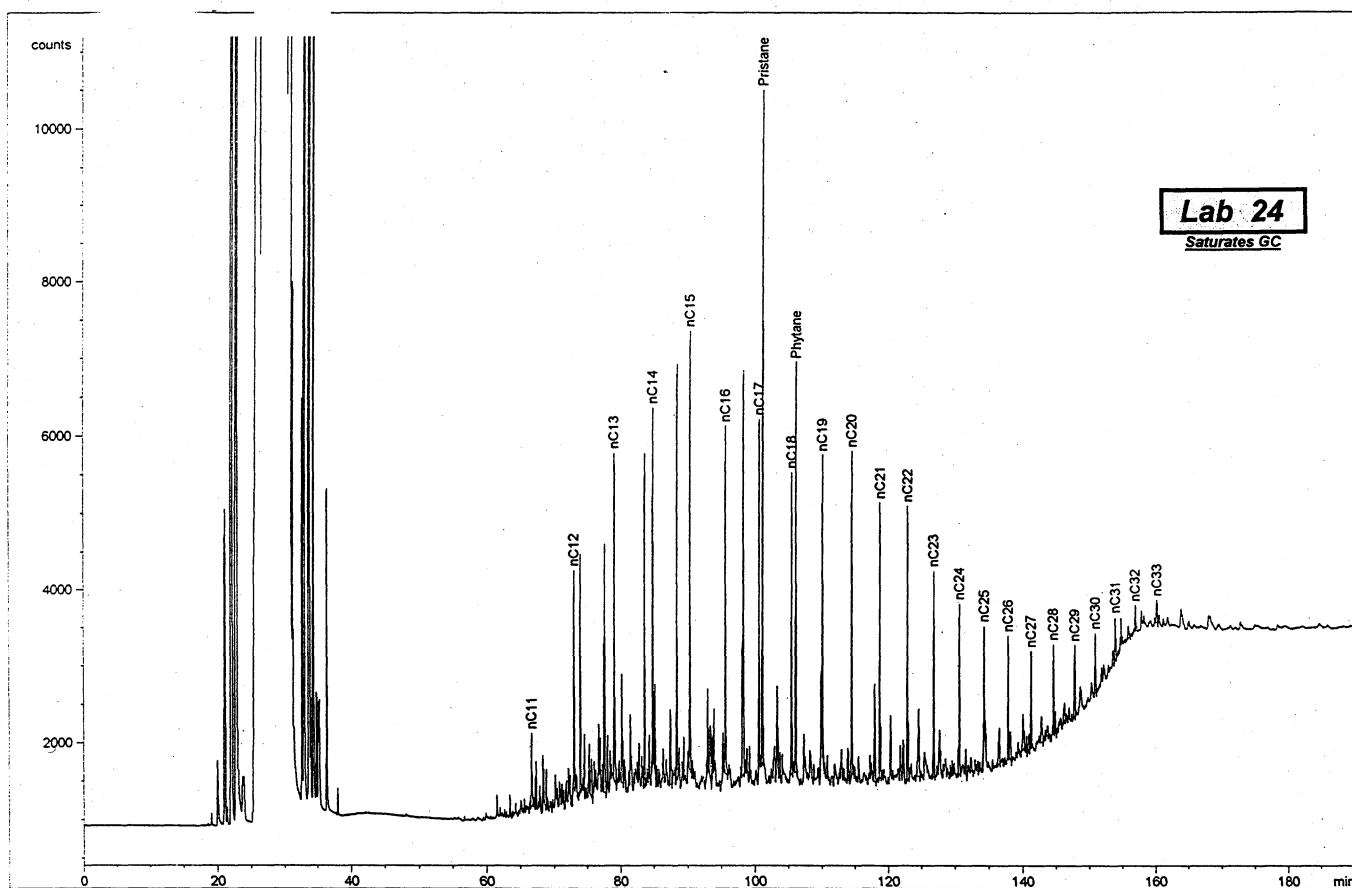
Lab 95
Whole extract GC

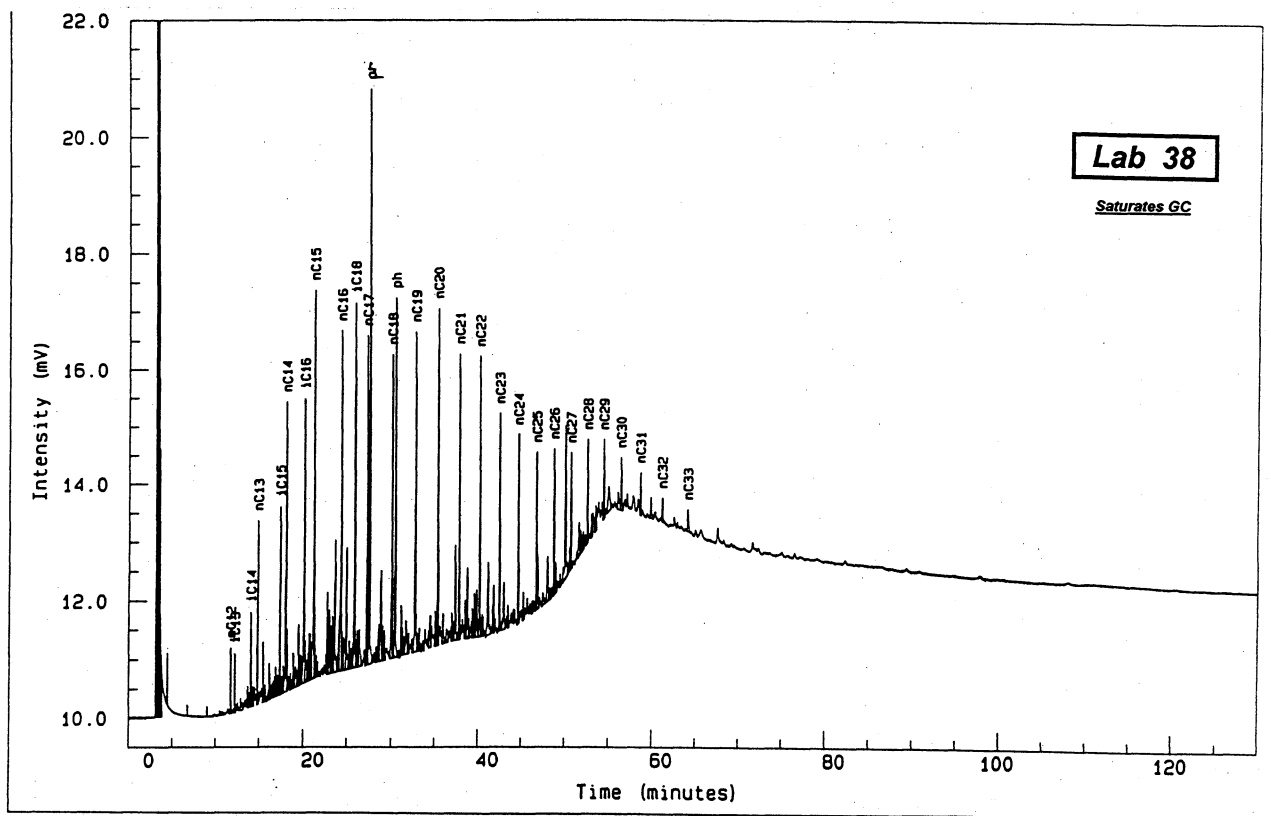
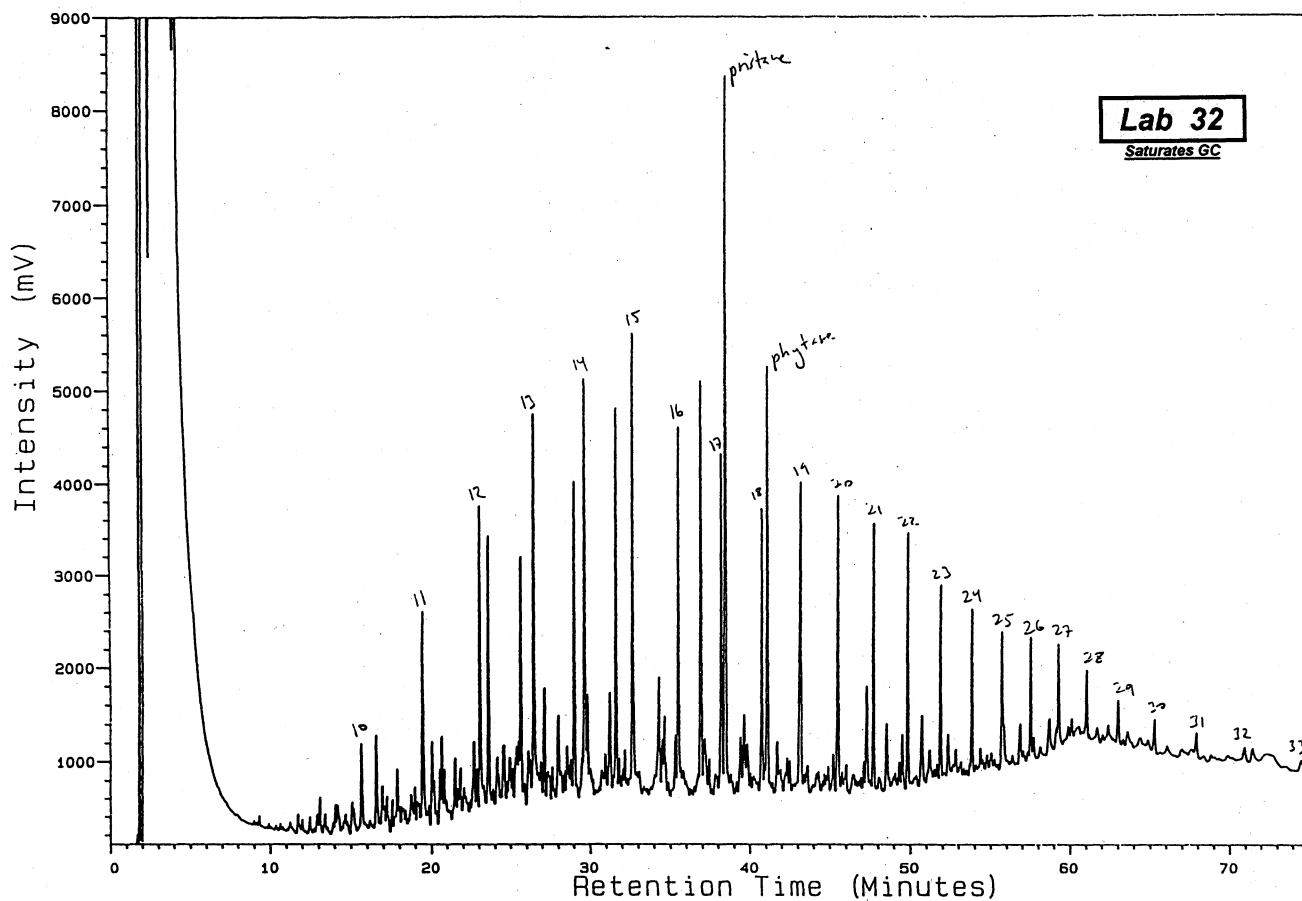
NGS SR-1

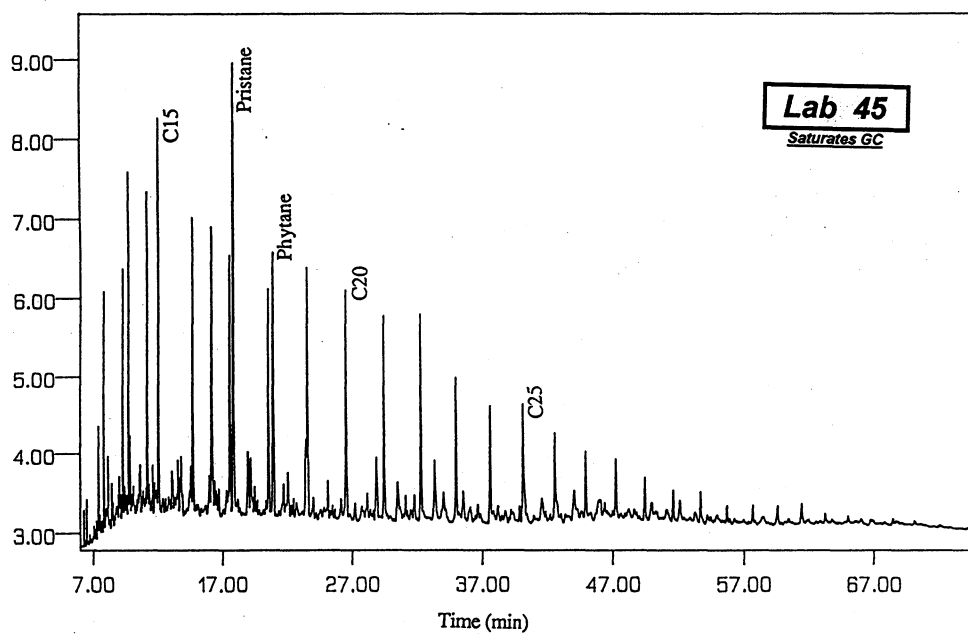
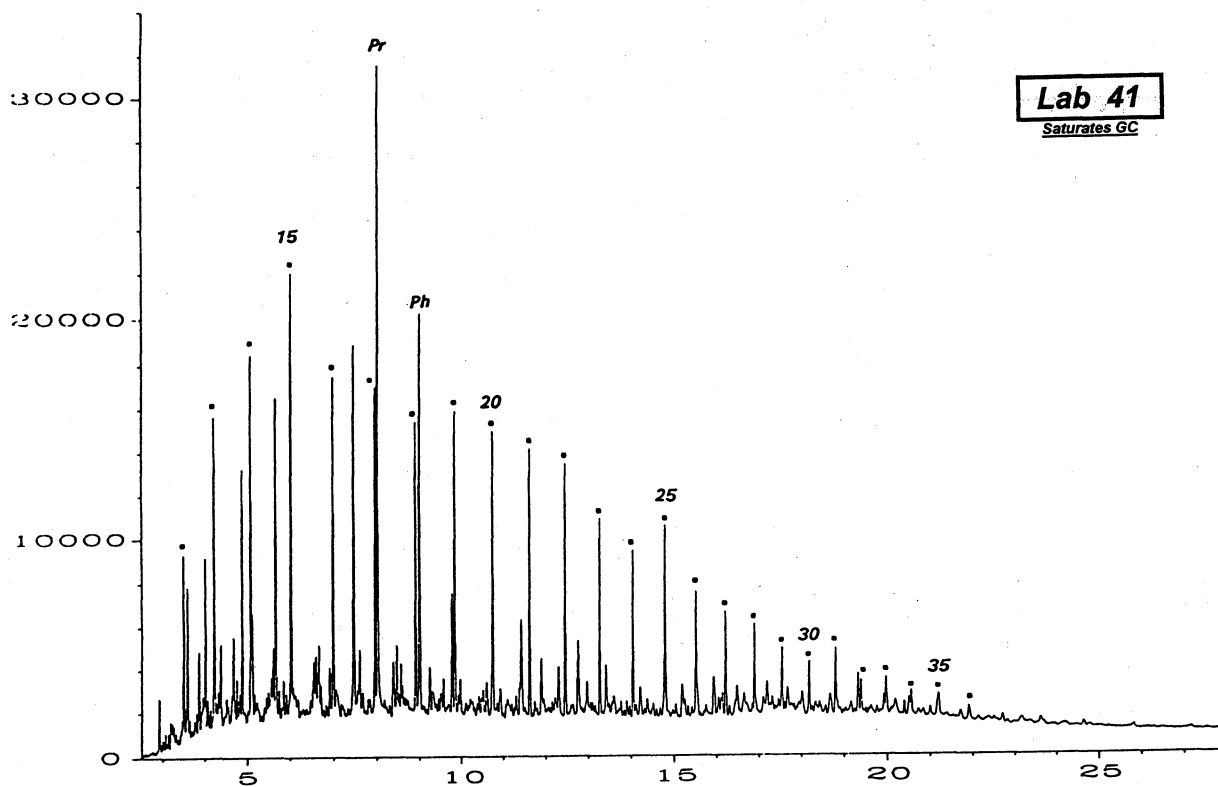
Appendix A5.3b

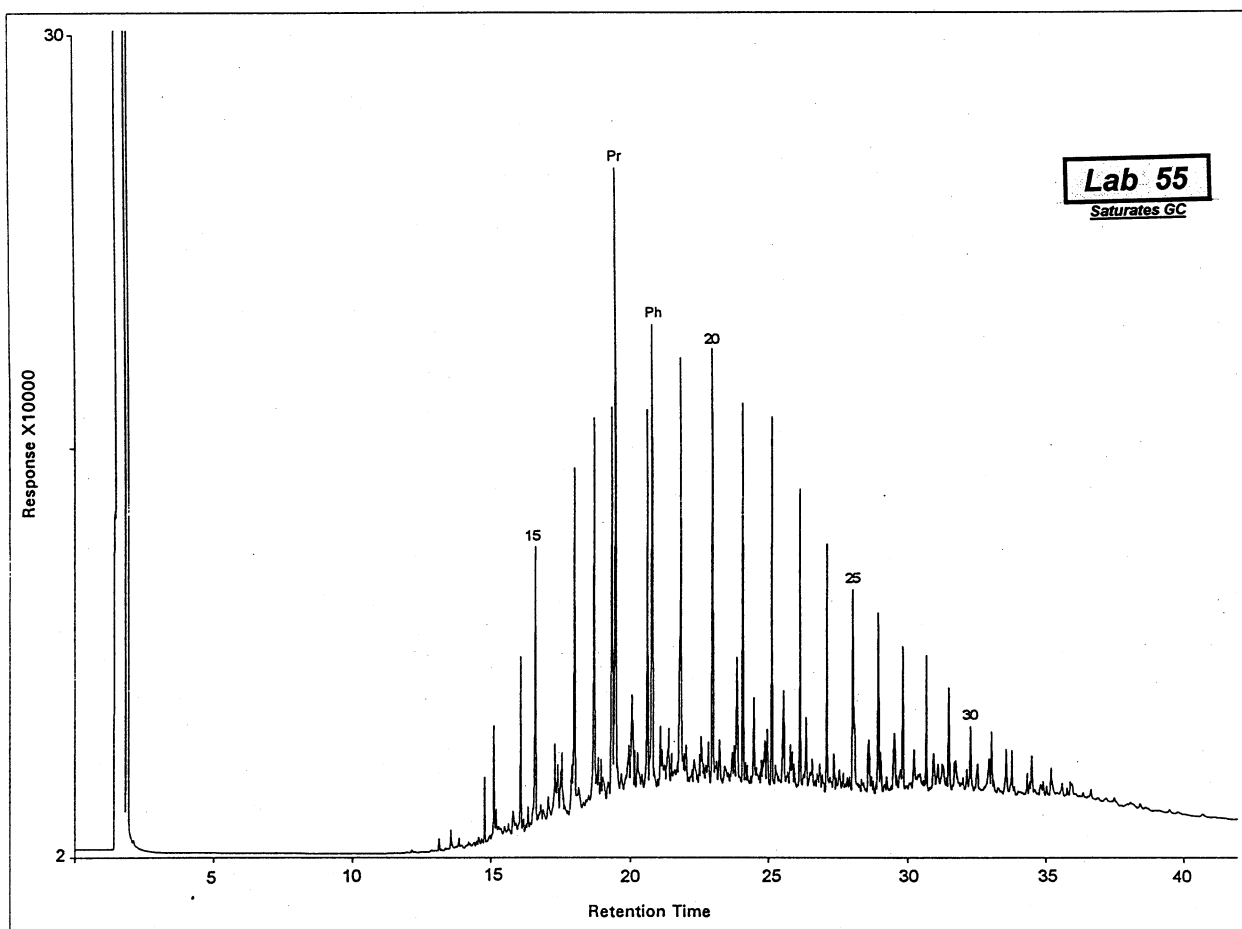
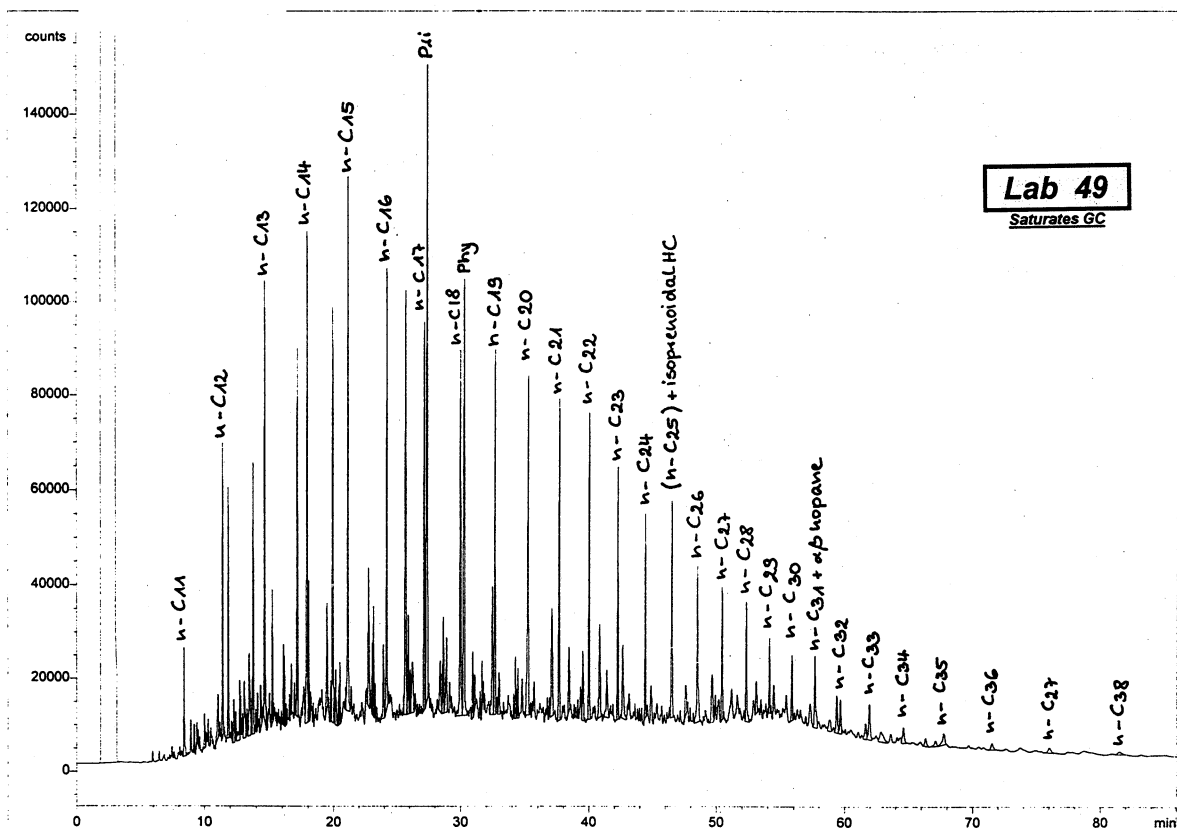
Saturates fraction GC chromatograms



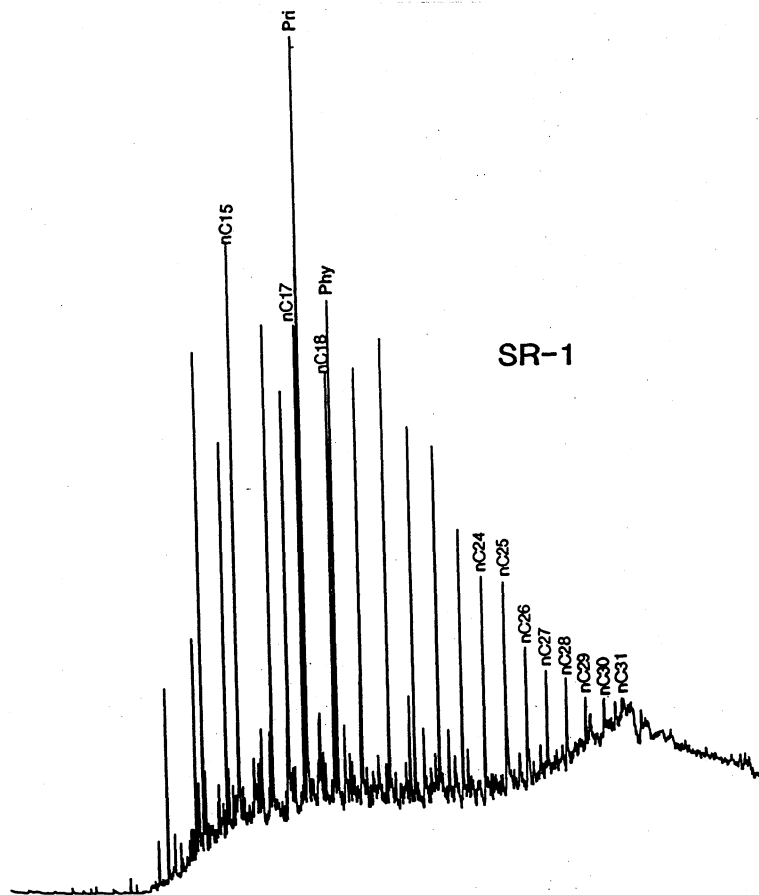




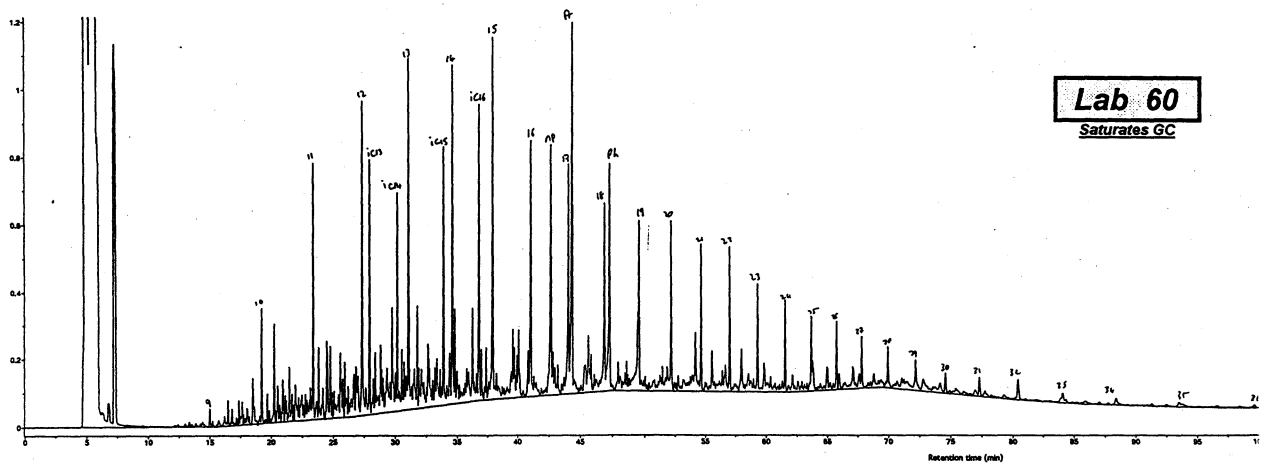


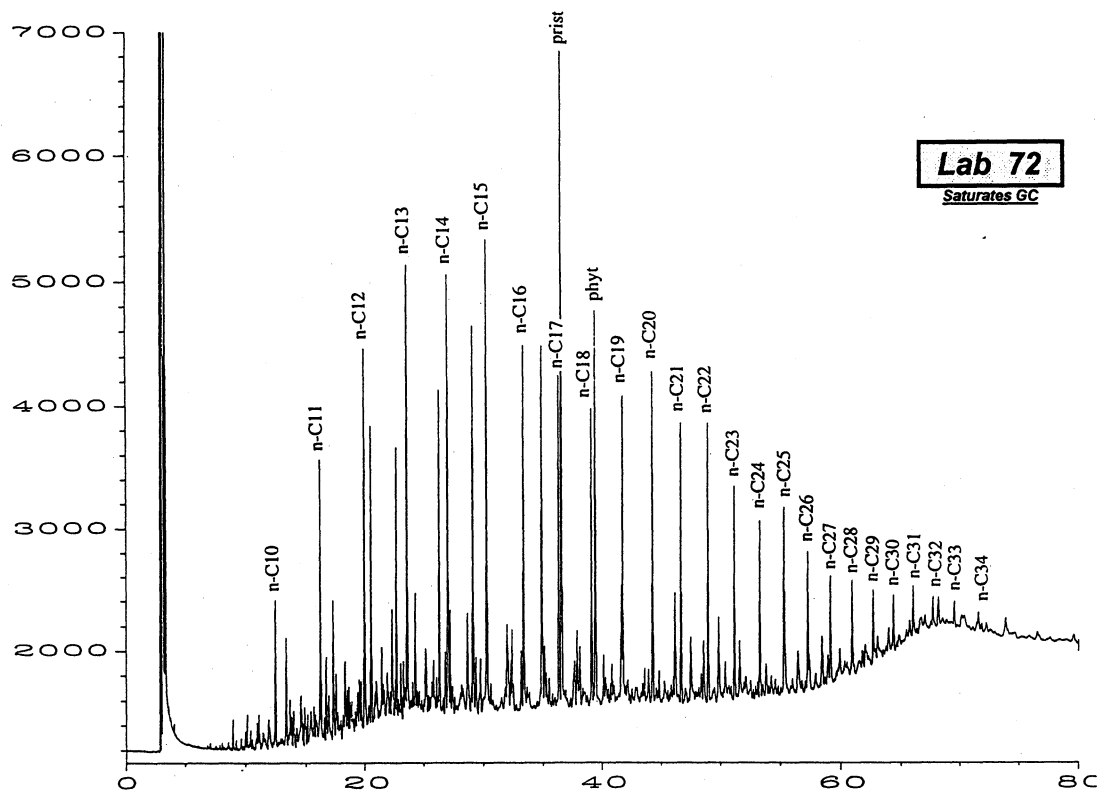
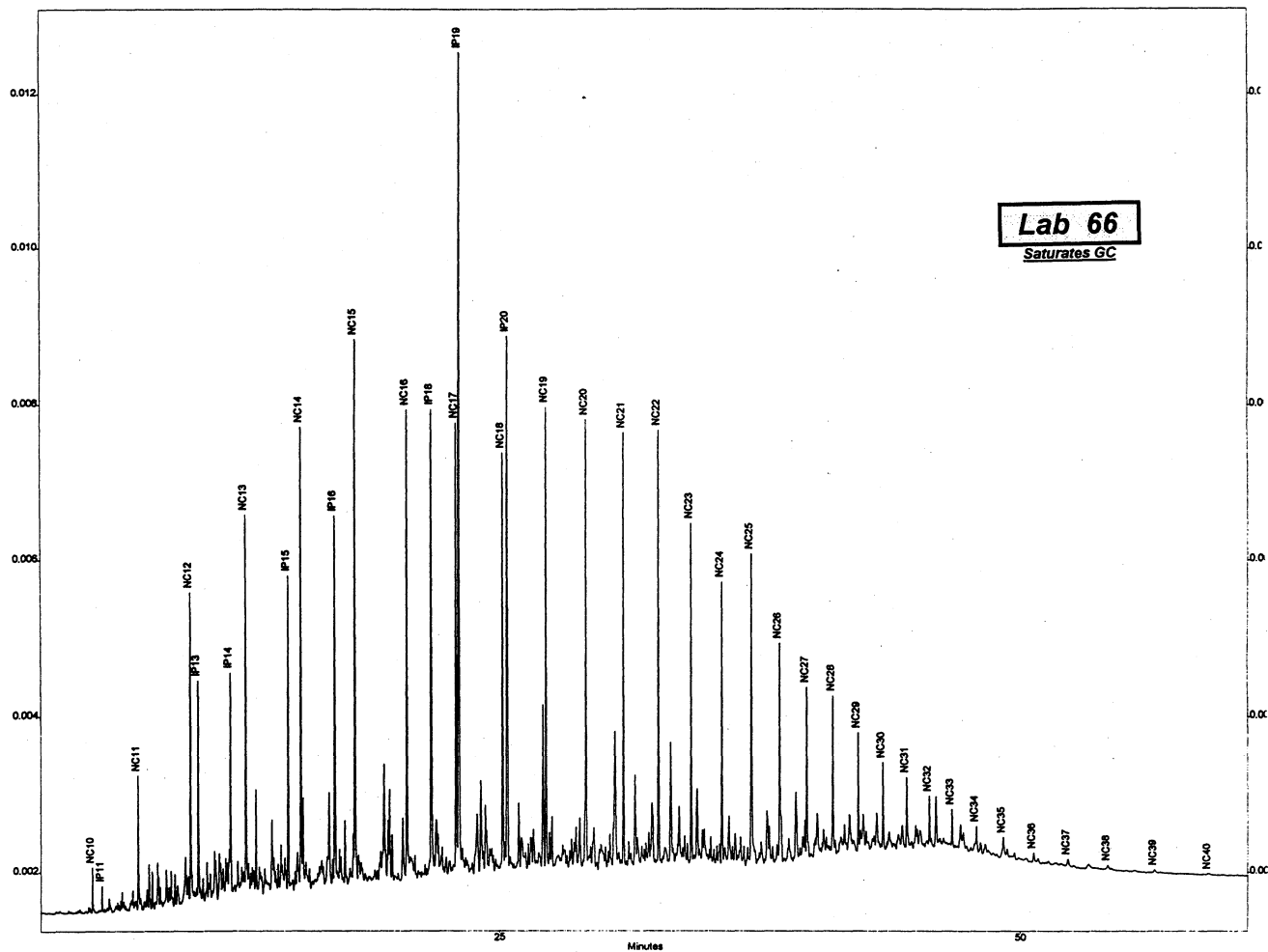


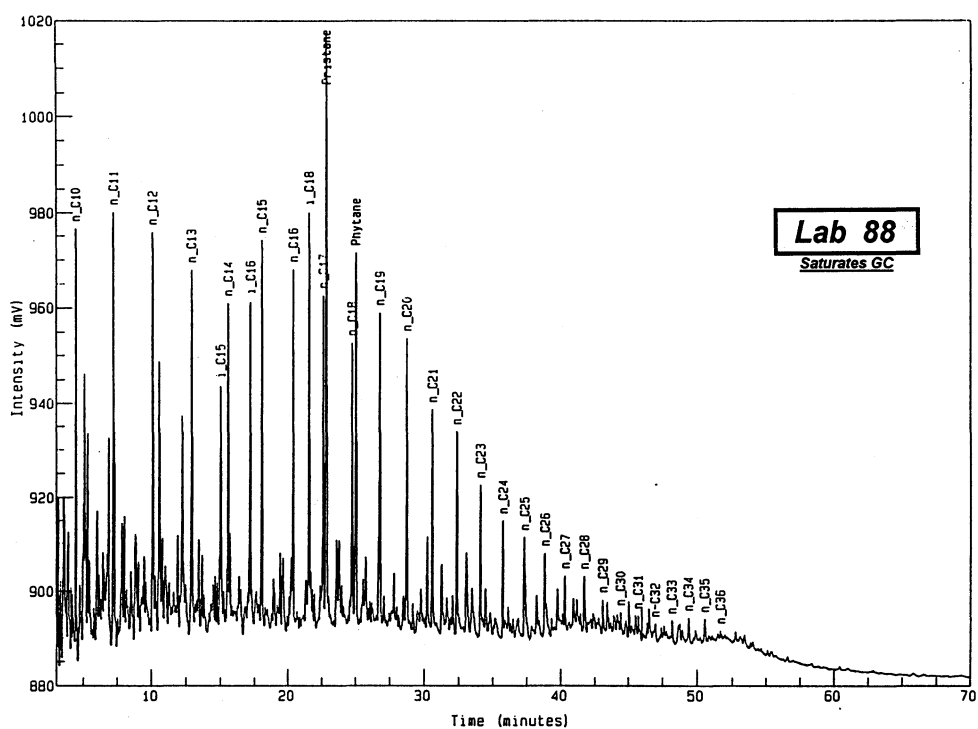
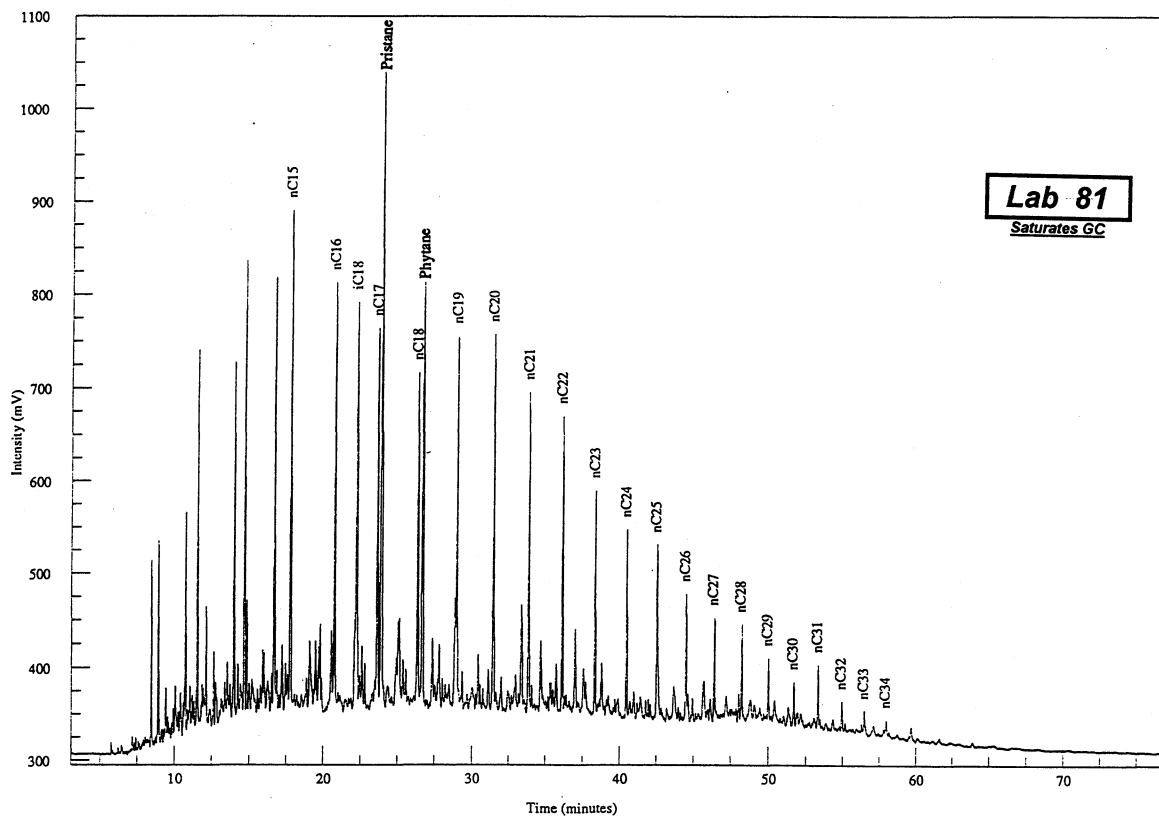
Lab 58
Saturates GC

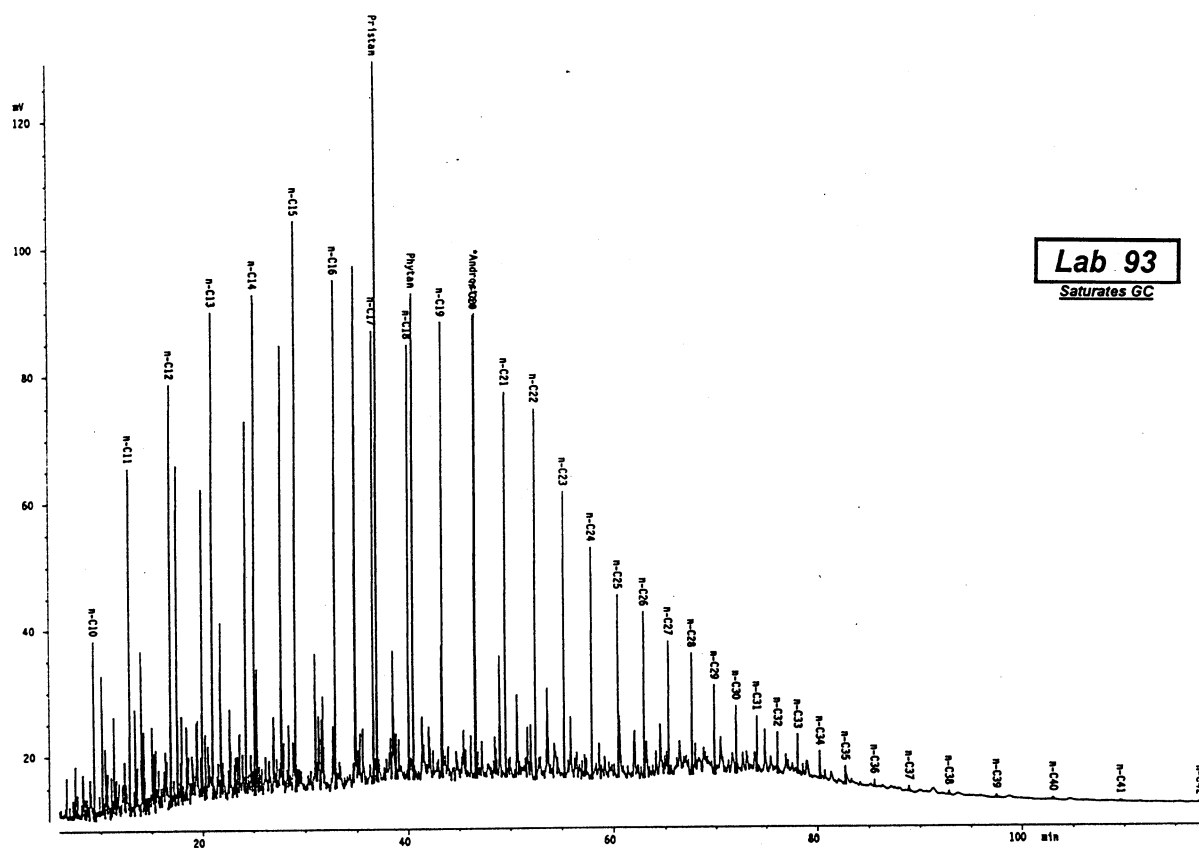
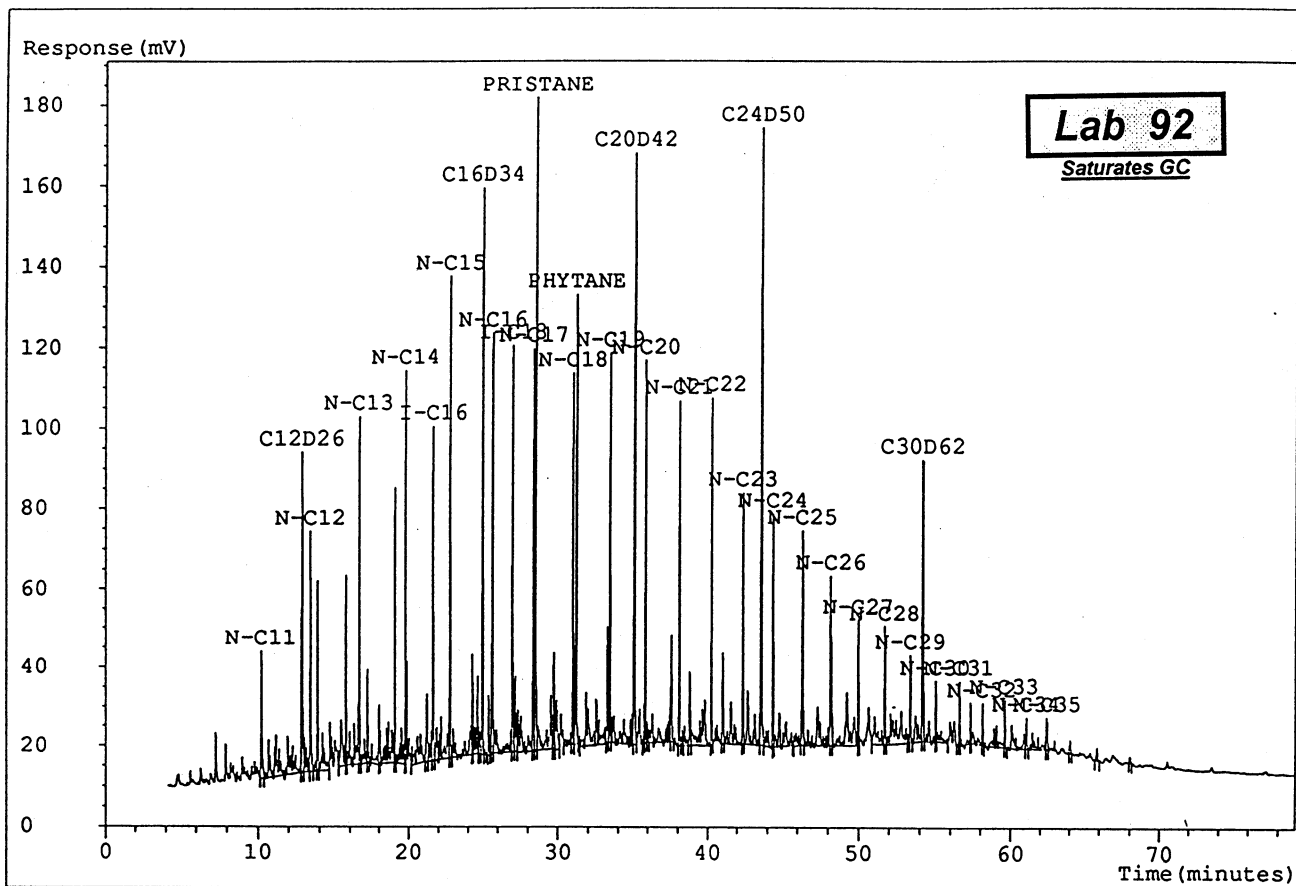


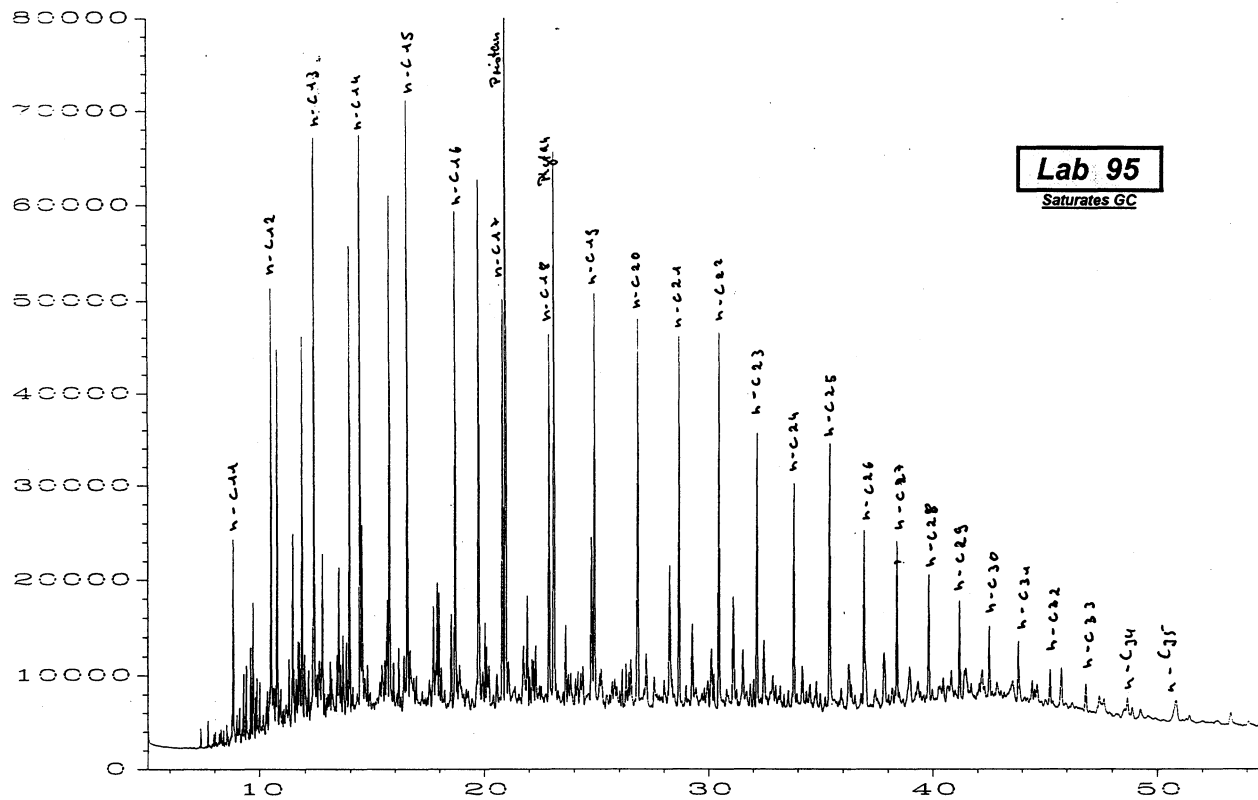
Lab 60
Saturates GC









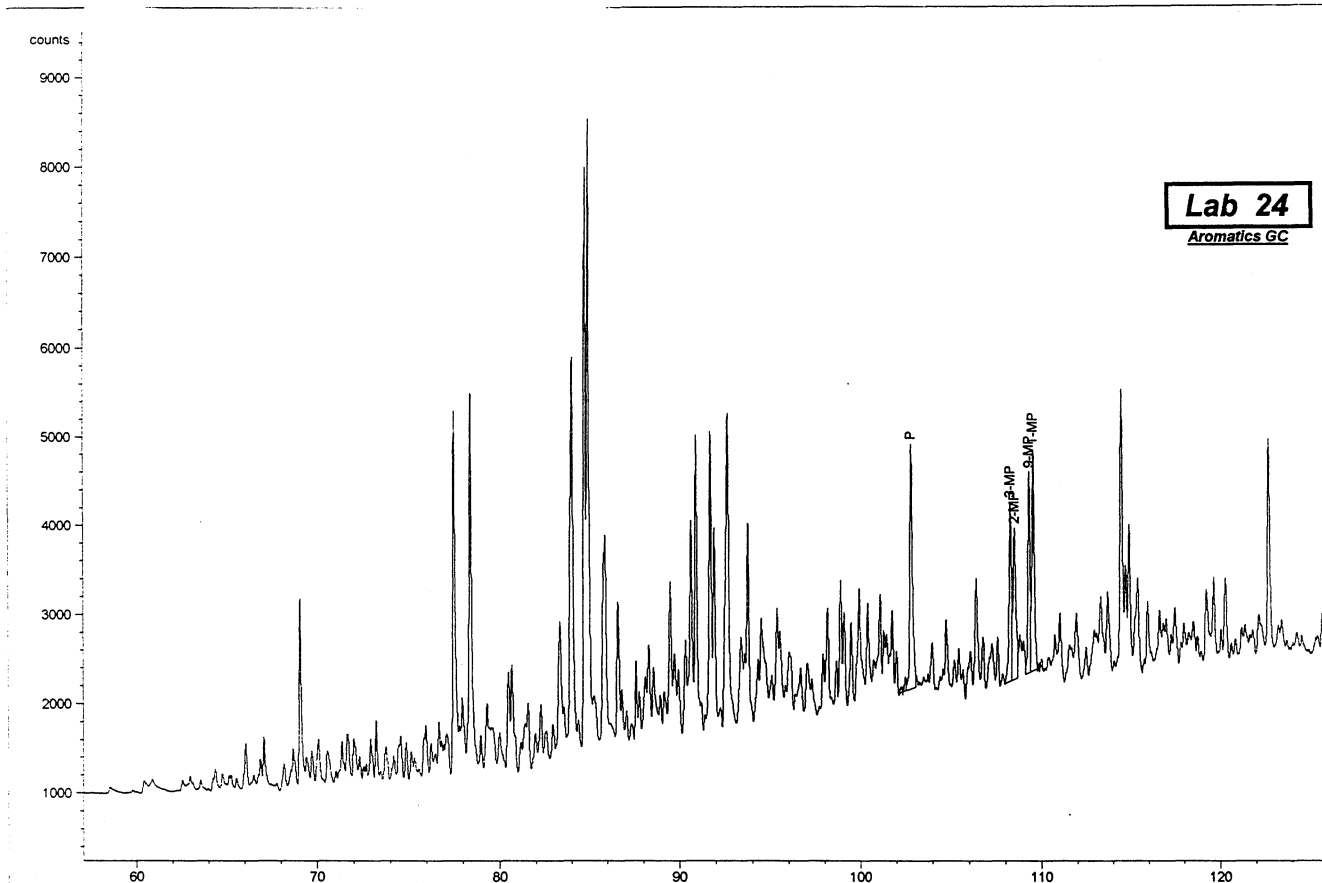
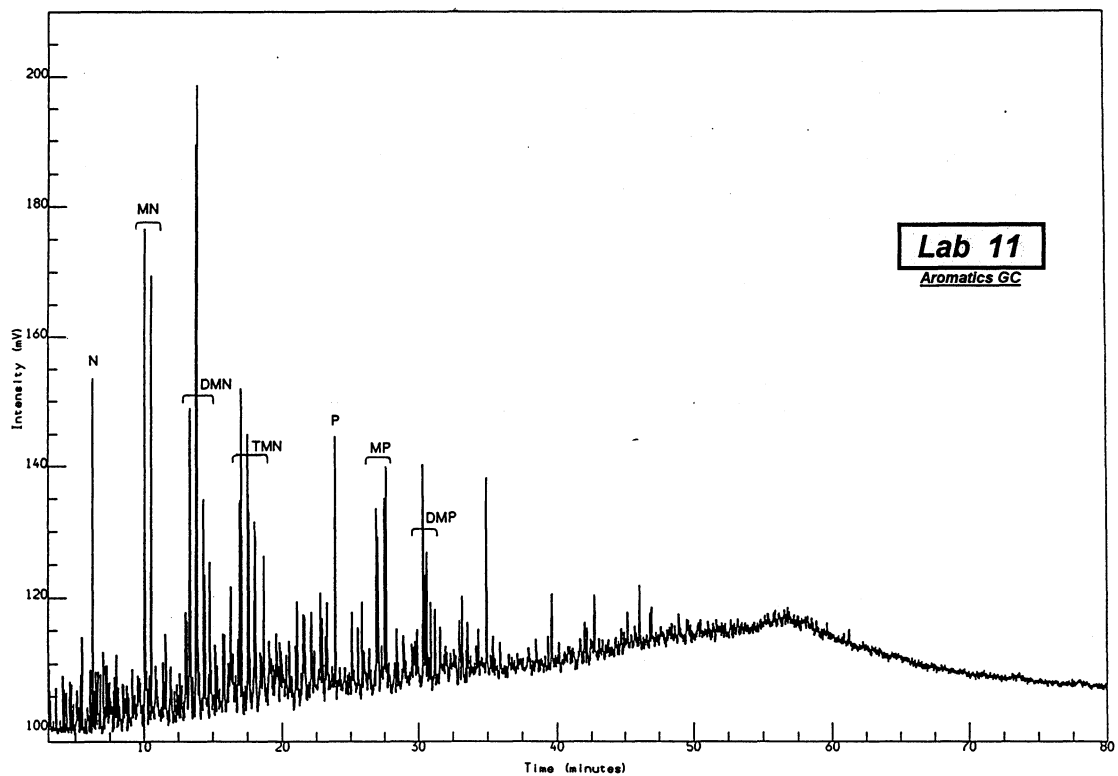


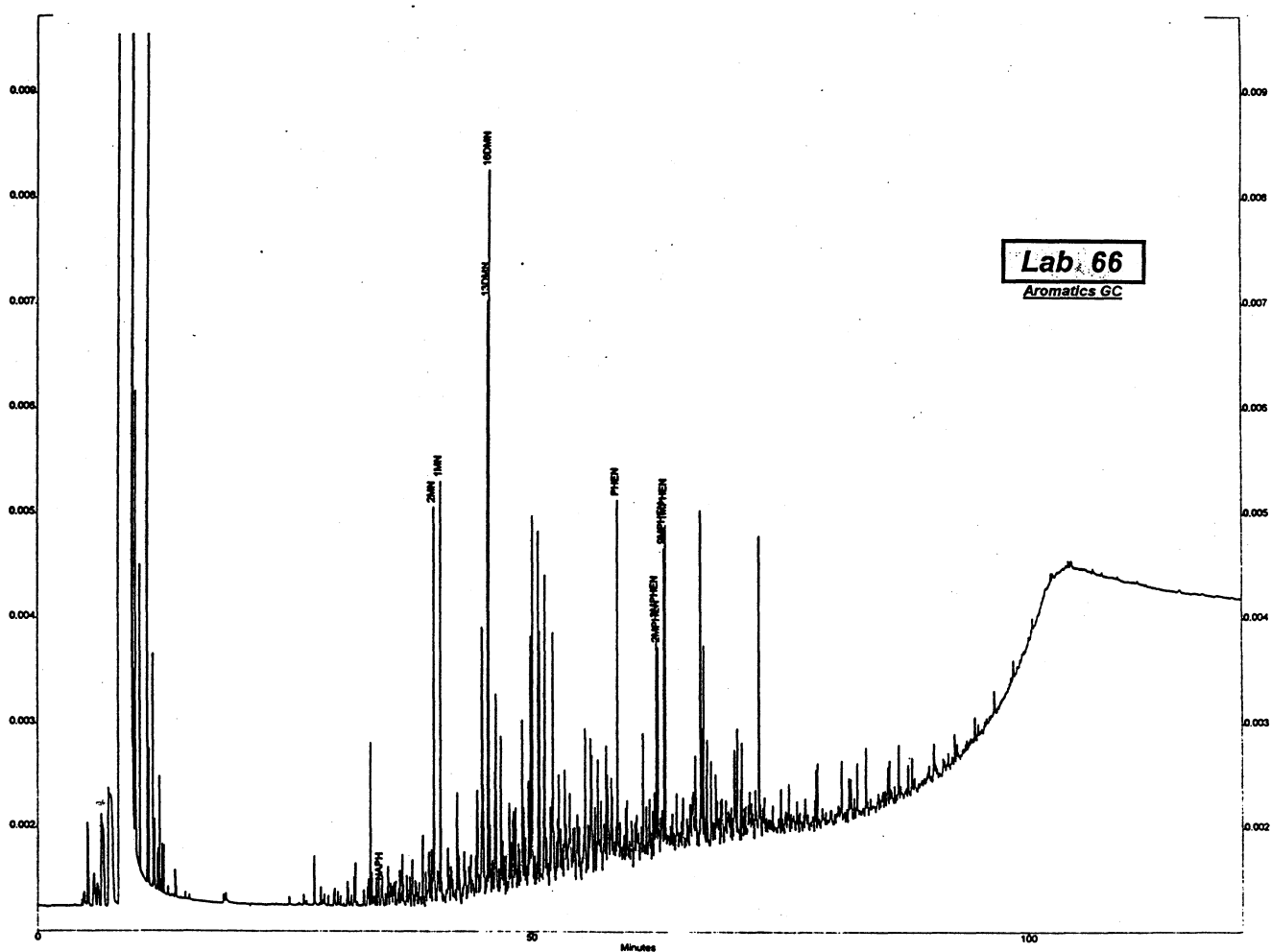
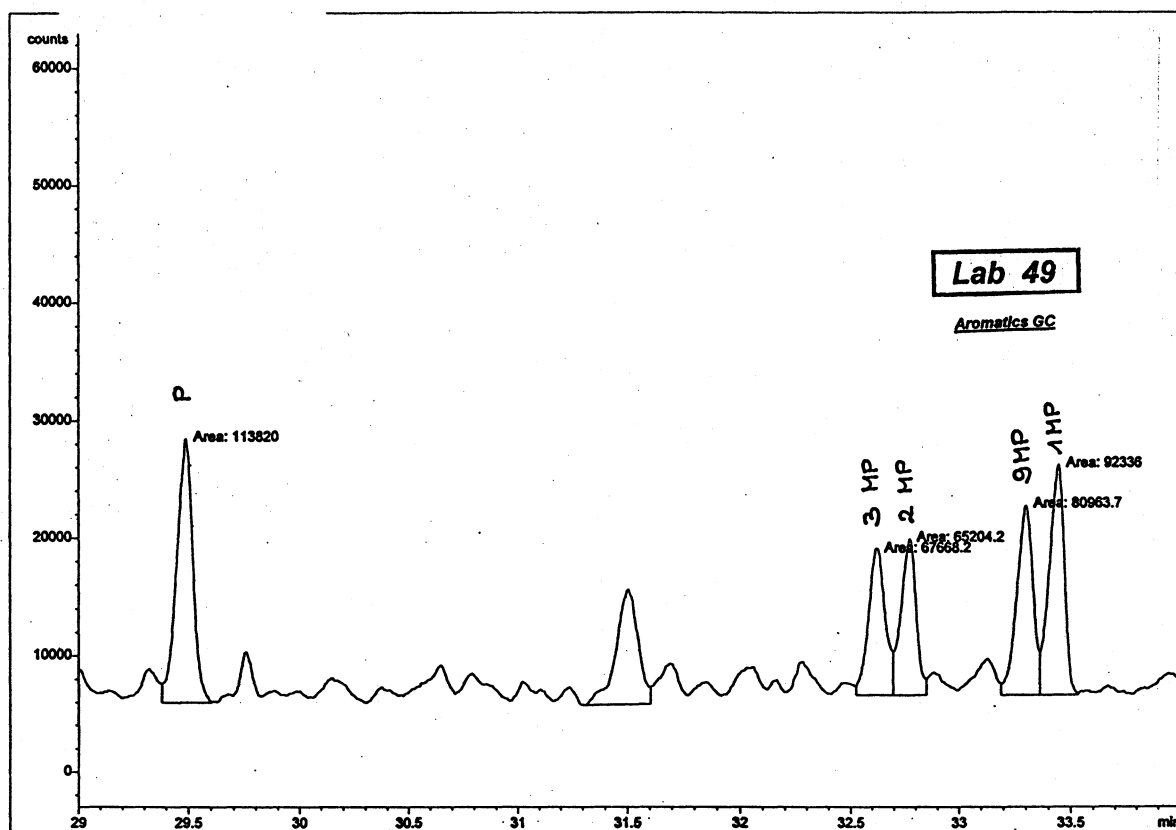
Lab 95
Saturates GC

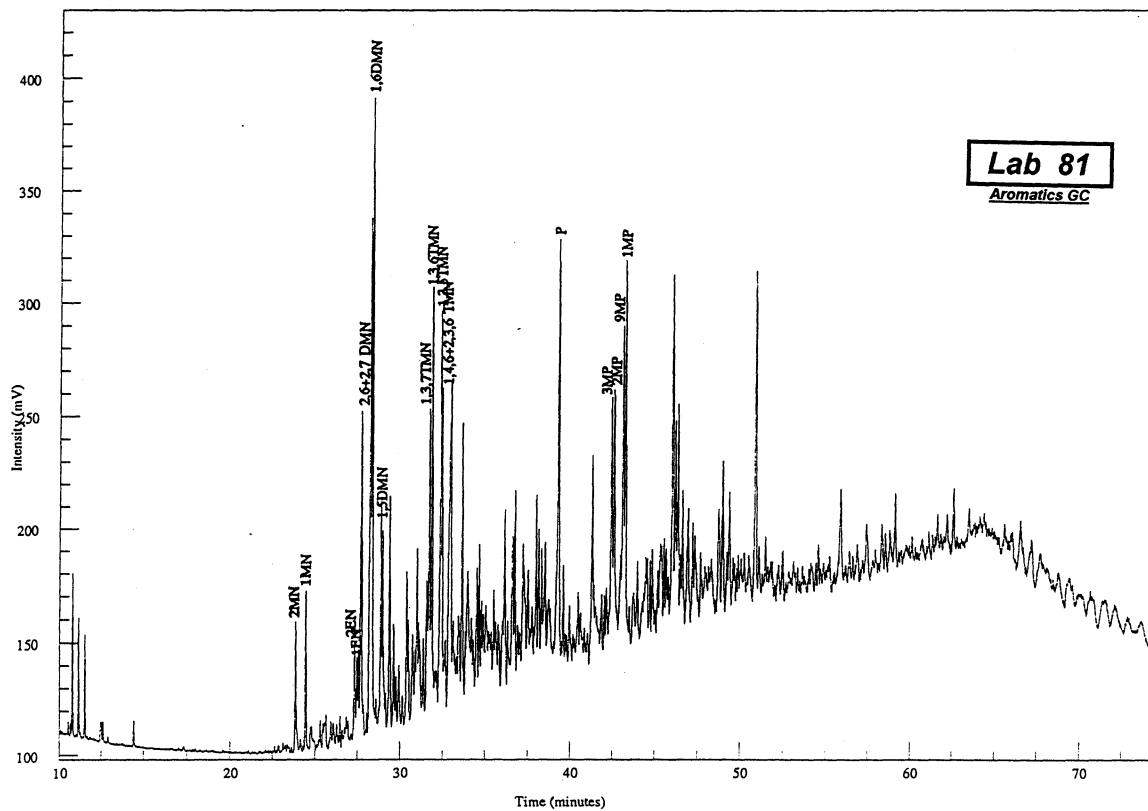
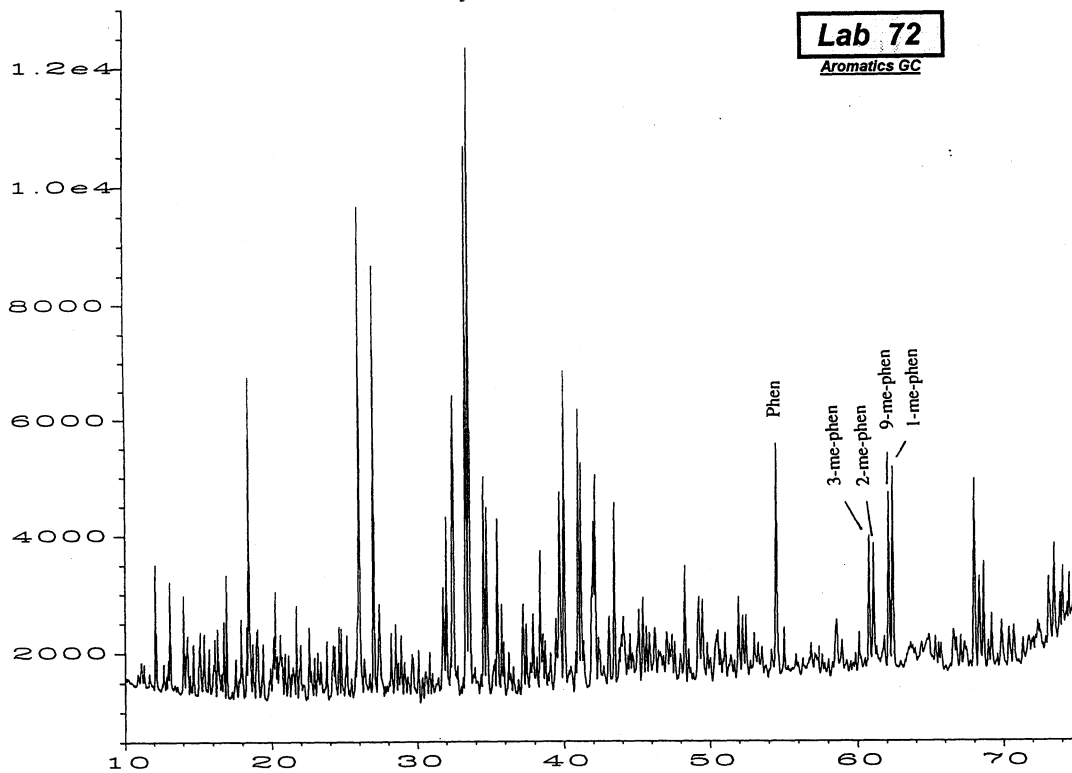
NGS SR-1

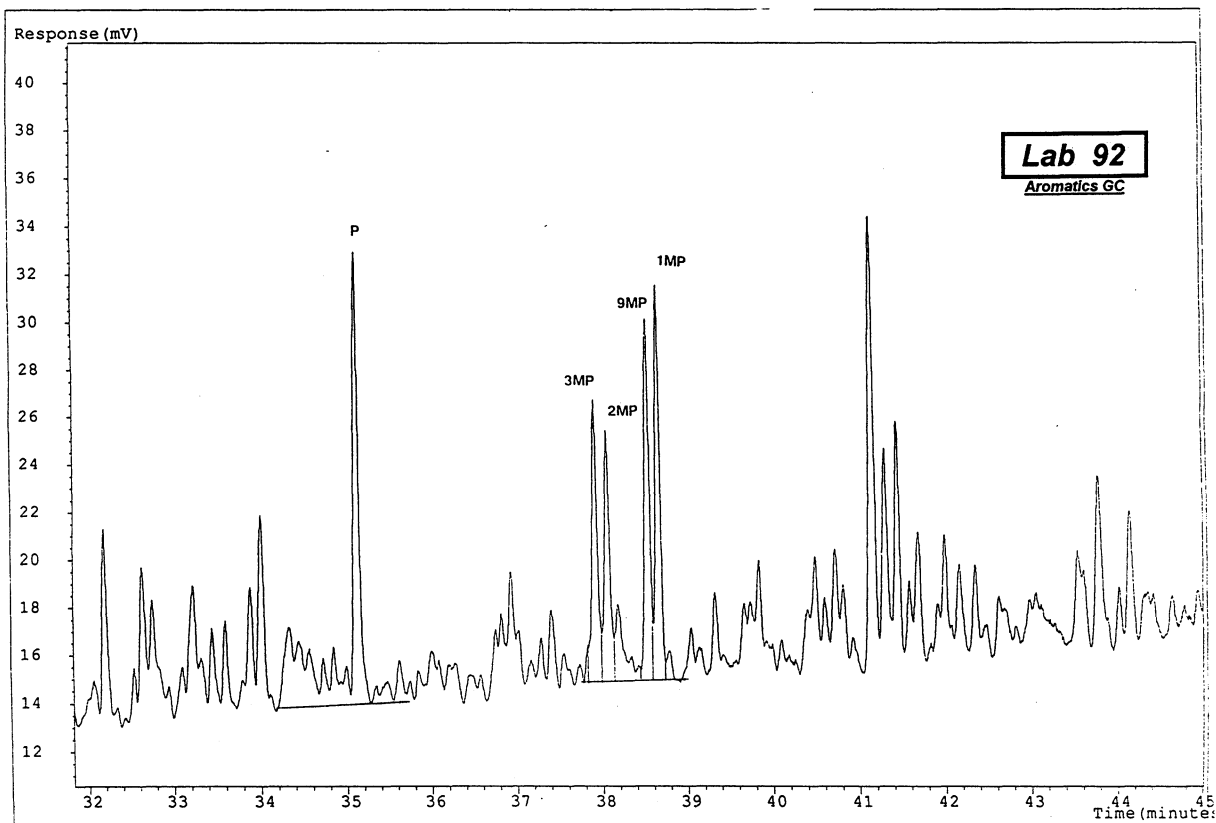
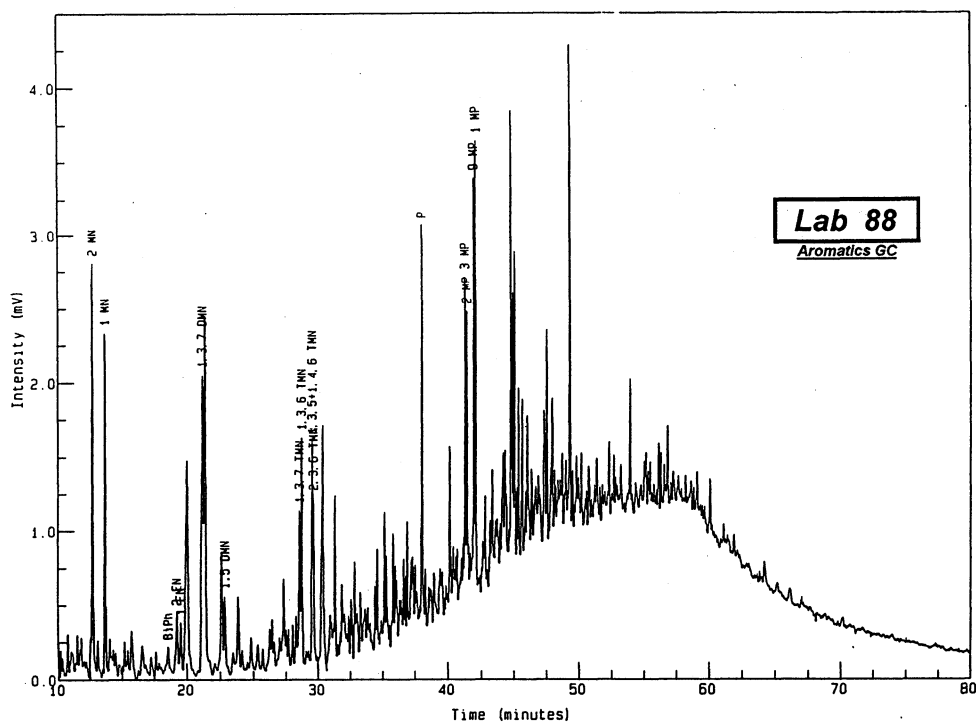
Appendix A5.3c

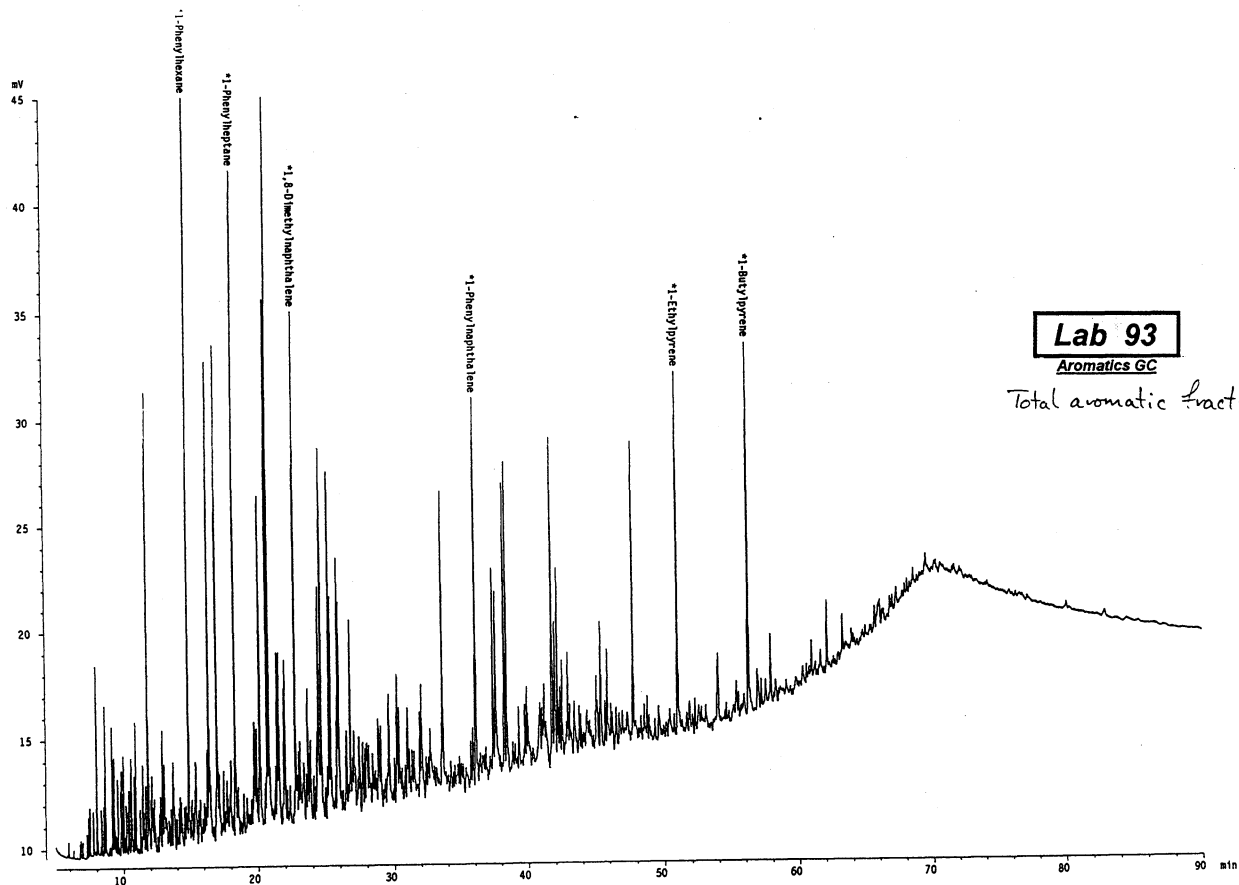
Aromatic fraction GC chromatograms





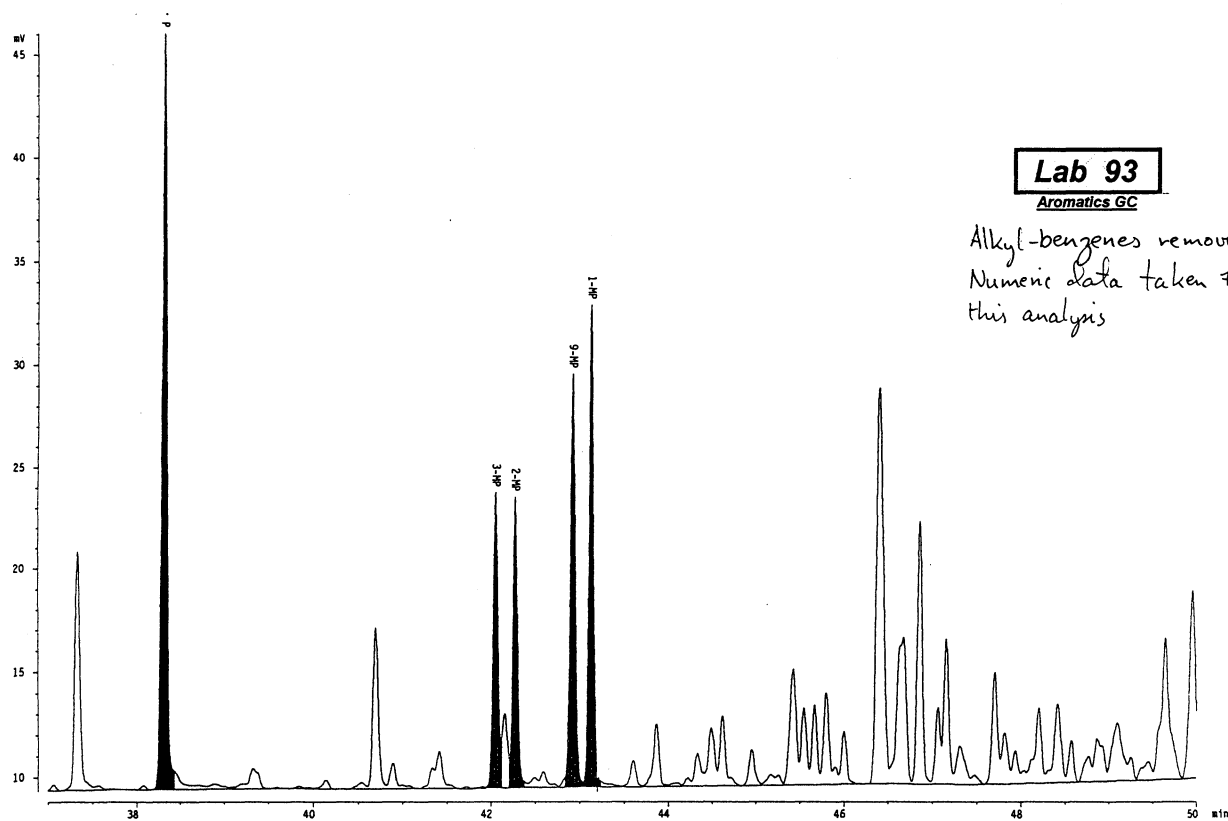






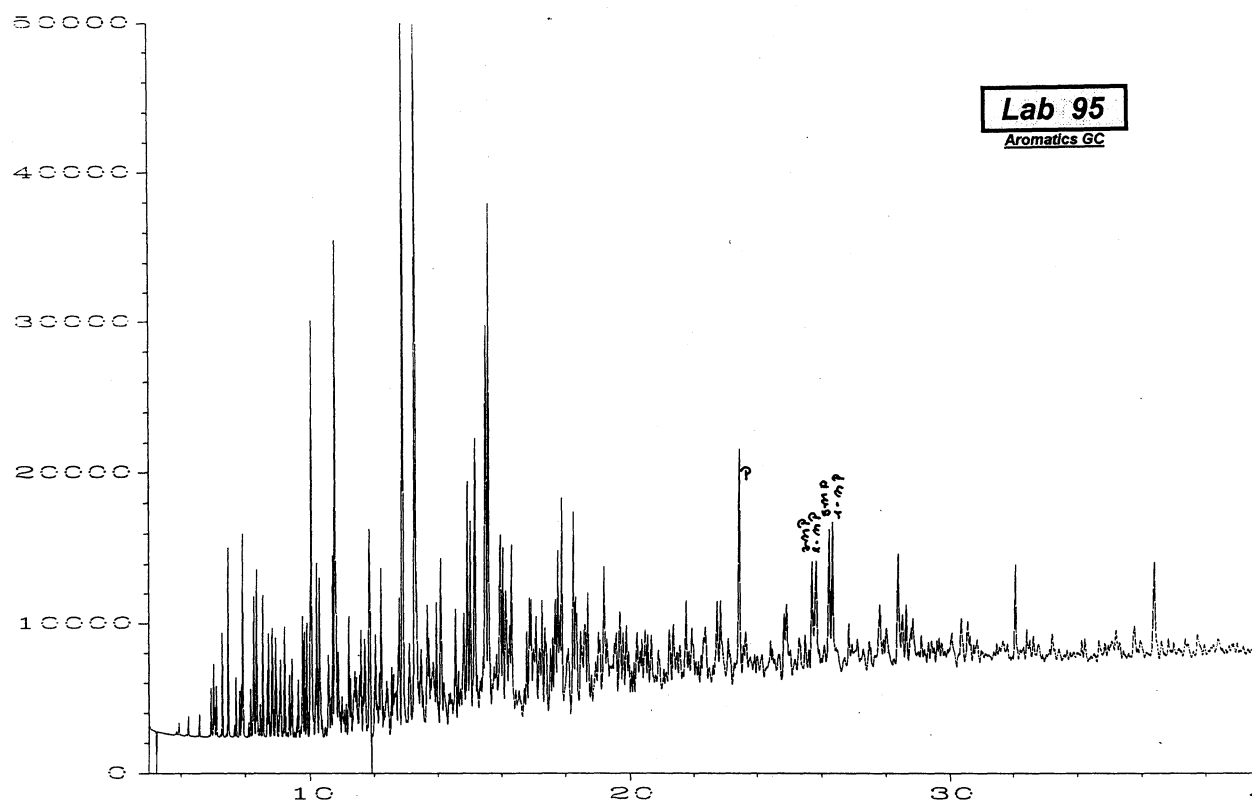
Lab 93
Aromatics GC

Total aromatic fraction



Lab 93
Aromatics GC

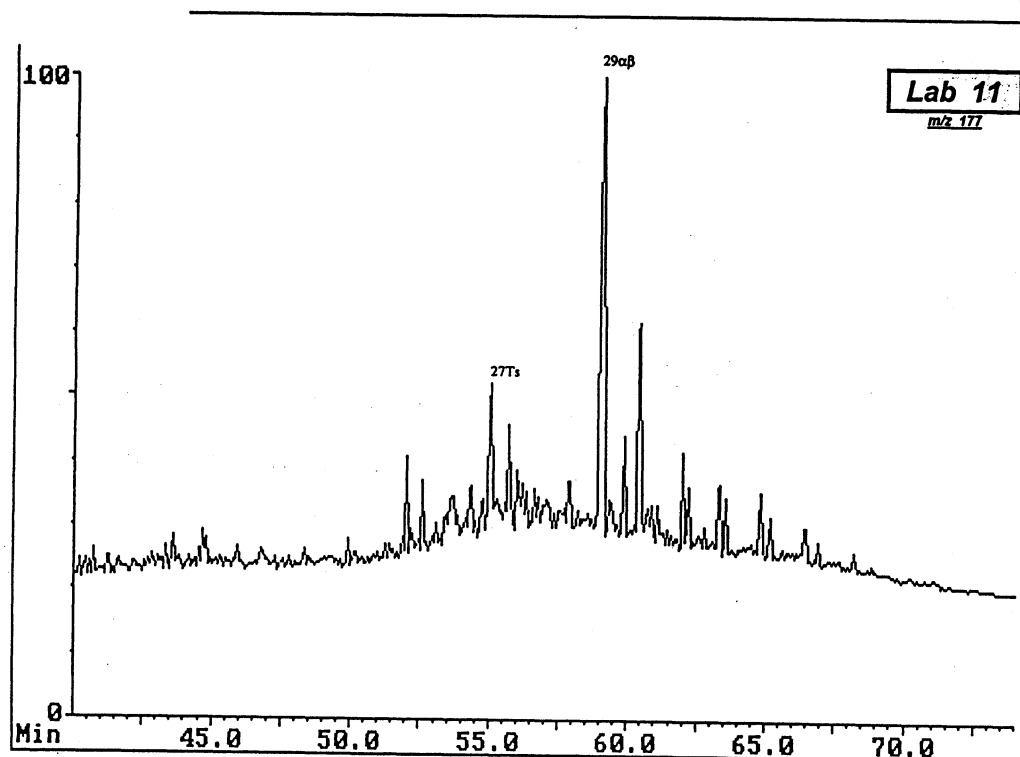
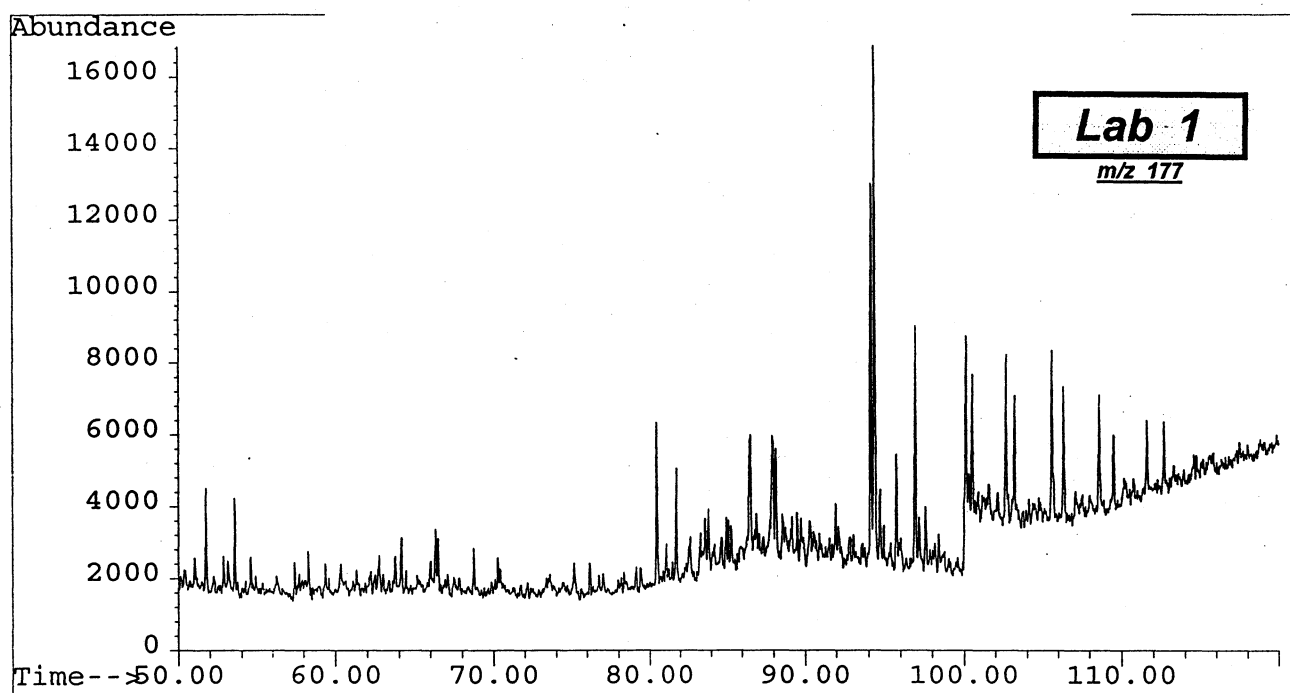
Alkyl-benzenes removed
Numeric data taken from
this analysis

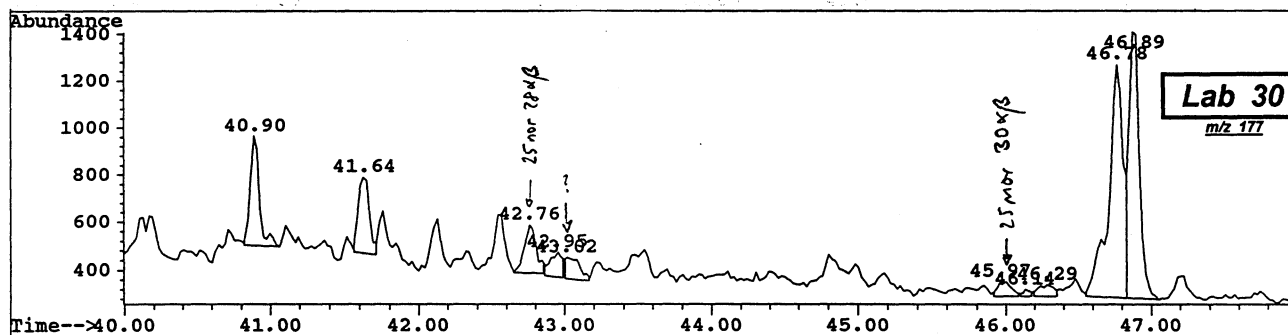
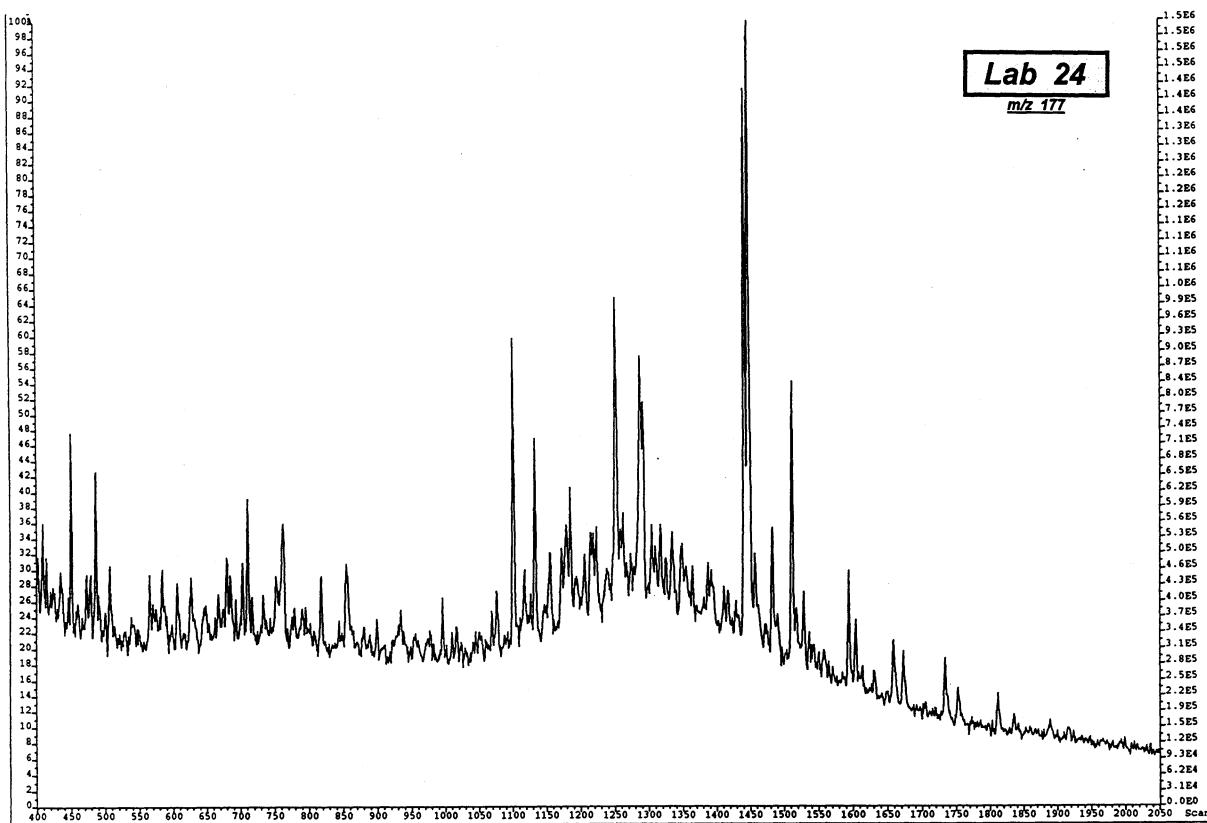


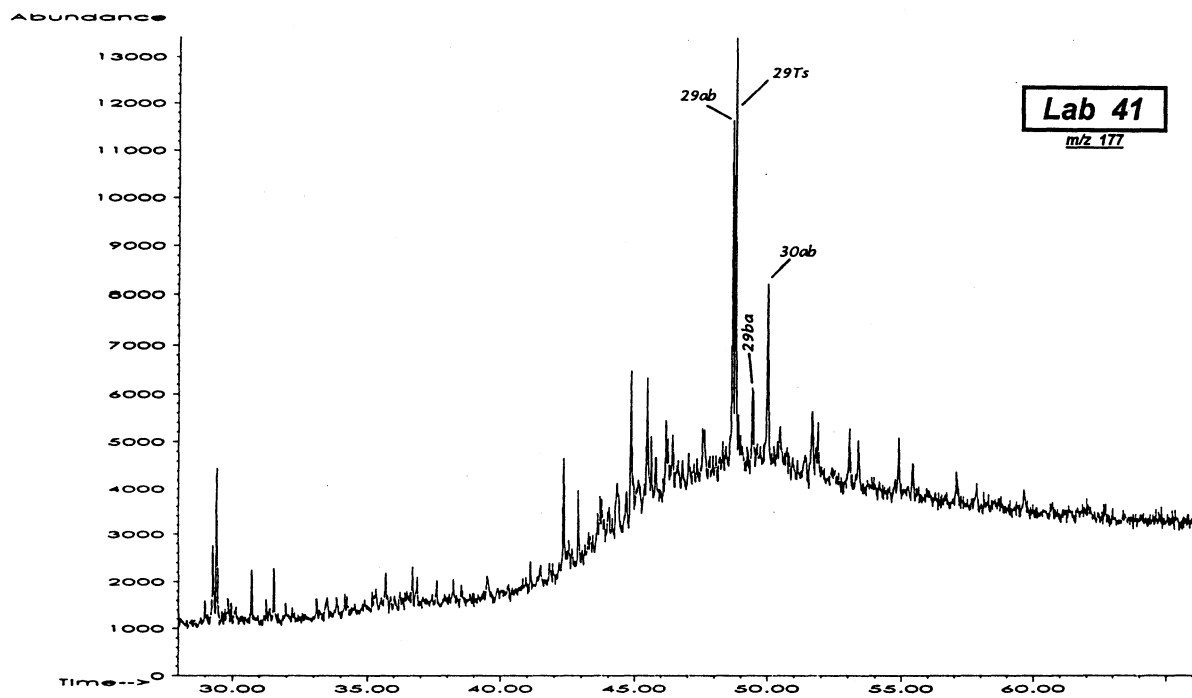
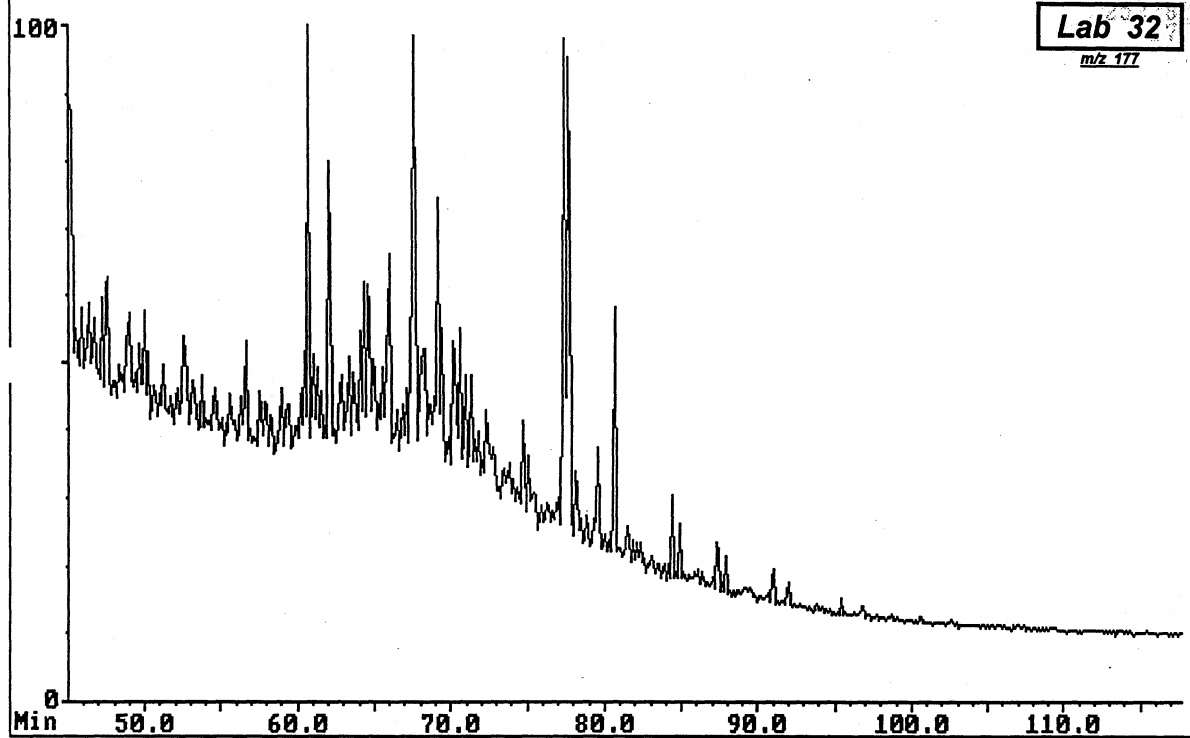
NGS SR-1

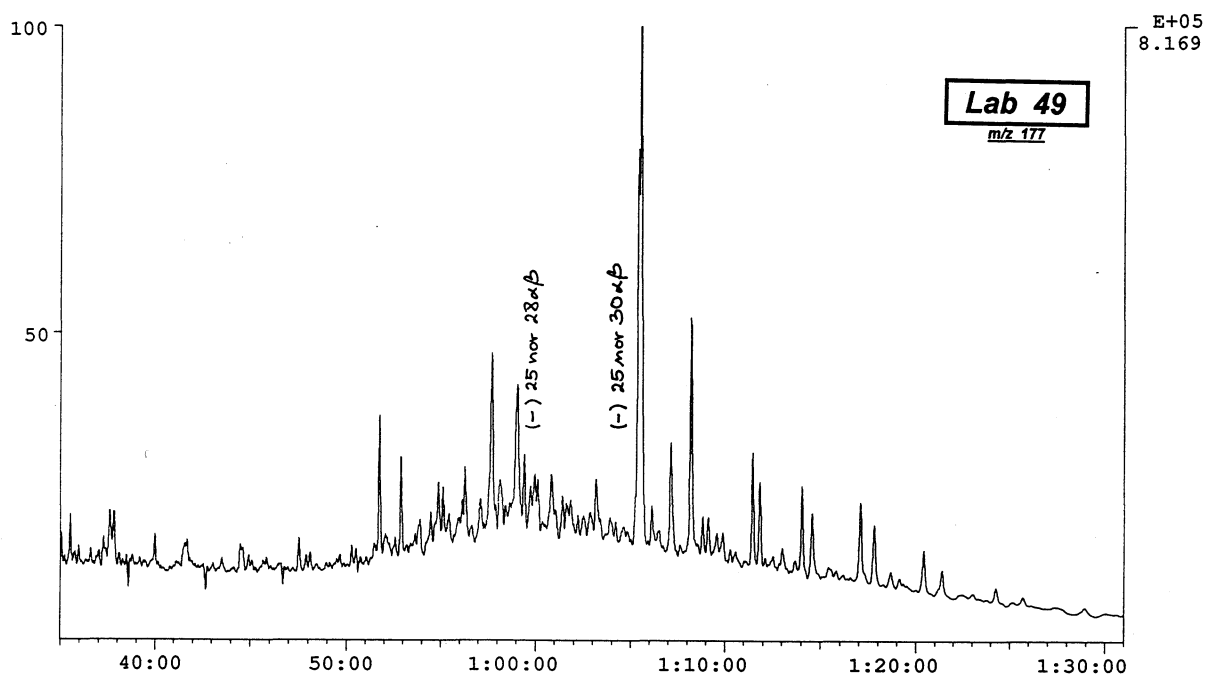
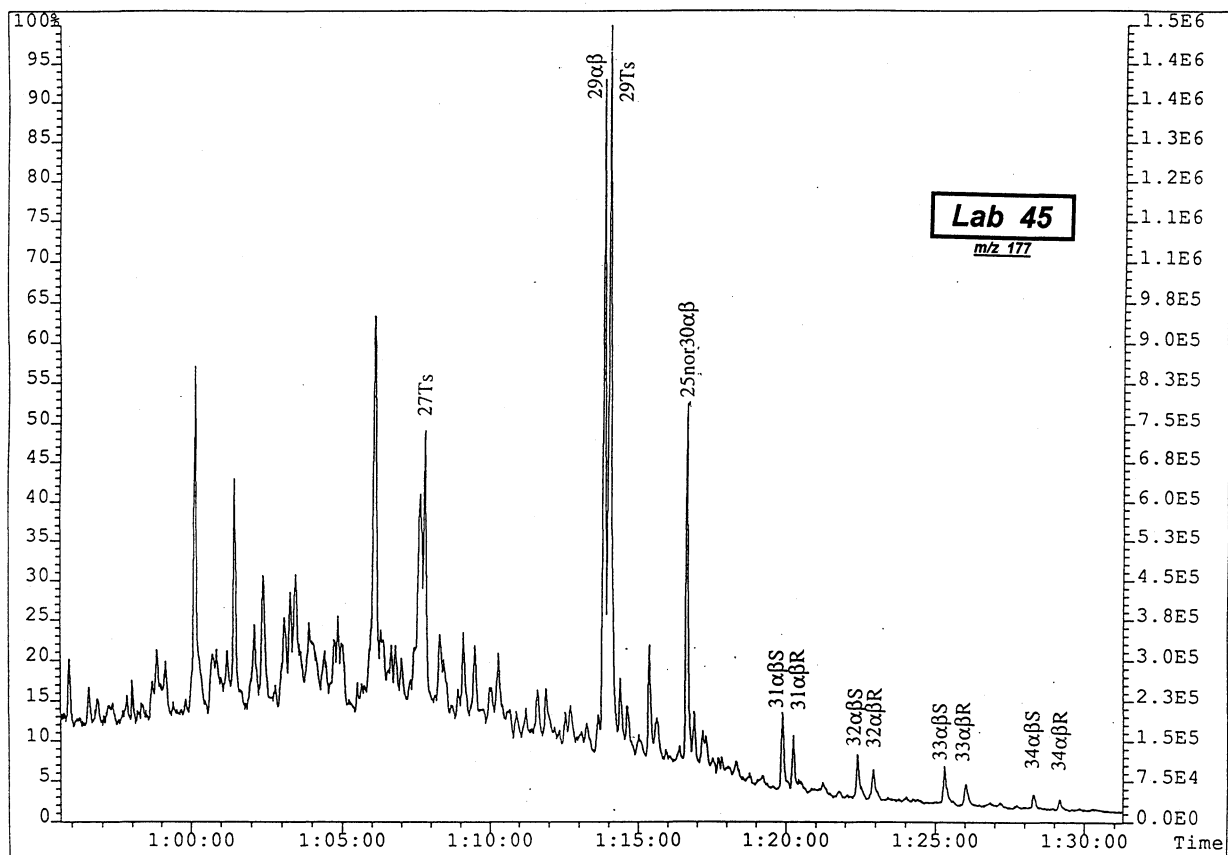
Appendix A5.4a-1

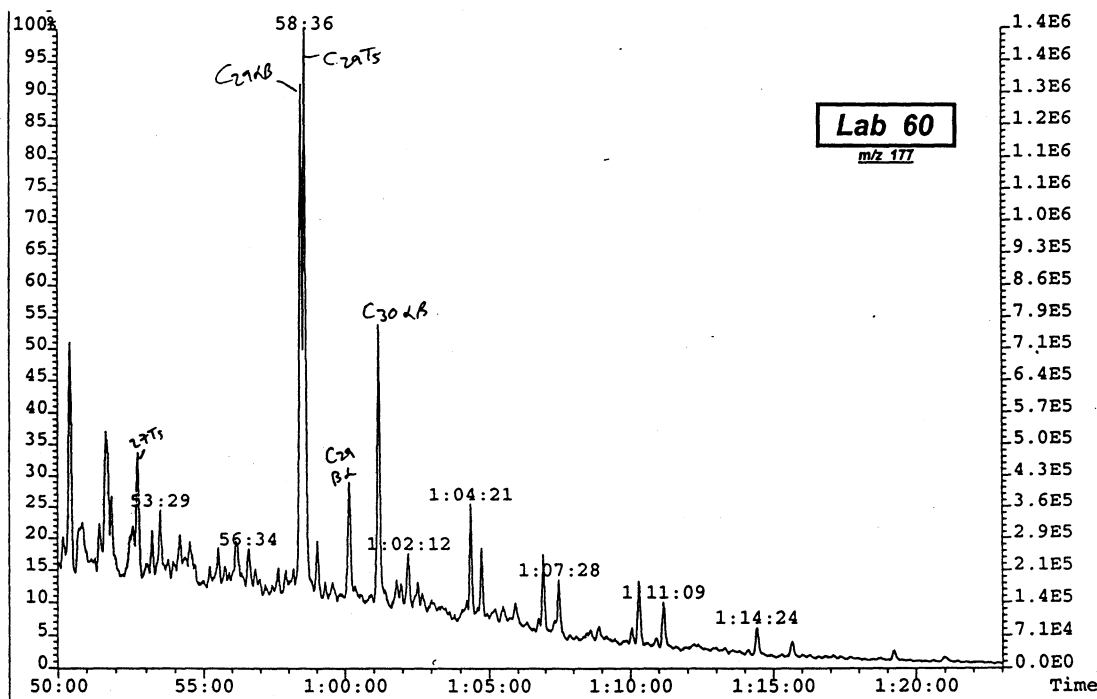
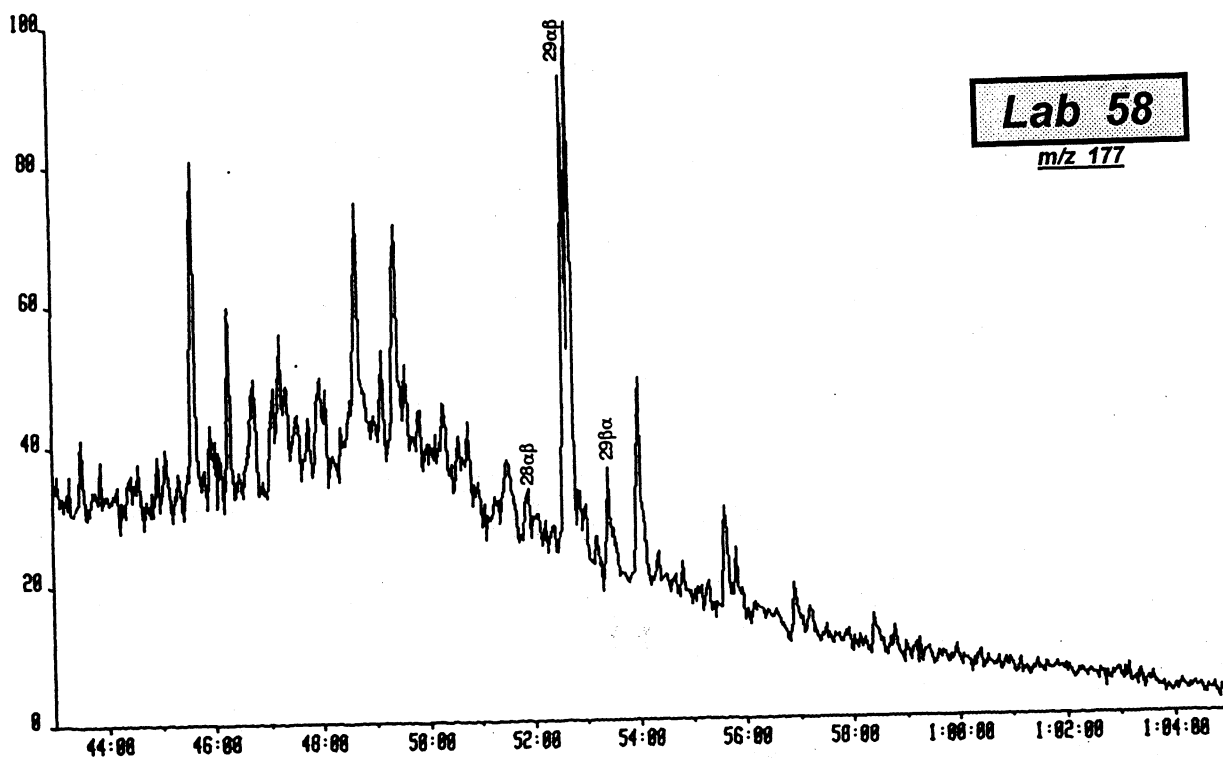
Saturates fraction m/z 177 GC-MS fragmentograms

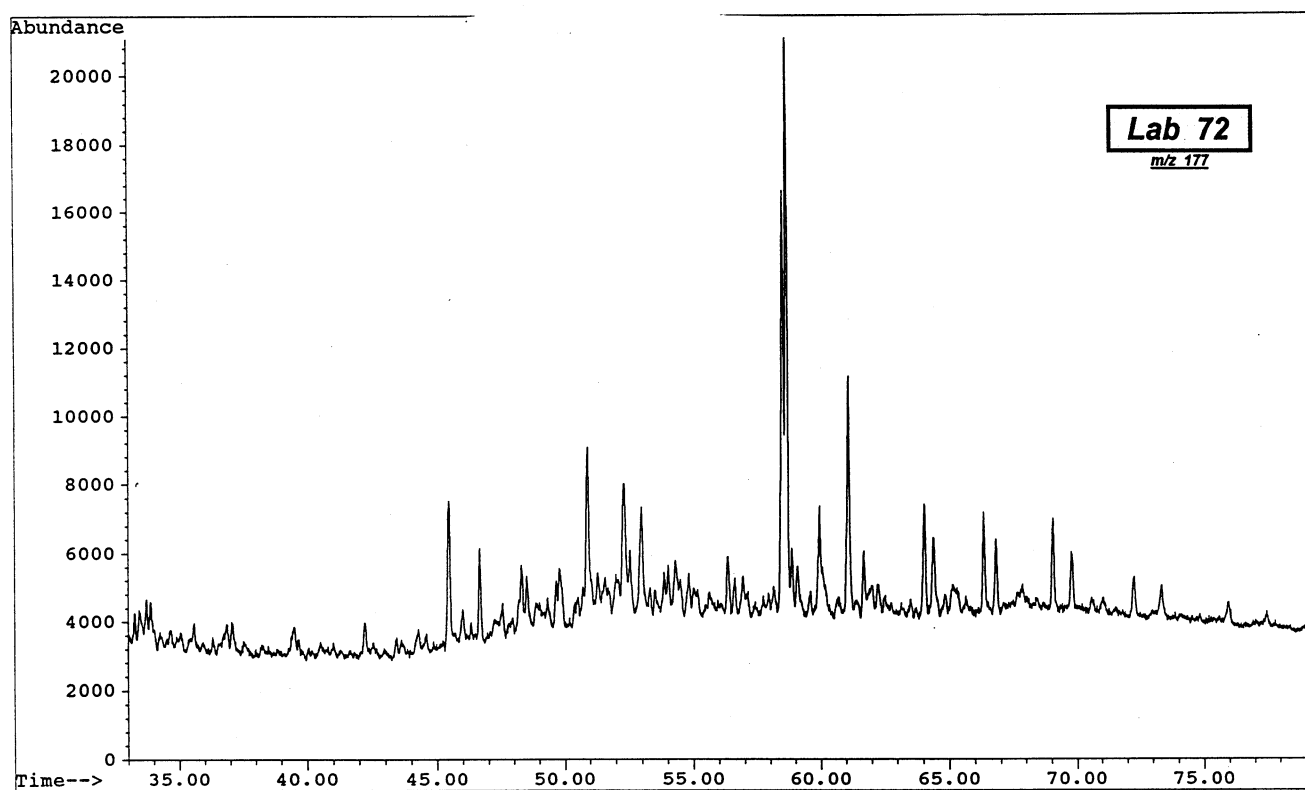
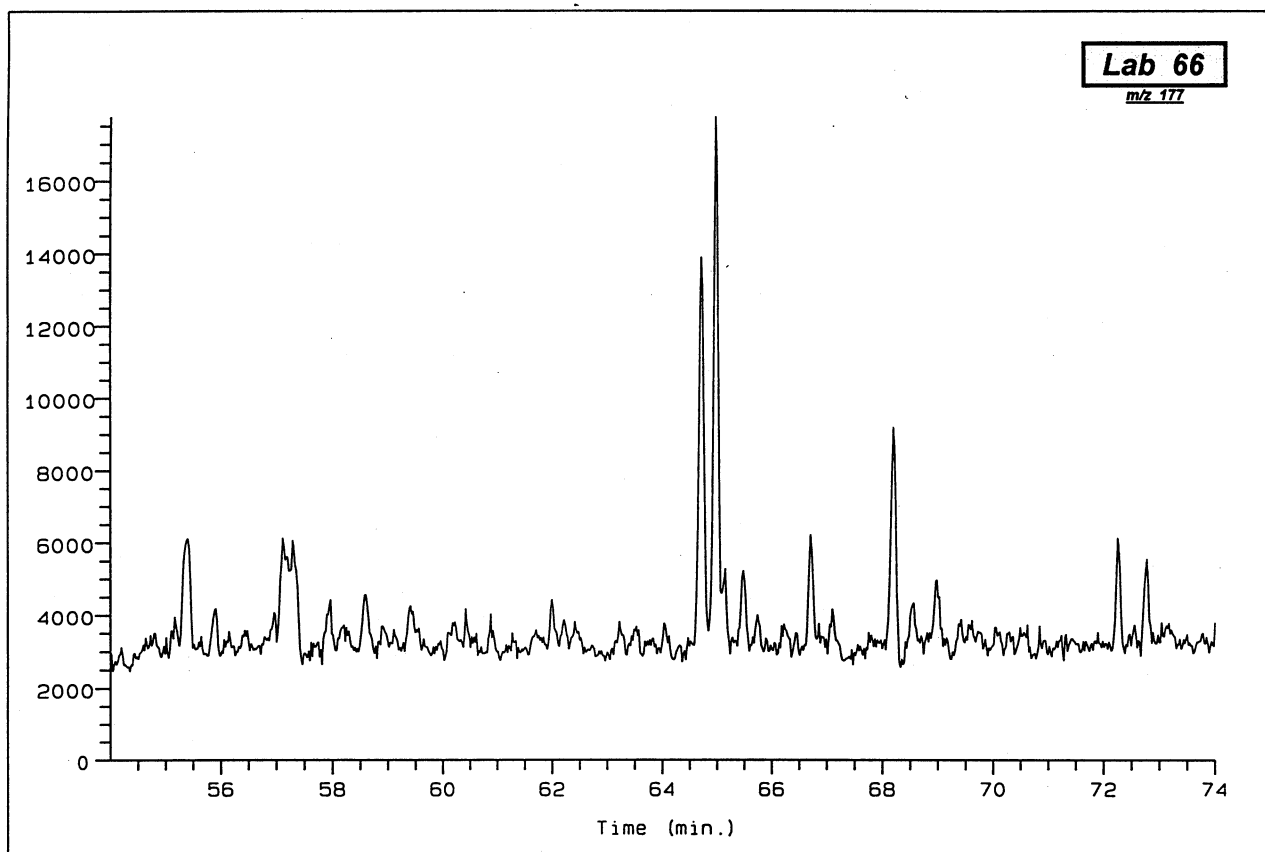


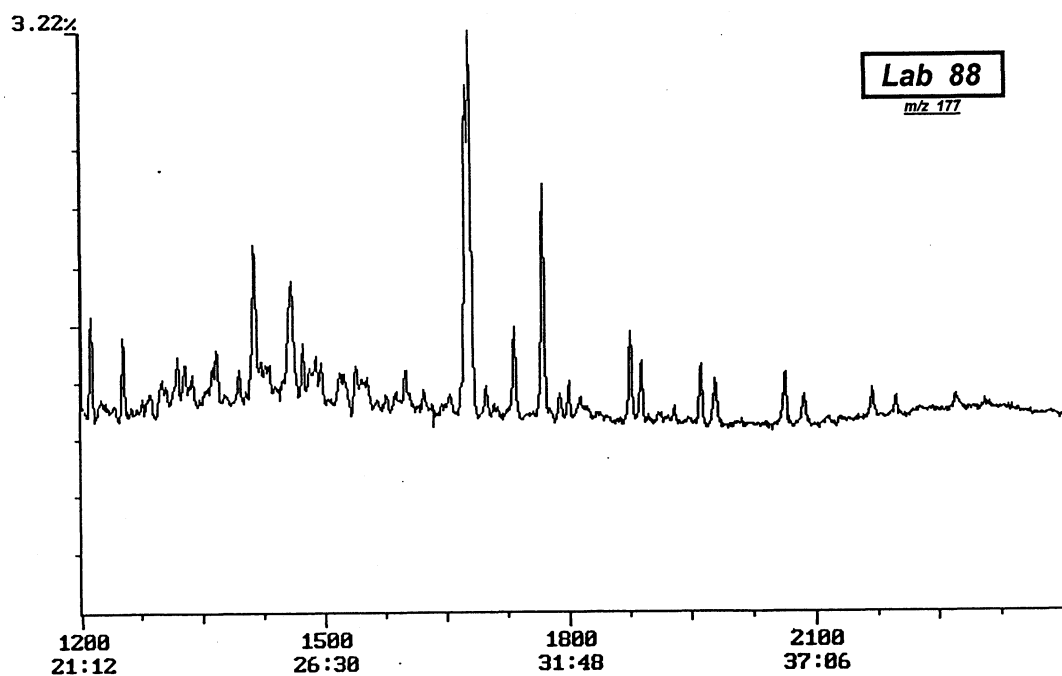
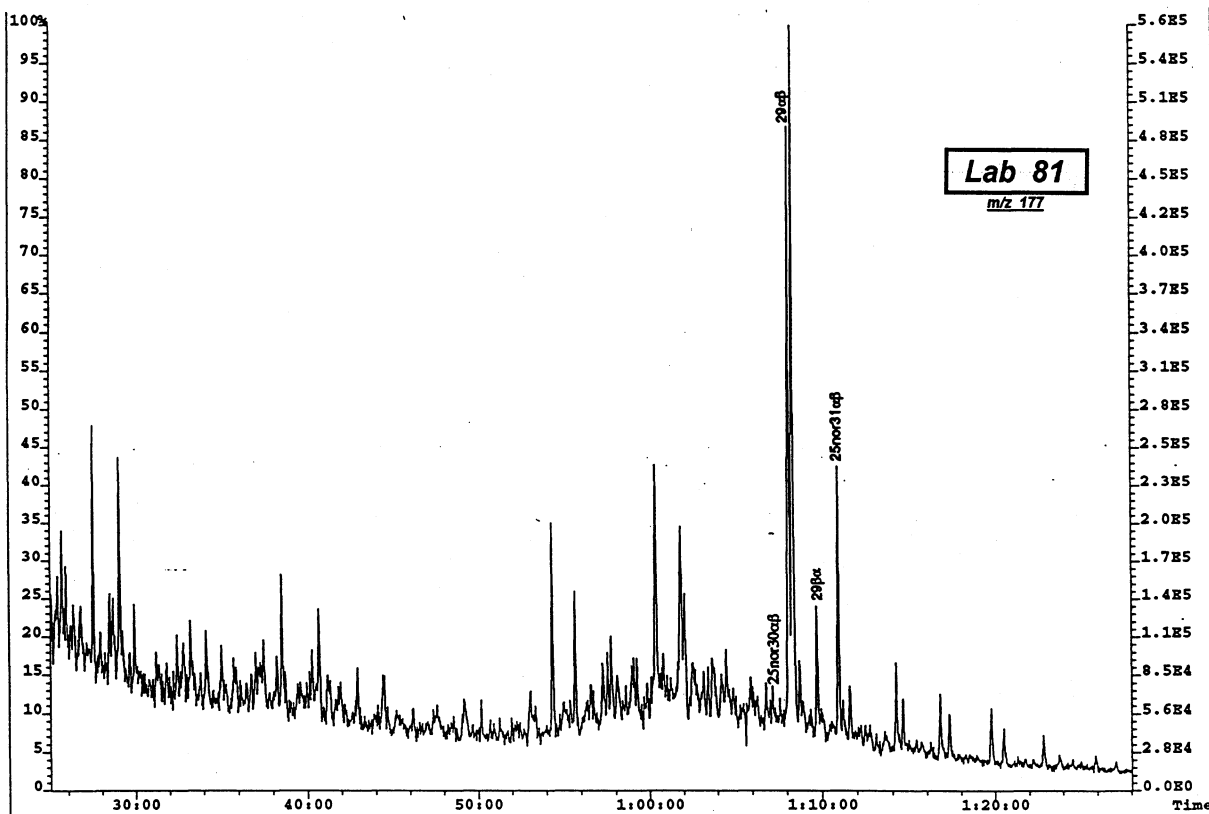


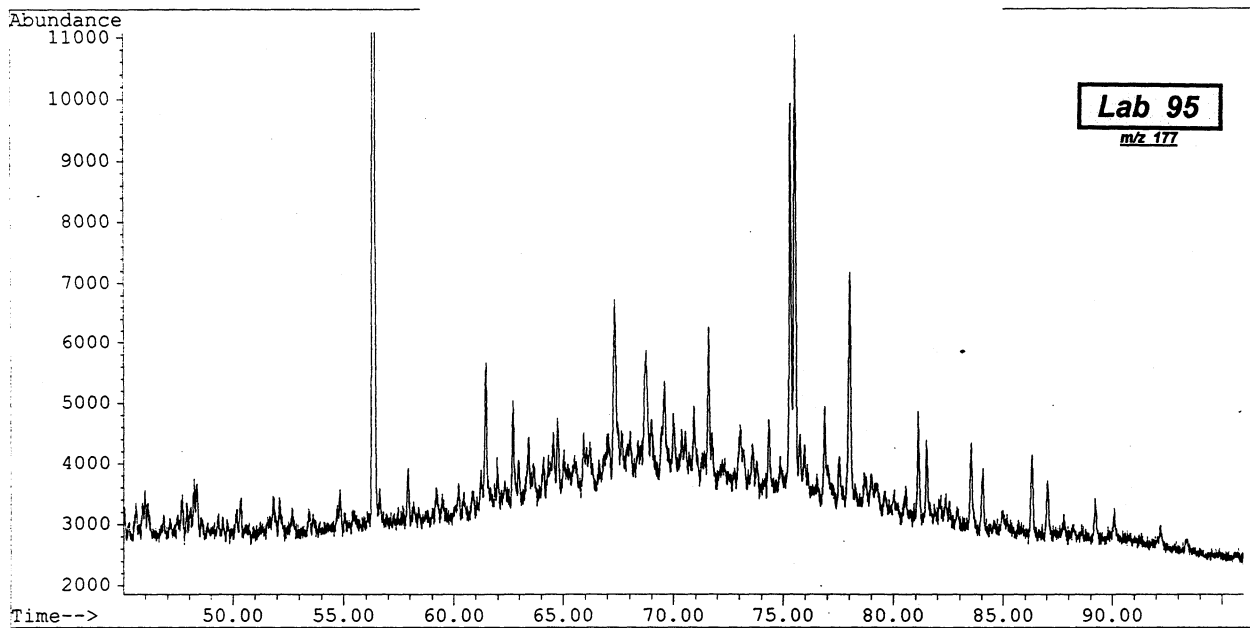








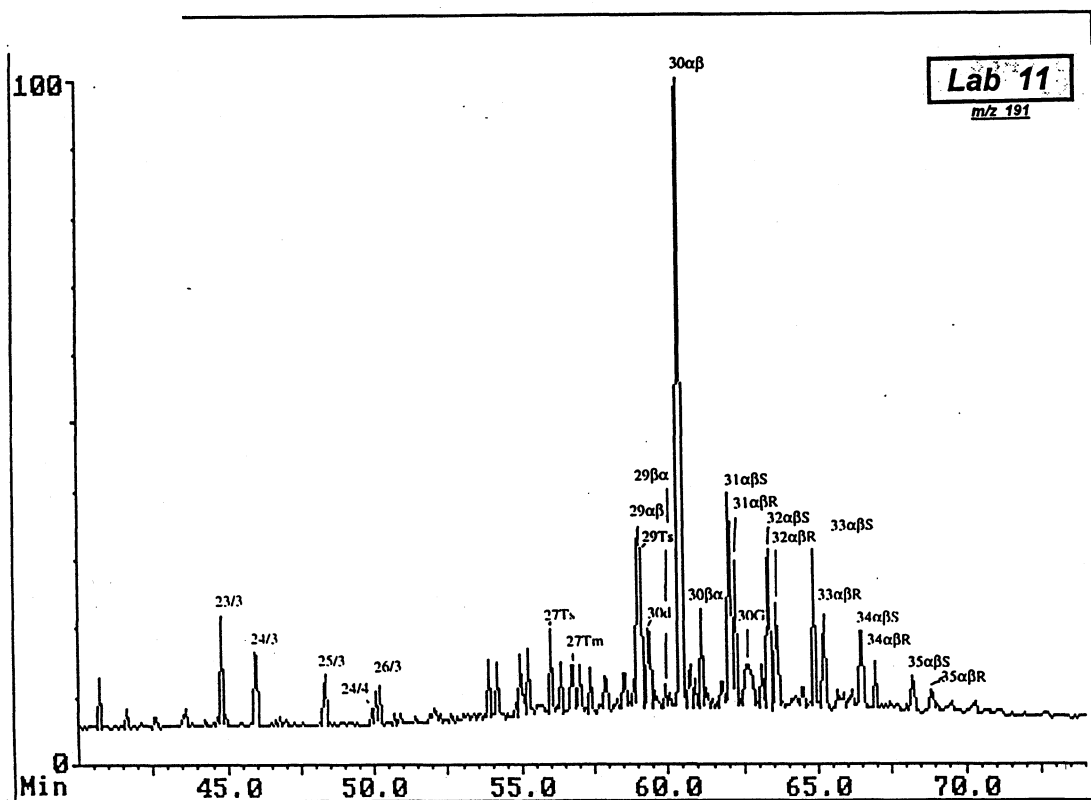
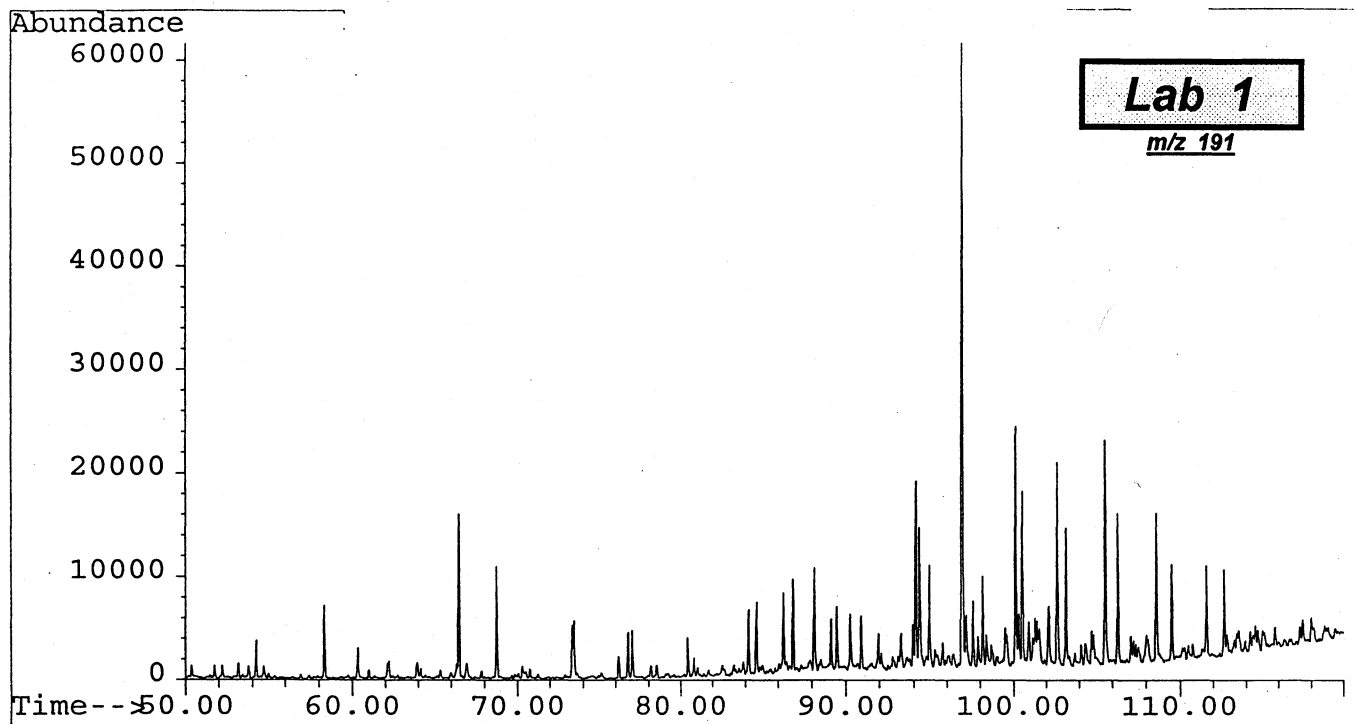


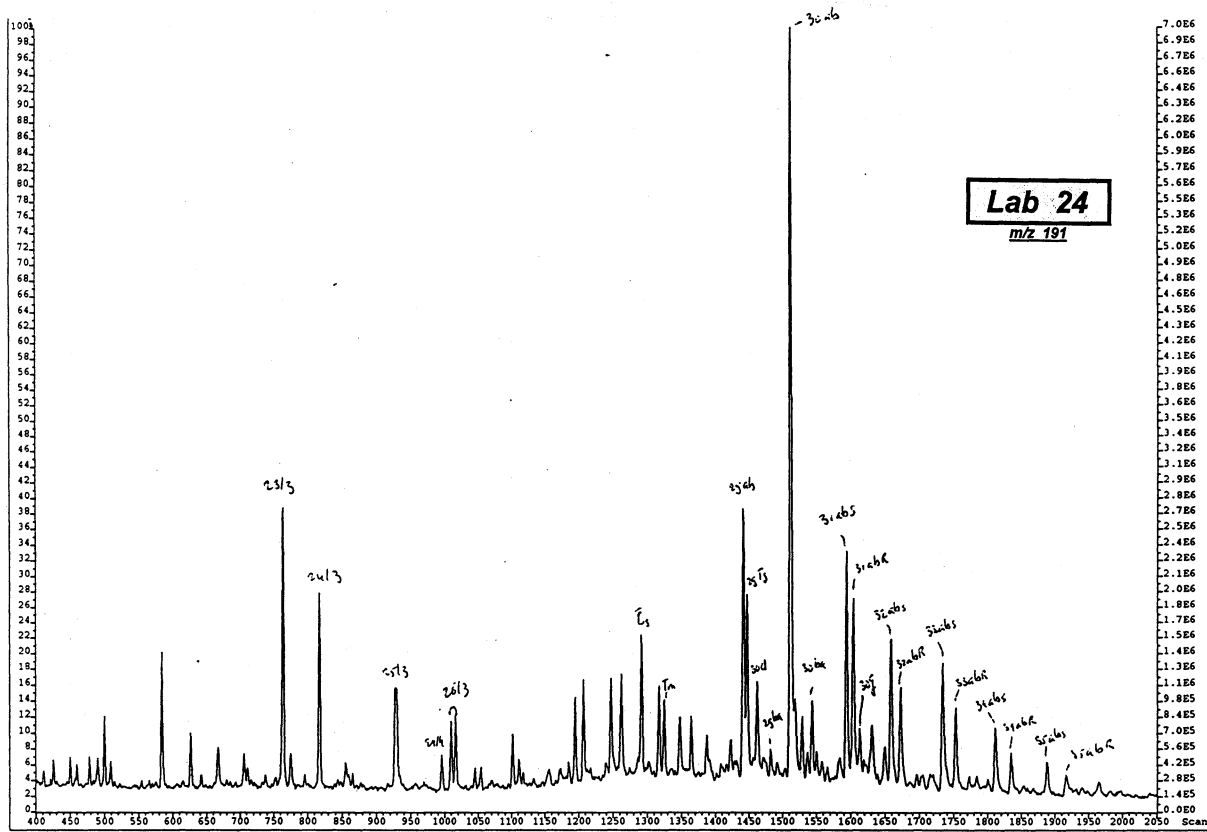


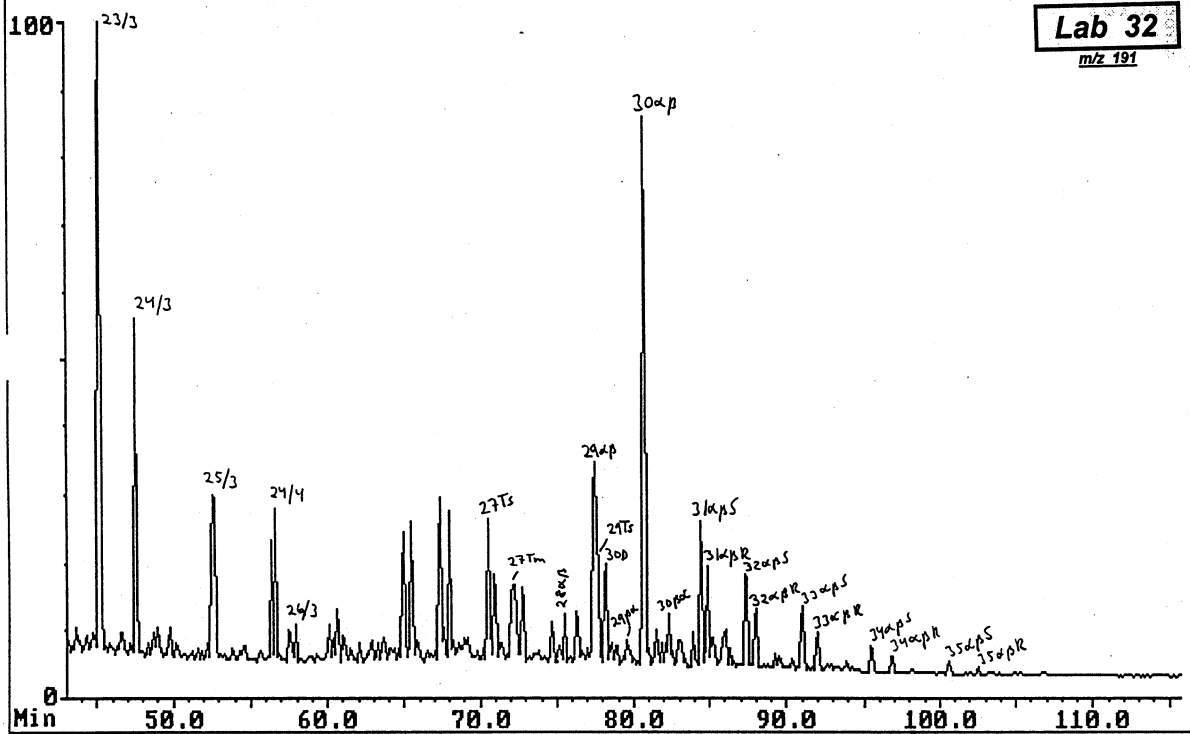
NGS SR-1

Appendix A5.4a-2

Saturates fraction m/z 191 GC-MS fragmentograms

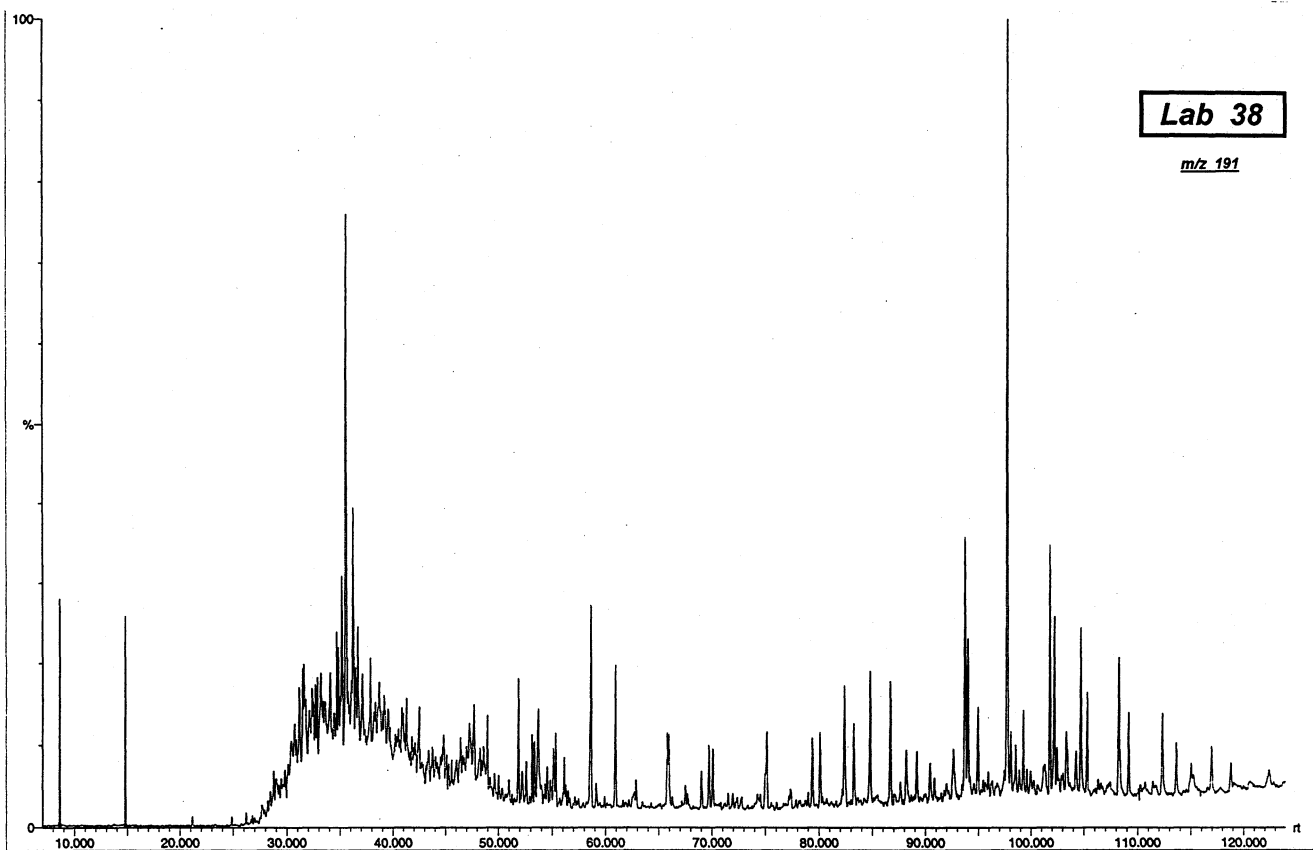






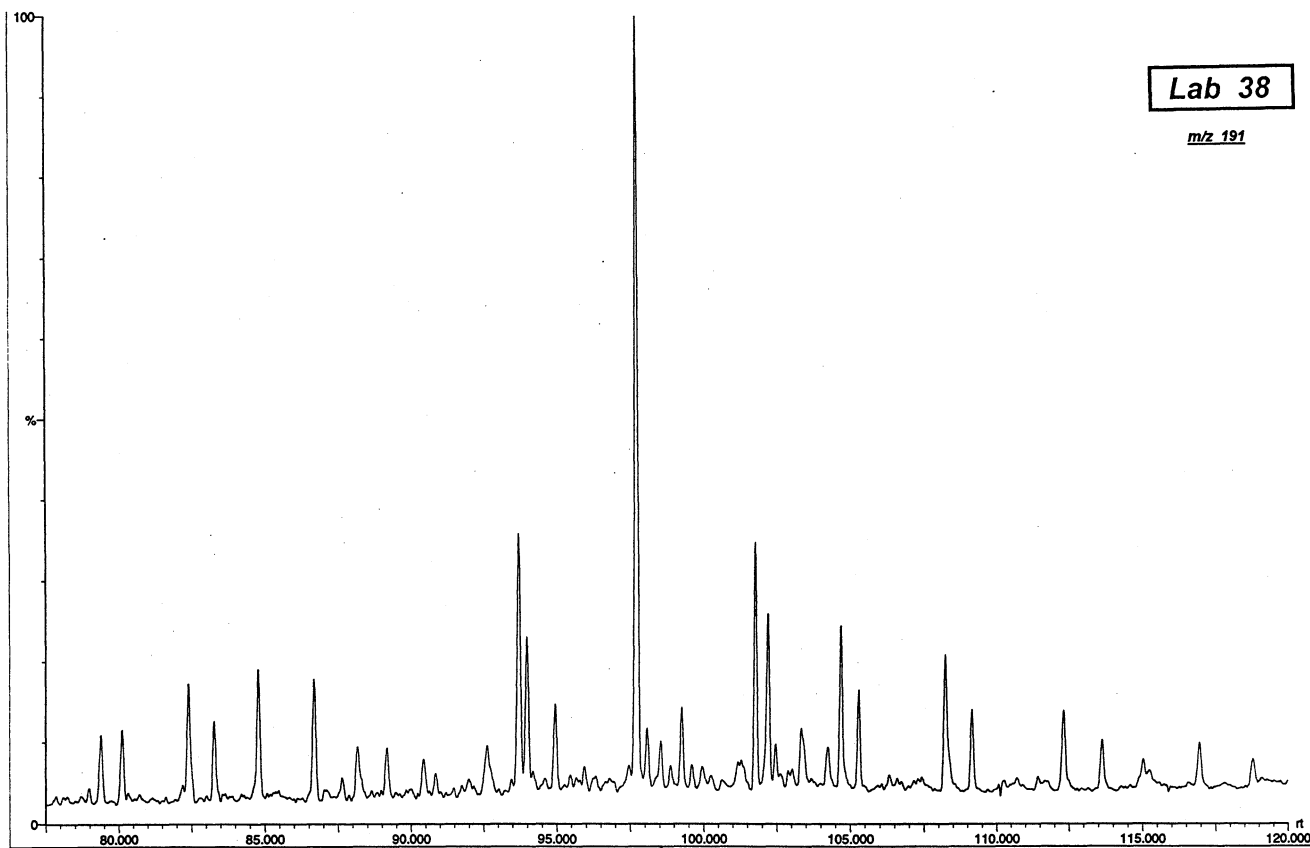
Lab 38

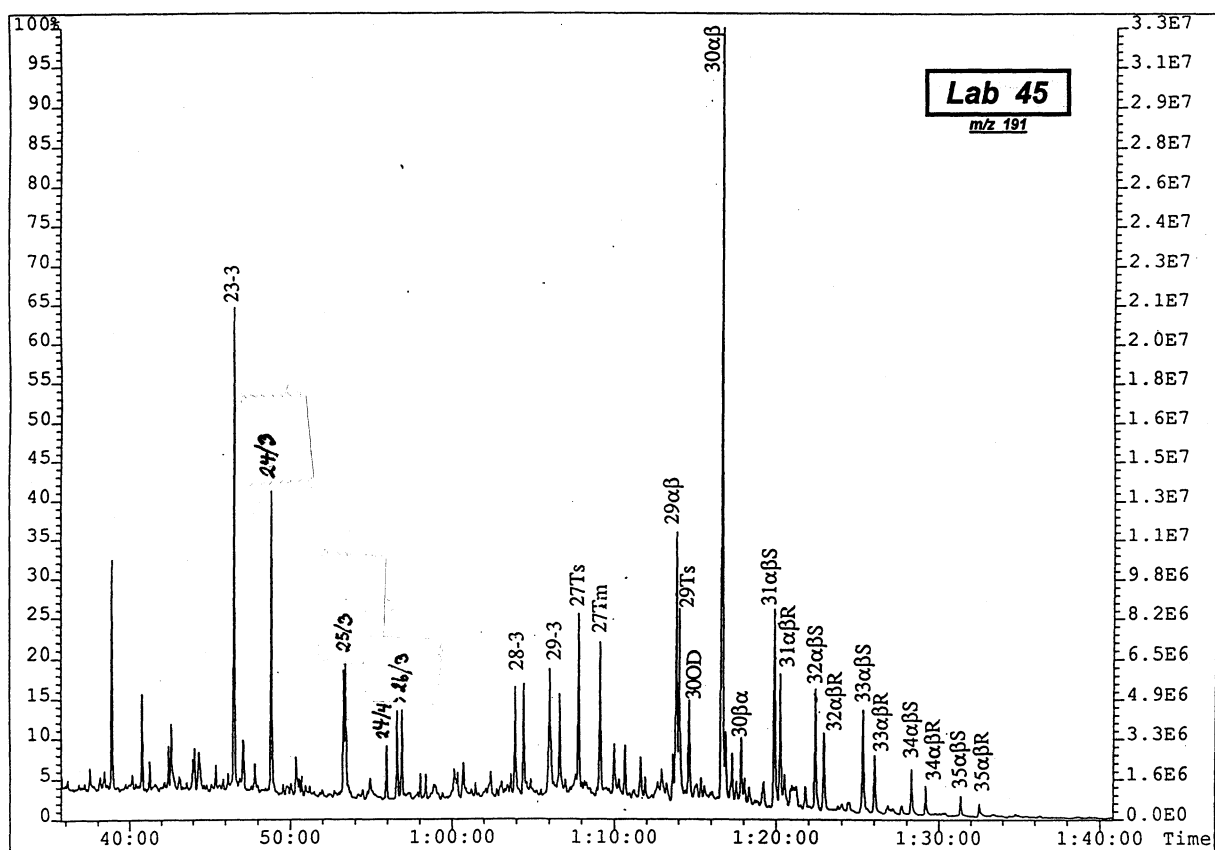
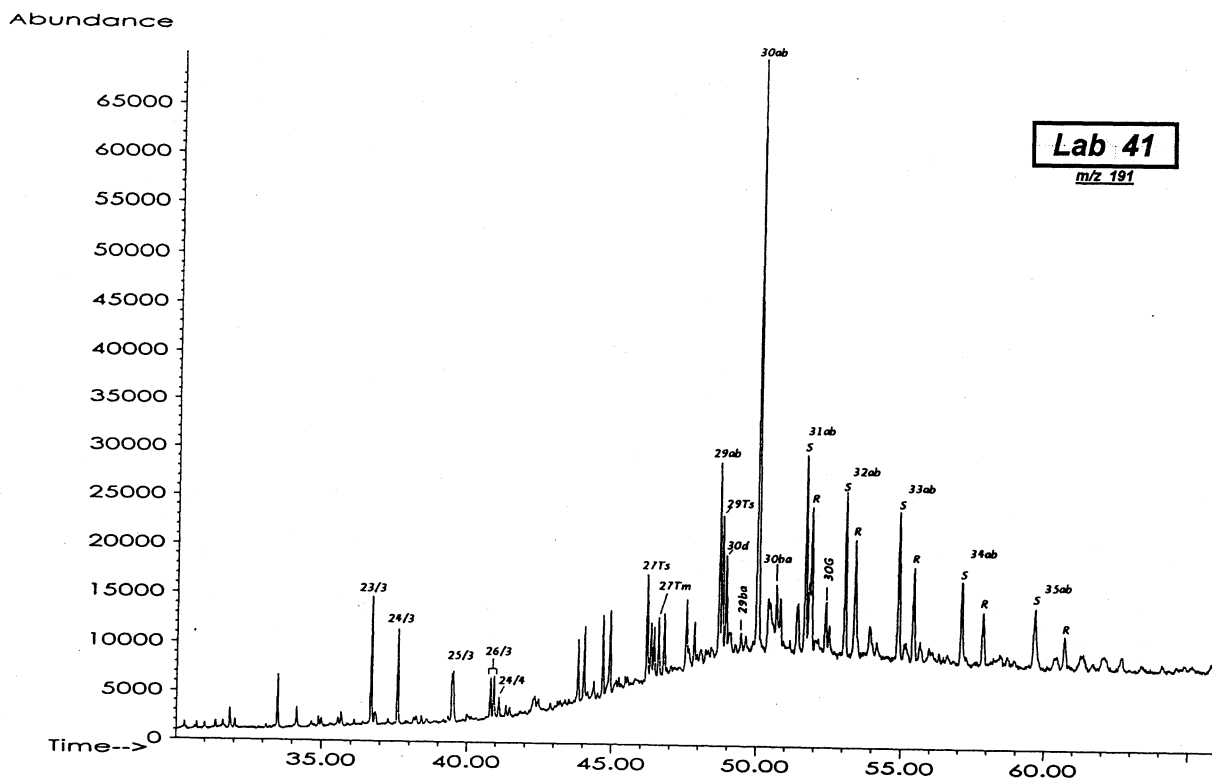
m/z 191

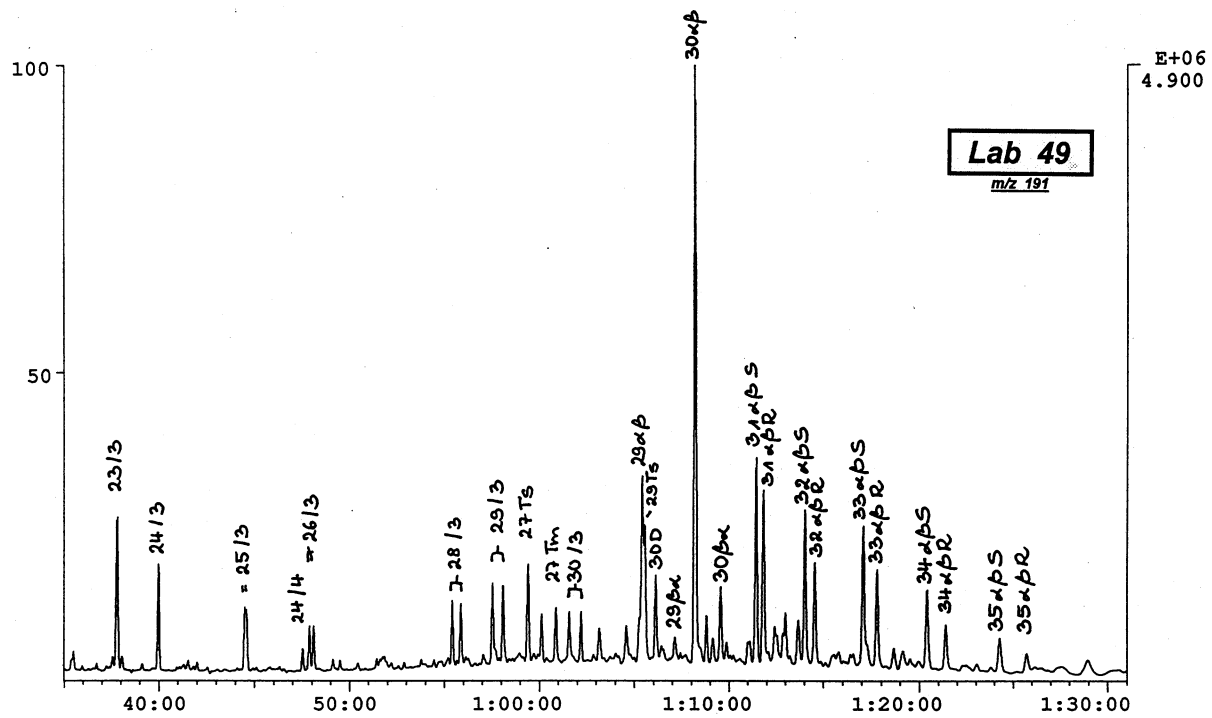


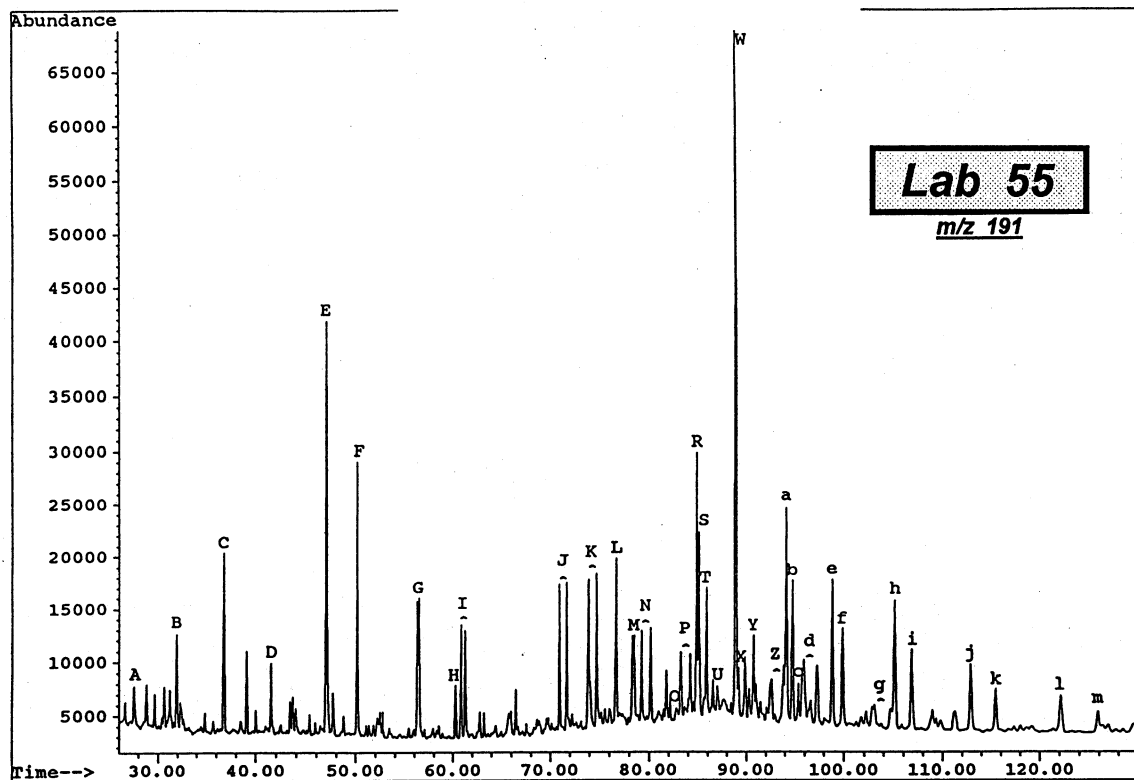
Lab 38

m/z 191

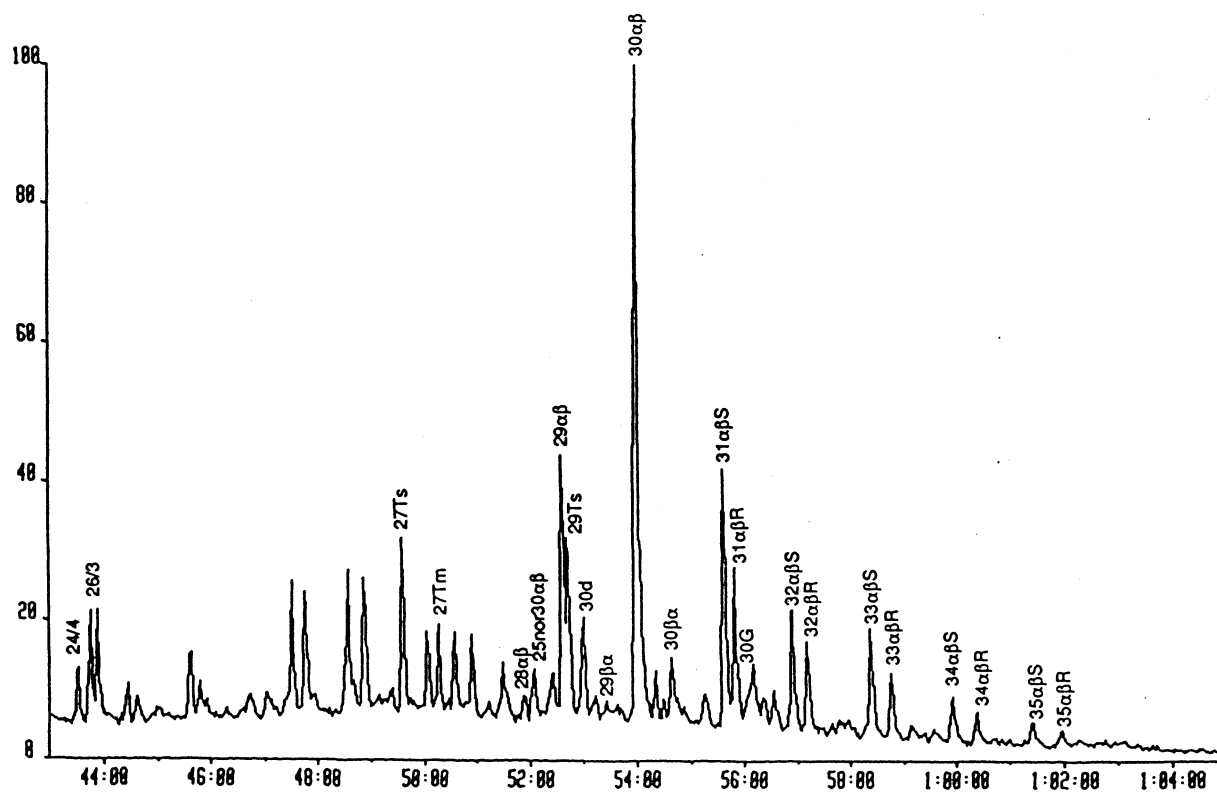
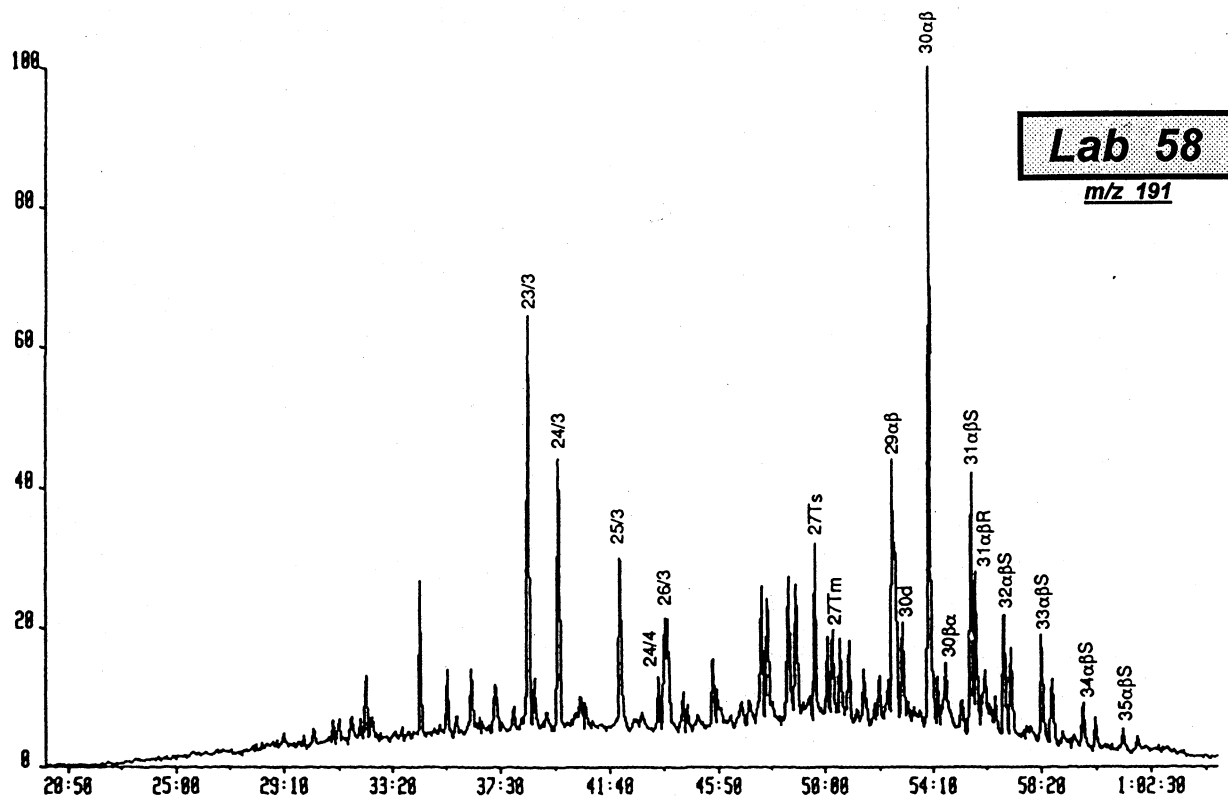


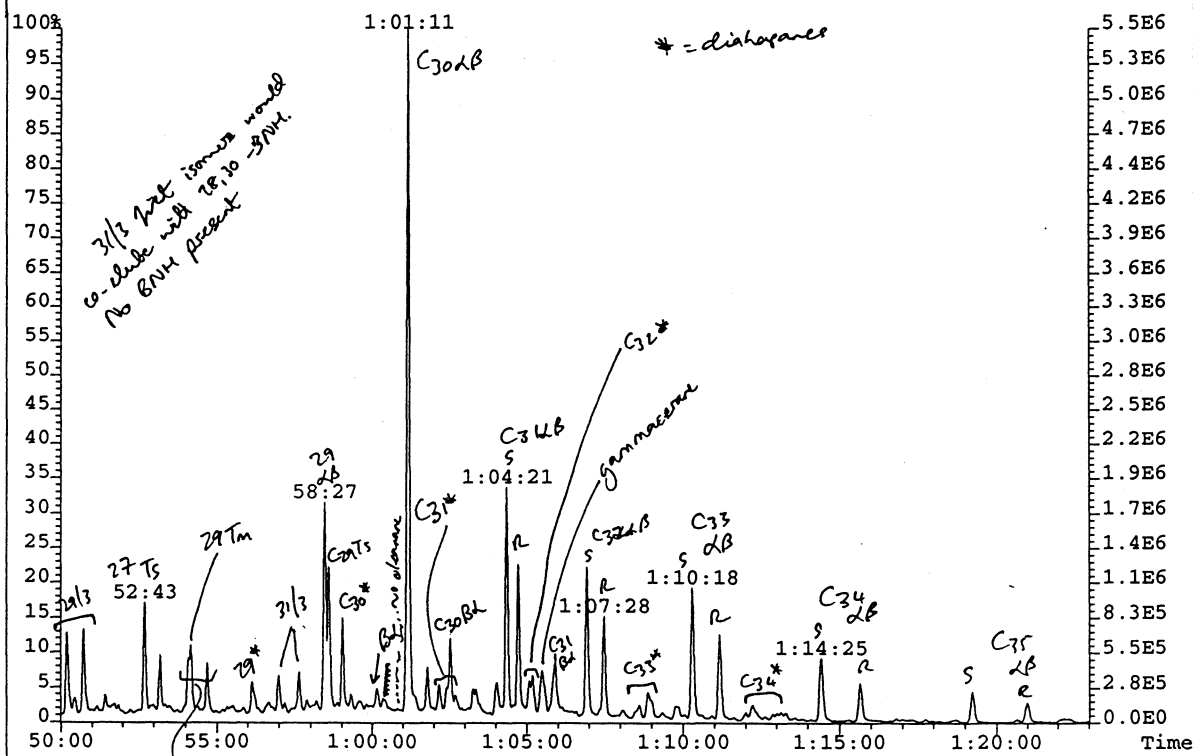
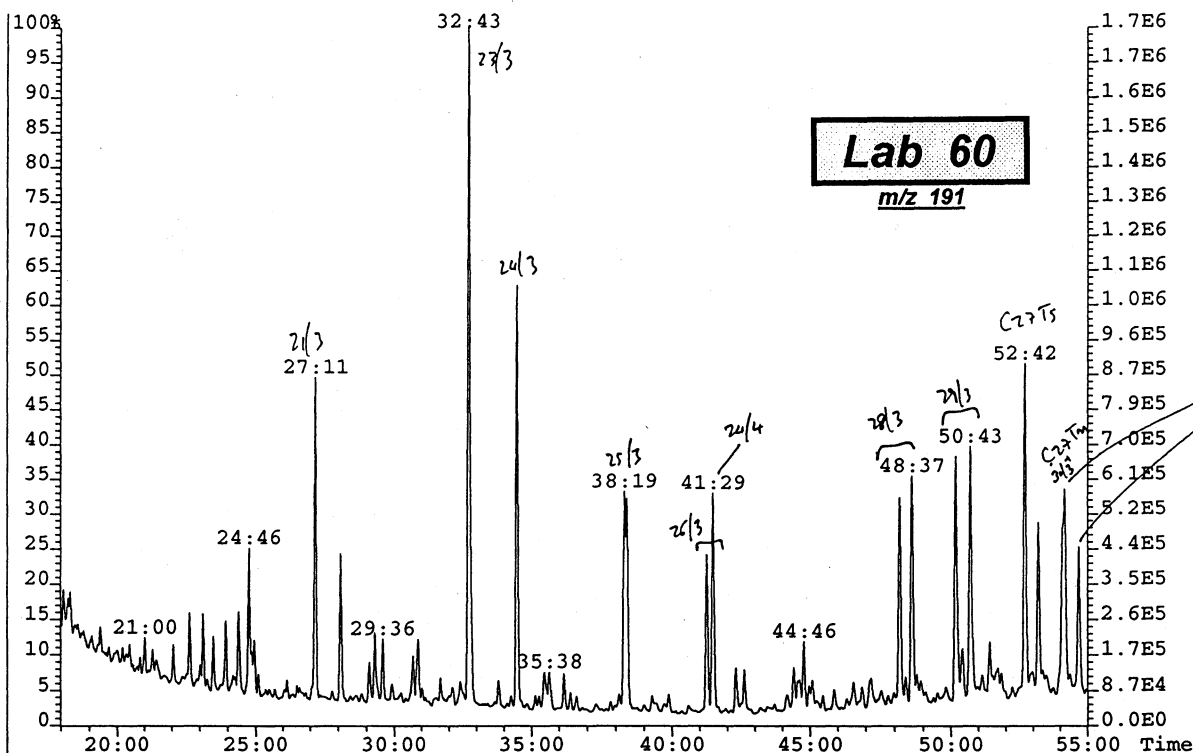






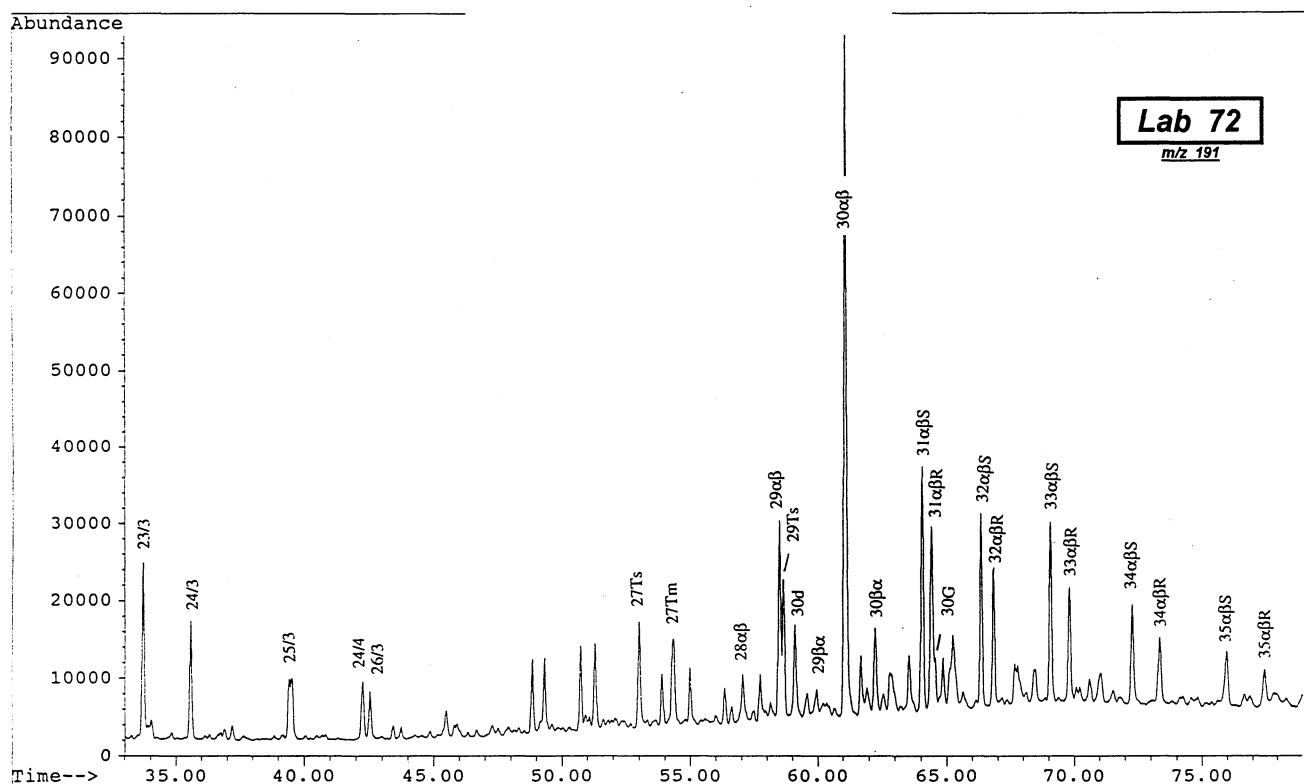
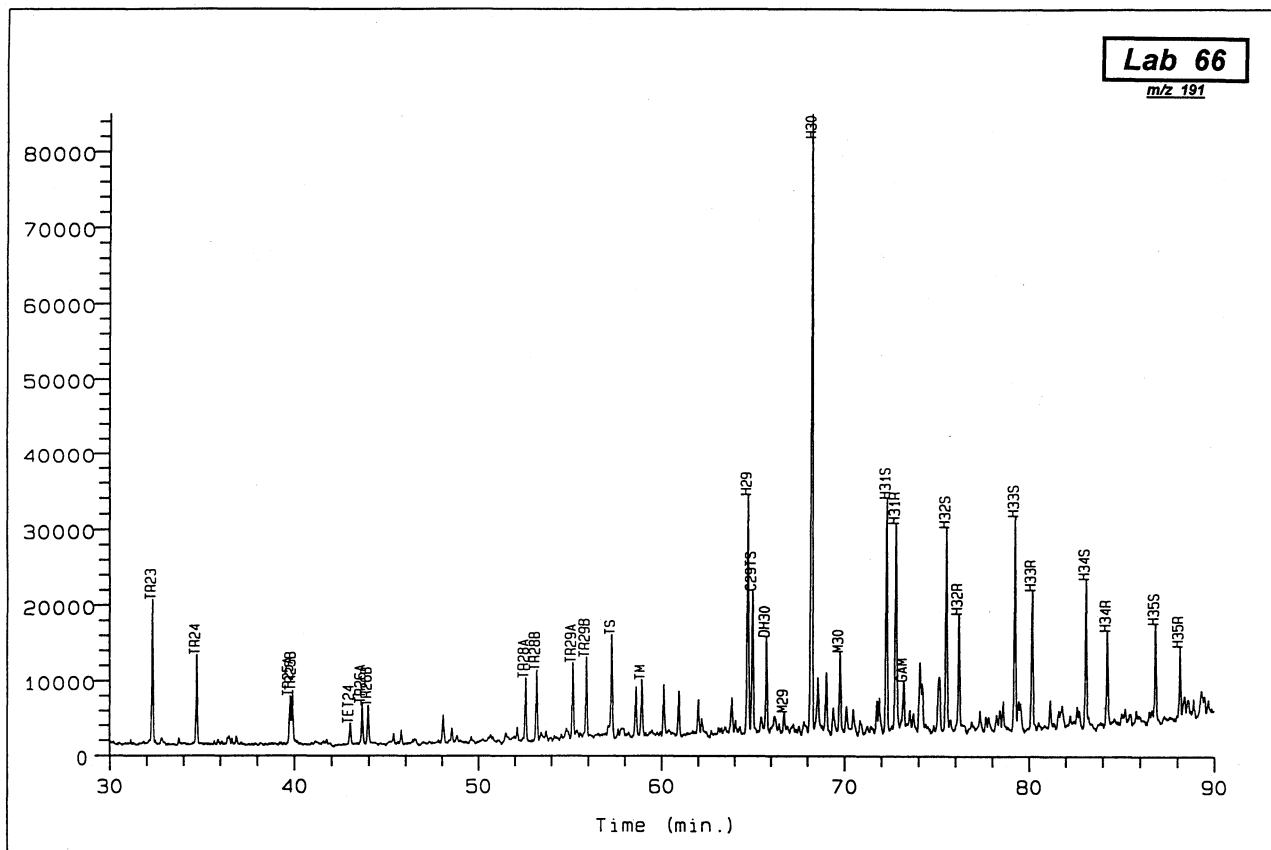
Peak ID	Triterpane Name		Ret Time	Area	Area%	ppm	
1	A	C ₁₉ Tricyclic Terpane	27.550	341729	0.61	14	
2	B	C ₂₀ Tricyclic Terpane	31.920	854847	1.52	35	
3	C	C ₂₁ Tricyclic Terpane	36.785	1465597	2.61	60	
4	D	C ₂₂ Tricyclic Terpane	41.509	644610	1.15	26	
5	E	C ₂₃ Tricyclic Terpane	23/3	47.059	3713909	6.62	153
6	F	C ₂₄ Tricyclic Terpane	24/3	50.169	2271523	4.05	93
7	G	C ₂₅ Tricyclic Terpane (22R)	25/3	56.315	1040959	1.86	43
8	G	C ₂₅ Tricyclic Terpane (22S)	25/3	56.494	1078055	1.92	44
9	H	C ₂₄ Tetracyclic Terpane	24/4	60.263	430502	0.77	18
10	I	C ₂₆ Tricyclic Terpane (22R)	26/3	60.846	877636	1.57	36
11	I	C ₂₆ Tricyclic Terpane (22S)	26/3	61.256	844870	1.51	35
12	J	C ₂₈ Tricyclic Terpane (22R)	70.941	1148756	2.05	47	
13	J	C ₂₈ Tricyclic Terpane (22S)	71.659	1184366	2.11	49	
14	K	C ₂₉ Tricyclic Terpane (22R)	73.879	1434369	2.56	59	
15	K	C ₂₉ Tricyclic Terpane (22S)	74.716	1215984	2.17	50	
16	L	C ₂₇ 18αH-Trisnorhopane (Ts)	27Ts	76.688	1507474	2.69	62
17	M	C ₂₇ 17αH-Trisnorhopane (Tm)	27Tm	78.487	684887	1.22	28
18	N	C ₃₀ Tricyclic Terpane (22R)	79.255	824885	1.47	34	
19	N	C ₃₀ Tricyclic Terpane (22S)	80.169	816656	1.46	34	
20	O	C ₂₈ 17αH,18αH,21βH-28,30-Bisnorhopane	28αβ	82.770	207821	0.37	9
21	P	C ₃₁ Tricyclic Terpane (22R)	83.256	766685	1.37	31	
22	Q	C ₂₉ 17αH, 21βH 25-Norhopane	25nor30αβ		0	0.00	0
23	P	C ₃₁ Tricyclic Terpane (22S)	84.223	642303	1.15	26	
24	R	C ₂₉ 17αH,21βH-Norhopane	29αβ	84.864	2305109	4.11	95
25	S	C ₂₉ 18αH-Norneohopane (29Ts)	29Ts	85.123	1761663	3.14	72
26	T	C ₃₀ 17αH Diahopane	30d	85.889	1319616	2.35	54
27	U	C ₂₉ 17βH,21αH-Normoretane	29βα	87.003	514249	0.92	21
28	V	C ₃₀ 18αH + 18βH-Oleanane	300		0	0.00	0
29	W	C ₃₀ 17αH,21βH-Hopane	30αβ	88.893	6732740	12.01	276
30	X	C ₃₀ 30-Nor-29-homo-17αH-Hopane		89.178	550725	0.98	23
31	Y	C ₃₀ 17βH,21αH-Moretane	30βα	90.740	887962	1.58	36
32	Z	C ₃₃ Tricyclic Terpane (22R)		92.601	778928	1.39	32
33	Z	C ₃₃ Tricyclic Terpane (22S)		93.830	674772	1.20	28
34	a	C ₃₁ 17αH,21βH-Homohopane (22S)	31αβS	94.119	2353959	4.20	97
35	b	C ₃₁ 17αH,21βH-Homohopane (22R)	31αβR	94.765	1641169	2.93	67
36	c	C ₃₀ Gammacerane	30G	95.368	455754	0.81	19
37	d	C ₃₄ Tricyclic Terpane (22R)		95.928	1275366	2.27	52
38	d	C ₃₄ Tricyclic Terpane (22S)		97.288	904113	1.61	37
39	e	C ₃₂ 17αH,21βH-Bishomohopane (22S)	32αβS	98.822	1850597	3.30	76
40	f	C ₃₂ 17αH,21βH-Bishomohopane (22R)	32αβR	99.865	1284941	2.29	53
41	g	C ₃₅ Tricyclic Terpane (22R)		103.049	533881	0.95	22
42	g	C ₃₅ Tricyclic Terpane (22S)		104.748	333762	0.60	14
43	h	C ₃₃ 17αH,21βH-Trishomohopane (22S)	33αβS	105.121	1783298	3.18	73
44	i	C ₃₃ 17αH,21βH-Trishomohopane (22R)	33αβR	106.854	1197231	2.13	49
45	j	C ₃₄ 17αH,21βH-Tetrahomohopane (22S)	34αβS	112.877	1075006	1.92	44
46	k	C ₃₄ 17αH,21βH-Tetrahomohopane (22R)	34αβR	115.442	715777	1.28	29
47	l	C ₃₅ 17αH,21βH-Pentahomohopane (22S)	35αβS	122.118	687028	1.23	28
48	m	C ₃₅ 17αH,21βH-Pentahomohopane (22R)	35αβR	125.897	462407	0.82	19

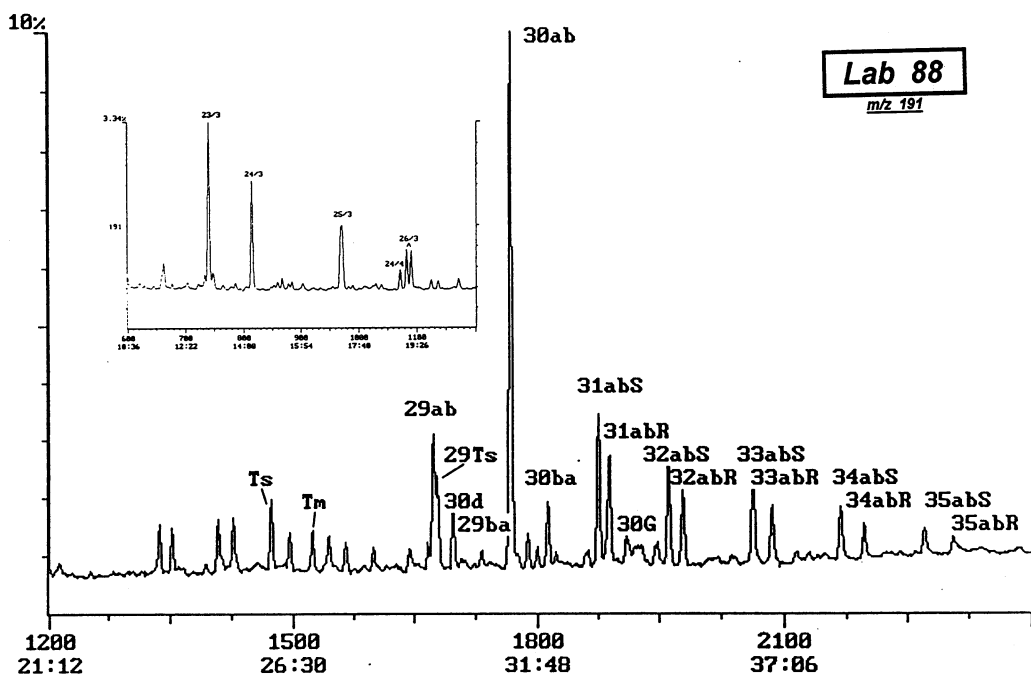
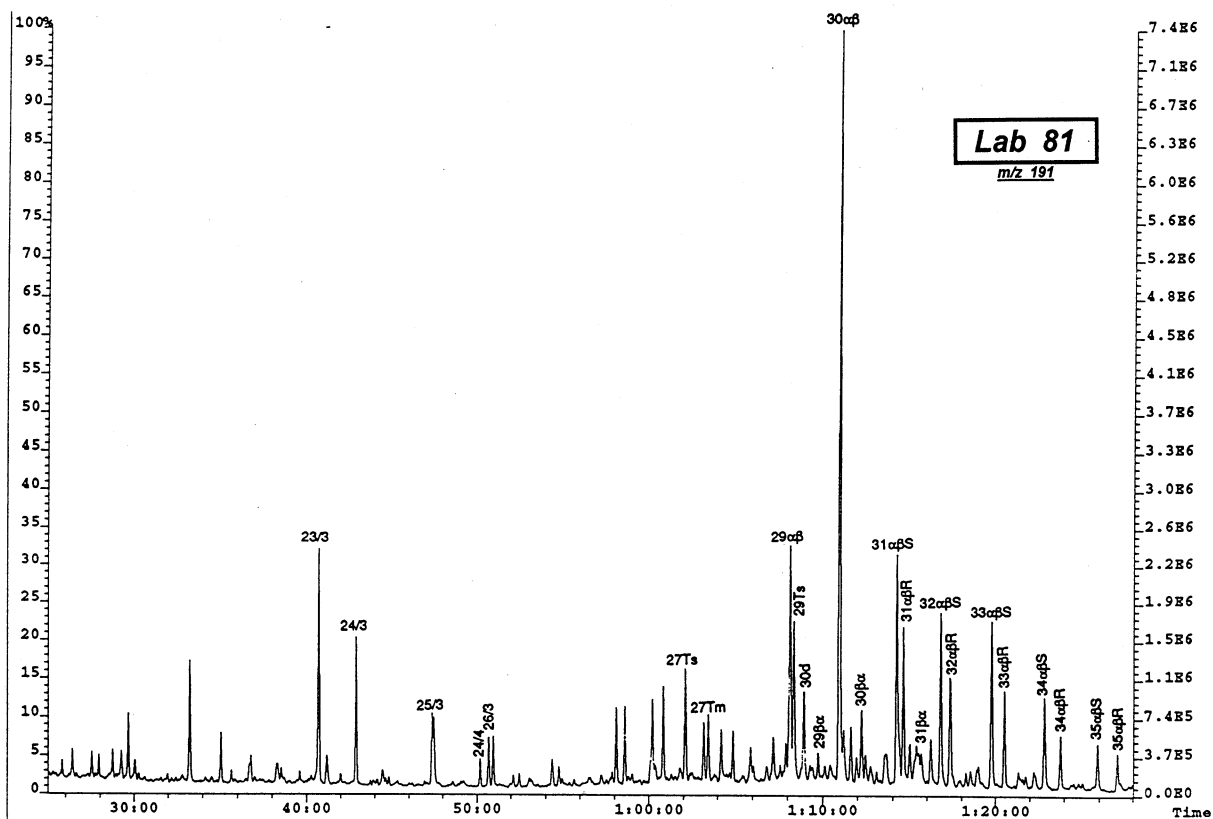


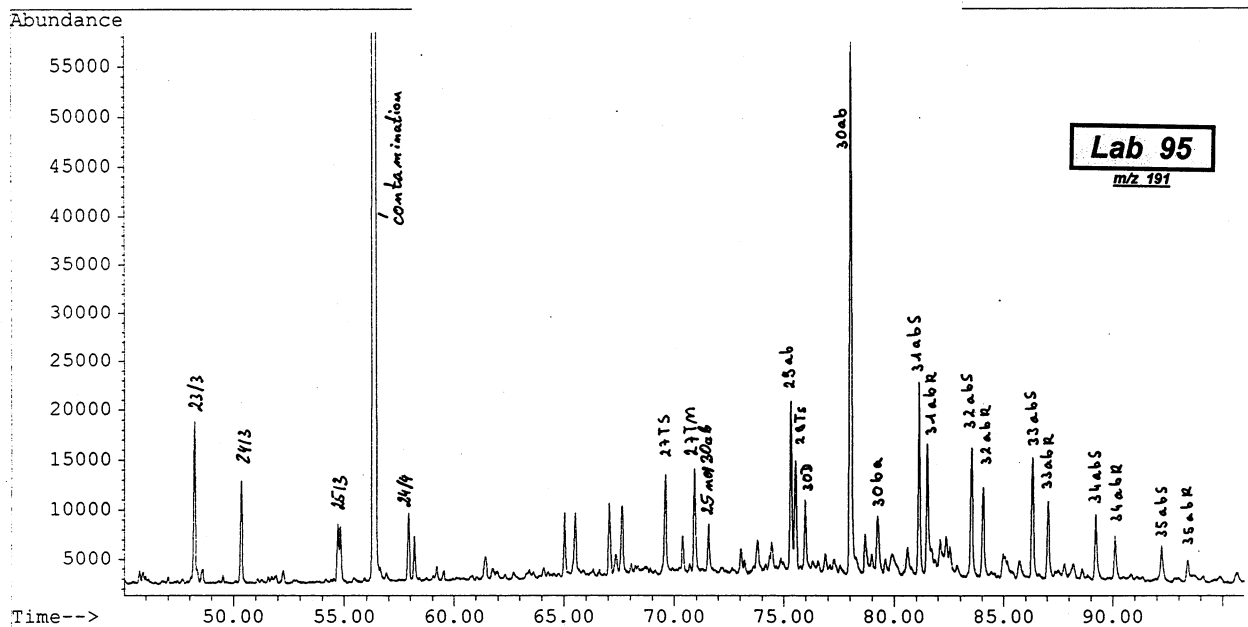


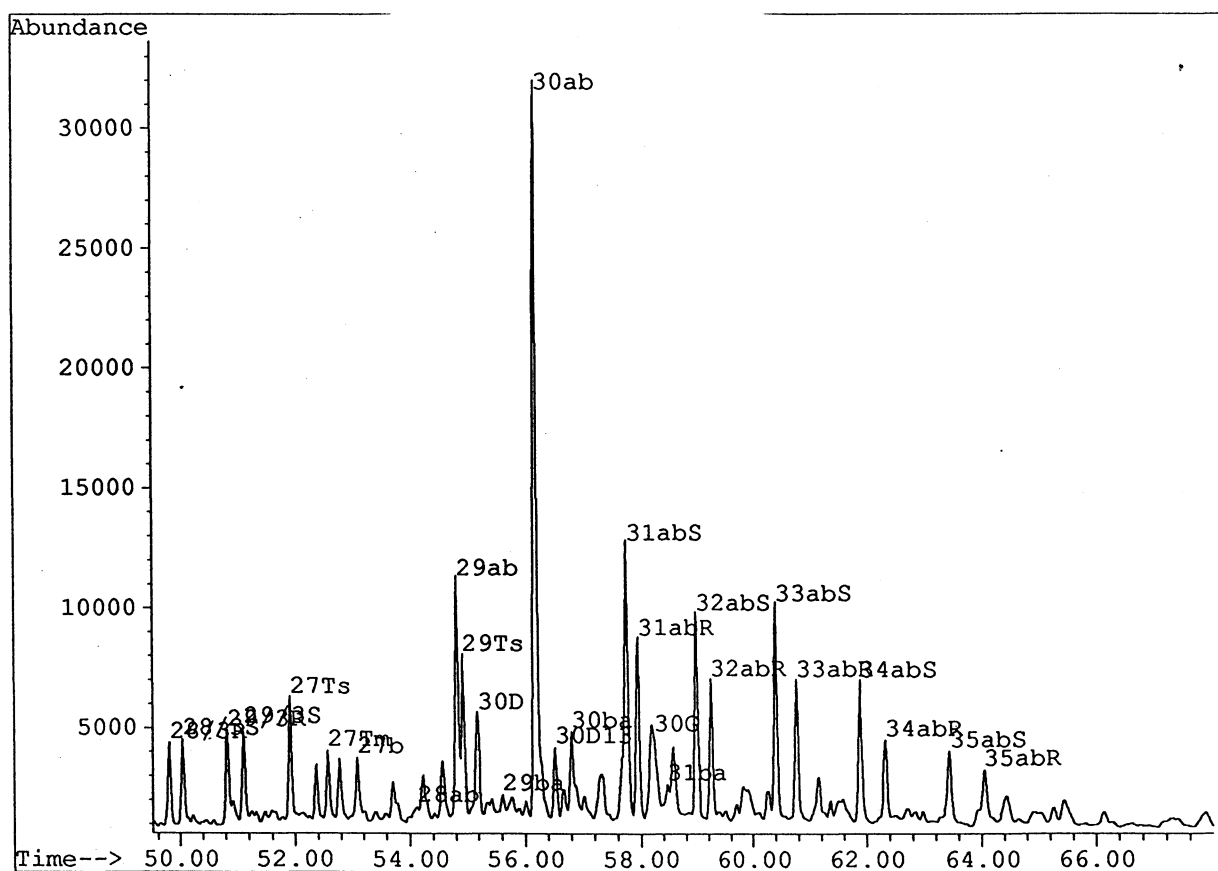
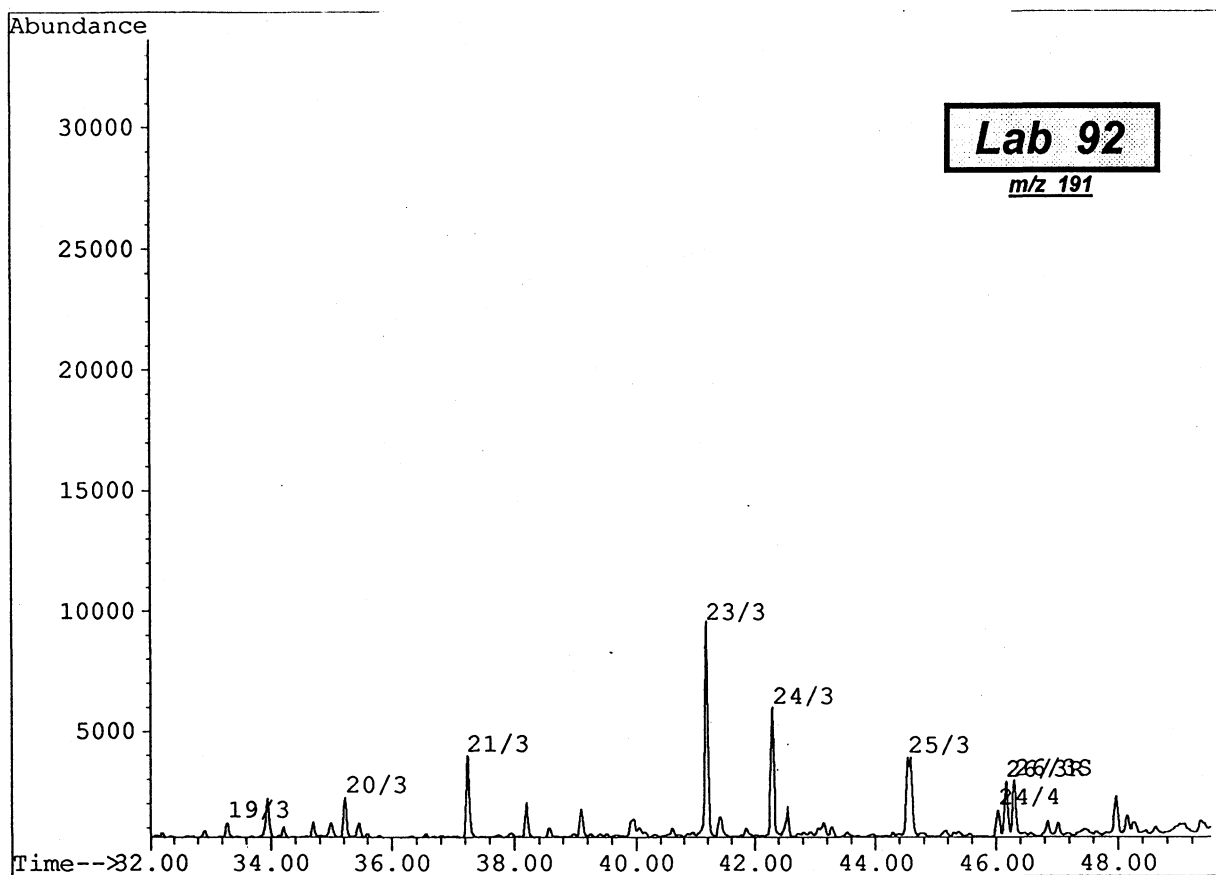
31/3 first isomer would
co-elute with 28:30 - BVM.
No BVM present

30/3
29/3m co-elutes with 30/3 first isomer
Separated when integrated.





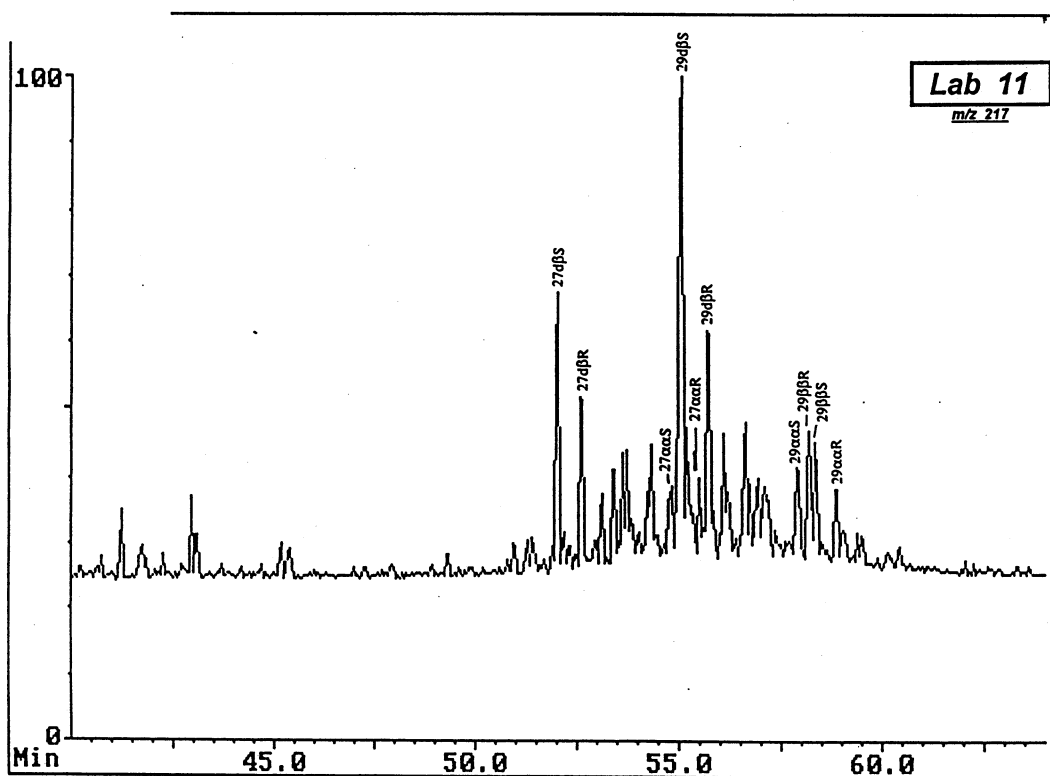
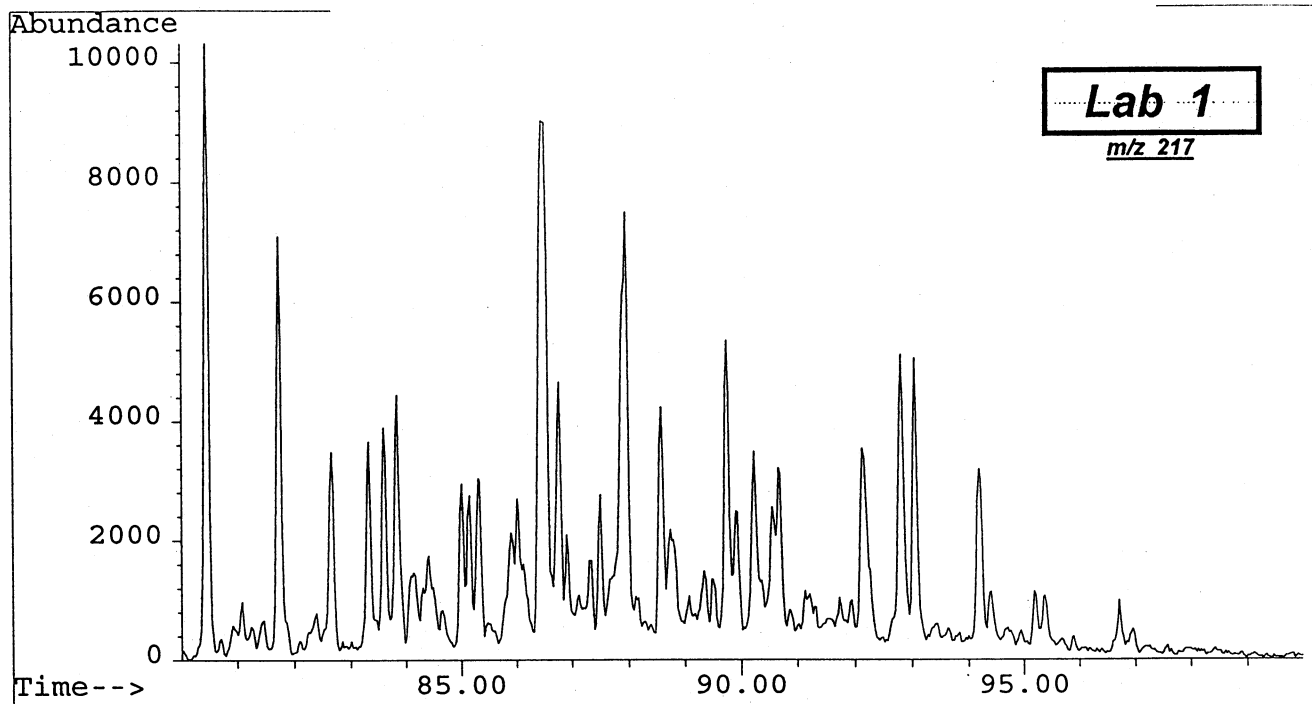


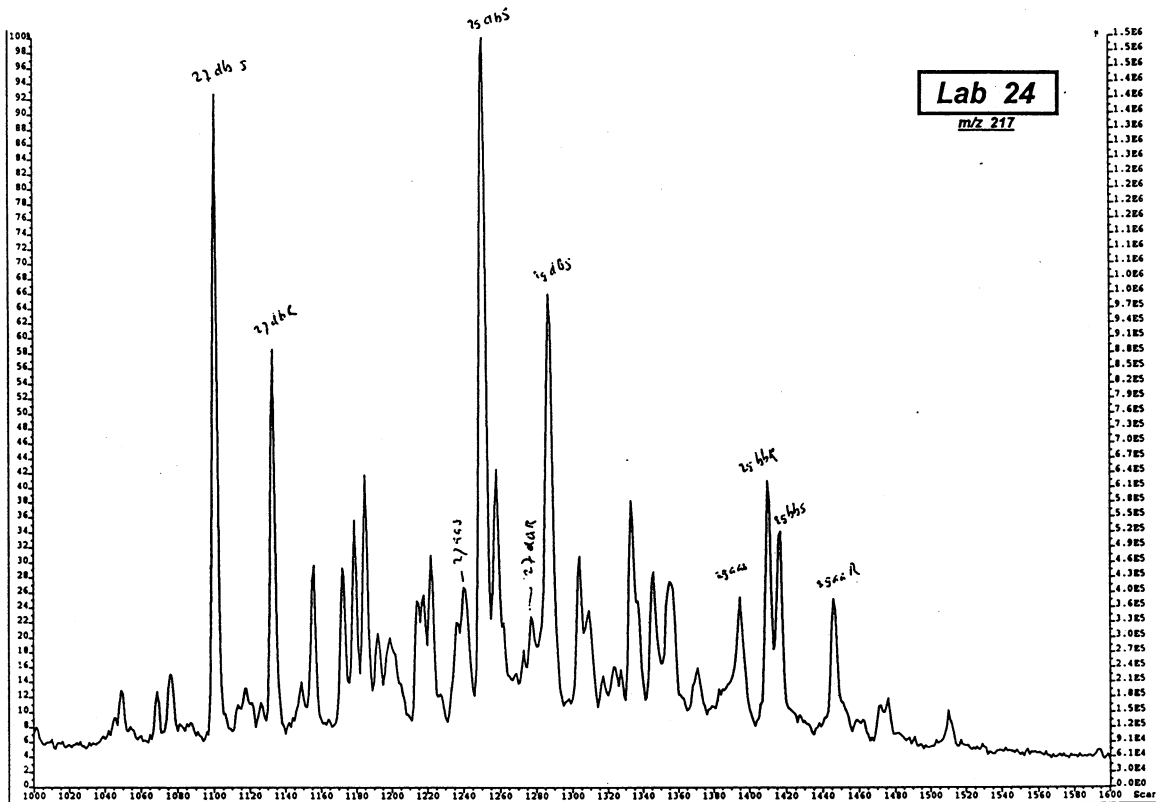
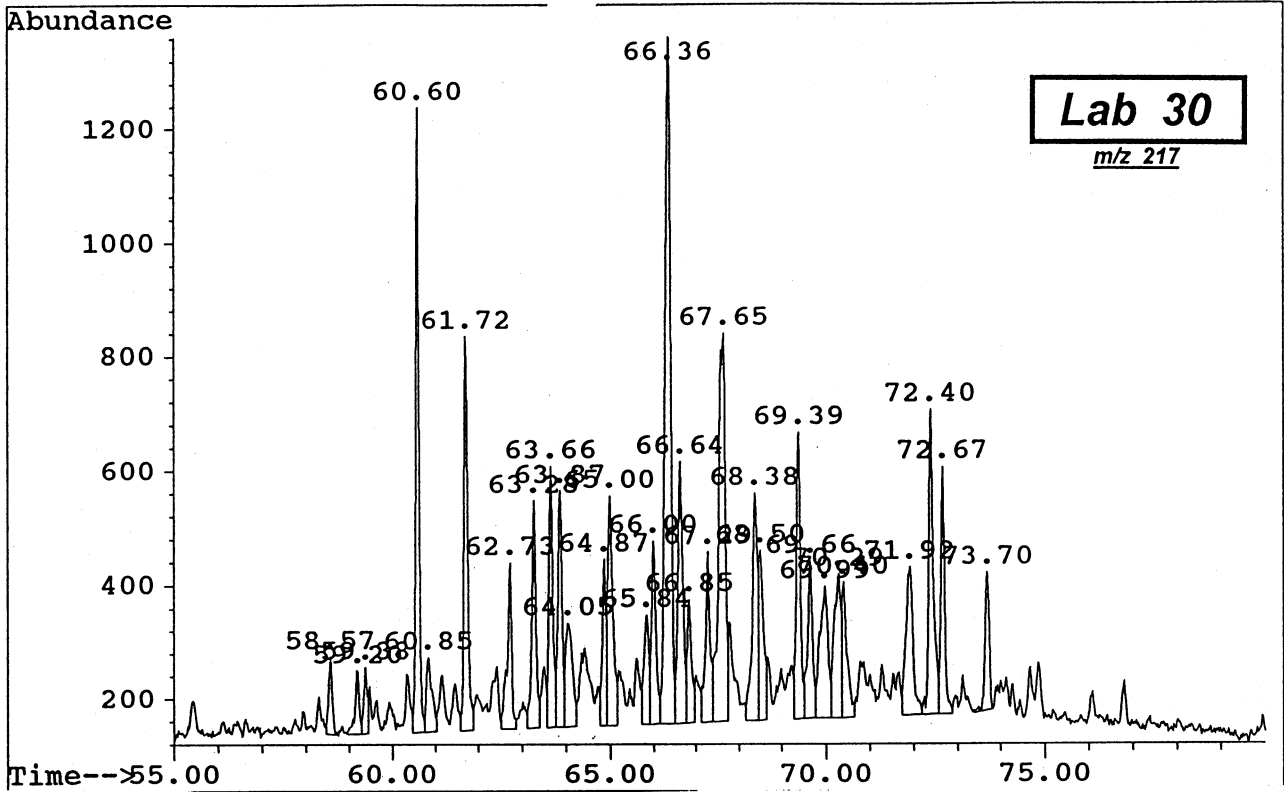


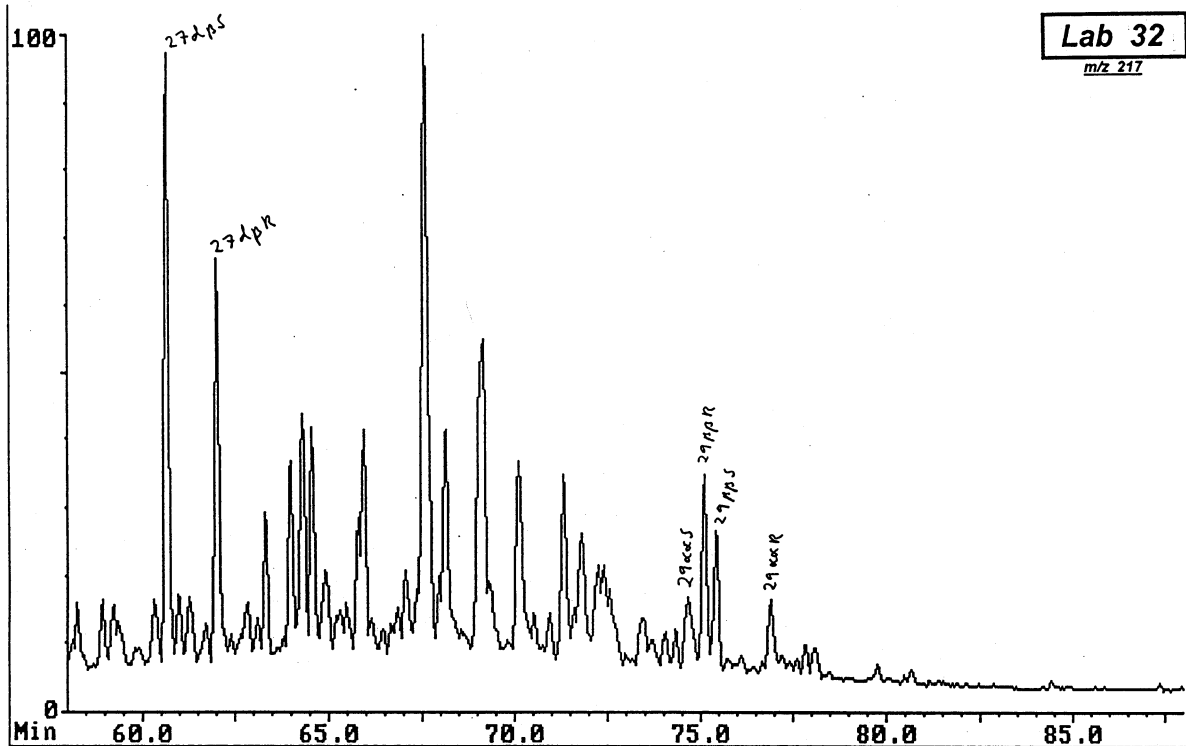
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Appendix A5.4a-3

Saturates fraction m/z 217 GC-MS fragmentograms

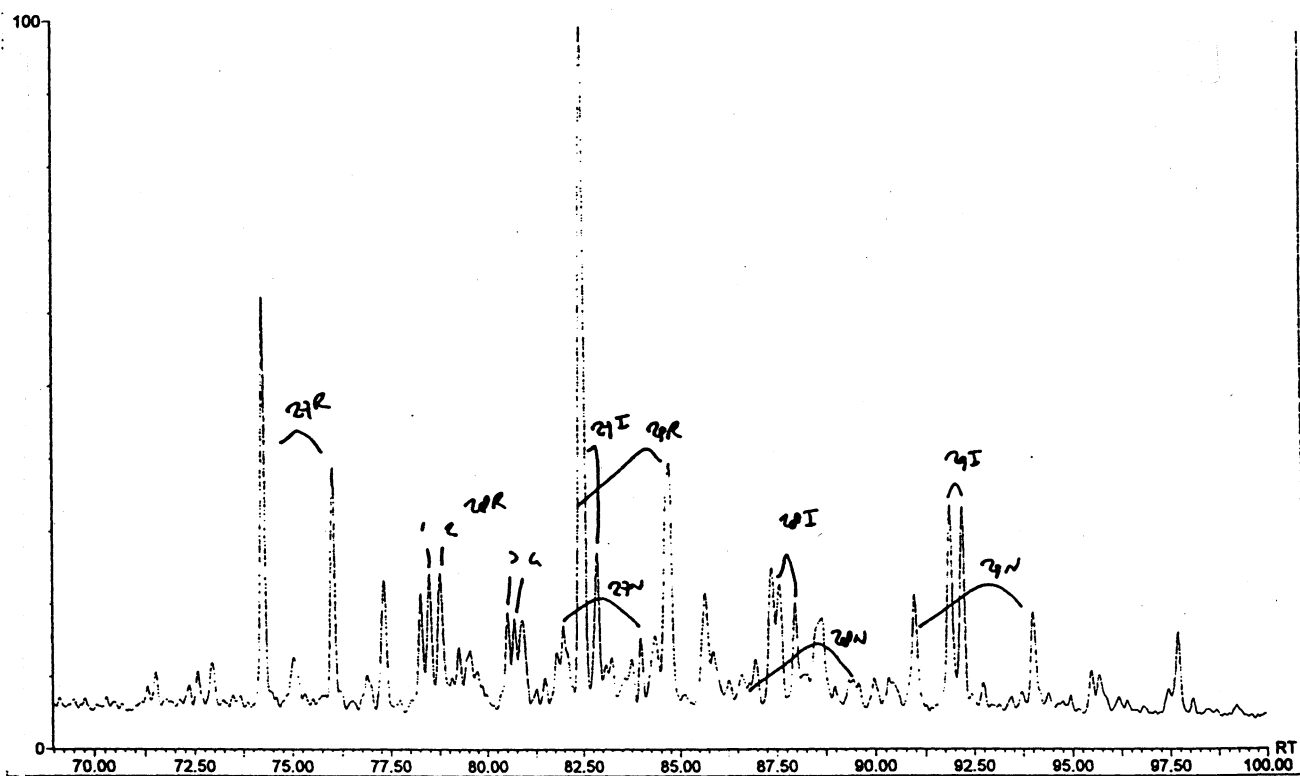
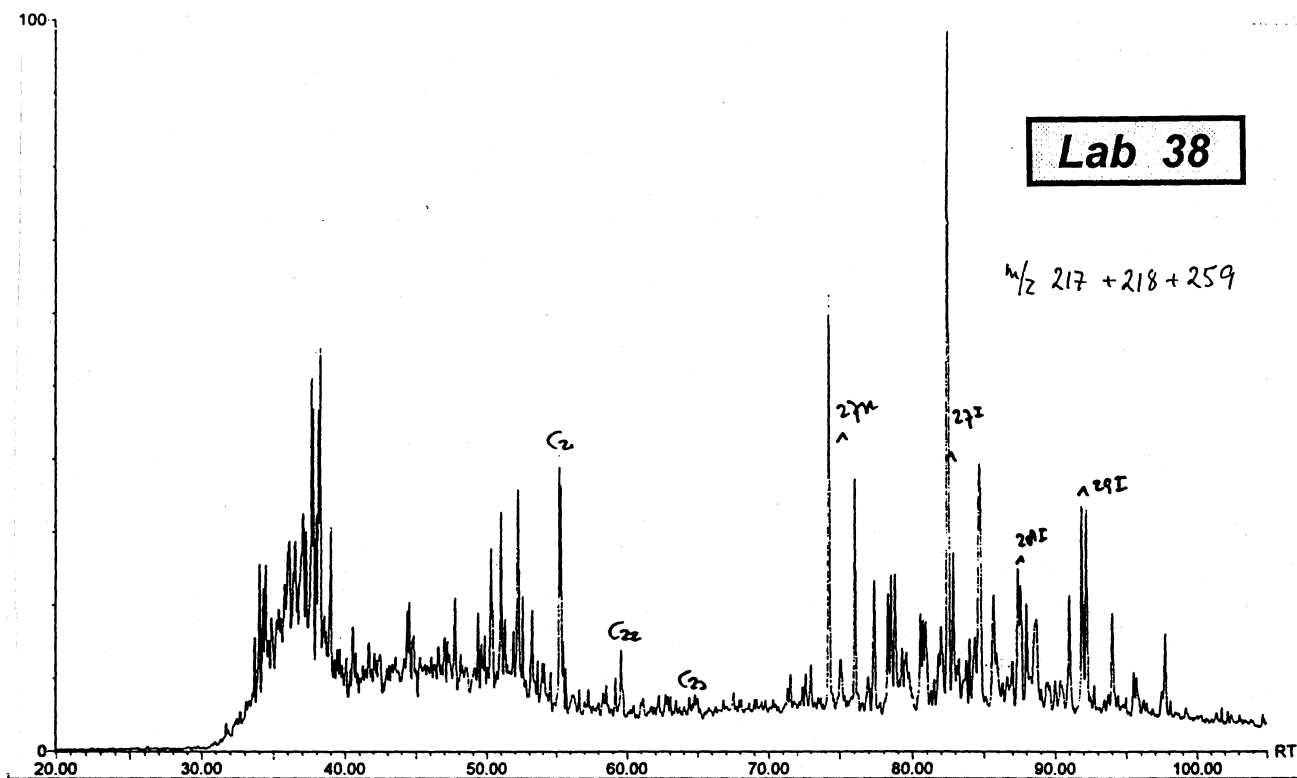


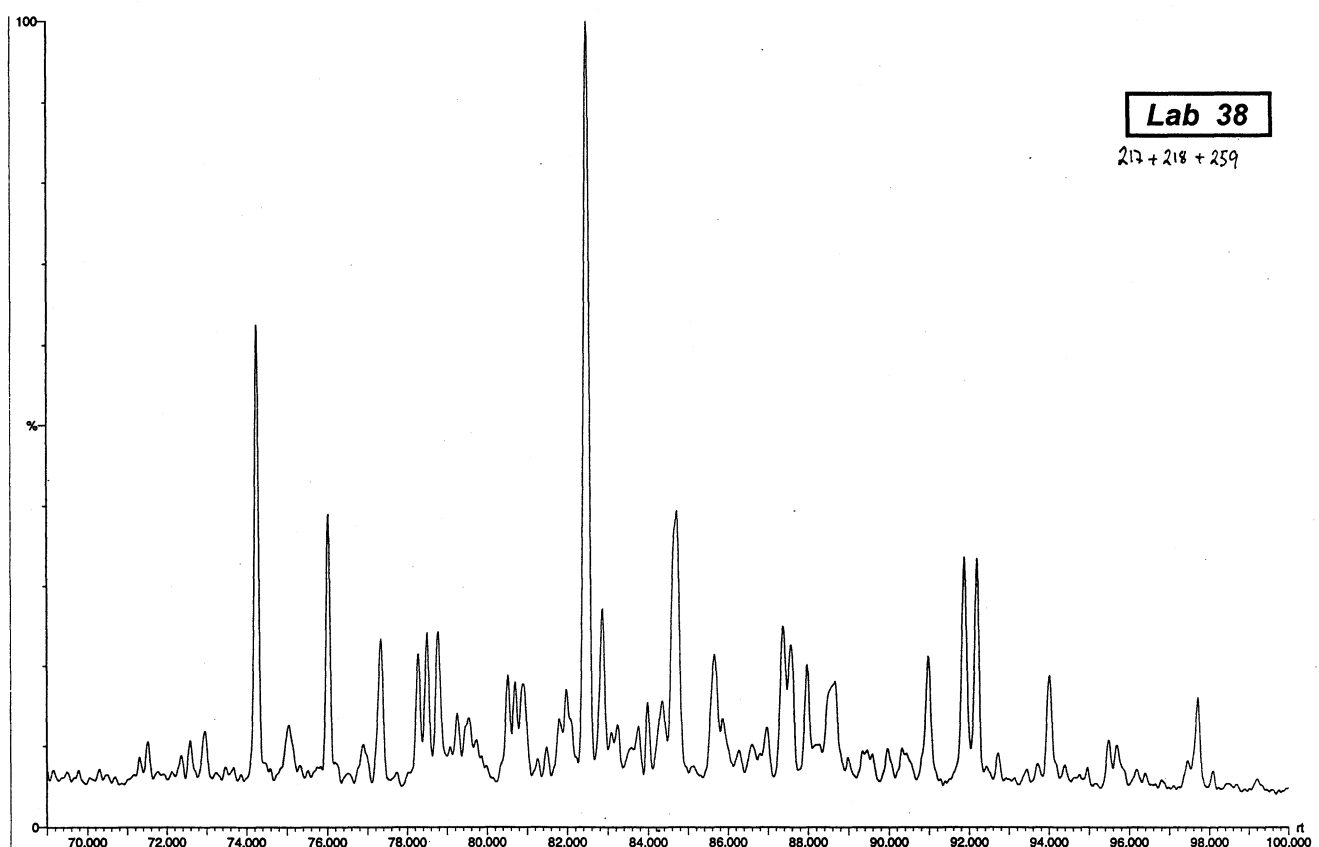
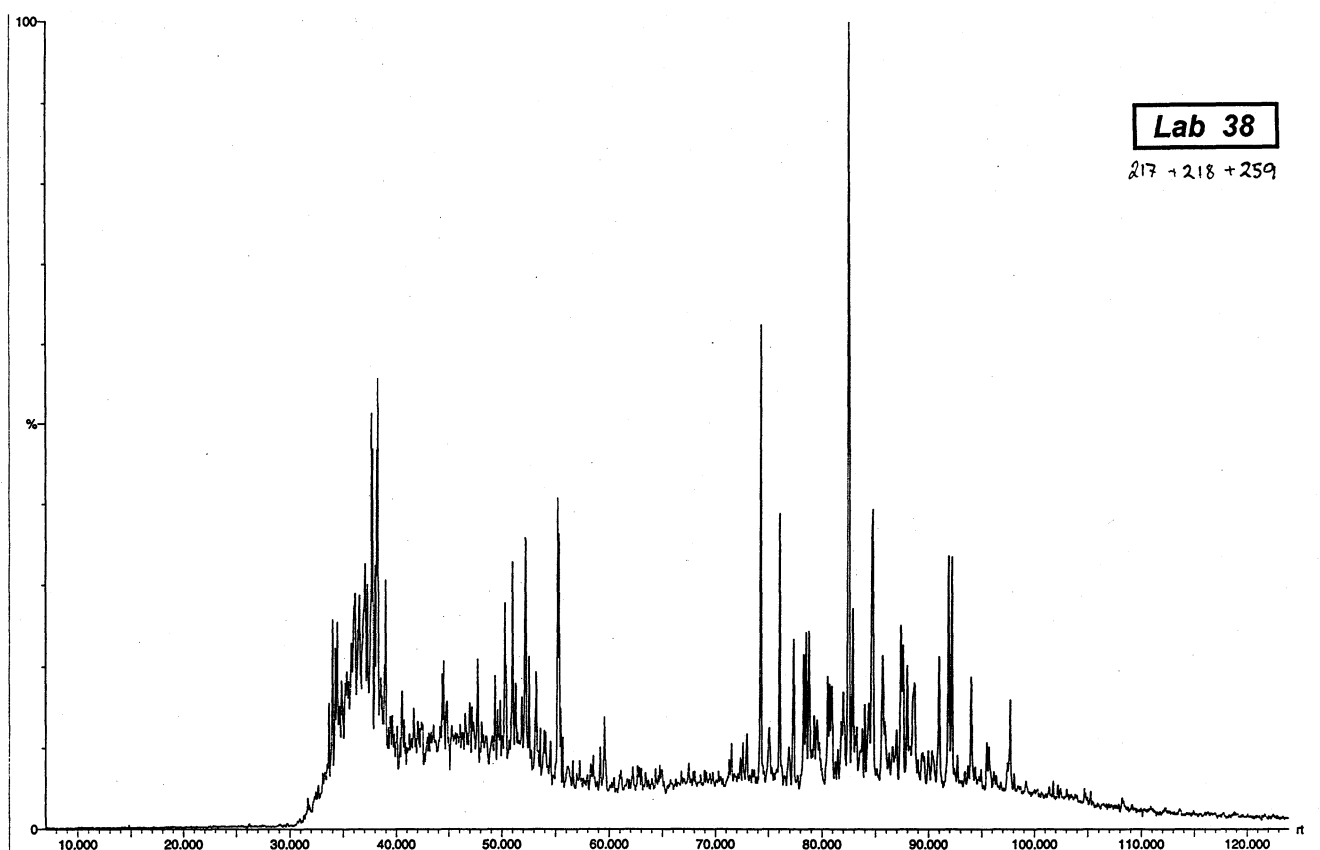




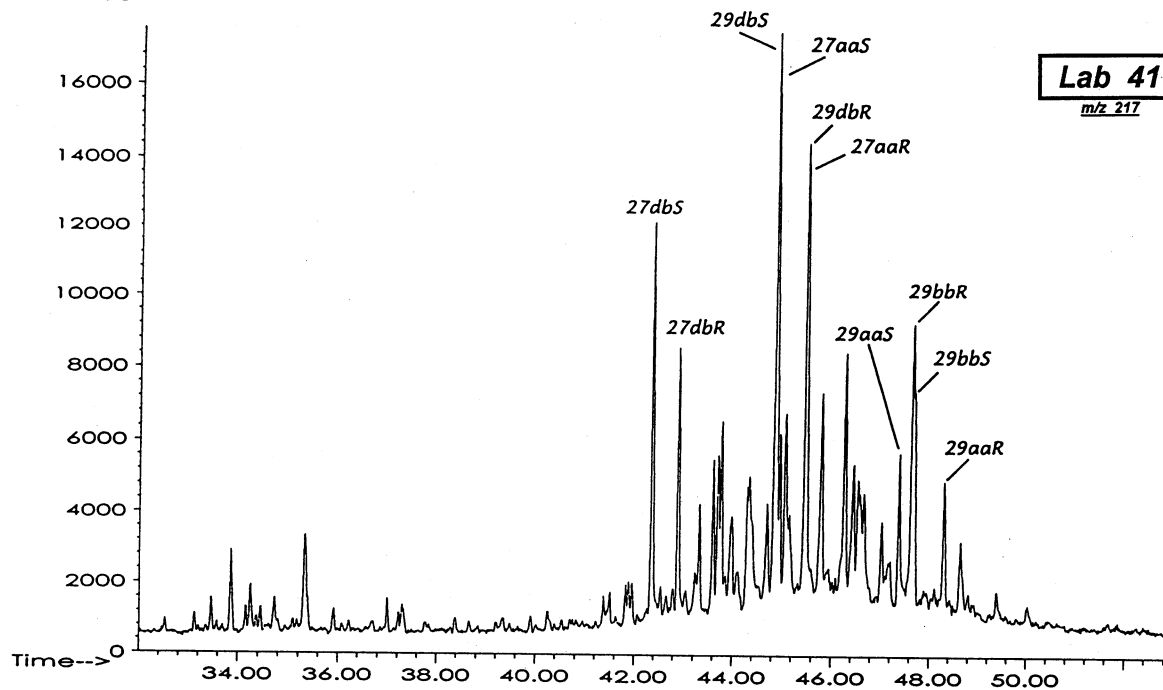
Lab 38

m/z 217 + 218 + 259



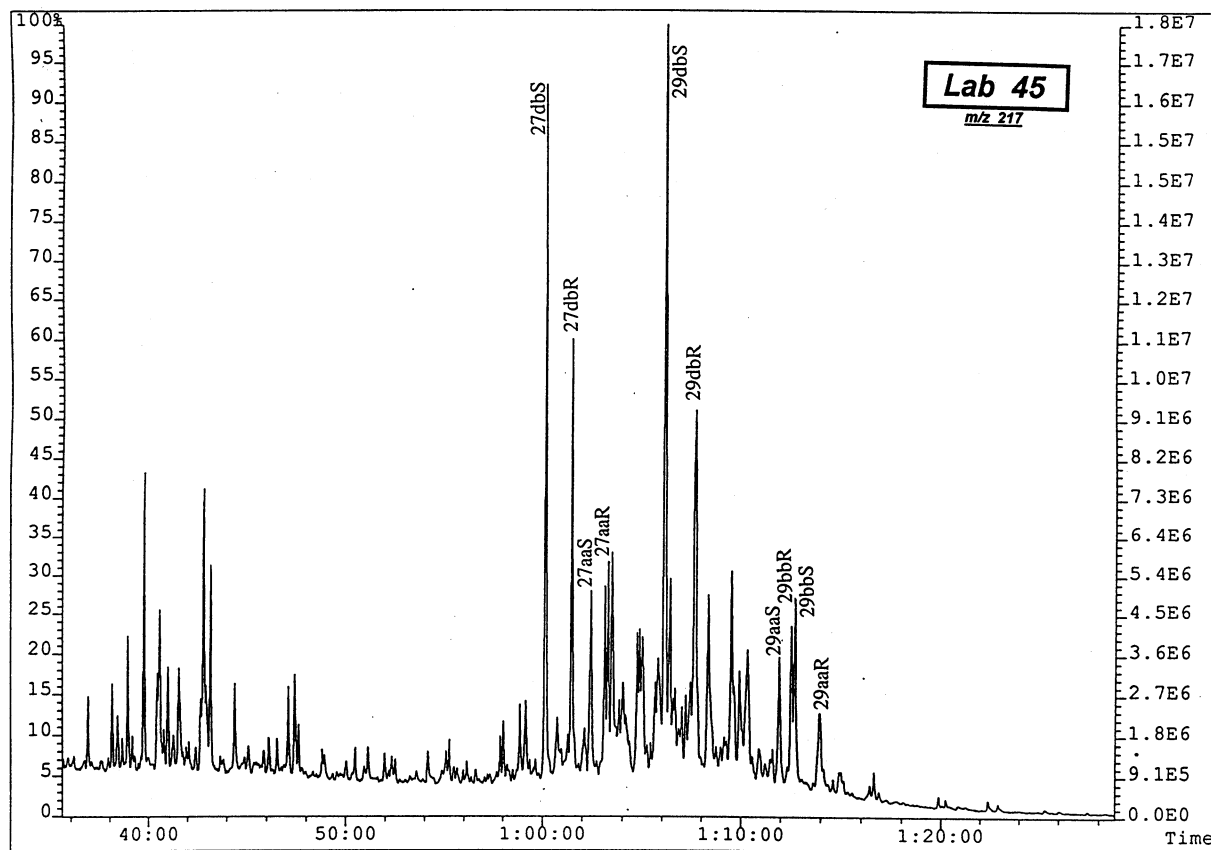


Abundance



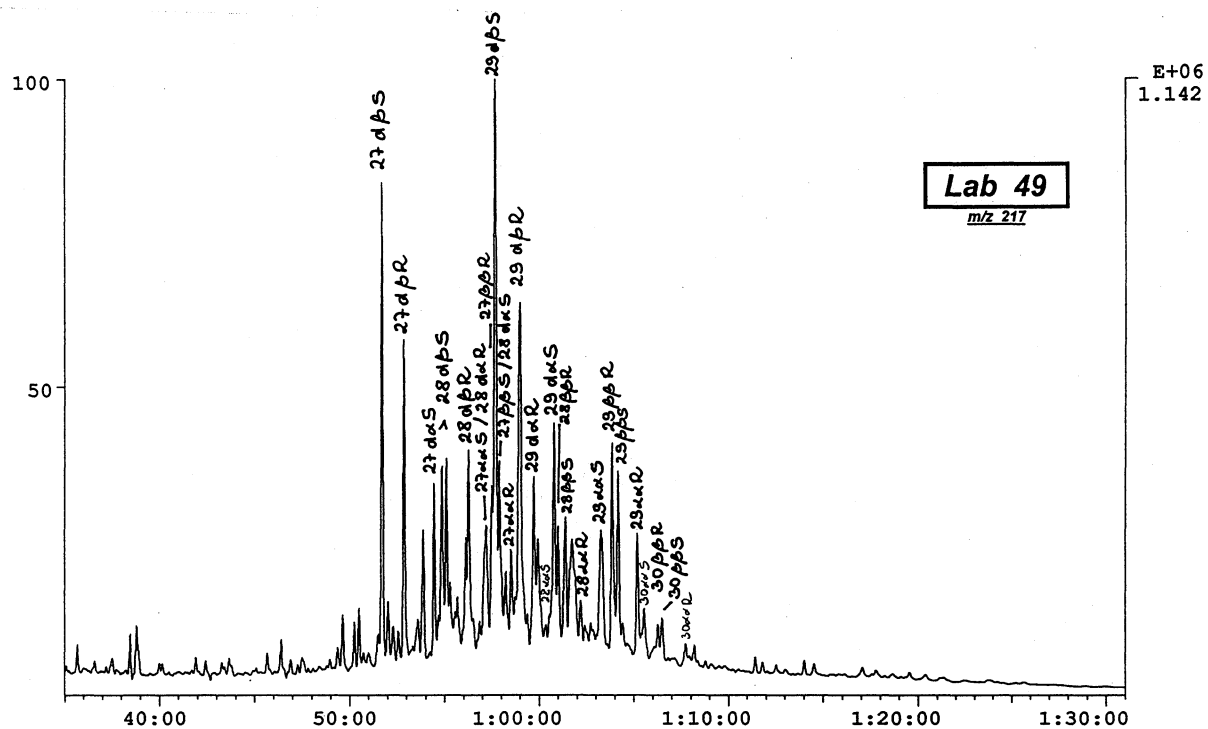
Lab 41

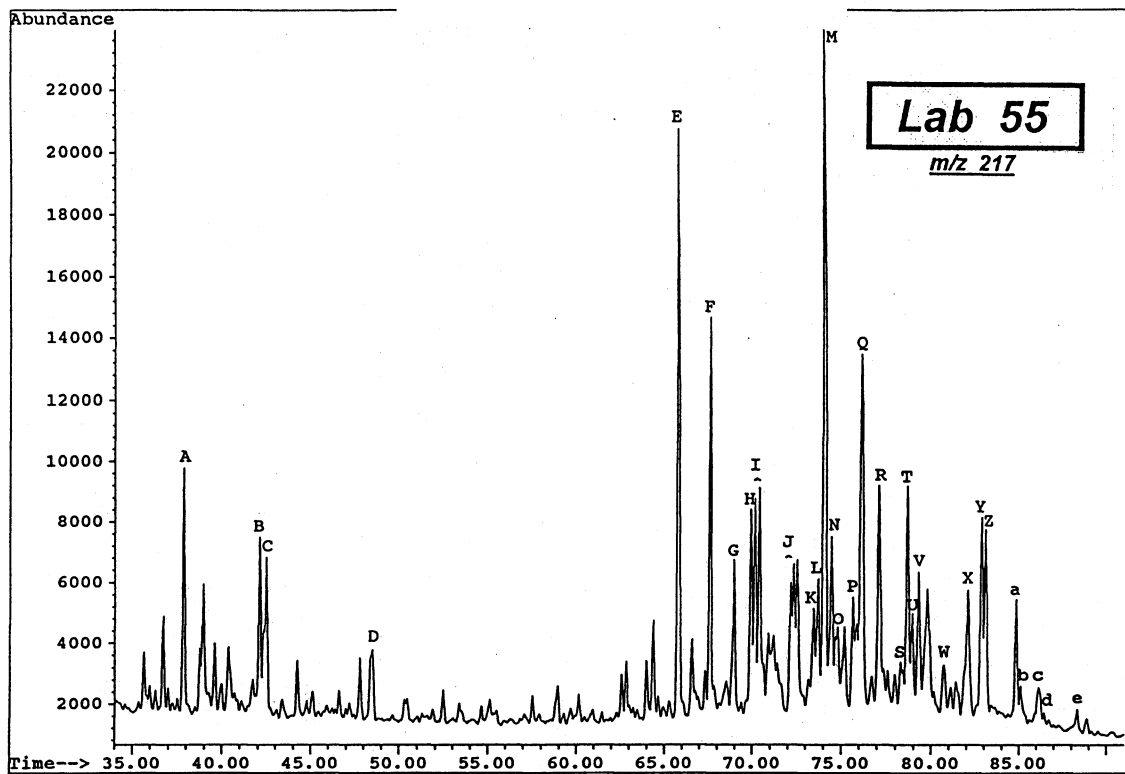
m/z 217



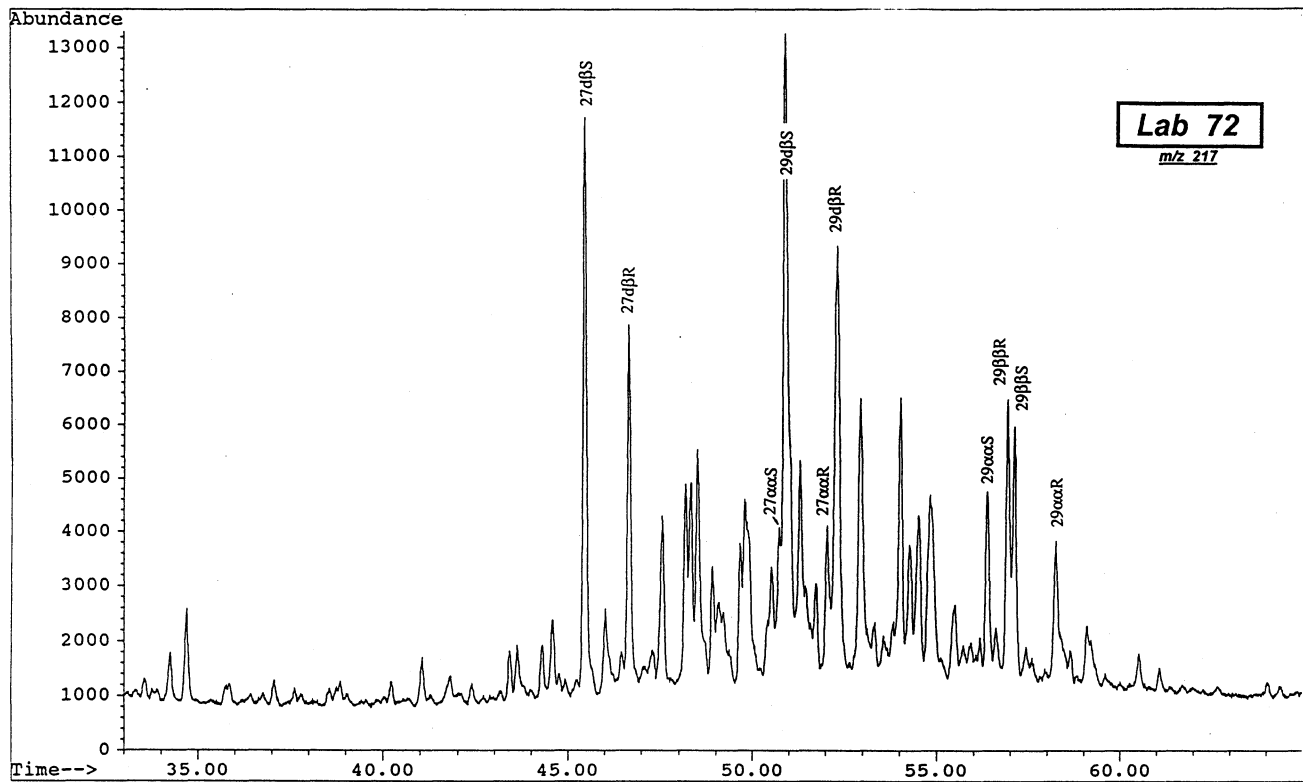
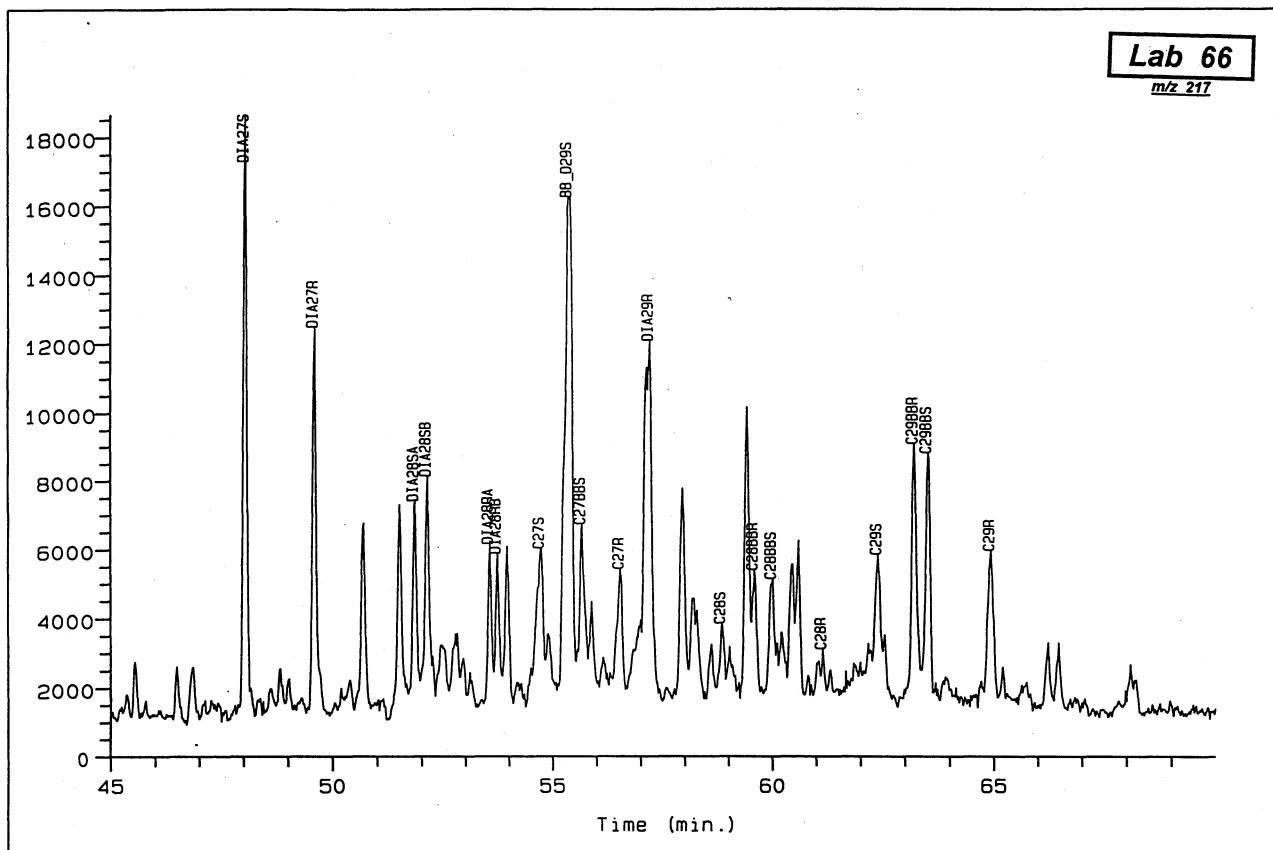
Lab 45

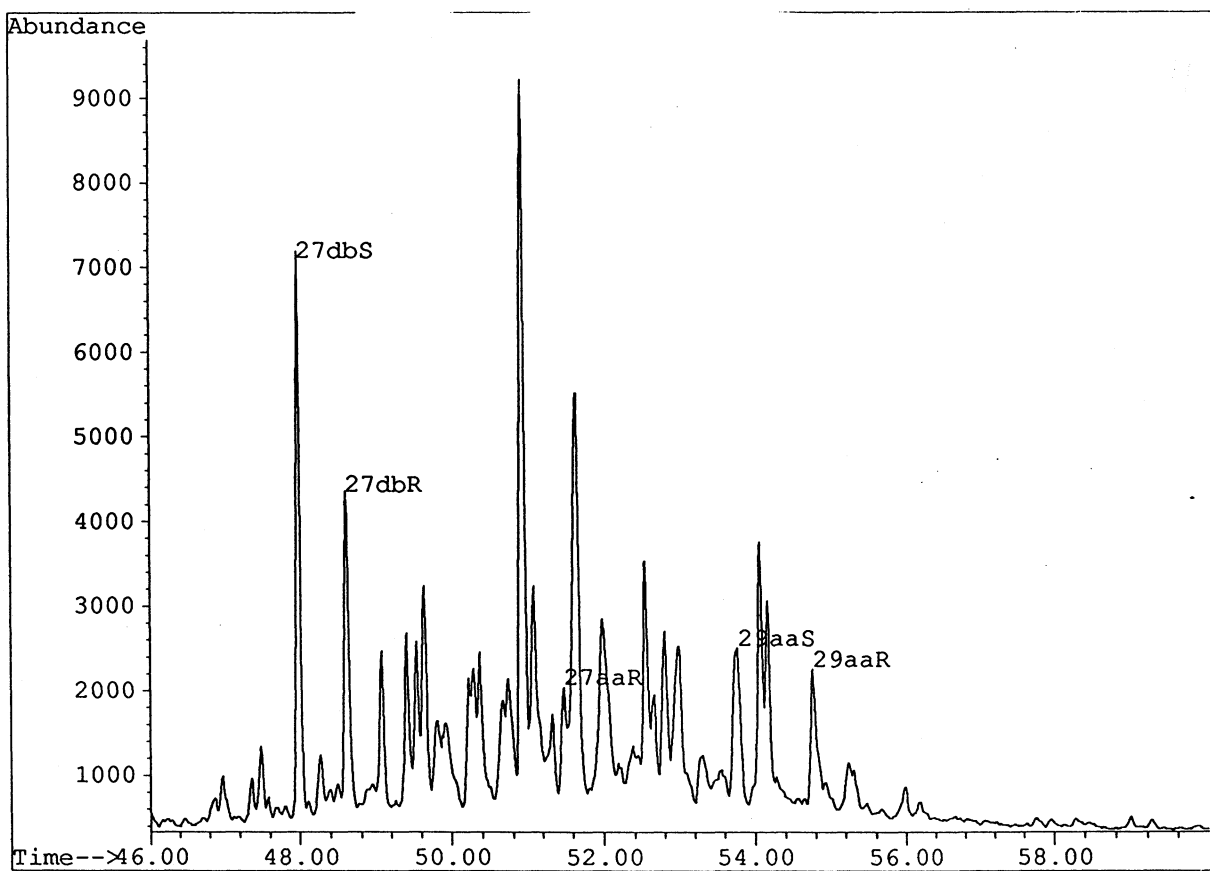
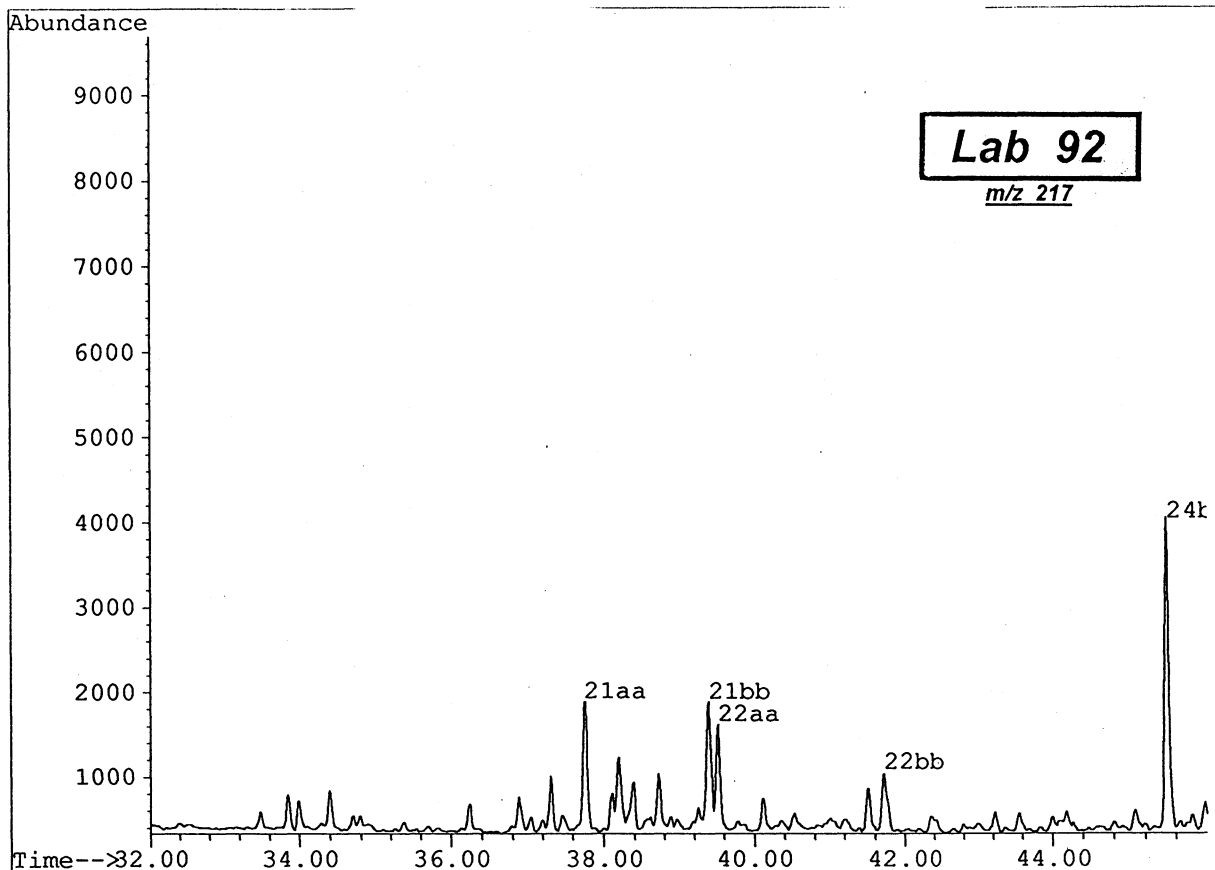
m/z 217

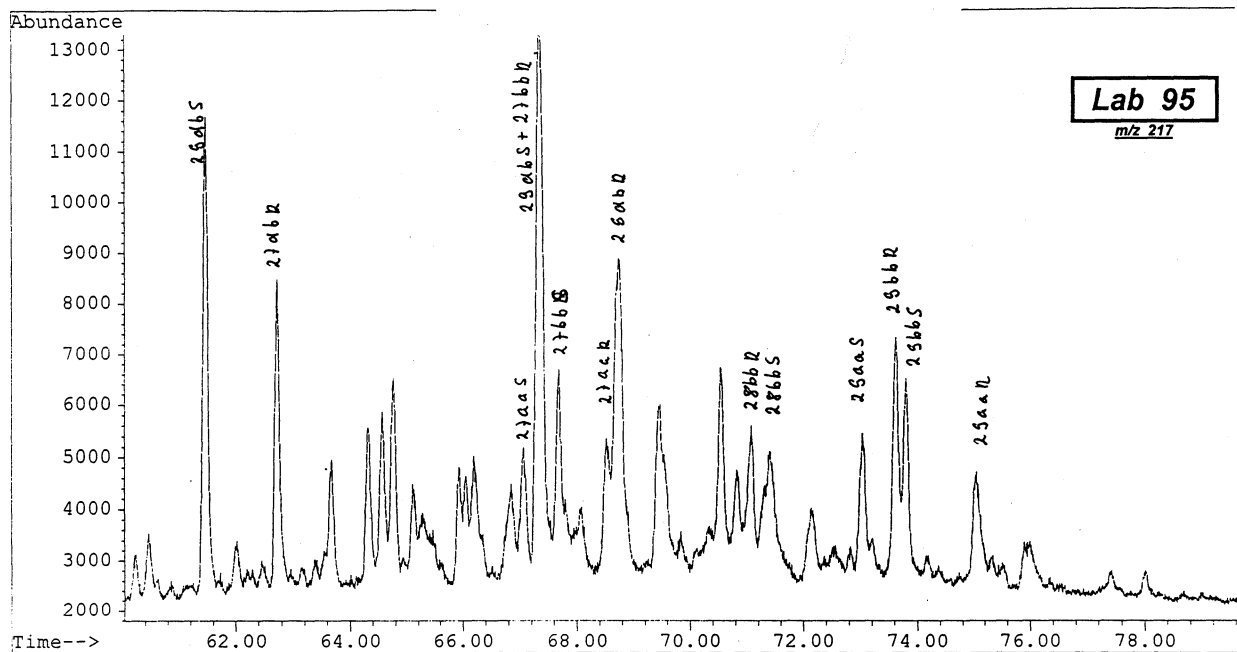




Peak ID	Sterane Name		Ret Time	Area	Area%	ppm
1	A	C ₂₁ diasterane	37.854	739479	3.69	30
2	B	C ₂₁ αβ sterane	42.095	530926	2.65	22
3	C	C ₂₂ diasterane	42.470	678820	3.39	28
4	D	C ₂₂ αβ sterane	48.506	352292	1.76	14
5	E	C ₂₇ βα diasterane (20S)	27dβS✓ 65.768	1742280	8.70	72
6	F	C ₂₇ βα diasterane (20R)	27dβR✓ 67.586	1046394	5.23	43
7	G	C ₂₇ αβ diasterane (20S)	27dαR 68.972	568477	2.84	23
8	H	C ₂₇ αβ diasterane (20R)	27dαS 69.921	589599	2.94	24
9	I	C ₂₈ βα diasterane (20S)	28dβS 70.392	1342580	6.70	55
10	J	C ₂₈ βα diasterane (20R)	28dβR 72.303	758928	3.79	31
11	K	C ₂₈ αβ diasterane (20S)	28dαR 73.435	329280	1.64	14
12	L	C ₂₇ ααα sterane (20S)	27ααS✓ 73.686	521119	2.60	21
13	M	C ₂₇ αβ ster-(20R) + C ₂₈ βα dia-(20S)	27ββR + 29dβS✓ 74.052	2360720	11.79	97
14	N	C ₂₇ αβ sterane (20S)	27ββS 74.450	649760	3.24	27
15	O	C ₂₈ αβ diasterane (20R)	28dαS 74.800	427724	2.14	18
16	P	C ₂₇ ααα sterane (20R)	27ααR✓ 75.638	346108	1.73	14
17	Q	C ₂₈ βα diasterane (20R)	29dβR✓ 76.128	1566954	7.82	64
18	R	C ₂₈ αβ diasterane (20S)	29dαR 77.071	864825	4.32	36
19	S	C ₂₈ ααα sterane (20S)	28ααS 78.290	146110	0.73	6
20	T	C ₂₈ αβ diasterane (20R)	29dαS 78.661	759793	3.79	31
21	U	C ₂₈ αβ sterane (20R)	28ββR 78.923	317815	1.59	13
22	V	C ₂₈ αβ sterane (20S)	28ββS 79.281	545787	2.73	22
23	W	C ₂₈ ααα sterane (20R)	28ααR 80.710	216466	1.08	9
24	X	C ₂₉ ααα sterane (20S)	29ααS✓ 82.062	539151	2.69	22
25	Y	C ₂₉ αβ sterane (20R)	29ββR✓ 82.833	706050	3.53	29
26	Z	C ₂₉ αβ sterane (20S)	29ββS✓ 83.070	579744	2.90	24
27	a	C ₂₉ ααα sterane (20R)	29ααR✓ 84.819	377096	1.88	15
28	b	C ₃₀ ααα sterane (20S)	30ααS 85.074	131533	0.66	5
29	c	C ₃₀ αβ sterane (20R)	30ββR 86.115	173357	0.87	7
30	d	C ₃₀ αβ sterane (20S)	30ββS 86.419	39045	0.19	2
31	e	C ₃₀ ααα sterane (20R)	30ααR 88.327	77405	0.39	3



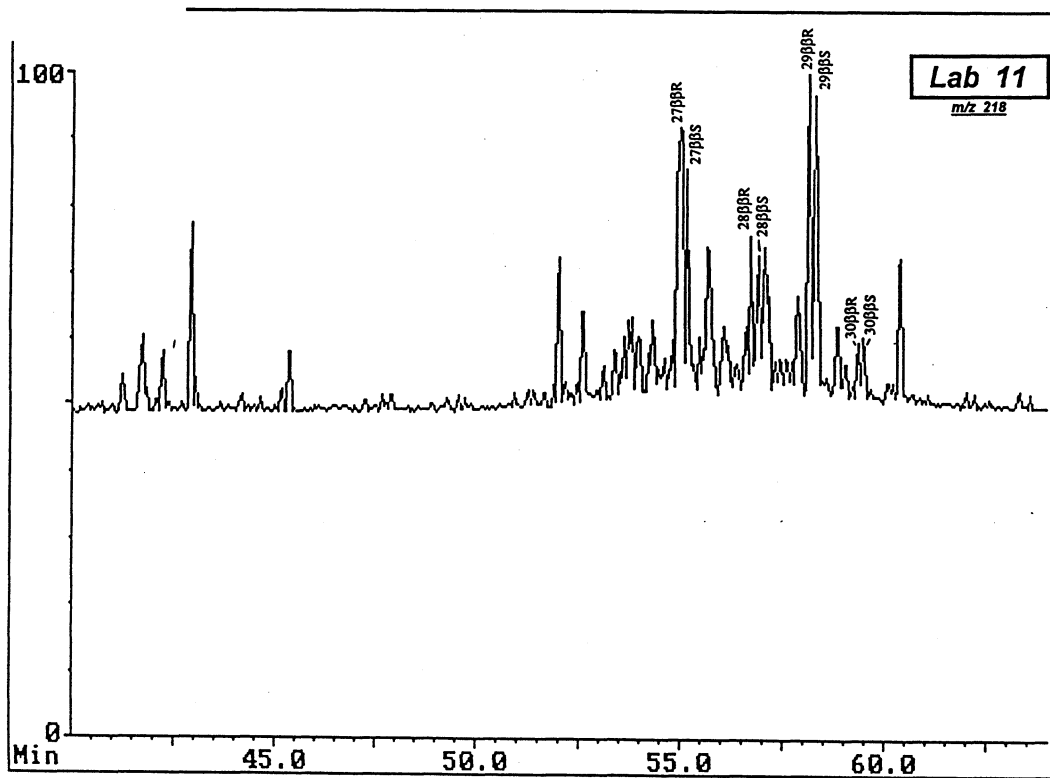
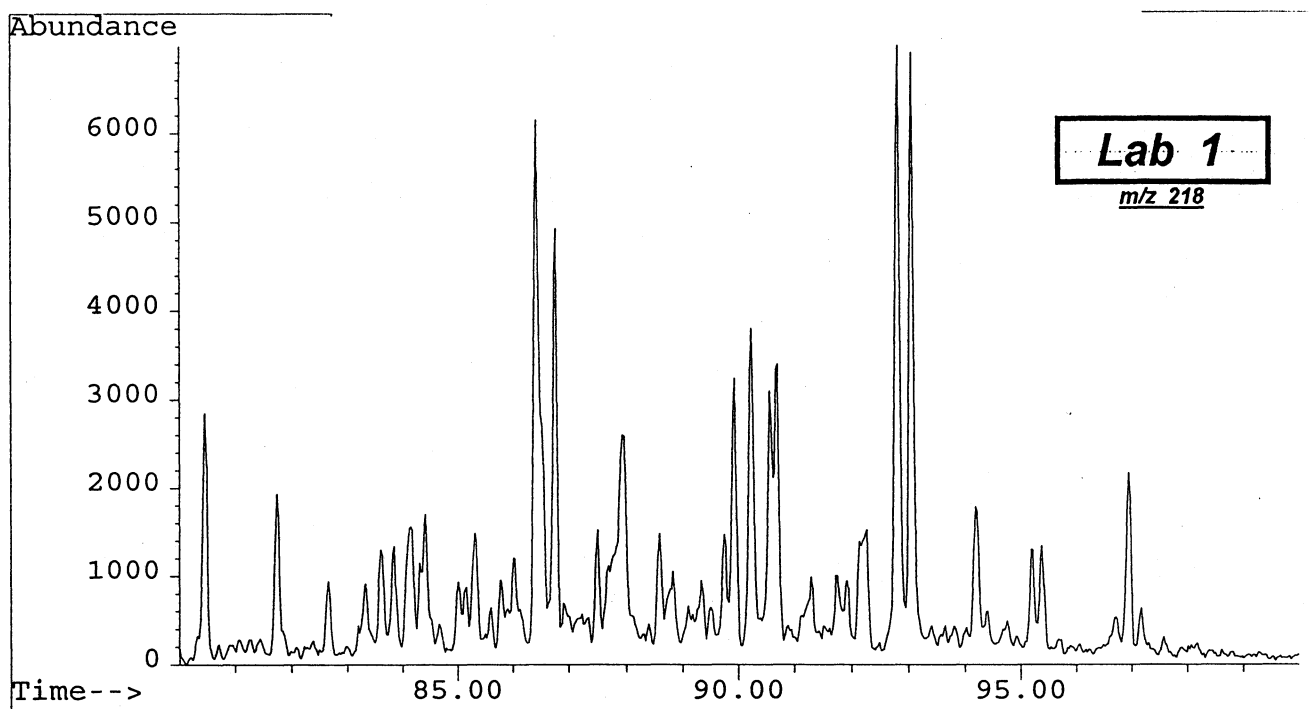


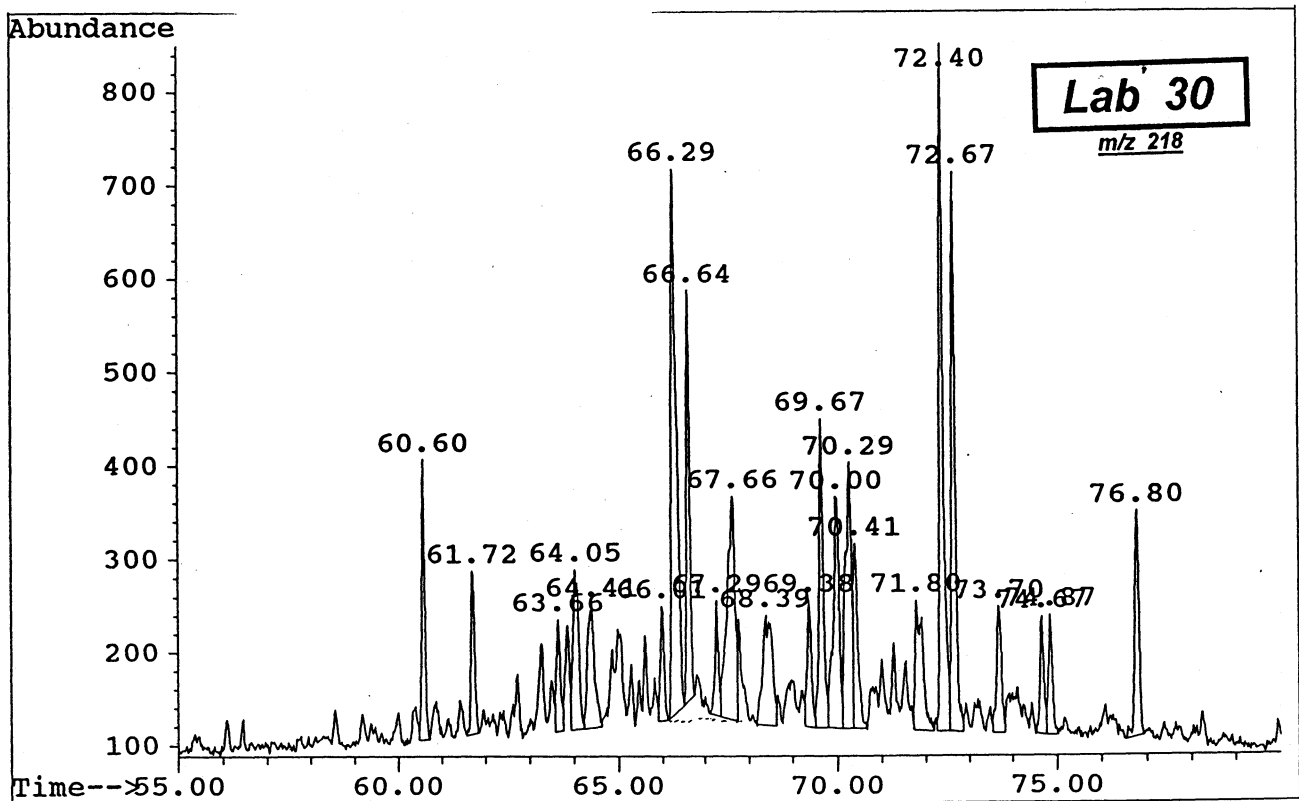
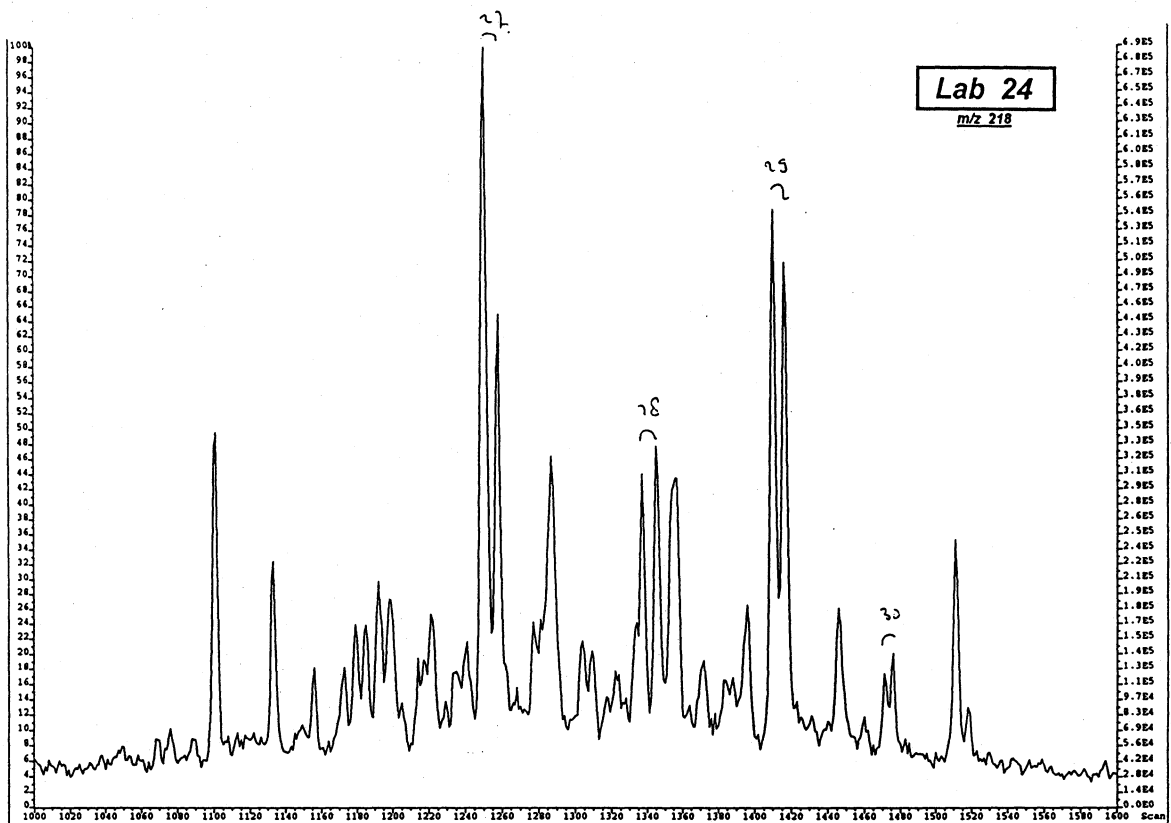


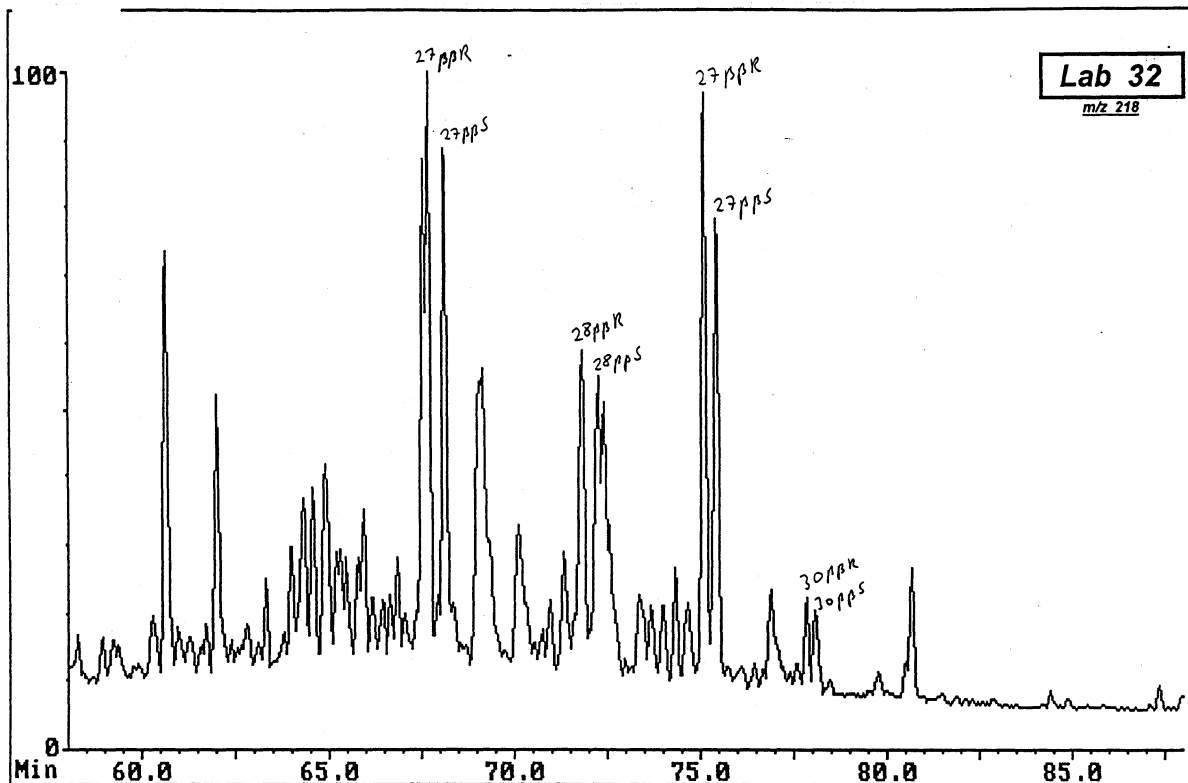
NGS SR-1

Appendix A5.4a-4

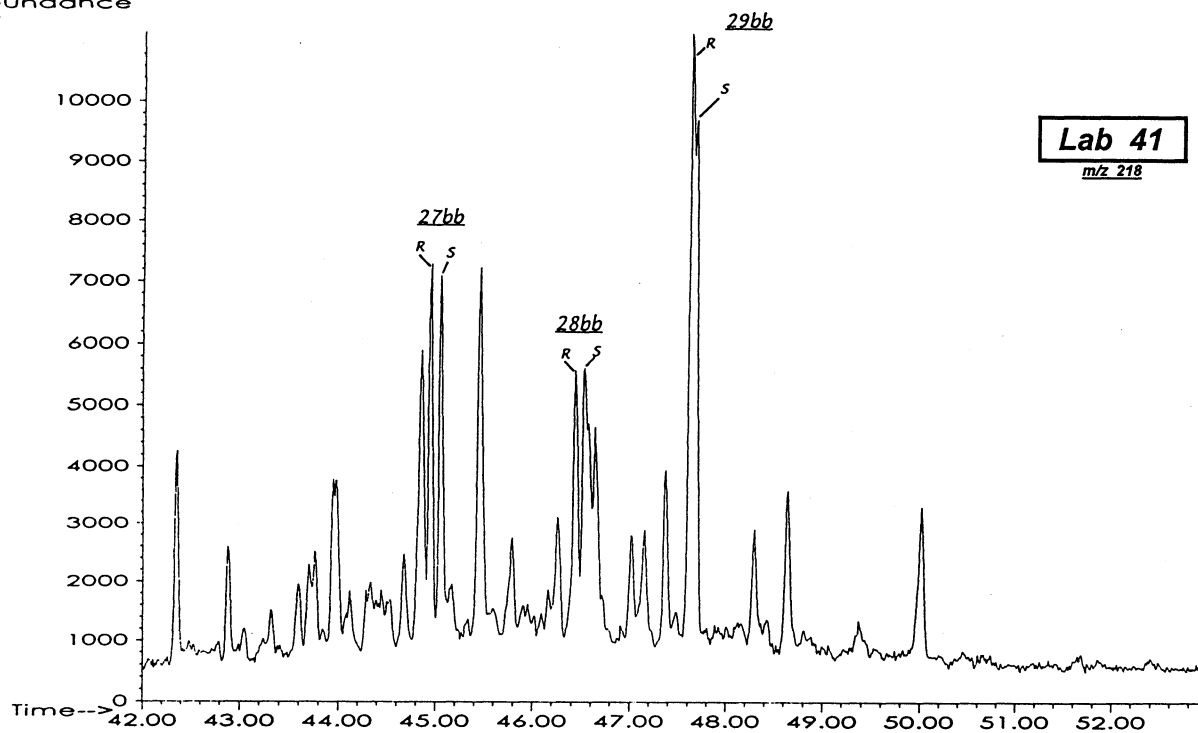
Saturates fraction m/z 218 GC-MS fragmentograms

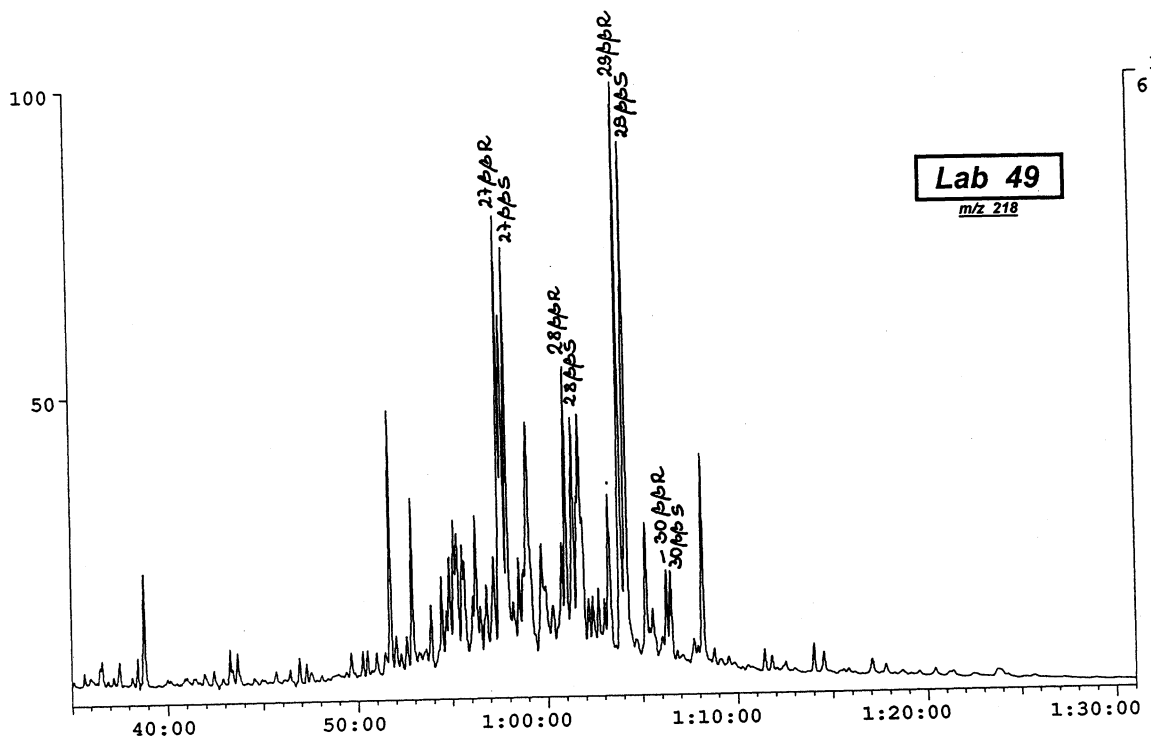
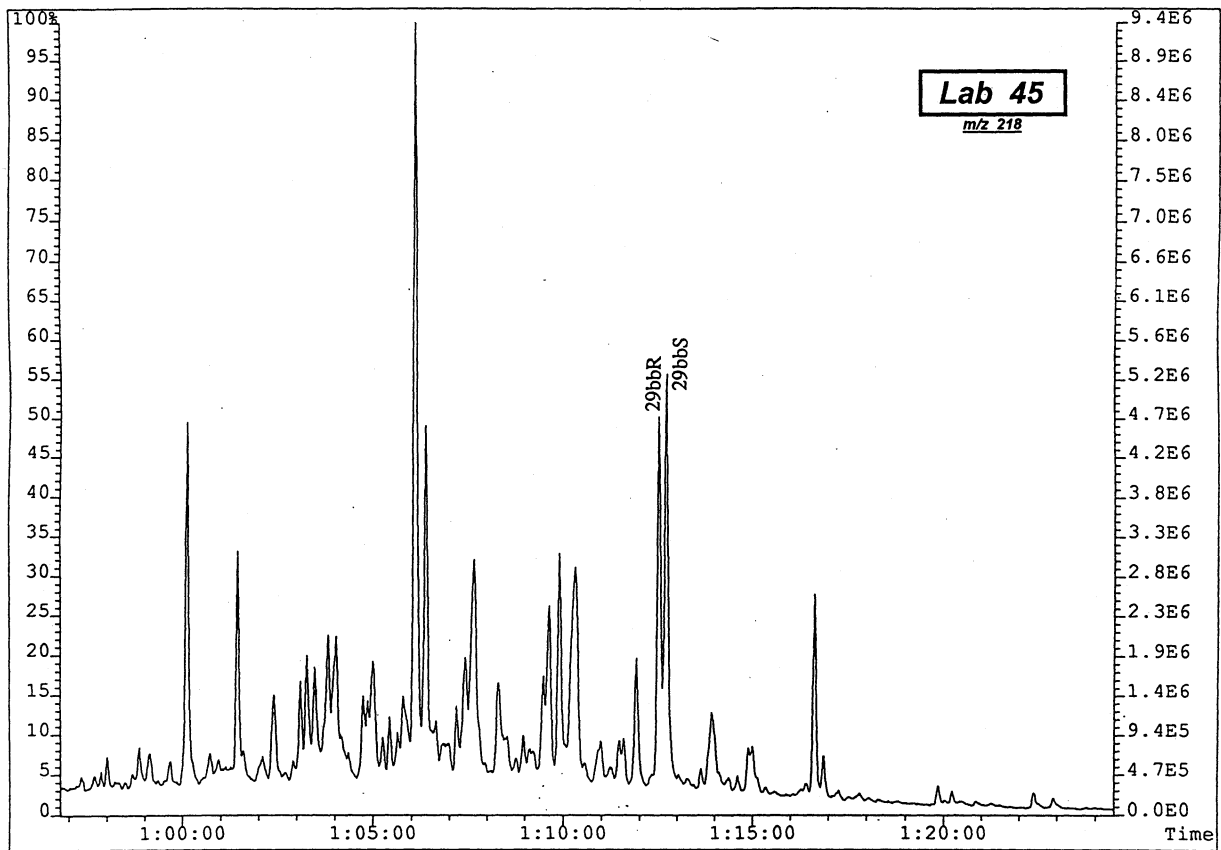


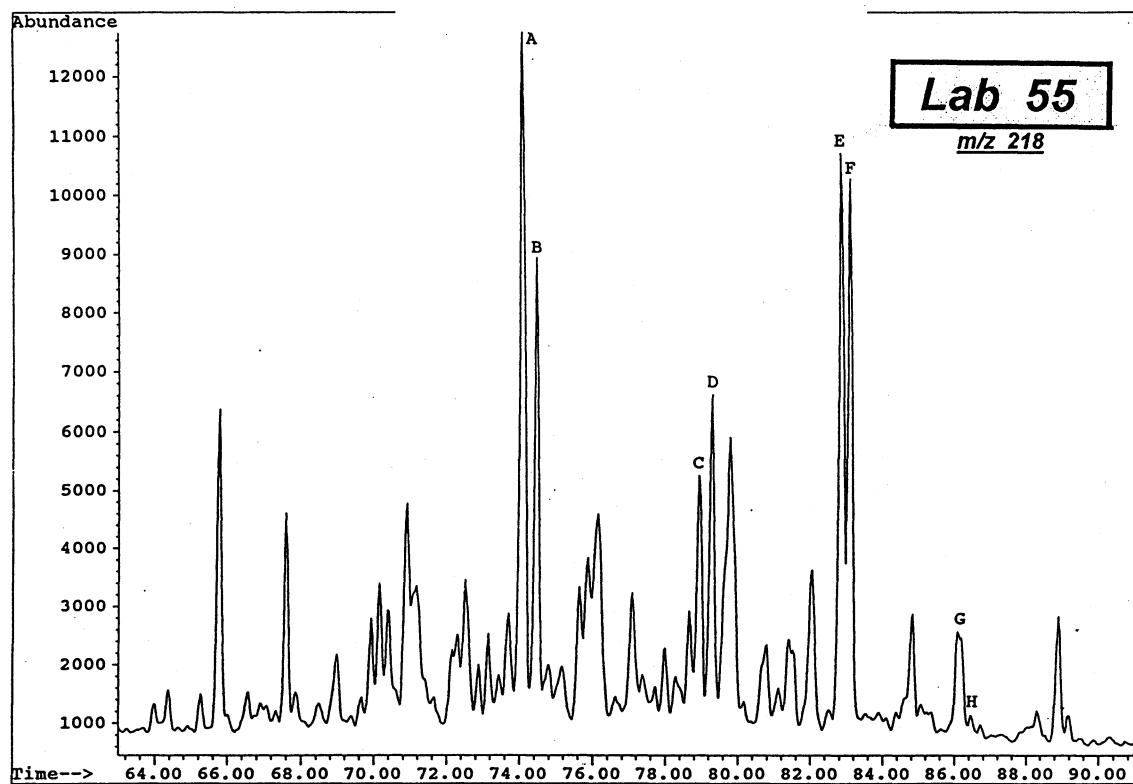




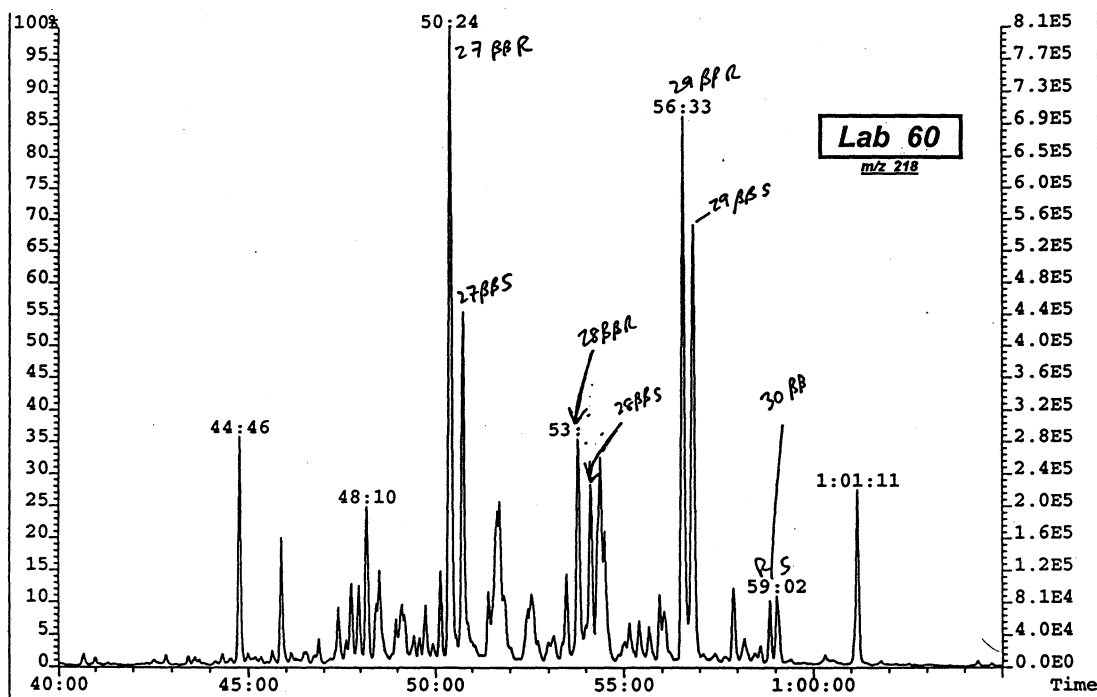
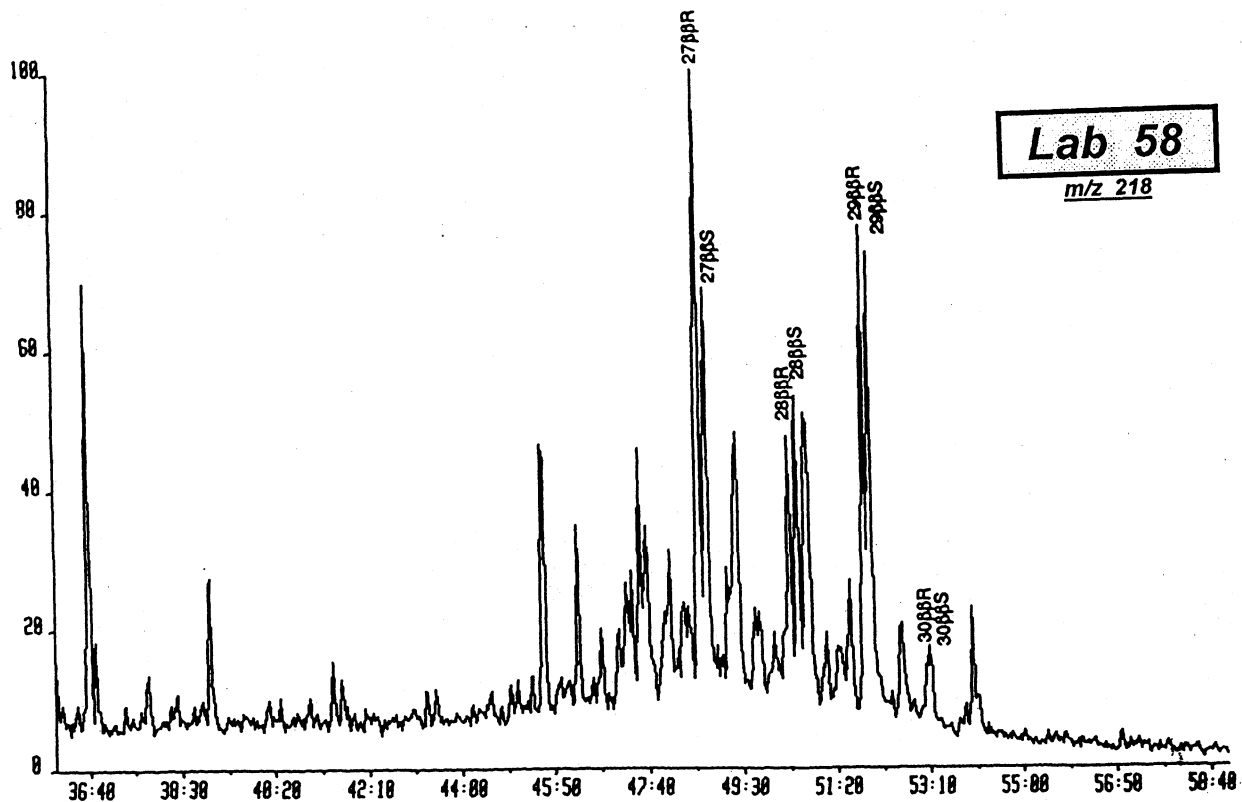
Abundance

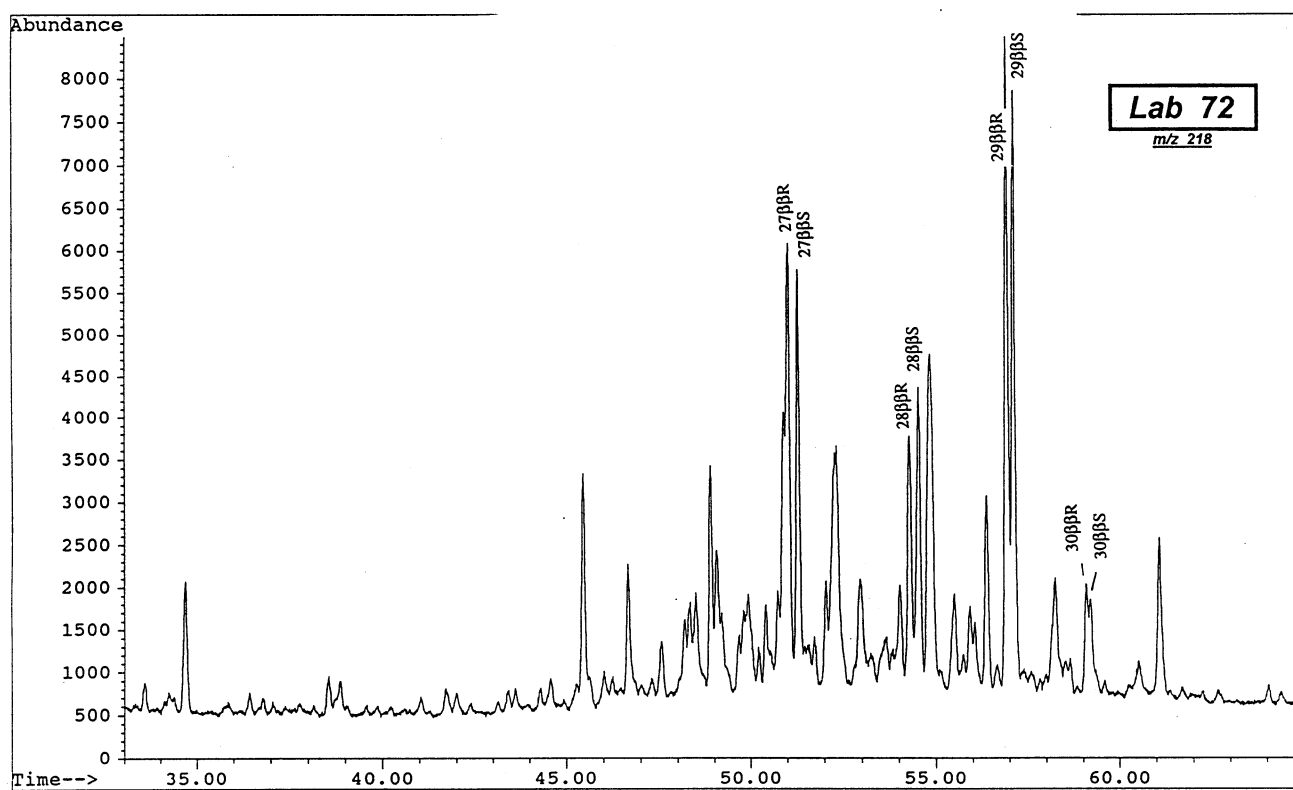
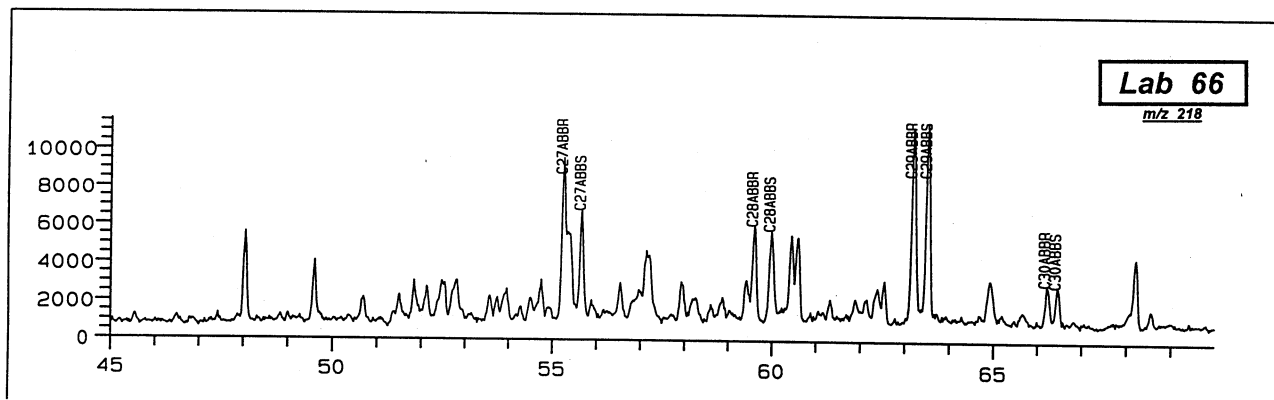


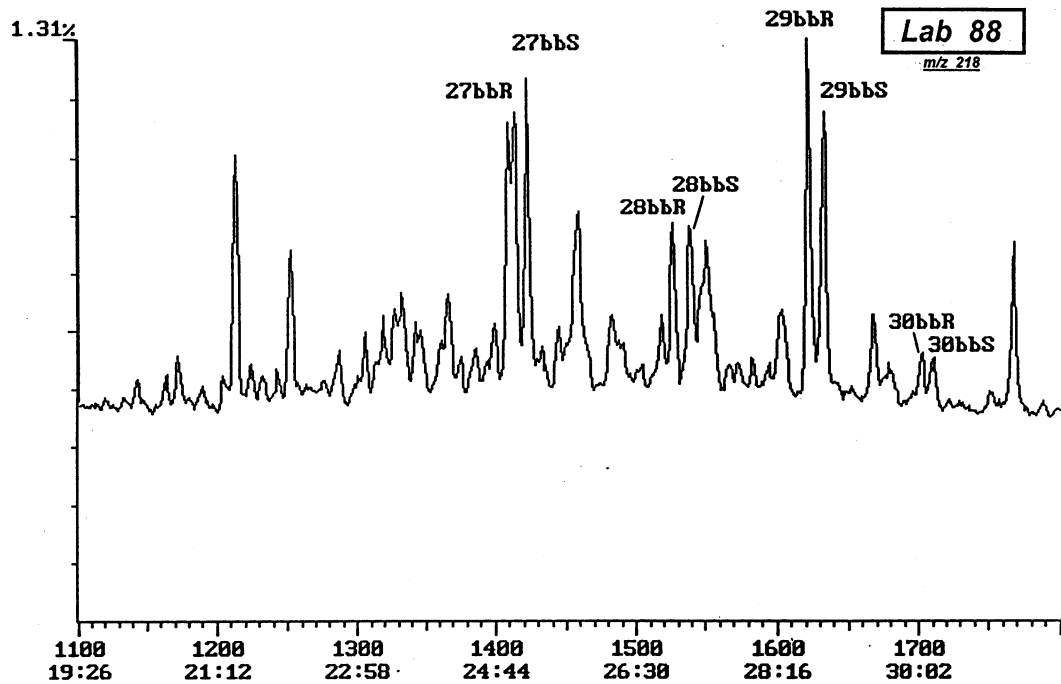
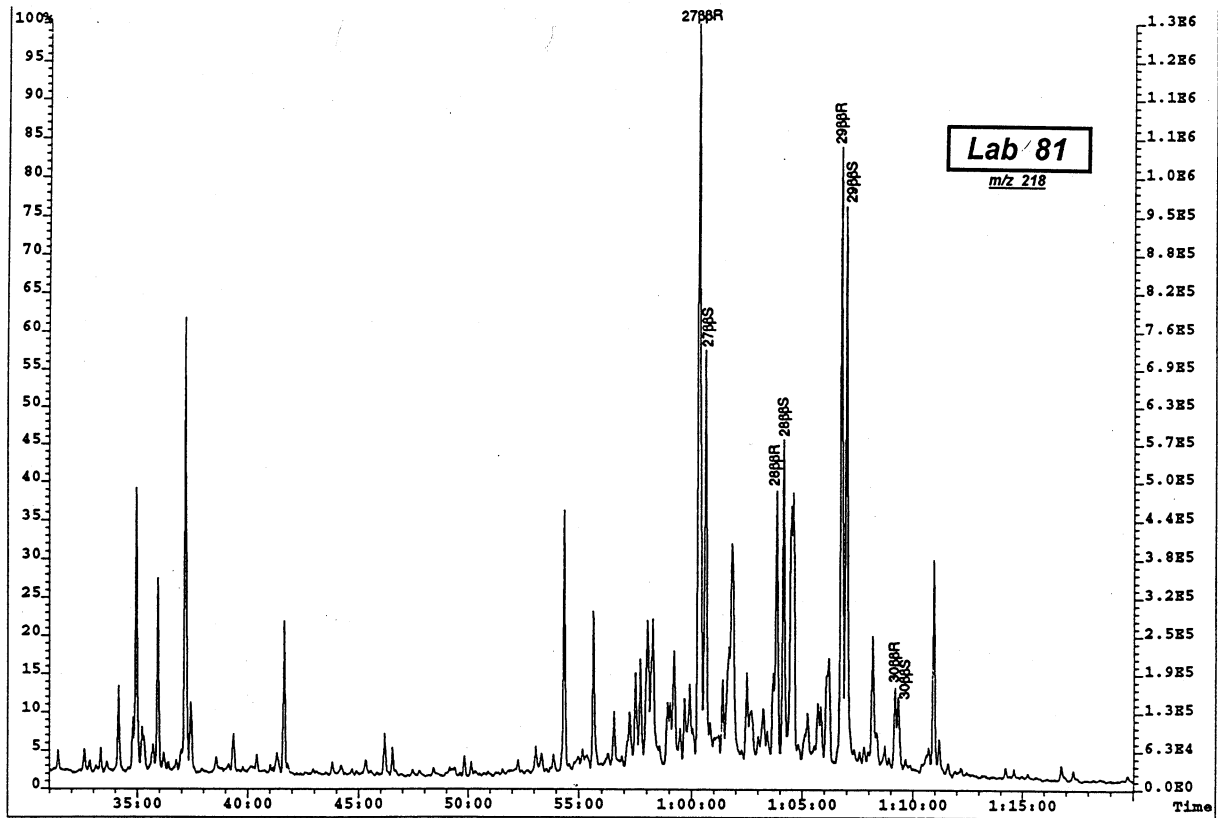


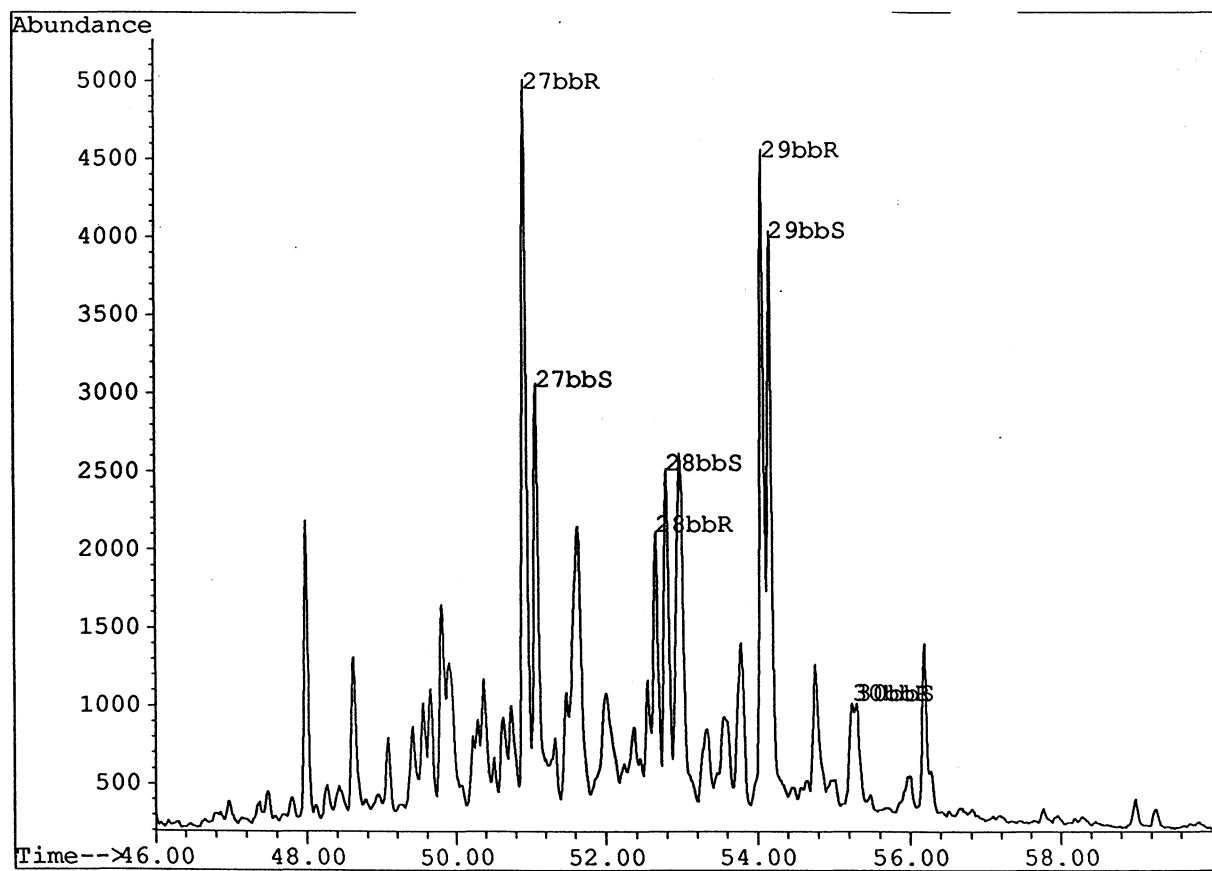
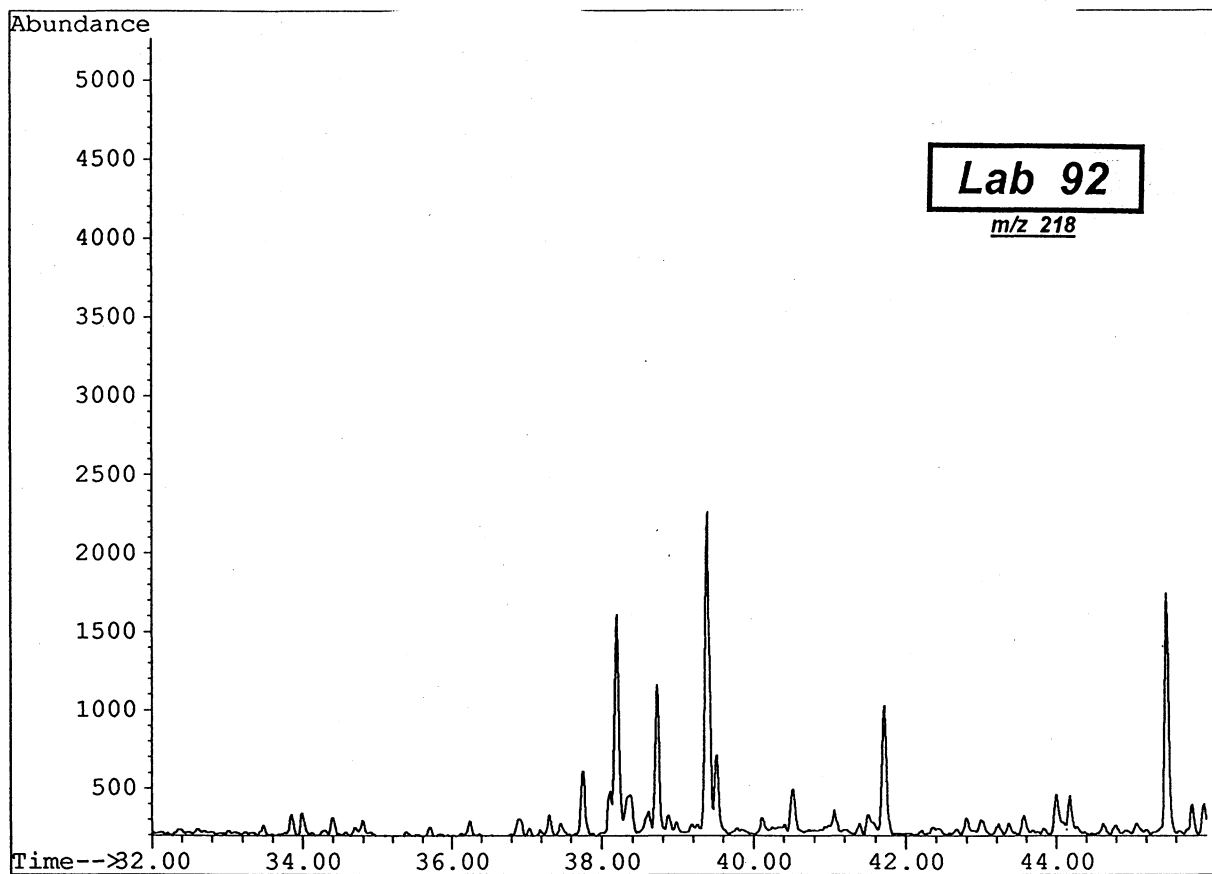


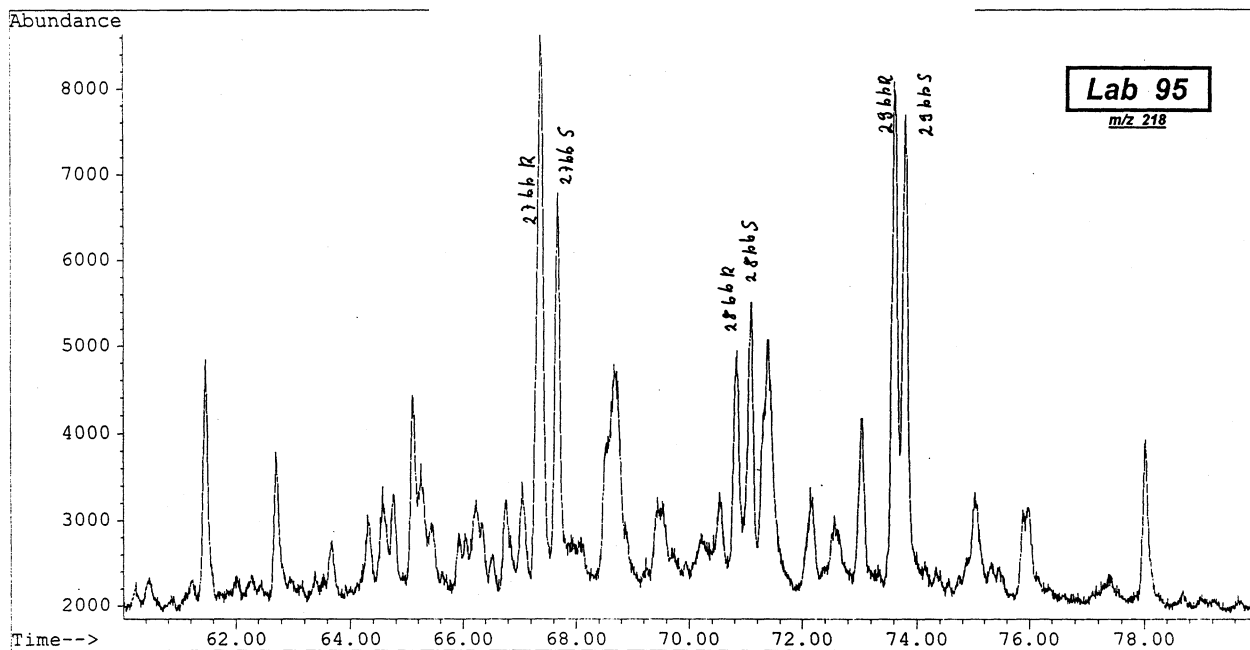
Peak ID	Sterane Name	Ret Time	Area	Area%	ppm
A	27-28 β R	74.089	1245514	24.60	51
B	27-28 β S	74.471	715349	14.13	29
C	28 β R	78.939	417336	8.24	17
D	28 β S	79.281	509157	10.06	21
E	29 β R	82.834	911915	18.01	37
F	29 β S	83.078	916358	18.10	38
G	30 β R	86.090	305439	6.03	13
H	30 β S	86.450	41785	0.83	2







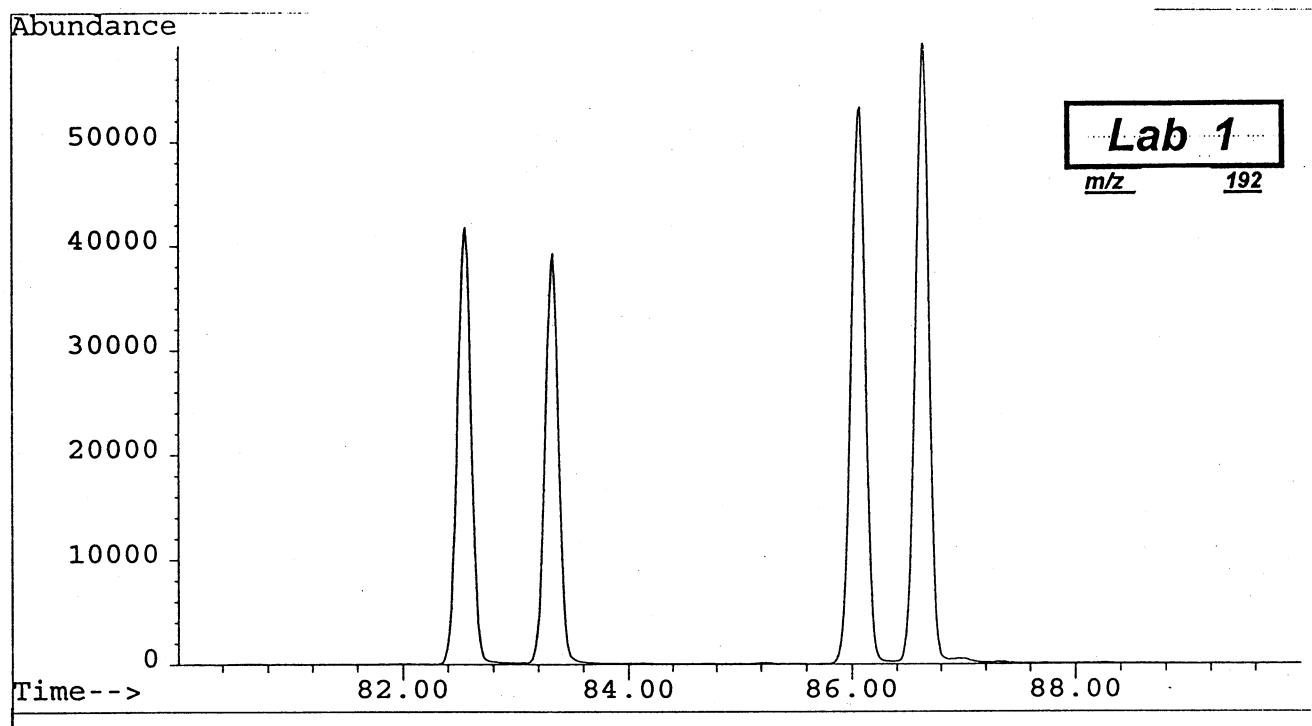


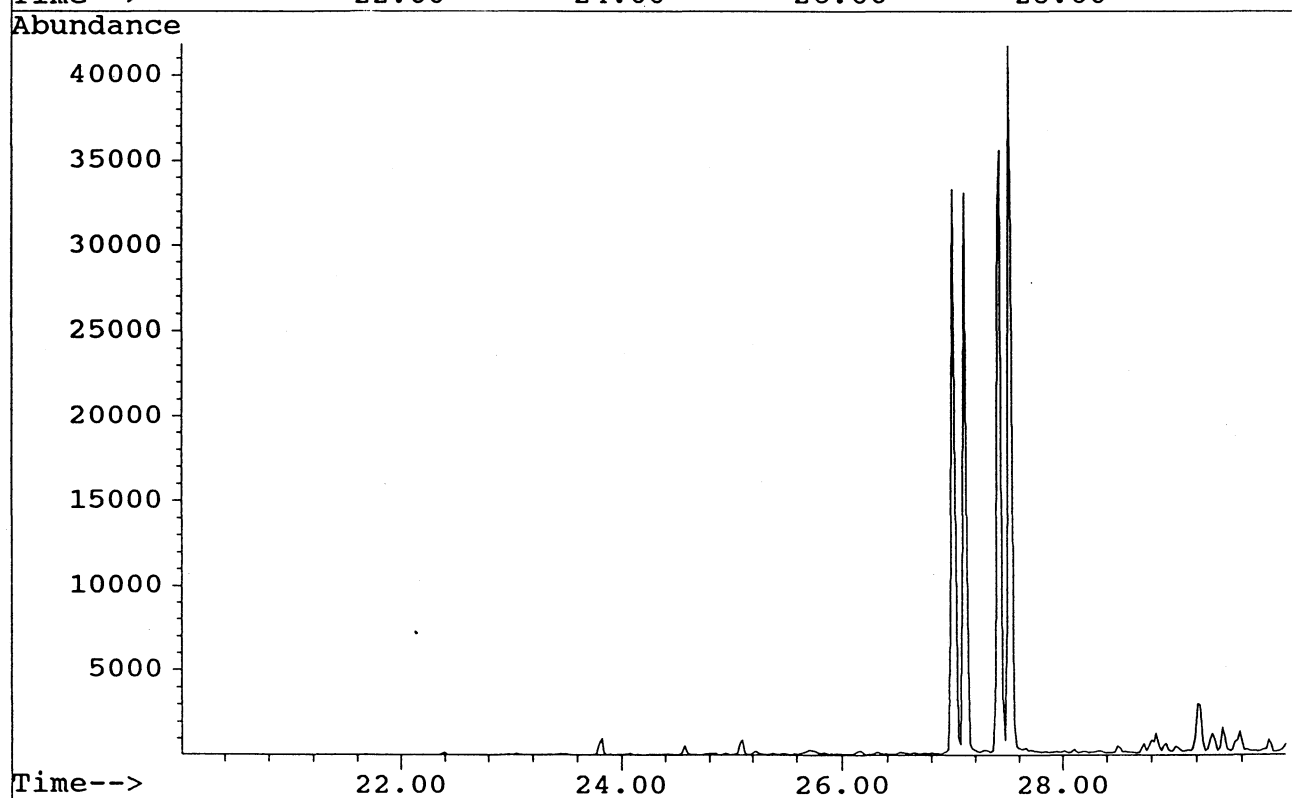
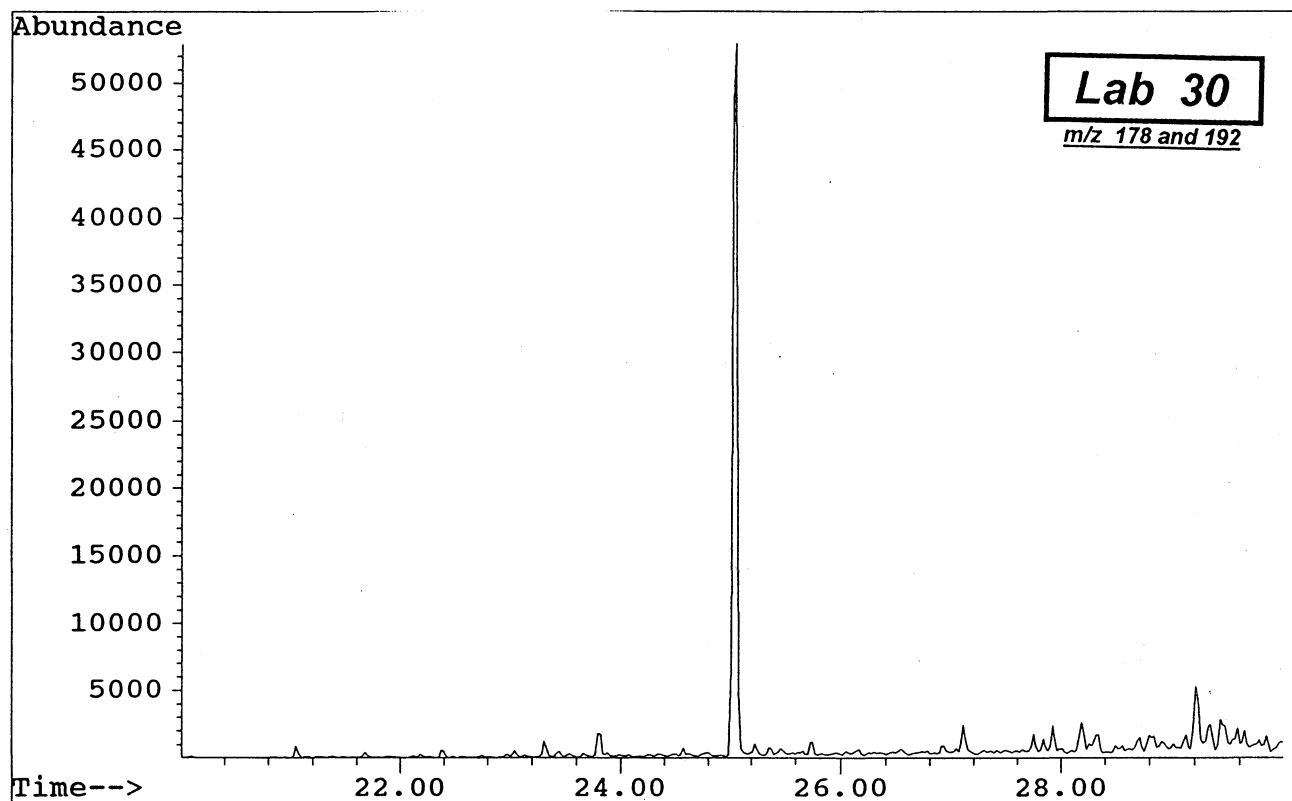


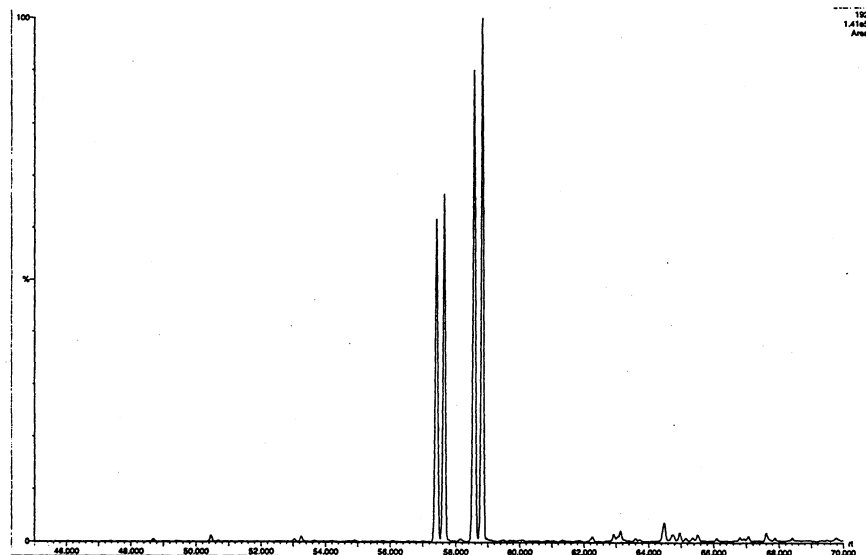
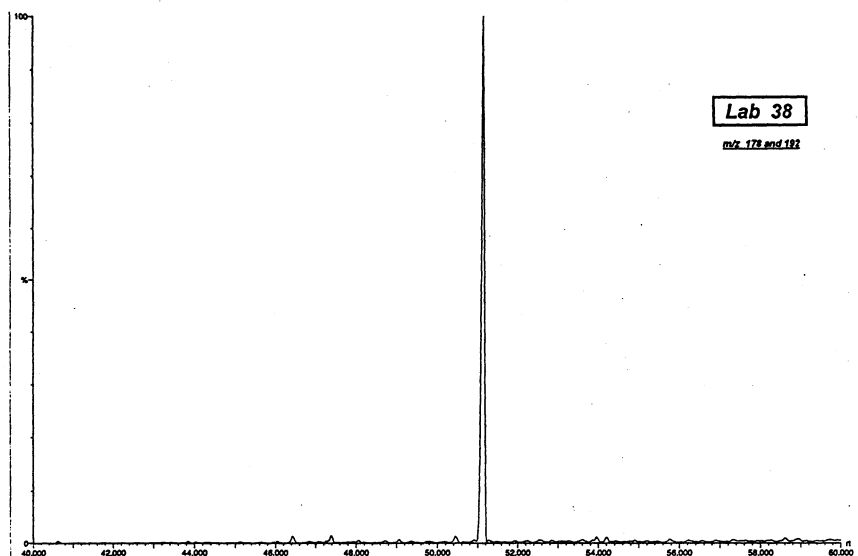
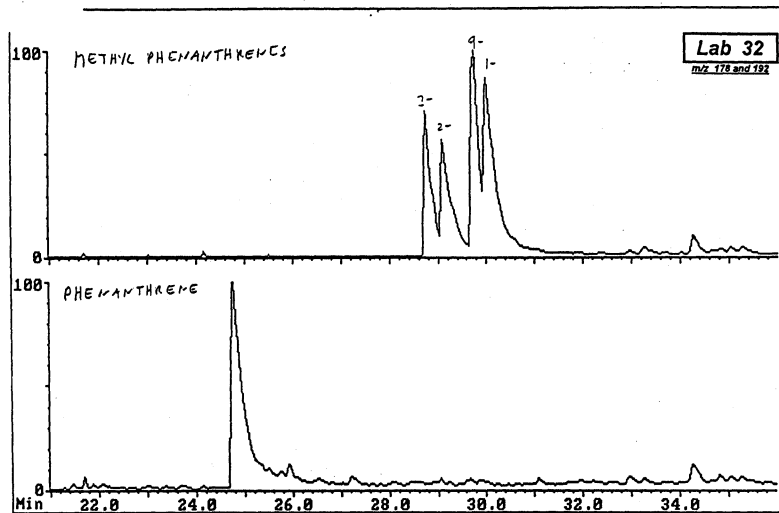
NGS SR-1

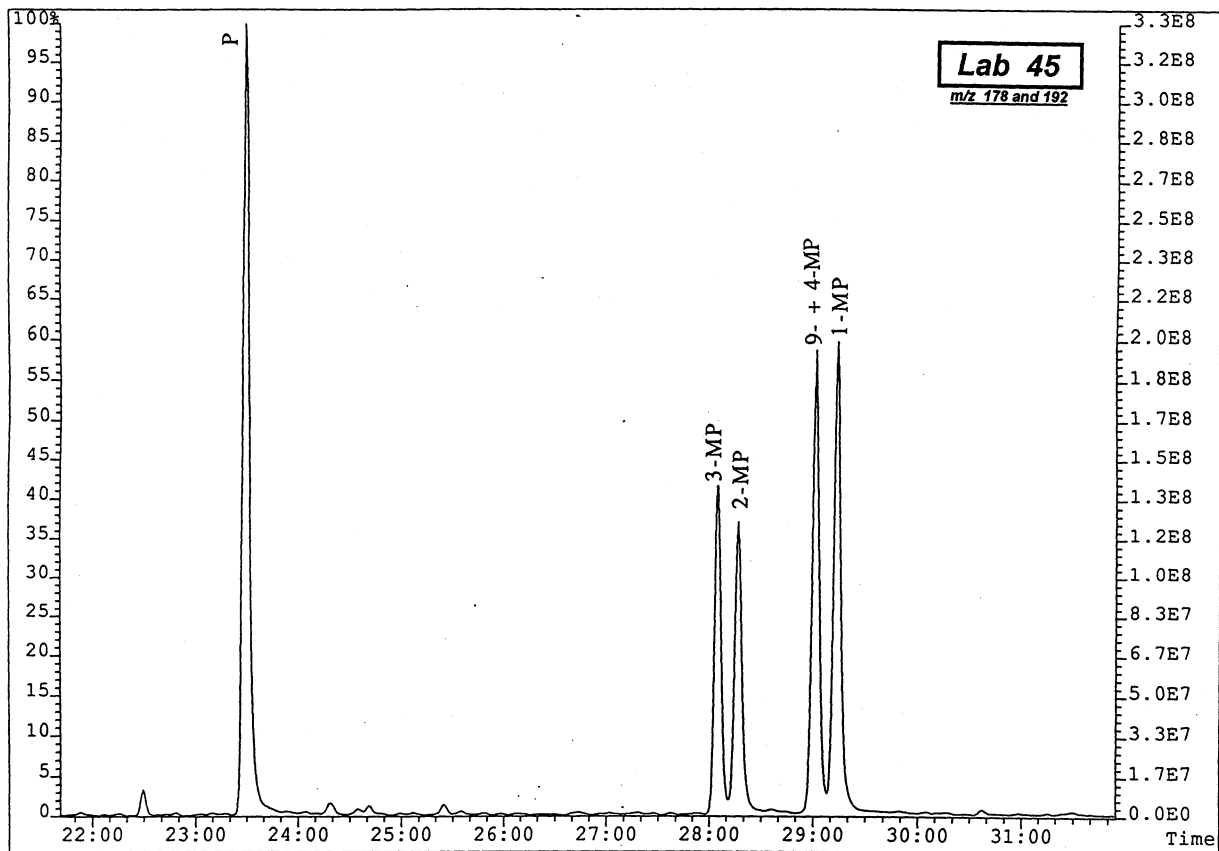
Appendix A5.4b-1

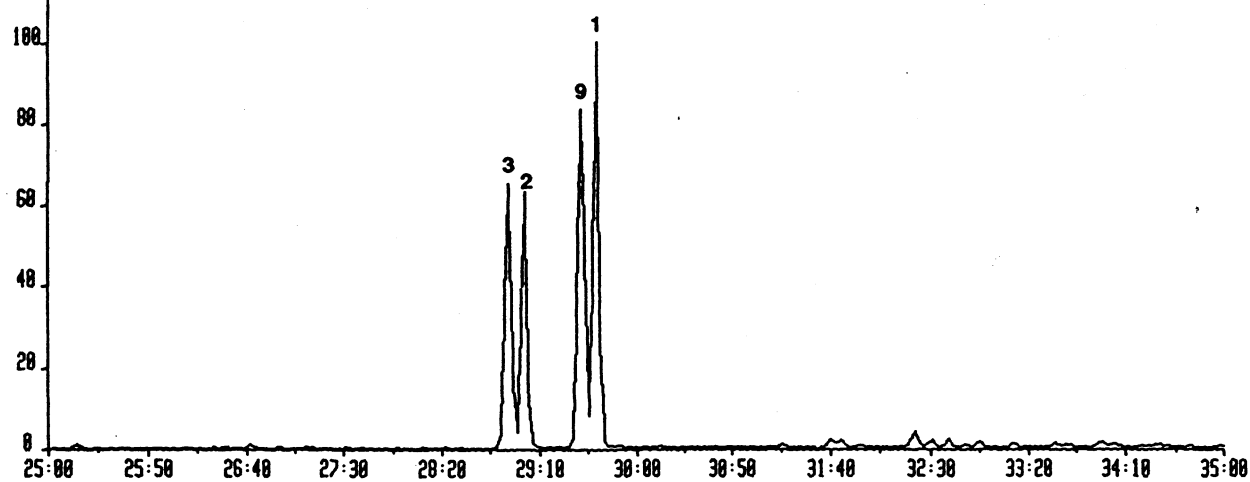
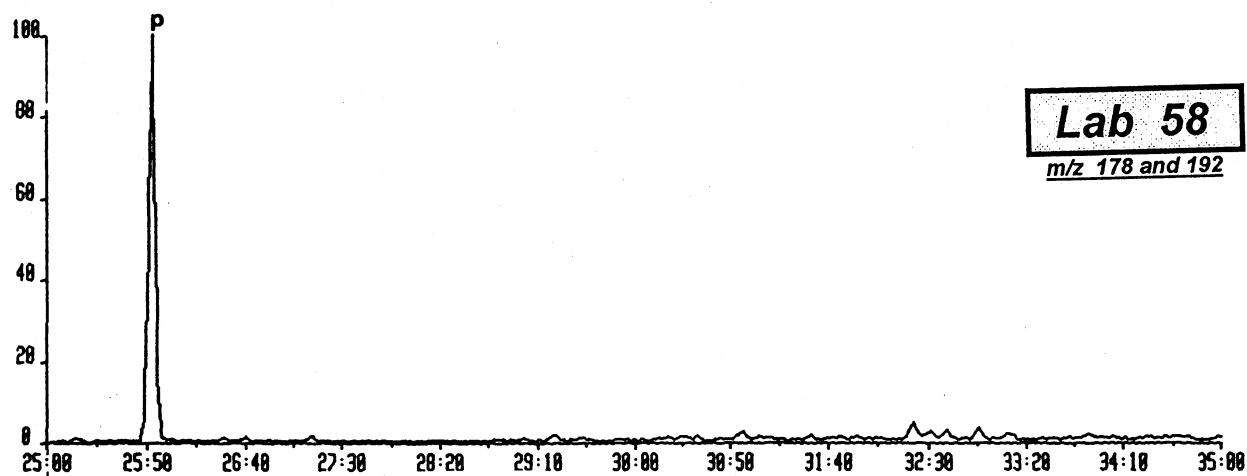
Aromatic fraction m/z 178 and 192 GC-MS fragmentograms

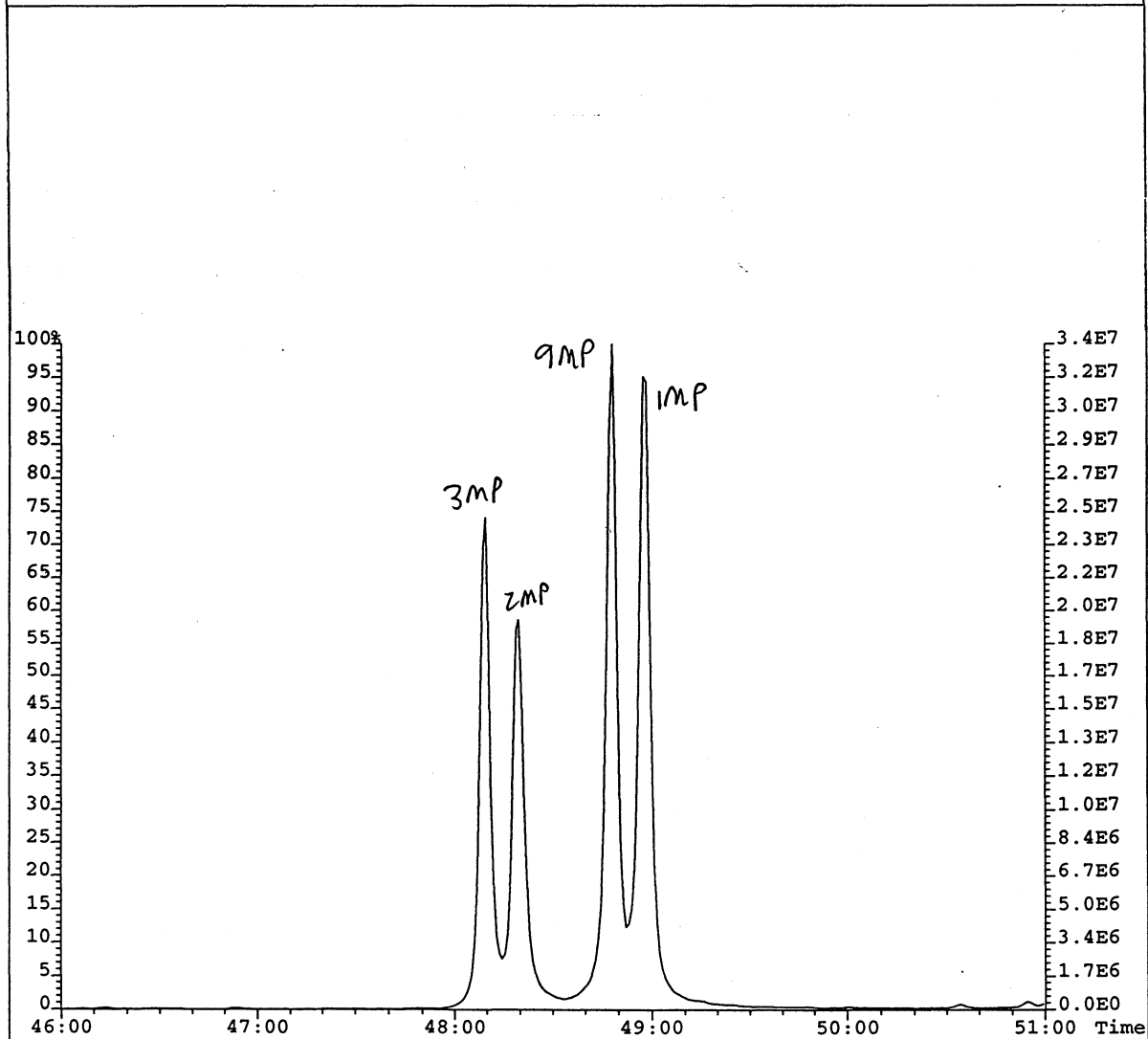
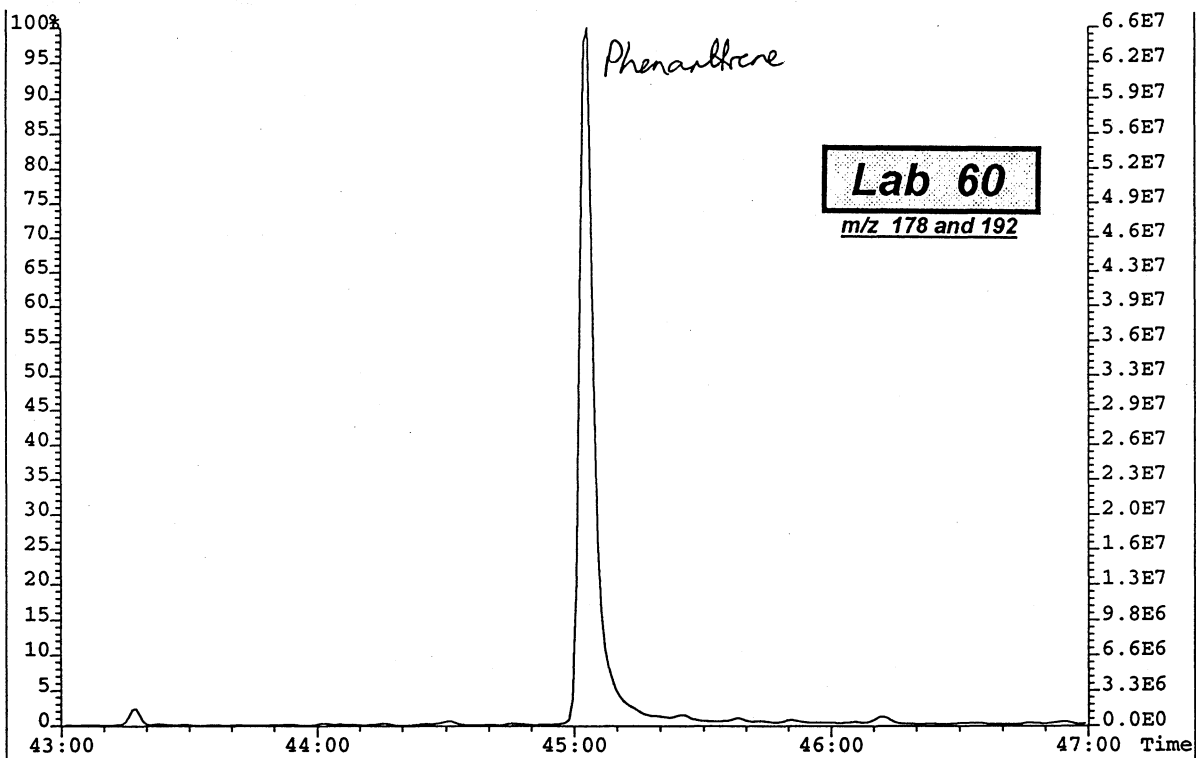


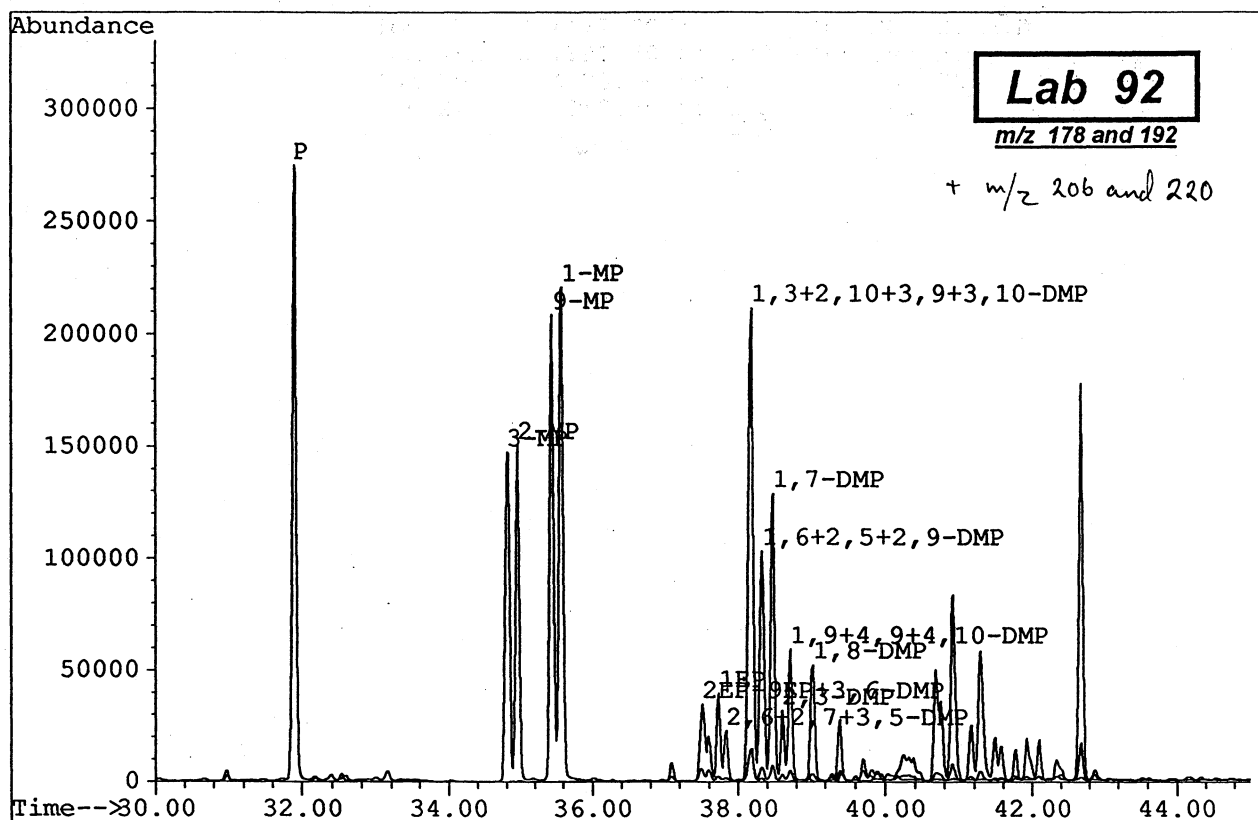








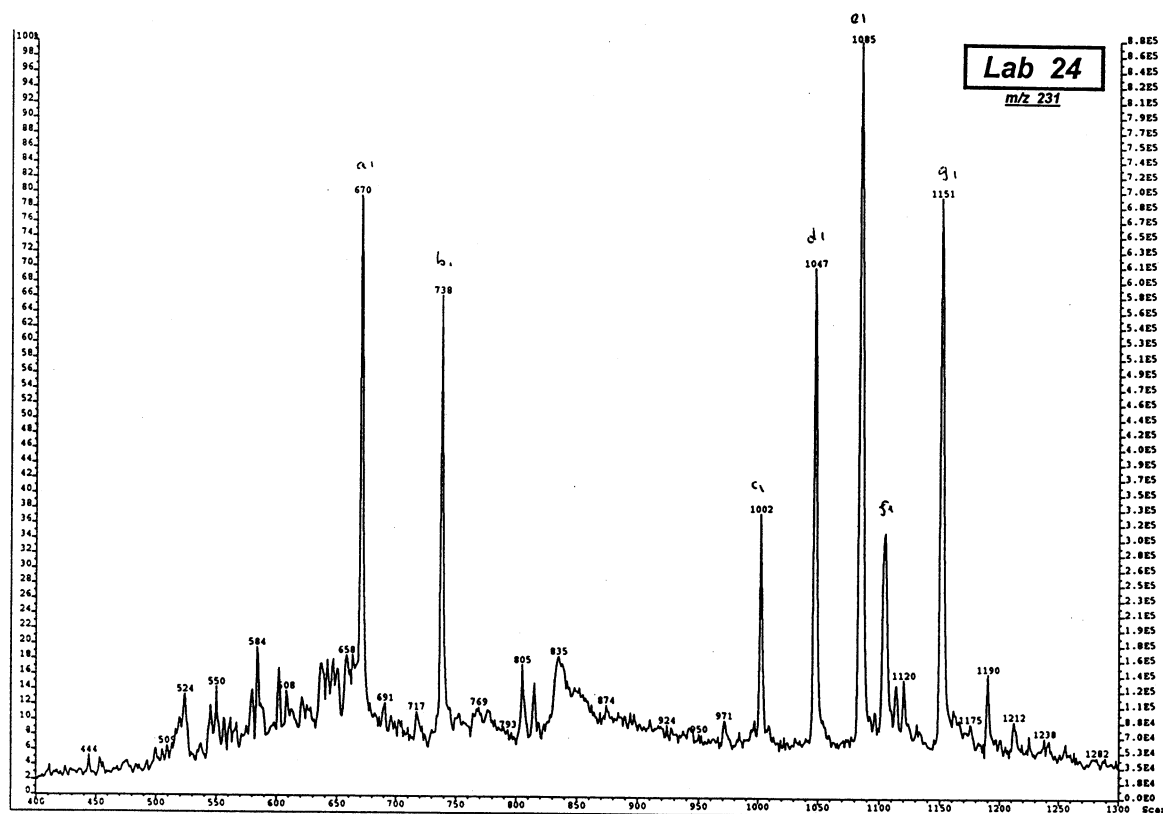
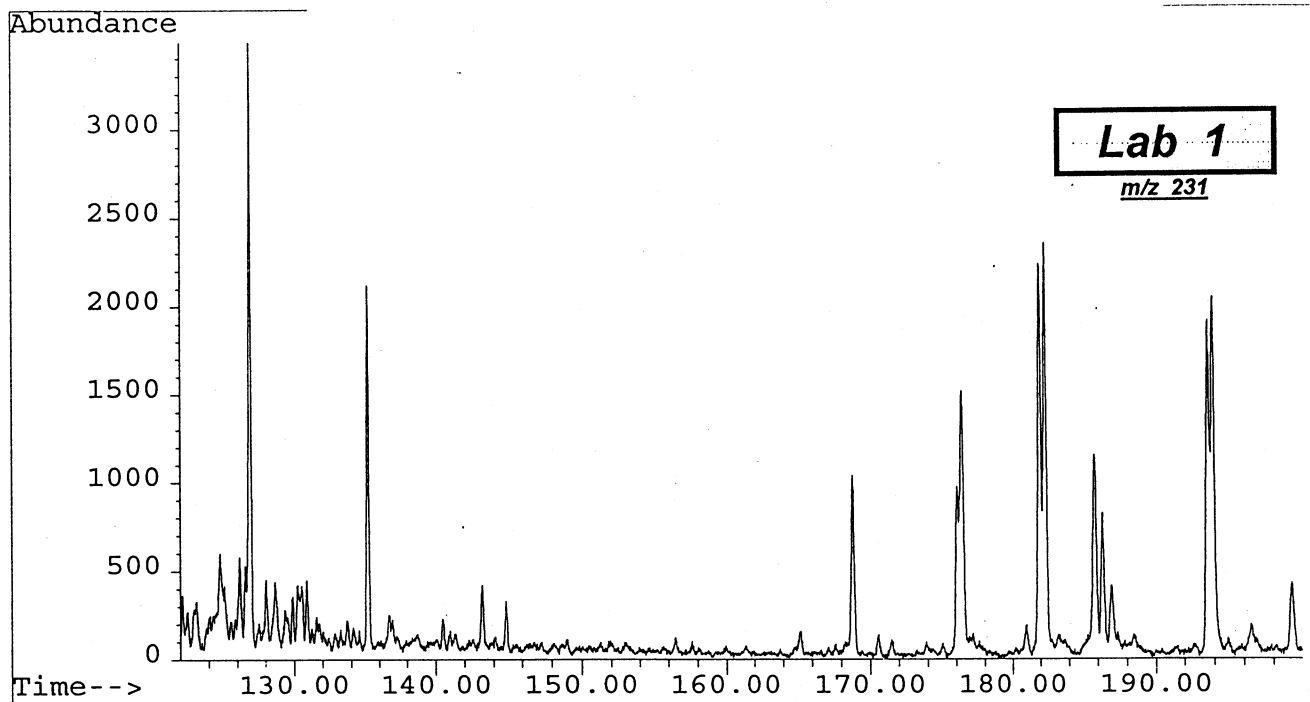


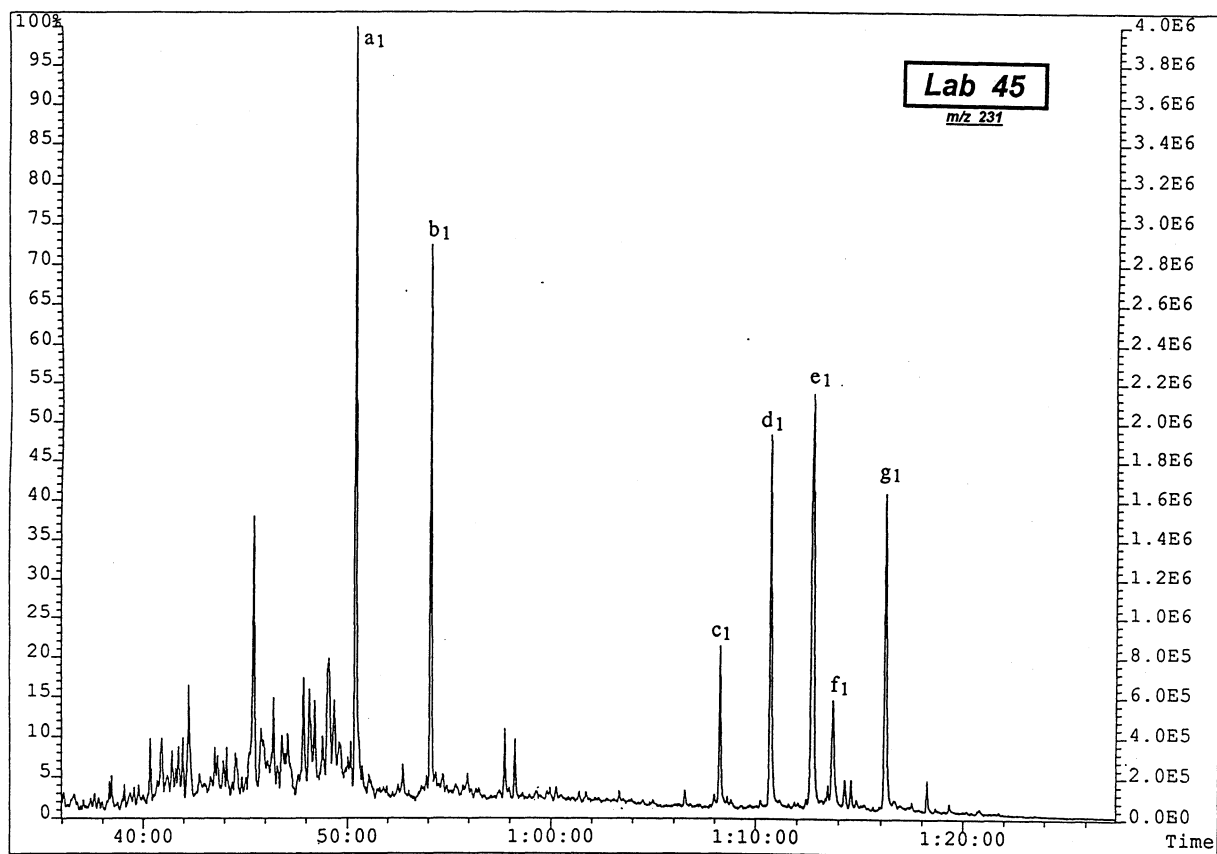
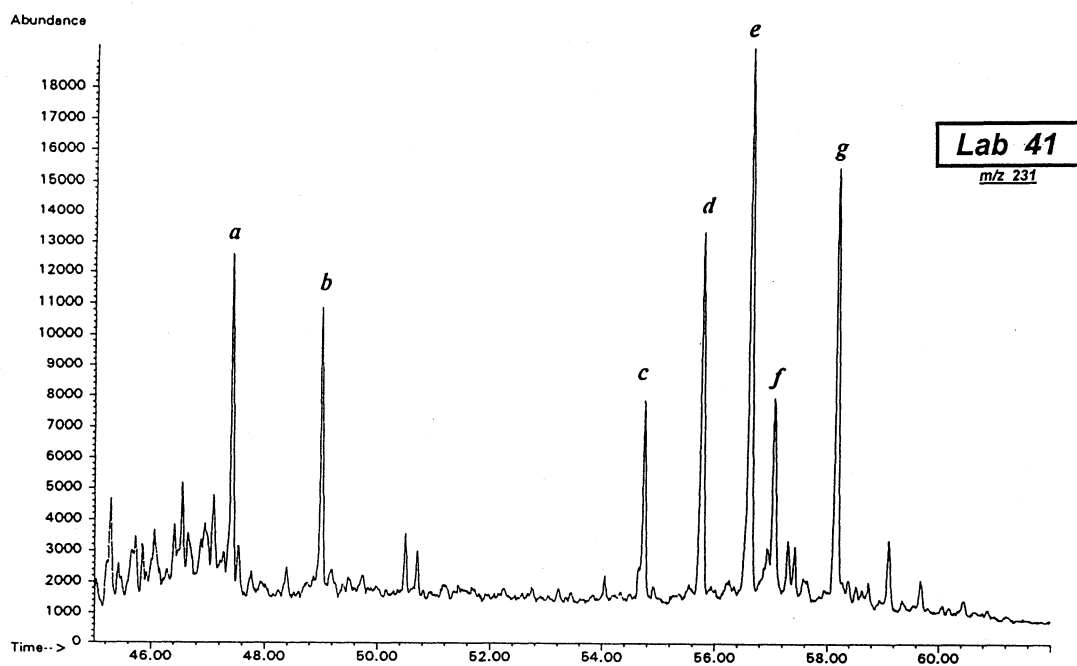


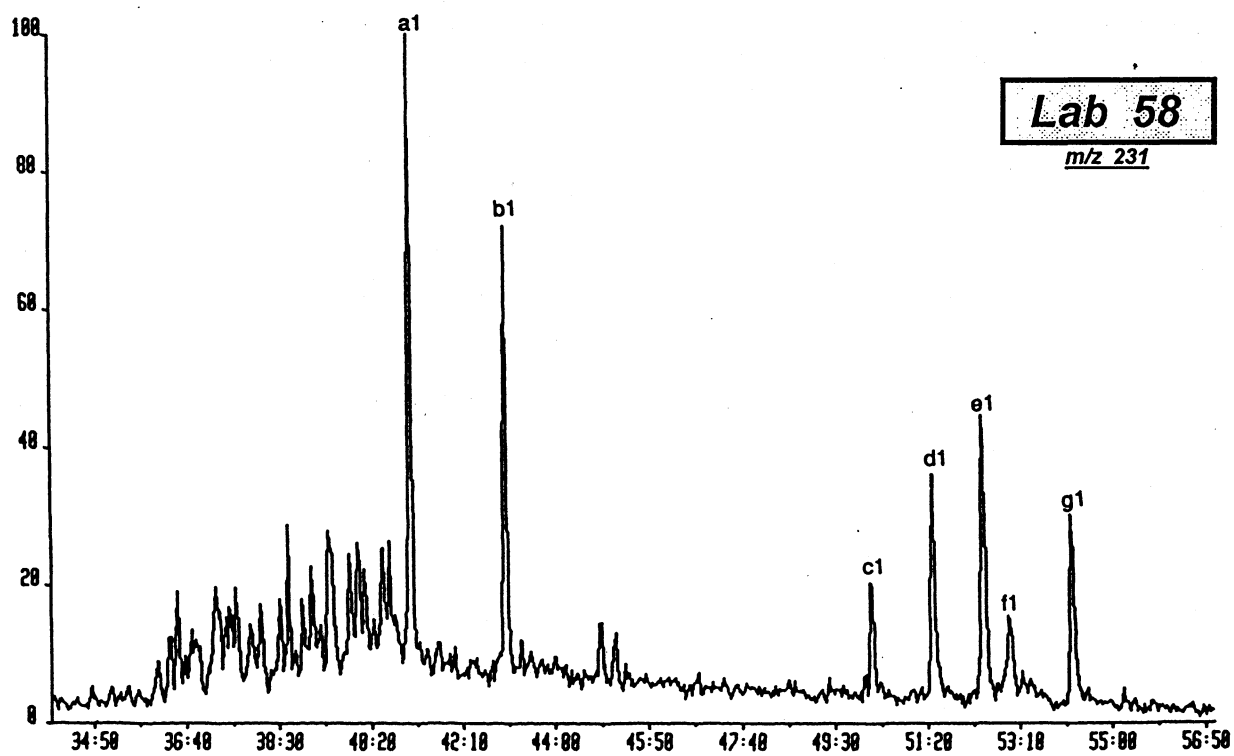
NGS SR-1

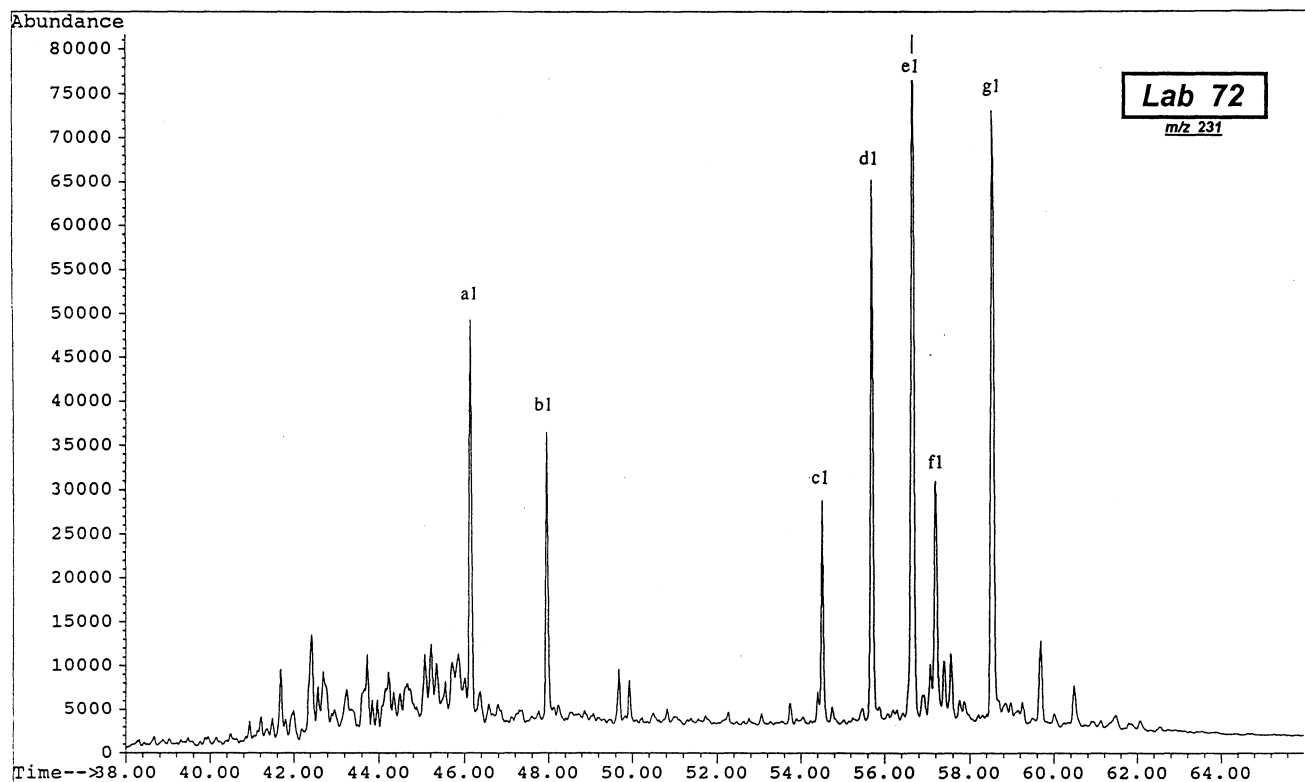
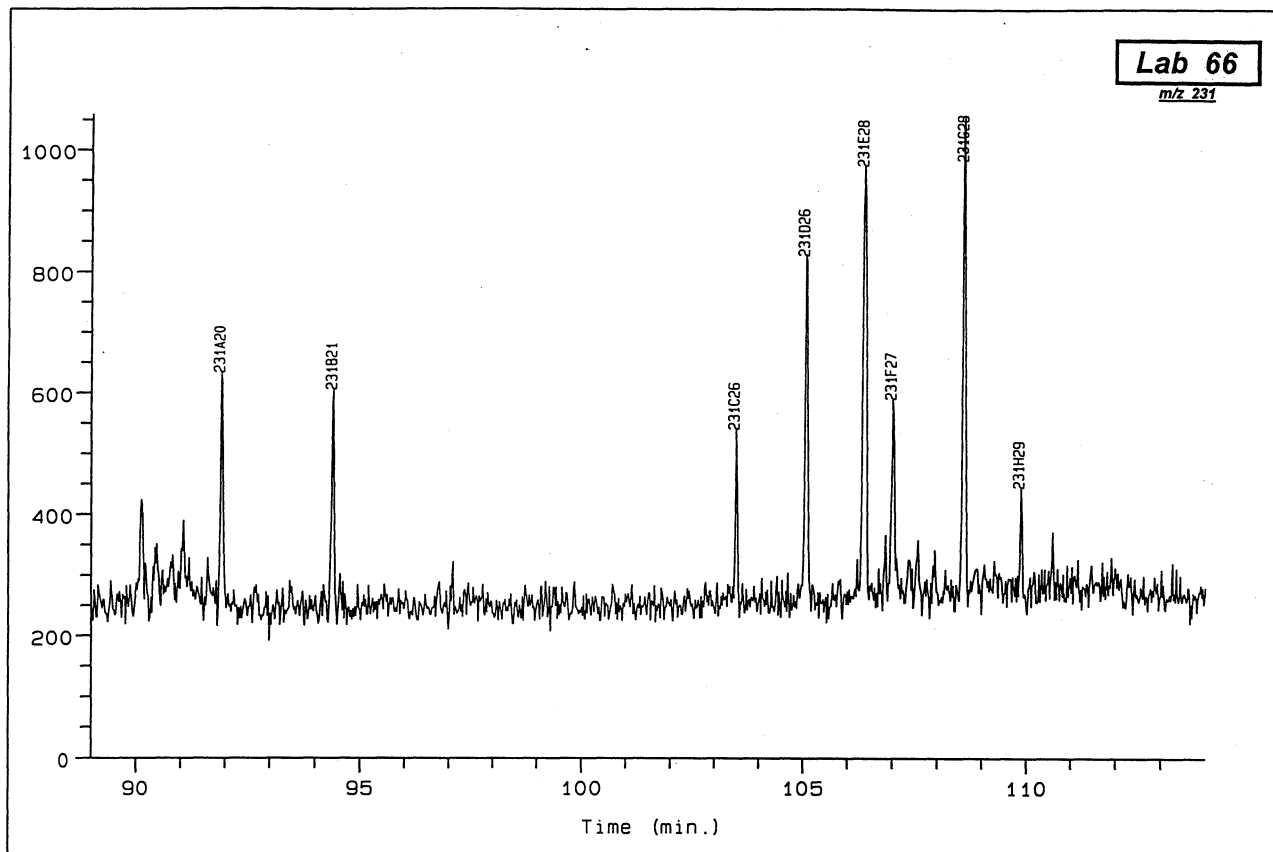
Appendix A5.4b-2

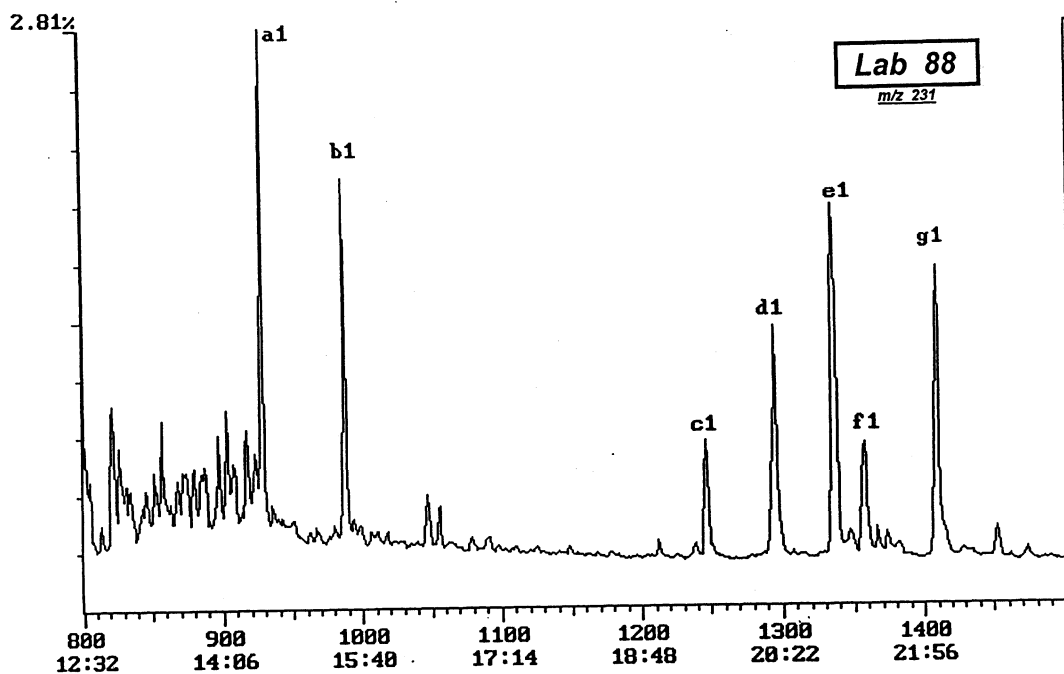
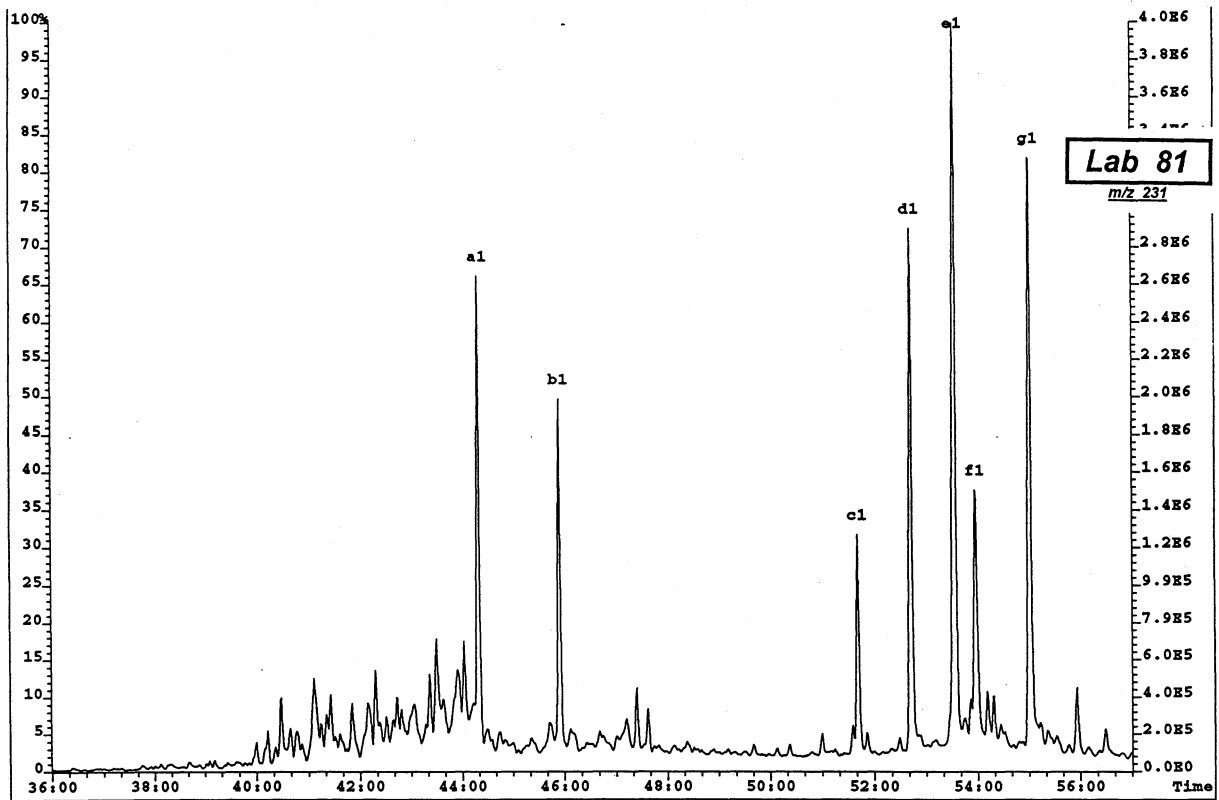
Aromatic fraction m/z 231 GC-MS fragmentograms

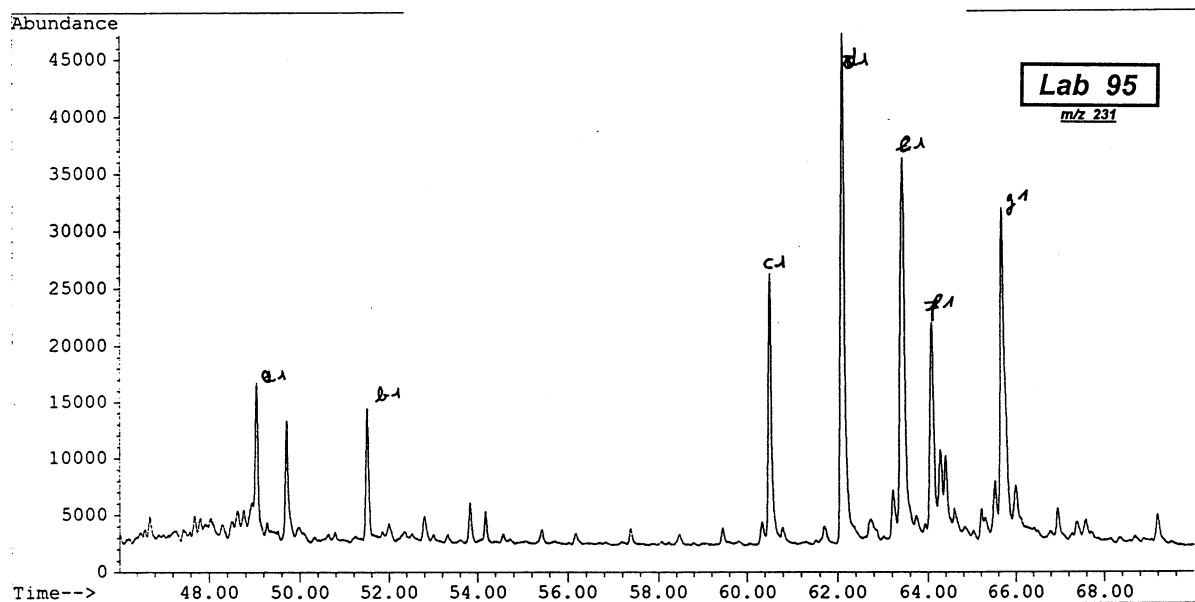
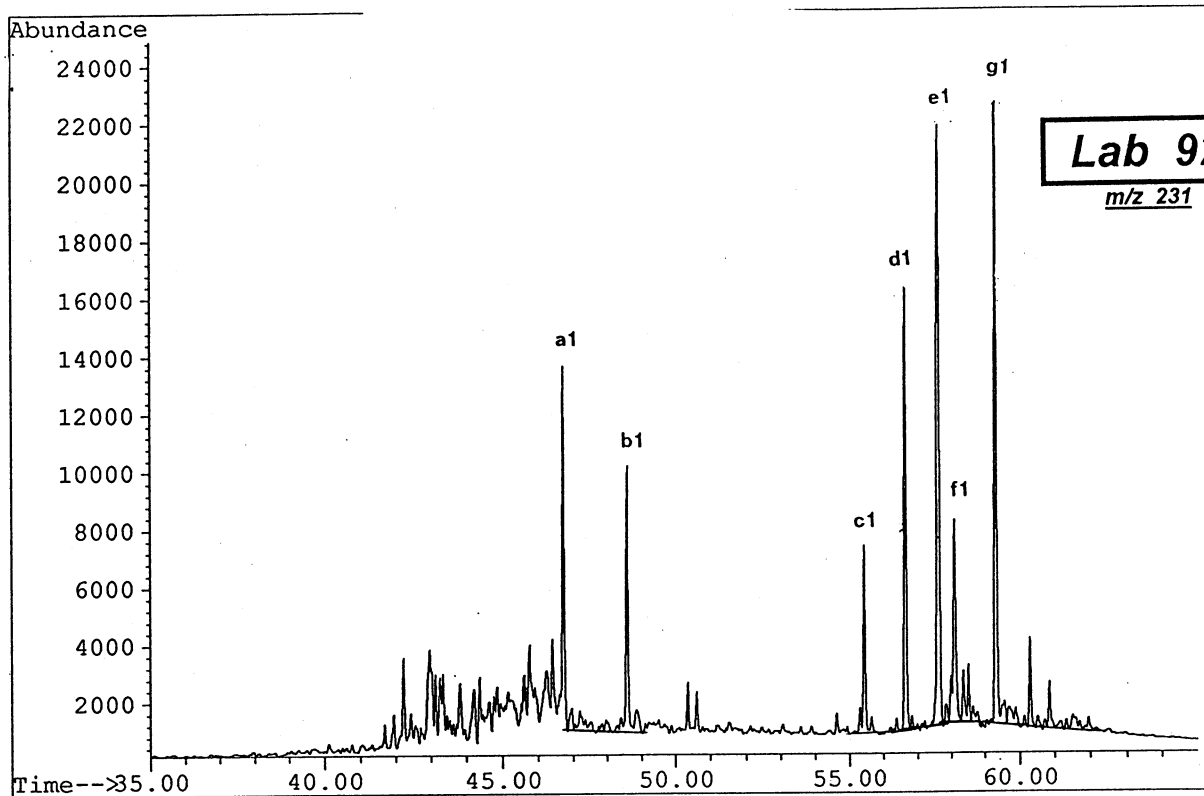








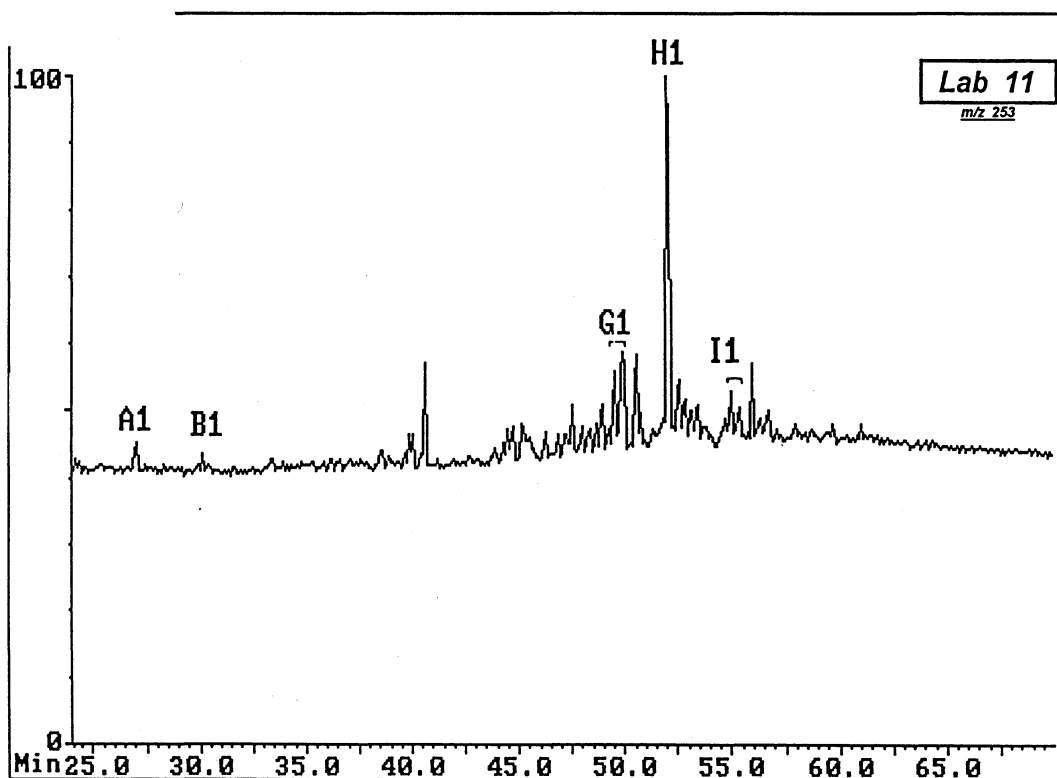
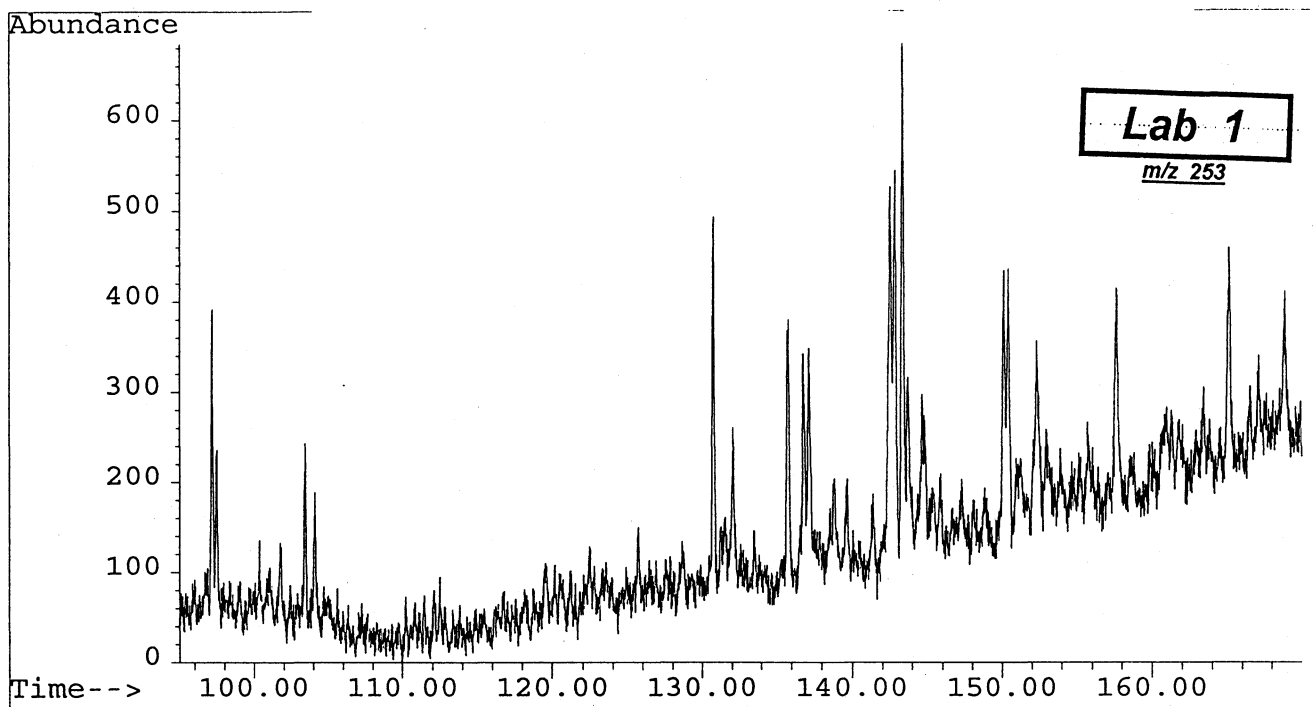


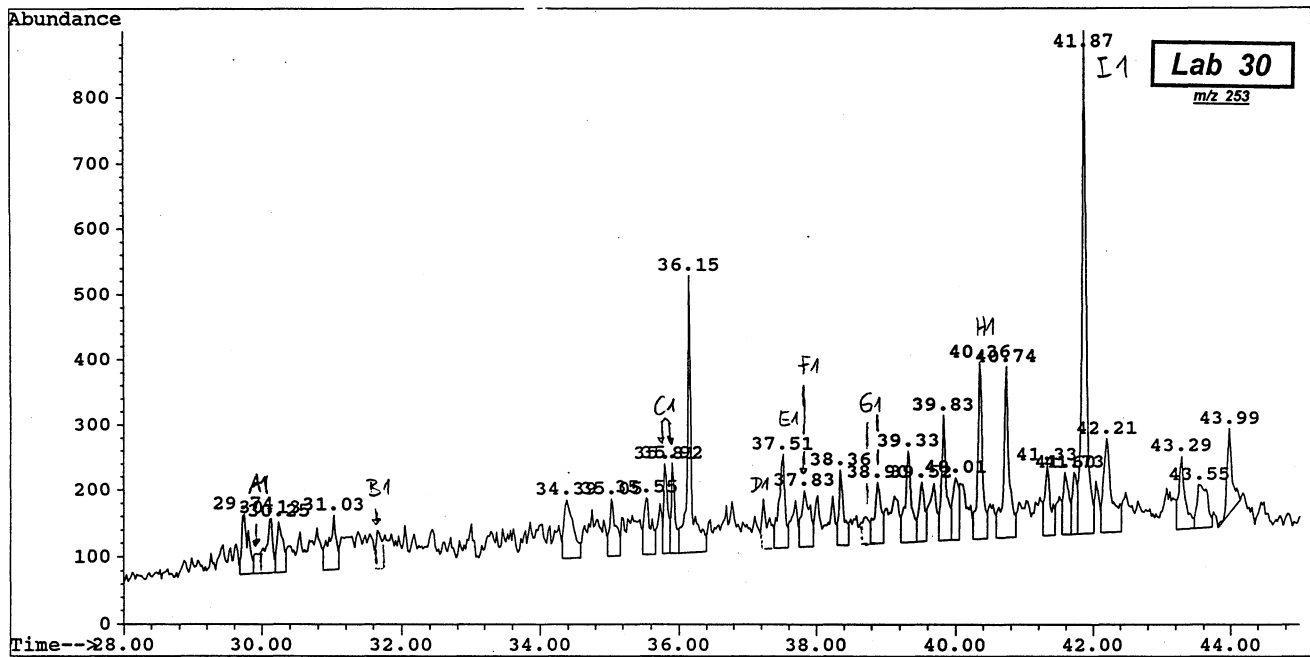
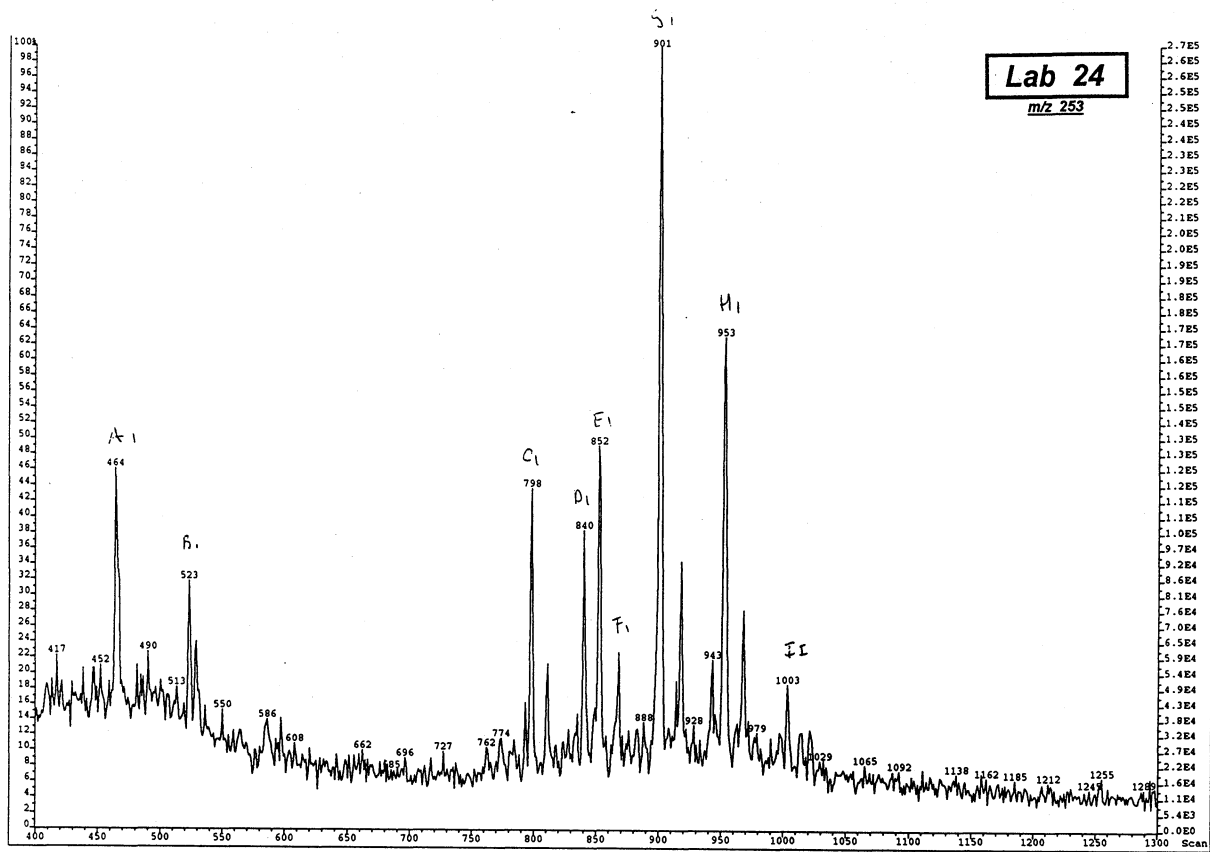


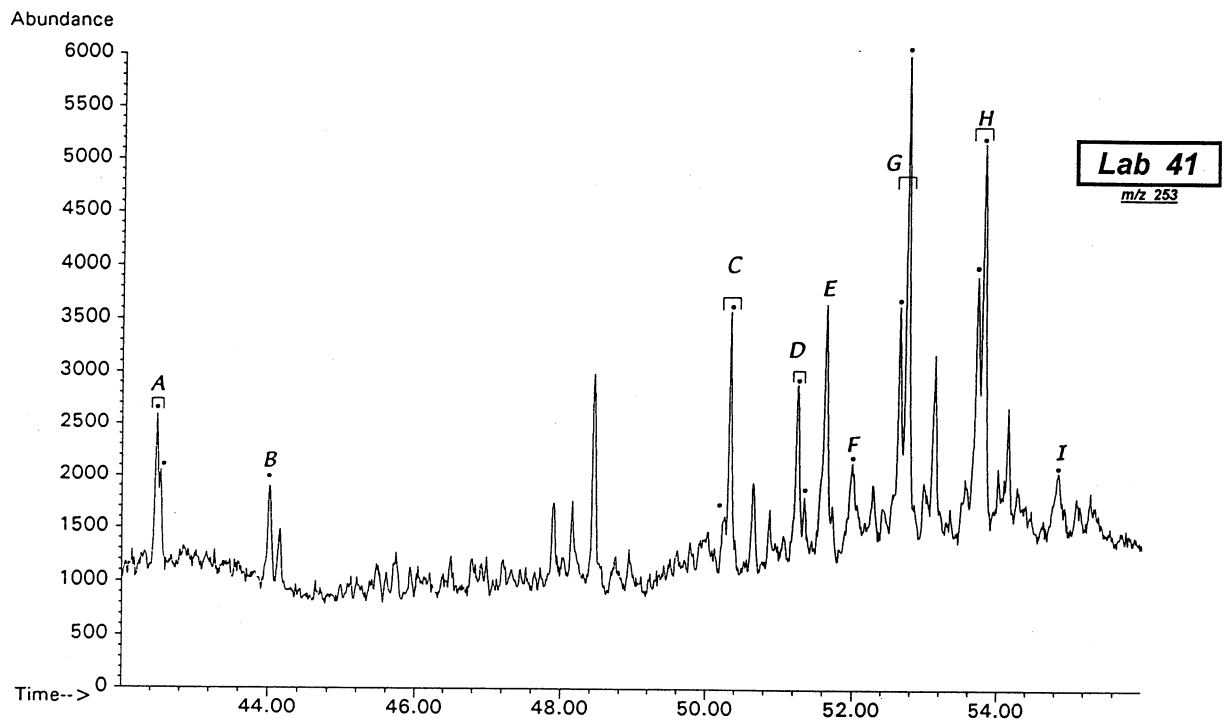
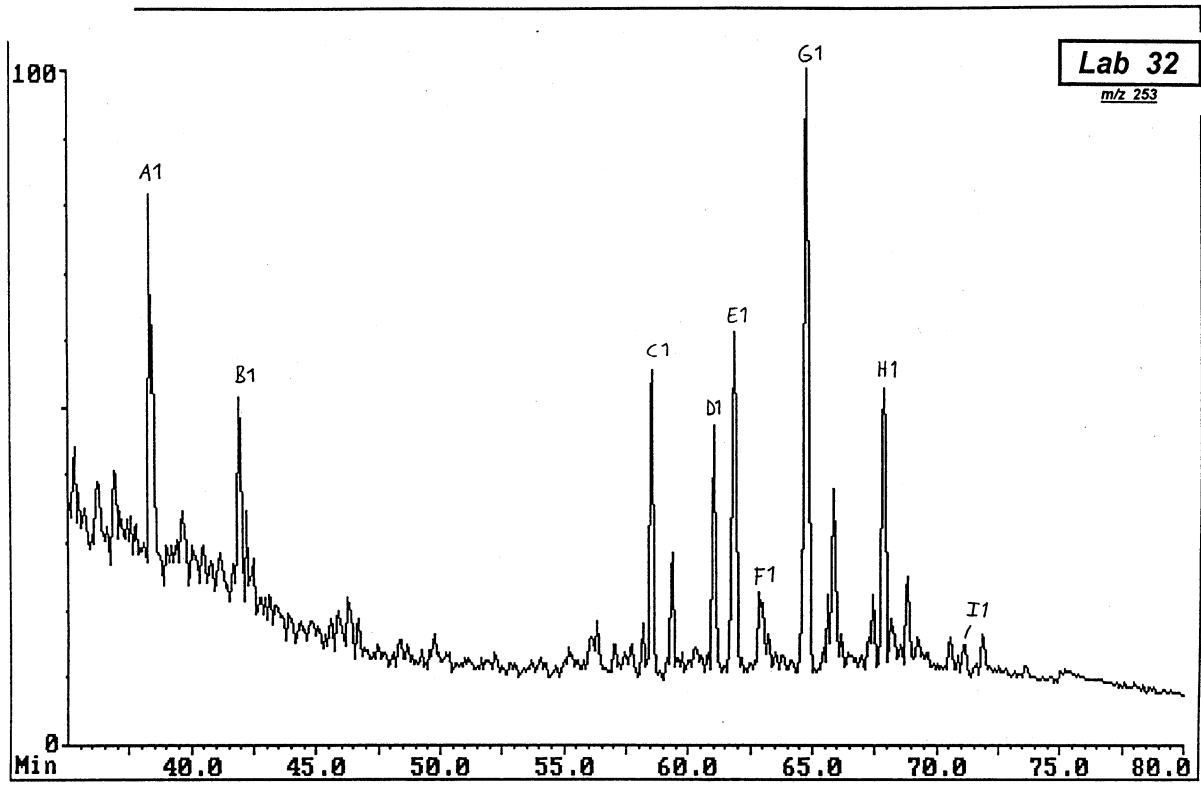
NGS SR-1

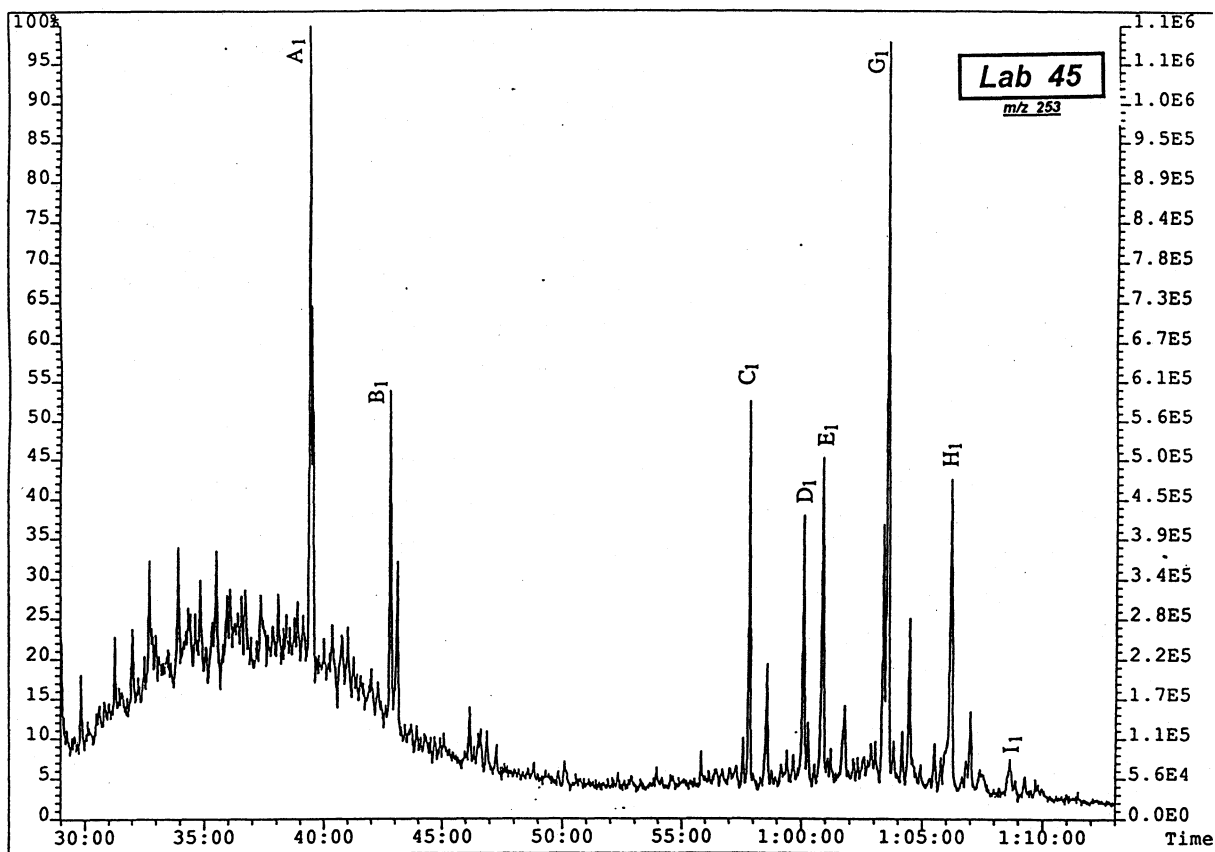
Appendix A5.4b-3

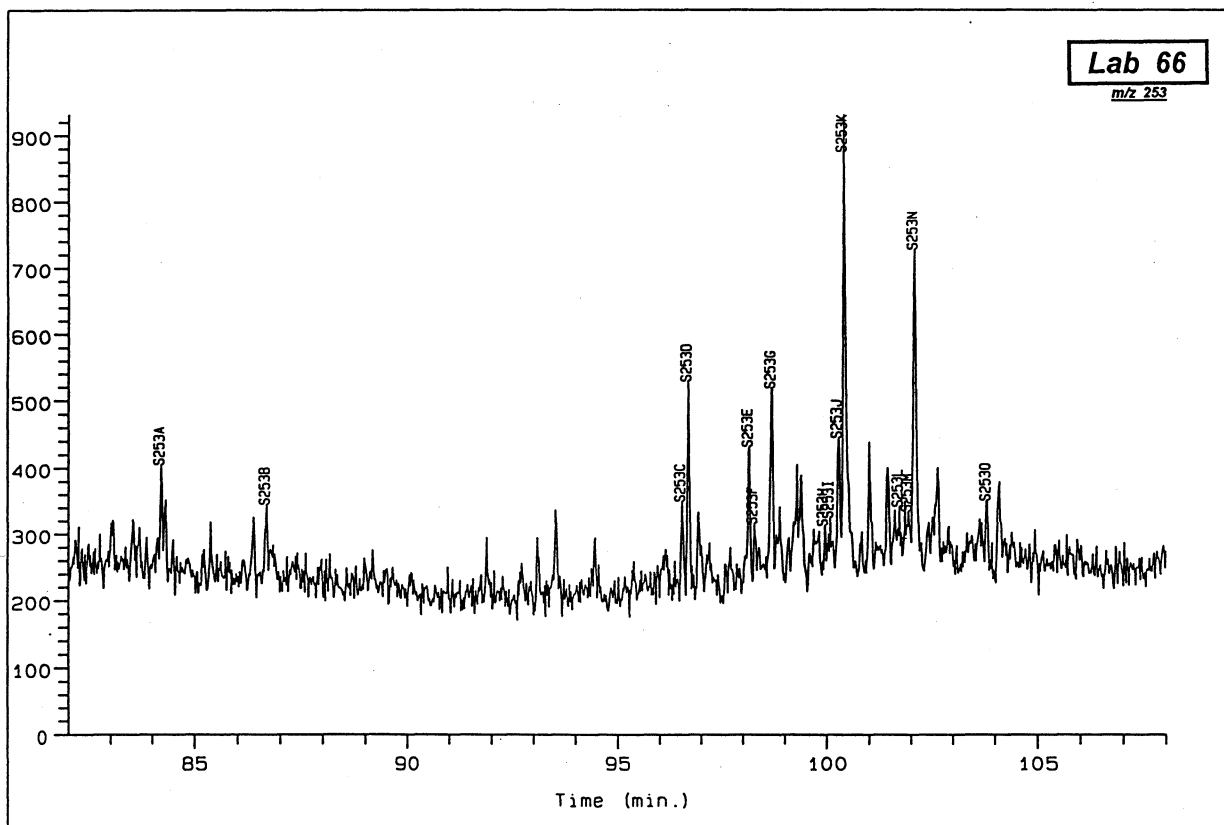
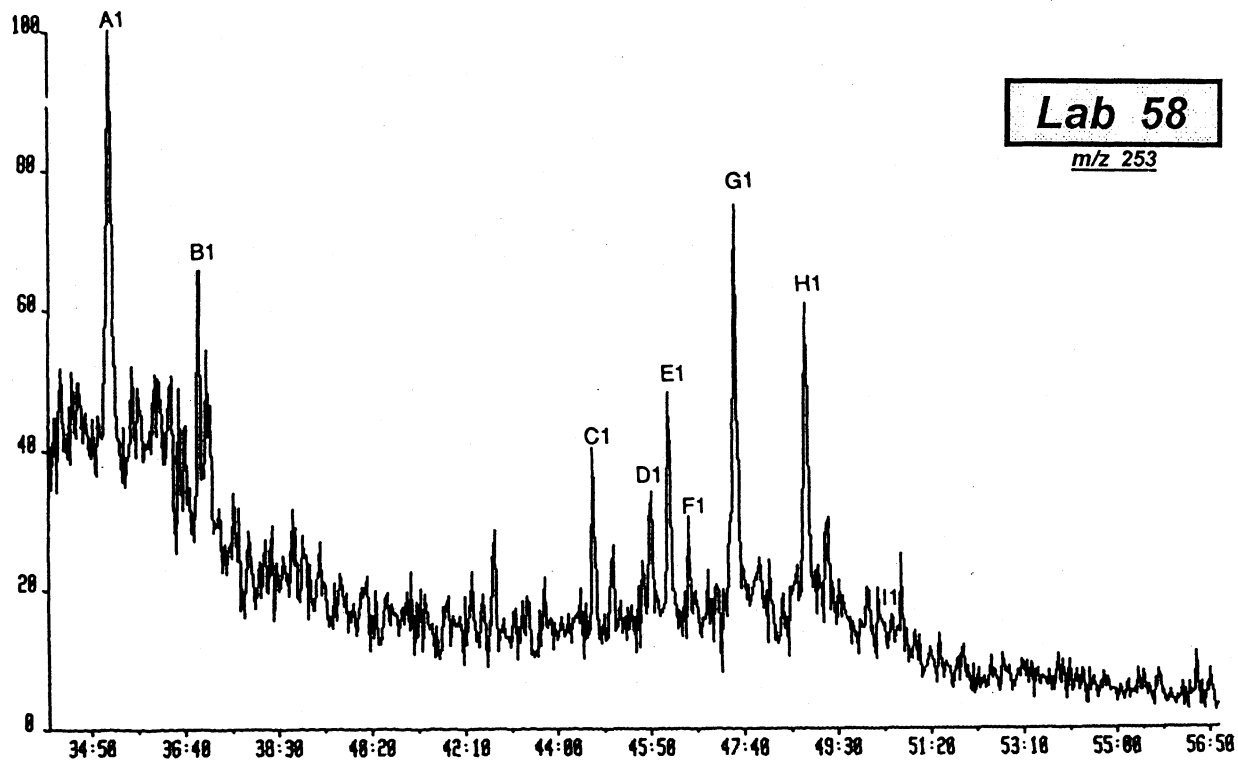
Aromatic fraction m/z 253 GC-MS fragmentograms

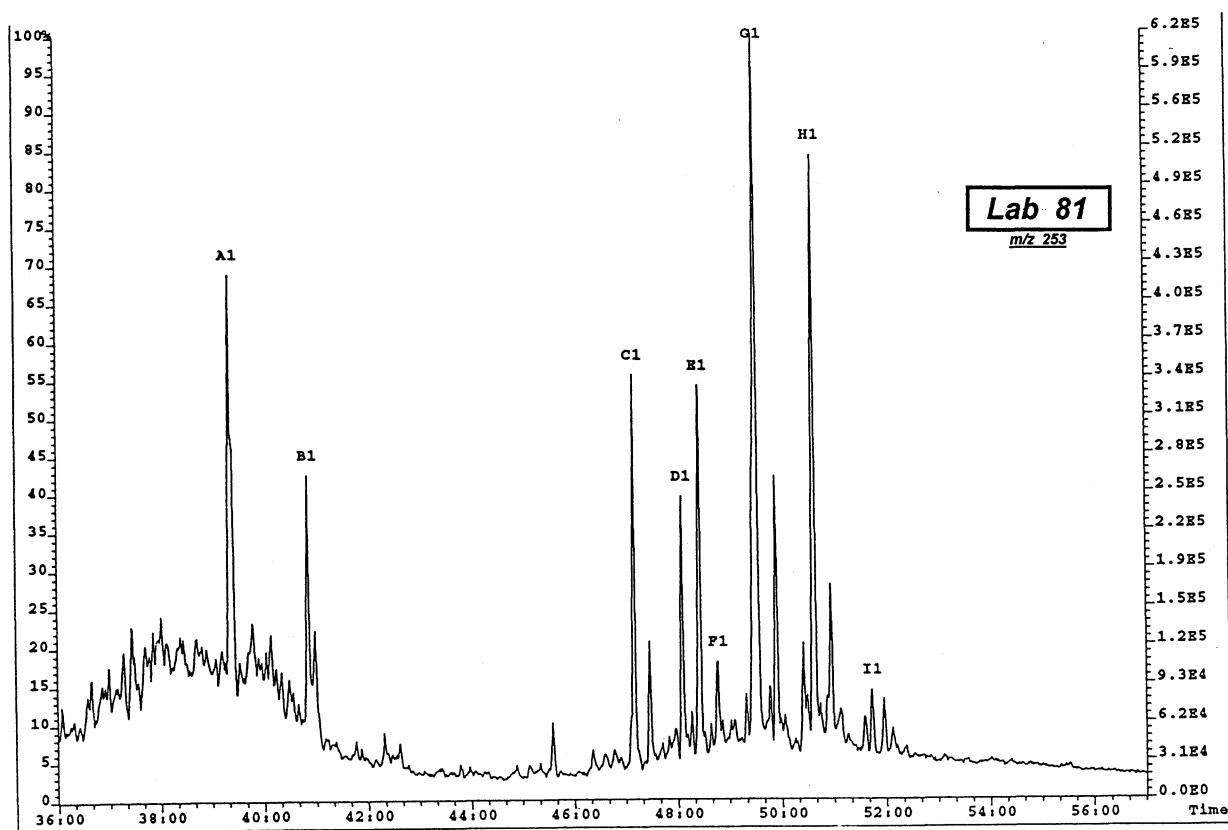
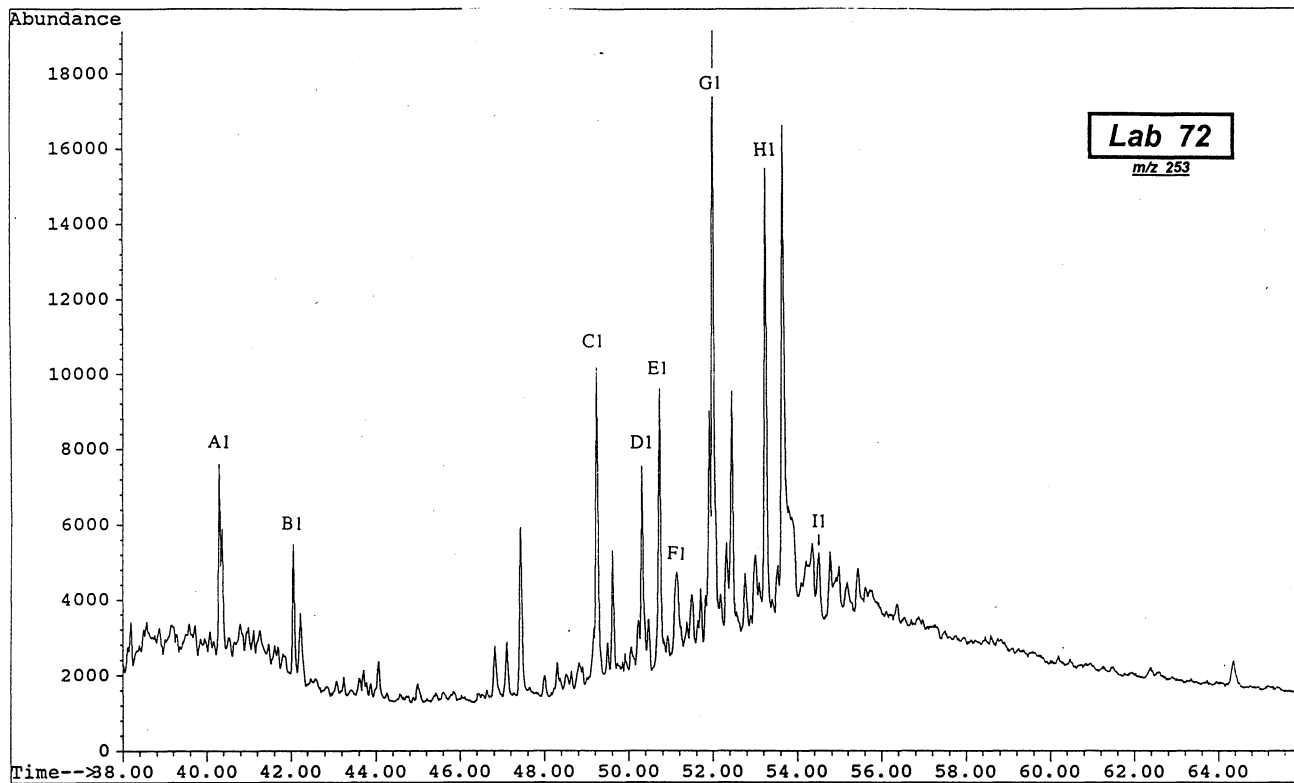


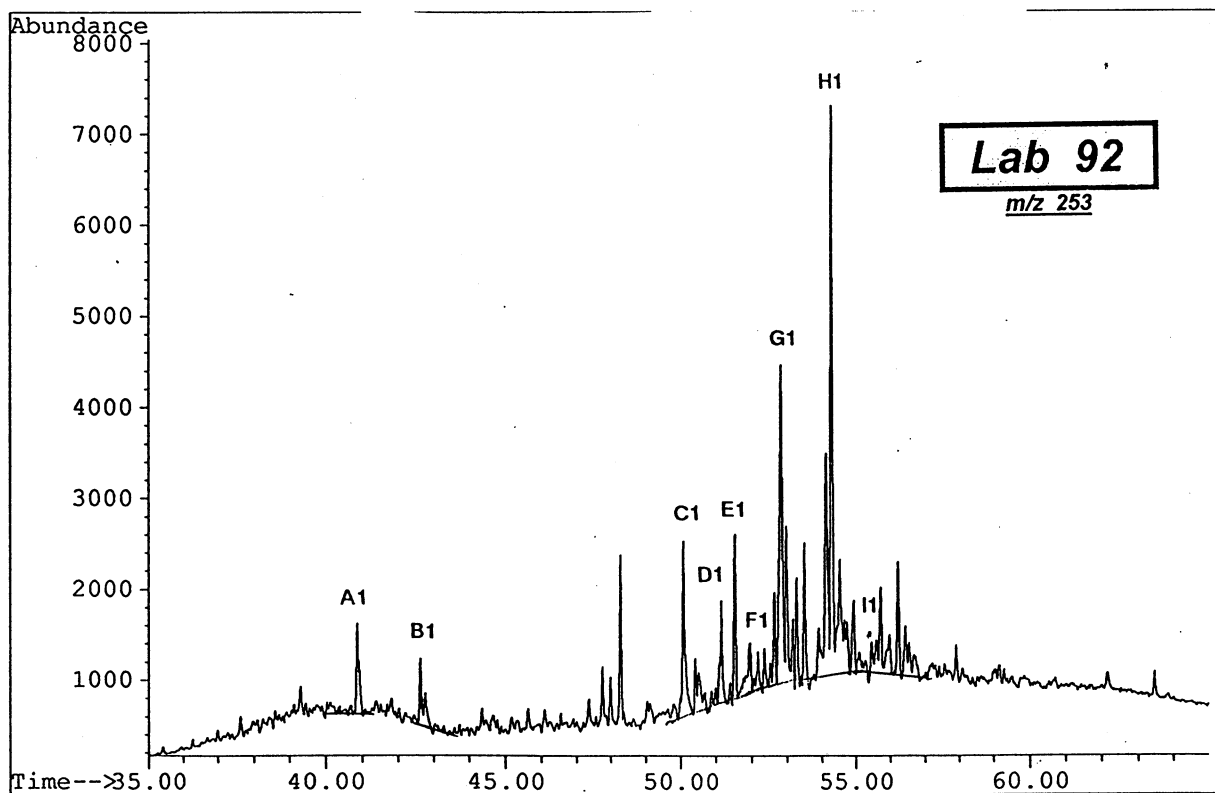
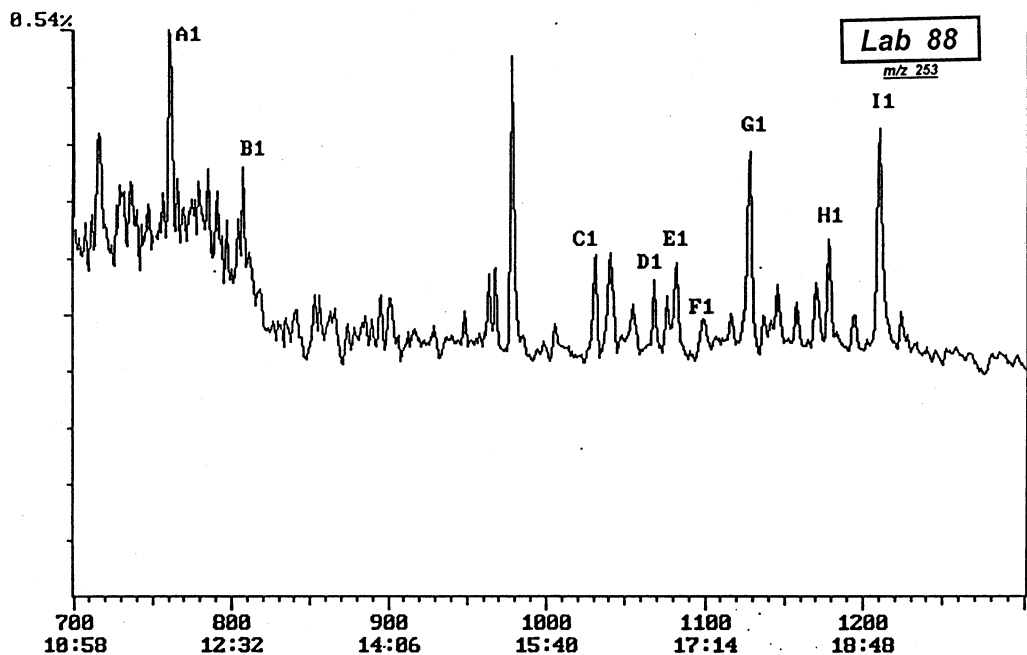


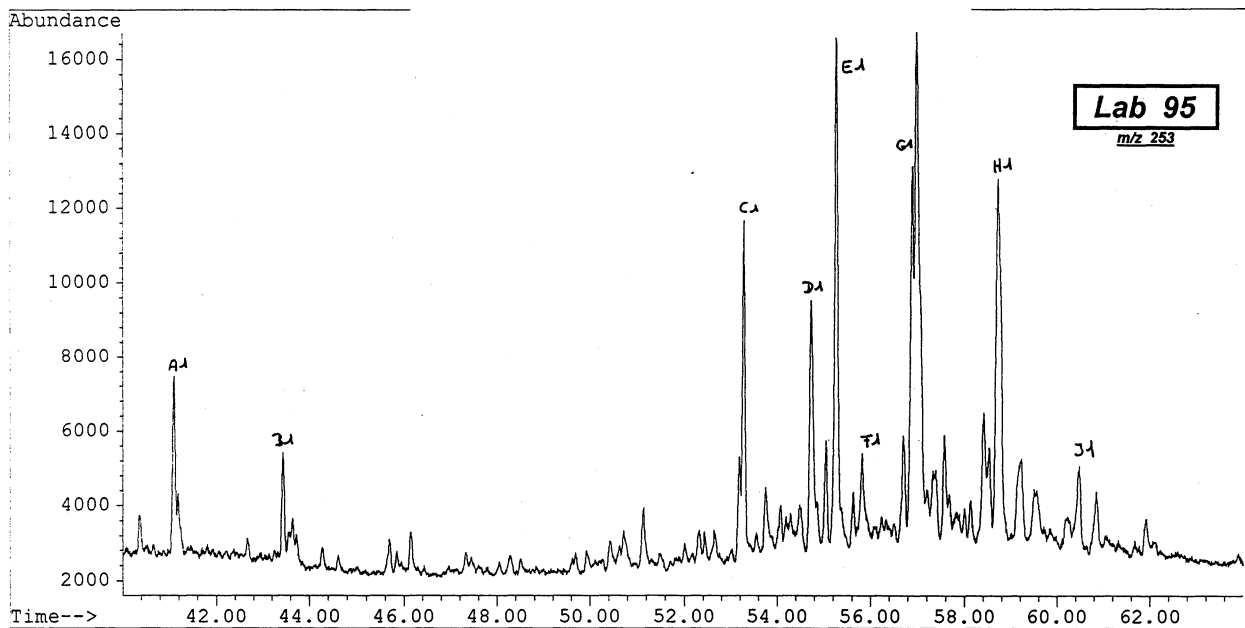








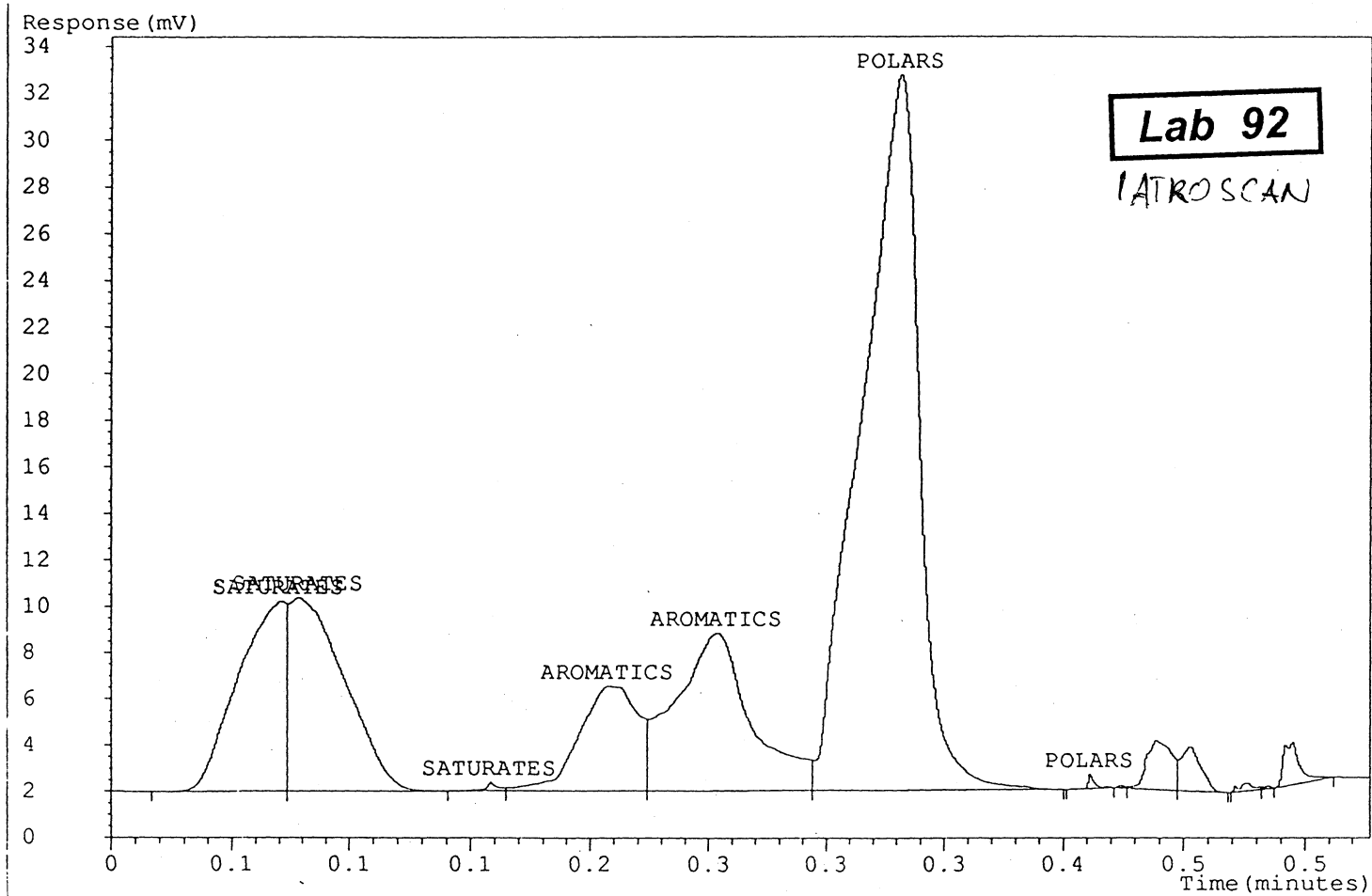
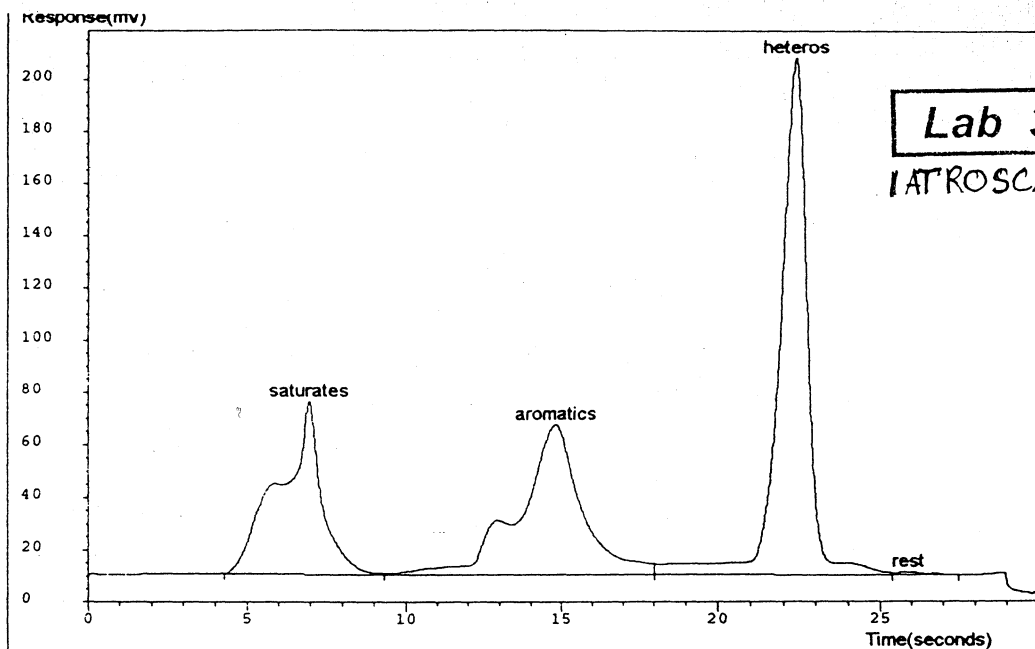




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Appendix A5.5

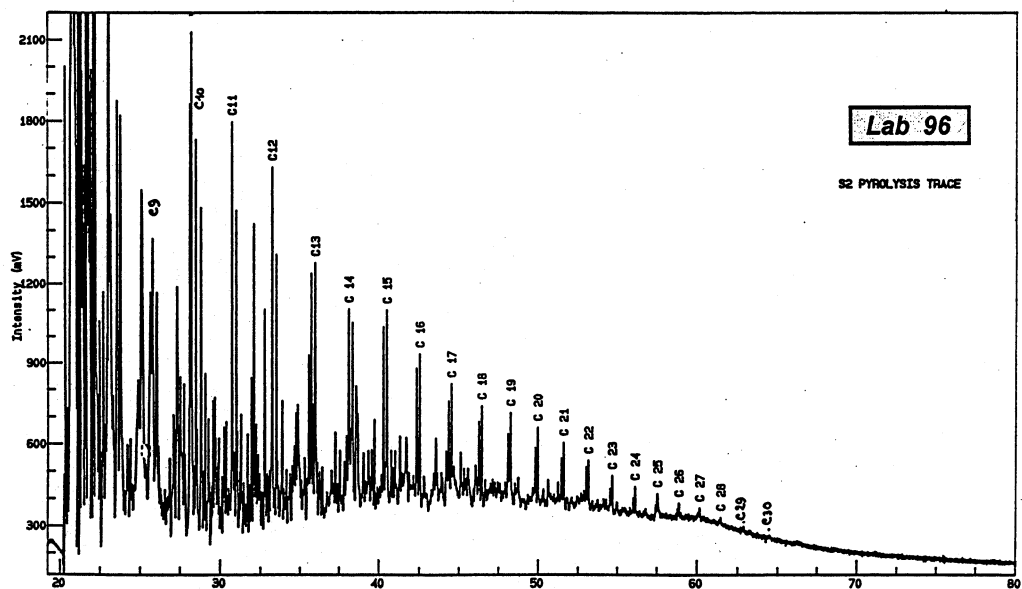
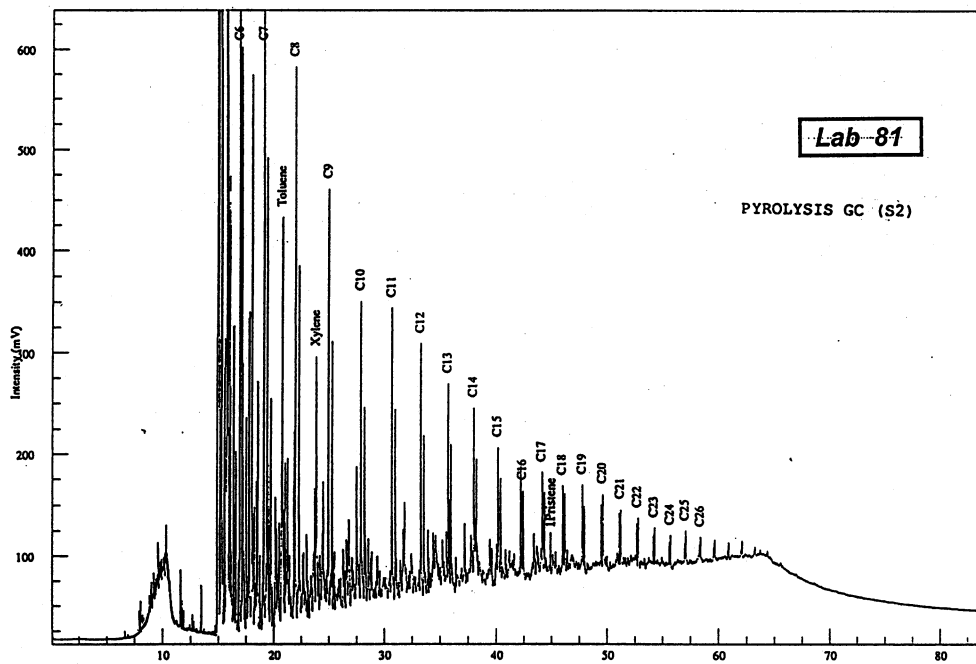
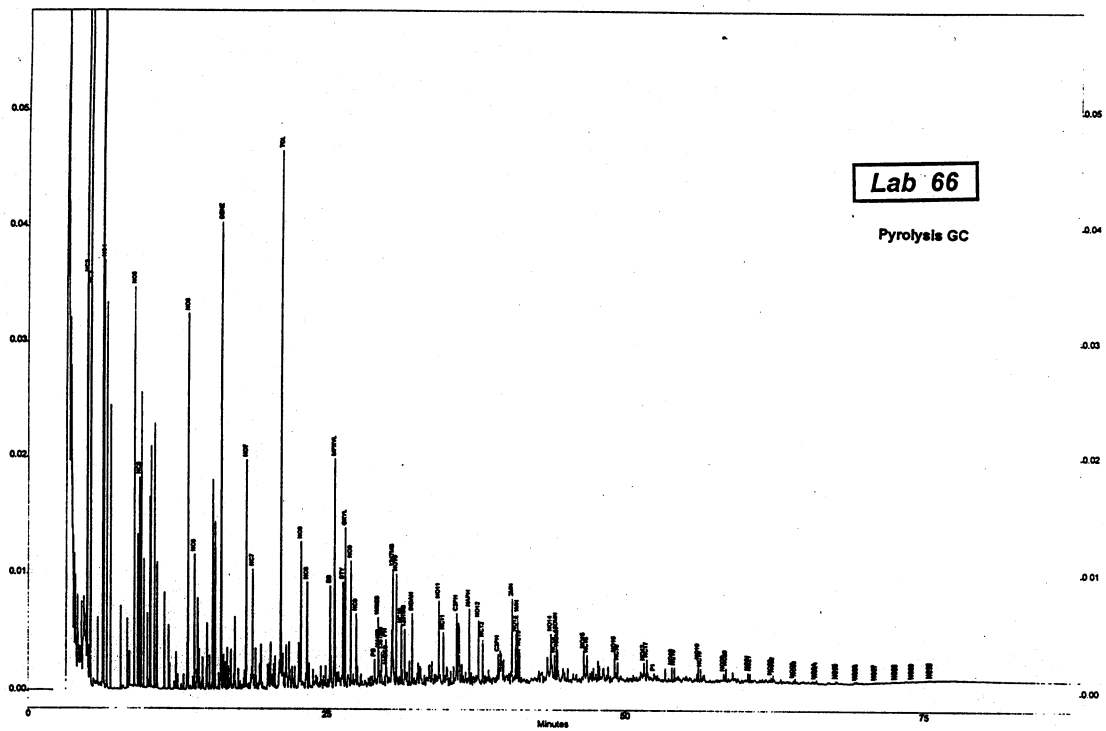
latroscan chromatograms



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Appendix A5.6

Pyrolysis GC chromatograms



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Appendix A5.7

Thermal extraction GC chromatograms

