

Fina Exploration Norway Inc.



May 1994

BA-94-1334-1

30 JUNI 1994

REGISTRERT

OLJEDIREKTORATET

**GEOCHEMICAL CHARACTERISATION
OF CRUDE OIL FROM
WELL 2/12-1 (DST No. 2)**

Fina Exploration Norway Inc.



The geochemical characterisation of the crude oil sample was performed by :

- 1) Geomark Research Inc., Houston, USA and
- 2) The Geochem Group Ltd., Chester, England.

The sample identification was :

Well	DST No.	Sample Identification		
		Fina	Geochem	Geomark
2/12-1	2	HA 564	8237-014	GNS 019

**GEOCHEMICAL CHARACTERIZATION OF
CRUDE OILS FROM THE NORTH SEA
FINAL REPORT**

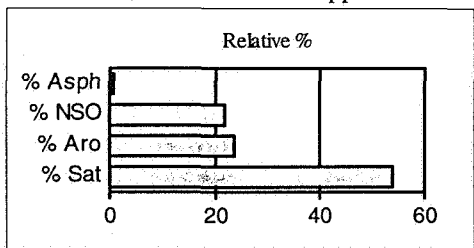
**PREPARED FOR
FINA EXPLORATION & PRODUCTION COMPANY
BRUSSELS, BELGIUM**

**PREPARED BY
GEOMARK RESEARCH, INC
HOUSTON, TEXAS**

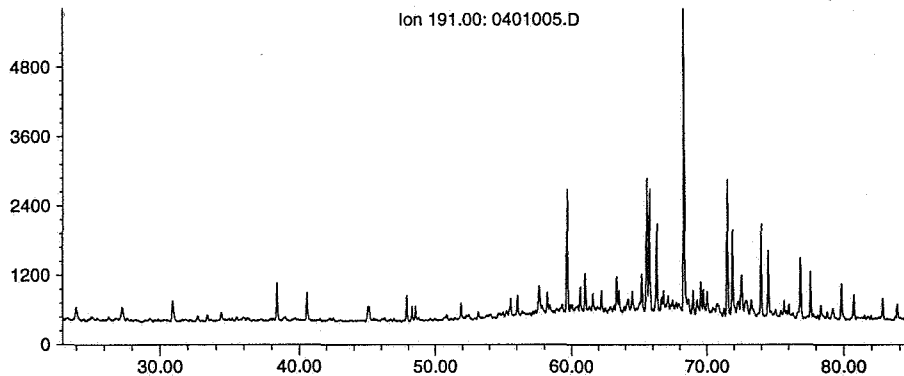
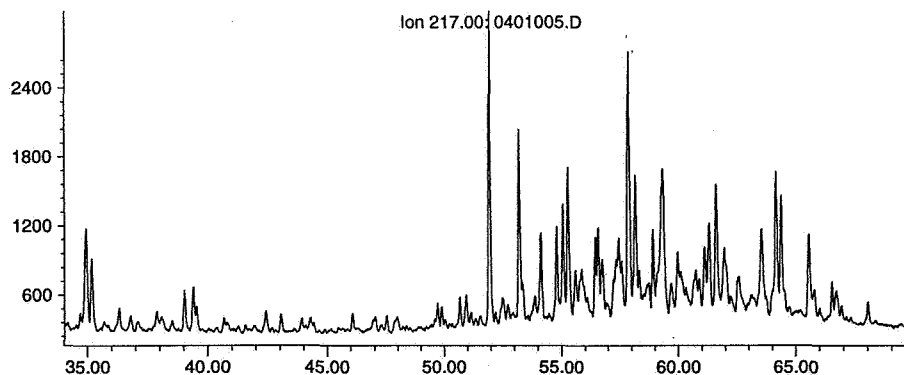
12 July 1993

APPENDIX A

Geochemical Summary Sheets

Oil Information Library System9748 Whithorn Drive Tel: (713) 856-9333
Houston, Texas 77095 Fax: (713) 856-2987**GEOCHEMICAL SUMMARY SHEET**Country: Norway
Basin: North Sea
Field:
Well:Depth:
Age:
Formation:12-Jul-93
Sample ID: HA564
LAT:
LONG:**BULK PROPERTIES:**API Gravity: % S: ppm V:
%< C15: 36.3 ppm Ni:**C15 + Composition**% Sat: 54.1
% Aro: 23.5
% NSO: 21.7
% Asph: 0.7
Sat/Aro= 2.30
n-Paraffin/Naphthene= 0.51**Stable Carbon Isotope Composition**
δ per mil PDBC15+ Saturate:
C15+ Aromatic:
Whole Crude:Deuterium Composition
(S.M.O.W.) Whole Crude:**GAS CHROMATOGRAPHY:****n-Paraffin
Distribution**Pr/Ph: Pr/n-C17:
CPI: Ph/n-C18:
n-C27/n-C17:**BIOMARKERS:**

ppm C30 Hopane: 97

Terpanes**Steranes****Key Ratios**C19/C23= 0.37
C22/C24= 0.29
C26/C25= 1.07
Tet/C23= 0.69

Ts/Tm= 3.24
C29D/H= 0.91
C27T/C27= 0.02
DM/H= 0.00
C28/H= 0.04
C30X/H= 0.29
C29/H= 0.84
OL/H= 0.02
GA/H= 0.02
C31S/H= 0.45
C35/C34= 0.60Rear/Reg= 4.01
Ster/Hop= 0.91
C29 20S/R= 0.93
%C27= 34.0
%C28= 31.5
%C29= 34.5
(m/z = 218)**COMMENTS:**

Sterane and Terpane Peak Identifications

Peak	Formula	MW	Sterane ID*
S1	C27H48	372	13 β , 17 α diacholestane (20S)
S2	C27H48	372	13 β , 17 α diacholestane (20R)
S3	C27H48	372	5 α cholestane (20S) +
		372	5 β cholestane (20R)
S4	C27H48	372	5 α , 14 β , 17 β cholestane (20R) +
	C29H52	400	13 β , 17 α diastigmastane (20S)
S5 + S5B**	C27H48	372	5 α , 14 β , 17 β cholestane (20S)
S6	C27H48	372	5 α cholestane (20R)
S7	C29H52	400	diastigmastane
S8	C28H50	386	5 α ergostane (20S)
S9	C28H50	386	5 α , 14 β , 17 β ergostane (20R) +
		386	5 β ergostane (20R)
S10 + S10B	C28H50	386	5 α , 14 β , 17 β ergostane (20S)
S11	C28H50	386	5 α ergostane (20R)
S12	C29H52	400	5 α stigmastane (20S)
S13	C29H52	400	5 α , 14 β , 17 β stigmastane (20R)
S14 + S14B	C29H52	400	5 α , 14 β , 17 β stigmastane (20S) +
		400	5 β stigmastane (20R)
S15	C29H52	400	5 α stigmastane (20R)

*assumes 8 β ,9 α ,14 α ,17 α unless otherwise stated. dia=rearranged

**based on the 217 and 218 m/z mass chromatograms, respectively

Peak	Formula	MW	Terpane ID
C19	C19H34	262	tricyclic diterpane
C20	C20H36	276	tricyclic diterpane
C21	C21H38	290	tricyclic diterpane
C22	C22H40	304	tricyclic terpane
C23	C23H42	318	tricyclic terpane
C24	C24H44	332	tricyclic terpane
C25	C25H46	346	tricyclic terpane
TET	C24H42	330	tetracyclic terpane
C26	C26H48	360	tricyclic terpane
C28	C28H52	388	extended tricyclic terpane
C29	C29H54	402	extended tricyclic terpane
C30	C30H56	416	extended tricyclic terpane
Ts	C27H46	370	18 α , 21 β -22,29,30-trisnorhopane
C27T	C27H46	370	17 α ,18 α ,21 β -25,28,30-trisnorhopane
Tm	C27H46	370	17 α , 21 β -22,29,30-trisnorhopane
C28H	C28H48	384	17 α , 18 α , 21 β -28,30-bisnorhopane
C29H	C29H50	398	17 α , 21 β -30-norhopane
C29D	C29H50	398	18 α , 17 α methyl-28,30-dinorhopane
C30X	C30H52	412	17 α , 15 α -methyl-27-norhopane (diahopane)
C29M	C29H50	398	17 β , 21 α -30-normortane
OL	C30H52	412	oleanane
C30H	C30H52	412	17 α , 21 β hopane
C30M	C30H52	412	17 β , 21 α moretane
C31H	C31H54	426	17 α , 21 β -30-homohopane (22S + 22R)
GA	C30H52	412	gammacerane
C32H	C32H56	440	17 α , 21 β -bishomohopane (22S + 22R)
C33H	C33H58	454	17 α , 21 β -trishomohopane (22S + 22R)
C34H	C34H60	468	17 α , 21 β extended hopane (22S + 22R)
C35H	C35H62	482	17 α , 21 β extended hopane (22S + 22R)

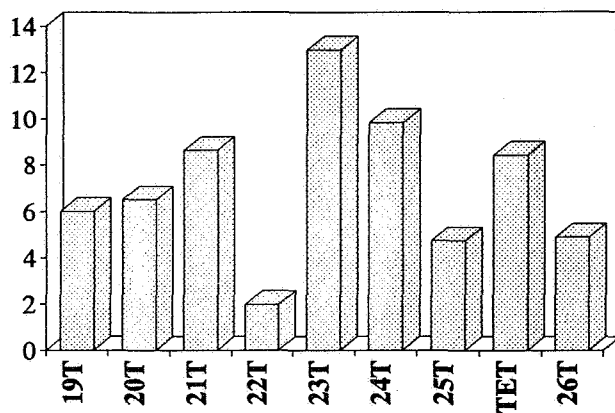
APPENDIX B

SATURATE BIOMARKER MASS FRAGMENTOGRAMS

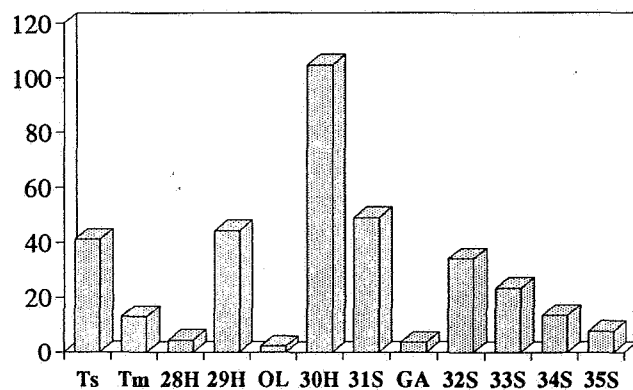
Biomarker Quantitation Report

Data File: 6401013.D
 Date File Acquired: 23 Jul 93 7:41 pm
 Acquisition Method: GMJULY22.M
 Sample Name: HA564
 Miscellaneous Info: 2.44 mg branched/cyclic hydrocarbon fraction

Peak#	m/z	Cpd.	RTmin.	Amount (ppm)	
				area	height
<i>Tricyclic Terpanes</i>					
1	191	C19T	44.86	5	6
2	191	C20T	48.79	7	6
3	191	C21T	52.91	7	9
4	191	C22T	56.69	3	2
5	191	C23T	60.99	13	13
6	191	C24T	63.28	8	10
7	191	C25R	67.85	3	5
8	191	C25S	67.95	5	4
9	191	TET	70.75	7	8
10	191	C26S	71.18	3	5
11	191	C26R	71.45	3	5
TRICYCLICS				65	74



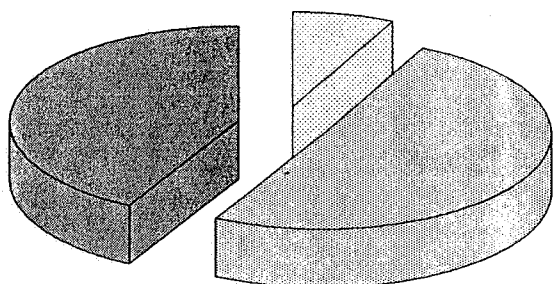
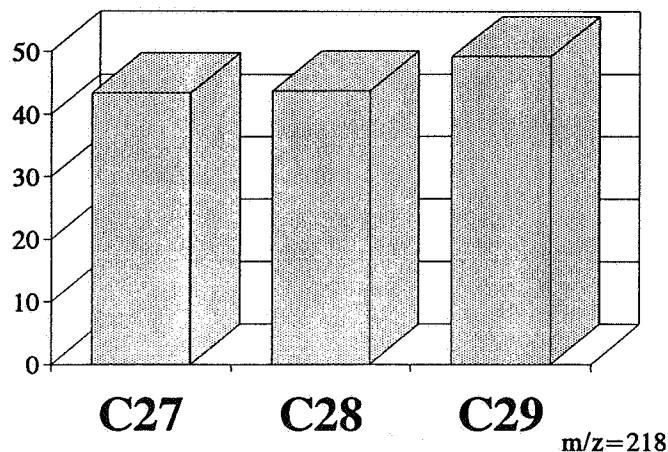
<i>Pentacyclic Terpanes</i>					
21	191	Ts	82.68	39	41
22	177	C27T	0.00	0	0
24	191	Tm	84.00	13	13
29	177	C28DM	84.82	4	2
34	191	C28H	87.21	6	4
37	177	C29DM	0.00	0	0
40	191	C29H	88.58	46	44
41	191	C29D	88.79	43	41
42	191	C30X	39.34	33	29
43	191	OL	90.95	1	2
44	191	C30H	91.34	108	105
45	191	C30M	92.57	10	9
46	191	C31S	94.53	51	49
47	191	C31R	94.90	37	31
48	191	GA	95.33	6	4
49	191	C32S	97.01	37	34
50	191	C32R	97.57	23	23
51	191	C33S	99.89	26	24
52	191	C33R	100.63	14	18
53	191	C34S	102.88	14	14
54	191	C34R	103.76	10	9
55	191	C35S	105.82	7	8
56	191	C35R	106.87	5	6
PENTACYCLICS				532	510



Biomarker Quantitation Report (cont.)

HA564

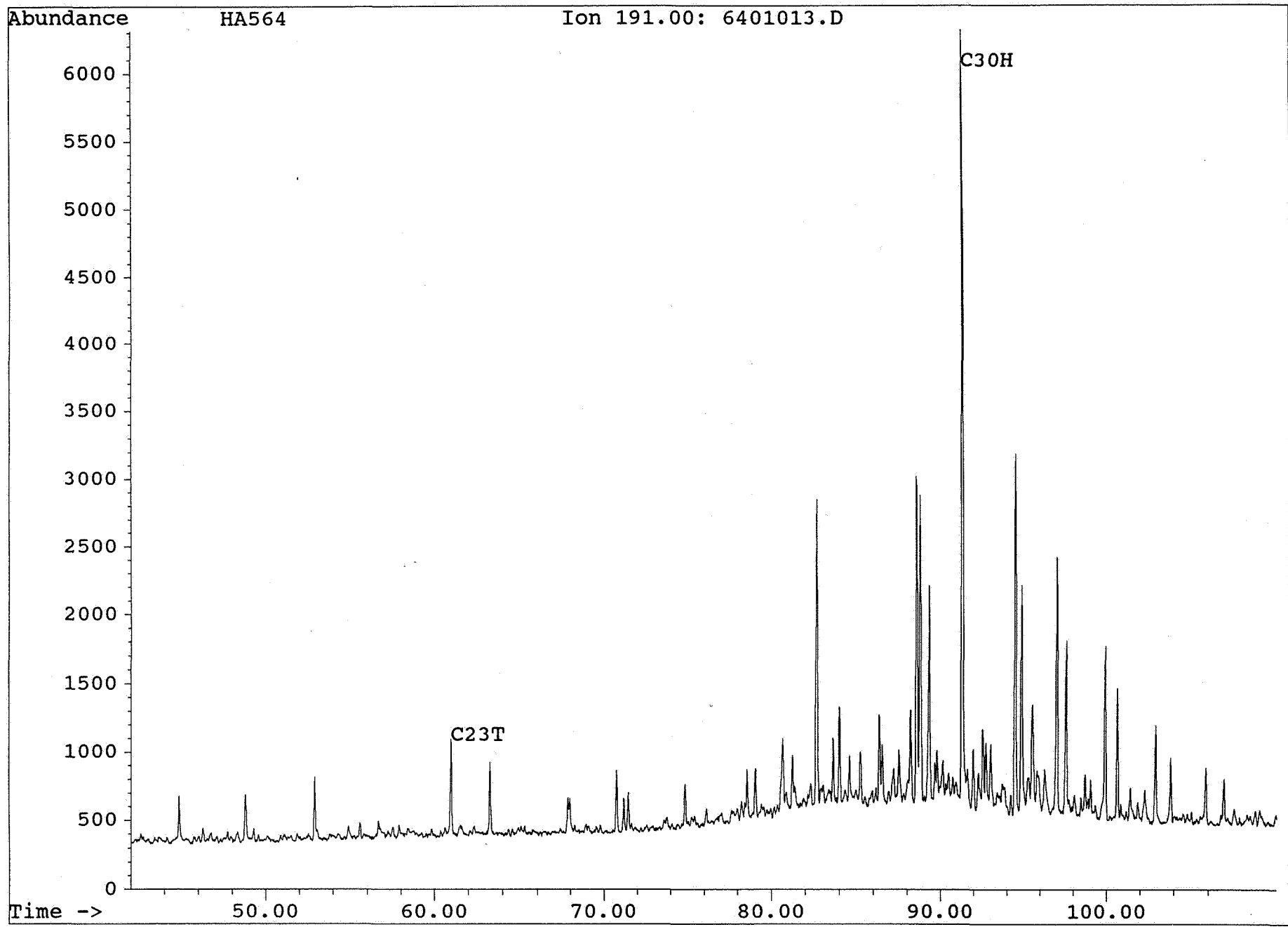
Peak#	m/z	Cpd.	RTmin.	Amount (ppm)	area	height
		<i>Steranes</i>				
12	217	S1	74.87	68	71	
13	217	S2	76.16	40	44	
14	217	S3	80.42	9	8	
15	217	S4	80.83	71	58	
16	218	S4B	80.81	61	58	
17	217	S5	81.14	30	28	
18	218	S5B	81.14	43	43	
19	217	S6	81.90	18	18	
20	217	S7	82.31	60	34	
23	217	S8	83.87	6	7	
25	217	S9	84.31	22	20	
26	218	S9B	84.31	36	36	
27	217	S10	84.61	34	30	
28	218	S10B	84.61	45	44	
30	217	S11	85.52	17	8	
31	217	S12	86.53	40	22	
32	217	S13	87.16	46	34	
33	218	S13B	87.16	52	52	
35	217	S14	87.39	17	24	
36	218	S14B	87.39	53	49	
38	221	ISTD	88.44	41	41	
39	217	S15	88.56	23	20	
STERANES				501	426	

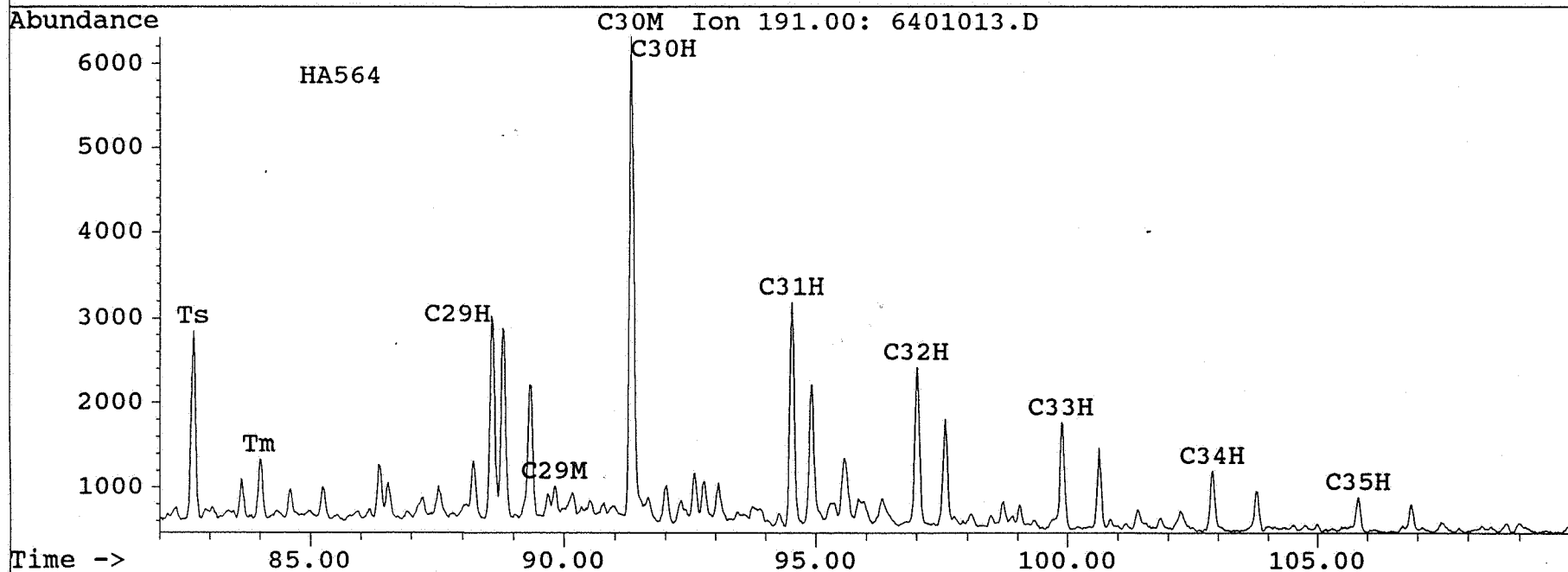
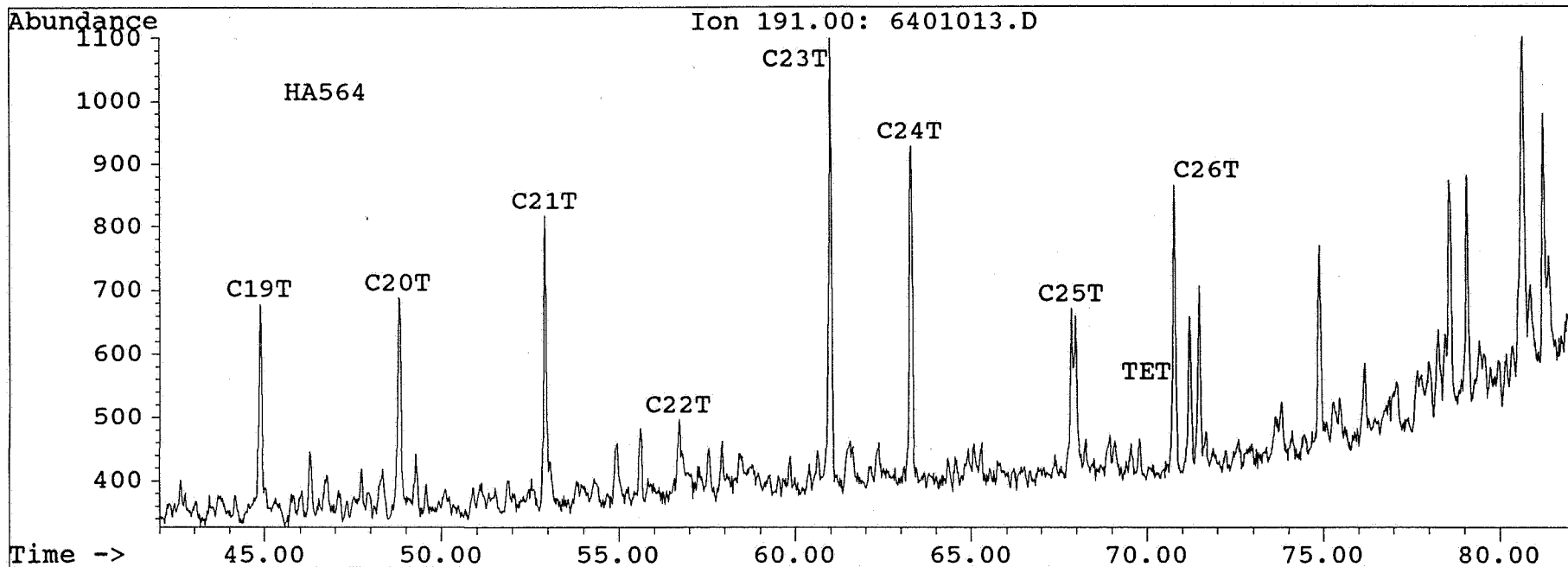


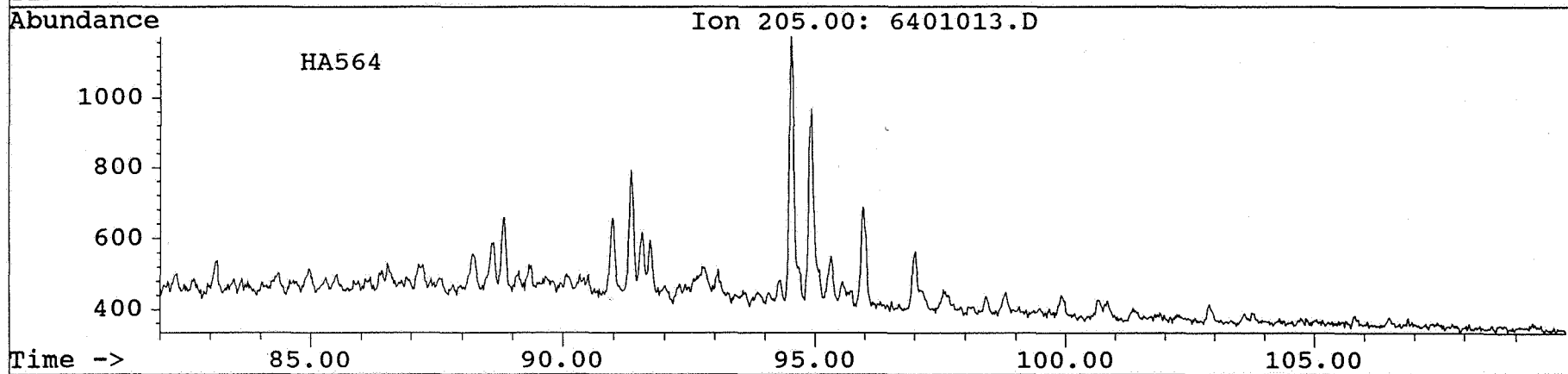
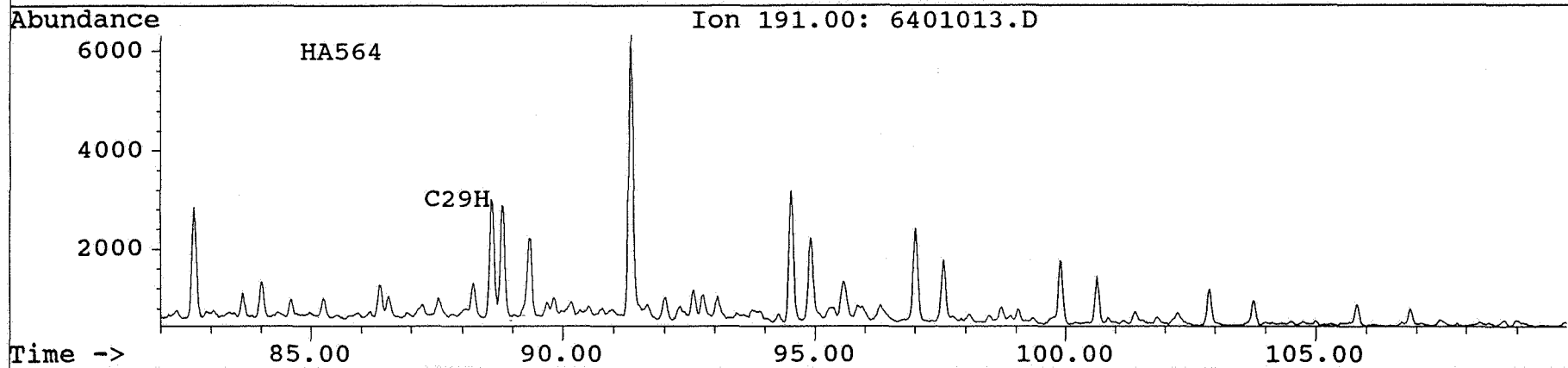
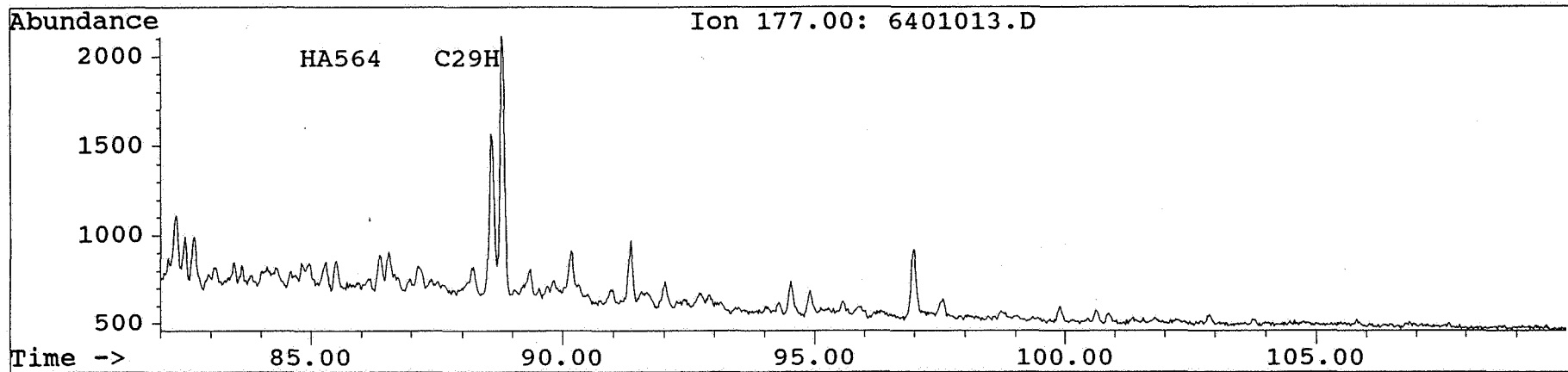
TRICYCLICS
 PENTACYCLICS
 STERANES

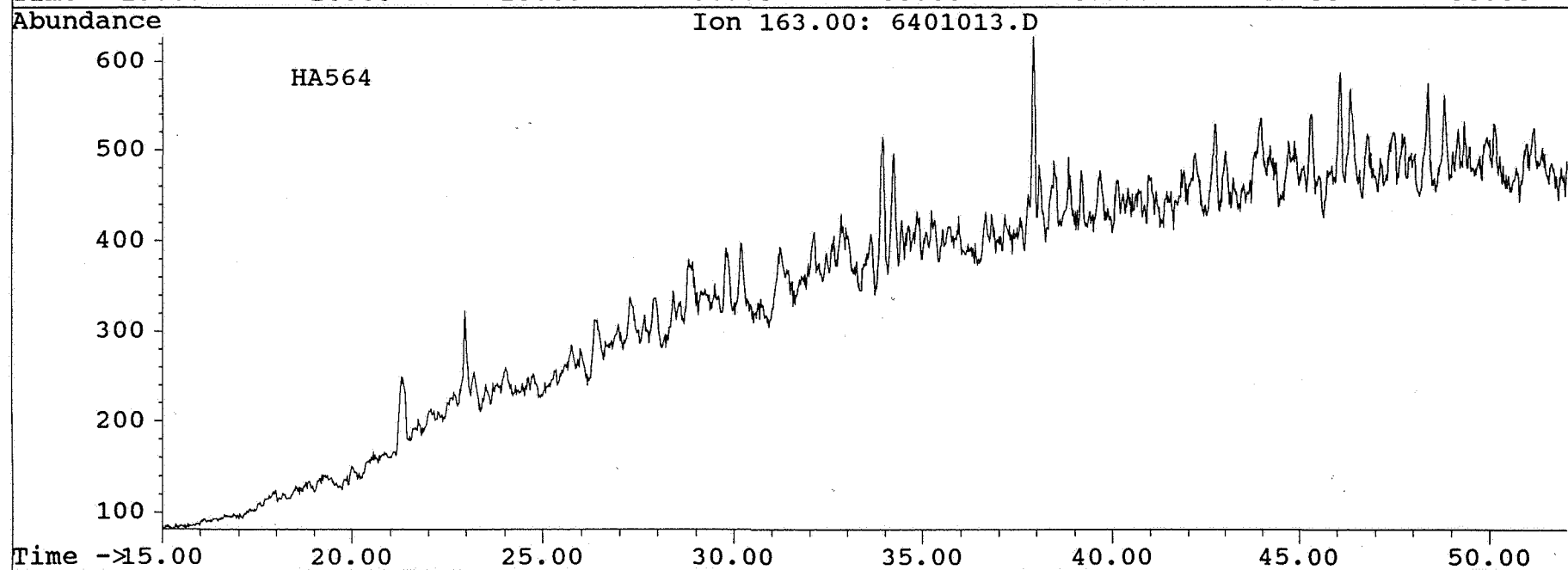
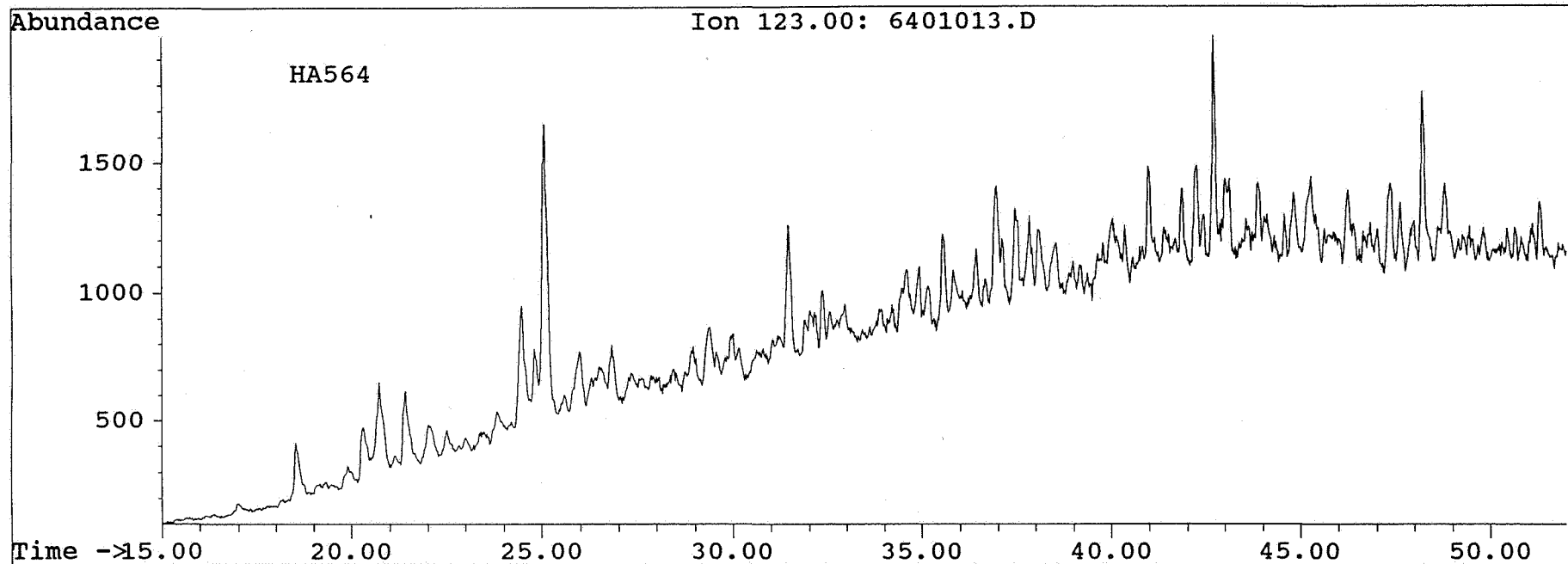
Key Ratios

	area	ht.		area	ht.
C19/C23	0.41	0.46	Ts/Tm	2.94	3.16
C21/C23	0.57	0.67	29D/29	0.94	0.93
C22/C23	0.22	0.15	C27T/27	0.00	0.00
C24/C23	0.63	0.76	DM/H	0.00	0.00
C26/C25	0.85	1.04	C27/H	0.49	0.52
Tet/C23	0.56	0.65	C28/H	0.06	0.04
			X/H	0.30	0.28
S1/S6	3.79	4.00	C29/H	0.83	0.82
%C27	30	32	M/H	0.09	0.09
%C28	32	32	OL/H	0.01	0.02
%C29	38	36	GA/H	0.06	0.03
20S/20R	1.72	1.06	C31/H	0.47	0.47
S/T	0.94	0.83	C35/C34	0.47	0.57
			C23/H	0.12	0.12







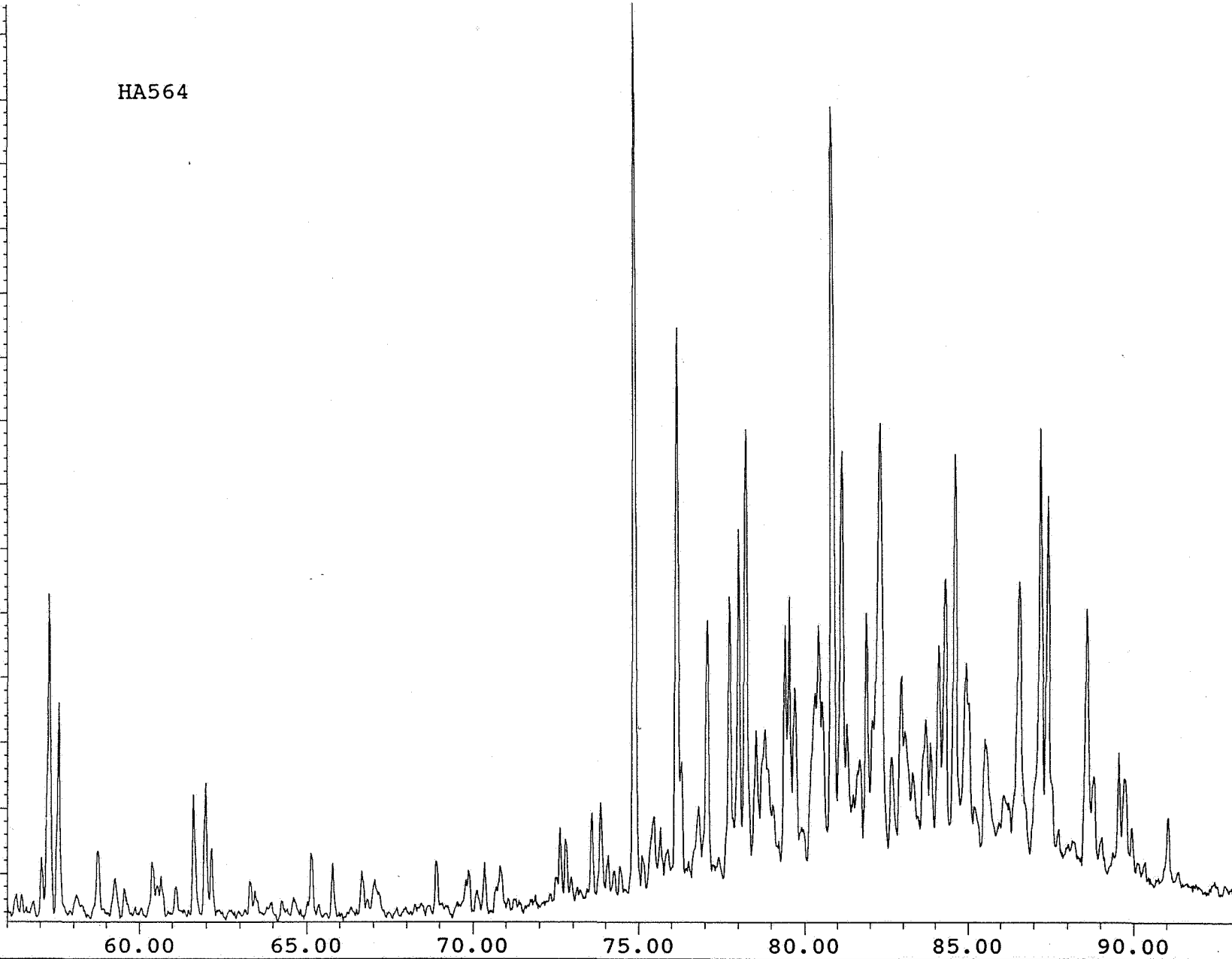


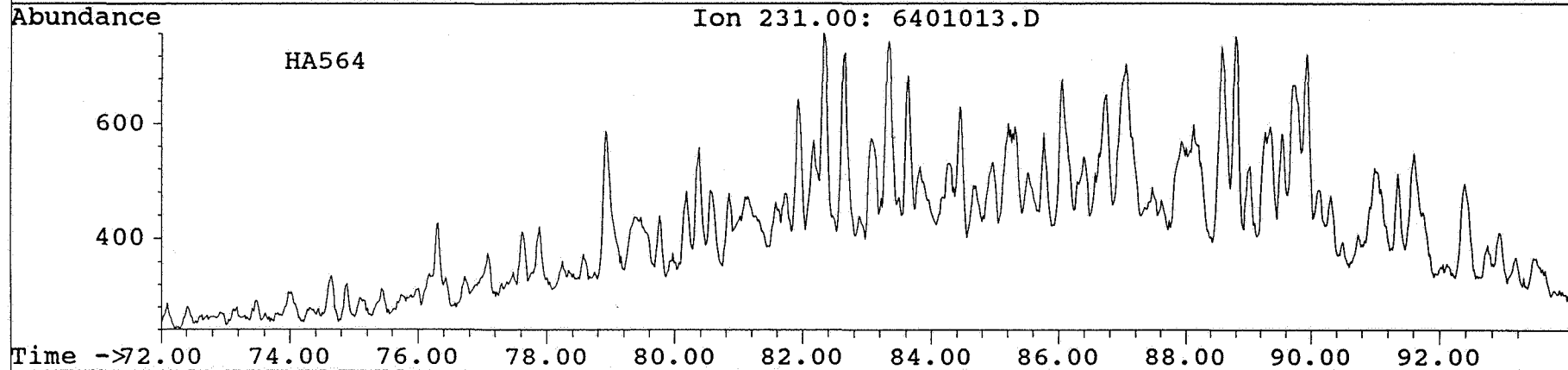
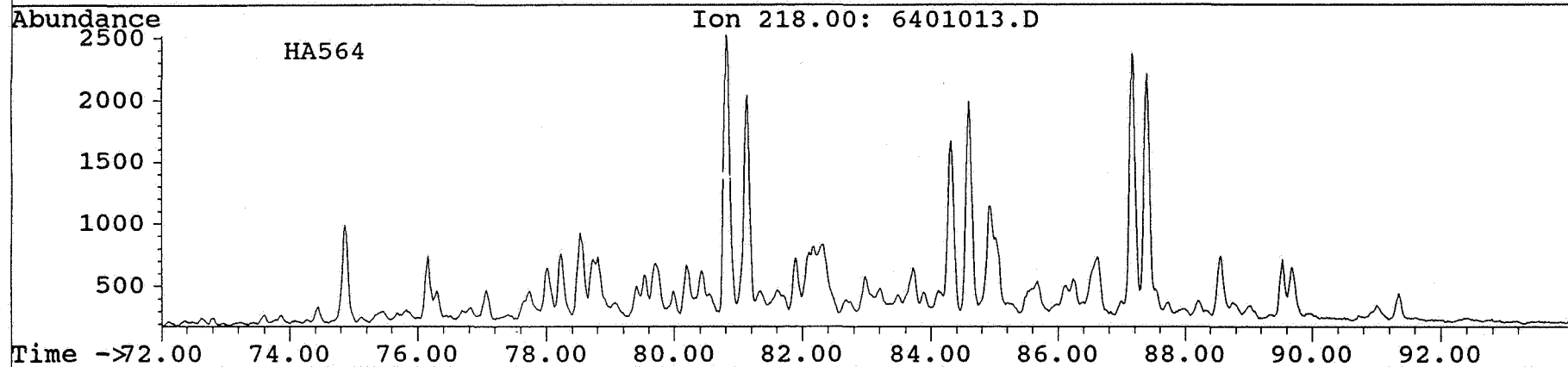
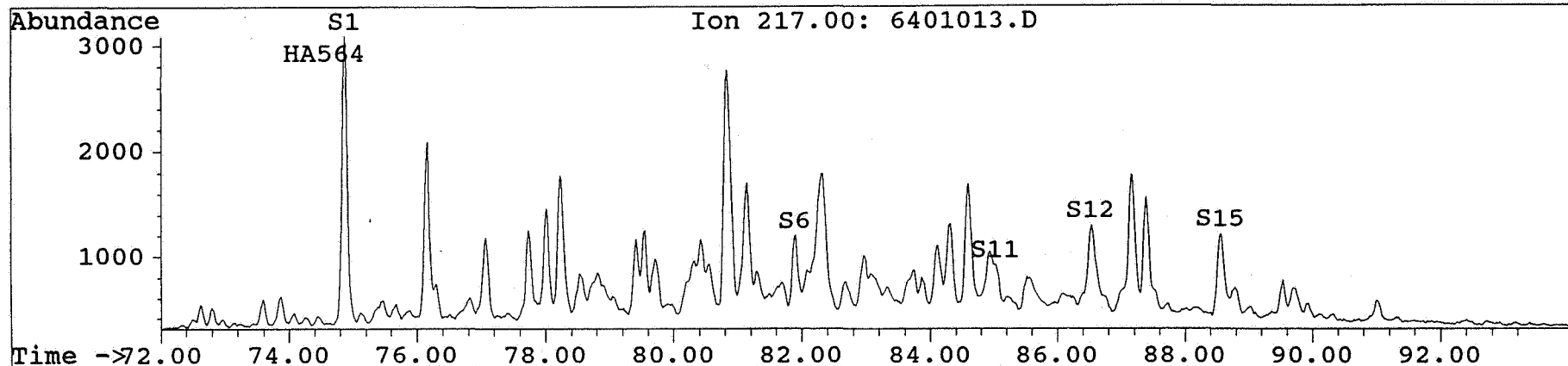
Abundance

Ion 217.00: 6401013.D

HA564

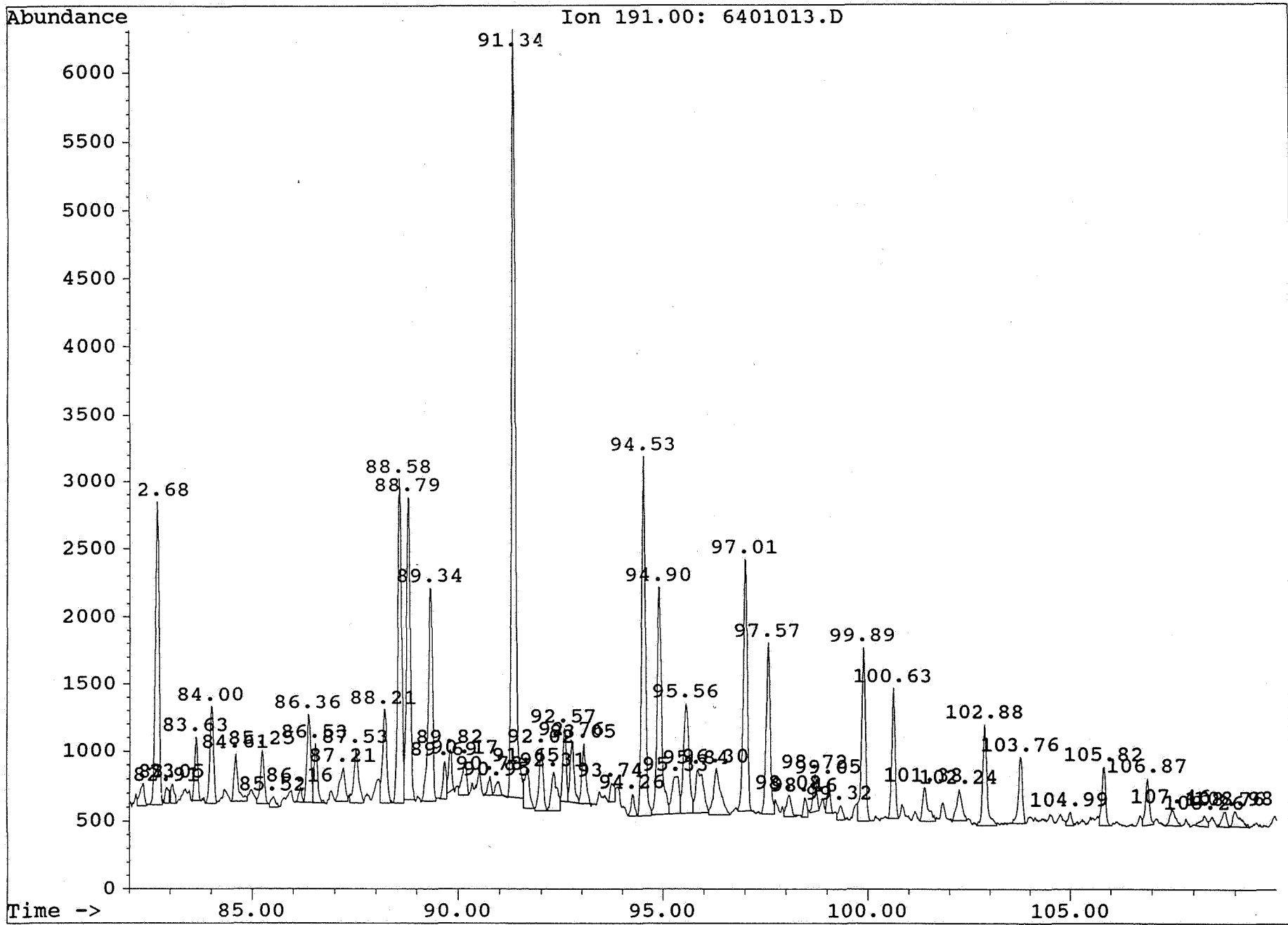
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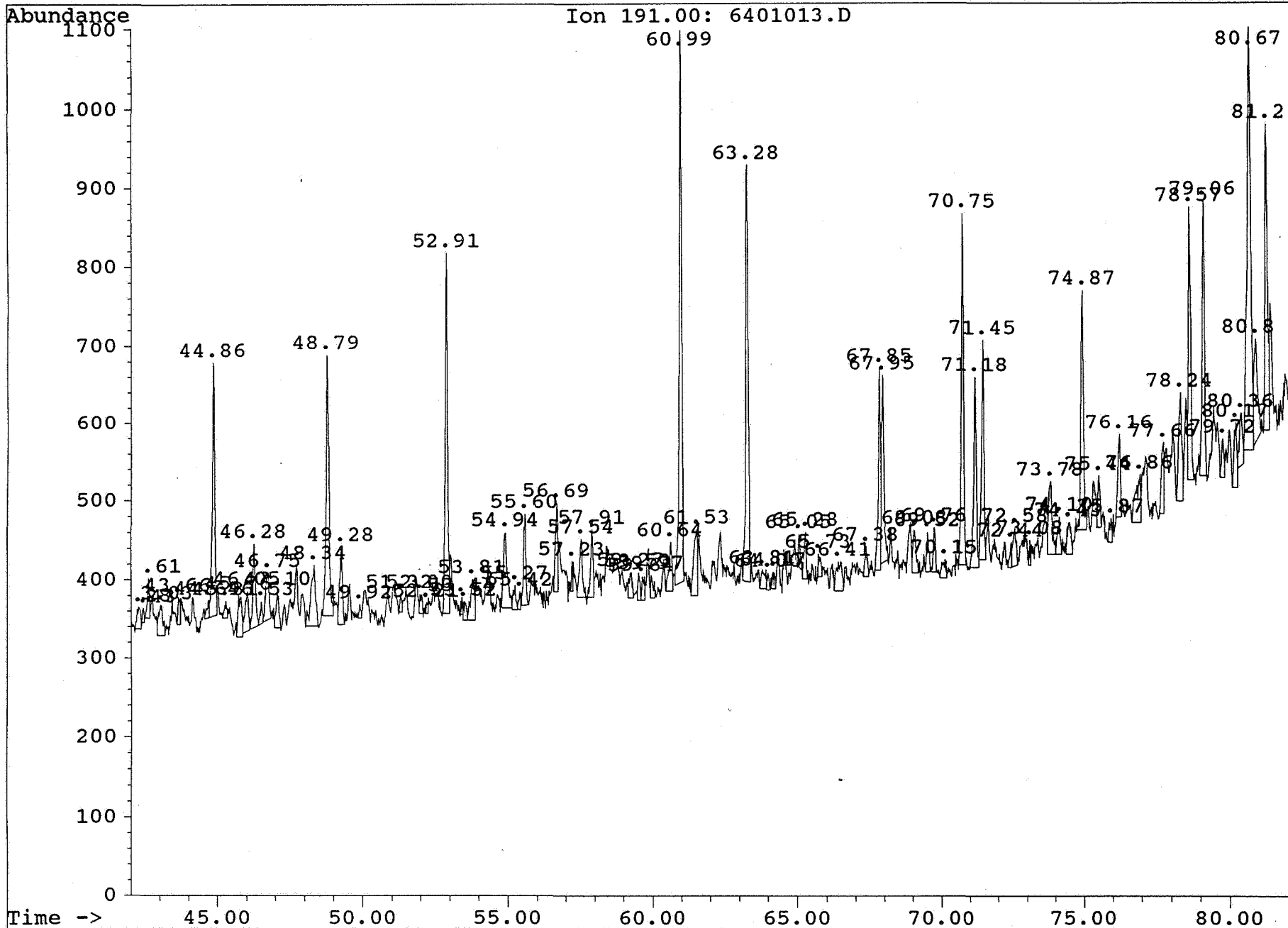
Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	82.329	RTE!	0.234	1160	82.193	82.427
2	82.680	RTE!	0.311	13912	82.504	82.816
3	82.913	RTE!	0.117	656.00	82.855	82.972
4	83.049	RTE!	0.156	713.00	83.011	83.166
5	83.633	RTE!	0.234	2456	83.517	83.750
6	84.003	RTE!	0.273	4392	83.867	84.139
7	84.607	RTE!	0.389	1566	84.490	84.879
8	85.249	RTE!	0.273	2507	85.113	85.385
9	85.521	RTE!	0.234	540.00	85.424	85.658
10	86.164	RTE!	0.195	566.00	86.047	86.242
11	86.358	RTE!	0.234	3330	86.242	86.475
12	86.533	RTE!	0.311	2474	86.475	86.787
13	87.215	RTE!	0.311	2179	87.020	87.332
14	87.526	RTE!	0.350	2374	87.370	87.721
15	88.207	RTE!	0.311	3903	88.110	88.422
16	88.577	RTE!	0.272	14451	88.422	88.694
17	88.791	RTE!	0.273	14284	88.694	88.967
18	89.336	RTE!	0.350	11325	89.122	89.473
19	89.687	RTE!	0.156	552.00	89.589	89.745
20	89.823	RTE!	0.156	1582	89.745	89.901
21	90.173	RTE!	0.234	1890	90.018	90.251
22	90.777	RTE!	0.195	705.00	90.640	90.835
23	90.952	RTE!	0.234	738.00	90.835	91.069
24	91.341	RTE!	0.389	34840	91.185	91.575
25	91.653	RTE!	0.273	2225	91.575	91.847
26	92.022	RTE!	0.311	3154	91.847	92.159
27	92.314	RTE!	0.311	1932	92.159	92.470
28	92.567	RTE!	0.195	3206	92.470	92.665
29	92.762	RTE!	0.273	2208	92.665	92.937
30	93.054	RTE!	0.311	2197	92.937	93.249
31	93.735	RTE!	0.156	1012	93.677	93.833
32	94.261	RTE!	0.234	907.00	94.144	94.378
33	94.533	RTE!	0.350	16942	94.378	94.728
34	94.903	RTE!	0.428	12675	94.728	95.156
35	95.331	RTE!	0.273	3162	95.156	95.429
36	95.565	RTE!	0.311	7379	95.429	95.740
37	95.837	RTE!	0.389	3970	95.740	96.129
38	96.304	RTE!	0.506	3933	96.129	96.635
39	97.005	RTE!	0.350	11691	96.830	97.180
40	97.570	RTE!	0.311	7744	97.414	97.725
41	98.076	RTE!	0.311	544.00	97.959	98.270
42	98.465	RTE!	0.156	784.00	98.387	98.543

45	99.321	RTE!	0.195	692.00	99.244	99.438
46	99.886	RTE!	0.311	8477	99.750	100.061
47	100.625	RTE!	0.273	4588	100.489	100.762
48	101.385	RTE!	0.389	2199	101.268	101.657
49	102.241	RTE!	0.389	2018	102.046	102.436
50	102.883	RTE!	0.506	4768	102.669	103.175
51	103.759	RTE!	0.389	3293	103.487	103.876
52	104.985	RTE!	0.195	567.00	104.888	105.083
53	105.822	RTE!	0.311	2223	105.706	106.017
54	106.873	RTE!	0.273	1604	106.757	107.029
55	107.457	RTE!	0.389	1076	107.302	107.691
56	108.255	RTE!	0.311	754.00	108.041	108.353
57	108.761	RTE!	0.311	867.00	108.547	108.859
58	108.976	RTE!	0.506	1352	108.859	109.365

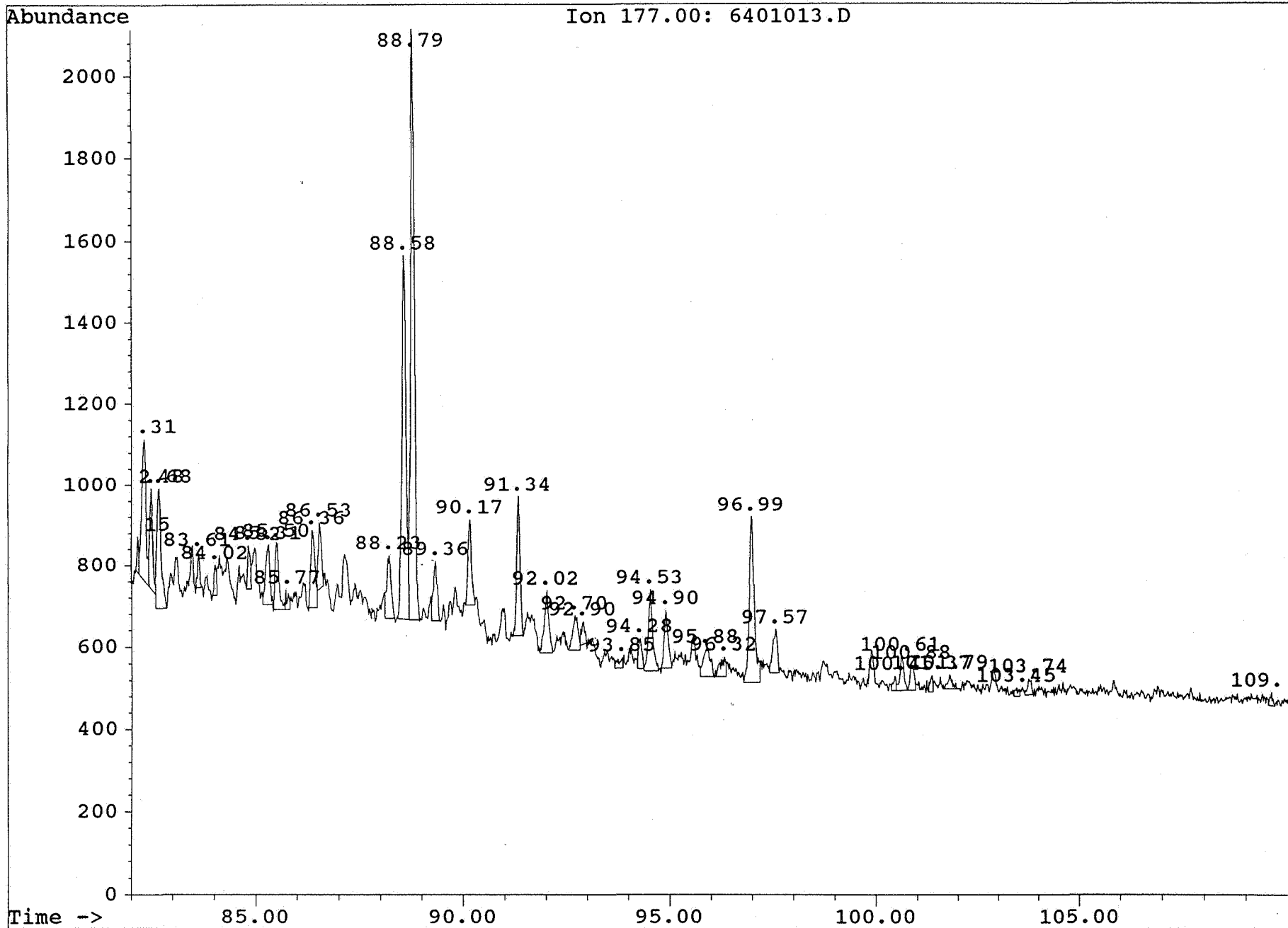


Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	42.275	RTE!	0.233	228.00	42.120	42.353
2	42.431	RTE!	0.117	71.00	42.353	42.470
3	42.606	RTE!	0.195	283.00	42.470	42.664
4	43.034	RTE!	0.272	389.00	42.897	43.170
5	43.656	RTE!	0.117	170.00	43.598	43.714
6	44.687	RTE!	0.156	122.00	44.570	44.726
7	44.862	RTE!	0.272	1644	44.726	44.998
8	45.309	RTE!	0.156	124.00	45.192	45.348
9	45.756	RTE!	0.233	490.00	45.659	45.893
10	46.048	RTE!	0.233	396.00	45.893	46.126
11	46.282	RTE!	0.272	323.00	46.165	46.437
12	46.534	RTE!	0.156	150.00	46.437	46.593
13	46.748	RTE!	0.272	78.00	46.593	46.865
14	47.098	RTE!	0.233	330.00	46.982	47.215
15	48.343	RTE!	0.428	854.00	48.071	48.499
16	48.790	RTE!	0.350	2443	48.654	49.004
17	49.277	RTE!	0.233	621.00	49.160	49.393
18	49.919	RTE!	0.117	75.00	49.860	49.977
19	51.319	RTE!	0.117	95.00	51.261	51.377
20	52.000	RTE!	0.195	135.00	51.961	52.155
21	52.213	RTE!	0.117	71.00	52.155	52.272
22	52.914	RTE!	0.233	2720	52.778	53.011
23	53.439	RTE!	0.117	64.00	53.361	53.478
24	53.517	RTE!	0.156	133.00	53.478	53.633
25	53.808	RTE!	0.272	94.00	53.633	53.906
26	54.936	RTE!	0.350	432.00	54.800	55.150
27	55.267	RTE!	0.194	189.00	55.150	55.345
28	55.423	RTE!	0.117	109.00	55.345	55.462
29	55.598	RTE!	0.233	292.00	55.500	55.734
30	56.687	RTE!	0.156	633.00	56.590	56.745
31	57.231	RTE!	0.078	96.00	57.173	57.251
32	57.543	RTE!	0.311	567.00	57.406	57.718
33	57.912	RTE!	0.272	533.00	57.718	57.990
34	59.274	RTE!	0.194	234.00	59.157	59.351
35	59.526	RTE!	0.117	156.00	59.468	59.585
36	59.643	RTE!	0.156	201.00	59.585	59.740
37	59.974	RTE!	0.156	136.00	59.935	60.090
38	60.635	RTE!	0.233	451.00	60.479	60.713
39	60.985	RTE!	0.311	4218	60.791	61.102
40	61.530	RTE!	0.233	757.00	61.335	61.569
41	63.280	RTE!	0.272	2678	63.125	63.397
42	63.805	RTE!	0.233	233.00	63.708	63.941

45	65.050	RTE!	0.156	201.00	64.992	65.147
46	65.283	RTE!	0.156	282.00	65.186	65.342
47	65.731	RTE!	0.156	168.00	65.692	65.847
48	66.411	RTE!	0.311	466.00	66.275	66.586
49	67.384	RTE!	0.194	217.00	67.287	67.481
50	67.851	RTE!	0.233	983.00	67.676	67.909
51	67.948	RTE!	0.233	1304	67.909	68.142
52	69.076	RTE!	0.233	378.00	68.998	69.232
53	69.523	RTE!	0.156	261.00	69.465	69.621
54	69.757	RTE!	0.194	319.00	69.659	69.854
55	70.146	RTE!	0.233	212.00	69.971	70.204
56	70.749	RTE!	0.272	2700	70.593	70.865
57	71.176	RTE!	0.311	1105	71.021	71.332
58	71.449	RTE!	0.233	1070	71.332	71.565
59	72.441	RTE!	0.117	138.00	72.344	72.461
60	72.578	RTE!	0.195	359.00	72.461	72.655
61	73.084	RTE!	0.078	78.00	73.045	73.123
62	73.784	RTE!	0.273	176.00	73.707	73.979
63	74.096	RTE!	0.195	298.00	73.979	74.174
64	74.427	RTE!	0.234	391.00	74.329	74.563
65	74.874	RTE!	0.311	1264	74.719	75.030
66	75.439	RTE!	0.156	343.00	75.381	75.536
67	75.867	RTE!	0.156	168.00	75.770	75.926
68	76.159	RTE!	0.195	651.00	76.042	76.237
69	76.860	RTE!	0.311	68.00	76.587	76.899
70	77.658	RTE!	0.156	502.00	77.522	77.677
71	78.242	RTE!	0.234	1073	78.106	78.339
72	78.573	RTE!	0.234	1853	78.495	78.728
73	79.059	RTE!	0.273	1507	78.923	79.196
74	79.721	RTE!	0.156	270.00	79.624	79.779
75	80.169	RTE!	0.195	568.00	80.052	80.247
76	80.363	RTE!	0.195	495.00	80.247	80.441
77	80.675	RTE!	0.350	4254	80.441	80.792
78	80.869	RTE!	0.273	426.00	80.792	81.064
79	81.239	RTE!	0.234	1568	81.103	81.337

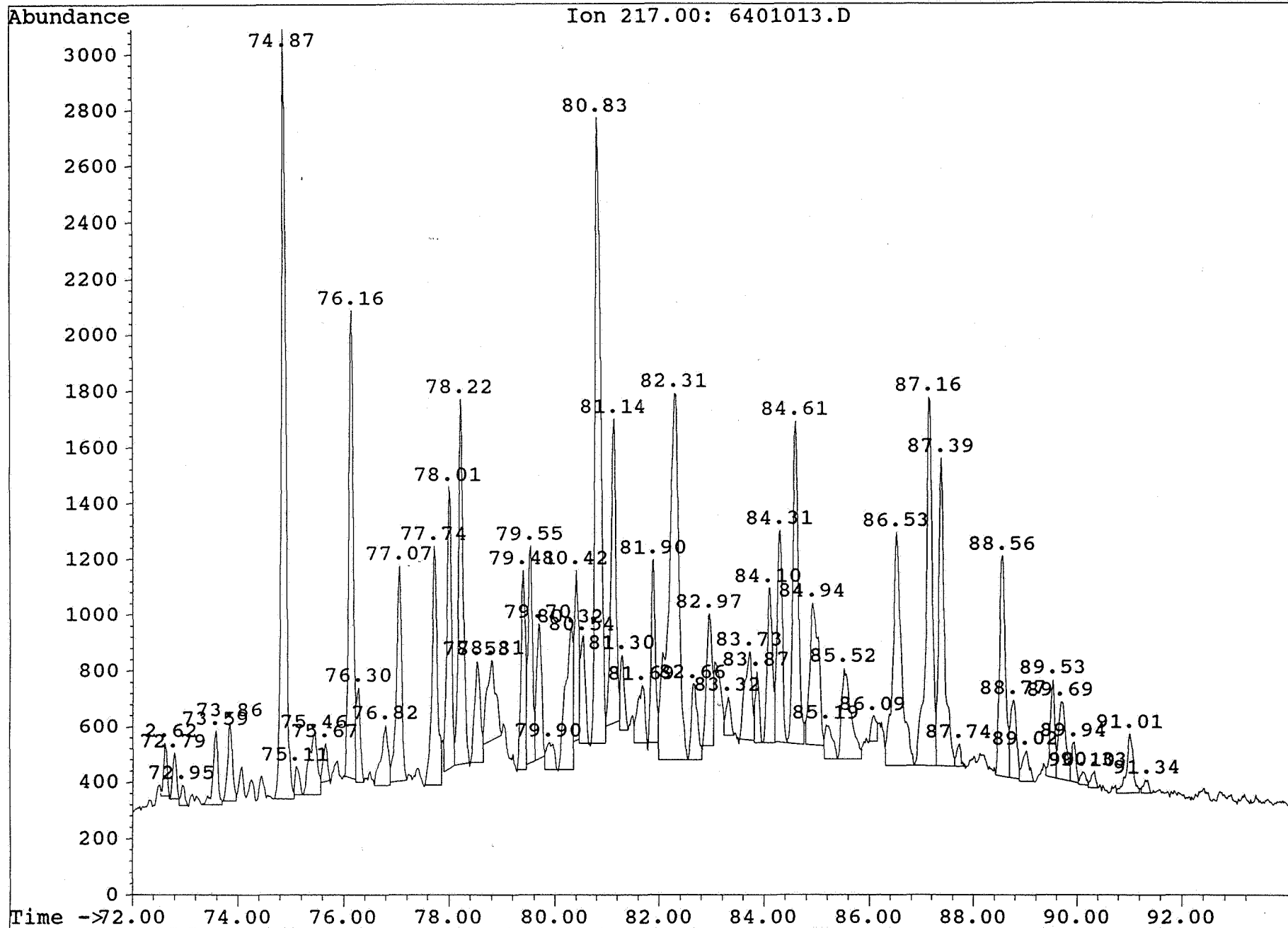


Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	82.154	RTE!	0.078	253.00	82.115	82.193
2	82.310	RTE!	0.234	1560	82.193	82.427
3	82.485	RTE!	0.156	328.00	82.427	82.582
4	82.680	RTE!	0.273	1315	82.582	82.855
5	83.614	RTE!	0.117	319.00	83.556	83.672
6	84.023	RTE!	0.117	348.00	83.945	84.062
7	84.821	RTE!	0.117	483.00	84.762	84.879
8	85.307	RTE!	0.273	214.00	85.152	85.424
9	85.502	RTE!	0.273	244.00	85.424	85.697
10	85.774	RTE!	0.117	199.00	85.697	85.813
11	86.358	RTE!	0.234	479.00	86.242	86.475
12	86.533	RTE!	0.156	894.00	86.475	86.631
13	88.227	RTE!	0.234	1105	88.110	88.344
14	88.577	RTE!	0.272	5329	88.422	88.694
15	88.791	RTE!	0.311	8470	88.694	89.005
16	89.356	RTE!	0.234	154.00	89.239	89.473
17	90.173	RTE!	0.234	402.00	90.057	90.290
18	91.341	RTE!	0.273	1919	91.185	91.458
19	92.022	RTE!	0.311	1123	91.847	92.159
20	92.704	RTE!	0.273	728.00	92.548	92.820
21	92.898	RTE!	0.156	317.00	92.820	92.976
22	93.852	RTE!	0.195	186.00	93.677	93.871
23	94.280	RTE!	0.156	392.00	94.222	94.378
24	94.533	RTE!	0.350	1431	94.378	94.728
25	94.903	RTE!	0.273	885.00	94.767	95.039
26	95.876	RTE!	0.389	178.00	95.740	96.129
27	96.324	RTE!	0.234	433.00	96.129	96.363
28	96.986	RTE!	0.389	3453	96.791	97.180
29	97.570	RTE!	0.234	794.00	97.414	97.647
30	100.450	RTE!	0.117	161.00	100.372	100.489
31	100.606	RTE!	0.273	566.00	100.489	100.762
32	100.879	RTE!	0.195	418.00	100.762	100.956
33	101.365	RTE!	0.117	198.00	101.268	101.385
34	101.793	RTE!	0.350	280.00	101.618	101.969
35	103.448	RTE!	0.156	136.00	103.370	103.526
36	103.740	RTE!	0.273	262.00	103.642	103.915
37	109.598	RTE!	0.156	134.00	109.521	109.676



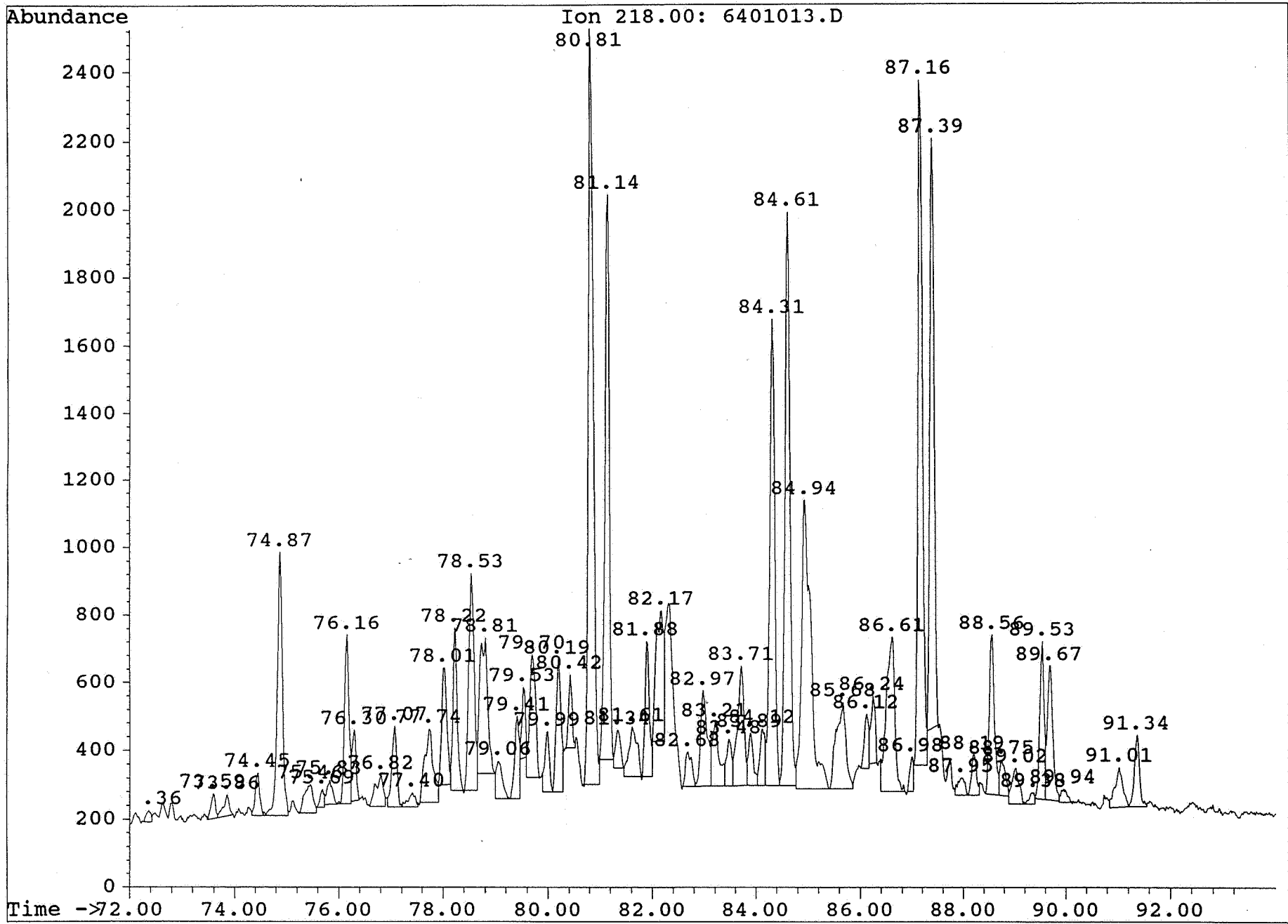
Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	72.617	RTE!	0.156	844.00	72.539	72.694
2	72.792	RTE!	0.195	391.00	72.694	72.889
3	72.947	RTE!	0.156	360.00	72.889	73.045
4	73.590	RTE!	0.389	1288	73.317	73.707
5	73.862	RTE!	0.273	1448	73.707	73.979
6	74.874	RTE!	0.389	16124	74.680	75.069
7	75.108	RTE!	0.156	530.00	75.069	75.225
8	75.458	RTE!	0.350	1935	75.225	75.575
9	75.672	RTE!	0.195	275.00	75.575	75.770
10	76.159	RTE!	0.234	9970	76.003	76.237
11	76.295	RTE!	0.156	1743	76.237	76.393
12	76.821	RTE!	0.311	2166	76.587	76.899
13	77.074	RTE!	0.311	4838	76.899	77.210
14	77.736	RTE!	0.311	6118	77.561	77.872
15	78.008	RTE!	0.195	5899	77.911	78.106
16	78.222	RTE!	0.311	8134	78.106	78.417
17	78.534	RTE!	0.234	2114	78.417	78.651
18	78.806	RTE!	0.350	2682	78.651	79.001
19	79.410	RTE!	0.195	4152	79.273	79.468
20	79.546	RTE!	0.156	3658	79.468	79.624
21	79.702	RTE!	0.195	3383	79.624	79.818
22	79.896	RTE!	0.234	962.00	79.818	80.052
23	80.324	RTE!	0.311	4325	80.052	80.363
24	80.422	RTE!	0.117	3363	80.363	80.480
25	80.539	RTE!	0.195	2404	80.480	80.675
26	80.831	RTE!	0.311	16879	80.675	80.986
27	81.142	RTE!	0.273	6840	80.986	81.259
28	81.298	RTE!	0.156	1319	81.259	81.414
29	81.687	RTE!	0.273	1306	81.531	81.804
30	81.901	RTE!	0.195	3228	81.804	81.998
31	82.310	RTE!	0.545	17619	81.998	82.543
32	82.660	RTE!	0.272	2320	82.543	82.816
33	82.972	RTE!	0.234	2712	82.816	83.049
34	83.322	RTE!	0.195	896.00	83.244	83.439
35	83.731	RTE!	0.272	2382	83.556	83.828
36	83.867	RTE!	0.156	543.00	83.828	83.984
37	84.101	RTE!	0.234	3356	83.984	84.217
38	84.315	RTE!	0.234	4462	84.217	84.451
39	84.607	RTE!	0.311	8206	84.451	84.762
40	84.937	RTE!	0.350	5250	84.801	85.152
41	85.191	RTE!	0.234	1145	85.152	85.385
42	85.521	RTE!	0.467	4217	85.385	85.852

44	555	RTE!	0.545	3440	0.519	00.004
45	87.156	RTE!	0.428	10794	86.864	87.293
46	87.390	RTE!	0.350	7720	87.293	87.643
47	87.740	RTE!	0.234	455.00	87.643	87.877
48	88.558	RTE!	0.272	5795	88.422	88.694
49	88.772	RTE!	0.195	2202	88.694	88.889
50	89.025	RTE!	0.273	956.00	88.889	89.161
51	89.531	RTE!	0.195	2055	89.395	89.589
52	89.687	RTE!	0.273	2159	89.589	89.862
53	89.940	RTE!	0.156	826.00	89.862	90.018
54	90.095	RTE!	0.195	318.00	90.018	90.212
55	90.329	RTE!	0.195	335.00	90.212	90.407
56	91.010	RTE!	0.428	1840	90.757	91.185
57	91.341	RTE!	0.195	304.00	91.224	91.419



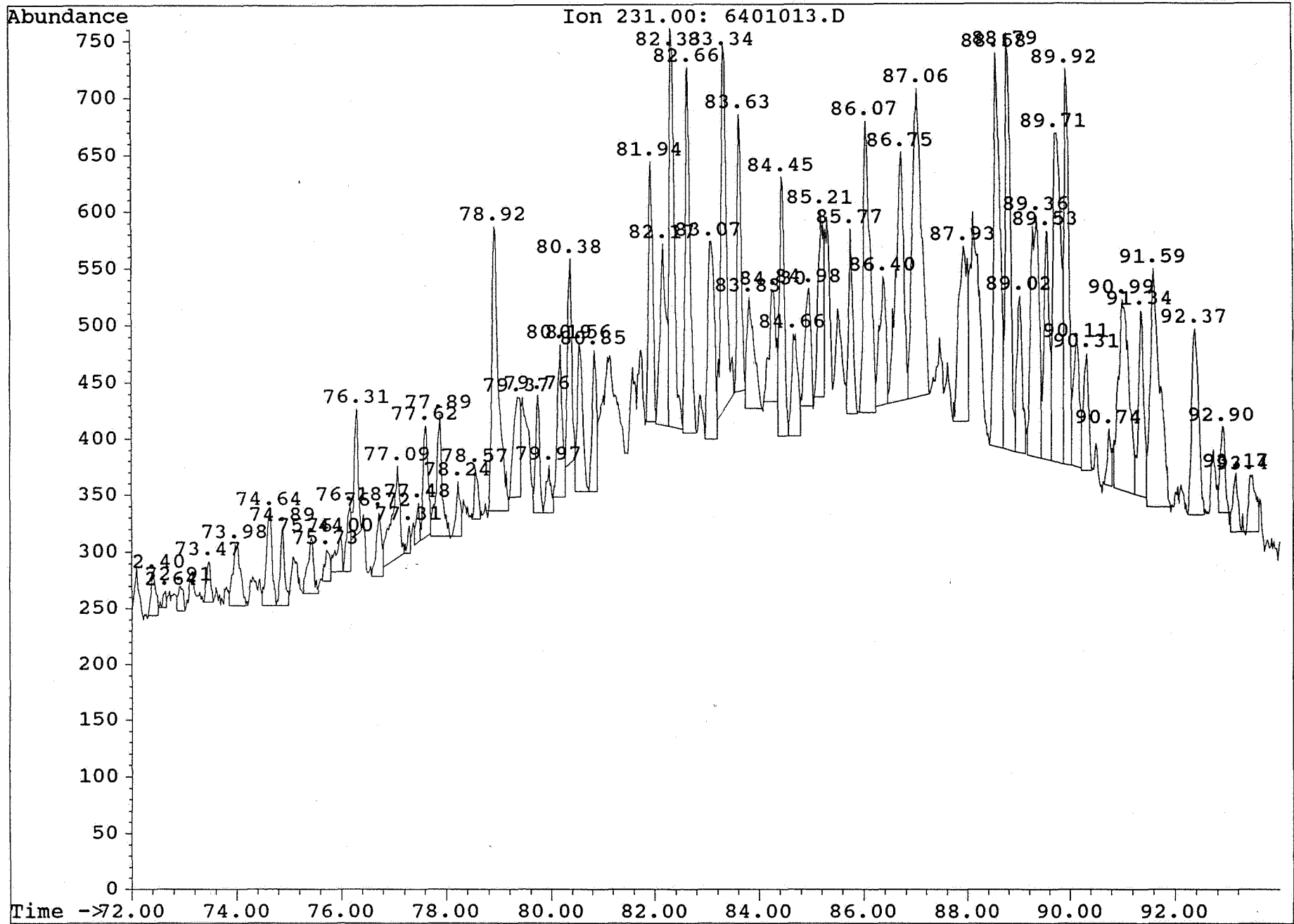
Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	72.363	RTE!	0.156	224.00	72.266	72.422
2	73.590	RTE!	0.195	421.00	73.473	73.668
3	73.862	RTE!	0.311	488.00	73.668	73.979
4	74.446	RTE!	0.273	506.00	74.329	74.602
5	74.874	RTE!	0.428	5320	74.602	75.030
6	75.458	RTE!	0.350	962.00	75.225	75.575
7	75.692	RTE!	0.156	280.00	75.575	75.731
8	75.828	RTE!	0.311	221.00	75.731	76.042
9	76.159	RTE!	0.195	3000	76.042	76.237
10	76.295	RTE!	0.156	1070	76.237	76.393
11	76.821	RTE!	0.311	1000.00	76.587	76.899
12	77.074	RTE!	0.273	1258	76.938	77.210
13	77.405	RTE!	0.311	415.00	77.210	77.522
14	77.736	RTE!	0.350	2072	77.561	77.911
15	78.008	RTE!	0.234	1952	77.911	78.144
16	78.222	RTE!	0.234	2860	78.144	78.378
17	78.534	RTE!	0.273	4179	78.378	78.651
18	78.806	RTE!	0.350	3733	78.651	79.001
19	79.059	RTE!	0.273	558.00	79.001	79.273
20	79.410	RTE!	0.195	1007	79.273	79.468
21	79.526	RTE!	0.117	934.00	79.468	79.585
22	79.702	RTE!	0.273	2579	79.585	79.857
23	79.994	RTE!	0.195	643.00	79.896	80.091
24	80.188	RTE!	0.195	2578	80.091	80.286
25	80.422	RTE!	0.195	588.00	80.324	80.519
26	80.811	RTE!	0.311	14343	80.675	80.986
27	81.142	RTE!	0.273	9783	80.986	81.259
28	81.337	RTE!	0.195	301.00	81.259	81.453
29	81.609	RTE!	0.350	1164	81.453	81.804
30	81.882	RTE!	0.195	2030	81.804	81.998
31	82.173	RTE!	0.234	3217	81.998	82.232
32	82.680	RTE!	0.234	843.00	82.582	82.816
33	82.972	RTE!	0.311	2075	82.816	83.127
34	83.205	RTE!	0.273	1274	83.127	83.400
35	83.478	RTE!	0.156	924.00	83.400	83.556
36	83.711	RTE!	0.272	2702	83.556	83.828
37	83.886	RTE!	0.195	592.00	83.828	84.023
38	84.120	RTE!	0.156	1166	84.023	84.178
39	84.315	RTE!	0.273	9349	84.178	84.451
40	84.607	RTE!	0.311	10875	84.451	84.762
41	84.937	RTE!	0.623	10385	84.762	85.385
42	85.677	RTE!	0.467	2938	85.385	85.852

45	86.611	RTE!	0.467	5048	86.397	86.864
46	86.981	RTE!	0.117	501.00	86.903	87.020
47	87.156	RTE!	0.272	12133	87.020	87.293
48	87.390	RTE!	0.234	9392	87.293	87.526
49	87.954	RTE!	0.234	484.00	87.838	88.071
50	88.188	RTE!	0.234	476.00	88.071	88.305
51	88.558	RTE!	0.272	3033	88.422	88.694
52	88.752	RTE!	0.195	754.00	88.694	88.889
53	89.025	RTE!	0.311	718.00	88.889	89.200
54	89.375	RTE!	0.195	232.00	89.200	89.395
55	89.531	RTE!	0.195	2555	89.395	89.589
56	89.667	RTE!	0.273	2554	89.589	89.862
57	89.940	RTE!	0.311	323.00	89.862	90.173
58	91.010	RTE!	0.350	1171	90.835	91.185
59	91.341	RTE!	0.350	1413	91.185	91.536



Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	72.402	RTE!	0.195	251.00	72.305	72.500
2	72.636	RTE!	0.156	60.00	72.500	72.655
3	72.908	RTE!	0.156	144.00	72.850	73.006
4	73.473	RTE!	0.195	206.00	73.356	73.551
5	73.979	RTE!	0.350	251.00	73.862	74.213
6	74.641	RTE!	0.273	637.00	74.485	74.758
7	74.894	RTE!	0.234	408.00	74.758	74.991
8	75.439	RTE!	0.311	88.00	75.264	75.575
9	75.731	RTE!	0.156	183.00	75.653	75.809
10	76.003	RTE!	0.234	248.00	75.809	76.042
11	76.179	RTE!	0.156	335.00	76.042	76.198
12	76.315	RTE!	0.195	596.00	76.198	76.393
13	76.724	RTE!	0.234	64.00	76.587	76.821
14	77.093	RTE!	0.389	502.00	76.821	77.210
15	77.307	RTE!	0.117	88.00	77.210	77.327
16	77.483	RTE!	0.117	158.00	77.405	77.522
17	77.619	RTE!	0.195	632.00	77.522	77.716
18	77.891	RTE!	0.389	823.00	77.716	78.106
19	78.242	RTE!	0.195	269.00	78.106	78.300
20	78.573	RTE!	0.156	207.00	78.495	78.651
21	78.923	RTE!	0.428	2308	78.767	79.196
22	79.371	RTE!	0.234	310.00	79.196	79.429
23	79.760	RTE!	0.195	559.00	79.663	79.857
24	79.974	RTE!	0.195	260.00	79.857	80.052
25	80.188	RTE!	0.234	455.00	80.052	80.286
26	80.383	RTE!	0.195	559.00	80.286	80.480
27	80.558	RTE!	0.272	537.00	80.480	80.753
28	80.850	RTE!	0.156	735.00	80.753	80.908
29	81.940	RTE!	0.195	1347	81.843	82.037
30	82.173	RTE!	0.234	721.00	82.037	82.271
31	82.329	RTE!	0.273	1749	82.271	82.543
32	82.660	RTE!	0.272	2200	82.543	82.816
33	83.069	RTE!	0.234	1591	82.972	83.205
34	83.341	RTE!	0.350	1965	83.205	83.556
35	83.633	RTE!	0.195	760.00	83.556	83.750
36	83.828	RTE!	0.311	907.00	83.750	84.062
37	84.295	RTE!	0.273	317.00	84.101	84.373
38	84.451	RTE!	0.195	1400	84.373	84.568
39	84.665	RTE!	0.234	763.00	84.568	84.801
40	84.976	RTE!	0.273	328.00	84.801	85.074
41	85.210	RTE!	0.195	1208	85.074	85.268
42	85.774	RTE!	0.195	854.00	85.697	85.891

44	86.748	RTE!	0.389	1756	86.475	86.864
45	87.059	RTE!	0.428	2947	86.864	87.293
46	87.935	RTE!	0.311	1194	87.721	88.032
47	88.577	RTE!	0.272	2950	88.422	88.694
48	88.791	RTE!	0.234	2000	88.694	88.928
49	89.025	RTE!	0.195	955.00	88.928	89.122
50	89.356	RTE!	0.272	2443	89.161	89.434
51	89.531	RTE!	0.195	943.00	89.434	89.628
52	89.706	RTE!	0.234	2517	89.628	89.862
53	89.920	RTE!	0.156	2134	89.862	90.018
54	90.115	RTE!	0.195	938.00	90.018	90.212
55	90.309	RTE!	0.195	672.00	90.212	90.407
56	90.738	RTE!	0.156	277.00	90.640	90.796
57	90.991	RTE!	0.389	2342	90.835	91.224
58	91.341	RTE!	0.234	698.00	91.224	91.458
59	91.594	RTE!	0.506	2202	91.458	91.964
60	92.373	RTE!	0.311	1500	92.236	92.548
61	92.898	RTE!	0.234	510.00	92.820	93.054
62	93.171	RTE!	0.272	358.00	93.054	93.326
63	93.443	RTE!	0.273	88.00	93.326	93.599

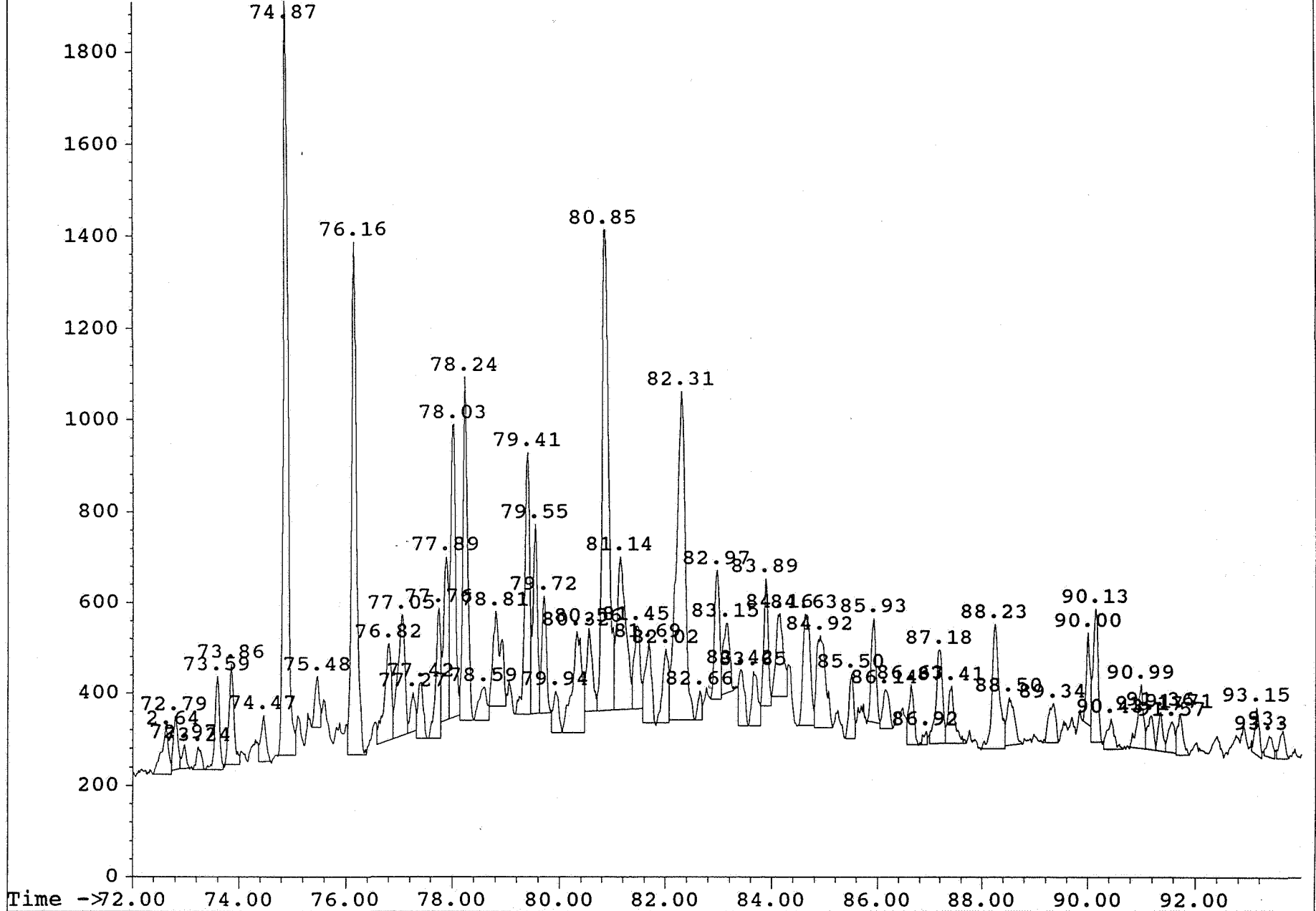


Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	72.636	RTE!	0.350	661.00	72.383	72.733
2	72.792	RTE!	0.156	641.00	72.733	72.889
3	72.967	RTE!	0.195	248.00	72.889	73.084
4	73.239	RTE!	0.234	313.00	73.123	73.356
5	73.590	RTE!	0.350	1191	73.356	73.707
6	73.862	RTE!	0.311	1153	73.707	74.018
7	74.466	RTE!	0.234	646.00	74.368	74.602
8	74.874	RTE!	0.350	9610	74.719	75.069
9	75.478	RTE!	0.156	641.00	75.381	75.536
10	76.159	RTE!	0.350	6915	76.042	76.393
11	76.821	RTE!	0.311	2041	76.587	76.899
12	77.054	RTE!	0.273	2458	76.899	77.171
13	77.269	RTE!	0.156	513.00	77.171	77.327
14	77.424	RTE!	0.234	489.00	77.327	77.561
15	77.755	RTE!	0.234	1779	77.561	77.794
16	77.891	RTE!	0.156	1771	77.794	77.950
17	78.028	RTE!	0.195	3423	77.950	78.144
18	78.242	RTE!	0.273	4201	78.144	78.417
19	78.592	RTE!	0.273	318.00	78.417	78.689
20	78.806	RTE!	0.311	2210	78.689	79.001
21	79.410	RTE!	0.311	3769	79.157	79.468
22	79.546	RTE!	0.156	2298	79.468	79.624
23	79.721	RTE!	0.234	1221	79.624	79.857
24	79.935	RTE!	0.195	617.00	79.857	80.052
25	80.324	RTE!	0.428	2417	80.052	80.480
26	80.558	RTE!	0.234	896.00	80.480	80.714
27	80.850	RTE!	0.311	8414	80.714	81.025
28	81.142	RTE!	0.350	3669	81.025	81.376
29	81.453	RTE!	0.195	942.00	81.376	81.570
30	81.687	RTE!	0.234	1430	81.570	81.804
31	82.018	RTE!	0.273	1288	81.804	82.076
32	82.310	RTE!	0.467	8161	82.076	82.543
33	82.660	RTE!	0.156	329.00	82.543	82.699
34	82.972	RTE!	0.195	1853	82.855	83.049
35	83.147	RTE!	0.234	795.00	83.049	83.283
36	83.419	RTE!	0.195	892.00	83.361	83.556
37	83.653	RTE!	0.234	510.00	83.556	83.789
38	83.886	RTE!	0.195	1601	83.789	83.984
39	84.159	RTE!	0.311	1350	83.984	84.295
40	84.626	RTE!	0.311	1909	84.490	84.801
41	84.918	RTE!	0.350	2427	84.801	85.152
42	85.502	RTE!	0.195	879.00	85.385	85.580

44	144	RTE!	0.234	704.00	6.047	86.281
45	86.631	RTE!	0.272	506.00	86.553	86.825
46	86.923	RTE!	0.117	145.00	86.825	86.942
47	87.176	RTE!	0.311	1833	86.981	87.293
48	87.409	RTE!	0.389	696.00	87.293	87.682
49	88.227	RTE!	0.467	2199	87.954	88.422
50	88.499	RTE!	0.350	690.00	88.422	88.772
51	89.336	RTE!	0.311	829.00	89.122	89.434
52	89.998	RTE!	0.156	578.00	89.901	90.057
53	90.134	RTE!	0.234	1500	90.057	90.290
54	90.426	RTE!	0.350	261.00	90.290	90.640
55	90.991	RTE!	0.311	1041	90.757	91.069
56	91.166	RTE!	0.195	569.00	91.069	91.263
57	91.361	RTE!	0.195	164.00	91.263	91.458
58	91.575	RTE!	0.195	590.00	91.458	91.653
59	91.711	RTE!	0.234	579.00	91.653	91.886
60	93.151	RTE!	0.195	594.00	93.054	93.249
61	93.385	RTE!	0.195	350.00	93.288	93.482
62	93.638	RTE!	0.234	456.00	93.521	93.755

Abundance

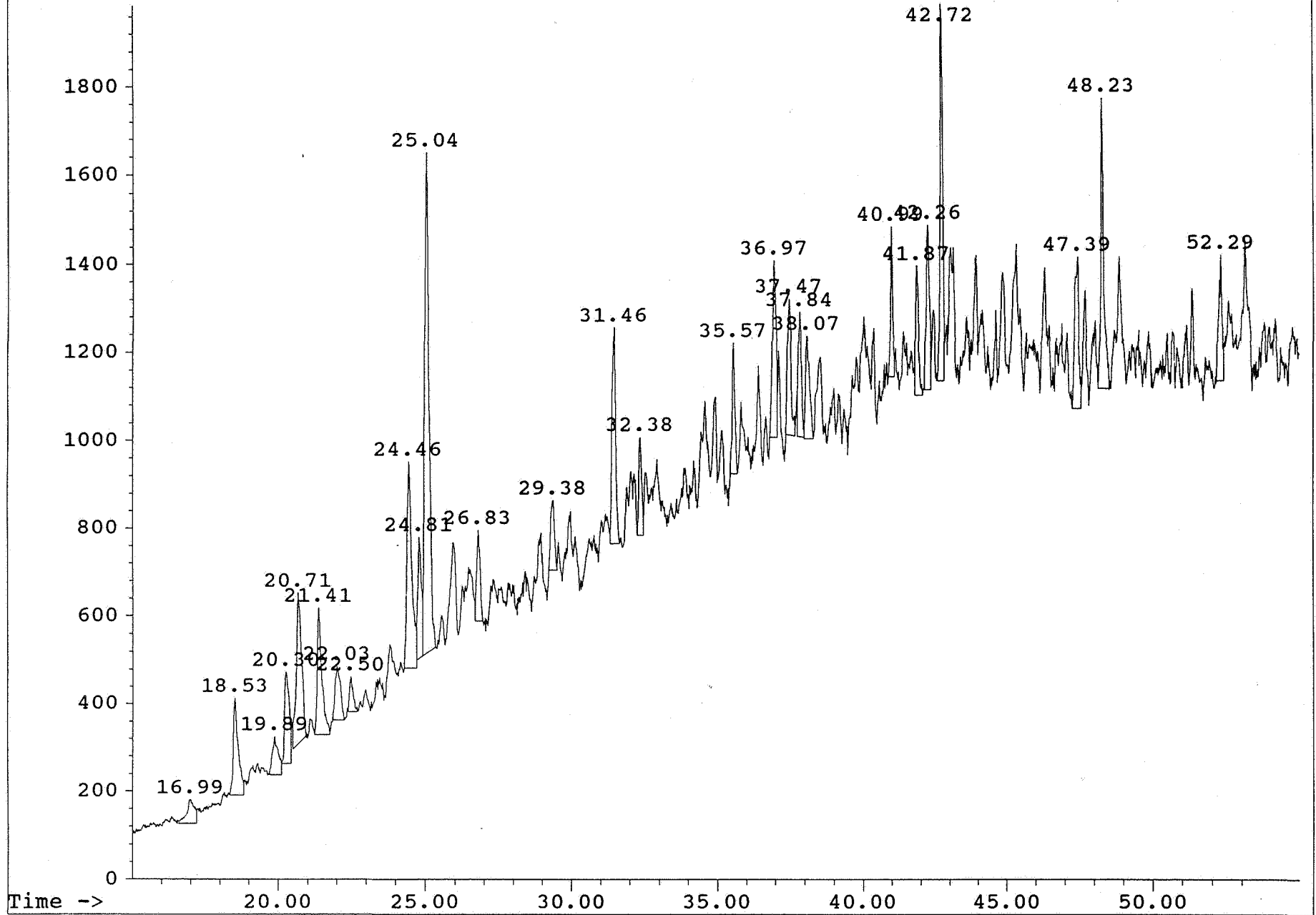
Ion 259.00: 6401013.D



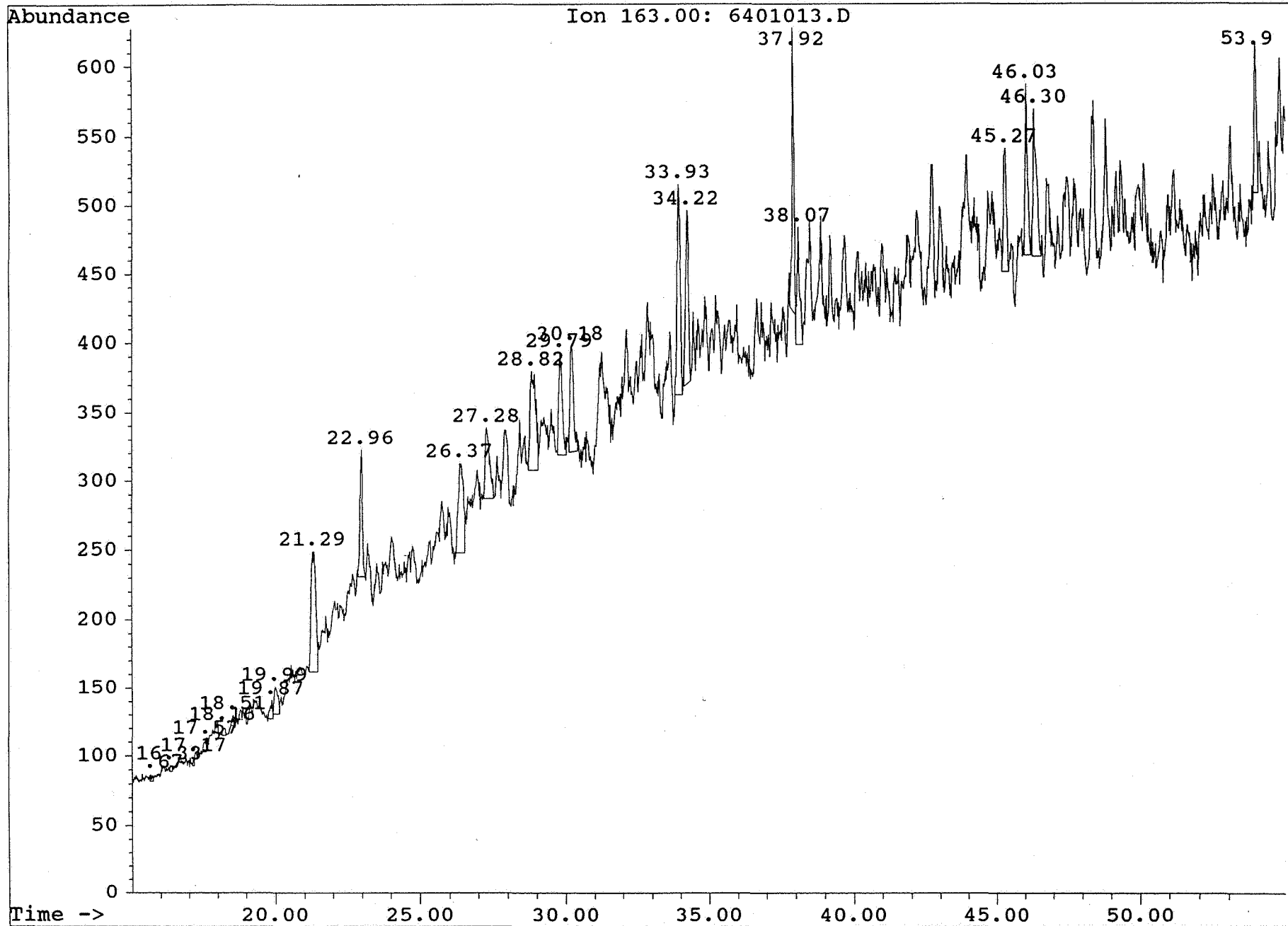
Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	16.991	RTE!	0.700	1093	16.525	17.225
2	18.528	RTE!	0.467	2629	18.353	18.819
3	19.889	RTE!	0.428	1259	19.714	20.142
4	20.298	RTE!	0.311	2380	20.142	20.453
5	20.706	RTE!	0.428	4147	20.531	20.959
6	21.406	RTE!	0.506	3202	21.270	21.776
7	22.029	RTE!	0.389	1549	21.892	22.281
8	22.495	RTE!	0.311	661.00	22.398	22.709
9	24.460	RTE!	0.428	4866	24.304	24.732
10	24.810	RTE!	0.195	2185	24.732	24.927
11	25.043	RTE!	0.467	11817	24.927	25.393
12	26.833	RTE!	0.272	1688	26.716	26.988
13	29.380	RTE!	0.272	1547	29.244	29.516
14	31.461	RTE!	0.311	4108	31.345	31.656
15	32.375	RTE!	0.194	508.00	32.278	32.473
16	35.565	RTE!	0.233	2032	35.468	35.701
17	36.965	RTE!	0.233	3428	36.829	37.063
18	37.471	RTE!	0.311	1435	37.374	37.685
19	37.841	RTE!	0.233	819.00	37.763	37.996
20	38.074	RTE!	0.311	2317	37.996	38.307
21	40.991	RTE!	0.195	527.00	40.914	41.108
22	41.867	RTE!	0.272	1907	41.808	42.081
23	42.256	RTE!	0.233	2988	42.120	42.353
24	42.722	RTE!	0.233	5335	42.586	42.820
25	47.390	RTE!	0.311	2107	47.215	47.526
26	48.227	RTE!	0.428	3700	48.110	48.538
27	52.291	RTE!	0.233	2270	52.155	52.389

Abundance

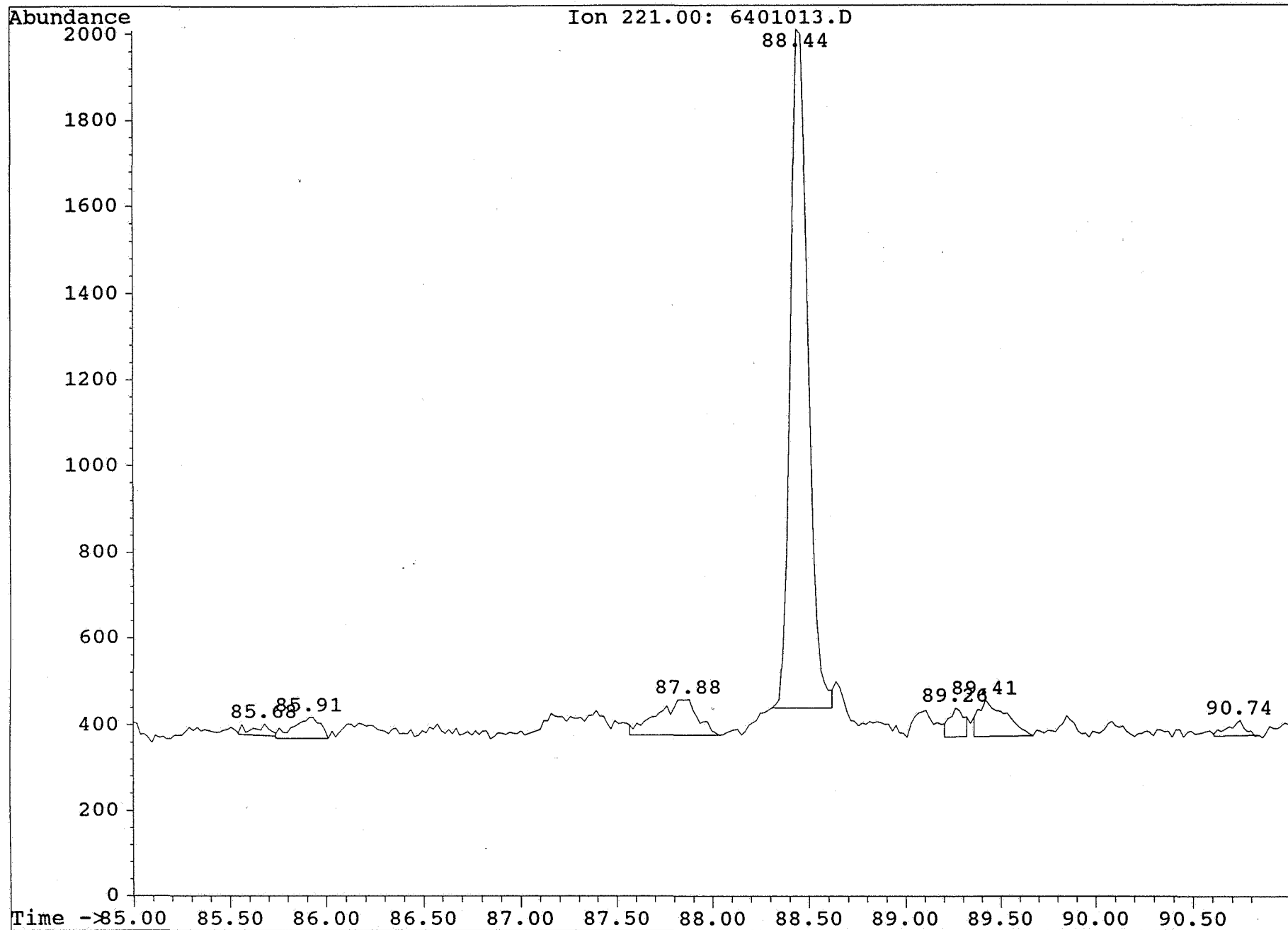
Ion 123.00: 6401013.D



Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	15.669	RTE!	0.117	22.00	15.630	15.747
2	16.330	RTE!	0.117	22.00	16.291	16.408
3	17.166	RTE!	0.078	21.00	17.108	17.186
4	17.575	RTE!	0.156	51.00	17.458	17.614
5	18.158	RTE!	0.156	31.00	18.119	18.275
6	18.508	RTE!	0.117	32.00	18.431	18.547
7	19.870	RTE!	0.194	78.00	19.714	19.909
8	19.986	RTE!	0.233	23.00	19.909	20.142
9	21.289	RTE!	0.311	1003	21.153	21.465
10	22.962	RTE!	0.233	269.00	22.865	23.098
11	26.366	RTE!	0.311	826.00	26.249	26.560
12	27.280	RTE!	0.350	548.00	27.183	27.533
13	28.816	RTE!	0.350	579.00	28.700	29.050
14	29.789	RTE!	0.311	253.00	29.711	30.022
15	30.178	RTE!	0.311	661.00	30.100	30.411
16	33.931	RTE!	0.272	692.00	33.795	34.068
17	34.223	RTE!	0.233	903.00	34.106	34.340
18	37.919	RTE!	0.194	1030	37.802	37.996
19	38.074	RTE!	0.233	571.00	37.996	38.230
20	45.270	RTE!	0.233	651.00	45.154	45.387
21	46.029	RTE!	0.233	178.00	45.932	46.165
22	46.301	RTE!	0.311	331.00	46.204	46.515
23	53.945	RTE!	0.156	571.00	53.867	54.022

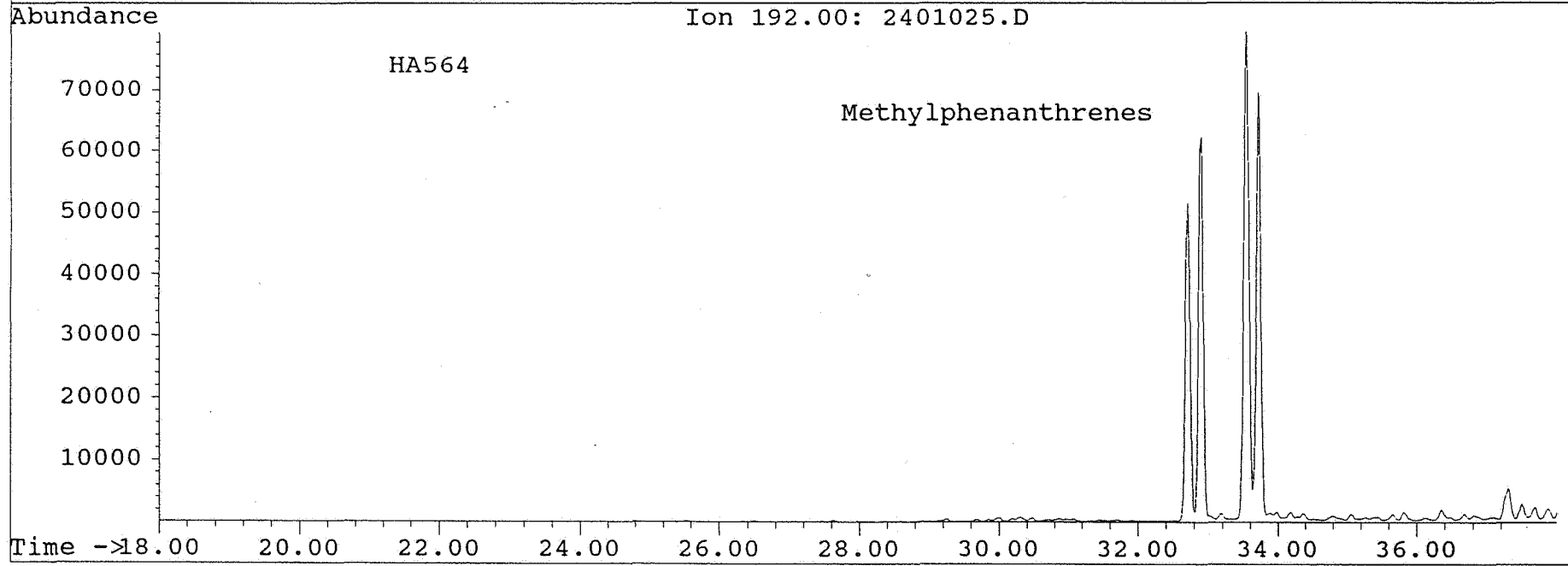
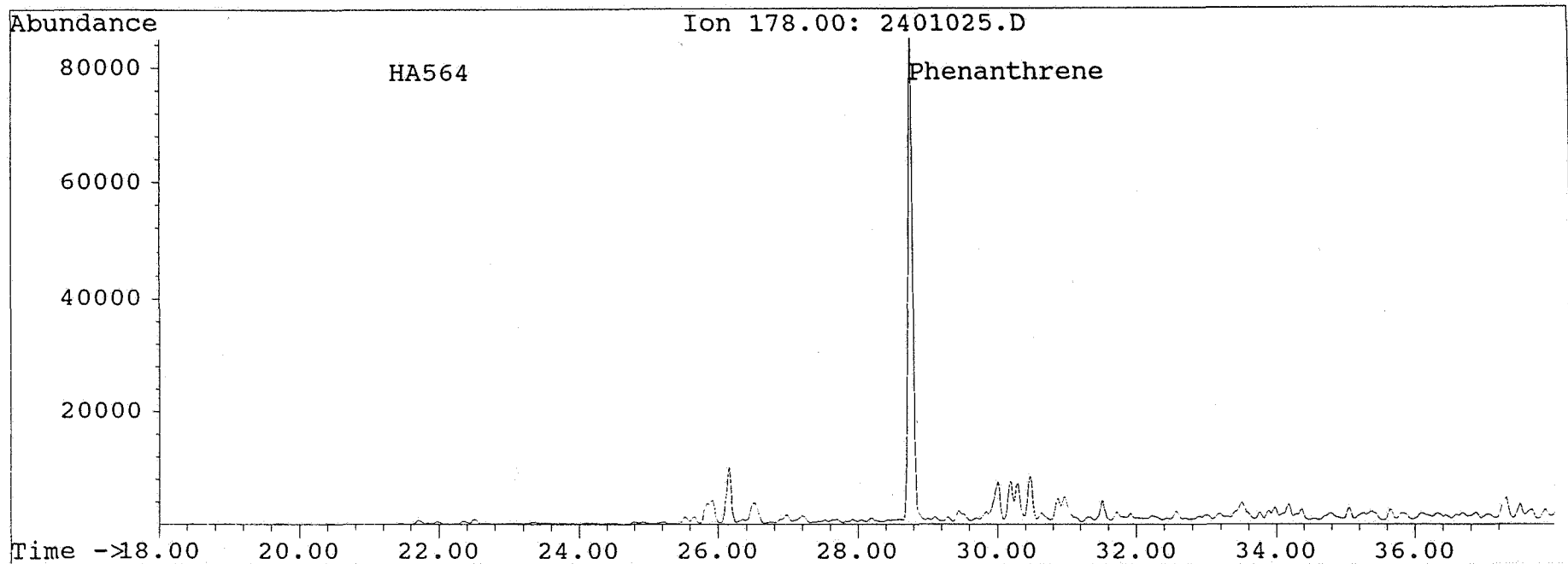


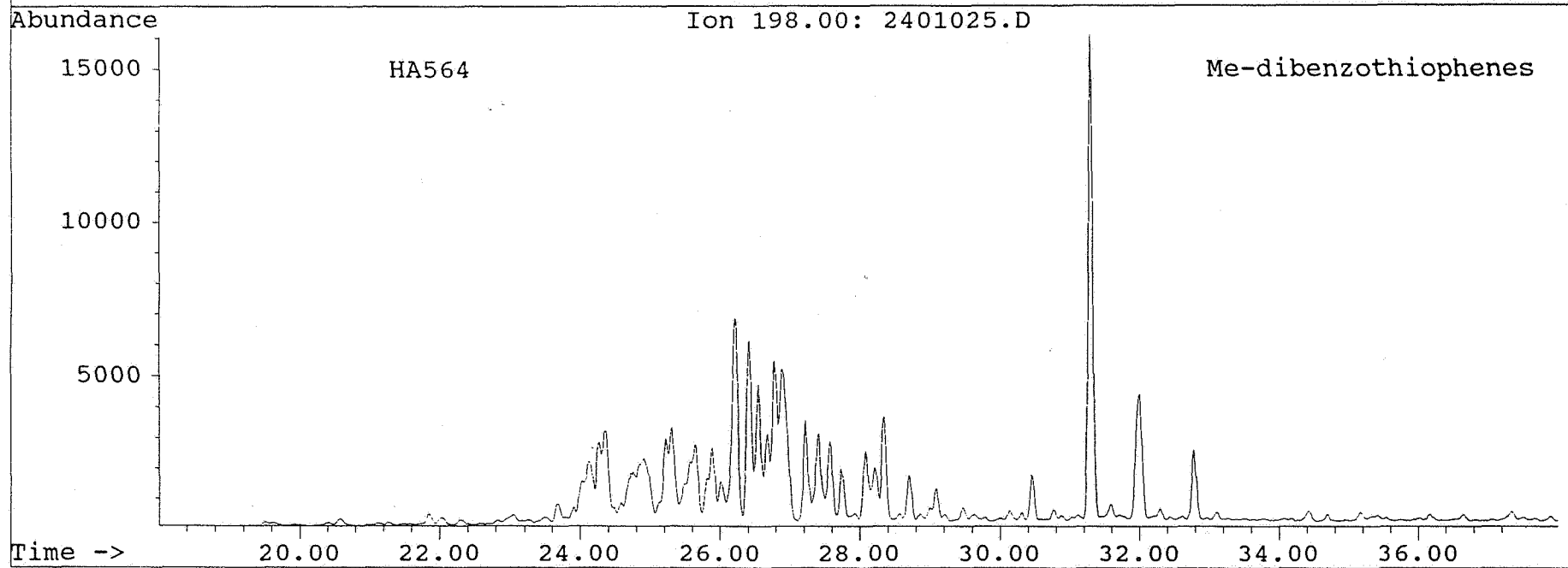
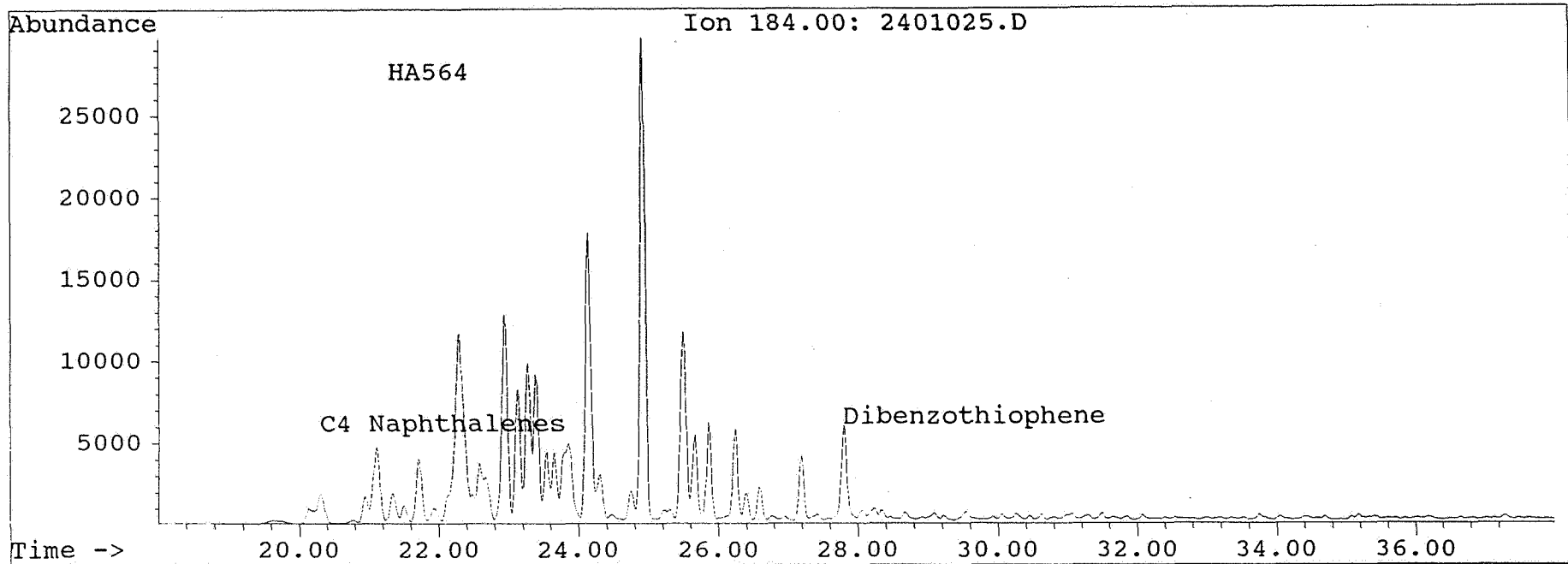
Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	85.677	RTE!	0.195	155.00	85.541	85.736
2	85.911	RTE!	0.273	471.00	85.736	86.008
3	87.877	RTE!	0.467	1188	87.565	88.032
4	88.441	RTE!	0.311	9365	88.305	88.616
5	89.258	RTE!	0.117	358.00	89.200	89.317
6	89.414	RTE!	0.311	351.00	89.356	89.667
7	90.738	RTE!	0.234	202.00	90.602	90.835

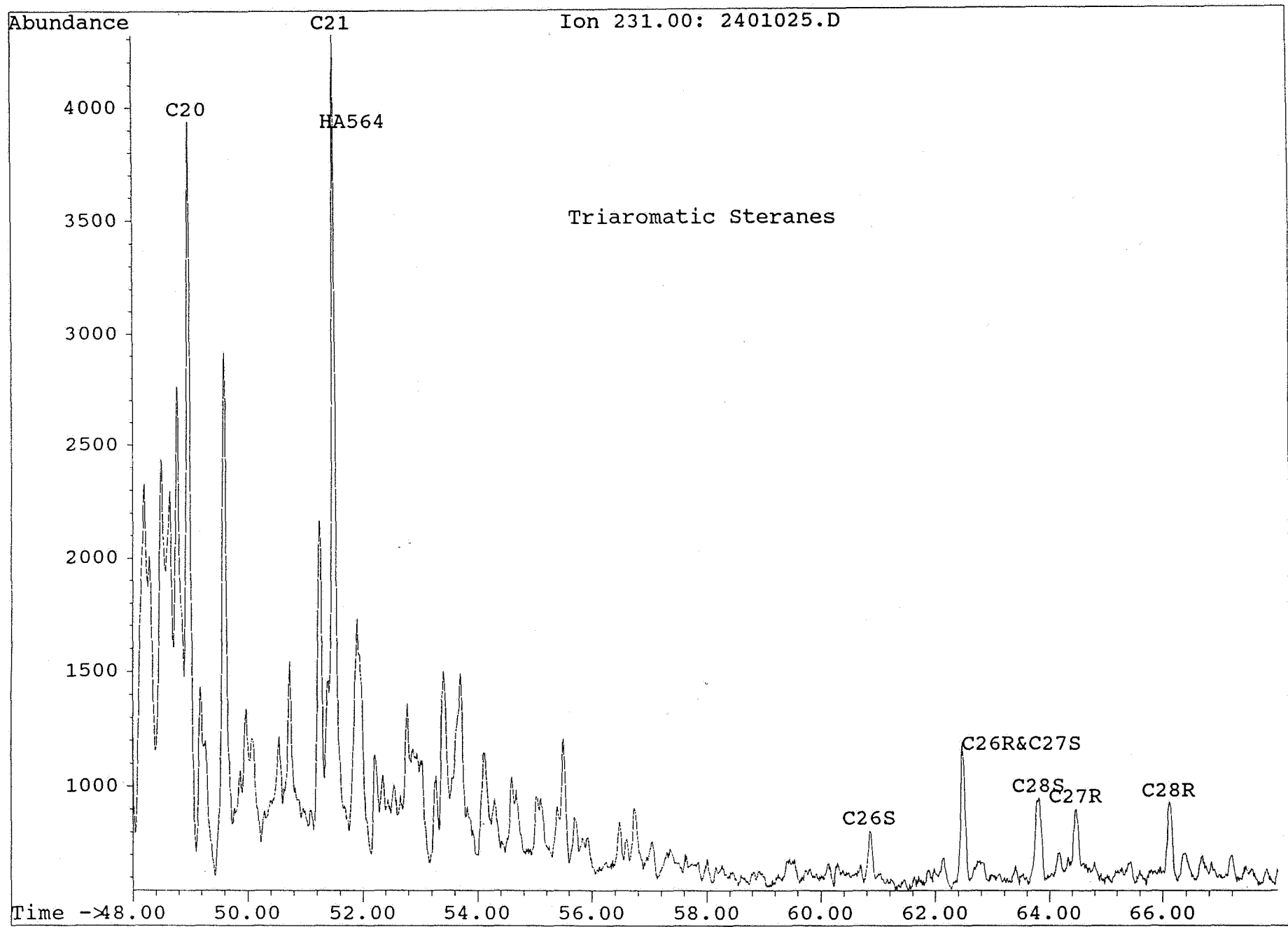


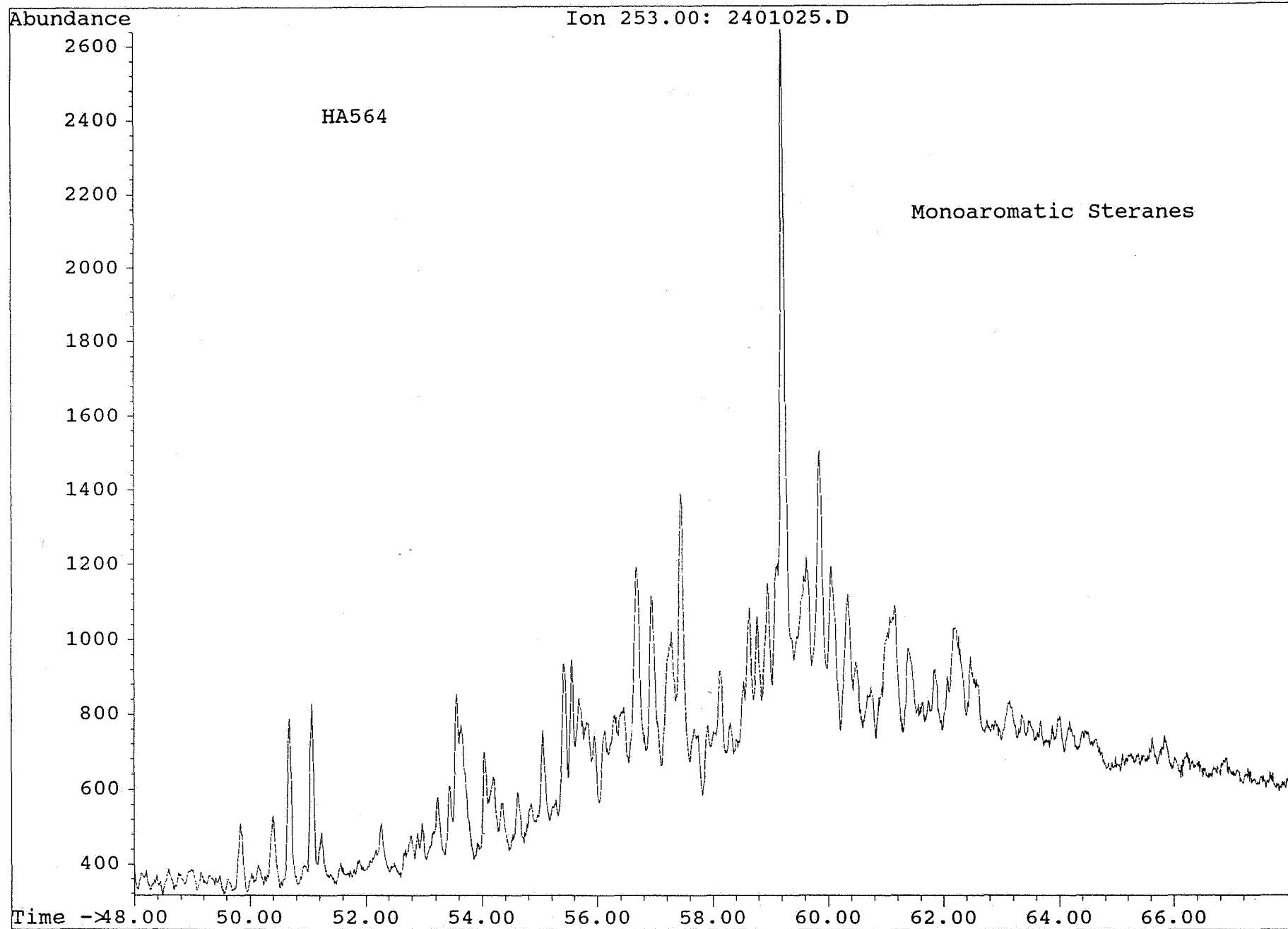
APPENDIX C

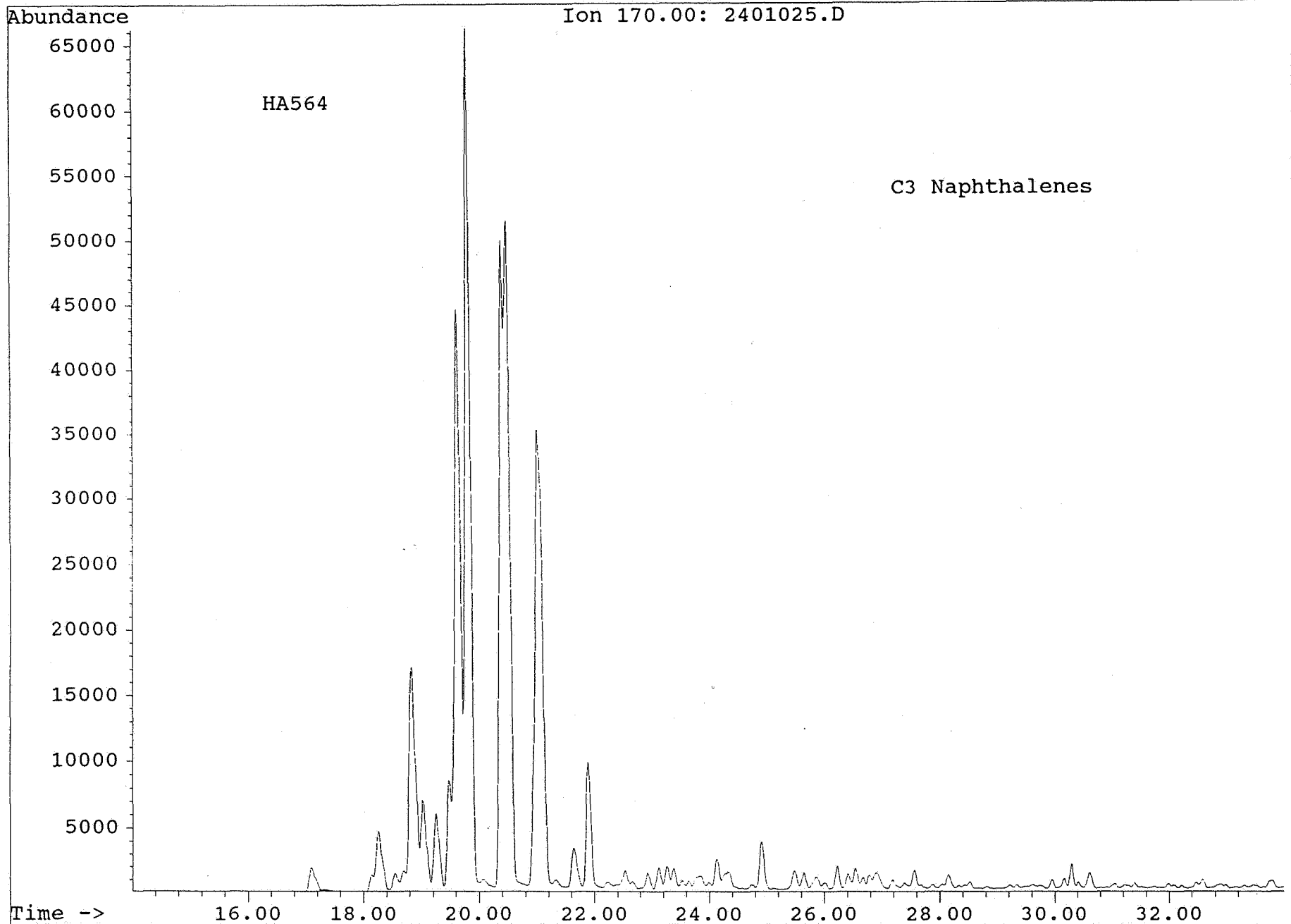
C15+ Aromatic Biomarker Mass Fragmentograms and Peak Areas





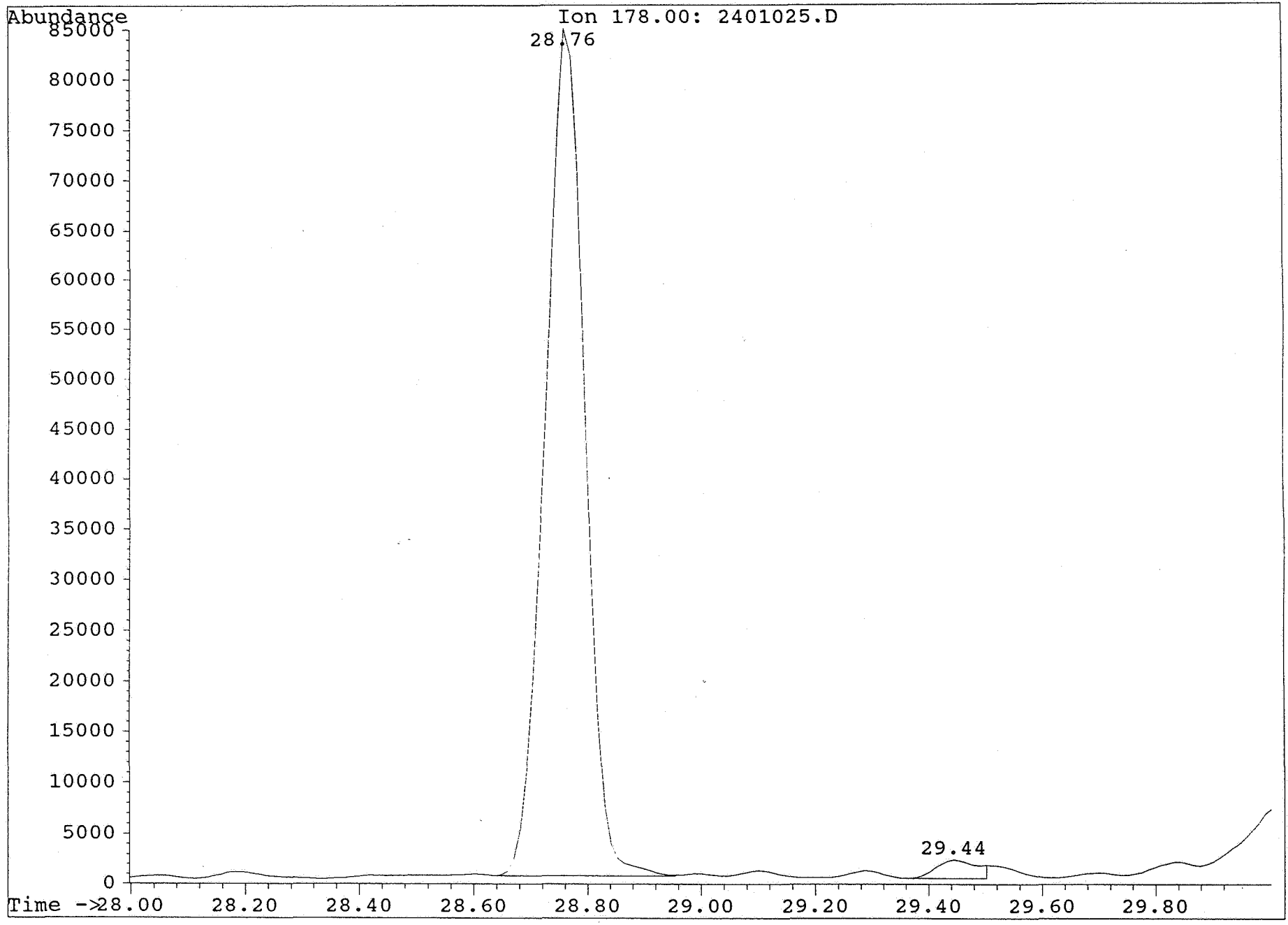






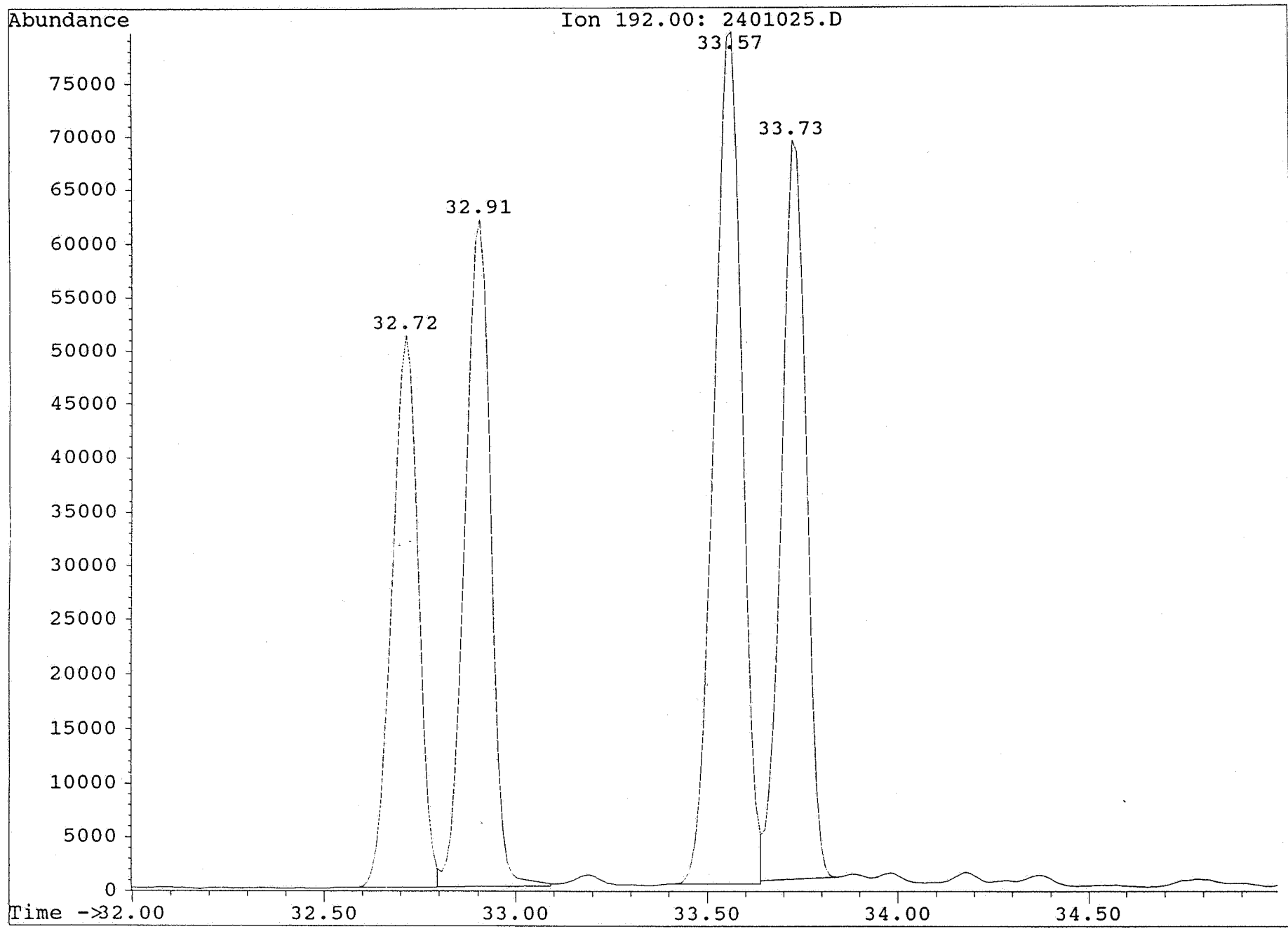
HA564

Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	28.761	RTE!	0.319	408715	28.636	28.955
2	29.445	RTE!	0.137	8475	29.365	29.502

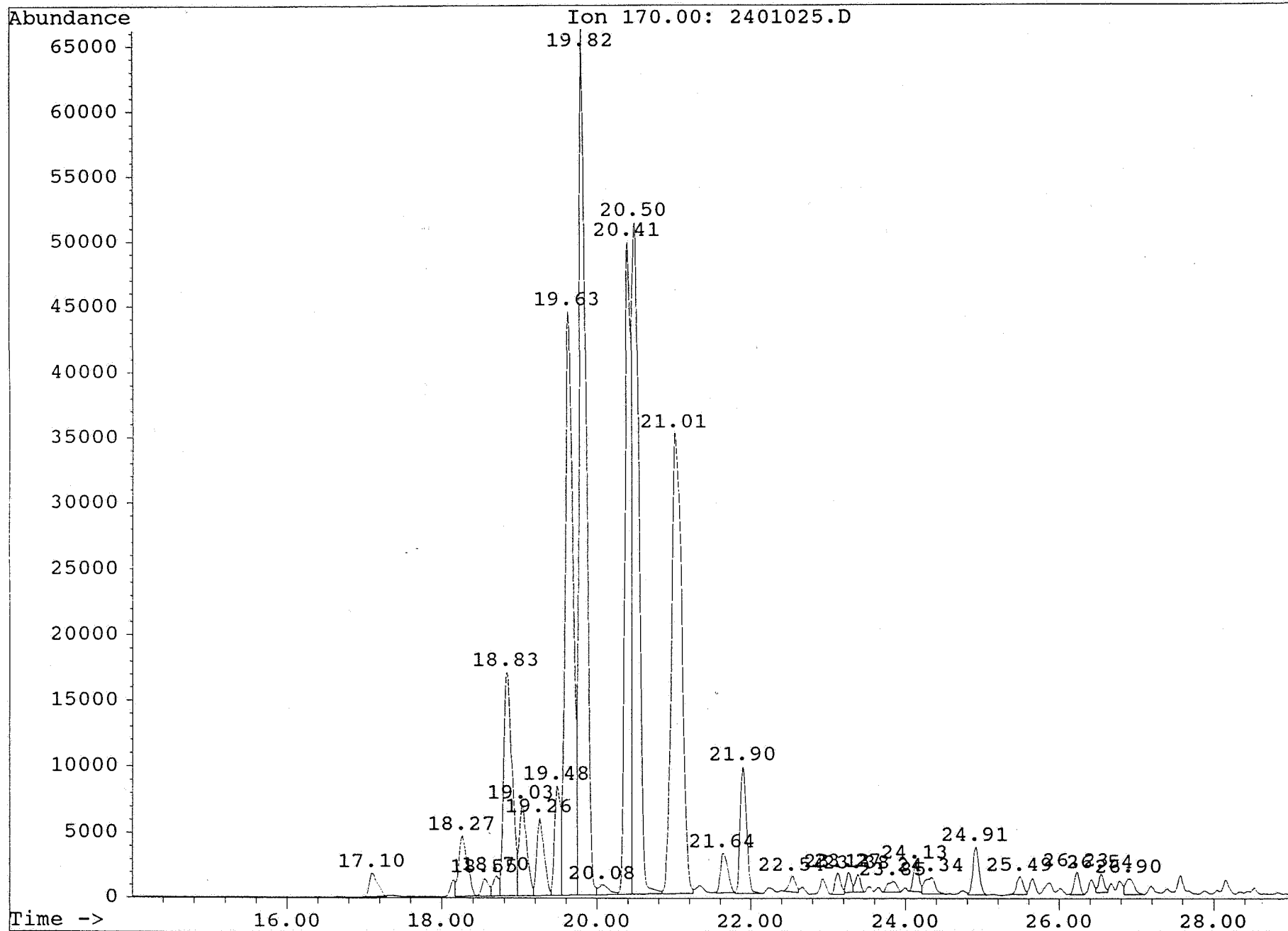


HA564

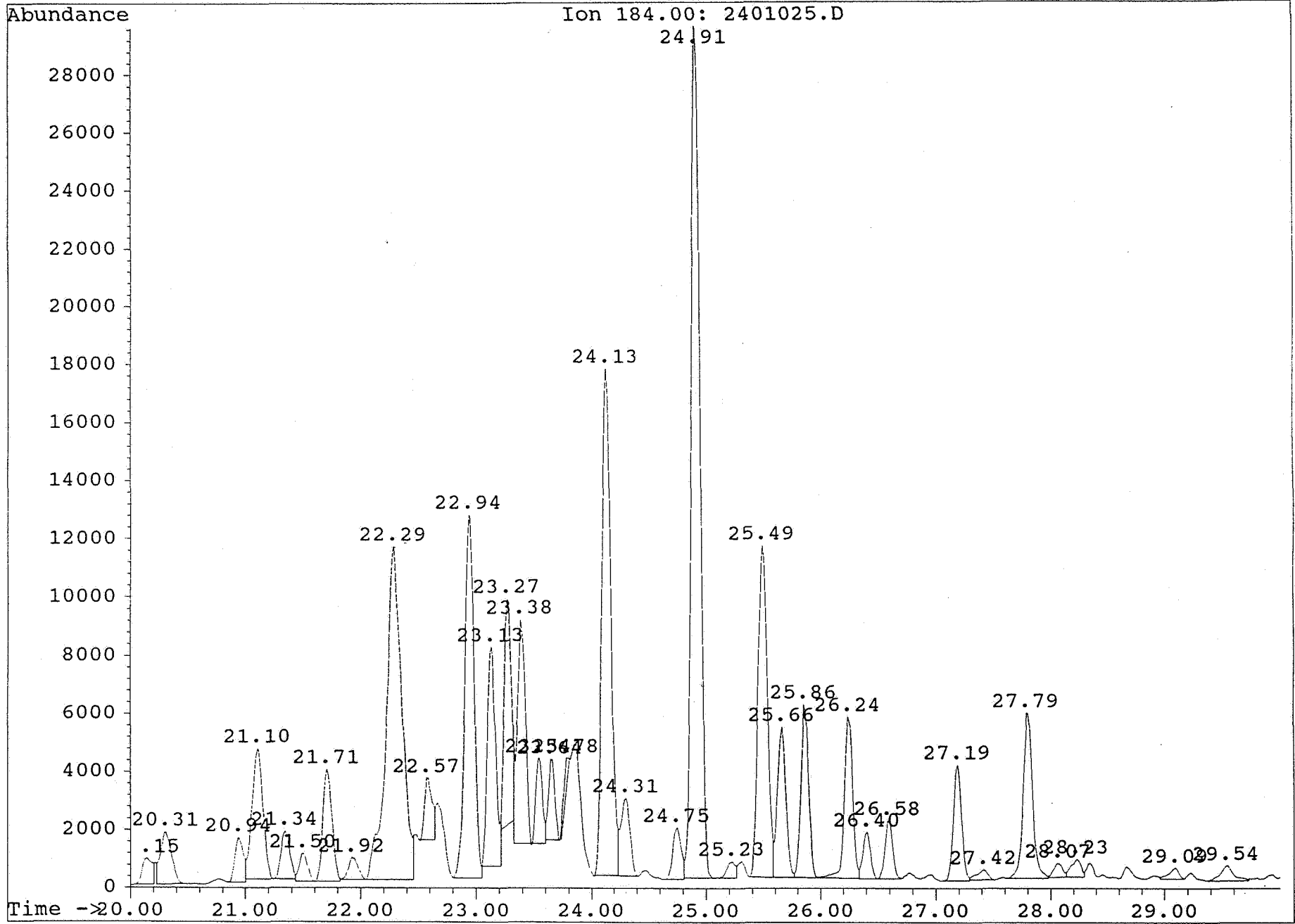
Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	32.716	RTE!	0.228	246137	32.567	32.795
2	32.909	RTE!	0.296	289881	32.795	33.092
3	33.570	RTE!	0.228	406424	33.411	33.639
4	33.730	RTE!	0.205	309855	33.639	33.844



Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	17.103	RTE!	0.296	13859	16.989	17.285
2	18.265	RTE!	0.274	34813	18.174	18.448
3	18.550	RTE!	0.182	7971	18.448	18.630
4	18.698	RTE!	0.114	7649	18.630	18.744
5	18.835	RTE!	0.228	130600	18.744	18.972
6	19.029	RTE!	0.205	46447	18.972	19.177
7	19.257	RTE!	0.228	39403	19.177	19.405
8	19.485	RTE!	0.137	43248	19.405	19.542
9	19.633	RTE!	0.205	314031	19.542	19.747
10	19.815	RTE!	0.251	402911	19.747	19.997
11	20.077	RTE!	0.274	6862	19.997	20.271
12	20.408	RTE!	0.182	257418	20.271	20.453
13	20.499	RTE!	0.387	304643	20.453	20.841
14	21.012	RTE!	0.410	326729	20.841	21.251
15	21.639	RTE!	0.274	20428	21.525	21.798
16	21.901	RTE!	0.342	55982	21.798	22.140
17	22.539	RTE!	0.205	7019	22.413	22.619
18	23.132	RTE!	0.182	8283	23.029	23.211
19	23.268	RTE!	0.114	7236	23.211	23.325
20	23.382	RTE!	0.137	6306	23.325	23.462
21	23.849	RTE!	0.228	6641	23.713	23.941
22	24.134	RTE!	0.160	10850	24.055	24.214
23	24.339	RTE!	0.319	12105	24.214	24.533
24	24.909	RTE!	0.274	20556	24.807	25.080
25	25.490	RTE!	0.228	7886	25.354	25.582
26	26.231	RTE!	0.205	7687	26.129	26.334
27	26.539	RTE!	0.160	6724	26.470	26.630
28	26.903	RTE!	0.274	8914	26.835	27.109

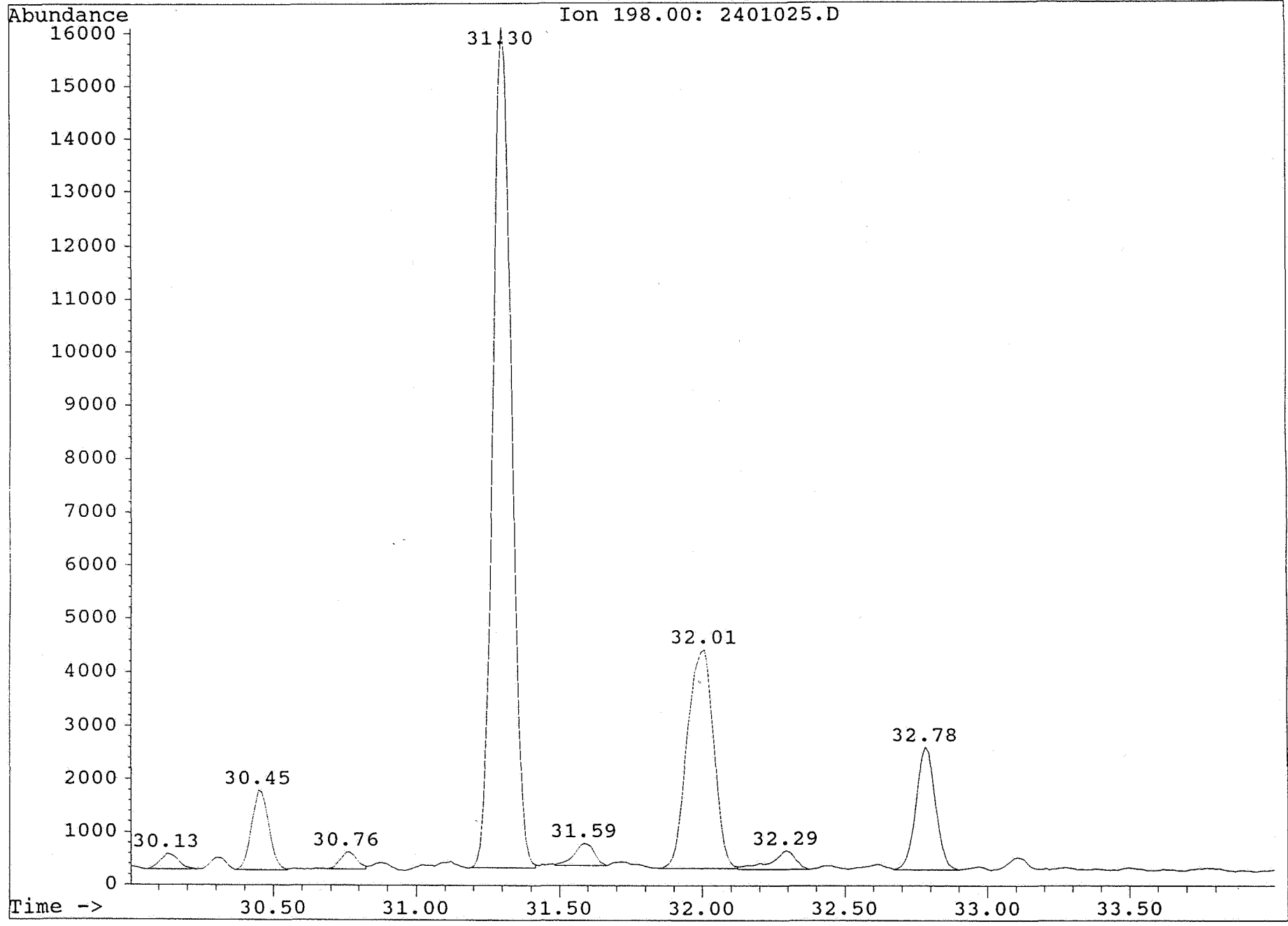


Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	20.146	RTE!	0.160	5715	20.043	20.203
2	20.305	RTE!	0.251	12191	20.225	20.476
3	20.943	RTE!	0.160	8100	20.841	21.000
4	21.103	RTE!	0.251	29246	21.000	21.251
5	21.342	RTE!	0.182	8761	21.251	21.433
6	21.502	RTE!	0.160	4878	21.433	21.593
7	21.707	RTE!	0.228	21341	21.593	21.821
8	21.924	RTE!	0.228	4107	21.821	22.049
9	22.288	RTE!	0.410	107728	22.049	22.459
10	22.573	RTE!	0.137	7999	22.505	22.641
11	22.938	RTE!	0.251	69804	22.801	23.052
12	23.132	RTE!	0.160	36536	23.052	23.211
13	23.268	RTE!	0.114	33954	23.211	23.325
14	23.382	RTE!	0.160	35675	23.325	23.485
15	23.542	RTE!	0.114	10507	23.485	23.599
16	23.644	RTE!	0.114	10384	23.599	23.713
17	23.781	RTE!	0.068	3729	23.735	23.804
18	24.134	RTE!	0.205	96284	24.032	24.237
19	24.305	RTE!	0.160	14652	24.237	24.396
20	24.750	RTE!	0.160	9152	24.647	24.807
21	24.909	RTE!	0.296	152671	24.807	25.103
22	25.228	RTE!	0.160	2445	25.103	25.263
23	25.490	RTE!	0.205	65509	25.376	25.582
24	25.661	RTE!	0.182	26096	25.582	25.764
25	25.855	RTE!	0.205	27627	25.764	25.969
26	26.243	RTE!	0.365	27843	25.969	26.334
27	26.402	RTE!	0.160	7379	26.334	26.493
28	26.584	RTE!	0.205	9131	26.493	26.698
29	27.188	RTE!	0.228	19676	27.063	27.291
30	27.416	RTE!	0.205	2337	27.291	27.496
31	27.792	RTE!	0.365	32263	27.610	27.975
32	28.066	RTE!	0.160	2378	27.975	28.134
33	28.225	RTE!	0.160	3357	28.134	28.294
34	29.092	RTE!	0.205	2381	28.955	29.160
35	29.536	RTE!	0.365	3984	29.365	29.730



HA564

Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	30.129	RTE!	0.182	1283	30.049	30.231
2	30.448	RTE!	0.182	6063	30.368	30.550
3	30.755	RTE!	0.137	1319	30.687	30.824
4	31.302	RTE!	0.228	71730	31.188	31.416
5	31.587	RTE!	0.182	1779	31.485	31.667
6	32.009	RTE!	0.274	26462	31.849	32.123
7	32.294	RTE!	0.251	2173	32.123	32.374
8	32.784	RTE!	0.228	10887	32.670	32.898



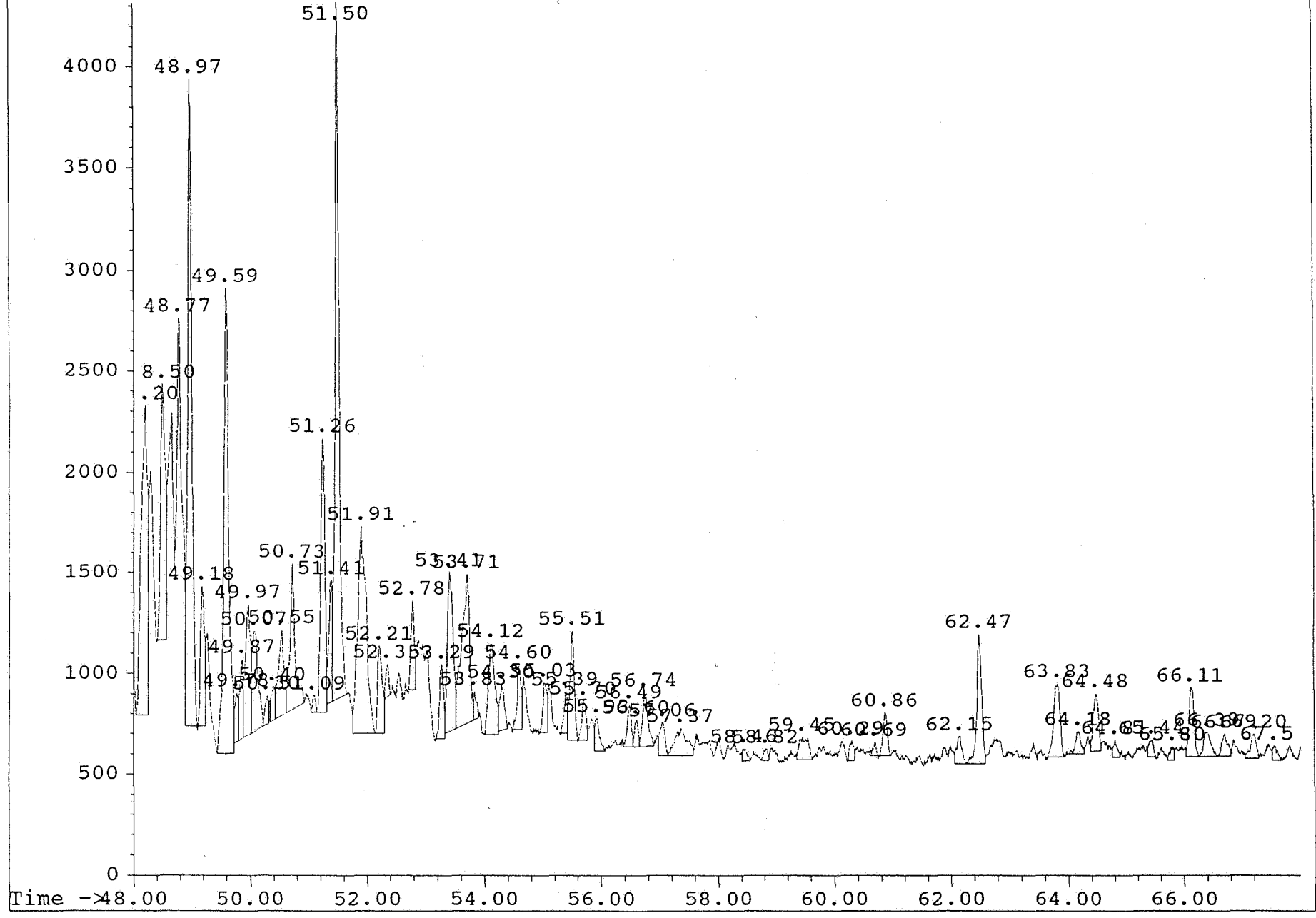
HA564

Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	48.203	RTE!	0.205	11504	48.043	48.248
2	48.499	RTE!	0.160	7567	48.408	48.568
3	48.773	RTE!	0.182	5993	48.704	48.887
4	48.966	RTE!	0.228	16098	48.887	49.115
5	49.183	RTE!	0.114	3290	49.115	49.229
6	49.593	RTE!	0.296	14174	49.434	49.730
7	49.776	RTE!	0.068	878.00	49.730	49.798
8	49.867	RTE!	0.091	1751	49.798	49.889
9	49.969	RTE!	0.137	3984	49.889	50.026
10	50.072	RTE!	0.205	2889	50.026	50.231
11	50.300	RTE!	0.091	582.00	50.231	50.323
12	50.402	RTE!	0.091	826.00	50.345	50.436
13	50.550	RTE!	0.182	2167	50.436	50.619
14	50.733	RTE!	0.319	4078	50.619	50.938
15	51.086	RTE!	0.091	319.00	51.052	51.143
16	51.257	RTE!	0.182	6972	51.143	51.325
17	51.405	RTE!	0.091	2509	51.325	51.417
18	51.496	RTE!	0.251	15466	51.417	51.667
19	51.907	RTE!	0.387	10130	51.758	52.146
20	52.214	RTE!	0.159	1976	52.146	52.305
21	52.351	RTE!	0.091	544.00	52.305	52.396
22	52.784	RTE!	0.114	1876	52.716	52.830
23	53.285	RTE!	0.160	1740	53.171	53.331
24	53.411	RTE!	0.182	5342	53.331	53.513
25	53.707	RTE!	0.296	6589	53.513	53.810
26	53.832	RTE!	0.091	447.00	53.810	53.901
27	54.117	RTE!	0.228	3016	54.015	54.243
28	54.300	RTE!	0.160	737.00	54.243	54.402
29	54.596	RTE!	0.182	1061	54.471	54.653
30	55.029	RTE!	0.137	648.00	54.949	55.086
31	55.394	RTE!	0.137	932.00	55.291	55.428
32	55.508	RTE!	0.182	2277	55.428	55.610
33	55.701	RTE!	0.160	1053	55.610	55.770
34	55.929	RTE!	0.182	838.00	55.884	56.066
35	56.488	RTE!	0.160	978.00	56.385	56.545
36	56.602	RTE!	0.114	576.00	56.545	56.659
37	56.738	RTE!	0.228	1759	56.659	56.887
38	57.057	RTE!	0.160	540.00	56.978	57.137
39	57.365	RTE!	0.433	1921	57.137	57.570
40	58.459	RTE!	0.137	319.00	58.414	58.550
41	58.824	RTE!	0.137	286.00	58.733	58.869
42	59.451	RTE!	0.274	1195	59.348	59.622

44	6	593	RTE!	0.137	252.00	.602	60.738
45	60.864	RTE!	0.205	1057		60.761	60.966
46	62.152	RTE!	0.205	460.00		62.060	62.266
47	62.471	RTE!	0.319	3786		62.266	62.585
48	63.827	RTE!	0.296	2454		63.656	63.952
49	64.180	RTE!	0.251	272.00		64.020	64.271
50	64.476	RTE!	0.182	1777		64.385	64.567
51	64.807	RTE!	0.137	389.00		64.750	64.886
52	65.445	RTE!	0.137	464.00		65.365	65.502
53	65.798	RTE!	0.114	333.00		65.707	65.821
54	66.106	RTE!	0.228	1671		66.026	66.254
55	66.391	RTE!	0.296	1059		66.254	66.550
56	66.687	RTE!	0.251	337.00		66.550	66.801
57	67.200	RTE!	0.228	812.00		67.052	67.280
58	67.542	RTE!	0.182	358.00		67.507	67.690

Abundance

Ion 231.00: 2401025.D



44	5. 143	RTE!	0.137	884.00	.029	59.166
45	59.245	RTE!	0.205	8170	59.166	59.371
46	59.884	RTE!	0.205	3213	59.781	59.986
47	60.066	RTE!	0.228	3292	59.986	60.214
48	60.362	RTE!	0.205	2453	60.237	60.442
49	61.399	RTE!	0.251	1045	61.331	61.582
50	61.867	RTE!	0.182	373.00	61.810	61.992
51	62.083	RTE!	0.068	234.00	62.038	62.106

