



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION VI
 HOUSTON BRANCH
 6608 HORNWOOD DRIVE
 HOUSTON TEXAS 77074

Ref. Case No. 8019
 Site Name VERTAL

Date: 11-13-87

Subject: CLP Data Review

From: *Sam*
 Michael L. Daggett, Chief, Organic Lab Section, 6E-HL

To: Hank Thompson, 6E-SH

A review of the laboratory raw data for the reference site has been completed by members of the Laboratory Section. Samples were:

INORGANIC: _____

ORGANIC: DF021201 _____
DF021202 _____
DF021204 → DF021217 _____
DF021219 → DF021222 _____
DF021301 → DF021303 _____

The data was found:

The rest of this document is contained in file 154300000 of the next file.

use of data requires caution. Problems are noted in Review Summary.
 data should not be used. Problems are noted in Review Summary.
 If the review can be addressed to me.

Attachments

cc: David Stockton, 6E-HL
 Duane Geuder, WH-548A

011377

ORGANIC QA CHECKLIST

Site VERTAC Contract No. 68-01-7340
 Case No. 8019/03 Contractor TMS ANAL
 Reviewed By M.C. RITZER Matrix SOIL
 Date 11/9/87 Acct. # 87PAJN38 SF 7FAU04
 Sample No. DF0212-19 through DF0212-22
DF0213-01 through DF0213-03

011378

OVERALL COMMENTS (To Be Completed By EPA PERSONNEL)

	VOA	B/N	A	Pest	Other
1. Holding Times	_____	_____	_____	_____	A
2. Tuning/Performance	_____	_____	_____	_____	A
3. Calibrations	_____	_____	_____	_____	A
4. Blanks	_____	_____	_____	_____	A
5. Surrogates	_____	_____	_____	_____	A
6. Matrix Spike/Dup	_____	_____	_____	_____	A
7. Compound Identity	_____	_____	_____	_____	P
8. Case Assessment	_____	_____	_____	_____	P

2,3,7,8-TCDF
Dioxins

COMMENTS OR CLARIFICATIONS (See Attached)

- A - Acceptable - All items delivered; all criteria met.
- P - Provisional - Data usable; some non-essential review items missing or criteria were not met.
- U - Unacceptable - Data unusable; essential review items missing or criteria not met.

ORGANIC QA CHECKLIST

Site VERTAC Contract No. 68-01-7390
 Case No. 8019/02 Contractor TMS ANAL
 Reviewed By M. C. Ritter Matrix SULC
 Date 11/9/87 Acct. # 87FAJN38 SF ZFAUCY
 Sample No. DF 0212-02
DF 0212-08 through DF 0212-17

011379

OVERALL COMMENTS (To Be Completed By EPA PERSONNEL)

	VOA	B/N	A	Pest	Dioxin Other
1. Holding Times	_____	_____	_____	_____	<u>A</u>
2. Tuning/Performance	_____	_____	_____	_____	<u>A</u>
3. Calibrations	_____	_____	_____	_____	<u>A</u>
4. Blanks	_____	_____	_____	_____	<u>A</u>
5. Surrogates	_____	_____	_____	_____	<u>A</u>
6. Matrix Spike/Dup	_____	_____	_____	_____	<u>A</u>
7. Compound Identity	_____	_____	_____	_____	<u>P</u>
8. Case Assessment	_____	_____	_____	_____	<u>P</u>

COMMENTS OR CLARIFICATIONS (See Attached)

- A - Acceptable - All items delivered; all criteria met.
- P - Provisional - Data usable; some non-essential review items missing or criteria were not met.
- U - Unacceptable - Data unusable; essential review items missing or criteria not met.

ORGANIC QA CHECKLIST

Site VERTAC Contract No. 68-01-7390
 Case No. 8019/01 Contractor TMS ANALYTICAL
 Reviewed By M.C. Ruffner Matrix SOIL
 Date 11/9/87 Acct. # 87FAJN38 SF 7FA404

Sample No. DF0212-01 DF0212-06 _____
DF0212-04 DF0212-07 _____
DF0212-05 _____

011380

OVERALL COMMENTS (To Be Completed By EPA PERSONNEL)

	VOA	B/N	A	Pest	Other
1. Holding Times	_____	_____	_____	_____	<u>A</u>
2. Tuning/Performance	_____	_____	_____	_____	<u>A</u>
3. Calibrations	_____	_____	_____	_____	<u>A</u>
4. Blanks	_____	_____	_____	_____	<u>A</u>
5. Surrogates	_____	_____	_____	_____	<u>A</u>
6. Matrix Spike/Dup	_____	_____	_____	_____	<u>A</u>
7. Compound Identity	_____	_____	_____	_____	<u>P</u>
8. Case Assessment	_____	_____	_____	_____	<u>P</u>

2378-7CDE
 Duplication

COMMENTS OR CLARIFICATIONS (See Attached)

- A - Acceptable - All items delivered; all criteria met.
- P - Provisional - Data usable; some non-essential review items missing or criteria were not met.
- U - Unacceptable - Data unusable; essential review items missing or criteria not met.

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 8019/01,02,03 SITE VERTAC LAB TMS

The following is a summary of sample qualifiers used by Region VI in reporting this CLP Case data:

No.	Acceptable	Provisional	Unacceptable
VOA	_____	_____	_____
BNA	_____	_____	_____
PEST	_____	_____	_____
OTHER Dioxin	<u>20</u>	<u>3</u>	_____

COMMENTS: PROVISIONAL

1. SAMPLES FOR BATCHES 01, 02, & 03 FOR CASE 8019. DATA PACKAGE IS PROVISIONAL; THREE SAMPLES SHOWED MAXIMUM POSSIBLE CONCENTRATION OF > 1 ppb AND RERUN REQUIREMENTS FOR THESE SAMPLES ARE BEING LOOKED INTO FROM A CONTRACTAL PROBLEM.
2. ALL 2,3,7,8-TCDD REQUIREMENTS PER IFS WA 86-K 357 APPEARED TO HAVE BEEN FULFILLED AND ALL DELIVERABLES WERE PRESENT. THE ONLY PROBLEM IS THAT FOR THE THREE SAMPLES, DFO212-09, DFO212-12 AND DFO213-01, WHICH HAVE MPC > 1, IS WHETHER THE LAB IS REQUIRE TO RERUN THESE SAMPLES IN AN EFFORT TO GET MPC < 1. THIS CONTRACT PROBLEM IS BEING INVESTIGATED AND DATA FOR PACKAGE IS PROVISIONAL AS A RESULT.
3. POSITIVE HITS FOR 2,3,7,8-TCDD WERE FOUND IN DFO212-07 (1.41 ppb); DFO212-10 (0.9 ppb); DFO212-11 (2.51 ppb); DFO212-15 (0.93 ppb); DFO212-16 (1.06 ppb); AND DFO212-20 (0.88 ppb).
4. PERFORMANCE SAMPLES DFO212-04 (6.85 ppb) AND DFO212-17 (5.93 ppb) WERE WITHIN 95% EPA ACCEPTANCE WINDOWS FOR DIOXINS. RESULTS ACCEPTABLE.

011381

011382 Batch 01



TMS ANALYTICAL SERVICES, INC.

6576 Morena Trail
Indianapolis, Indiana 46268
317.291.5697

Case number: 8019
Batch Number: 1

DOCUMENT INVENTORY

Document Control #	Document Type	# Pages
8019 - 01	Case File Document Inventory Sheet	1
8019 - 02	Letter	1
8019 - 03	Form A-15	2
8019 - 04	Form B-2	2
8019 - 05	Form B-3	1
8019 - 06	Chromatographic Data of Initial Calibration Standards	54
8019 - 07	Chromatographic Data of Daily Calibration Standards	8
8019 - 08	Chromatographic Data of Daily Performance Checks	12
8019 - 09	Standard Data Package	24
8019 - 10	Chain-of-Custody	1
8019 - 11	Shipping Manifest	2
8019 - 12	GC/MS Log	2
8019 - 13	Analyst Logbook	1
8019 - 14	Additional Reporting Forms	2

011383



TRACE MASS SPECTROMETRY

8019-02

TMS ANALYTICAL SERVICES, INC.

October 2, 1987

Mr. Mike Wittington
CLP Sample Management Office
Viar & Co.
209 Madison St., Suite 200
Alexandria, VA 22314

Dear Mr. Wittington:

Enclosed is the complete Sample Data Package for the analysis of samples for 2,3,7,8-TCDD according to the procedures specified under CLP contract #7390.

These samples were received as Case #8019, Batch #1 on September 14. Results were sent by overnight courier on October 2 for arrival on the October 5, 1987 due date.

No special problems were experienced with these samples. On 09/23/87, Tony Neskey from SMO called Dan Delinger from TMS to notify the lab that Case #8910 Batch 1 should be Case #8019 Batch 1. Tony Neskey called Dan Delinger again on 09/25/87 to explain that the duplicate and spike samples for Case #8019 Batch #1 will be included in Case #8019 Batch #3, therefore no B-4 Form will be included in this report. In addition, sample number PE-QIG182 was mislabeled as PE-QIG187 on the sample tag. Adjustments were made by Kelly E. Mills, Sample Custodian, on 09/14/87. The results for all samples meet all the QA/QC requirements and all results should be considered valid.

If you should have any questions regarding these data or this report, please feel free to contact me at (317)291-5697.

Very truly yours,

Dennis L. Heuring, Ph.D.
President

CC:
USEPA EMSL/LV QA Division
944 E. Harmon Ave.
Executive Center, Rm 226
Las Vegas, NV 89109

USEPA REGION VI LABORATORY
Monterey Park Plaza - Bldg. C
6608 Hornwood Drive
Houston, TX 77074
Attn: Melvin Ritter

ENCLOSURES:

011384



TMS Analytica. Services Inc.

8019-03

6376 MORENCI TRAIL • TEL. (317) 291-5697 • INDIANAPOLIS, INDIANA 46268

FORM B-1S. TCDD SOIL DATA REPORT FORM

Page 1 of

Lab: TMS ANALYTICAL

Report Date: 10/1/87

Case/Batch No: 8019/#1

Column: PA2331

Instrument ID: FINNIGAN 4000

EPA Sample No.	Extr. Date	Wet wt	ug/kg Meas.	TCDD MPC	GC/MS Date	Analysis Time	Surr. S/N Ratio	* % REC(IS)
M.B.	9/15	10.25	ND	0.15	9/29	0414	6.5	67.3
212-01		10.11	ND	0.19	9/29	0511	7.2	47.1
P.R. 212-04		10.25	6.85	—	9/29	0143	10.8	73.1
212-05		9.95	ND	0.91	9/29	0539	9.3	47.0
212-06		10.11 10.02	ND	0.44	10/1	1411	3.8	27.4
212-07	✓	9.99	1.41	—	9/29	0636	4.6	58.9

0113810

- MB - Method Blank
- N - Native TCDD Spike
- D - Duplicate/Fortified Field Blank
- PE - EMSL-LV Performance Evaluation Sample
- MPC - Maximum Possible Concentration
- *Note: Relative to ¹³C₁₂-1,2,3,4-TCDD
- FB - Field Blank
- IS - Internal Standard
- RR - Rerun
- RS - Recovery Standard
- ND - Not Detected



TANDEM MASS SPECTROMETRY

TMS Analytica' Services Inc.

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FORM B-1S. TCDD SOIL DATA REPORT FORM

Page 2 of

Lab: TMS ANALYTICAL

Report Date: 10/1/87

Case/Batch No: 8019 / #1

Column: SP2331

Instrument ID: FINNIGAN 4000

011386

Sample Number	Rel. Response Ratios			Response (Area)								
	320/322	332/334IS	332/334RS	259	320	322	328	332IS	334IS	332RS	334RS	
MB.	—	0.79	0.81	—	—	—	2574	414187	51483	50140	6206	
512 - C1	—	0.78	0.81	—	—	—	2287	26628	34075	47828	5740	
-04	0.80	0.81	0.82	16266	67005	84201	3716	44745	54906	50619	6137	
-C5	0.73	0.78	0.82	—	1651	2259	2798	23333	30031	43366	5267	
-C6	—	0.87	0.81	—	—	—	891	14099	16136	41265	5075	
-C7	0.81	0.79	0.82	2360	9594	11868	2788	31184	29311	45319	555	

- MB = Method Blank
- N = Native TCDD Spike
- D = Duplicate/Fortified Field Blank
- PE = EMSL-LV Performance Evaluation Sample
- MPC = Maximum Possible Concentration
- FB = Field Blank
- IS = Internal Standard
- RR = Rerun
- ND = Not Detected
- RS = Recovery Standard



INITIAL CALIBRATION SUMMARY

Laboratory: TMS Analytical

CC Solution Alternative: II

Case/Batch No.: 8019/1

Instrument ID: FURUKAWA 4000

Date	Time	Sol. ID	AREA						
			320	322	328	332IS	334IS	332RS	334RS
7-23-82	0910	CC1	14631	18675	12402	70007	92271	39272	48595
	1111	CC1	15257	18682	12701	74277	96113	41356	52016
	1140	CC1	15310	19173	13235	73748	98335	40069	51625
7-23-82	1013	CC2	76781	96910	27179	72125	96502	12972	52117
	1249	CC2	79387	99258	27172	75759	97496	43127	55321
	1237	CC2	78444	103161	28389	78235	97892	44120	55519
7-23-82	1042	CC3	403155	526872	48532*	76922	102124	44303	57362
	1346	CC3	417441	540479	51709	80268	106068	46162	57012
	1335	CC3	391804	510654	48053	76299	98823	42832	54850
7-23-82	0913	CC4	1565040	2032170	† /	75036	95191	41338	52871
	1403	CC4	1630940	2109860	/	76974	100609	43009	54752
	1432	CC4	1657120	2183070	/ †	79736	101874	45709	56486

011387

Solution ID Codes:

- CC1 = Concentration calibration solution #1
- CC2 = Concentration calibration solution #2
- CC3 = Concentration calibration solution #3
- CC4 = Concentration calibration solution #4

* Not present in CC Solution Alternative One.



TMS Analytical Services Inc.

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FORM B-2

INITIAL CALIBRATION SUMMARY

Page 2 of 2

Laboratory: TMS Analytical

CC Solution Alternative: 11

Case/Batch No.: 8019/11

Instrument ID: FISVIGAN 4000

Date	Time	Sol. ID	Measured RRF _n	Mean RRF _n	Measured RRF ₁	Mean RRF ₁
4-23-89	0910	CC1	1.08	1.06	1.06	1.06
	1111	CC1	1.05		1.04	
	1140	CC1	1.05		1.07	
4-23-89	1013	CC2	1.08	1.07	1.01	1.02
	1209	CC2	1.07		1.02	
	1237	CC2	1.07		1.03	
4-23-89	1042	CC3	1.09	1.08	1.01	1.02
	1306	CC3	1.08		1.03	
	1335	CC3	1.08		1.02	
4-23-89	0943	CC4	1.11	1.11	1.03	1.03
	1403	CC4	1.11		1.04	
	1432	CC4	1.11		1.02	

011388

Solution ID Codes:

- CC1 = Concentration calibration solution #1
- CC2 = Concentration calibration solution #2
- CC3 = Concentration calibration solution #3
- CC4 = Concentration calibration solution #4

ZRSO: RRF _n	RRF ₁
CC1 = <u>1.63</u>	<u>1.44</u>
CC2 = <u>0.54</u>	<u>0.98</u>
CC3 = <u>0.53</u>	<u>0.98</u>
CC4 = <u>0.0</u>	<u>0.97</u>

Native Mean of Means: 1.08

IS Mean of Means: 1.03



TANDEM MASS SPECTROMETRY

TMS ANALYTICAL SERVICES, INC.

6376 Morenci Trail
Indianapolis, Indiana 46268
317-291-5697

October 7, 1987

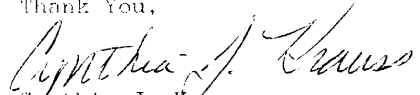
CLP Sample Management Office
Viar & Co.
209 Madison St., Suite 200
Alexandria, VA 22314

To whom it may concern:

Please replace the existing B-3 Forms found in the Sample Data Package and the Sample Data Summary Package with these corrected B-3 Forms. Our files have been updated and corrected by C. Krauss, Document Control Officer.

If you should have any questions please feel free to contact me at (317)291-5697.

Thank You,


Cynthia J. Krauss
Document Control Officer

CC:
USEPA EMSL/LV QA Division
944 E. Harmon Ave.
Executive Center, Rm 226
Las Vegas, NV 89109

USEPA REGION VI LABORATORY
Monterey Park Plaza - Bldg. C
5608 Hornwood Drive
Houston, TX 77074
Attn: Melvin Ritter

ENCLOSURES:

011389



TMS Analytical Services Inc.

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Result
MUR
6/11

FORM B-3

ROUTINE CALIBRATION SUMMARY

Laboratory: TMS ANALYTICAL CC Solution Alternative: II

Case/Batch No.: 2019 Batch #1/2/3 Instrument ID: FINNIGAN 4000

(CC1)
(PCS) PERFORMANCE CHECK SOL. CON. CALIB. SOL. #1

Date	9/28	9/29	9/30	9/30	10/1	10/1	9/28	9/30	10/1
Time	2233	0925	1244	2132	1333	2018	2156	1208	1503
Response									
259	—	—	—	—	—	—	2191	2031	2731
320	17641	10900	11111	12514	11829	5830	8185	6062	9330
322	21230	14053	13506	15256	11785	7301	10062	7078	11230
328	—	—	—	—	—	—	6352	4715	7458
332IS	5915	36183	34461	56111	35311	112800	41529	29842	416810
334IS	65707	46086	42674	45804	44579	20952	51659	36929	57618
332RS	104875	72647	70406	61552	69191	33583	24665	16856	25710
334RS	127415	89973	85977	76694	84815	40508	29370	20834	32007
Ratios									
320/322	0.83	0.78	0.82	0.82	0.80	0.80	0.81	0.86	0.83
332/334IS	0.79	0.80	0.81	0.79	0.79	0.80	0.80	0.81	0.79
332/334RS	0.83	0.81	0.82	0.80	0.82	0.83	0.84	0.81	0.81
RRF ₇	—	—	—	—	—	—	1.03	1.03	1.01
RRF ₄	—	—	—	—	—	—	0.99	1.01	1.05
Z Valley	0.0	0.0	0.0	0.0	0.0	0.0	—	—	—

011390



TMS Analytical Services Inc.

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8019-0

FORM B-3

ROUTINE CALIBRATION SUMMARY

Laboratory: TMS ANALYTICAL

CC Solution Alternative: II

Case/Batch No.: 8019 BATCH #1

Instrument ID: FINNIGAN 4000

(PCS) PERFORMANCE CHECK SOL.

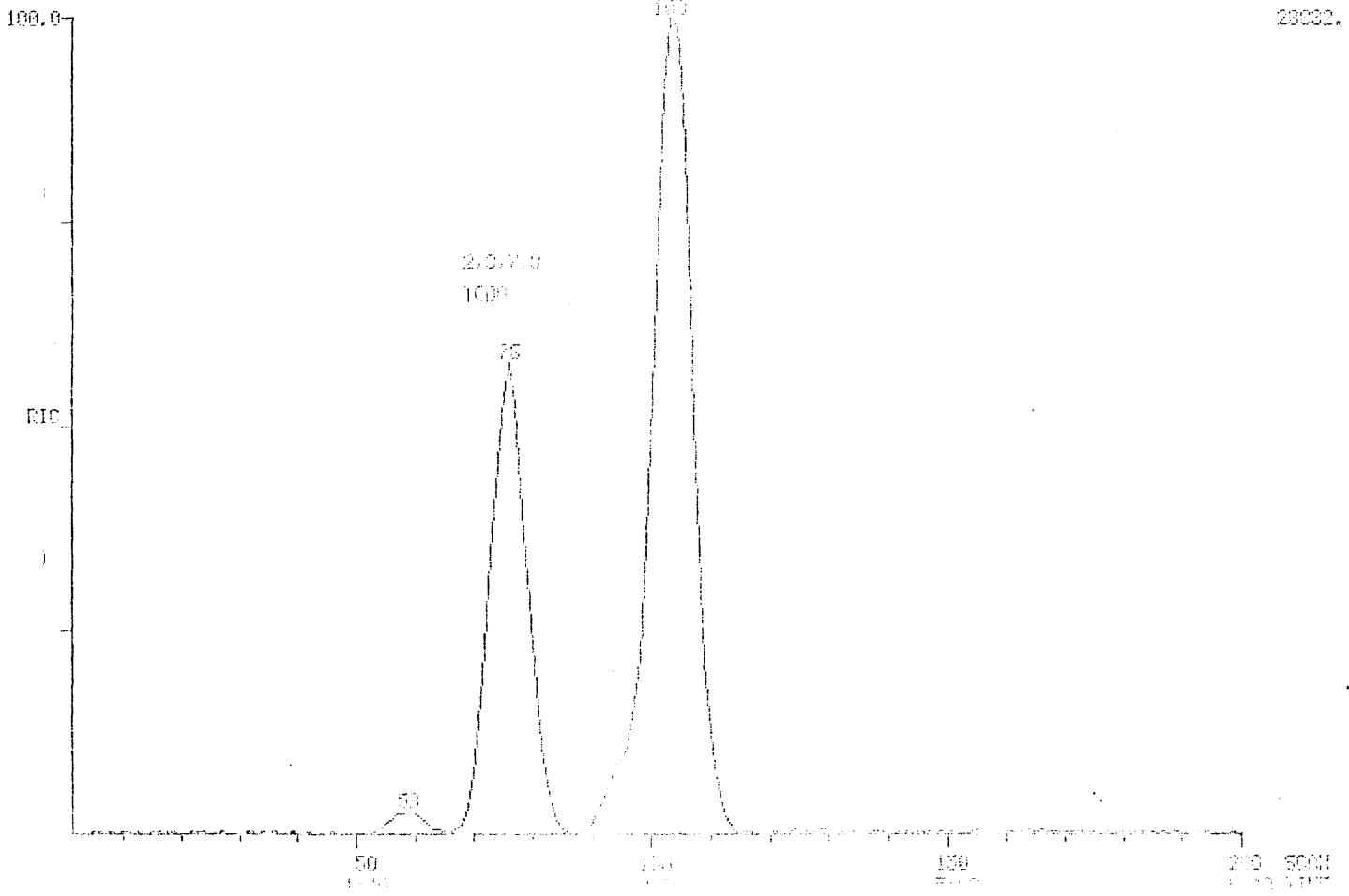
(CCI)
CON. CALIB. SOL. #1

Date	9/28	9/29	9/30	9/30	10/1		9/28	9/30	10/1
Time	2233	0925	1244	2132	1333		2156	1208	1303
Response									
259	—	—	—	—	—		2491	2031	2731
320	17641	10900	11111	12514	11889		8185	6062	9330
322	21230	14053	13506	15256	14785		10062	7078	11230
328	—	—	—	—	—		6352	4715	7458
332IS	5915	36683	34461	36111	35311		41529	29842	46810
334IS	65707	46086	42674	45804	44579		51659	36929	59618
332RS	104895	72647	70406	61552	69191		24665	16856	25740
334RS	127115	89973	85977	76694	84845		29370	20834	32007
Ratios									
320/322	0.83	0.78	0.82	0.82	0.80		0.81	0.86	0.83
332/334IS	0.79	0.80	0.81	0.79	0.79		0.80	0.81	0.79
332/334RS	0.83	0.81	0.82	0.80	0.82		0.84	0.81	0.81
RRF _n	—	—	—	—	—		1.03	1.03	1.01
RRF _i	—	—	—	—	—		0.99	1.01	1.05
% Valley	0.0	0.0	0.0	0.0	0.0		—	—	—

011391

268110
011392

RIC
04/23/87 8:10:00
SAMPLE: COLUMN PERFORMANCE MIX
CONDS.: 1UL/SP2331/100-250025/200-210041HOLD10
RANGE: G 1. 200 LABEL: H 5. 2.5 CONN: G 0. 1.0 U 0 5000 U 20. 8



068110

INSTR: CHROMATOGRAMS

DATE: 04/23/87

TIME: 8:15:00

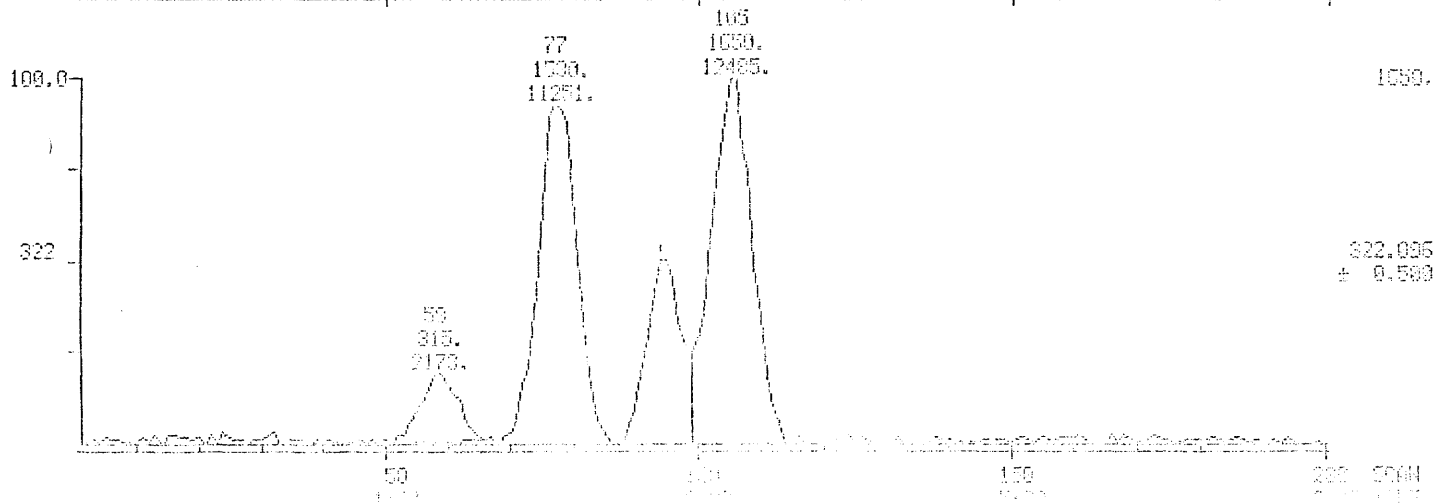
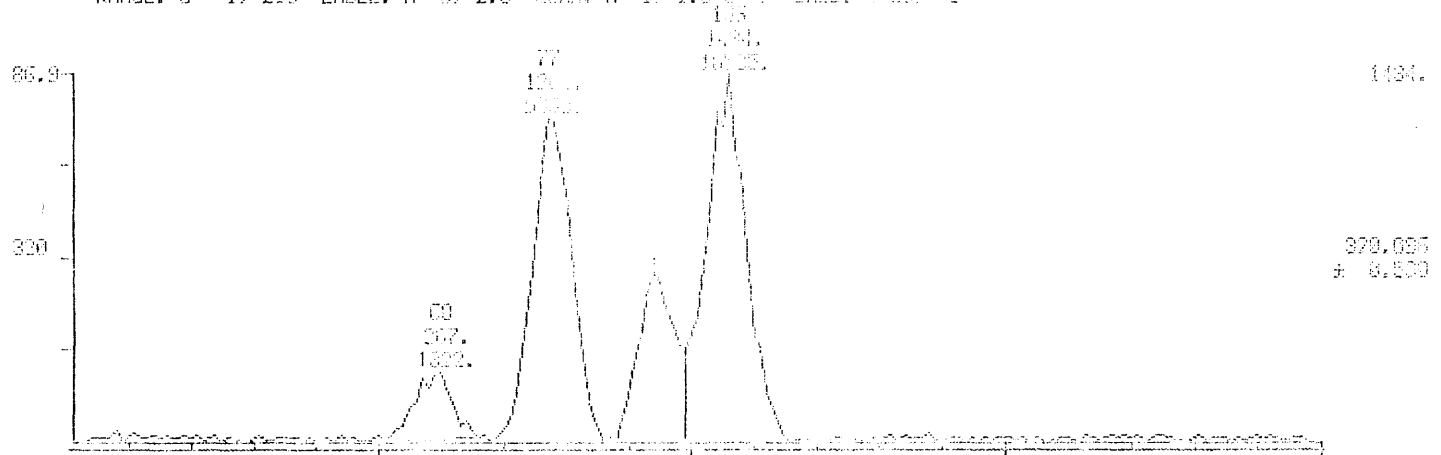
04/23/87 8:15:00

FILE: 068110.D

SAMPLE: COLUMBI PERFORMANCE MIX

COND.: 1UL/SP2331/190-2000/200-2400/1000/DIO

RANGE: G 1, 200 LABEL: H 5, 2.5 BUSCH 8 1, 1.0 J, 0 LAGE: H 06, 8



011394

MASS CHROMATOGRAMS

04/23/87 8:15:09

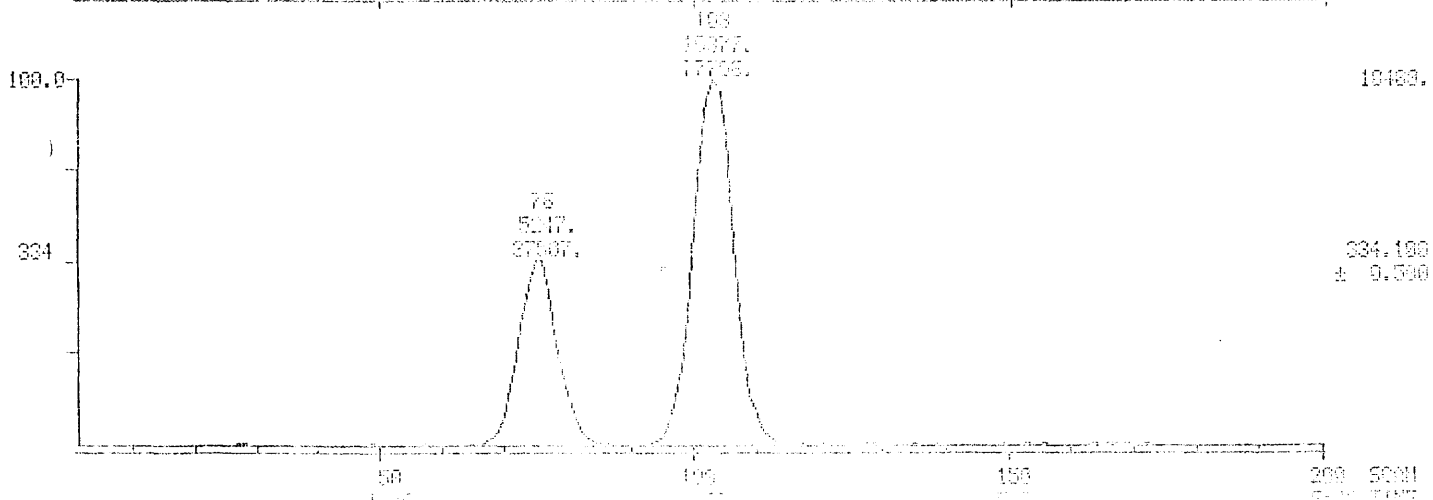
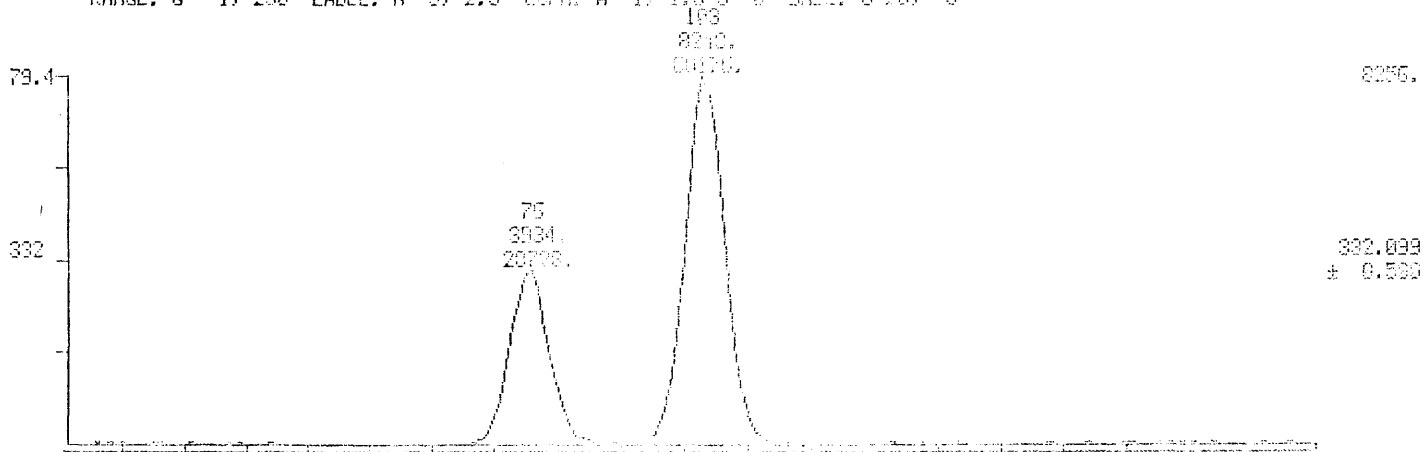
SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 1UL/SP2331/100-200025/200-24001/101 010

RANGE: G 1, 200 LABEL: H 5, 2.5 GAIN: A 1, 1.0 J 0 BASE: U 20, 3

100.000001 01
04/23/87 08:15:09

00002 1 10 000



50 100 150 200 50000

011395

RII RIC

DATA: 00000001

DATE: 1997 10 10 00

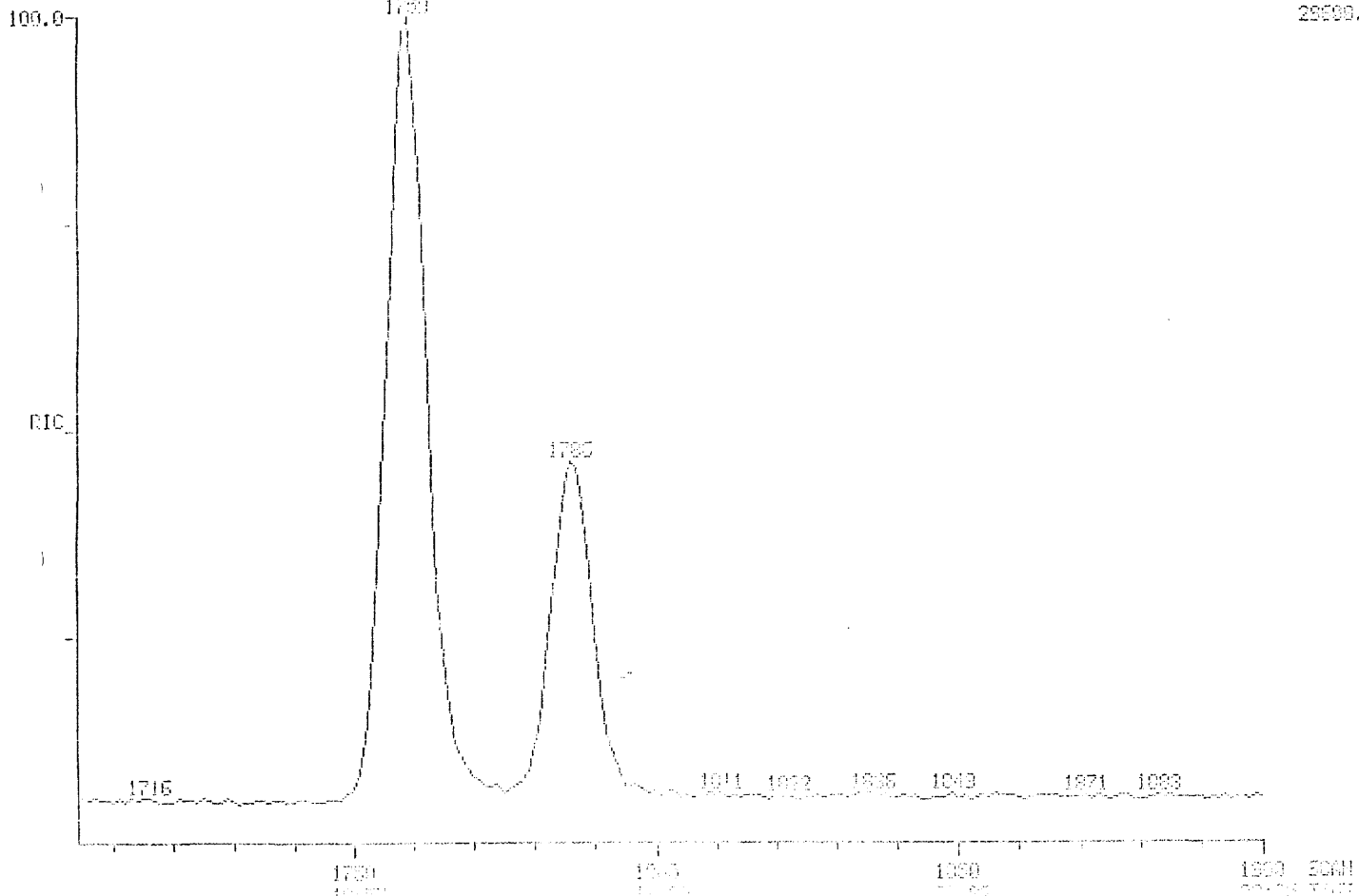
04/23/97 11:11:00

0111: 00000001.L2

SAMPLE: CALIBRATION SOLN 1

COND.: 1UL/SP2331/100-200020/200-24004/10L010

RANGE: 61704.1560 LABEL: H 0, 4.0 QUAN: 0 0, 1.0 U 0 DATE: U 20, 3



011396

HID INES CHROMATOGRAMS

DATE: 04/23/87 01
TIME: 11:11:00

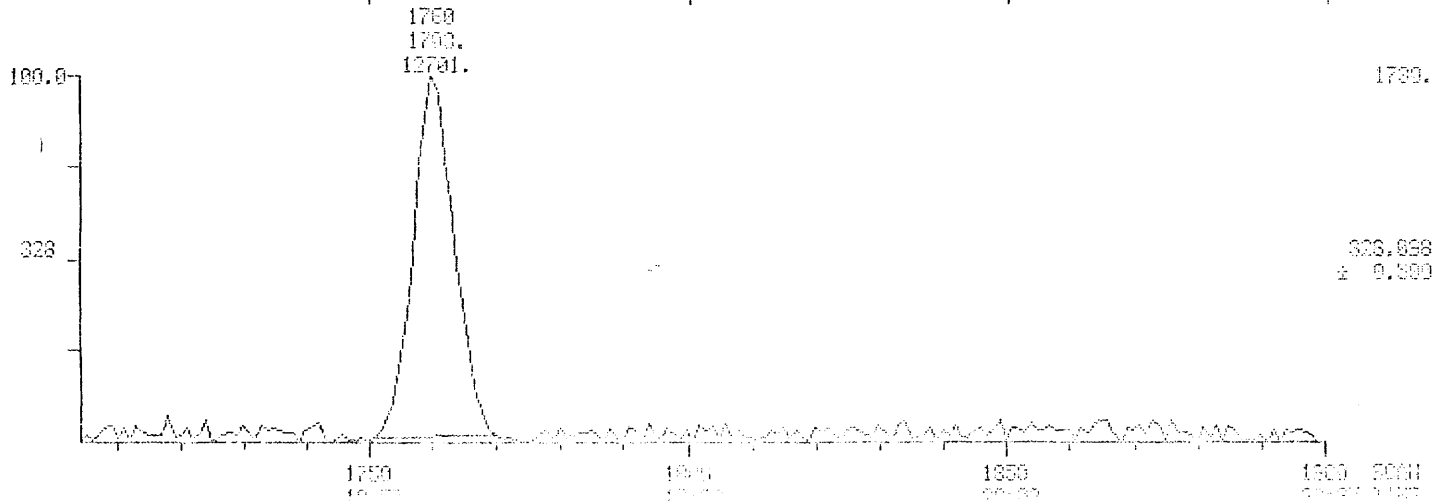
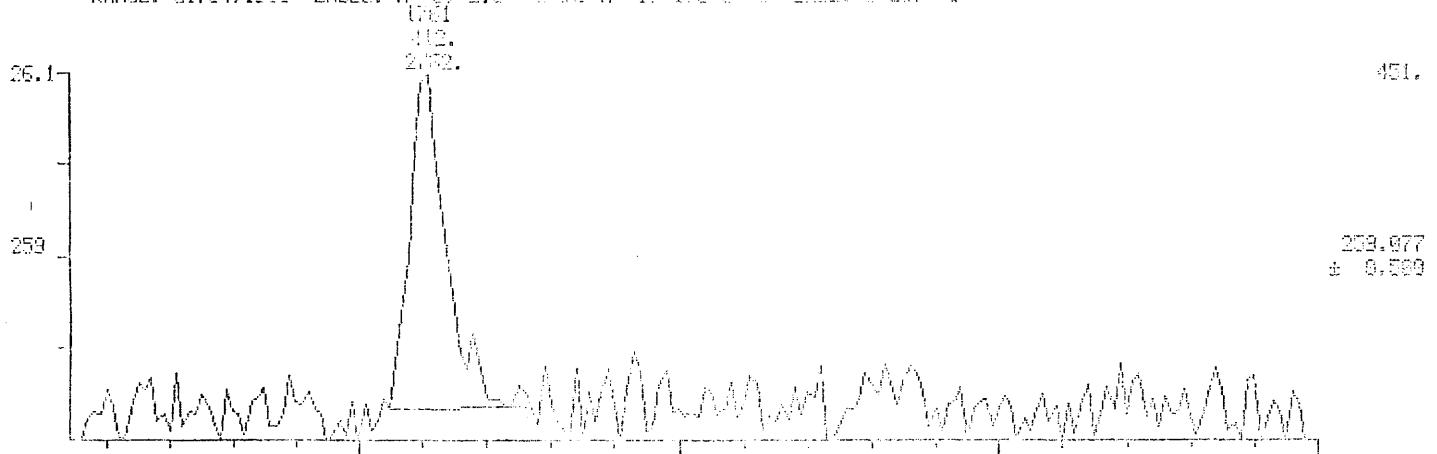
04/23/87 11:11:00

04/23/87 11:11:00

SAMPLE: CALIBRATION SOLN I

CONDS.: 1UL/SP2331/103-200825/203-24531/150L19

RANGE: 61704,1900 LABEL: R 5, 2.5 0.00: A 1, 1.0 U 0 0.00: U 20, 0



268110

HID MASS CHROMATOGRAM

DATE: 04/23/97

TIME: 11:11:00

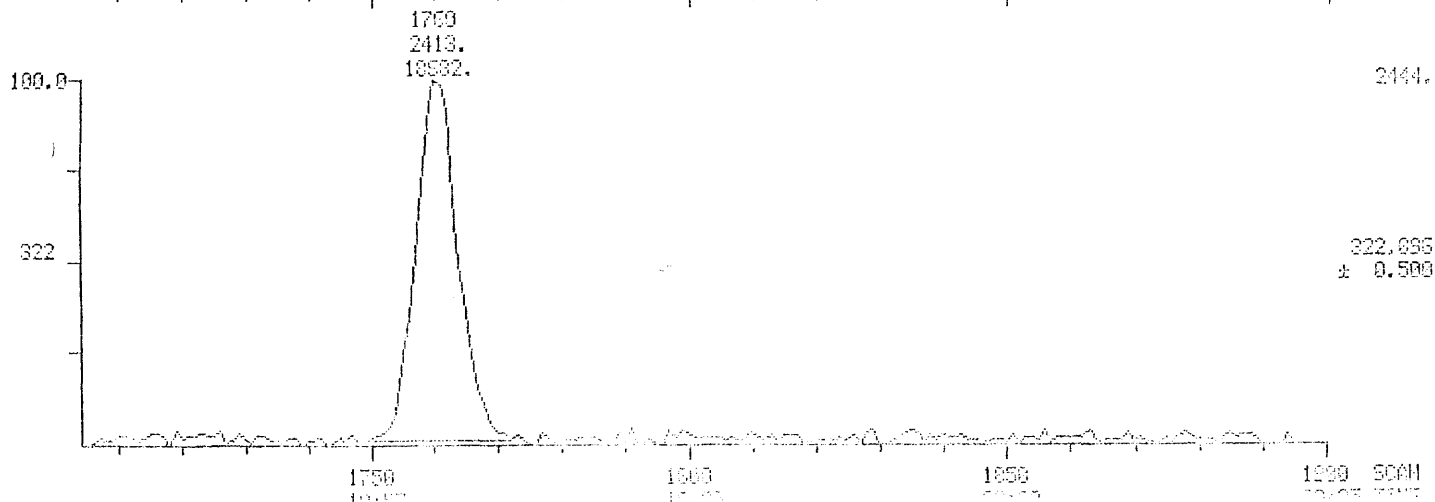
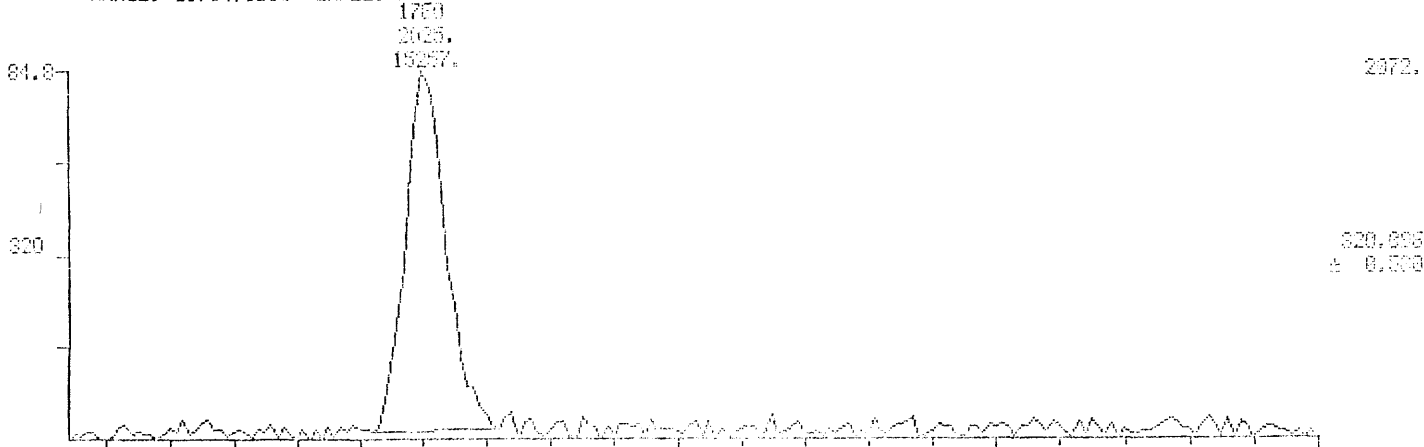
04/23/97 11:11:00

FILE: 042307.D

SAMPLE: CALIBRATION SOLN I

COND.: 1UL/SP2331/100-200025/200-240014/PLU010

RANGE: G1704,1300 LABEL: H 5, 2.5 CONC: A 1, 1.0 U 0 PAGE: 020, 3



868110

MID MASS CHROMATOGRAMS

DATE: 03/03/87

TIME: 17.04 TO 19.00

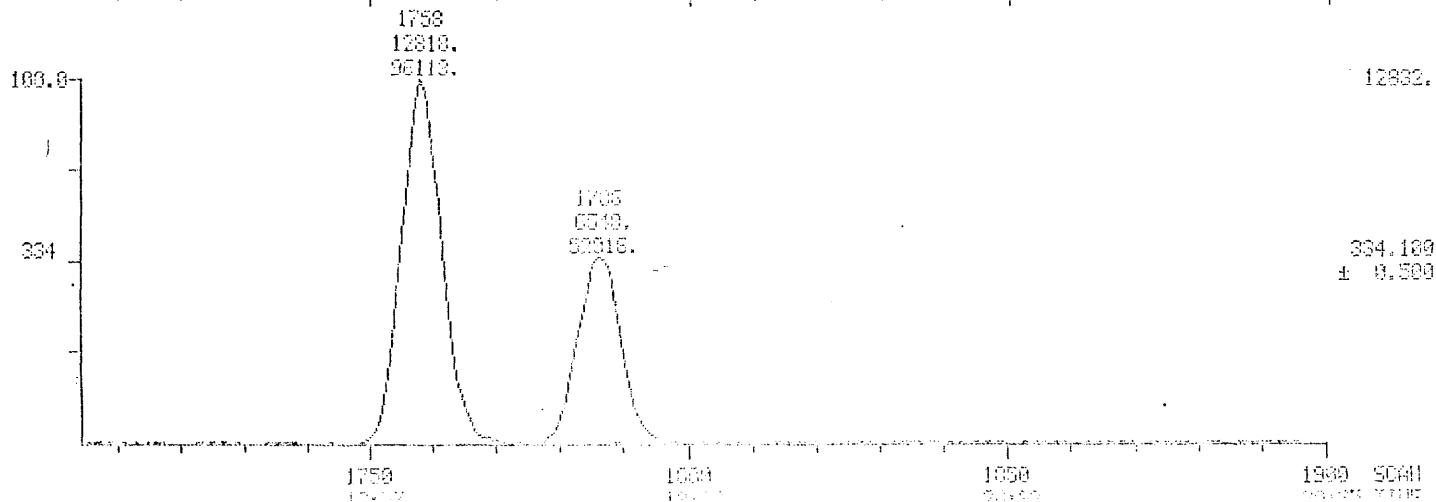
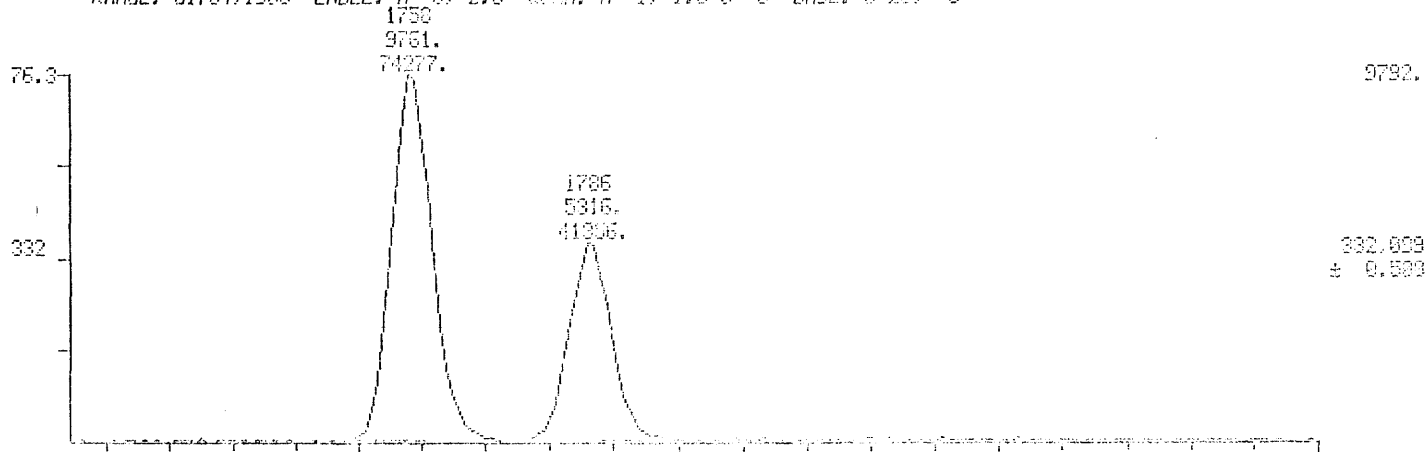
04/23/87 11:11:00

QCL: 010242337 03

SAMPLE: CALIBRATION SOLN I

COND.: 1UL/SP2331/100-200025/200-24004/110L010

RANGE: 61704.1900 LABEL: H 5, 2.5 GWH: 0 1, 1.0 J 0 BASE: U 20, 3



668110

MID RIC

04/23/87 11:40:00

SAMPLE: CALIBRATION SOLN I

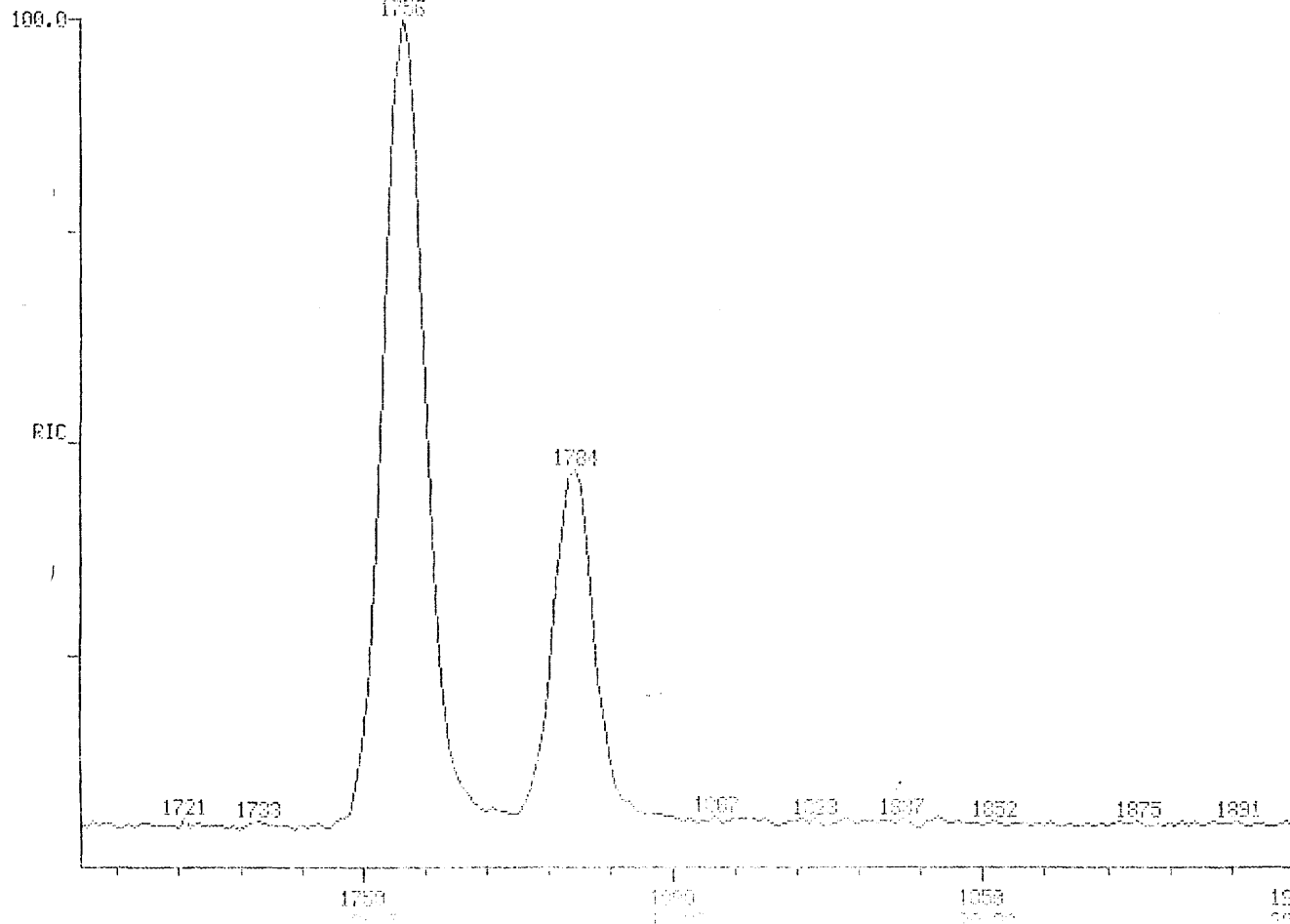
CONDS.: 1UL/SP2331/100-200025/200-24604/100L010

RANGE: 01704.1900 LABEL: H 9. 4.0 CONC: A 0. 1.0 J 0 PAGE: M 20. 3

1700 171007 01

0000 1704 10 1000

0001. 0.020017 00



29440.

1900 9041
00-05 1107

000110

MID MASS CHROMATOGRAMS

Run: 11110, 21

DATE: 04/23/87

04/23/87 11:40:00

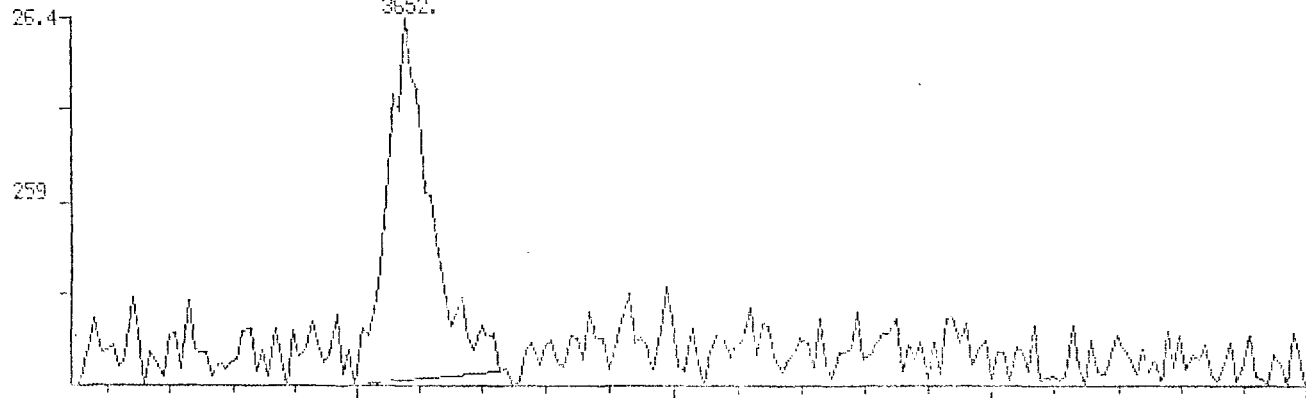
Operator: G. L. ...

SAMPLE: CALIBRATION SOLN I

COND.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: 01704.1900 LABEL: H 5 2.5 OLAD: A 1 1.0 J 0 BAGE: U 20 3

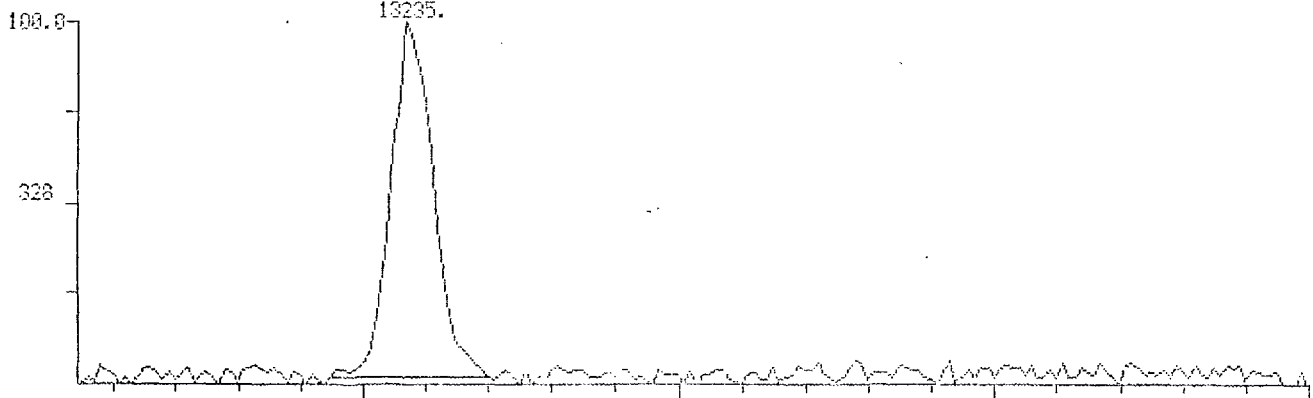
1758
447.
3652.



453.

259.077
± 0.500

1757
1682.
13235.



1716.

328.060
± 0.500

1750 1800 1850 1900 SCAN
10:57 10:58 10:59 11:00

011401

HID MASS CHROMATOGRAM

DATE: 04/23/87

TIME: 11:49:00

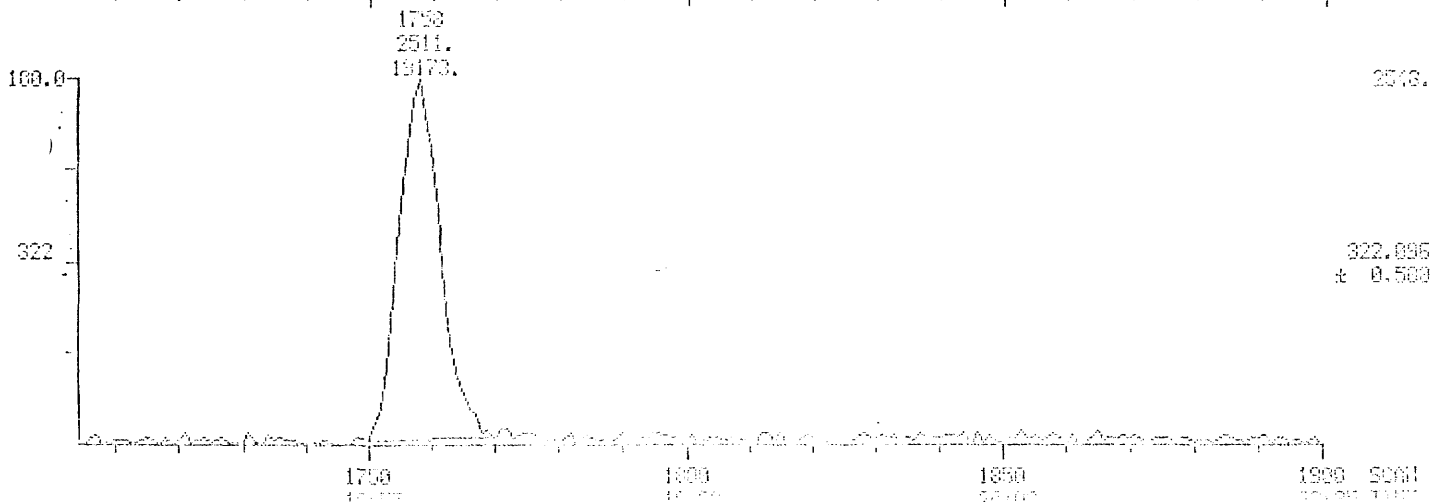
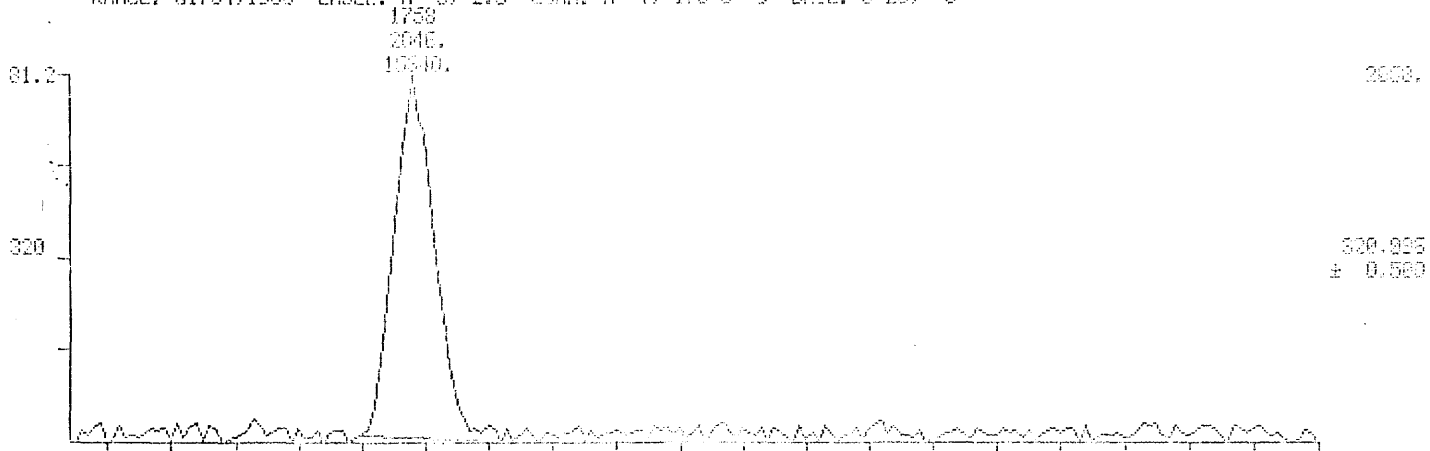
04/23/87 11:49:00

FILE: G17041909.D

SAMPLE: CALIBRATION SOLN I

COND.: 1UL/SP2331/100-200025/200-24000/NOLO10

RANGE: G1704.1909 LABEL: N 5; 2.5 QUANT: A 1; 1.0 J 0 BASE: U 20; 0



MID MASS CHROMATOGRAPHY

DATE: 11/20/87

TIME: 17:01:30.1000

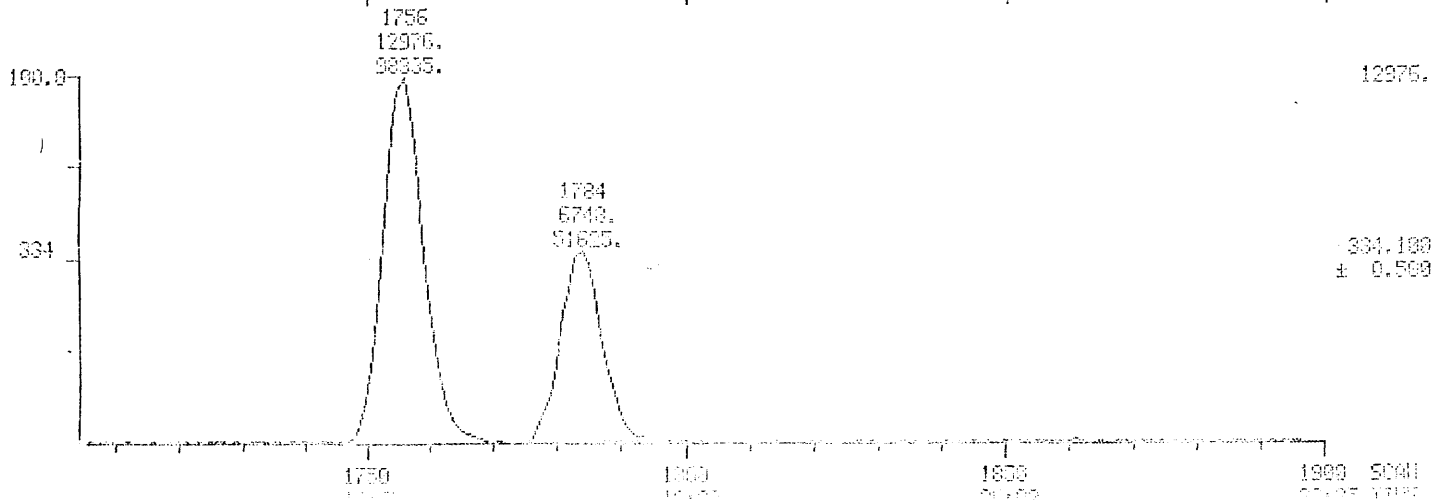
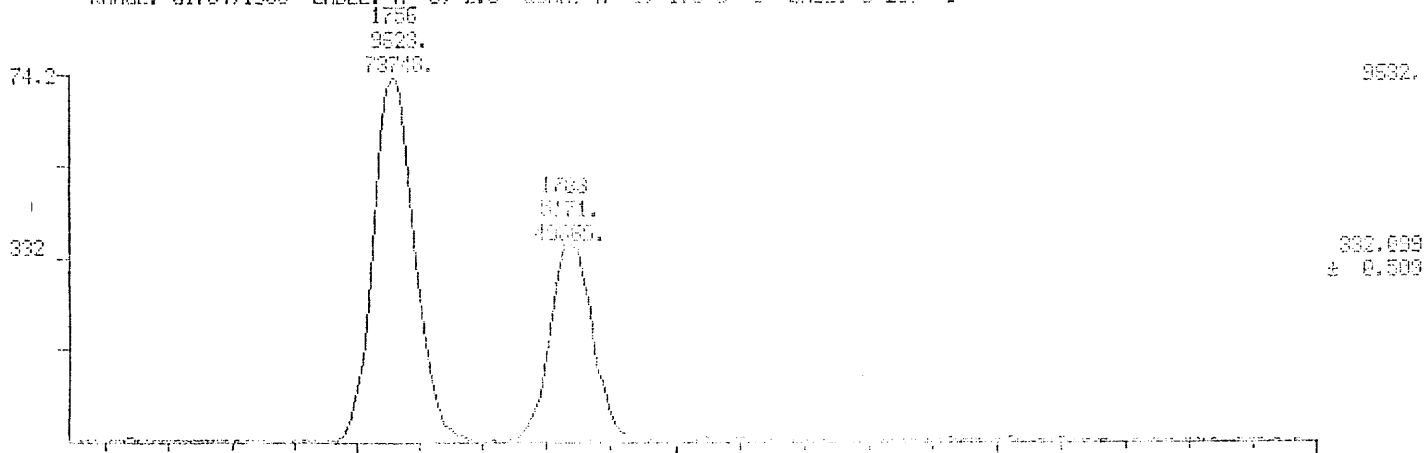
04/23/87 11:49:00

LAB: 00010000 03

SAMPLE: CALIBRATION SOLN I

CONDS.: 1UL/SP2331/100-200025/200-2107/INLET10

RANGE: G1704,1900 LABEL: N 5, 2.5 QMNI: 0 1, 1.0 U 0 BASE: U 20, 3



011403

HID RIC

04/23/87 9:10:00

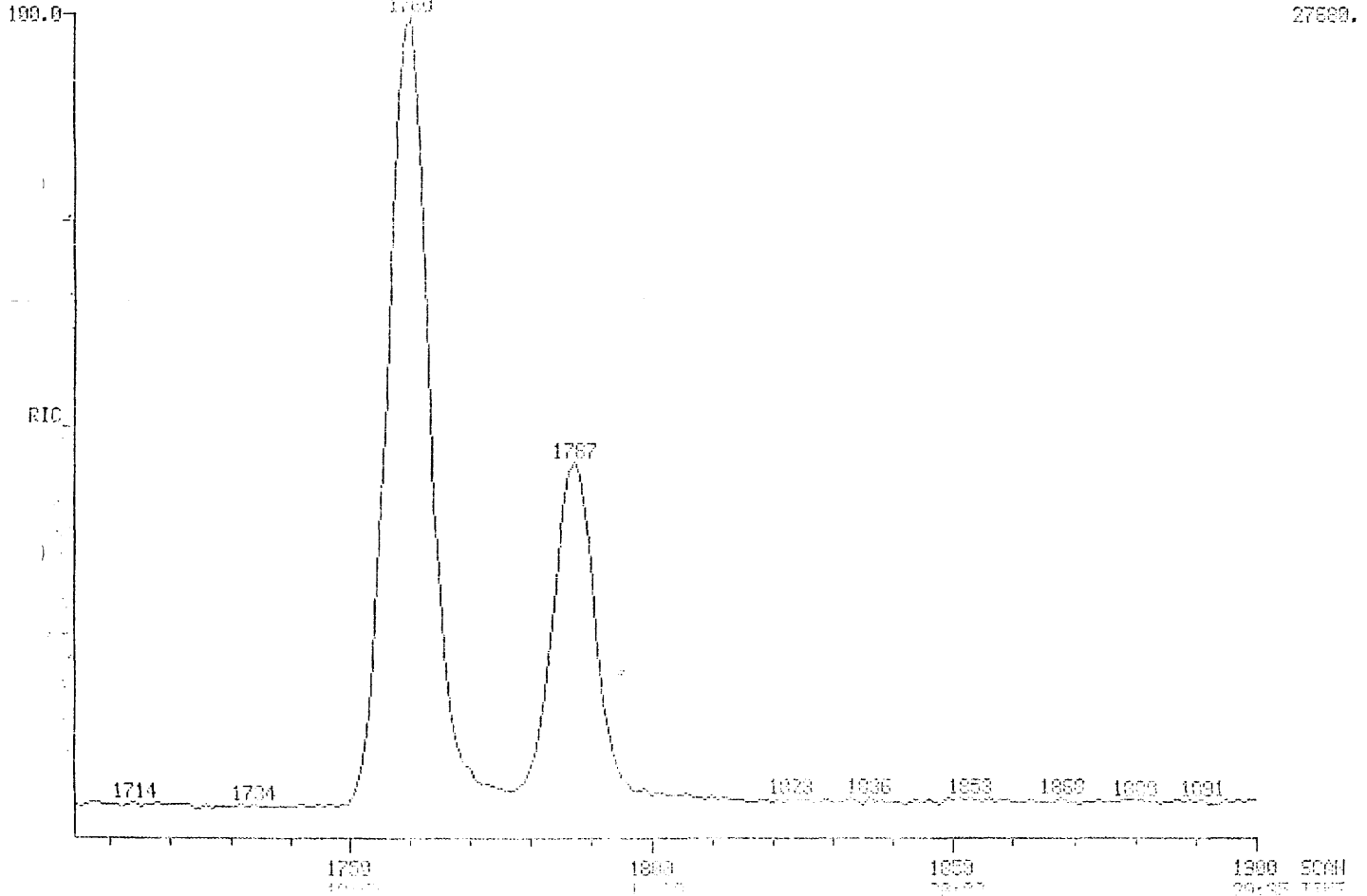
SAMPLE: CALIBRATION SOLN. I

CONDS.: 1UL/5P2331/100-200025/200-2400/110L010

RANGE: G1704.1900 LABEL: U 0, 4.9 CURS: A 0, 1.0 U 0 BASE: U 20, 3

DATE: 04/23/87 09:10:00

0000 1704 19 1000



011404

HID MASS CHROMATOGRAMS

FILE: 0002102.D

SCANS 1704 TO 1900

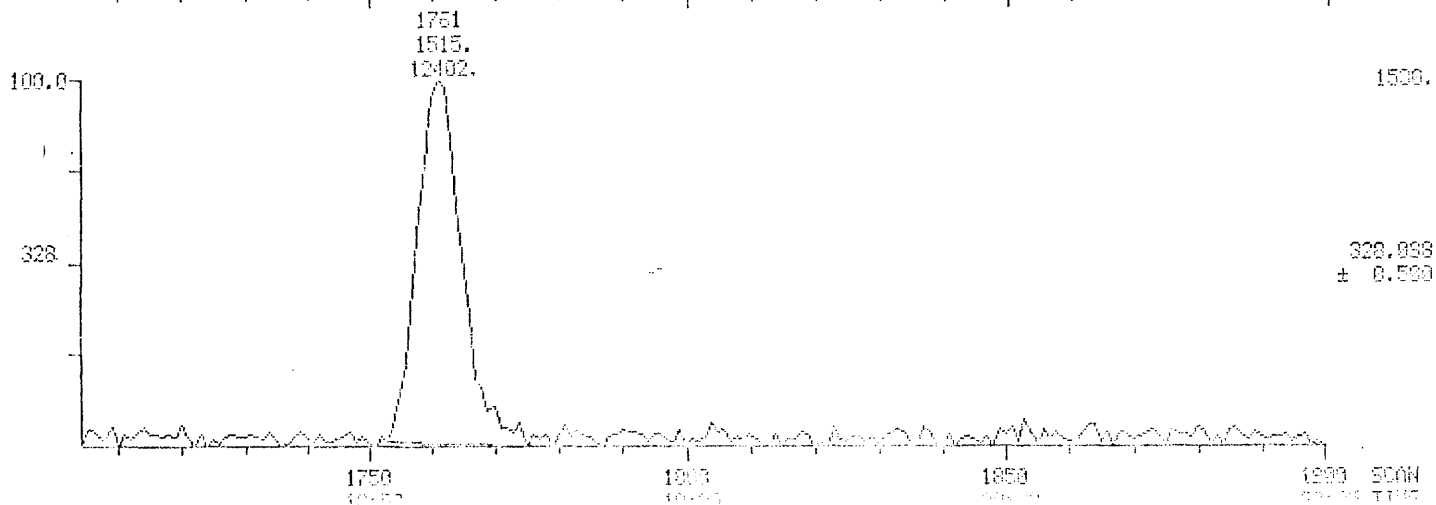
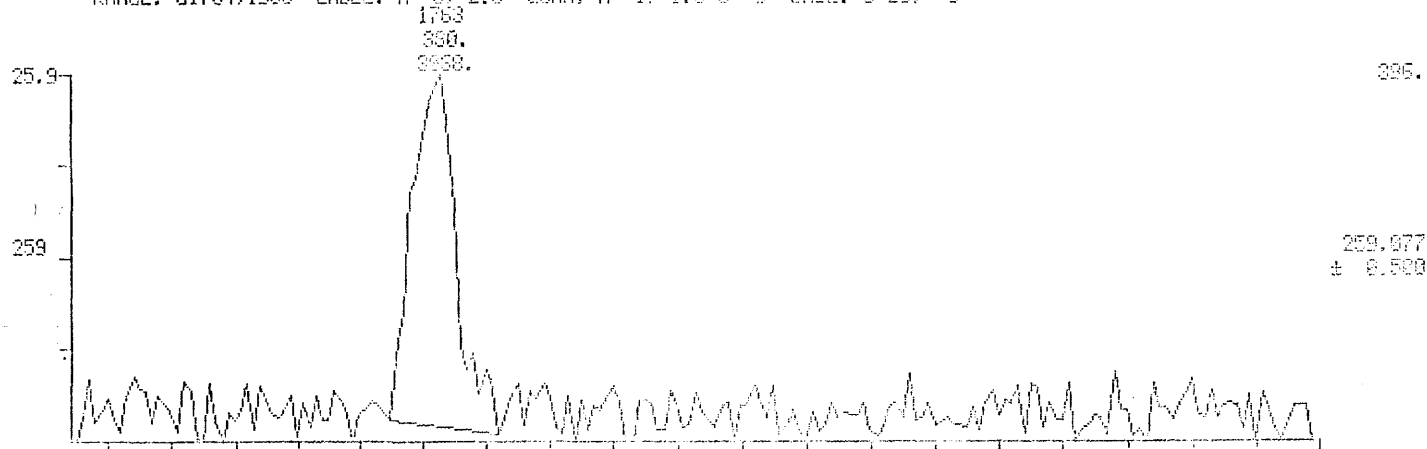
04/23/87 9:10:00

CELL: 01/010007 01

SAMPLE: CALIBRATION SOLN. I

CONDS.: 1UL/SP2331/100-230025/200-240014/HOLD10

RANGE: G1704,1900 LABEL: II 5. 2.5 GUMI; A 1. 1.0 J 9 CASE: U 20. 3



011408

HID HISS CHROMATOGRAPH

11/21/67 10:00

11/21/67 10:00

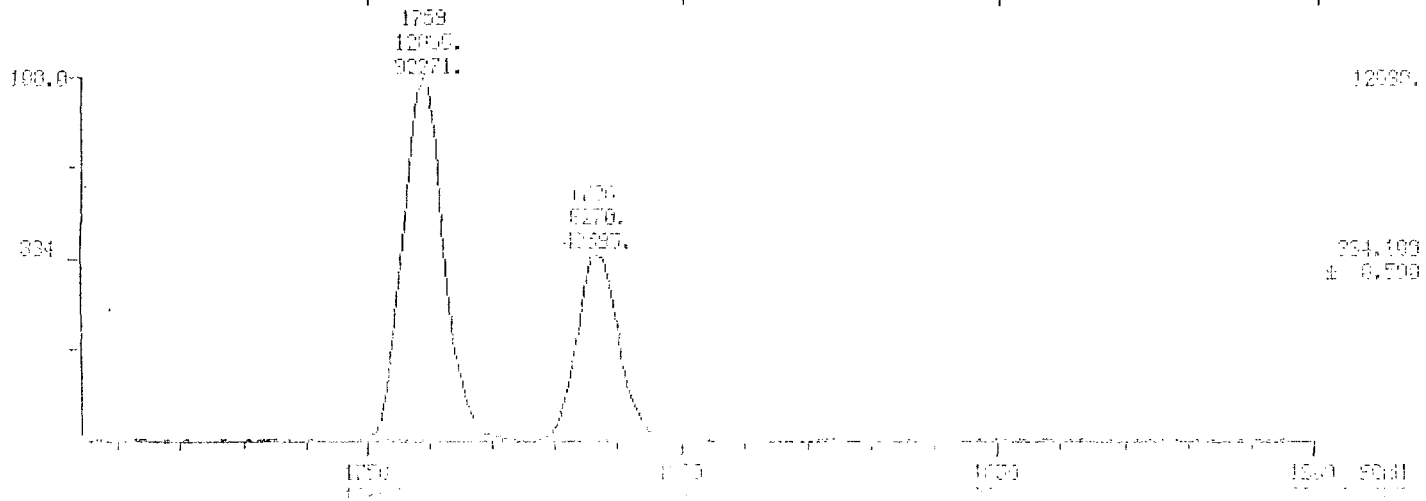
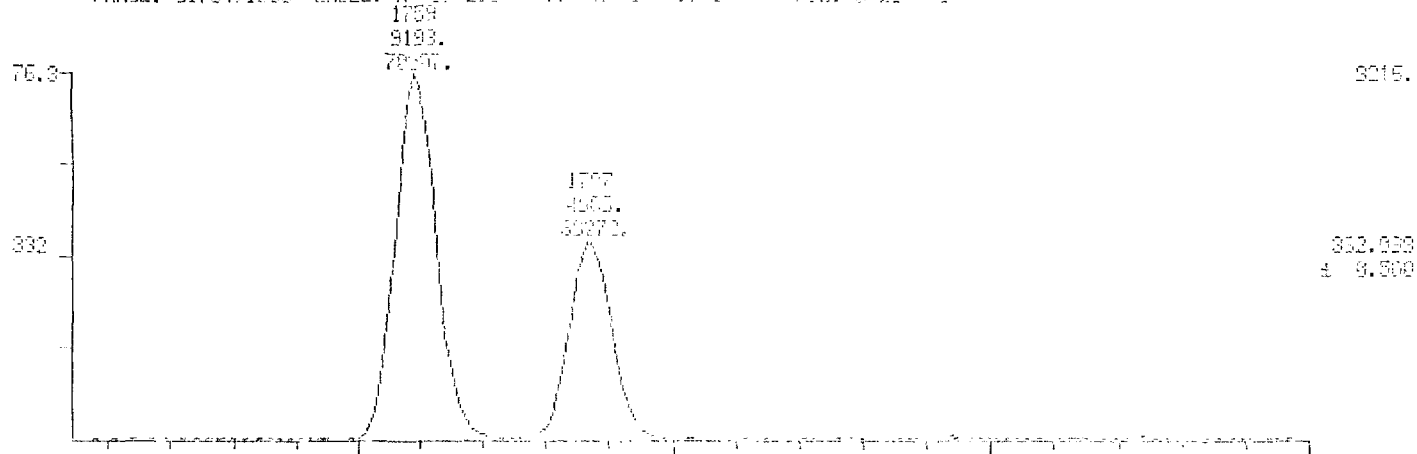
04/22/67 9:10:00

11/21/67 10:00

SAMPLE: CALIBRATION SOLN. I

CONDS.: 1UL/SP2031 1100-200000 200-2100: 100/10

RANGE: 61704.1000 LABEL: H. S. 2.5 10/25 1. 1. 1.0 J. 0. 5.00: 0.20 3



011407

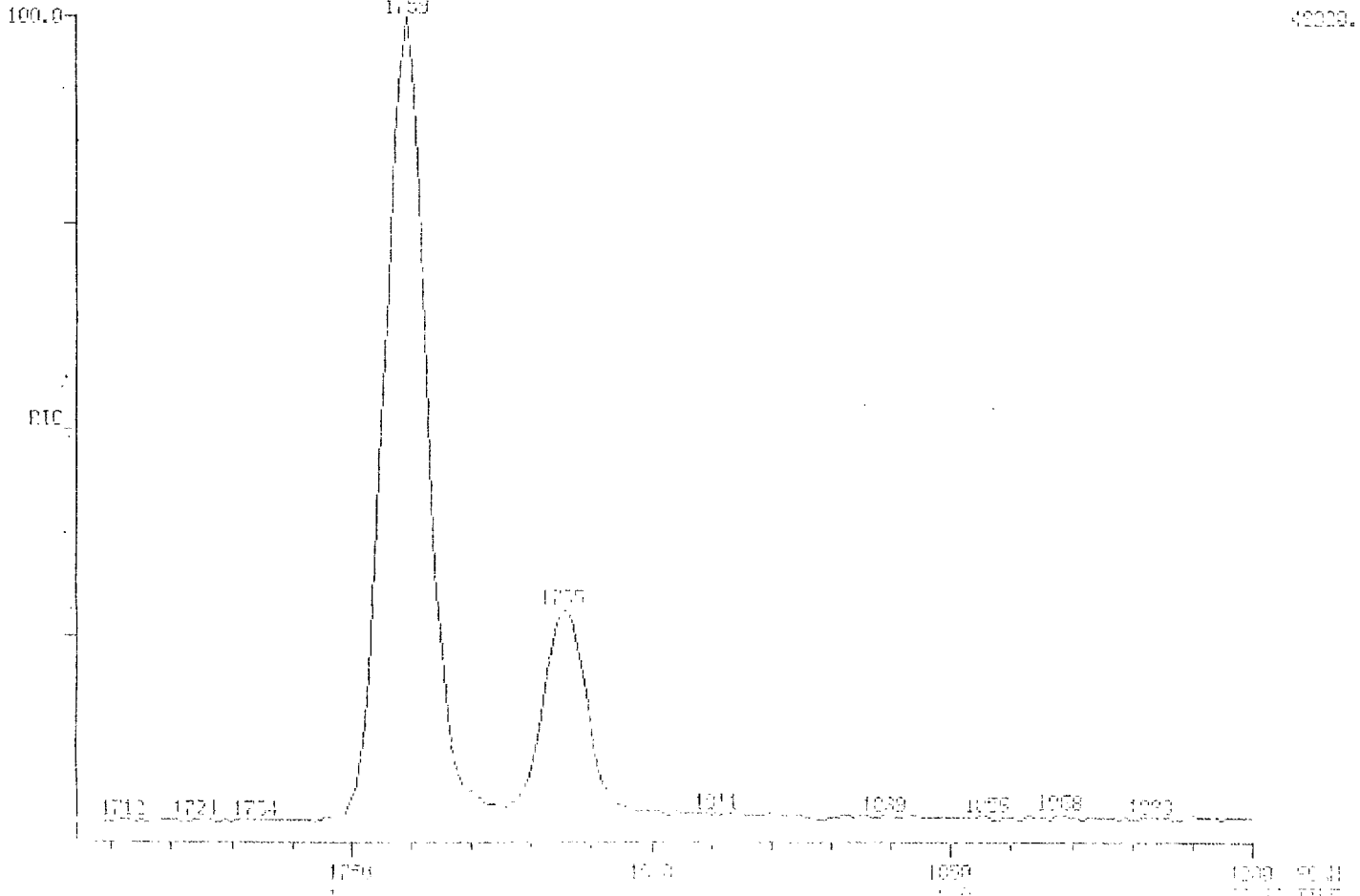
HID RIC

04/23/87 10:00:00

SAMPLE: CALIBRATION SOLN II

COND5.: 10L/SP2331/100-209825-200-24084-HOLD10

PAUSE: 61704.1900 LABEL: H 0 4.0 CELL: 0 0-1.0 J 0 RATE: 0.20 3



801110

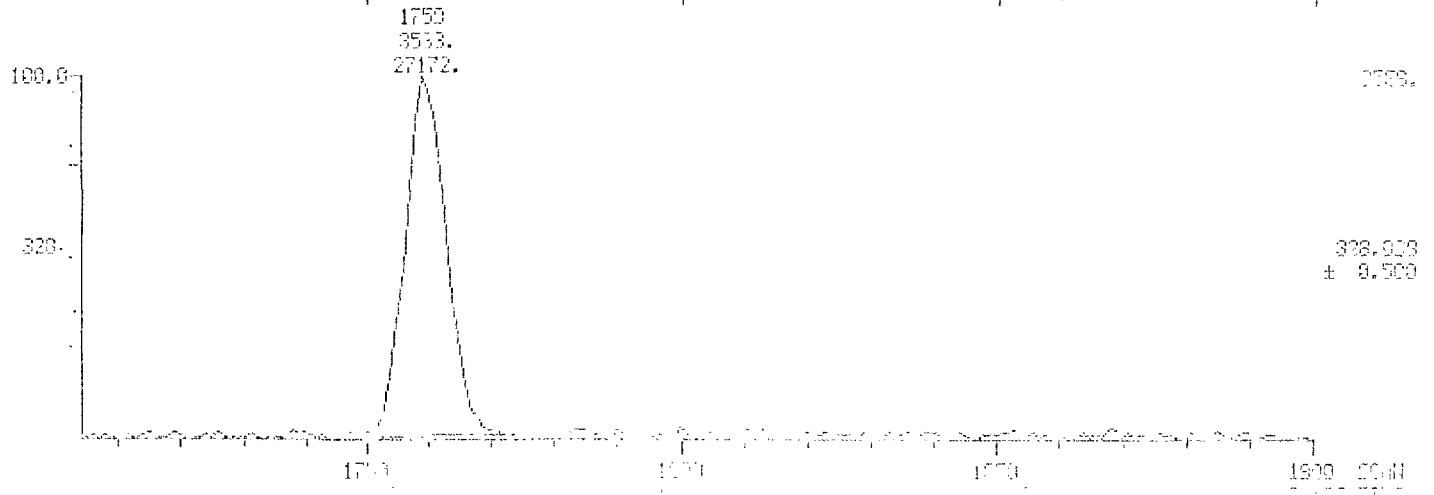
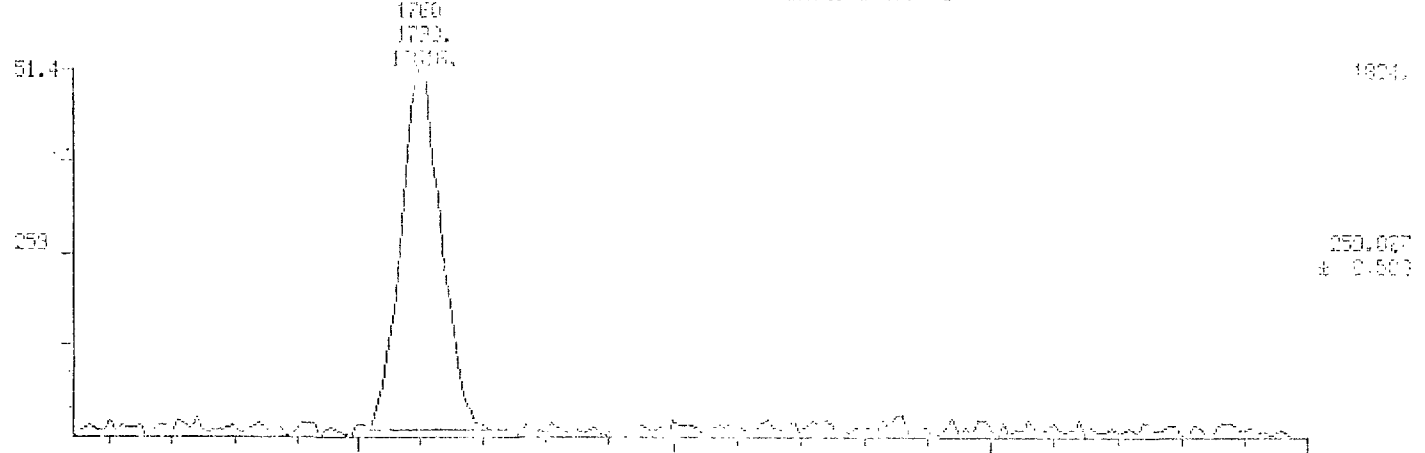
HID TICS CHROMATOGRAM

04/23/87 12:09:00

SAMPLE: CALIBRATION SOLN II

COND.: 1UL/SP2331/100-200007.263-21000412L100

RANGE: 6104.1900 LABEL: 0.5, 2.5 (4.1) @ 1.10 U @ 5.00: U 20, 3



011410

MID MASS CHROMATOGRAM

DATE: 04/23/87

TIME: 11:41:09.123

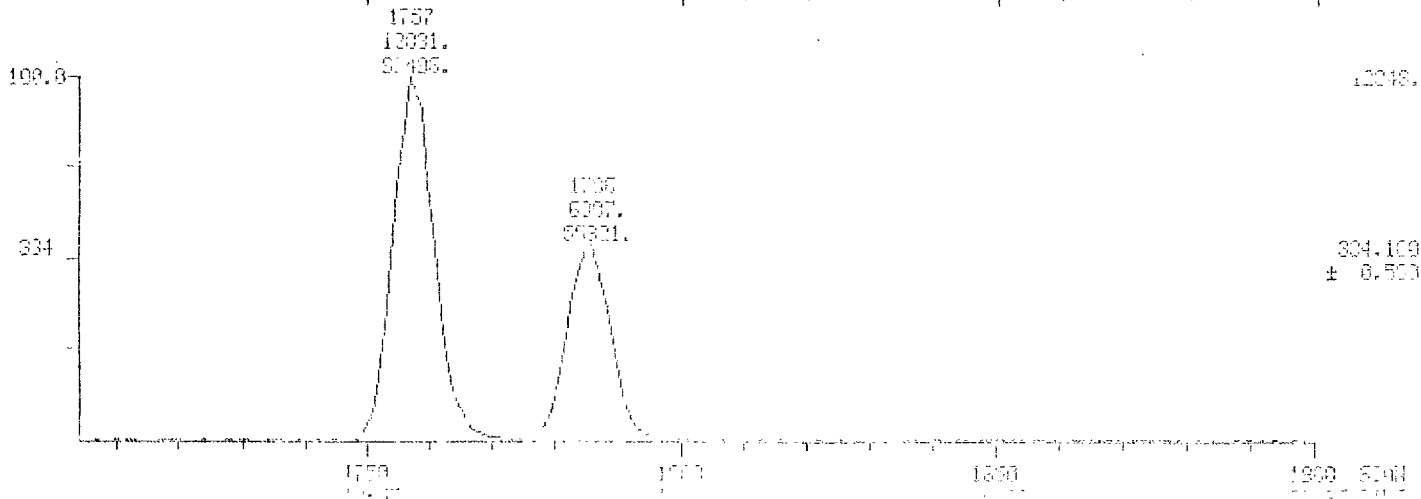
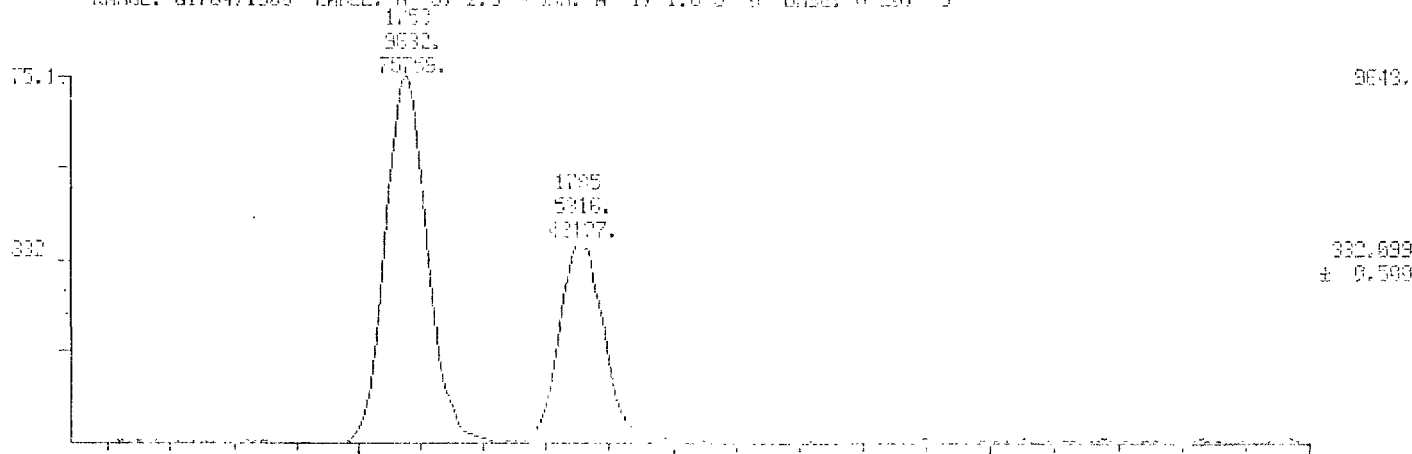
04/23/87 12:09:00

USER: GUYARD, J

SAMPLE: CALIBRATION SOLN II

CONDS.: 1UL/EP2331 100-200015/200-21001 NUL D10

RANGE: 61704.1989 LABEL: H 5/ 2.5 C/0.36 W 1/ 1.0 U 0 BASE: H 09, 3



011411

H10 RIC

04/23/87 12:37:00

SAMPLE: CALIBRATION SOLN II

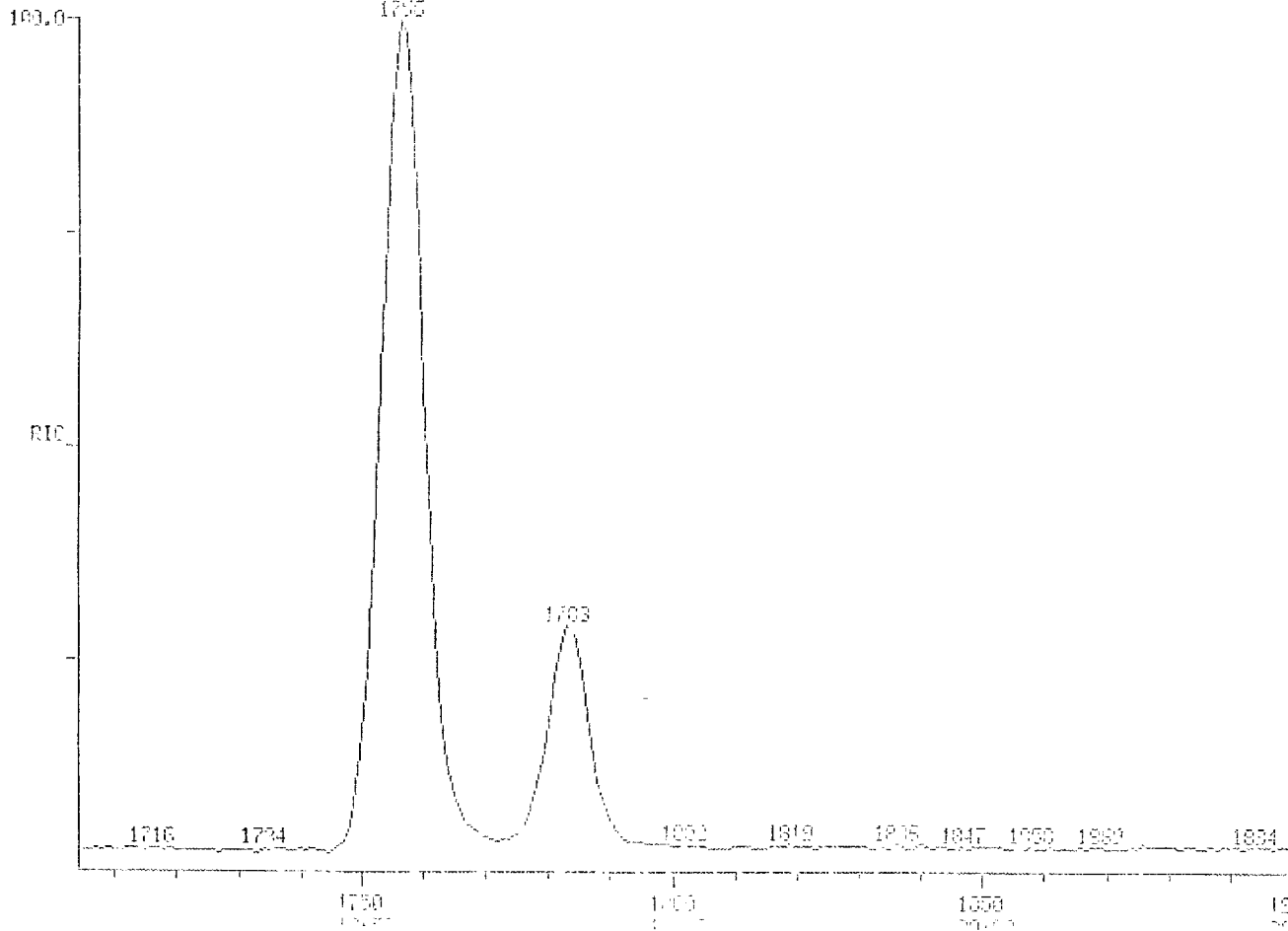
CONDS.: 1UL/SP2331-100-206675/300-21004-HOLD10

RANGE: 61704:1395 LABEL: H 0, 1.0 0345: H 0, 1.0 1 0 CASE: U 03, 3

Sample Name: 011411

Date: 04/23/87

Time: 12:37:00



50316.

50316

214110

HID MASS CHROMATOGRAMS

FILE: 177110.D

SCALE: 177110.D

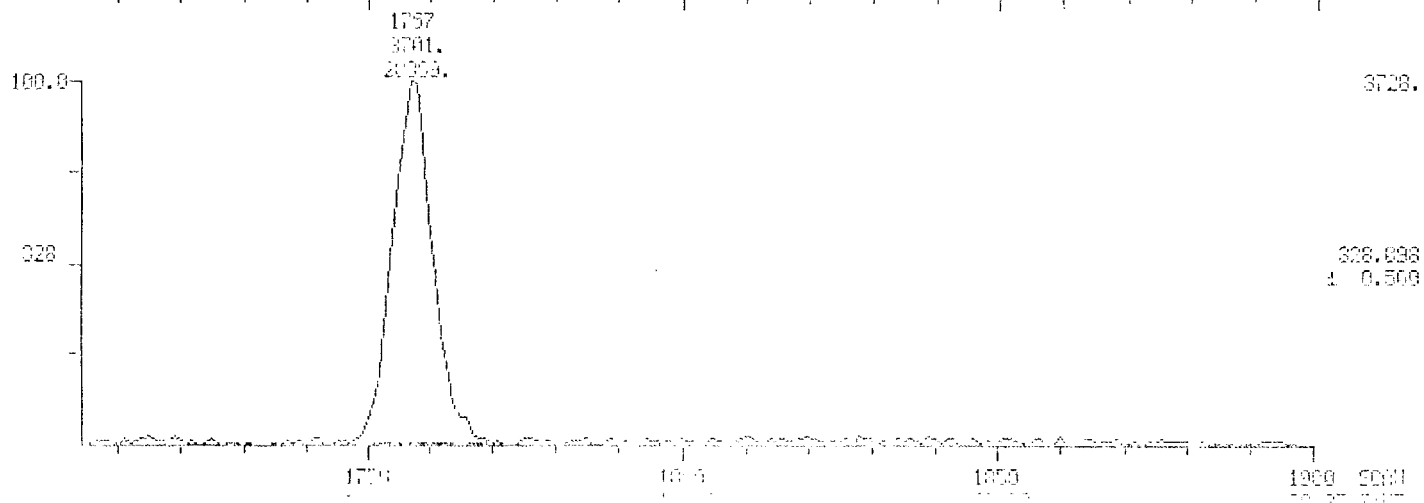
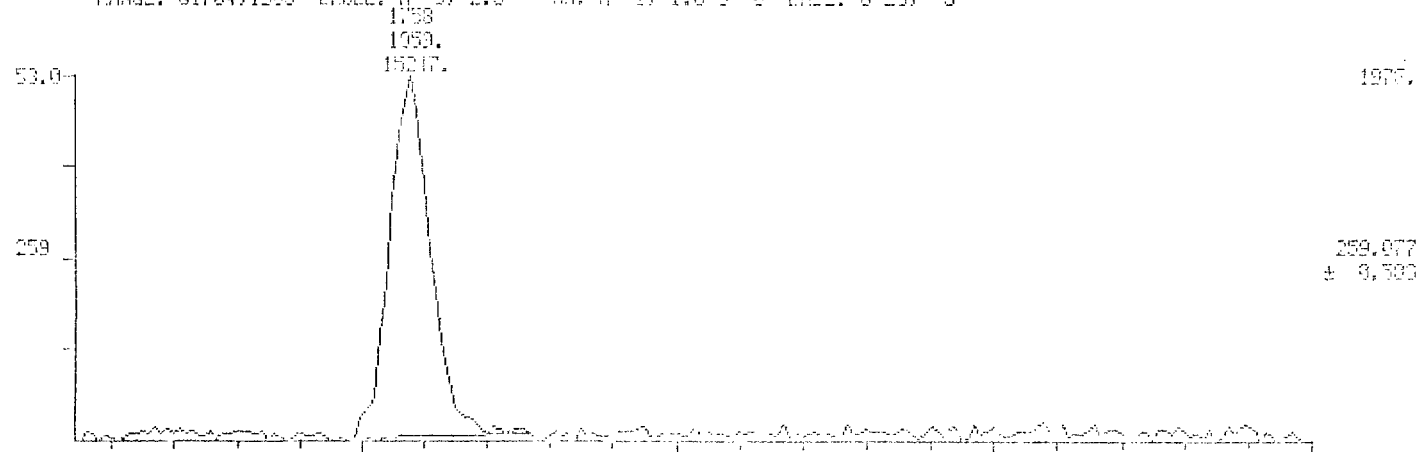
04-23-97 12:37:00

177110.D

SAMPLE: CALIBRATION SOLN II

COND.: 1UL/SP2331:100-200025/200-2100:101110

RANGE: 61704.1900 LABEL: H-5, 2.5 9.00: 1, 1.0 1.0 0.00: 0.20, 3



011413

HID MASS CHROMATOGRAMS

DATE: 07/20/00 01

SCANS 1704 TO 1900

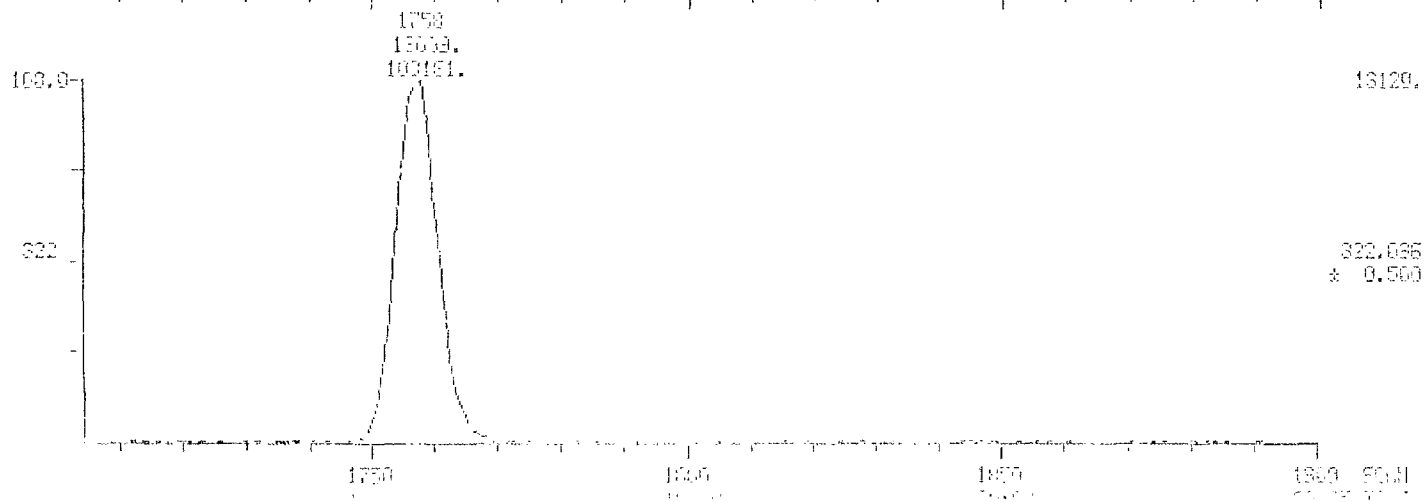
04/23/07 12:37:00

FILE: 00101217.D

SAMPLE: CALIBRATION SOLN II

COND.: 1UL/SF2331/100-200005-200-240214MM.D10

RANGE: 61704.1200 LABEL: II S: 2.5 PUFF: n 1, 1.0 J 0 D: 0.00, 3



DATA

HID MASS CHROMATOGRAMS

DATE: 04/23/87

TIME: 12:37:00

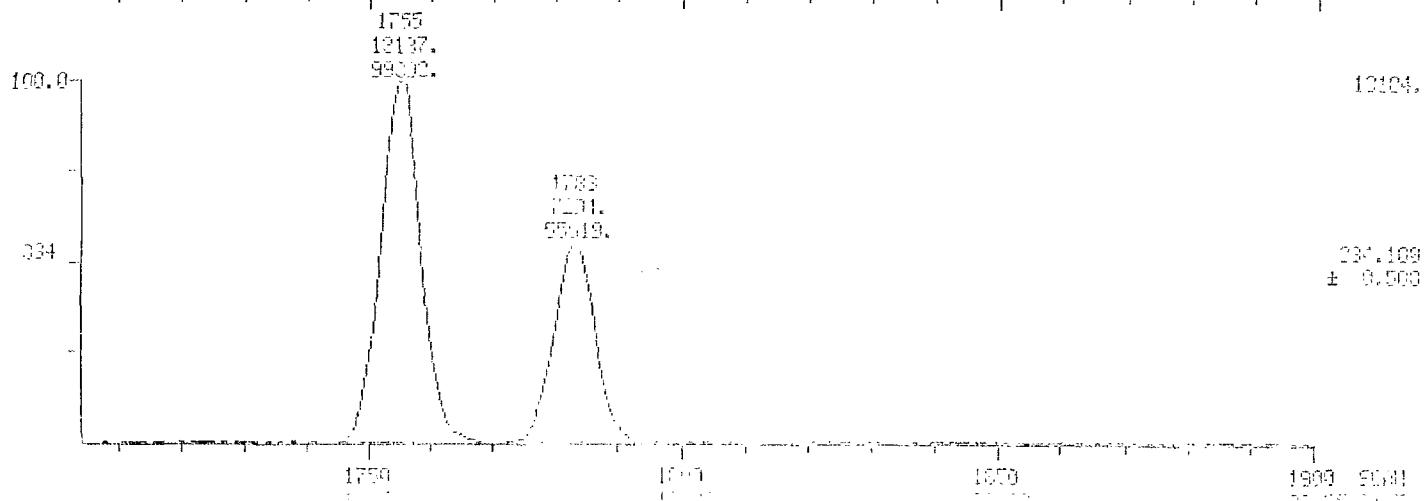
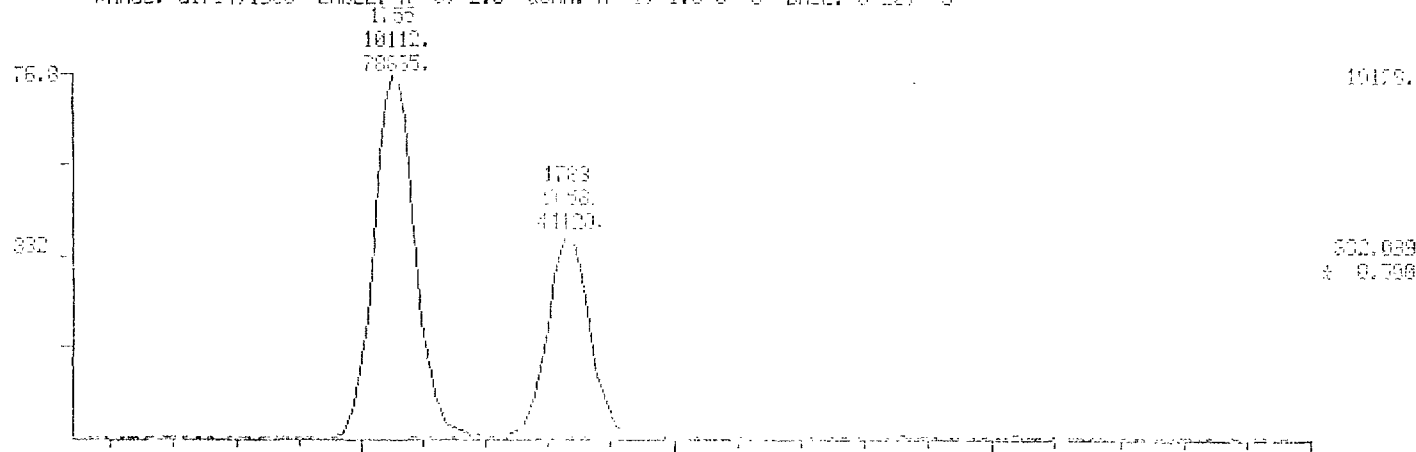
04/23/87 12:37:00

COND: CALIBRATION SOLN II

SAMPLE: CALIBRATION SOLN II

COND.: 1UL/SP2331/100-200025.000-24081-HOLD10

RANGE: 01704.1950 LABEL: H 5, 2.5 QUANT: 1, 1.0 J 0 G:SL: U 20, 3



0111416

HID MASS CHROMATOGRAMS

Date: 04/22/87

0000 1734 TO 1980

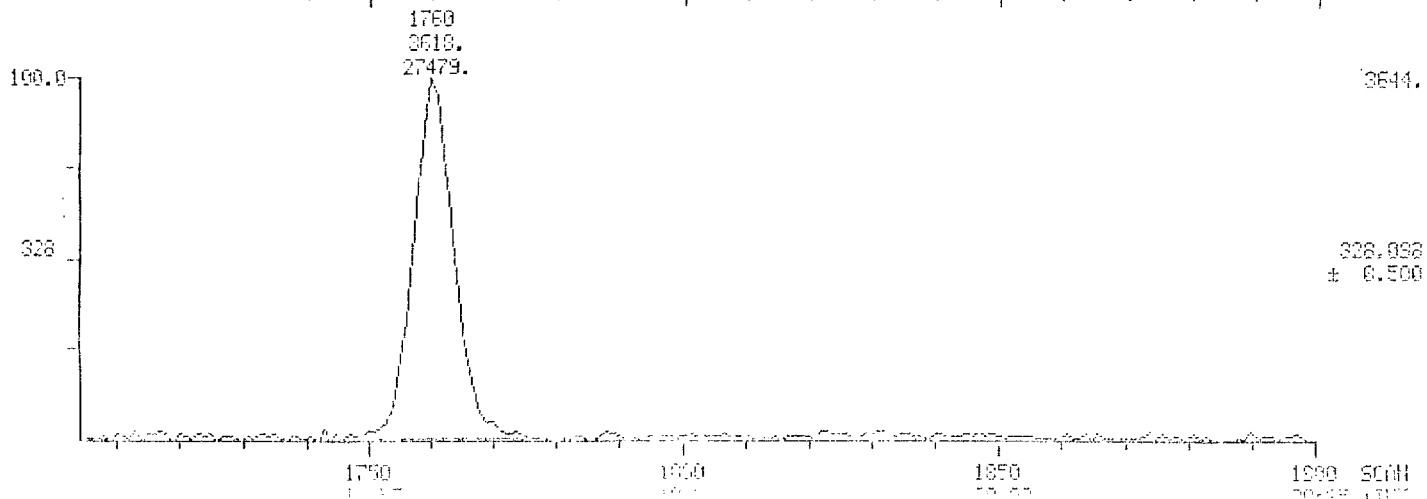
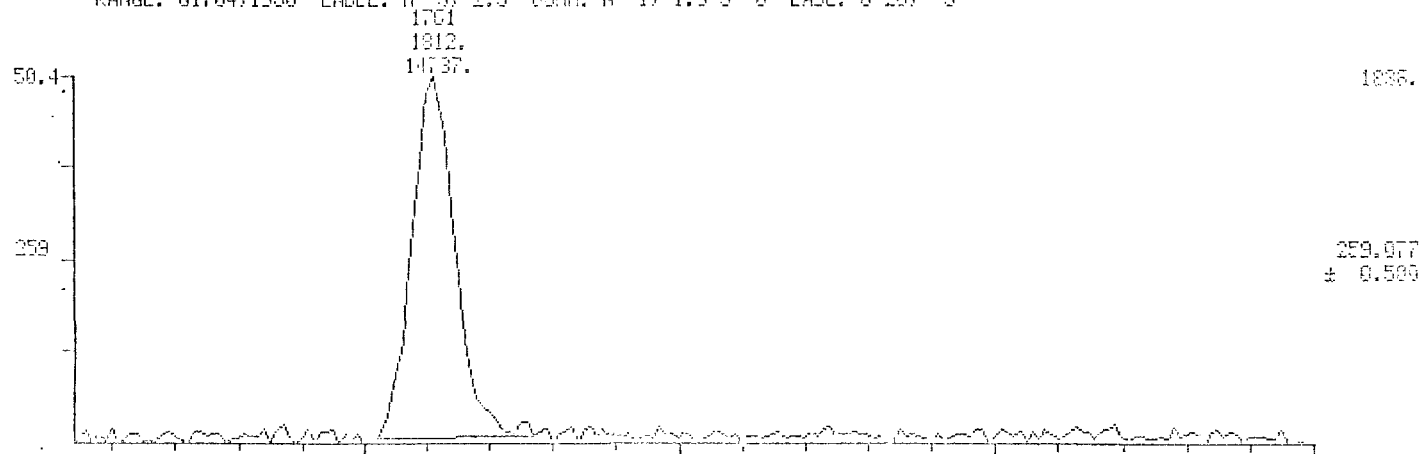
04/22/87 10:13:00

0000 CALIB:0207.D

SAMPLE: CALIBRATION SOLN II

CONDS.: 1UL/SP2331/100-200025/200-24004 HOLD10

RANGE: 01704.1980 LABEL: H 5, 2.5 OUM: A 1, 1.9 U 0 ENSE: U 20, 3



011417

MID MASS CHROMATOGRAMS

Date: 04/23/87

Scan: 1751 TO 1930

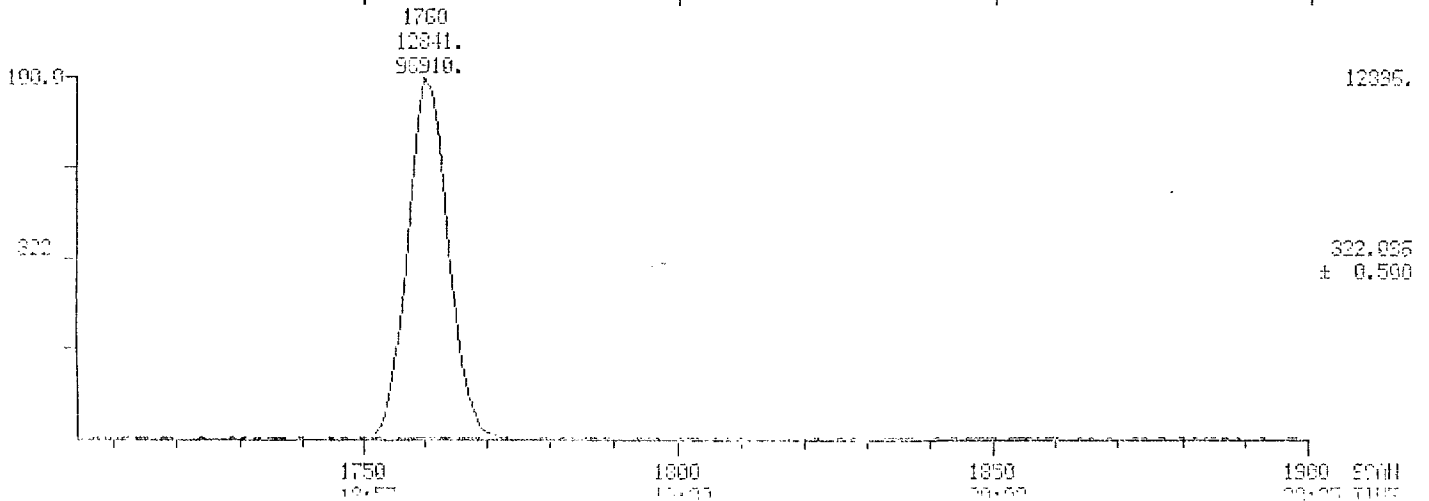
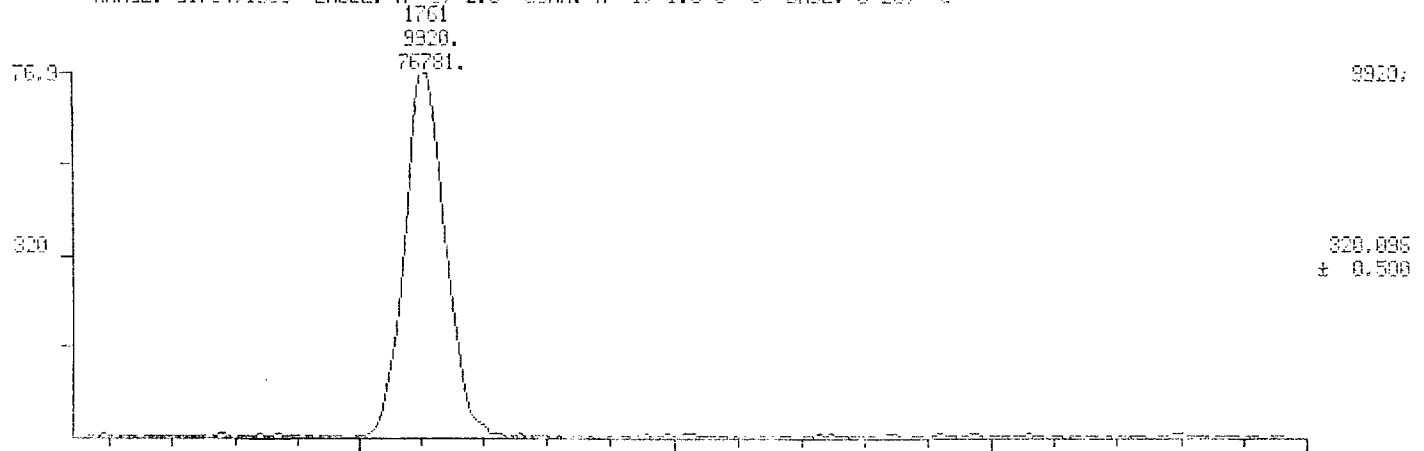
04/23/87 10:13:00

Cal: 01012307 55

SAMPLE: CALIBRATION SOLN II

CONDS.: 1UL/SP2331/100-200025/200-24004 HOLD10

RANGE: G1704,1900 LABEL: H-5, 2.5 CURVE: A 1, 1.0 U 0 BASE: U 20, 3



011118

MID MASS CHROMATOGRAMS

Date: 04/23/87 10:13:00

SCAN: 1751 TO 1900

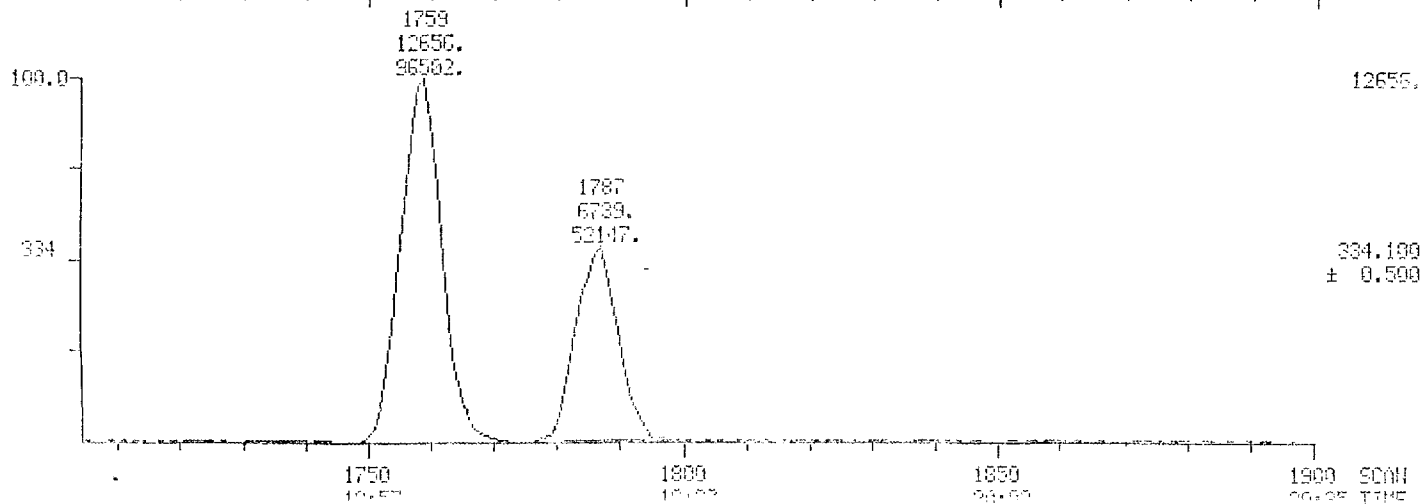
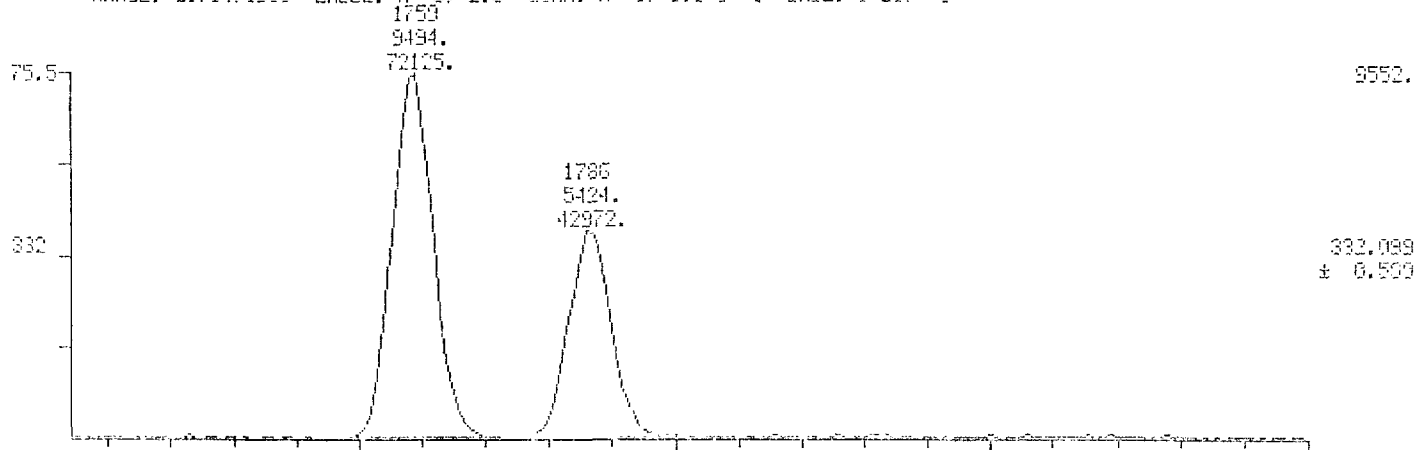
04/23/87 10:13:00

CH1: CALG10387 WS

SAMPLE: CALIBRATION SOLN II

CONDS.: 1UL/SP2331/100-206025/200-24004.HOLD10

RANGE: 61704.1900 LABEL: H 5, 2.5 GUNK: A 1, 1.0 U 0 BASE: U 30, 3



011419

NID RIC

04/23/87 13:05:00

SAMPLE: CALIBRATION SOLN III

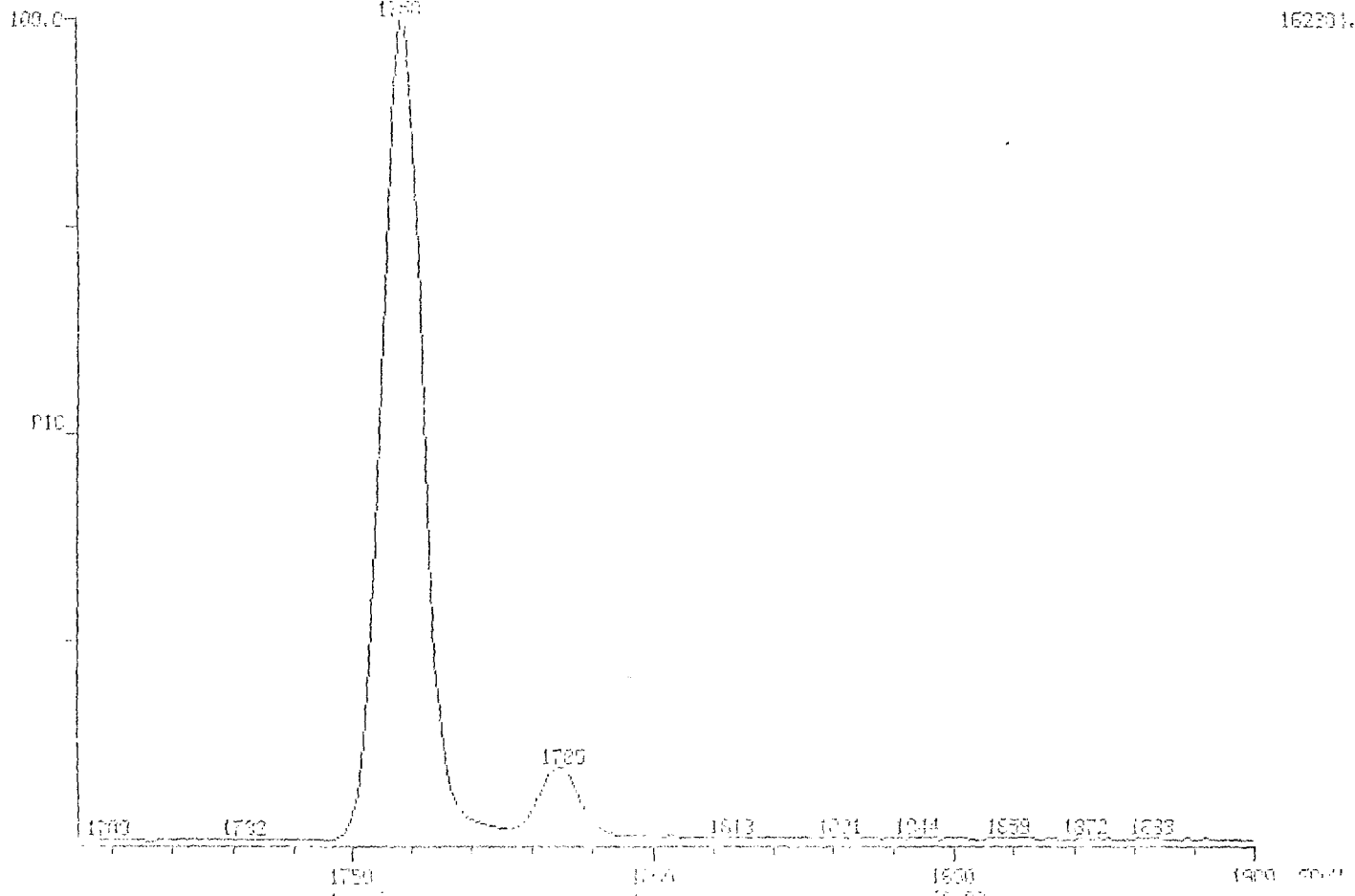
COND.S.: 1UL/SP2331/100-200025-200-24021/110LD10

RANGE: 01704.1900 LABEL: H 0 4.0 CUM: S 0 1.0 J 0 DICE: H 20 3

DATE: 11/01/87 01

TIME: 1711 TO 1900

FILE: 04001200 29



011420

HID MASS CHROMATOGRAMS

DATE: 11-01-87

TIME: 17:10:10.00

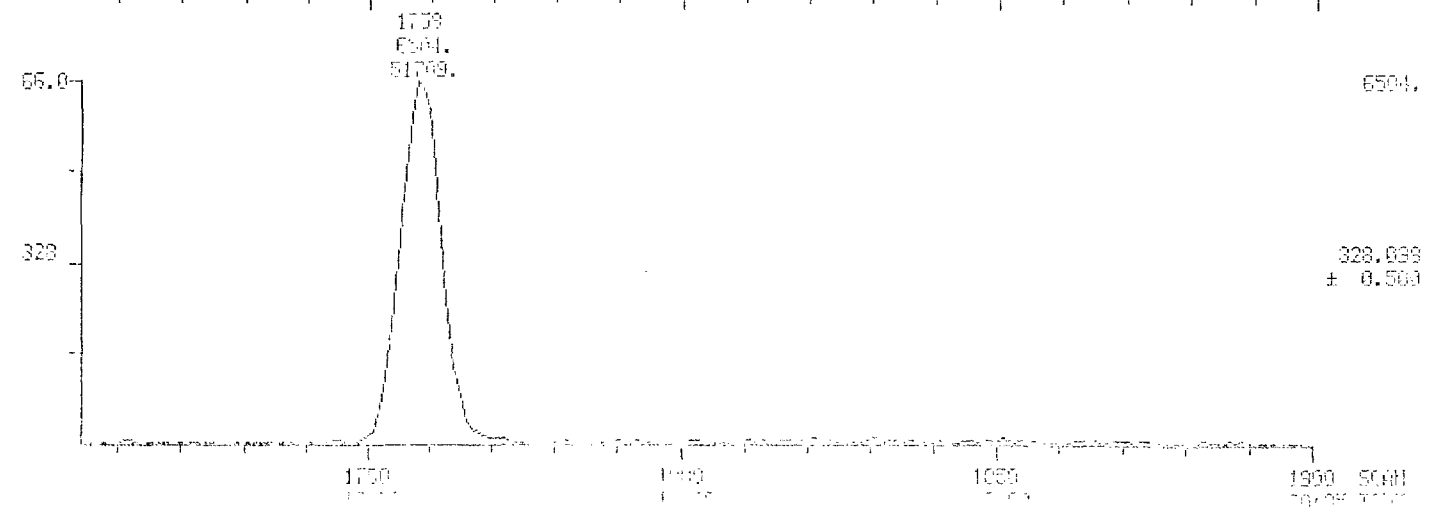
04/23/87 13:06:00

C.M.I: CALIBRATION 1.5

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/SP2331/100-200005/203-24031410LD10

RANGE: 01704,1900 LABEL: H 5, 2.5 QNH: 0 1, 1.0 U 0 INSE: 4 10, 3



1900 SCAN

011421

HTD MASS CHROMATOGRAM

DATE: 01/10/99

TIME: 07:17:11.0

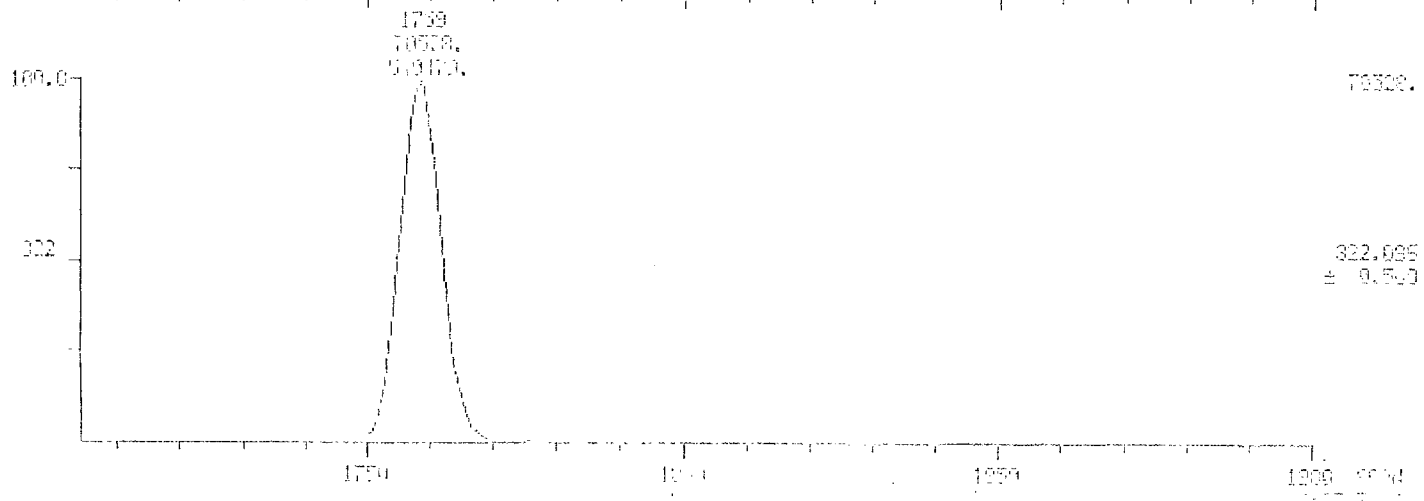
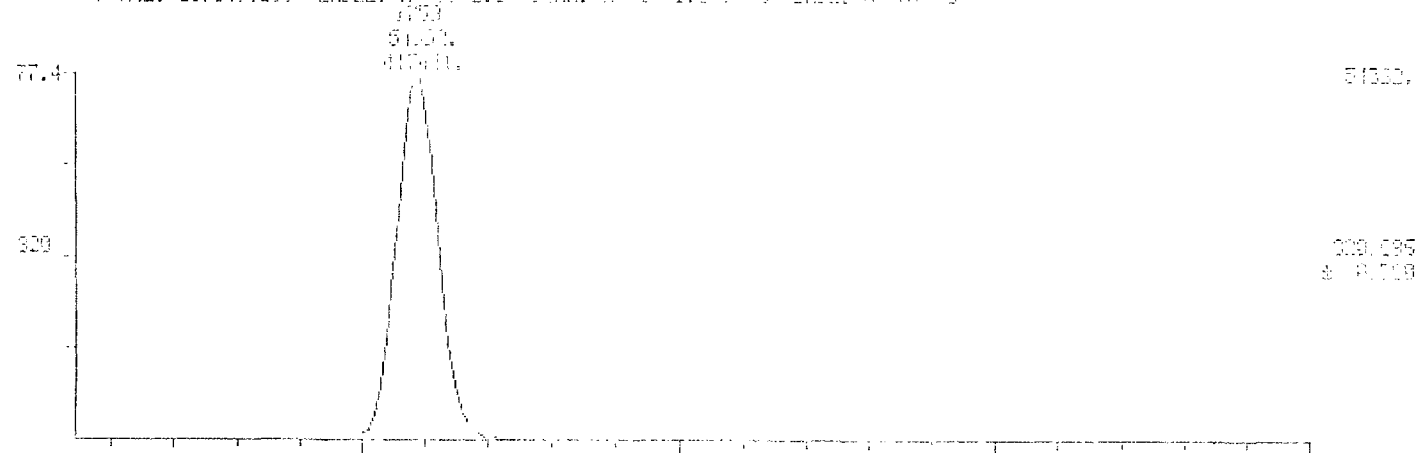
04/20/97 13:06:00

FILE: 011421.D

SAMPLE: CALIBRATION SOLN III

COND.: INJ SP0331-100-200005-200-21001-101.D10

RANGE: 61700-1000 LABEL: 0.5% L.S. COLUMN: 1-1.6.0.0 SIZE: 0.70.0



011422

HPLC ANALYSIS REPORT

DATE: 01/23/87

TIME: 13:05:03

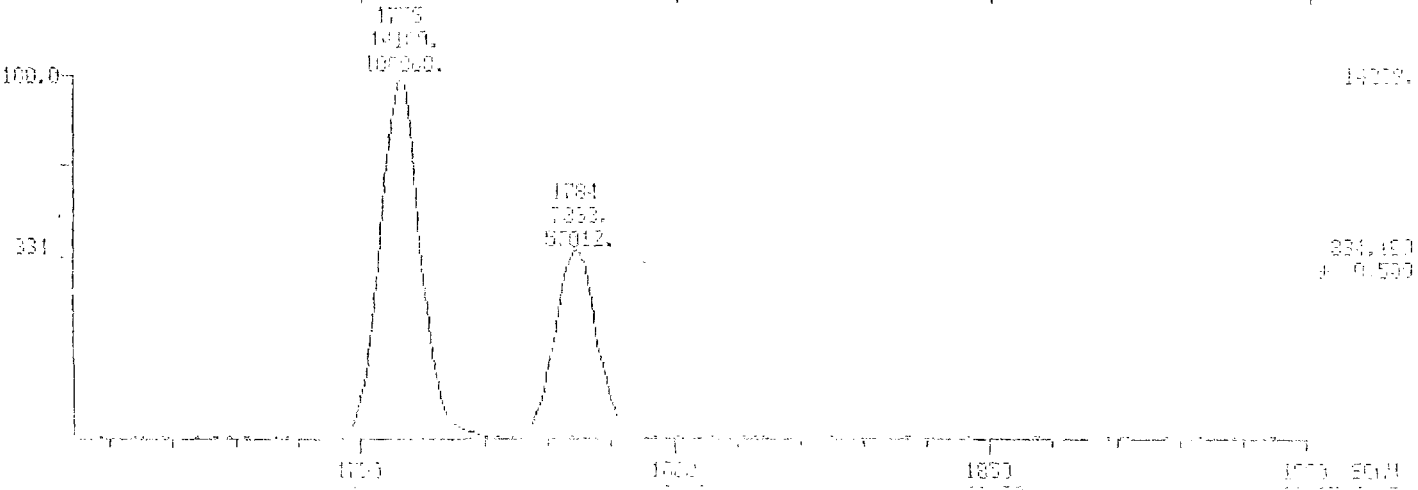
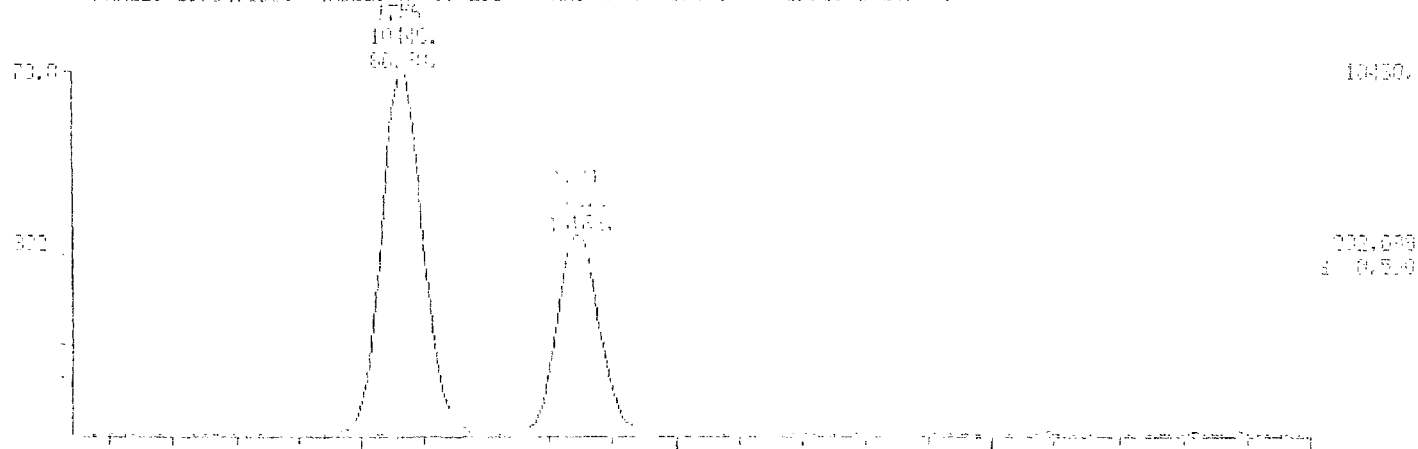
01/23/87 13:05:03

01/23/87 13:05:03

SAMPLE: CALIBRATION SOLN III

CONDS.: 10% 5F2331 100-200000 100-200000 100-200000

PRICE: 01701/1000 LABEL: 01 50 2.5 0.000 9 1.1 0.3 9 0.00 0.00 0



011423

MID RIC

DATE: 04/23/87

TIME: 13:25:00

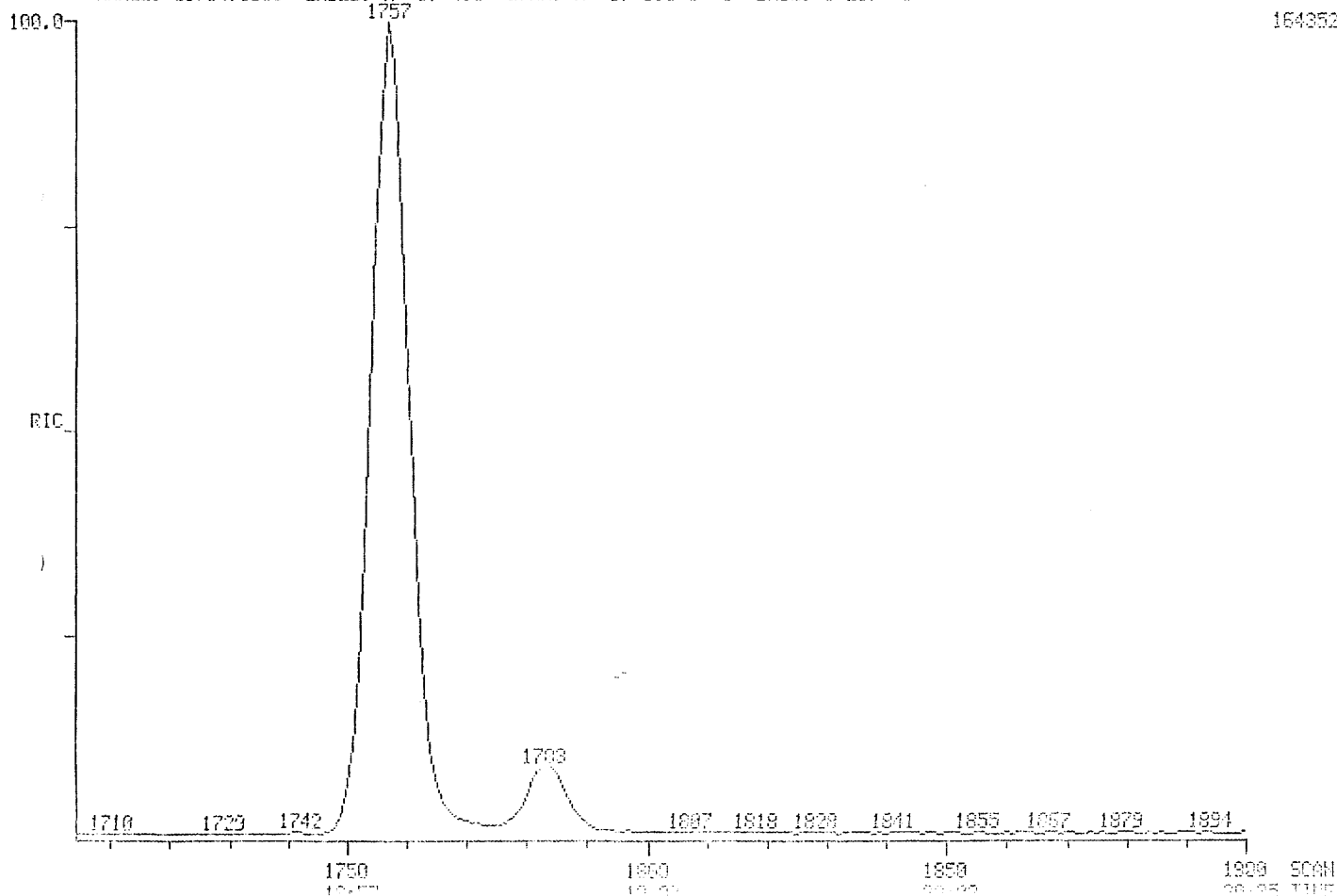
04/23/87 13:25:00

FILE: 210012007.D

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/SP2331/100-200025/200-24004/10LID10

RANGE: G1704.1900 LABEL: M 0, 4.0 QUAN: 0 0, 1.0 U 0 DATE: U 20, 3



011425

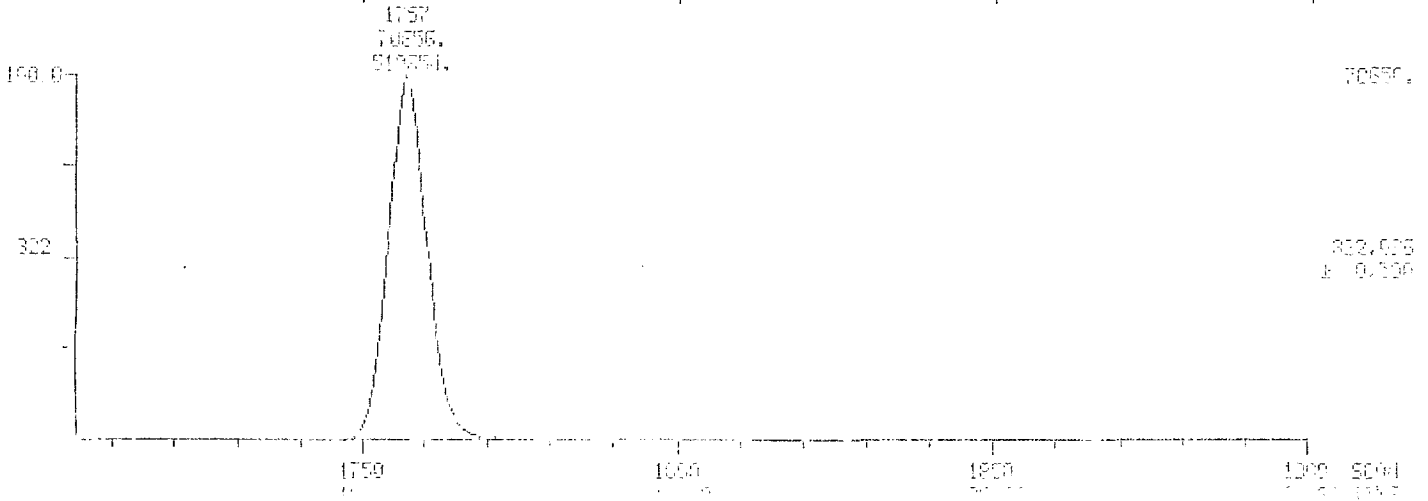
MID MASS CHROM.10.07.00
04/23/87 13:35:00

DATE: 04/23/87
TIME: 13:35:00

SAMPLE: CALIBRATION SOLN III

CONDS.: IUL/SP2331-100-200-21001 10.010

PARSE: 01701.1900 LABEL: H 5. 2.5 0.00: 0 1. 1.0 J 0 0.0: 0.07, 3



011426

MID 1165 CHROMATOGRAMS

DATE: 11/27/81

TIME: 10.70 AM

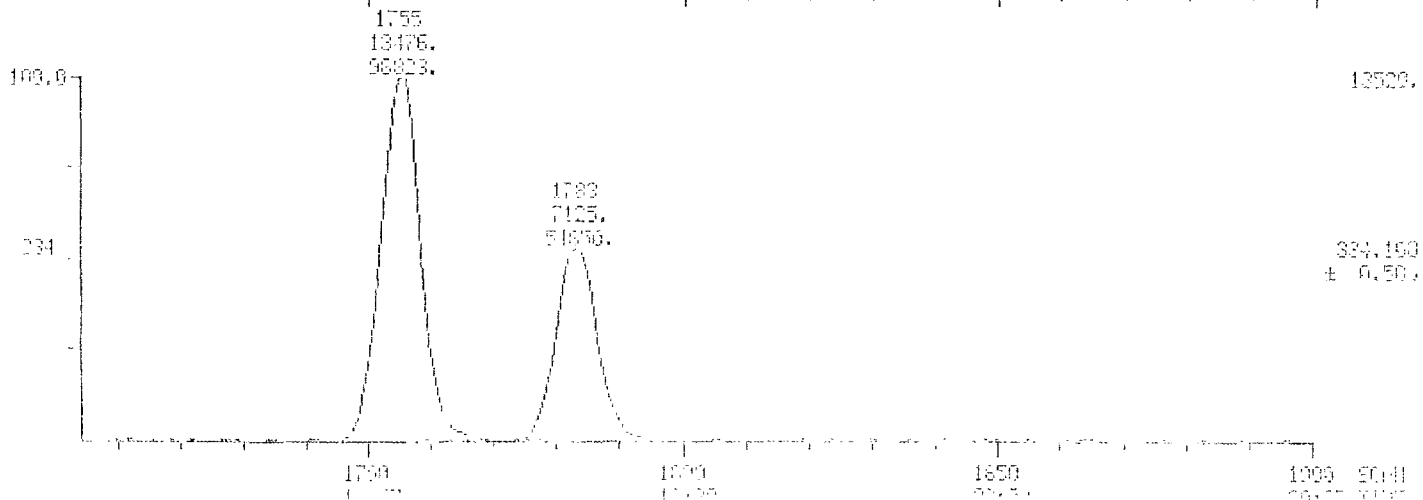
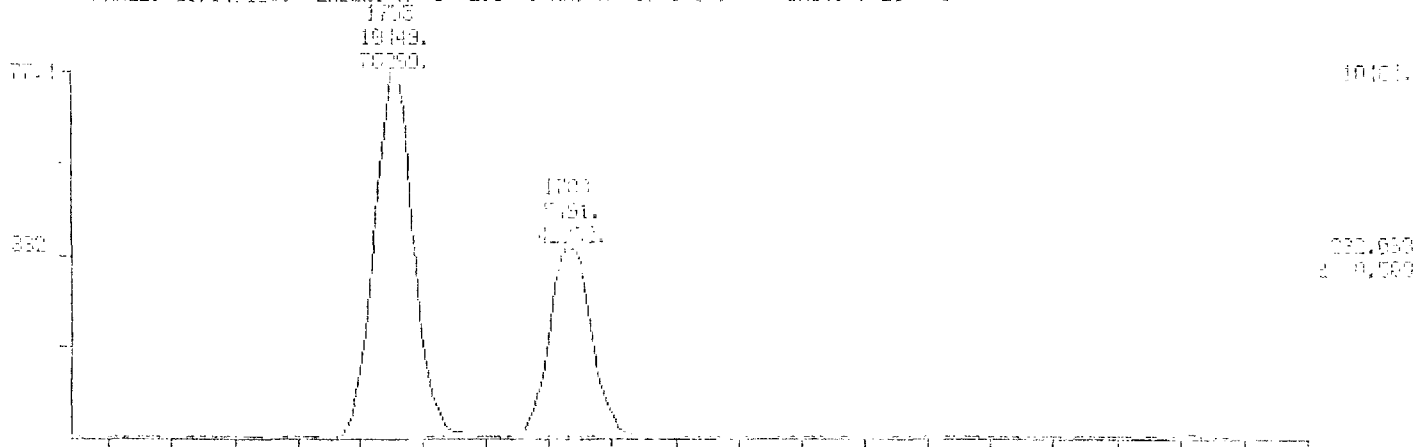
04/23/87 13:35:00

OPER: GAN10371.5

SAMPLE: CALIBRATION SOLUTION III

CONDG.: 1UL-SP2331-100-206825-200-24064 110.010

RANGE: 61704.1900 LABEL: N 5- 2.5 GUSH: A 1- 1.0 J 9 DATE: 0.00 3



011127

NID RIC

DATE: 04/23/87

TIME: 10:42:00

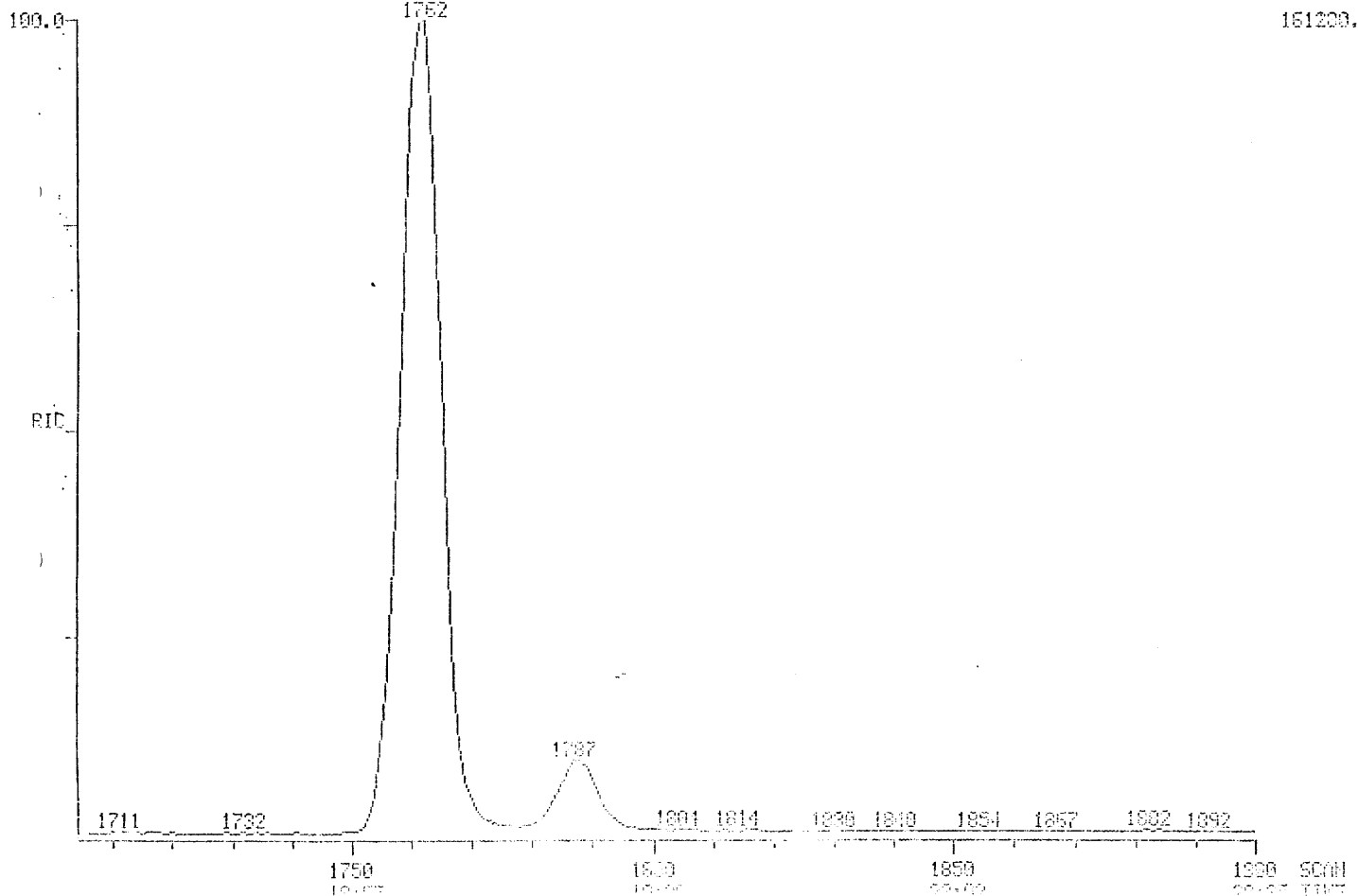
04/23/87 10:42:00

CALL: 011127

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: 61704.1900 LABEL: N 0, 4.0 QUANT: A 0, 1.0 J 0 BASE: U 20, 3



MID MASS CHROMATOGRAMS

DATE: 04/23/87 21

SCAN: 1704 TO 1900

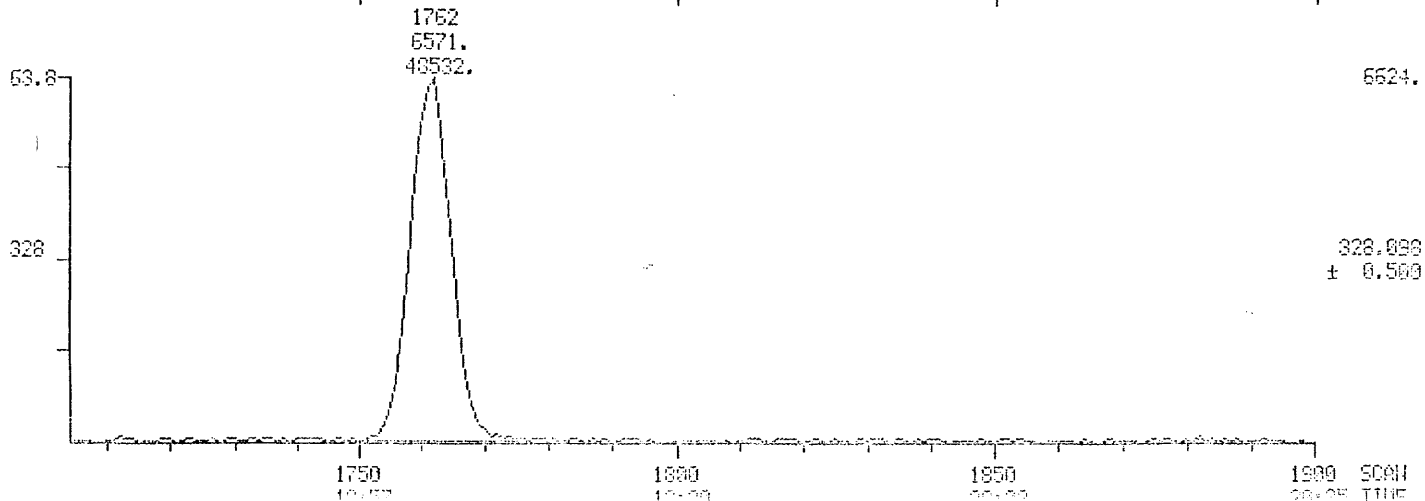
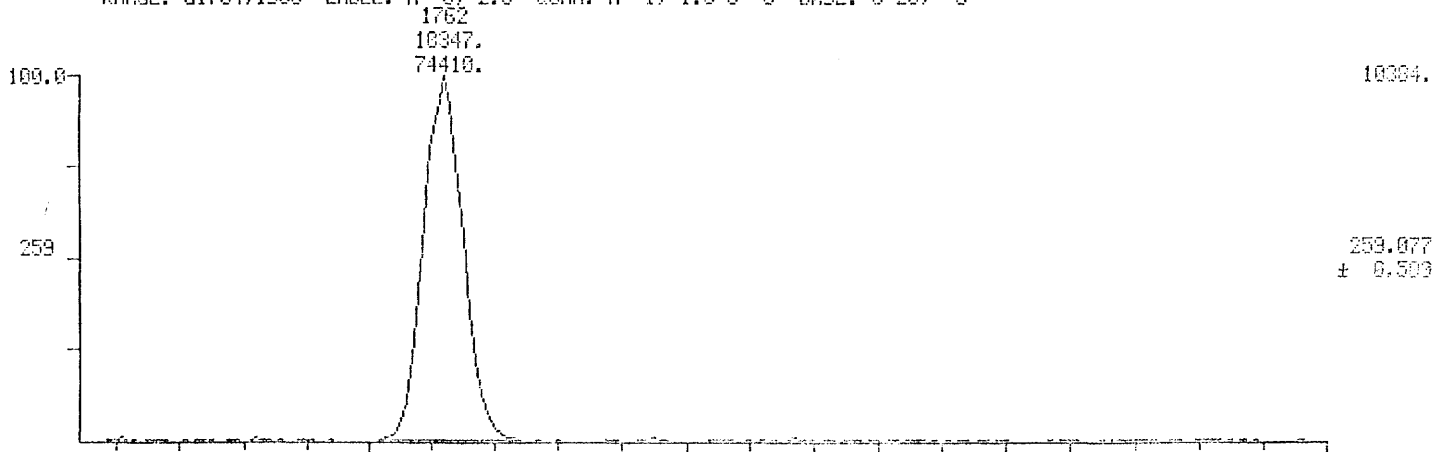
04/23/87 10:42:00

CALI: CAL001037 05

SAMPLE: CALIBRATION SOLN III

COND.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704,1900 LABEL: H 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1750
10:57

1800
11:00

1850
11:03

1900 SCAN
11:06 TIME

011429

MID MASS CHROMATOGRAMS

DATE: 01-10-81

TIME: 17:10:15.00

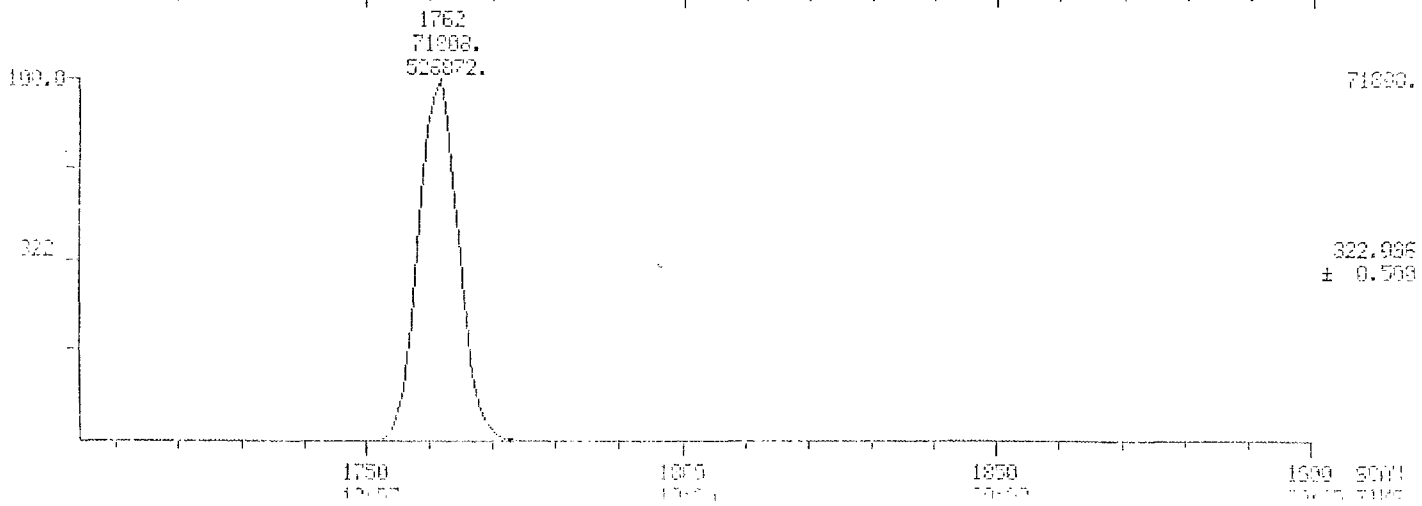
04/23/87 10:42:00

GLI: CLE312907 #5

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/SP2331/100-200#25 200-240#4/HOLD10

RANGE: 61704,1900 LABEL: H 5, 2.5 CURN: A 1, 1.0 U 0 BASE: U 20, 3



011430

MID MASS CHROMATOGRAMS

DATE: 04/23/97

SCANS 1700 TO 1900

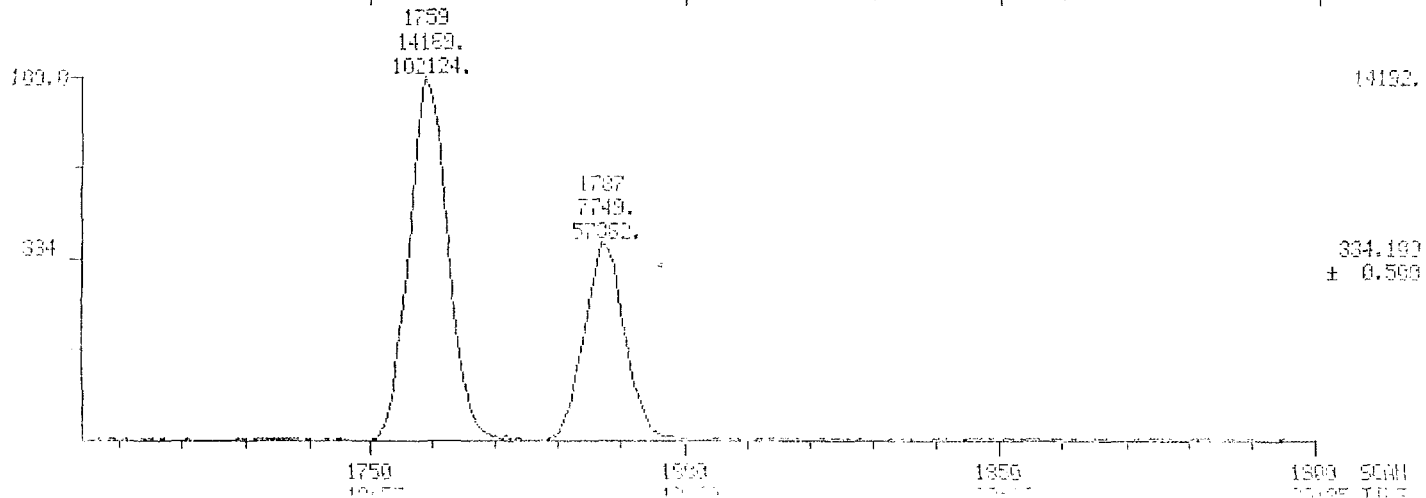
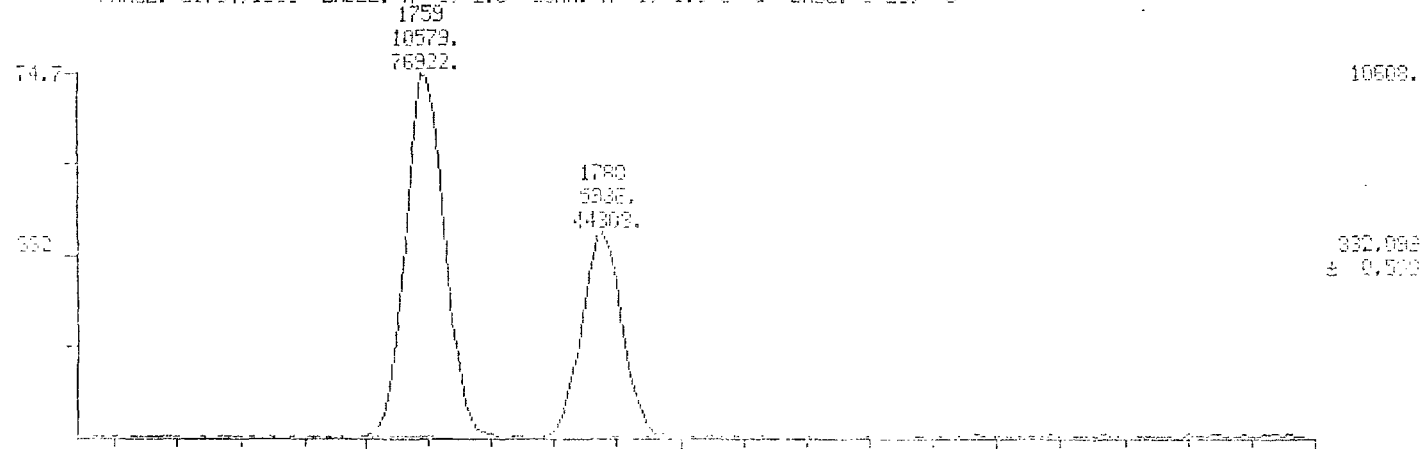
04/23/97 10:42:00

FILE: CALIB00097.D

SAMPLE: CALIBRATION SOLN III

COND5.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704.1900 LABEL: N 5, 2.5 QUANT: A 1, 1.0 J 0 BASE: U 20, 3



011131

HID RIC

DATA: 0702312.VI

SCANS: 1101 TO 1105

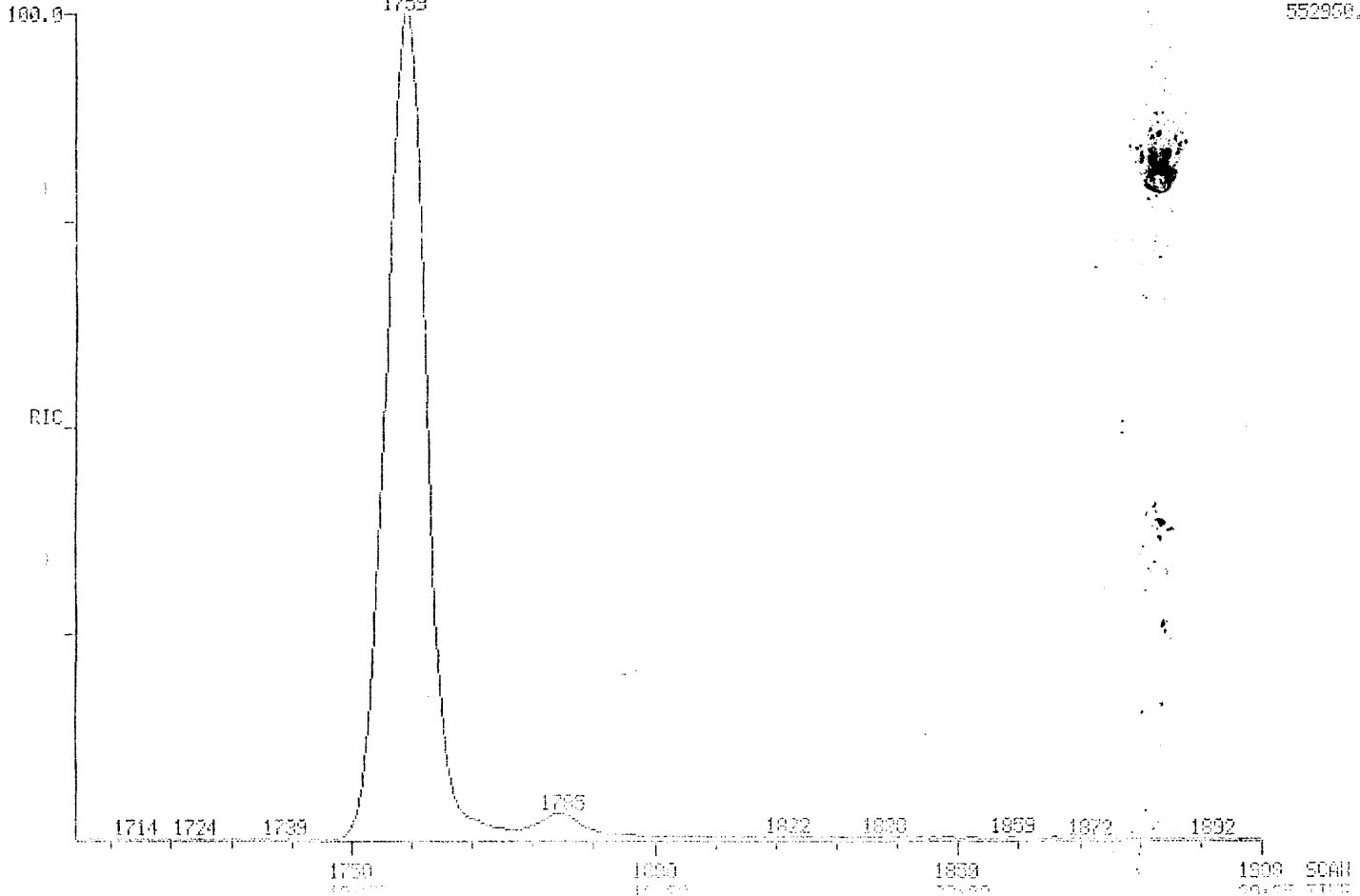
04/23/87 14:03:00

FILE: 04120097.D

SAMPLE: CALIBRATION SOLN IV

COND5.: 1UL/SP2331/100-2000025/200-24001/HID.D10

RANGE: 61704.1900 LABEL: H 0, 4.0 SUMP: 0 0, 1.0 J 0 BASE: U 20, 3



552950.

1714 1724 1739 1750 1759 1766 1776 1822 1830 1839 1872 1892

1750 1800 1900 SCAN

111432

HID MASS CHROMATOGRAMS

DATE: 04/23/97

TIME: 14:03:09

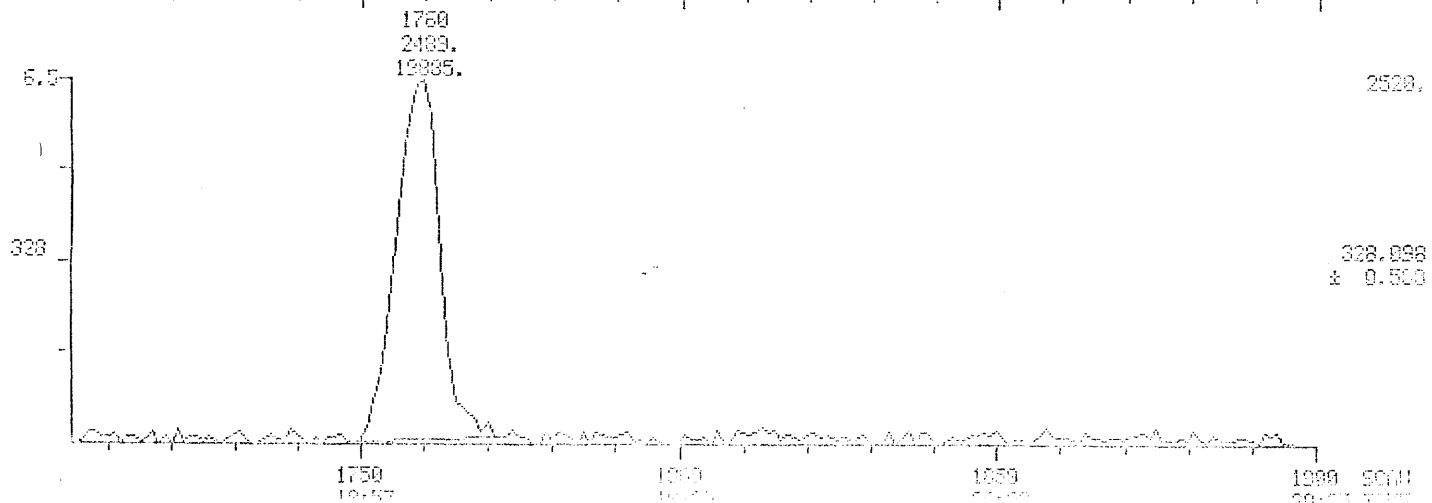
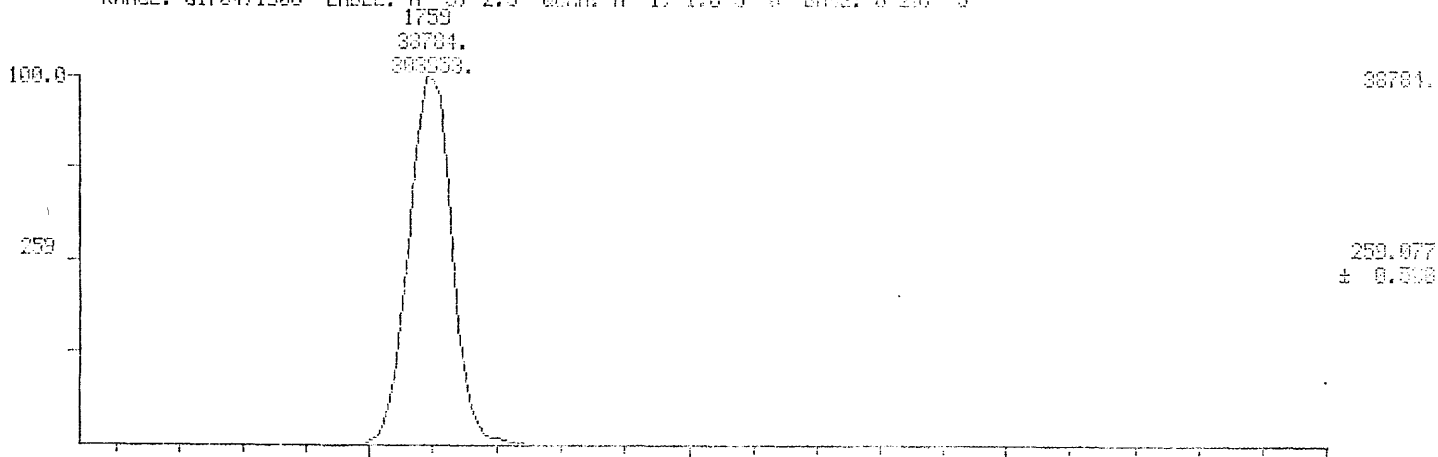
04/23/97 14:03:09

COND: 100-200025/200-24634/HOLD10

SAMPLE: CALIBRATION SOLN IV

COND5.: 1UL/SP2331/100-200025/200-24634/HOLD10

RANGE: 01704.1900 LABEL: H 5, 2.5 QUANT: A 1, 1.0 U 0 BASE: U 20, 3



011433

HID MASS CHROMATOGRAMS

DATE: 04/23/87

TIME: 14:03:58

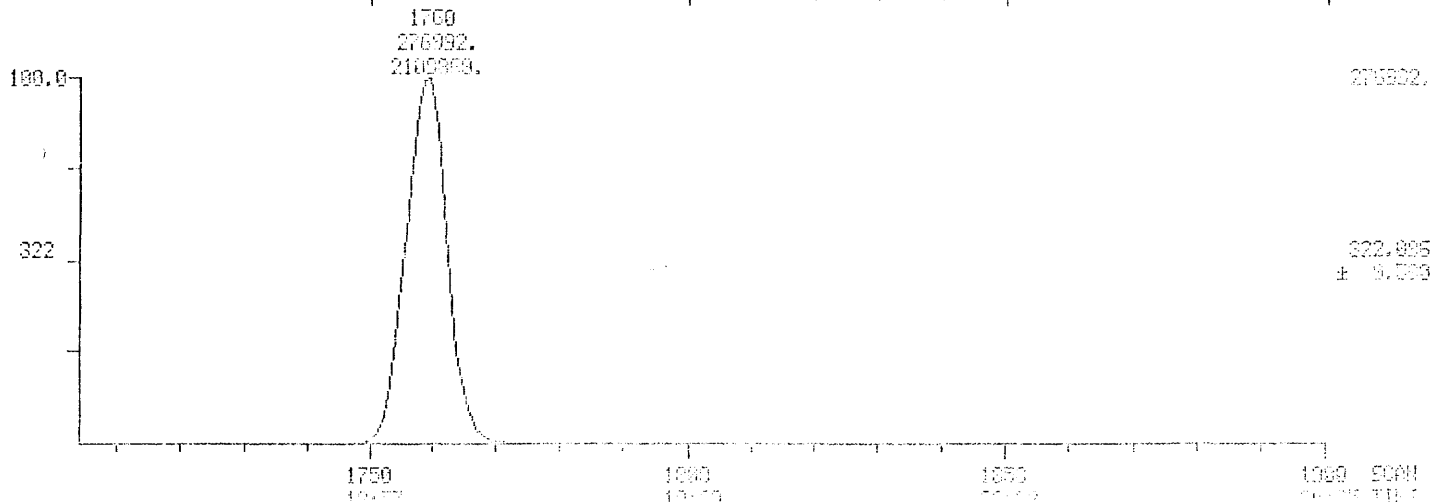
04/23/87 14:03:58

0.700 100.00000000

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200025/250-2400/100010

RANGE: 01704.1000 LABEL: H 5. 2.5 CONN: A 1. 1.0 U 0 DATE: U 20. 0



011434

HID MASS CHROMATOGRAM

1. 11. 072012 01

DATE: 11. 11. 2010

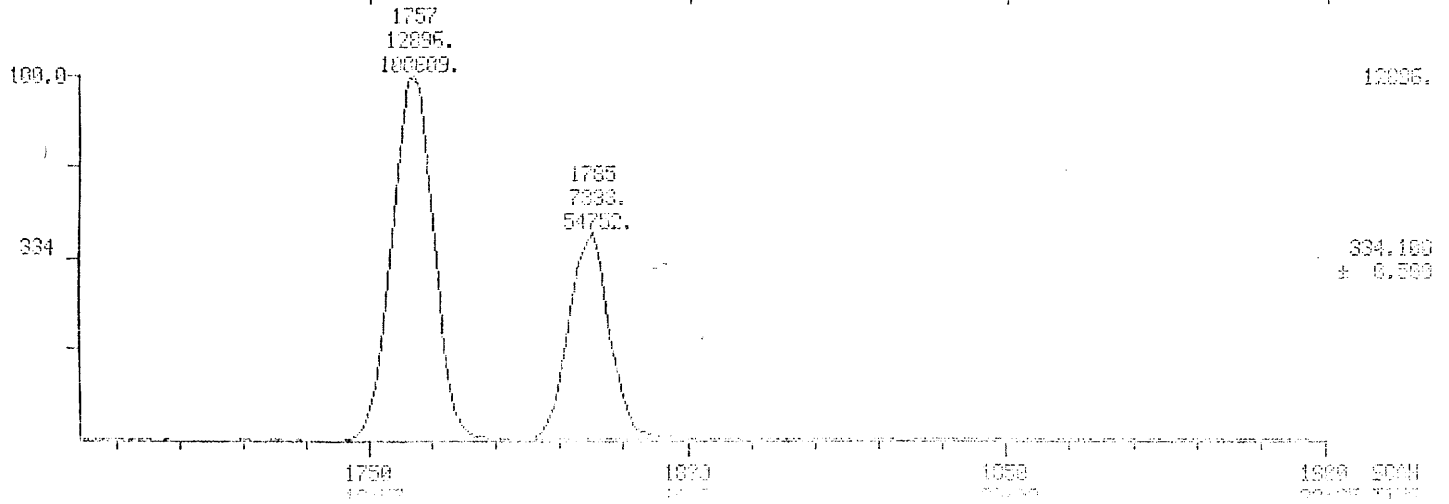
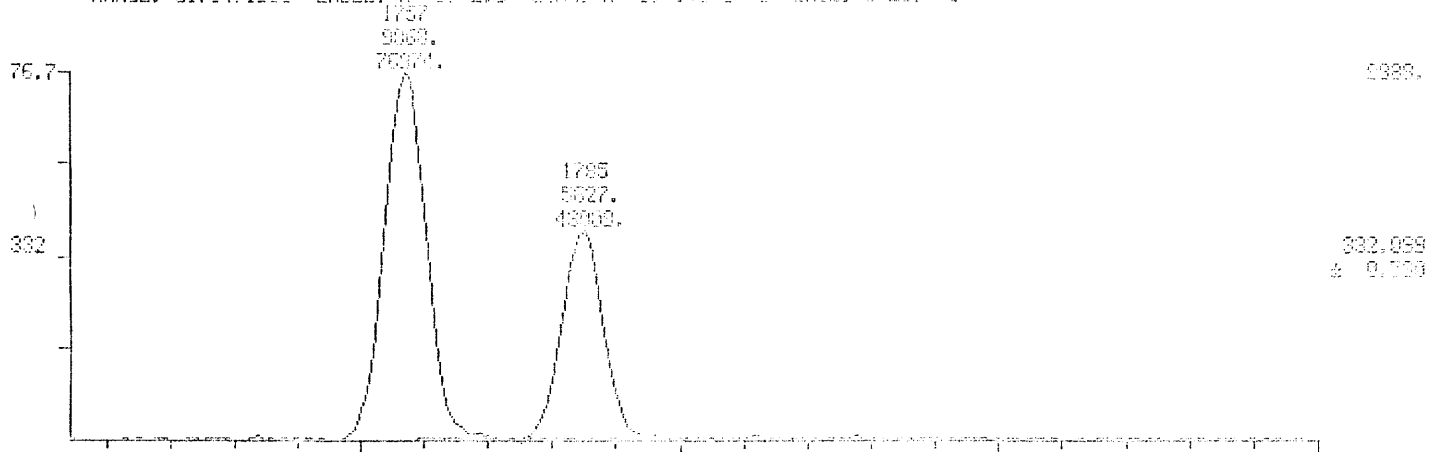
04/23/87 14:03:09

SOL3: CUL312037 05

SAMPLE: CALIBRATION SOLN 10

CONDS.: 1UL/SP2331/180-200035/200-21201/103.013

RANGE: G1704.1900 LABEL: H 5, 2.5 CURVE A 1, 1.0 J 0 DATE: 11.20. 3



011435

HID RIC

04/23/87 14:02:00

SAMPLE: CALIBRATION SOLN IV

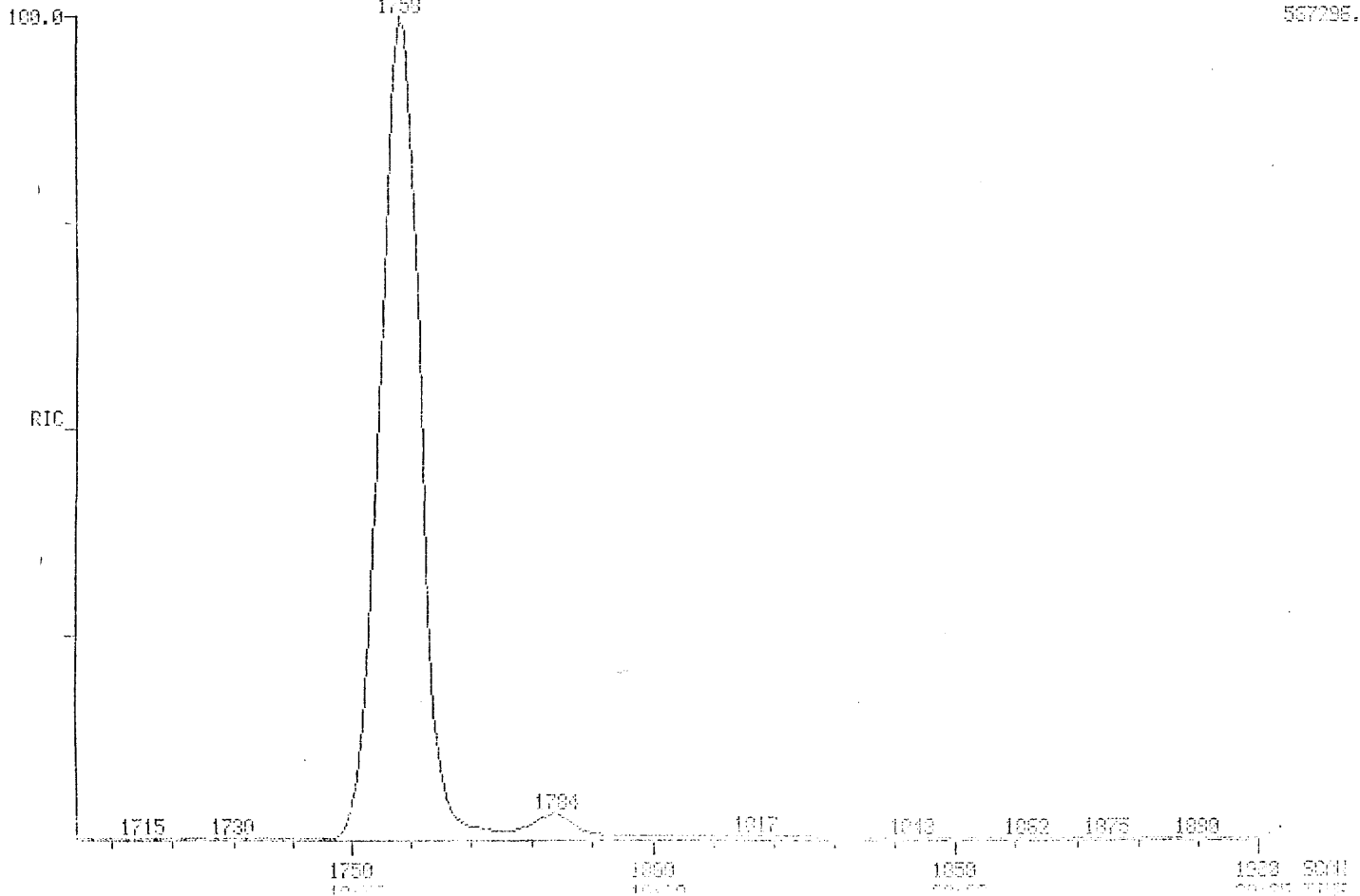
CONDS.: 1UL/SP2331/100-200015/200-2400/400 D10

RANGE: 61794.1500 LABEL: 0, 4.0 0.00: 0, 0, 1.0 0 0 BASE: 0.00, 0

DATE: 04/23/87

TIME: 14:02:00

SCN: 1750 TO 1800



507296

SCN: 1750 TO 1800

011436

MID MASS CHROMATOGRAMS

DATE: 07/29/87 01

TIME: 17:04 TO 19:00

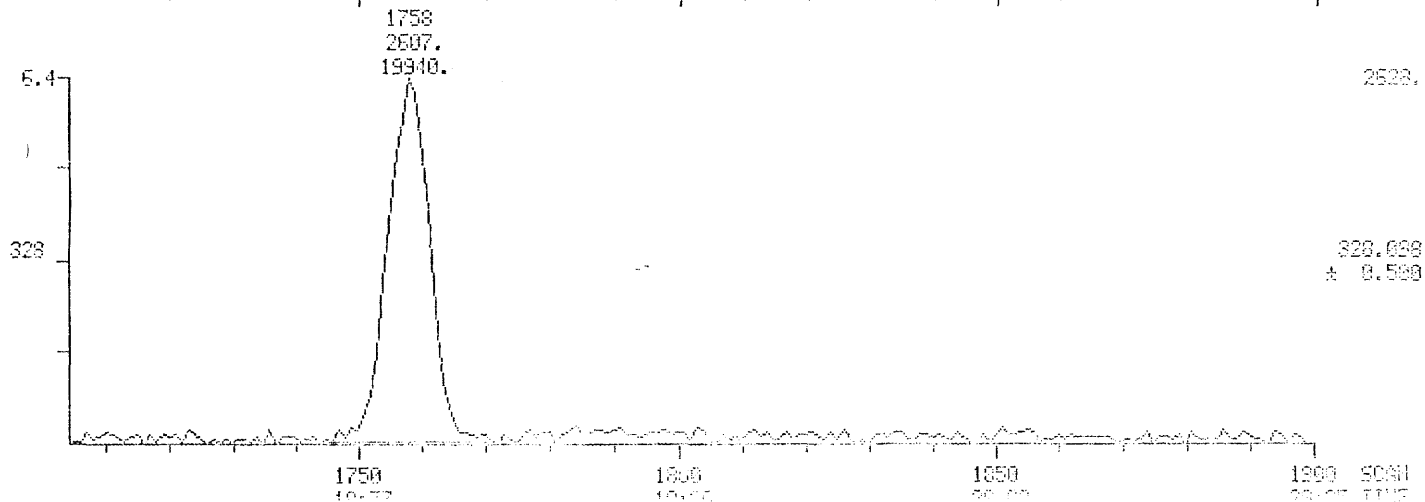
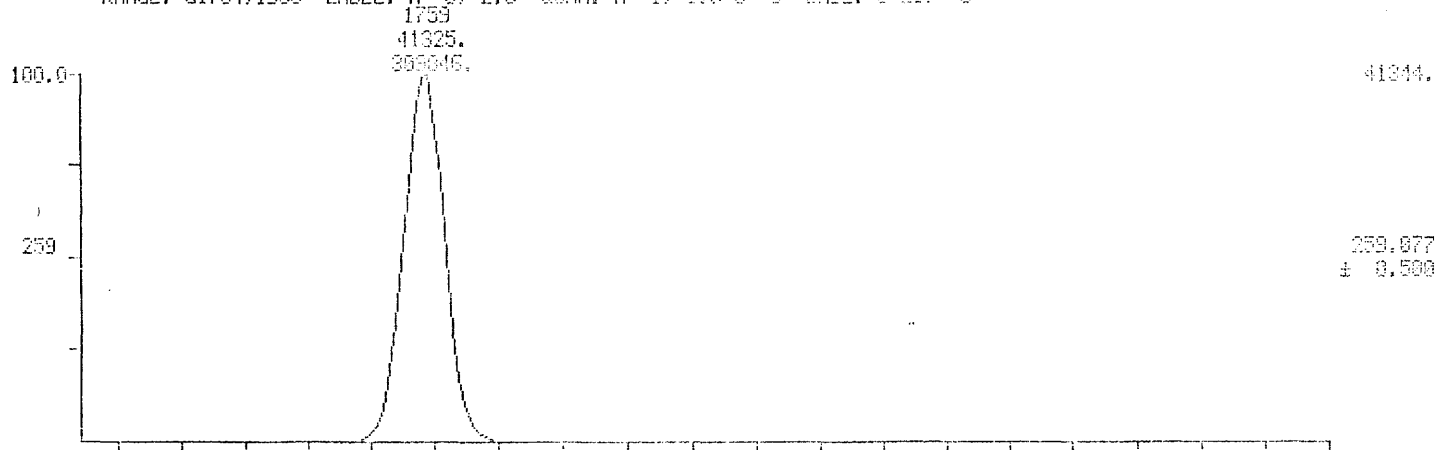
94/23/87 14:32:00

COND: 07/29/87 03

SAMPLE: CALIBRATION SOLN IV

CONDS.: IUL/SP2331/100-200025/200-24004/10LB19

RANGE: G1701:1900 LABEL: H 5, 2.5 GWIN: A 1, 1.0 J 9 WAGE: U 20, 0



011437

HID MASS CHROMATOGRAM

DATE: 07/03/87

TIME: 1:01:03.00

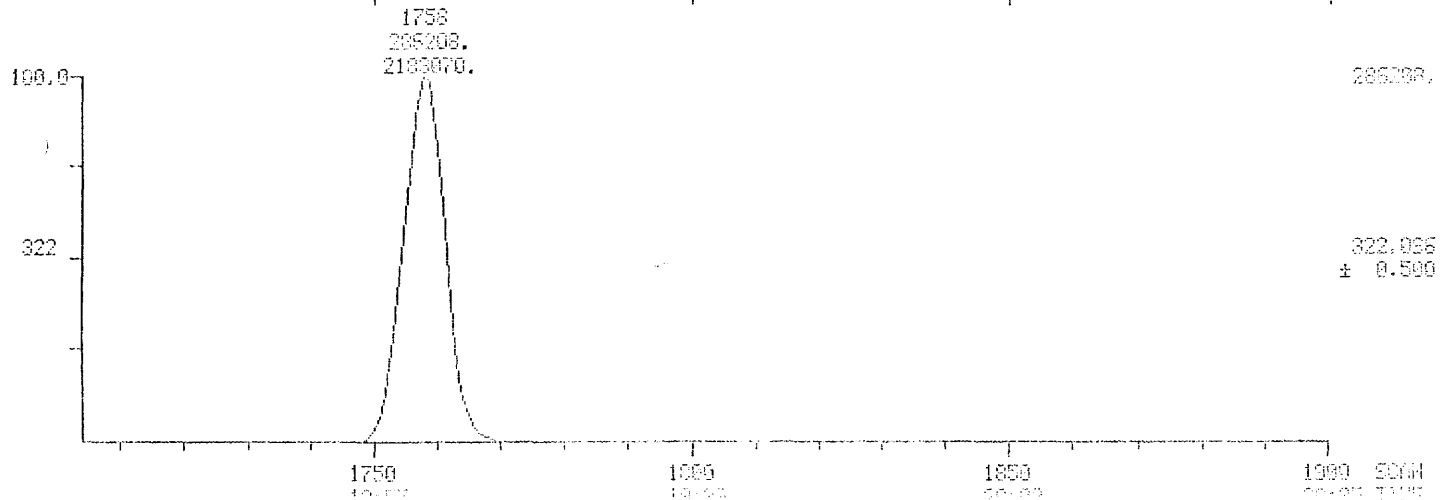
04/23/87 14:32:00

FILE: CALIBRATION

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200005/200-200004/NOVD10

RANGE: 01704.1960 LABEL: U 5, 2.5 GUSH: 0 1, 1.0 1 3 BASE: U 00, 3



011438

HTD MASS CHROMATOGRAMS

FILE: 011438.D

DATE: 10/17/00

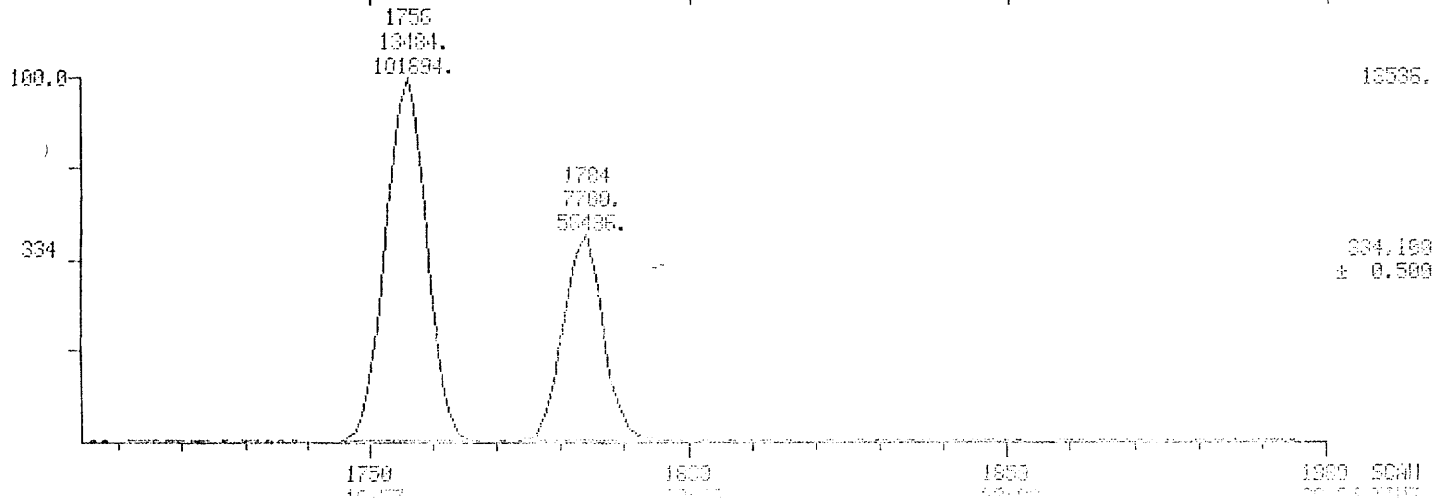
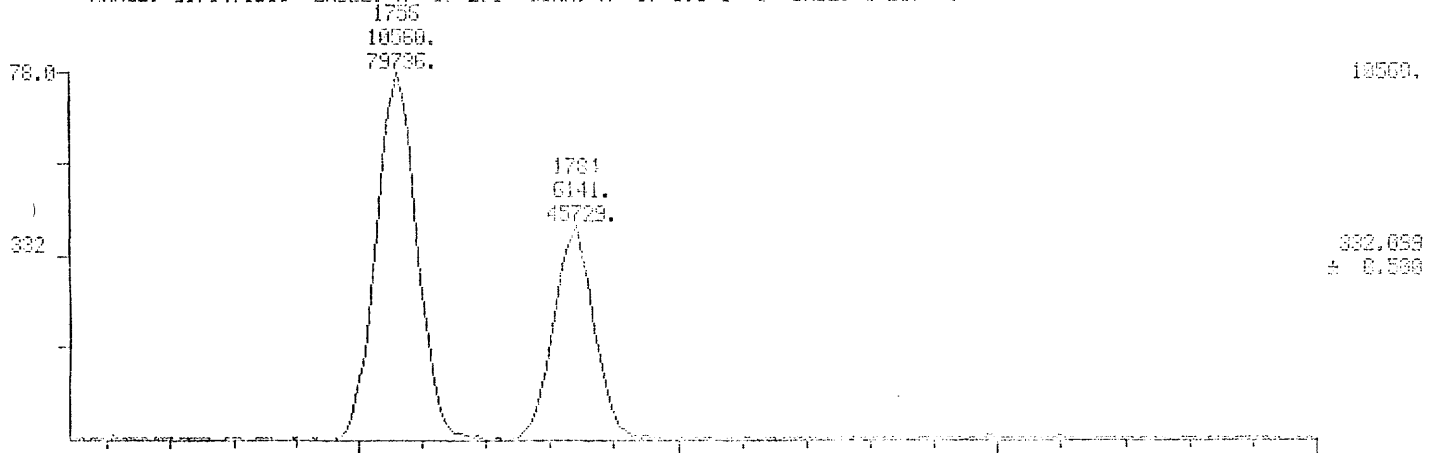
04/23/97 14:32:00

CELL: 011438.D

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200025/200-24001/ANL.DIG

RANGE: G1704.1900 LABEL: H 5, 2.5 CURVE: A 1, 1.0 U 0 CASE: U 20, 3



011439

MID RIC

DATE: APR 10 81

CONC: 1704 TO 1200

04/23/87 9:43:00

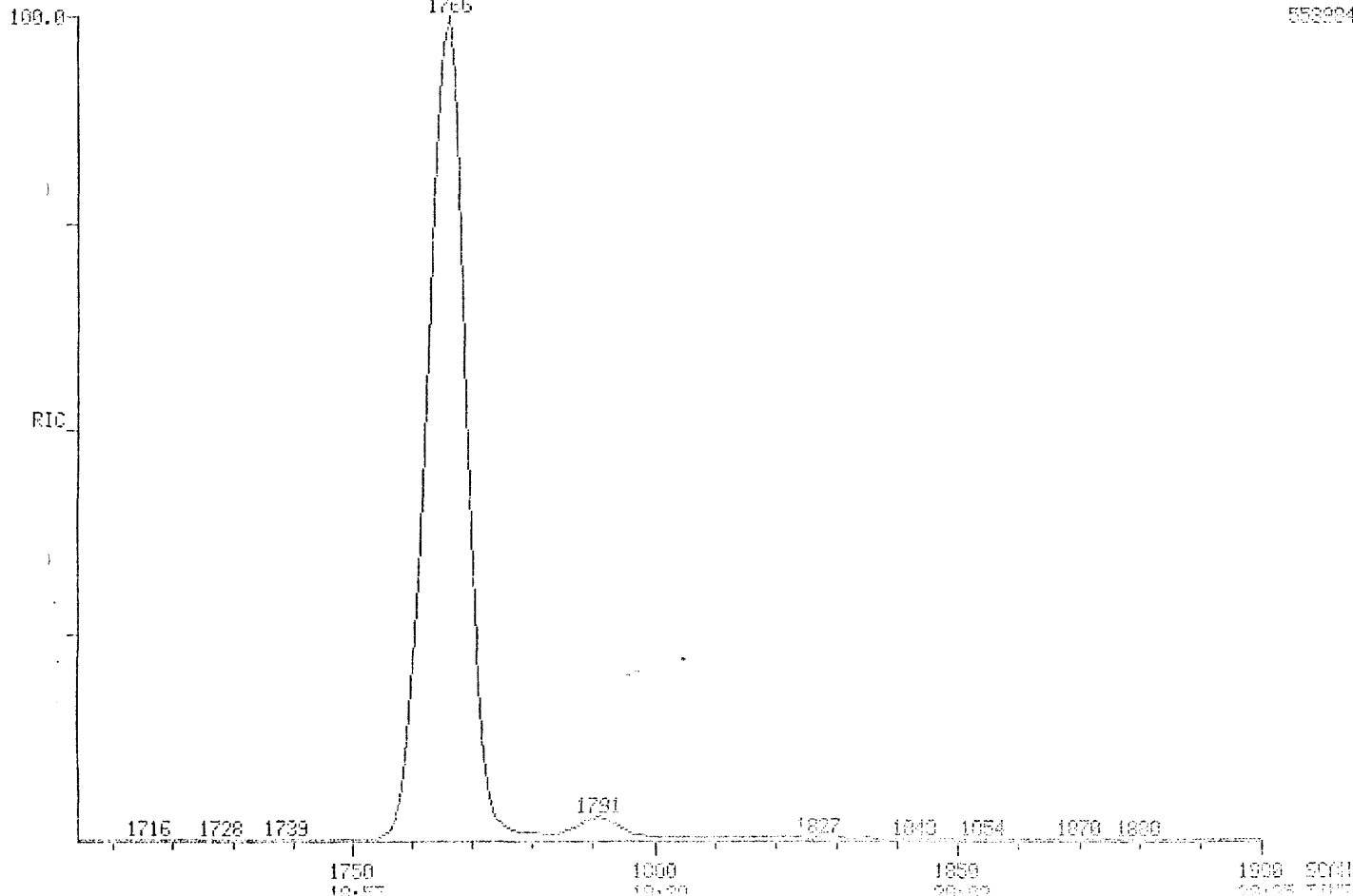
CALI: CALIBRATION 05

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704.1300 LABEL: H 0.4.0 QUAN: A 0.1.0 J 0 BASS: U 20. 3

552904.



011440

HID MASS CHROMATOGRAMS

DATE: 04/23/87

TIME: 09:43:00

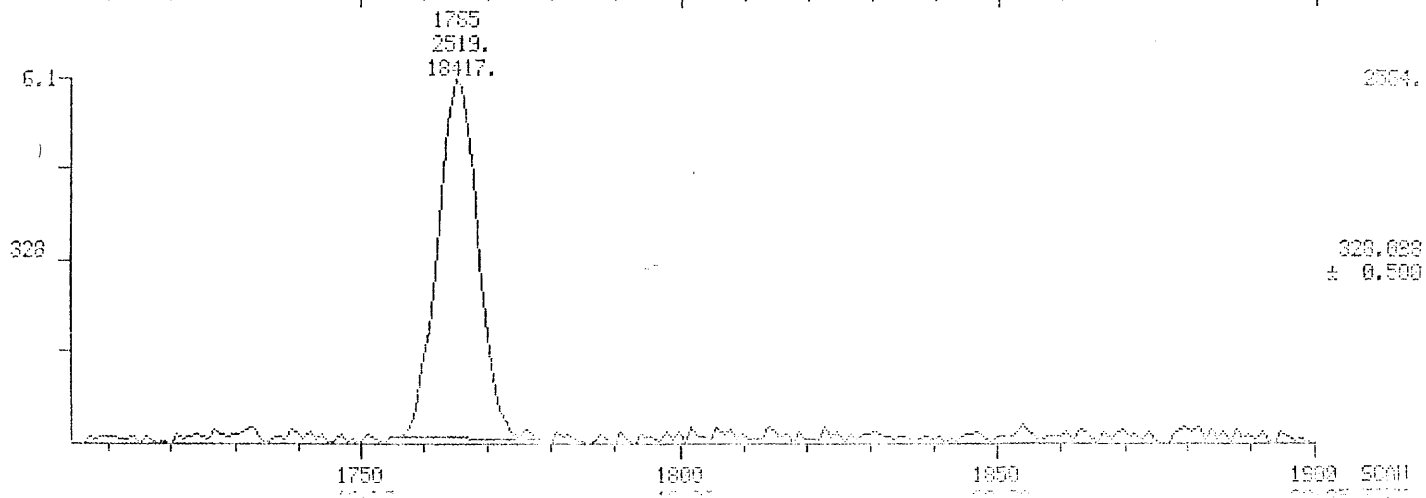
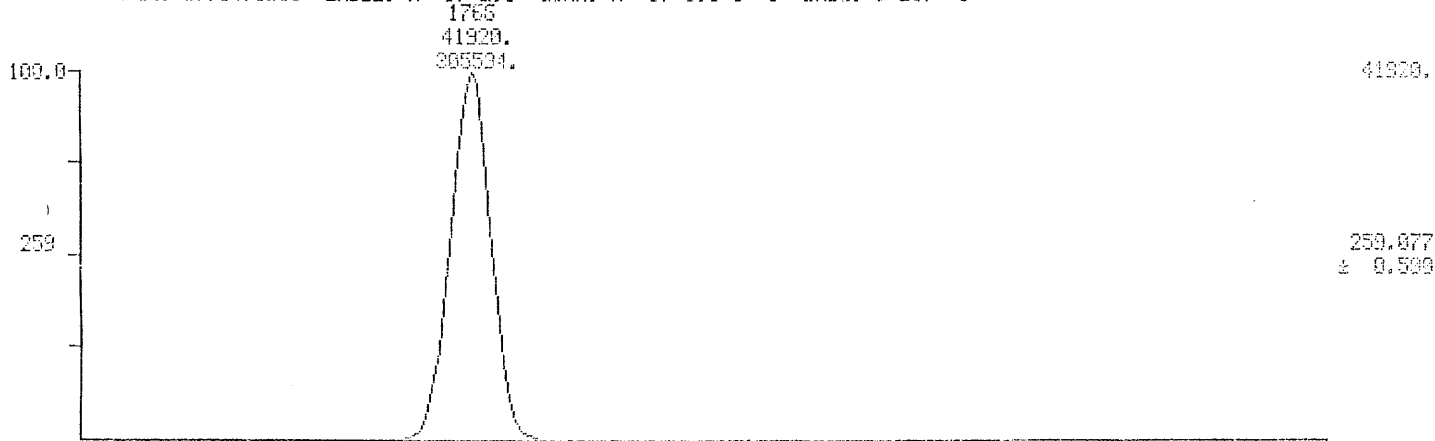
04/23/87 9:43:00

CONC: 5.25000000000000

SAMPLE: CALIBRATION SOLN IV

COND5.: 1UL/5P2331/100-200025/200-24034/HOLD10

RANGE: G1704.1900 LABEL: N 5.2.5 OMSH: A 1.1.0 J 0 DATE: U 23. 3



011442

MID MASS CHROMATOGRAMS

DATE: 07/11/87

00:00 17:04 TO 18:00

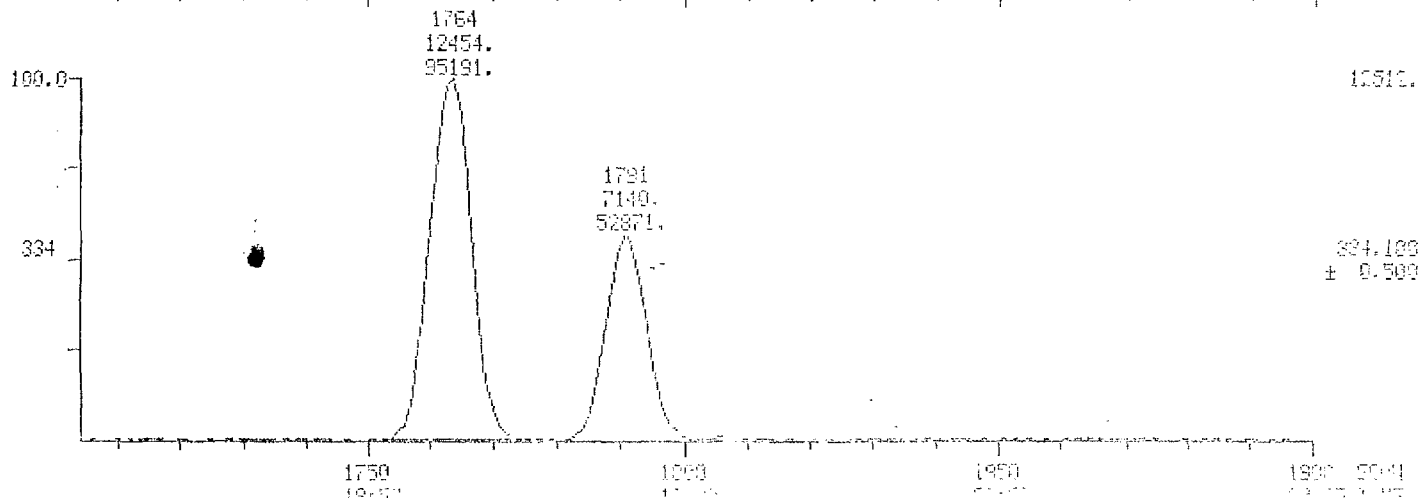
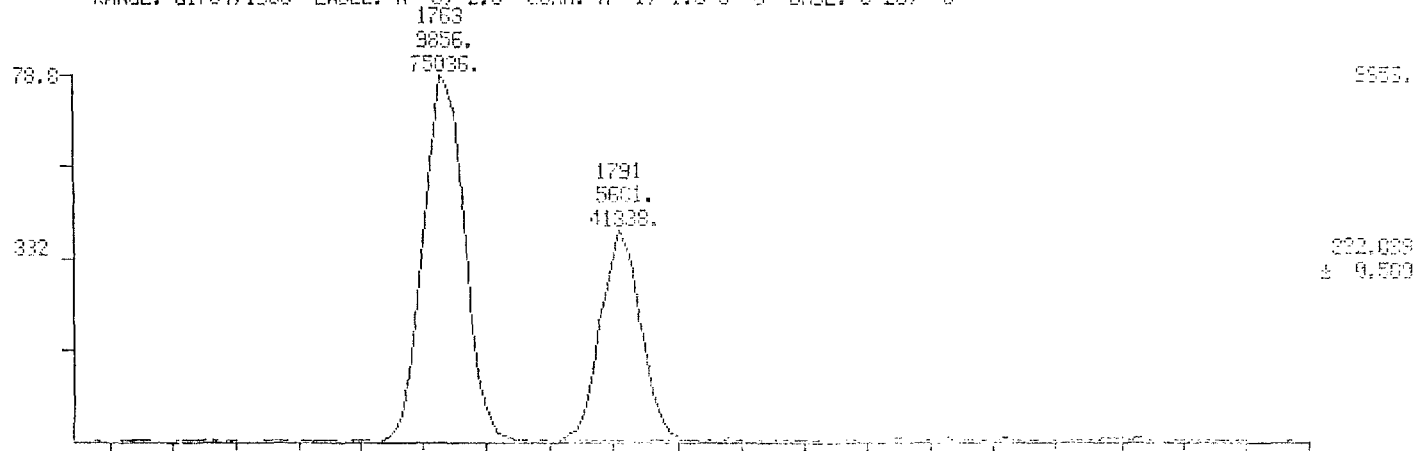
04/23/87 9:43:00

CALL: 000002007 00

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/5P2331/100-200025/200-24004/HOLD10

RANGE: G1704,1900 LABEL: H 5, 2.5 QUIN: A 1, 1.0 U 0 BASE: U 20, 3



011443

MID RIC

DATE: APR2014 01

SCANS 1704 TO 1800

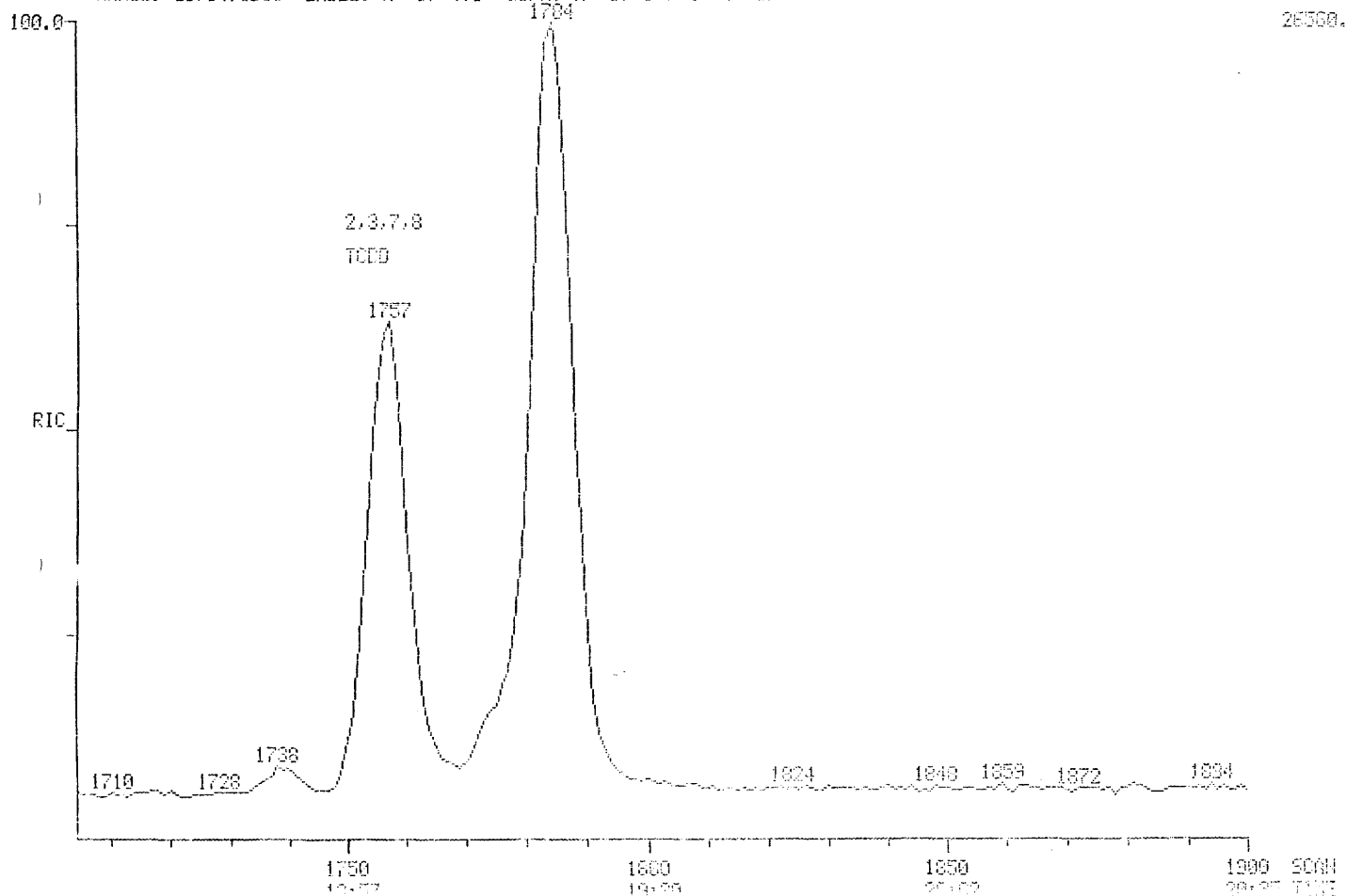
94/23/87 15:02:00

ONLI: C01012257 35

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704,1900 LABEL: H 0, 4.0 GUNN: 6 0, 1.6 J 0 BASE: U 20, 0



011444

MID MASS CHROMATOGRAMS

DATE: APR 23 1987

SCANS 1794 TO 1939

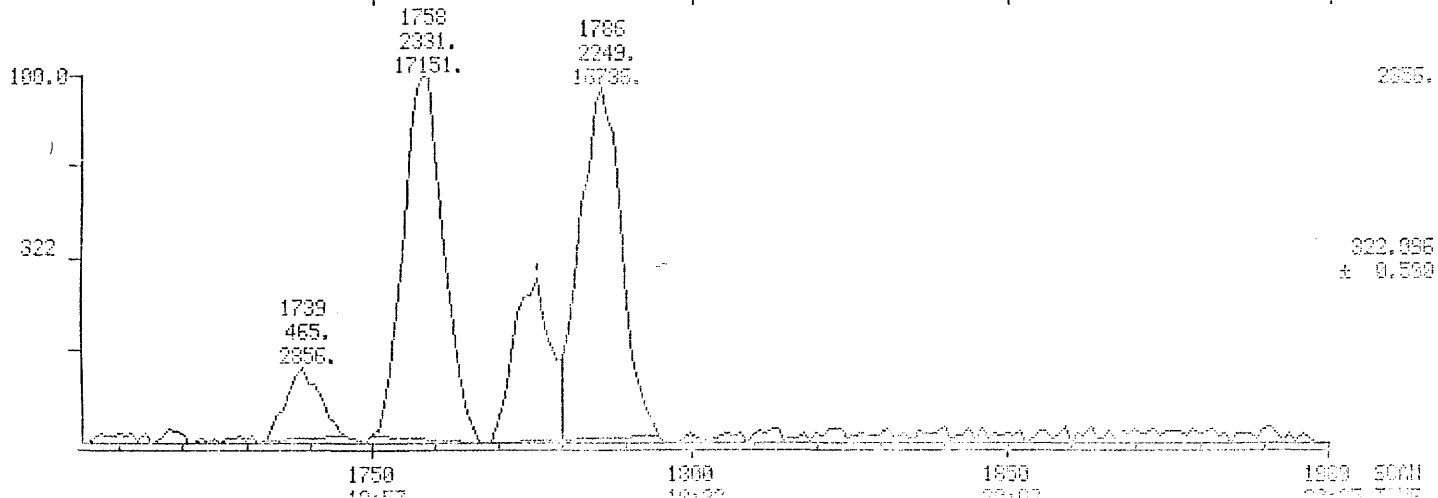
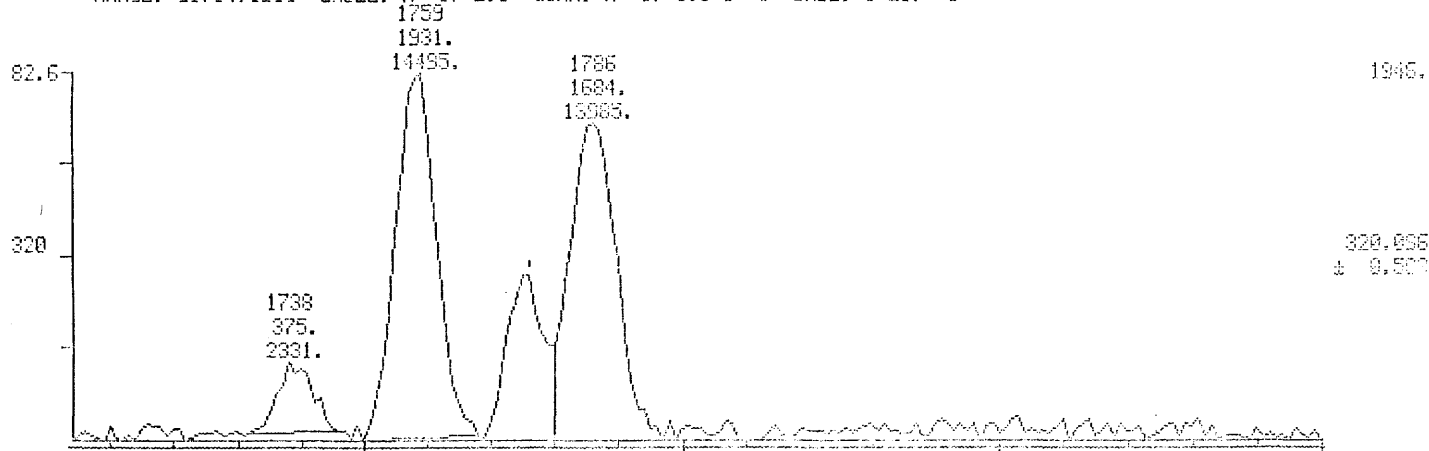
04/23/87 15:02:00

Q13: 0.1012007 63

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704,1900 LABEL: II 5, 2.5 QUAN: n 1, 1.0 J 0 BASE: U 20, 3





011145

MID MASS CHROMATOGRAMS

DATA: APR2314 81

SCANS 1704 TO 1900

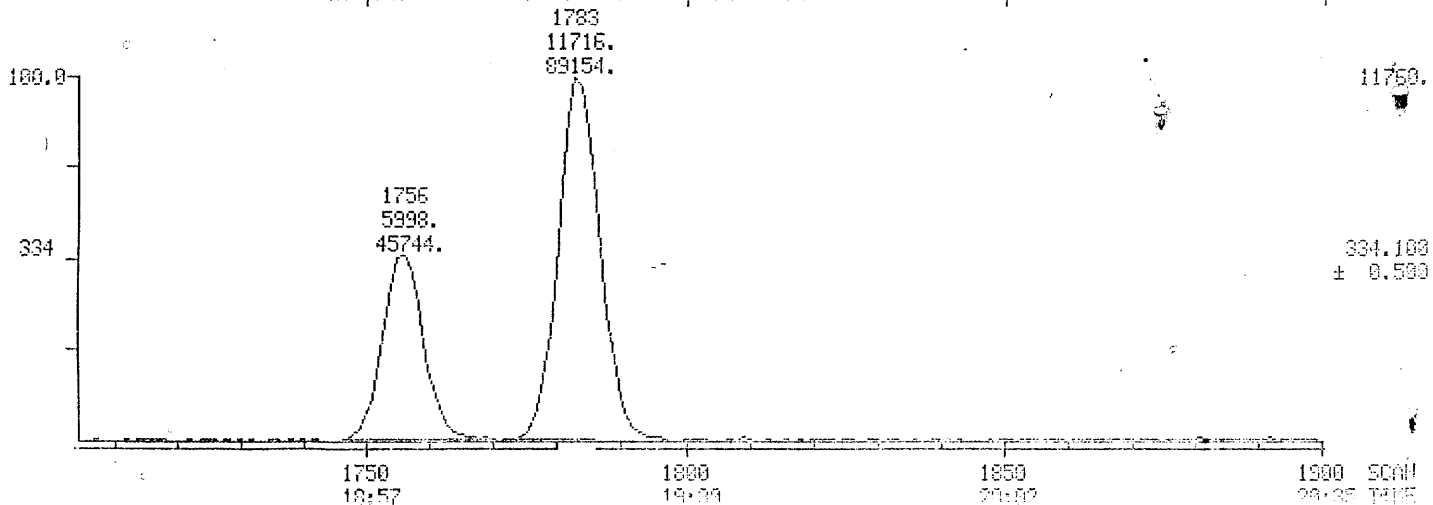
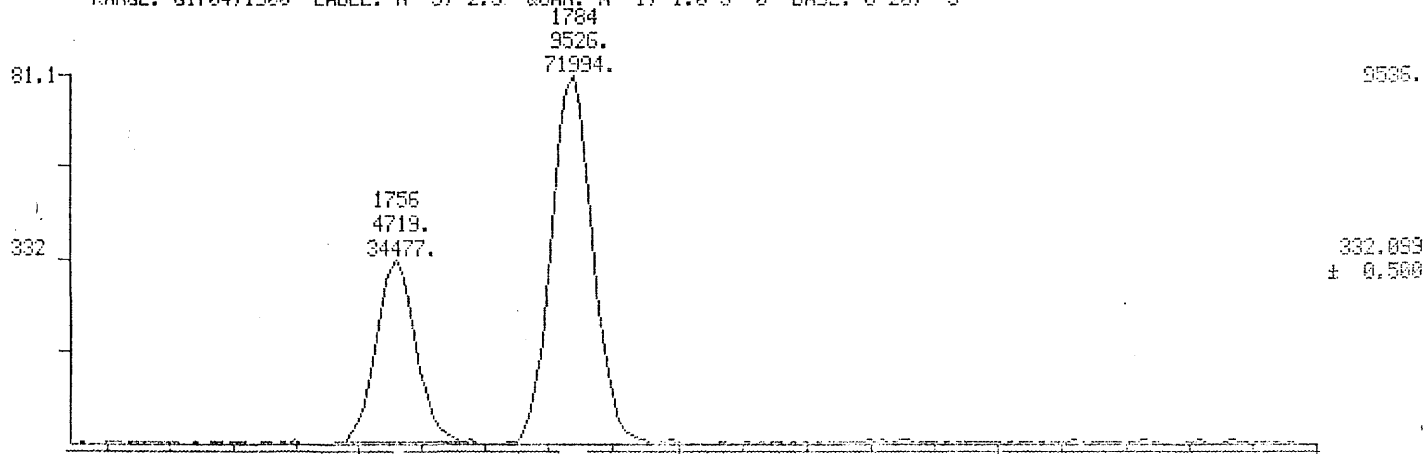
04/23/87 15:02:00

CALI: CAL042087 05

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 1UL/SP2331/100-200@25/200-240@4/HOLD10

RANGE: G1704.1900 LABEL: H 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1750
18:57

1800
19:09

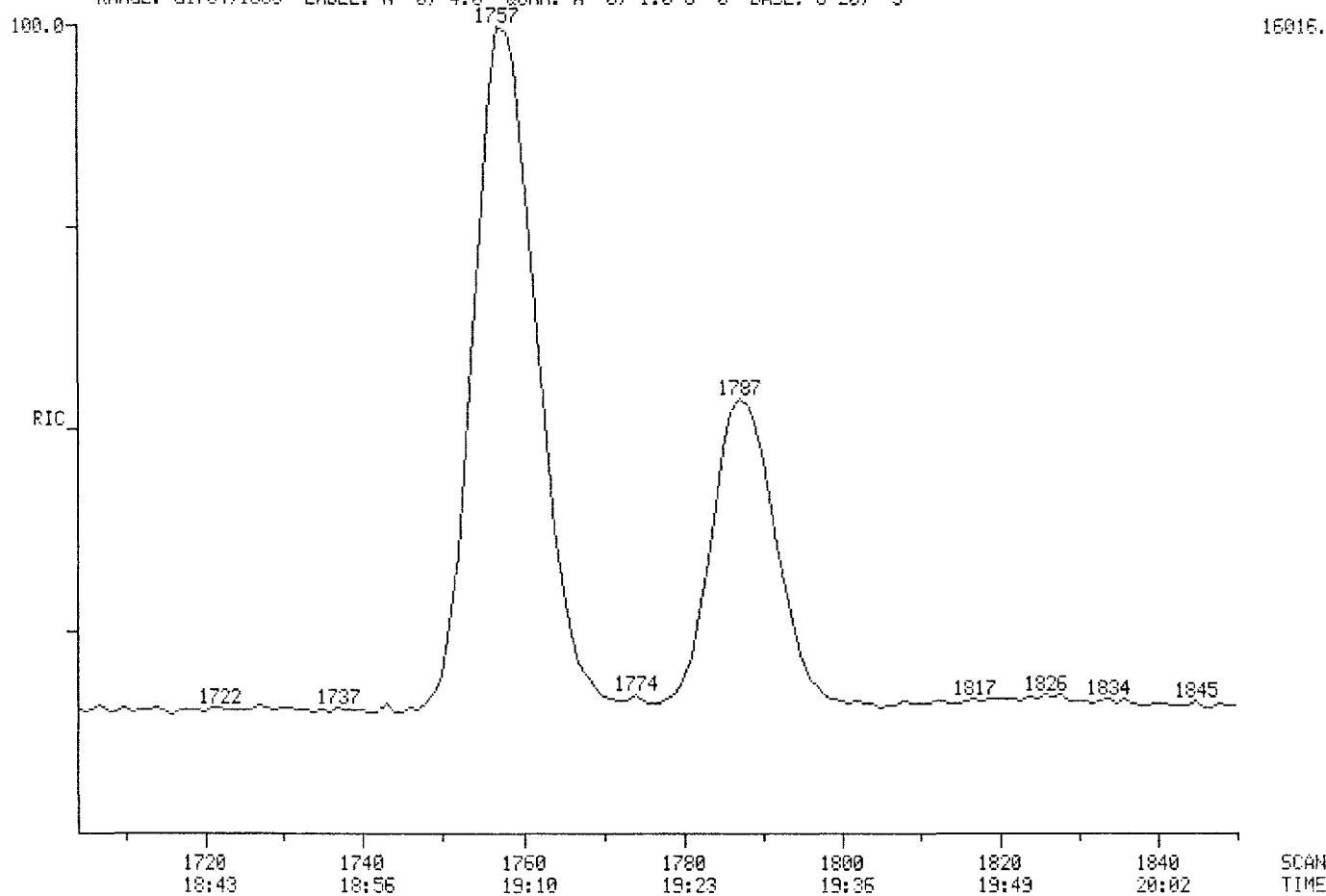
1850
20:07

1900 SCAN
20:35 TIME

011146

0017-07

MID RIC DATA: SEP2003 #1 SCANS 1704 TO 1850
09/28/87 21:56:00 CALI: CAL092587 #3
SAMPLE: CAL 1 SOLN
CONDS.: 50M SP2331/100/100-200025/200-24004/8
RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



16015.

SCAN
TIME

011442

MID MASS CHROMATOGRAMS

DATA: SEP2003 #1

SCANS 1704 TO 1850

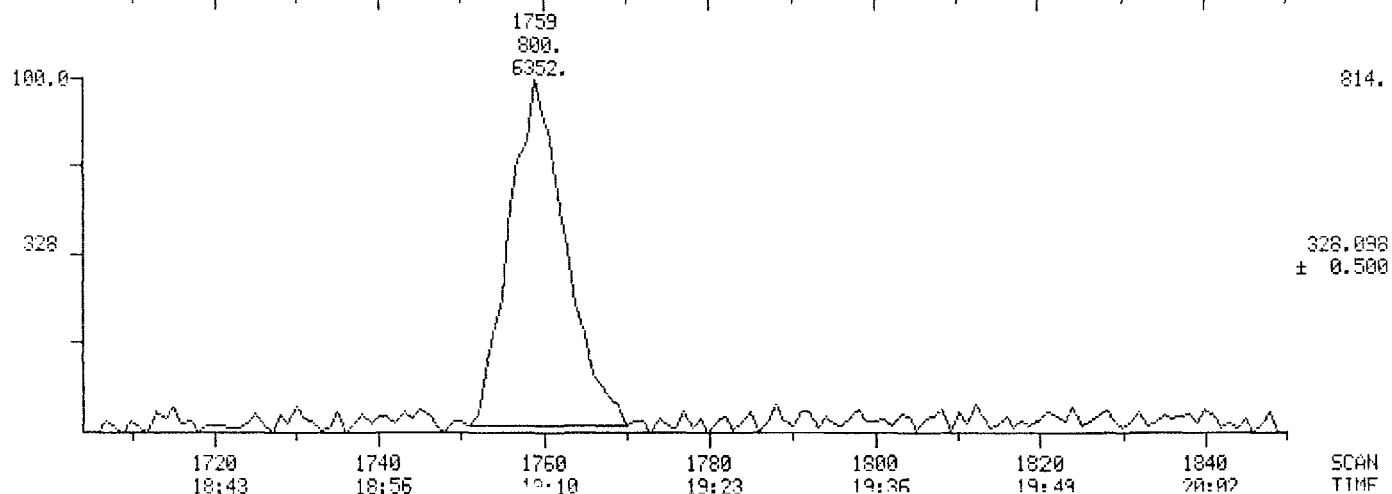
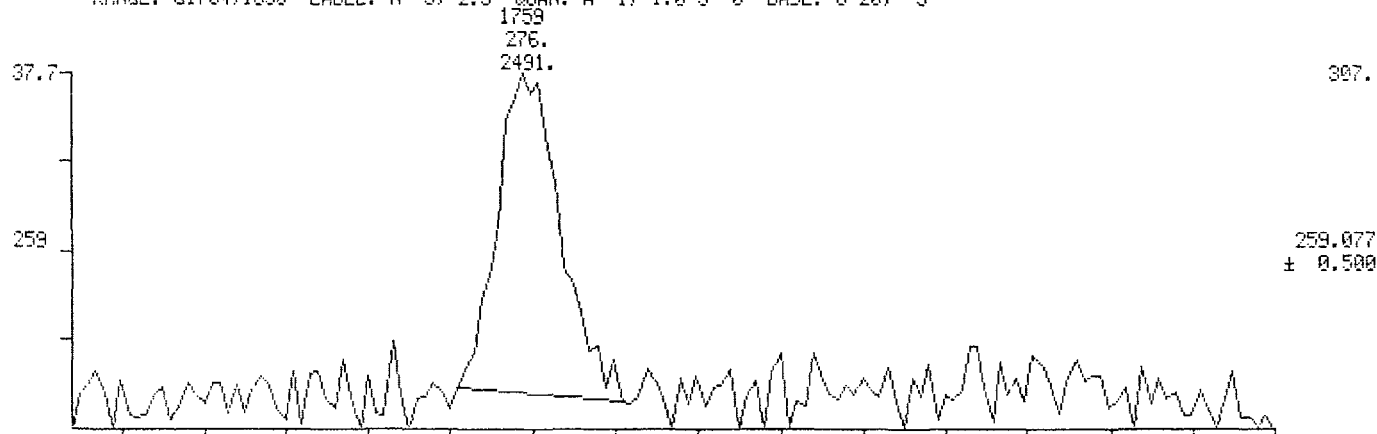
09/28/87 21:56:00

CALI: CAL092507 #3

SAMPLE: CAL 1 SOLN

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011448

MID MASS CHROMATOGRAMS

DATA: SEP2803 #1

SCANS 1704 TO 1850

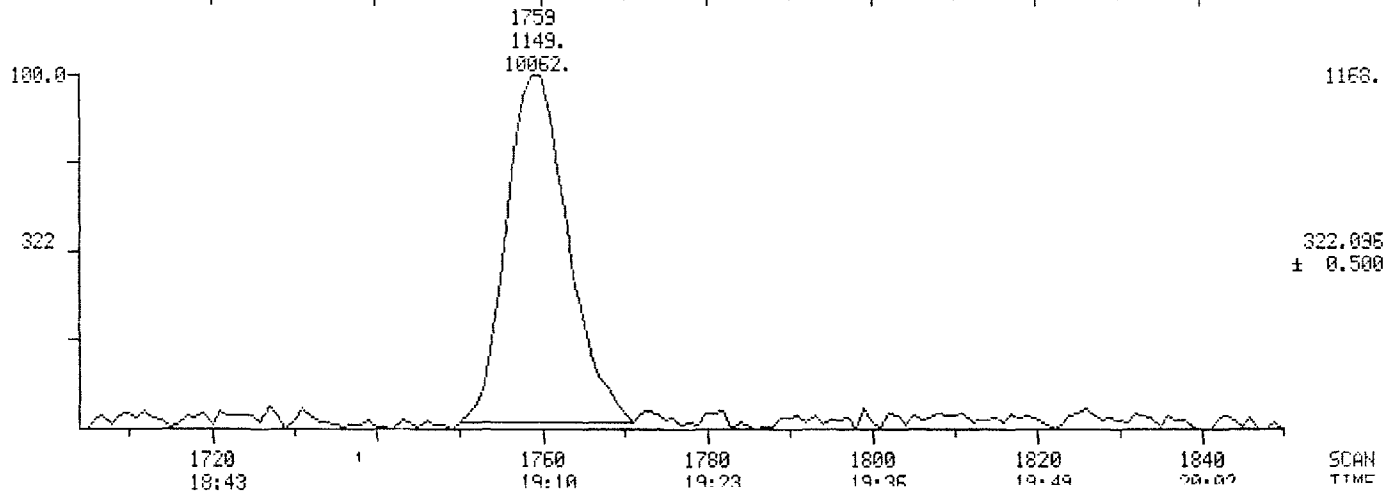
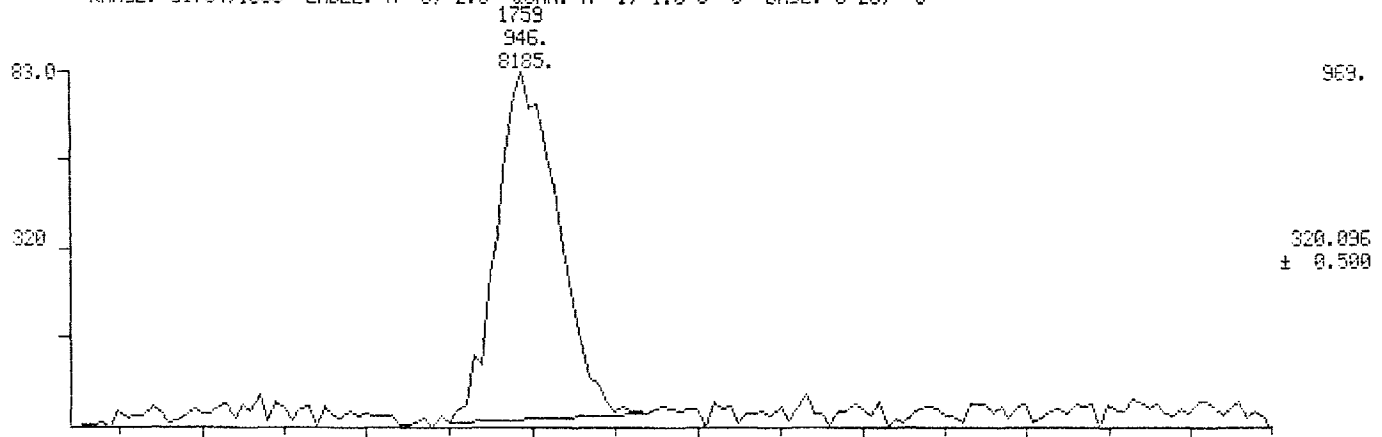
09/28/87 21:56:00

CALI: CAL092507 #3

SAMPLE: CAL 1 SOLN

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011449

MID MASS CHROMATOGRAMS

DATA: SEP2883 #1

SCANS 1704 TO 1850

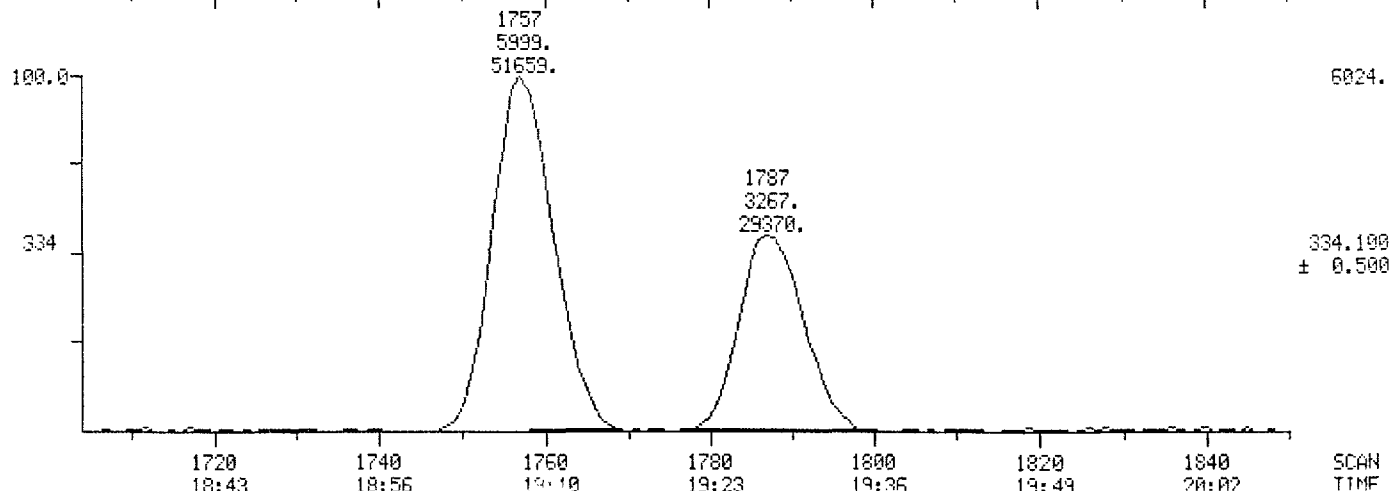
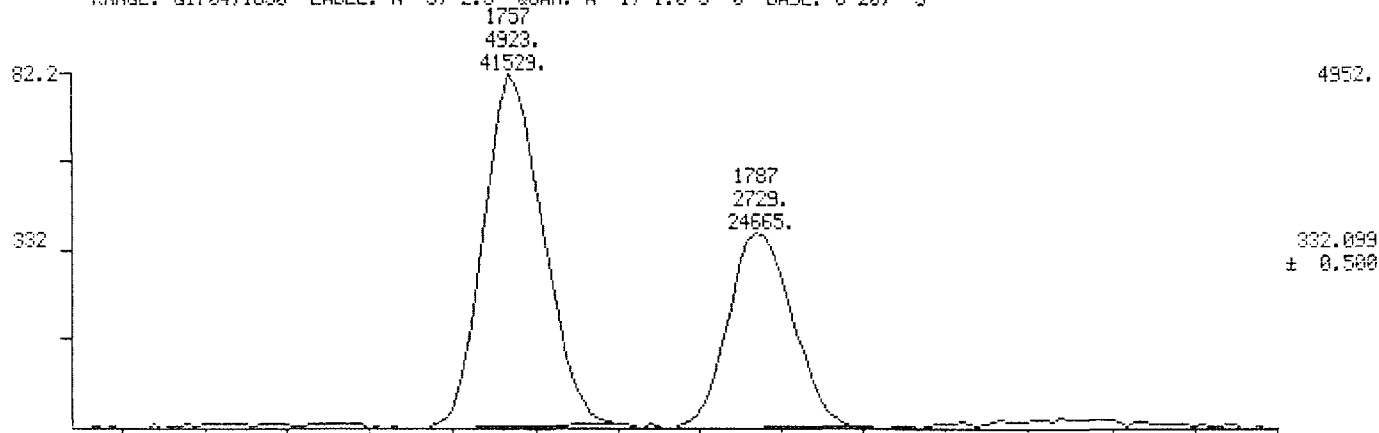
09/28/87 21:56:00

CALI: CAL092507 #3

SAMPLE: CAL 1 SOLN

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011450

MID MASS CHROMATOGRAMS

DATA: OCT0101 #1

SCANS 1704 TO 1850

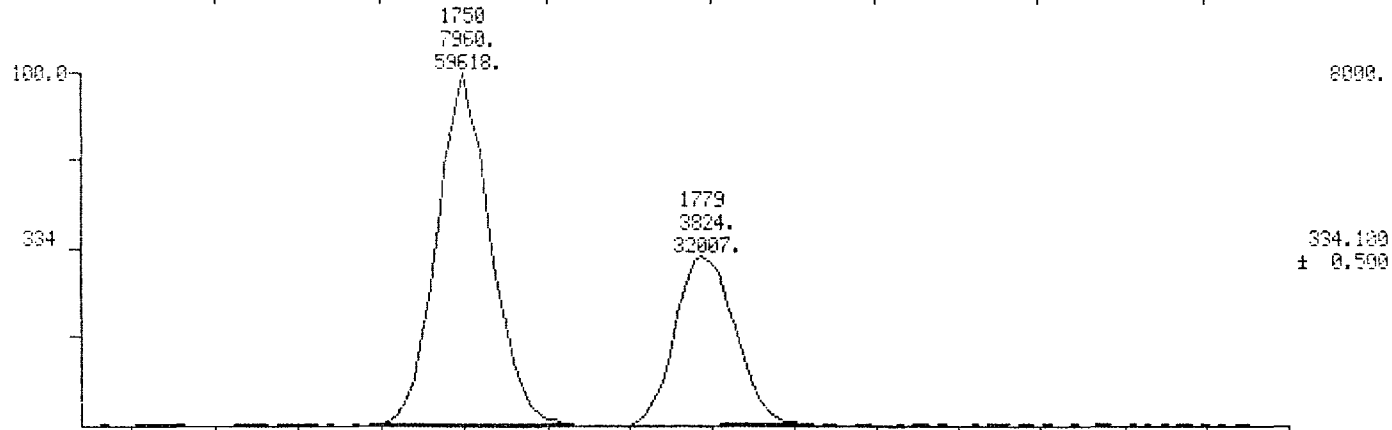
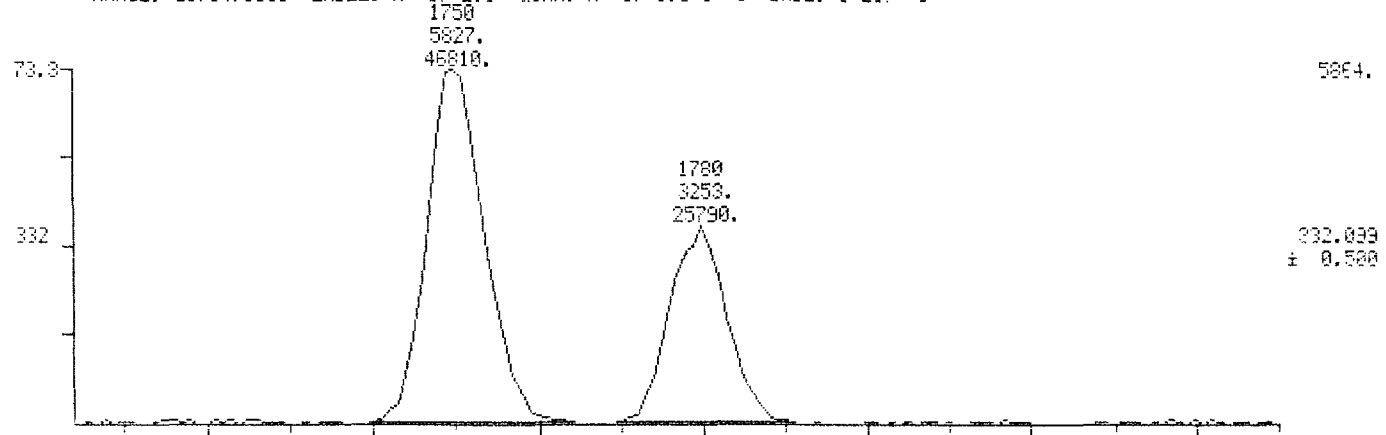
10/01/87 13:03:00

CALI: CAL092507 #3

SAMPLE: CALIBRATION SOLN 1

CONDS.: 50M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1720
18:43

1740
18:56

1760
19:10

1780
19:23

1800
19:36

1820
19:49

1840
20:02

SCAN
TIME

19110

MID MASS CHROMATOGRAMS

DATA: OCT0101 #1

SCANS 1704 TO 1850

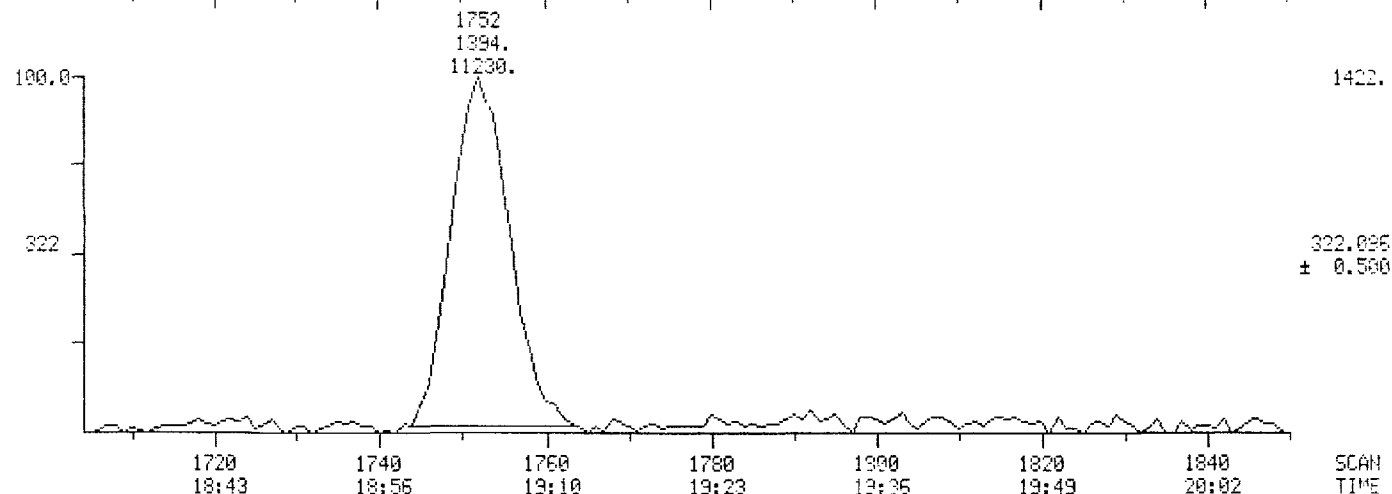
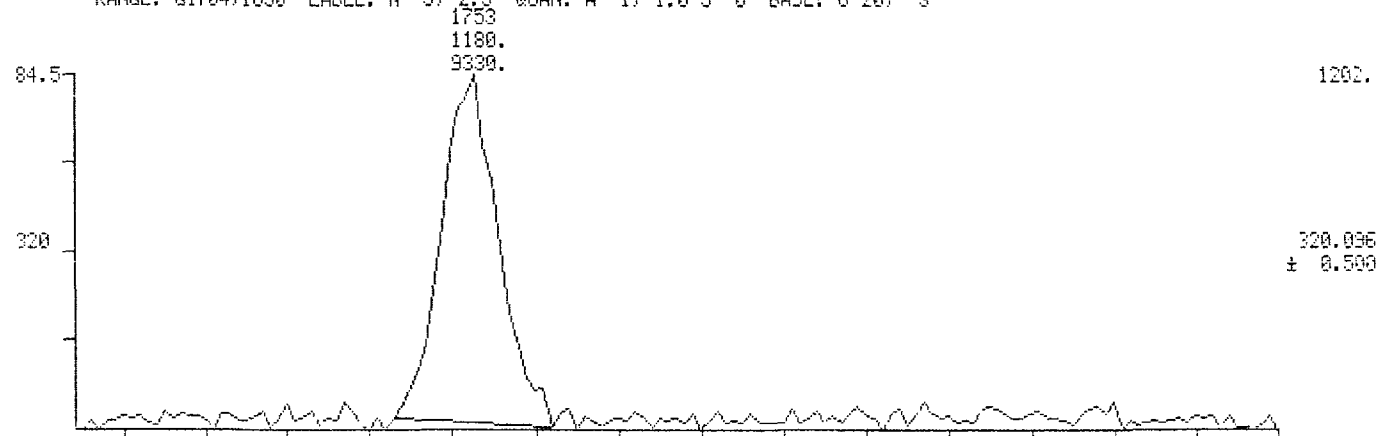
10/01/87 13:03:00

CALI: CAL092587 #3

SAMPLE: CALIBRATION SOLN 1

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



SCAN
TIME

011452

MID MASS CHROMATOGRAMS

DATA: OCT0101 #1

SCANS 1704 TO 1850

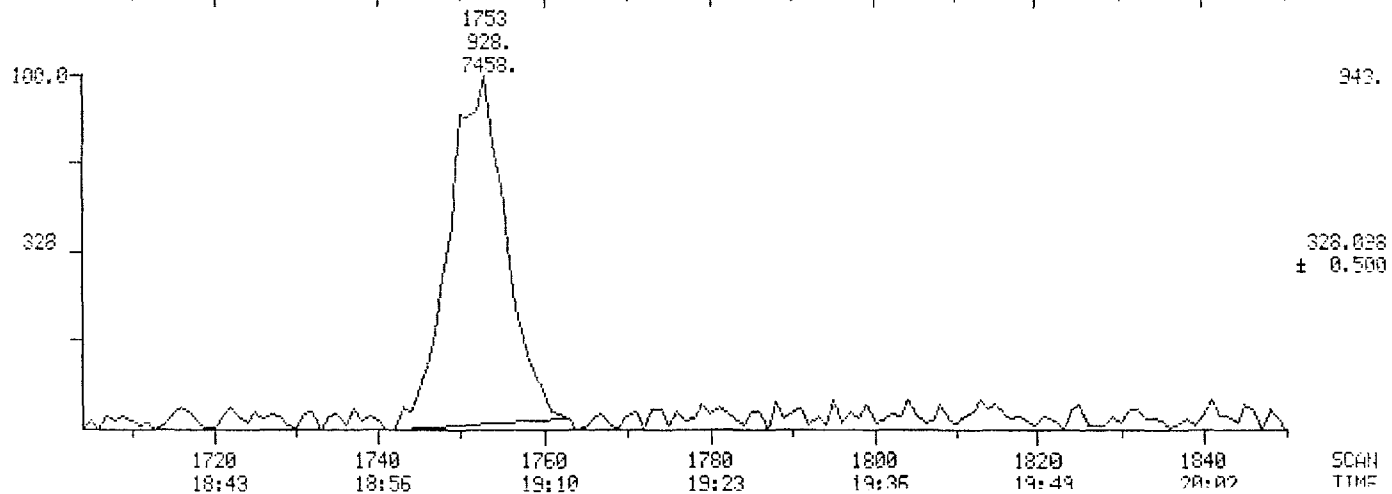
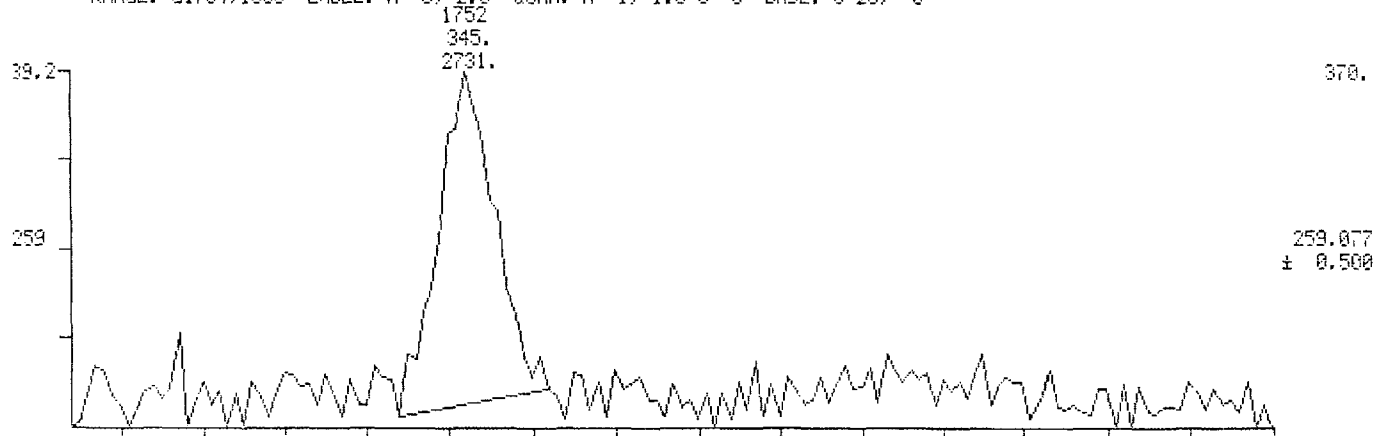
10/01/87 13:03:00

CALI: CAL092507 #3

SAMPLE: CALIBRATION SOLN 1

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011453

MID RIC

10/01/87 13:03:00

SAMPLE: CALIBRATION SOLN 1

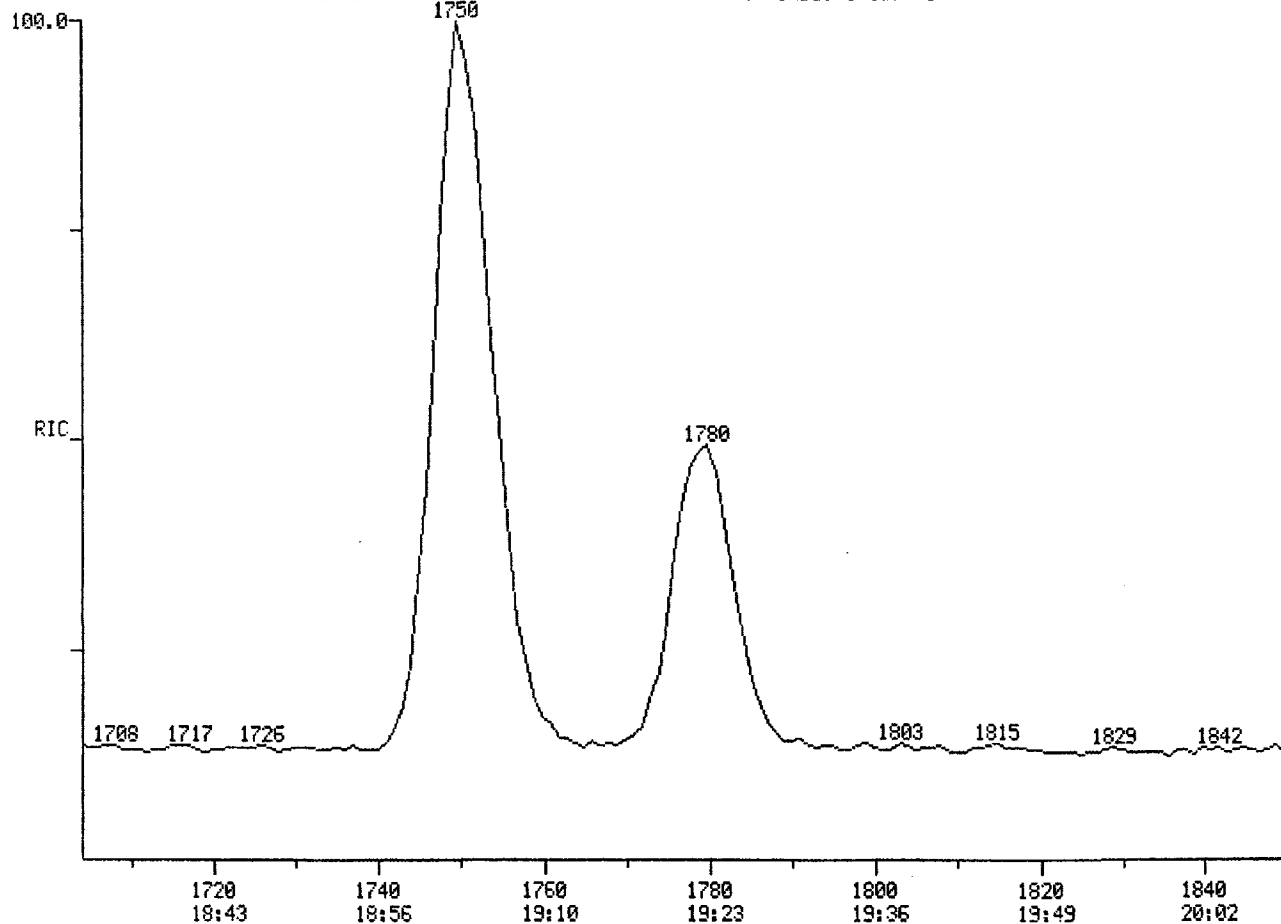
CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 0.4.0 QUAN: A 0.1.0 J 0 BASE: U 20, 3

DATA: OCT0101 #1

CALI: CAL092587 #3

SCANS 1704 TO 1850



19552.

SCAN
TIME

011454

809-08

MID RIC
09/28/87 22:33:00

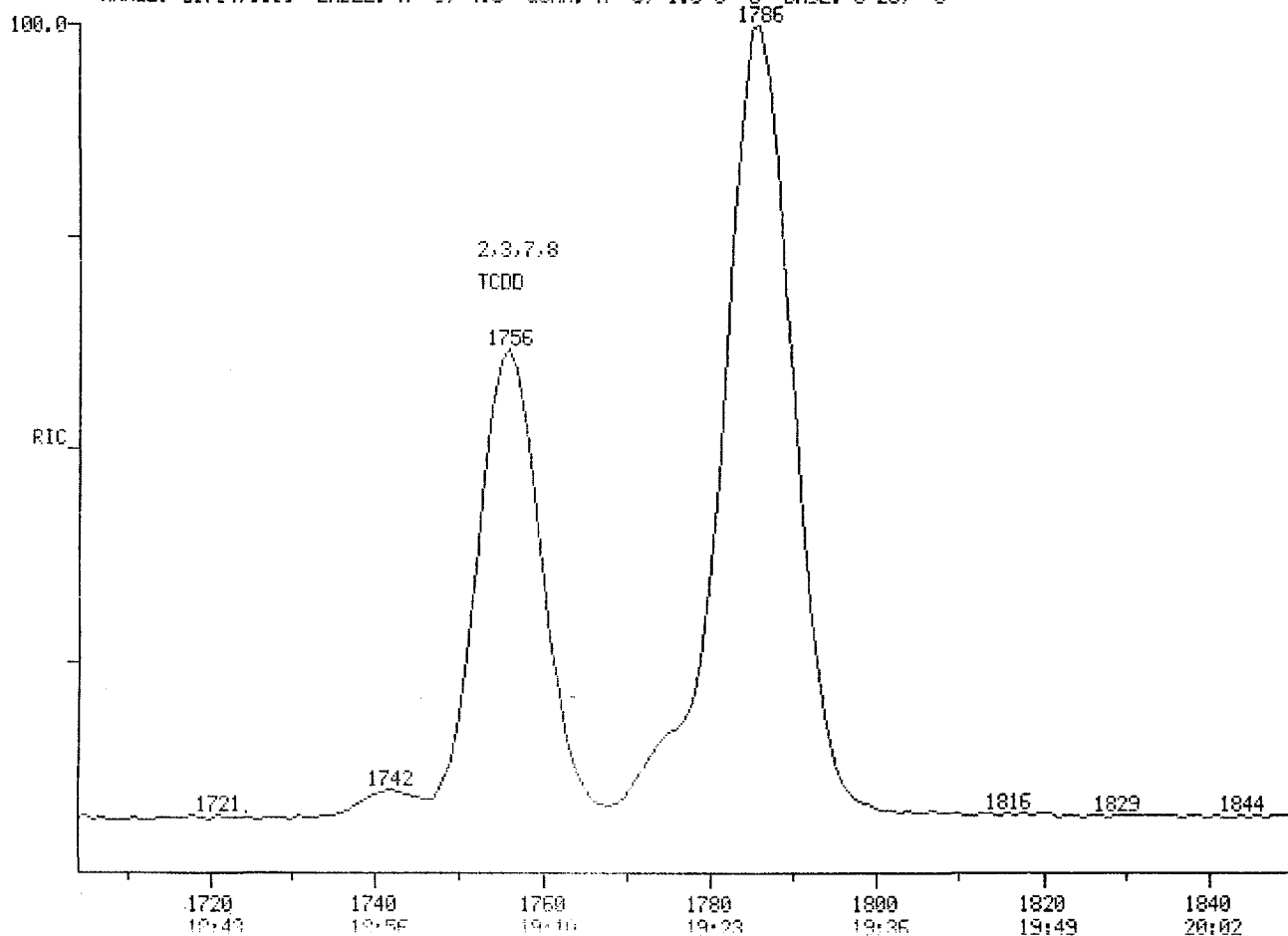
DATA: SEP2804 #1
CALI: CAL092587 #3

SCANS 1704 TO 1850

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: H 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



34624.

SCAN
TIME

011455

MID MASS CHROMATOGRAMS

DATA: SEP2804 #1

SCANS 1704 TO 1850

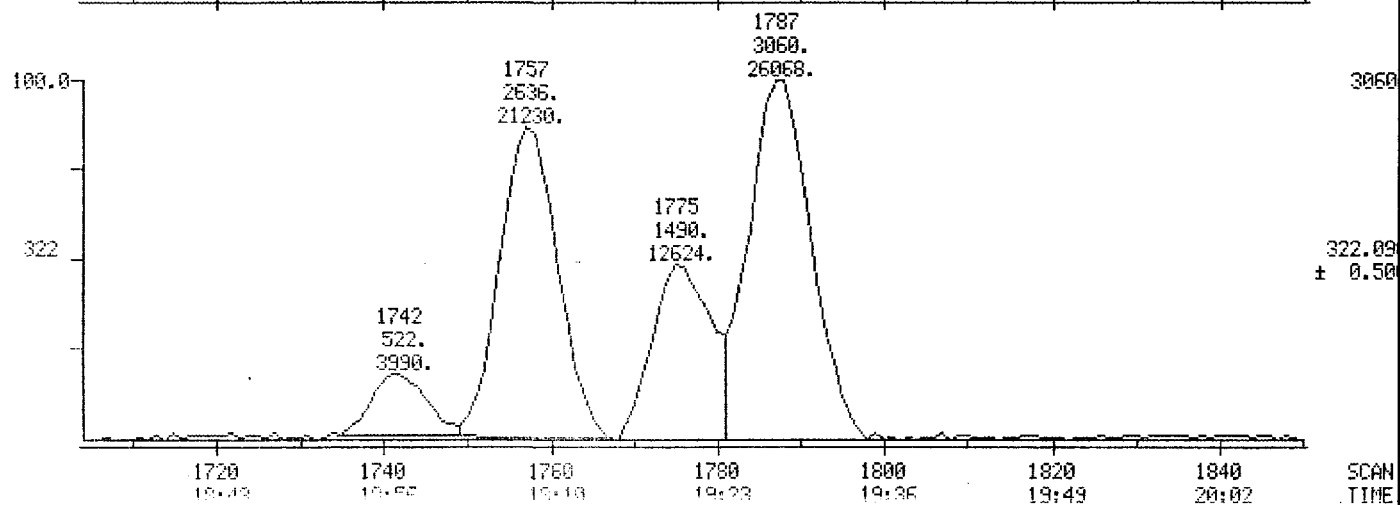
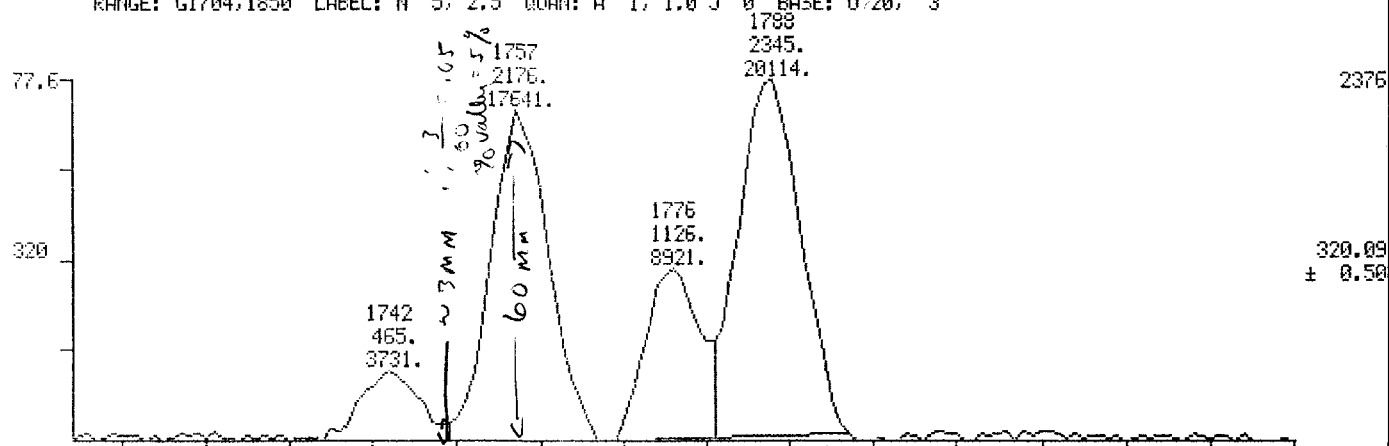
09/28/87 22:33:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5; 2.5 QUAN: A 1, 1.0 J 0 BASE: U.20, 3



997110

MID MASS CHROMATOGRAMS

DATA: SEP2804 #1

SCANS 1704 TO 1850

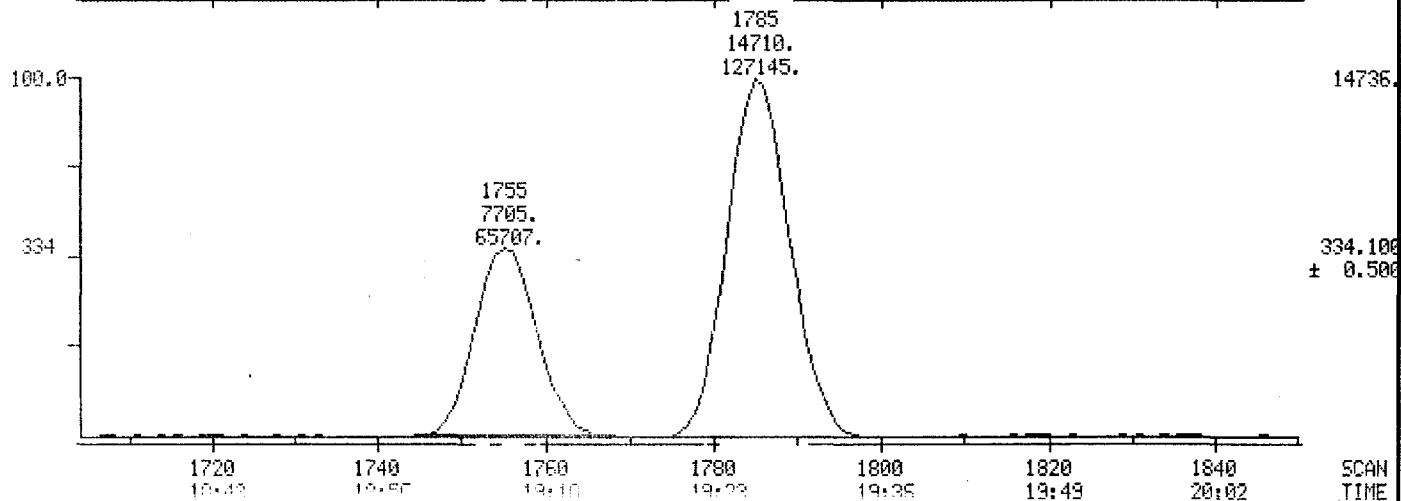
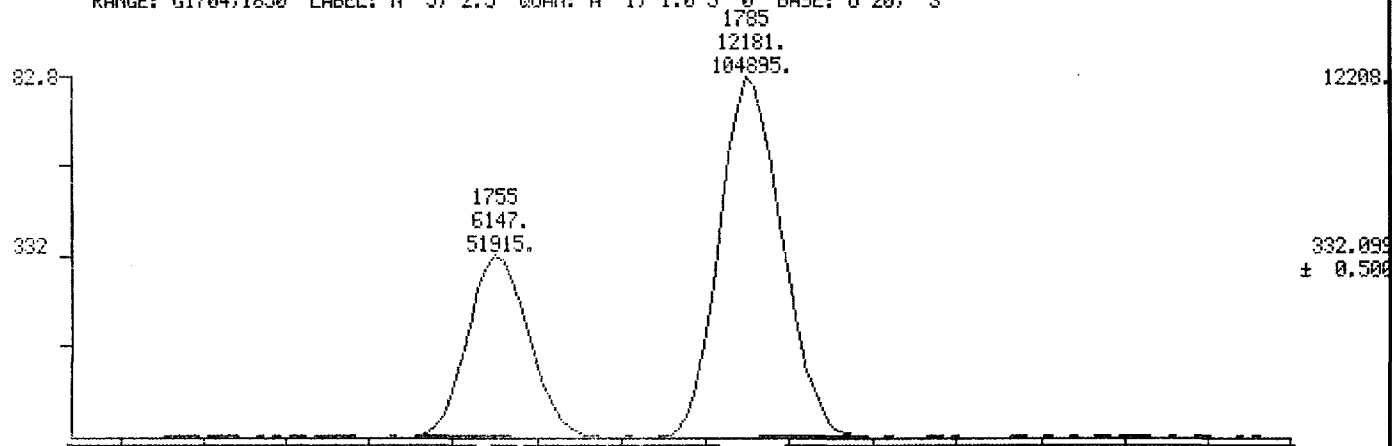
09/28/87 22:33:00

CALI: CAL002587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011457

MID RIC

DATA: SEP2827 #1

SCANS 1704 TO 1850

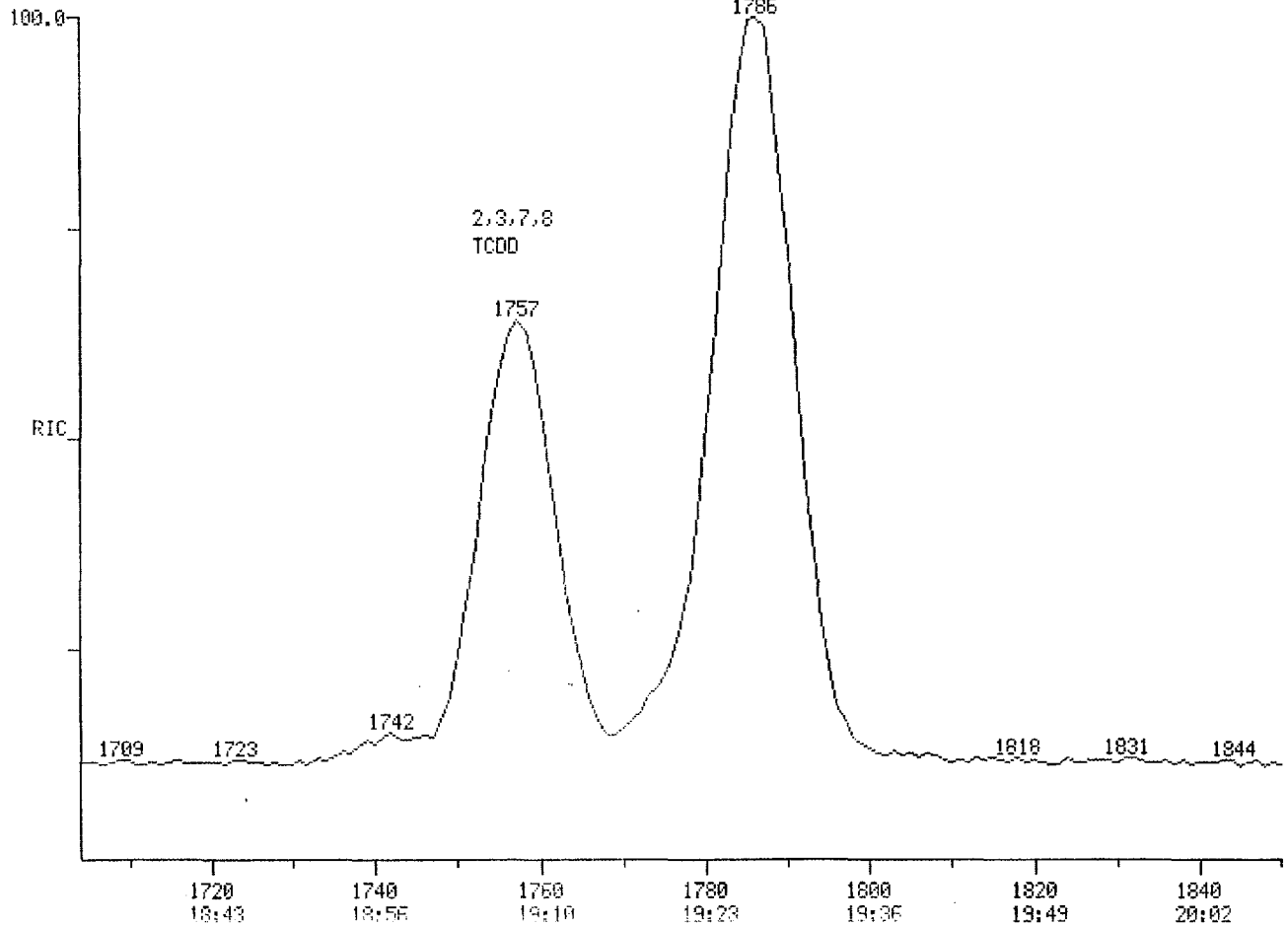
09/29/87 9:25:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0. 4.0 QUAN: A 0. 1.0 J 0 BASE: U 20. 3



21824

SCAN
TIME

011458

MID MASS CHROMATOGRAMS

DATA: SEP2827 #1

SCANS 1704 TO 1850

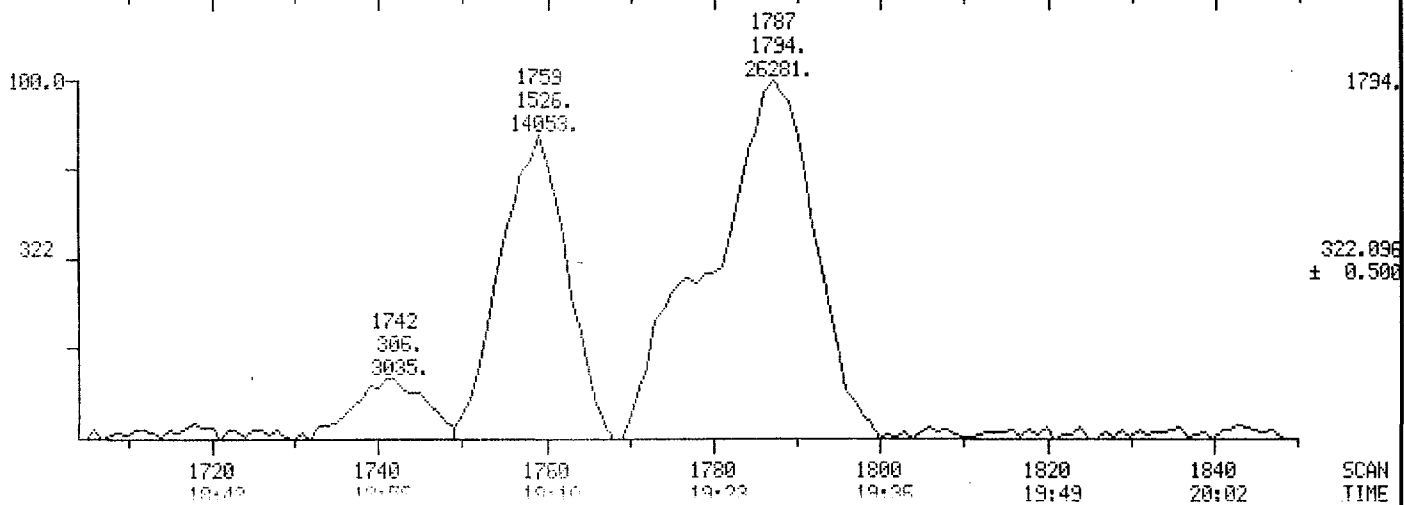
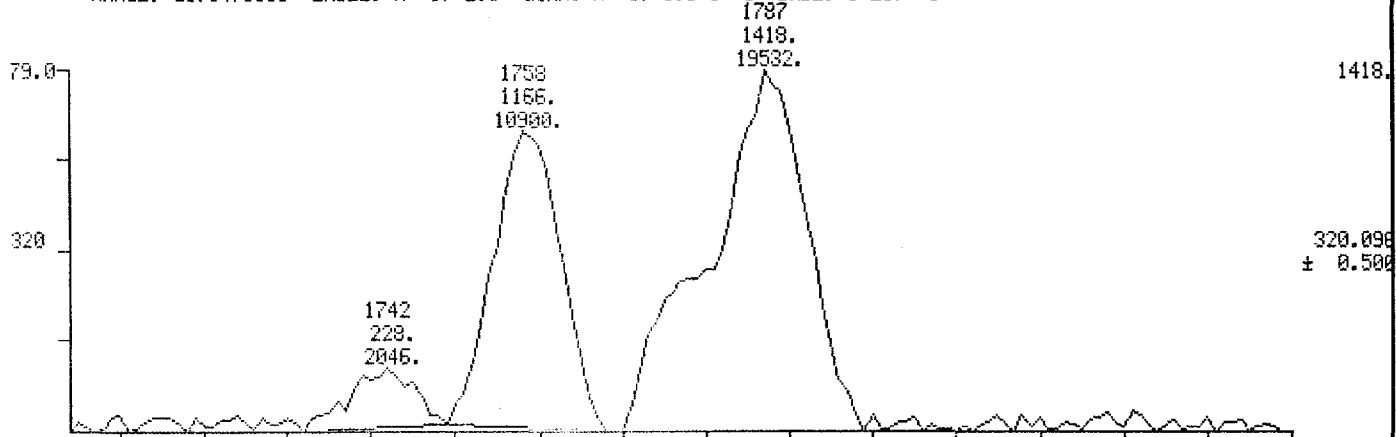
09/29/87 9:25:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011459

MID MASS CHROMATOGRAMS

DATA: SEP2827 #1

SCANS 1704 TO 1850

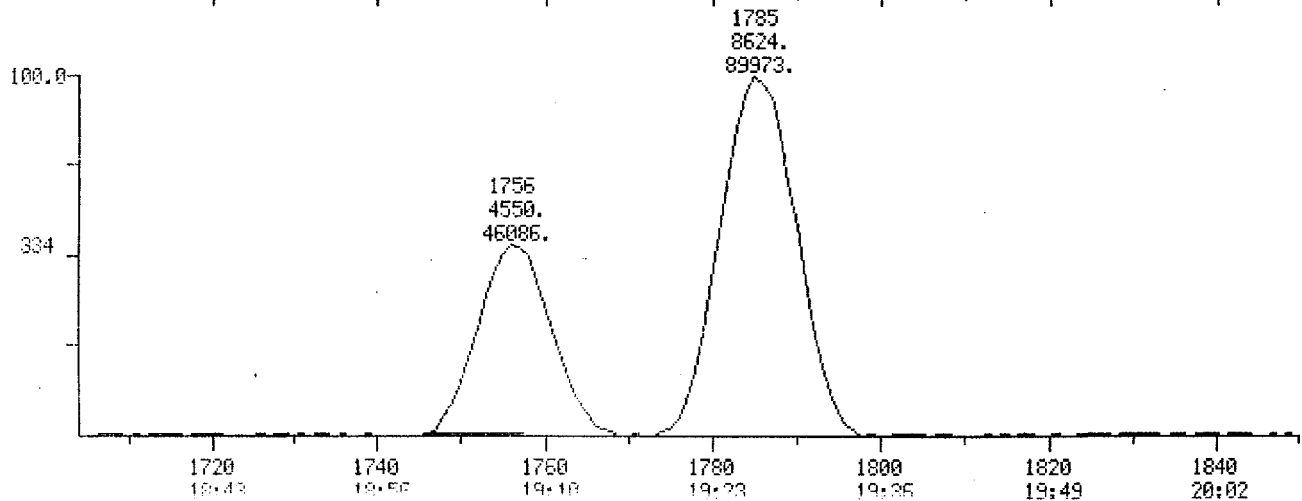
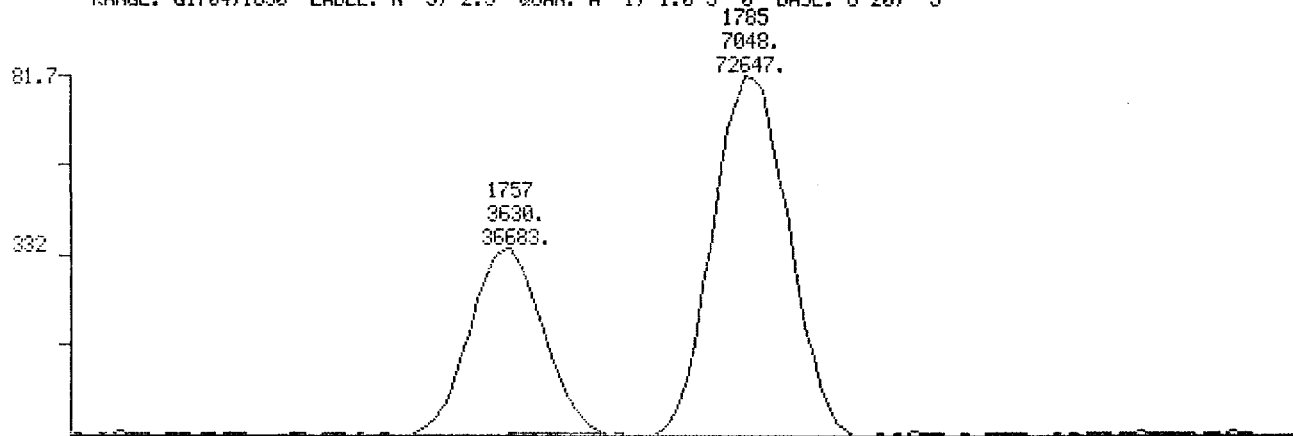
03/29/87 3:25:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 50M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1720
19:43

1740
19:50

1760
19:57

1780
20:04

1800
20:11

1820
20:18

1840
20:25

SCAN
TIME

011460

MID RIC
10/01/87 13:33:00

DATA: OCT0102 #1
CALI: CAL092587 #3

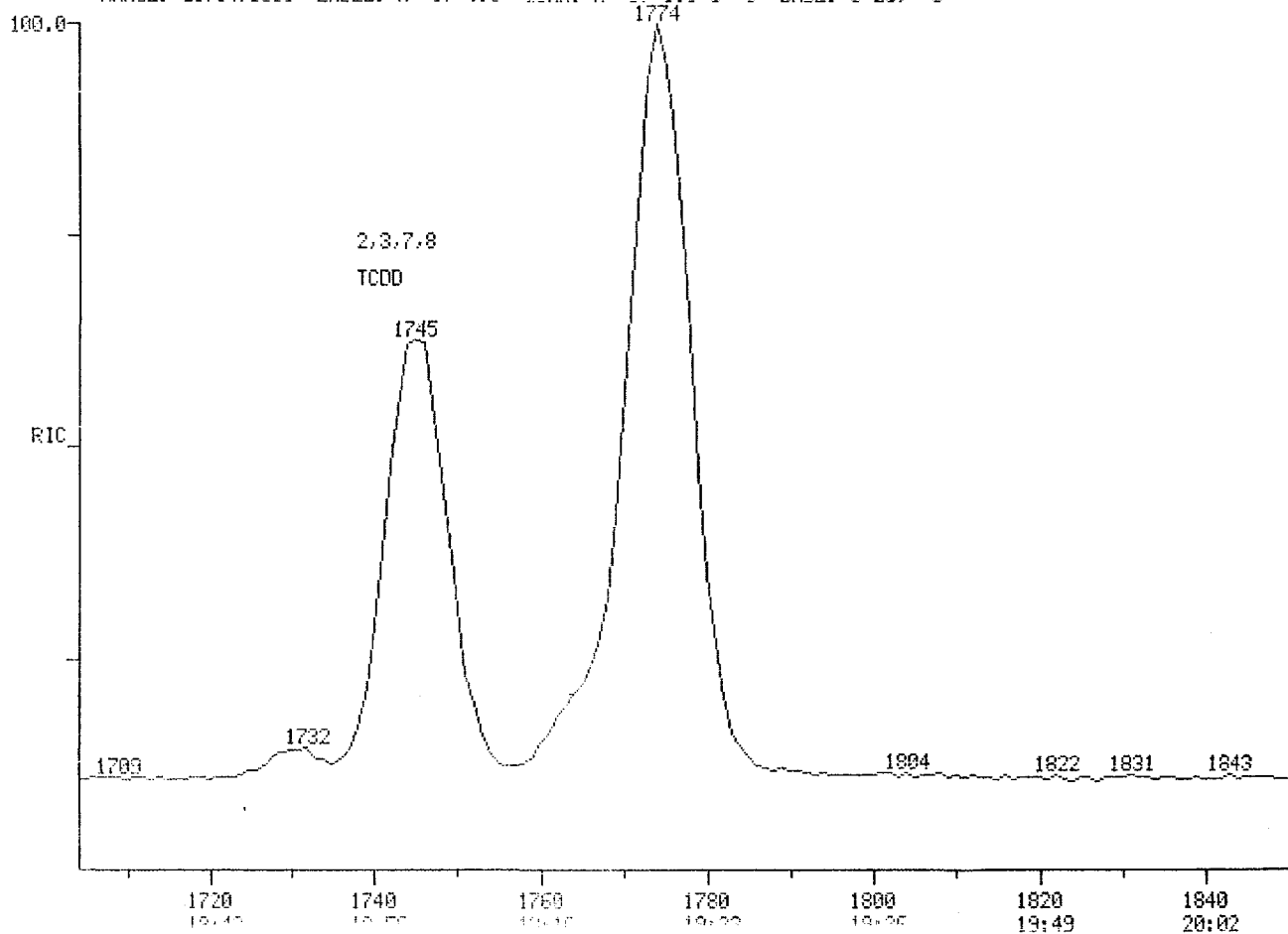
SCANS 1704 TO 1850

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60N SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

25632



SCAN
TIME

011461

MID MASS CHROMATOGRAMS

DATA: OCT0102 #1

SCANS 1704 TO 1850

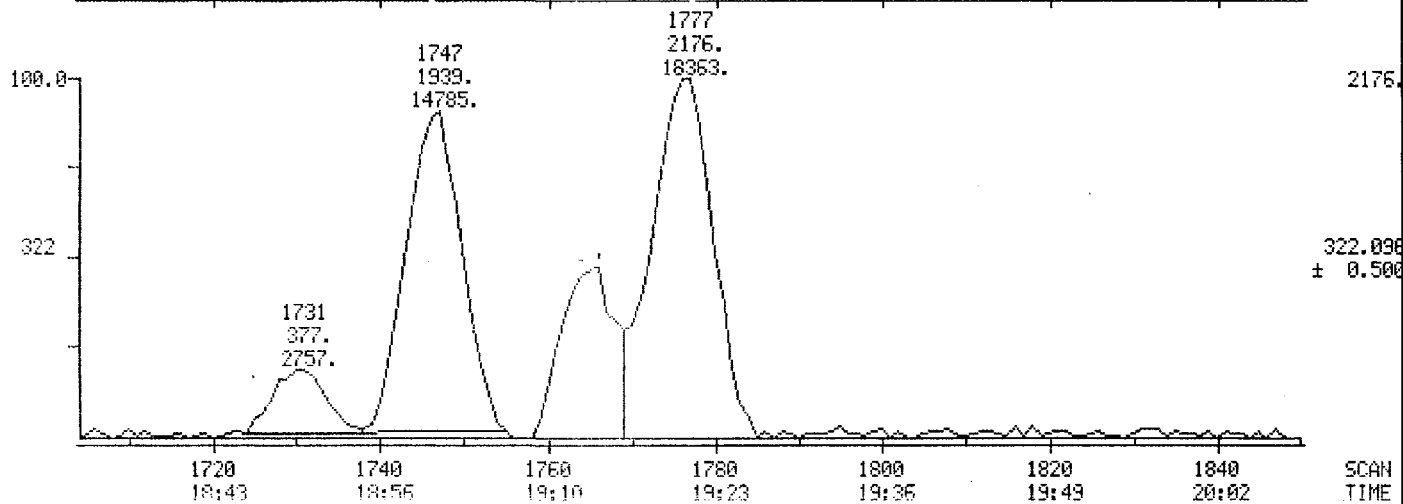
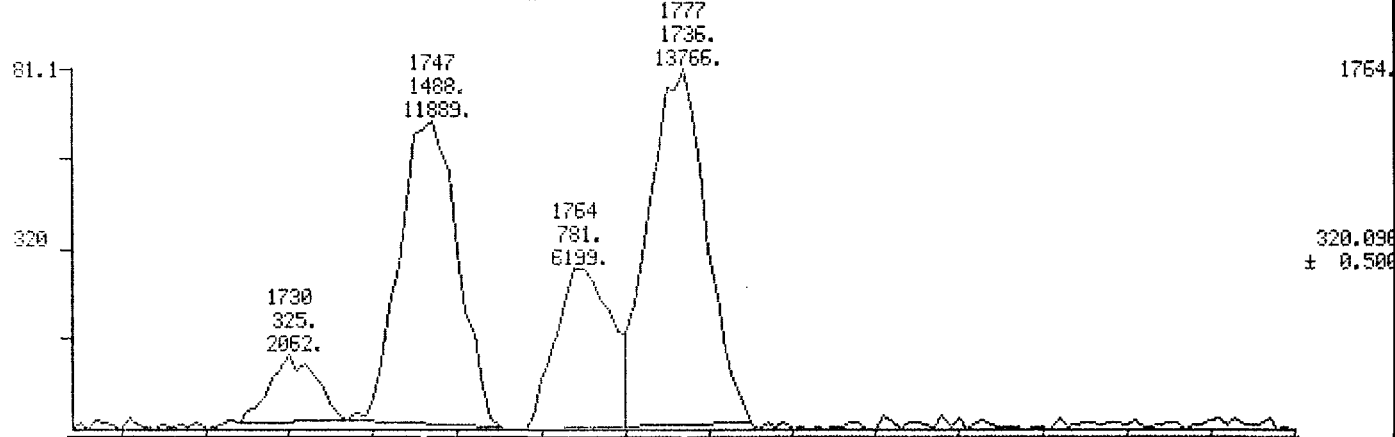
10/01/87 13:33:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: 01704.1850 LABEL: N 5. 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011462

MID MASS CHROMATOGRAMS

DATA: OCT0182 #1

SCANS 1704 TO 1850

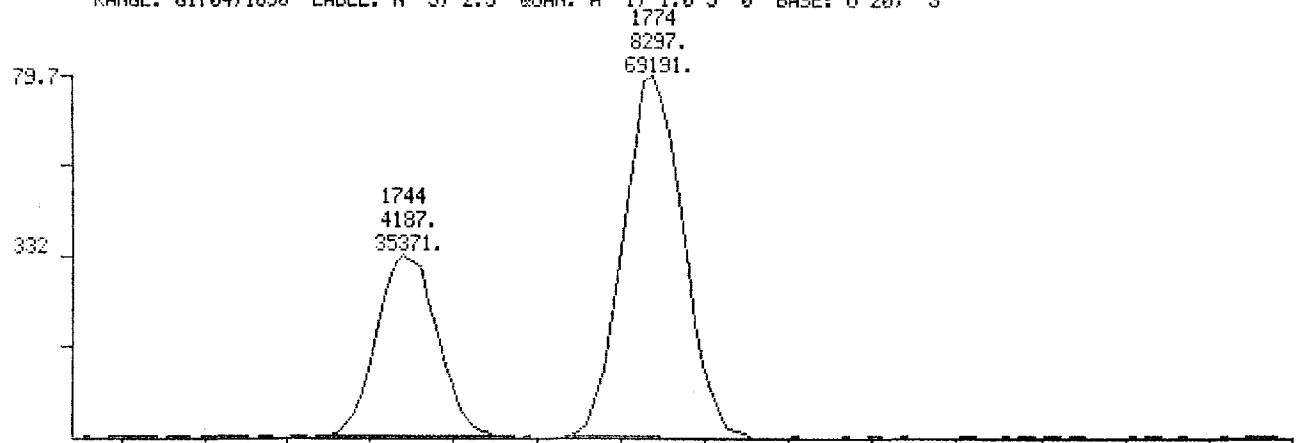
10/01/87 13:33:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

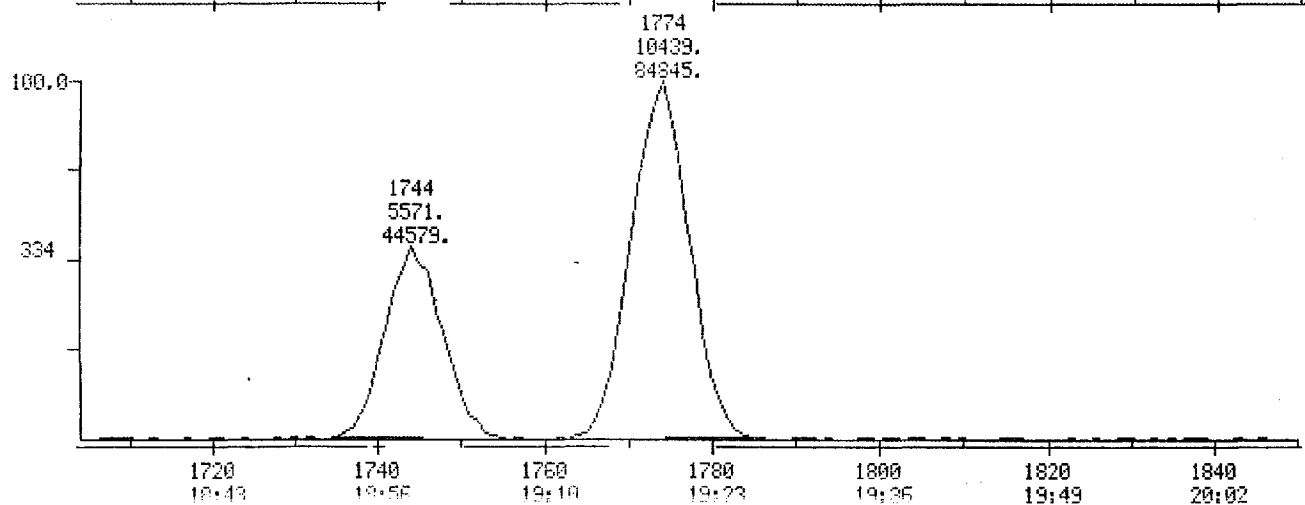
CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5. 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



8336

332.09
± 0.500



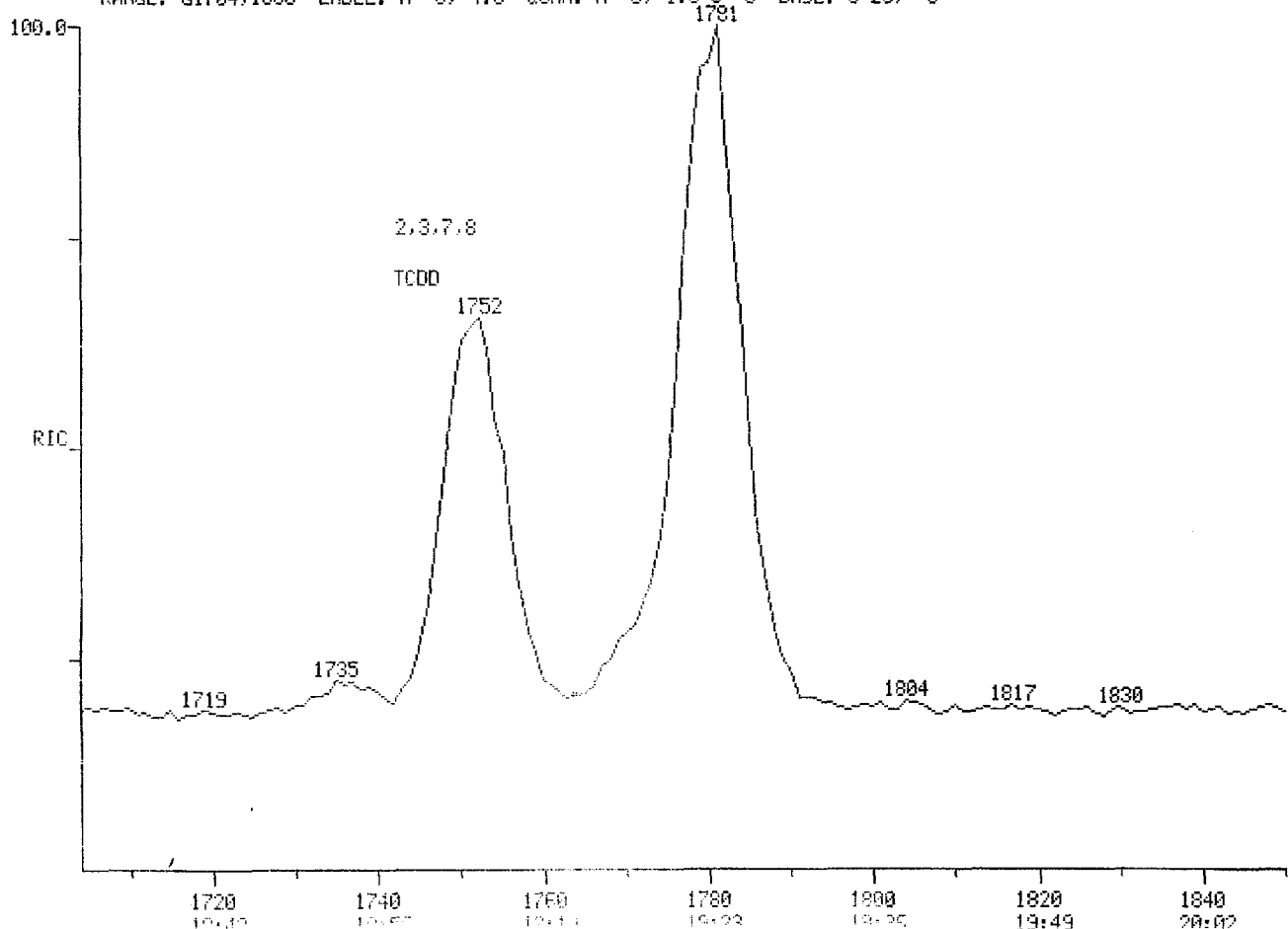
10464

334.100
± 0.500

SCAN
TIME

011463

MID RIC DATA: OCT0110 #1 SCANS 1704 TO 1850
10/01/87 20:18:00 CALI: CAL002587 #3
SAMPLE: COLUMN PERFORMANCE MIX
CONDS.: 60M SP2331/100/100-200025/200-24004/8
RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



13504.

SCAN TIME

011464

MID MASS CHROMATOGRAMS

DATA: OCT0110 #1

SCANS 1704 TO 1850

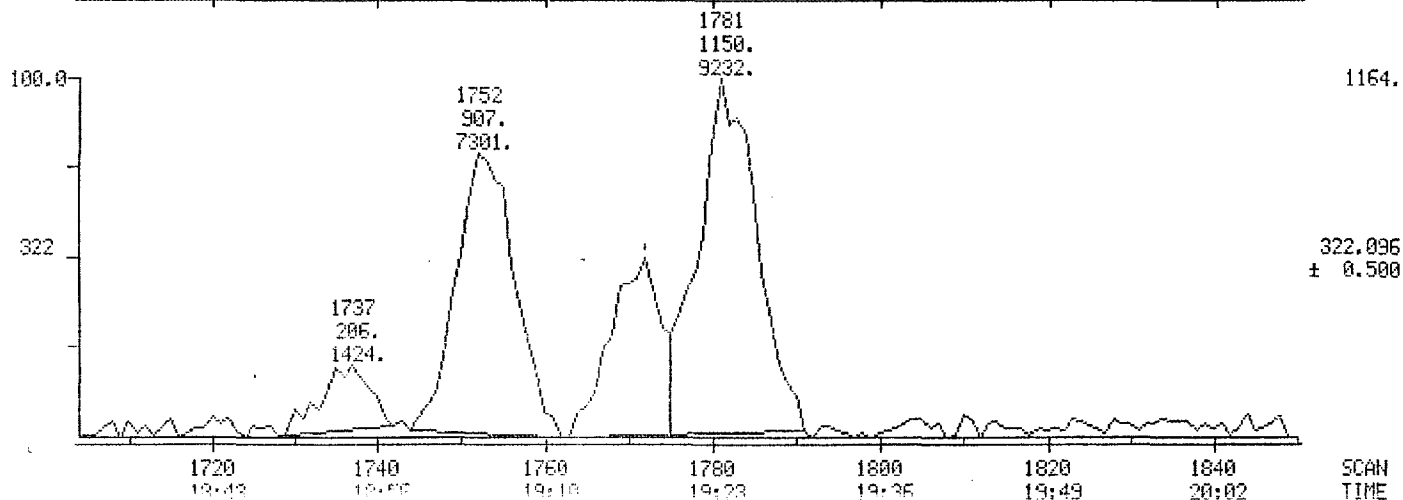
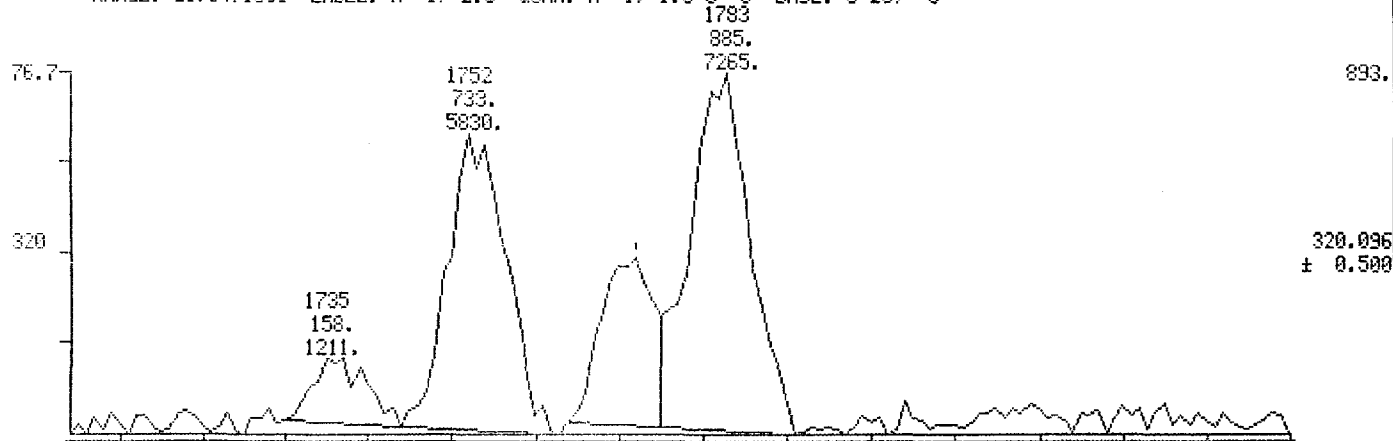
10/01/87 20:18:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200@25/200-240@4/S

RANGE: G1704.1850 LABEL: N 5; 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011165

MID MASS CHROMATOGRAMS

DATA: OCT0110 #1

SCANS 1704 TO 1850

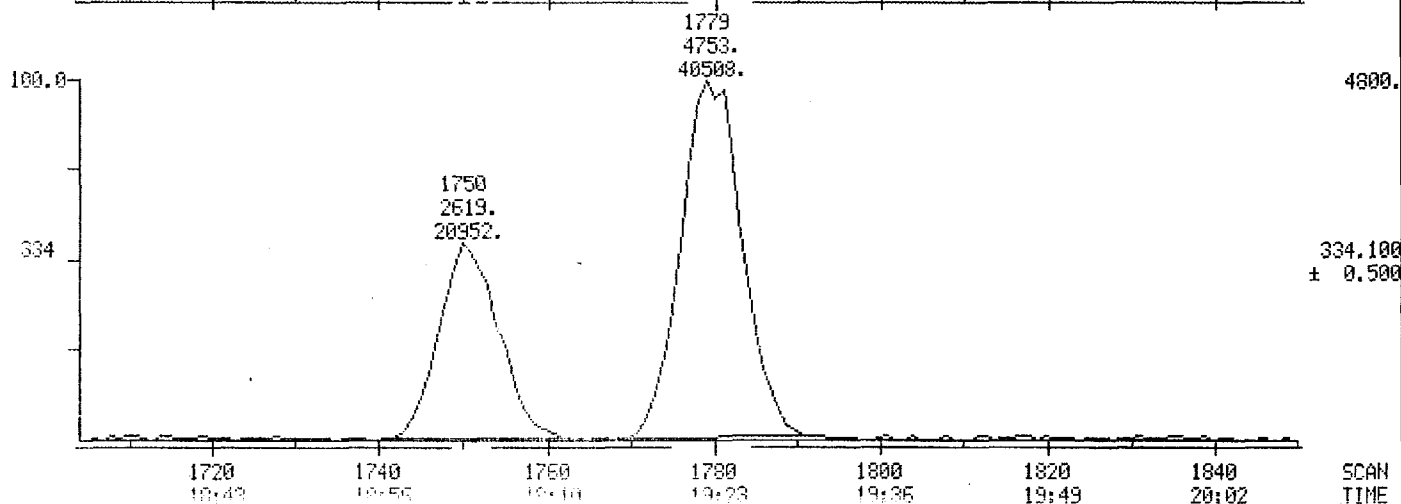
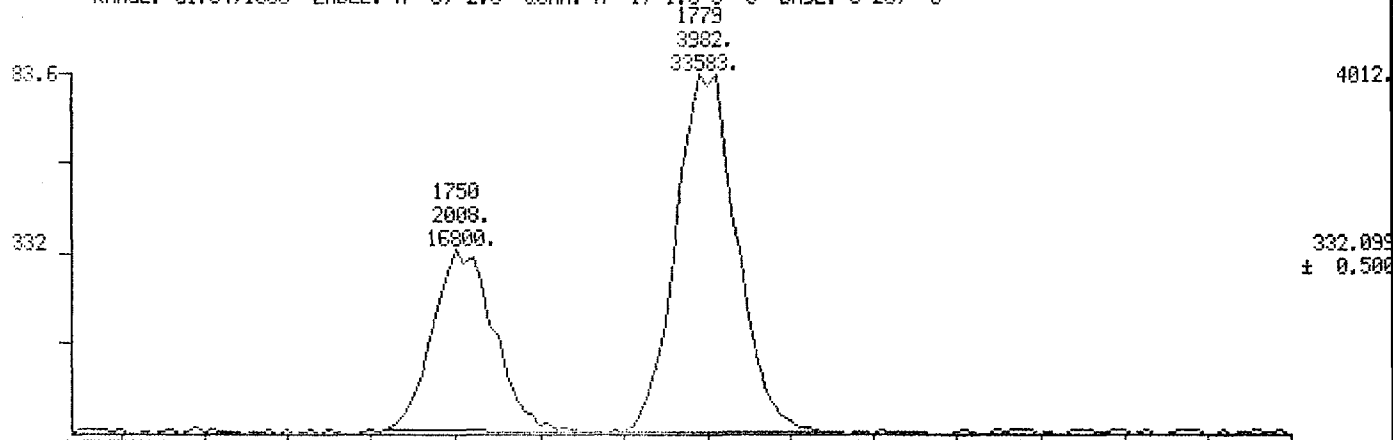
10/01/87 20:18:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



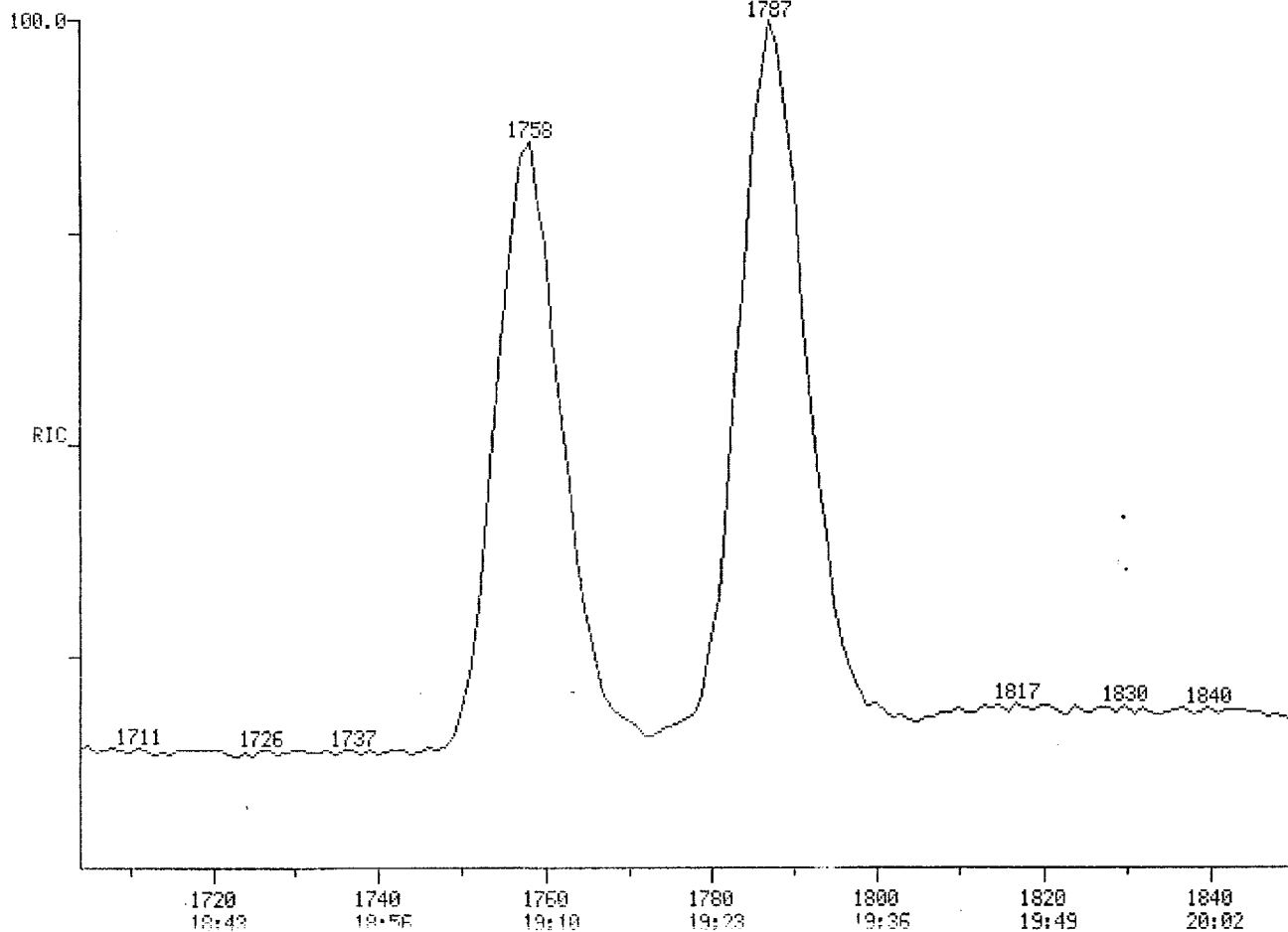
SCAN TIME

991110

011-07

MID RIC DATA: SEP2816 #1 SCANS 1704 TO 1850
 09/29/87 4:14:00 CALI: CAL092587 #3
 SAMPLE: CASE 8019: BATCH1/M.B./10.25G
 CONDS.: 60M SP2331/100/100-200025/200-24004/8
 RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0, BASE: U 20, 3

14912.



SCAN TIME

011467

MID MASS CHROMATOGRAMS

DATA: SEP2816 #1

SCANS 1704 TO 1850

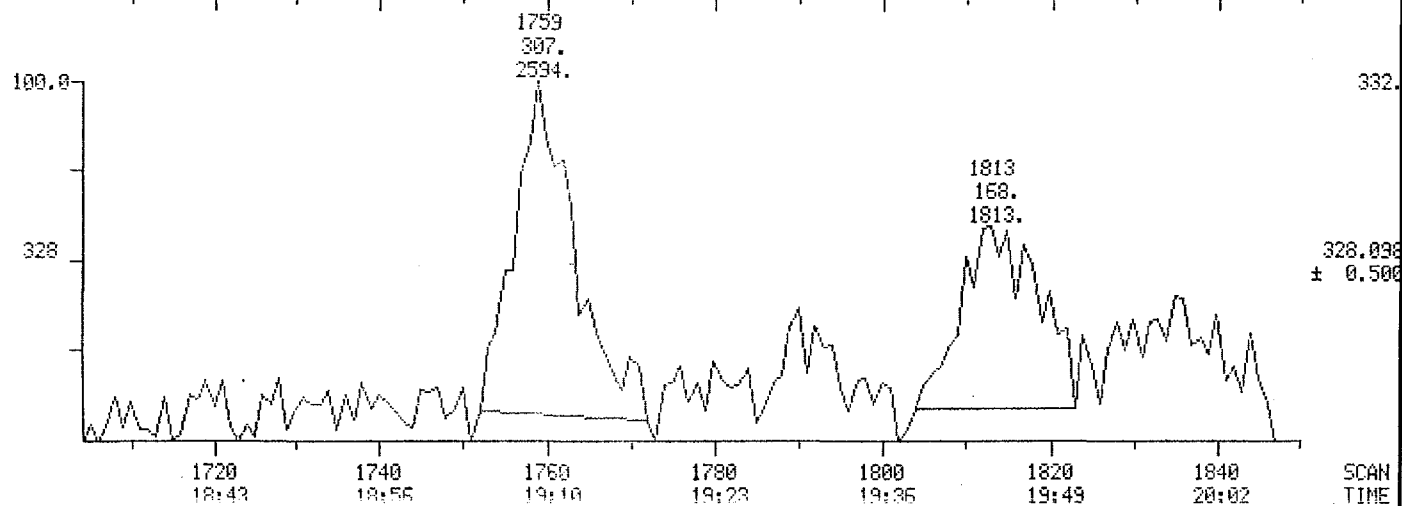
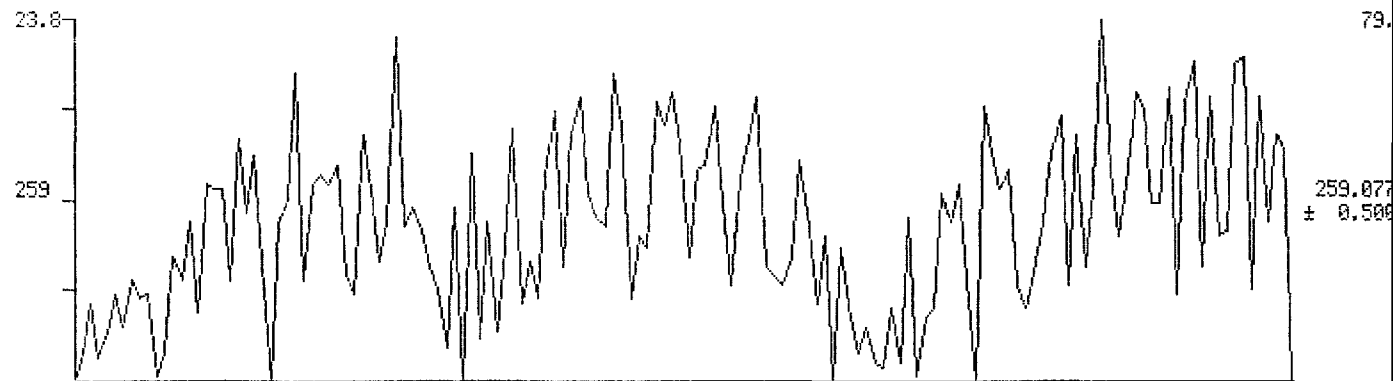
09/29/87 4:14:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/M.B./10.25G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011468

MID MASS CHROMATOGRAMS

DATA: SEP2816 #1

SCANS 1704 TO 1850

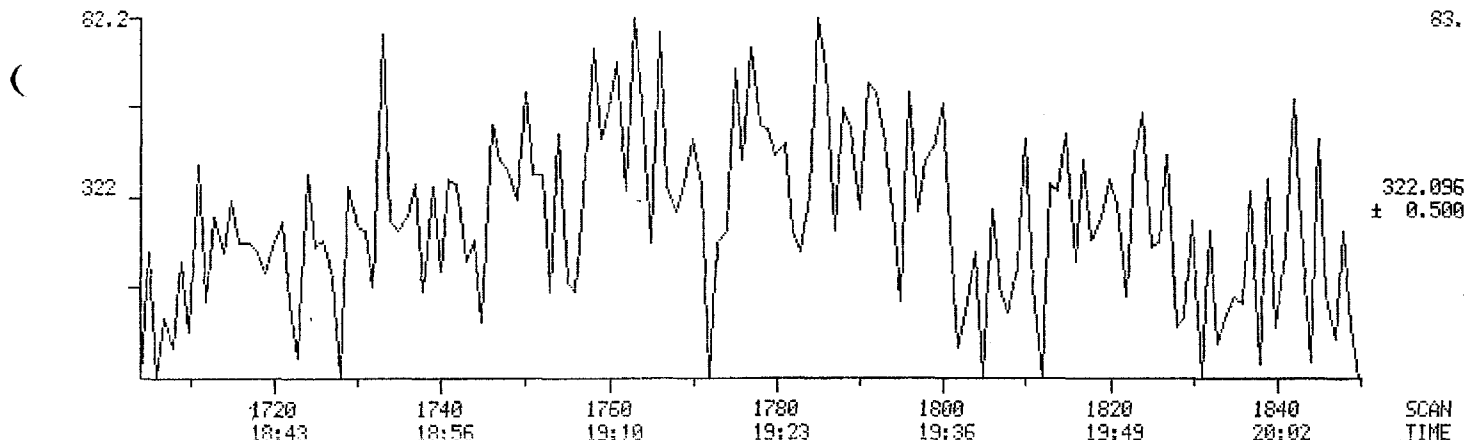
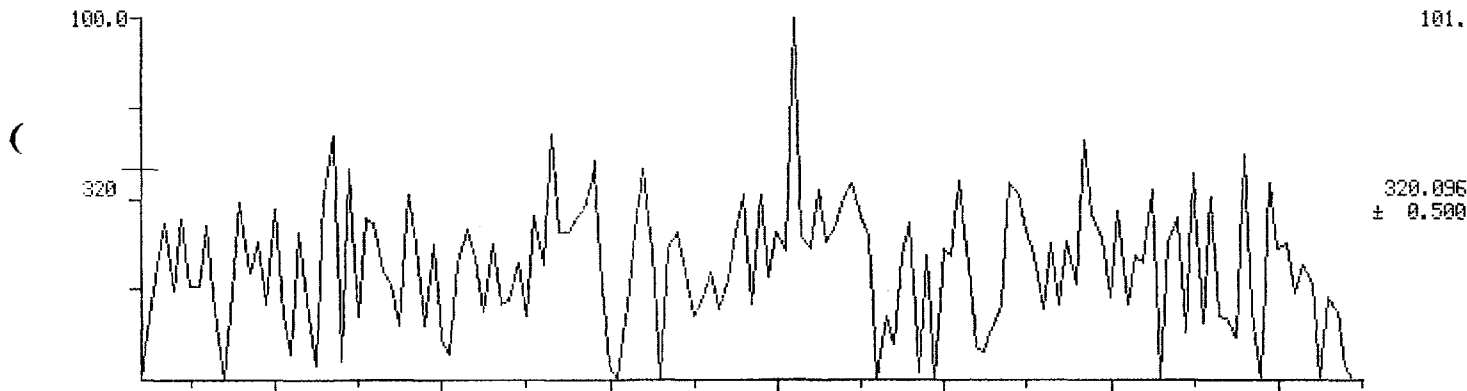
09/29/87 4:14:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/M.B./10.25G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/3

RANGE: G1704.1850 LABEL: N 5. 2.5 QUAN: A 1. 1.0 J 0 BASE: U 20. 3



697110

MID MASS CHROMATOGRAMS

DATA: SEP2816 #1

SCANS 1704 TO 1850

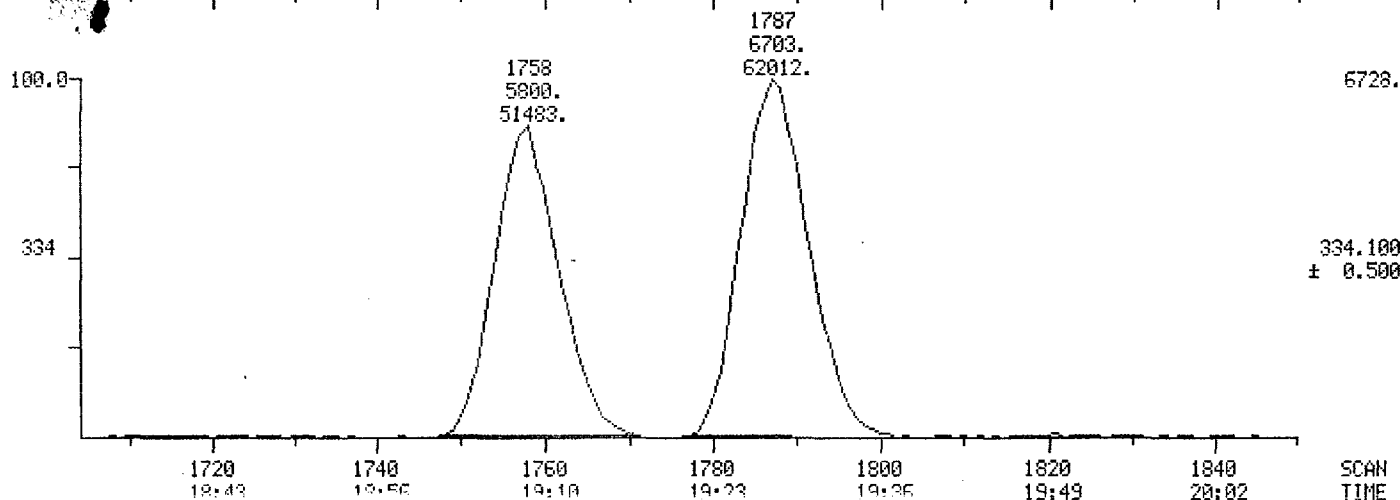
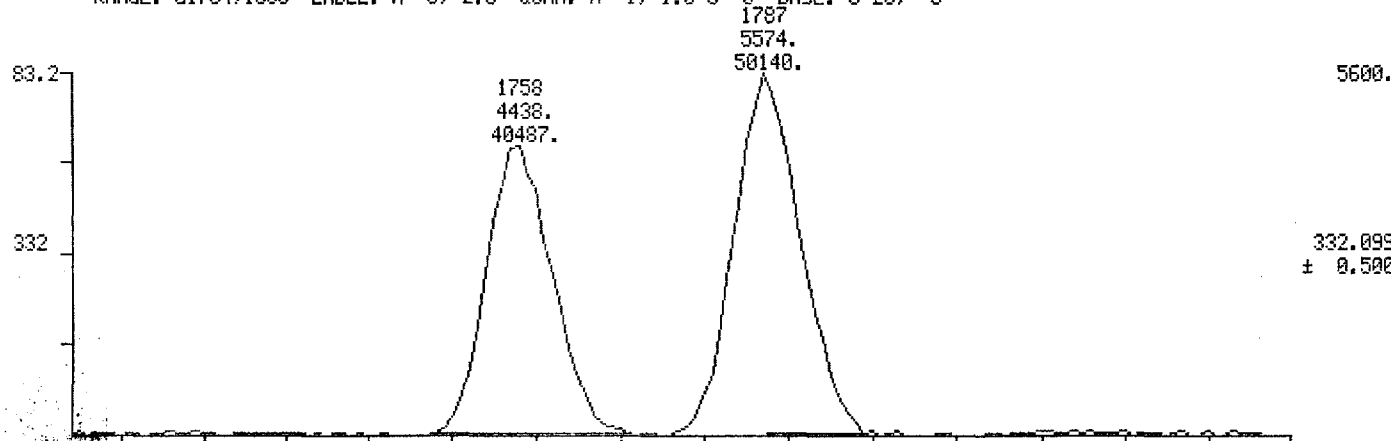
09/23/87 4:14:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/M.B./10.25G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/3

RANGE: G1704:1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



SCAN TIME

011470

MID RIC

DATA: SEP2818 #1

SCANS 1704 TO 1850

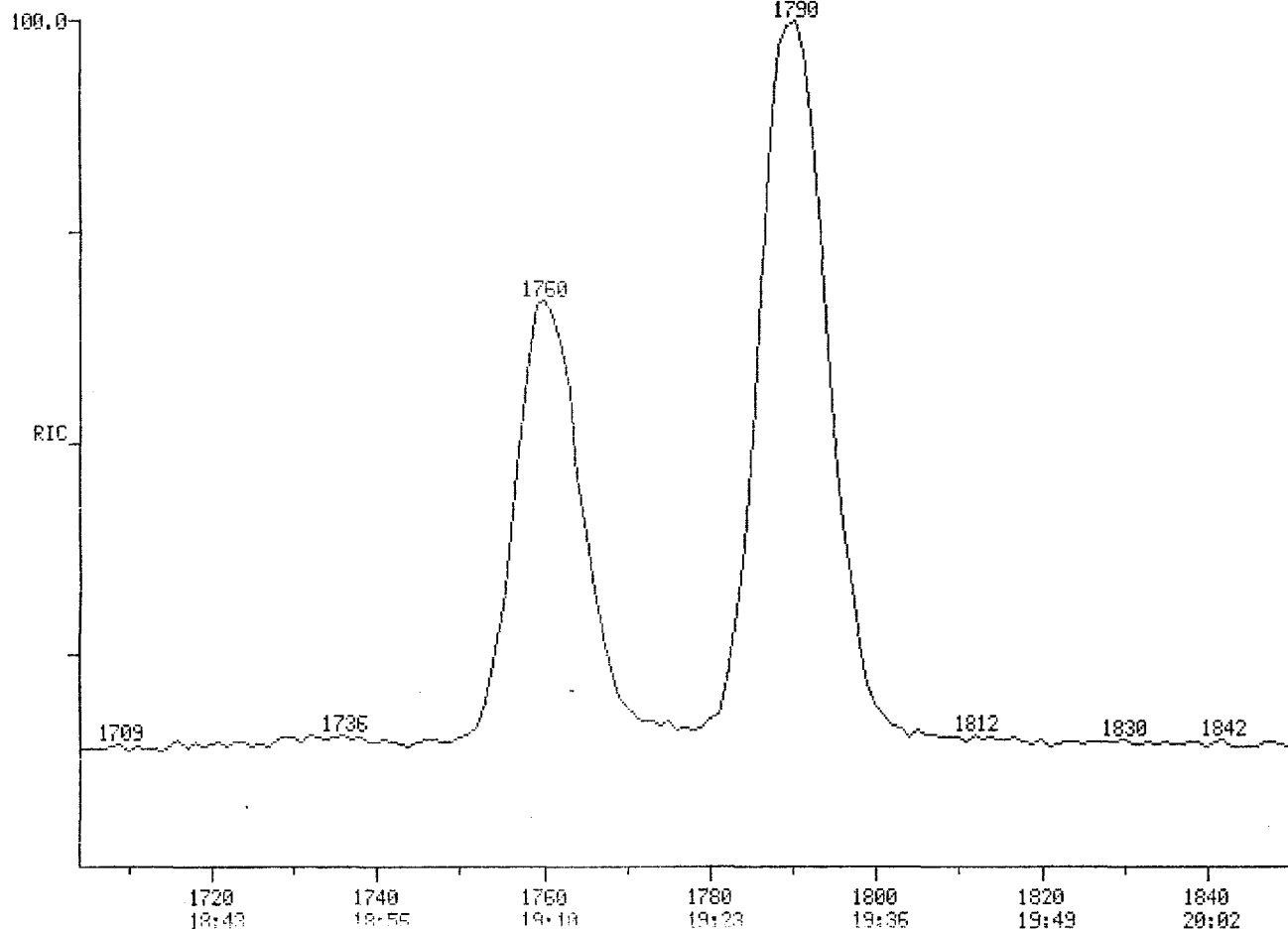
09/29/87 5:11:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/212-01/10.11G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



13504.

SCAN
TIME

011471

MID MASS CHROMATOGRAMS

DATA: SEP2818 #1

SCANS 1704 TO 1850

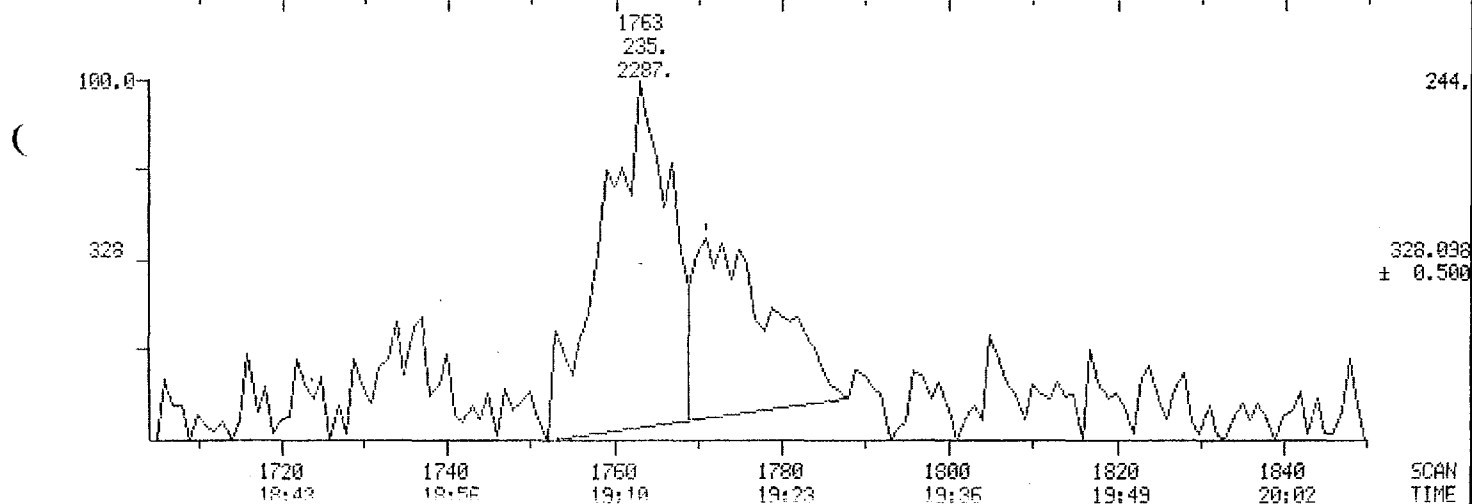
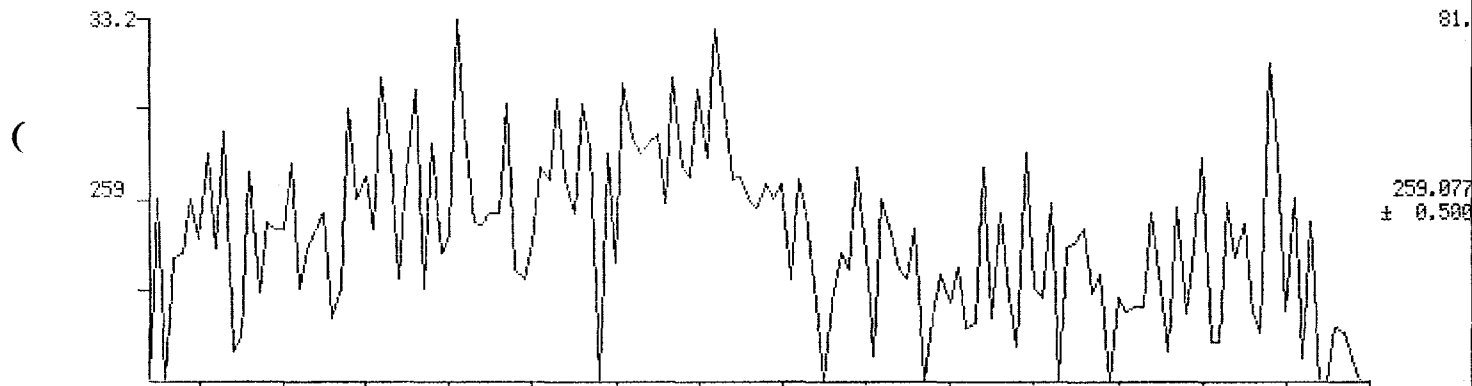
09/29/87 5:11:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/212-01/10.11G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011472

MID MASS CHROMATOGRAMS

DATA: SEP2818 #1

SCANS 1704 TO 1850

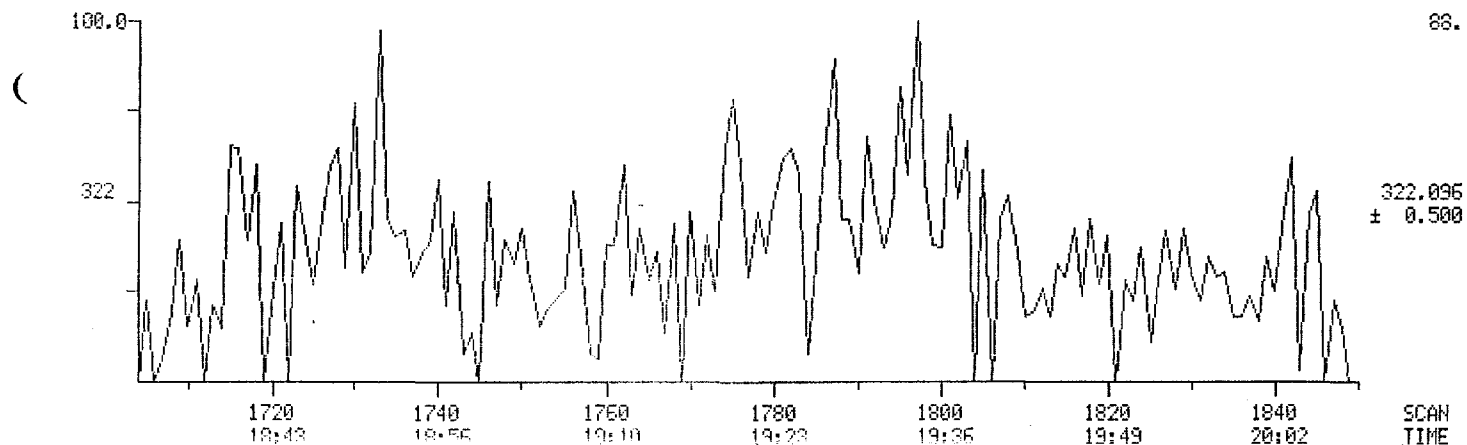
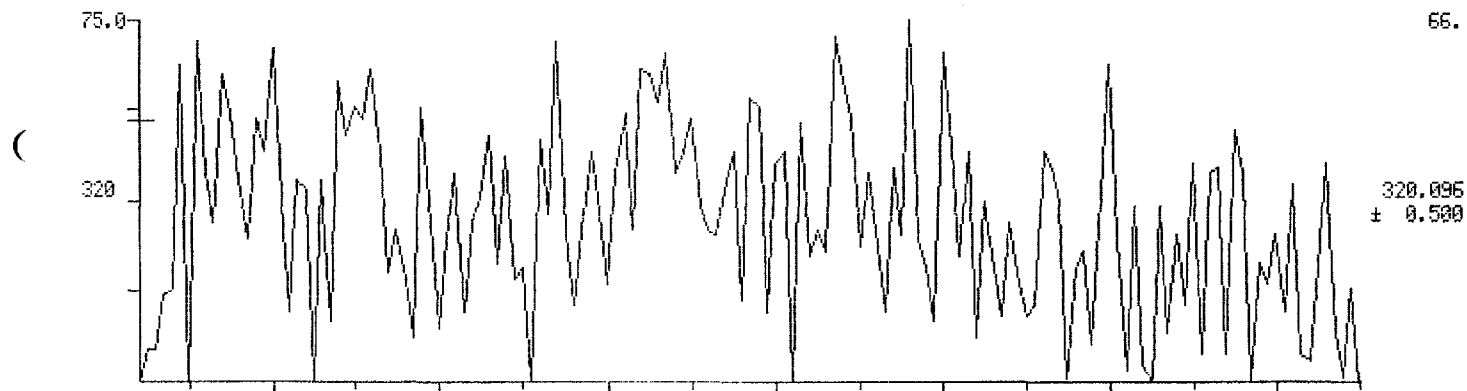
09/23/87 5:11:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/212-01/10.11G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



SCAN TIME

011473

MID MASS CHROMATOGRAMS

DATA: SEP2818 #1

SCANS 1704 TO 1850

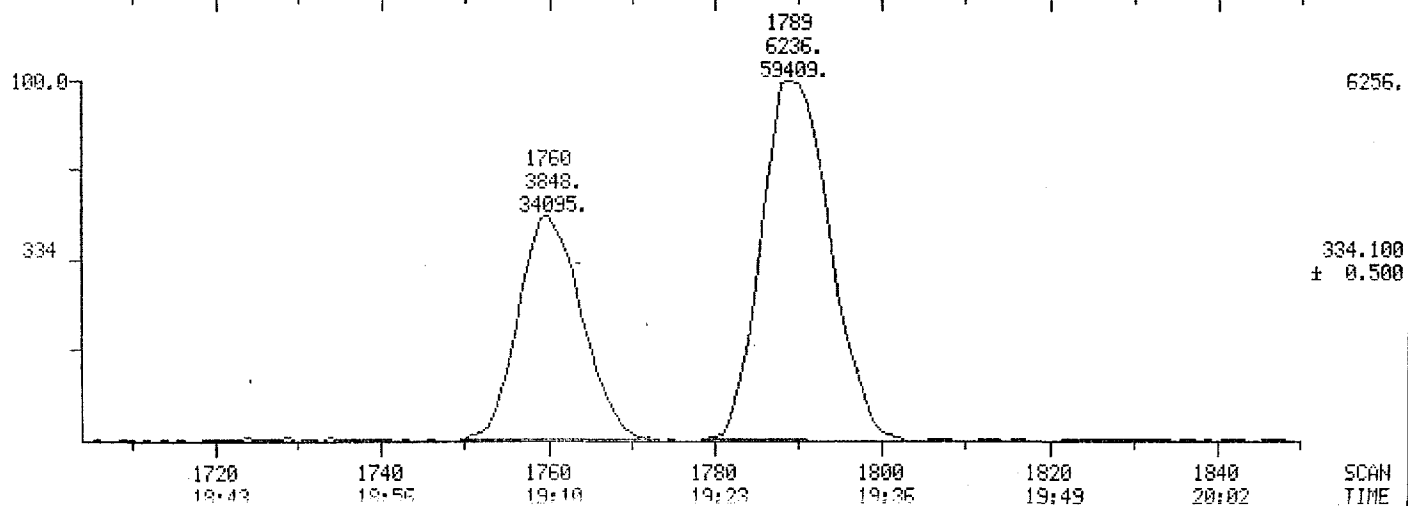
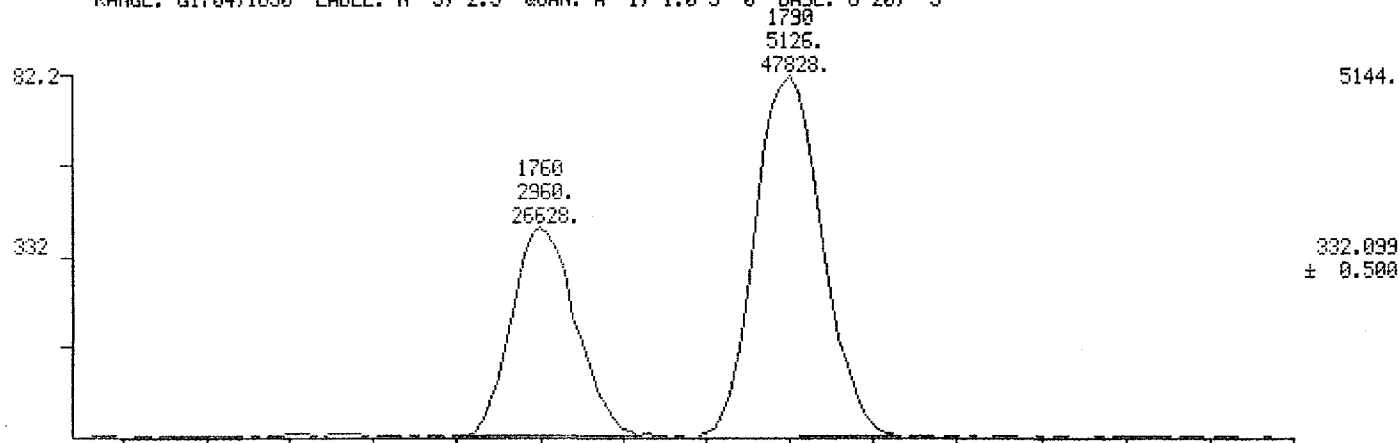
09/29/87 5:11:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/212-01/10.11G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1720
19:43

1740
19:55

1760
19:10

1780
19:23

1800
19:36

1820
19:49

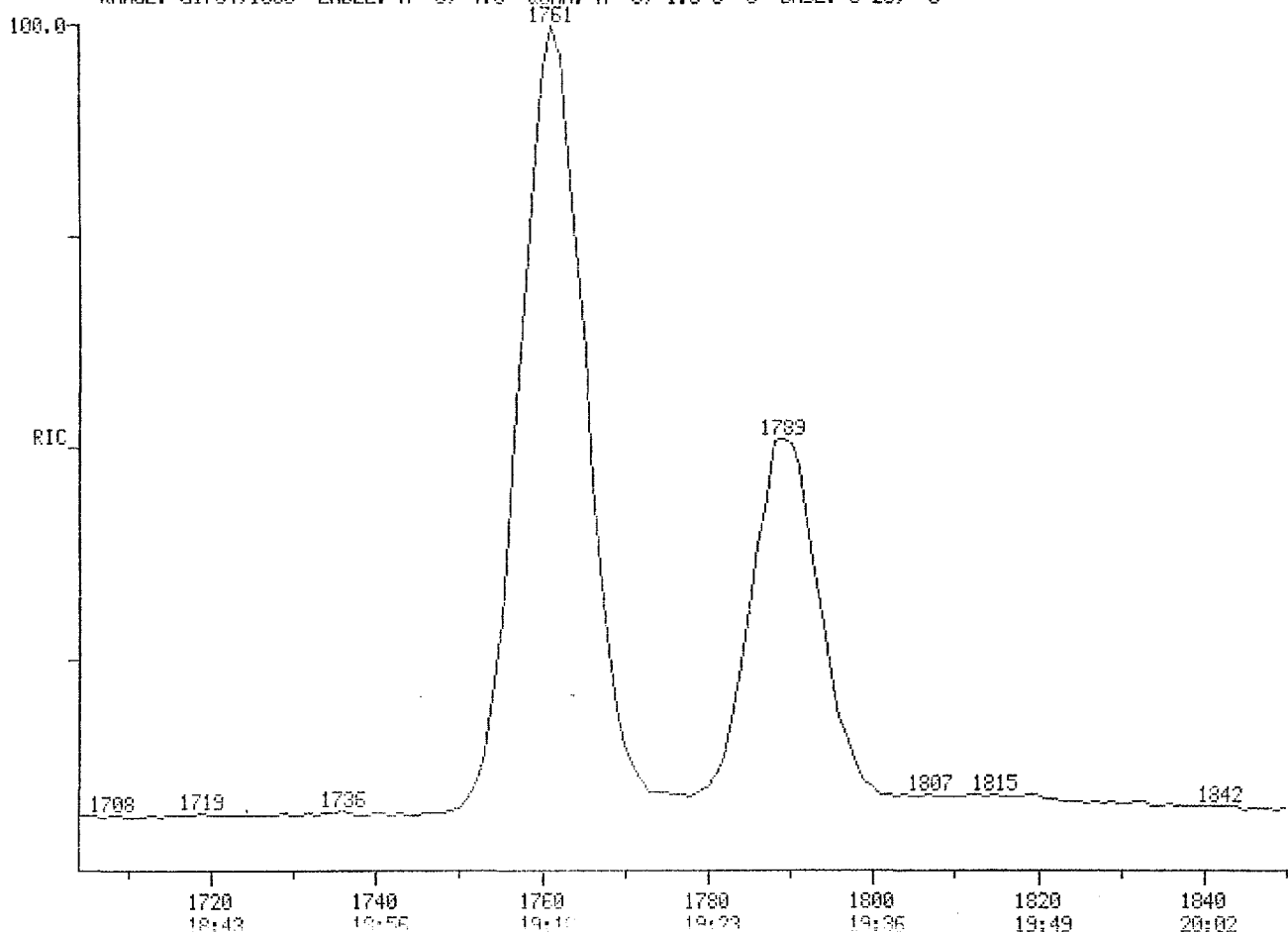
1840
20:02

SCAN
TIME

011474

MID RIC DATA: SEP2817 #1 SCANS 1704 TO 1850
09/29/87 4:43:00 CALI: CAL092597 #3
SAMPLE: CASE 8019: BATCH1/212-04/10.25G
CONDS.: 60M SP2331/100/100-200025/200-24004/8
RANGE: G1704.1850 LABEL: N 0, 4.0 CUGH: A 0, 1.0 J 0 BASE: U 20, 3

32224.



SCAN
TIME

011475

MID MASS CHROMATOGRAMS

DATA: SEP2817 #1

SCANS 1704 TO 1850

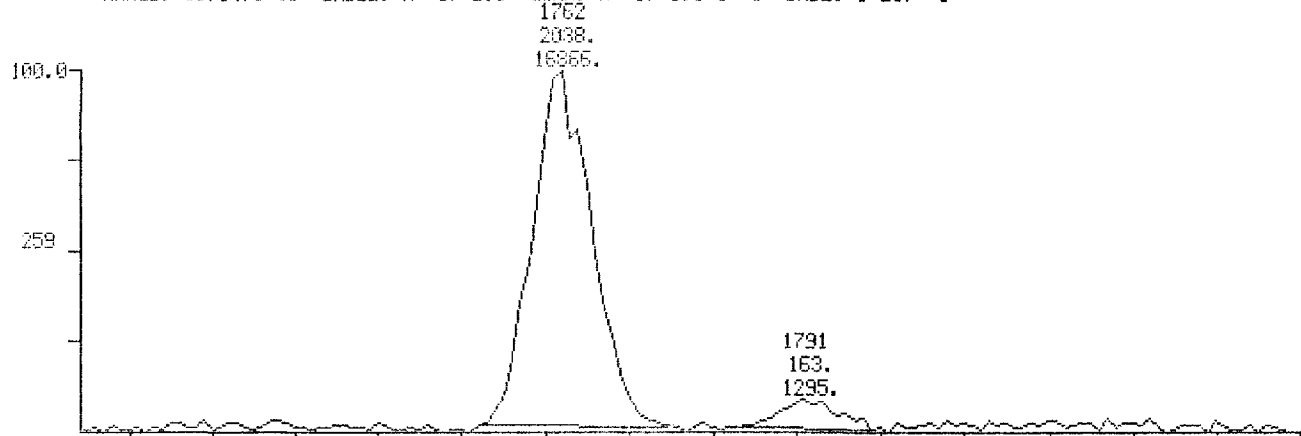
09/29/87 4:43:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/212-04/10.25G

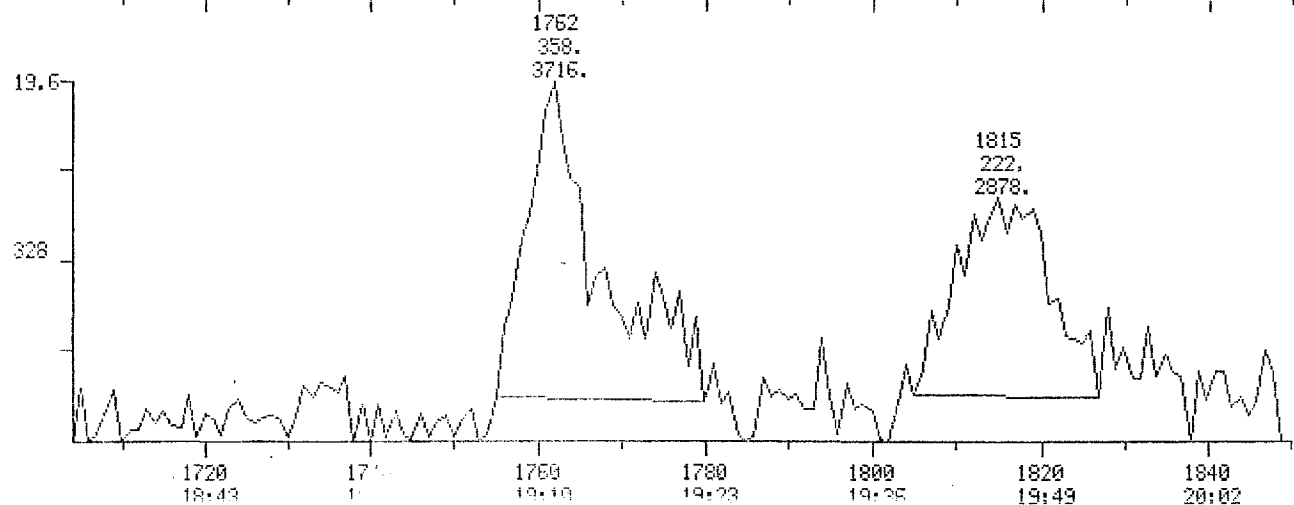
CONDS.: 50M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5. 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



2072.

259.077
± 0.500



405.

328.096
± 0.500

1720 1740 1760 1780 1800 1820 1840
19:43 19:47 19:50 19:53 19:56 19:59 20:02

SCAN
TIME

011476

MID MASS CHROMATOGRAMS

DATA: SEP2817 #1

SCANS 1704 TO 1850

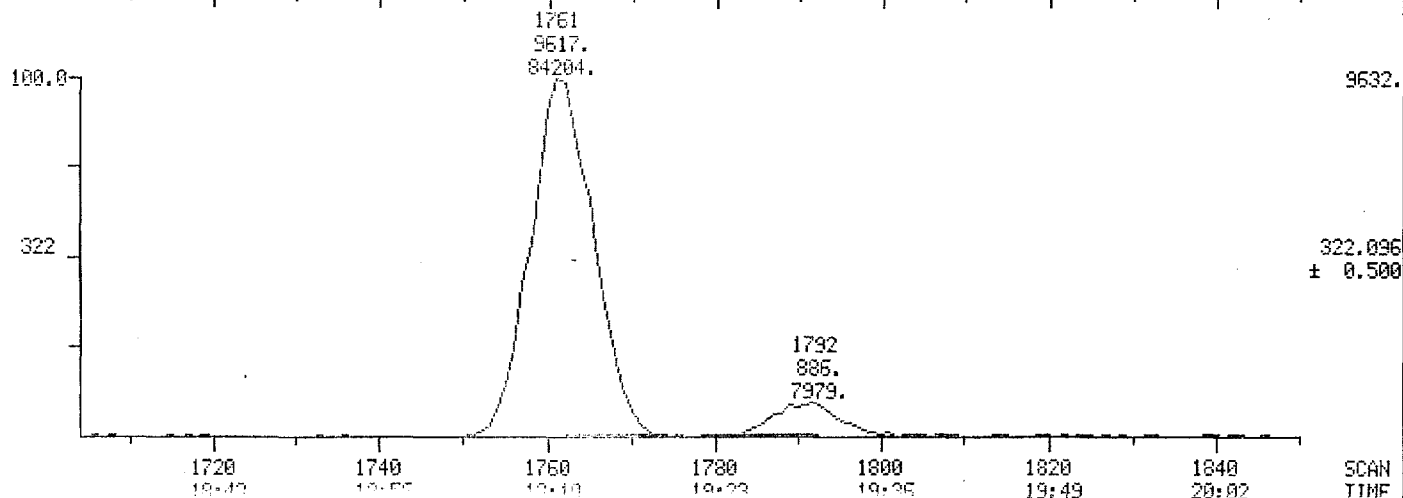
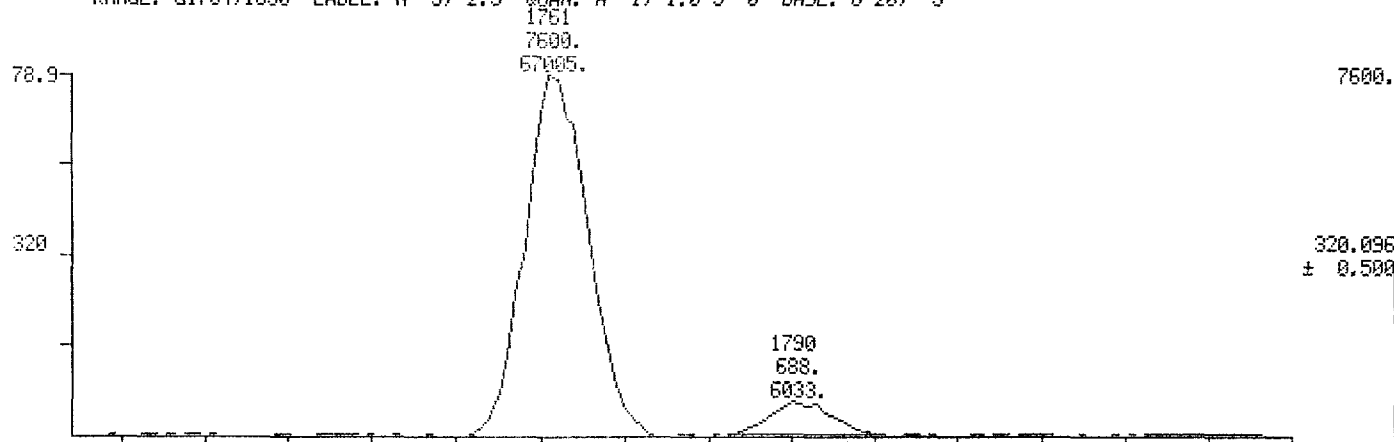
09/29/87 4:43:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/212-04/10.25G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011477

MID MASS CHROMATOGRAMS

DATA: SEP2817 #1

SCANS 1704 TO 1850

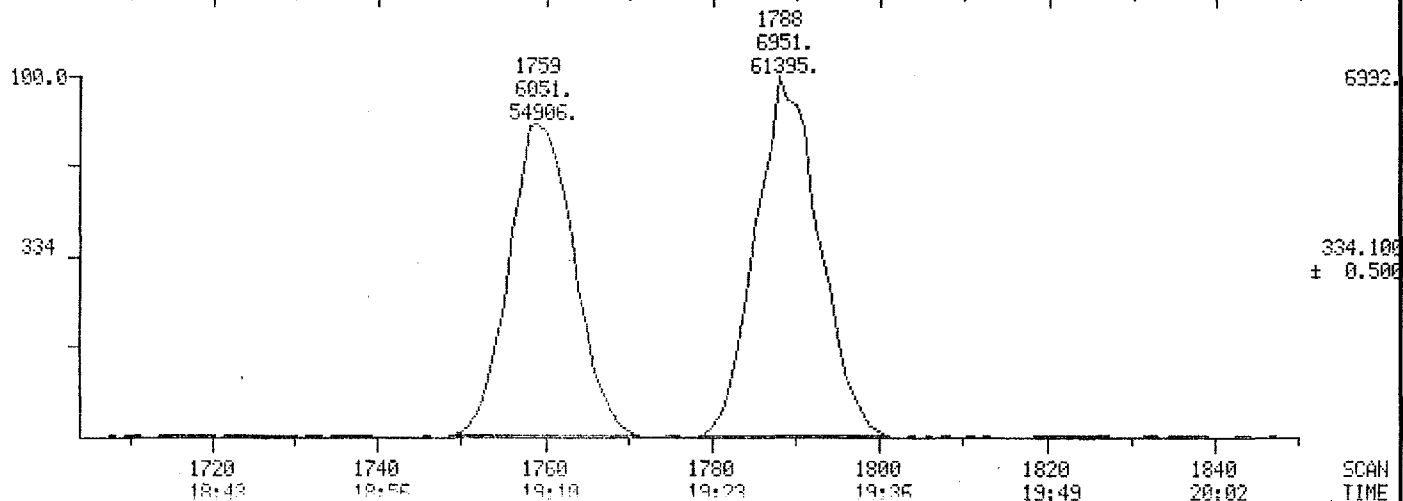
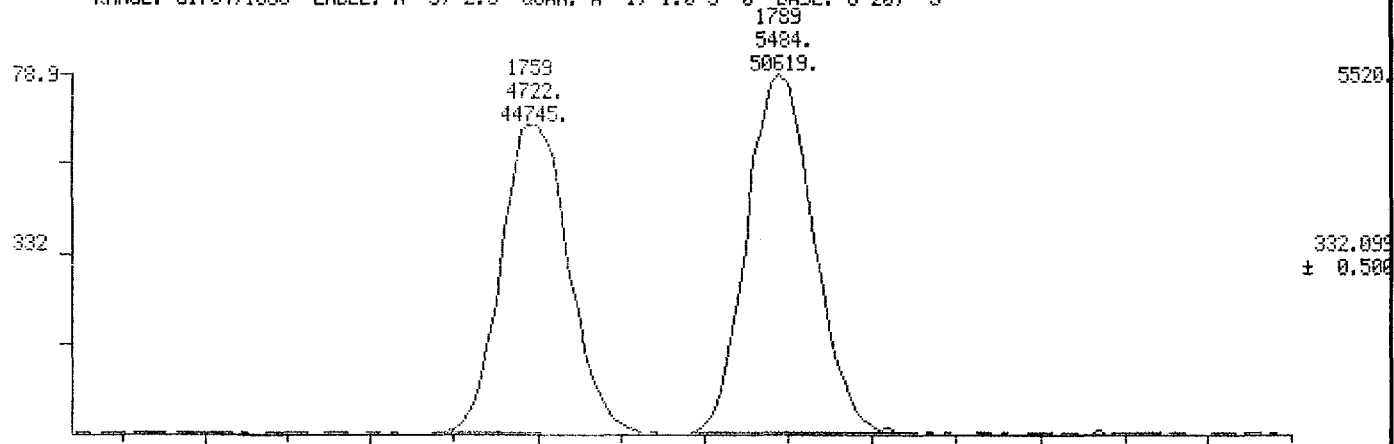
09/29/87 4:43:00

CALI: CAL092587 #3

SAMPLE: CASE 8019; BATCH1/212-04/10.25G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

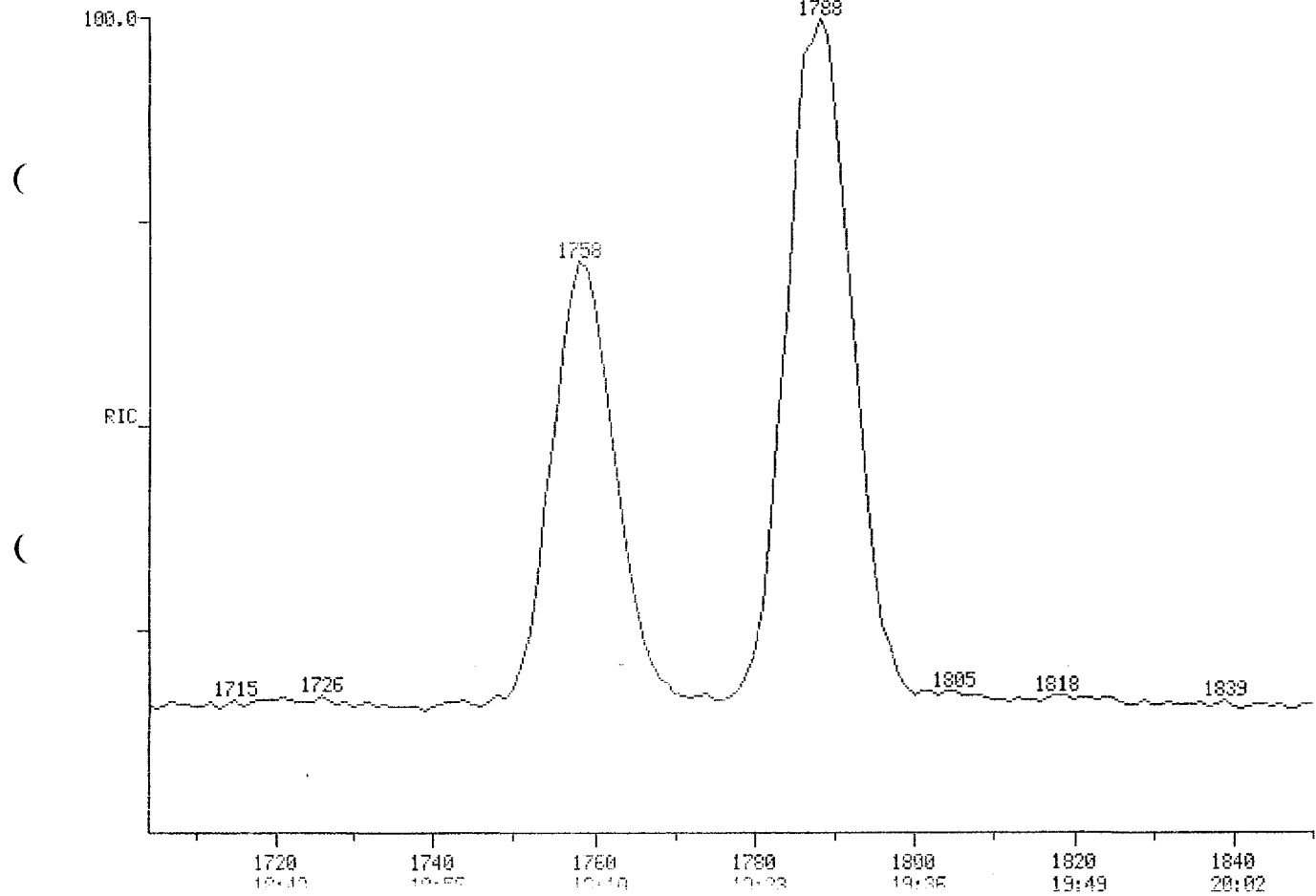
RANGE: G1704.1850 LABEL: N 5. 2.5 QUAN: A 1. 1.0 J 0 BASE: U 20. 3



011478

MID RIC DATA: SEP2819 #1 SCANS 1704 TO 1850
09/29/97 5:39:00 CALI: CAL092507 #3
SAMPLE: CASE 8019: BATCH1/212-05/9.95G
CONDS.: 60M SP2331/100/100-200@25/200-240@4/0
RANGE: G1704.1850 LABEL: N 0. 4.0 QUANT: A 0. 1.0 J 0. BASE: U 20. 3

12368.



SCAN
TIME

MID MASS CHROMATOGRAMS

DATA: SEP2819 #1

SCANS 1704 TO 1850

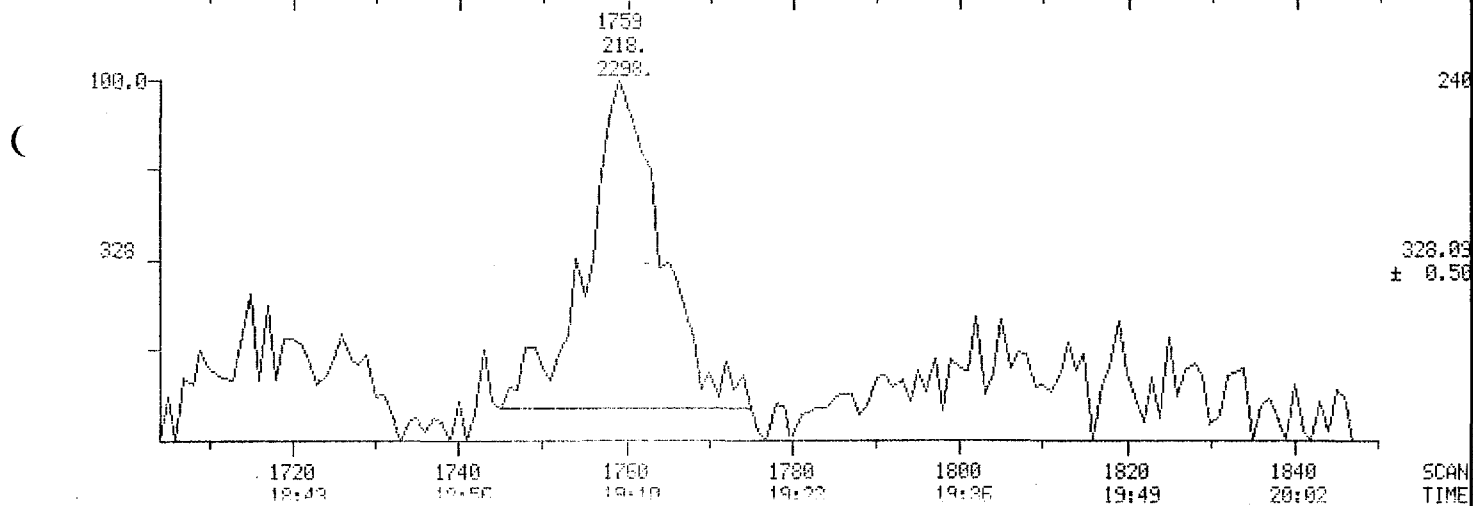
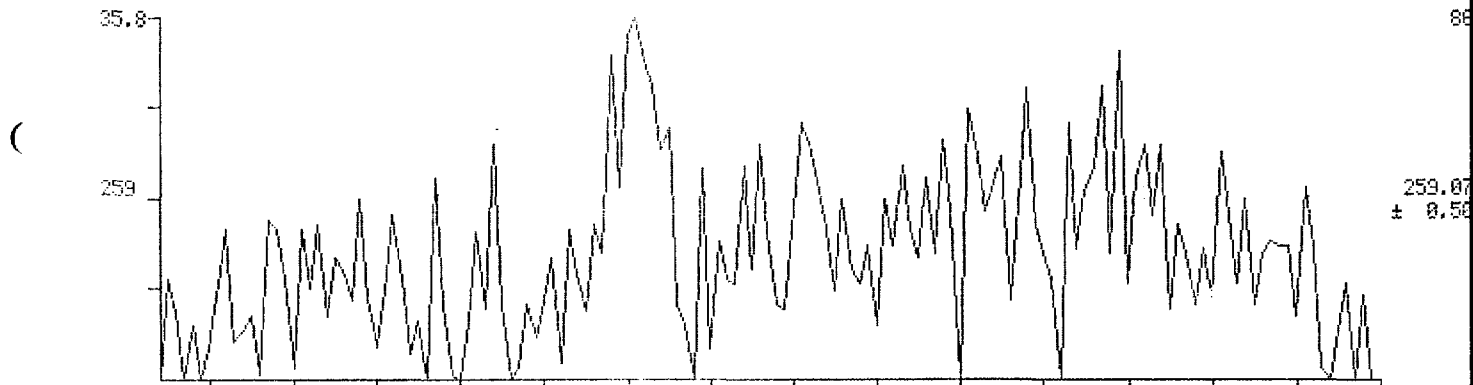
09/29/87 5:39:00

CALI: CAL092587 #3

SAMPLE: CASE 8019; BATCH1/212-05/3.95G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011479

MID MASS CHROMATOGRAMS

DATA: SEP2819 #1

SCANS 1704 TO 1850

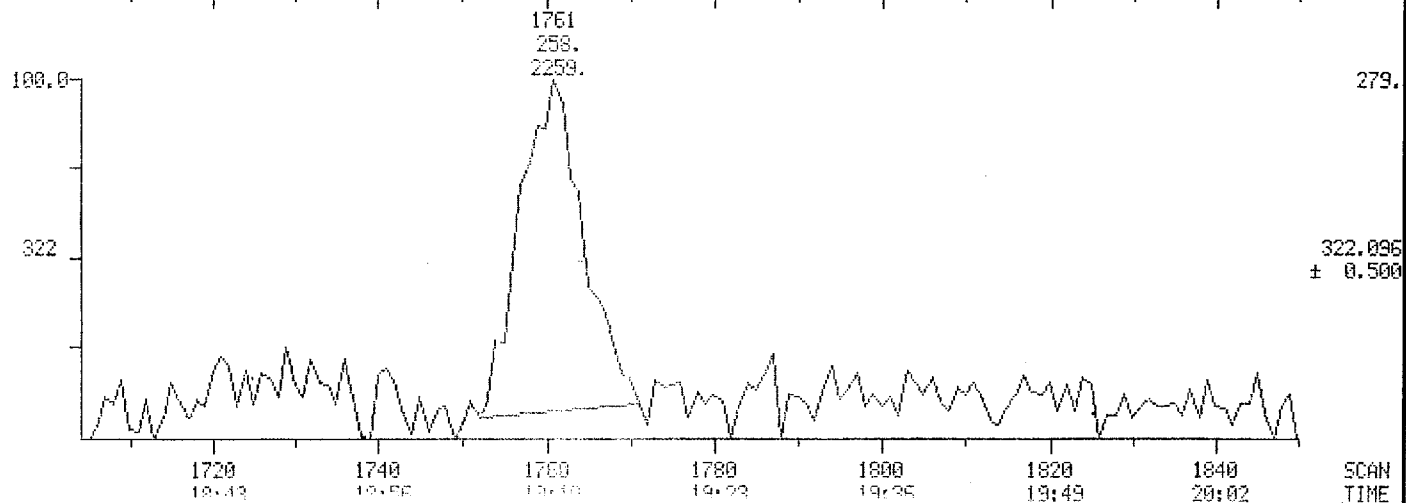
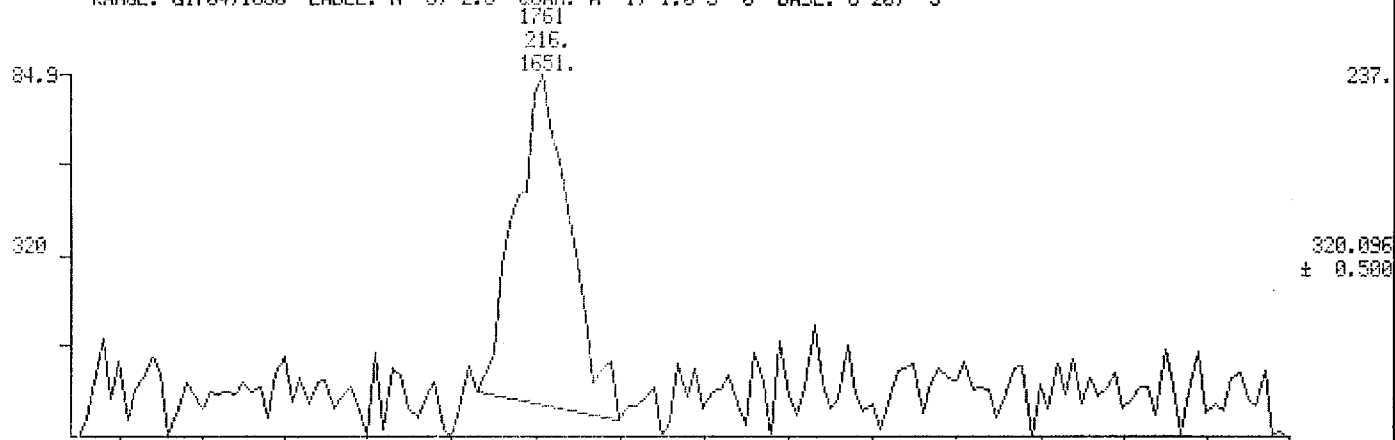
09/29/87 5:39:00

CALI: CAL092587 #3

SAMPLE: CASE 8019; BATCH1/212-05/3.95G

CONDS.: 60M SP2331/100/100-200025/200-24004-8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011480

MID MASS CHROMATOGRAMS

DATA: SEP2819 #1

SCANS 1704 TO 1850

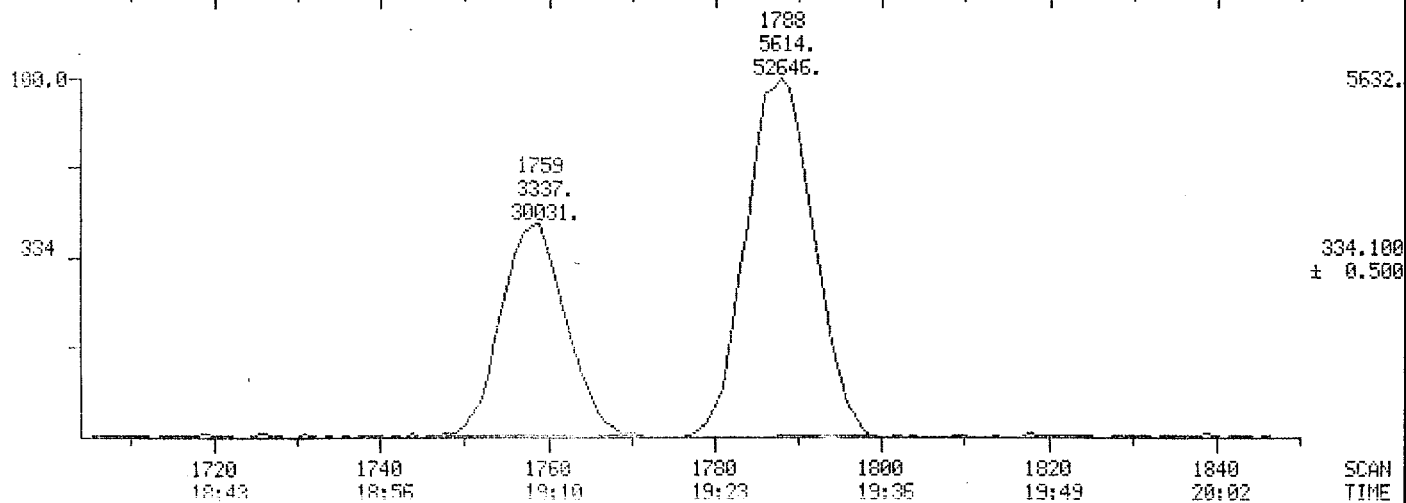
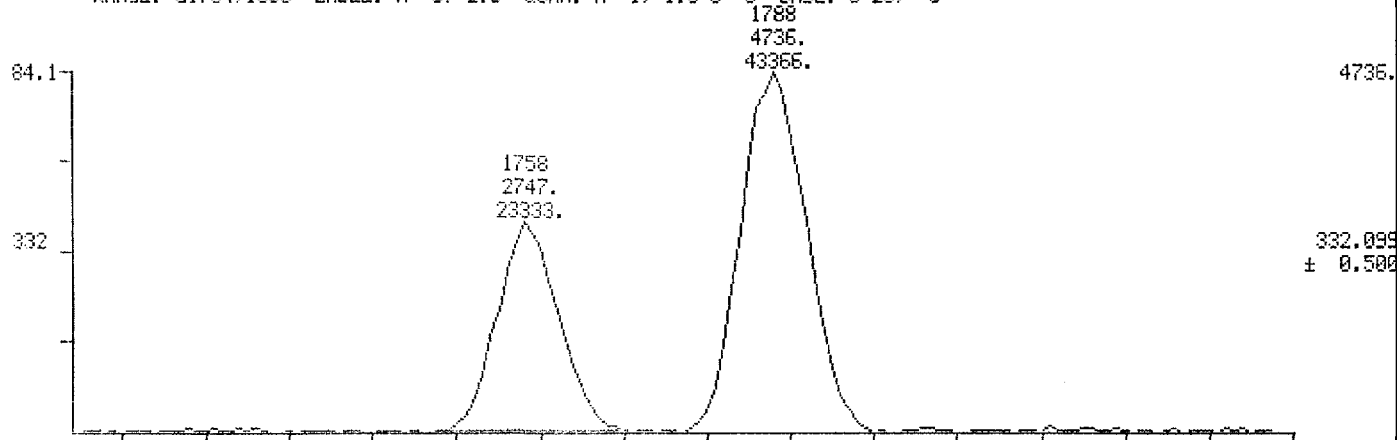
09/29/87 5:39:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/212-05/9.95G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



SCAN TIME

011481

MID RIC

DATA: OCT0103 #1

SCANS 1704 TO 1850

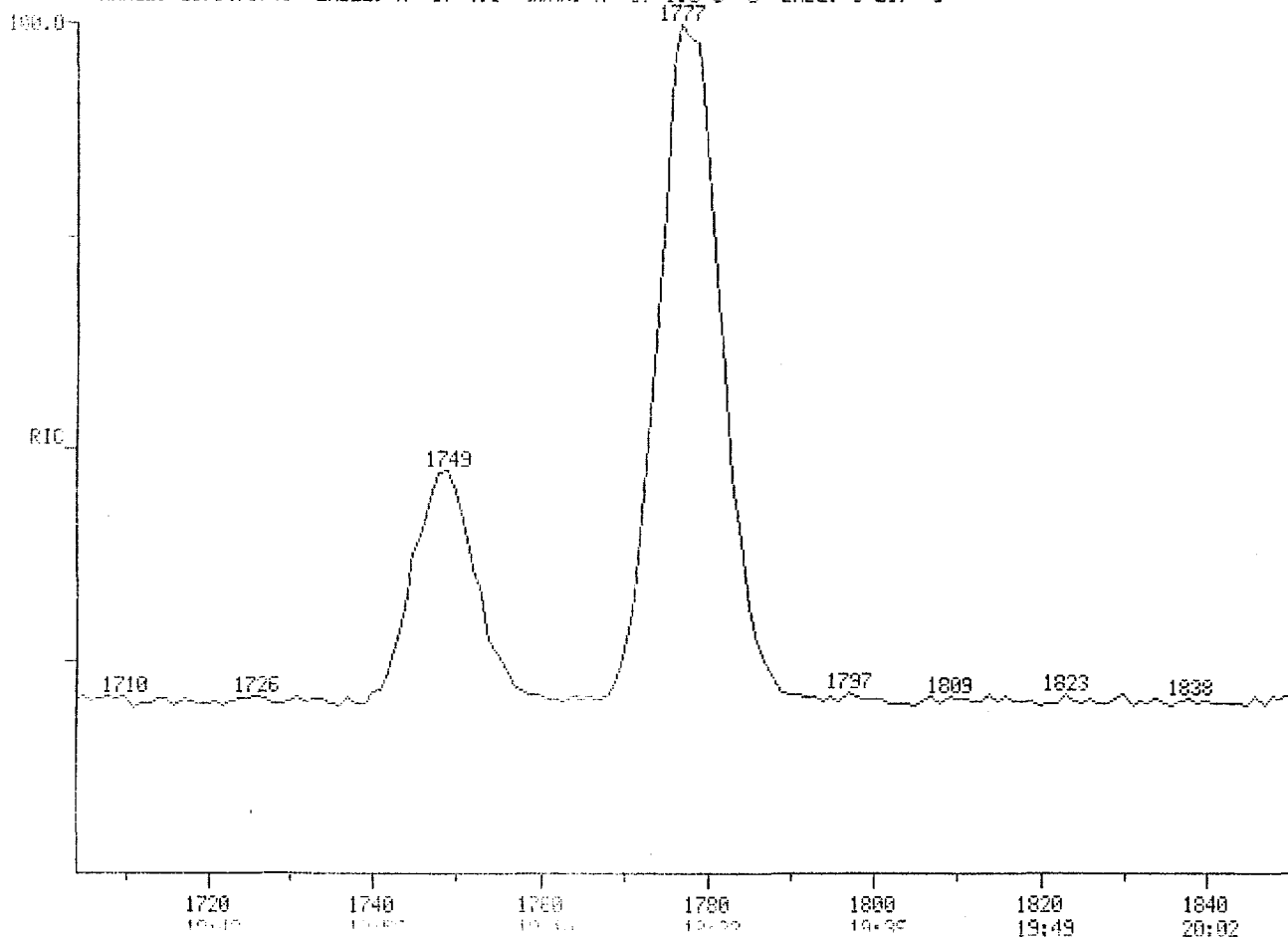
10/01/87 14:11:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/212-06/10.11G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: H 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



13200.

SCAN
TIME

011482

MID MASS CHROMATOGRAMS

DATA: OCT0103 #1

SCANS 1704 TO 1850

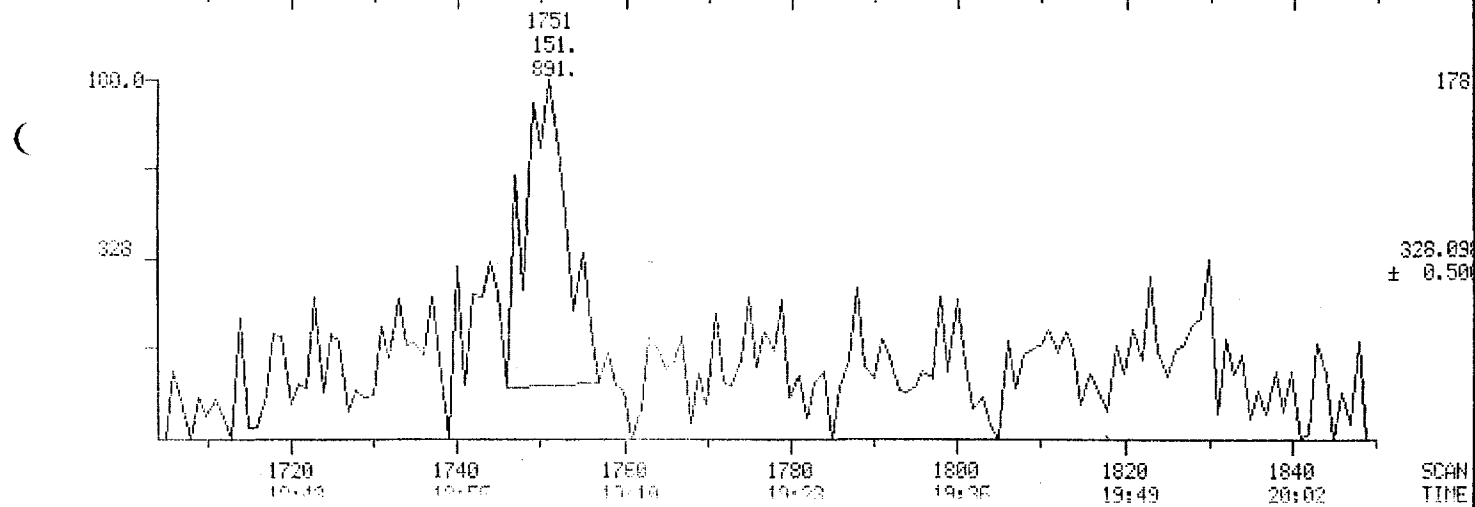
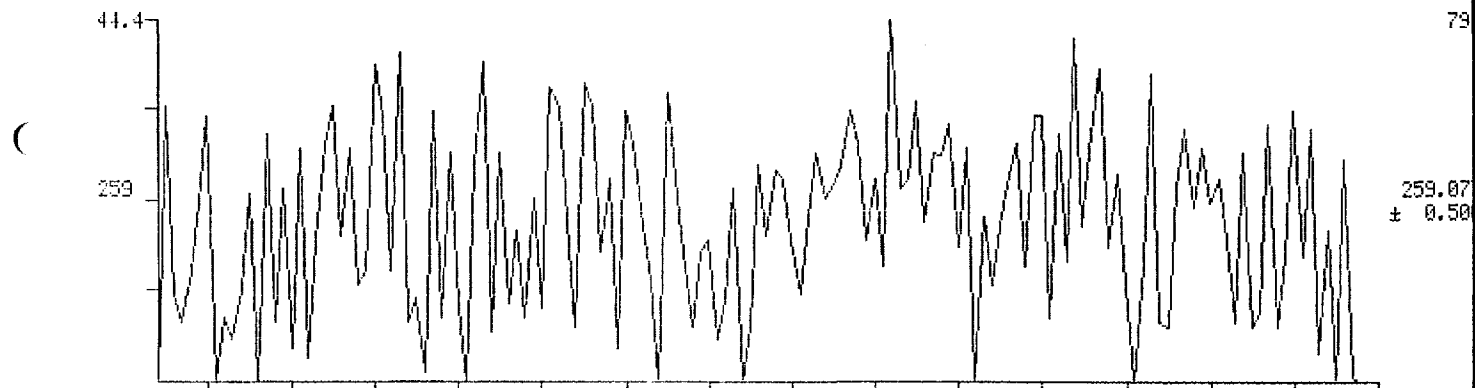
10/01/87 14:11:00

CALI: CAL992587 #3

SAMPLE: CASE 0019; BATCH1/212-06/10.11G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011483

MID MASS CHROMATOGRAMS

DATA: OCT0103 #1

SCANS 1704 TO 1850

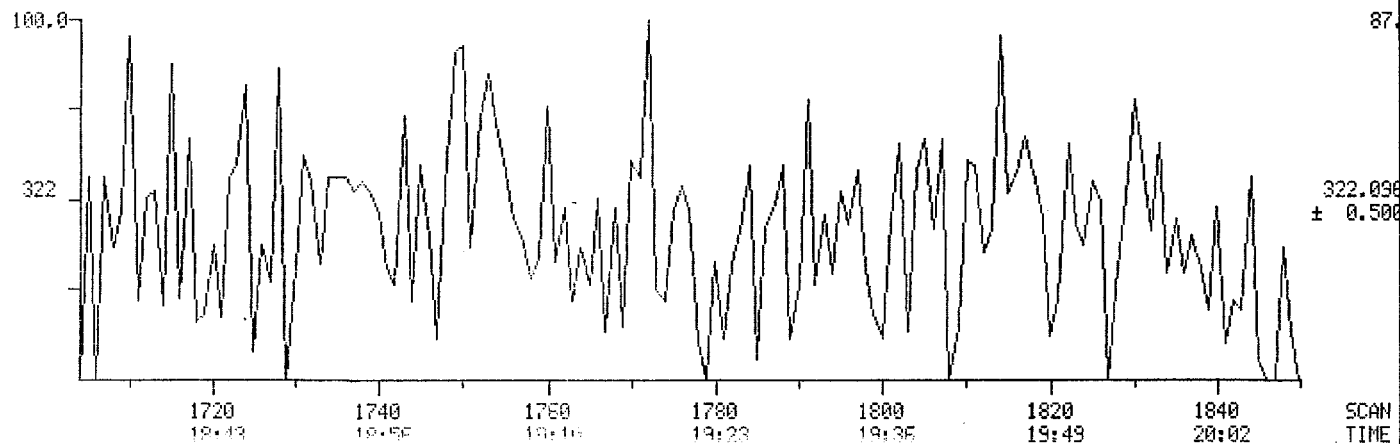
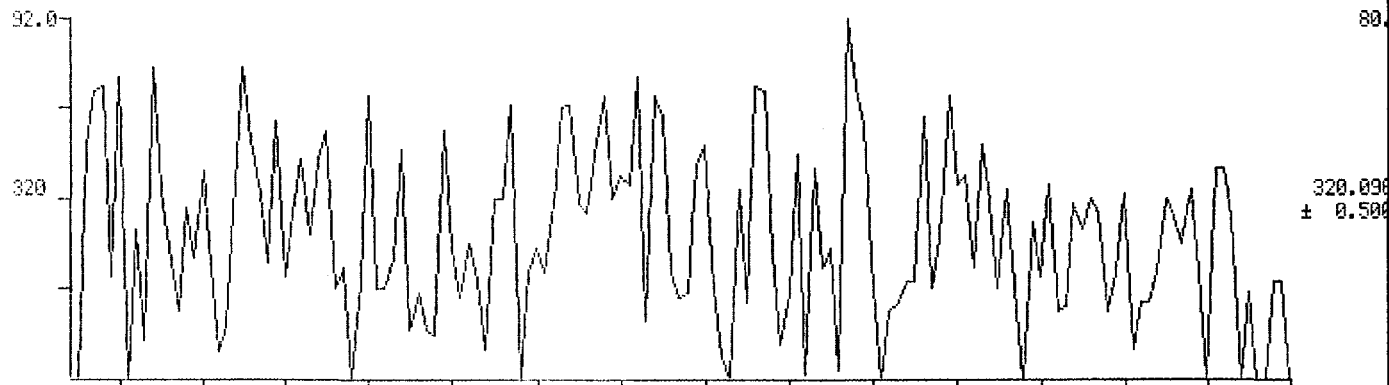
10/01/87 14:11:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/212-06/10.11G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5. 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011484

MID MASS CHROMATOGRAMS

DATA: OCT0103 #1

SCANS 1704 TO 1850

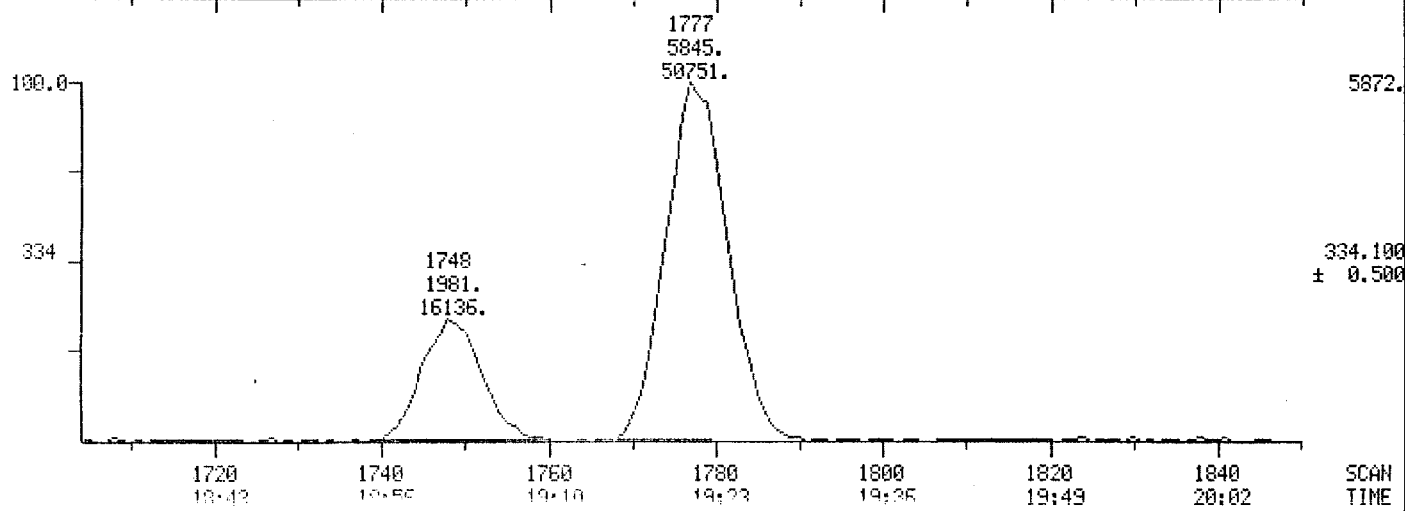
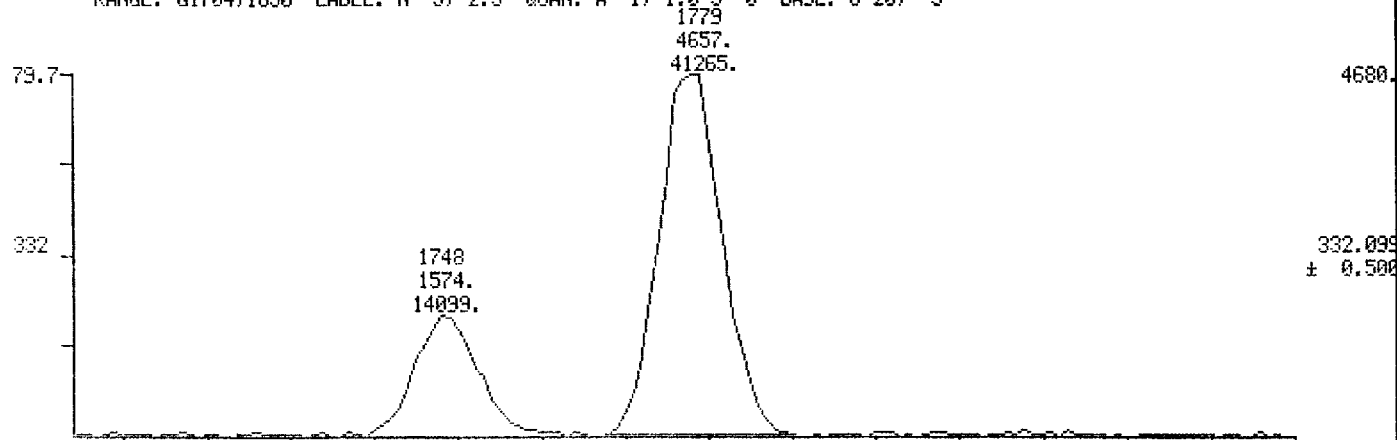
10/01/87 14:11:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/212-06/10.11G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



4680.

332.099
± 0.500

5872.

334.100
± 0.500

SCAN
TIME

011485

MID RIC
09/29/87 6:35:00

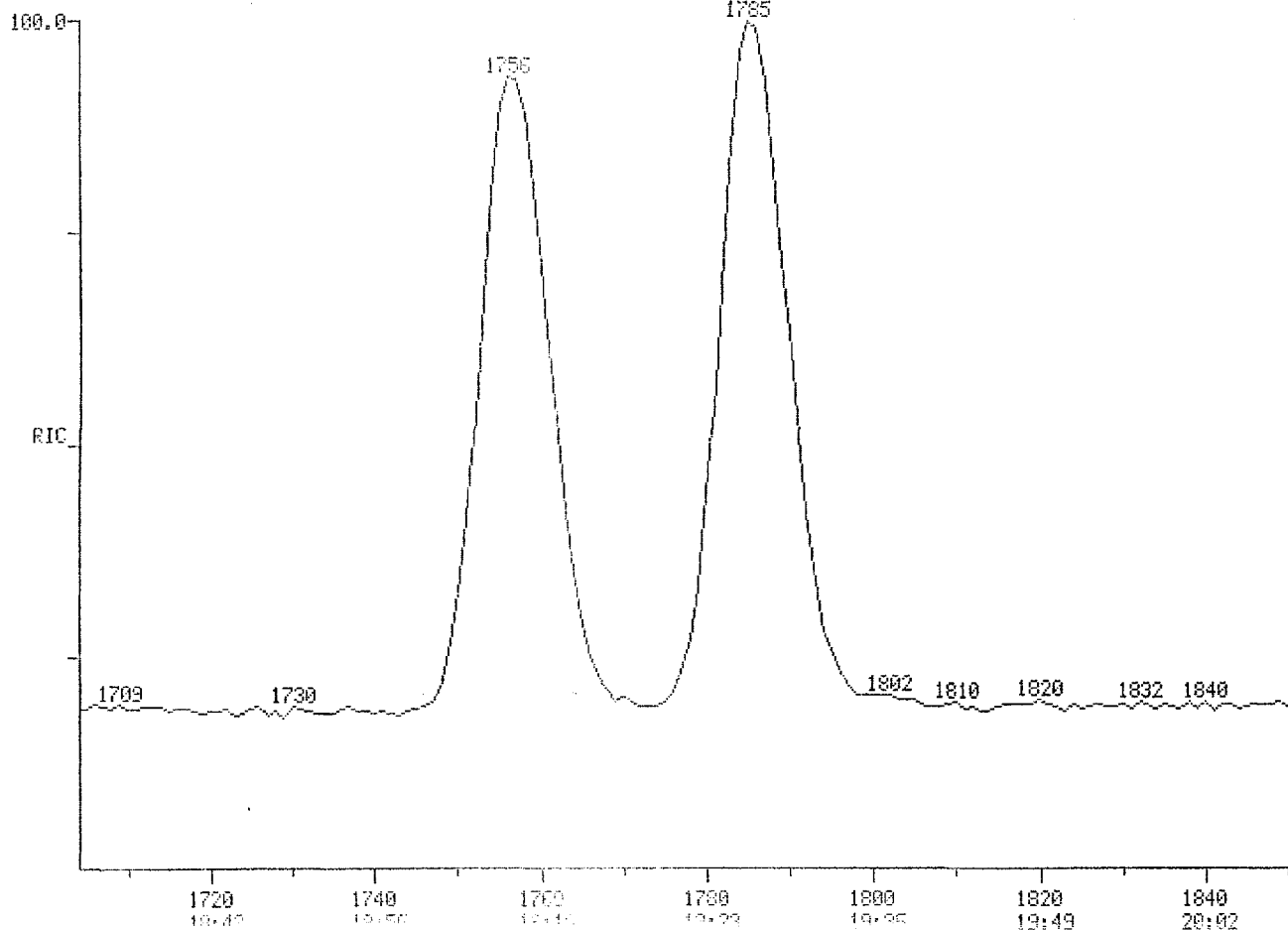
DATA: SEP2821 #1
CALI: CAL092587 #3

SCANS 1704 TO 1850

SAMPLE: CASE 8019: BATCH1/212-87/9.996

CONDS.: 60M SP2331/100/100-200025/269-24004/0

RANGE: G1704.1850 LABEL: N 0. 4.0 QUAR: A 0. 1.0 J 0 BASE: U 20. 3



13424.

SCAN
TIME

011486

MID MASS CHROMATOGRAMS

DATA: SEP2821 #1

SCANS 1704 TO 1850

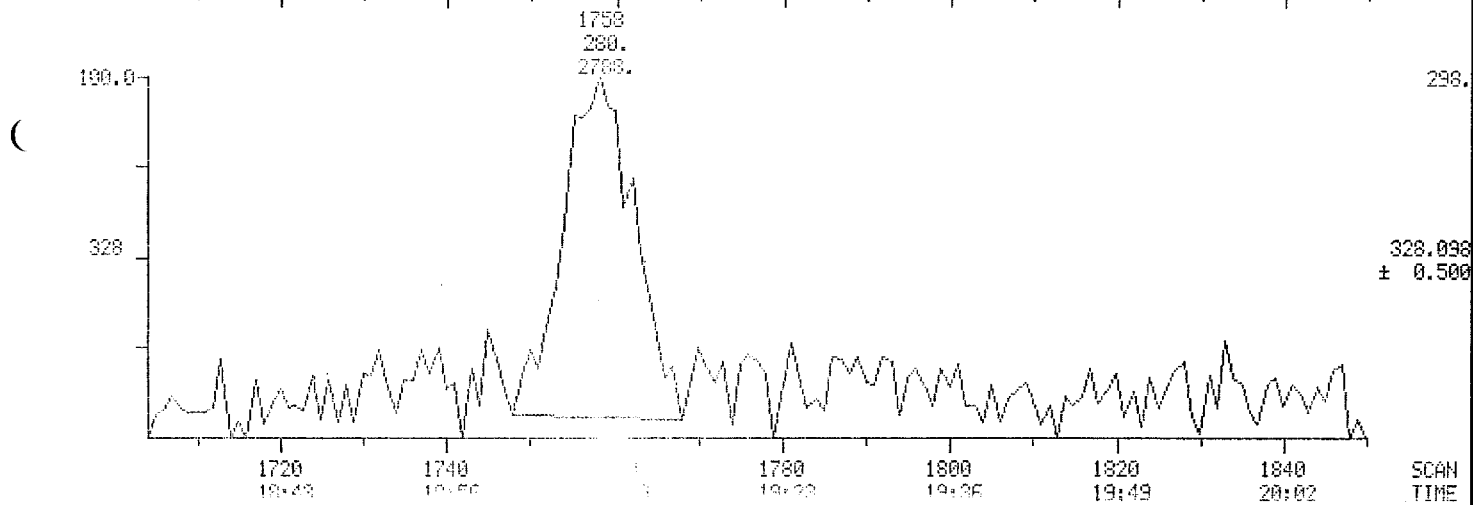
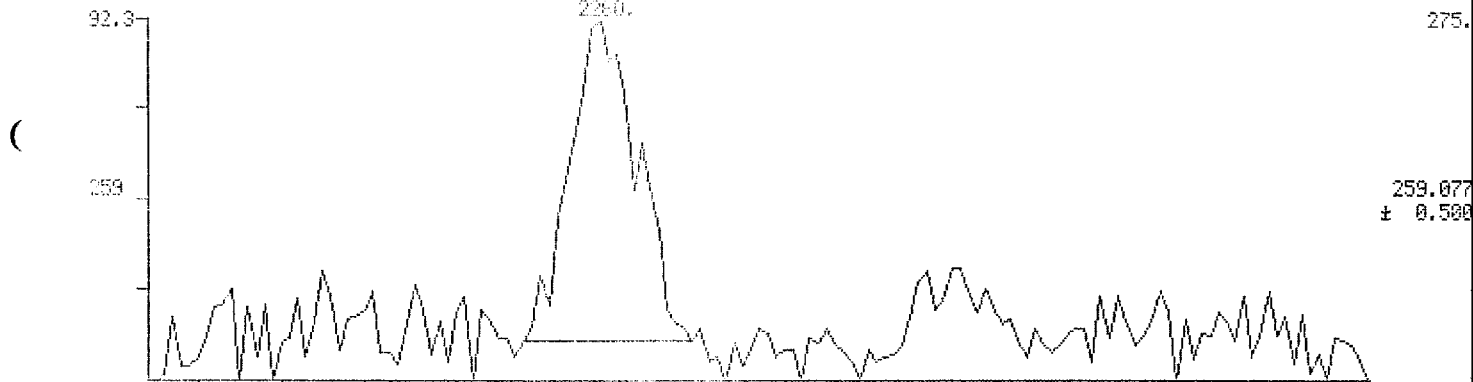
09/29/87 6:36:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/212-07/9.93G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5. 2.5 QUMH: A 1. 1.0 J 0 BASE: U 20. 3



011487

MID MASS CHROMATOGRAMS

DATA: SEP2821 #1

SCANS 1704 TO 1850

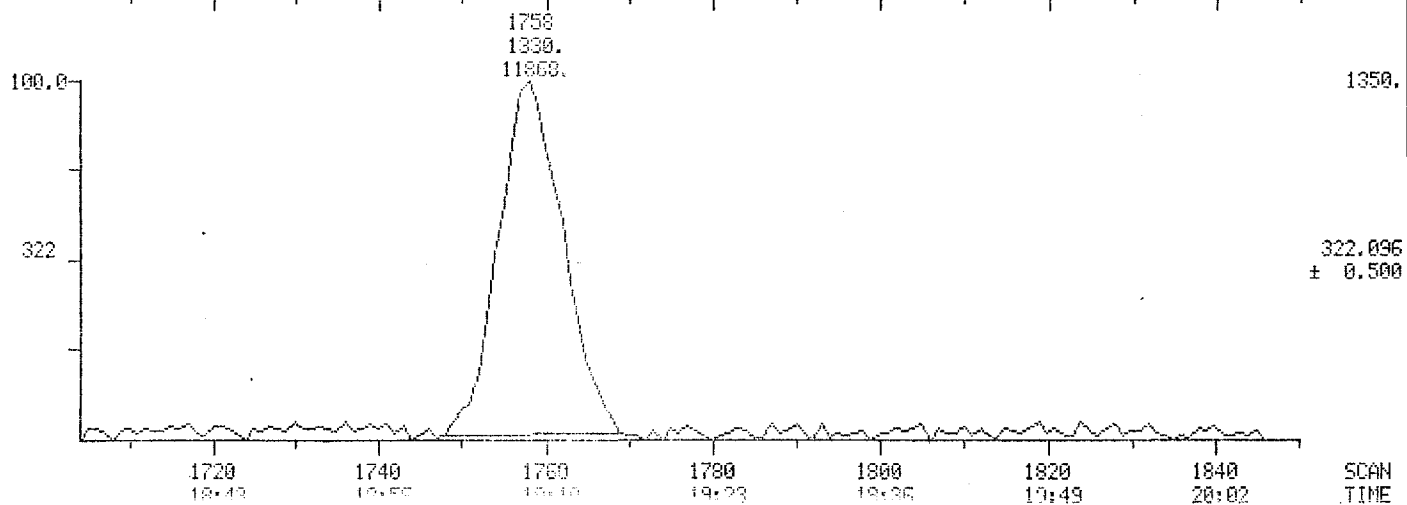
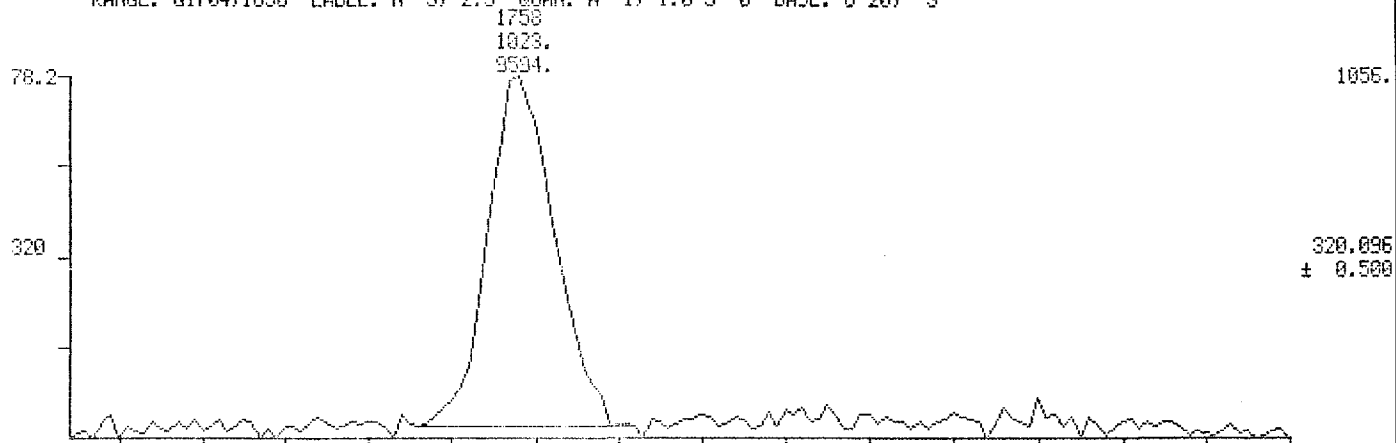
09/29/87 6:35:00

CALI: CAL002597 #3

SAMPLE: CASE 8019: BATCH1/212-07/9,99G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011488

MID MASS CHROMATOGRAMS

DATA: SEP2821 #1

SCANS 1704 TO 1850

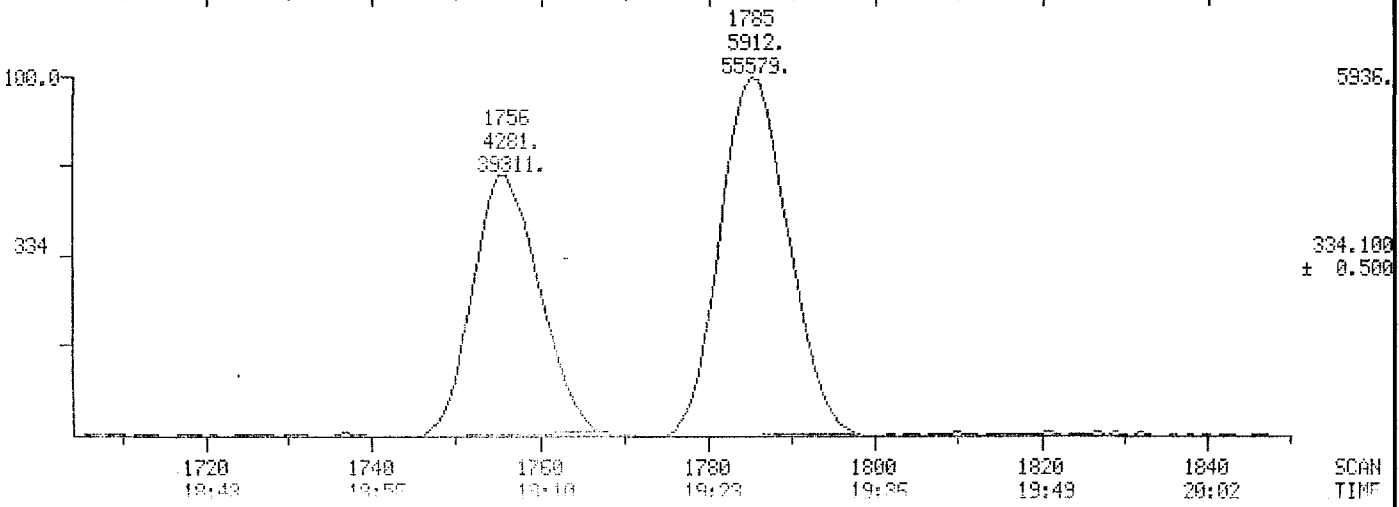
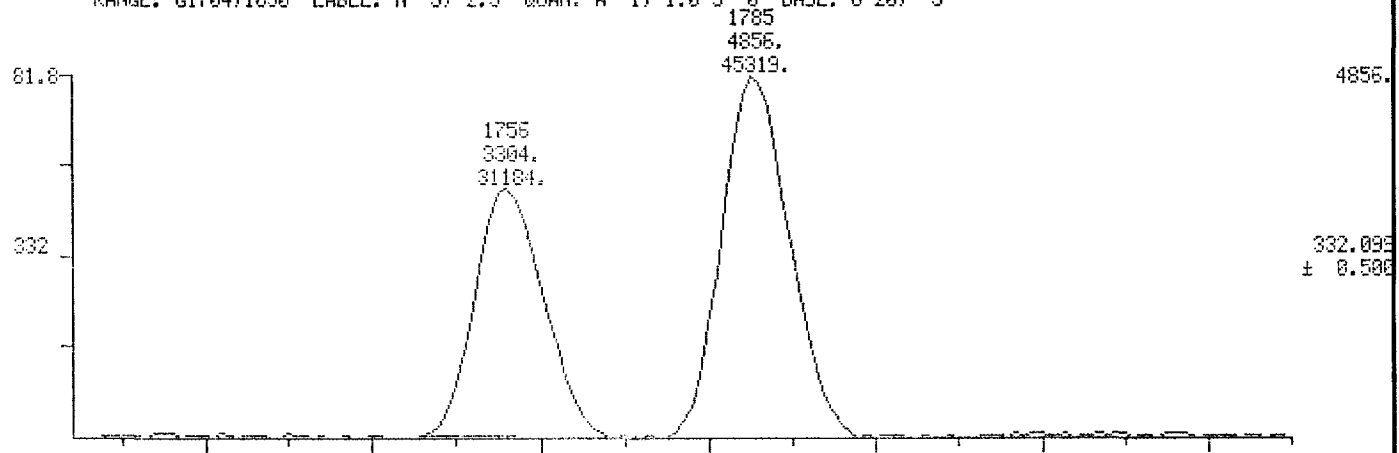
09/29/87 6:36:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH1/212-07/9.99G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: 61704.1850 LABEL: N 5: 2.5 QUAN: A 1, 1.0 U 0 BASE: U 20, 3



4856.

332.095
± 0.500

5936.

334.100
± 0.500

SCAN
TIME

342270644

FEDERAL EXPRESS

COMPLETE ALL INFORMATION IN THE 5 NECKS... (TYPE OR PRINT)

YOUR FEDERAL EXPRESS ACCOUNT NUMBER: 0752-5345-2

DATE: 7/1/83



FROM (Your Name): **COOLIDGE ENVIRONMENT INC**

COMPANY: **COOLIDGE ENVIRONMENT INC**

DEPARTMENT/FLOOR NO.:

STREET ADDRESS: **1005 NORTH ST. STE 014**

CITY: **GALLATON** STATE: **TX**

TO (Recipient's Name):

COMPANY: **THE...**

DEPARTMENT/FLOOR NO.:

STREET ADDRESS (P.O. BOX NUMBERS ARE NOT DELIVERABLE):

CITY: **...** STATE: **...**

ARRILL NO. **342270644** ZIP CODE BY DATE REQUIRED FOR CARRIER: **7512314803**

IN TENDERING THIS SHIPMENT, SHIPPER AGREES THAT F.E.C. SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM CARRIAGE HEREOF, F.E.C. DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THIS SHIPMENT. THIS IS A NON-NEGOTIABLE AIRBILL SUBJECT TO CONDITIONS OF CARRIER SET FORTH ON REVERSE OF SHIPPER'S COPY. UNLESS SHIPPER DECLARES A HIGHER VALUE, THE LIABILITY OF FEDERAL EXPRESS CORPORATION IS LIMITED TO \$100.00 FEDERAL EXPRESS DOES NOT CARRY OUNDO LIABILITY INSURANCE.

YOUR NOTES/REFERENCE NUMBERS (FIRST 12 CHARACTERS WILL ALSO APPEAR ON INVOICE): **FA...**

PAYMENT: Bill Shipper Bill Recipient's F.E.C. Acct. Bill 3rd Party F.E.C. Acct. Bill Credit Card

SERVICES CHECK ONLY ONE BOX:

PRIORITY 1 (OVERNIGHT DELIVERY) (9 to 10:55)

STANDARD AIR (DELIVERY AND PICKUP ON FOLLOWING PICK UP DAY 10 TO 10:55)

ORMS AND RADIOACTIVE MATERIAL ONLY (OVERNIGHT IS NEXT BUSINESS DAY (MONDAY THROUGH FRIDAY), TWO DAYS FROM ALASKA/HAWAII. SATURDAY DELIVERY AVAILABLE IN CONTINENTAL U.S. SEE SPECIAL HANDLING.)

DELIVERY AND SPECIAL HANDLING CHECK SERVICES REQUIRED:

HOLD FOR PICK-UP AT FOLLOWING FEDERAL EXPRESS LOCATION SHOWN IN SERVICE GUIDE. RECIPIENT'S PHONE NUMBER IS REQUIRED.

DELIVER

SATURDAY SERVICE REQUIRED (See Reverse Order charge applies for delivery.)

RESTRICTED ARTICLES SERVICE (See Standard Prohibited Articles, except batteries.)

AIR CARRIER SPECIAL SERVICE (Special rates, charge applies.)

OFFICE

OTHER SPECIAL SERVICE

PKGS.	WEIGHT	DECLARED VALUE	OS	EMP. NO.	DATE
1	1.10				
TOTAL	1.10				

SHIPPER'S DOOR REGULAR STOP ON-CALL STOP F.E.C. LOC.

RECEIVED BY: **Xenia K. Noble**

DATE/TIME: For Federal Express Use: **7/1/83 9:10**

F.E.C. EMPLOYEE NUMBER: **10810**

FEDERAL EXPRESS FREIGHT CHARGES: **...**

DECLARED VALUE OF THIS SHIPMENT: **...**

ADVANCE DELIVERY SERVICE:

ADVANCE DELIVERY SERVICE CHARGE: **...**

TOTAL CHARGES: **...**

REMARKS: **...**

SHIPPER'S CERTIFICATION FOR RESTRICTED ARTICLES (TYPE OR PRINT)

NO. OF PKGS.	PROPER SHIPPING NAME	CLASSIFICATION	IDENTIFICATION NO.	REMARKS
1	Flammable Solid, NOS	Flammable Solid	...	17to2

ADDITIONAL DESCRIPTION REQUIREMENTS FOR RADIOACTIVE MATERIALS (SEE BACK)

THIS SHIPMENT IS WITHIN THE LIMITATIONS PRESCRIBED FOR PASSENGER AIRCRAFT CARGO AIRCRAFT ONLY (DELETE-NONAPPLICABLE) IF ACCEPTABLE FOR PASSENGER AIRCRAFT, THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT TO, RESEARCH, MEDICAL DIAGNOSIS OR TREATMENT.

I HEREBY CERTIFY THAT THE CONTENTS OF THIS CONSIGNMENT ARE FULLY AND ACCURATELY DESCRIBED ABOVE BY PROPER SHIPPING NAME AND ARE CLASSIFIED, PACKED, MARKED, AND LABELED, AND IN PROPER CONDITION FOR CARRIAGE BY AIR ACCORDING TO APPLICABLE NATIONAL GOVERNMENTAL REGULATIONS.

Signature: **...** Date: **7/1/83**

July 1912

1912

Journal

2801

1755

212 CONN. (CANT CONN.)

02

2003

CHANGES (CON. 12-11-12)

03

2156

CANT CONN

04

2233

CON. 12-11-12

05

2308

WATSON KAUAI

06

2376

#212-17

07

000-1

#212-16

08

0032

#212-02

09

0059

#212-11

10

0137

#212-11

11

0155

#212-15

12

0223

#212-10

13

0250

#212-08

14

0318

#212-12

15

0346

#212-09

16

0411

WATSON KAUAI

17

0412

#212-01

18

0511

#212-01

19

0537

#212-05

20

0607

#212-06

21

0636

#212-07

22

0702

ALB. - RILEY

23

0723

#212-22

24

0801

#212-02

25

0827

#212-11

26

0857

#212-01

27

0725

CON. 12-11-12

011491

Witnessed & Understood by me, _____

Date 7/11/12

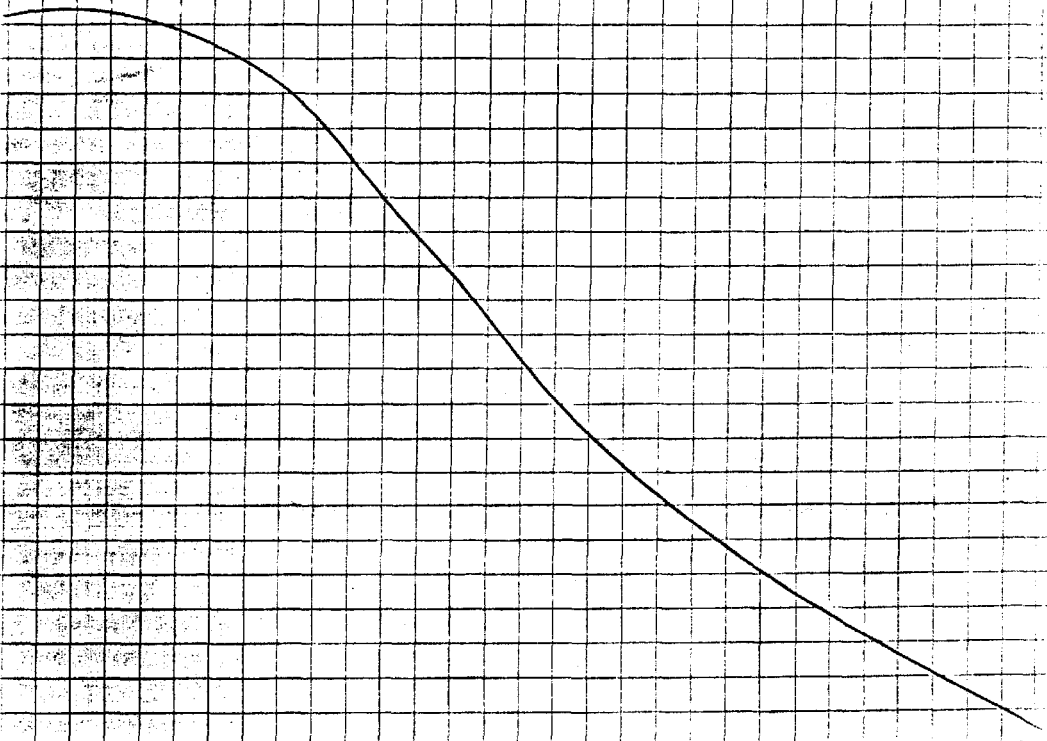
Invented by _____

Date _____

Recorded by _____

Page No. _____

<u>File No.</u>	<u>Time</u>	<u>Description</u>
0010101	1303	Col T Bone
02	1323	Col NCP - 1111x
03	1411	H 212-06
04	1445	H 212-02
05	1515 1515	H 212-11
06	1614	1714 H 212-16
07	1715	H 212-19
08	1825	H 213-02 - 15550
09	1922	1113 - C-153 2013
10	2018	H 212-06 Col P-5



011492

To Page No. _____

Read & Understood by me,

[Signature]

Date

10/1/07

Invented by

Recorded by

Date




TMS Analytical Services Inc. 8019-1

6376 N. RENO TRAIL • TEL. (317) 291-5597 • INDIANAPOLIS, INDIANA 46268

GC/MS ANALYSIS LOG SHEET

CASE NUMBER CASE 8019-BATCH #1
PAGE 1 OF 1

	SMD SAMPLE #	RUN NUMBER	DATE	ANALYST	DISC NUMBER	TAPE NUMBER	LOCATOR NUMBER	COMMENTS
1	M.B.	SCADA: 16	9/29	TTM	15			
2	212-01	18	9/29	TTM	15			
3	212-04	17	9/29	TTM	15			
4	212-05	19	9/29	TTM	15			
5	212-06	OCTO1 03		TTM	16			
6	212-07	21	9/29	TTM	15			
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

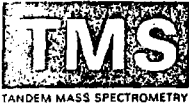


 MGR
 GPH

011493

GC COLUMN DESCRIPTION: _____

TEMPERATURE PROGRAM: _____



TMS Analytical Services Inc.

8019-14

6376 MORENCI TRAIL • TEL. (317) 291-5697 • INDIANAPOLIS, INDIANA 46268

SAMPLE RECEIPT/CONDITION DOCUMENTATION

PAGE 1 OF 1

DOCUMENT CONTROL NUMBER: 8019
CASE NUMBER: 8019
BATCH NUMBER: 1
AIRBILL NUMBER: 342270644
DATE RECEIVED: 9/14/87
TIME RECEIVED: 10:10

- CUSTODY SEALS PRESENT / NOT PRESENT
 INTACT / NOT INTACT
- OTHER SEALS, TAPE, LOCKS, ETC. PRESENT / NOT PRESENT
 INTACT / NOT INTACT
- CHAIN-OF CUSTODY PRESENT / ABSENT
- CLP DIOXIN SHIPMENT RECORD PRESENT / ABSENT

011494

SND SAMPLE NUMBER	SAMPLE LC NUMBER	SAMPLE TAG		INFORMATION ON DOCUMENTATION		REMARKS: (CONDITION OF SAMPLE, SHIPMENT, DOCUMENTATION, ETC.)
		PRESENT	ABSENT	AGREE	DISAGREE	
DF 21201		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		PE# QIG 182 per Chain of Custody Rec Tag reads QIG 187
DF 21204		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
DF 21205		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
DF 21206		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
DF 21207		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		

SAMPLE CUSTODIAN SIGNATURE Kelly E. Mills



TMS Analytical Services Inc.

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 SAMPLE TRACKING RECORD

CASE NUMBER 8019
 PAGE 1 OF 1

9/14/87
 Batch #1

SND SAMPLE #	SAMPLE WEIGHT	SAMPLE SPIKED	SAMPLE EXTRACTED	SAMPLE EVAP.	COLUMN #1 & #2 CLEANUP	CARBON COLUMN CLEANUP	EXTRACTS ISSUED TO GC/MS	EXTRACTS RECEIVED AT GC/MS	GC/MS ANALYSIS COMPLETED	EXTRACTS RETN'D TO STORAGE	EXTRACTS REC'D FOR STORAGE	COMMENTS
mB	10.25g	II	✓	✓	✓	✓	✓	✓	✓	✓	✓	
212-04	10.25g											PE
212-01	10.11g											011495
212-05	9.95g											
212-06	10.08g											
212-07	9.99g											
COMPLETED BY	KSM	KSM	KSM	KSM	KSM	KSM	KSM	KSM	KSM	KSM	KSM	R.E.M.
DATE	9/15/87	9/15/87	9/14/87	9/14/87	9/14/87	9/18/87	9/18/87	9/18/87	9/29	10/1	10/1	10/1

CHAIN OF CUSTODY RECORD

PROJ. NO. 8019 of 8215 7/27/87		PROJECT NAME					NO. OF CONTAINERS	REMARKS				
AMPLERS: (Signature) <i>Burgess</i> <i>J.W. Reynolds</i>												
TA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	2, 3, 28, TCDD						
						Tag #	Dioxin Shipment Record Batch number	IT Sample #				
28	9-11-87	1007hrs	X		Vanderberg Blvd - 1/4 mi from John Harden Dr North of drainage bridge (in front South) of concrete culvert	1	1			6009414	01	WH1222 ABCD
16E	9-11-87	1205hrs	X		225° from so. Manure hole (one of three) west of rocky branch near West Lane dead end and Dresden St. 1/4 from Manhole 10187 from station 220 at end of West Lane. 3' past of chain link fence at 2113 West Lane	1	1			6009418	01	WH1223 A
6	9-11-87	1515hrs	X		255° NW 105' from thiner on utility pole located 125' 225° from security light pole at end of thurs	1	1			6009419	01	WH1224 C
30	9-11-87	1735hrs	X			1	1			6009420	01	WH1225 C

Relinquished by: (Signature) <i>Burgess</i> <i>J.W. Reynolds</i>	Date / Time 09-11-87 1900hrs	Received by: (Signature) Federal Express	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature) Federal Express	Date / Time 9/14/87 10:10	Received by: (Signature) <i>Guinea</i>	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Av bill # 34227064V	

Batch 02 011497



TMS ANALYTICAL SERVICES, INC.

8019-01

6376 Morenci Trail
Indianapolis, Indiana 46268
317-291-5697

Case number: 8019
Batch Number: 2

011498

DOCUMENT INVENTORY

Document Control #	Document Type	# Pages
8019 - 01	Case File Document Inventory Sheet	1
8019 - 02	Letter	1
8019 - 03	Form B-15	2
8019 - 04	Form B-2	2
8019 - 05	Form B-3	1
8019 - 06	Chromatographic Data of Initial Calibration Standards	54
8019 - 07	Chromatographic Data of Daily Calibration Standards	8
8019 - 08	Chromatographic Data of Column Performance Checks	12
8019 - 09	Standard Data Package	48
8019 - 10	Chain-of-Custody	1
8019 - 11	Shipping Manifest	2
8019 - 12	GC/MS Log	2
8019 - 13	Analysts Logbook	1
8019 - 14	Additional Reporting Forms	2

8019-02



TMS ANALYTICAL SERVICES, INC.

TANDEM MASS SPECTROMETRY

6376 Morenci Trail
Indianapolis, Indiana 46268
317-291-5697

October 5, 1987

CLP Sample Management Office
Viar & Co.
209 Madison St., Suite 200
Alexandria, VA 22314

To whom it may concern:

Enclosed is the complete Sample Data Package for the analysis of samples for 2,3,7,8-TCDD according to the procedures specified under CLP contract #7390.

These samples were received as Case #8019, Batch #2 on September 15. Results were sent by overnight courier on October 5 for arrival on the October 6, 1987 due date.

No special problems were experienced with these samples. On 09/23/87, Tony Neskey from SMO called Dan Delinger from TMS to notify the lab that Case #8910 Batch 2 should be Case #8019 Batch 2. Tony Neskey called Dan Delinger again on 09/25/87 to explain that the duplicate and spike samples for Case #8019 Batch #2 will be included in Case #8019 Batch #3, therefore no B-4 Form will be included in this report. Adjustments were made by Kelly E. Mills, Sample Custodian, on 09/14/87. The results for all samples meet all the QA/QC requirements and all results should be considered valid.

If you should have any questions regarding these data or this report, please feel free to contact me at (317)291-5697.

Very truly yours,

Dennis L. Heuring, Ph.D.
President

CC:
USEPA EMSL/LV QA Division
944 E. Harmon Ave.
Executive Center, Rm 226
Las Vegas, NV 89109

USEPA REGION VI LABORATORY
Monterey Park Plaza - Bldg. C
6608 Hornwood Drive
Houston, TX 77074
Attn: Melvin Ritter

ENCLOSURES:

011499



TMS Analytical Services Inc.

6376 MORENCI TRAIL • TEL. (317) 291-5697 • INDIANAPOLIS, INDIANA 46268

8019-0

FORM B-1S. TCDD SOIL DATA REPORT FORM

Page 1 of 2

Lab: TMS ANALYTICAL

Report Date: 9/29/87

Case/Batch No: 8019/ #2

Column: SP 2331

Instrument ID: FINNIGAN 4000

EPA Sample No.	Extr. Date	Wet wt	ug/kg Meas.	TCDD MPC	GC/MS Date	Analysis Time	Surr. S/N Ratio	% REC (IS) *
MB	9/15	9.98	N.D.	0.22	9/28	2308	5.0	37.9
212-02	9/15	10.16	N.D.	0.34	10/11	1443	5.0	40.2
212-08	9/15	9.94	N.D.	0.37	9/27	0250	5.8	23.1
212-09	9/15	10.13	N.D.	2.8	9/29	0346	4.3	27.8
212-10	9/15	10.07	0.86	—	9/29	0223	5.0	32.8
212-11	9/15	9.96	2.51	—	9/29	0127	6.5	55.8
212-12	9/15	10.02	N.D.	1.17	9/29	0318	5.9	42.2
212-13	9/15	10.13	N.D.	0.12	9/29	0059	4.0	40.0
212-14	9/15	10.00	N.D.	0.58	10/11	1545	5.0	37.6
212-15	9/15	10.02	0.93	—	9/29	0155	4.1	24.0
212-16	9/15	10.11	1.06	—	10/11	1614	3.6	16.9
R.E. 212-17	9/15	9.99	5.93	—	9/28	2336	6.5	48.5

011500

- MB = Method Blank
- N = Native TCDD Spike
- D = Duplicate/Fortified Field Blank
- PE = EMSL-LV Performance Evaluation Sample
- MPC = Maximum Possible Concentration
- *Note: Relative to ¹³C₁₂-1,2,3,4-TCDD
- FB = Field Blank
- IS = Internal Standard
- RR = Rerun
- RS = Recovery Standard
- ND = Not Detected



TMS Analytical Services Inc.

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FORM B-1S. TCDD SOIL DATA REPORT FORM

Page 2 of 2

Lab: TMS ANALYTICAL

Report Date: 9/29/87

Case/Batch No: 8019/BATCH #2

Column: SP2331

Instrument ID: FINNIGAN 4000

011501

EPA Sample Number	Rel. Response Ratios			Response (Area)								
	320/322	332/334IS	332/334RS	259	320	322	328	332IS	334IS	332RS	334RS	
M.B.	-	0.78	0.81	-	-	-	1874	26474	33752	56920	70276	
212-02		0.81	0.81	-	-	-	1120	17102	21083	35283	43443	
212-08	-	0.79	0.81	-	-	-	1055	15259	19265	56801	69725	
212-09	0.79	0.80	0.80	-	3865	4963	1058	16679	20902	50006	62153	
212-10	0.87	0.79	0.80	1261	4771	5491	2059	24152	30584	61804	77654	
212-11	0.83	0.79	0.82	5103	20640	24932	2509	37174	47214	57514	70833	
212-12	0.80	0.77	0.78	-	2834	3151	1452	24713	31946	49474	63415	
212-13	0.80	0.77	0.80	-	3179	3984	2228	32676	42593	67630	86844	
212-14	-	0.76	0.82	-	-	-	1155	16532	21652	36524	44623	
212-15	0.77	0.79	0.80	975	3650	4765	1365	18533	23423	65471	81432	
212-16	0.80	0.77	0.82	798	2441	3049	806	10383	13429	52896	64569	
P.E. 212-17	0.78	0.77	0.81	11729	44318	56533	2820	34235	44645	61454	75181	

- MB = Method Blank
- N = Native TCDD Spike
- D = Duplicate/Fortified Field Blank
- PE = EMSL-LV Performance Evaluation Sample
- MPC = Maximum Possible Concentration
- FB = Field Blank
- IS = Internal Standard
- RR = Rerun
- ND = Not Detected
- RS = Recovery Standard

INITIAL CALIBRATION SUMMARY

Laboratory: TMS Analytical

CC Solution Alternative: IL

Case/Batch No.: 8019/2

Instrument ID: FLOUIDAD 4000

Date	Time	Sol. ID	AREA						
			320	322	328	332IS	334IS	332RS	334RS
11-23-88	0910	CC1	14631	18675	12402	70007	92271	39272	48595
	1111	CC1	15257	18682	12701	74277	96113	41356	52016
	1140	CC1	15340	19173	13235	73748	98335	40069	51625
11-23-88	1013	CC2	76781	96910	27479	72125	96502	42772	52117
	1209	CC2	79387	99258	27172	75759	97496	43127	55321
	1237	CC2	78444	103161	28389	78235	97892	44120	55519
11-23-88	1042	CC3	403155	526872	48532*	76922	102124	44303	57362
	1306	CC3	417411	540479	51709	80268	106068	46162	57012
	1335	CC3	391804	510654	48053	76299	98823	42832	51850
11-23-88	0943	CC4	1565040	2038470	† /	75036	95191	41338	52871
	1403	CC4	1630940	2109860	/	76974	100609	43009	54752
	1432	CC4	1657120	2183070	/ †	79736	101894	45729	56486

011502

Solution ID Codes:

- CC1 = Concentration calibration solution #1
- CC2 = Concentration calibration solution #2
- CC3 = Concentration calibration solution #3
- CC4 = Concentration calibration solution #4

* Not present in CC Solution Alternative One.



TMS Analytical Services Inc.

TANDEM MASS SPECTROMETRY

6376 MORENCI TRAIL • TEL: (317) 291-5697 • INDIANAPOLIS, INDIANA 46268

FORM B-2

INITIAL CALIBRATION SUMMARY

Page 2 of 2

Laboratory: TMS Analytical

CC Solution Alternative: 11

Case/Batch No.: 8019/2

Instrument ID: FINDIGAN 4000

Date	Time	Sol. ID	Measured RRF _n	Mean RRF _n	Measured RRF _i	Mean RRF _i
4-23-87	0910	CC1	1.08	1.06	1.06	1.06
	1111	CC1	1.05		1.04	
	1140	CC1	1.05		1.07	
4-23-87	1013	CC2	1.08	1.07	1.01	1.02
	1209	CC2	1.07		1.02	
	1237	CC2	1.07		1.03	
4-23-87	1042	CC3	1.09	1.08	1.01	1.02
	1306	CC3	1.08		1.03	
	1335	CC3	1.08		1.02	
4-23-87	0943	CC4	1.11	1.11	1.03	1.03
	1403	CC4	1.11		1.04	
	1432	CC4	1.11		1.02	

011503

Solution ID Codes:

- CC1 = Concentration calibration solution #1
- CC2 = Concentration calibration solution #2
- CC3 = Concentration calibration solution #3
- CC4 = Concentration calibration solution #4

ZRSD: RRF _n	RRF _i
CC1 = <u>1.63</u>	<u>1.44</u>
CC2 = <u>0.54</u>	<u>0.98</u>
CC3 = <u>0.53</u>	<u>0.98</u>
CC4 = <u>1.0</u>	<u>0.97</u>

Native Mean of Means: 1.08

IS Mean of Means: 1.03



TMS Analytical Services Inc.

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FORM B-3

ROUTINE CALIBRATION SUMMARY

Laboratory: TMS ANALYTICAL CC Solution Alternative: II

Case/Batch No.: 2019 BATCH #1/#2/#3 Instrument ID: FINDIGAN 4000

(PCS) PERFORMANCE CHECK SOL.

(CC1)
CON. CALIB. SOL. #1

Date	9/28	9/29	9/30	9/30	10/1	10/1	9/28	9/30	10/1
Time	2233	0925	1244	2132	1333	2018	2156	1208	1303
Response									
259	—	—	—	—	—	—	2491	2031	2731
320	17641	10900	11111	12514	11829	5830	8185	6062	9330
322	21230	14053	13506	15256	14785	7301	10062	7078	11230
328	—	—	—	—	—	—	6352	4715	7458
332IS	5715	36683	34461	3611	35371	11200	41529	29842	46810
334IS	65707	46086	42674	45804	44579	20952	51659	36929	59618
332RS	104895	72647	70406	61552	69191	33583	24665	16856	25790
334RS	127415	89973	85974	76694	84845	40508	29370	20834	32007
Ratios									
320/322	0.83	0.78	0.82	0.82	0.80	0.80	0.81	0.86	0.83
332/334IS	0.79	0.80	0.81	0.79	0.79	0.80	0.80	0.81	0.79
332/334RS	0.83	0.81	0.82	0.80	0.82	0.83	0.84	0.81	0.81
RRF _n	—	—	—	—	—	—	1.03	1.03	1.01
RRF _t	—	—	—	—	—	—	0.99	1.01	1.05
% Valley	0.0	0.0	0.0	0.0	0.0	0.0	—	—	—

011504



TMS Analytical Services Inc.

6376 MORENCI TRAIL • TEL. (317) 291-5697 • INDIANAPOLIS, INDIANA 46268

8019-05

FORM B-3

ROUTINE CALIBRATION SUMMARY

Laboratory: TMS ANALYTICAL

CC Solution Alternative: II

Case/Batch No.: 8019 BATCH #1/*2

Instrument ID: FINNIGAN 4000

011505

(PCS) PERFORMANCE CHECK SOL. (CC1) CON. CALIB. SOL. #1

Date	9/28	9/29	9/30	9/30	10/1	10/1	9/28	9/30	10/1
Time	2233	0925	1244	2132	1333	2018	2156	1208	1303
Response									
259	—	—	—	—	—	—	2491	2031	2731
320	17641	10900	11111	12514	11889	5830	8185	10662	9330
322	21230	14053	13506	15256	14785	7301	10062	7078	11230
328	—	—	—	—	—	—	6352	4715	7458
332IS	5915	36183	34461	36111	35371	116800	41529	29842	46810
334IS	65707	46086	42674	45804	44579	20952	51659	36929	59618
332RS	10485	72647	70406	161552	69191	33583	24665	116856	25770
334RS	127115	89973	85974	76694	84845	40508	29370	20834	32007
Ratios									
320/322	0.83	0.78	0.82	0.82	0.80	0.80	0.81	0.86	0.83
332/334IS	0.79	0.80	0.81	0.79	0.79	0.80	0.80	0.81	0.79
332/334RS	0.83	0.81	0.82	0.80	0.82	0.83	0.84	0.81	0.81
RRF _n	—	—	—	—	—	—	1.03	1.03	1.01
RRF _t	—	—	—	—	—	—	0.99	1.01	1.05
Z Valley	0.0	0.0	0.0	0.0	0.0	0.0	—	—	—

909110

RIC

04/23/87 8:16:00

SAMPLE: COLUMN PERFORMANCE MIX

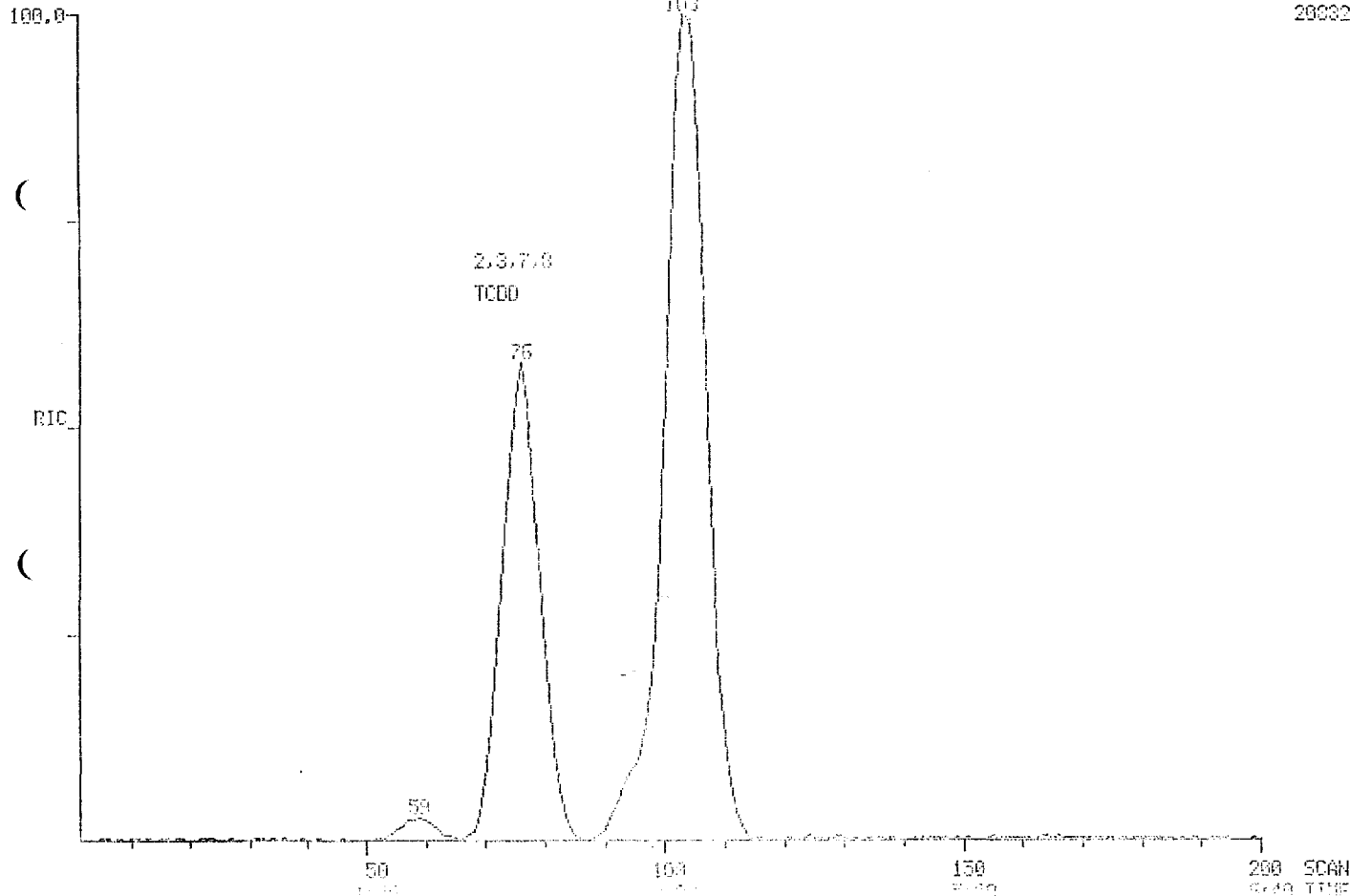
CONDS.: 1UL/SP2331/100-260025/200-24004/HOLD10

RANGE: G 1, 200 LABEL: N 5, 2.5 CURVE: A 0, 1.0 J 9 BASE: U 20, 3

DATE: APR23 81

SCANS 1 TO 200

ORIG: 001042307 05



20-6108

011507

INSTRUMENT CHROMATOGRAMS

04/23/37 8:15:00

SAMPLE: COLUMN PERFORMANCE MIX

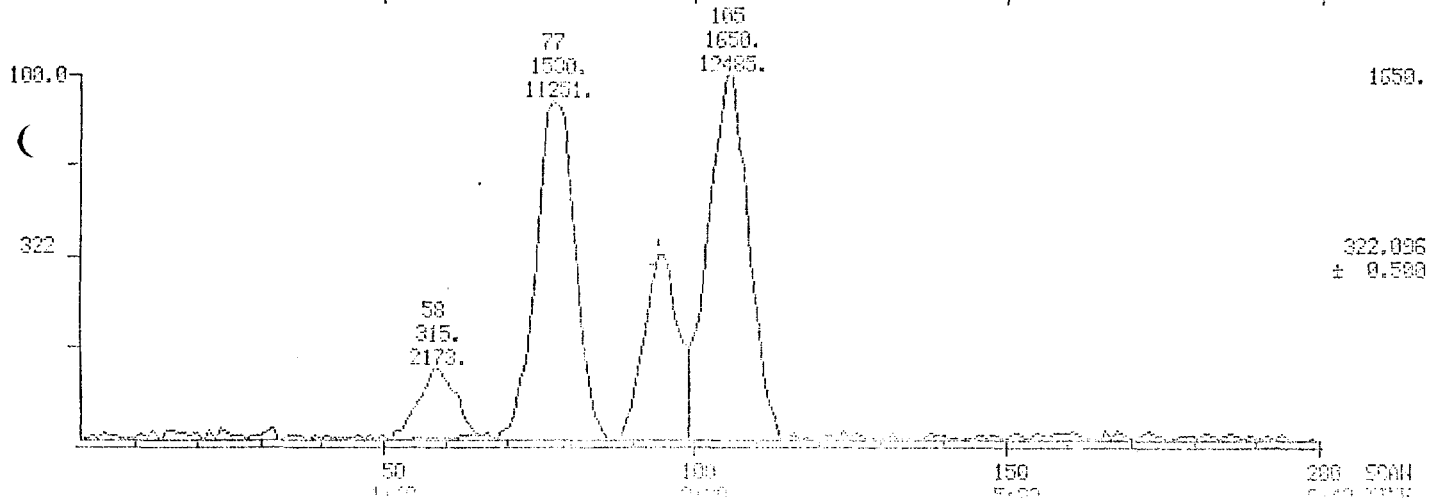
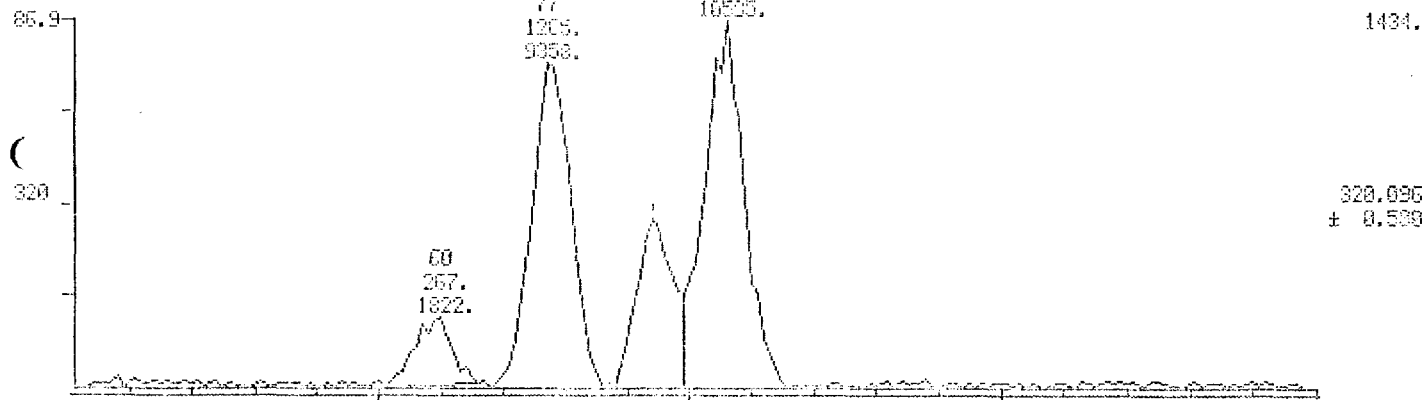
CONDS.: 1UL/SP2331/100-200625/200-240G1/HOLD10

RANGE: G 1, 200 LABEL: H 5, 2.5 QUANT: A 1, 1.0 J 9 SCALE: 0.20, 3

DATA: 04/23/37 11

CH1: 04/23/37 15

CONTR: 1 TO 200



809110

MASS CHROMATOGRAMS

04/23/87 8:16:00

SAMPLE: COLUMN PERFORMANCE MIX

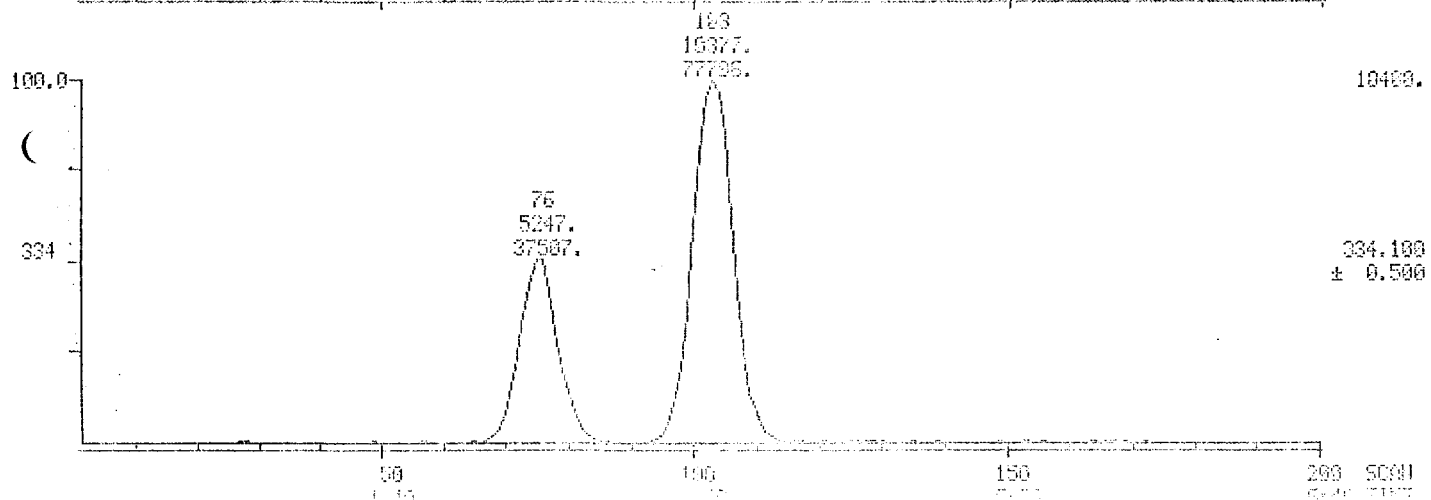
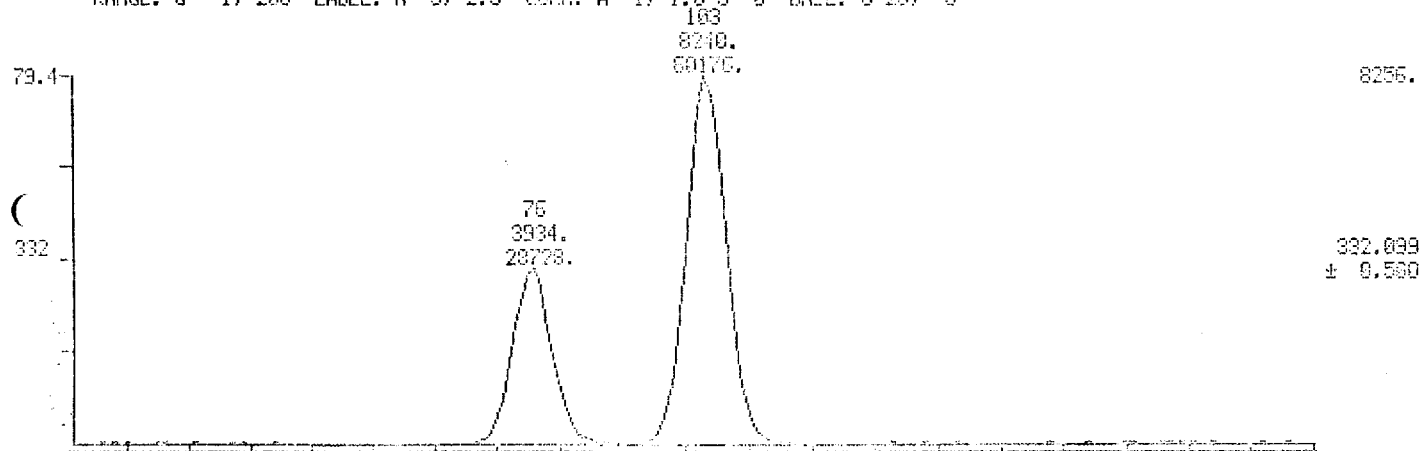
CONDS.: 1UL/SP2331/100-200@25/200-240@4/10LD10

RANGE: G 1, 200 LABEL: H 5, 2.5 OVEN: A 1, 1.0 J 0 BASE: U 20, 3

DATA: 001201.D1

FILE: 0405037.D5

SCANS 1 TO 200



011505

MID RIC

04/23/07 11:11:00

SAMPLE: CALIBRATION SOLN I

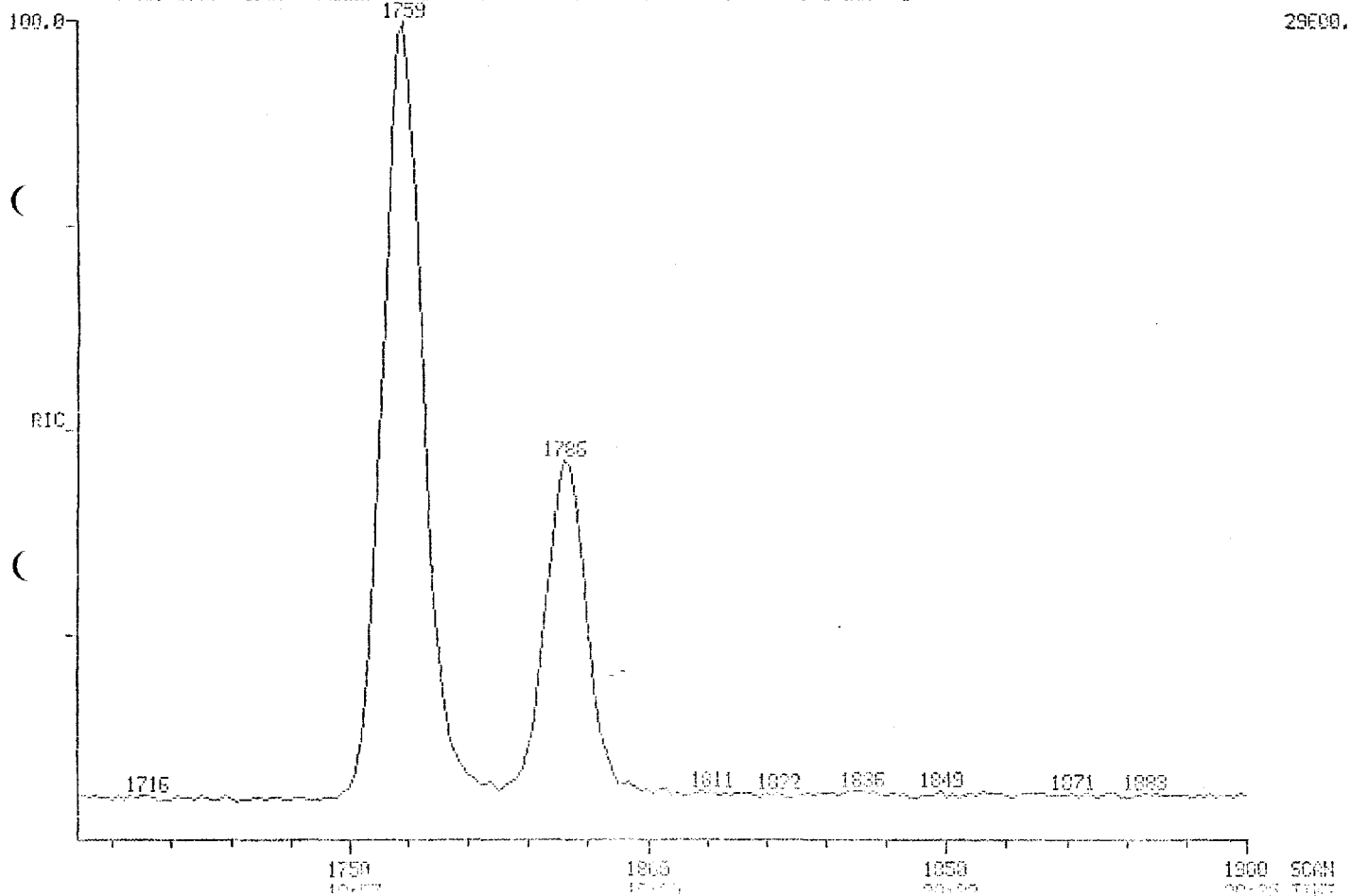
COND.: IUL/SP2331/100-200025/200-24004/10LD10

RANGE: 61704.1900 LABEL: H 0, 4.0 QUAN: A 0, 1.0 U 0 BASE: U 20, 3

DATA: 1072000 01

DATE: 011012007 05

SCANS 1704 TO 1553



015110

MID MASS CHROMATOGRAMS

DATE: FEB 20 06 01

SCANS 1704 TO 1900

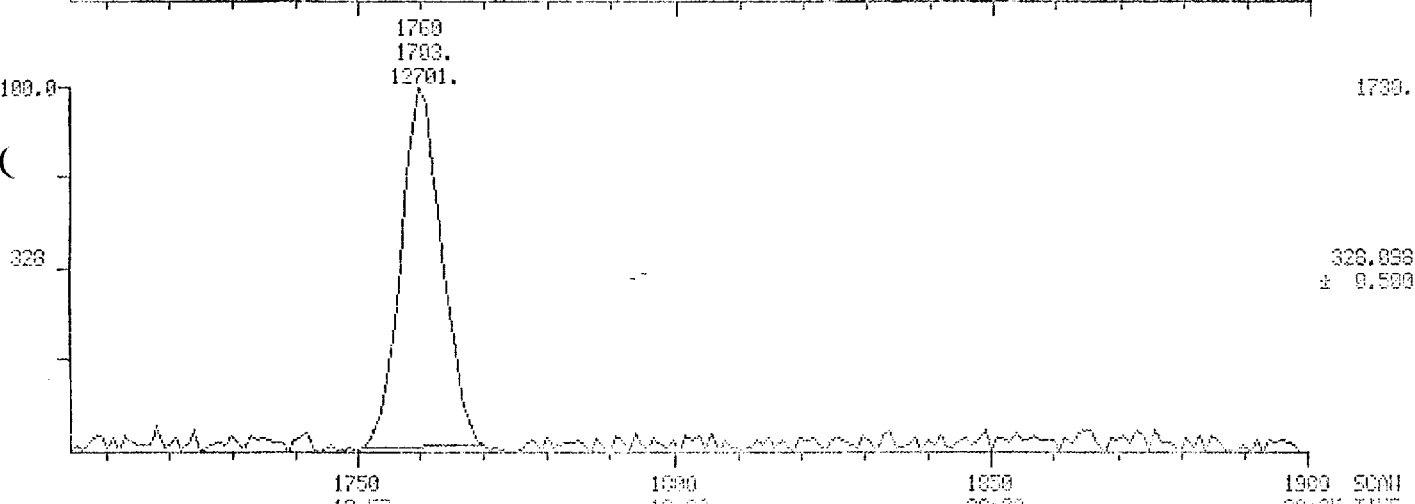
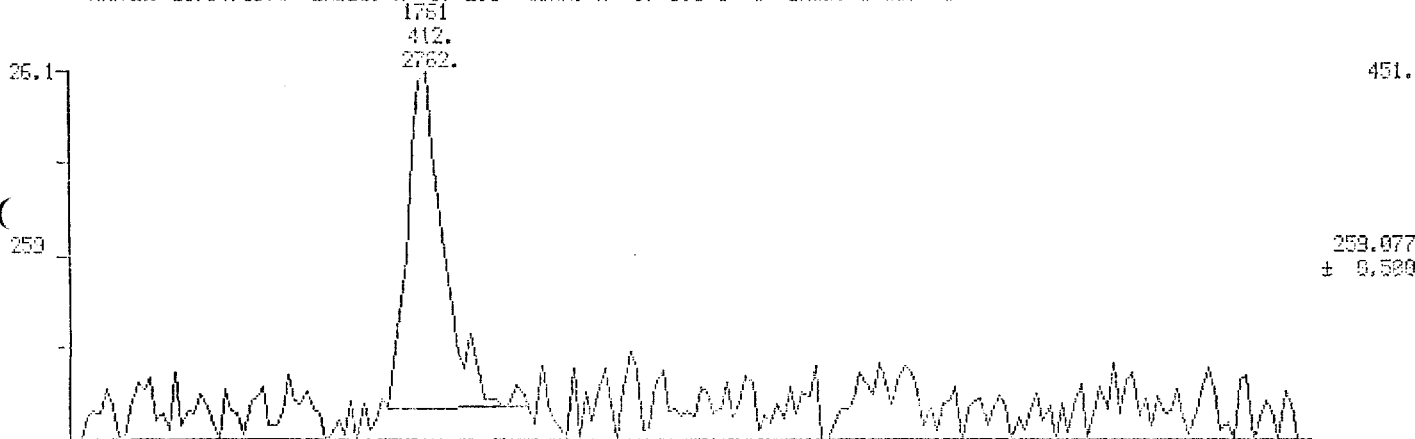
04/23/87 11:11:00

CELL: C01C12307 05

SAMPLE: CALIBRATION SOLN I

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: 61704,1900 LABEL: H 5, 2.5 QUANT: A 1, 1.0 J 0 CASE: U 20, 3



1750 19-57 1800 19-51 1850 20-00 1900 SCAN 20-01 TIME

111511

HID MASS CHROMATOGRAMS

DATE: 01/26/88 01

SCANS 1701 TO 1909

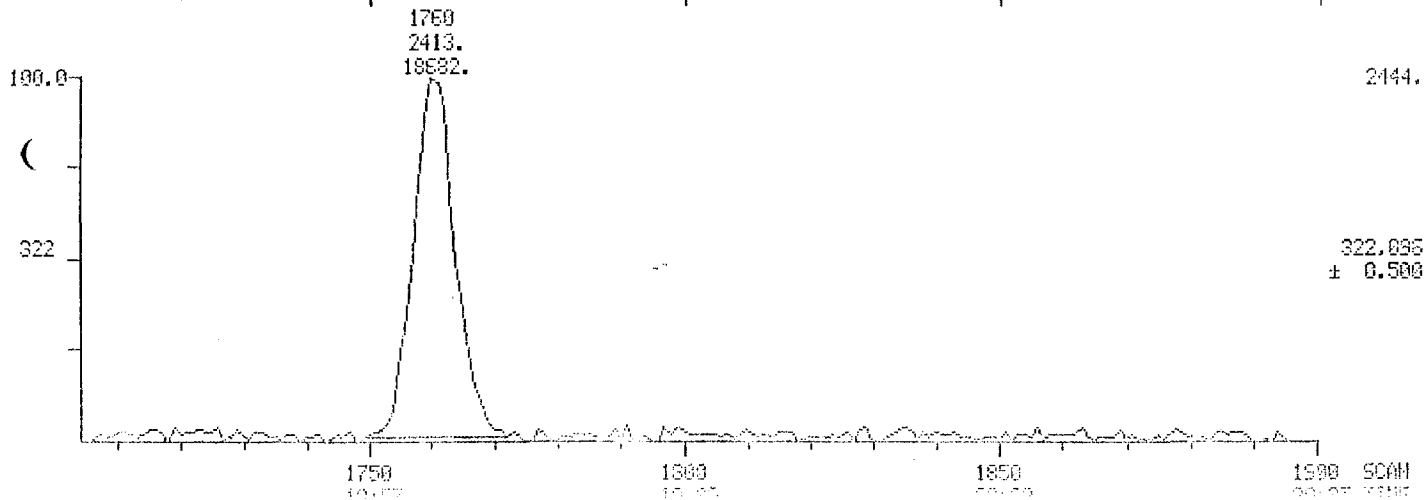
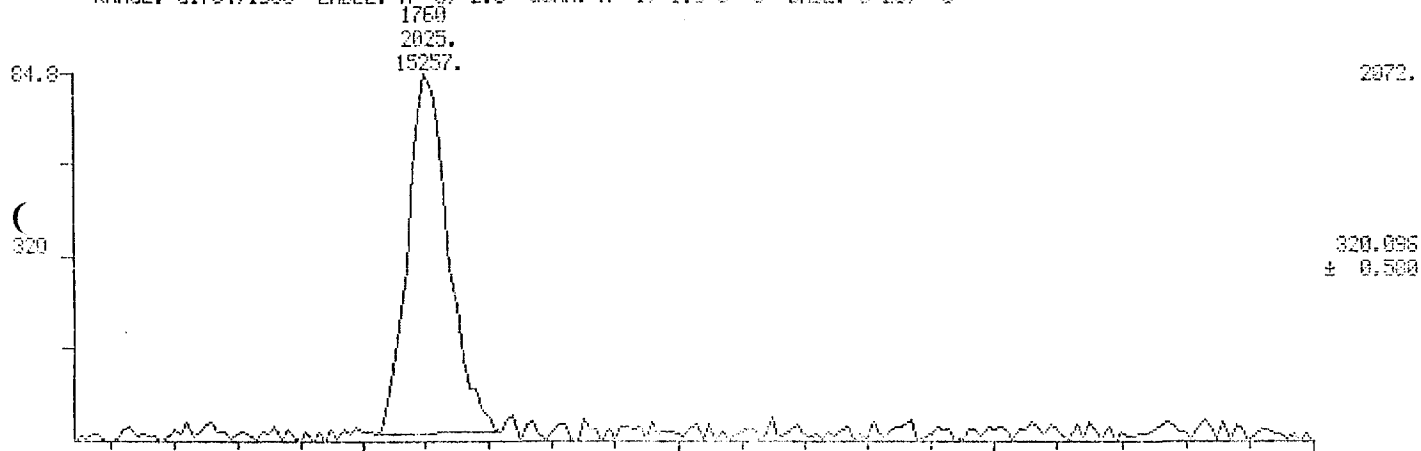
04/23/87 11:11:09

CALL: 021012307 25

SAMPLE: CALIBRATION SOLN I

CONDS.: 1UL/SP2331/100-200025/200-2400/1/10LD10

RANGE: 01704.1900 LABEL: N 5, 2.5 CURVE: A 1, 1.0 J 0 DICE: U 20, 3



011512

MID MASS CHROMATOGRAMS

DATA: SPD2305 01

SCANS 1704 TO 1900

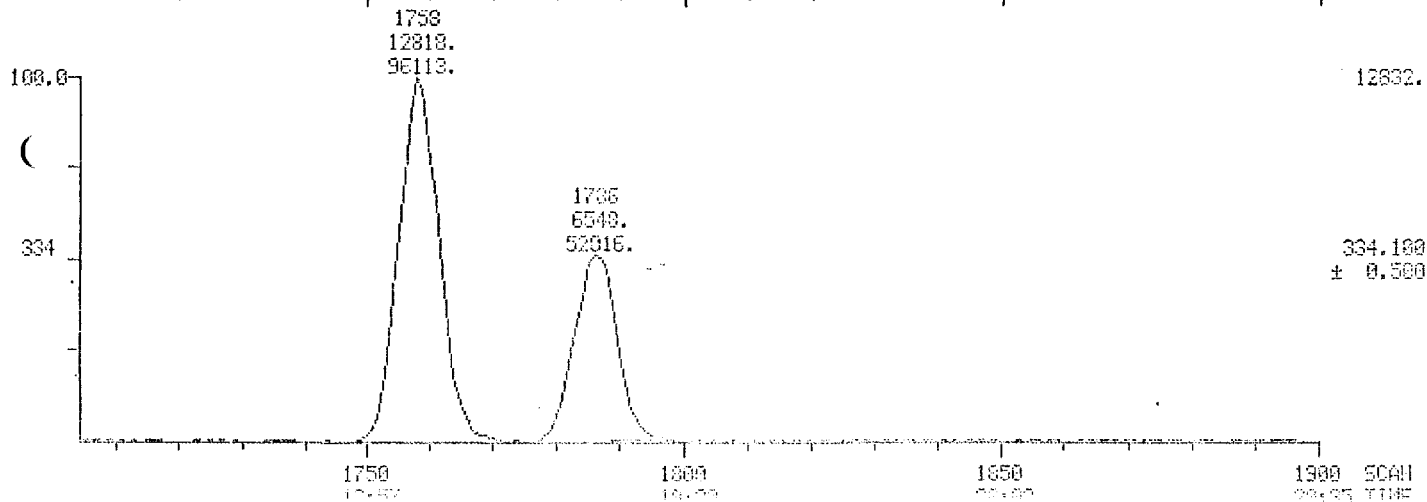
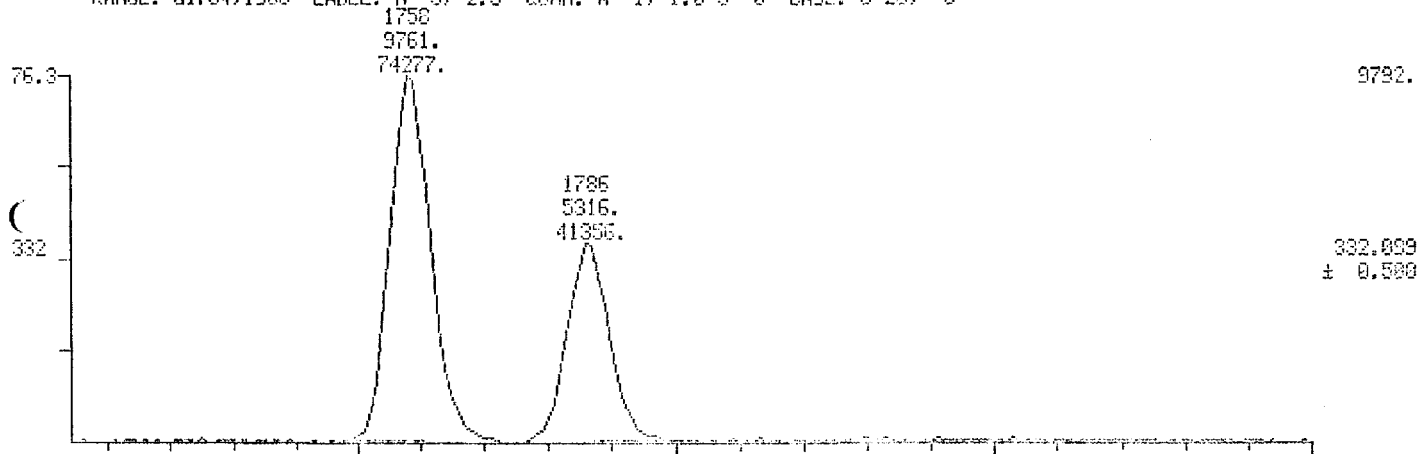
04/23/87 11:11:00

CALL: CAL042387 WS

SAMPLE: CALIBRATION SOLN I

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704.1900 LABEL: H 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011513

NID RIC

DATA: 1212037 01

SCANS 1704 TO 1930

04/23/87 11:40:00

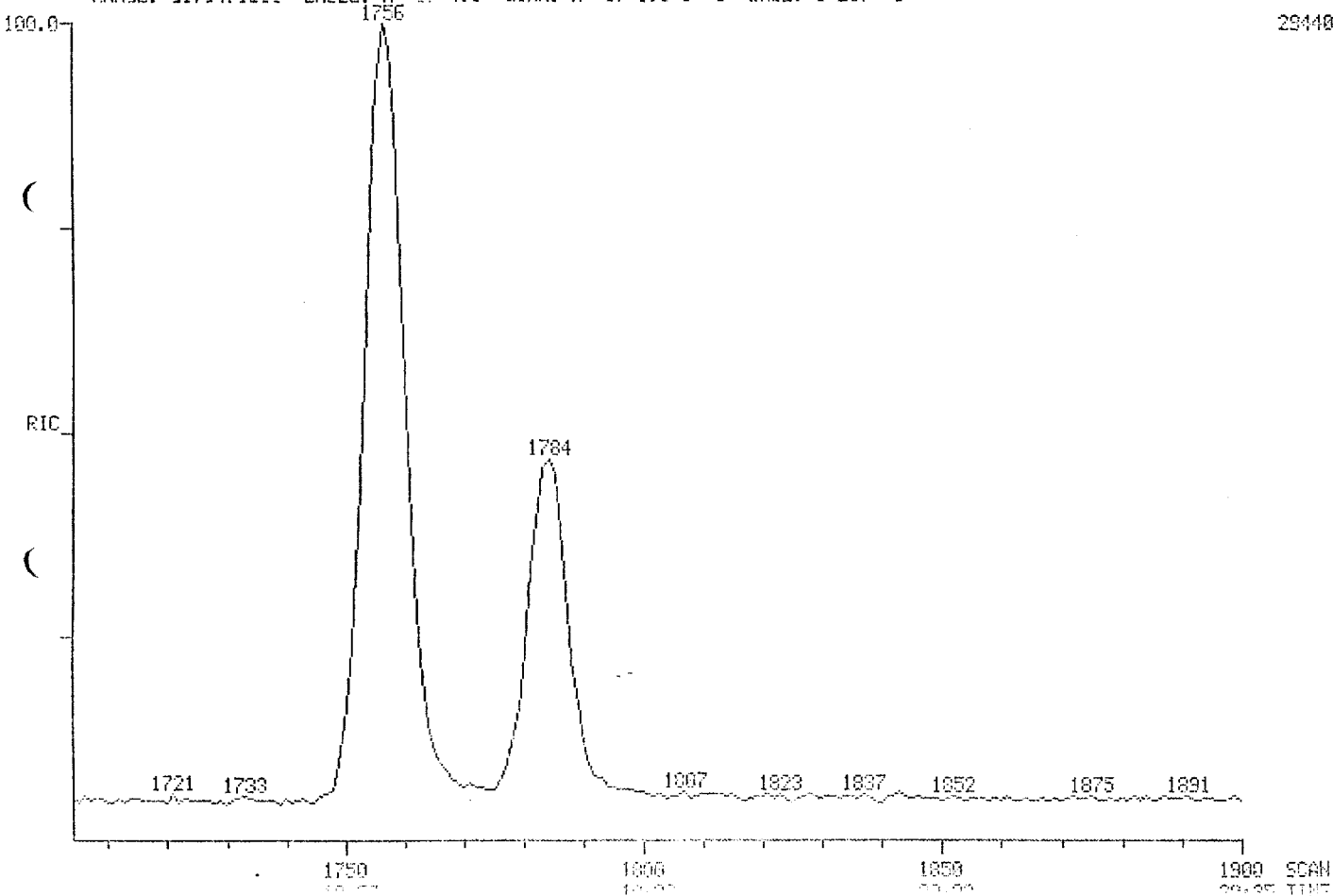
CALI. CALS12037 03

SAMPLE: CALIBRATION SOLN I

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704.1900 LABEL: N 0. 4.0 QUANT: A 0. 1.0 J 0 BASE: U 20. 3

29440.



011514

HID MASS CHROMATOGRAMS

DATA: 0702307 01

SCANS 1704 TO 1800

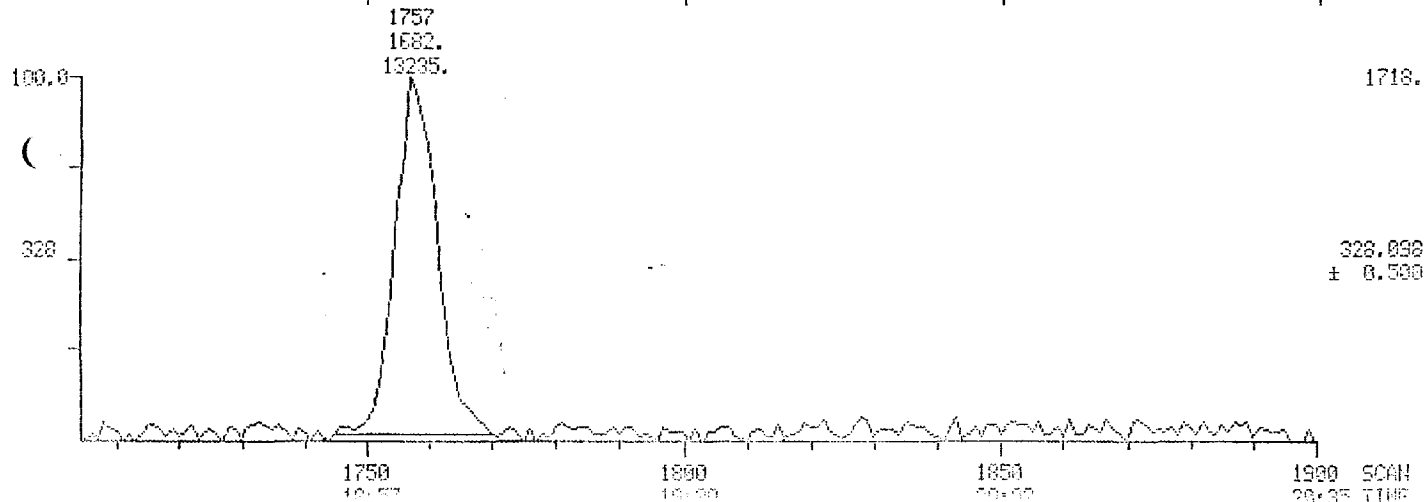
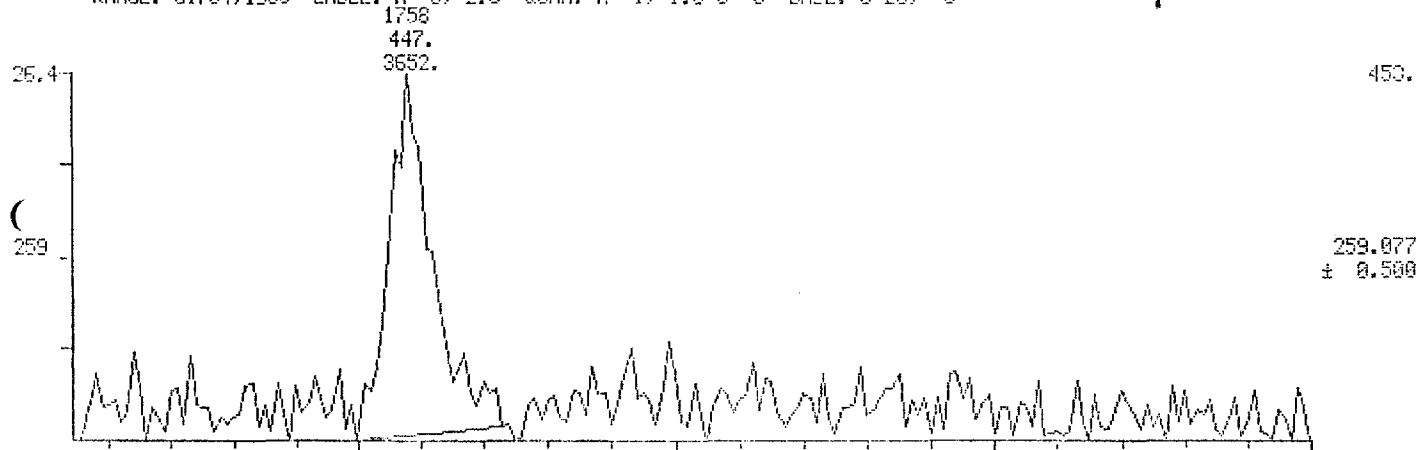
04/23/87 11:40:00

QC1: CALS12397 05

SAMPLE: CALIBRATION SOLN I

CONDS.: 1UL/5P2331/100-200025/200-24004/HOLD10

RANGE: 01704,1900 LABEL: N 5, 2.5 QUIN: A 1, 1.0 J 0 BASE: U 20, 3



011515

HID MASS CHROMATOGRAMS

DATE: 01/23/67

TIME: 11:40:00

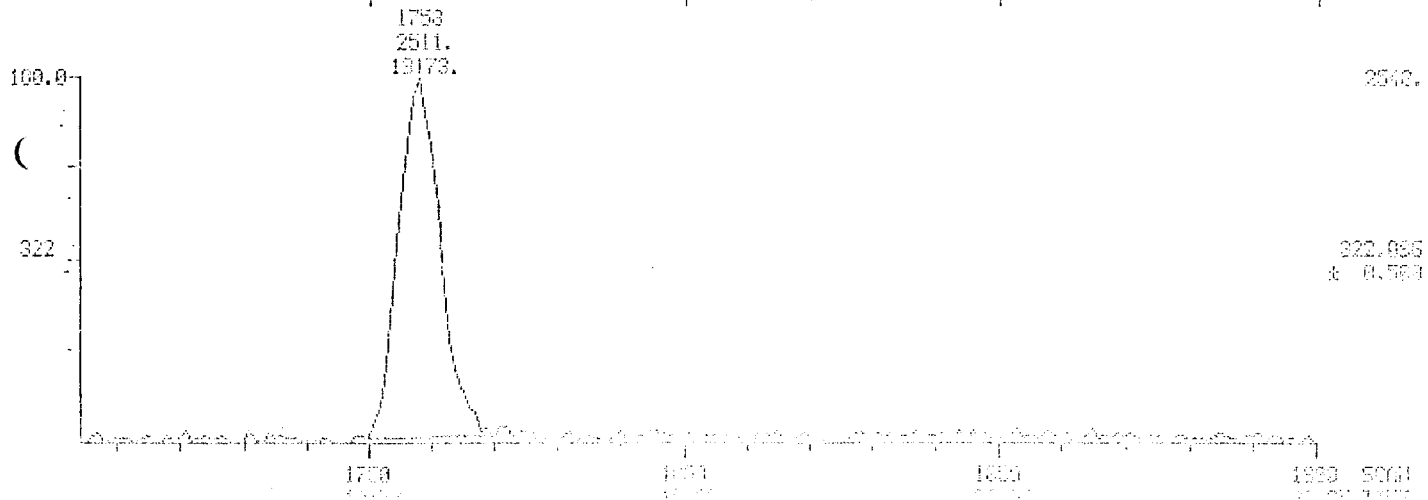
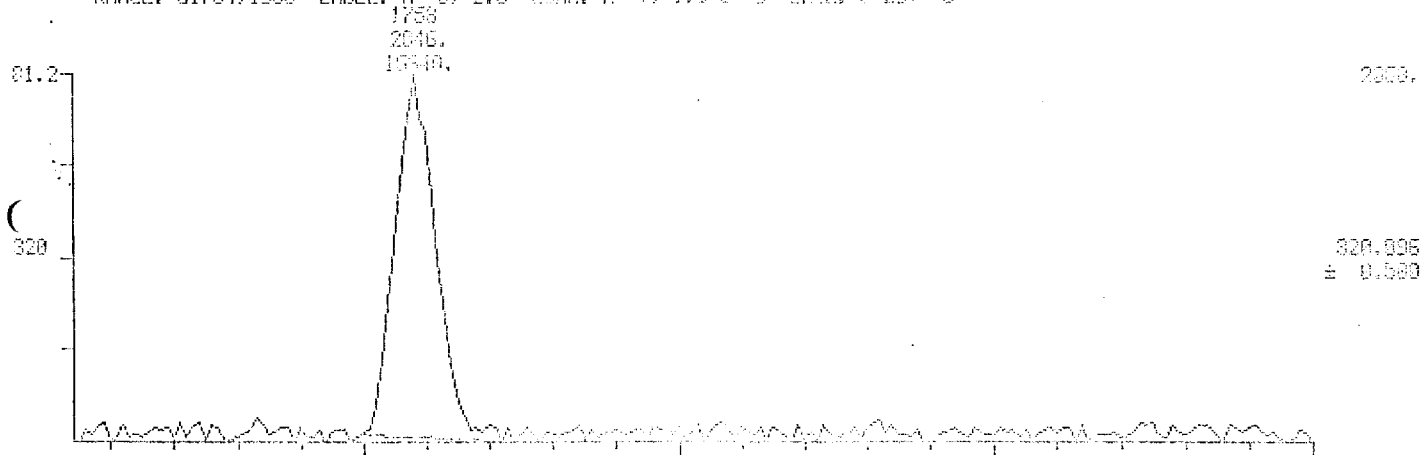
01/23/67 11:40:00

CELL: 600000000

SAMPLE: CALIBRATION SOLN I

COND.: 1UL/SP2331/100-200025/200-24004/103LD10

RANGE: G1704,1000 LABEL: H. S. 2.5 (S) A 1, 1.0 U 0 DATE: 0 20, 3



0115110

NID NISS CHROMATOGRMS

DATE: 07/20/87

TIME: 17:01 YR 1988

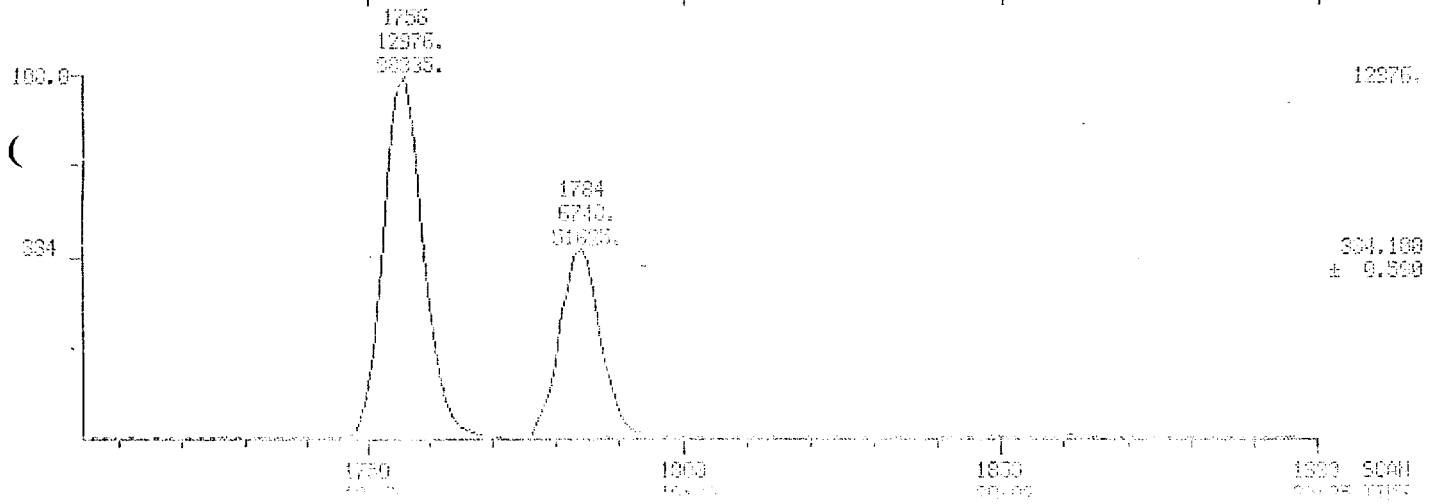
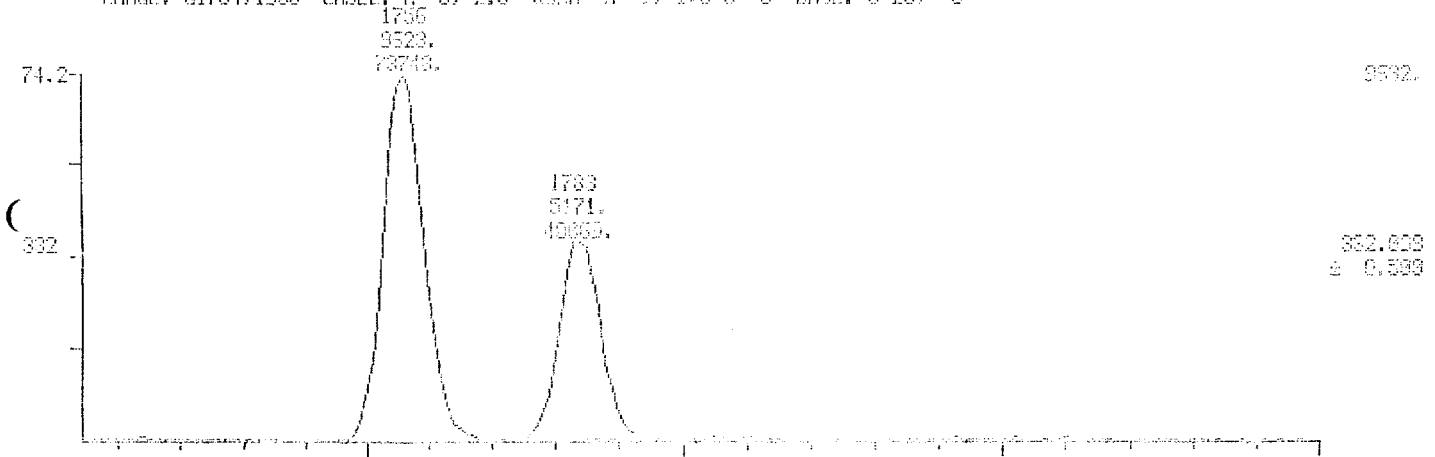
04/20/87 11:48:50

FILE: CALIBR1.D

SAMPLE: CALIBRATION SOLN I

COND.: IUL/SP2331/100-200025/200-24000.4181010

RANGE: 61704.1900 LABEL: H 5. 2.5 QUOT A 1, 1.0 J 0 BASE: U 20, 3



011517

MID RIC

04/23/87 9:10:00

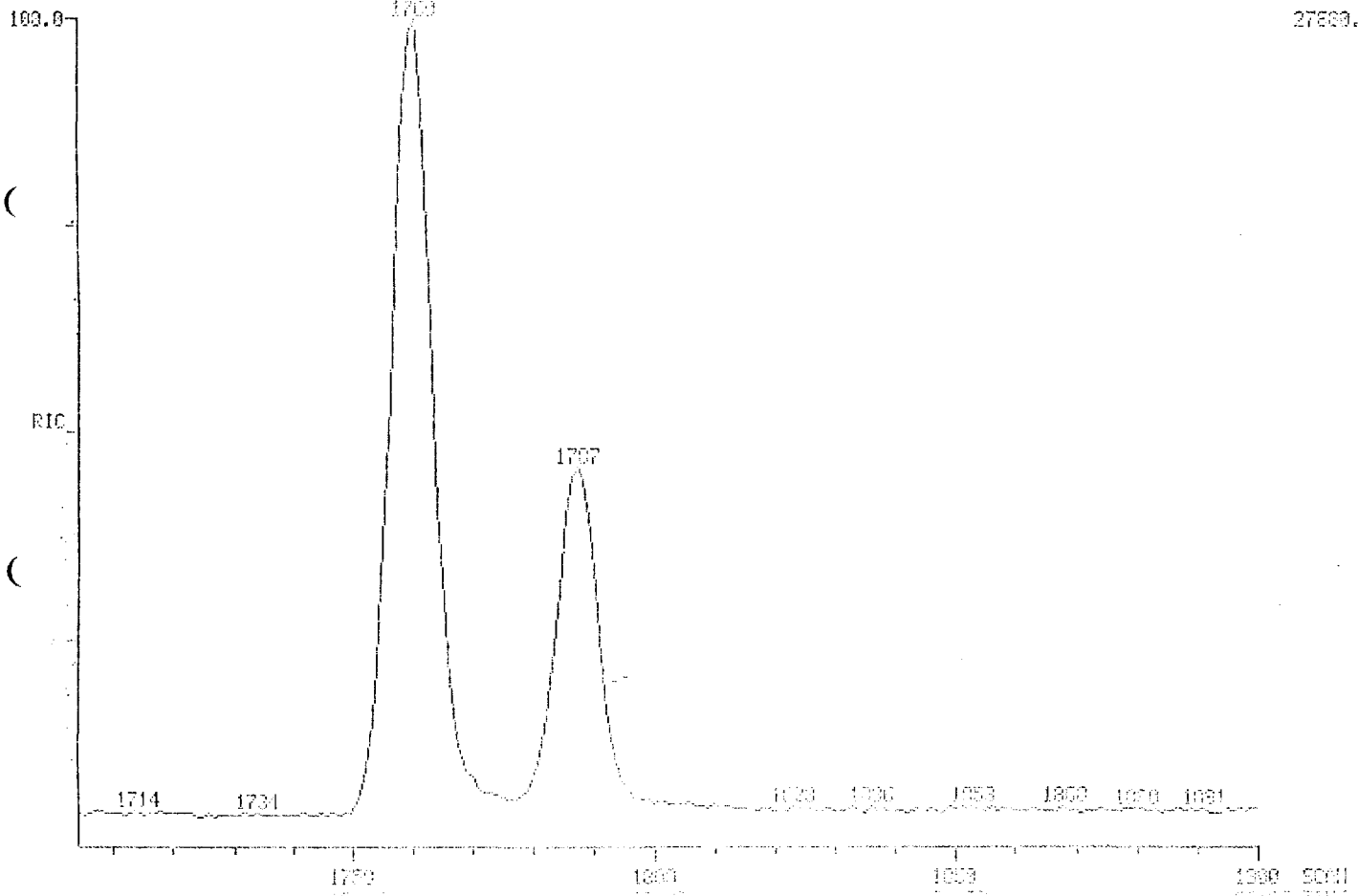
SAMPLE: CALIBRATION SOLN. I

CONDS.: 1UL/SP2331/100-200025/200-24001-NON D10

RANGE: 61704.1000 LABEL: U 0, 4.9 CUSH: A 0, 1.0 J 0 RADP: U 20, 8

04/23/87 9:10:00

04/23/87 9:10:00



0115110

HID MASS CHROMATOGRAMS

FILE: 040102.D1

START TIME: 10:00

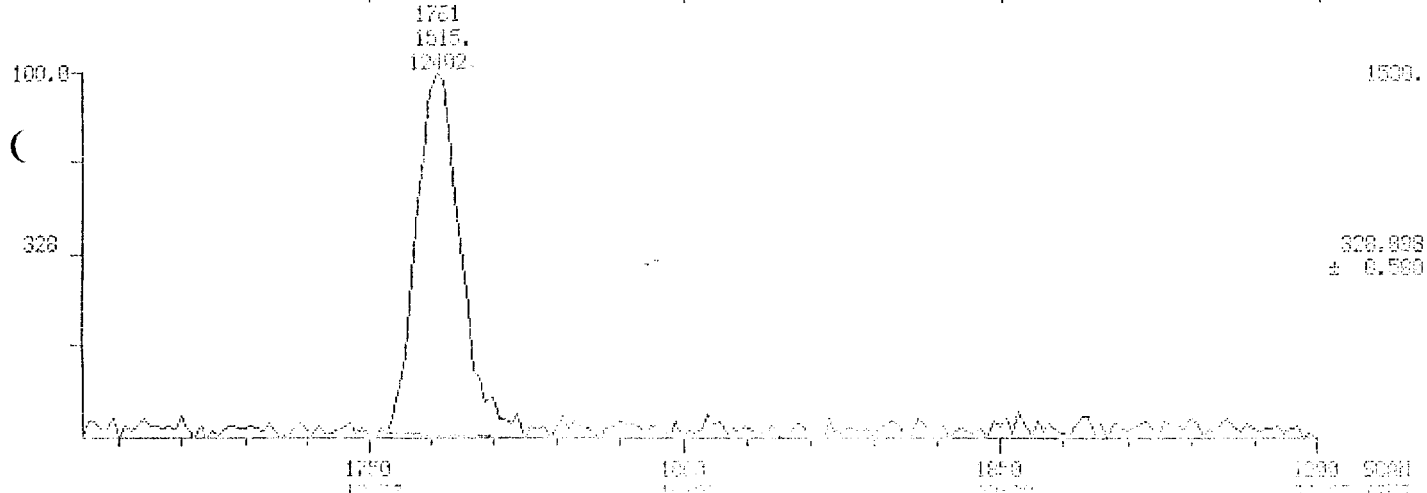
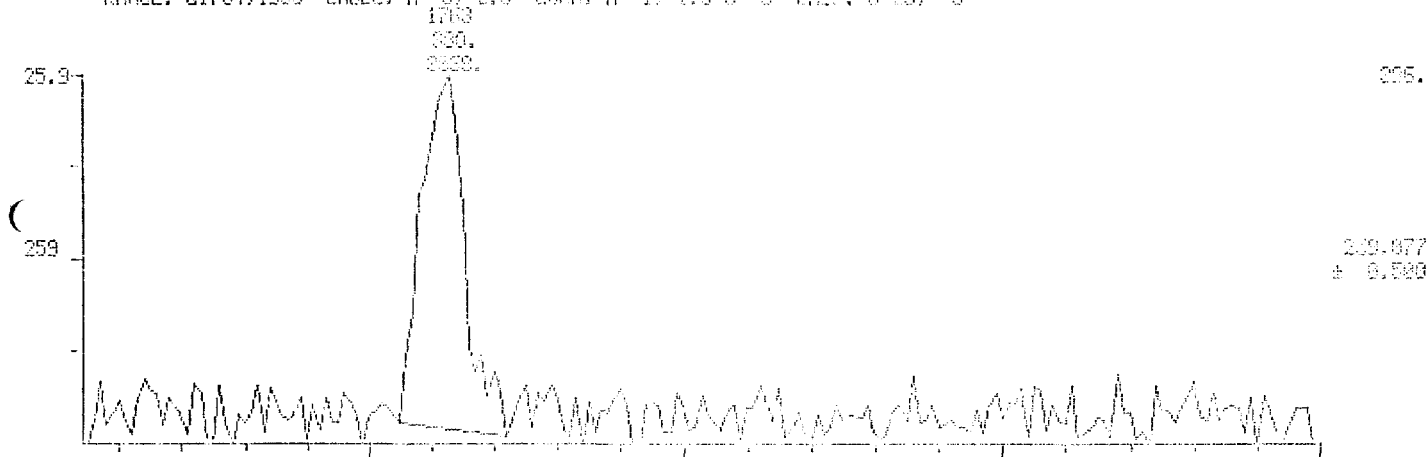
04/23/87 9:10:00

DATE: 04/23/87 00

SAMPLE: CALIBRATION SOLN. I

COND.: 1UL/SP2331/100-200025/200-24021/100.D10

RANGE: G1704.1900 LABEL: H 5, 2.5 COND: A 1, 1.0 J 0 RYSE: U 20, 3



011519

HID HISS CHROMATOGRAMS

04/23/87 09:10:00

04/23/87 09:10:00

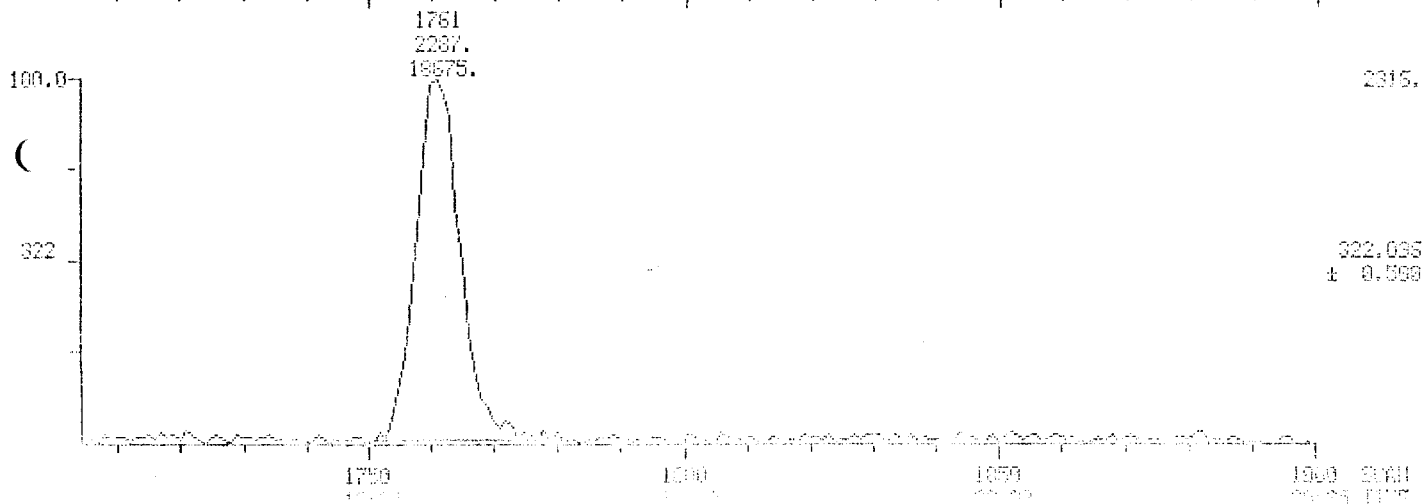
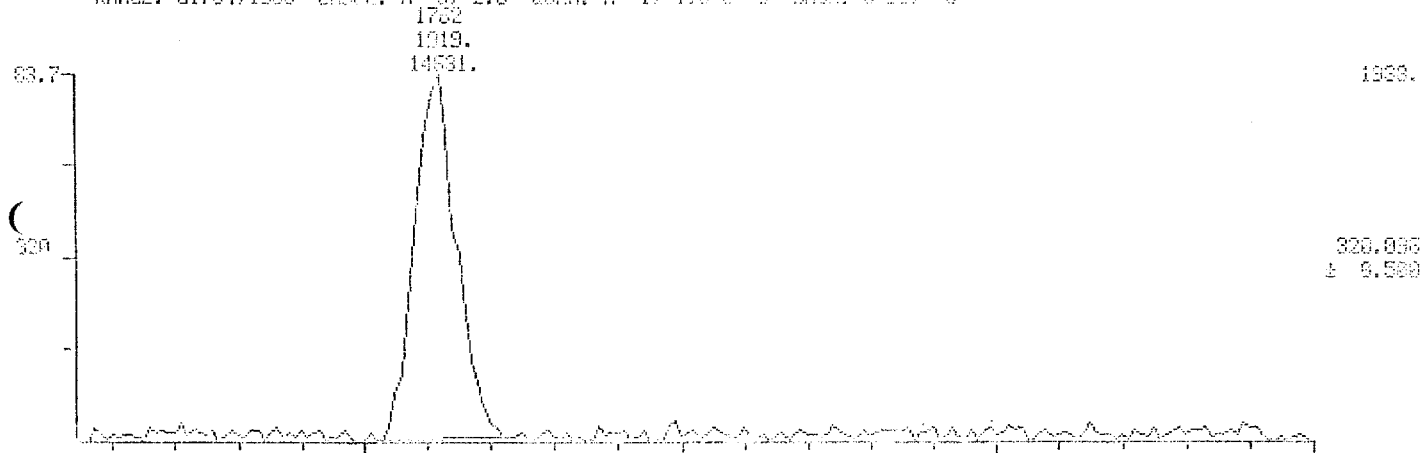
04/23/87 09:10:00

04/23/87 09:10:00

SAMPLE: CALIBRATION SOLN. I

COND.: 1UL/SP2331/100-206025/200-24004/400LH10

RANGE: 61704/1900 LAMPL: 0.5, 2.5 QUEN: A 1, 1.0 U 0 INCT: 0.20, 0



011520

MID MASS CHROMATOGRAMS

04/23/87 9:10:00

SAMPLE: CALIBRATION SOLN. I

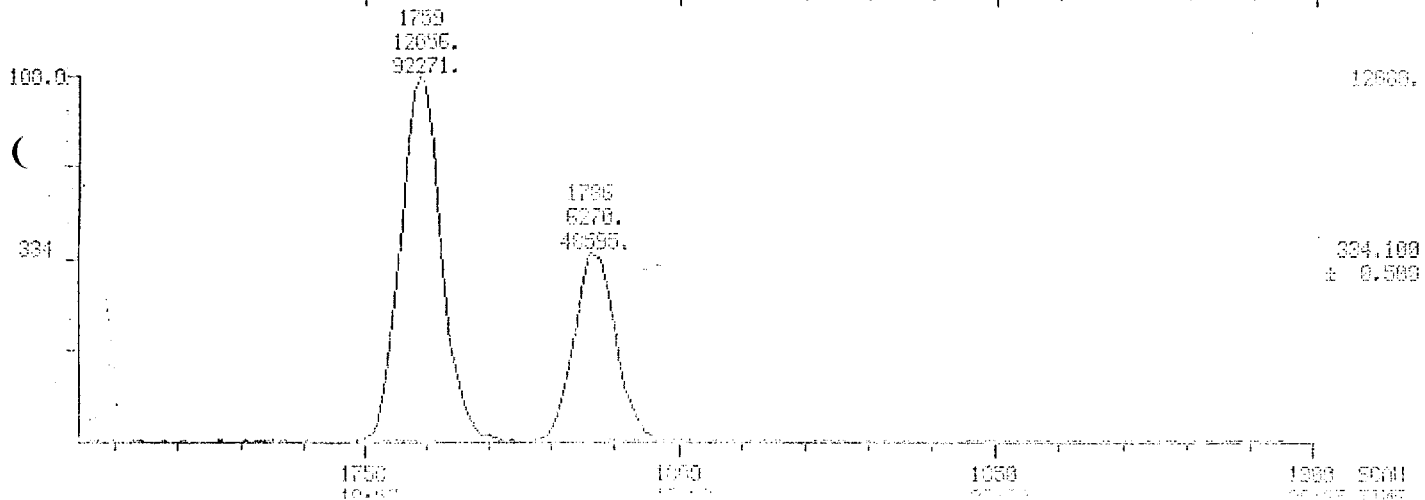
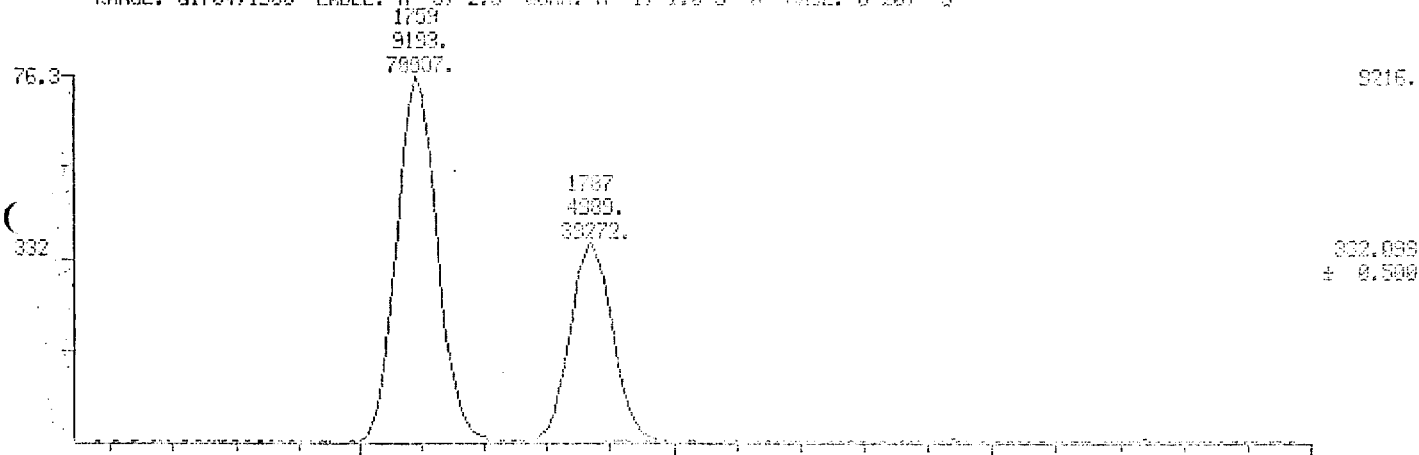
CONDS.: 1UL/SP2331/100-200025/200-21004/10L010

RANGE: 61704.1960 LABEL: H 5; 2.5 QUNT: 6 1; 1.0 U 0 PAGE: U 23, 3

DATE: 04/23/87

TIME: 09:10:00

FILE: 011520



011521

HID RIC

DATE: 01/23/87

TIME: 12:00:00

01/23/87 12:00:00

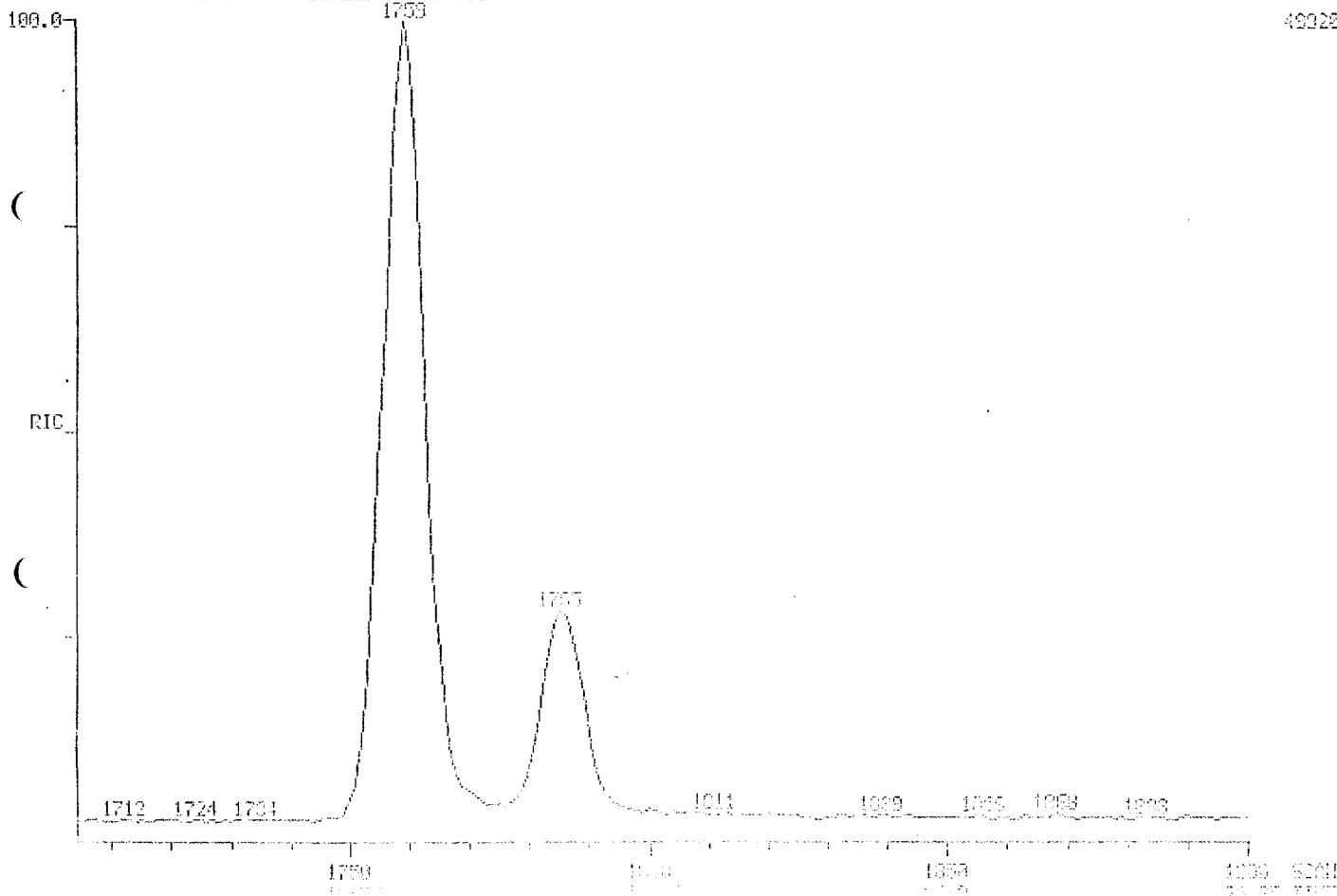
01/23/87 12:00:00

SAMPLE: CALIBRATION SOLN II

COND5.: 1UL/EP2331/100-200025/205-21001/HOLD18

RANGE: 61704,1200 LABEL: H 0. 4.0 CURVE: A 0. 1.0 U 0 BASE: U 20. 0

49029.



011522

HTD MASS CHROMATOGRAM
04/23/87 12:09:00

FILE: 011522.D
DATE: 04/23/87

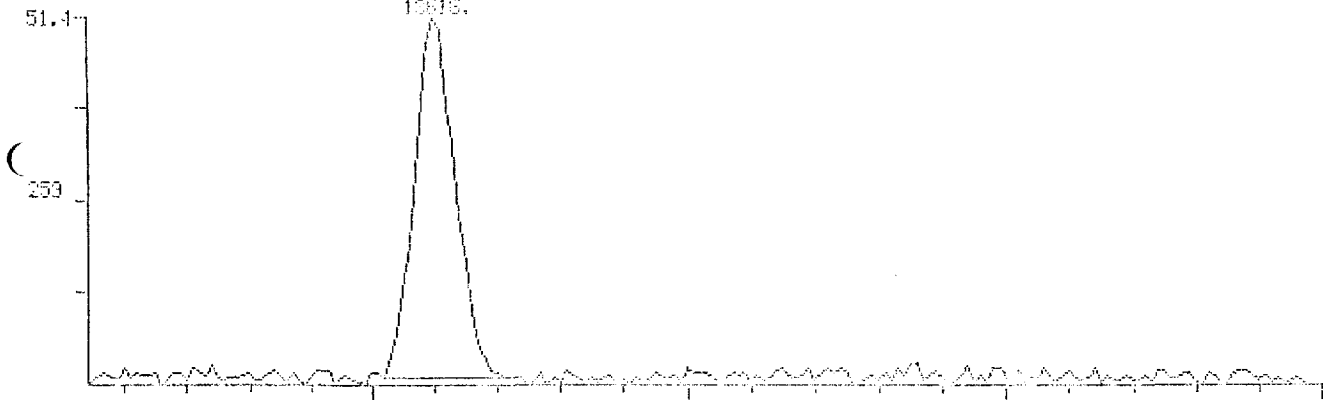
TIME: 12:09:00

SAMPLE: CALIBRATION SOLN II

COND.: IUL/SP2331/100-200025/200-240044/HOLD10

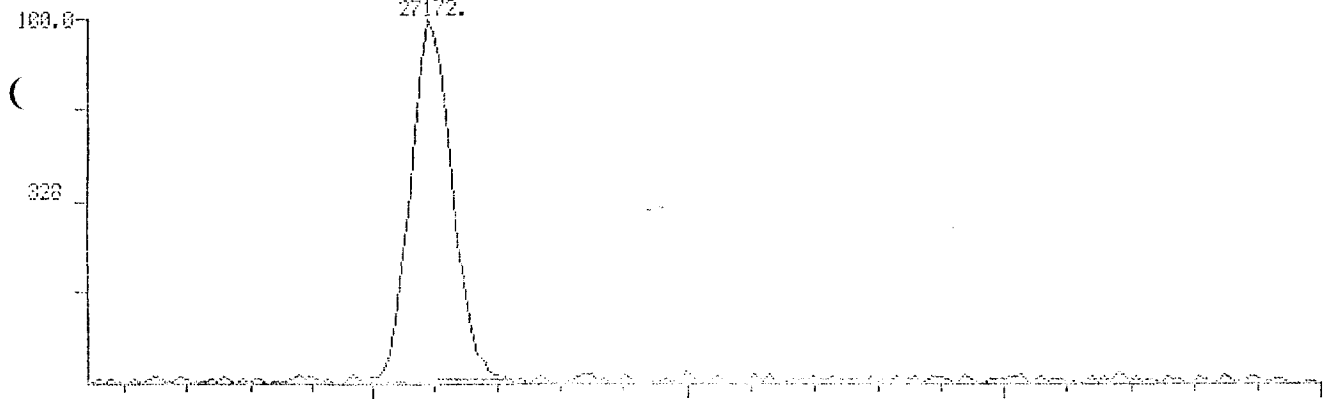
RANGE: 61704.1900 LABEL: H 5, 2.5 CURVE: A 1, 1.0 U 0 BYTE: U 20, 3

1760
1750.
16618.



1750.0
259.027
± 0.500

1750
3503.
27172.



1750.0
328.028
± 0.500

1750 1900 1950 1990 5000
MIN

011523

HED BASES CHROMATOGRAMS

DATE: 04/23/87

TIME: 12:09:00

04/23/87 12:09:00

COND: 1UL/SP2331/100-23025/200-24904/101.013

SAMPLE: CALIBRATION SOLN II

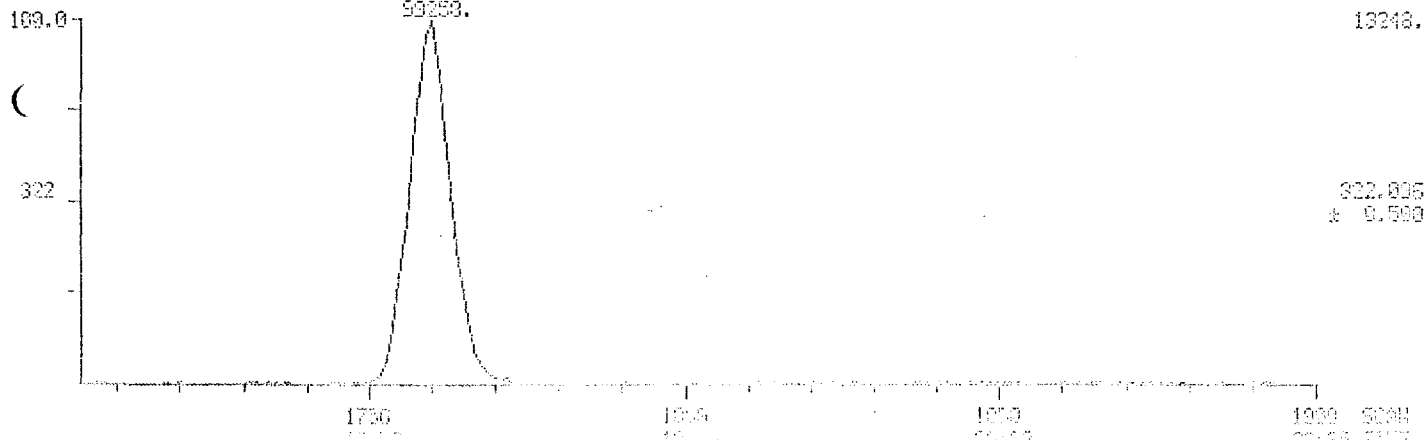
COND5.: 1UL/SP2331/100-23025/200-24904/101.013

RANGE: 61704.1500 LABEL: H_5, 2.5 UNIT: A (, 1.0 J 0 DATE: 0 28, 0

1750
10150.
79337.



1750
13248.
99253.



011524

MID RASS CHROMATOGRAM

DATE: 04/23/87

TIME: 12:03:00

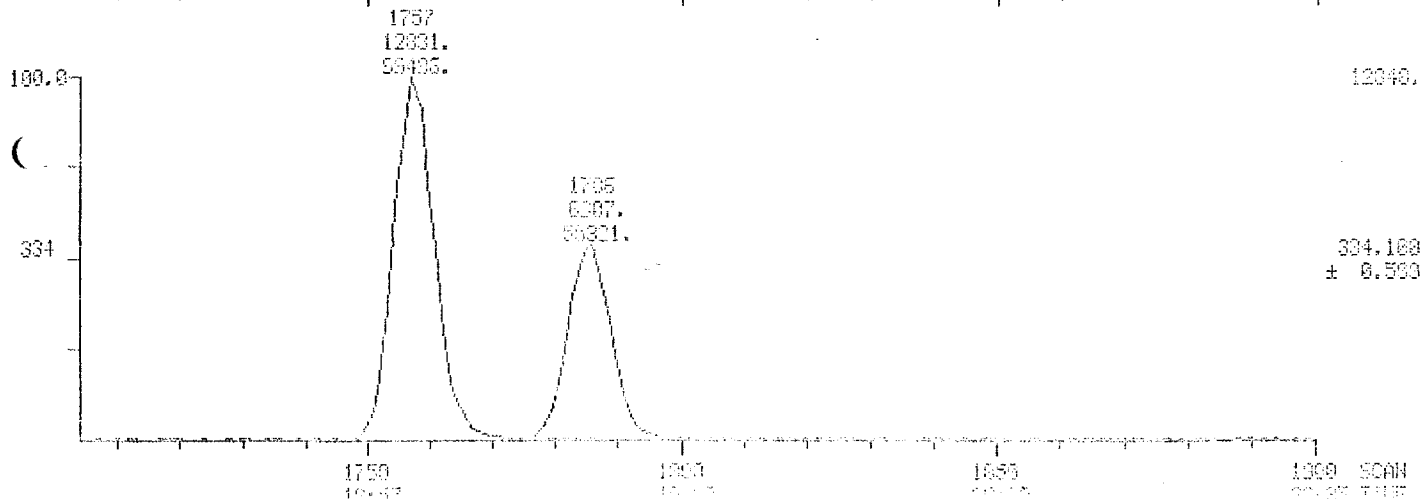
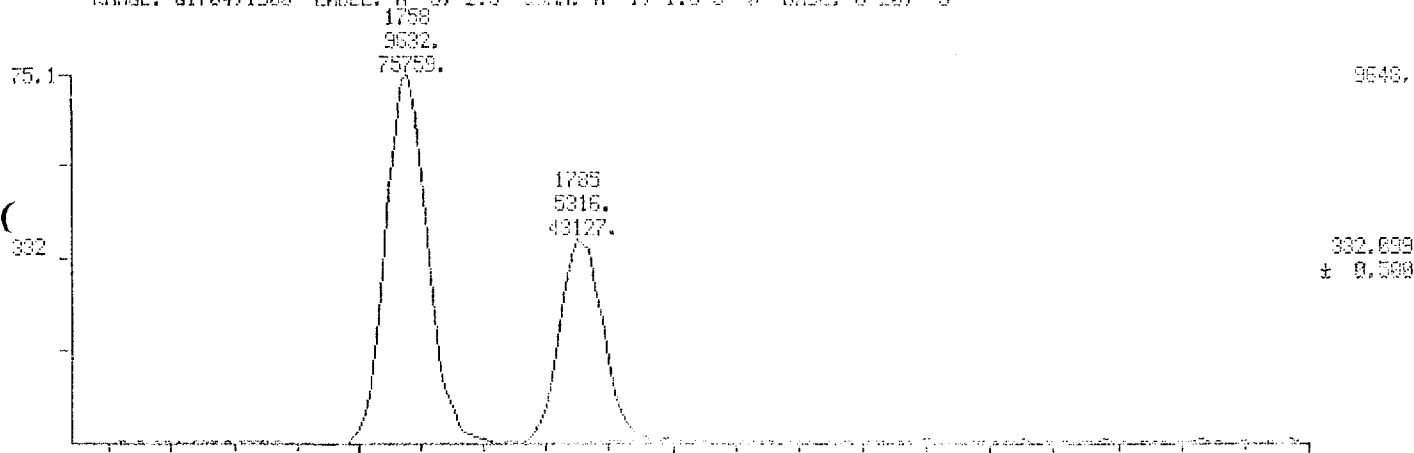
04/23/87 12:03:00

FILE: CALIBRATION

SAMPLE: CALIBRATION SOLN II

COND.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: 61704.1900 LABEL: H 5, 2.5 CURVE: A 1, 1.0 U 0 BASE: U 20, 0



011525

HID RIC

04/23/87 12:37:00

SAMPLE: CALIBRATION SOLN II

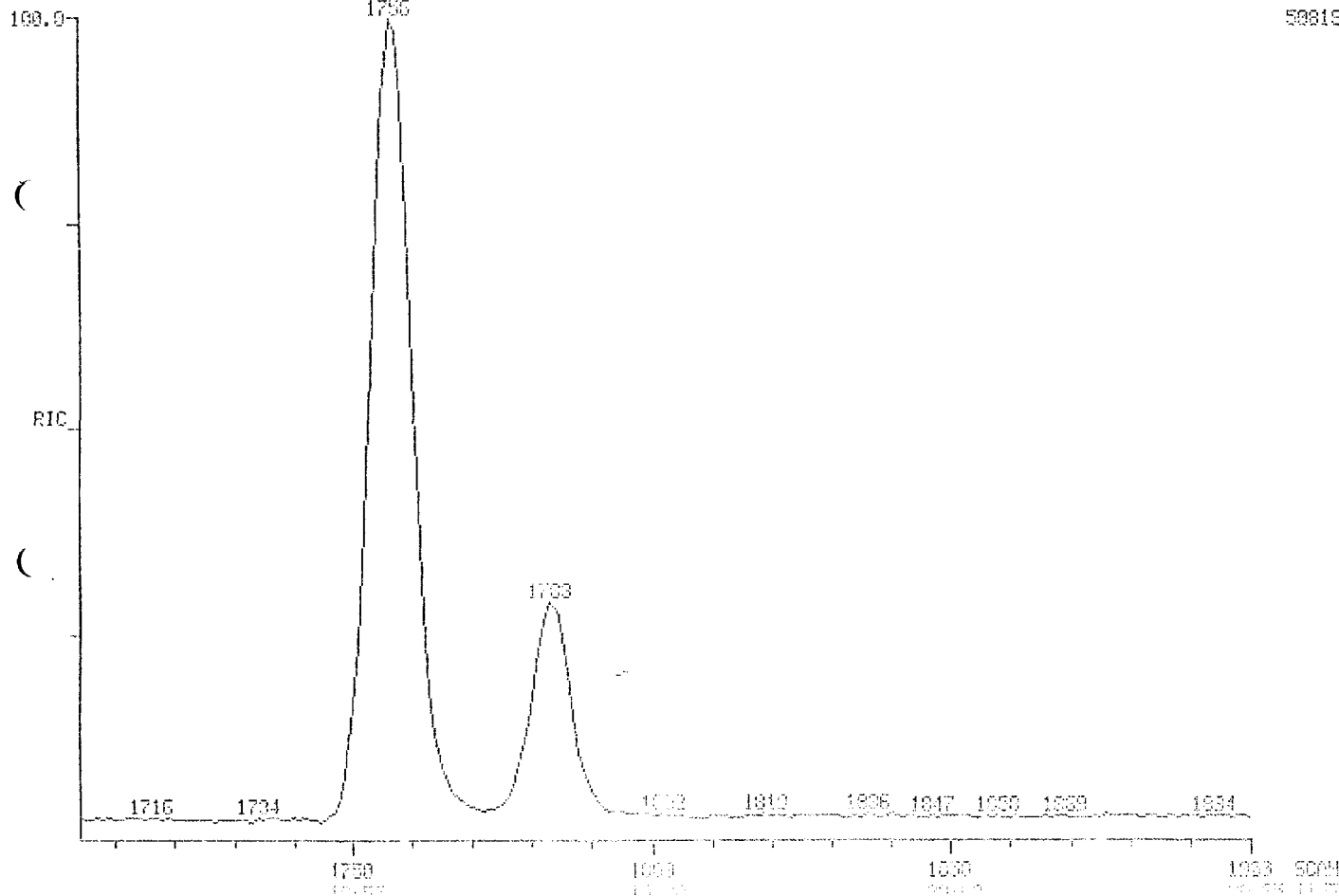
CONDS.: 1UL/SP2331/100-200025/200-24001/HOLD10

RANGE: G1704,1300 LABEL: H 0, 4.0 GUSH: A 0, 1.5 U 0 GASE: U 20, 3

DATE: APR 23 1987
TIME: 12:37:00

SCAN: 1701 TO 1999

50815.



011526

MID MASS CHROMATOGRAMS

DATA: 11/09/88 01

COND: 1901 70 1000

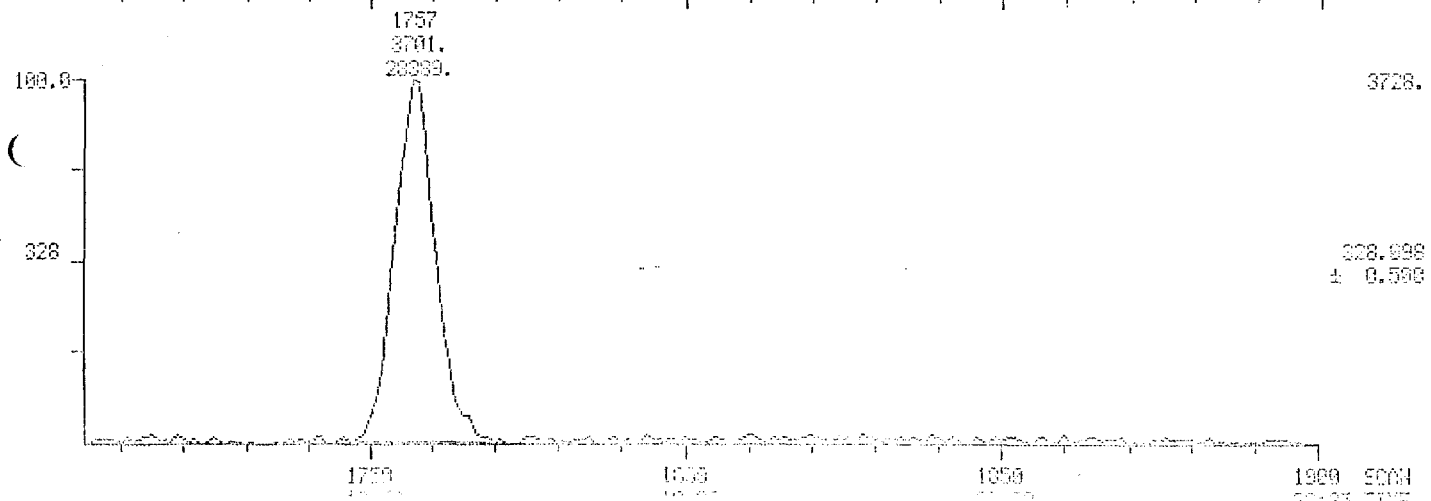
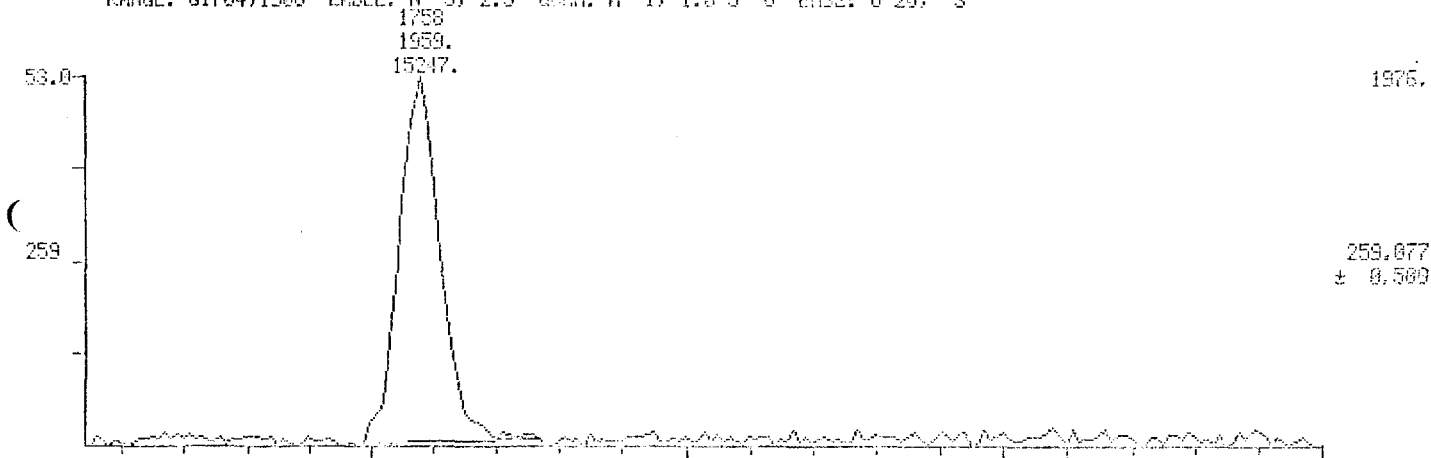
04/23/87 12:37:00

INSTR: G1704 1900

SAMPLE: CALIBRATION SOLN II

COND: 10UL/SP2331/100-200025/200-24004/100.D10

RANGE: G1704,1900 LABEL: H 5, 2.5 GAIN: A 1, 1.0 J 0 BASE: U 20, 3



011527

HID MASS CHROMATOGRAMS

DATA: 0702000 01

COND: 1704 10 1000

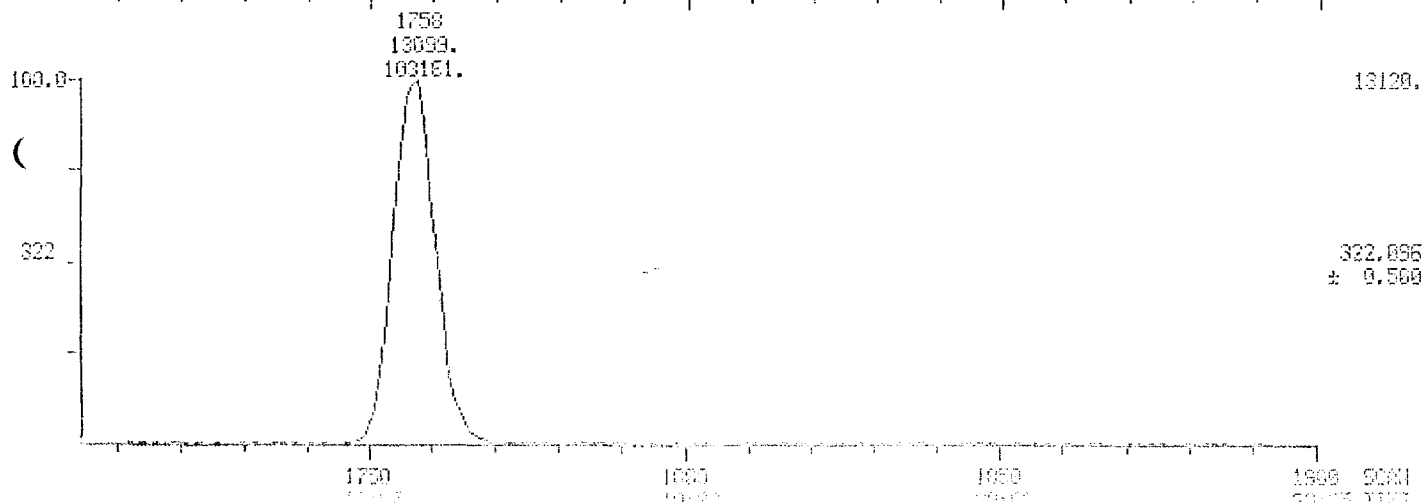
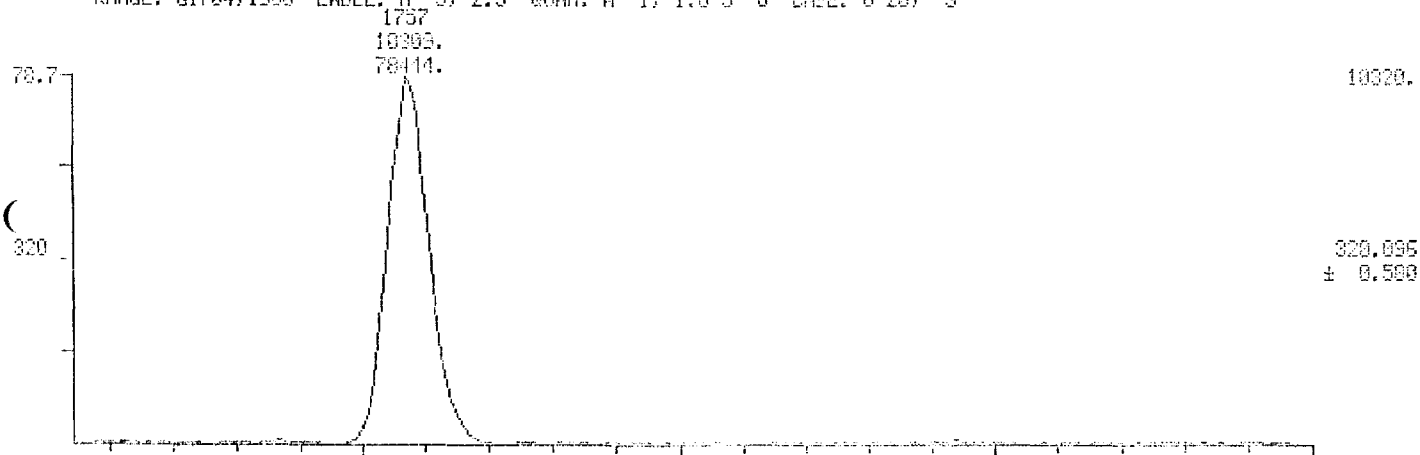
04/23/87 12:37:09

CALI: CAL010007 03

SAMPLE: CALIBRATION SOLN II

COND: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704.1000 LABEL: II 5, 2.5 QUAN: A 1, 1.0 U 0 BASE: U 20, 3



011528

MID MASS CHROMATOGRAMS

DATA: 8472669.D1

SCANS 1704 TO 1800

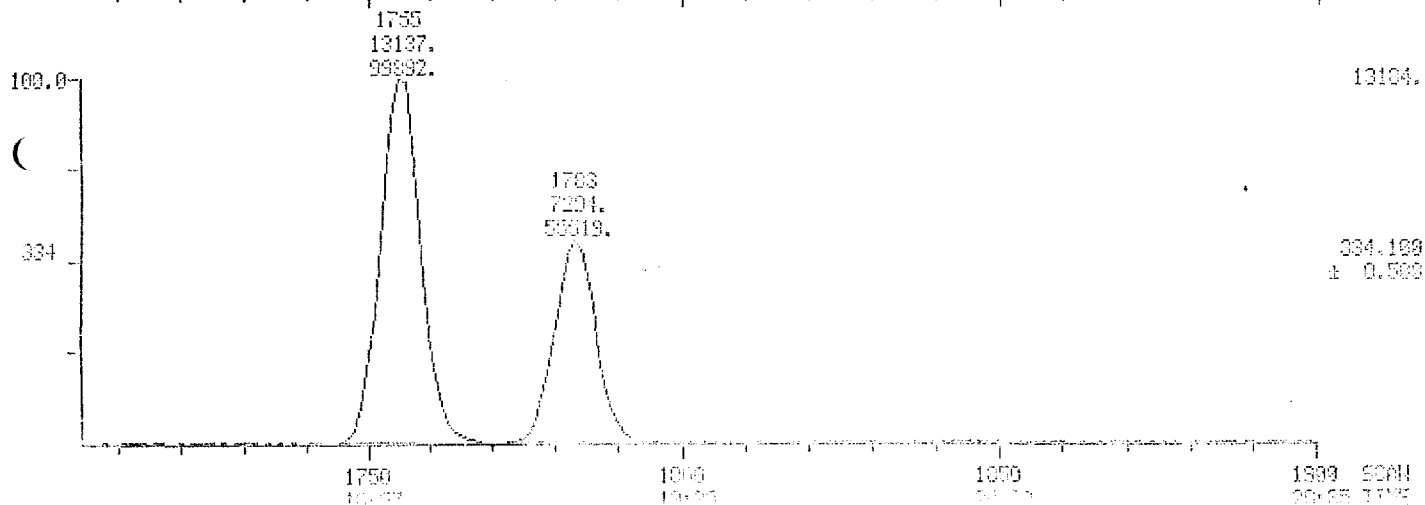
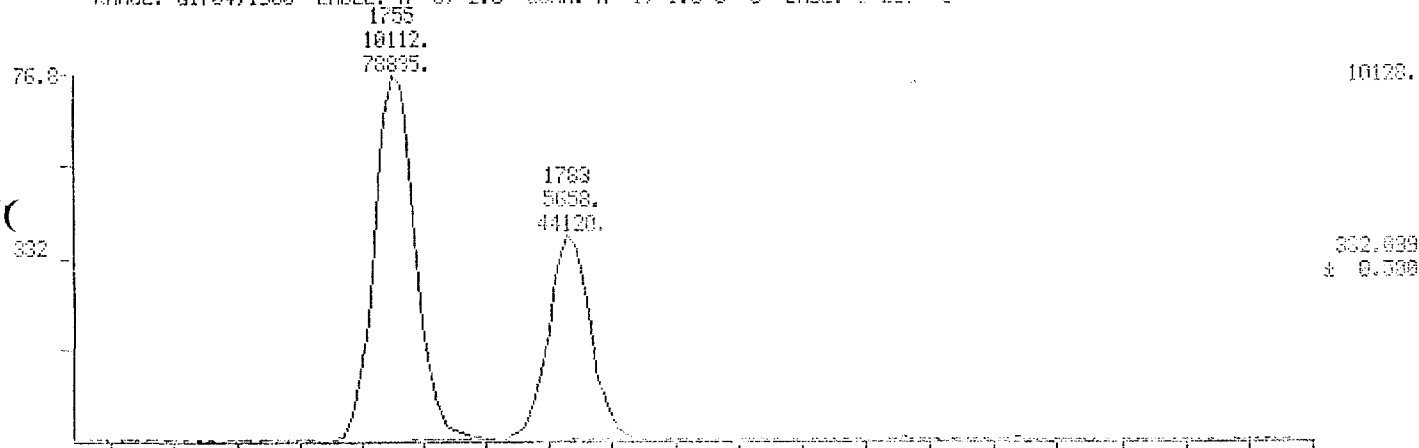
04/23/87 12:37:00

ORIG: CALIB0387.W3

SAMPLE: CALIBRATION SOLN II

CONDOS.: 1UL/SP2331/100-200025/200-24004/INLET10

RANGE: G1704.1500 LABEL: H 5, 2.5 OVEN: n 1, 1.0 J 0 BASE: U 20, 3



011529

MID RIC

DATE: 11/10/04 01

TIME: 17:31:30 1994

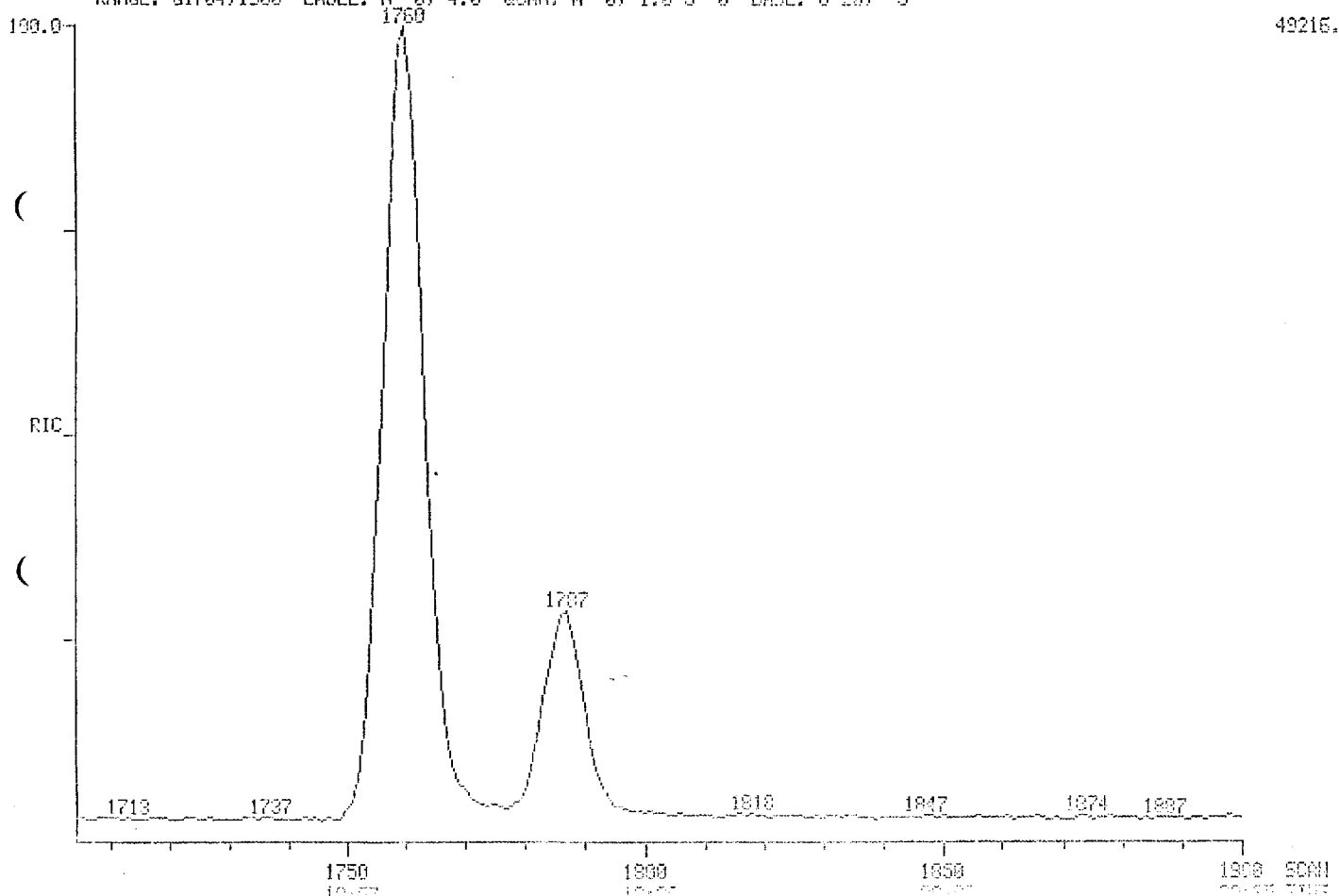
04/23/07 10:13:00

FILE: 0115297.D

SAMPLE: CALIBRATION SOLN II

CONDS.: IUL/SP2331/100-200025/200-24004/110L010

RANGE: G1704.1900 LABEL: U 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



011530

MID MASS CHROMATOGRAMS

DATE: APR2104 41

SCANS 1704 TO 1900

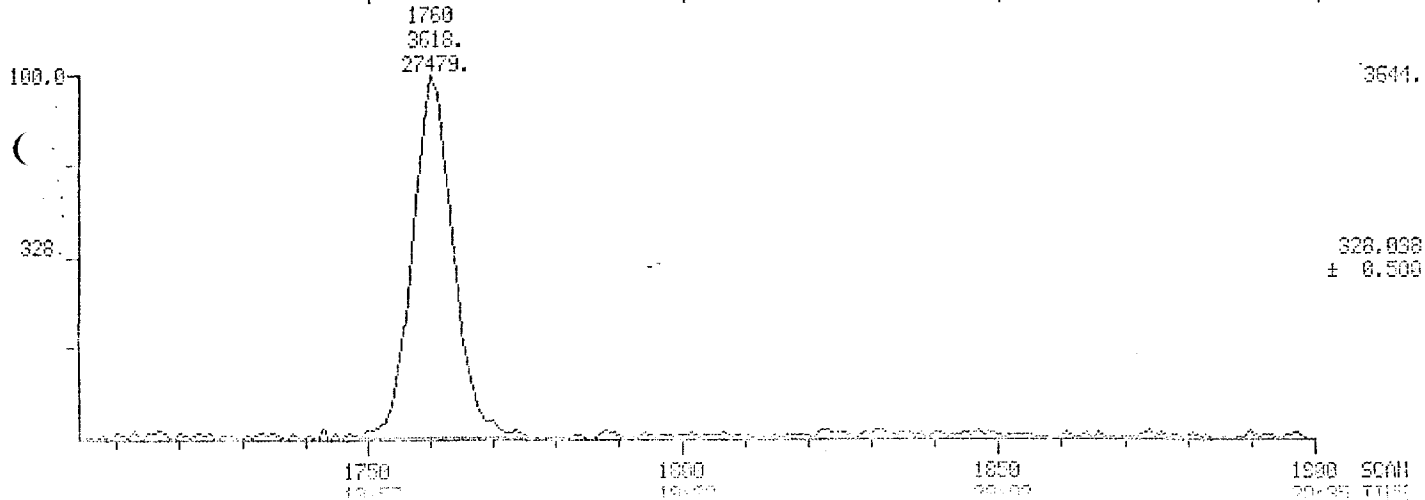
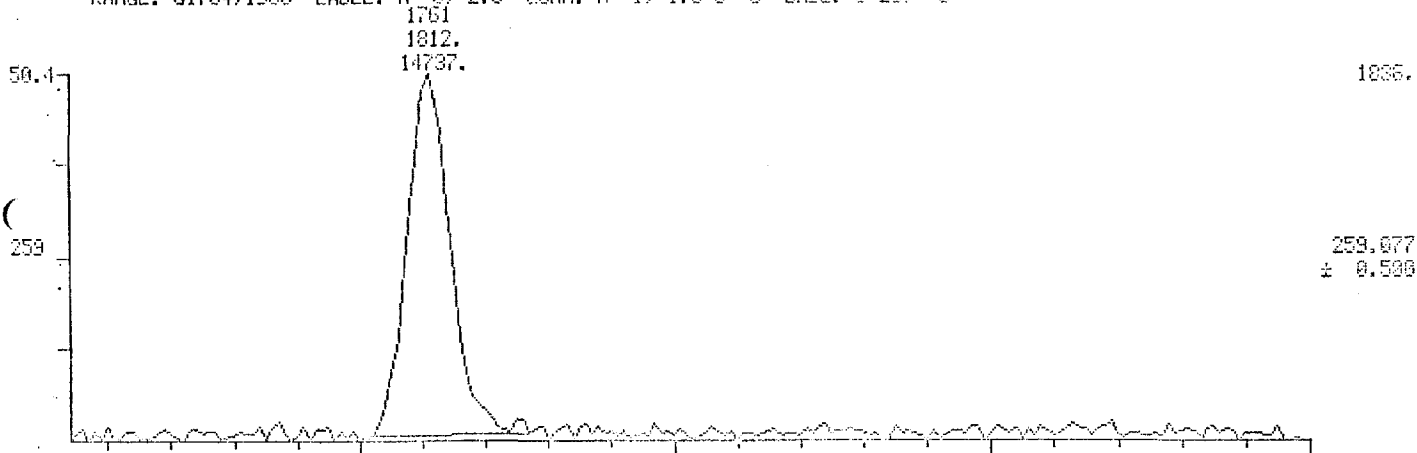
04/20/87 10:13:00

ONLY: CAL042337 03

SAMPLE: CALIBRATION SOLN II

CONDS.: 1UL/SP2331/100-200@25/200-240@4/HOLD10

RANGE: G1704.1900 LABEL: H 5, 2.5 CUMH: 0 1, 1.0 J 0 CASE: U 20, 3



011531

HPLC MASS CHROMATOGRAMS

DATA: 6/22/87 01

SCAN: 1701 TO 1930

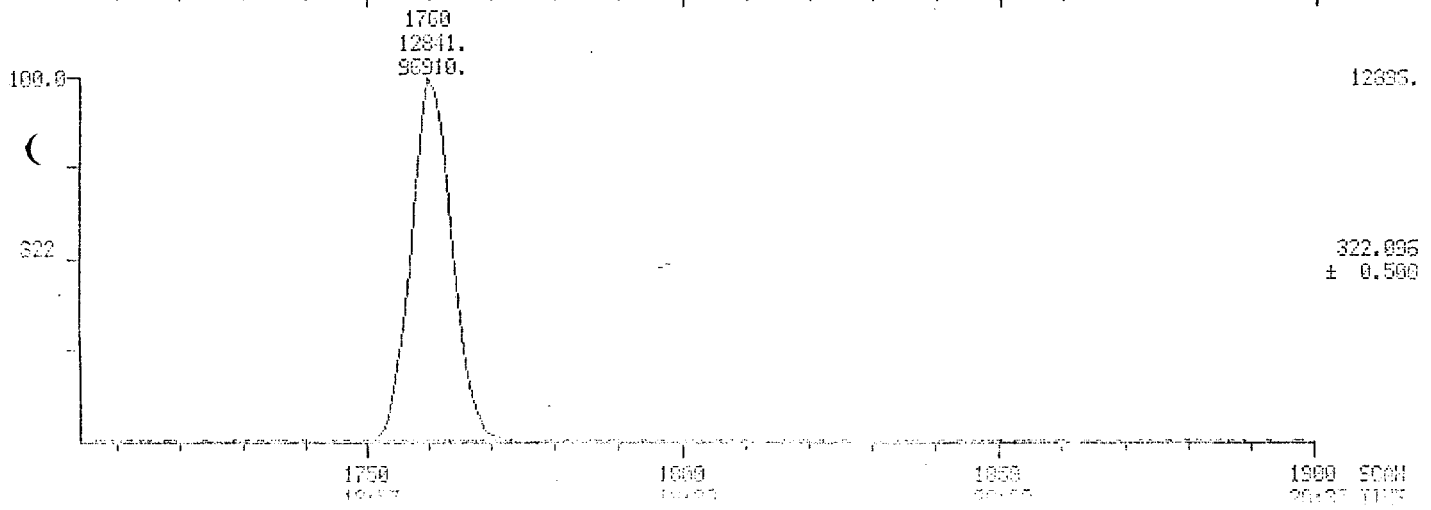
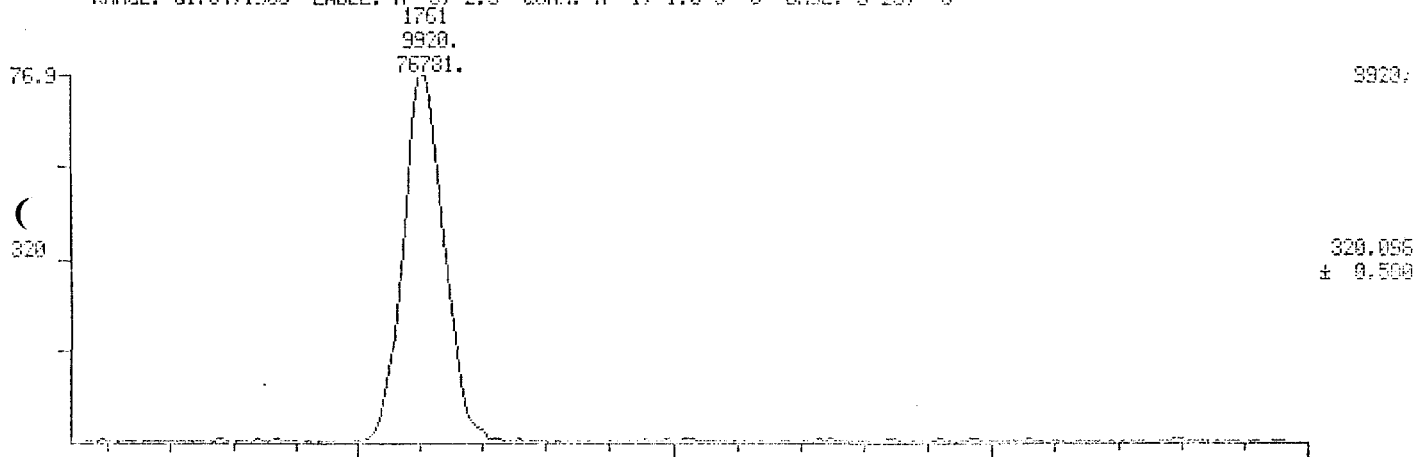
04/23/87 10:13:00

CALIB: 00000007 05

SAMPLE: CALIBRATION SOLN II

CONDS.: IUL/SP2331/100-200025/200-24004/HOLD10

RANGE: 61704.1900 LABEL: M 5, 2.5 QUANT: A 1, 1.0 J 0 BASE: U 20, 3



011532

NID HASS CHROMATOGRAMS

FILE: 011532.D

DATE: 01/17/90 10:00

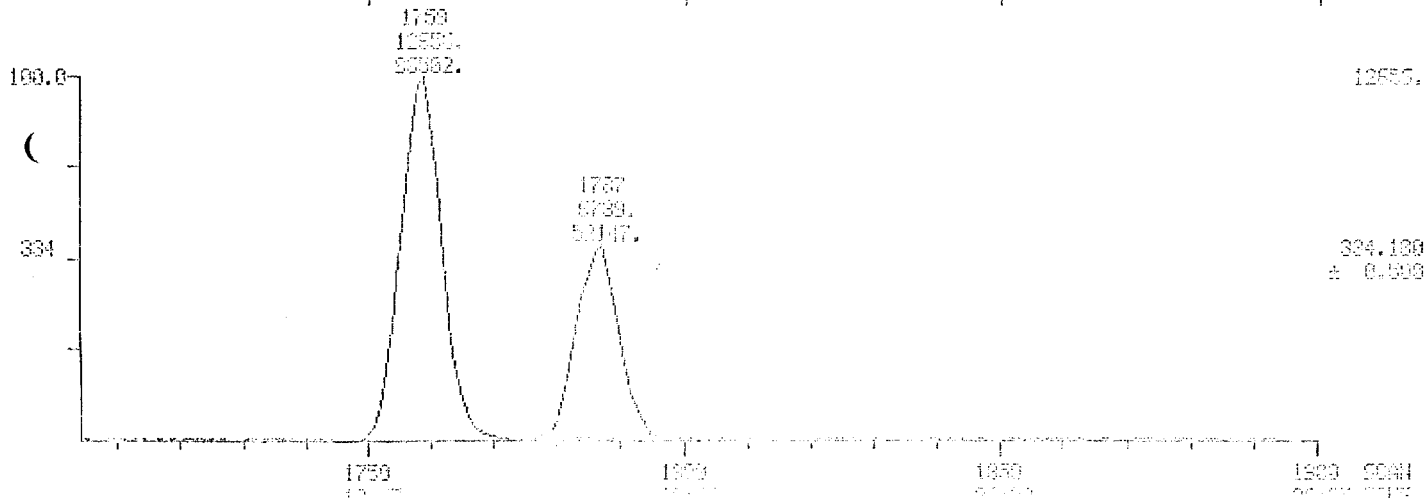
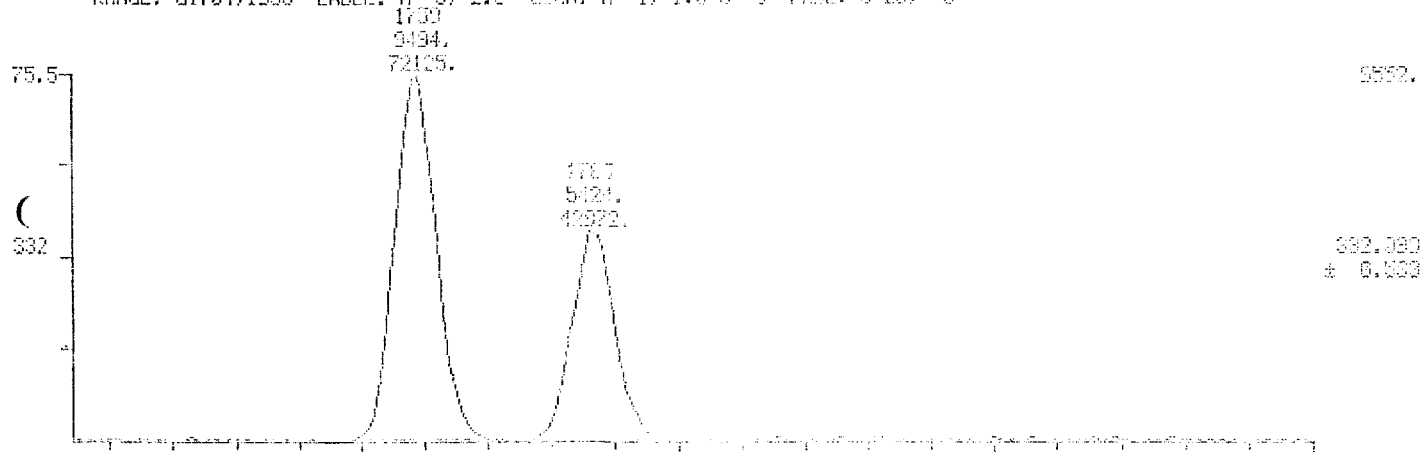
04/23/87 10:13:00

COND: 1UL/SP2331/100-200025/200-24001/100 D10

SAMPLE: CALIBRATION SOLN II

COND5.: 1UL/SP2331/100-200025/200-24001/100 D10

RANGE: 01704.1900 LABEL: 11 5, 2.5 GAIN: 0 1, 1.0 U 0 PACE: U 20, 8



011533

HIB RIC

04/23/87 13:05:00

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/SP2331/100-260025/208-24024/110L010

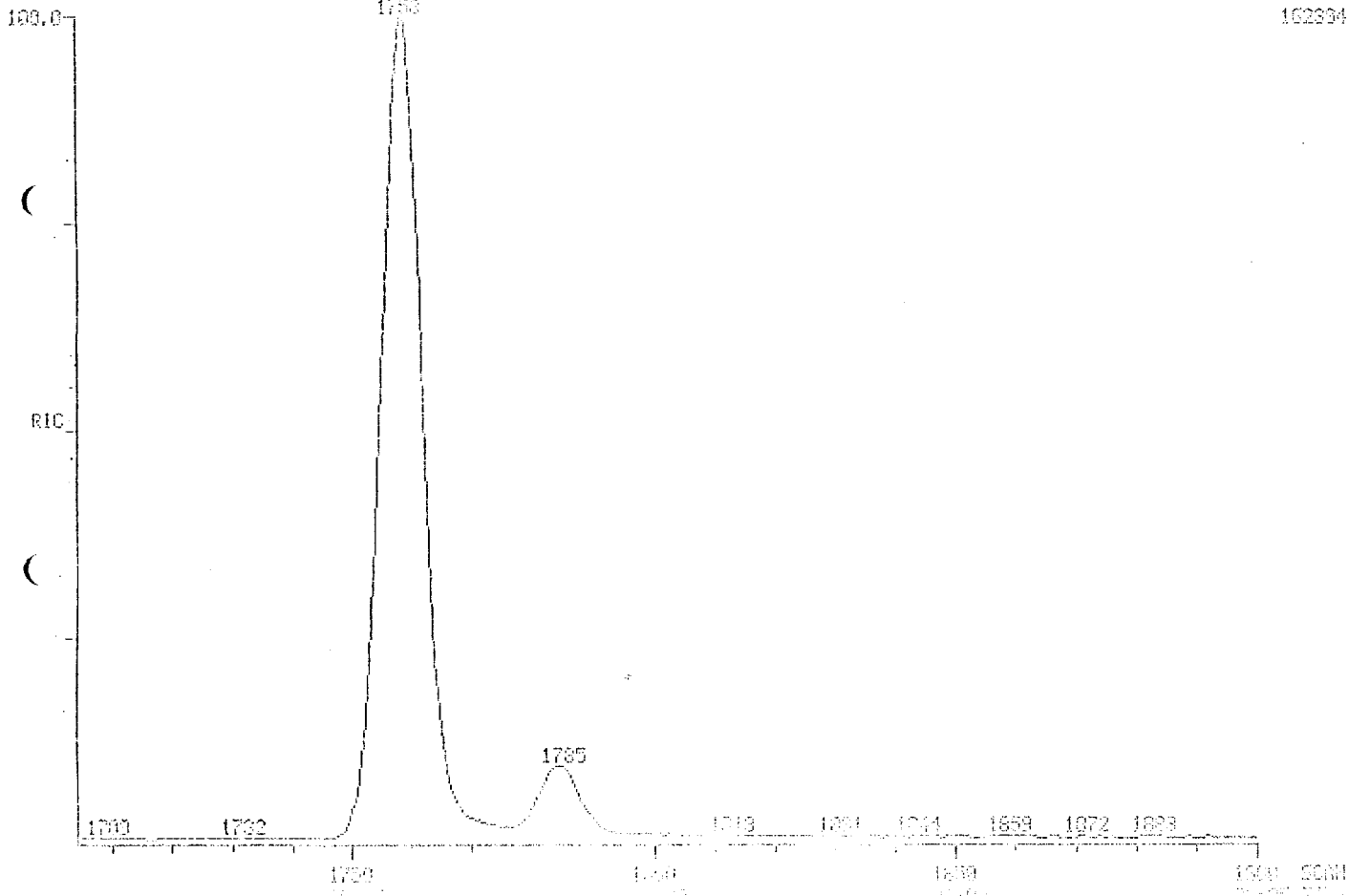
RANGE: 61794.1900 LABEL: H 0, 1.0 GYTR: S 0, 1.0 U 9 DISE: U 20, 0

1730.000000

0.000000

1730.000000

162304.



011534

HID NISS CHEMISTORONS

DATE: 04/23/87

TIME: 10:10:10

04/23/87 10:00:00

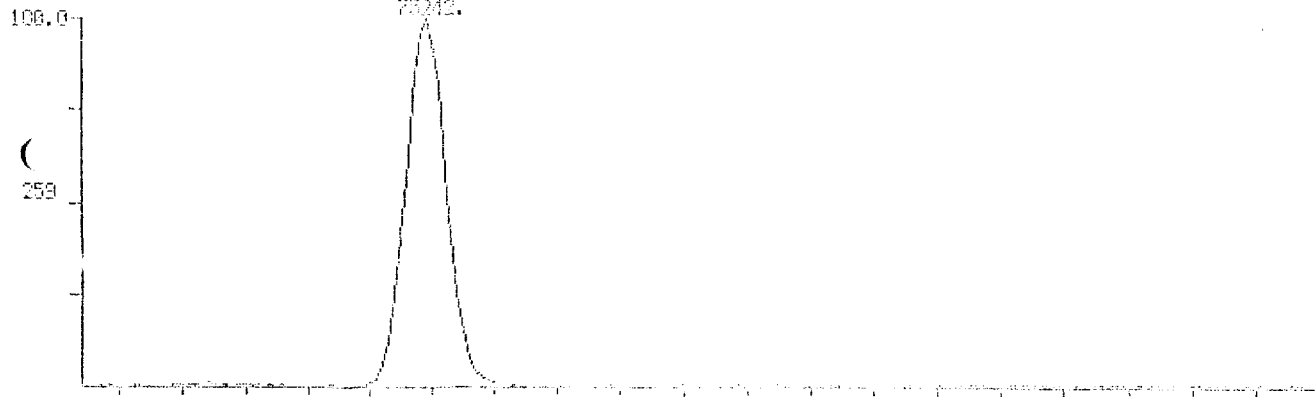
011534

SAMPLE: CALIBRATION SOLN III

COND.: 1UL/SP2331/100-200000/100-2400/100 D10

RANGE: 01704.1300 LABEL: H 5. 2.5 GAIN: 0 1. 1.0 2 0 SCALE: 0.00 0

1709
6345.
75242.



1709
6345.
51763.



1709 1000 1800 2000 MIN

011535

HPLC CHROMATOGRAMS

DATE: 04/23/97

TIME: 13:06:09

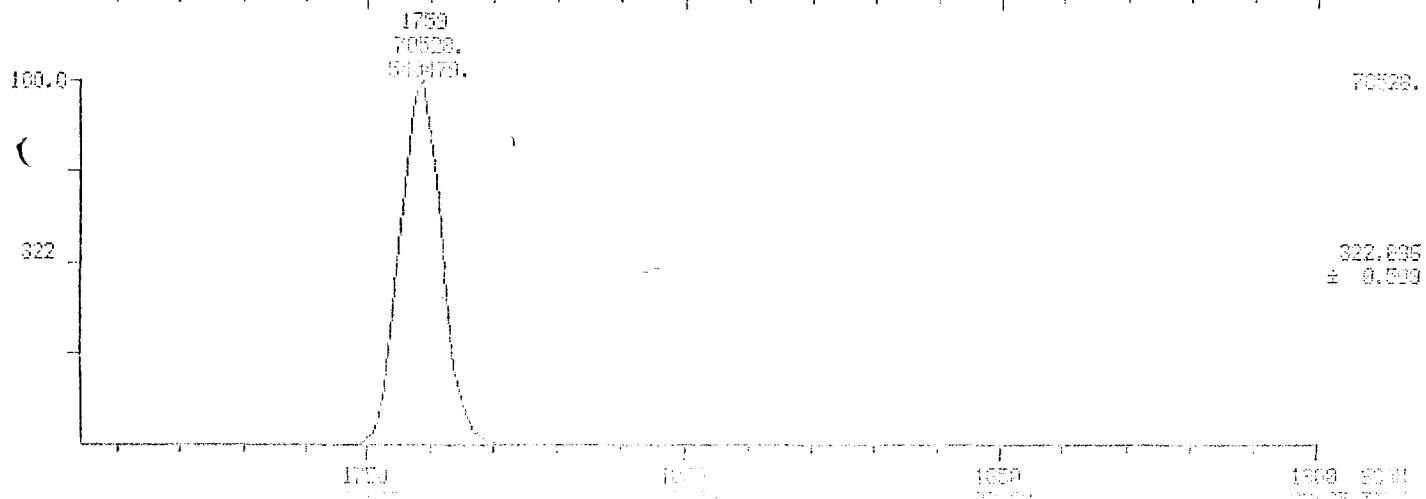
84/23/97 13:06:09

FILE: 011535.D

SAMPLE: CALIBRATION SOLN III

COND.: 10L/SP2331/100-200000/200-2400/MS/D10

RANGE: 61704.1000 LABEL: H 5 2.5 0.5M 0.1 1.0 U 0 RATE: 0.20, 3



011536

NID RIC

04/23/97 10:42:00

SAMPLE: CALIBRATION SOLN III

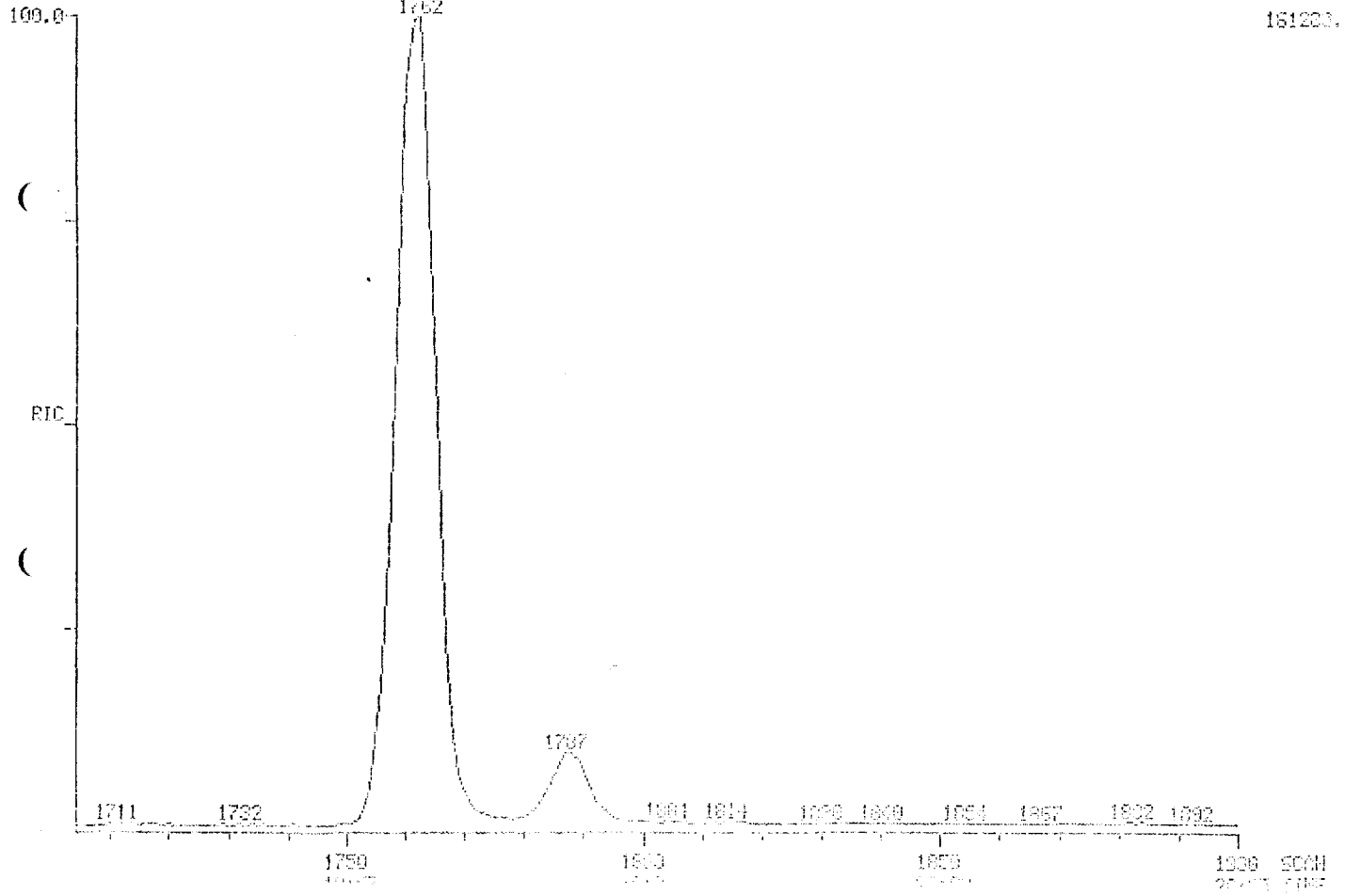
COND5.: 1UL/5P2331/100-200825/200-24064/100L010

RANGE: G1704.1000 LABEL: H 0, 4.0 CURV: 0 0, 1.0 J 0 1968: H 20, 0

1752 1707

1811 1814 1800 1800 1851 1857 1802 1802

181203.



011537

HID MASS CHROMATOGRAMS

11/11/2009 11:11:10

11/11/2009 11:11:10

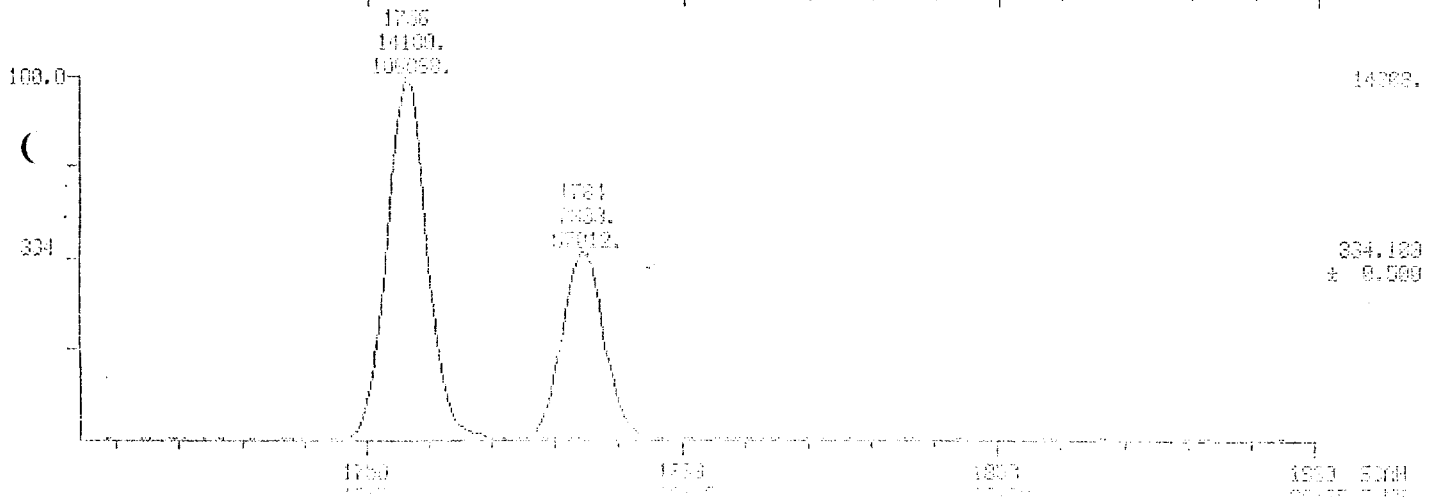
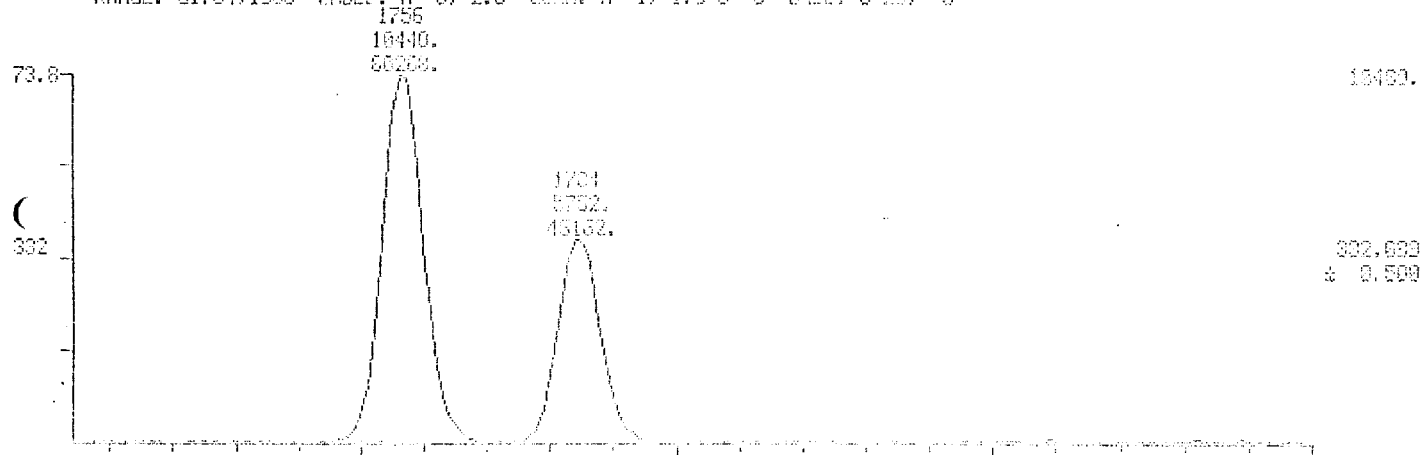
01/23/07 13:05:09

01/23/2007 13:05:09

SAMPLE: CALIBRATION SOLN 111

CONDS.: 1UL/SP2331/100-200025/200-240004/HOLD10

RANGE: 61704.1900 LABEL: H 5, 2.5 UMIN: A 1, 1.0 U 0 BISE: U 20, 0



011538

HID RIC

DATE: 04/23/87

TIME: 13:35:09

04/23/87 13:35:09

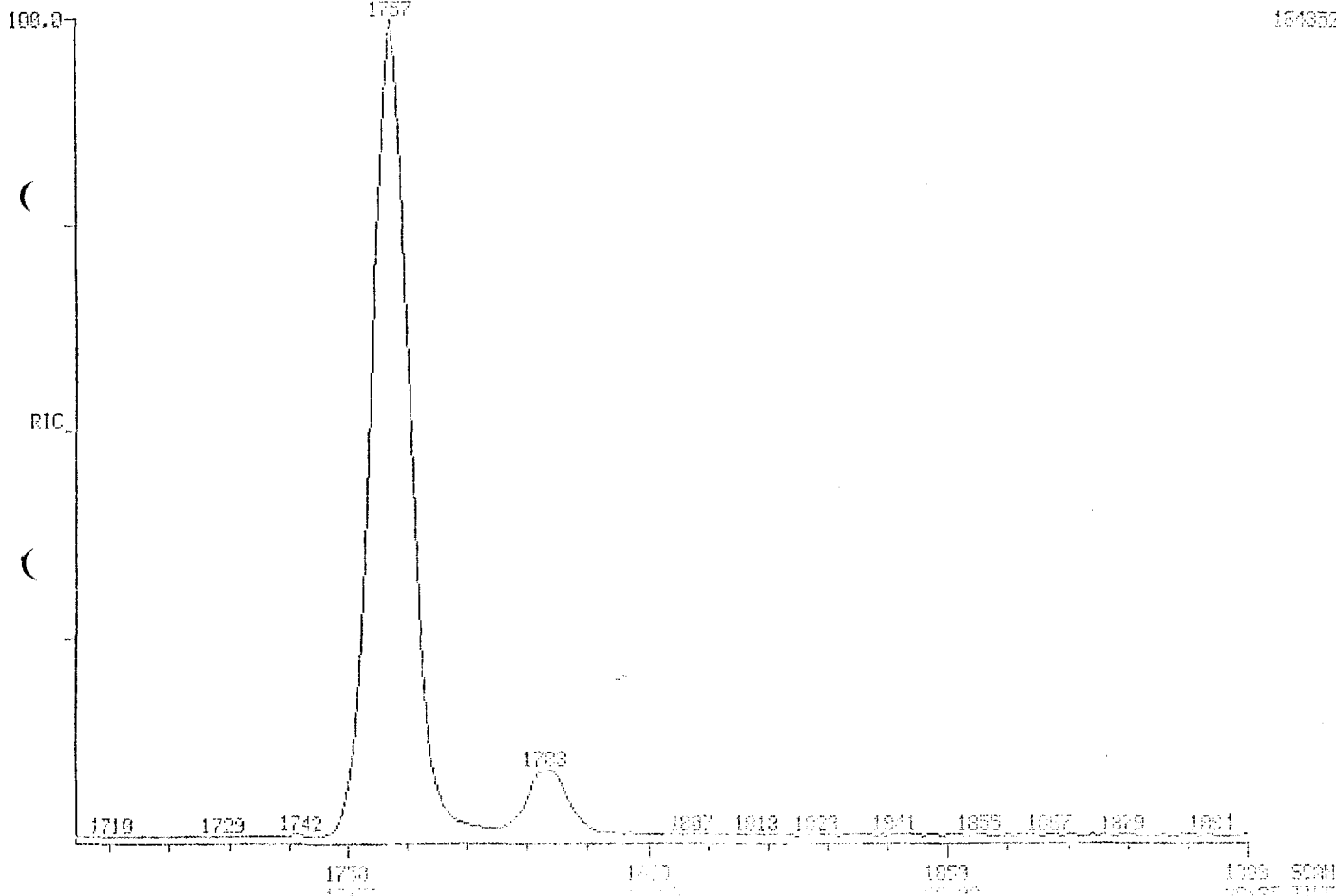
FILE: 011538.D

SAMPLE: CALIBRATION SOLN III

COND.: 1UL/SP2331/100-200025/200-24004/HID.D10

RANGE: 61704.1900 LABEL: H 0, 4.0 OVEN: A 6, 1.0 U 0 DATE: U 20, 3

161352.



011539

MID MASS CHROMATOGRAMS
04/23/87 13:35:09

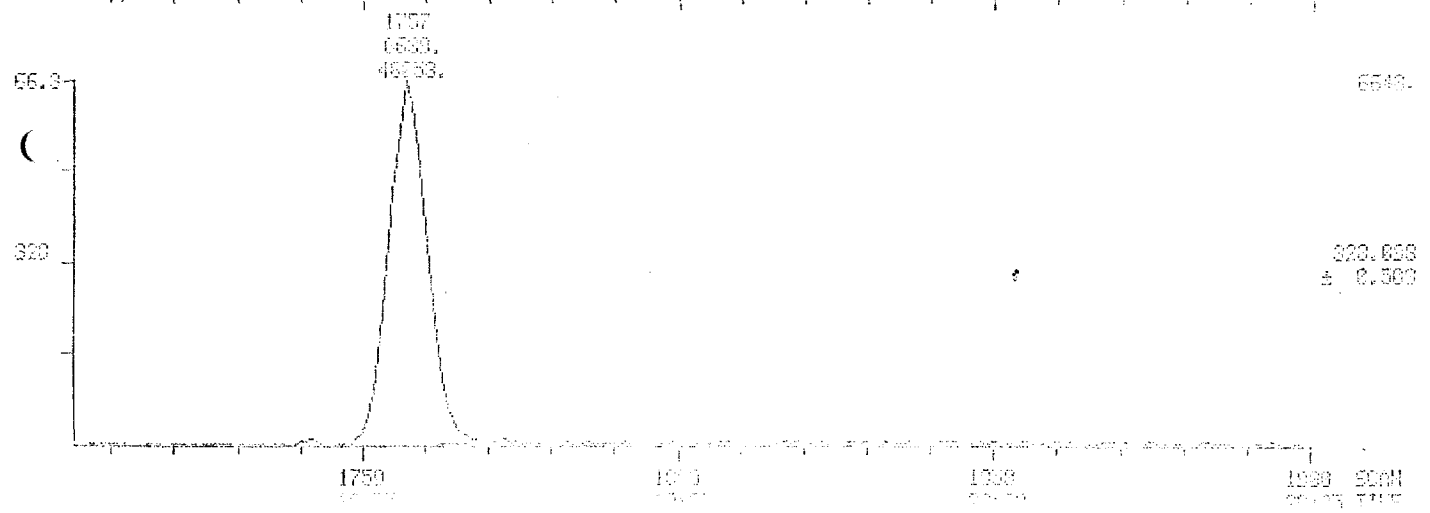
DATA 1.20411 01
UNIT: G/MS/0.7 04

CONC: 15.110 7:00

SAMPLE: CALIBRATION 50LH III

COND5.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704.1900 LABEL: H 5, 2.5 QMS: A 1, 1.0 U 0 CASE: U 00, 8



1750
MIN

1800
MIN

1850
MIN

1900 500H
MIN TIME

011540

MID MASS CHROMATOGRAM

DATE: 04/23/87

TIME: 13:35:00

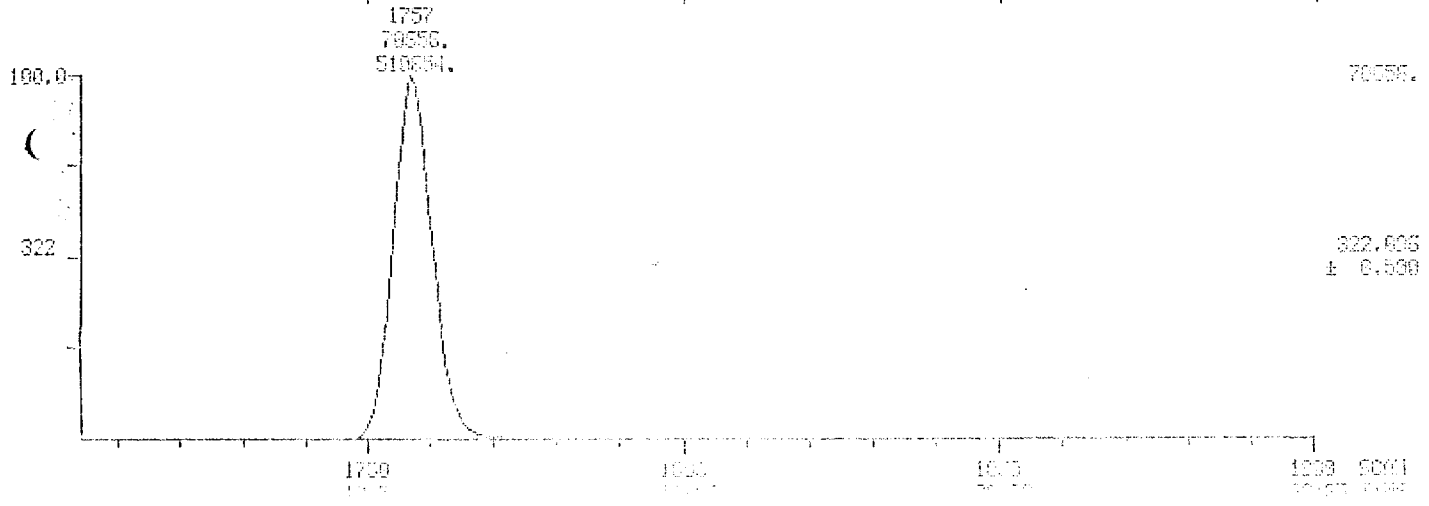
04/23/87 13:35:00

OPER: J. J. ...

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/SP2331/100-200023/200-24001-102110

RANGE: 61704.1900 LABEL: H 5, 2.5 QNVS: 0 1, 1.0 J 0 BASE: 0 20, 8



011541

MID MASS CHROMATOGRAMS

11/11/87 11:00

11/11/87 11:00

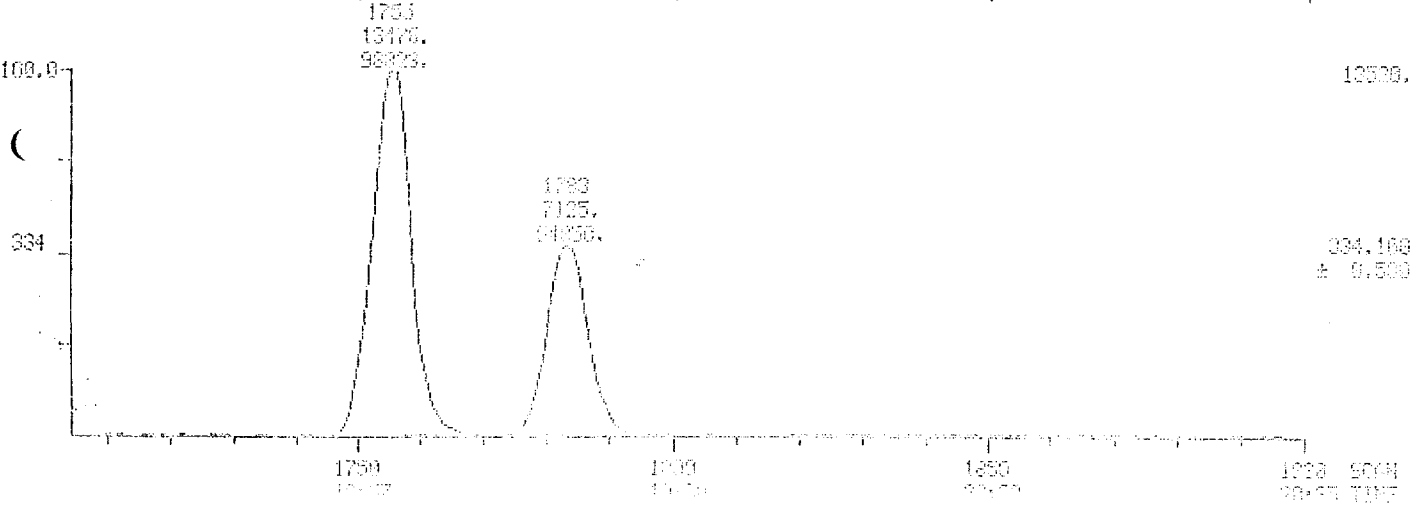
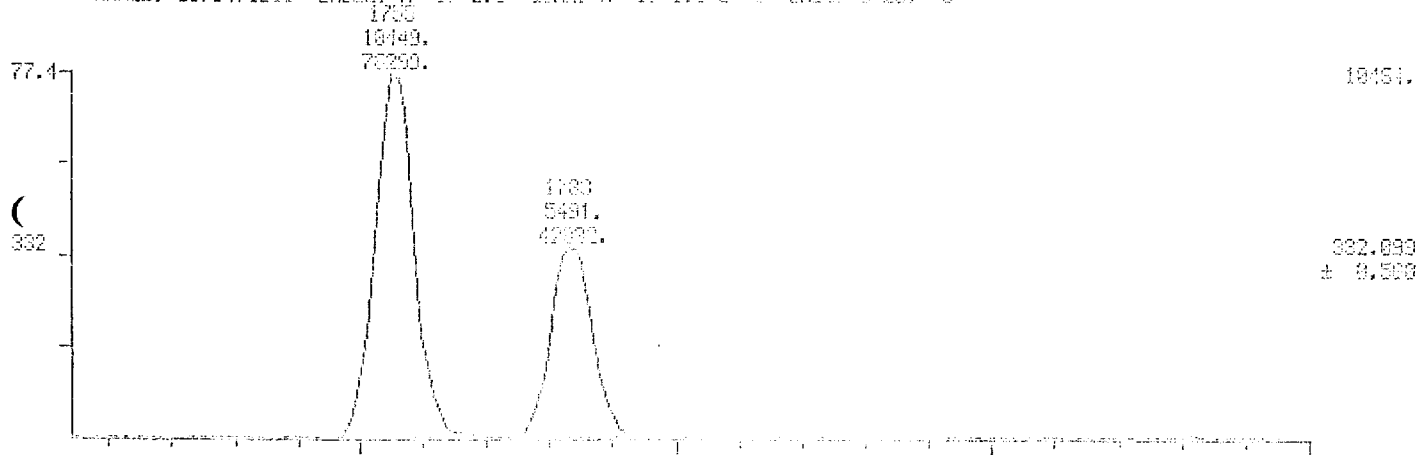
04/23/87 13:05:00

10/11/87 11:00

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/SP2331/100-203625/200-24004/100L016

RANGE: 61704,1000 LABEL: H 5: 2.5 QUSH: A 1: 1.0 U 0 0000: 0.20, 3



1000 5000
20:00 TIME

011542

HID MASS CHROMATOGRAM

FILE: 000000.D

DATE/TIME TO END

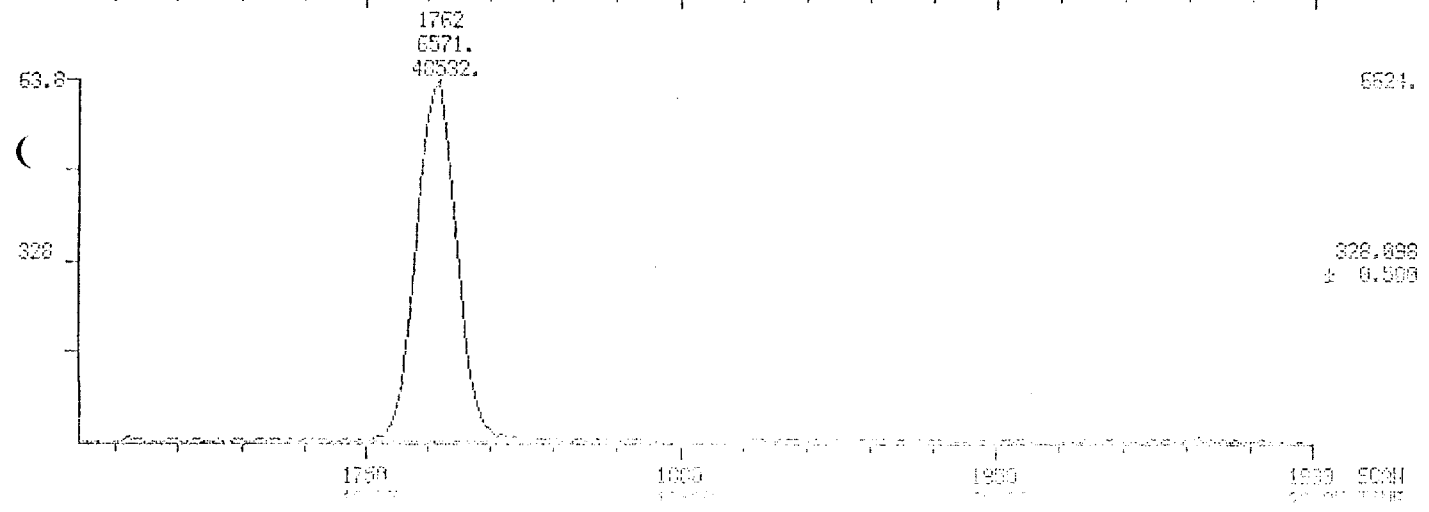
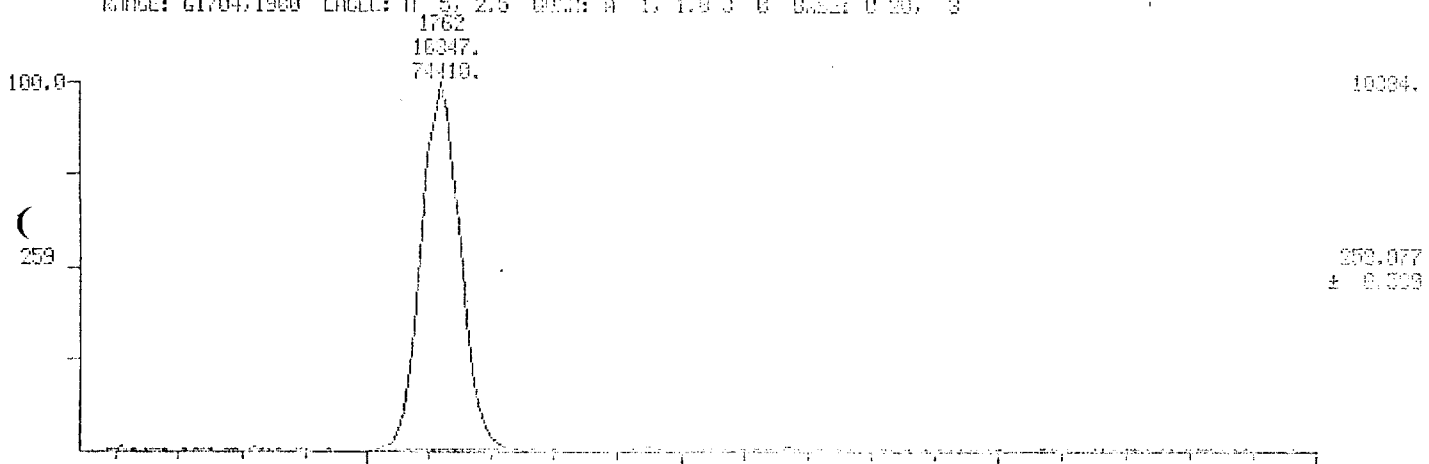
04/23/87 10:42:00

FILE: 000000.D

SAMPLE: CALIBRATION SOLN III

CONDS.: IUL/SP2331/100-200025/200-24004/HOLD10

RANGE: 61704.1900 LABEL: U 5, 2.5 BLEN: 0 1, 1.0 U 0 BASE: U 20, 0



011543

MID MASS CHROMATOGRAMS

11/01/87 10:42:00

04/23/87 10:42:00

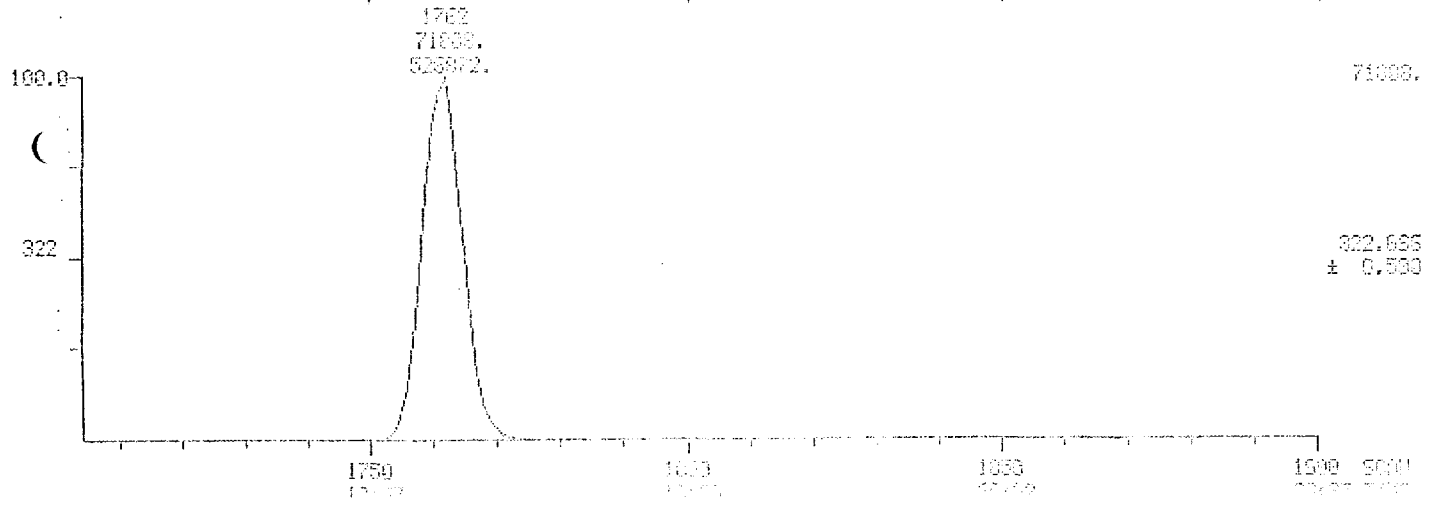
04/23/87 10:42:00

04/23/87 10:42:00

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/SP2331/100-200025-200-2400/110L010

RANGE: 61704,1900 LABEL: H 5, 2.5 CURV: A 1, 1.0 U 0 BASE: U 20, 3



011544

HID MASS CHROMATOGRAMS

04/23/97 10:42:00

SAMPLE: CALIBRATION SOLN III

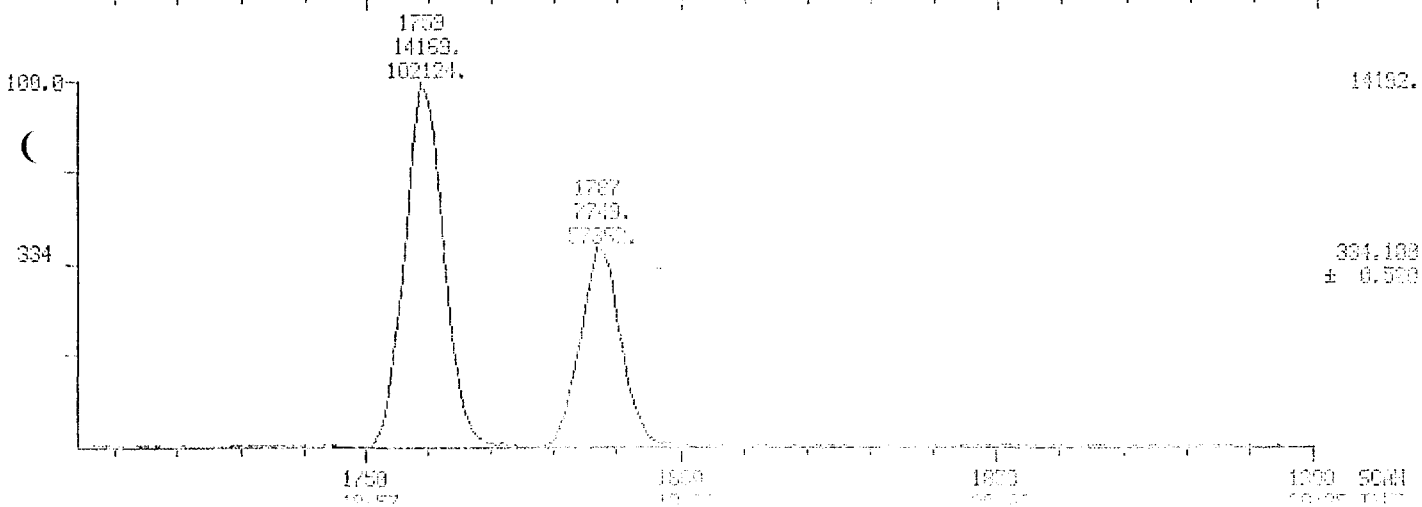
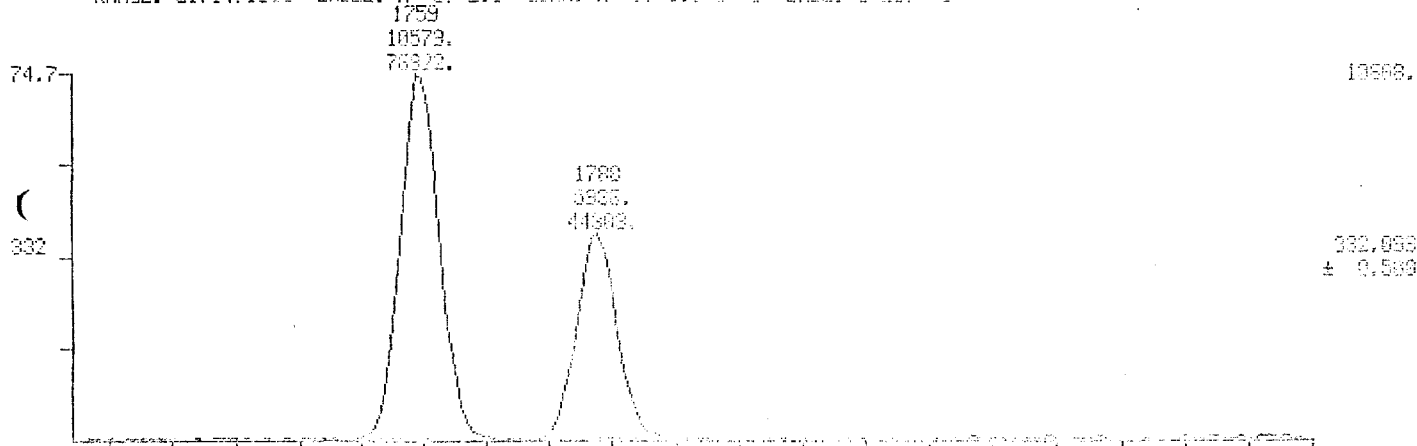
COND.: 1UL/SP2331/100-200#25/200-240#4/10L#10

RANGE: G1704.1900 LABEL: M 5, 2.5 QM#A 1, 1.0 J 0 BASE: U 23, 3

DATA: 011544.D

2000.000 TO 1900

CH1: 011544.D



011545

NID RIC

04/29/87 14:03:00

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/CP2331/100-200025/200-24021-110LB10

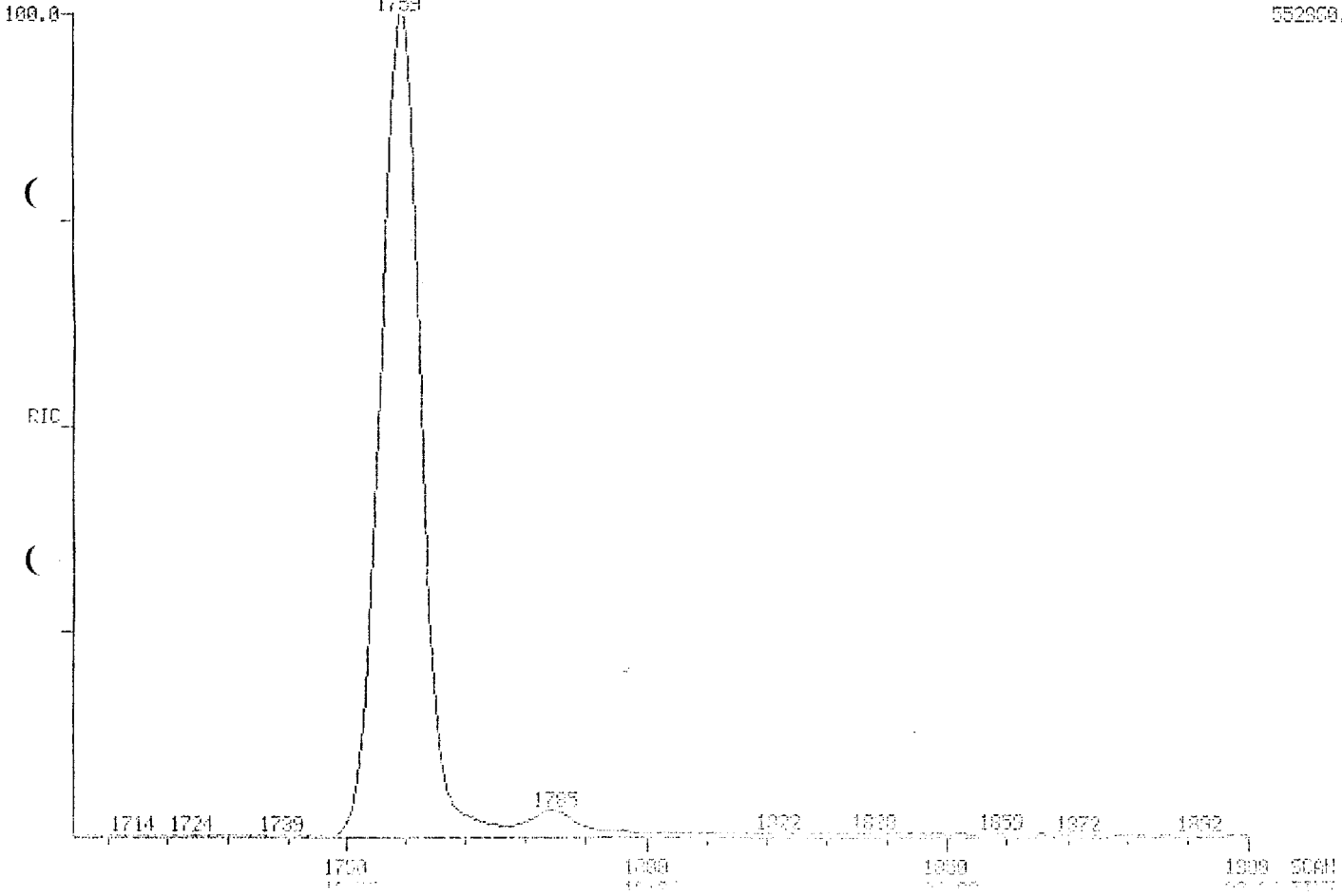
RANGE: 01704.1500 LABEL: H 0, 4.6 QUANT: 0 0, 1.0 J 0 PAGE: 0 20, 3

DATA: 0.00000000

FILE: 011545.D

0.00000000

552950.



011546

MSD MASS CHROMATOGRAM

DATE: 04/23/87

TIME: 14:03:00

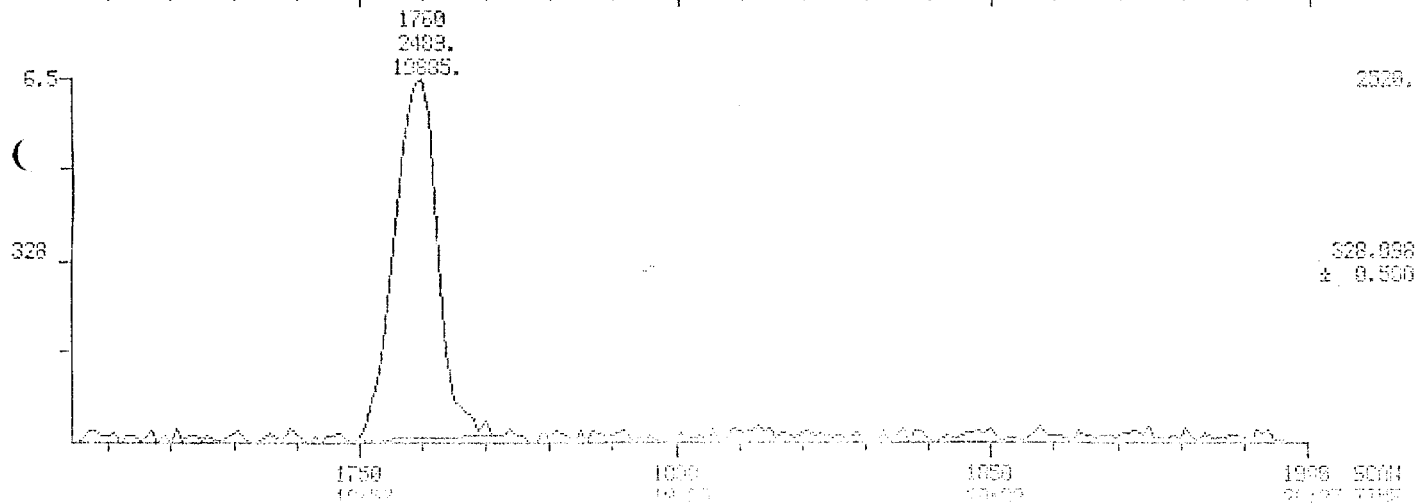
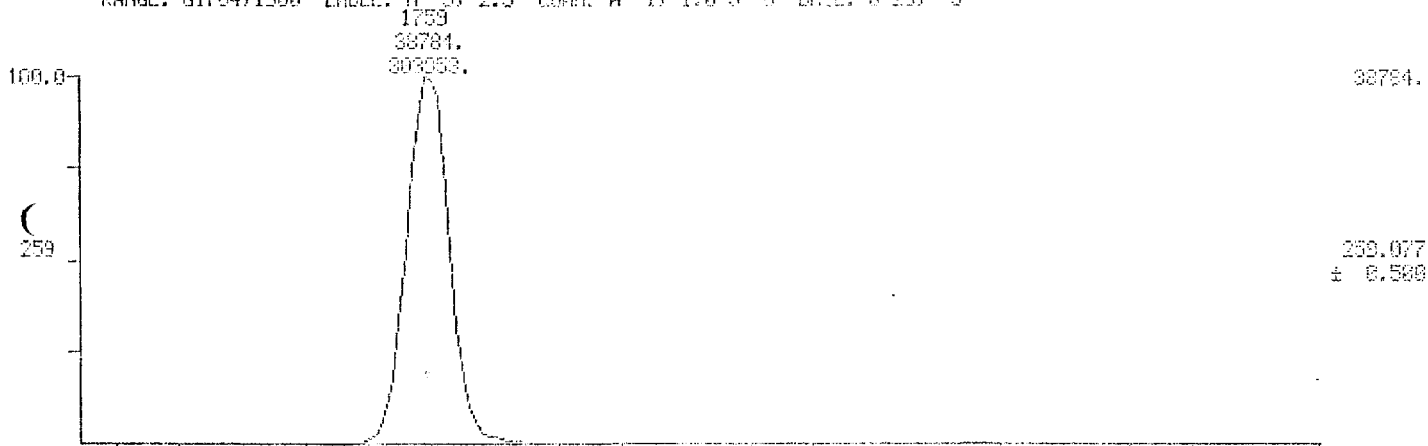
04/23/87 14:03:00

FILE: CALIBRATION

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: 61704.1500 LABEL: M 5, 2.5 QUANT: A 1, 1.0 J 0 DYE: U 20, 3



011547

HID/MASS CHROMATOGRAPHY

FILE: 011547.D

DATE: 04/23/87 14:03:00

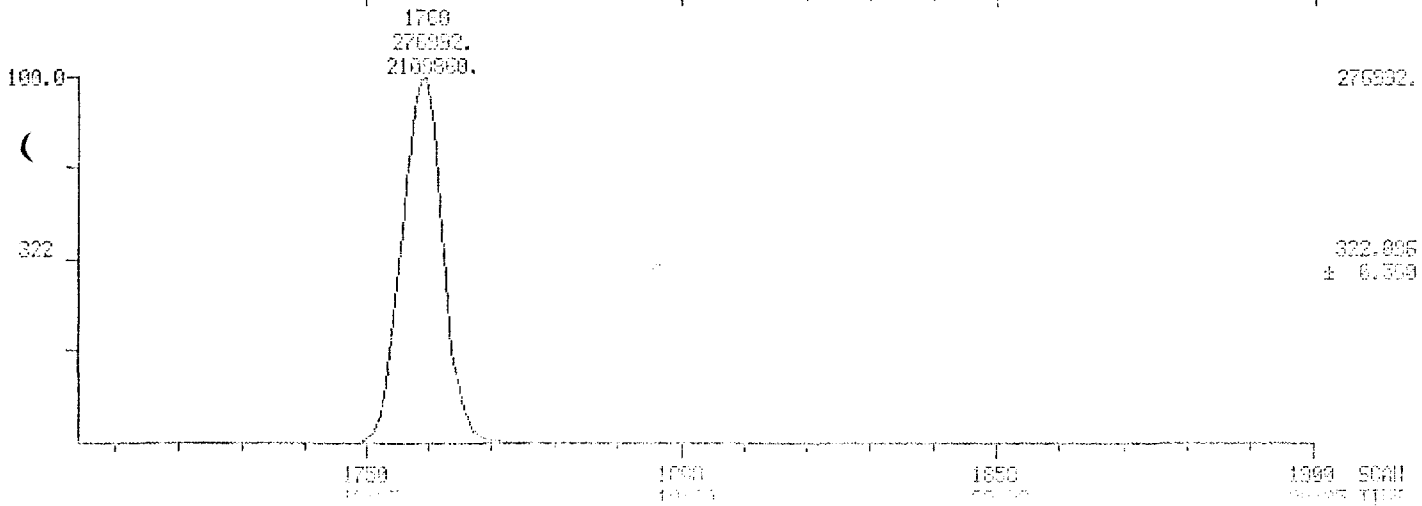
04/23/87 14:03:00

011547.D

SAMPLE: CALIBRATION SOLN IV

COND.: 1UL/SP2331/100-200025/260-24001/47LB10

RANGE: 61704.190 LABEL: H 5: 2.5 0000: 0 1. 1.0 0 0 DMS: U 20. 3



011548

HID MASS CHROMATOGRAM

DATE: 01/20/12 01

TIME: 17:01 TO 18:00

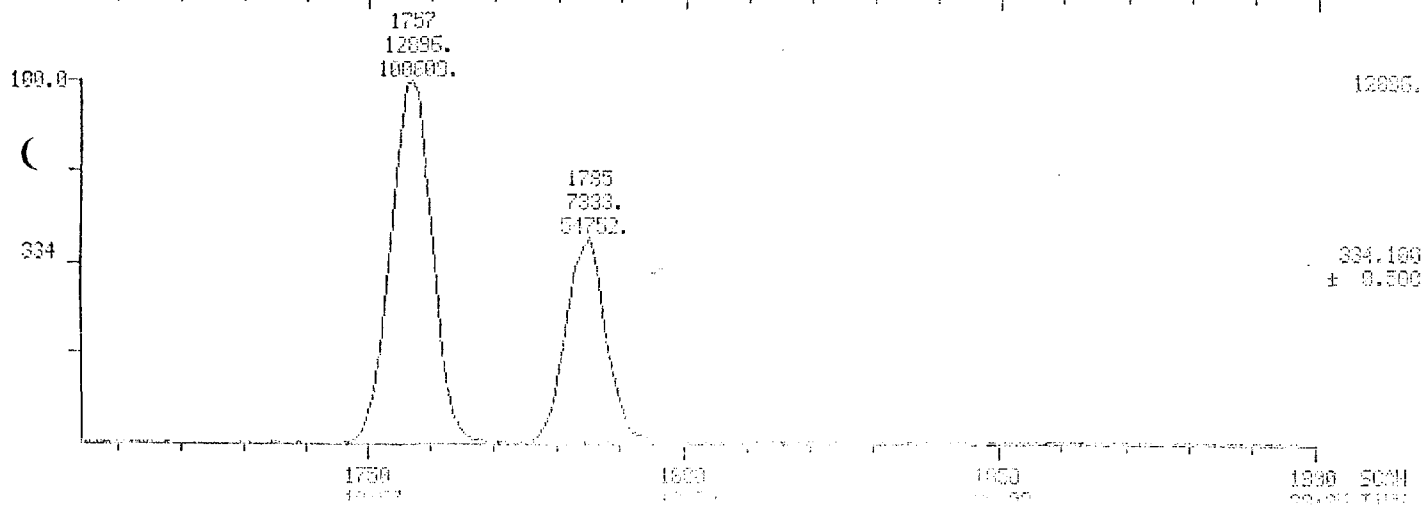
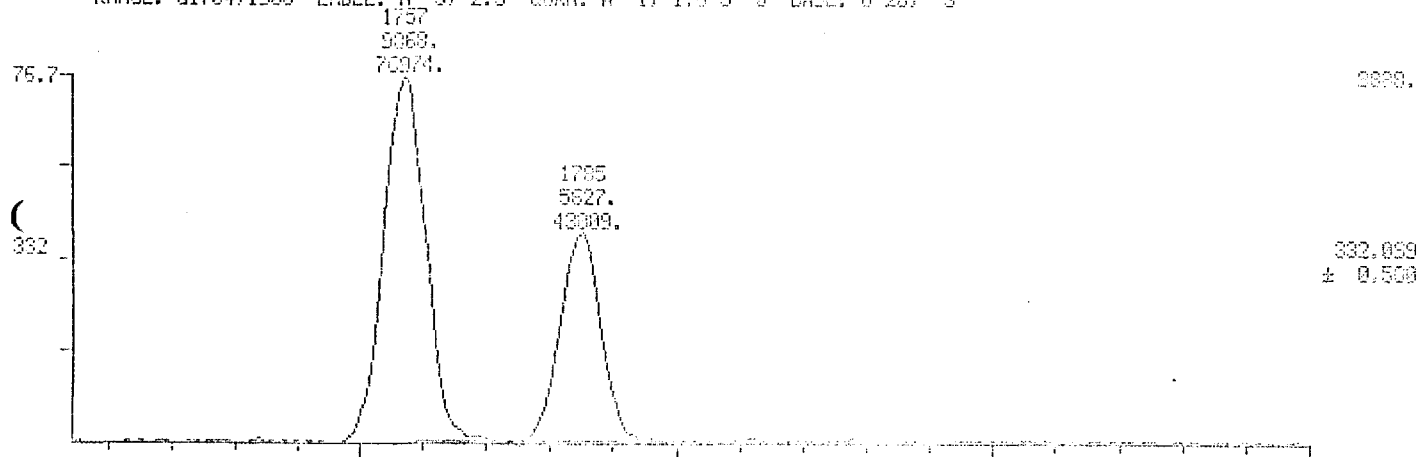
04/23/97 14:03:00

FILE: 01101001.D

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200025/200-240014/101010

RANGE: 01704.1900 LABEL: U 5, 2.5 QUANT: 0 1, 1.0 U 0 LACC: U 20, 0



011549

NID RIC

DATE: 04/23/87

TIME: 14:32:00

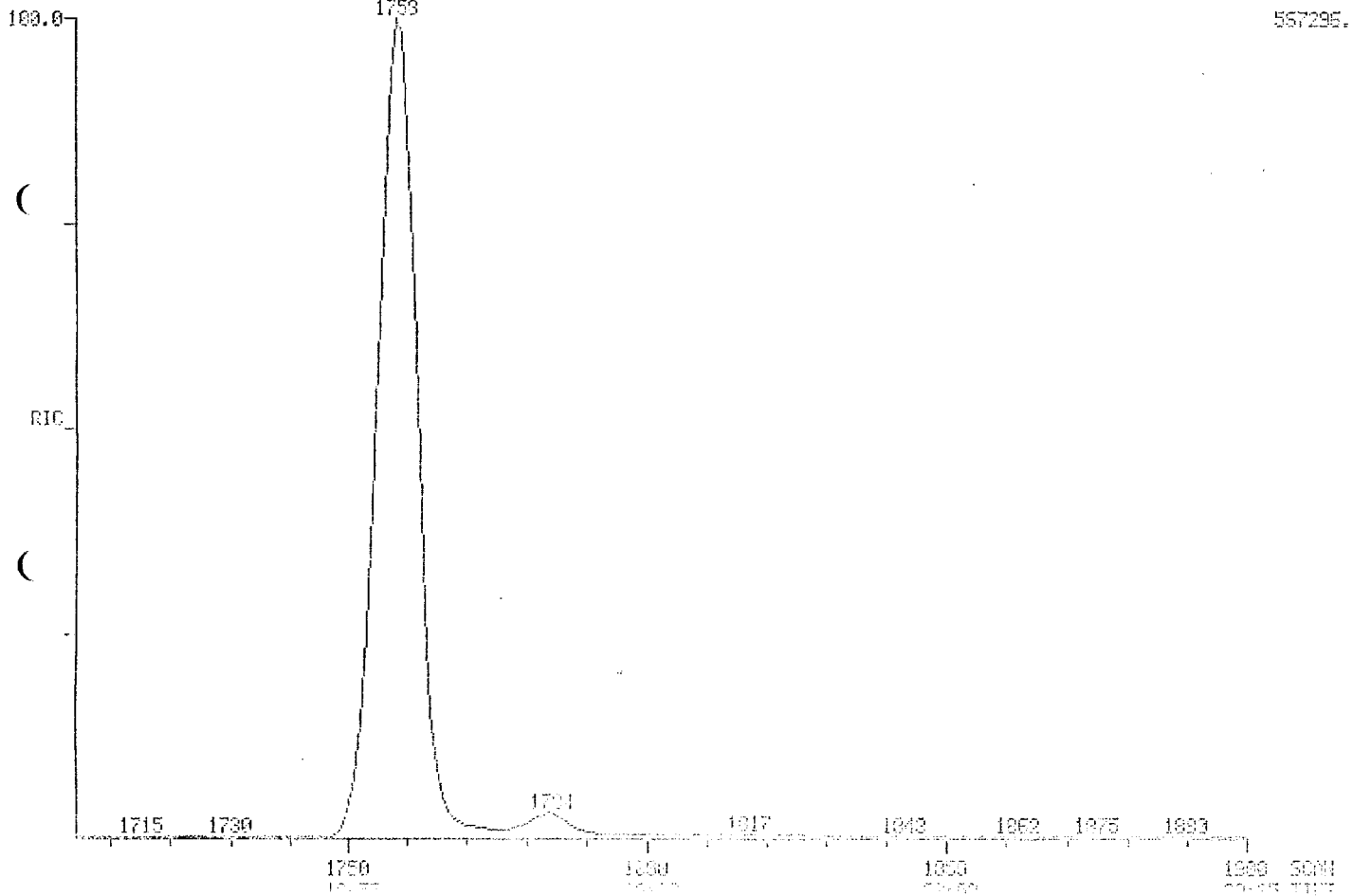
04/23/87 14:32:00

FILE: 011549.D

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/5P2331/100-200035/200-24004/HOLD10

RANGE: 61704,1900 LABEL: H 0, 4.0 QUNT: A 0, 1.0 J 0 BASE: U 20, 3



01150

MID MASS CHROMATOGRAM

DATE: APR2810 11

SCAN 1701 TO 1920

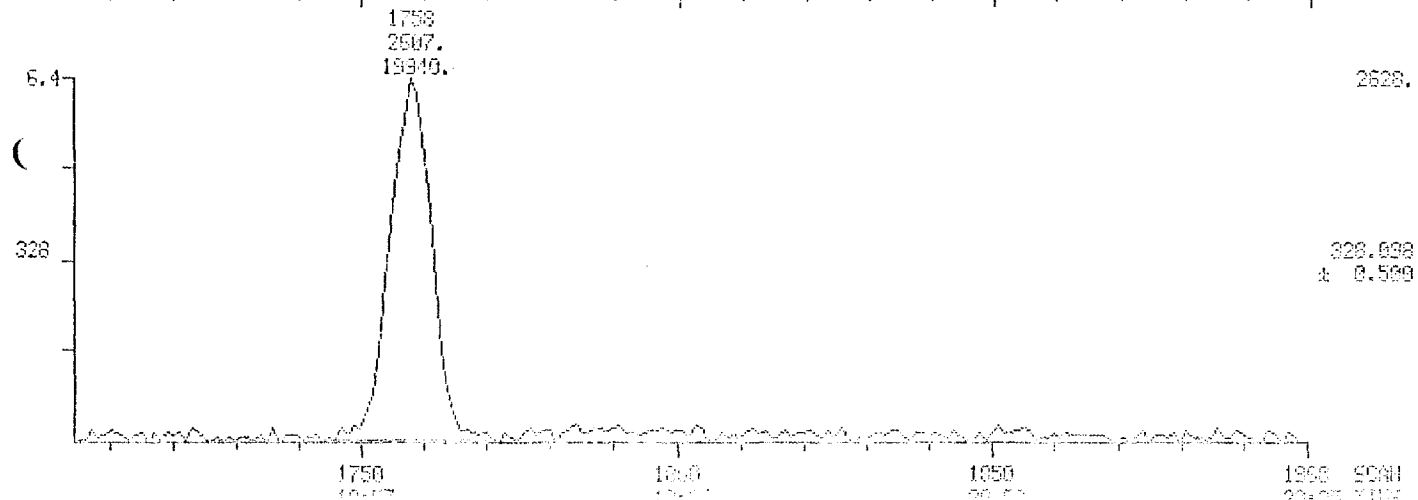
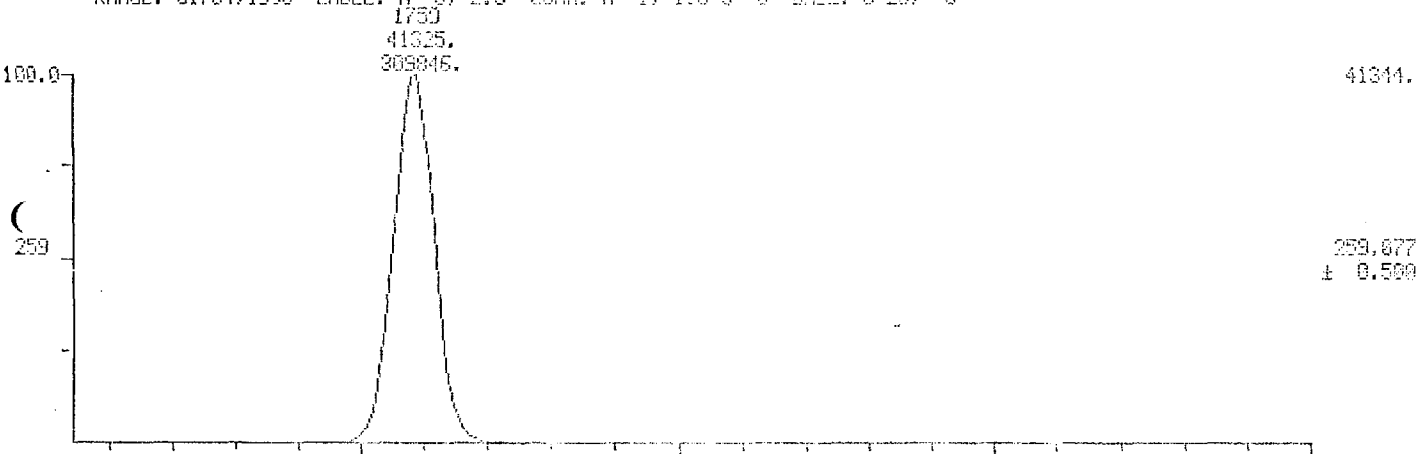
04/23/87 14:32:00

CALL: COLS10007 05

SAMPLE: CALIBRATION SOLN IV

COND.: IUL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704.1900 LABEL: H 5, 2.5 QUANT: A 1, 1.0 J 0 DYE: U 20, 3



011511

HIG HRES CHROMATOGRAM

EXP: 011511.D

DATE: 01/31/93

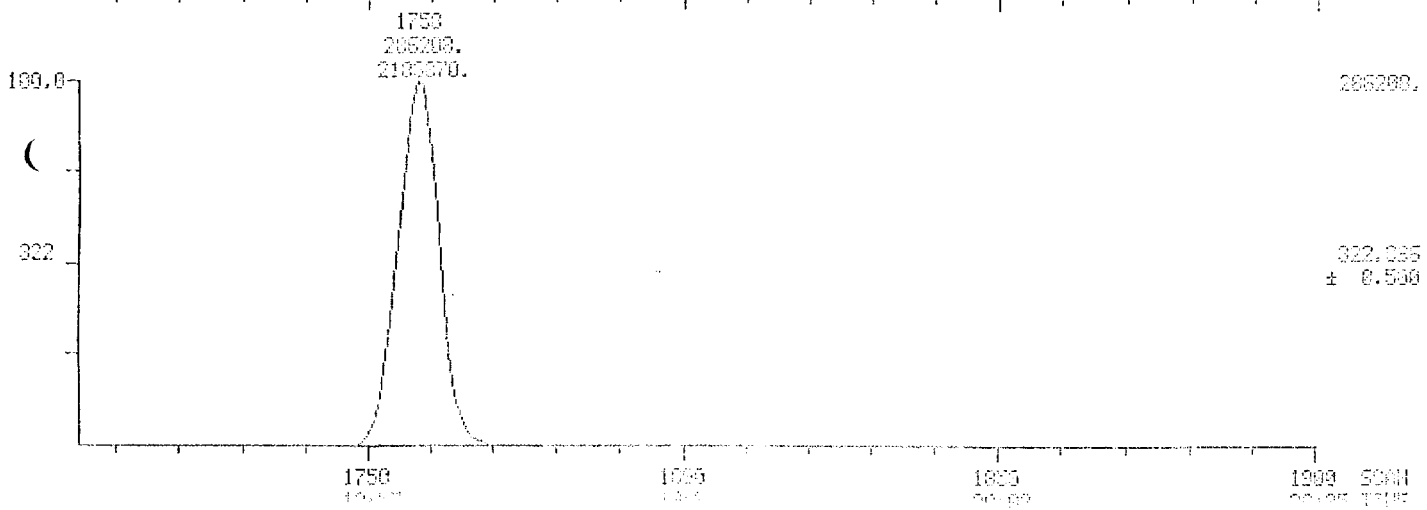
04/23/87 14:32:00

CALL: CALIBRAT 01

SAMPLE: CALIBRATION SOLN 10

COND.: 1UL/SF2331/100-200005/200-2400/400LD10

RANGE: 61704.1900 LABEL: H 5. 2.5 CUSH: A 1. 1.0 U 0 BYE: U 30. 3



011552

MSD MASS CHROMATOGRAMS

DATA ACQUIRED BY

DATE: 07/01/79 11:03

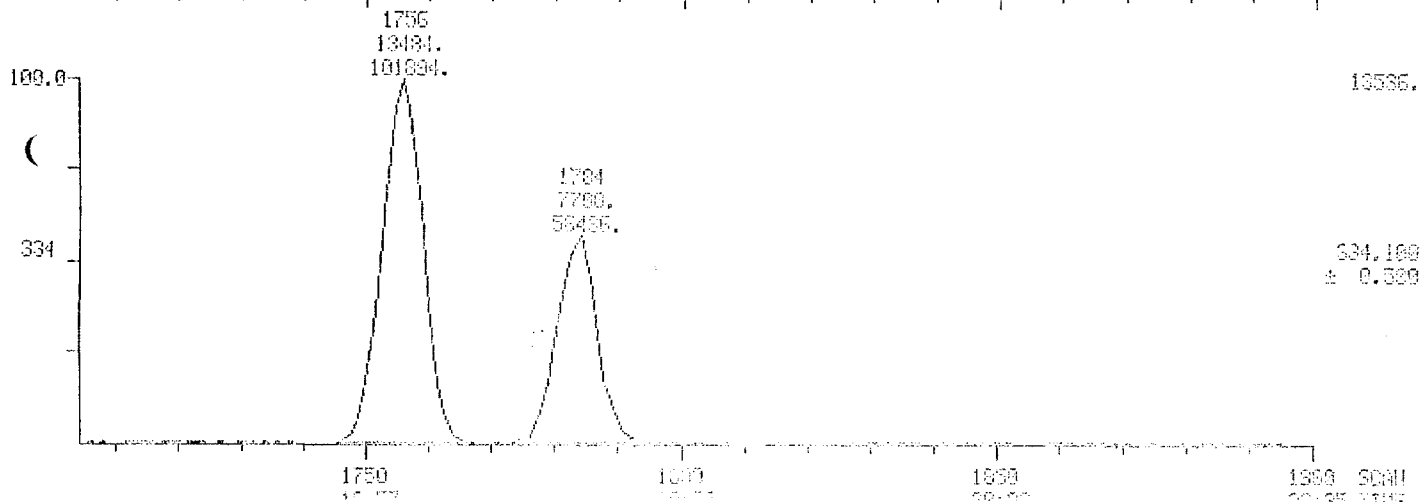
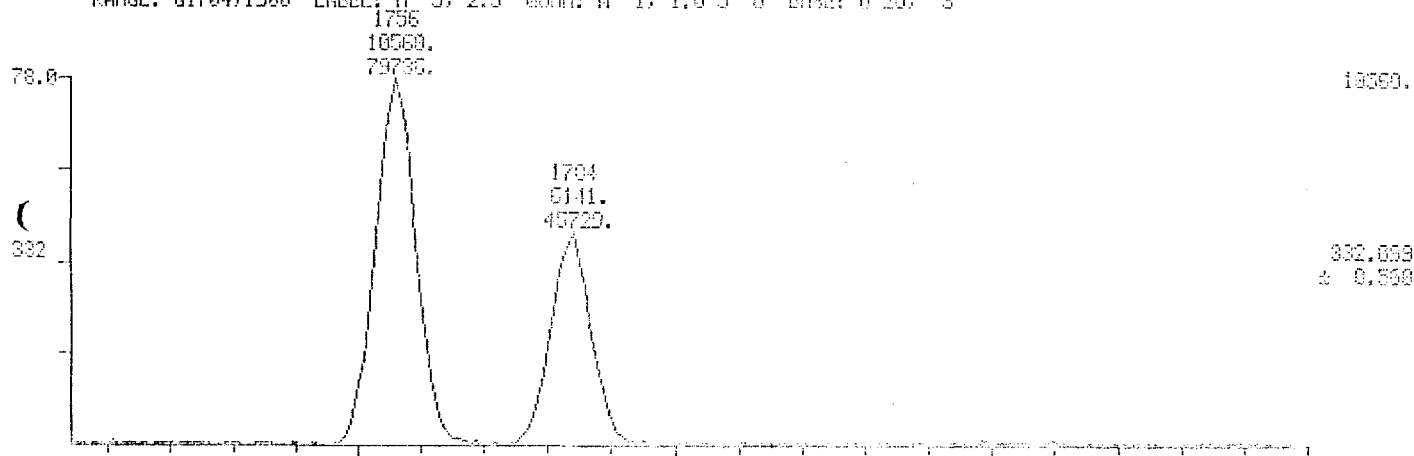
04/23/87 14:32:00

ONLY: 01155527.DS

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200025/200-24004/100.D10

RANGE: 61704.1900 LABEL: H 5, 2.5 QUANT: A 1, 1.0 J 0 DATE: H 20, 3



011510

MID RIC

DATE: 04/23/87

TIME: 9:43:00

04/23/87 9:43:00

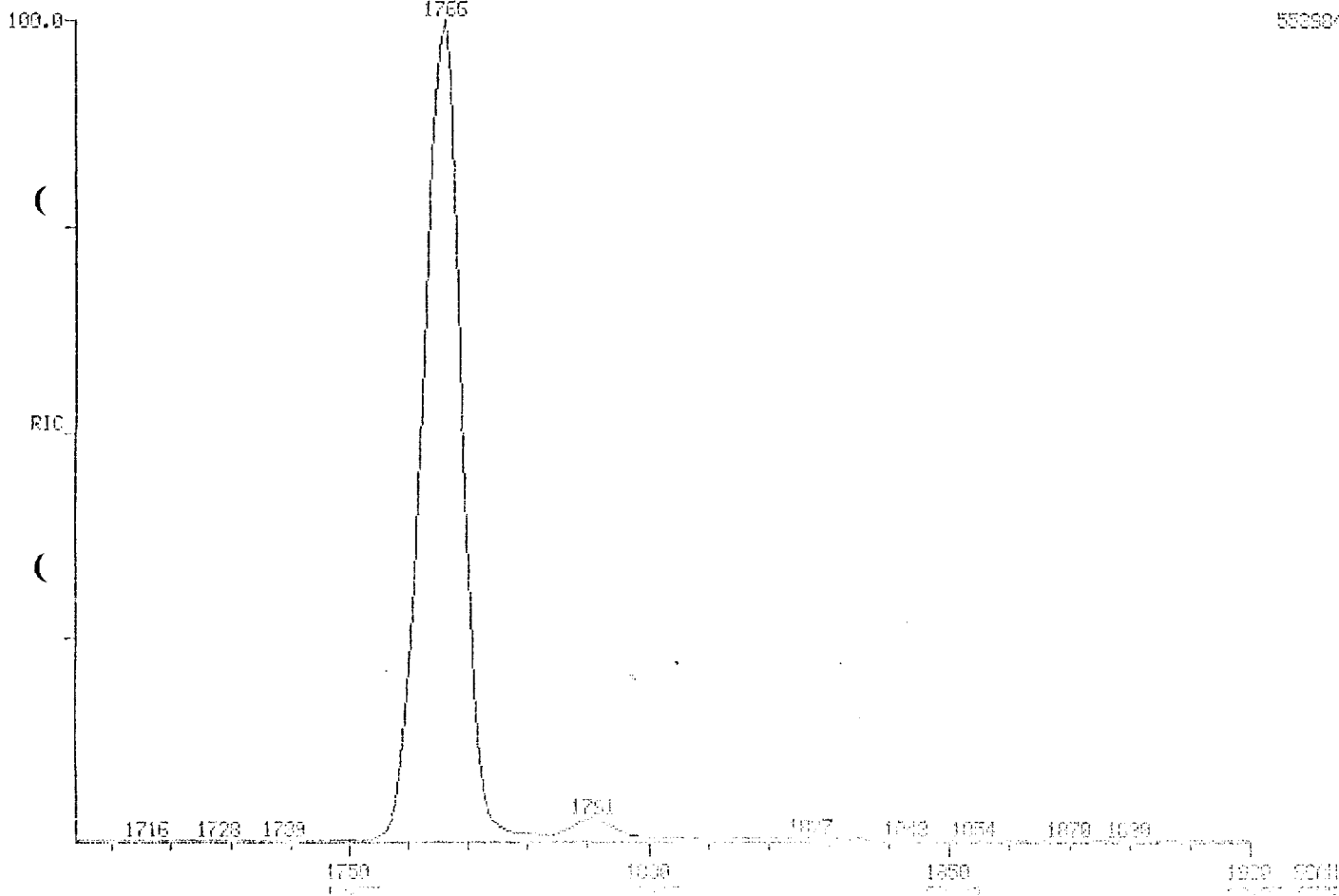
CALL: CALP12.87 03

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: 01704.1900 LABEL: H 0. 4.0 QUANT: A 0. 1.0 J 0 BASE: U 20. 3

552604.



011554

HID MASS CHROMATOGRAMS

DATE: 01/01/87 01

TIME: 17:17:00 1000

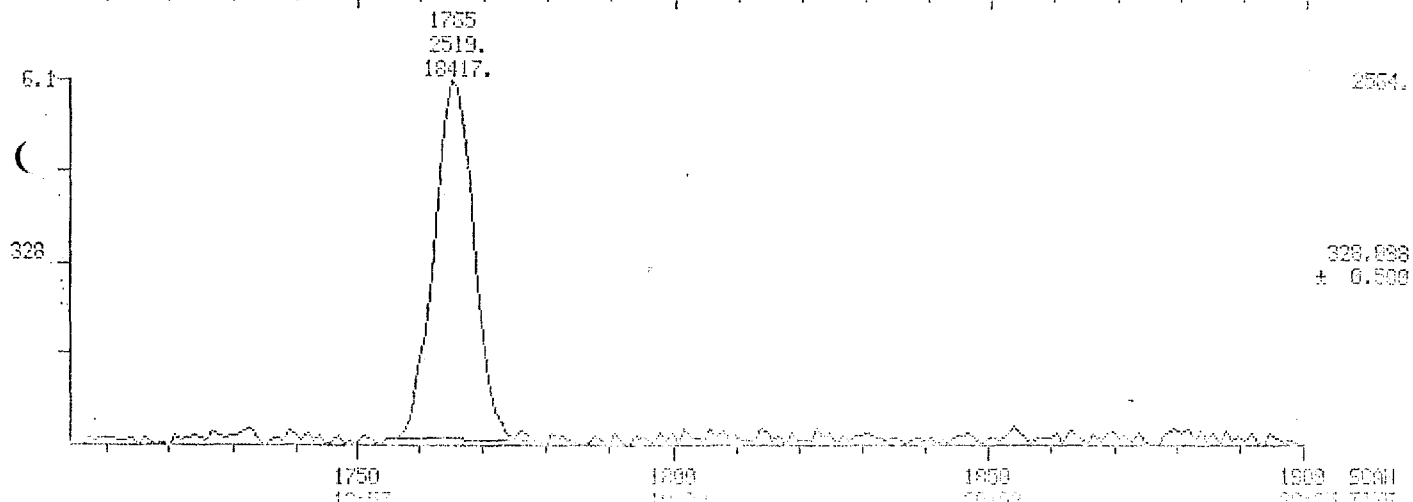
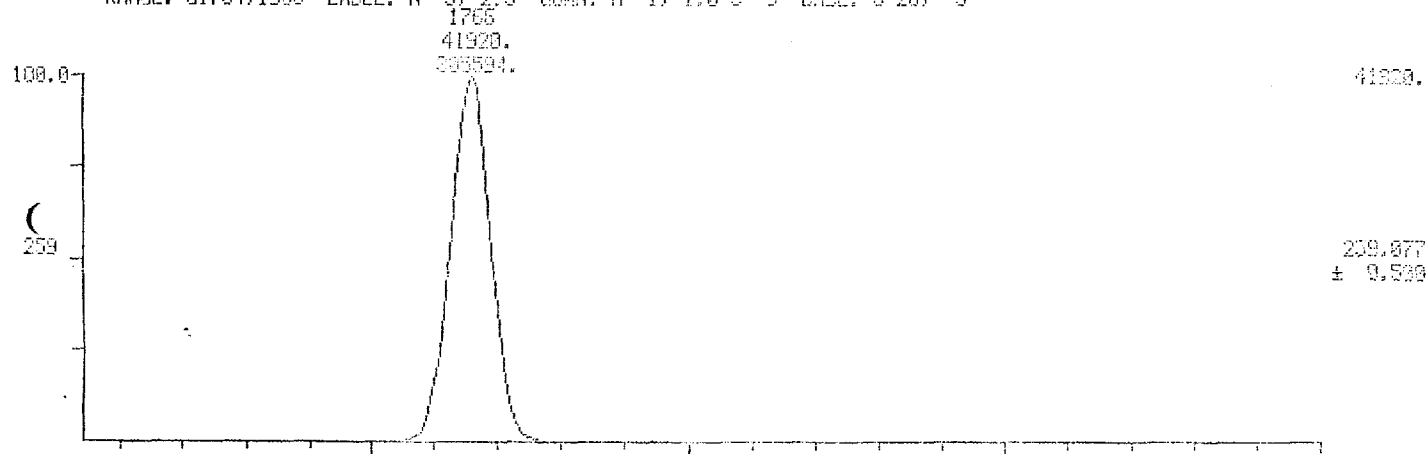
04/23/87 9:43:00

NAME: CALIBRATION 05

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-205035/200-24004/HOLD10

RANGE: G1704,1900 LABEL: H S, 2, 5 QUAN: A 1, 1.0 U 0 BASE: U 20, 3



011555

HID TRASS CHROMATOGRAM

NOV 07 2009 01

0000 0701 TO 1210

04/23/07 9:43:00

FILE: 011555.D

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200R25/200-240R4/HOLD10

RANGE: 01704.1900 LABEL: H 5, 2.5 OUN: A 1, 1.0 U 0 DATE: U 20, 3

1765
214015.
1565040.

77.7

320

214015.

320.090
± 0.000

1765
275456.
2038470.

100.0

322

275456.

322.096
± 0.000

1700
100000

1800
100000

1900
100000

1900
100000

999110

NID MASS CHROMATOGRAMS

DATA: 01/23/87

TIME: 1004 TO 1100

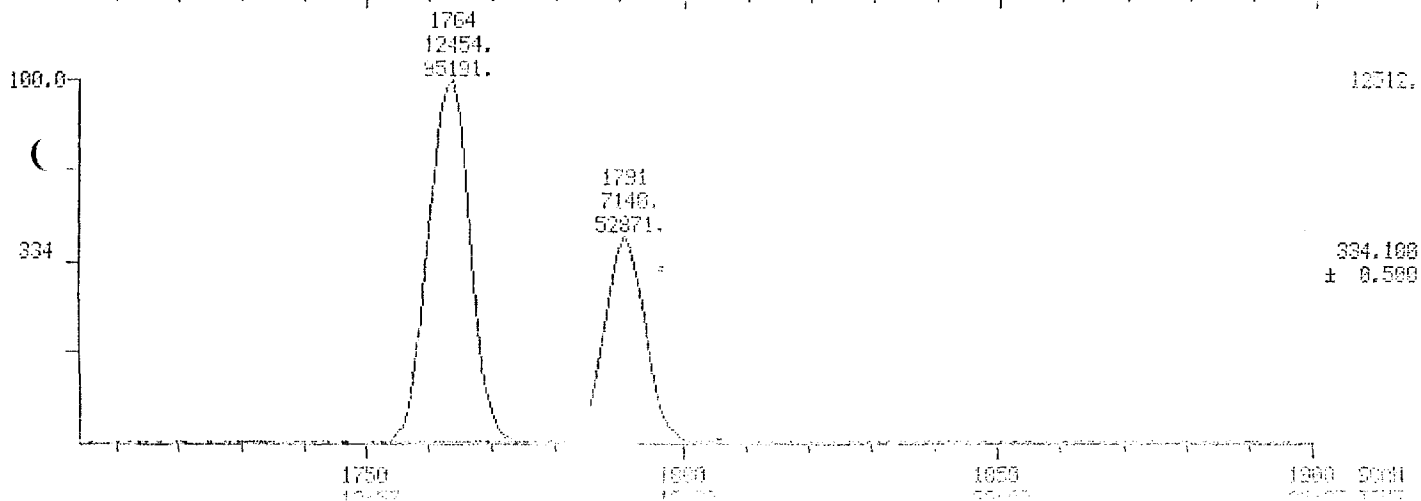
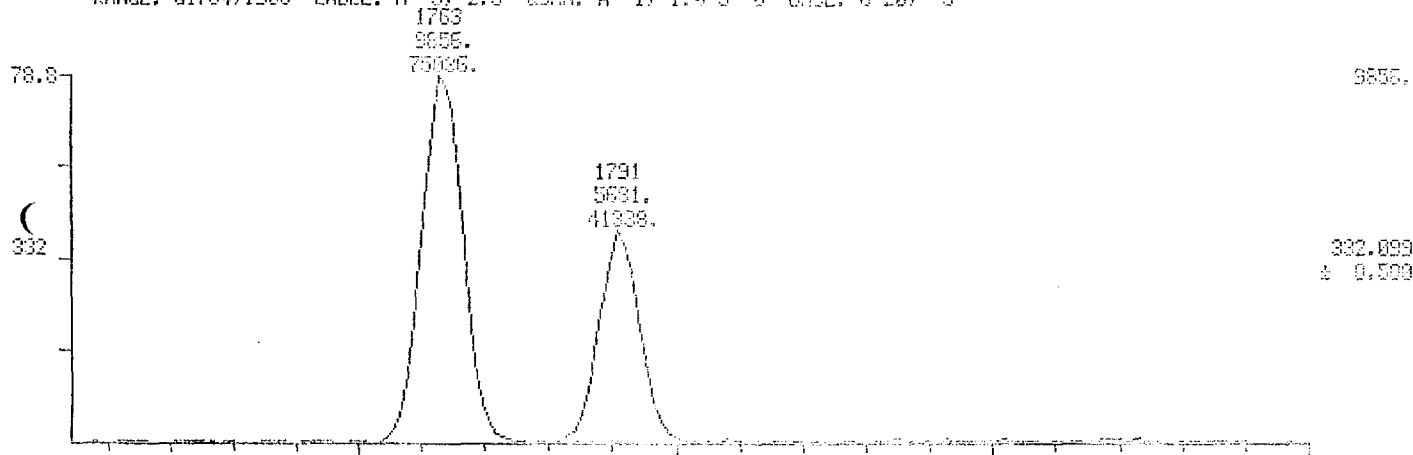
04/23/87 9:43:00

FILE: 00001001.D

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200025/200-24001/HOLD10

RANGE: 61704,1900 LABEL: M 5, 2.5 QUANT: A 1, 1.9 U 0 BASE: U 20, 3



011554

MID RIC

DATA: 04/23/87 01

0001: 1704 TO 1900

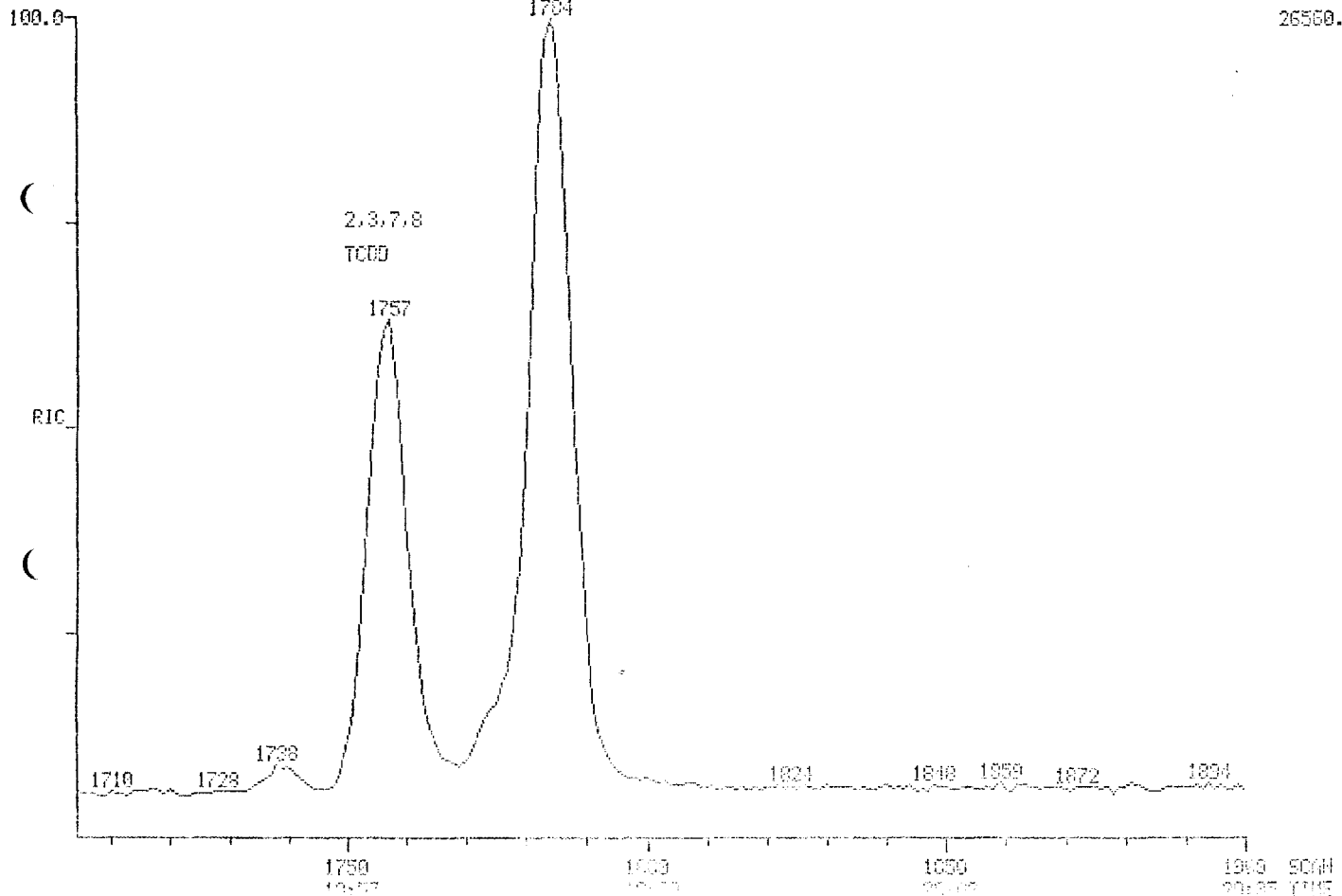
04/23/87 15:02:00

FILE: 01012357.D

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 1UL/SP2331/100-200025/200-24004/110LD10

RANGE: 61704,1900 LABEL: H 0, 4.0 CUVN: A 0, 1.0 J 0 BASE: U 20, 0



011558

MID MASS CHROMATOGRAMS

DATA: 0112314.D1

SCANS 1704 TO 1900

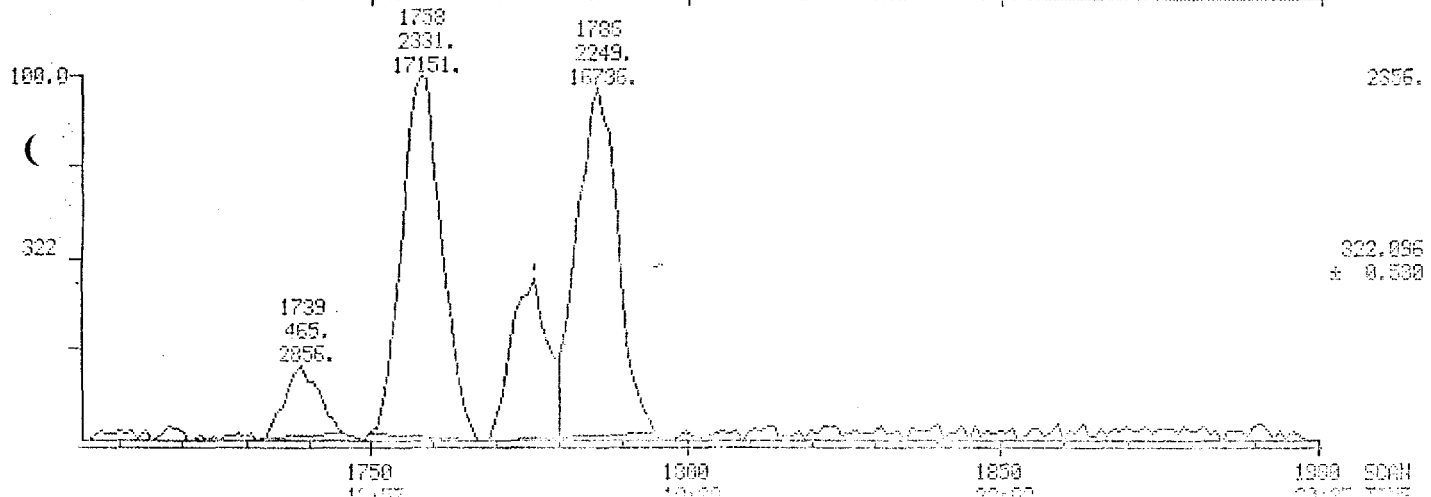
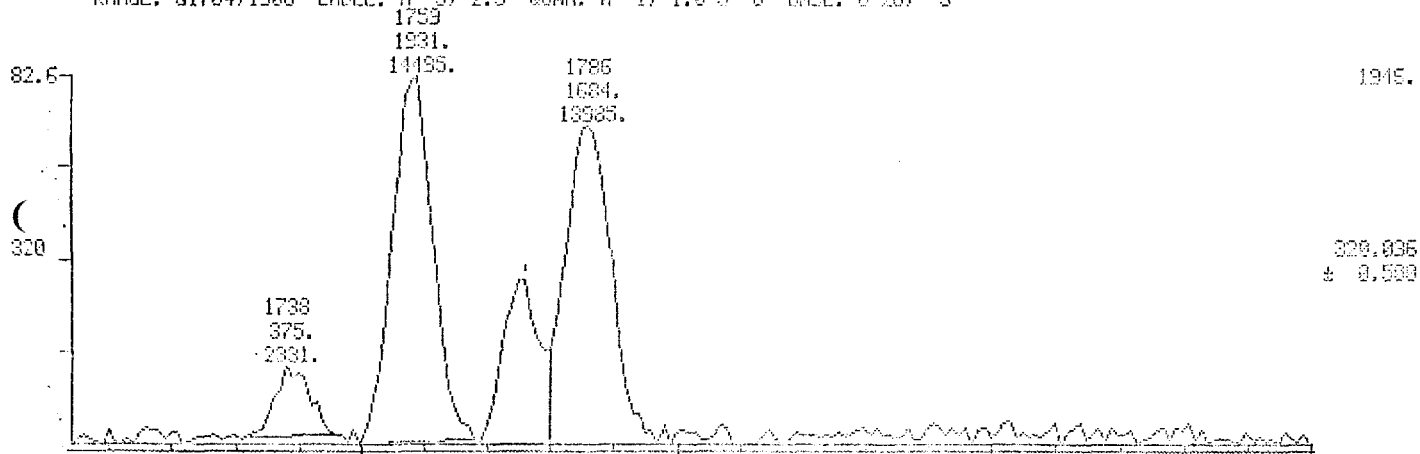
04/23/87 15:02:00

CALL: CALS10007.D5

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 1UL/5P2331/100-260825/200-24904/HOLD10

RANGE: G1704,1900 LABEL: H 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1750
17:00

1800
18:00

1850
18:50

1900 SCAN
19:00 TIME

011559

NID MISS CHROMATOGRAMS

DATA: 01/23/87 01

SCANS 1704 TO 1800

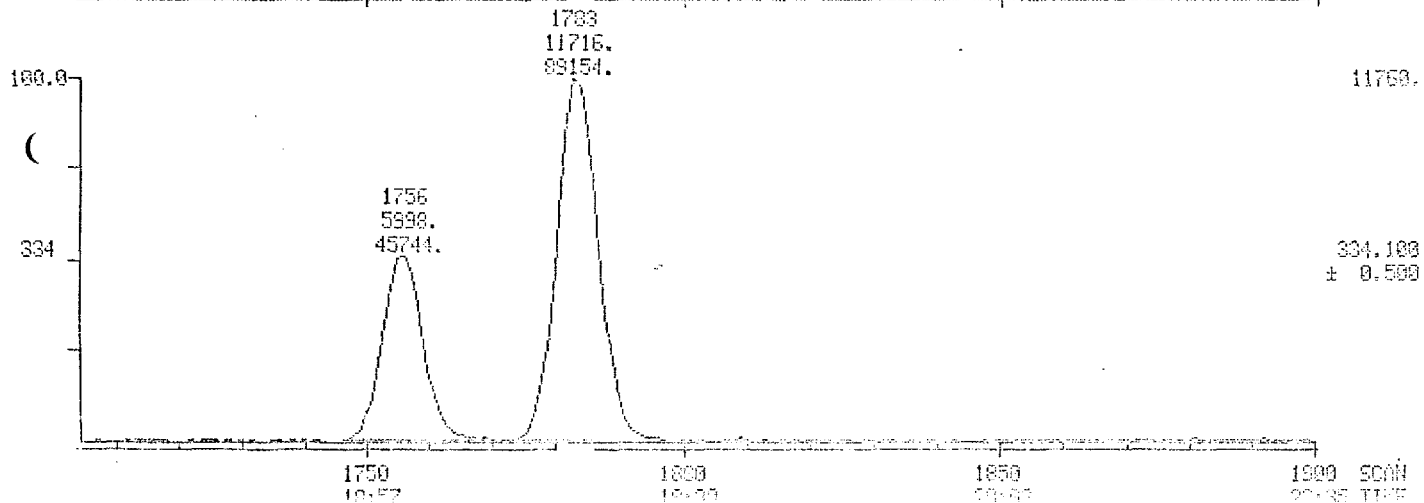
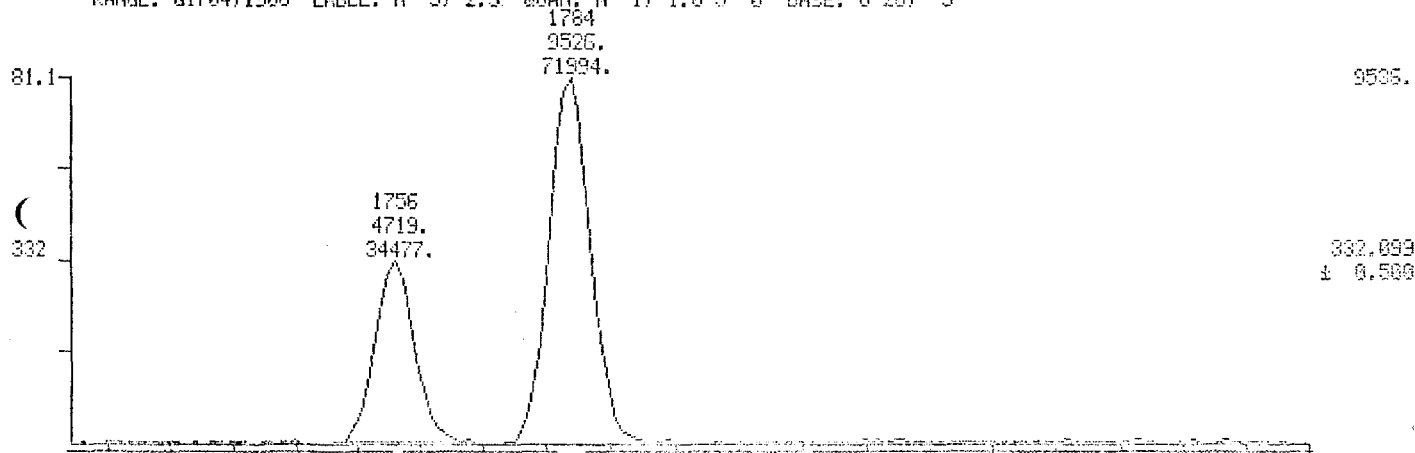
04/23/87 15:02:00

CALL: CNL912287 88

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: IUL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704,1900 LABEL: H 5, 2.5 QUAN: A 1, 1.0 U 0 BASE: U 20, 3



095110

MID RIC

09/28/87 21:56:00

SAMPLE: CAL 1 SOLN

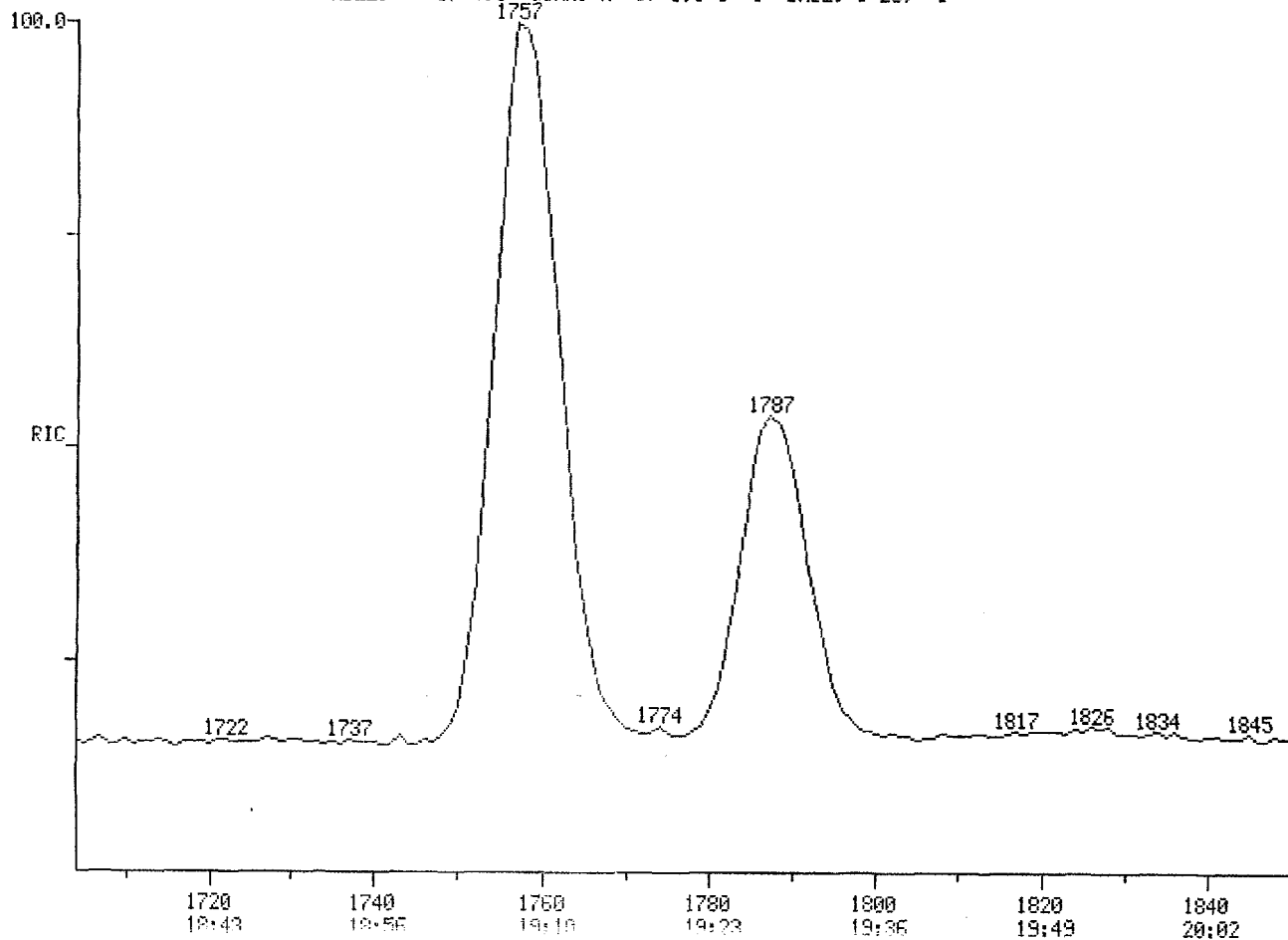
CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: SEP2803 #1

CALI: CAL092587 #3

SCANS 1704 TO 1850



16016.

SCAN
TIME

10-6108

199110

MID MASS CHROMATOGRAMS

DATA: SEP2993 #1

SCANS 1704 TO 1850

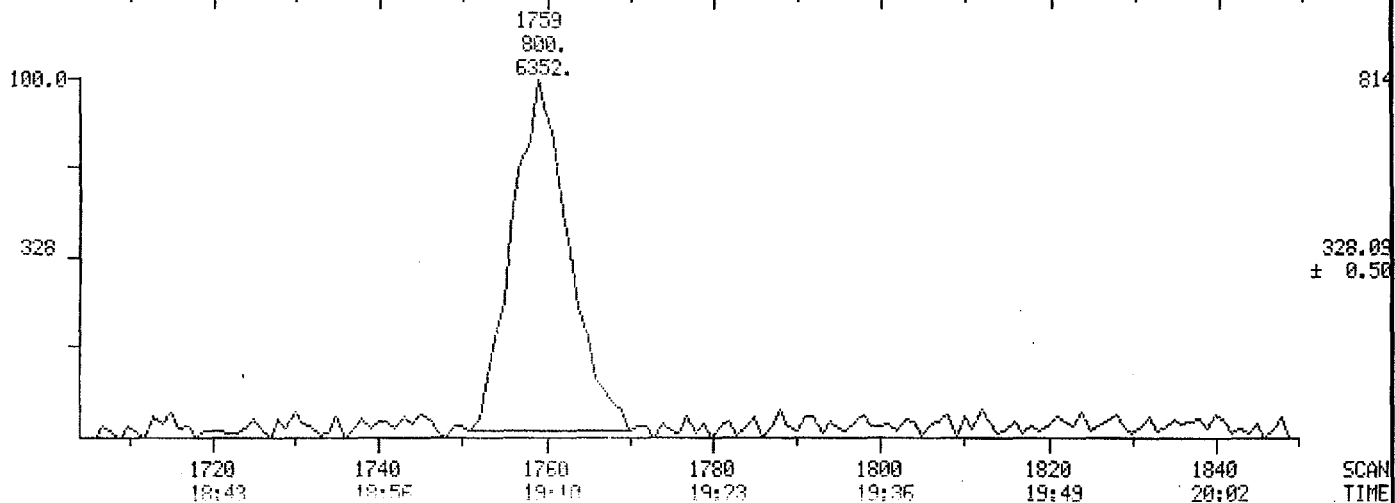
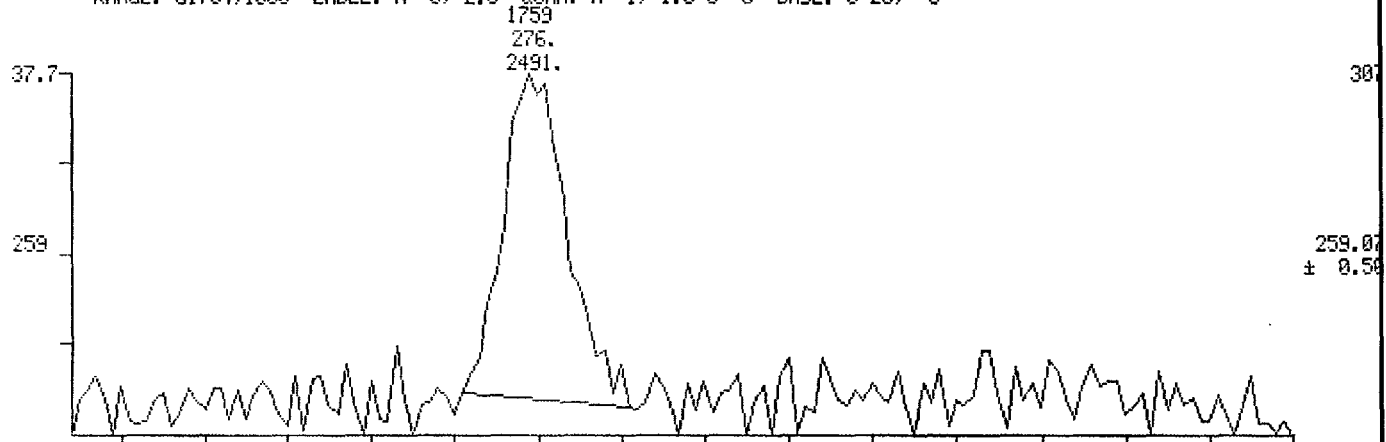
09/28/87 21:56:00

CALI: CAL092587 #3

SAMPLE: CAL 1 SOLN

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



399110

MID MASS CHROMATOGRAMS

DATA: SEP2883 #1

SCANS 1704 TO 1850

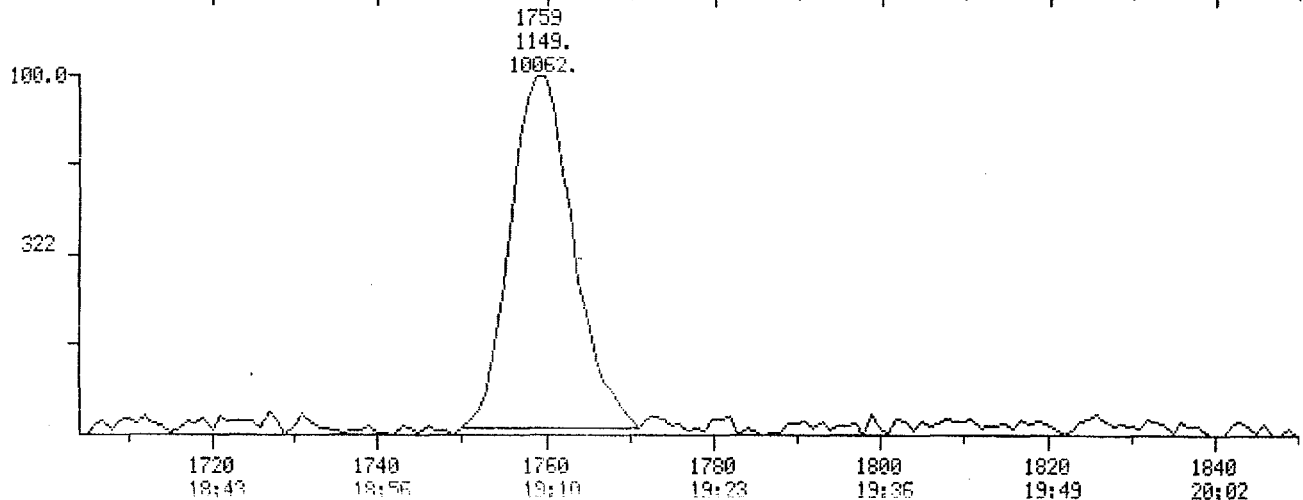
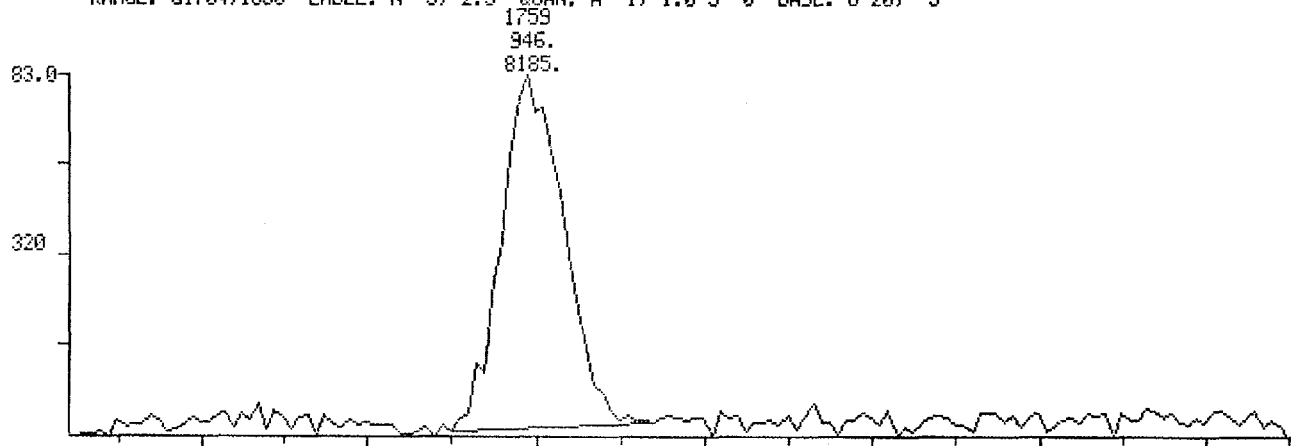
09/28/87 21:56:00

CALI: CAL092587 #3

SAMPLE: CAL 1 SOLN

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011563

MID MASS CHROMATOGRAMS

DATA: SEP2803 #1

SCANS 1704 TO 1850

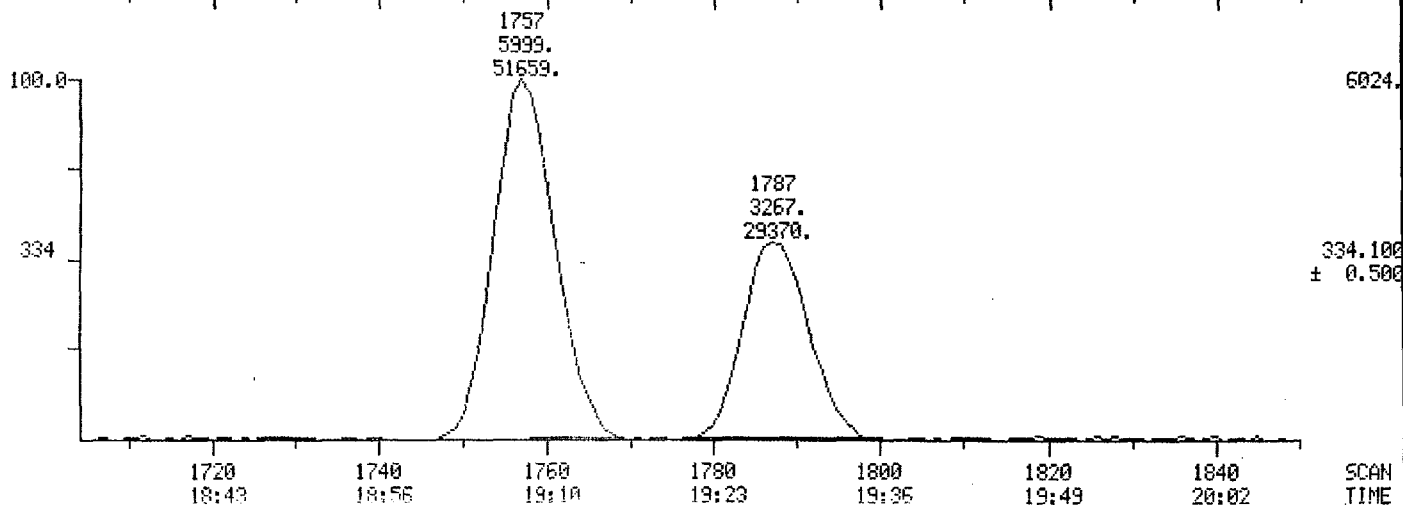
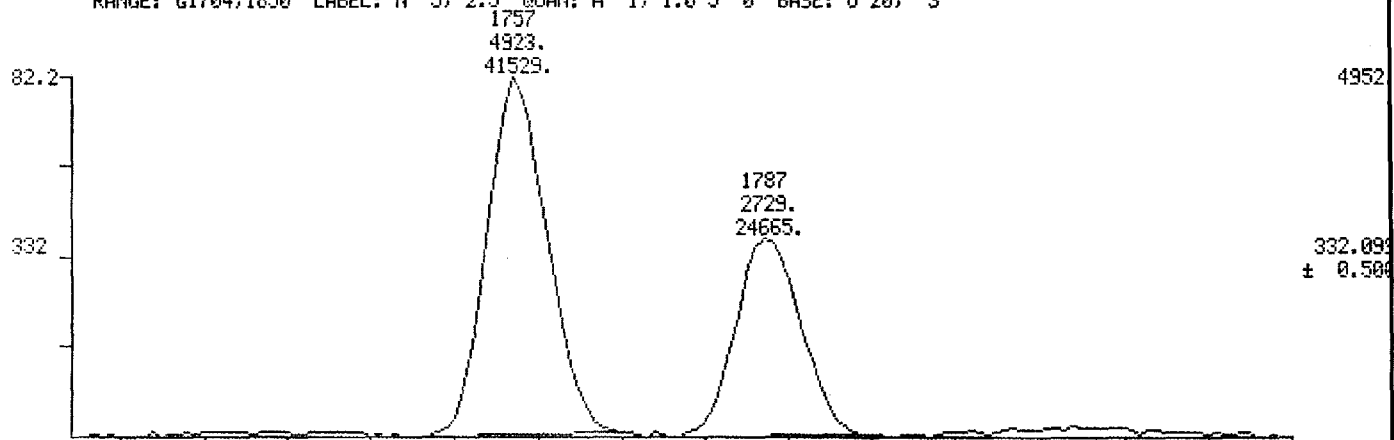
09/28/87 21:56:00

CALI: CAL092587 #3

SAMPLE: CAL 1 SOLN

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1720
18:43

1740
18:56

1760
19:10

1780
19:23

1800
19:36

1820
19:49

1840
20:02

SCAN
TIME

011564

MID MASS CHROMATOGRAMS

DATA: OCT0101 #1

SCANS 1704 TO 1850

10/01/87 13:03:00

CALI: CAL092587 #3

SAMPLE: CALIBRATION SOLN 1

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3

1750
5827.
46810.

1780
3253.
25790.

73.3

332

5854

332.09
± 0.50

1750
7960.
59618.

1779
3824.
32007.

100.0

334

8000

334.10
± 0.50

1720
18:43

1740
19:56

1760
19:10

1780
19:23

1800
19:36

1820
19:49

1840
20:02

SCAN
TIME

999110

MID MASS CHROMATOGRAMS

DATA: OCT0101 #1

SCANS 1704 TO 1850

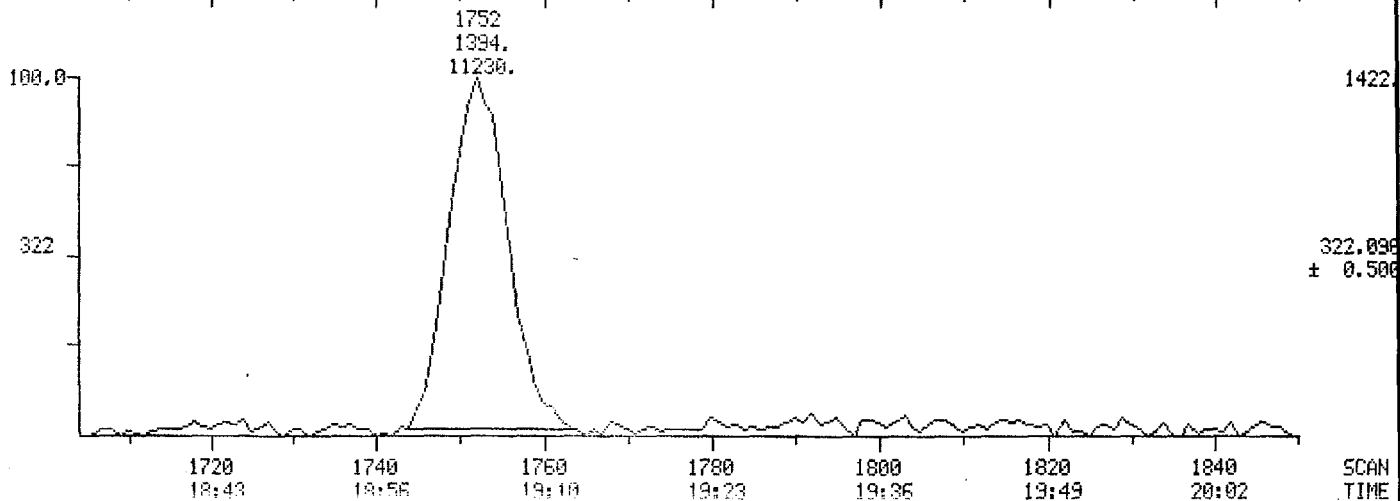
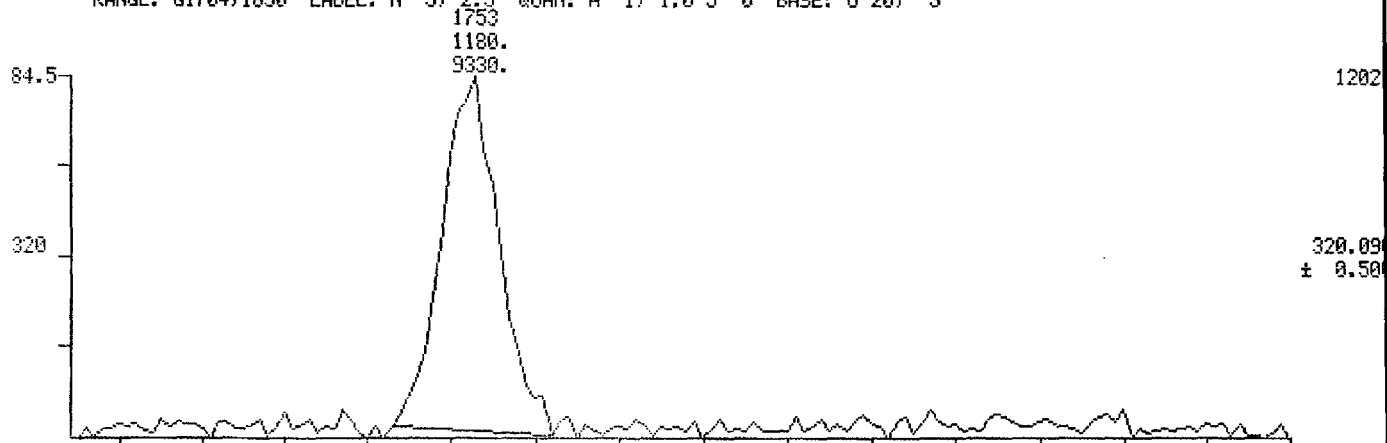
10/01/87 13:03:00

CALI: CAL092587 #3

SAMPLE: CALIBRATION SOLN 1

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 5. 2.5 QUAN: A 1. 1.0 J 0 BASE: U 20. 3



999110

MID MASS CHROMATOGRAMS

DATA: OCT0101 #1

SCANS 1704 TO 1850

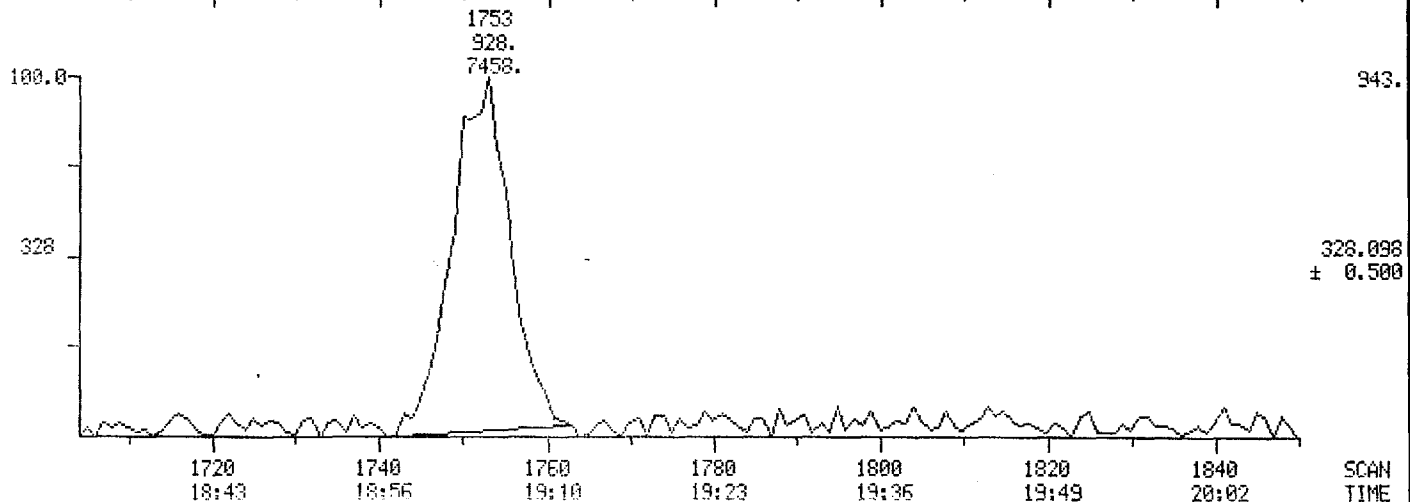
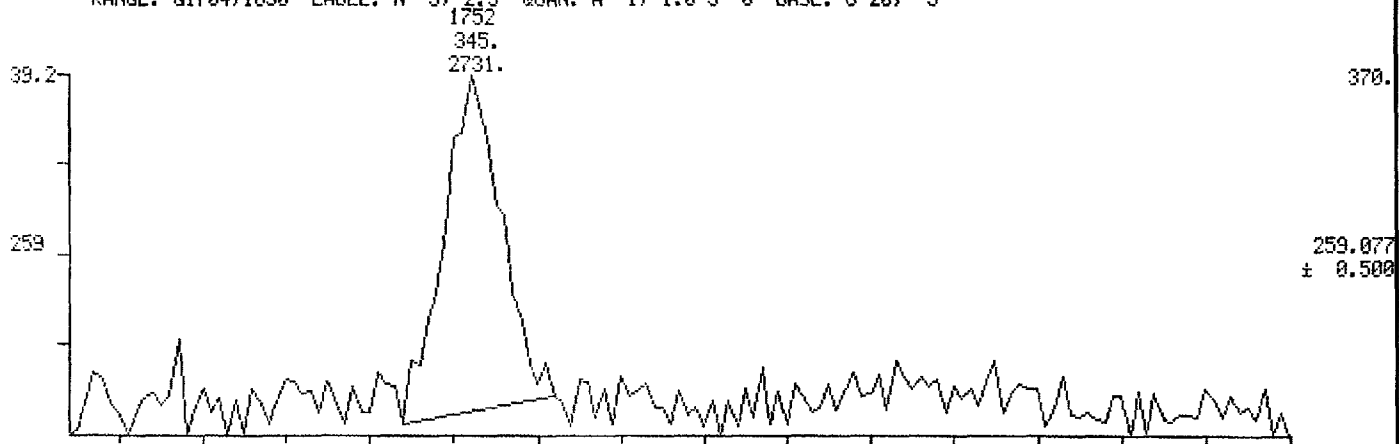
10/01/87 13:03:00

CALI: CAL092587 #3

SAMPLE: CALIBRATION SOLN 1

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011567

MID RIC

10/01/87 13:03:00

SAMPLE: CALIBRATION SOLN 1

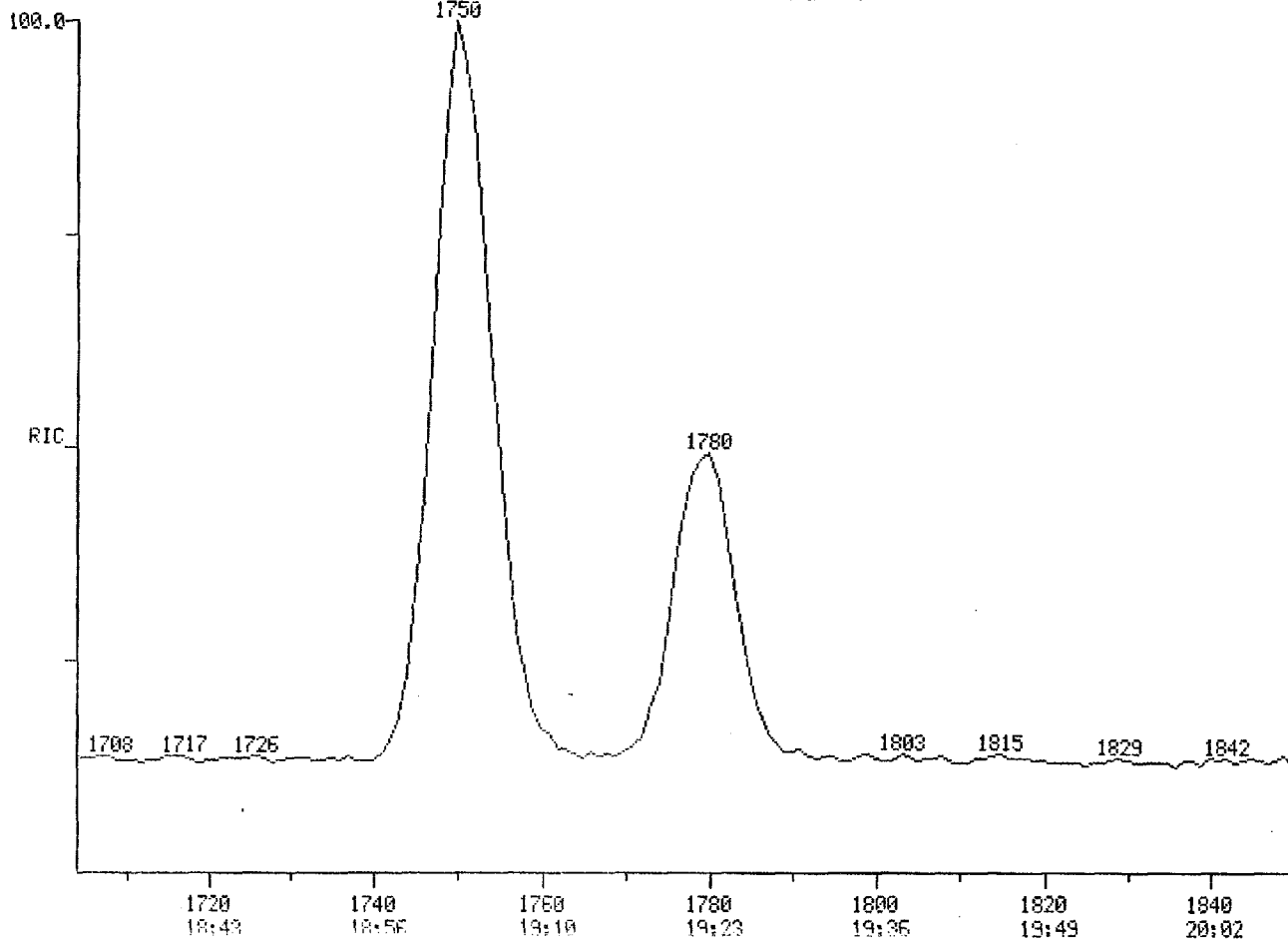
CONDS.: 60M 5P2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: OCT0101 #1

SCANS 1704 TO 1850

CALI: CAL092587 #3



19552

SCAN
TIME

899110

MID RIC

DATA: SEP2804 #1

SCANS 1704 TO 1850

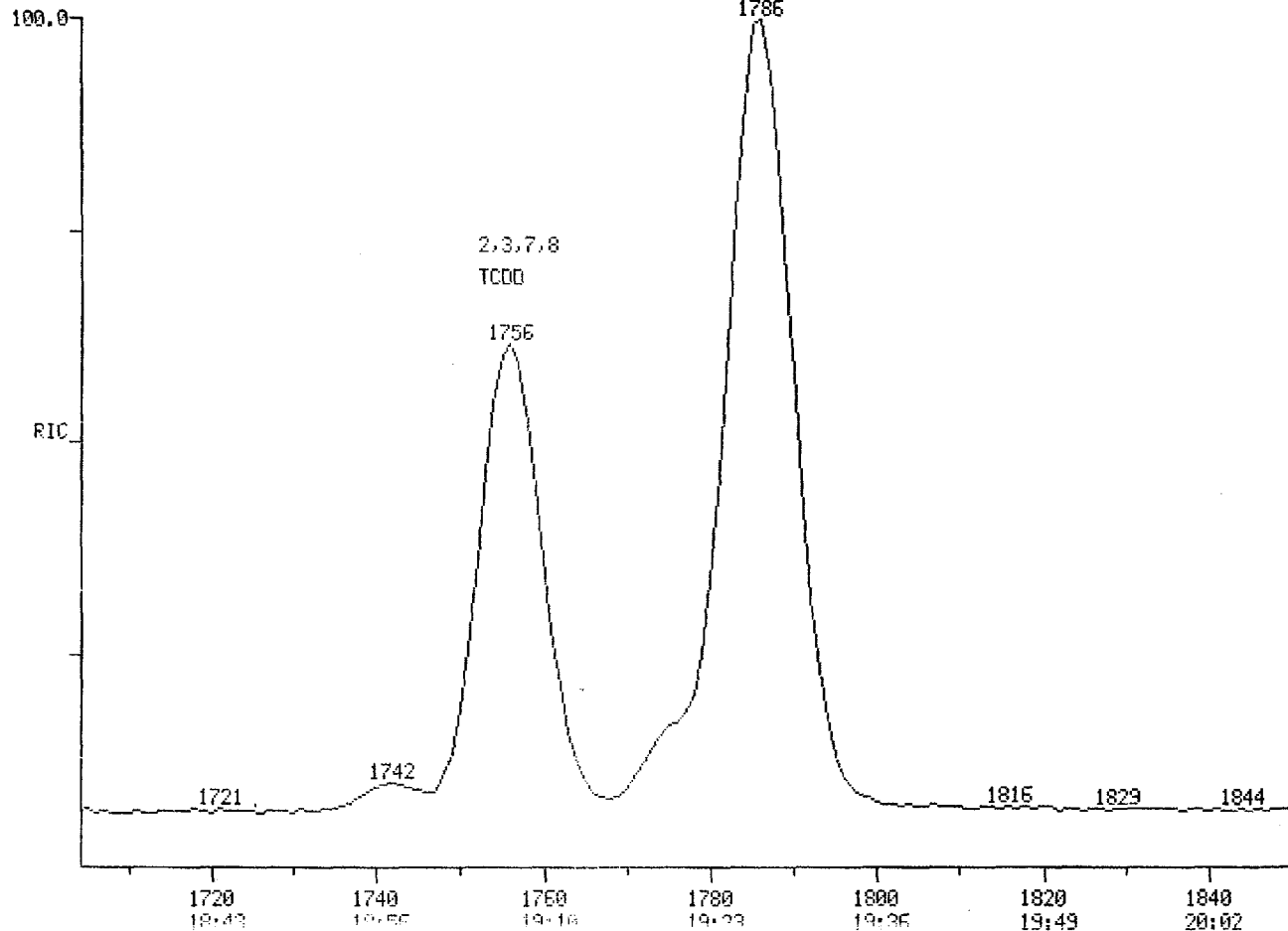
09/28/87 22:33:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

COND5.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



34524.

SCAN 2-6108
TIME

01156T

MID MASS CHROMATOGRAMS

DATA: SEP2804 #1

SCANS 1704 TO 1850

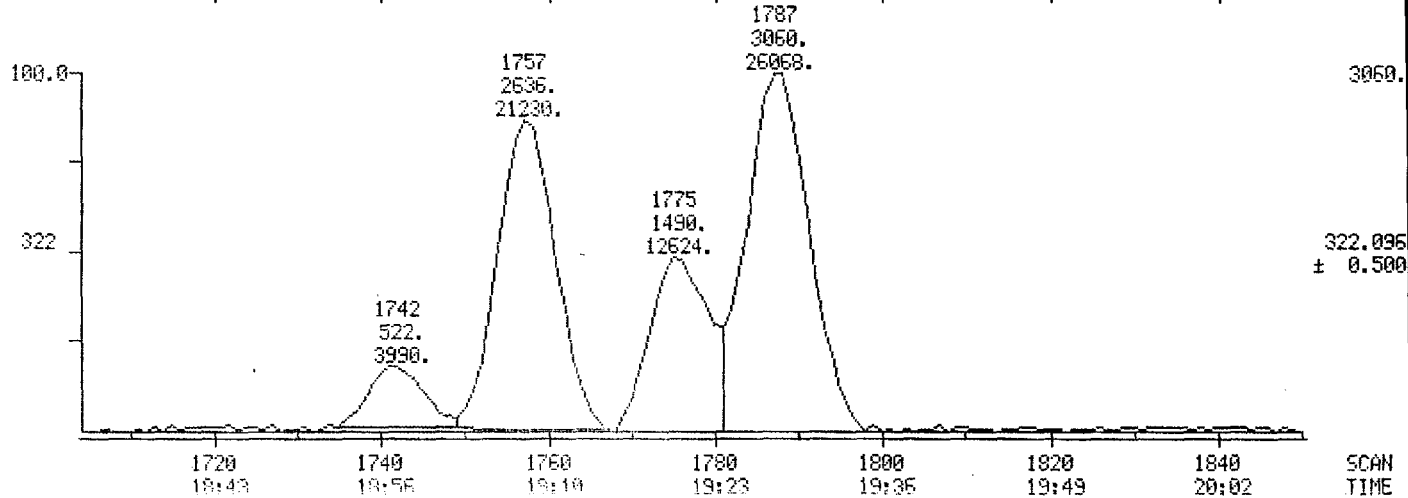
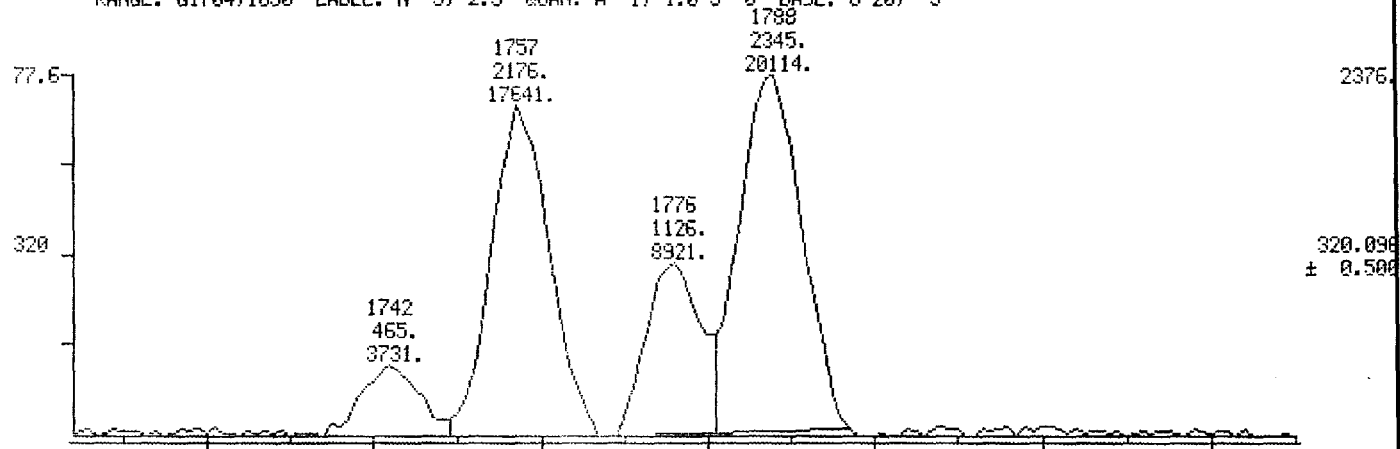
09/28/87 22:33:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

COND5.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: H 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



025110

MID MASS CHROMATOGRAMS

DATA: SEP2804 #1

SCANS 1704 TO 1850

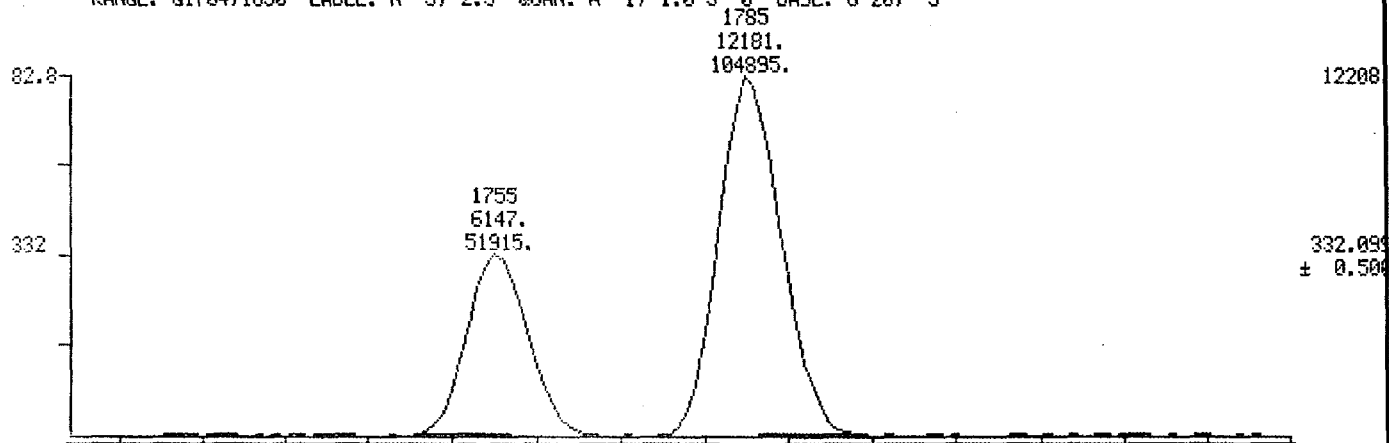
09/28/87 22:33:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

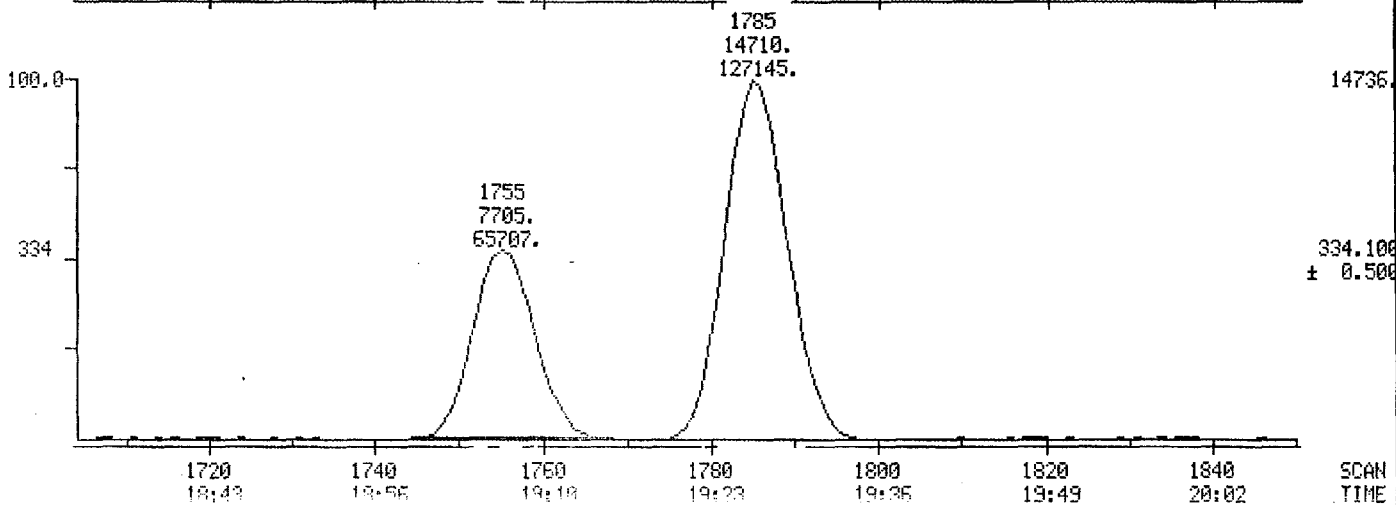
CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



12208

332.093
± 0.500



14736.

334.100
± 0.500

1720
18:43

1740
19:05

1760
19:18

1780
19:23

1800
19:35

1820
19:49

1840
20:02

SCAN
TIME

125110

MID MASS CHROMATOGRAMS

DATA: SEP2827 #1

SCANS 1704 TO 1850

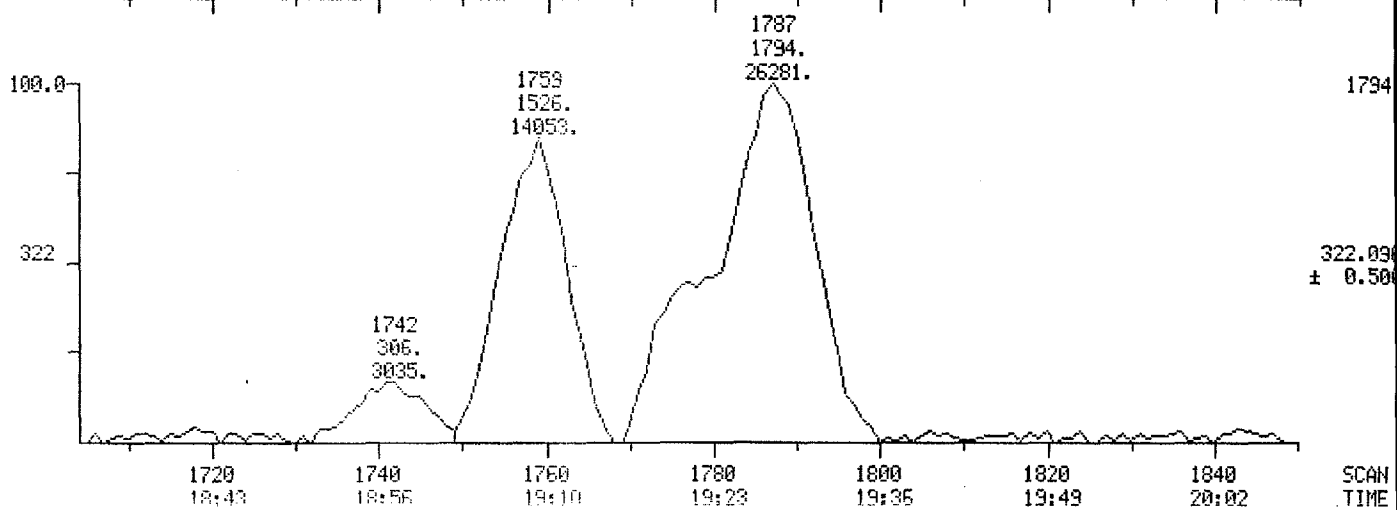
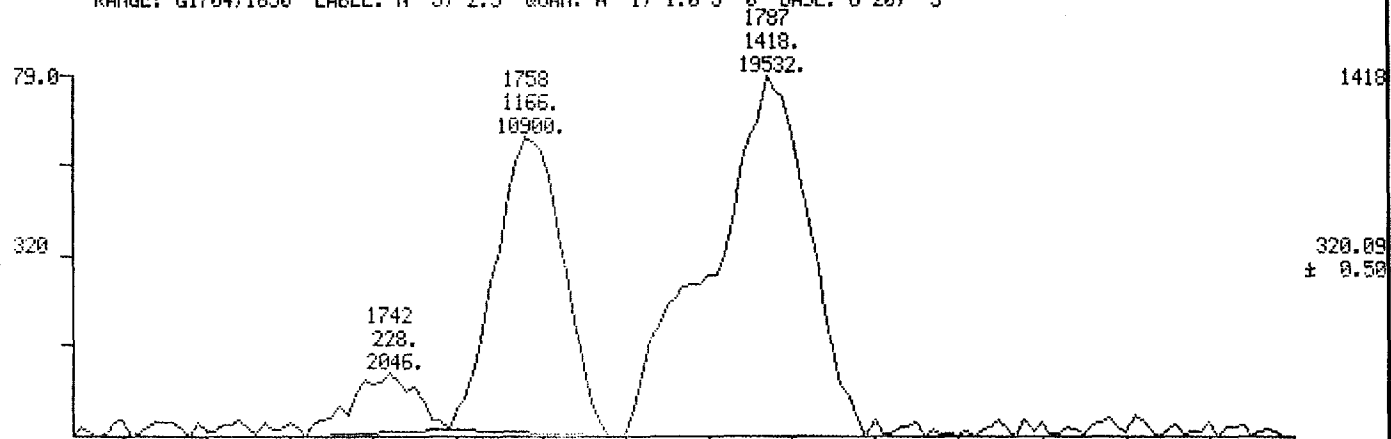
09/29/87 9:25:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



229170

MID MASS CHROMATOGRAMS

DATA: SEP2827 #1

SCANS 1704 TO 1850

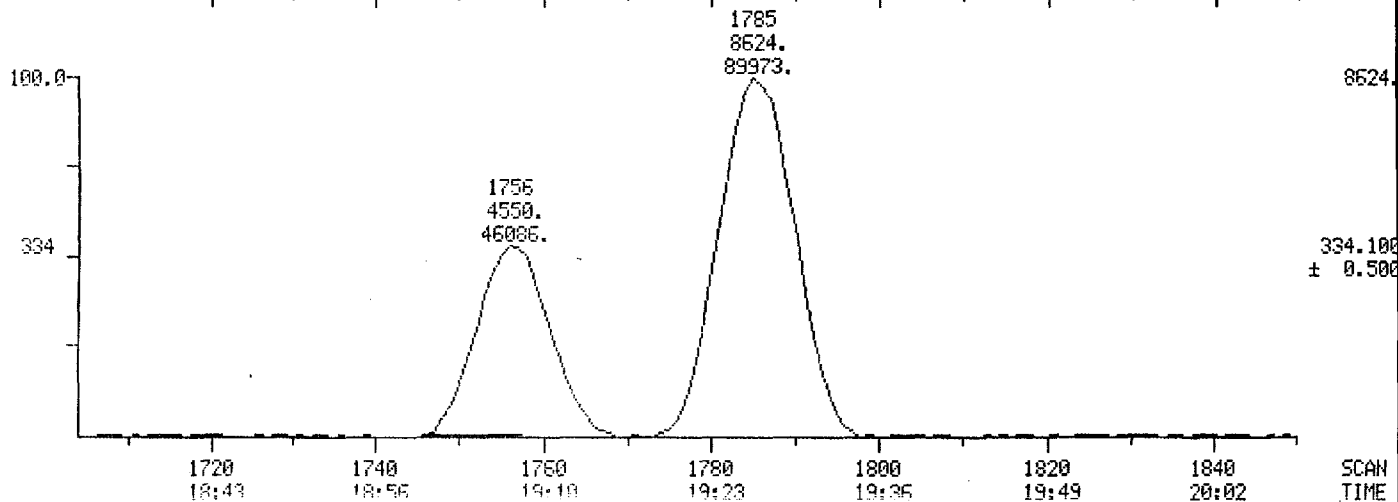
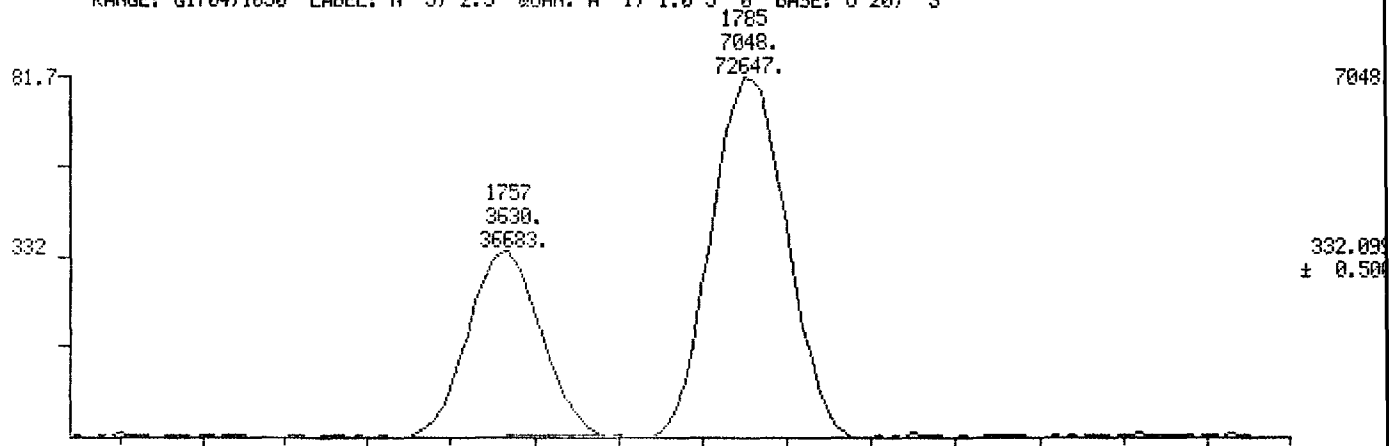
09/29/87 9:25:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



SCAN TIME

011573

MID RIC

DATA: SEP2827 #1

SCANS 1704 TO 1850

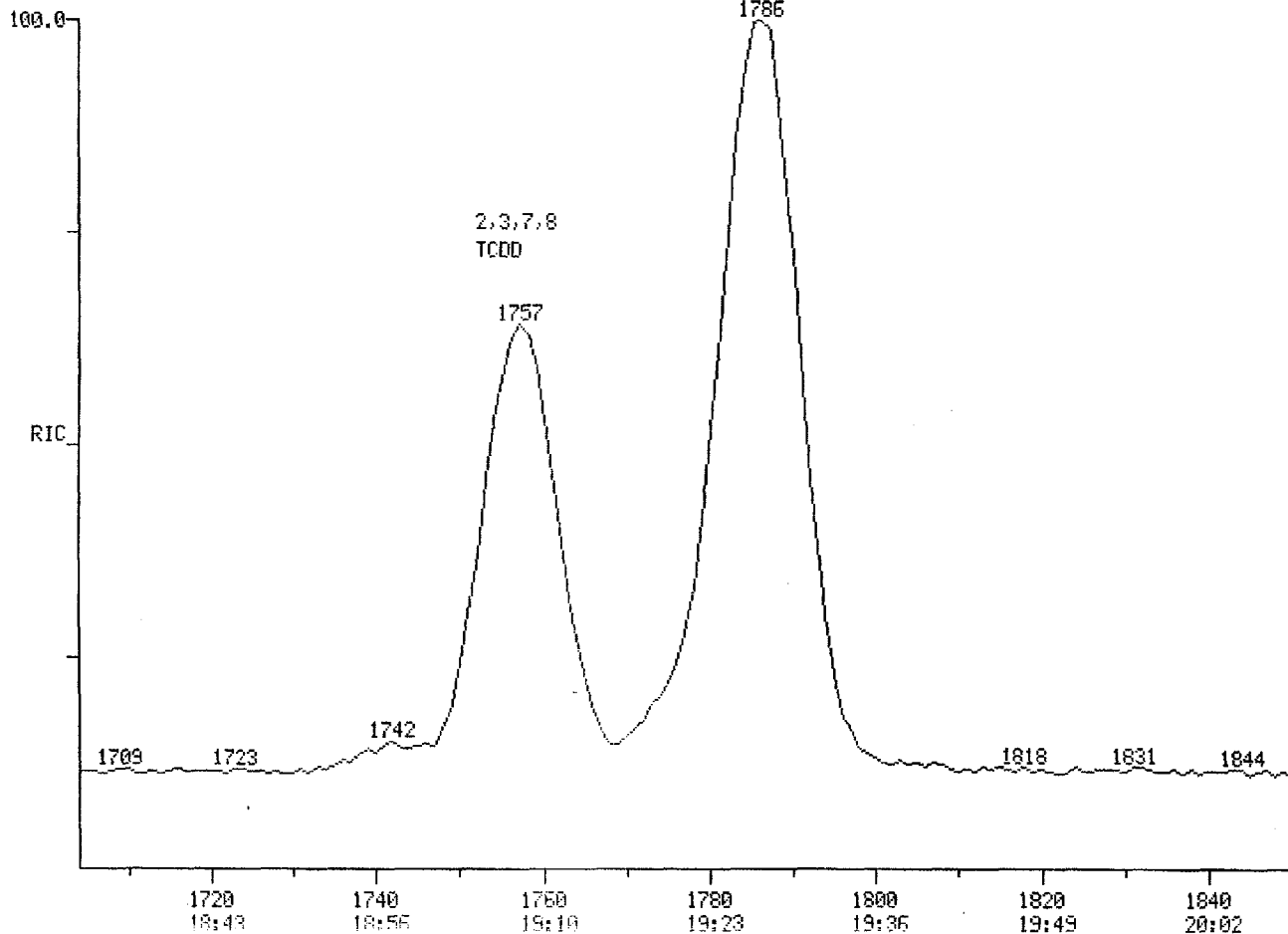
09/29/87 9:25:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



21824

SCAN
TIME

011574

MID RIC

10/01/87 13:33:00

SAMPLE: COLUMN PERFORMANCE MIX

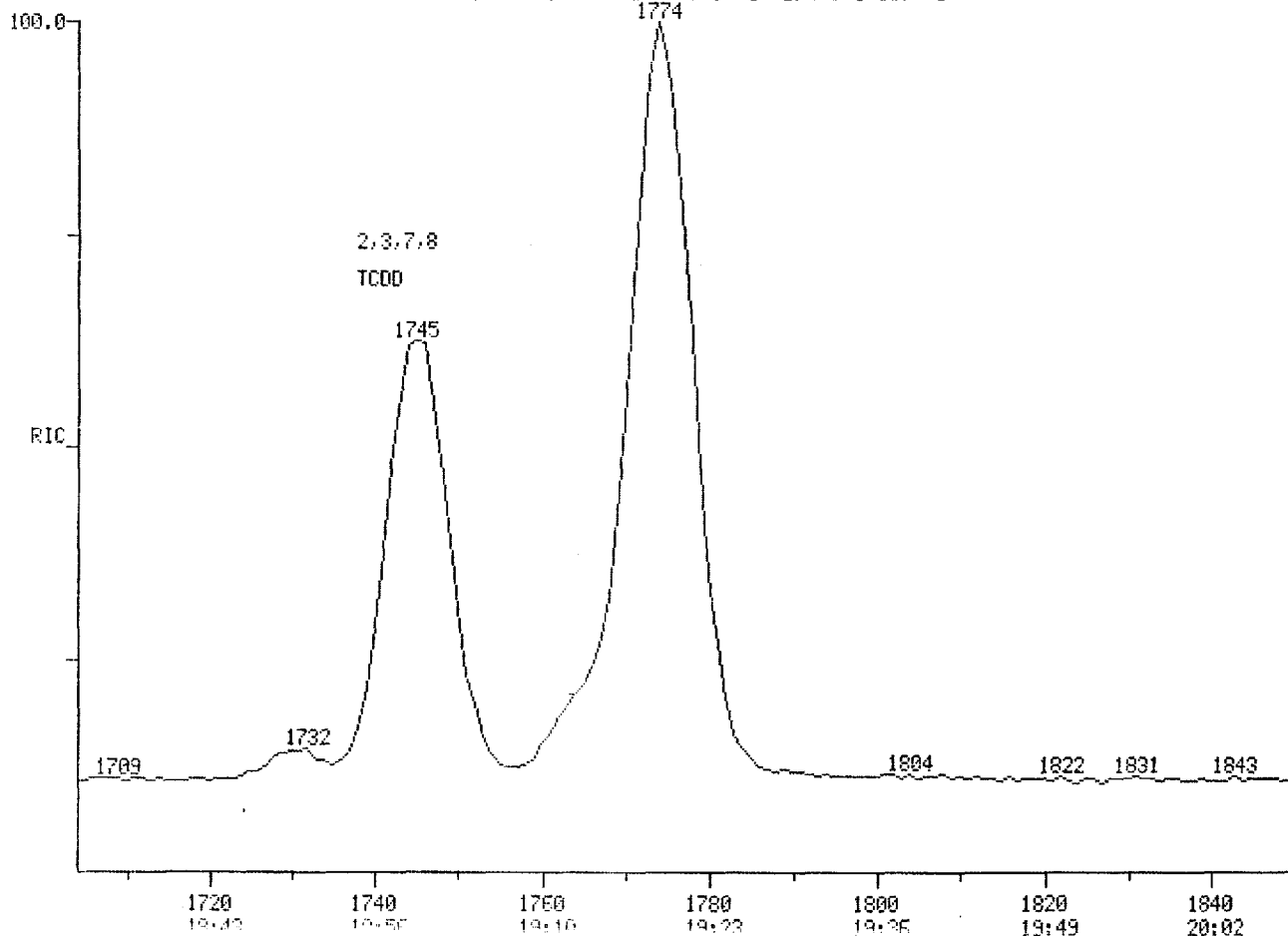
CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0. 4.0 QUAN: A 0. 1.0 J 0 BASE: U 20. 3

DATA: OCT0102 #1

CALI: CAL092587 #3

SCANS 1704 TO 1850



25632

SCAN TIME

011575

MID MASS CHROMATOGRAMS

DATA: OCT0102 #1

SCANS 1704 TO 1850

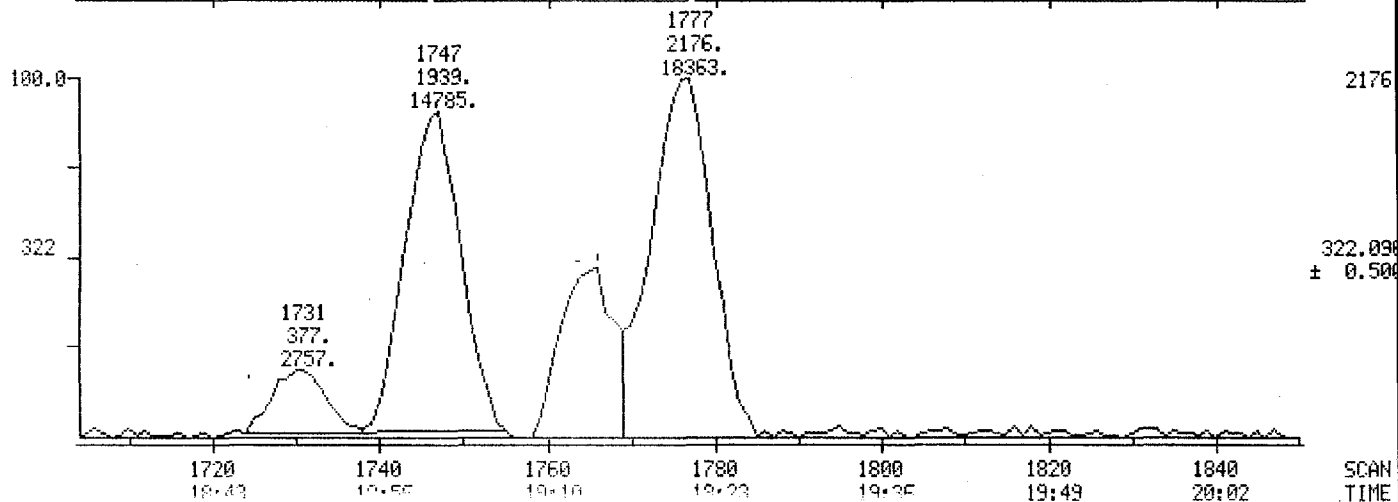
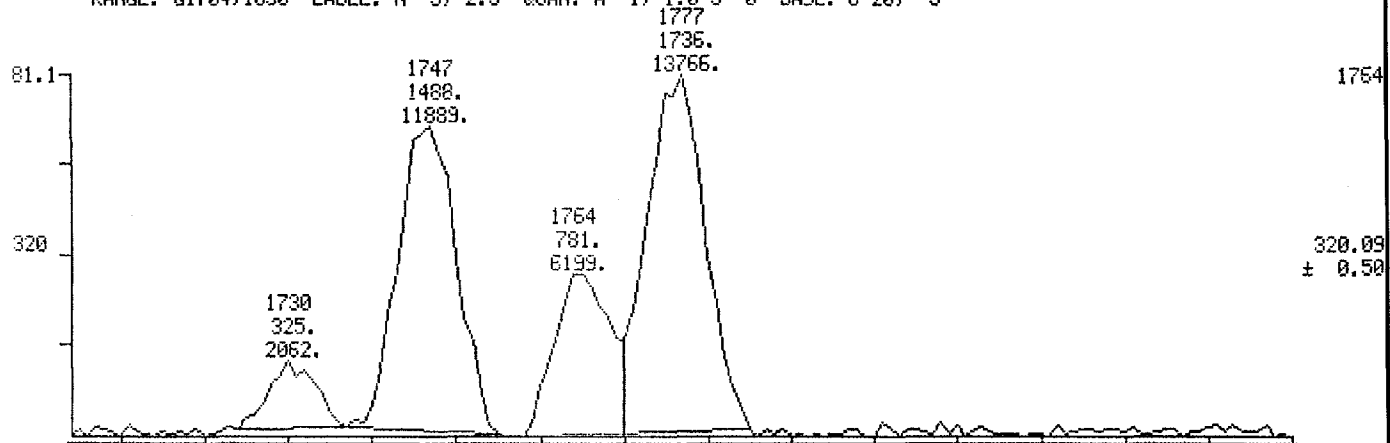
10/01/87 13:33:00

CALI: CAL032587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



929T10

MID MASS CHROMATOGRAMS

DATA: OCT0102 #1

SCANS 1704 TO 1850

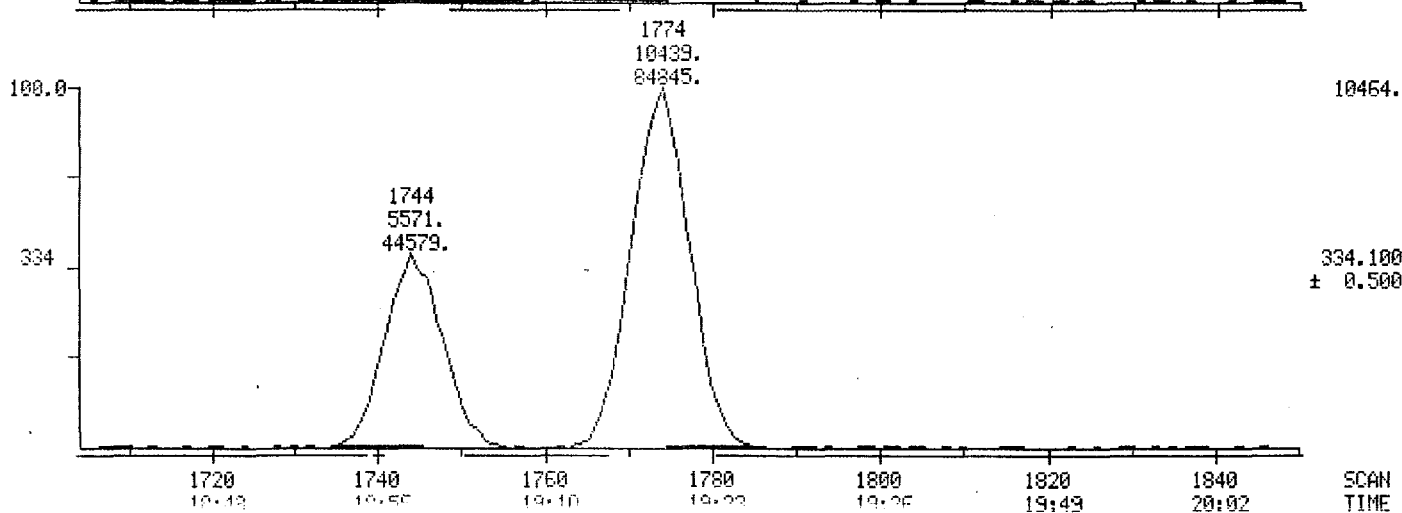
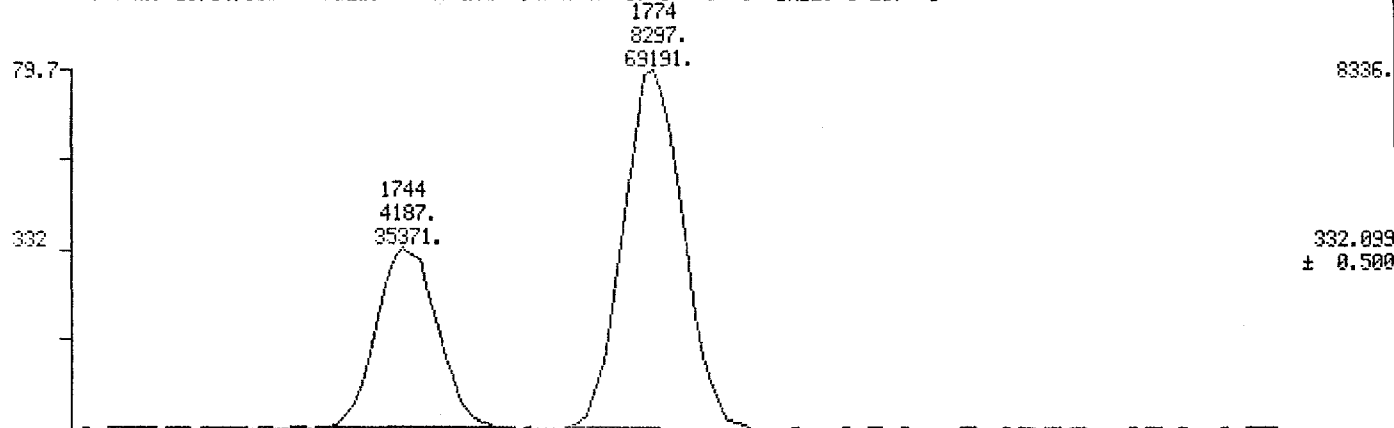
10/01/87 13:33:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



115770

MID RIC

10/01/87 20:18:00

SAMPLE: COLUMN PERFORMANCE MIX

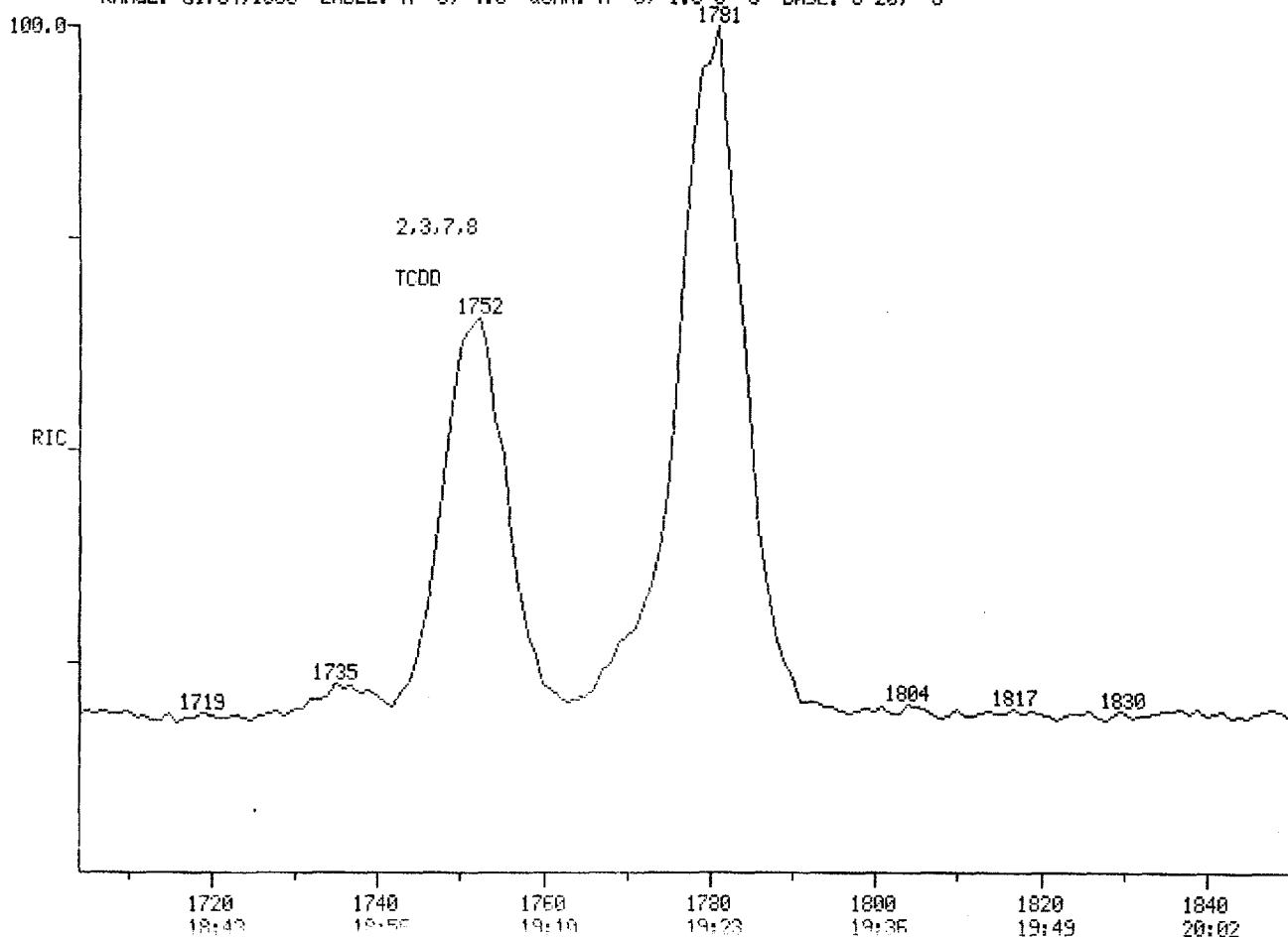
CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: OCT0110 #1

CALI: CAL092587 #3

SCANS 1704 TO 1850



13504.

SCAN
TIME

829T10

MID MASS CHROMATOGRAMS

DATA: OCT0110 #1

SCANS 1704 TO 1850

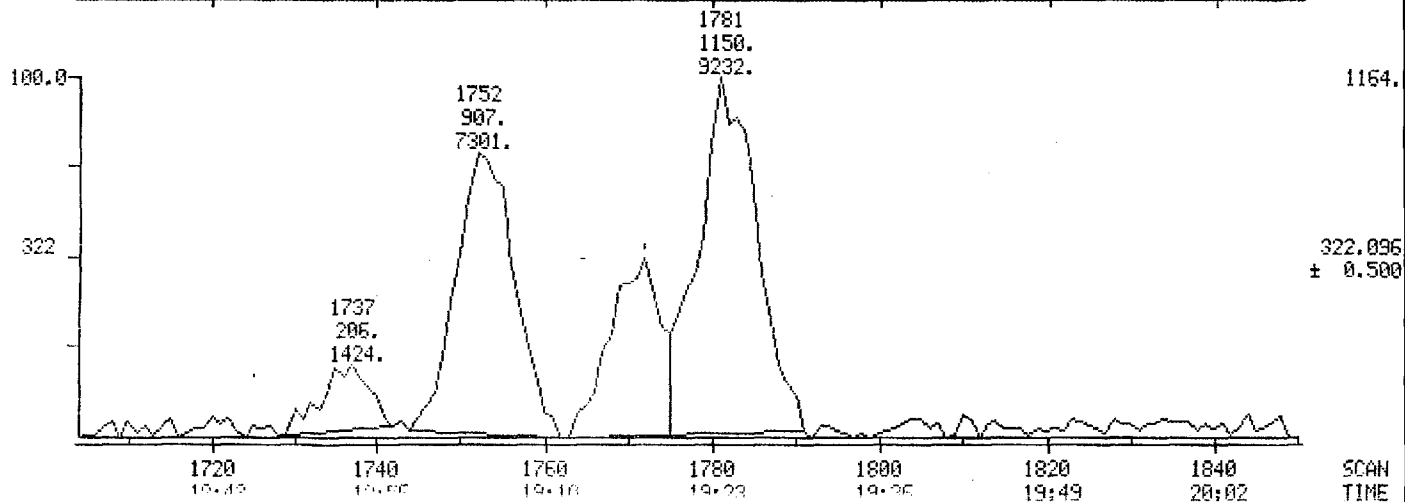
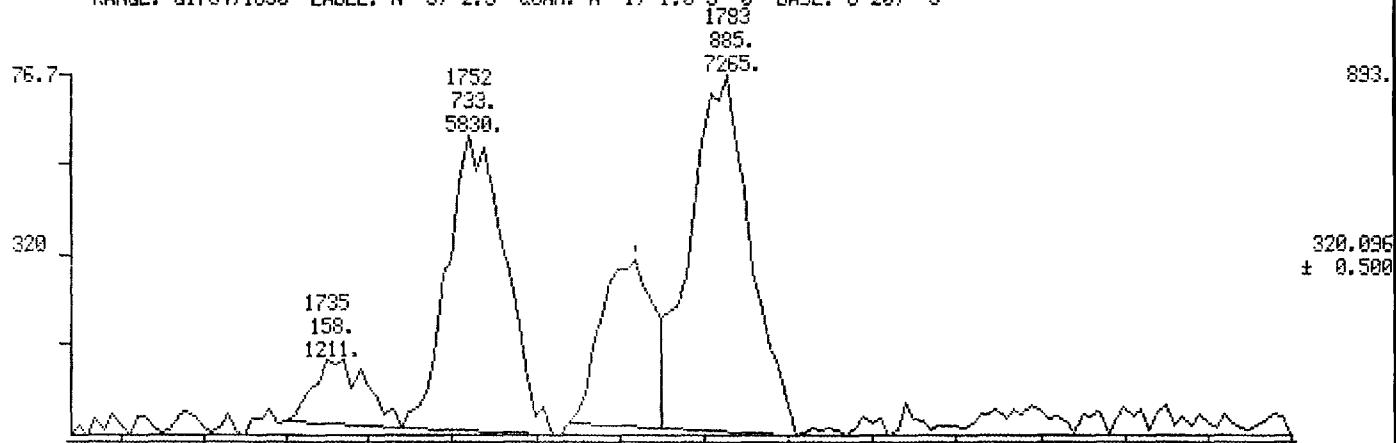
10/01/87 20:18:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



SCAN TIME

629110

MID MASS CHROMATOGRAMS

DATA: OCT0110 #1

SCANS 1704 TO 1850

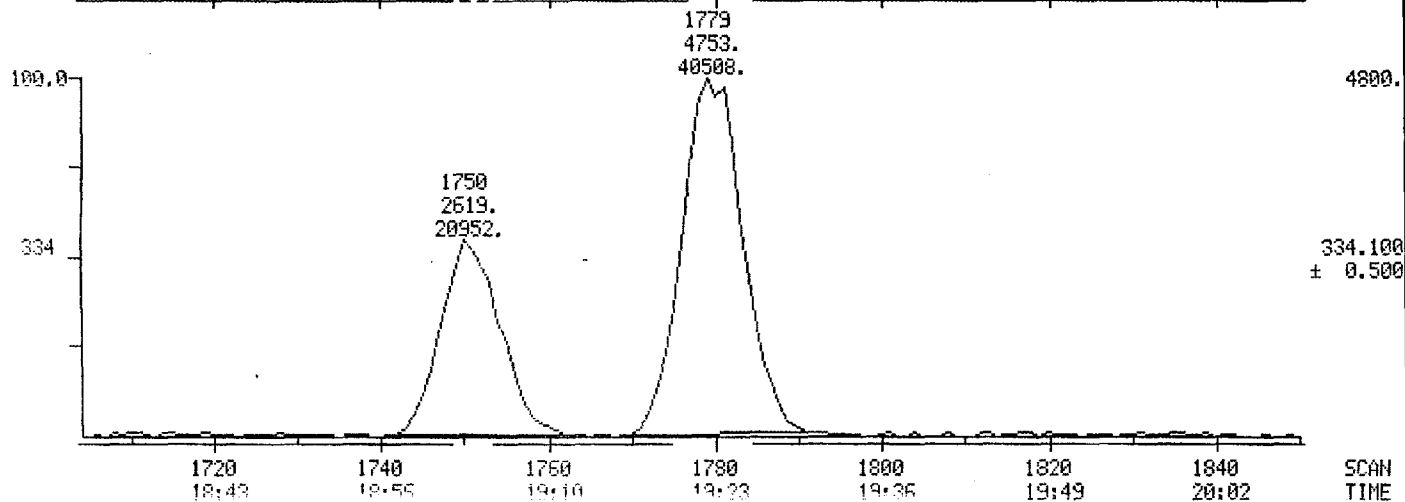
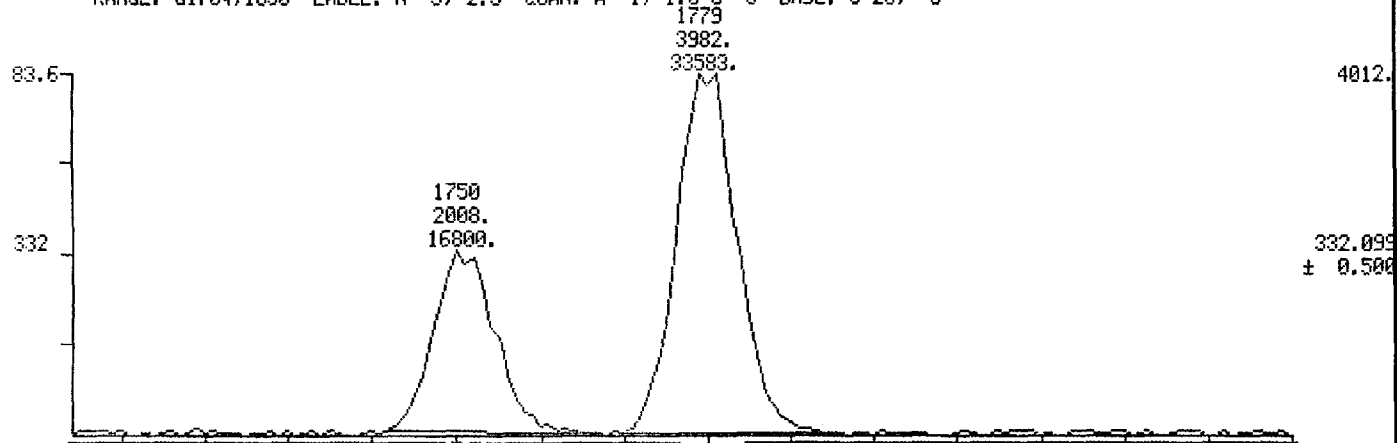
10/01/87 20:18:00

CALI: CAL032587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



089110

HTO RIC

09/28/87 23:08:00

SAMPLE: CASE 8019: BATCH2/H.B./9.98G

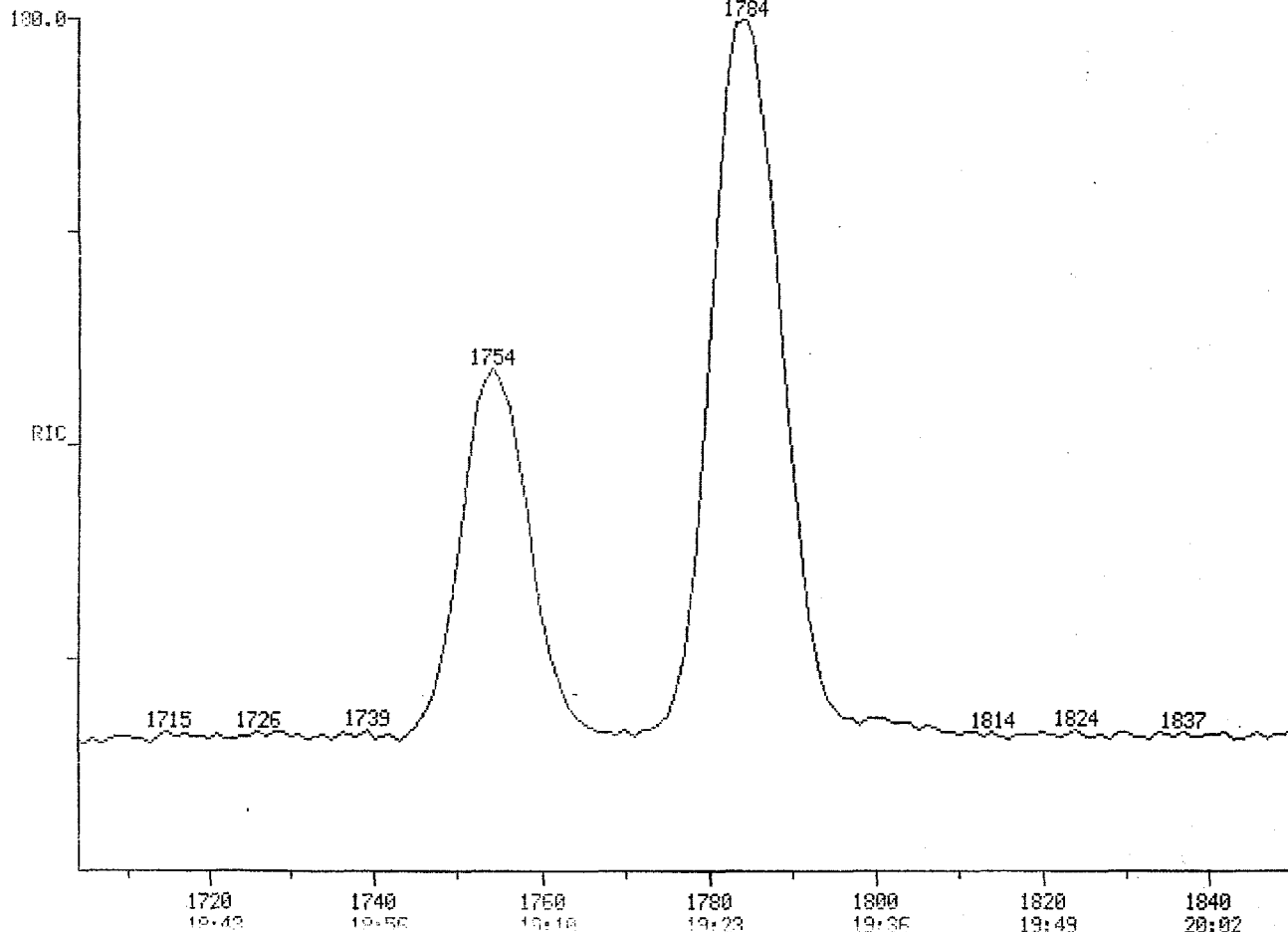
CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: SEP2805 #1

SCANS 1704 TO 1850

CALI: CAL032587 #3



15952.

8019-09

SCAN
TIME

011811

MID MASS CHROMATOGRAMS

DATA: SEP2885 #1

SCANS 1704 TO 1850

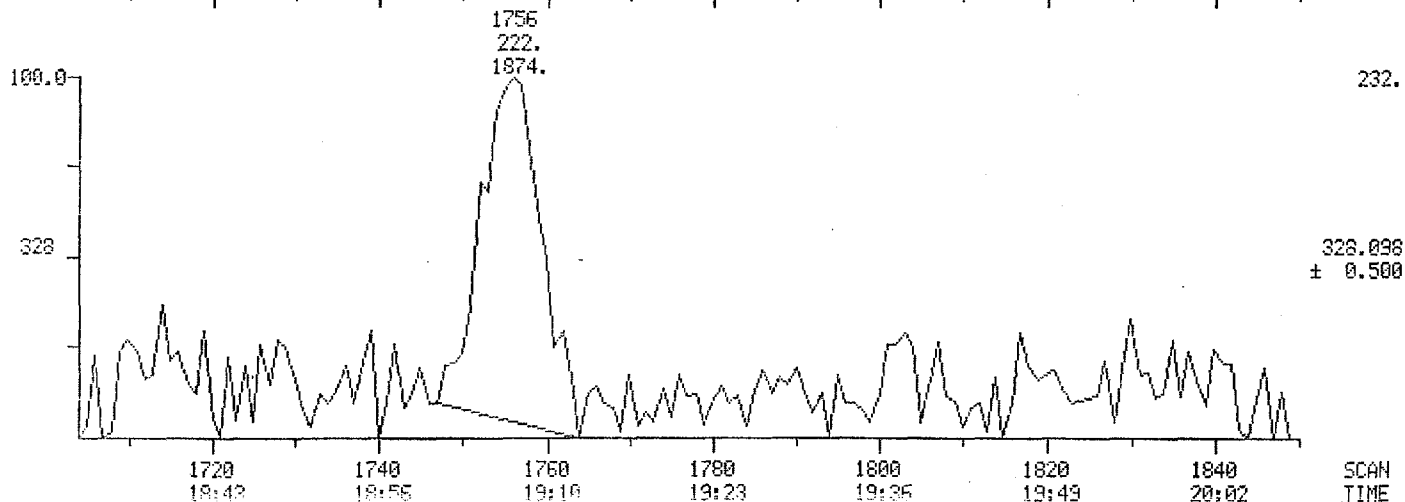
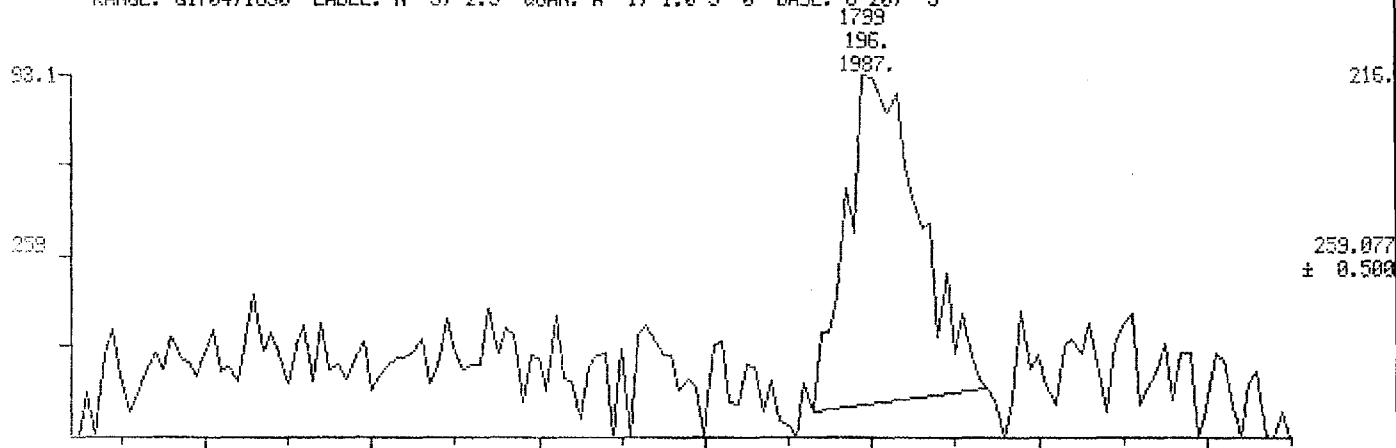
09/28/87 23:08:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/M.B./9.98G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5. 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



SCAN TIME

011582

MID MASS CHROMATOGRAMS

DATA: SEP2805 #1

SCANS 1704 TO 1850

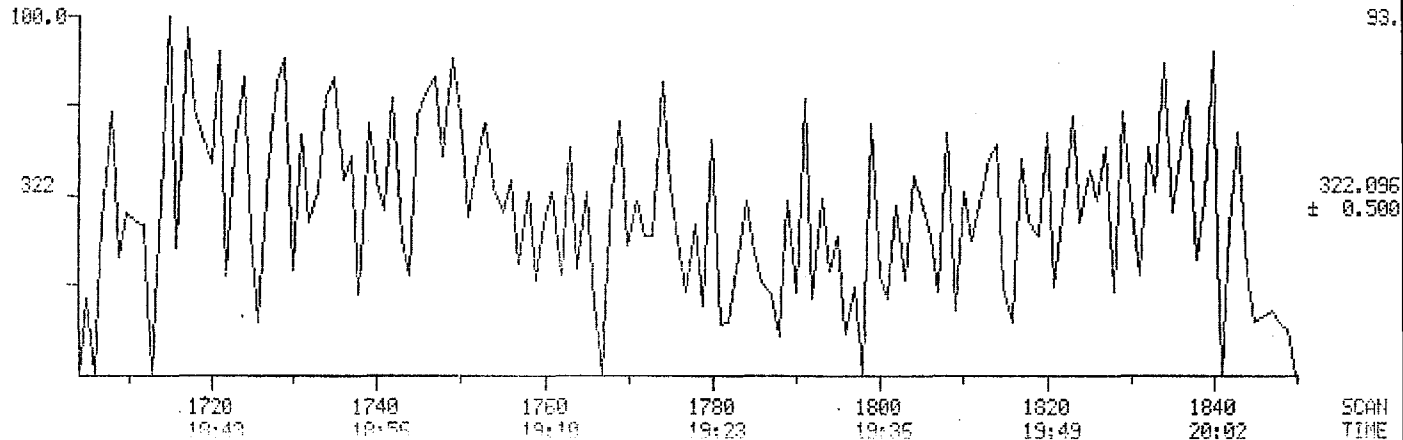
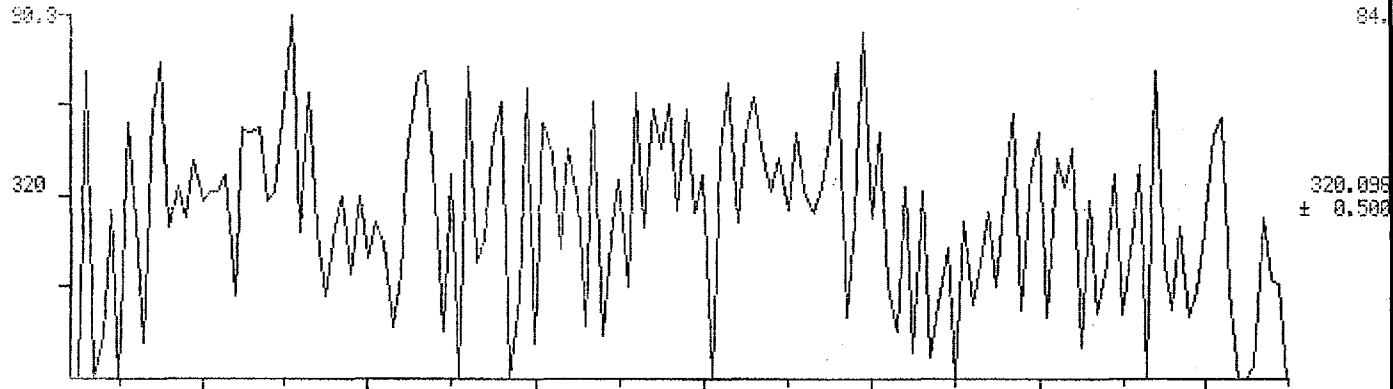
09/28/87 23:08:00

CALI: CAL032587 #3

SAMPLE: CASE 8019: BATCH2/M.B./9.98G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011583

MID MASS CHROMATOGRAMS

DATA: SEP2885 #1

SCANS 1704 TO 1850

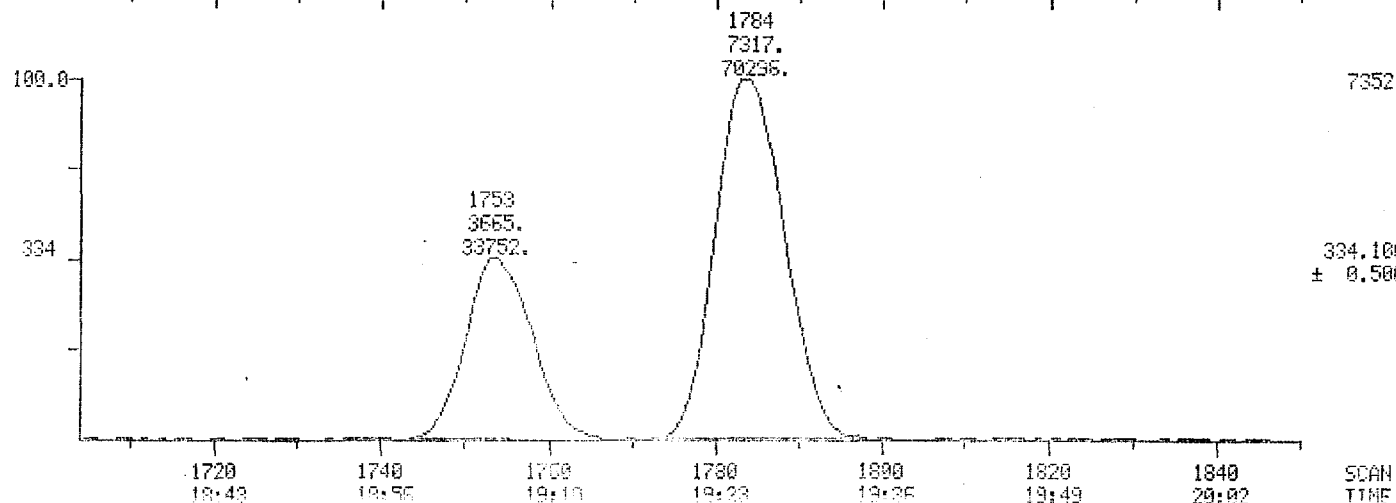
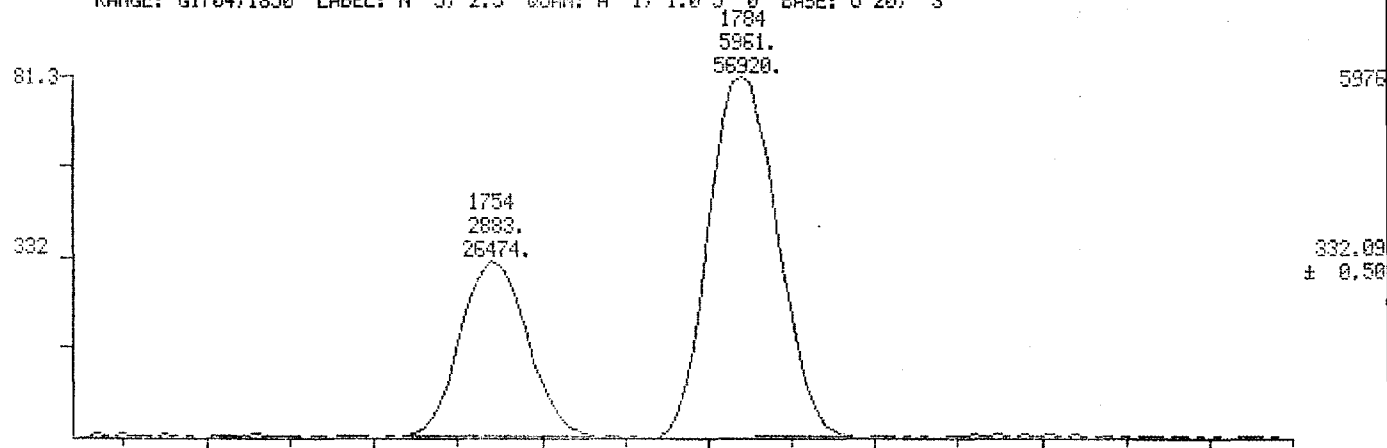
09/28/87 23:08:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/M.B./9.98G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011584

MID RIC

DATA: OCT0104 #1

SCANS 1704 TO 1850

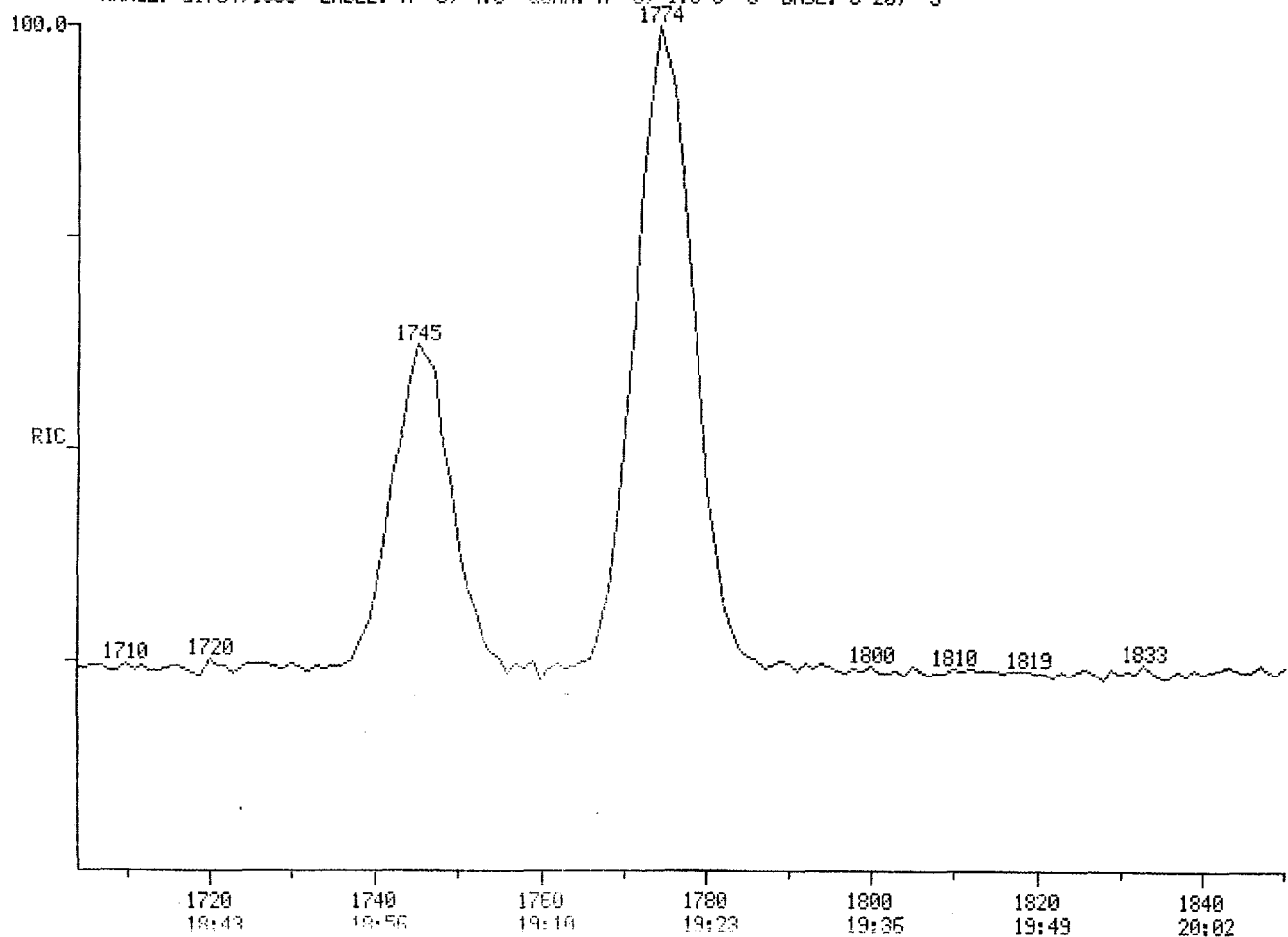
10/01/87 14:43:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/212-02/10.16G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



12800

SCAN
TIME

011585

MID MASS CHROMATOGRAMS

DATA: OCT0184 #1

SCANS 1704 TO 1850

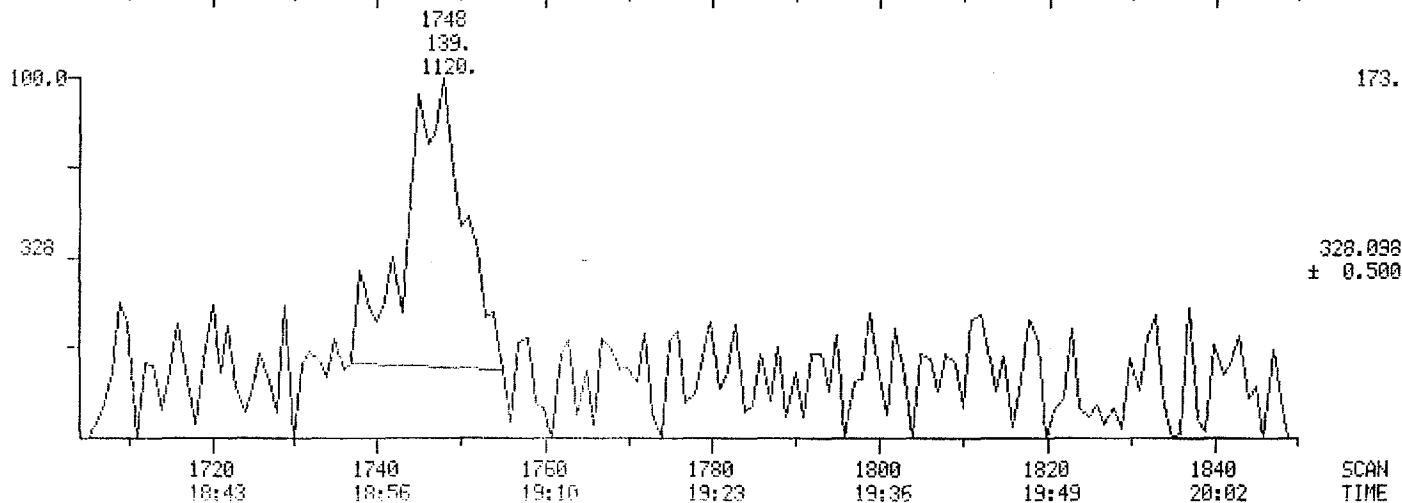
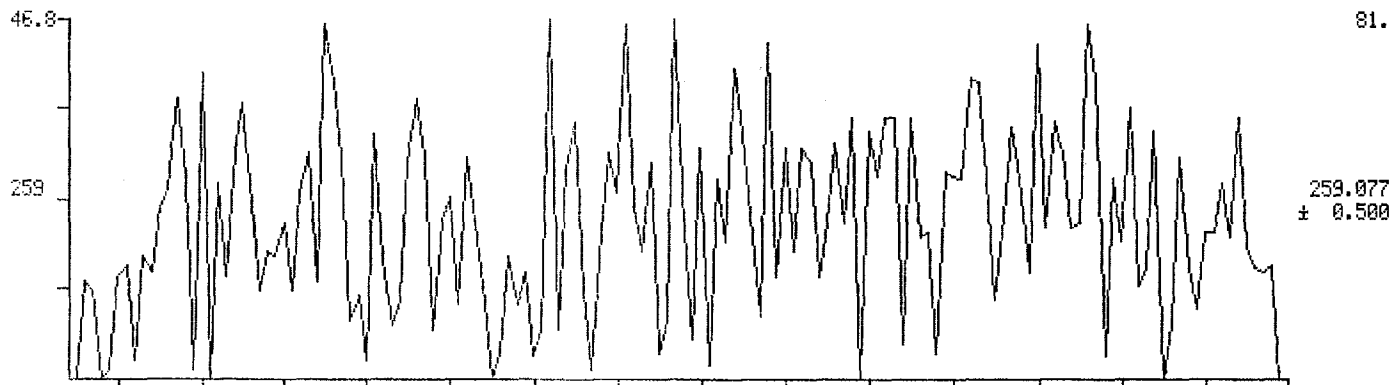
10/01/87 14:43:00

CALI: CAL032587 #3

SAMPLE: CASE 8019: BATCH2/212-02/10.16G

CONDS.: 50M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011586

MID MASS CHROMATOGRAMS

DATA: OCT0104 #1

SCANS 1704 TO 1850

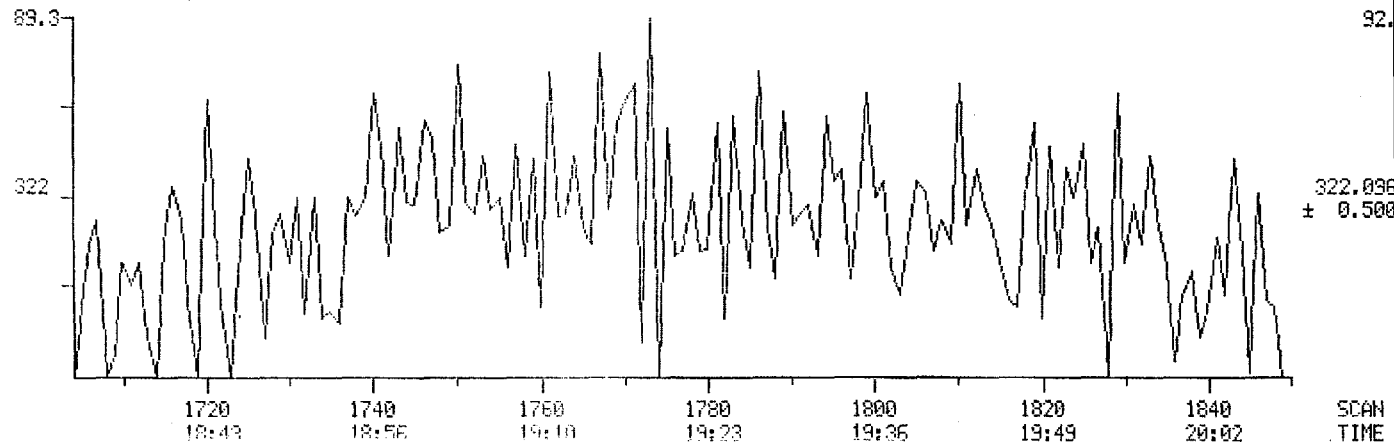
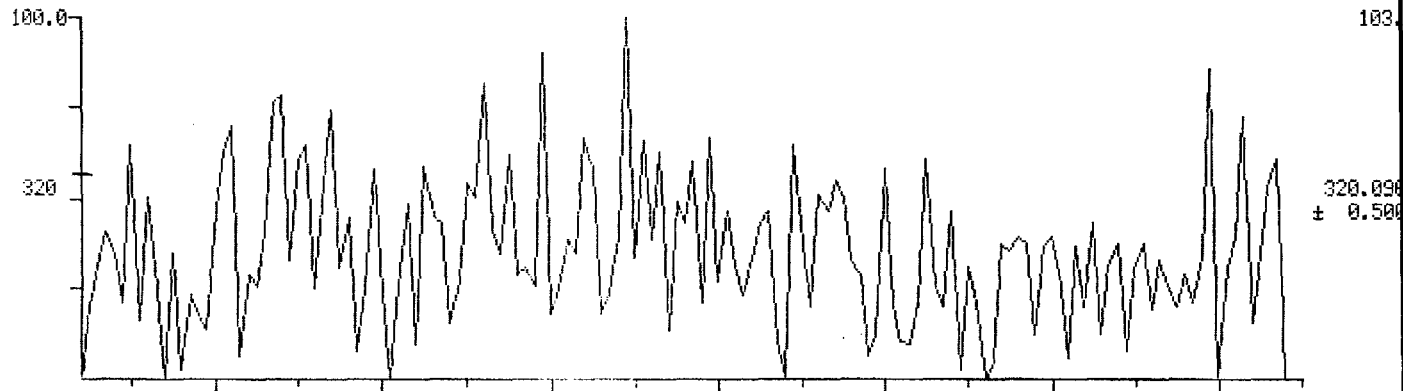
10/01/87 14:43:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/212-02/10.16G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011587

MID MASS CHROMATOGRAMS

DATA: OCT0104 #1

SCANS 1704 TO 1850

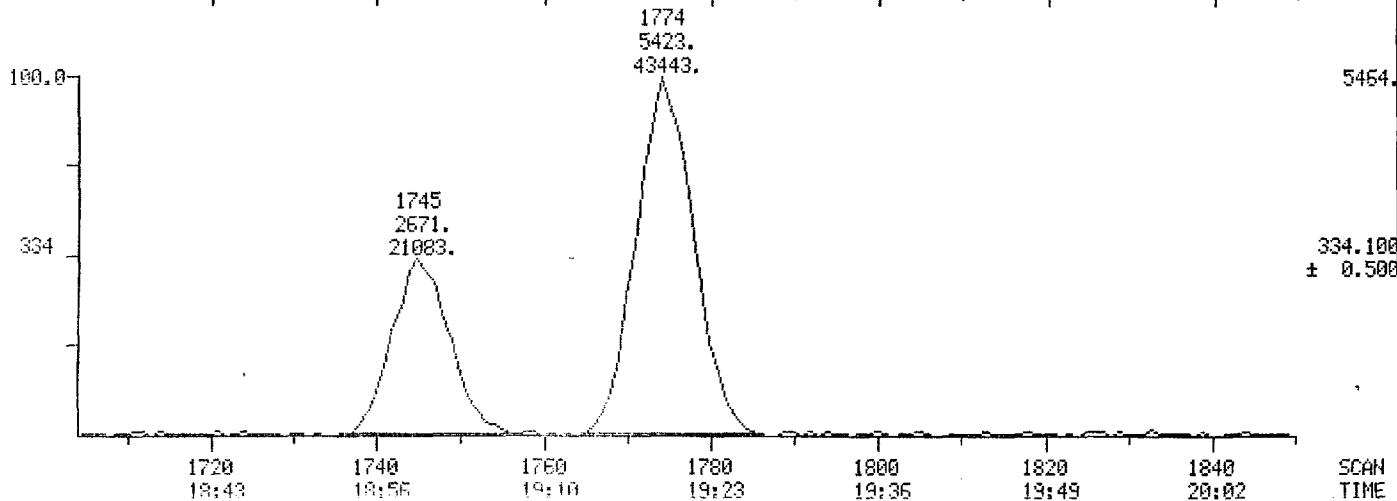
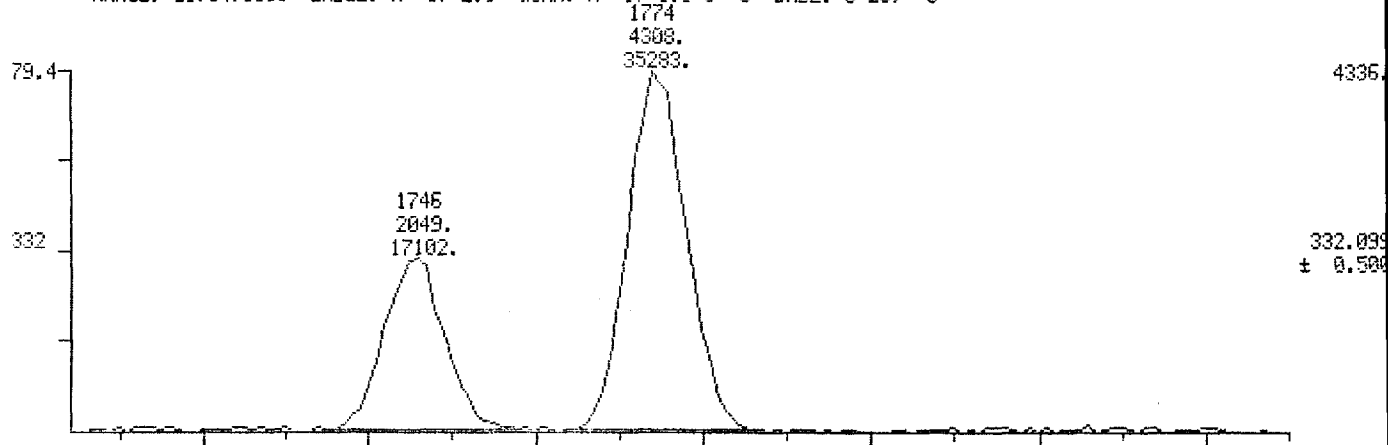
10/01/87 14:43:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/212-02/10.16G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



389110

MID RIC

DATA: SEP2813 #1

SCANS 1734 TO 1850

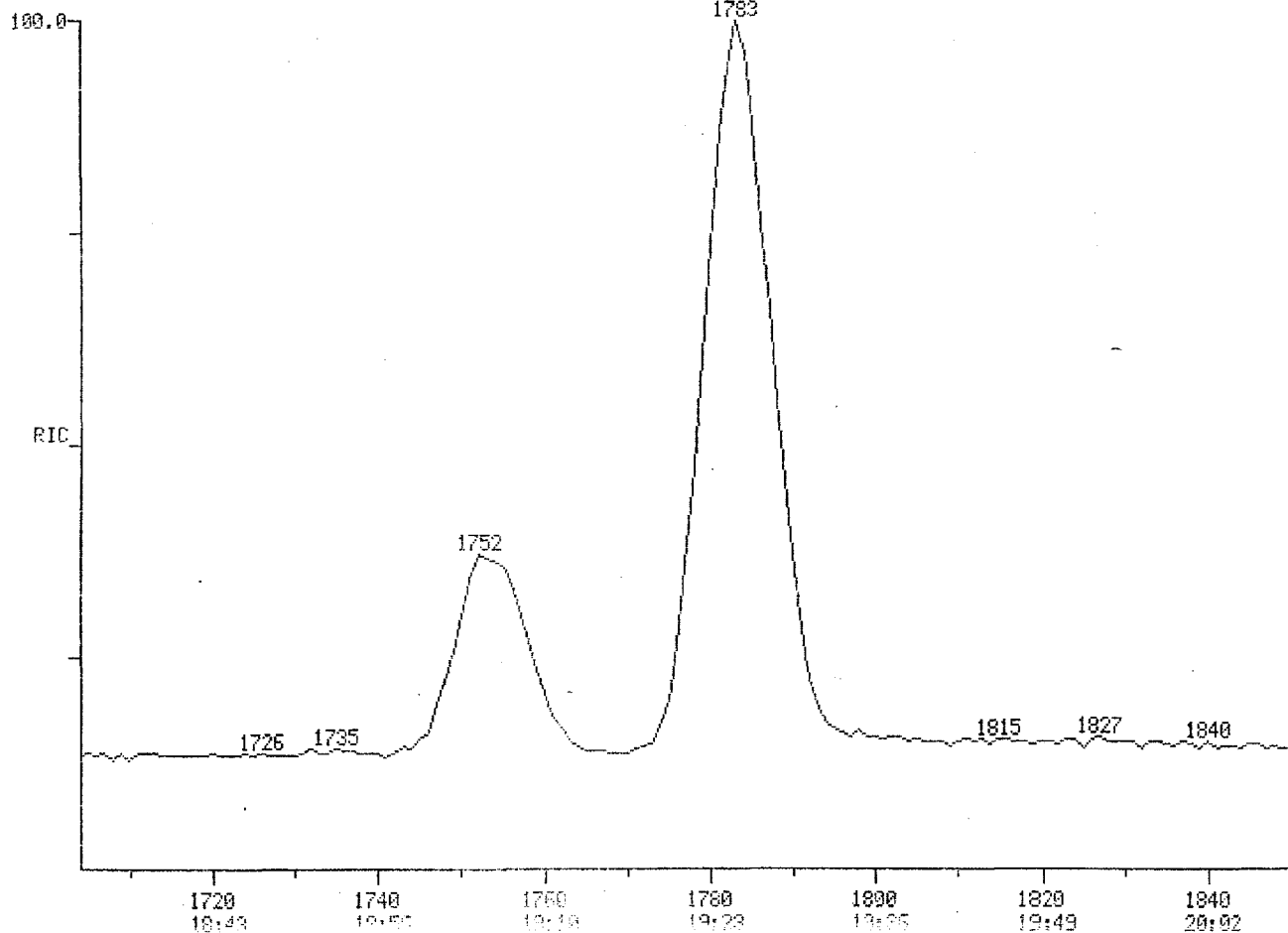
09/29/97 2:50:00

CALI: CAL692587 #3

SAMPLE: CASE 8019: BATCH2/ 212-08 9.94G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



15695

SCAN
TIME

011589

MID MASS CHROMATOGRAMS

DATA: SEP2812 #1

SCANS 1704 TO 1850

09/29/97 2:50:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/ 212-08 9.94G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3

1799

178.

1330.

282.

100.0

259

259.077
± 0.500

1755

116.

1655.

137.

67.8

328

328.098
± 0.500

1720
18:42

1740
18:52

1759
19:00

1780
19:08

1800
19:17

1820
19:49

1840
20:02

SCAN
TIME

011590

MID MASS CHROMATOGRAMS

DATA: SEP2813 #1

SCANS 1704 TO 1850

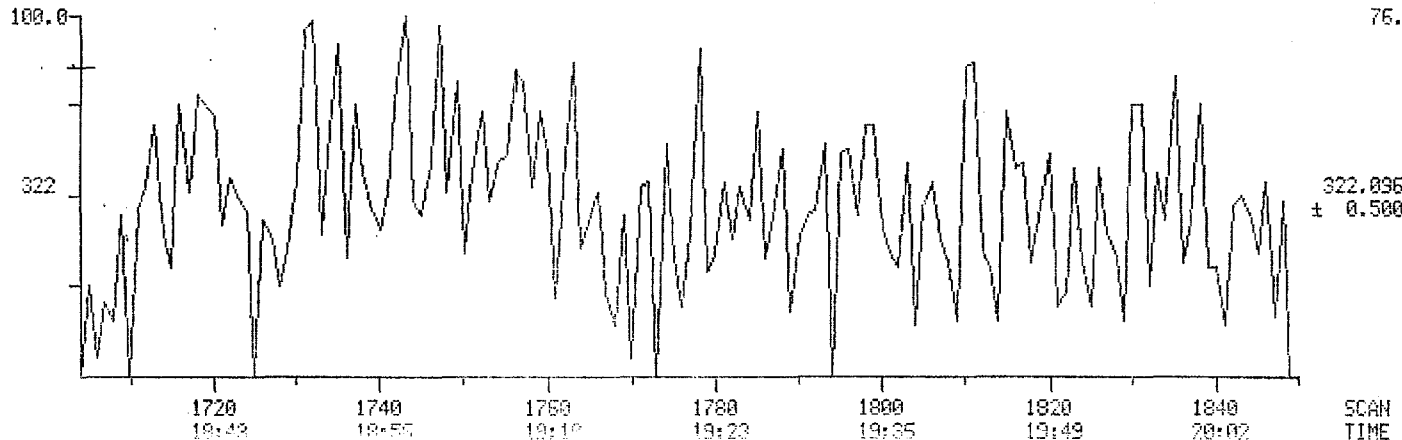
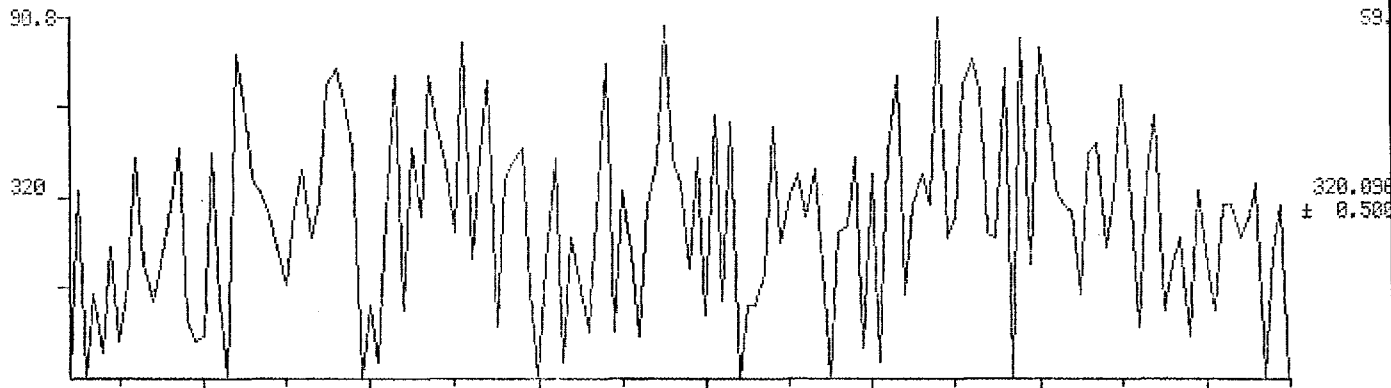
09/29/87 2:50:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/ 212-08 9.94G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/3

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAM: A 1, 1.0 J 0 BASE: U 20, 3



169110

MID MASS CHROMATOGRAMS

DATA: SEP2813 #1

SCANS 1704 TO 1850

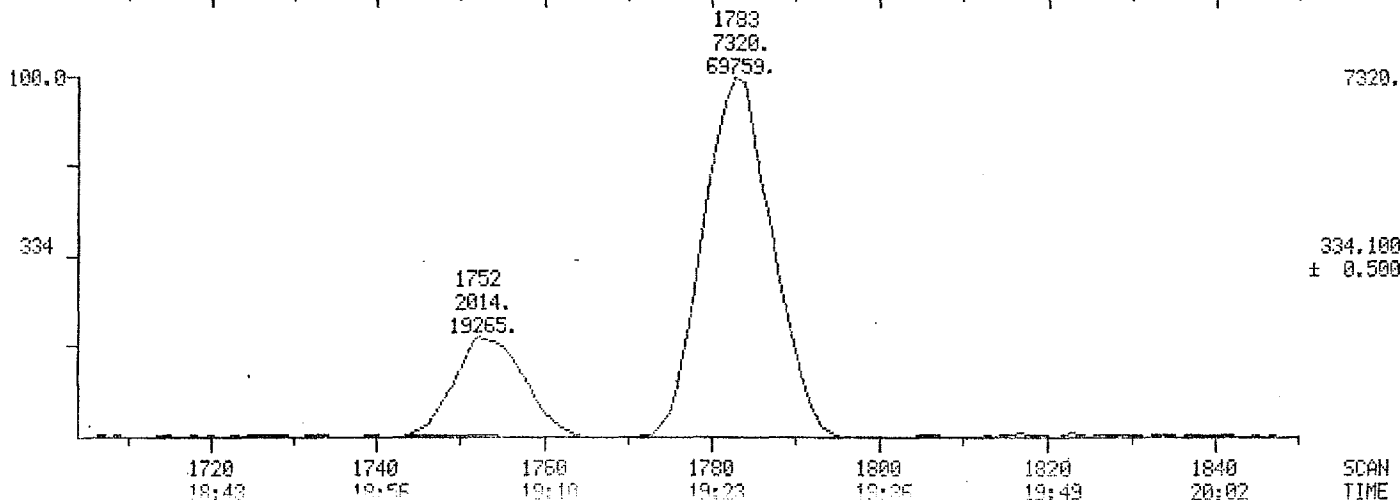
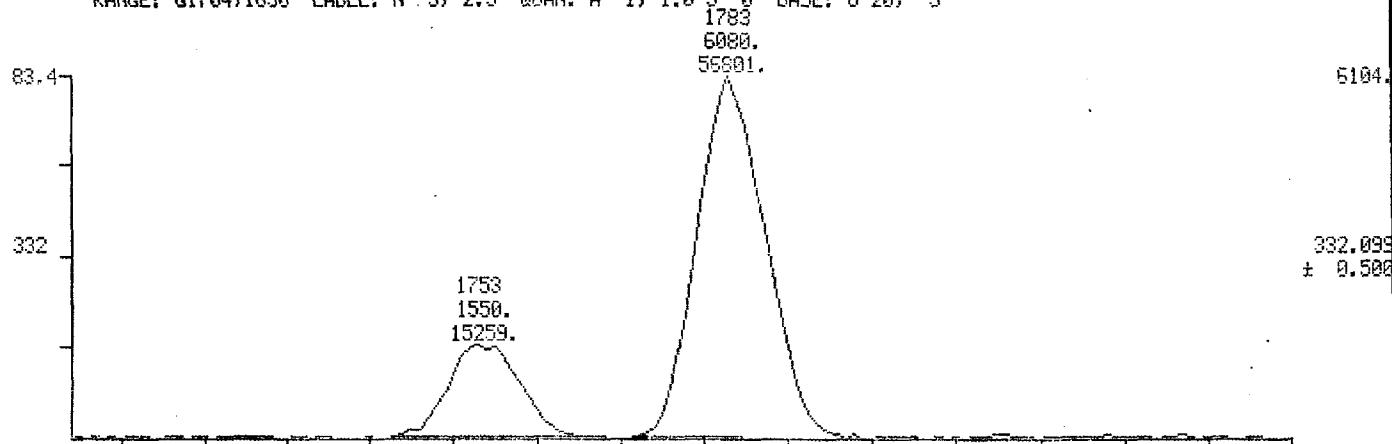
09/29/87 2:50:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/ 212-08 9.94G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



269T0

NID RIC

09/29/87 3:45:00

FILE: 09100101.d

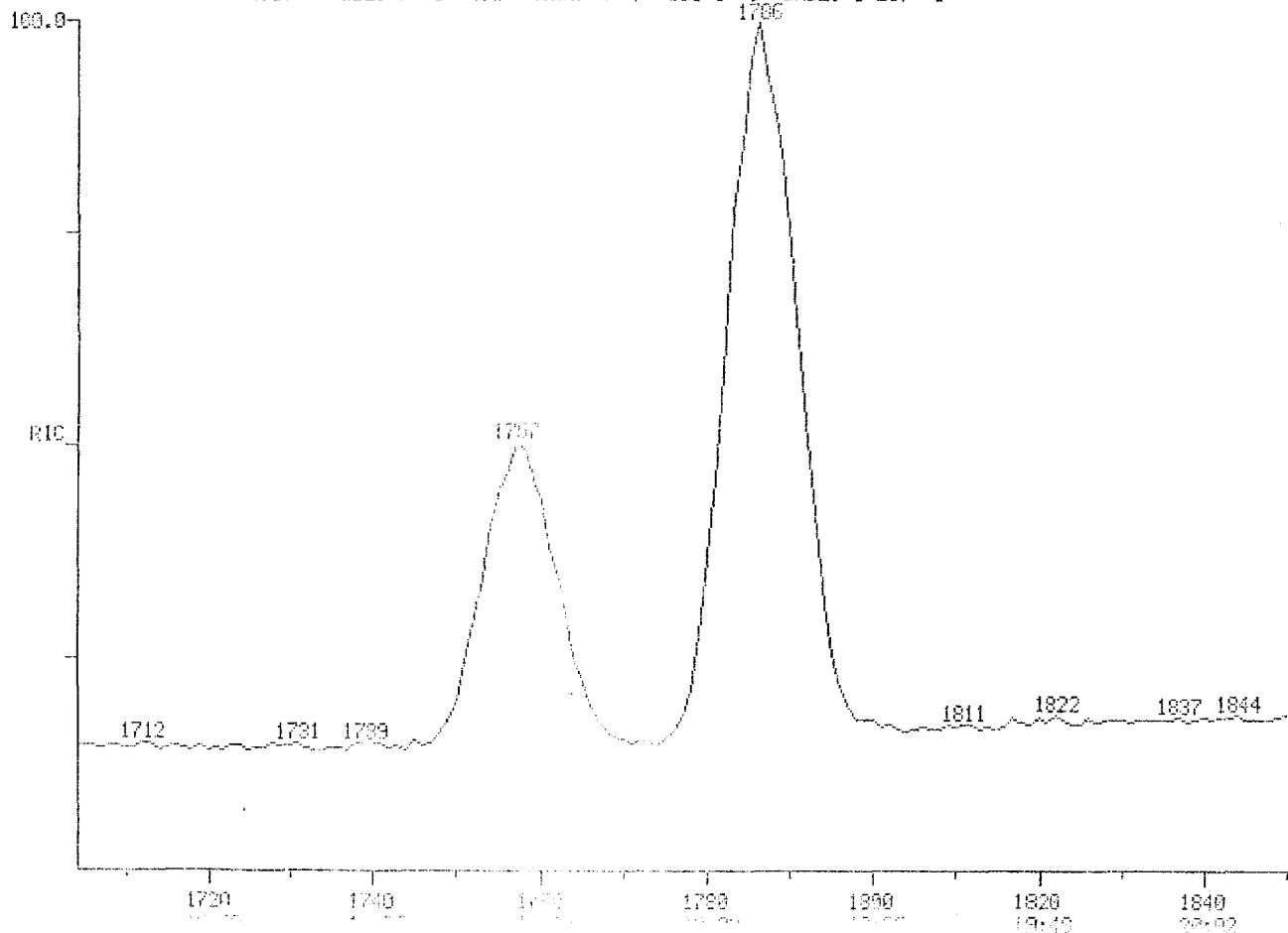
SCANS 1734 TO 1850

SPLIT: 01.00/0.07 #3

SAMPLE: CASE 8819; BATCH2/212-03/10,13G

CONDS.: 60M SP2331/100/100-200025/200-21004/0

RANGE: G1704.1850 LABEL: H 0, 4.0 GUN: A 0, 1.0 J 0, BASE: U 20, 3



13855

SCAN
TIME

011593

MID MASS CHROMATOGRAMS

DATA: SL72815 #1

SCANS 1704 TO 1850

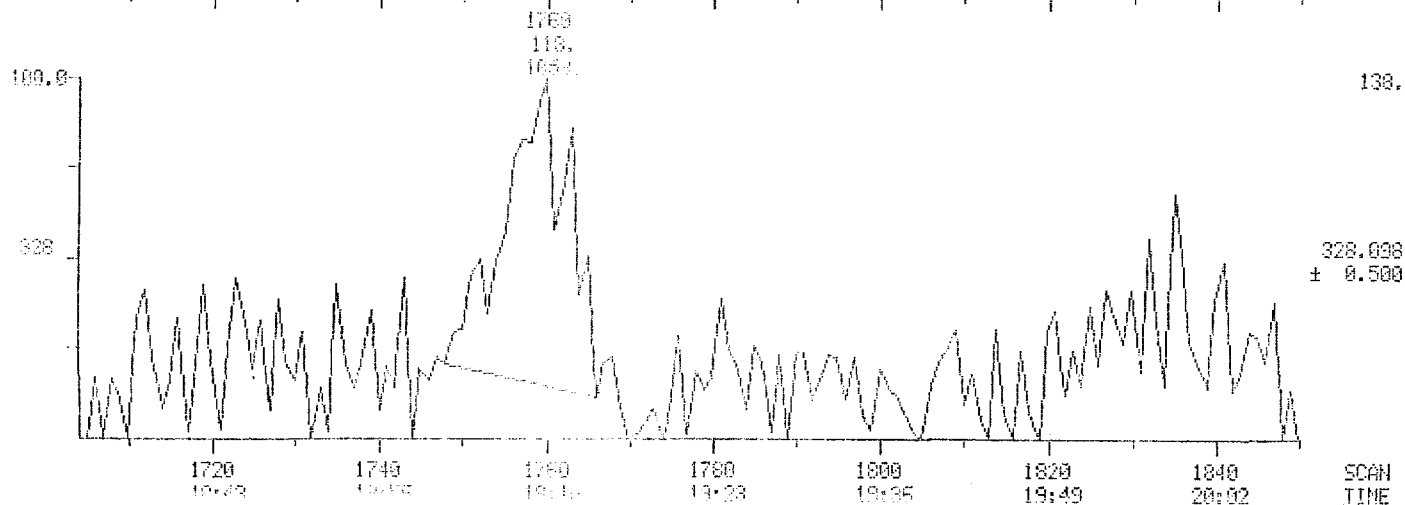
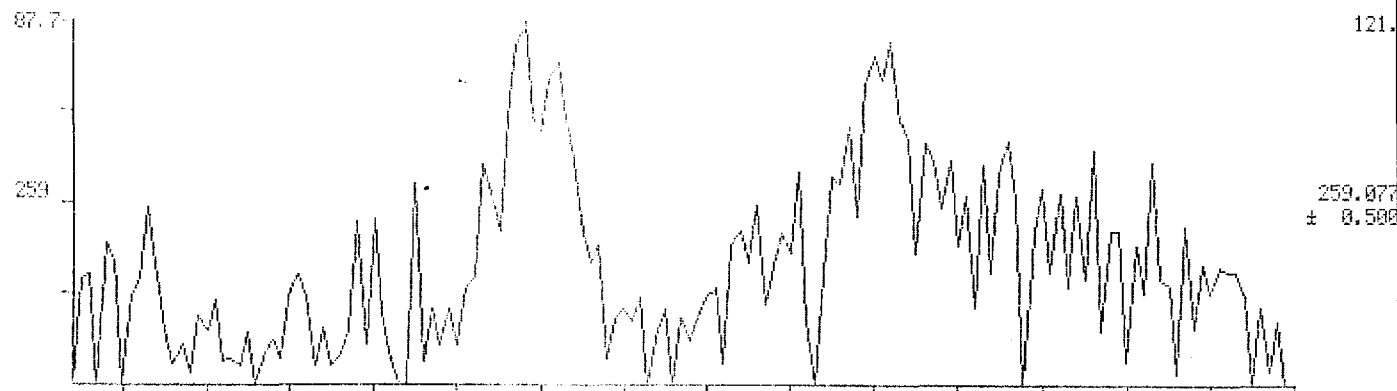
09/29/87 3:46:00

CALL: CAL082587 #3

SAMPLE: CASE 8019: BATCH2/212-89/10.130

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 OURN: A 1, 1.0 J 0 BASE: U 20, 3



011594

MID MASS CHROMATOGRAMS

DATA: SP23315 #1

SCANS 1704 TO 1850

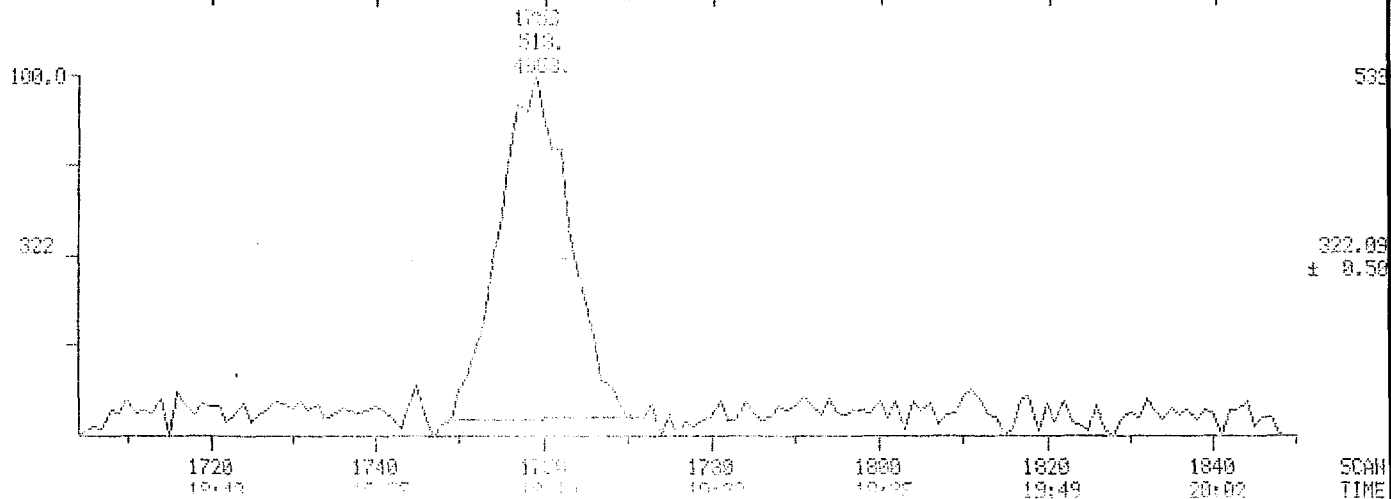
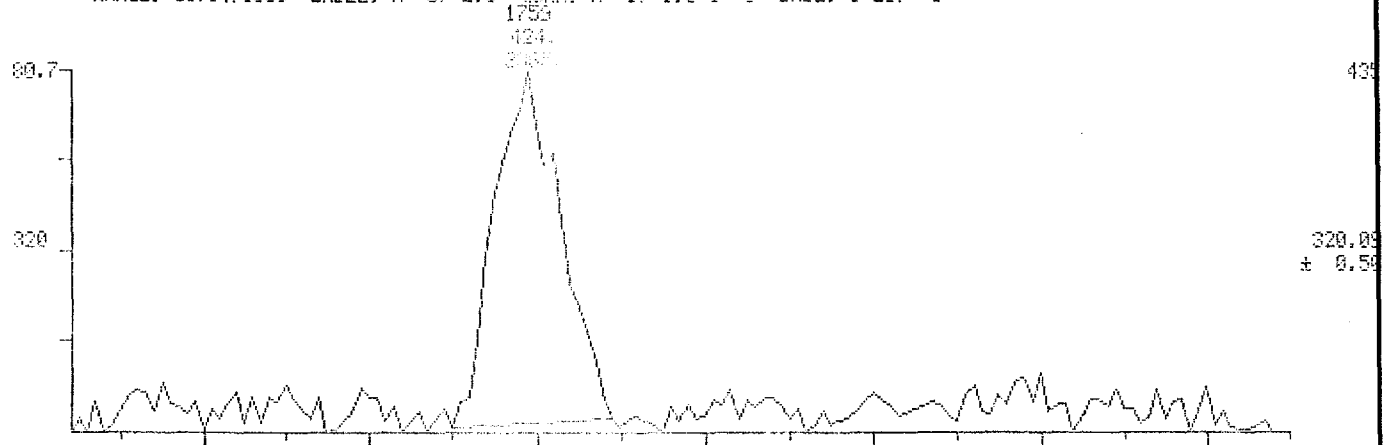
09/29/87 3:45:00

DATA: GNL002587 #3

SAMPLE: CASE 8019; BATCH2/212-09/19.130

CONDS.: 60M SP2331/100/100-200025/200-21004/3

RANGE: 61704.1850 LABEL: N 5; 2.5 QUAN: 0 1. 1.0 J 0 BASE: U 20, 3



435
320.09
± 0.59
533
322.09
± 0.59
SCAN
TIME

011595

MID MASS CHROMATOGRAMS

DATA: SEP2015 #1

SCANS 1704 TO 1850

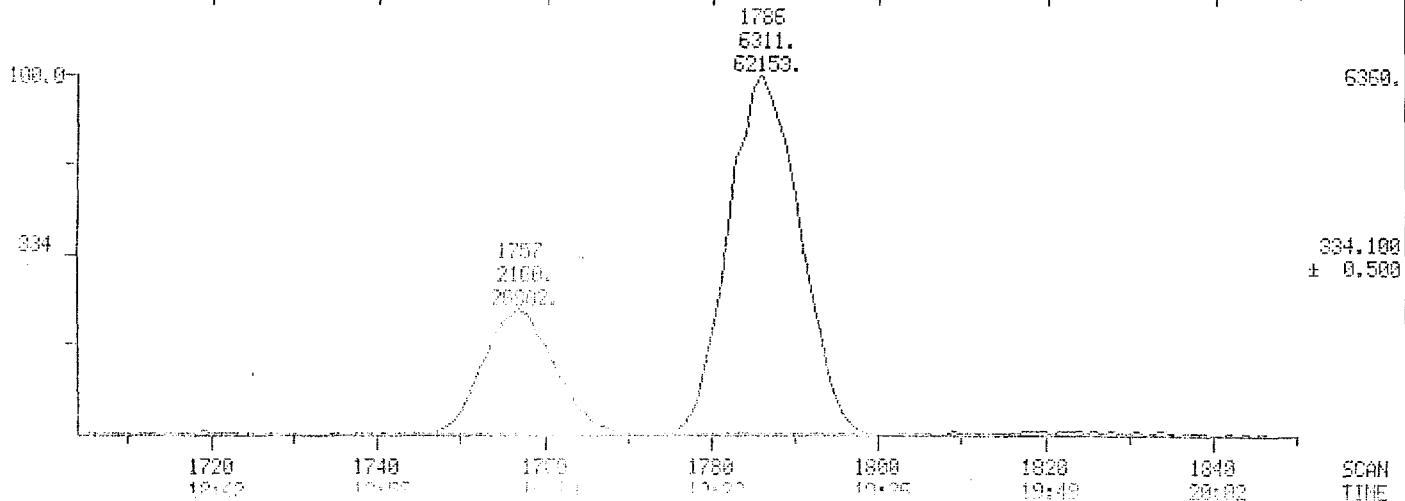
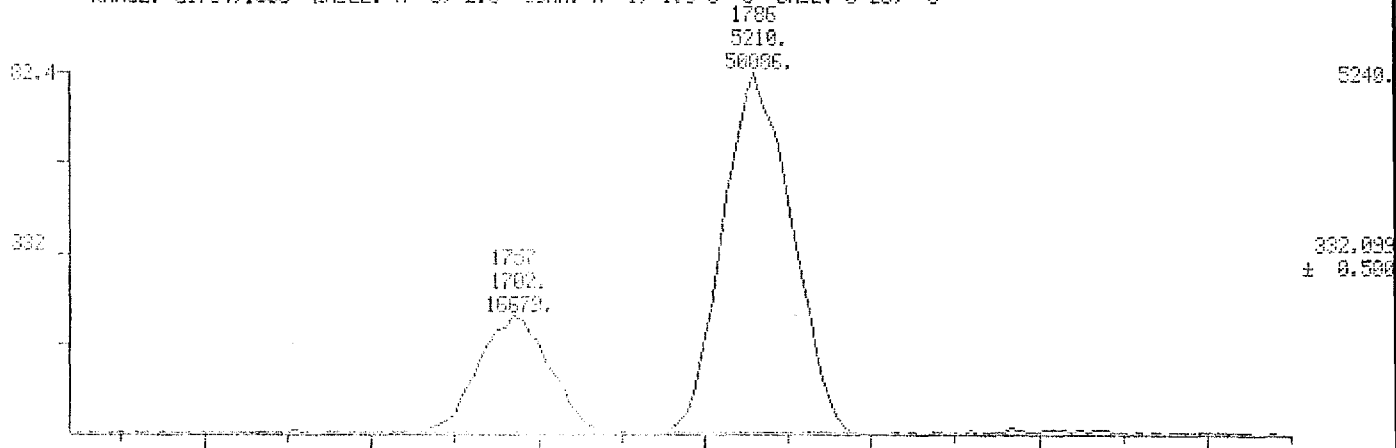
09/29/87 3:46:00

LJL15 CAL092597 #3

SAMPLE: CASE 8819; BATCH2/212-09-10.13E

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: H 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



969TT0

MID RIC

DATA: SEP2812 #1

SCANS 1704 TO 1850

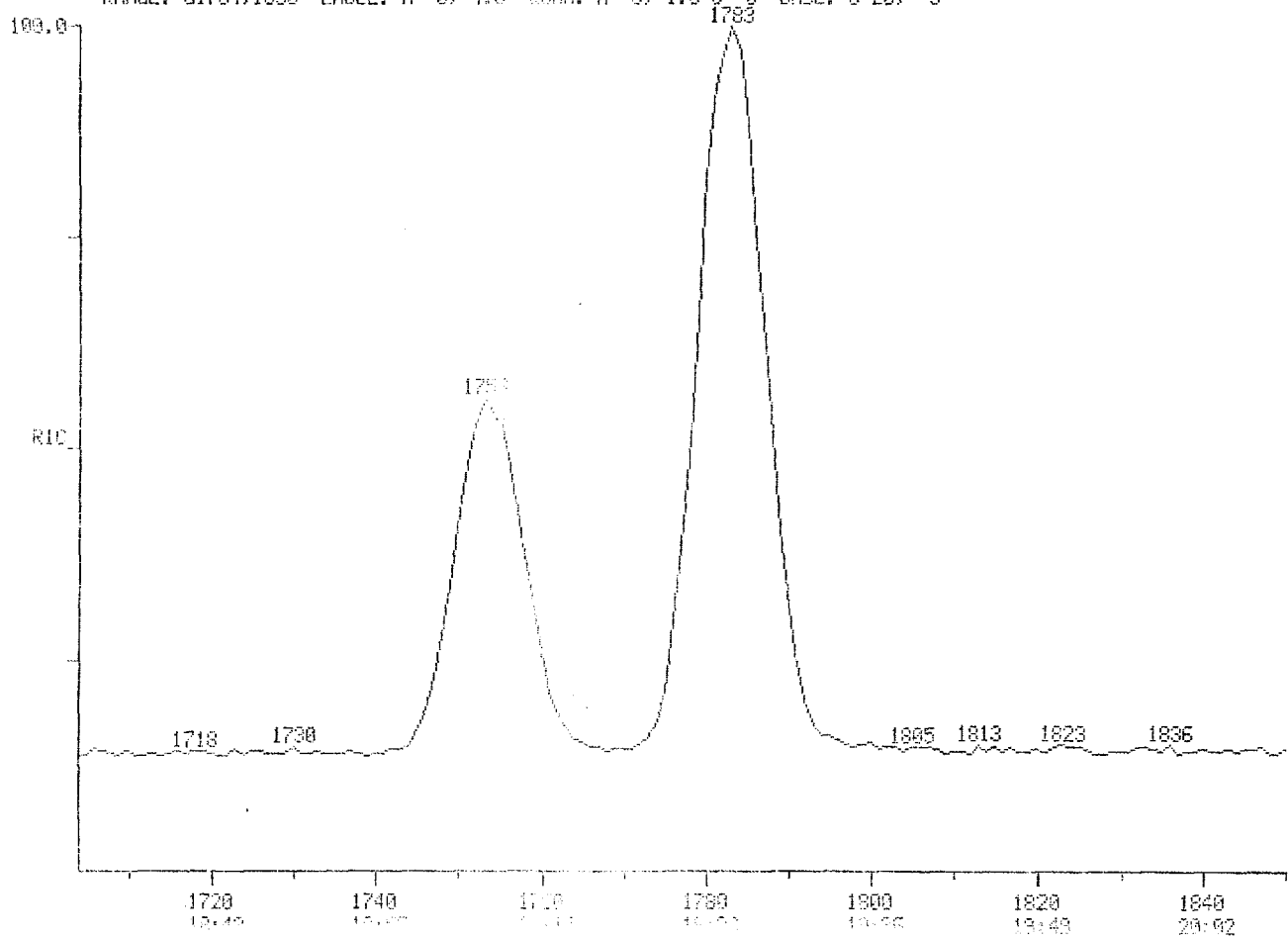
09/29/87 2:23:00

CALL: ONL002907 #3

SAMPLE: CASE 8819: BATCH2/ 212-10 10.076

CONDS.: 60M SP2331/100/100-290825/200-24081/0

RANGE: G1704.1850 LABEL: H 0, 4.0 OUSH: A 0, 1.0 J 0 BASE: U 20, 3



17200

SCAN
TIME

26977

HID MASS CHROMATOGRAMS

DATA: SEP2012 #1

SCANS 1704 TO 1850

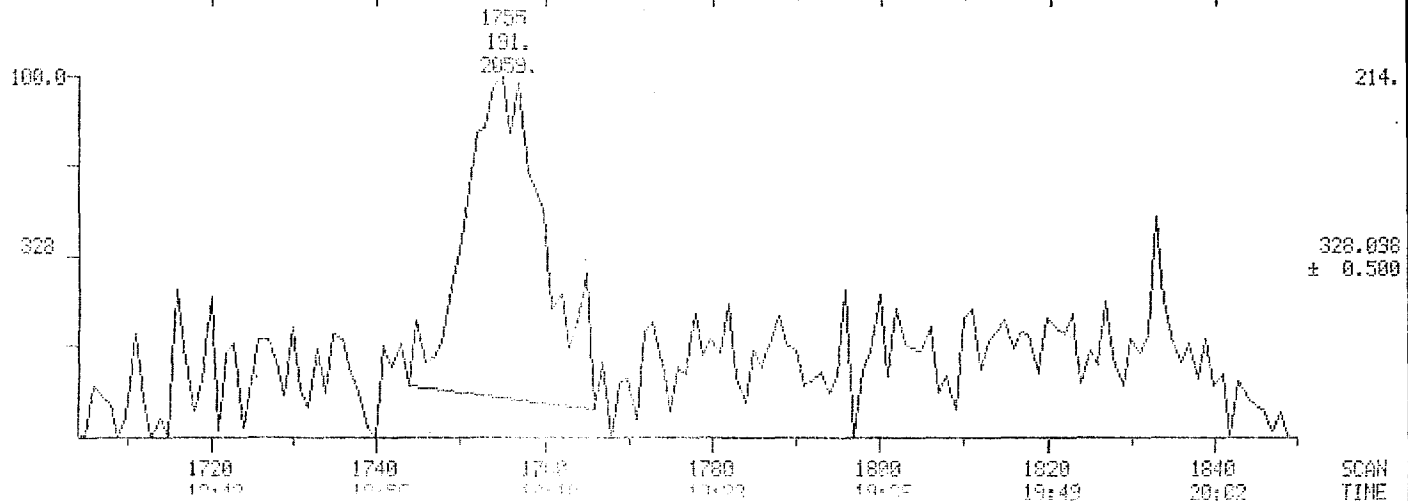
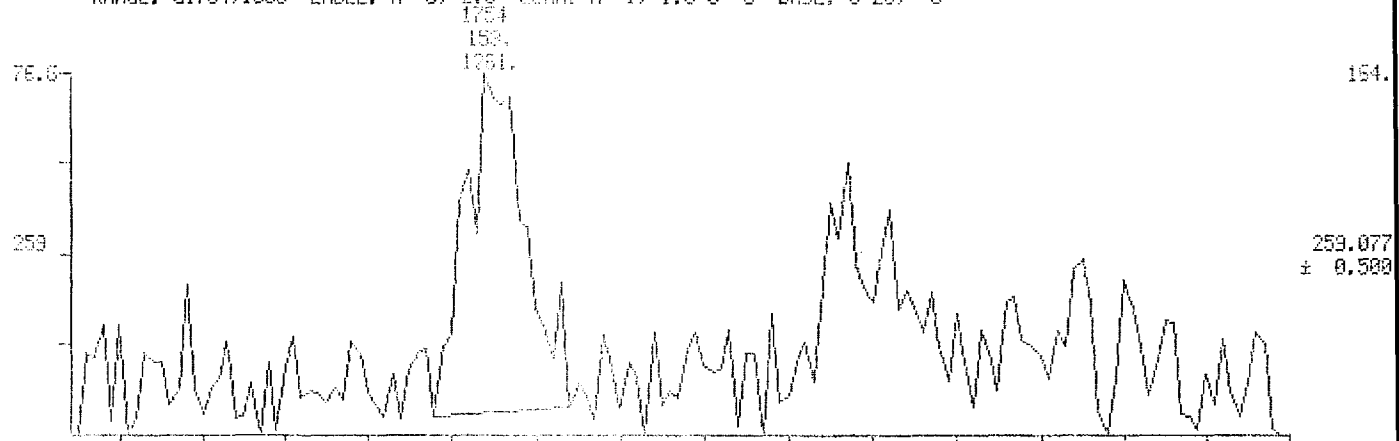
09/29/07 2:23:00

CAL1: CAL002587 #3

SAMPLE: CASE 8019: BATCH2/ 212-10 10.07G

COND.: 60M SP2331/100/100-200025/200 04001/3

RANGE: G1704,1850 LABEL: H 5, 2.5 OUSON: n 1, 1.0 J 0 BASE: U 20, 3



SCAN
TIME

869TT0

MID MASS CHROMATOGRAMS

DATA: SEP2812 #1

SCAN# 1704 TO 1850

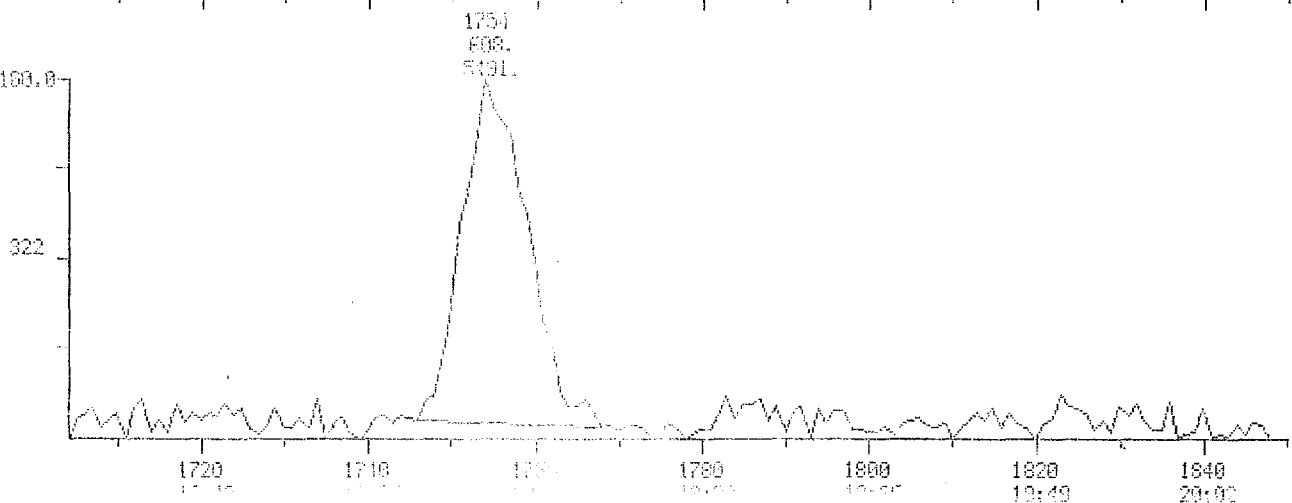
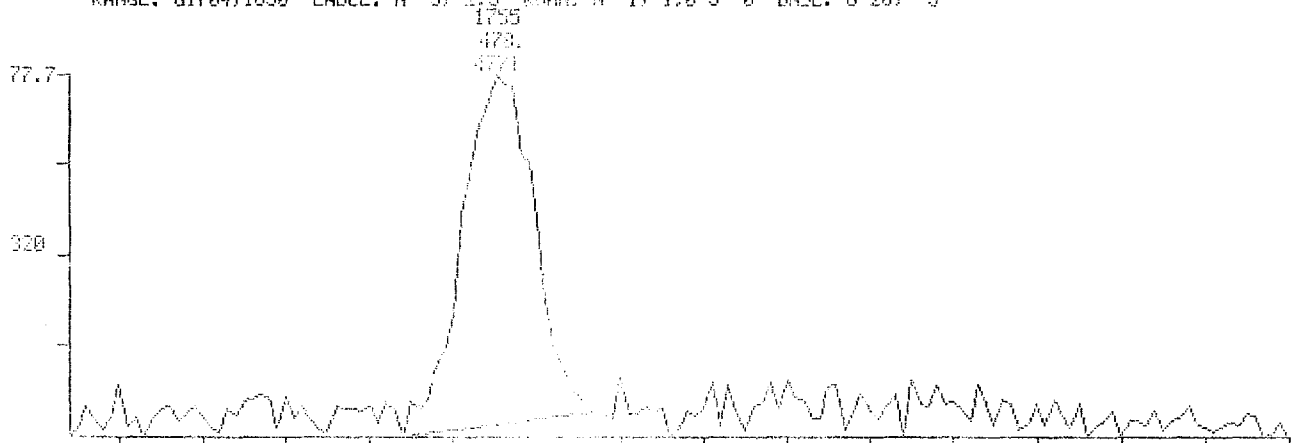
09/29/87 2:23:00

CALL: GAL992587 #3

SAMPLE: CASE 8819; BATCH# 212-10 10.07G

COND.: 60M SP2331/100/100-200MS/200 24004/3

RANGE: G1704,1850 LABEL: H 5, 2.5, 0.1M: A 1, 1.0 J 0 BASE: U 20, 3



49

320.09
± 0.50

636

322.09
± 0.50

SCAN
TIME

669110

MID MASS CHROMATOGRAMS

DATE: SEP2812 #1

SCANS 1704 TO 1850

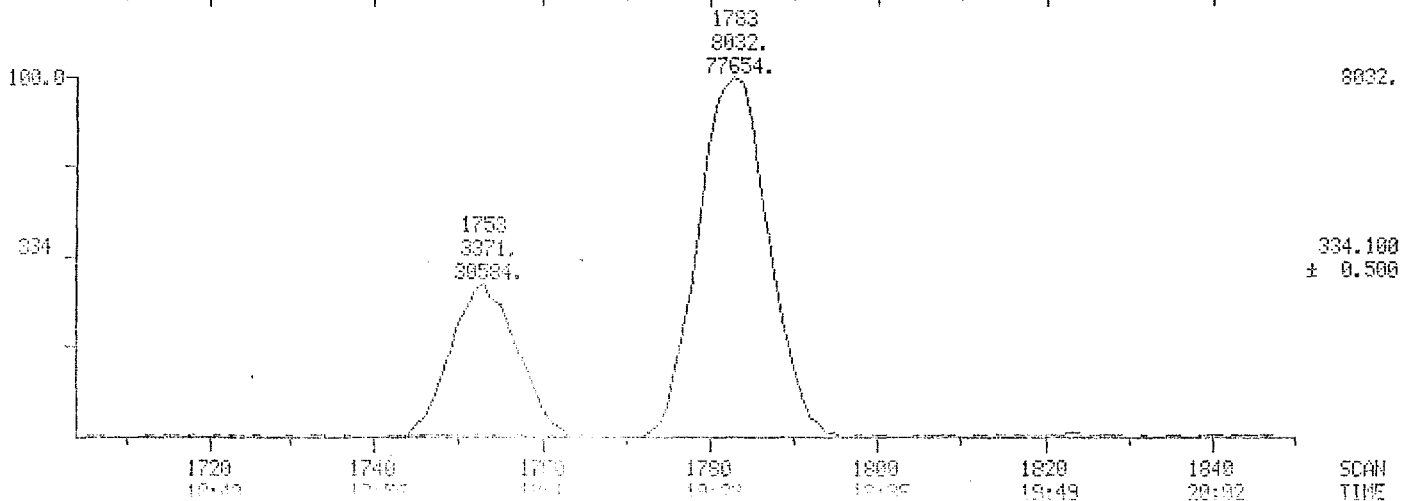
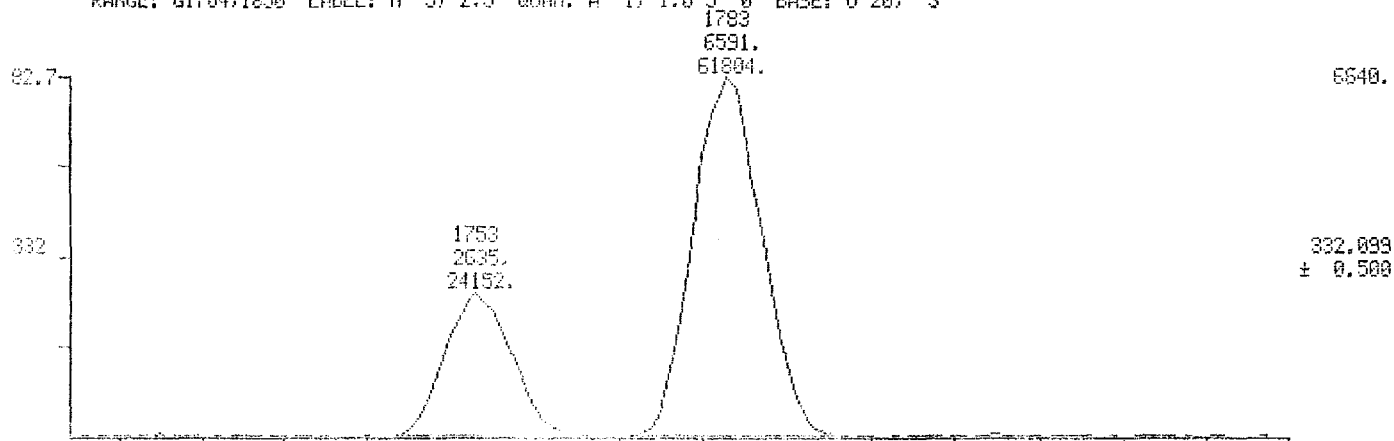
03/29/97 2:23:00

CAL: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/ 212-10 10.070

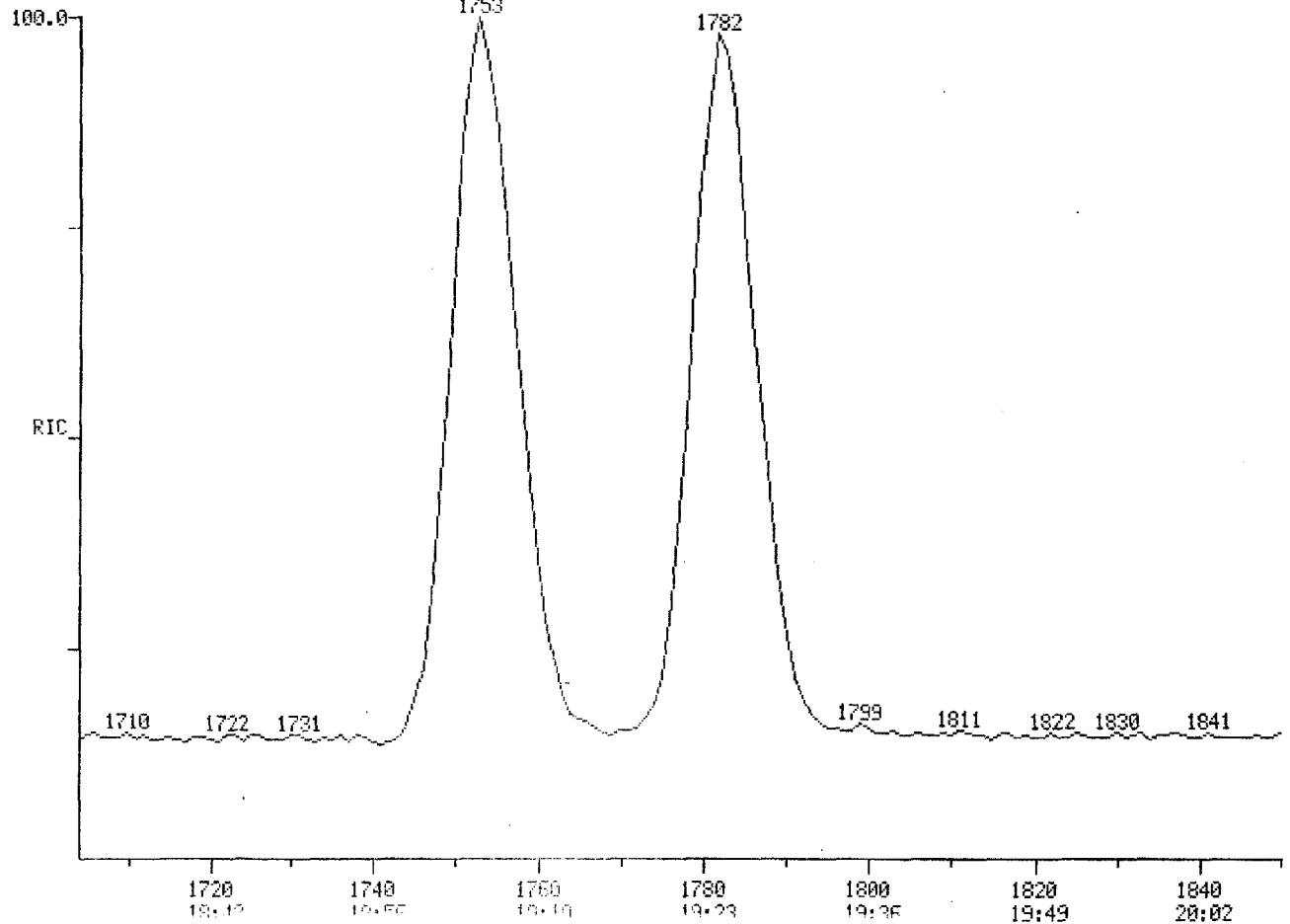
CONDS.: 50M 5P2331/100/100-200025/200-24601/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUANT: A 1, 1.0 J 0 BASE: U 20, 3



009110

MID RIC DATA: SEP2810 #1 SCANS 1704 TO 1850
09/29/87 1:27:00 CALI: CAL092587 #3
SAMPLE: CASE 8019: BATCH 2/ 212-11 9.96G
CONDS.: 60M 5P2331/100/100-200@25/200-240@4/8
RANGE: G1704,1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



17760

SCAN TIME

0119110

MID MASS CHROMATOGRAMS

DATA: SEP2810 #1

SCANS 1704 TO 1850

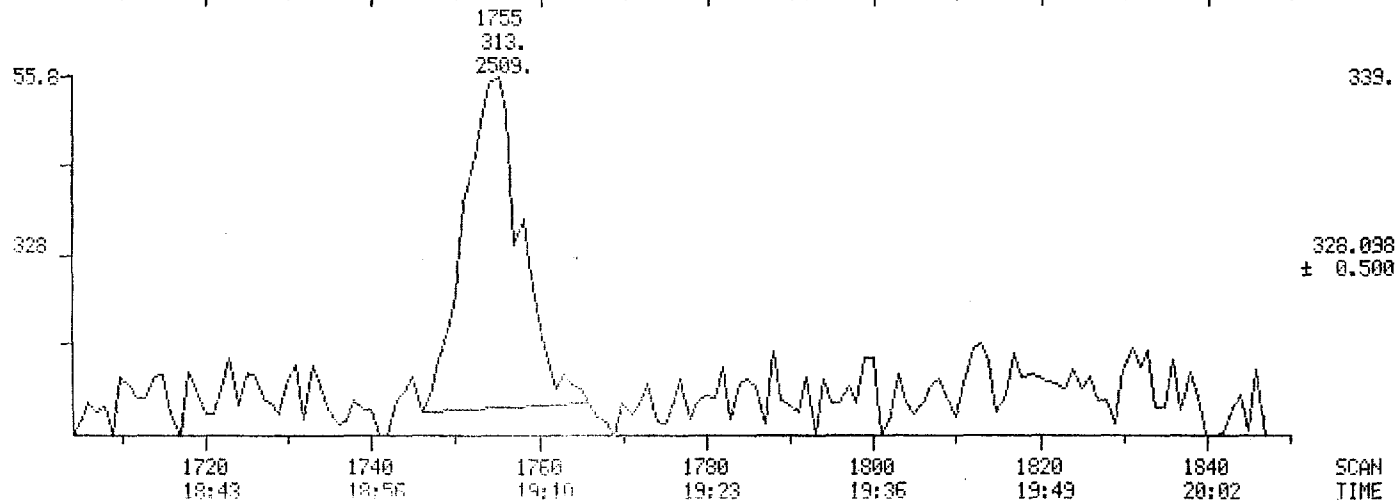
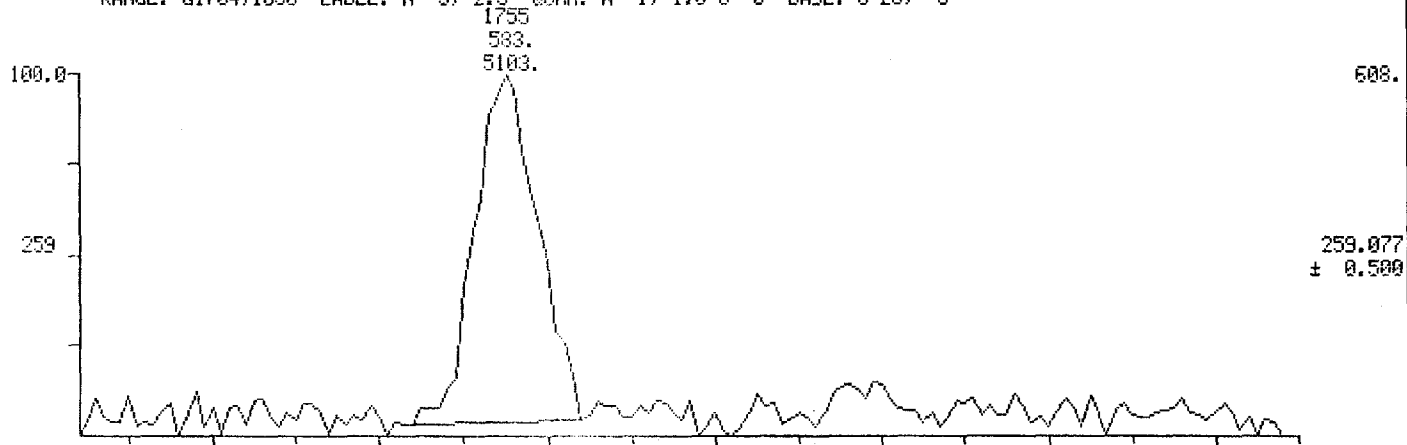
09/29/87 1:27:00

CAL1: CAL092587 #3

SAMPLE: CASE 8019: BATCH 2/ 212-11 9.96G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



309110

MID MASS CHROMATOGRAMS

DATA: SEP2810 #1

SCANS 1704 TO 1850

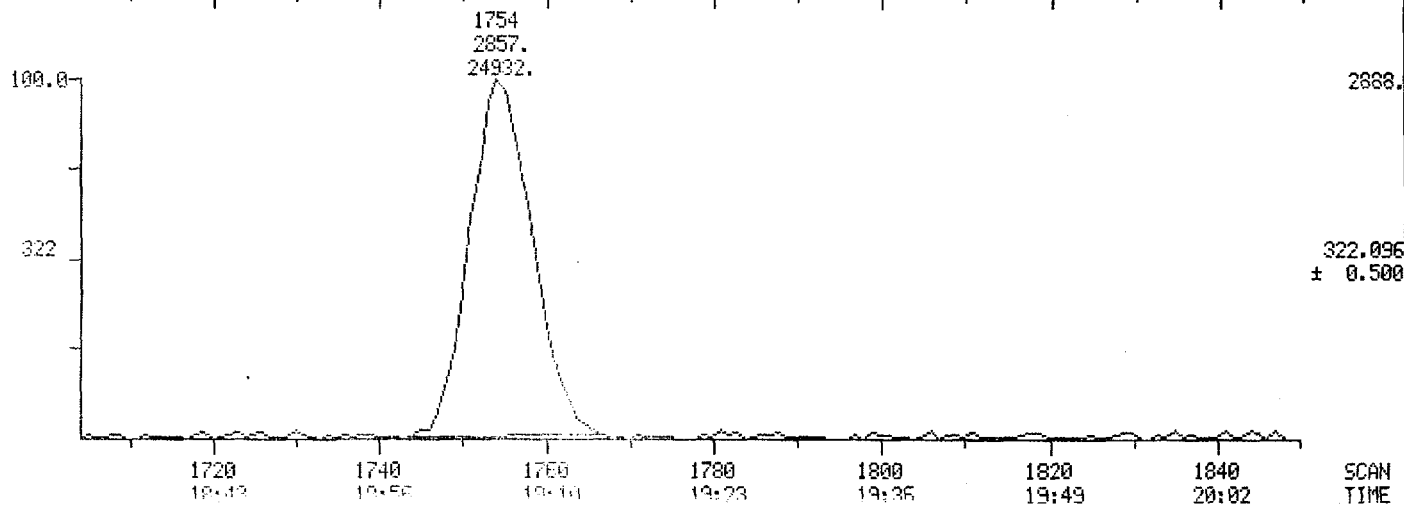
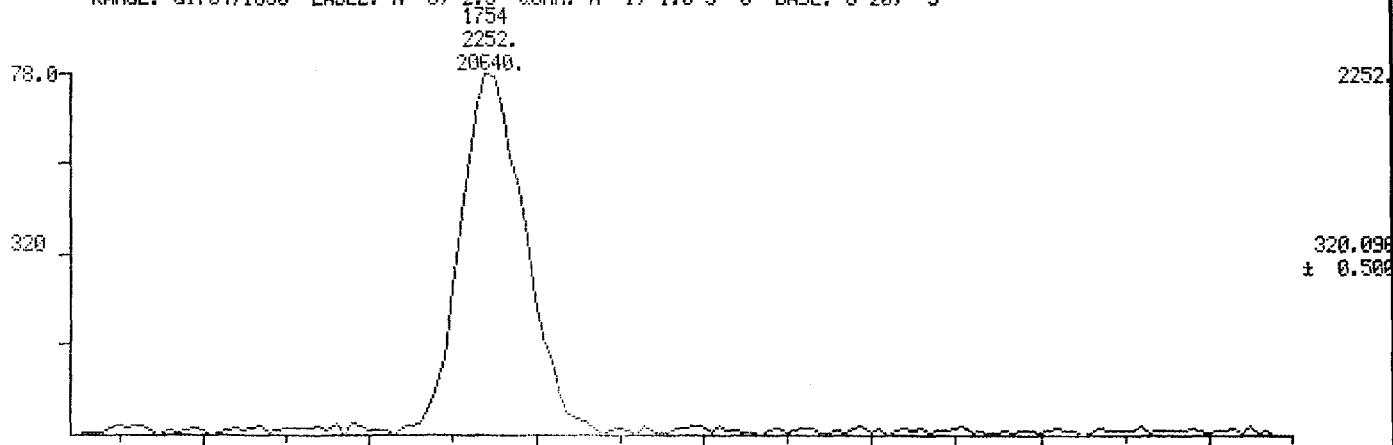
09/29/87 1:27:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH 2/ 212-11 9.96G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



09110

MID MASS CHROMATOGRAMS

DATA: SEP2810 #1

SCANS 1704 TO 1850

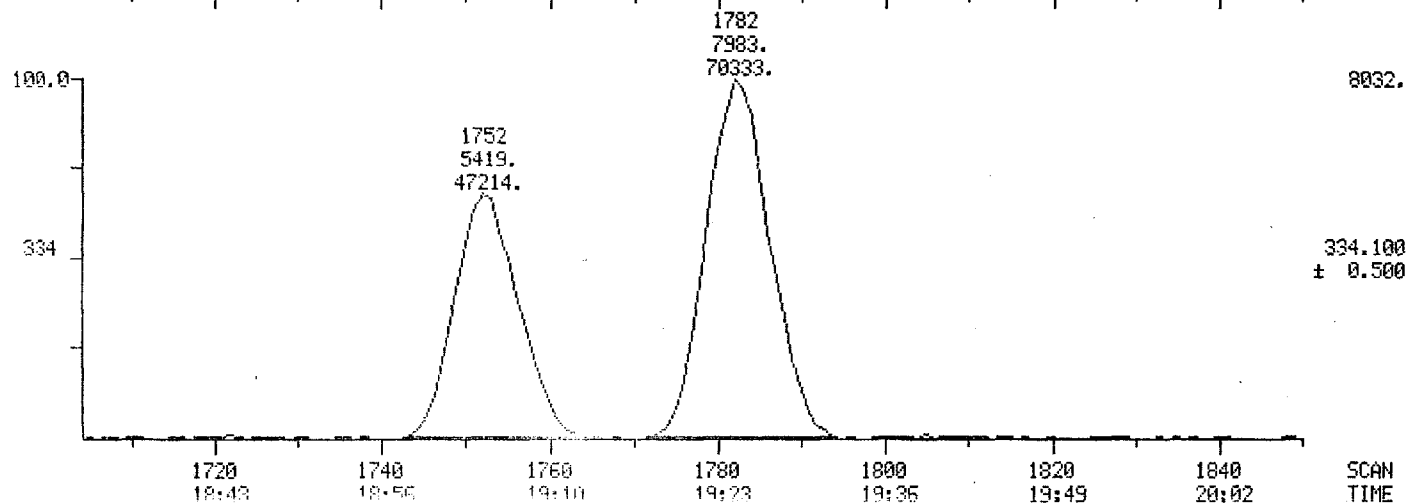
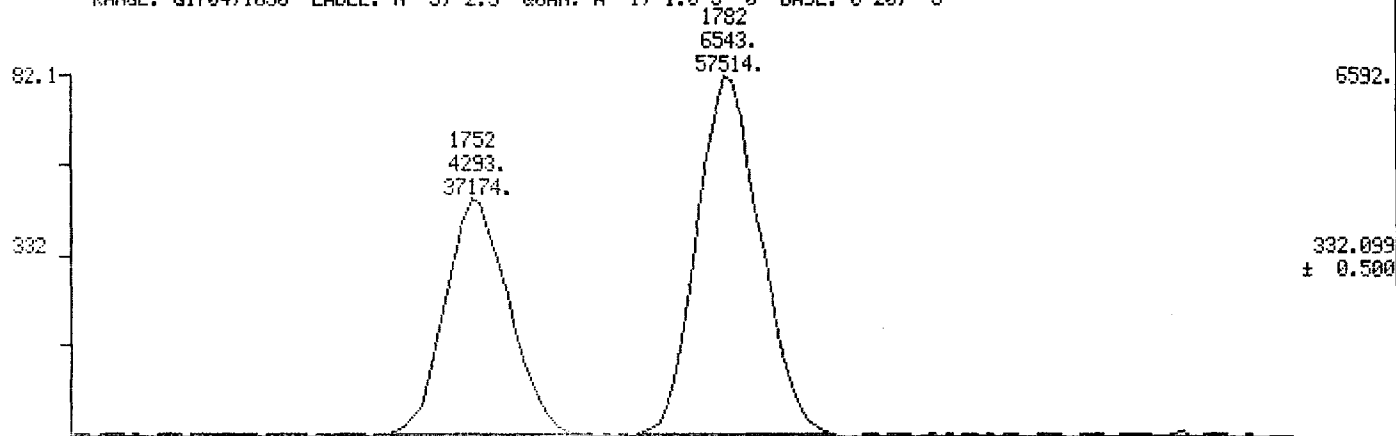
09/29/87 1:27:00

CALI: CAL092587 #3

SAMPLE: CASE 8019; BATCH 2/ 212-11 9.96G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/3

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011604

MID RIC

DATA: SEP2814 #1

SCANS 1704 TO 1850

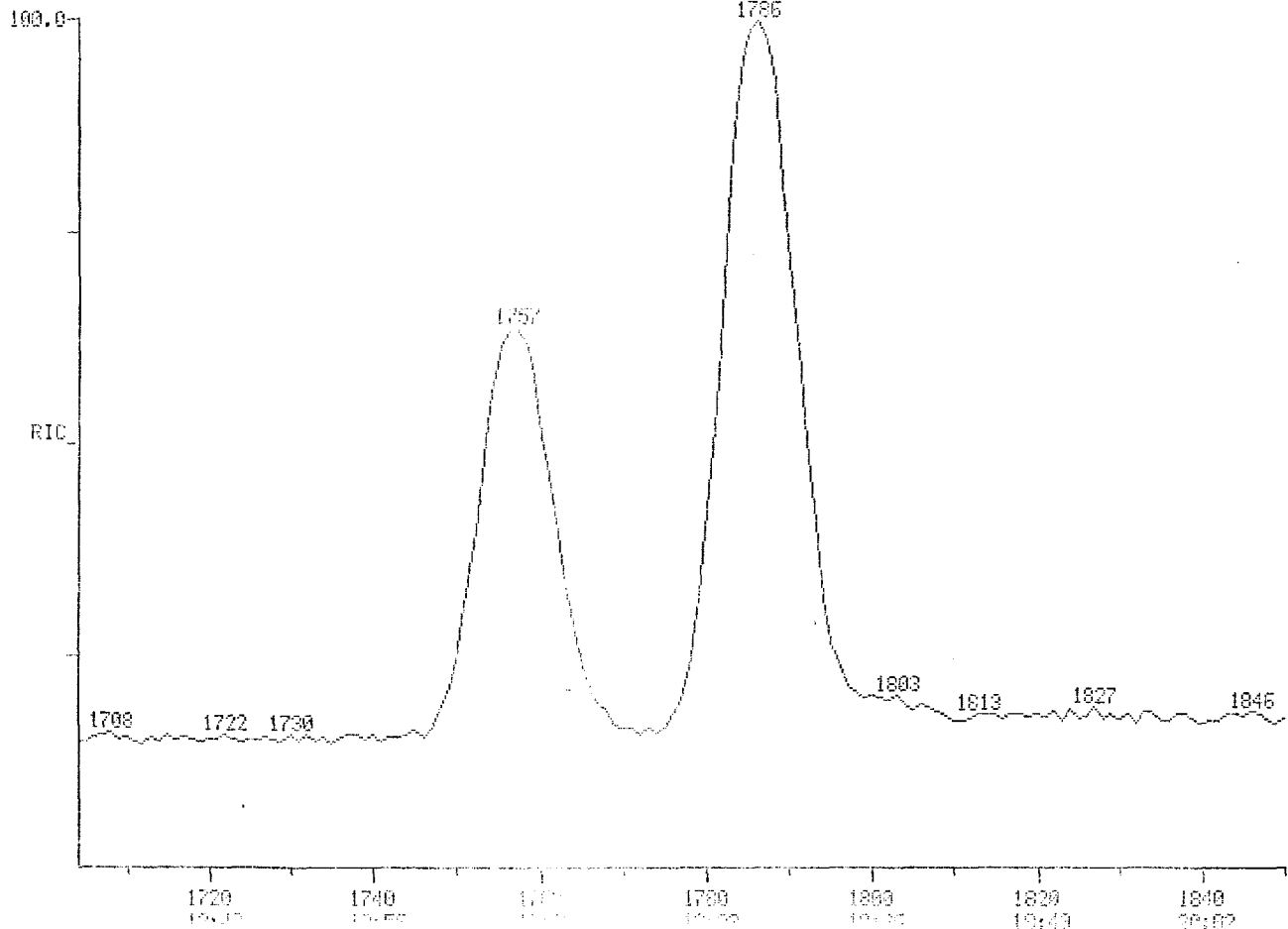
03/29/87 3:18:00

DN I: DAL002387 #3

SAMPLE: CASE 8019: BATCH2/ 212-12 10.020

CONDS.: 60M SP2331/100/100-200@25/200-24001/8

RANGE: G1704.1850 LABEL: N 0. 4.0 CING: A 0. 1.0 J 0. BASE: U 20. 3



13168

SCAN TIME

011605

HID MASS CHROMATOGRAMS

Date: SEP2814 #1

SCANS 1764 TO 1850

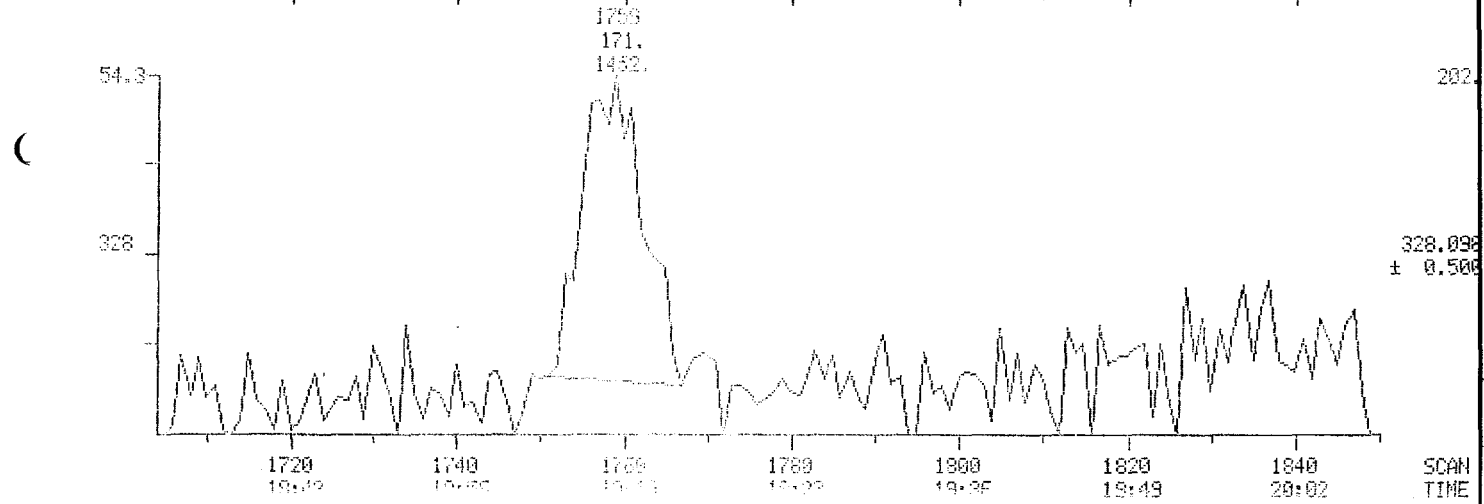
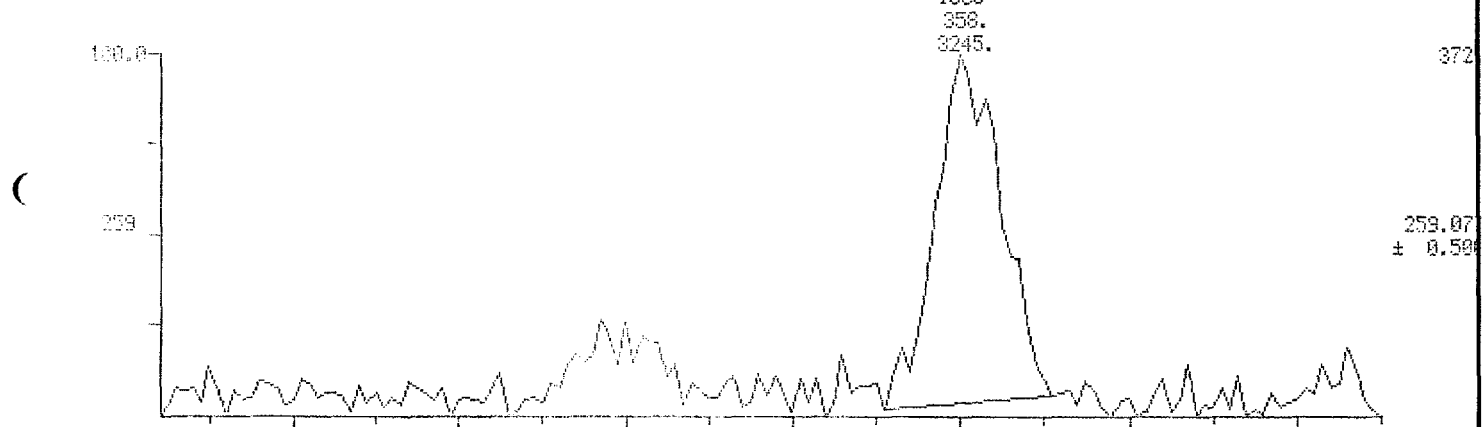
09/29/87 3:18:00

CALI: CAL092587 #3

SAMPLE: CASE 8019; BATCH2/ 212-12 10.02G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5. 2.5 QUANT: A 1, 1.0 J 0 BASE: U 20, 3



SCAN TIME

01160

MSD MASS CHROMATOGRAMS

DATE: SEP2314 #1

SCANS 1704 TO 1850

09/29/87 3:18:00

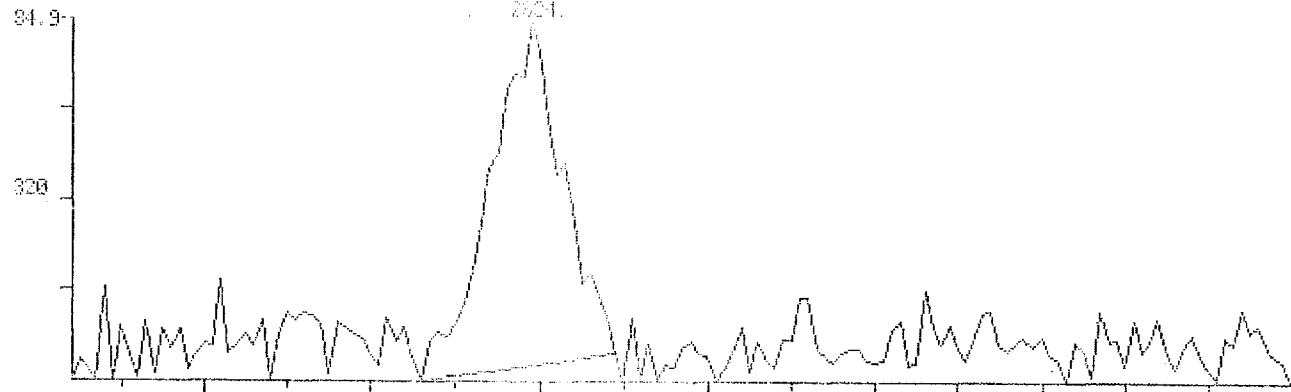
CH1: CAL0902587 #3

SAMPLE: CASE 8019: BATCH2/ 212-12 10.02G

CONDS.: 60M SP2331/100/100-200025/200-24004/3

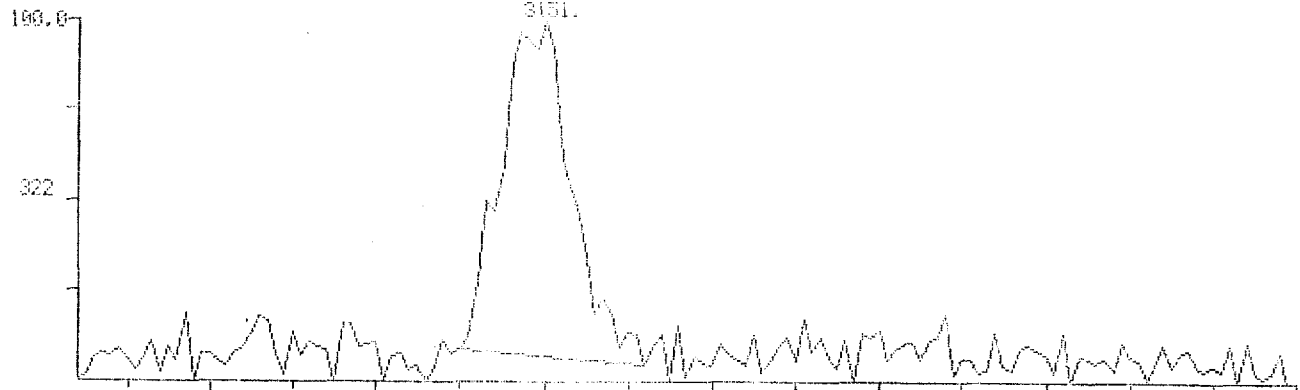
RANGE: G1704.1650 LABEL: N 5, 2.5 QM: N 1, 1.0 J 0 BASE: U 20, 3

1759
321.
2921.



293.
320.096
± 0.500

1760
321.
3151.



345.
322.096
± 0.500

1720
17:20

1740
17:40

1760
17:59

1780
18:00

1800
18:00

1820
18:00

1840
20:00

SCAN
TIME

209110

MID MASS CHROMATOGRAMS

DATA: SEP2814 #1

SCANS 1704 TO 1850

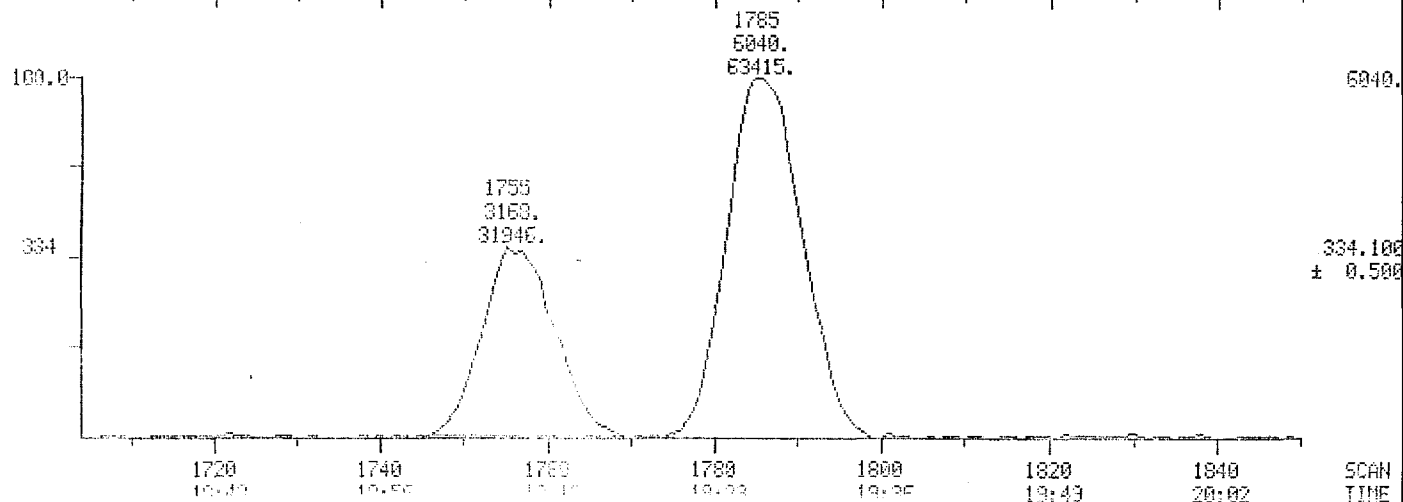
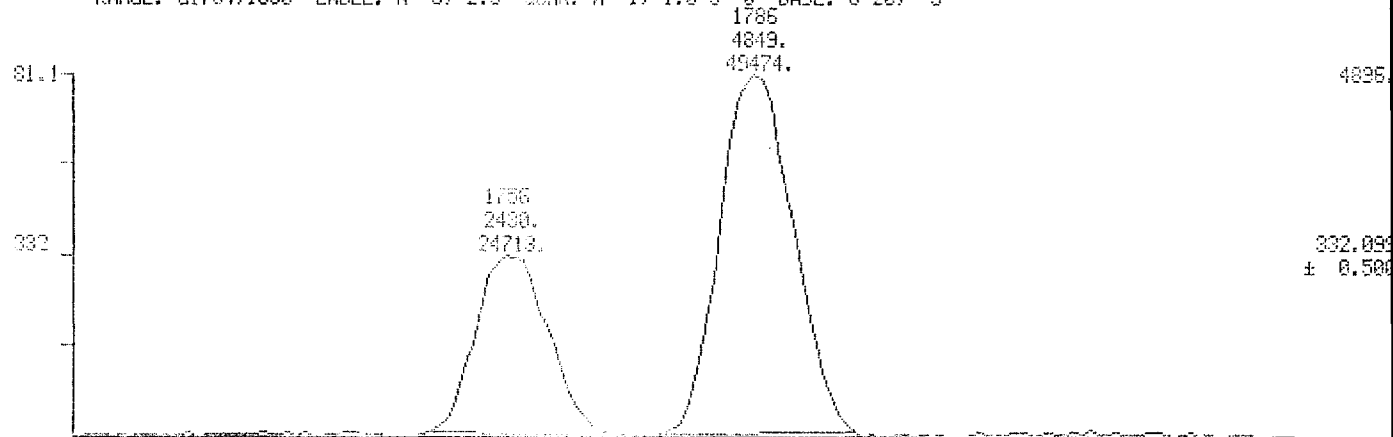
09/29/87 3:18:00

CALI: CNL092537 #3

SAMPLE: CASE 8019: BATCH2/ 212-12 10.030

CONDS.: 50M 5F2331/100/100-200E25/200-240E1/8

RANGE: G1704,1850 LABEL: H 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



303110

MID RIC

DATA: SCP2000 #1

SCANS 1704 TO 1850

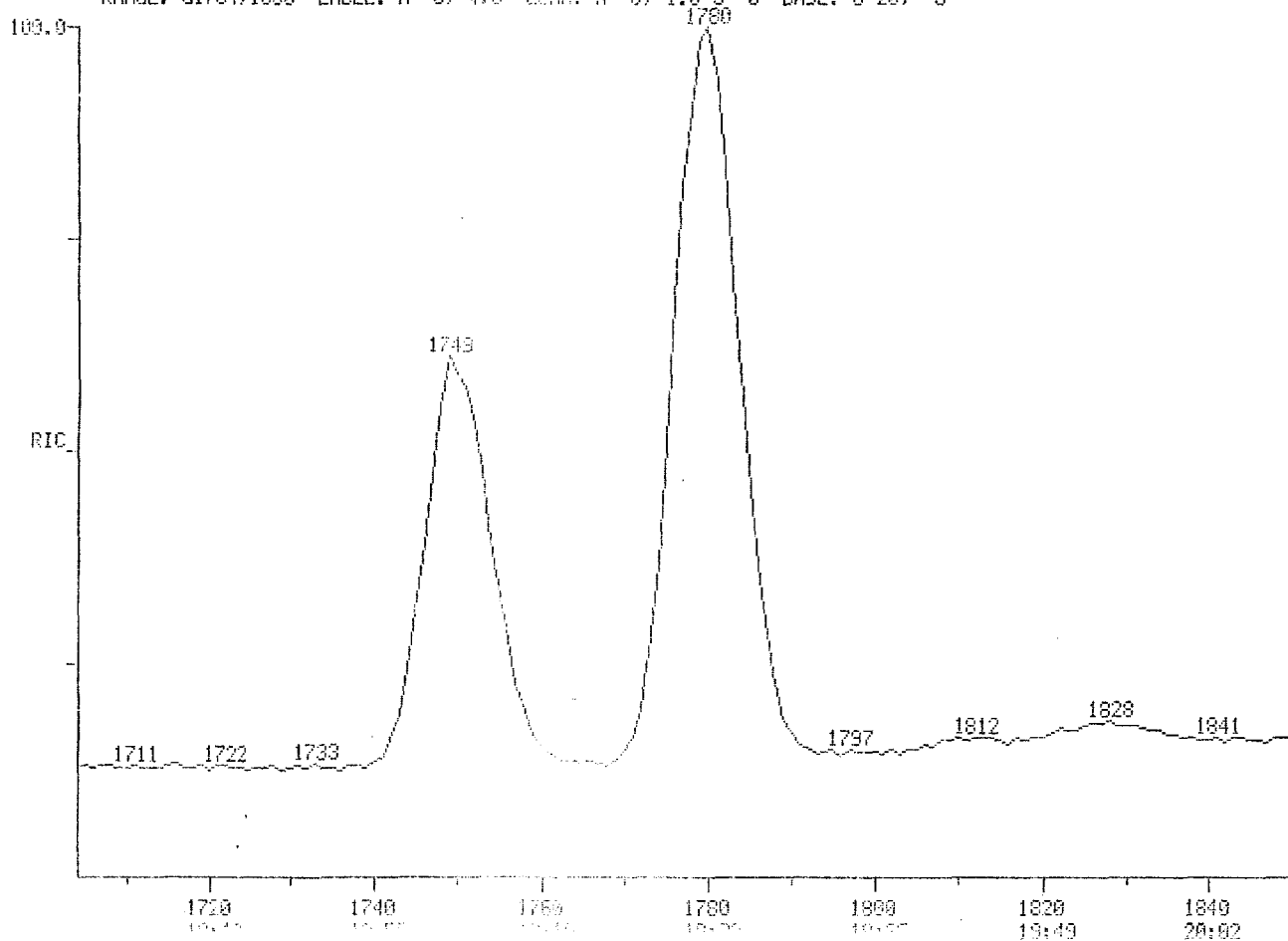
09/29/87 0:59:00

CALL: CAL000587 #3

SAMPLE: CASE 0019: BATCH 2/ 212-13 10.13G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0, 4.0 UMIN: A 0, 1.0 J 0 BASE: U 20, 3



20032.

SCAN
TIME

011601

HID MASS CHROMATOGRAMS

DATA: SLP2009 #1

SCANS 1704 TO 1850

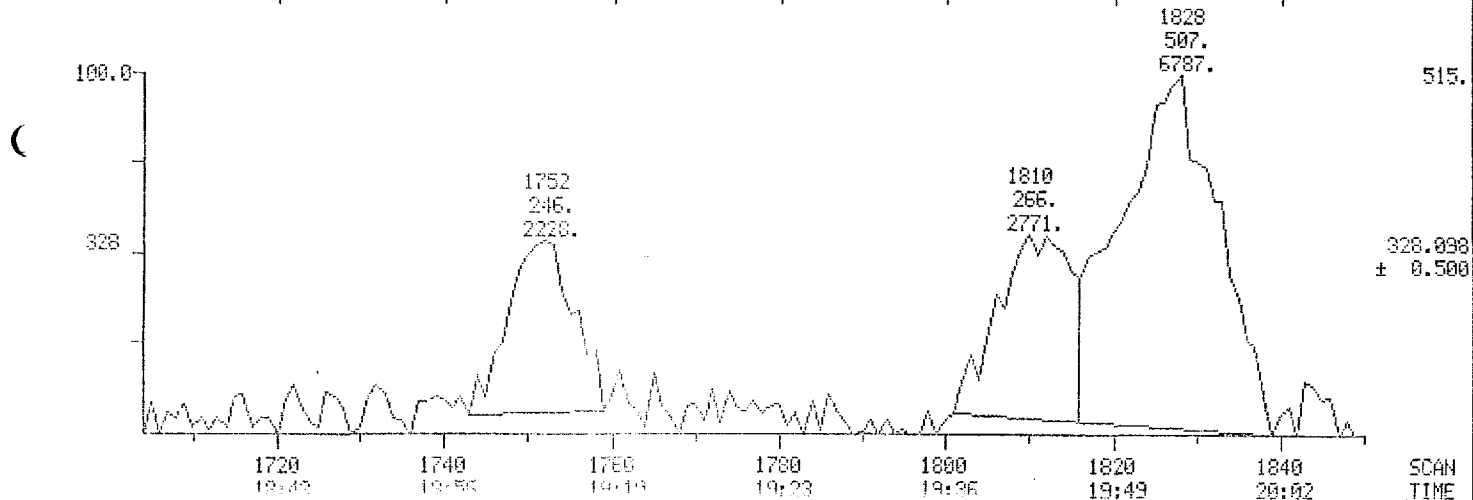
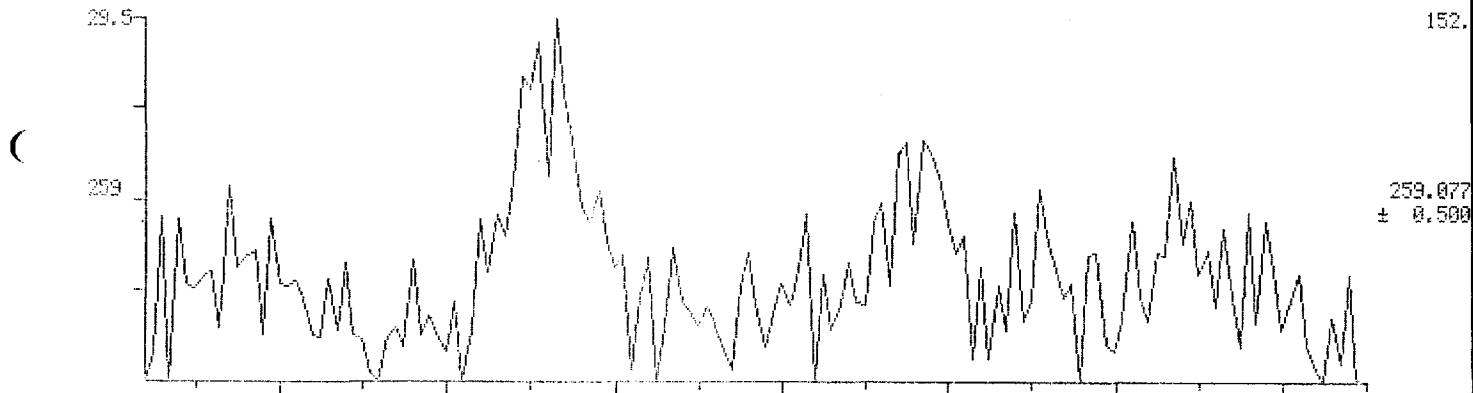
09/29/87 0:53:00

CALI: DAL092587 #3

SAMPLE: CASE 8019: BATCH 2/ 212-13 10.13G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: H 5, 2.5 CURVE: A 1, 1.0 J 0 BASE: U 20, 3



019110

MID MASS CHROMATOGRAMS

DATE: SEP2889 #1

SCANS 1704 TO 1850

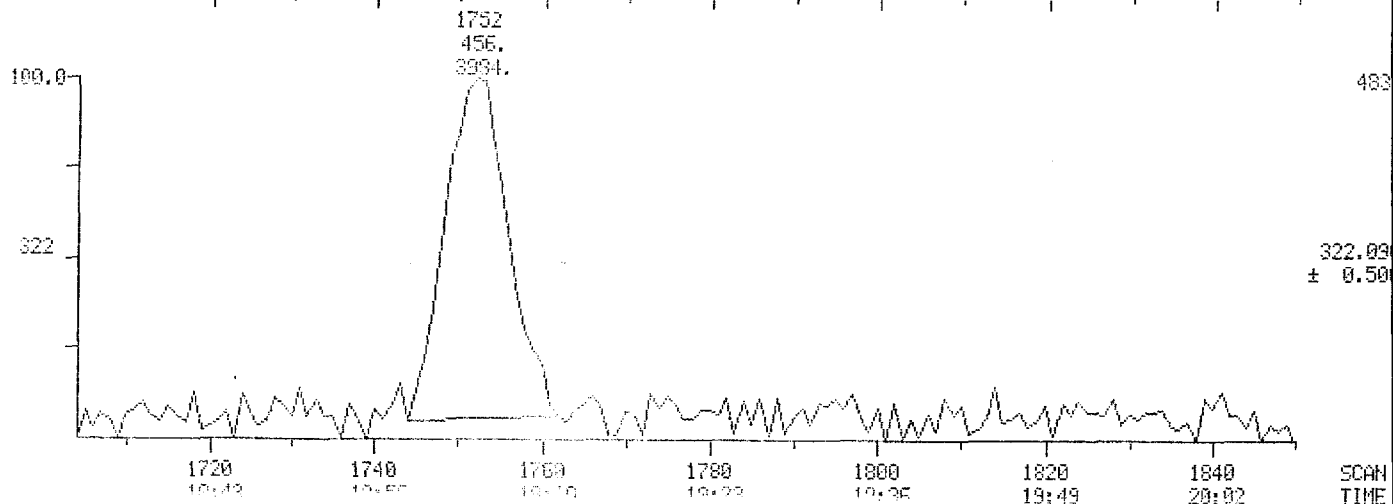
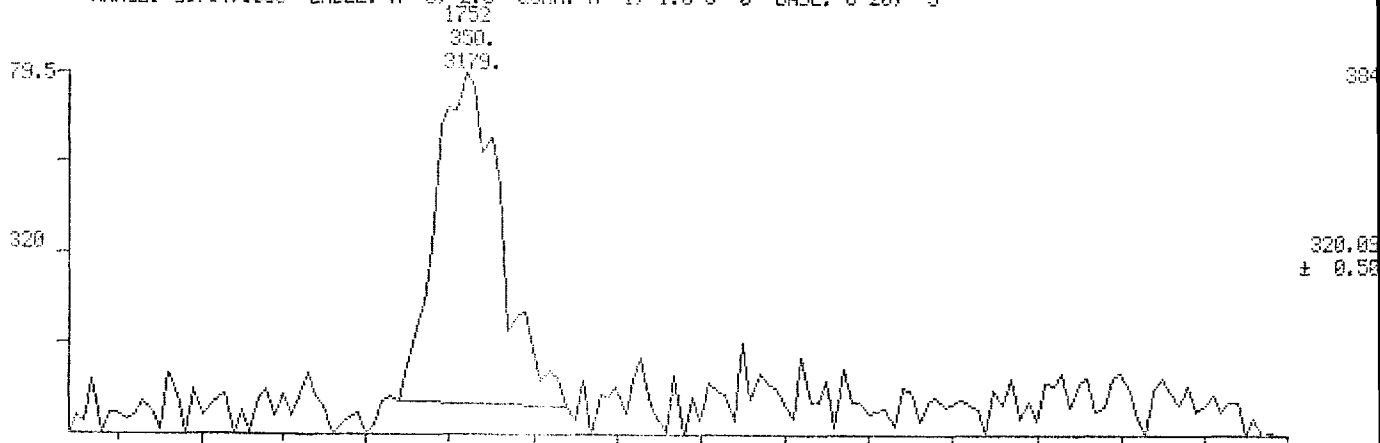
09/29/87 0:59:00

CAL1: CAL692587 #3

SAMPLE: CASE 8019: BATCH 2/ 212-13 10.13G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: 61704.1850 LABEL: N 5, 2.5 OUCH: 0 1, 1.0 J 0 BASE: U 20, 3



119110

MID MASS CHROMATOGRAMS

DATA: SEP2809 #1

SCANS 1704 TO 1850

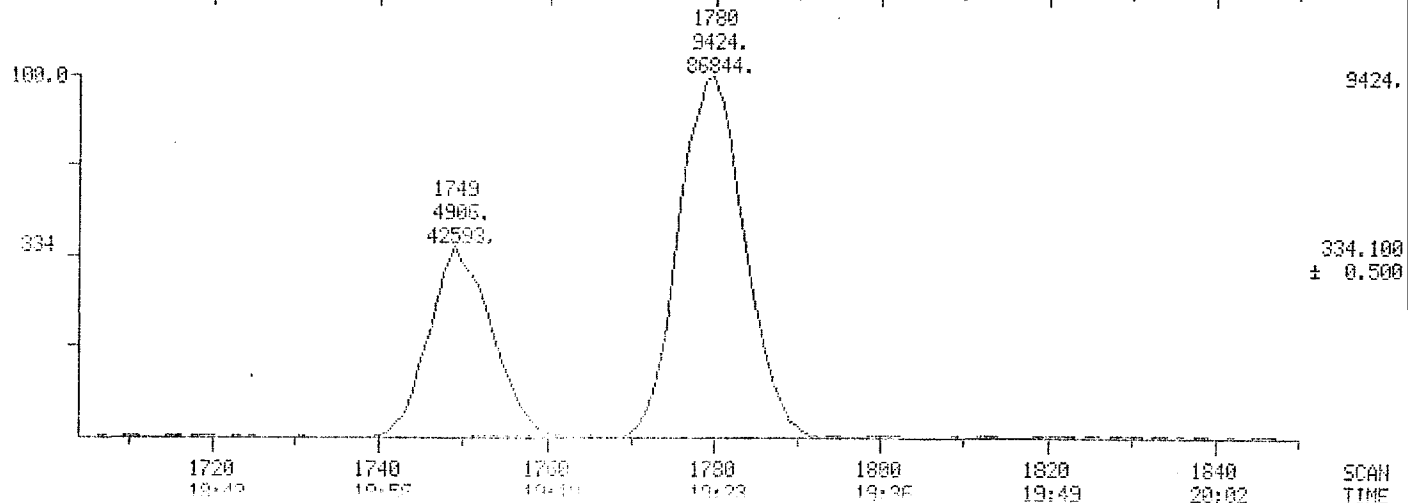
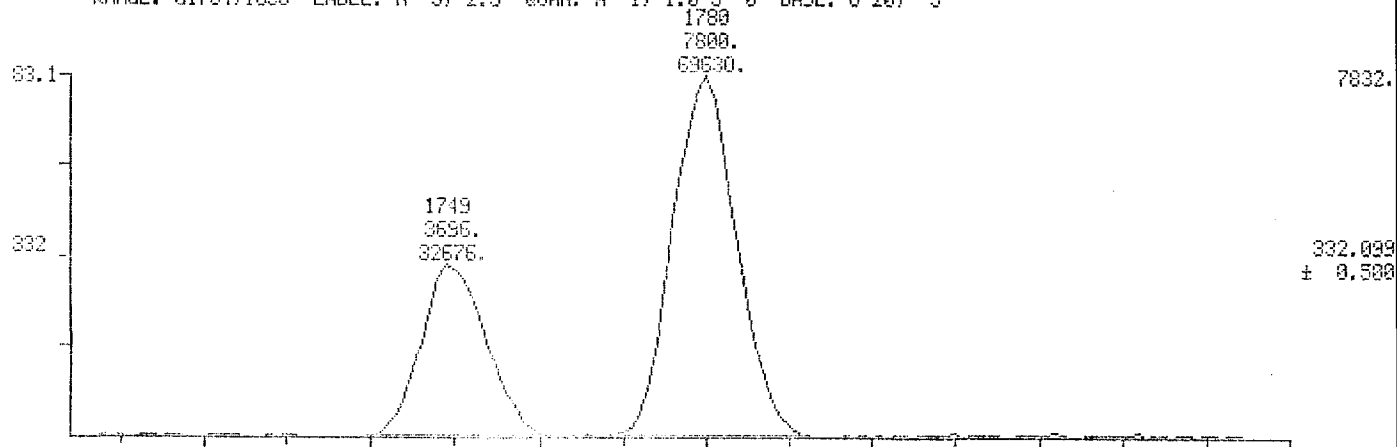
09/29/87 0:59:00

CALI: CAL992587 #3

SAMPLE: CASE 8019: BATCH 2/ 212-13 10.13G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 5; 2.5 QUAN: A 1; 1.0 J 0 BASE: U 20; 3



011613

MID RIC

10/01/87 15:45:00

SAMPLE: CASE 8019: BATCH2/212-14/10.00G

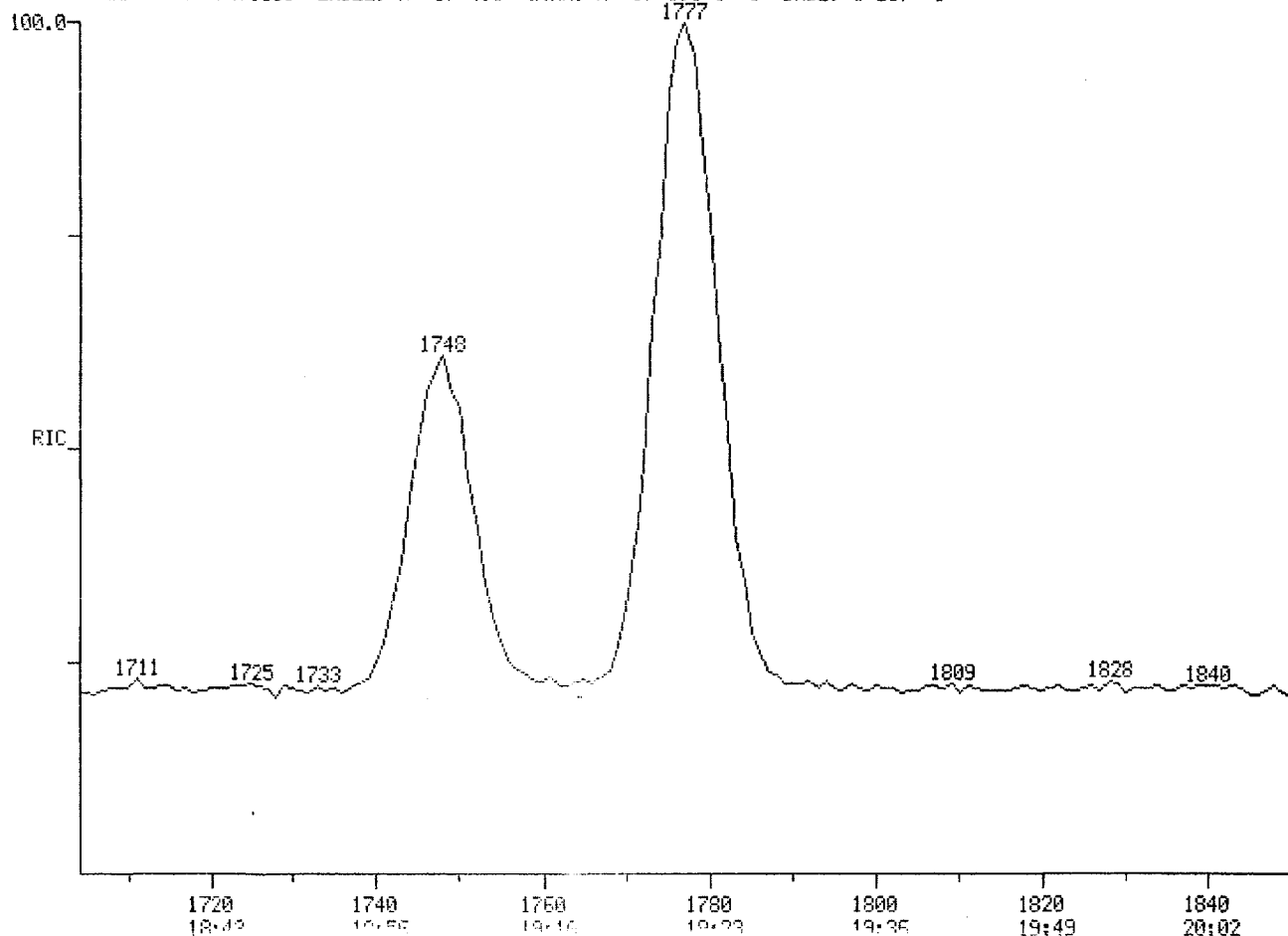
CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: OCT0185 #1

CALI: CAL092587 #3

SCANS 1704 TO 1850



12256.

SCAN TIME

011613

MID MASS CHROMATOGRAMS

DATA: OCT0105 #1

SCANS 1704 TO 1850

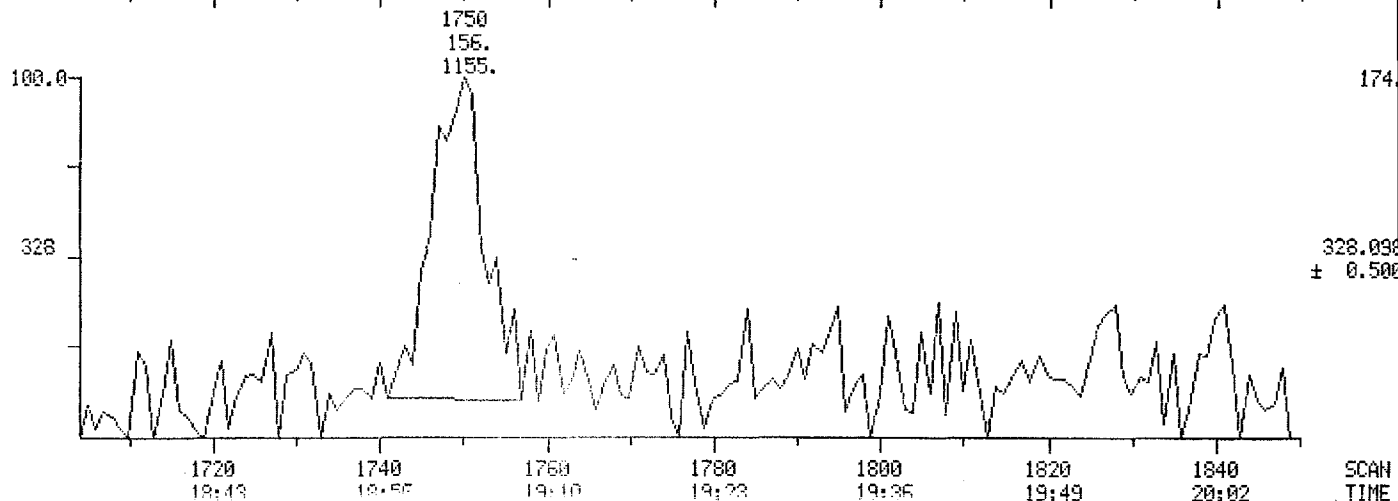
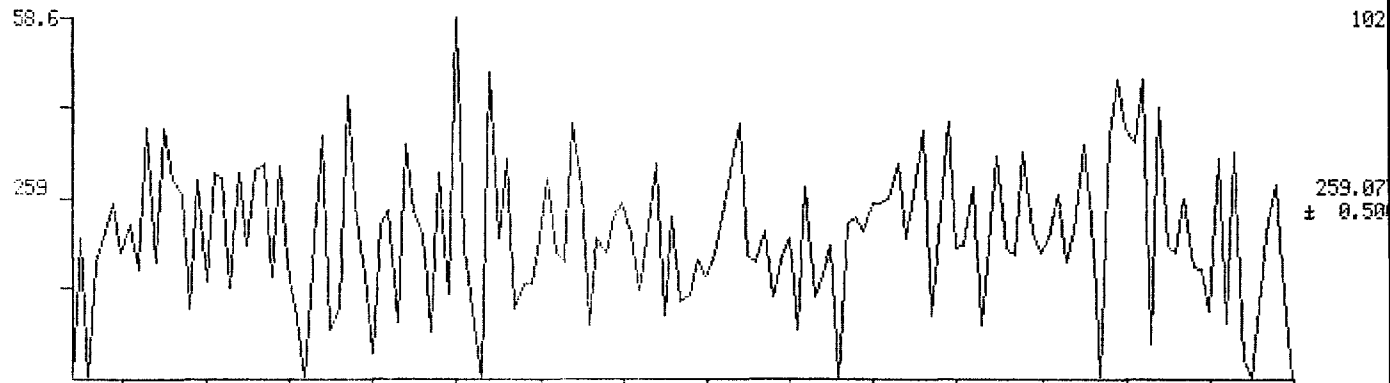
10/01/87 15:45:00

CALI: CAL092587 #3

SAMPLE: CASE 8019; BATCH2/212-14/10.00G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: H 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011614

MID MASS CHROMATOGRAMS

DATA: OCT0185 #1

SCANS 1704 TO 1850

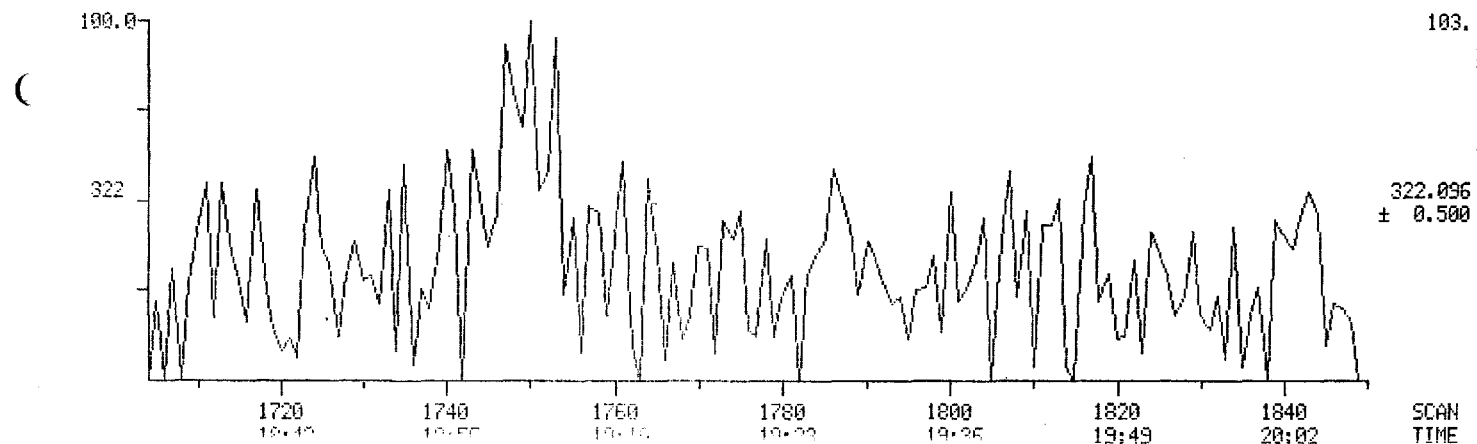
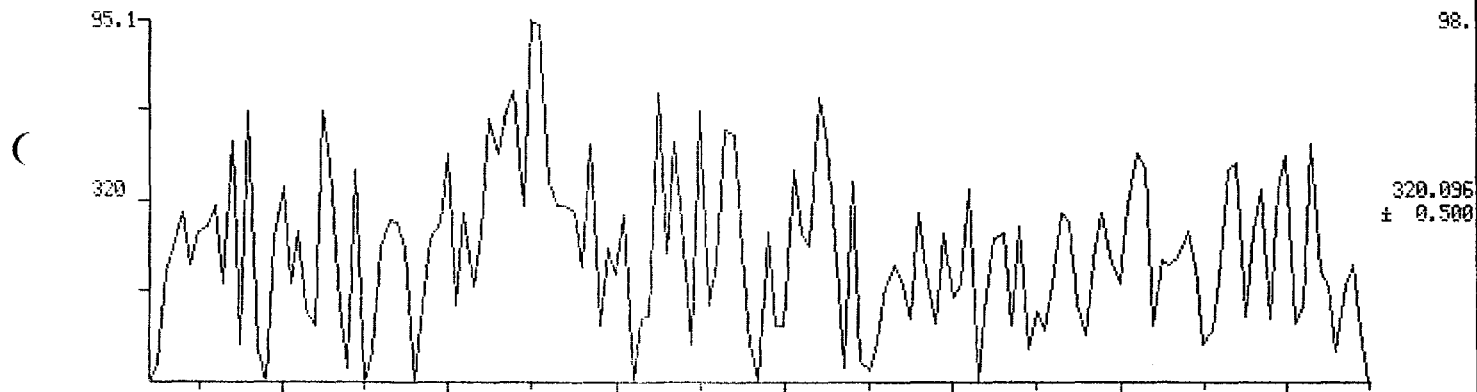
10/01/87 15:45:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/212-14/10.00G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: Q1704.1850 LABEL: H 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



MID MASS CHROMATOGRAMS

DATA: OCT0105 #1

SCANS 1704 TO 1850

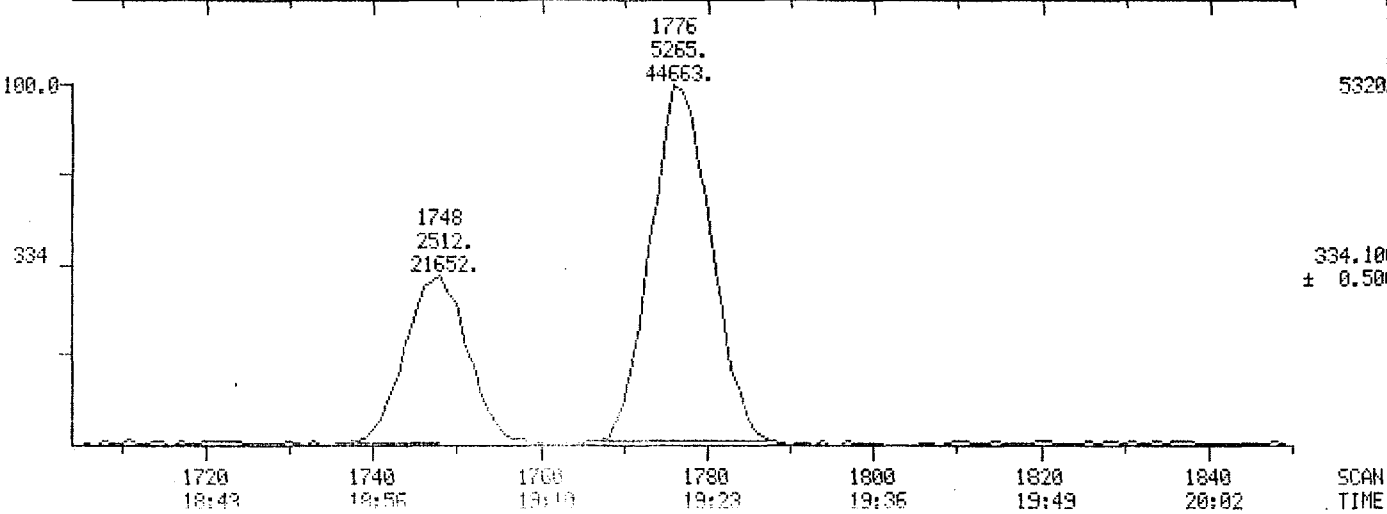
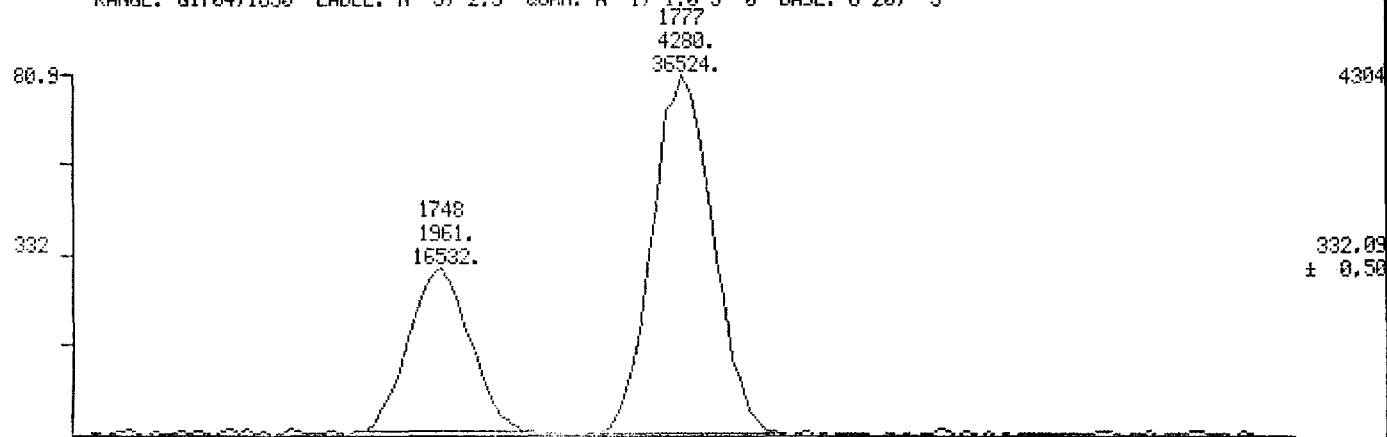
10/01/87 15:45:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/212-14/10.00G

CONDS.: 60M SP2331/100/100-200#25/200-240#4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1720 18:43 1748 19:56 1766 19:19 1780 19:23 1800 19:36 1820 19:49 1840 20:02 SCAN TIME

011615

HID RIC

DATA: SEP2011 #1

SCANS 1704 TO 1850

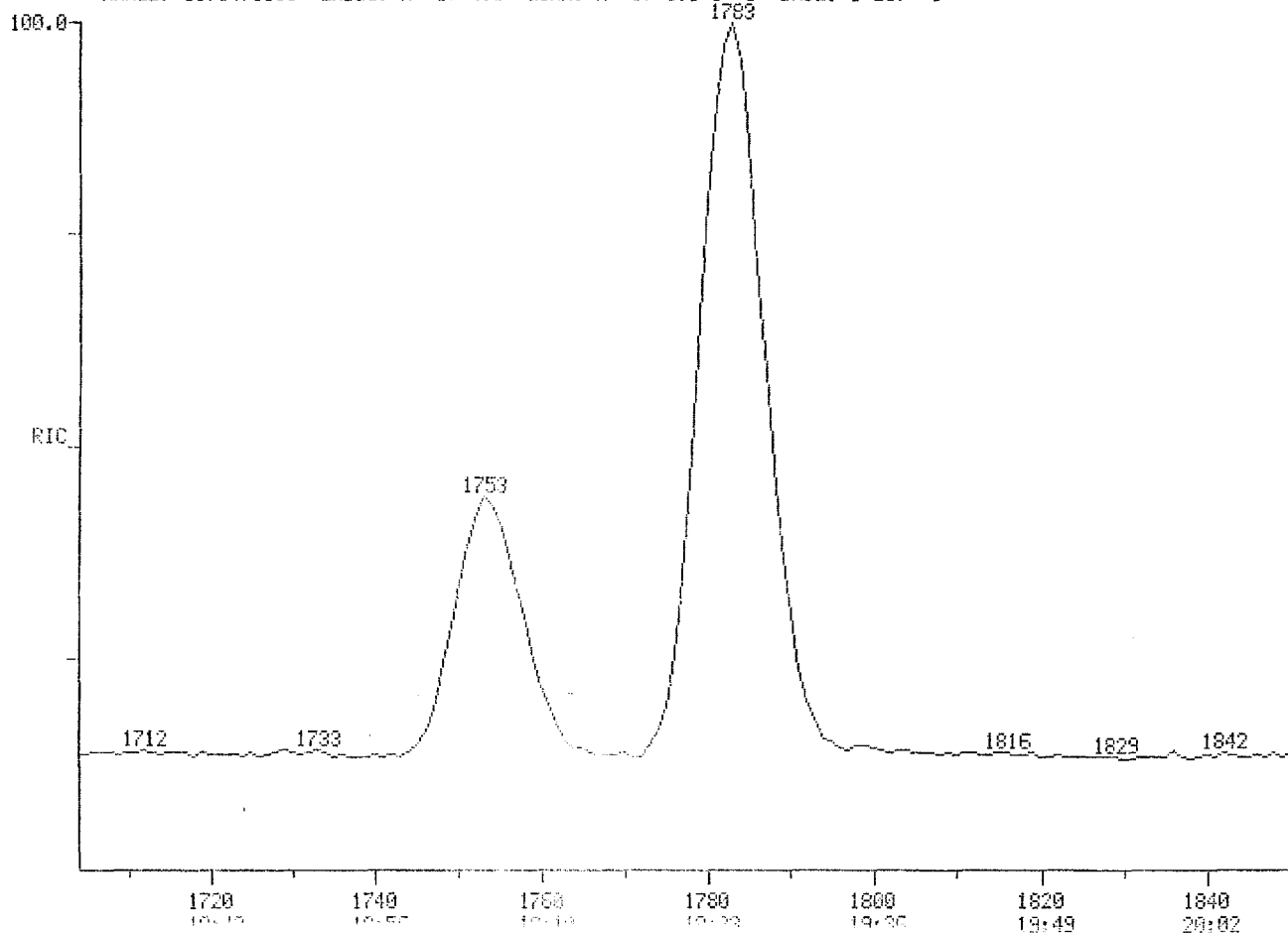
09/29/87 1:55:00

CALI: CAL090587 #3

SAMPLE: CASE 8019: BATCH2/ 212-15 10.00G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 0, 4.0 QWIN: A 0, 1.0 J 0 BASE: U 20, 3



18720

SCAN
TIME

011616

MID MASS CHROMATOGRAMS

DATA: SEP2811 #1

SCANS 1704 TO 1850

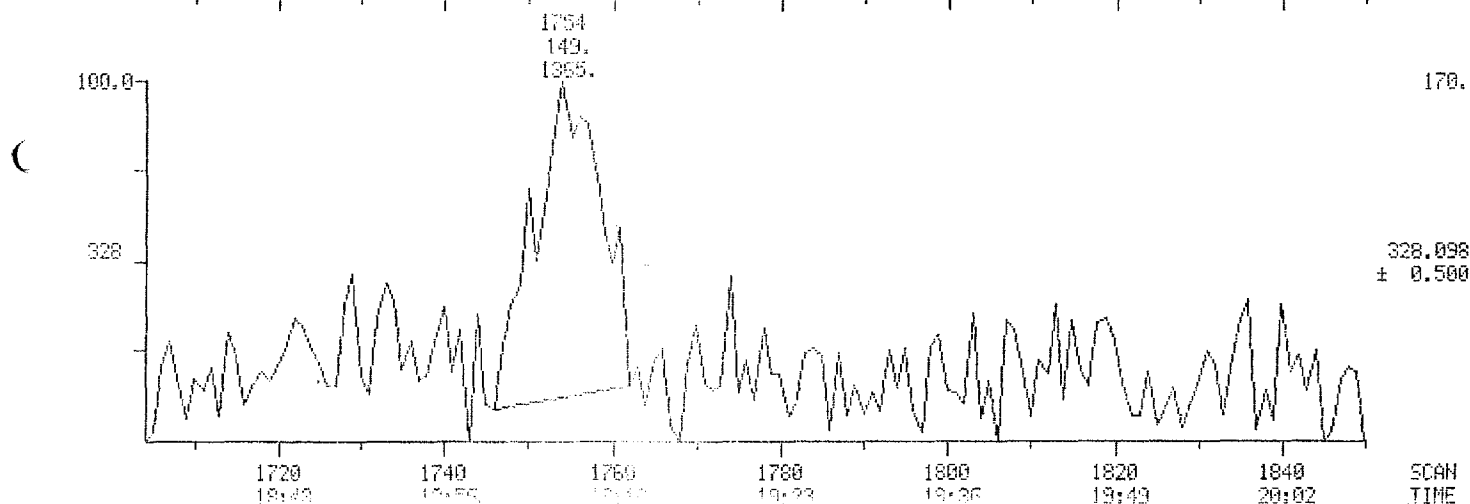
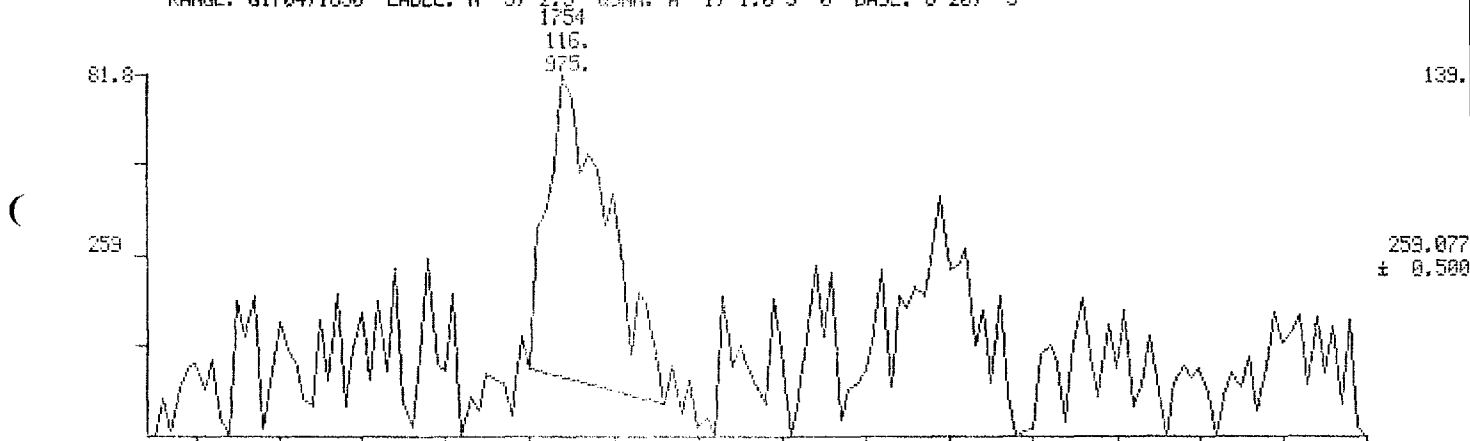
09/29/87 1:55:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/ 212-15 10.02G

CONDS.: 60M SP2331/100/100-200025/200-24004/0

RANGE: G1704.1850 LABEL: N 5, 2.5 QUANT: A 1, 1.0 J 0 BASE: U 20, 3



011617

MID MASS CHROMATOGRAMS

DATA: SEP2811 #1

SCANS 1704 TO 1850

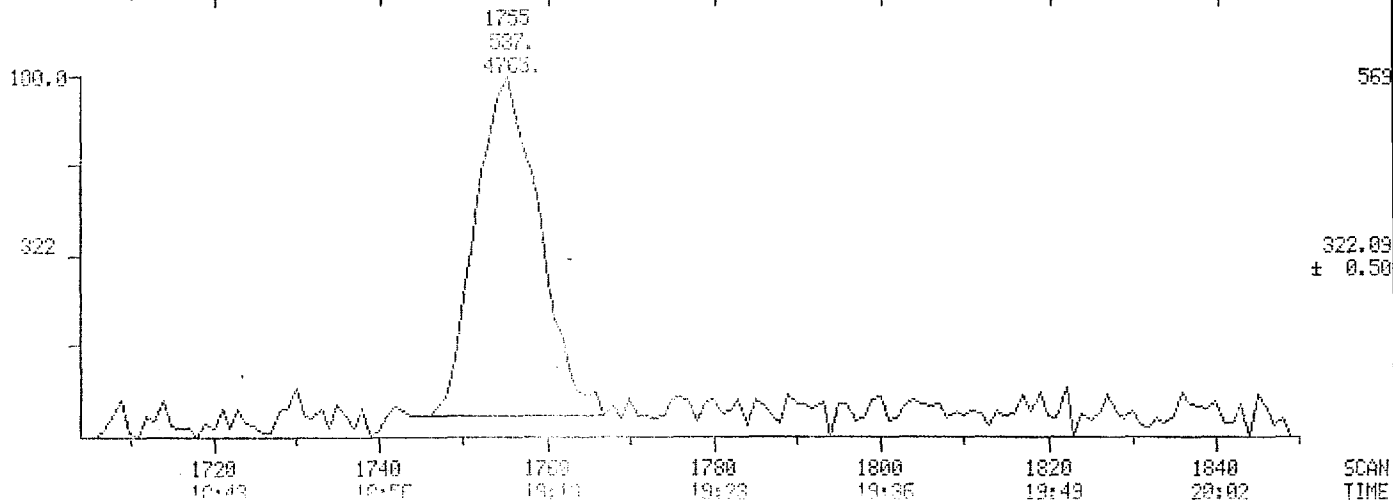
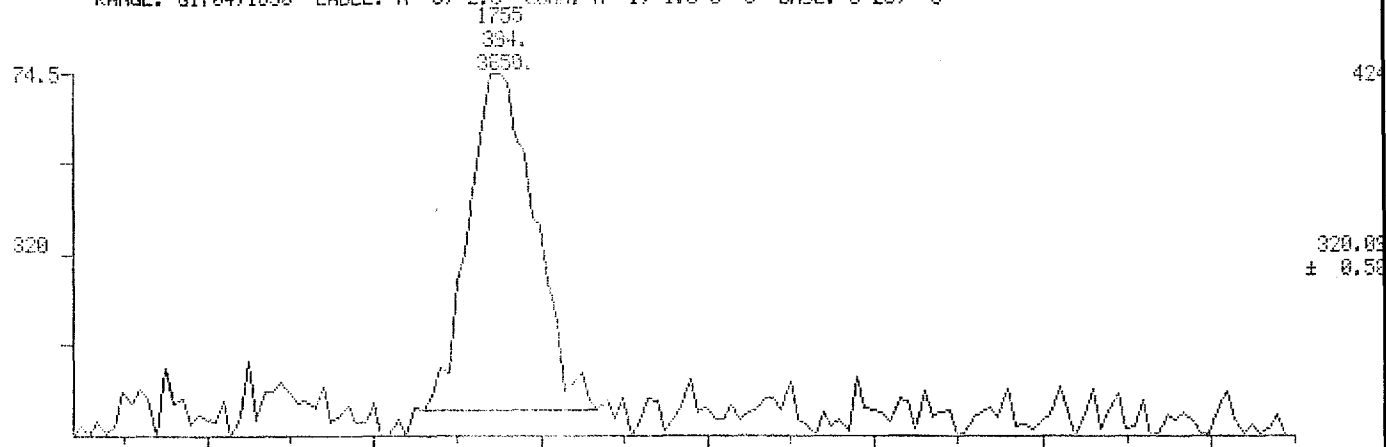
09/29/87 1:55:00

CALI: CAL092587 #3

SAMPLE: CASE 8019; BATCH2/ 212-15 10.02G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 5, 2.5 COLUMN: A 1. 1.0 J 0 BASE: U 20, 3



SCAN TIME

319110

MID MASS CHROMATOGRAMS

DATA: SEP2811 #1

SCANS 1704 TO 1850

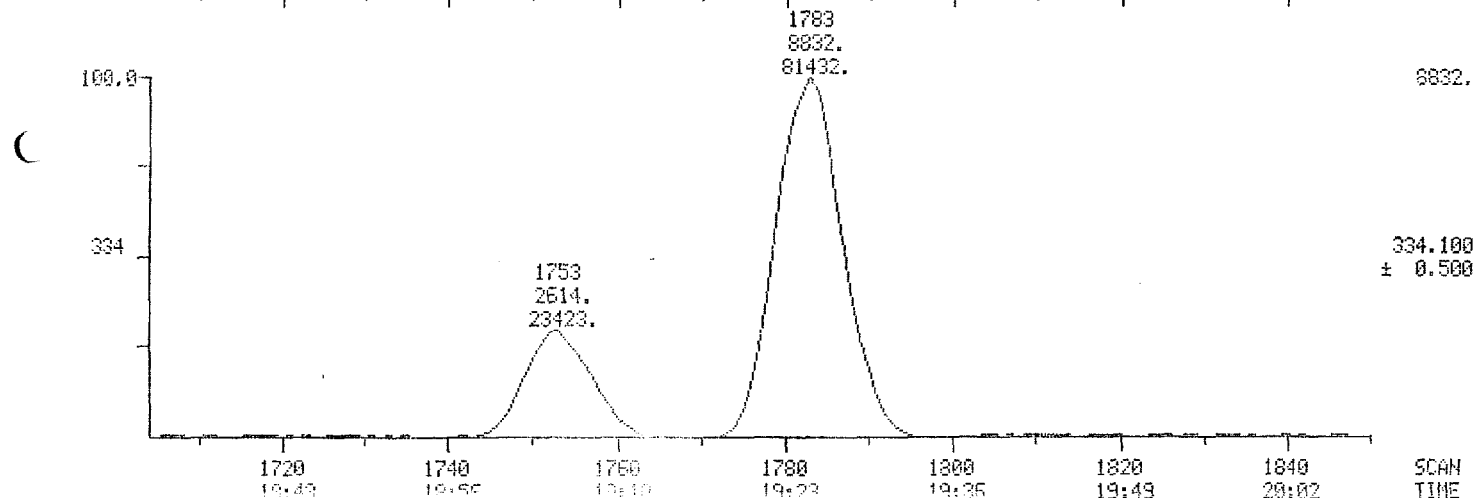
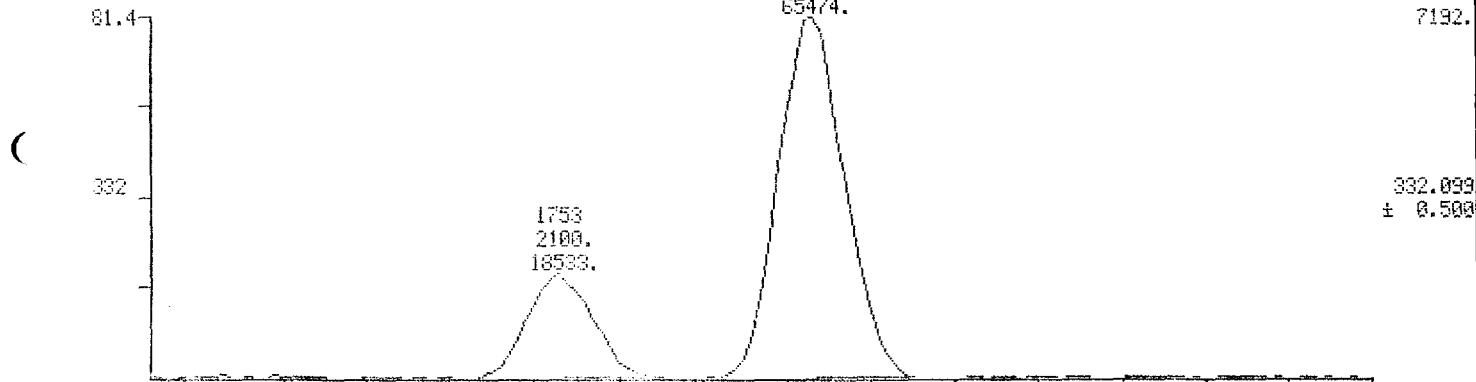
09/29/87 1:55:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/ 212-15 10.02G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



319110

MID RIC

DATA: OCT0106 #1

SCANS 1704 TO 1850

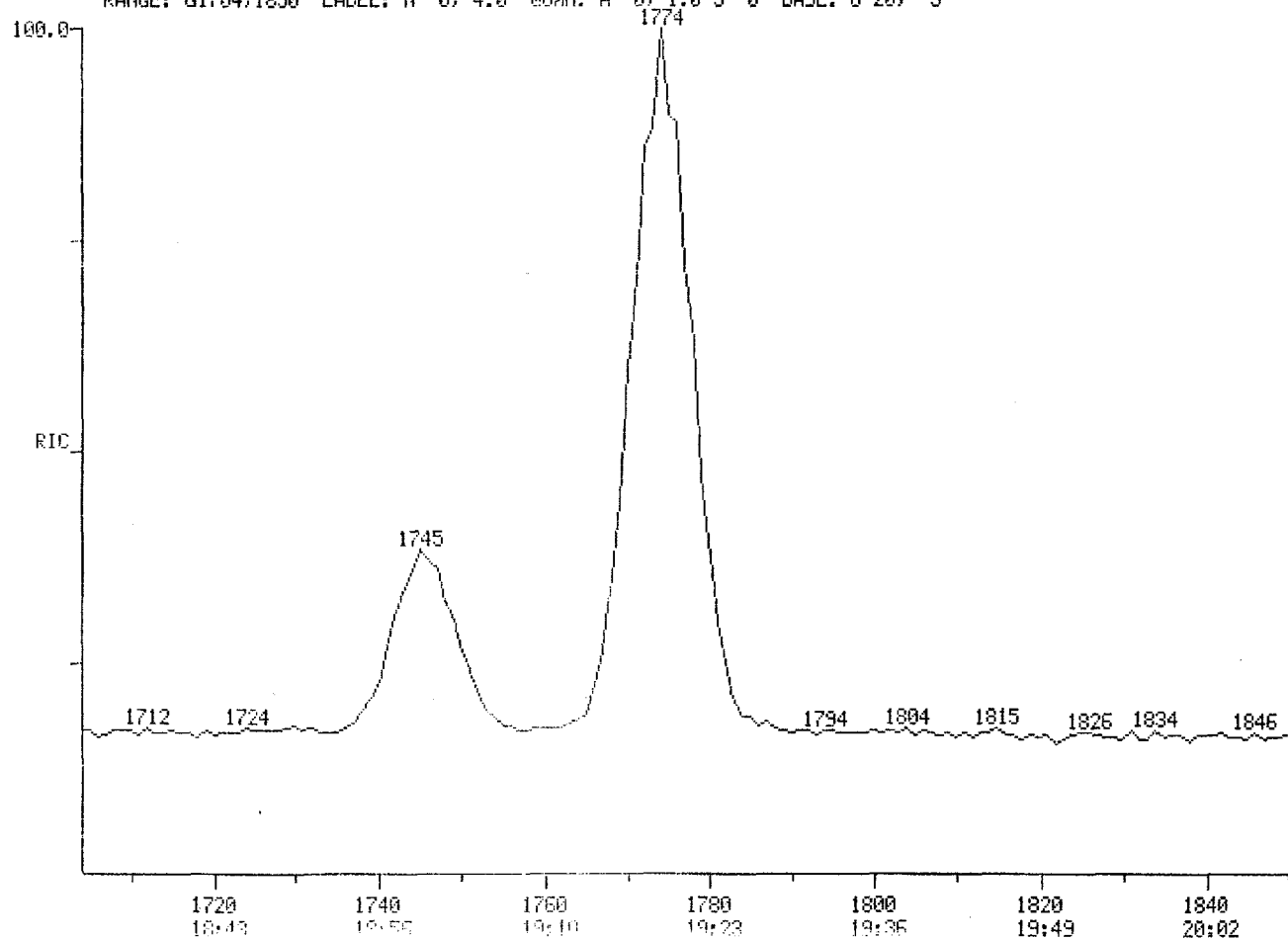
10/01/87 16:14:00

CAL1: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/212-16/10.11G

CONDS.: 60M 5P2331/100/100-200025/200-24004/B

RANGE: G1704,1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



16800.

SCAN
TIME

011620

NID MASS CHROMATOGRAMS

DATA: OCT0106 #1

SCANS 1704 TO 1850

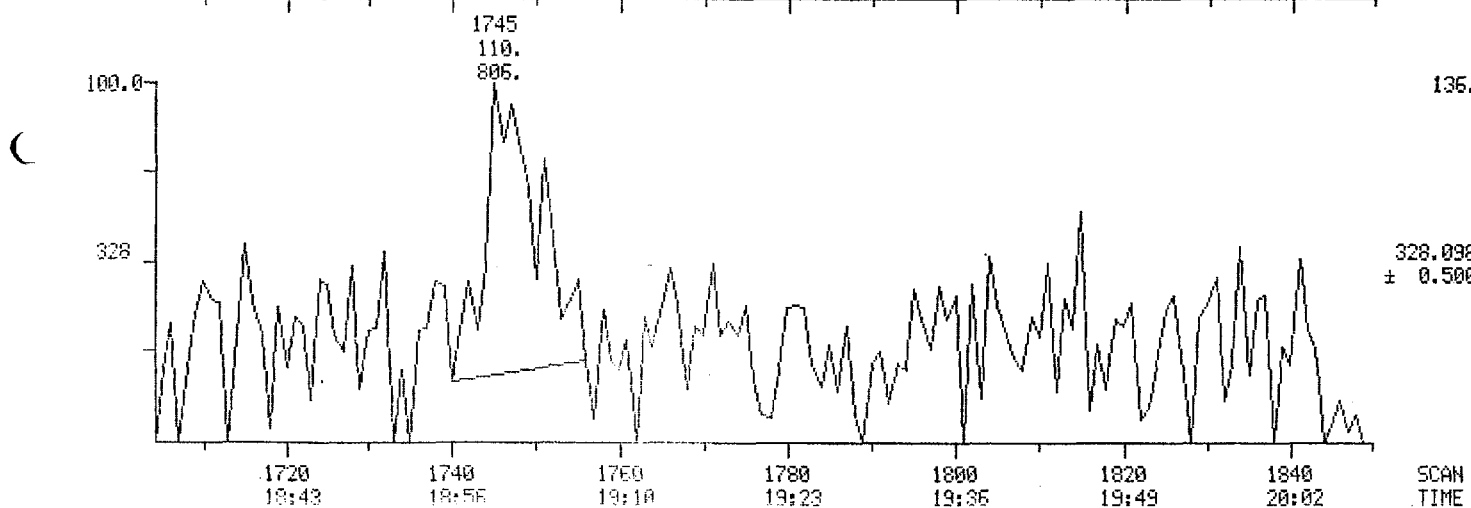
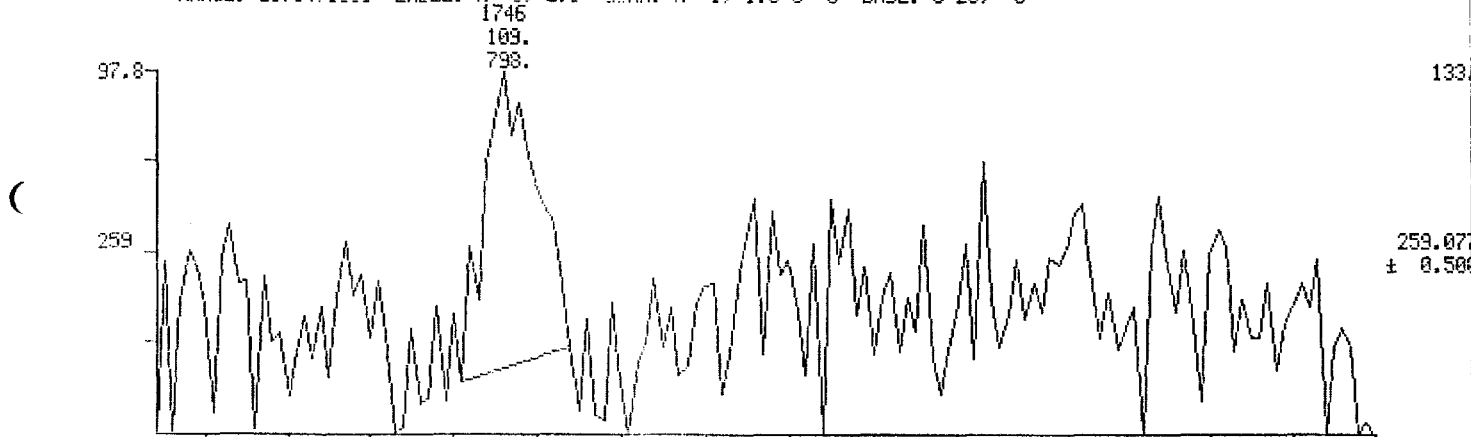
10/01/87 16:14:00

CAL1: CAL092587 #3

SAMPLE: CASE 8819: BATCH2/212-16/10.11G

CONDS.: 50M 5P2331/100/100-200@25/200-240@4/3

RANGE: G1704.1850 LABEL: N. 5. 2.5 QUAN: A 1. 1.0 J 0 BASE: U 20, 3



011621

MID MASS CHROMATOGRAMS

DATA: OCT0106 #1

SCANS 1704 TO 1850

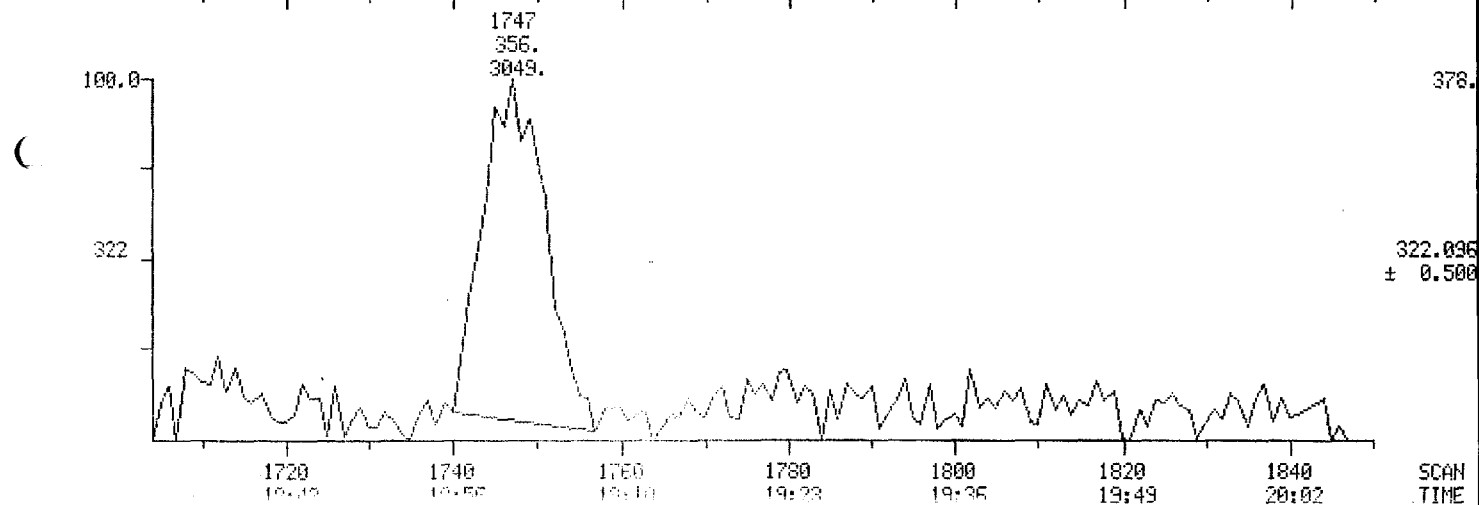
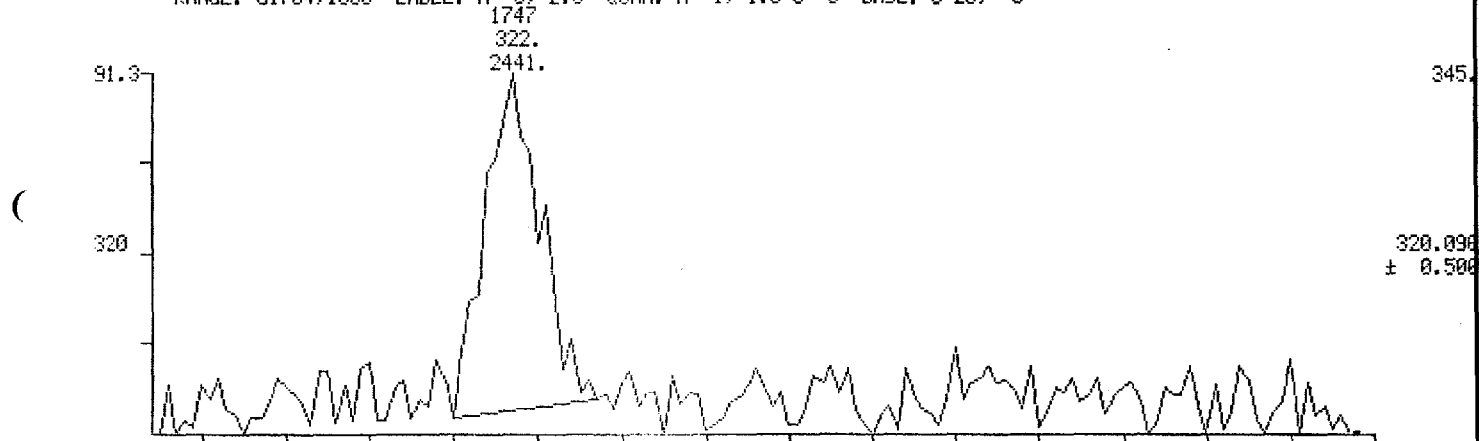
10/01/87 16:14:00

CAL1: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/212-16/10.11G

CONDS.: 68M SP2331/100/100-200@25/200-240@4/3

RANGE: G1704,1850 LABEL: N 5, 2.5 QUIN: A 1, 1.0 J 0 BASE: U 20, 3



SCAN TIME

011622

MID MASS CHROMATOGRAMS

DATA: OCT0106 #1

SCANS 1704 TO 1850

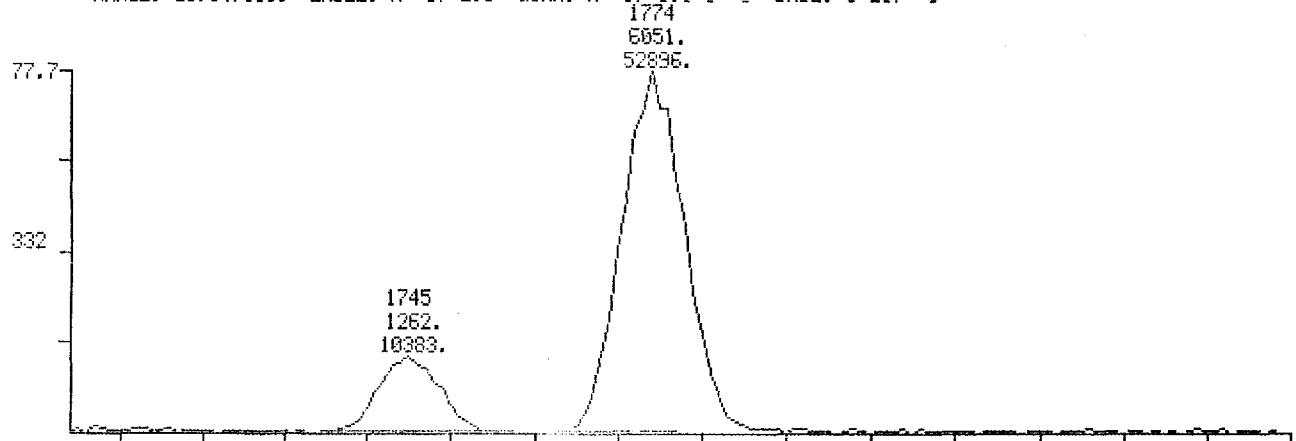
10/01/87 16:14:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH2/212-16/10.11G

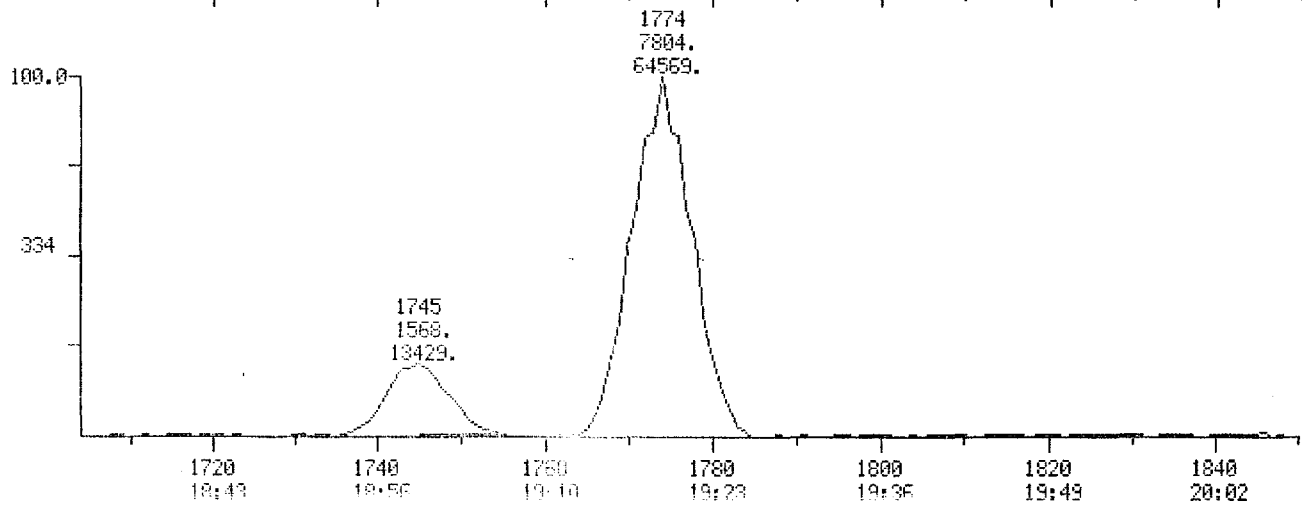
CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



6072

332.09
± 0.500



7616

334.100
± 0.500

SCAN
TIME

011623

NID RIC

DATA: SEP2806 #1

SCANS 1704 TO 1850

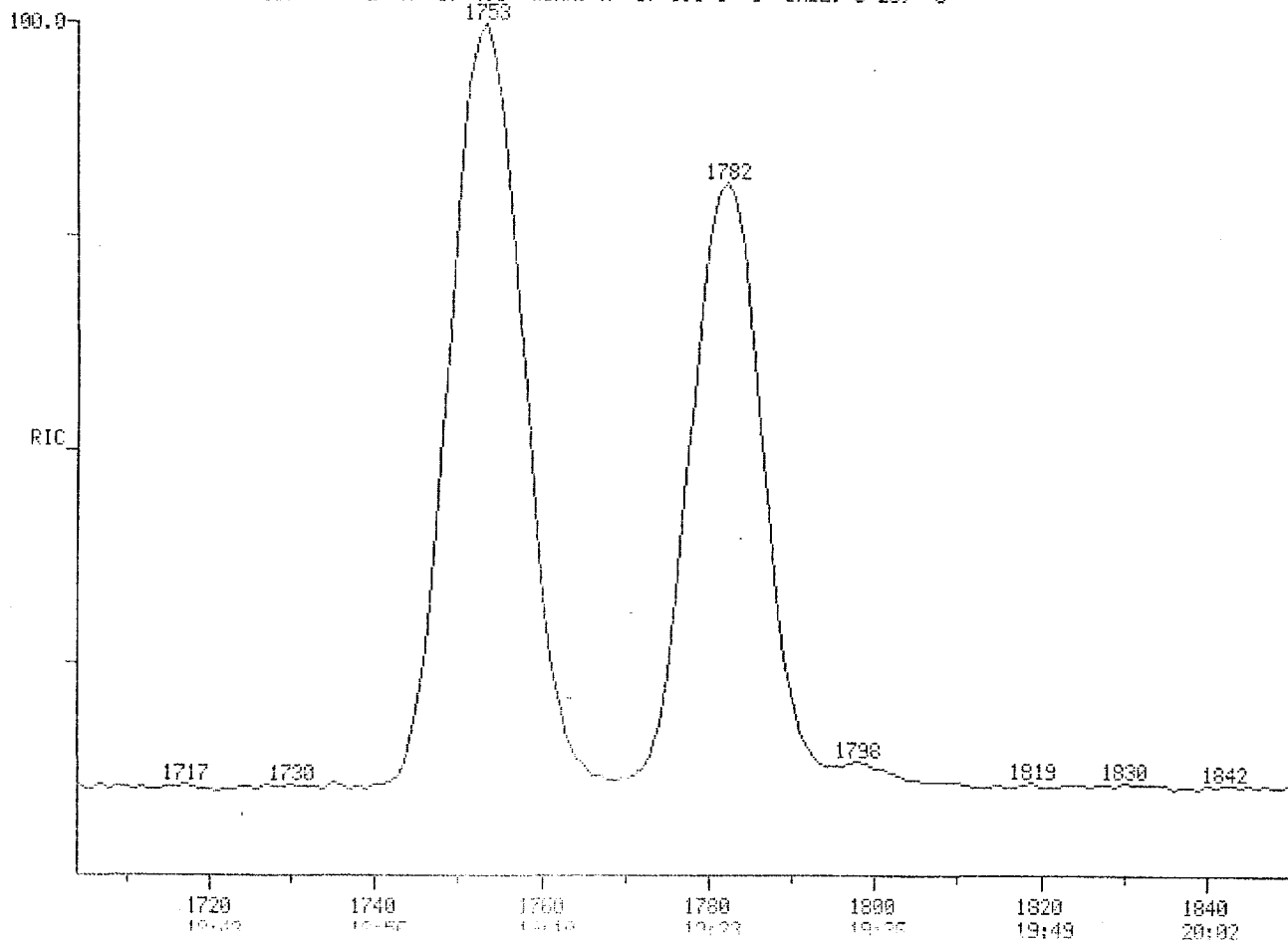
09/28/87 23:35:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH 2 - 212-17 9.99G

CONDS.: 60M SP2331/100/100-200025/200-24004/3

RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



21792

SCAN
TIME

011624

MID MASS CHROMATOGRAMS

DATA: SEP2085 #1

SCANS 1704 TO 1850

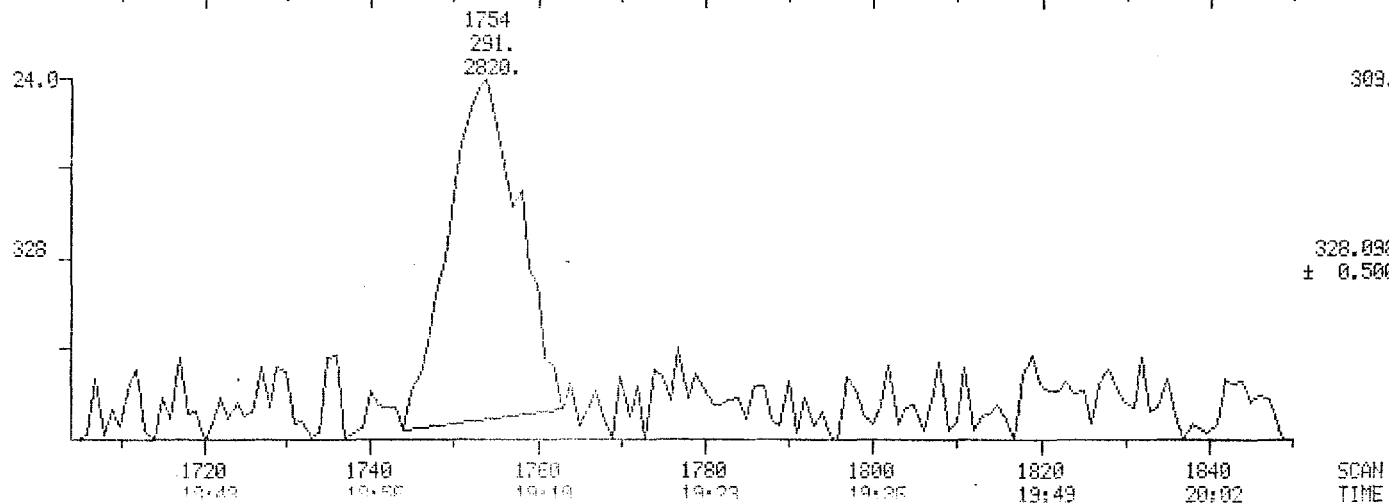
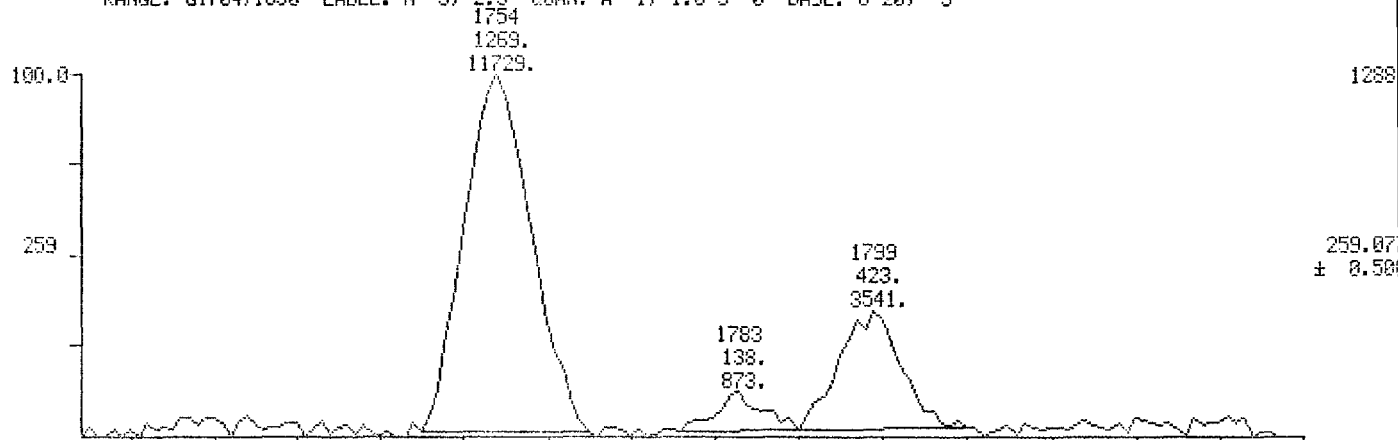
09/28/87 23:36:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH 2 - 212-17 9.99G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



SCAN TIME

011625

MID MASS CHROMATOGRAMS

DATA: SEP2006 #1

SCANS 1704 TO 1850

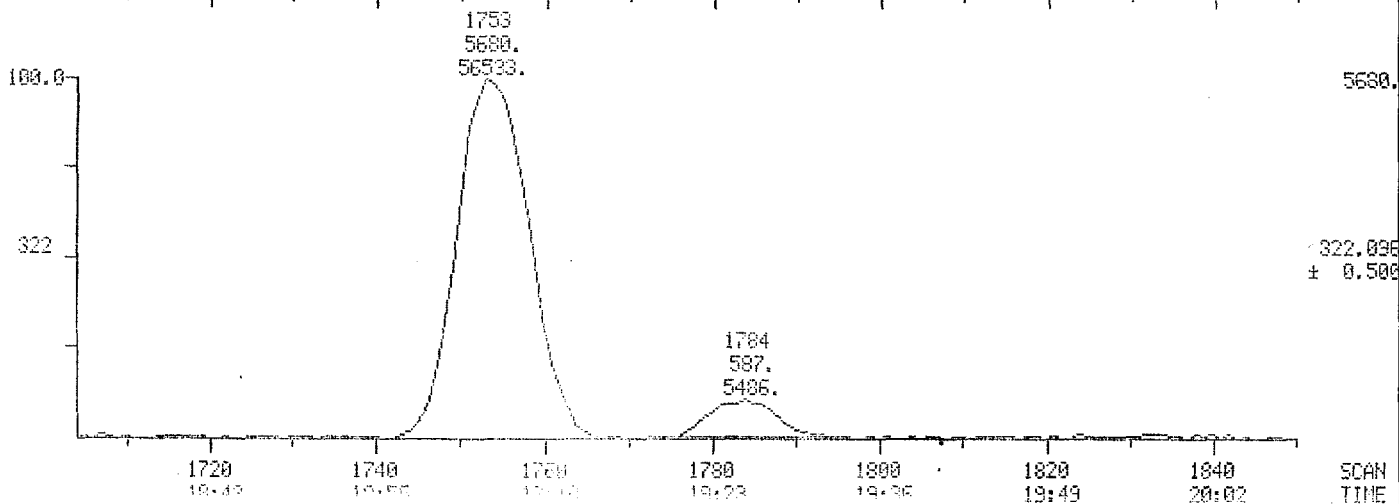
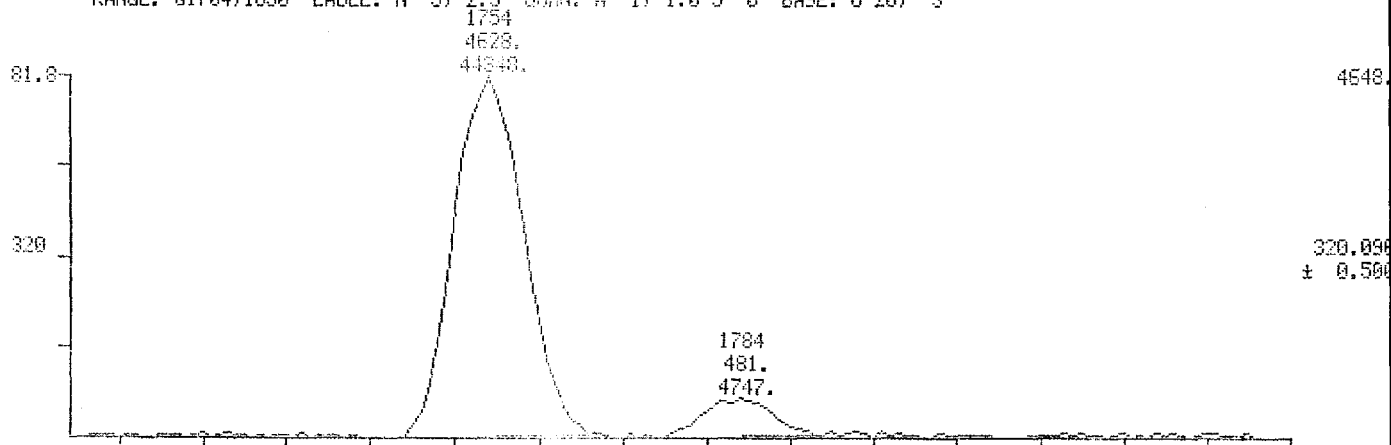
09/28/87 23:35:00

CALL: CAL032537 #3

SAMPLE: CASE 8819; BATCH 2 - 212-17 9.900

CONDOS.: 60M SP2331/100/100-200@25-200-240@1/8

RANGE: G1704,1850 LABEL: N 5; 2.5 OVEN: A 1; 1.0 J 0 BASE: U 20, 3



1720 18:43 1740 19:00 1760 19:17 1780 19:33 1800 19:50 1820 20:07 1840 20:24 SCAN TIME

011626

MID MASS CHROMATOGRAMS

DATA: SEP2806 #1

SCANS 1704 TO 1850

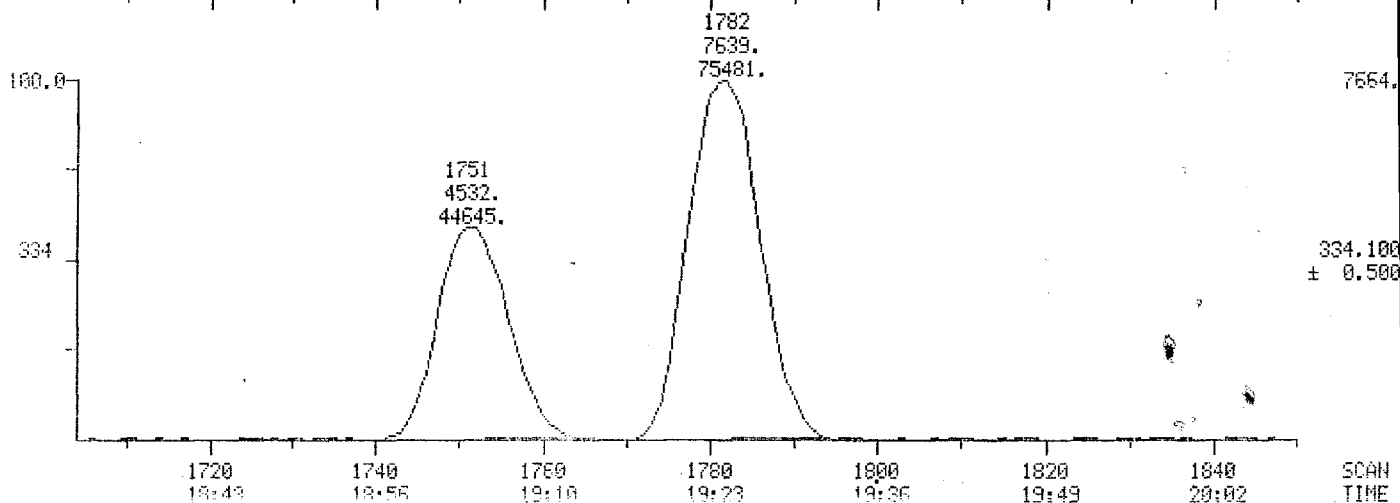
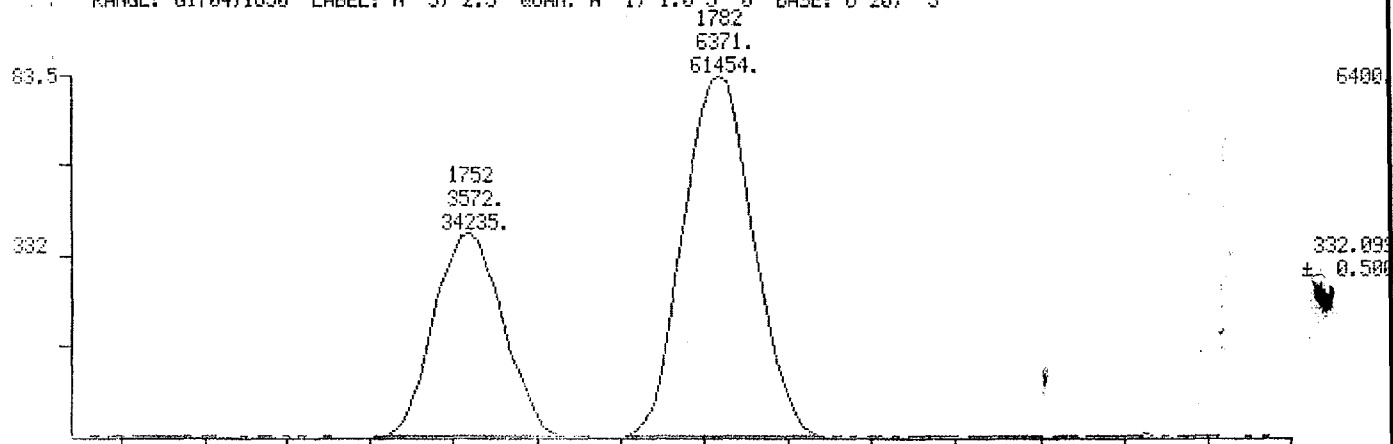
09/28/87 23:36:00

CALI: CAL092537 #3

SAMPLE: CASE 8019: BATCH 2 - 212-17 9.99G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1720
18:43

1740
18:55

1760
19:10

1780
19:23

1800
19:35

1820
19:49

1840
20:02

SCAN
TIME

110.

File Name	Time	Description	DEL FR.	BATCH #
Sep 2801	1935	CAL I SAND		
02	2003	COL. PERF. MIX		
03	2156	CAL I SAND		
04	2233	COL. PERF. MIX		
05	2308	METHOD BLANK		BATCH #2
06	2336	#212-17		
07	0004	#212-16		
08	0032	#212-02		
09	0059	#212-443		
10	0127	#212-11		
11	0155	#212-15		
12	0223	#212-10		
13	0250	#212-08		
14	0318	#212-12		
15	0346	#212-09		
16	0414	METHOD BLANK		BATCH #
17	0443	#212-04		
18	0511	#212-01		
19	0539	#212-05		
20	0607	#212-06		
21	0636	#212-07		
22	0705	M.B. - BATCH #3		
23	0733	#212-22		
24	0801	#213-02		
25	0829	#212-19		
26	0857	#213-01		
27	0925	COL. PERF. MIX		

Sep 24
MRF
65-112

To Page No. _____

See & Understood by me,

Date

Invented by

Date

David H. Robinson

9/29/87

Recorded by

No. _____

File NameTimeDescription

OCTO1 01

1303

CAR I SOIL

02

1333

COL. PERF. MIX

03

1411

#212-06

04

1443

#212-02

05

~~1513~~ 1545

#212-11

06

1614

~~#212-14~~ #212-16

07

1715

#212-19

08

1825

#213-02 - TEST ①

09

1922

M.B. - CASE 80-4

10

2018

~~#351-06~~ COL. PERF. MIX

011626

To Page No. _____

Understood by me,

SK [Signature]

Date

10/1/87

Invented by

Recorded by

Date



TANDEM MASS SPECTROMETRY

TMS Analytical Services Inc. 8019-1

6376 MORENCI TRAIL • TEL (317) 291-5697 • INDIANAPOLIS, INDIANA 46268

GC/MS ANALYSIS LOG SHEET

CASE NUMBER 8019-BATCH #2
PAGE 1 OF 1

SNO	RUN	DATE	ANALYST	DISC	TAPE	LOCATOR	COMMENTS
SAMPLE #	NUMBER			NUMBER	NUMBER	NUMBER	
1	M.B.	SEP28-05	9/28	1174	15		
2	212-02	04	10/1		16		
3	212-08	SEP28-13	9/28		15		
4	212-09	15					
5	212-10	12					
6	212-11	10					
7	212-12	14					
8	212-13	09					
9	212-14	OCT01-05	10/1		16		
10	212-15	SEP28-11	9/28				
11	212-16	OCT01-06	10/1				
12	212-17	SEP28-06	9/28				
13							
14							
15							
16							
17							
18							
19							
20							

011630

GC COLUMN DESCRIPTION: SP2221
 TEMPERATURE PROGRAM: 100 °C
100-200 °C @ 25
200-2400 °C
Hold 8.5



TMS Analytical Services Inc.

6376 MORENCI TRAIL • TEL. (317) 291-5697 • INDIANAPOLIS, INDIANA 46268

8019-4

SAMPLE RECEIPT/CONDITION DOCUMENTATION

PAGE 1 OF 1

DOCUMENT CONTROL NUMBER: 8019

CASE NUMBER: 8019

BATCH NUMBER: 2

AIRBILL NUMBER: 342270666

DATE RECEIVED: 9/15/87

TIME RECEIVED: 09:25

- 1. CUSTODY SEALS PRESENT / NOT PRESENT
INTACT / NOT INTACT
- 2. OTHER SEALS, TAPE, LOCKS, ETC. PRESENT / NOT PRESENT
INTACT / NOT INTACT
- 3. CHAIN-OF CUSTODY PRESENT / ABSENT
- 4. CLP DIOXIN SHIPMENT RECORD PRESENT / ABSENT

011631

SHO SAMPLE NUMBER	SAMPLE LC NUMBER	SAMPLE TAG		INFORMATION ON DOCUMENTATION		REMARKS: (CONDITION OF SAMPLE, SHIPMENT, DOCUMENTATION, ETC.)
		PRESENT	ABSENT	AGREE	DISAGREE	
DF021208		✓		✓		
DF021209		✓		✓		
DF021210		✓		✓		
DF021211		✓		✓		
DF021212		✓		✓		
DF021213		✓		✓		
DF021214		✓		✓		
DF021215		✓		✓		
DF021216		✓		✓		
DF021217		✓		✓		
DF021202		✓		✓		

SAMPLE CUSTODIAN SIGNATURE R. J. E. Miller



TANDEM MASS SPECTROMETRY

TMS Analytical Services Inc.

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SAMPLE TRACKING RECORD

CASE NUMBER 8017 9/15/87
 PAGE 1 OF 1 Batch #2

011632

SND SAMPLE #	SAMPLE WEIGHT	SAMPLE SPIKED	SAMPLE EXTRACTED	SAMPLE EVAP.	COLUMN #1 & #2 CLEANUP	CARBON COLUMN CLEANUP	EXTRACTS ISSUED TO GC/MS	EXTRACTS RECEIVED AT GC/MS	GC/MS ANALYSIS COMPLETED	EXTRACTS RETN'D TO STORAGE	EXTRACTS REC'D FOR STORAGE	COMMENTS
MB	9.98	#	✓	✓	✓	✓	✓	✓	✓	✓	✓	
212-17	9.99											PE
212-16	9.90											RE-201
212-08	9.96											RE-201
212-14	10.00											
212-13	10.13											
212-11	9.96											
212-13	10.02											
212-10	10.07											
212-08	9.94											
212-12	10.02											
212-09	10.13											
COMPLETED BY	KSM	KSM	KSM	KSM	KSM	KSM	KSM	KSM	KSM	KSM	KSM	KSM
DATE	9/15/87	9/15/87	9/16/87	9/17/87	9/18/87	9/21/87	9/22/87	9/29	10/1	10/1	10/1	

FEDERAL EXPRESS

PLEASE COMPLETE ALL INFORMATION IN THE 5 BLOCKS OUTLINED IN ORANGE
 CHECK OF FORM SET FOR COMPLETE PREPARATION INSTRUCTIONS

342270666



YOUR FEDERAL EXPRESS ACCOUNT NUMBER 2752-5840-2	DATE 9/15/97
FROM (Your Name) Tara C. Sekely	TO (Recipient's Name) Deanna Huring
COMPANY ECOLOGOY & ENVIRONMENT INC	COMPANY TMS Analytical
DEPARTMENT/FLOOR NO.	DEPARTMENT/FLOOR NO.
STREET ADDRESS 1509 MAIN ST STE 314	STREET ADDRESS (P.O. BOX NUMBERS ARE NOT DELIVERABLE) 6376 Moreau Trail
CITY DALLAS TX	CITY Irving TX

AIRBILL NO. 342270666 ZIP ACCURATE ZIP CODE REQUIRED FOR DELIVERY **75152-3131** 481015
 IN TENDERING THIS SHIPMENT, SHIPPER AGREES THAT F.E.C. SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM CARRIAGE HEREOF. F.E.C. DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THIS SHIPMENT. THIS IS A NON-NEGOTIABLE AIRBILL SUBJECT TO CONDITIONS OF CONTRACT SET FORTH ON REVERSE OF SHIPPER'S COPY. UNLESS YOU DECLARE A HIGHER VALUE, THE LIABILITY OF FEDERAL EXPRESS CORPORATION IS LIMITED TO \$100.00. FEDERAL EXPRESS DOES NOT CARRY CARGO LIABILITY INSURANCE.

YOUR REFERENCE NUMBERS (FIRST 12 CHARACTERS WILL ALSO APPEAR ON INVOICE)
FAR0009EE-21

PAYMENT Bill Shipper Bill Recipient's F.E.C. Acct. Bill 3rd Party F.E.C. Acct. Bill Credit Card
 Cash in Advance Account Number/Credit Card Number **973-2872**

SERVICES CHECK ONLY ONE BOX PRIORITY 1 <input checked="" type="checkbox"/> OVERNIGHT PACKAGES (Up to 70 LBS.) <input type="checkbox"/> STANDARD AIR (Overnight 2nd Business Day Following Pickup Up to 70 LBS.) <input type="checkbox"/> OVERNIGHT IS NEXT BUSINESS DAY (MONDAY THROUGH FRIDAY). TWO DAYS FROM ALASKA/HAWAII. SATURDAY DELIVERY AVAILABLE IN CONTINENTAL U.S. SEE "SPECIAL HANDLING." <input type="checkbox"/> ORM'S AND RADIOACTIVE MATERIAL ONLY	DELIVERY AND SPECIAL HANDLING CHECK SERVICES REQUIRED: 1 <input type="checkbox"/> HOLD FOR PICKUP AT FOLLOWING FEDERAL EXPRESS LOCATION SHOWN IN SERVICE GUIDE. "RECIPIENT'S PHONE NUMBER IS REQUIRED." 2 <input checked="" type="checkbox"/> DELIVER 3 <input type="checkbox"/> SATURDAY SERVICE (Required for Remote Area pickup only for delivery. Restricted for Priority 1) 4 <input checked="" type="checkbox"/> RESTRICTED ACCESS (Signature Required for Delivery) 5 <input type="checkbox"/> ISS (Shippers Account Only) (Required, extra charge applies) 6 <input type="checkbox"/> DRY ICE (LBS.) 7 <input type="checkbox"/> OTHER SPECIAL SERVICE 8 <input type="checkbox"/> 9 <input type="checkbox"/>	PACKAGES WEIGHT DECLARED VALUE O/S 1 22 TOTAL TOTAL TOTAL RECEIVED AT SHIPPER'S DOOR <input type="checkbox"/> REGULAR STOP <input type="checkbox"/> ON-CALL STOP <input type="checkbox"/> F.E.C. LOC. Federal Express Corporation Employee No. 9115/970935 DATE/TIME For Federal Express Use 9/15/97 09:35	DATE <input type="checkbox"/> CASH RECEIVED <input type="checkbox"/> RETURN SHIPMENT <input checked="" type="checkbox"/> THIRD PARTY <input type="checkbox"/> ONE TO ONE <input type="checkbox"/> ONE TO HOLD STREET ADDRESS CITY STATE ZIP RECEIVED BY (Signature) Deanna Huring DATE/TIME RECEIVED F.E.C. EMPLOYEE NUMBER	FEDERAL EXPRESS FREIGHT CHARGES DECLARED VALUE ADVANCE ORIGIN ADVANCE DESTIN. OTHER TOTAL CHARGES PART #2041730764 REVISION DATE 2/93 PRINTED U.S.A.
---	---	---	---	---

011633

AIRBILL NUMBER 342270666 SHIPPER'S CERTIFICATION FOR RESTRICTED ARTICLES (TYPE OR PRINT)

NO. OF PKGS.	PROPER SHIPPING NAME	CLASSIFICATION (PER 49 CFR, 172.101)	IDENTIFICATION NO.	NET QUANT PER PACKA
1	Flammable Solid	Flammable Solid	Flammable Solid UN 1325	4502

ADDITIONAL DESCRIPTION REQUIREMENTS FOR	RADIOACTIVE	ACTIVITY	CATEGORY OF LABELS	TRANS INDEX	PACKAGE IDENTIFICA
RADIOACTIVE MATERIALS (SEE BACK)					

THIS SHIPMENT IS WITHIN THE LIMITATIONS PRESCRIBED FOR PASSENGER AIRCRAFT CARGO AIRCRAFT ONLY (DELETE-NONAPPLICABLE)

IF ACCEPTABLE FOR PASSENGER AIRCRAFT, THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDE TO, RESEARCH, MEDICAL DIAGNOSIS OR TREATMENT.

I HEREBY CERTIFY THAT THE CONTENTS OF THIS CONSIGNMENT ARE FULLY AND ACCURATELY DESCRIBED ABOVE BY PROP SHIPPING NAME AND ARE CLASSIFIED, PACKED, MARKED, AND LABELED, AND IN PROPER CONDITION FOR CARRIAGE BY ACCORDING TO APPLICABLE NATIONAL GOVERNMENTAL REGULATIONS.

NAME/TITLE OF PERSON SIGNING CERTIFICATION Tara C. Sekely Env Eng	EMERGENCY TELEPHONE NO. (214) 742-6601	SIGNATURE OF SHIPPER Tara C. Sekely
---	--	---

804-10

PROJ. NO.		PROJECT NAME				NO. OF CONTAINERS	REMARKS											
Case # 8019 8940		SAMPLERS: (Signature) <i>J. Pennington (Team Leader)</i> <i>(see attached IT Chain of Custody Record # 38275 for samplers and receipt of splits)</i>																
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	Tag #	District Shipment Record Batch number	IT Sample #										
11	9-12-87	1500hrs		X	As described on IT sampling documents (Ref loc F085)	6009421	02	WH 1226C										
7	9-12-87	1625hrs		X	As described on IT sampling documents (Ref loc F061)	6009422	02	WH 1230A										
6	9-12-87	1616hrs		X	As described on IT sampling documents (Ref loc F060)	6009423	02	WH 1229B										
5	9-12-87	1600hrs		X	As described on IT sampling documents (Ref loc F059)	6009424	02	WH 1228C										
14	9-13-87	110hrs		X	As described on IT sampling documents (Ref loc F025)	6009425	02	WH 1232C										
15	9-13-87	1520hrs		X	As described on IT sampling documents (Ref loc F040)	6009426	02	WH 1234A										
8	9-13-87	1625hrs		X	As described on IT sampling documents (Ref loc F063)	6009427	02	WH 1235B										
12	9-14-87	1152hrs		X	As described on IT sampling documents (Ref loc F104)	6009429	02	WH 1237A										
13	9-14-87	1110hrs		X	As described on IT sampling documents (Ref loc F105)	6009428	02	WH 1236C										
28	9-14-87	1007hrs		X	Vanderberg Blvd - 1/4 mile from John Hayden Dr. North of Drawnage Bridge in front (south) of concrete culverts	6009430	02	—										

Relinquished by: (Signature) <i>J. Pennington</i>	Date / Time 9/14/87 4:00pm	Received by: (Signature) <i>Federal Express</i>	Relinquished by: (Signature) <i>Federal Express</i>	Date / Time 9/15/87 9:25	Received by: (Signature) <i>Cynthia Kraus</i>
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks <i>Airbill Number 342270666</i>	

Batch 03

011635



TMS ANALYTICAL SERVICES, INC.

8019-01

6376 Morenci Trail
Indianapolis, Indiana 46268
317-291-5697

Case number: 8019
Batch Number: 3

DOCUMENT INVENTORY

Document Control #	Document Type	# Pages
8019 - 01	Case File Document Inventory Sheet	1
8019 - 02	Letter	1
8019 - 03	Form B-19	2
8019 - 04	Form B-2	2
8019 - 05	Form B-3	1
8019 - 06	Form B-4	1
8019 - 07	Chromatographic Data of Initial Calibration Standards	5A
8019 - 08	Chromatographic Data of Daily Calibration Standards	12
8019 - 09	Chromatographic Data of Column Performance Checks	18
8019 - 10	Standard Data Package	36
8019 - 11	Chain-of-Custody	1
8019 - 12	Shipping Manifest	2
8019 - 13	GC/MS Log	3
8019 - 14	Analysts Logbook	1
8019 - 15	Additional Reporting Forms	2

011636



8019-02

TMS ANALYTICAL SERVICES, INC.

6376 Morenci Trail
Indianapolis, Indiana 46268
317-291-5697

October 7, 1987

CLP Sample Management Office
Viarr & Co.
209 Madison St., Suite 200
Alexandria, VA 22314

To whom it may concern:

Enclosed is the complete Sample Data Package for the analysis of samples for 2,3,7,8-TCDD according to the procedures specified under CLP contract #7390.

These samples were received as Case #8019, Batch #3 on September 18. Results were sent by overnight courier on October 7 for arrival on the October 8, one day early of the October 9, 1987 due date.

No special problems were experienced with these samples. On 09/23/87, Tony Neskey from SMO called Dan Delinger from TMS to notify the lab that Case #8910 Batch 3 should be Case #8019 Batch 3. Regarding the high recovery on sample #213-02 (native spike), TMS is aware of this problem. Our initial concern prompted us to re-run this sample twice, using fresh spike solution and reagents. Results from these re-runs duplicated the initial calculations. Dan Delinger from TMS contacted Tony Neskey from SMO on 10/06/87 regarding this discrepancy. Adjustments were made by Kelly E. Mills, Sample Custodian, on 09/18/87. The results for all samples meet all the QA/QC requirements and all results should be considered valid.

If you should have any questions regarding these data or this report, please feel free to contact me at (317)291-5697.

Very truly yours,

Dennis L. Heuring, Ph.D.
President

CC:
USEPA EMSL/LV QA Division
944 E. Harmon Ave.
Executive Center, Rm 226
Las Vegas, NV 89109

USEPA REGION VI LABORATORY
Monterey Park Plaza - Bldg. C
6608 Hornwood Drive
Houston, TX 77074
Attn: Melvin Ritter

ENCLOSURES:

011637



TMS Analytical Services Inc.

6375-MORENCI TRAIL • TEL. (317) 291-5697 • INDIANAPOLIS, INDIANA 46268

FORM B-1S. TCDD SOIL DATA REPORT FORM

Page 2 of 2

Lab: TMS ANALYTICAL

Report Date: 9/6/87

Case/Batch No: 8019/#3

Column: SP 2331

Instrument ID: FINNIGAN 4000

011639

EPA Sample Number	Rel. Response Ratios			Response (Area)							
	320/322	332/334IS	332/334RS	259	320	322	328	332IS	334IS	332RS	334RS
M.B.	-	0.82	0.82	-	-	-	2872	18413	22573	26668	32426
212-19	-	0.79	0.81	-	-	-	3160	36442	46371	253537	311837
-20	0.77	0.80	0.82	1045	3378	4389	1866	17798	22584	34582	42200
-21	-	0.80	0.81	-	-	-	758	15620	19545	44614	55337
-22	-	0.78	0.82	-	-	-	1222	15129	19433	40012	49068
213-01	0.83	0.79	0.82	-	3551	4303	1108	16823	21288	43215	52630
-02N	0.78	0.82	0.80	1538	5728	7277	2401	116341	19831	40661	50872
-03	-	0.73	0.78	-	-	-	2574	36186	49598	99487	127067
-03D	-	0.78	0.80	-	-	-	4275	68514	87552	188579	234280

- MB = Method Blank
- N = Native TCDD Spike
- D = Duplicate/Fortified Field Blank
- PE = EMSL-LV Performance Evaluation Sample
- MPC = Maximum Possible Concentration
- FB = Field Blank
- IS = Internal Standard
- RR = Rerun
- ND = Not Detected
- RS = Recovery Standard

INITIAL CALIBRATION SUMMARY

Laboratory: TMS Analytical

CC Solution Alternative: II

Case/Batch No.: 8019/3

Instrument ID: Finnigan 4000

01164C

Date	Time	Sol. ID	AREA						
			320	322	328	332IS	334IS	332RS	334RS
11-23-88 IX	0910	CC1	14631	18675	12402	70007	92271	39272	48595
	1111	CC1	15257	18682	12701	74277	96113	41356	52016
	1140	CC1	15340	19173	13235	73748	98335	40069	51625
11-23-88 Z	1013	CC2	76781	96910	27479	72125	96502	42972	52117
	1249	CC2	79387	99258	27172	75759	99496	43127	55321
	1237	CC2	78444	103161	28389	78235	99892	44120	55519
11-23-88 Z	1042	CC3	403155	526872	48532*	76922	102124	44303	57362
	1306	CC3	417441	540479	51709	80268	106068	46162	57012
	1335	CC3	391804	510654	48053	76299	98823	42832	51850
11-23-88 Z	0943	CC4	1565040	2038470	† /	75036	95191	41338	52871
	1403	CC4	1630740	2109860	† /	76974	100609	43009	54752
	1452	CC4	1657120	2183070	† /	79736	101894	45729	56486

Solution ID Codes:

- CC1 = Concentration calibration solution #1
- CC2 = Concentration calibration solution #2
- CC3 = Concentration calibration solution #3
- CC4 = Concentration calibration solution #4

* Not present in CC Solution Alternative One.



TMS Analytical Services Inc.

6376 MORENCI TRAIL • TEL: (317) 291-5697 • INDIANAPOLIS, INDIANA 46268

FORM T-2

INITIAL CALIBRATION SUMMARY

Page 2 of 2

Laboratory: TMS Analytical

CC Solution Alternative: 11

Case/Batch No.: 8019/3

Instrument ID: FINNIGAN 4000

Date	Time	Sol. ID	Measured RRF _n	Mean RRF _n	Measured RRF ₁	Mean RRF ₁
11-23-87	0910	CC1	1.08	1.06	1.06	1.06
	1111	CC1	1.05		1.04	
	1140	CC1	1.05		1.07	
11-23-87	1013	CC2	1.08	1.07	1.01	1.02
	1209	CC2	1.07		1.02	
	1237	CC2	1.07		1.03	
11-23-87	1042	CC3	1.09	1.08	1.01	1.02
	1306	CC3	1.08		1.03	
	1335	CC3	1.08		1.02	
11-23-87	0943	CC4	1.11	1.11	1.03	1.03
	1403	CC4	1.11		1.04	
	1432	CC4	1.11		1.02	

011641

Solution ID Codes:

- CC1 = Concentration calibration solution #1
- CC2 = Concentration calibration solution #2
- CC3 = Concentration calibration solution #3
- CC4 = Concentration calibration solution #4

ZRSO: RRF _n	RRF ₁
CC1 = <u>1.63</u>	<u>1.14</u>
CC2 = <u>0.54</u>	<u>0.98</u>
CC3 = <u>0.53</u>	<u>0.48</u>
CC4 = <u>0.0</u>	<u>0.97</u>

Native Mean of Means: 1.08

IS Mean of Means: 1.03



TMS Analytical Services Inc.

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8019 - 06

FORM B-4

QUALITY CONTROL SUMMARY

011643

Laboratory Name TMS ANALYTICAL

Case/Batch No. 8019/43

Instrument ID FINNIGAN 4000

SOIL

Accuracy, Fortified/
Spike Field Blank: 105%

EPA Sample Number: 4213-02

Relative Difference (%),
Duplicate Analysis: 0.0

EPA Sample Number: 4213-03

WATER

Accuracy, Fortified/
Spike Field Blank: NA

EPA Sample Number: NA

Relative Difference (%),
Duplicate Analysis: NA

EPA Sample Number: NA

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME					NO. OF CON- TAINERS	REMARKS									
SAMPLERS: (Signature) <i>Paul W. Rausch</i>																	
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION												
9	9-15-87	1235hrs	✓		As described on IT Sampling documents (Ref loc F069)					6009432	03	WH1240B					
2	9-15-87	1315hrs	✓		As described on IT sampling documents (Ref loc F014)					6009433	03	WH1241A					
10	9-15-87	1515hrs	✓		As described on IT sampling documents (Ref loc F031)					6009434	03	WH1242B					
1	9-16-87	1315hrs	✓		As described on IT sampling documents (Ref loc F006)					6009435	03	WH1243C					
3	9-16-87	1532hrs	✓		As described on IT sampling documents (Ref loc F046)					6009436	03	WH1246A					
4	9-16-87	1514hrs	✓		As described on IT sampling documents (Ref loc F047)					6009437	03	WH1245B					
18	9-17-87	1700hrs	✓		As described on IT sampling documents (Ref loc S002)					6009438	03	WH1248A					
Relinquished by: (Signature) <i>Paul W. Rausch</i> I.T.		Date / Time 09-17 1730hrs		Received by: (Signature) <i>Federal Express's Heather Schmitt</i>			Relinquished by: (Signature)			Date / Time		Received by: (Signature)					
Relinquished by: (Signature) <i>Heather Schmitt</i>		Date / Time 9-17-87		Received by: (Signature) <i>Federal Express</i>			Relinquished by: (Signature) <i>Federal Express</i>			Date / Time 9/18/87 0945		Received by: (Signature) <i>Suzanne E. Fox</i>					
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)			Date / Time		Remarks Airbill # 342270655								

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

FEDERAL EXPRESS

COMPLETE ALL INFORMATION IN THE 5 BLOCKS CONTAINED IN THE BACK OF FORM SET FOR COMPLETE PREPARATION INSTRUCTIONS.

342270655

YOUR FEDERAL EXPRESS ACCOUNT NUMBER
0752-840-2

DATE
9/17/89



FROM (Your Name)
Imre Sakelyhidi

COMPANY
COURTNEY B ENVIRONMENT INC

DEPARTMENT/FLOOR NO.
1009 HAIN ST. STE 614

STREET ADDRESS
DALLAS TX

CITY
DALLAS TX

TO (Recipient's Name)
Dennis Huring

COMPANY
TMS Analytical

DEPARTMENT/FLOOR NO.
6376 Moberg Trail

STREET ADDRESS
Indianapolis IN

CITY
Indianapolis IN

ARRBILL NO. **342270655**

ZIP ACCOUNT BY CODE REQUIRED FOR CORRECT DELIVERY
75201 0148019

IN TENDERING THIS SHIPMENT, SHIPPER AGREES THAT F.E.C. SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM CARRIAGE HEREOF, F.E.C. DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THIS SHIPMENT; THIS IS A NON-NEGOTIABLE AIRBILL SUBJECT TO CONDITIONS OF CONTRACT SET FORTH ON REVERSE OF SHIPPER'S COPY. UNLESS YOU DECLARE A HIGHER VALUE, THE LIABILITY OF FEDERAL EXPRESS CORPORATION IS LIMITED TO \$100. FEDERAL EXPRESS DOES NOT CARRY CARGO LIABILITY INSURANCE.

ZIP ACCOUNT BY CODE REQUIRED FOR CORRECT DELIVERY
46201 01118

YOUR NOTES/REFERENCE NUMBERS (FIRST 12 CHARACTERS WILL ALSO APPEAR ON INVOICE)
FAR0006EE-21

FEDERAL EXPRESS
FREIGHT CHARGES
DECLARED VALUE
ADVANCE CREDIT

PAYMENT Bill Shipper Bill Recipient's F.E.D. Acct. Bill 2nd Party F.E.C. Acct. Bill Credit Card

Cash in Advance
Account Number/Credit Card Number
020037514

EMP. NO. (OPTIONAL)
DATE IN ORDER TO SUBMIT
CASH RECEIVED
ACTING

SERVICES CHECK ONLY ONE BOX OF EACH TYPE

DELIVERY AND SPECIAL HANDLING CHECK SERVICES REQUIRED

PRIORITY 1 (OVERNIGHT PACKAGING - 1 to 2 business days (up to 70 LBS.))

STANDARD AIR (DELIVERY AND PICKUP FOLLOWING PICKUP UP TO 10 LBS.)

DAYTIME (NEXT BUSINESS DAY (MONDAY THROUGH FRIDAY); TWO DAYS (FROM ALASKA/HAWAII); SATURDAY DELIVERY AVAILABLE IN CONTINENTAL U.S. SEE "SPECIAL HANDLING")

ORAM'S AND RADIOACTIVE MATERIAL ONLY

DELIVERY AND PICKUP FOLLOWING PICKUP UP TO 10 LBS.)

DAYTIME (NEXT BUSINESS DAY (MONDAY THROUGH FRIDAY); TWO DAYS (FROM ALASKA/HAWAII); SATURDAY DELIVERY AVAILABLE IN CONTINENTAL U.S. SEE "SPECIAL HANDLING")

PACKAGES	WEIGHT	DECLARED VALUE	OR	EMP. NO.	DATE IN ORDER TO SUBMIT
1	7.0				
TOTAL	TOTAL	TOTAL			

RECEIVED BY (Signature)
Julie Noble

DATE/TIME RECEIVED
9/17/89 09:15

F.E.C. EMPLOYEE NUMBER

SHIPPER'S CERTIFICATION FOR RESTRICTED ARTICLES

ARRBILL NUMBER **342270655** (TYPE OR PRINT)

NO. OF PKGS.	PROPER SHIPPING NAME	CLASSIFICATION	IDENTIFICATION NO.	QUANTITY
1	Flammable Solid NOS	Flammable Solid	Flammable Solid - NOS UN1925	28.0z
Limited Quantity				

ADDITIONAL DESCRIPTION REQUIREMENTS FOR RADIOACTIVE MATERIALS (SEE BACK)

THIS SHIPMENT IS WITHIN THE LIMITATIONS PRESCRIBED FOR PASSENGER AIRCRAFT ~~CARGO AIRCRAFT ONLY~~ (DELETE-NONAPPLICABLE)

IF ACCEPTABLE FOR PASSENGER AIRCRAFT, THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT TO, RESEARCH, MEDICAL DIAGNOSIS OR TREATMENT.

I HEREBY CERTIFY THAT THE CONTENTS OF THIS CONSIGNMENT ARE FULLY AND ACCURATELY DESCRIBED ABOVE BY PROPER SHIPPING NAME AND ARE CLASSIFIED, PACKED, MARKED AND LABELED, AND IN PROPER CONDITION FOR CARRIAGE BY AIR ACCORDING TO APPLICABLE NATIONAL GOVERNMENTAL REGULATIONS.

NAME AND ADDRESS OF SHIPPER
Imre Sakelyhidi 214-742-6601

0116

File No. _____

File NameTimeDescription

Sep 2801

1935

BAD
CORRECTED
CHANGED

CART SOW

DEL

02

2003

CO. PERS. MIX

03

2156

CART SOW

04

2233

CO. PERS. MIX

05

2308

METHOD BLANK

06

2336

#212-17

07

0004

#212-16

08

0032

#212-02

09

0059

#212-113

10

0127

#212-115

11

0155

#212-15

12

0223

#212-10

13

0250

#212-08

14

0318

#212-12

15

0346

#212-07

16

0414

METHOD BLANK

BATCH

17

0443

#212-04

18

0511

#212-01

19

0539

#212-05

20

0607

#212-06

21

0636

#212-07

22

0705

M.B. - BATCH #3

23

0733

#212-22

24

0801

#213-02

25

0829

#212-19

26

0857

#213-01

27

0925

CO. PERS. MIX

To Page No. _____

seen & Understood by me,

Date

Invented by

Date

Tom H. Helmer

9/29/87

Recorded by

m Page No. _____

<u>File Name</u>	<u>Date</u>	<u>Description</u>
SEP 3001	1208	Ch. T. SOEN
02	1214	Col. N. S. 111X
03	1259	# 212-20
04	1227	# 212 31
05	1231	# 212 03
06	1238	# 212-02 DUP
07	1210	TRACING #5 212.
08	—	Ch. T. SOEN #1 112
09	—	# 212 02
09	2132	²⁰¹ REF. Ch. T. SOEN
10	—	(Ch. T. SOEN)
11	—	# 212-02
12	—	# 212-19

01164E

To Page No. _____

nessed & Understood by me,

Date

Invented by

Date

Recorded by

No.	File Name	Time	Description
	OCT 01 01	1303	CAR I SOLN
	02	1333	COL. AGR. MIX
	03	1411	#212-06
	04	1443	#212-02
	05	1518 1545	#212-11
	06	1614	#212-14 #212-16
	07	1715	#212-19
	08	1825	#213-02 - TEST @ WAT. U.S. 19-87
	09	1922	M.B. - CASE 8048:4
	10	2018	#351-06 COL. AGR. MIX

To Page No. _____

& Understood by me,

SK Reizer

Date

10/1/87

Invented by

Recorded by

Date

011649



TMS Analytical Services Inc.

6376 MORENCI TRAIL • TEL. (317) 291-5697 • INDIANAPOLIS, INDIANA 46268

8019-14

GC/MS ANALYSIS LOG SHEET

CASE NUMBER 8019/43
PAGE 1 OF 1

SNO	RUN	DISC	TAPE	LOCATOR	COMMENTS
SAMPLE #	NUMBER	NUMBER	NUMBER	NUMBER	
1.	SEP M.B. 3007	9/30	STM	15	
2.	OCT 212-19 0107	10/1	STM	15	
3.	SEP 212-20 3003	9/30	STM	15	
4.	SEP 212-21 3004	9/30	STM	15	
5.	OLTS 212-22 2822	9/29	STM	15	
6.	OLTS 213-01 2826	9/29	STM	15	
7.	SEP 213-02 N 2824	9/29	STM	15	
8.	SEP 213-03 3005	9/30	STM	15	
9.	SEP 213-03 D 3006	9/30	STM	15	
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					

01165C

GC COLUMN DESCRIPTION: 5A2231

TEMPERATURE PROGRAM: 100 °C
100-200 @ 25/min
200-240 @ 4/min
Hold 2 min



TANDEM MASS SPECTROMETRY

TMS Analytical Services Inc.

6376 MORENO TRAIL • TEL. (317) 291-5697 • INDIANAPOLIS, INDIANA 46268

SAMPLE TRACKING RECORD

CASE NUMBER 8019
PAGE 1 OF 1

9/18/87
Batch #3

SAMPLE #	SAMPLE WEIGHT	SAMPLE SPIKED	SAMPLE EXTRACTED	SAMPLE EVAP.	COLUMN #1 & #2 CLEANUP	CARBON COLUMN CLEANUP	EXTRACTS ISSUED TO GC/MS	EXTRACTS RECEIVED AT GC/MS	GC/MS ANALYSIS COMPLETED	EXTRACTS RETN'D TO STORAGE	EXTRACTS REC'D FOR STORAGE	COMMENTS
MB	10.18	II	✓	✓	✓	✓	✓	✓	✓	✓	✓	
DF0212 19	9.98											
212-20	10.03											
212-21	10.07											
212-22	10.16											
213-01	10.04											
213-02	10.58	I										
213-03	10.04	II										
213-03 DUD	10.01	"						↓	↓	↓	✓	
COMPLETED BY	KSM	KSM	KSM	KSM	KSM	KSM	KSM	KSM	KSM	KSM	KSM	
DATE	9/22/87	9/22/87	9/22/87	9/24/87	9/24/87	9/24/87	9/25/87	9/28/87	10/11/87	10/16/87	10/26/87	

011652

011653

0011 01

RIC

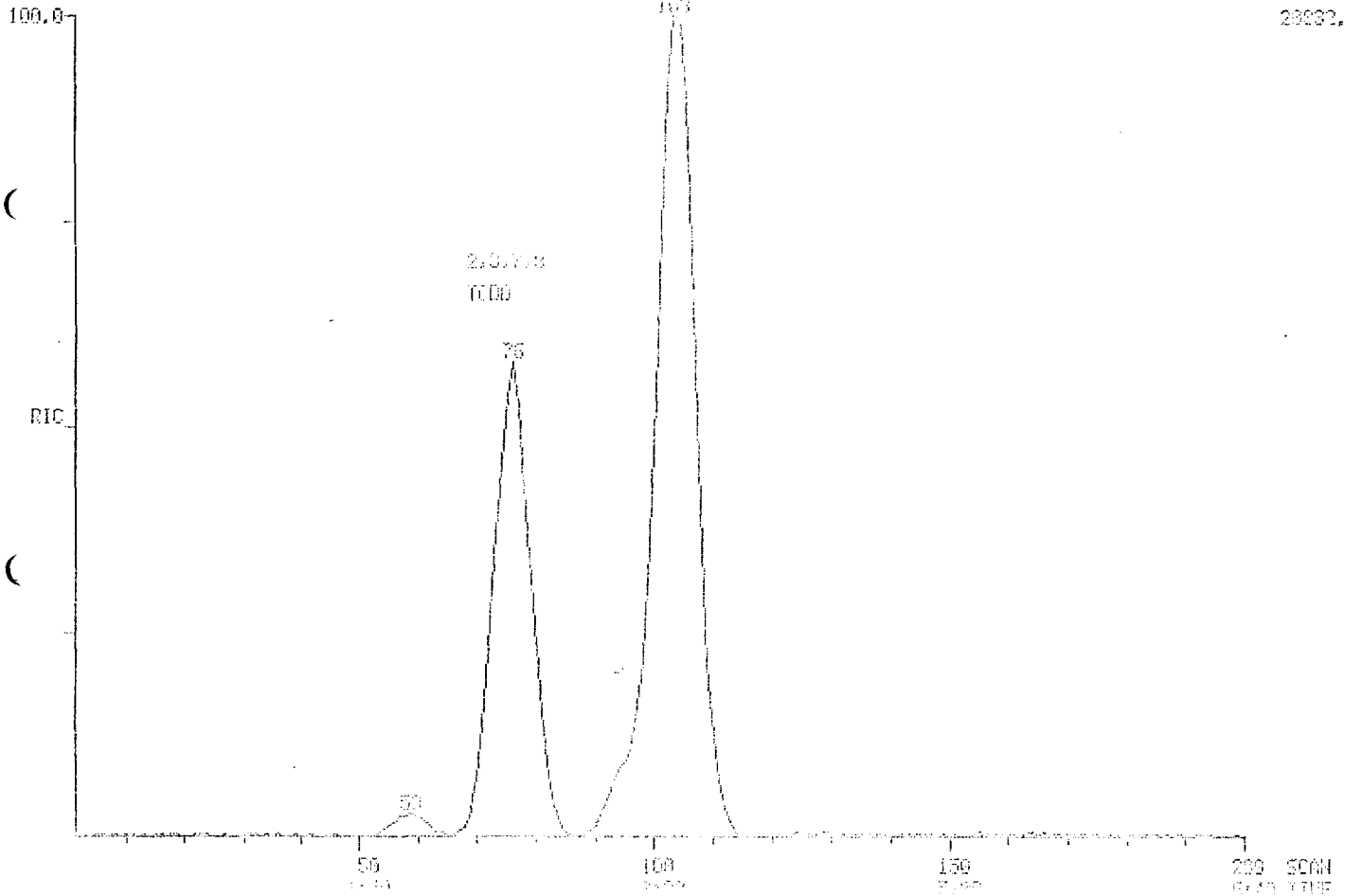
04/23/07 8:10:08

SAMPLE: COLUMN PERFORMANCE HIGH

COND5.: 1UL/SP2331/100-200025/000-21001-HOLD30

RANGE: G 1. 200 LABEL: 1! 5! 2.5 COND: 0 0! 1.5 U 3 COND: U 20. 3

00000 1 70 310



23332.

200 SCAN
04/23/07

011654

INSTR. CHROMATOGRAMS

DATE: 11/23/87

TIME: 1:40:00

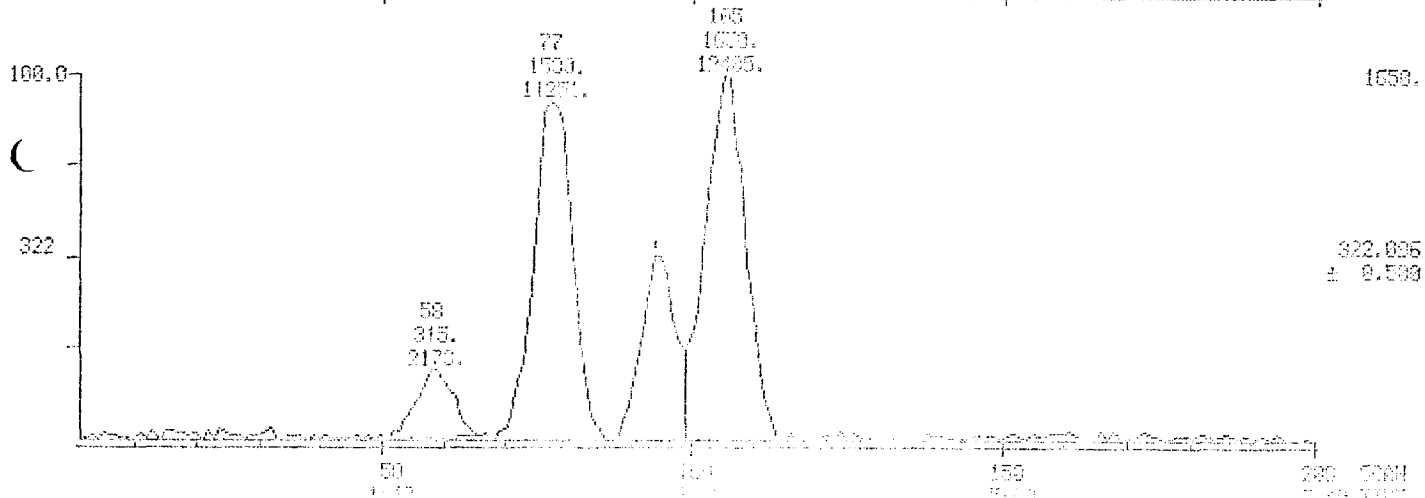
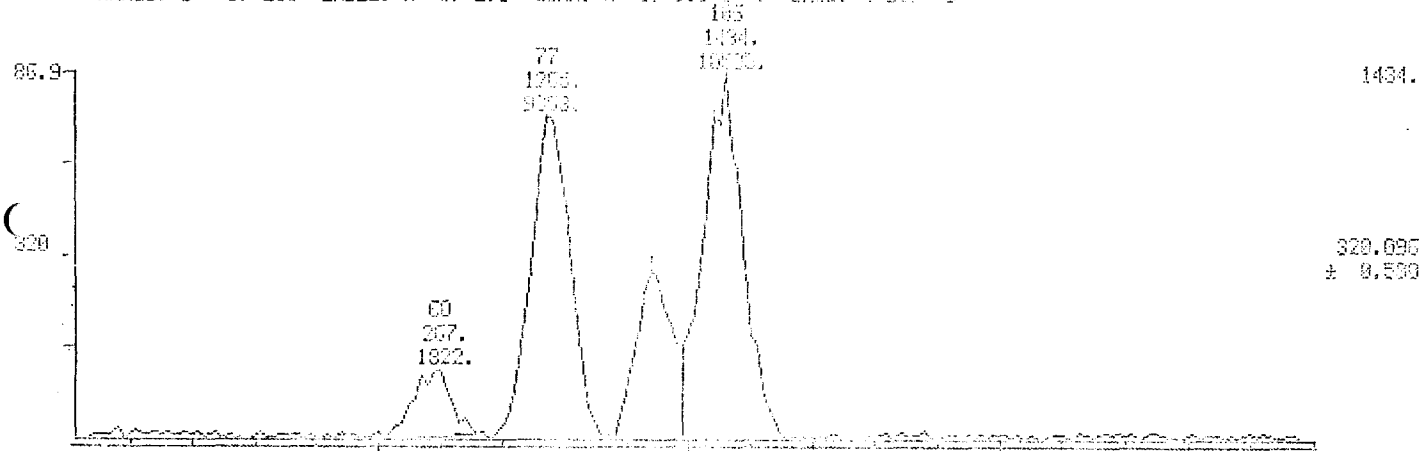
04/23/87 8:16:00

LAB: 11/23/87

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 1UL/SP2331/100-200025/200-2400/110/010

RANGE: G 1, 200 LABEL: H 5, 2.5 QUAN: A 1, 1.0 U. C. CORR: U 20, 3



011656

HID RIC

DATE: 07/23/87

COND: 1704 TO 1822

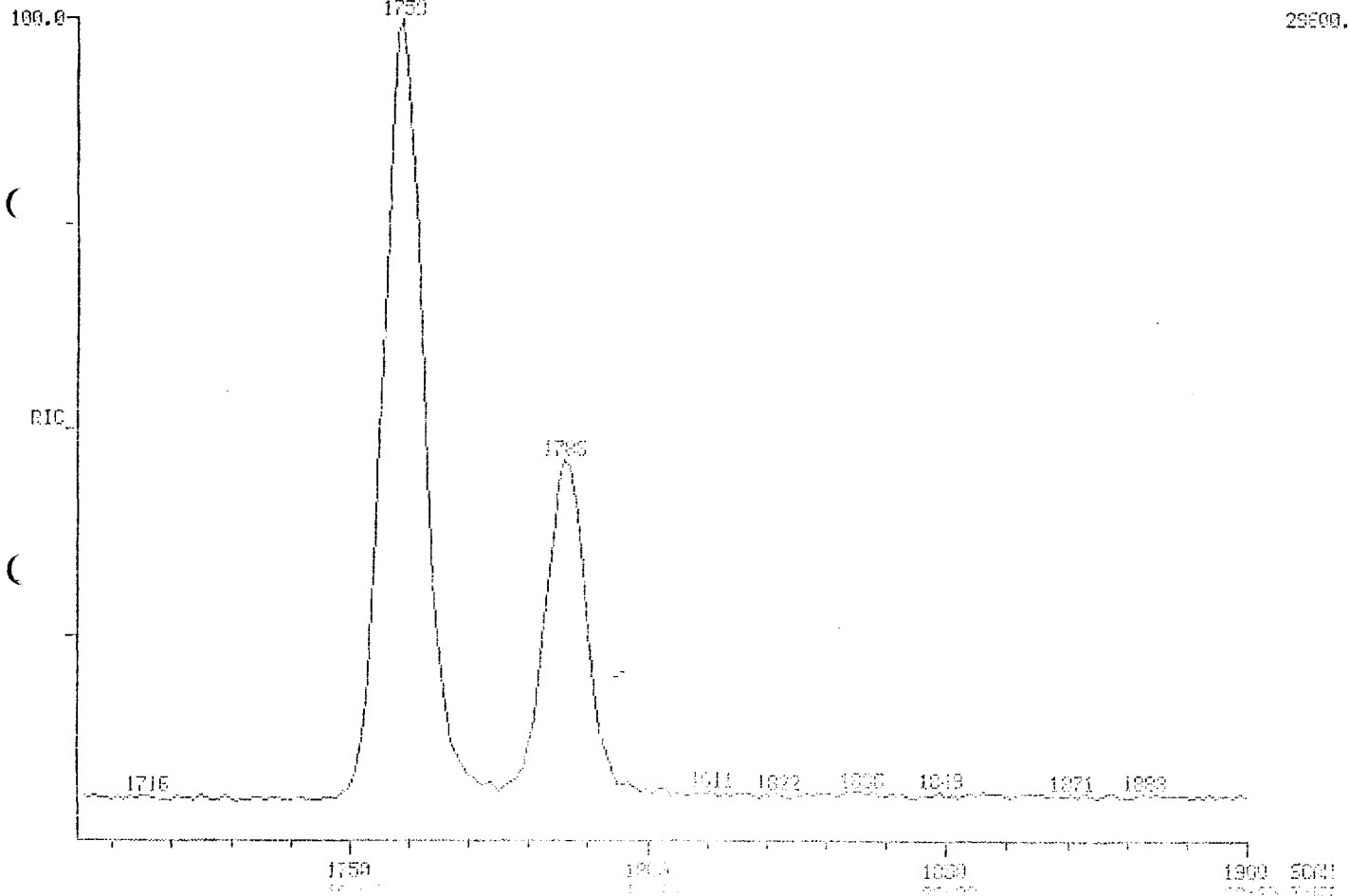
04/23/87 11:11:03

FILE: 011656.D

SAMPLE: CALIBRATION SOLN I

COND: 1UL/SP2331/100-200025/200-240044/10L010

RANGE: 01704.1000 LABEL: H 0, 4.0 QUAN: 0 0, 1.0 J 0 BASE: U 20, 3



011657

HID MASS CHROMATOGRAMS

DATE: 01/20/88

SCAN: 1701 TO 1900

04/23/87 11:11:03

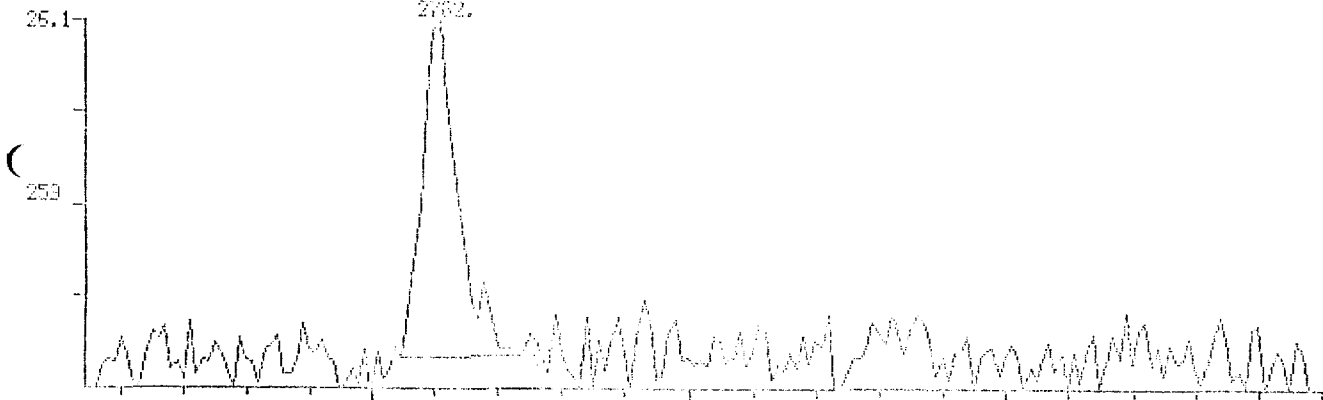
CALL: 6122520715

SAMPLE: CALIBRATION SOLN I

CONFS.: 1UL/SP2331/100-200025/200-24531/HOLD10

RANGE: 61704,1900 LABEL: H 5, 2.5 GUSH 6 1, 1.0 U 9 ORGE: H 20, 3

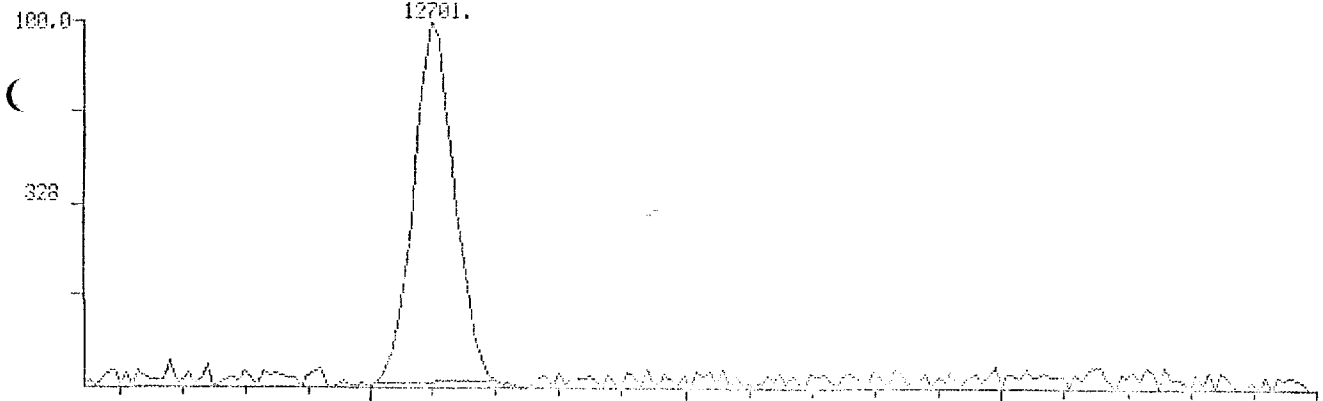
1701
1702
2792.



451.

209.077
± 0.500

1709
1700.
12701.



1700.

329.033
± 0.500

1750 1800 1850 1900 SCAN
12-57 17-57 22-00 28-24 TIME

399110

HID NASS CHROMATOGRAMS

INSTR: 843015-11

SCANS: 1791 TO 1839

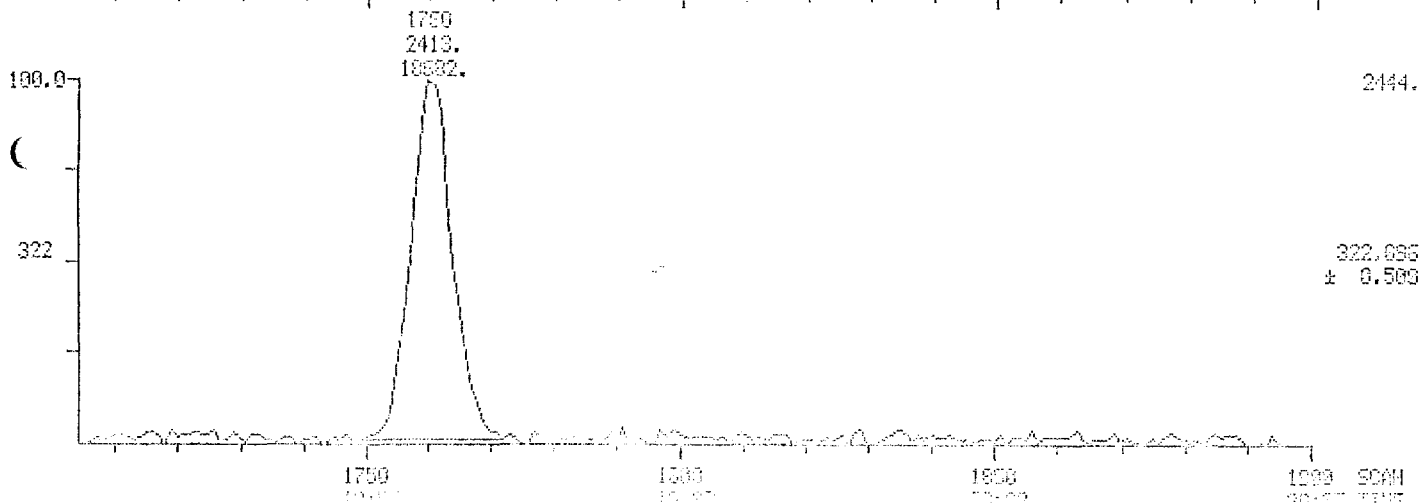
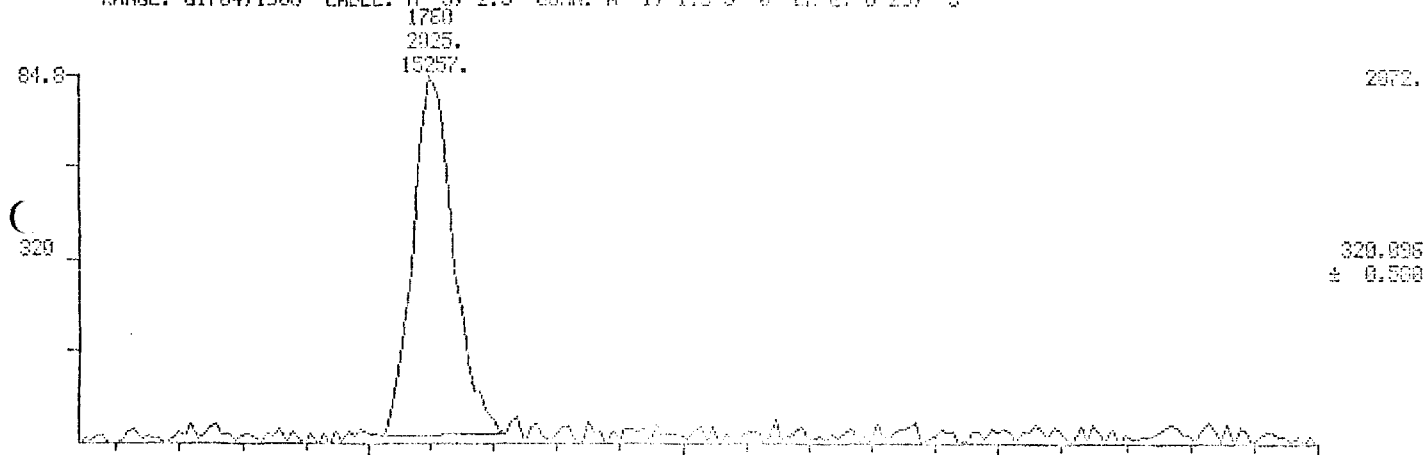
04/23/87 11:11:00

CONC: 0.0000000000

SAMPLE: CALIBRATION SOLN I

CONDS.: 1UL/SP2331/100-200025/200-24001/100/10

RANGE: G1704.1900 LABEL: H 5, 2.5 GUAN: A 1, 1.0 J 0 RATE: U 20, 3



399110

MID MASS CHROMATOGRAMS

DATA: APT0206 21

SCANS: 1704 TO 1800

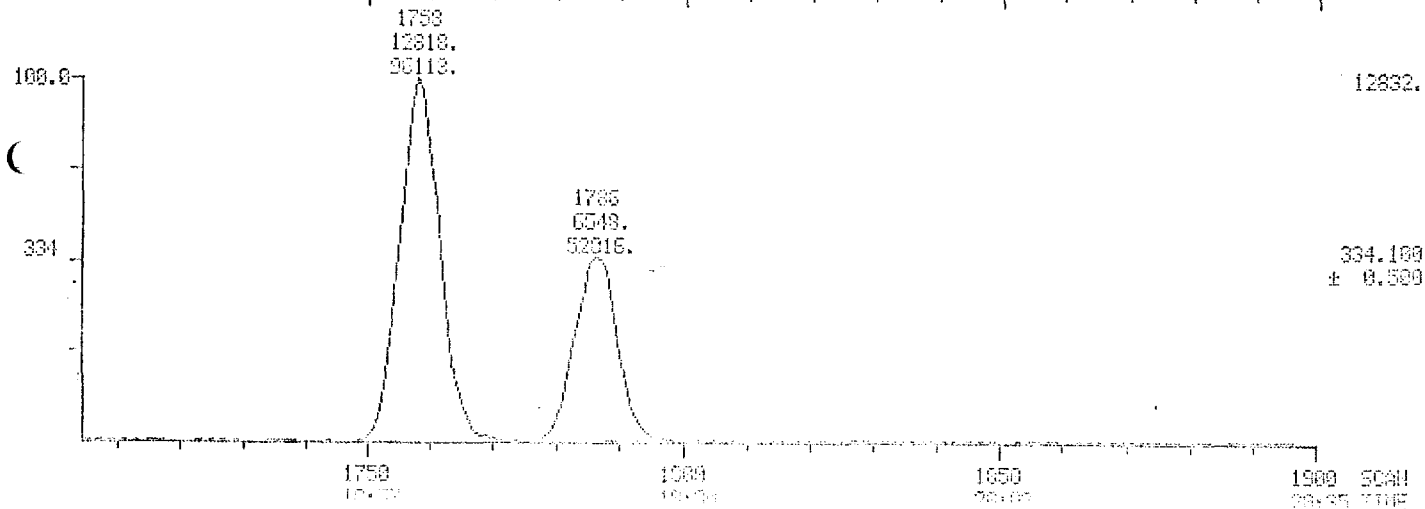
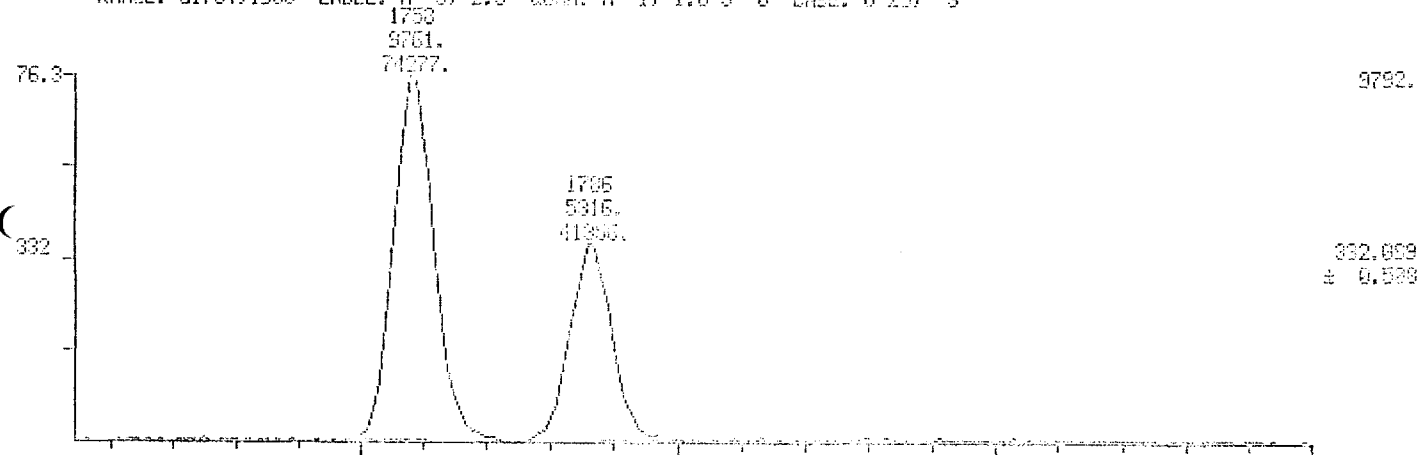
04/23/87 11:11:00

CELL: 030042807 10

SAMPLE: CALIBRATION SOLN I

CONDS.: 1UL/SP2331/100-200@25/200-24004/HOLD10

RANGE: G1704.1900 LABEL: H 5, 2.5 QM/N: A 1, 1.0 J 0 BASE: U 20, 3



099110

MID RIC

01/23/87 11:40:00

SAMPLE: CALIBRATION SOLN I

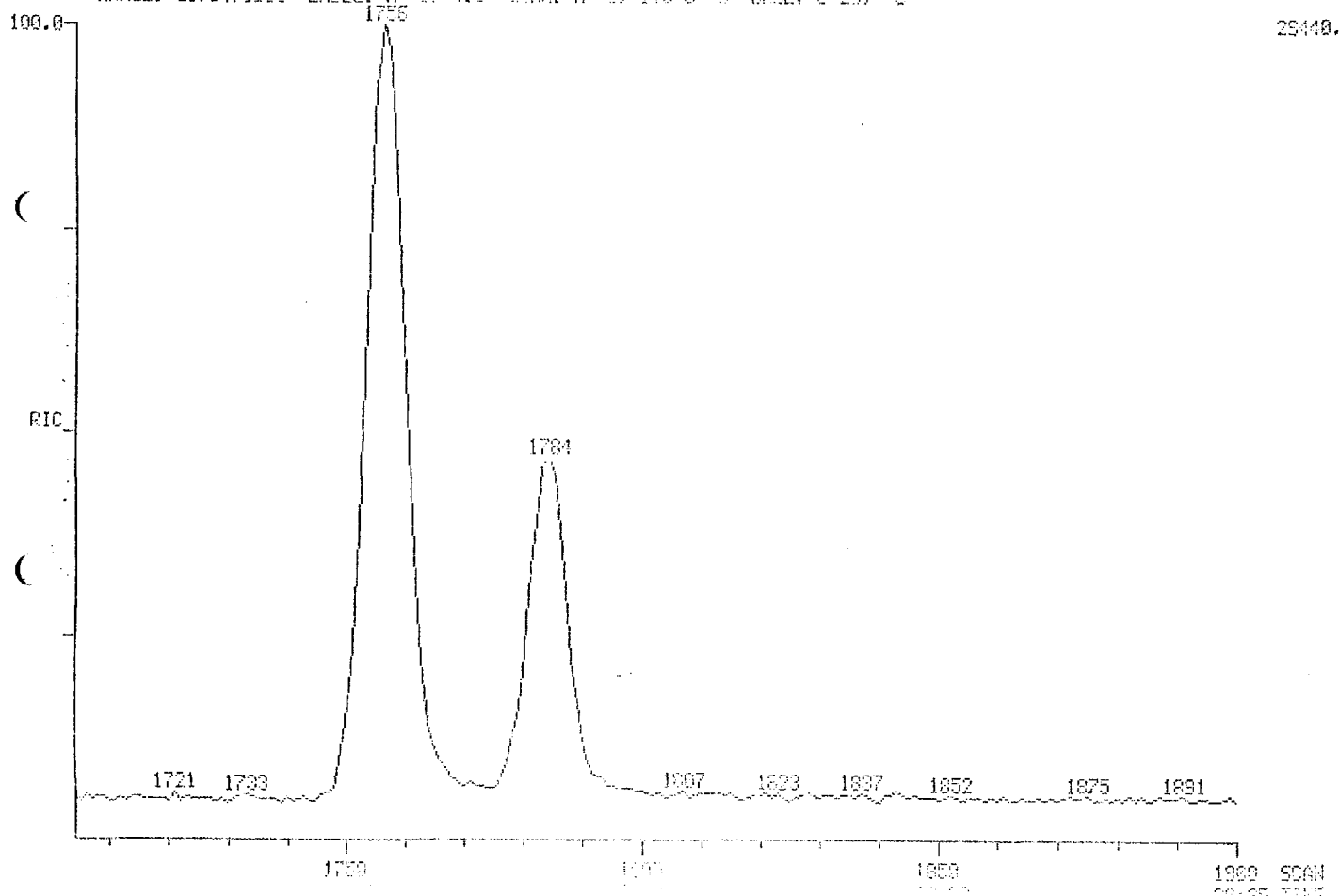
CONDS.: 1UL/SP2331/100-200025/200-24001/154.010

RANGE: 01704.1900 LABEL: H 0. 4.0 CMM: A 0. 1.0 J 0. DAGE: U 20. 3

DATE: 01/23/87

TIME: 11:40:00

SCANS: 1754 TO 1755



011611

HTD MASS CHROMATOGRAMS

04/29/87 11:49:00

SAMPLE: CALIBRATION SOLN I

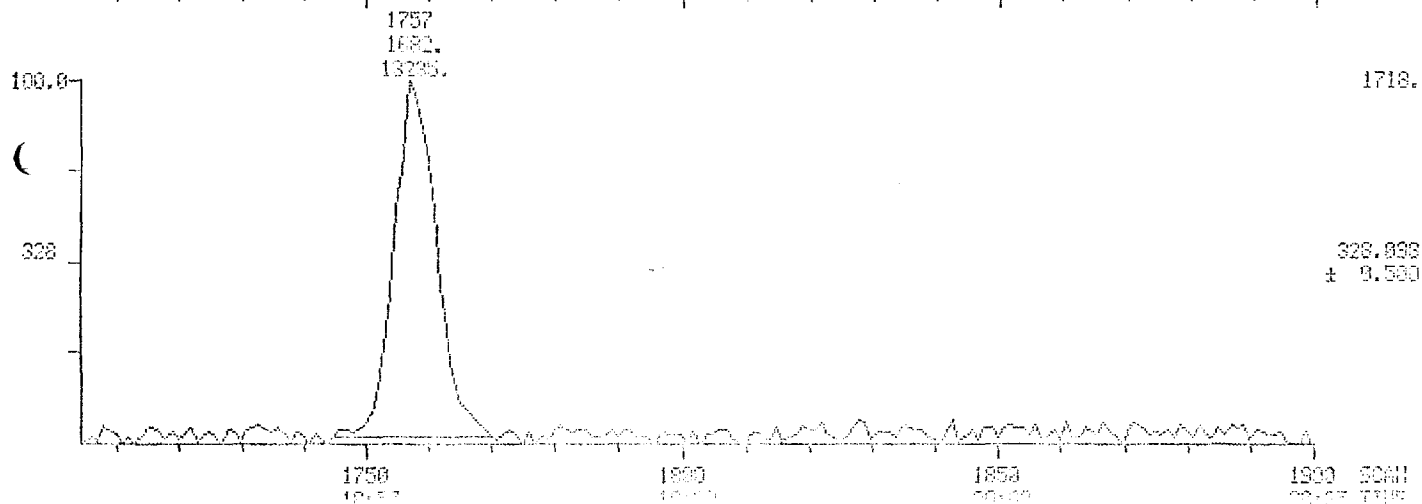
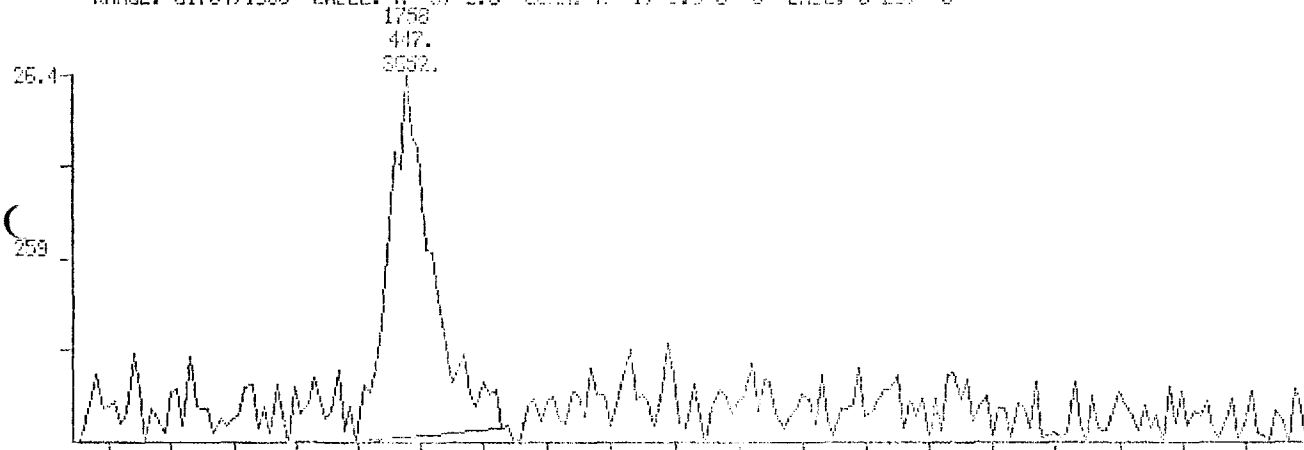
CONDS.: 1UL/SP2331/100-200025/200-24004/MSLD10

RANGE: 01704.1900 LABEL: H 5, 2.5 QUANT: 0 1, 1.0 U 0 BASE: U 20, 3

04/29/87 11:49:00

04/29/87 11:49:00

04/29/87 11:49:00



399110

MID MASS CHROMATOGRAMS

04/23/87 11:40:00

SAMPLE: CALIBRATION SOLN I

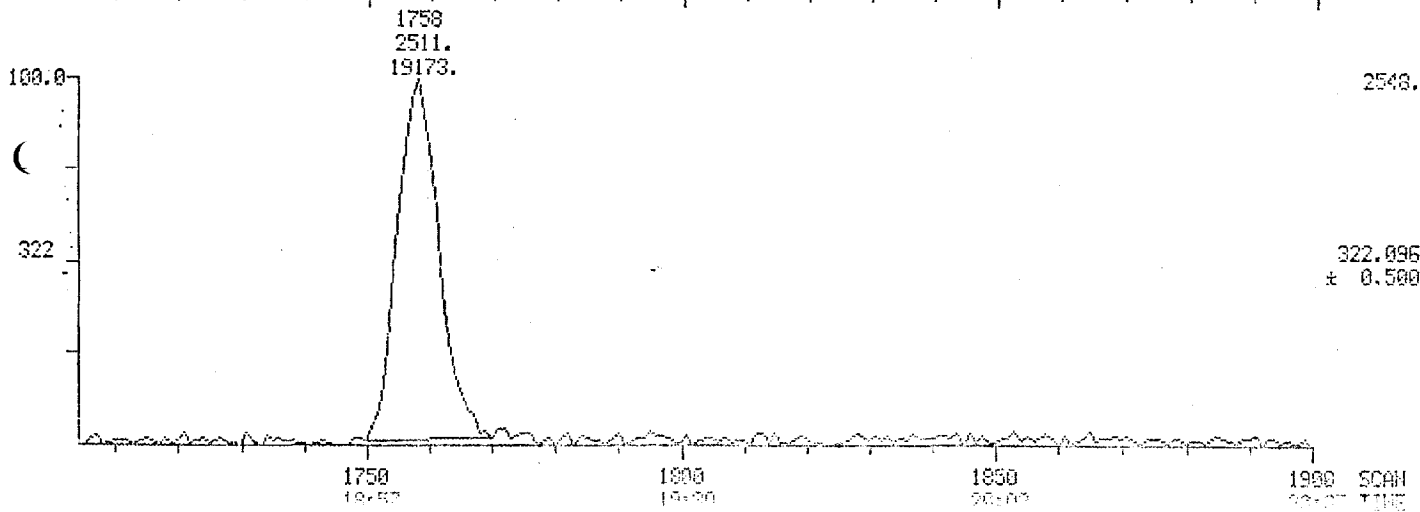
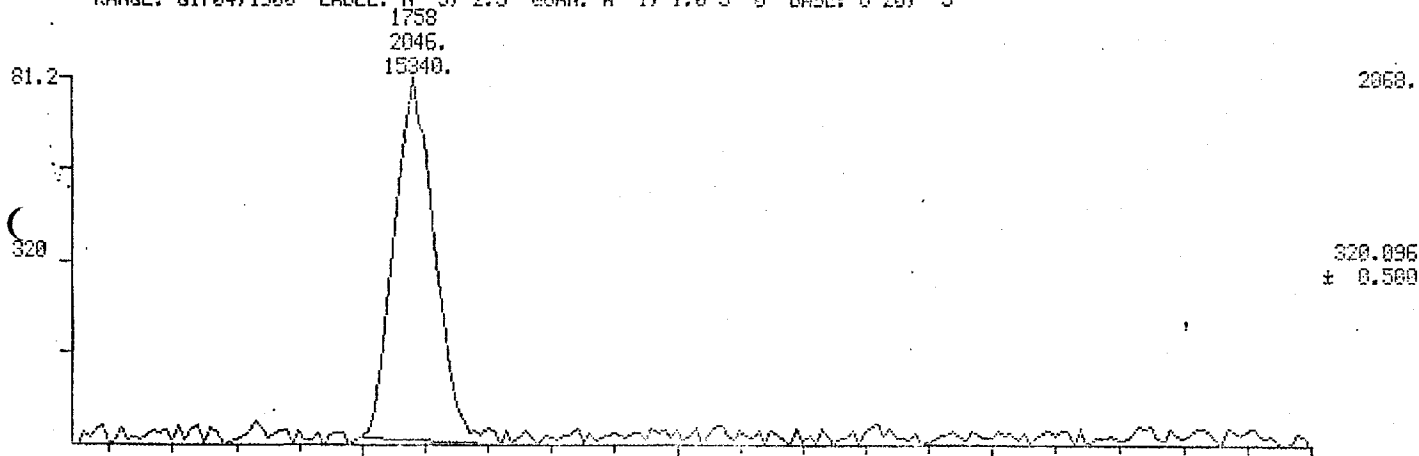
CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704,1900 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 9 BASE: U 20, 3

DATA: 04/23/87 11

SCAN: 1704 TO 1900

FILE: 04/23/87 03



1750
10:57

1800
10:00

1850
09:00

1900
08:07 TIME

SCAN

011693

MID MASS CHROMATOGRAMS

DATE: 12/02/87 01

SCANS 1704 TO 1900

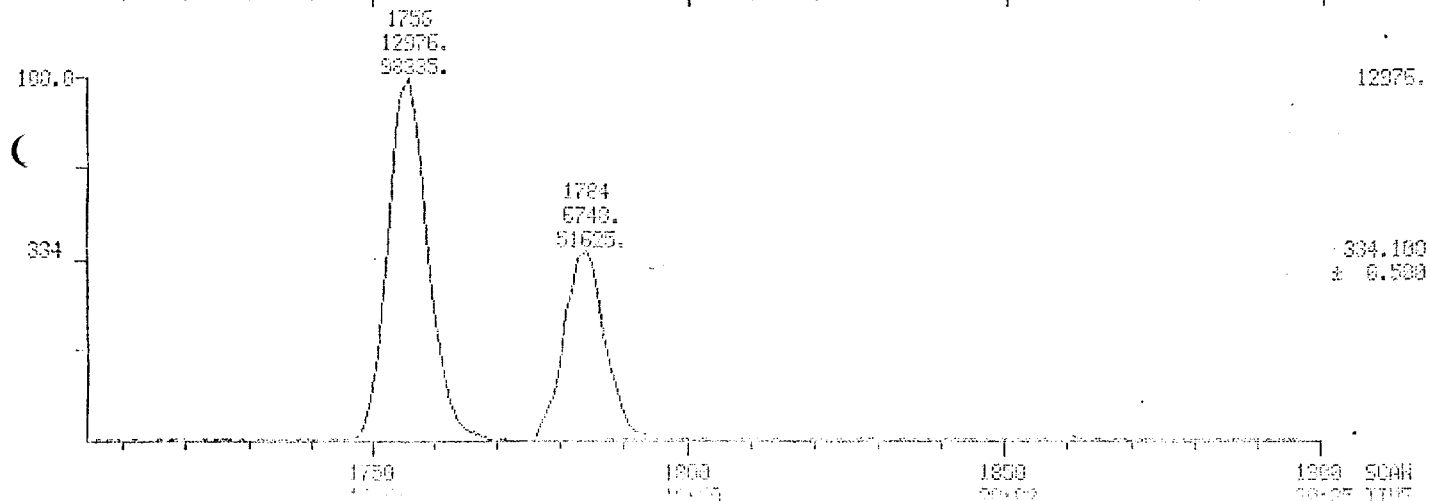
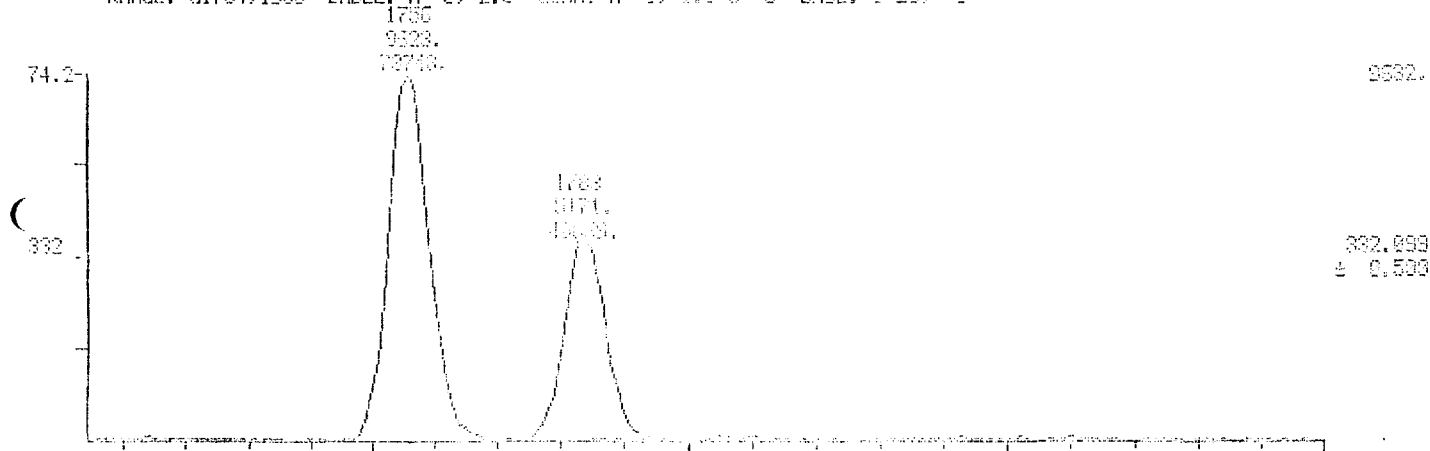
04/23/87 11:49:50

CALI: CAL12007 05

SAMPLE: CALIBRATION SOLN I

CONDS.: 1UL/SP2331/100-200025/200-24004/100.016

RANGE: G1704.1900 LABEL: H 5, 2.5 QUANT: A 1, 1.0 J 0 BASE: U 20, 3



011664

MID RIC

04/23/87 9:10:00

SAMPLE: CALIBRATION SOLN. I

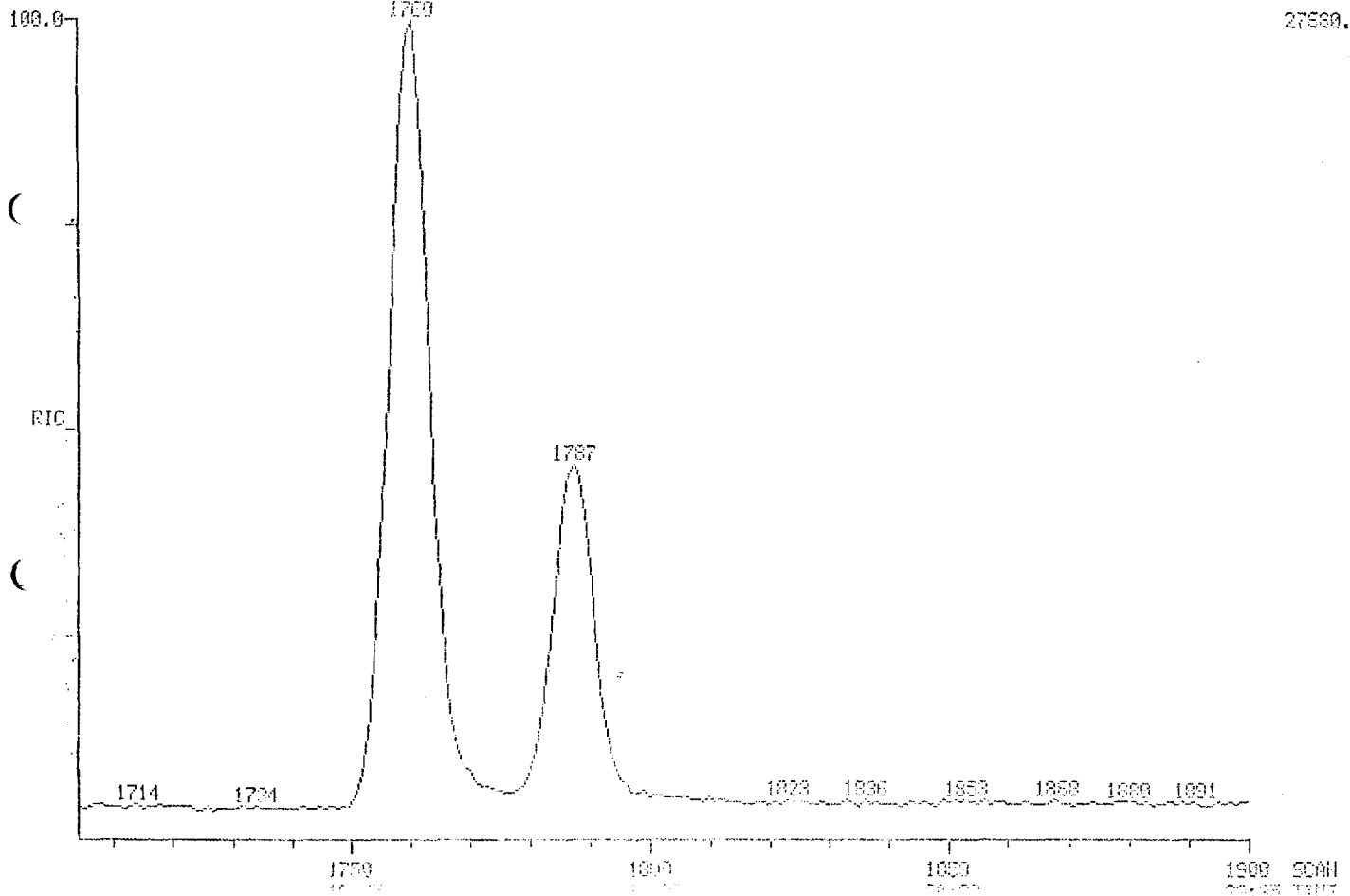
COND5.: 1UL/SP2331/100-200025/200-24004/110LD10

RANGE: 01704.1900 LABEL: N 0, 4.9 SUM: A 0, 1.0 J 0 BASE: U 20, 3

FORM: 011664 01

DATE: 04/23/87 13

00000 0100 001 0000



399110

HID MASS CHROMATOGRAMS

DATE: APR 20 1987

TIME: 17:01 TO 17:00

04/23/87 9:19:00

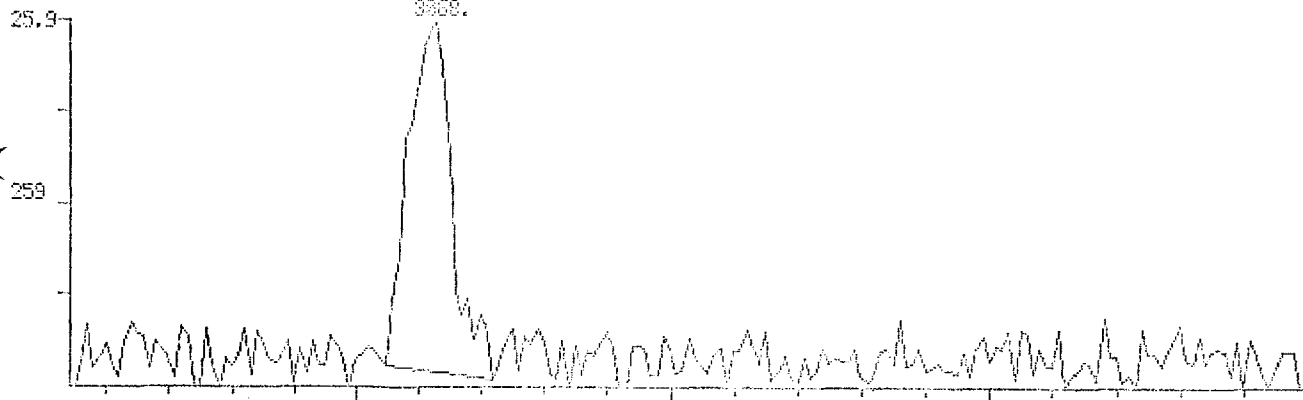
FILE: CALIBR.D

SAMPLE: CALIBRATION SOLN. I

COND.: 1UL/SP2331/100-200023/000-24004/HOLD10

RANGE: G1704.1200 LABEL: H 5, 2.5 QUANT: A 1, 1.0 J 9 PASE: U 00, 3

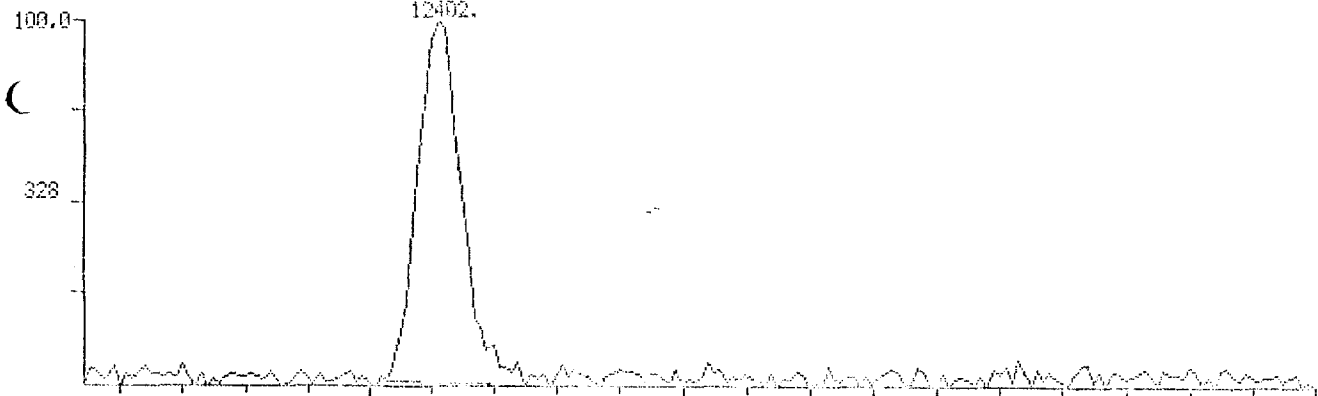
1763
500.
3900.



396.

250.077
± 0.500

1751
1515.
12402.



1530.

328.098
± 0.500

1750 1800 1850 1900 SCAN

399T10

HID MASS CHROMATOGRAMS

04/23/87 9:10:00

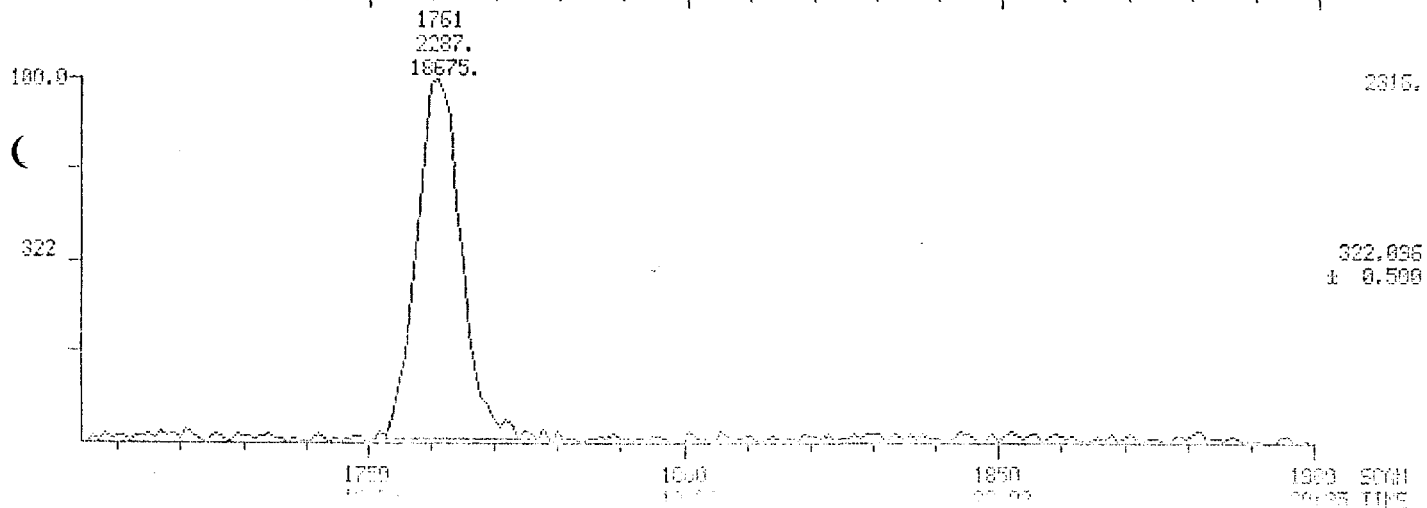
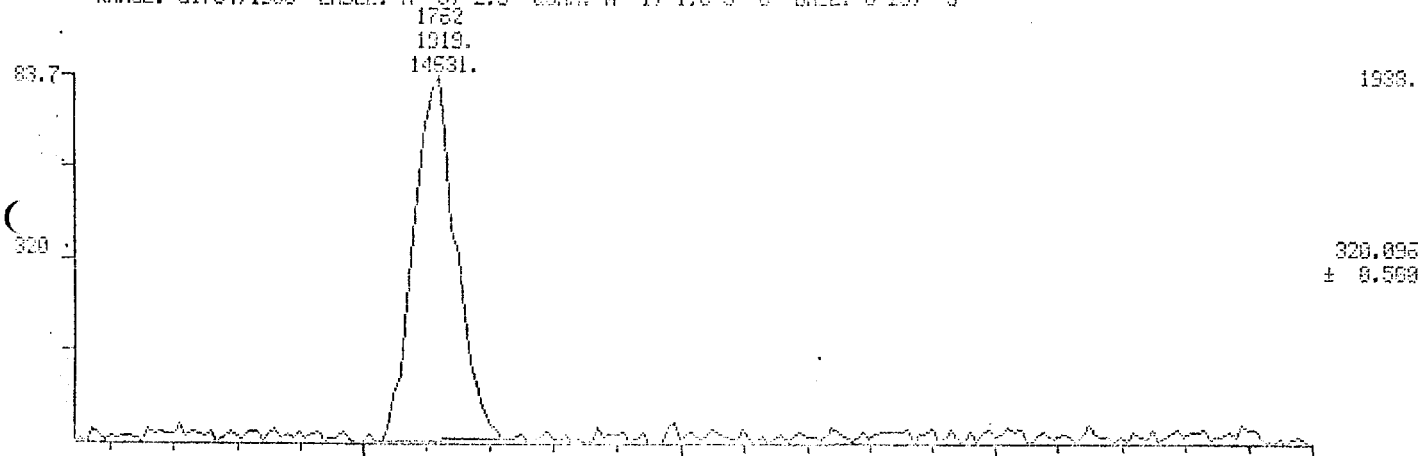
DATA: 04/23/87 09:10:00
DIR: 00002301.D

FILE: 00002301.D

SAMPLE: CALIBRATION SOLN. I

COND.: 1UL/SP2331/100-200025/200-24000/HOLD10

RANGE: G1704,1900 LABEL: N 5, 2.5 GUYN A 1, 1.0 J 0 GAGE: U 20, 3



299110

HID MASS CHROMATOGRAMS

DATE: 04/23/87

SCANS 1704 TO 1900

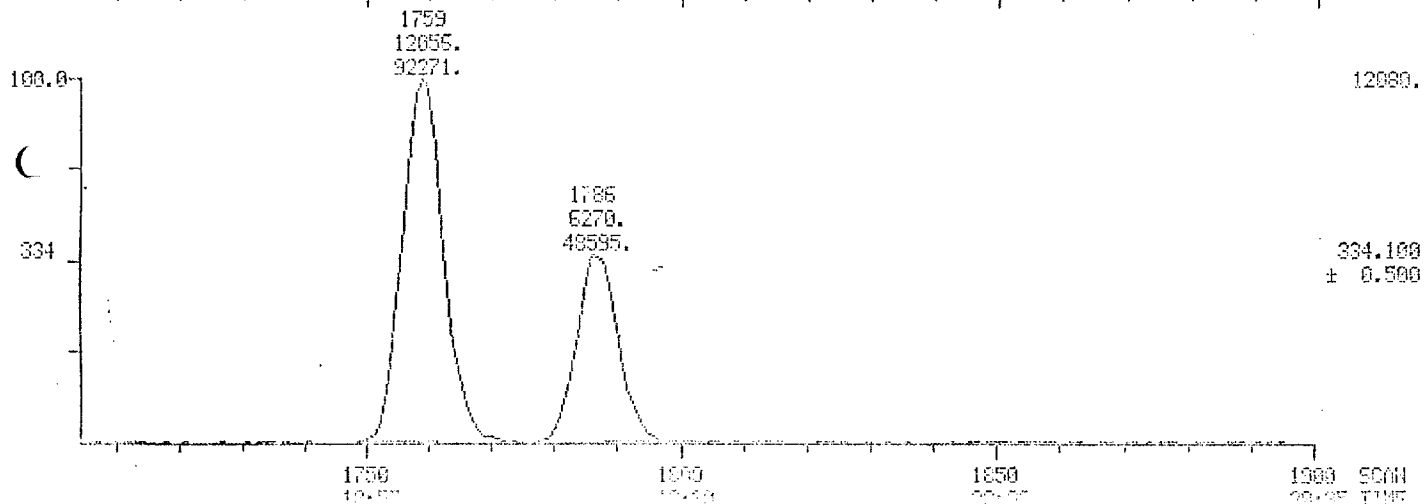
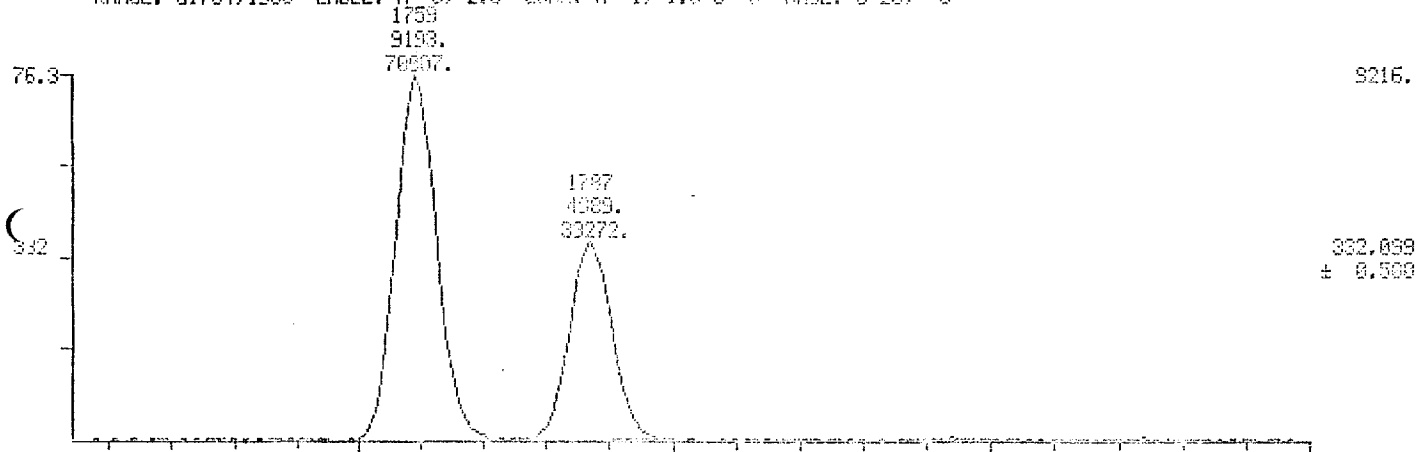
04/23/87 9:10:00

TIME: 00:04:00.00

SAMPLE: CALIBRATION SOLN. I

COND5.: 1UL/SP2331/100-200025/200-210004/HOLD10

RANGE: G1704.1900 LABEL: H 5, 2.5 CONN: A 1, 1.0 J 0 RASE: U 20, 3



399110

NID RIC

DATE: 04/23/87

TIME: 12:09:00

04/23/87 12:09:00

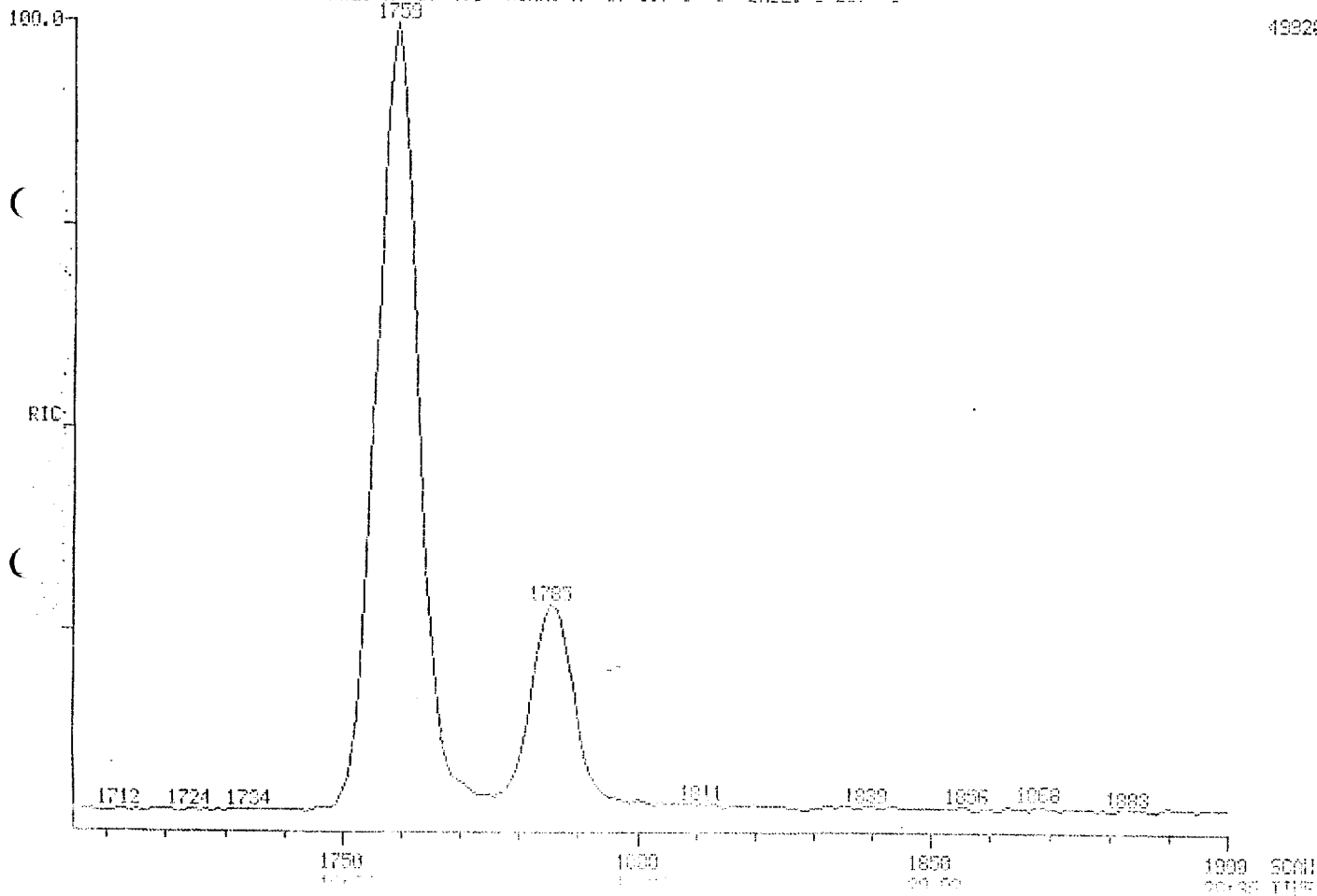
CONC: 0.1012500000

SAMPLE: CALIBRATION SOLN II

COND: 1UL/SP2331/100-260025/200-24004/HOLD10

RANGE: 61704,1900 LABEL: N 0, 4.0 PUSH: A 0, 1.0 J 9 SACE: U 20, 3

49928.



399110

MID MASS CHROMATOGRAMS

04/23/87 12:09:00

SAMPLE: CALIBRATION SOLN II

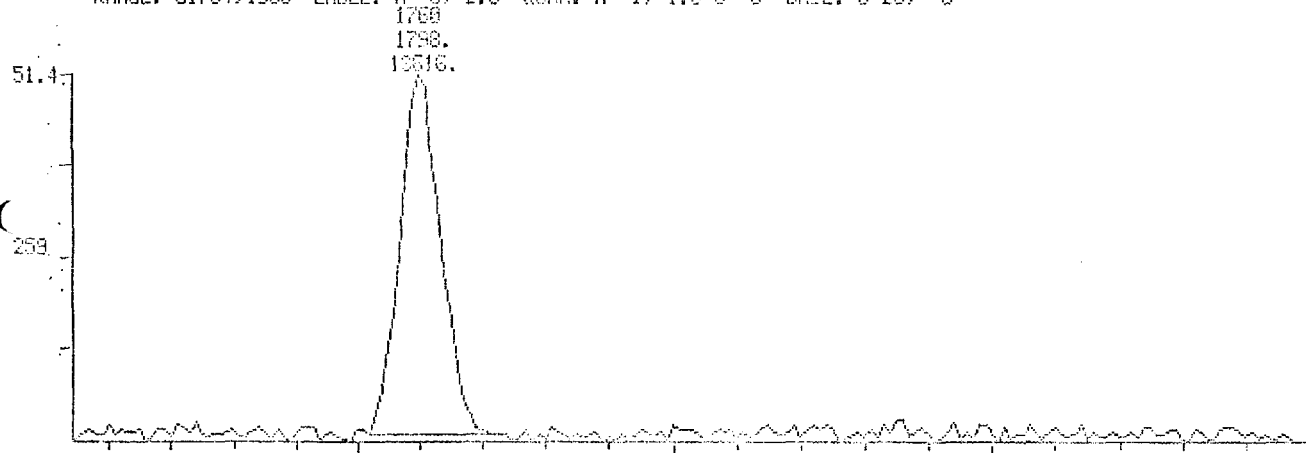
COND.: 1UL/SP2331/100-200023/200-24001/HOLD10

RANGE: G1704,1900 LABEL: W 5, 2.5 QUANT: A 1, 1.0 U 0 BASE: U 20, 3

REV.: 0.0000 01

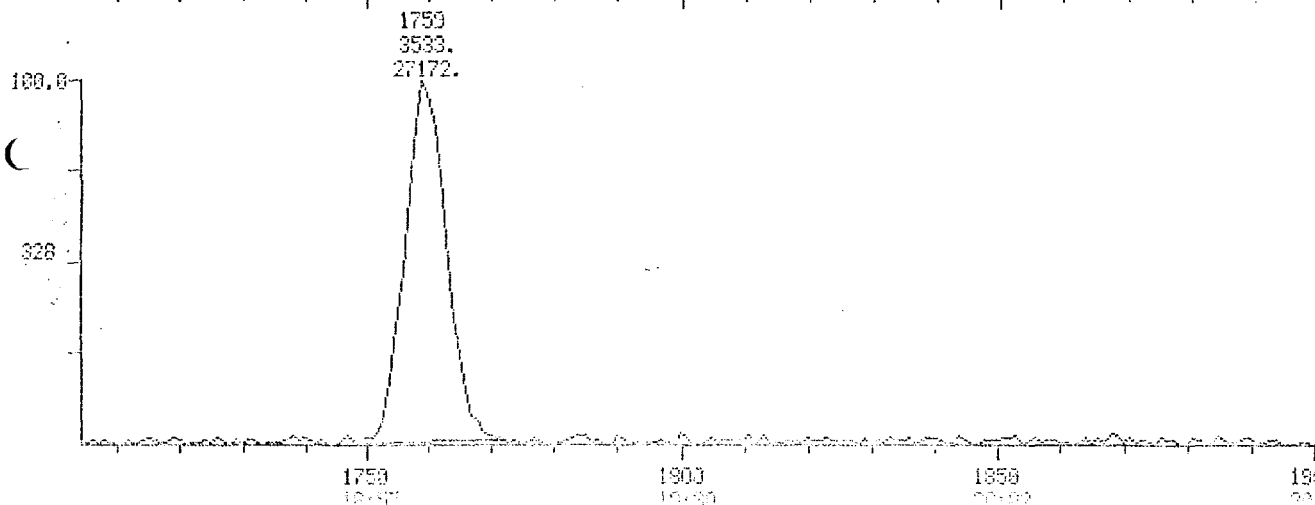
00005 1704 TO 1900

DATE: 04/23/87 10



1034.

258.027
± 0.500



3508.

326.030
± 0.500

1900 SCAN
00:05 TIME

011670

HID MASS CHROMATOGRAM

DATE: 04/23/87

TIME: 11:21 TO 19:00

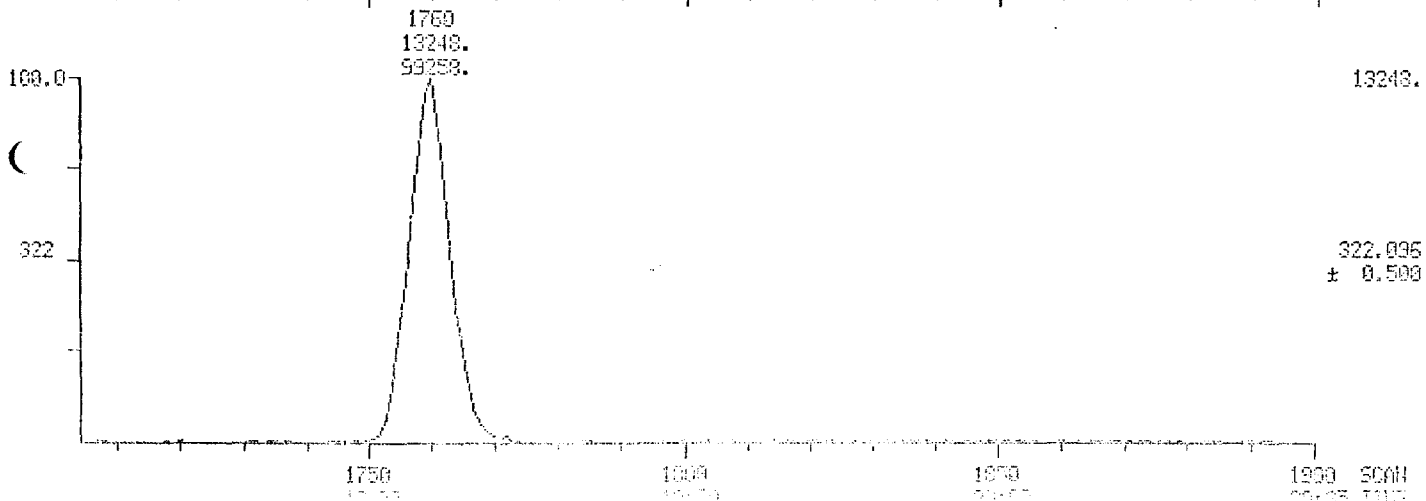
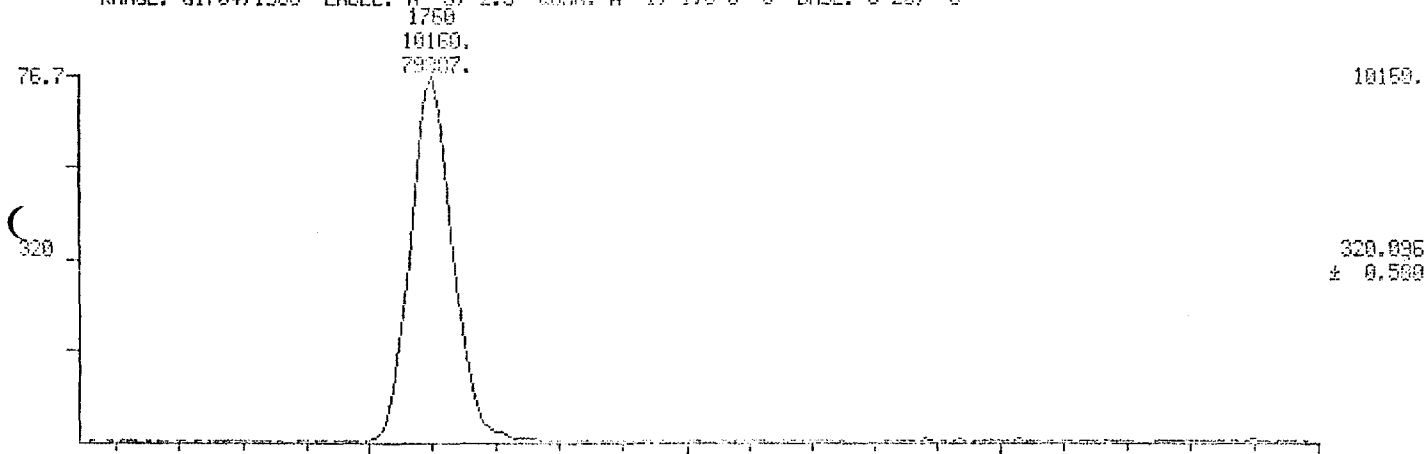
04/23/87 12:09:00

FILE: 00116607.D

SAMPLE: CALIBRATION SOLN II

CONDS.: 1UL/SP2331/100-200025/200-24031/HOLD10

RANGE: G1704.1900 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



129110

MID MASS CHROMATOGRAMS

DATE: 04/23/87

SCANS 1704 TO 1800

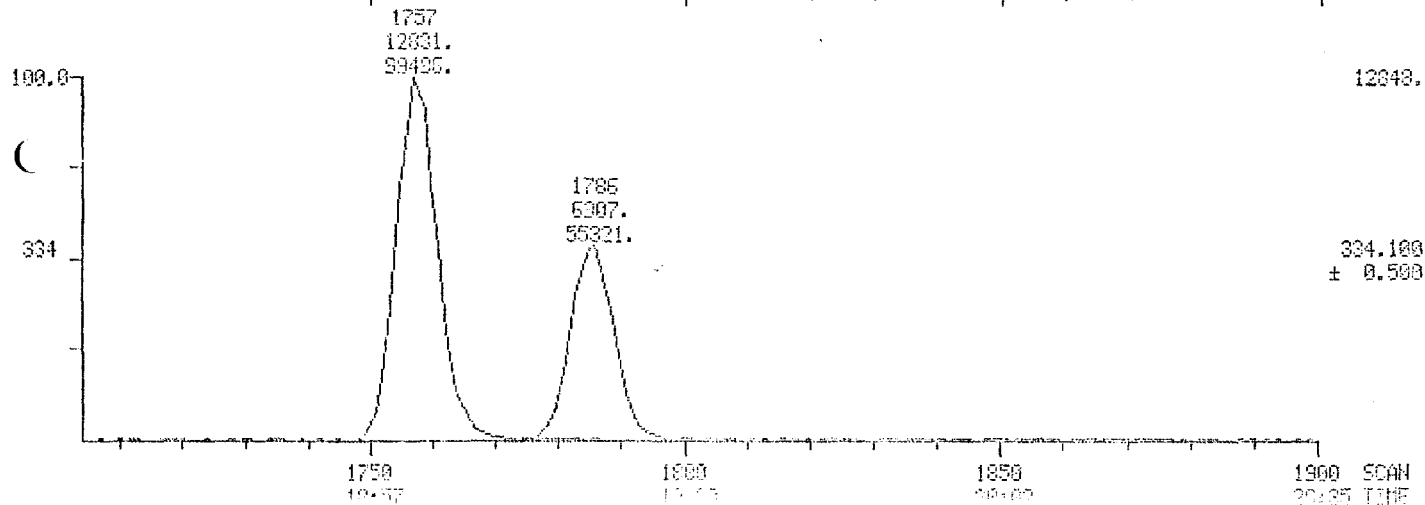
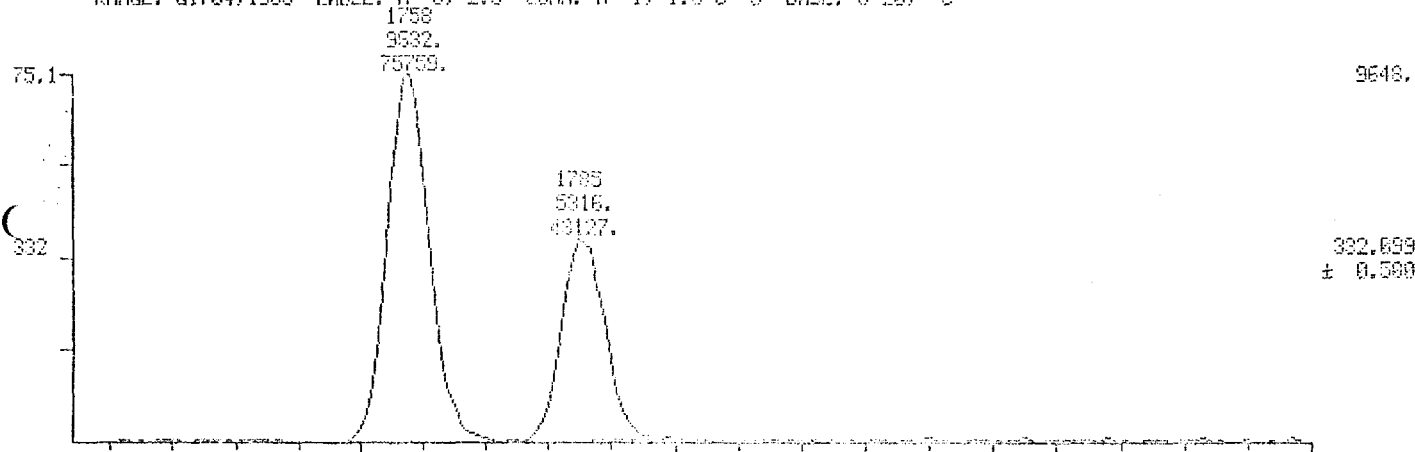
04/23/87 12:09:00

CALL: CALS10007 05

SAMPLE: CALIBRATION SOLN II

CONDS.: 1UL/SP2331/100-209625/200-210@4/110LD10

RANGE: G1704,1900 LABEL: H 5, 2.5 OURN: A 1, 1.0 U 0 CASE: U 29, 3



1750
12:07

1800
12:07

1850
12:07

1900 SCAN
20:25 TIME

011672

NID RIC

DATA: 002105 11

SCAN: 1704 TO 1990

04/23/87 12:37:00

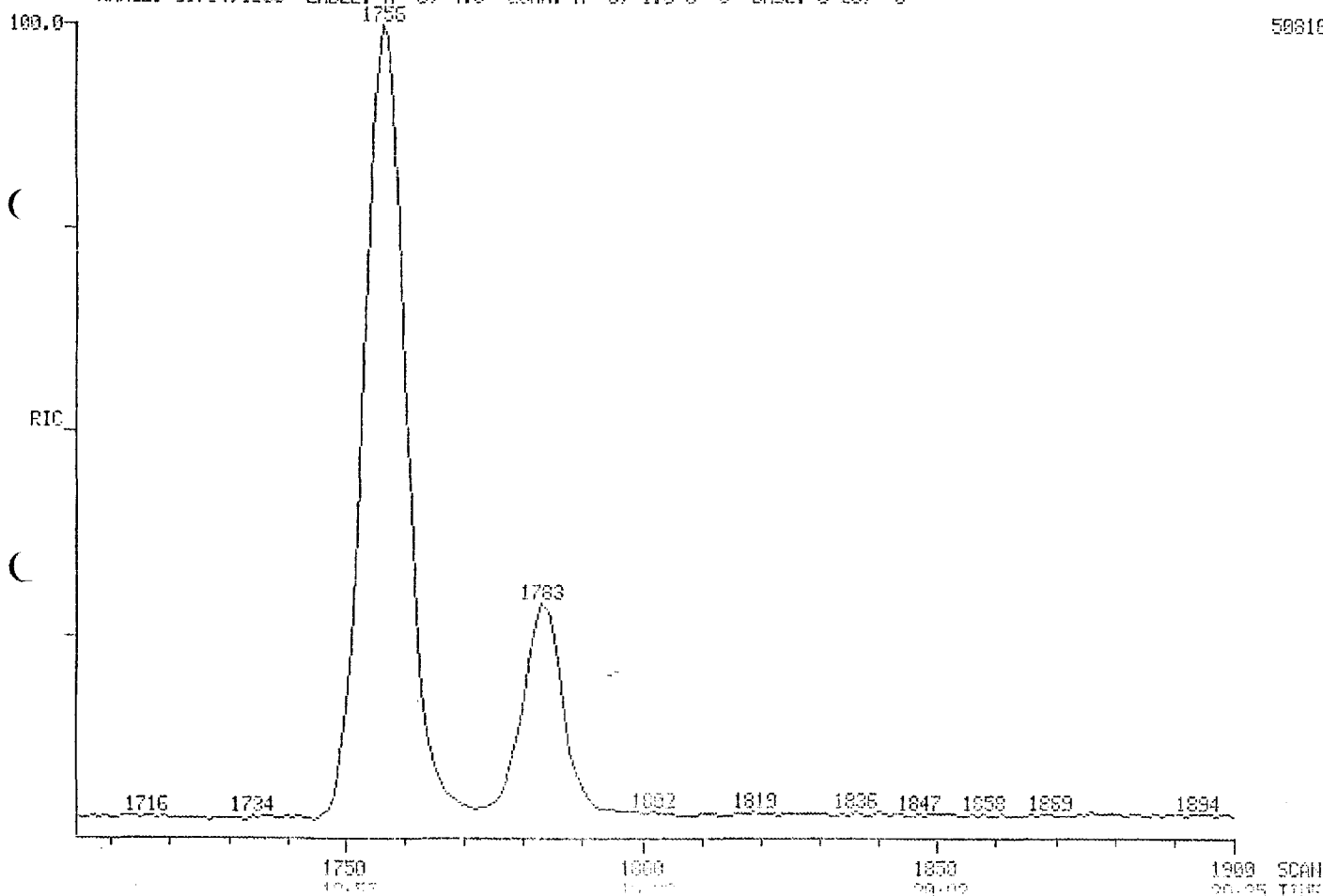
CELL: L1L042007 03

SAMPLE: CALIBRATION SOLN II

COND.: 1UL/SP2331/100-206025/200-24004/110LD10

RANGE: G1704.1900 LABEL: N 0, 4.0 GUSH: A 0, 1.0 U 0 BASE: U 20, 3

50816.



329110

MID MASS CHROMATOGRAMS

DATA: M1000001

SCANS 1761 TO 1538

04/23/87 12:37:00

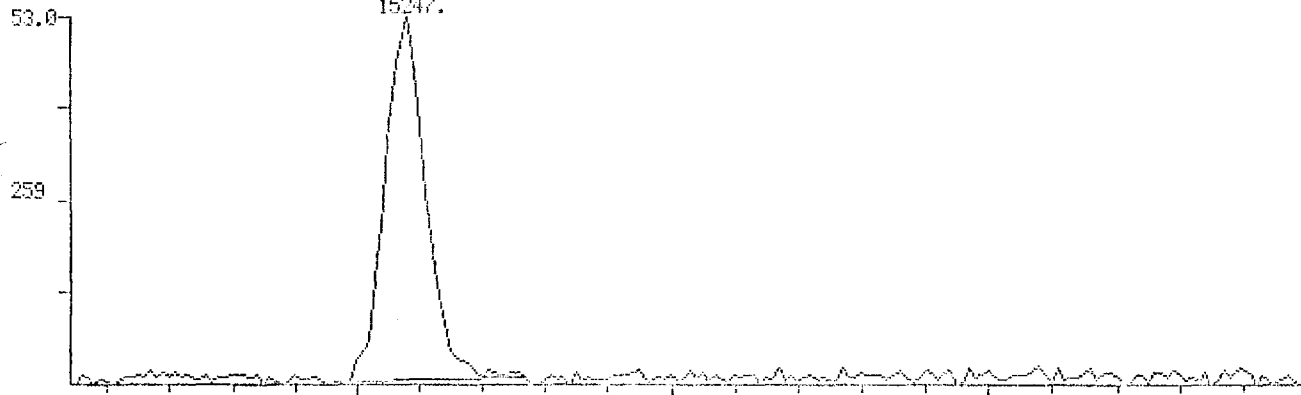
SMPL: CALIBRATION SOLN II

SAMPLE: CALIBRATION SOLN II

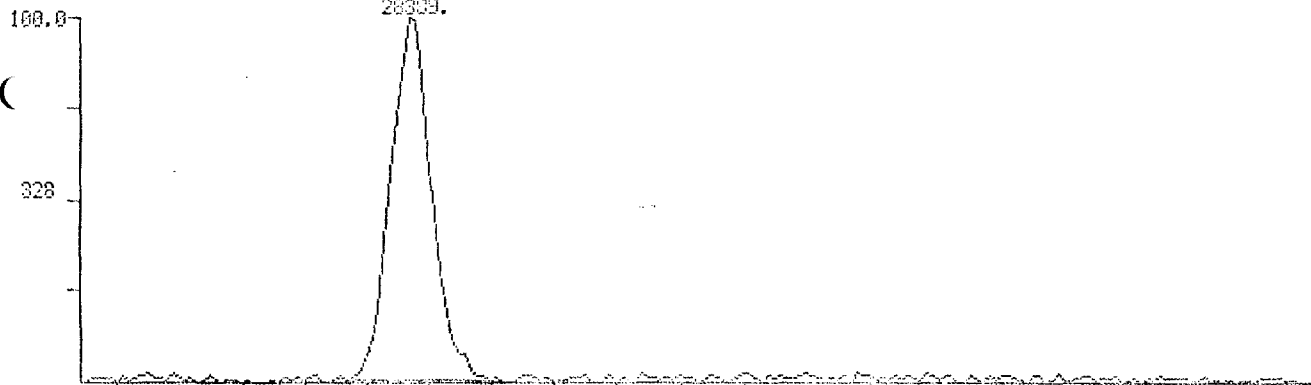
CONDS.: IUL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704,1900 LABEL: N S, 2.5 QMNH: A 1, 1.0 J 0 DASE: U 20, 3

1758
1959.
15247.



1757
3701.
20009.



1750
1750.00

1800
1800.00

1850
1850.00

1900 SCAN
20-05 TIME

011674

HID MASS CHROMATOGRAMS

DATA: APR2389 01

SCANS 1704 TO 1939

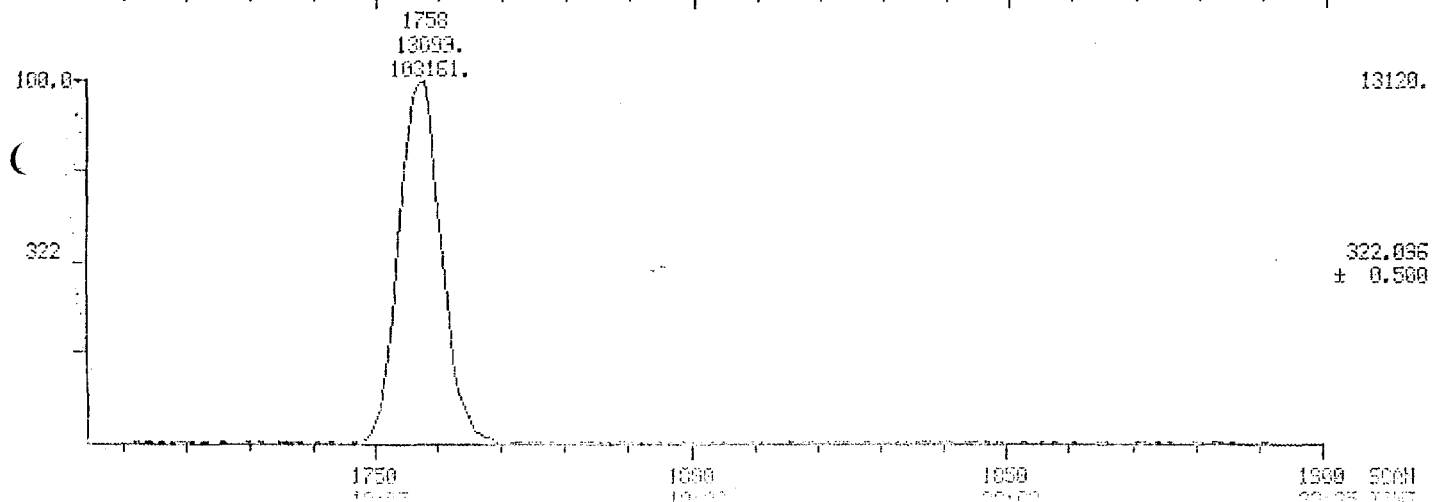
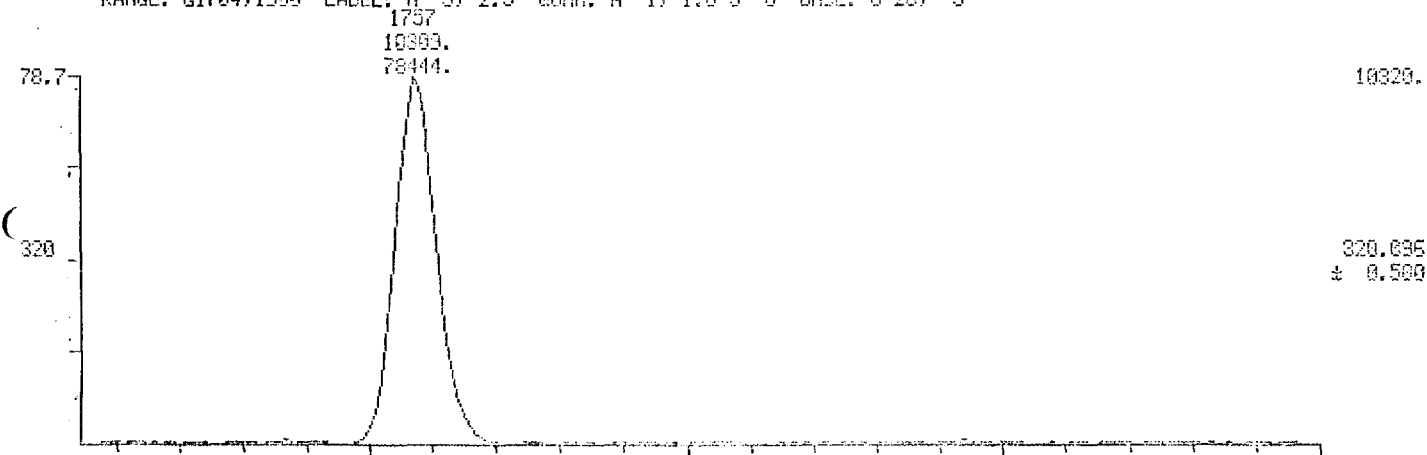
04/23/87 12:37:00

CALL: CAL012667 05

SAMPLE: CALIBRATION SOLN II

CONDS.: 1UL/SP2331/100-200025/200-24000/HOLD10

RANGE: 61704,1900 LABEL: H 5, 2.5 QUAN: A 1, 1.0 U 0 BASE: U 20, 3



329110

MID MASS CHROMATOGRAMS

DATA: APR2090 01

SCANS 1704 TO 1900

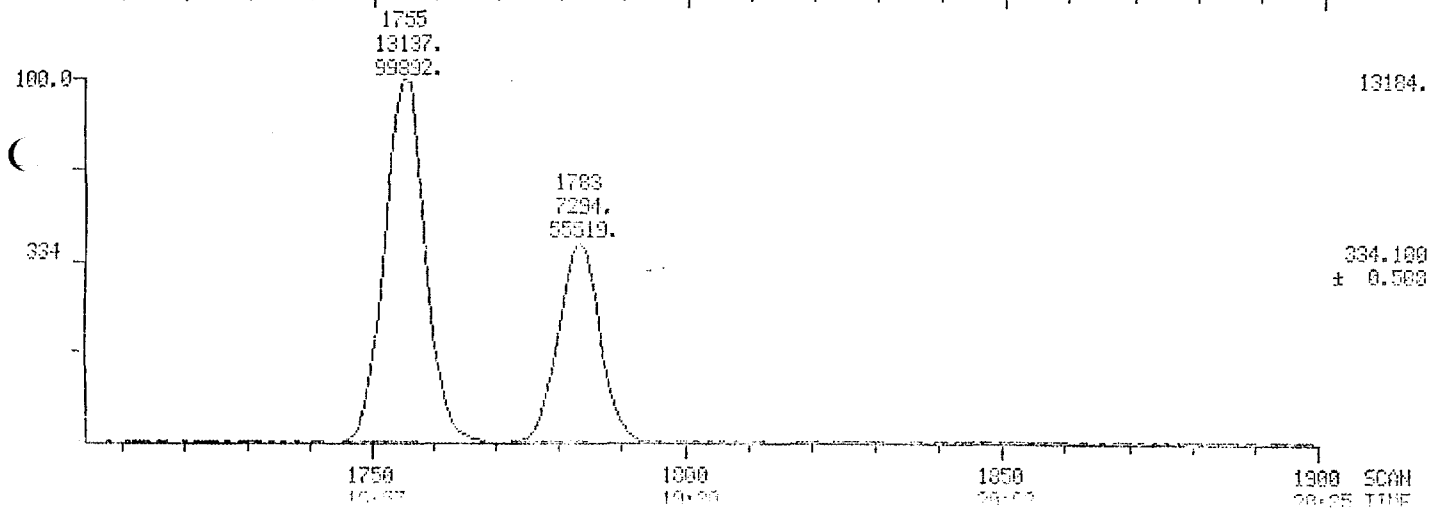
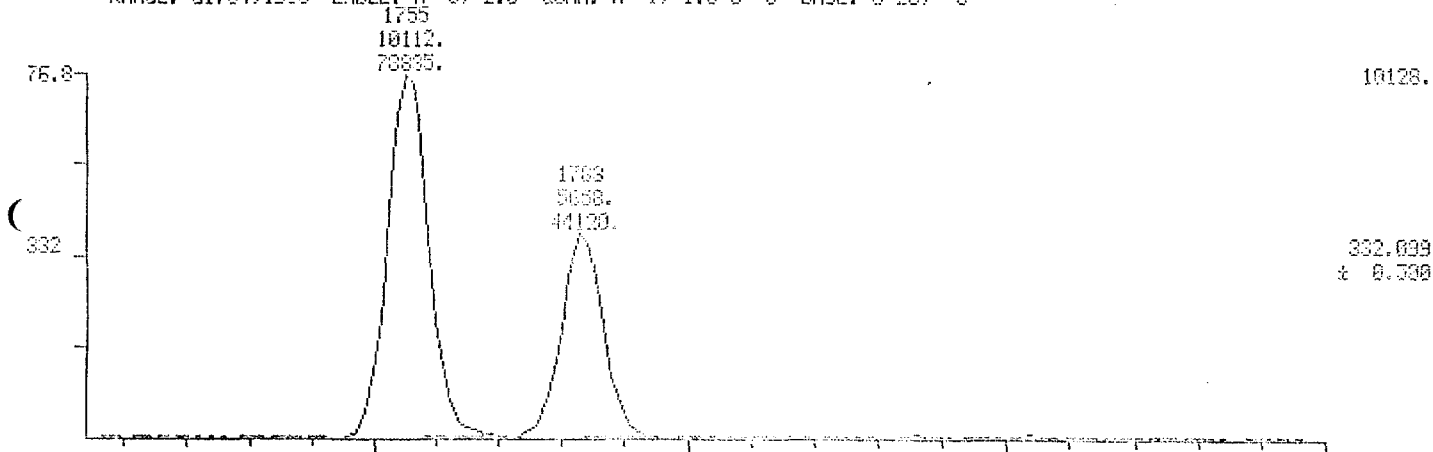
04/23/87 12:37:00

CALC: CAL012337 45

SAMPLE: CALIBRATION SOLN II

CONDS.: IUL/SP2331/100-200325/200-24004/HOL010

RANGE: G1704.1900 LABEL: H 5, 2.5 CUSH: A 1, 1.0 J 0 BASE: U 20, 3



011676

HID RIC

04/23/87 10:13:00

SAMPLE: CALIBRATION SOLN II

CONDS.: 1UL/SP2331/100-200025/200-24004.410LD10

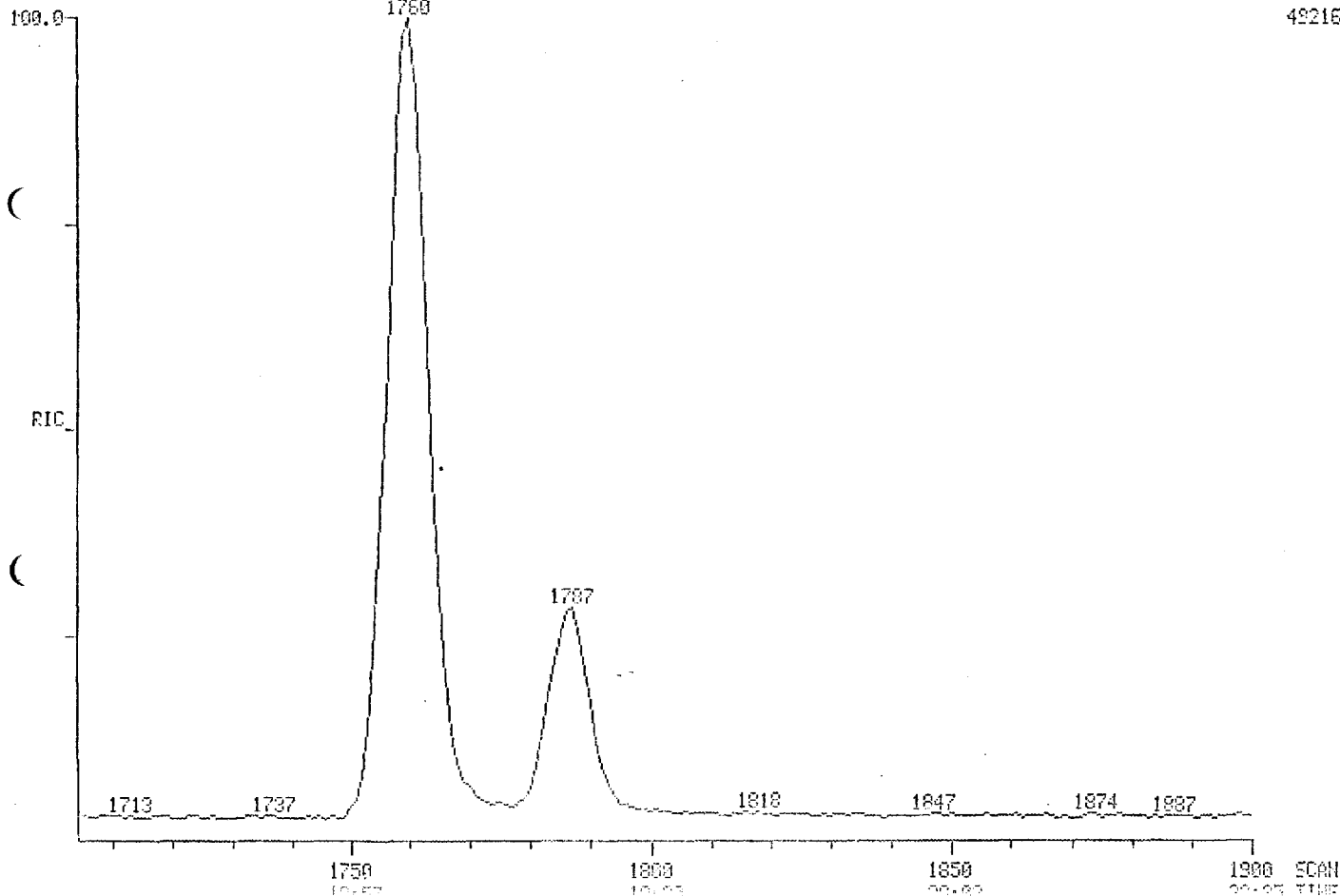
RANGE: G1704.1900 LABEL: H. O. 4.0 CURM: A 0. 1.0 J 0 BASE: U 20. 3

DATA: 0001104 01

SCAND 1704 TO 1900

CALIB: 000012007 05

49216.



229110

MID MASS CHROMATOGRAMS

04/23/87 10:13:00

SAMPLE: CALIBRATION SOLN II

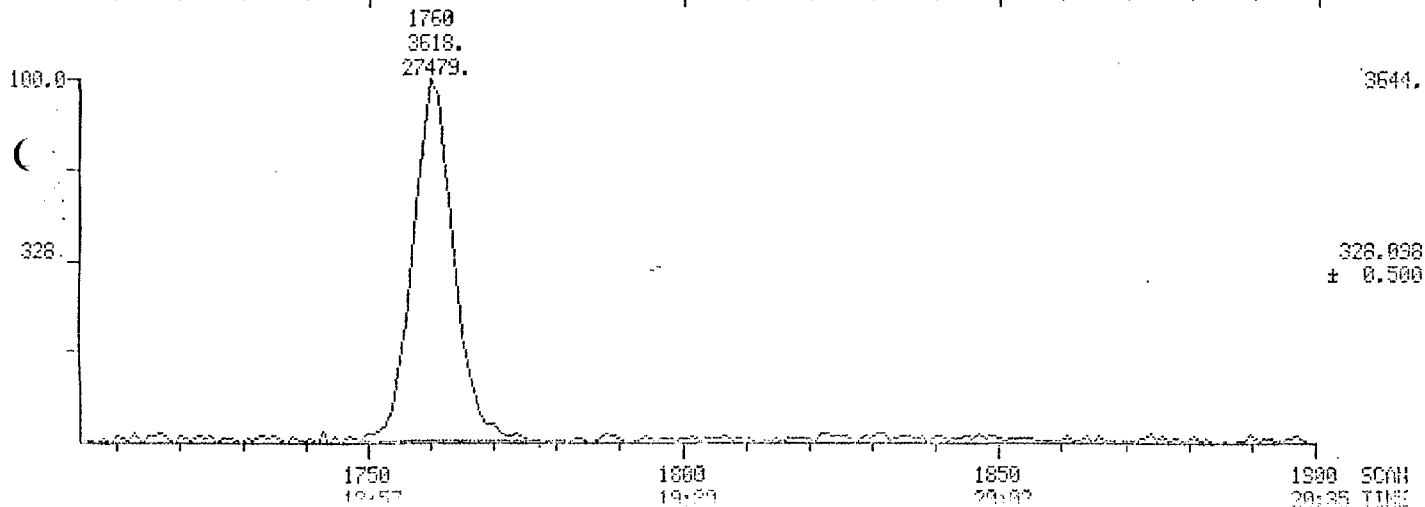
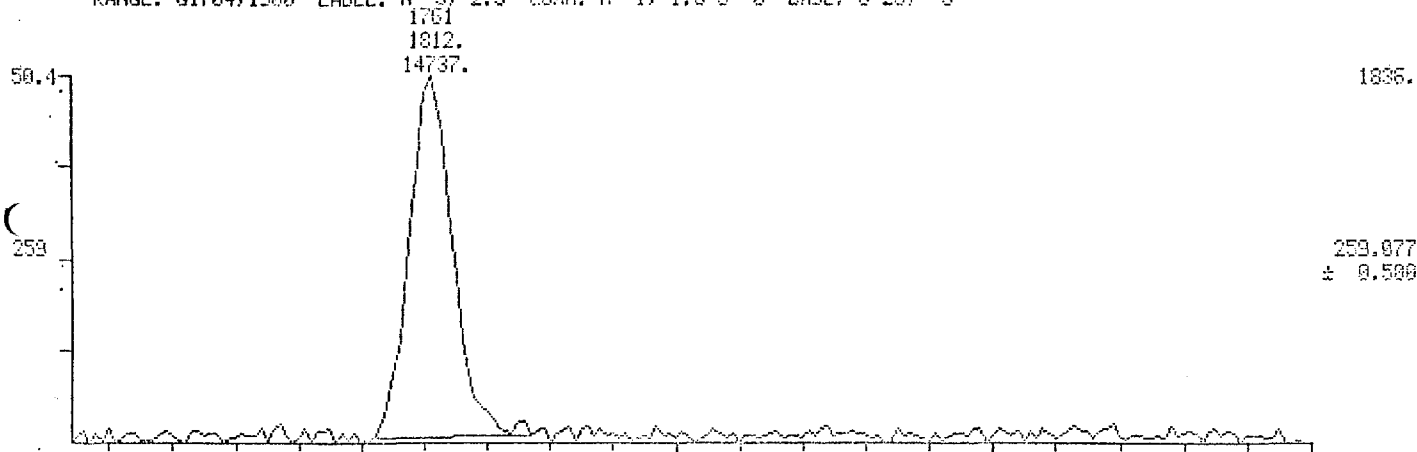
COND.S.: IUL/SP2331/100-200@25/200-240@4/HOLD10

RANGE: G1704,1900 LABEL: M 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3

DATA: 042104 #1

SCAN 3 1704 TO 1900

CALL: CAL042387 65



329110

MID MASS CHROMATOGRAMS

DATE: APR2194 #1

SAMPLE 1701 TO 1930

04/23/87 10:13:00

CALL: CAL042807 45

SAMPLE: CALIBRATION SOLN II

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704,1900 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3

1761

3920.

76781.

76.9

320

9920.

320.895

± 0.500

1760

12841.

96910.

100.0

322

12836.

322.895

± 0.500

1750
10.57

1800
11.53

1850
12.49

1900
13.45

SCAN
20.00 TIME

329110

MID MASS CHROMATOGRAMS

DATE: 07/21/87

SCAN: 1704 TO 1900

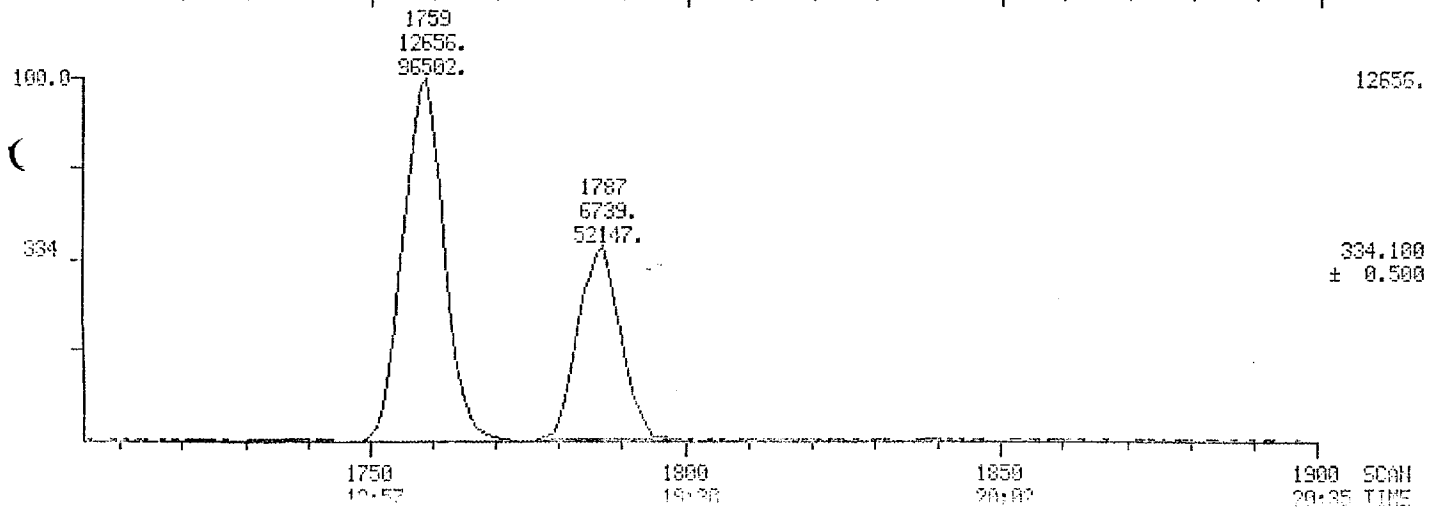
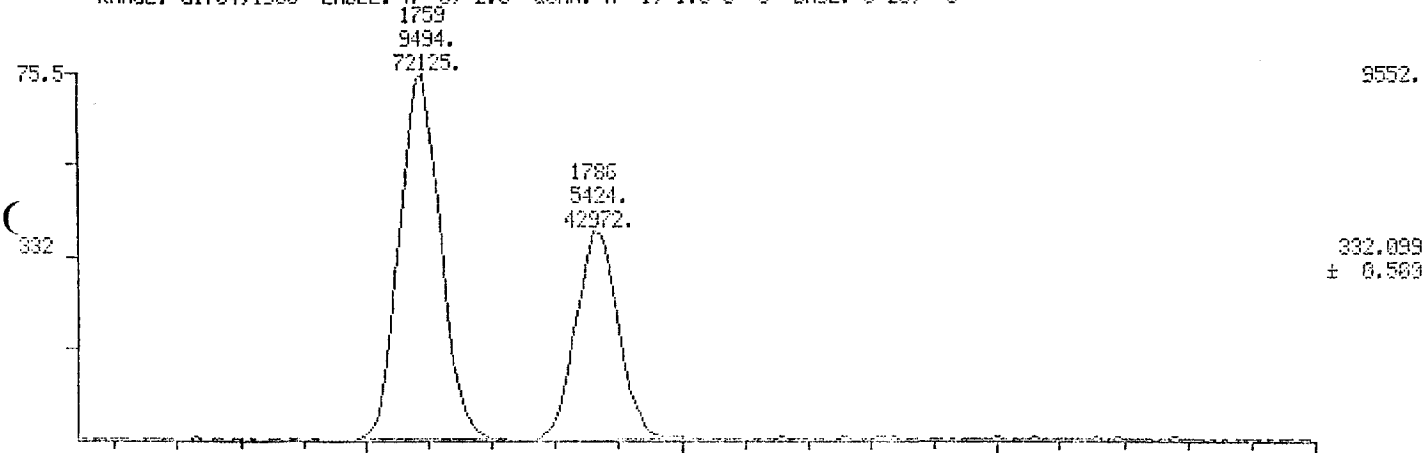
04/23/87 10:13:00

CALI: CAL012307 #5

SAMPLE: CALIBRATION SOLN II

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704.1900 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



01168C

HID RIC

DATA: MFR2810 #1

SCANS 1701 TO 1990

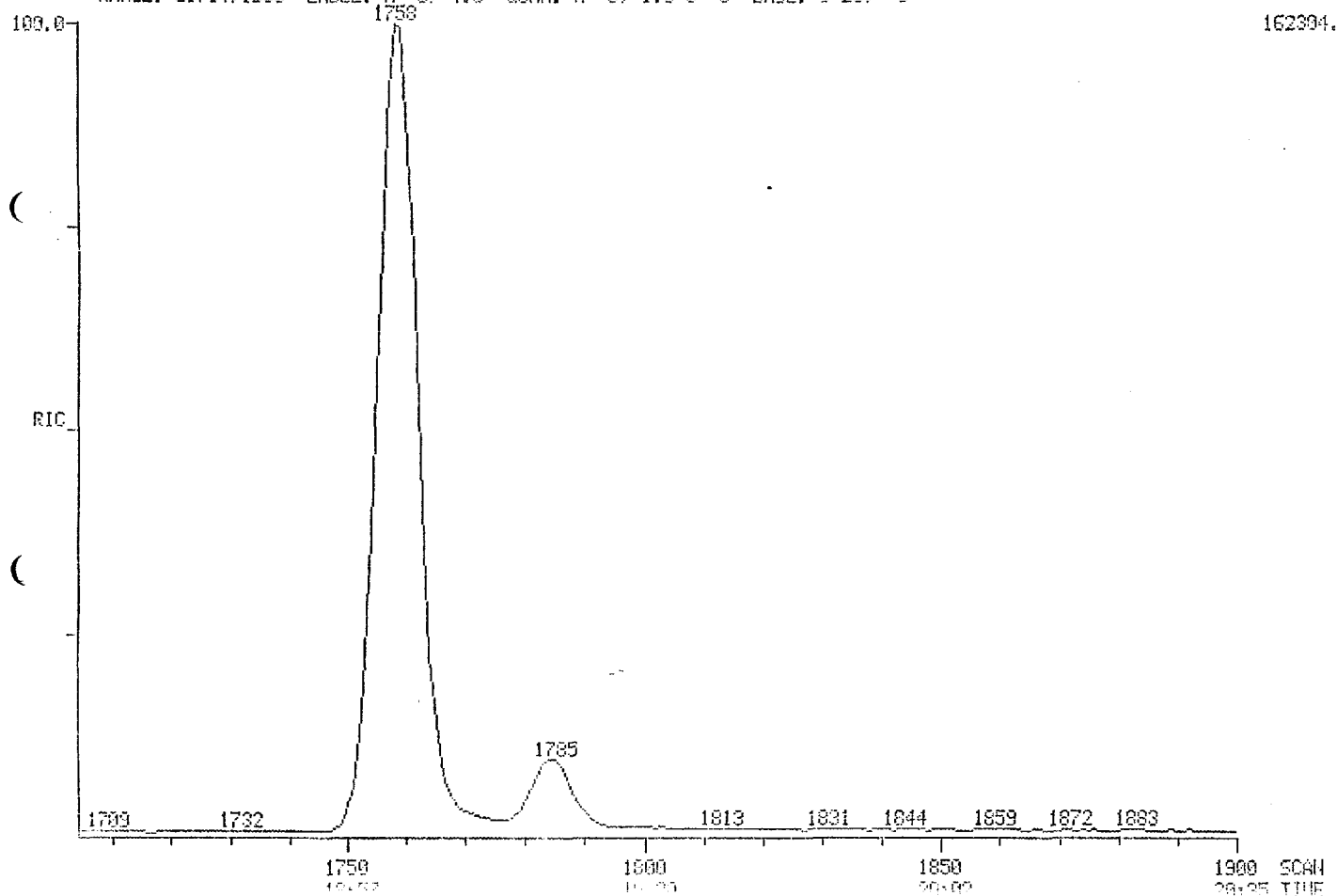
04/23/87 13:05:00

CALI: CAL642307 #5

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/5P2331/100-200025/200-24004/HOLD10

RANGE: G1704.1900 LABEL: H 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



011681

HID MASS CHROMATOGRAMS

DATA: APR2010 41

SCANS 1704 TO 1900

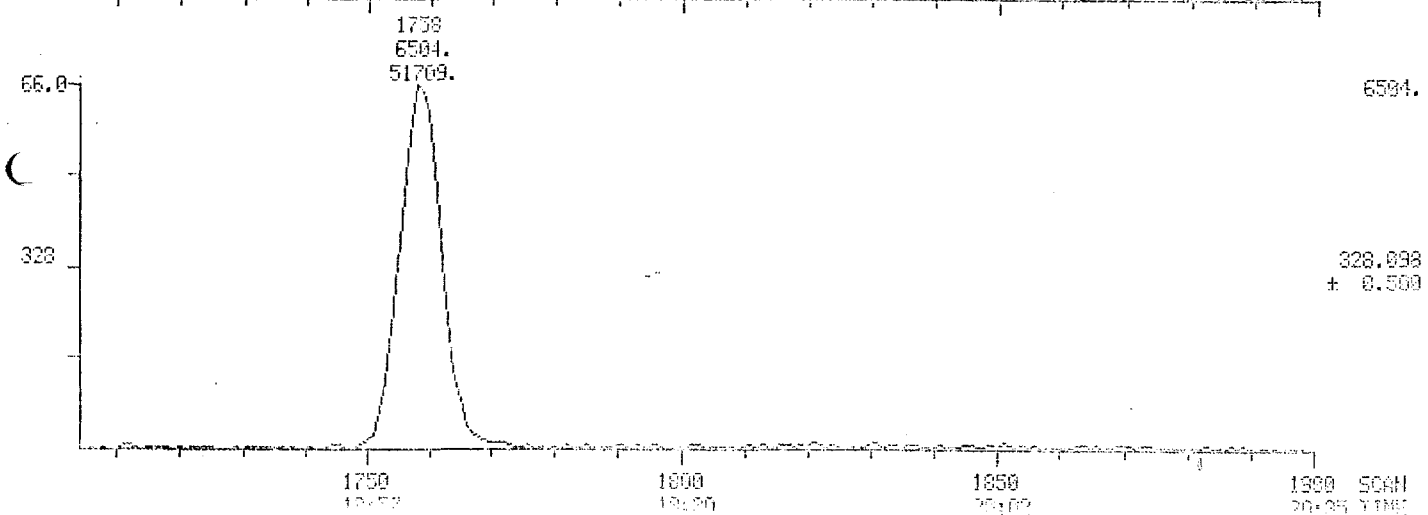
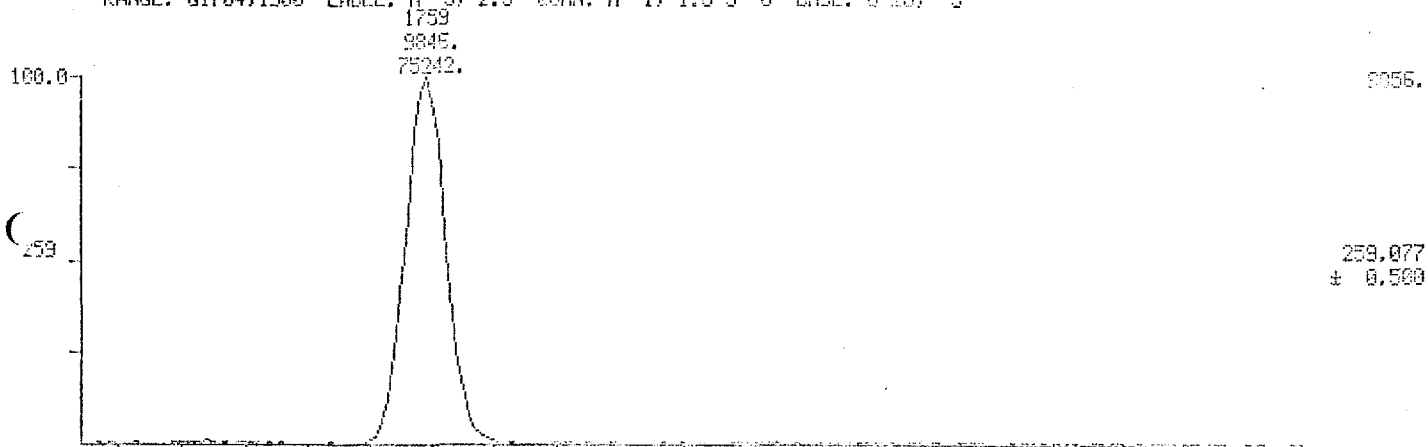
04/23/87 13:06:00

CALI: CAL0-12307 05

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/5P2331/100-200R25/200-240R4/HOLD10

RANGE: 01704,1900 LABEL: H 5, 2.5 CUMH: A 1, 1.0 J 0 BASE: U 00, 0



389110

MSD MASS CHROMATOGRAMS

DATE: 04/23/97

TIME: 1704 TO 1900

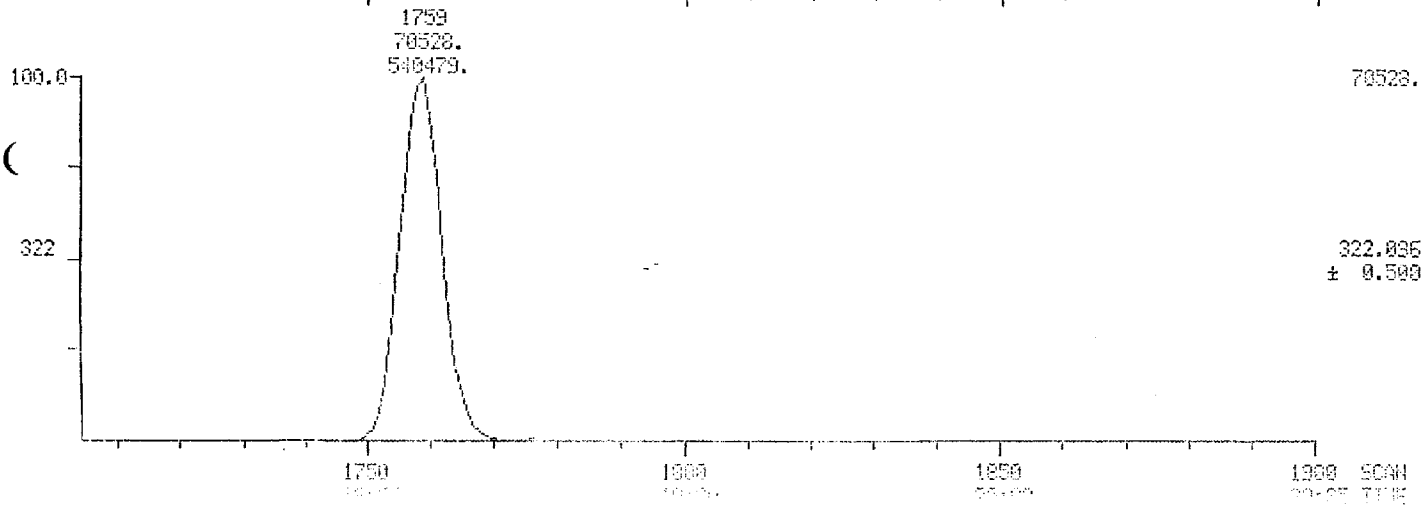
04/23/97 13:00:00

NAME: CALIB-2267.D

SAMPLE: CALIBRATION SOLN III

COND.: 1UL/SP2331/100-200025/200-2400/1/INCLD10

RANGE: G1704.1900 LABEL: M 5, 2.5 QUAN: A 1, 1.0 J 0 DATE: 0 30, 3



889110

HID RIC

04/23/87 10:42:00

SAMPLE: CALIBRATION SOLN III

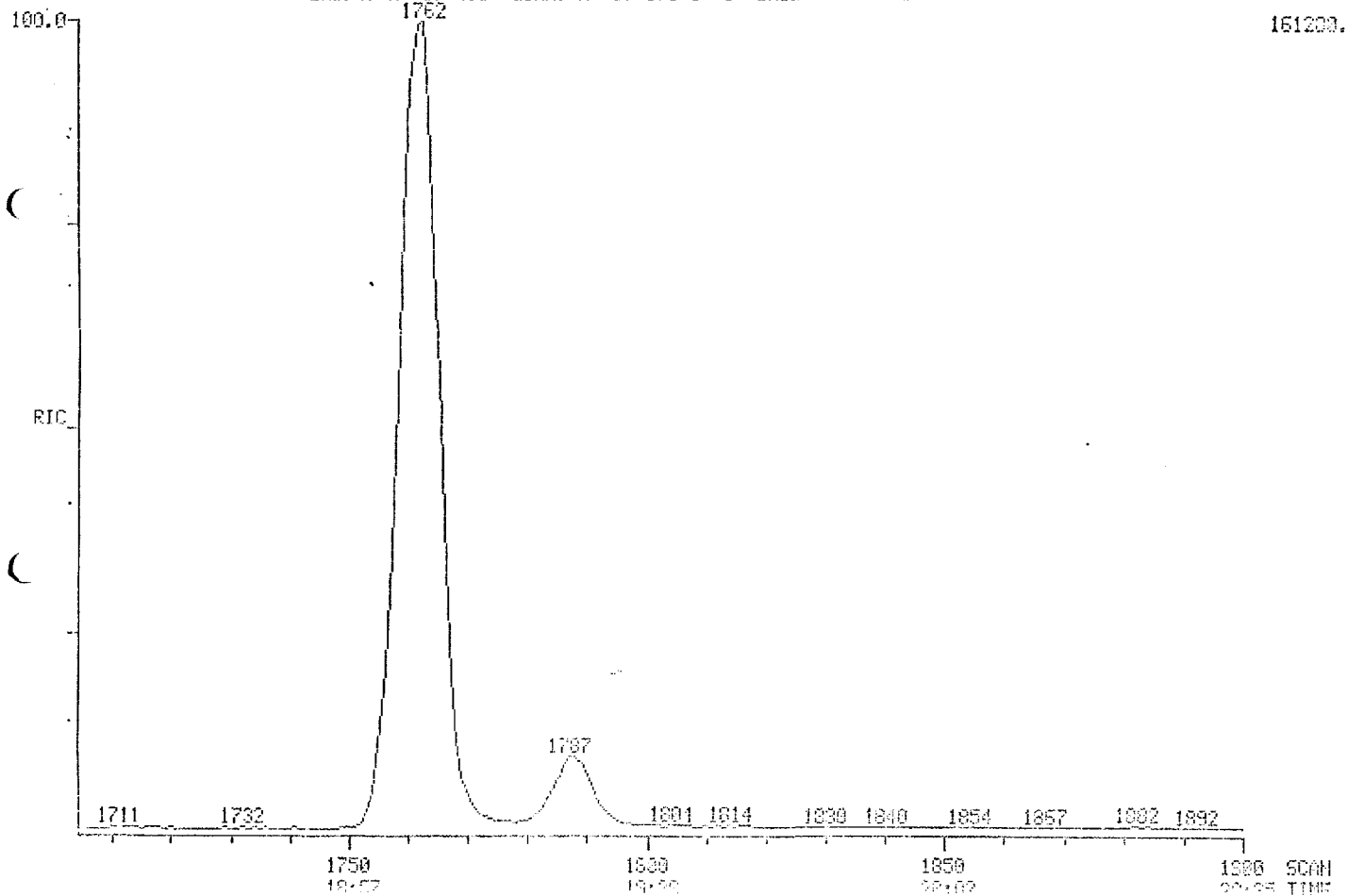
CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704,1900 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATE: APR23 87

CALI: CAL012337 05

SCAN: 1704 TO 1900



011684

HID MASS CHROMATOGRAMS

DATE: 04/23/87

SCANS: 1703 TO 1900

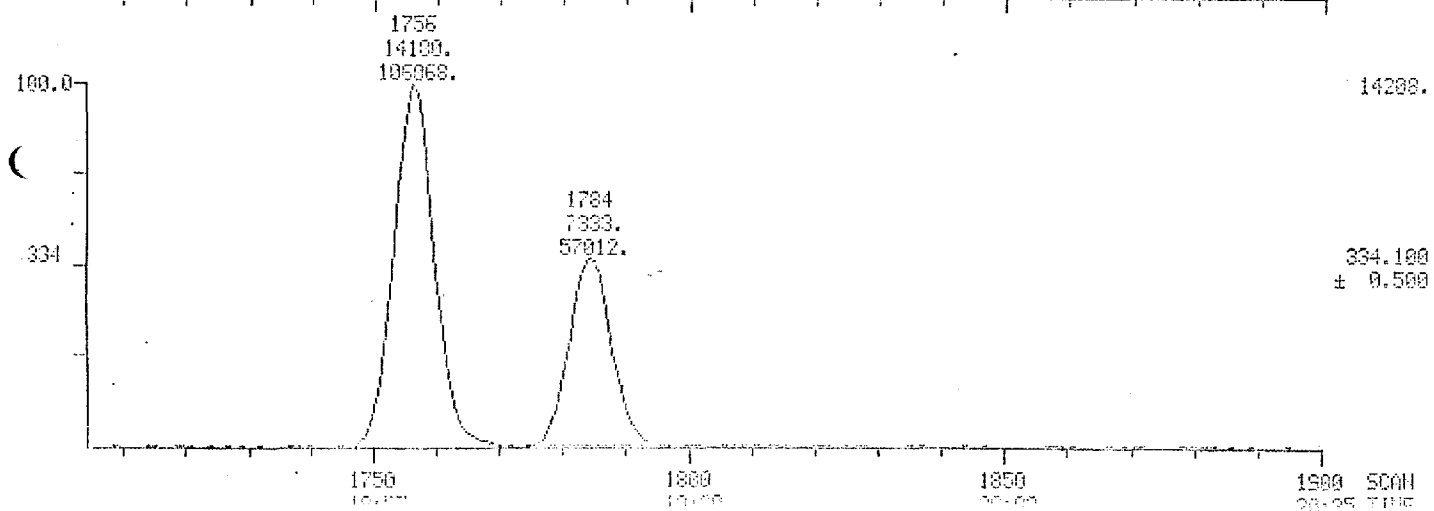
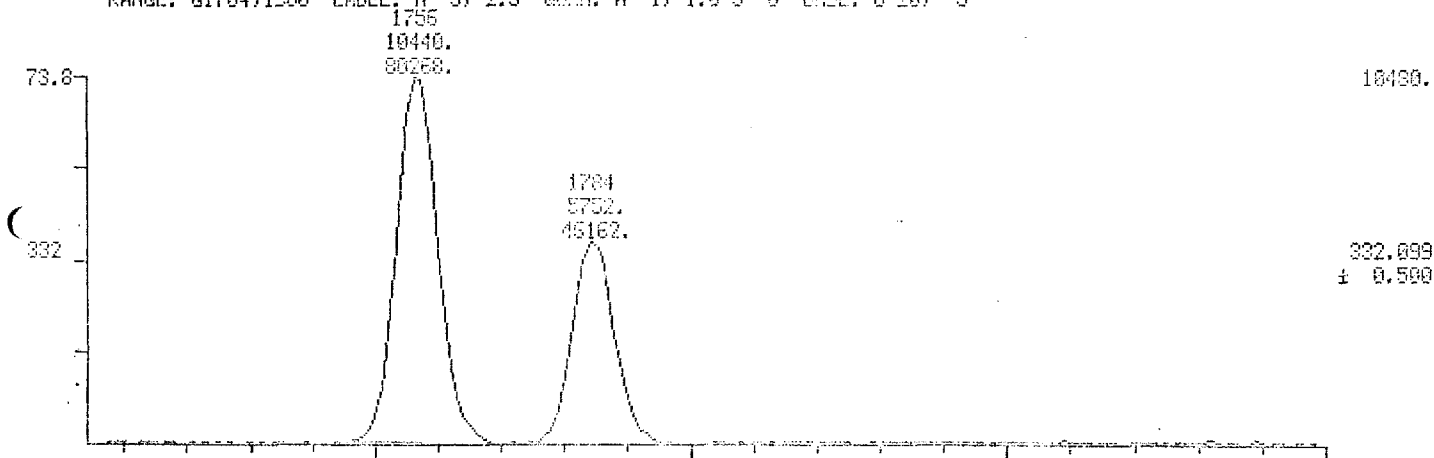
04/23/87 13:05:00

CELL: CALS11007 00

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/SP2331/100-200025/200-24601/10LD10

RANGE: 61704,1900 LABEL: H 5, 2.5 QMVA: A 1, 1.9 J 0 BASE: U 20, 3



01168E

MID RIC

04/23/87 13:35:00

SAMPLE: CALIBRATION SOLN III

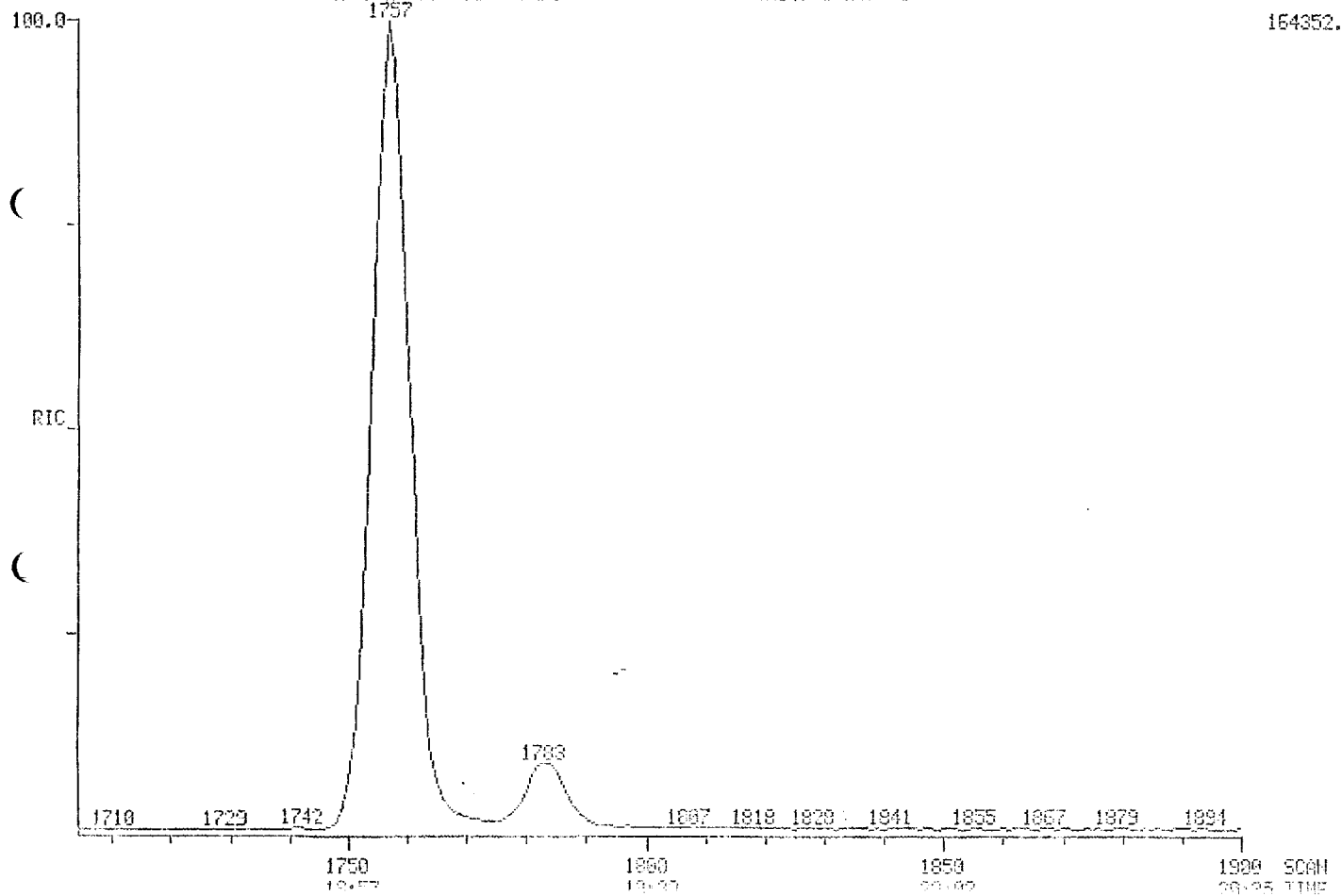
CONDS.: 1UL/SP2331/100-200025/200-24604/HOLD10

RANGE: G1704.1900 LABEL: N 0, 4.0 QUAN: 0 0, 1.0 J 0 BASE: U 20, 3

DATE: 04/23/87

CALL: CALIB/2207 00

SCANS 1704 TO 1900



389110

MID MASS CHROMATOGRAMS

DATE: 04/23/87

SCANS 1704 TO 1890

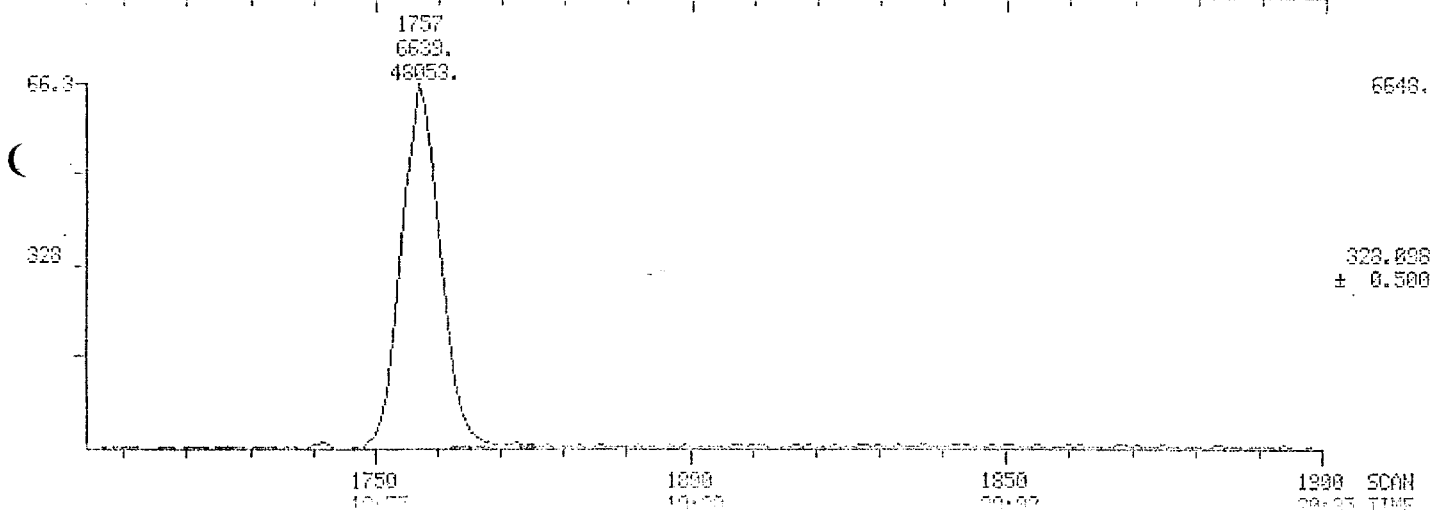
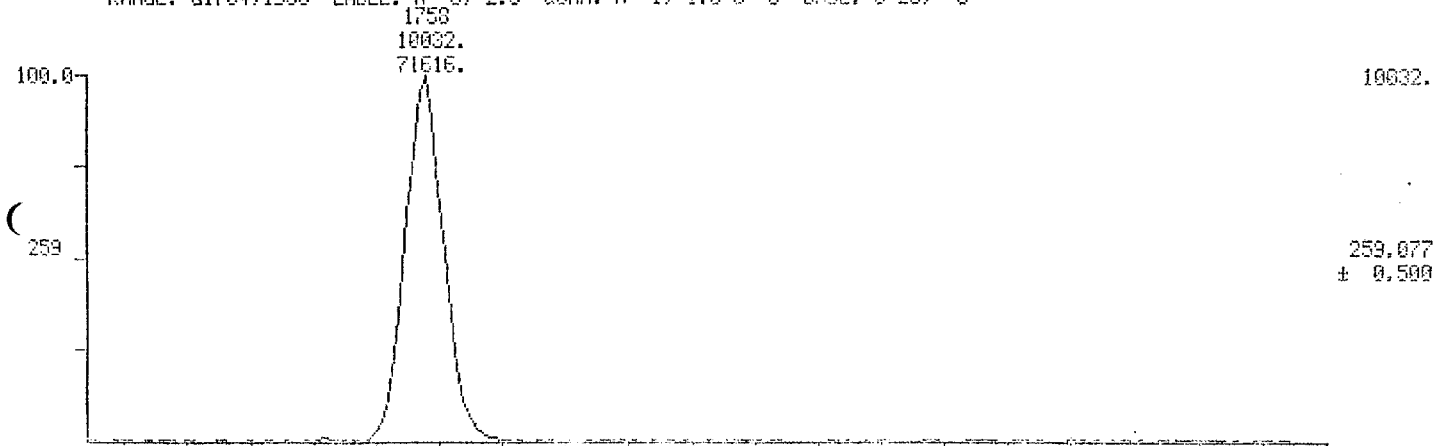
04/23/87 13:35:00

CALI: 01L042387 05

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704.1900 LABEL: N 5; 2.5 QUAN: A 1; 1.0 J 0 BASE: U 20; 3



489110

MID MASS CHROMATOGRAMS

DATE: APR 20 11 31

SCANS 1704 TO 1503

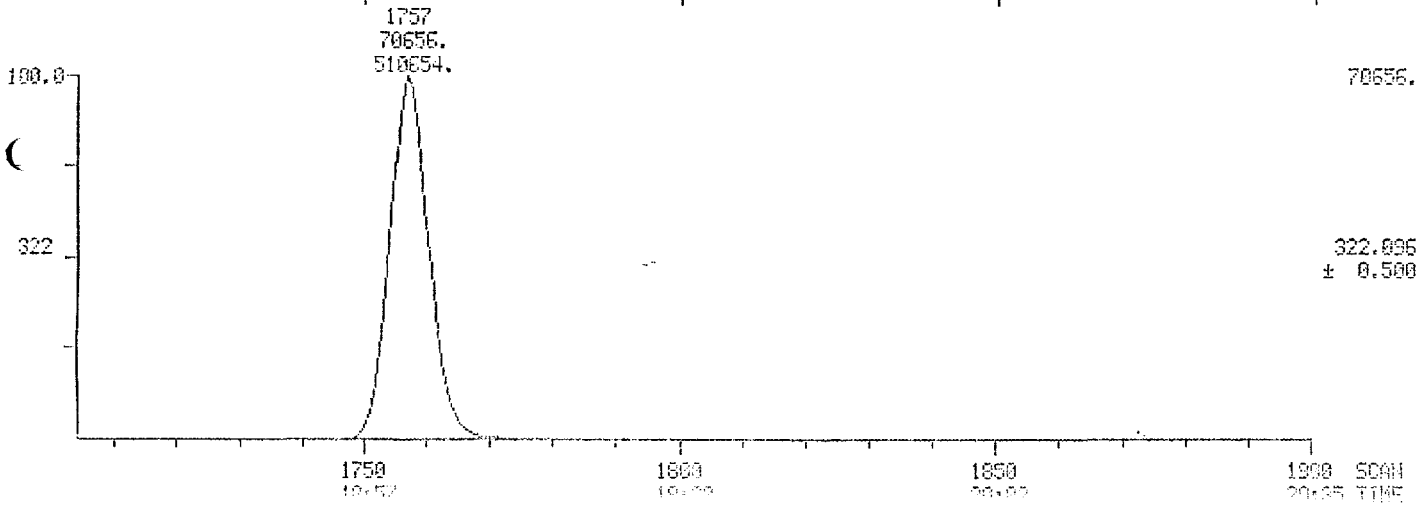
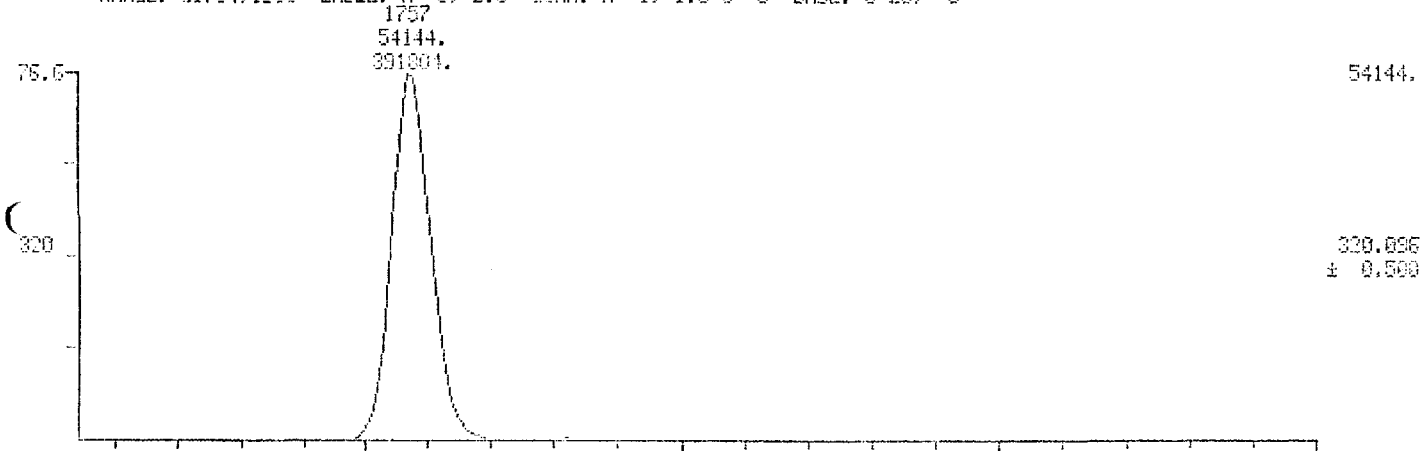
04/23/87 13:35:00

CALL: CAL012337 95

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/SP2331/100-200025/200-24004/WOLD10

RANGE: 01704.1900 LABEL: H 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



389110

MSD MASS CHROMATOGRAMS

DATA: 8/23/87 13:35:00

SCANS 1704 TO 1950

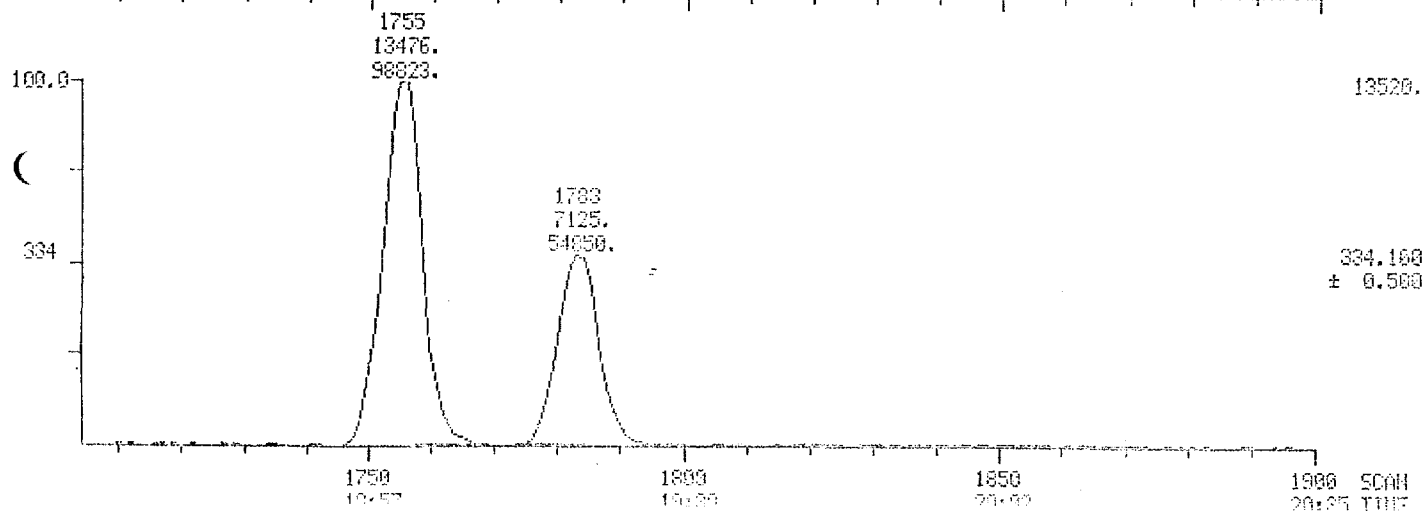
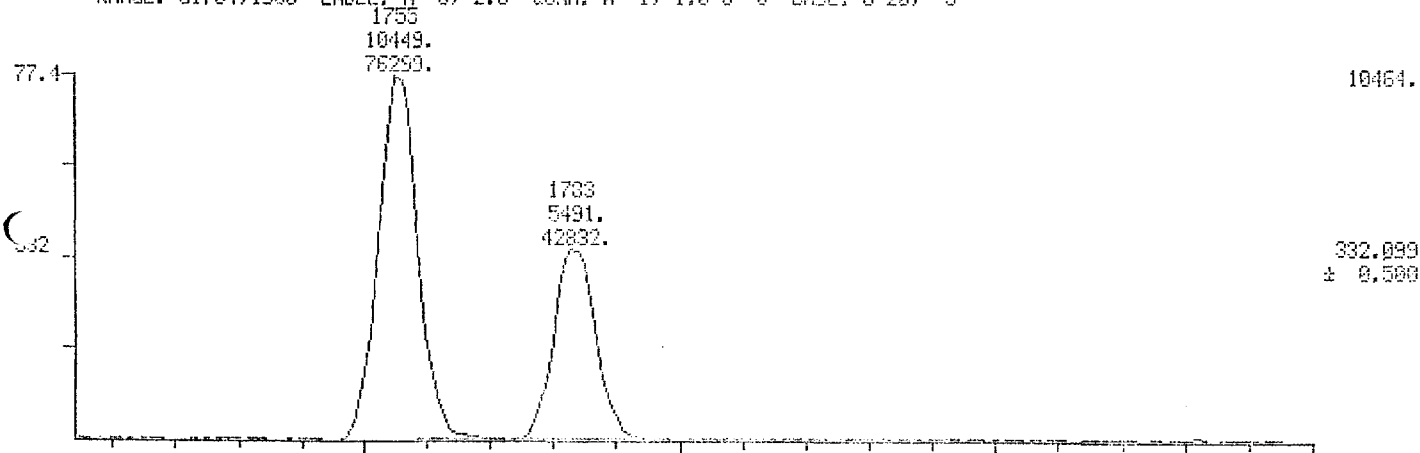
04/23/87 13:35:00

CALI: CAL042307 00

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/SP2331/100-200025/200-24004/10LD10

RANGE: G1704,1900 LABEL: M 5, 2.5 GUSH: A 1, 1.0 J 0 BASE: U 20, 3



1900 SCAN
20:05 TIME

389110

HID.MASS CHROMATOGRAMS

DATA: APR2005 01

SCANS 1704 TO 1900

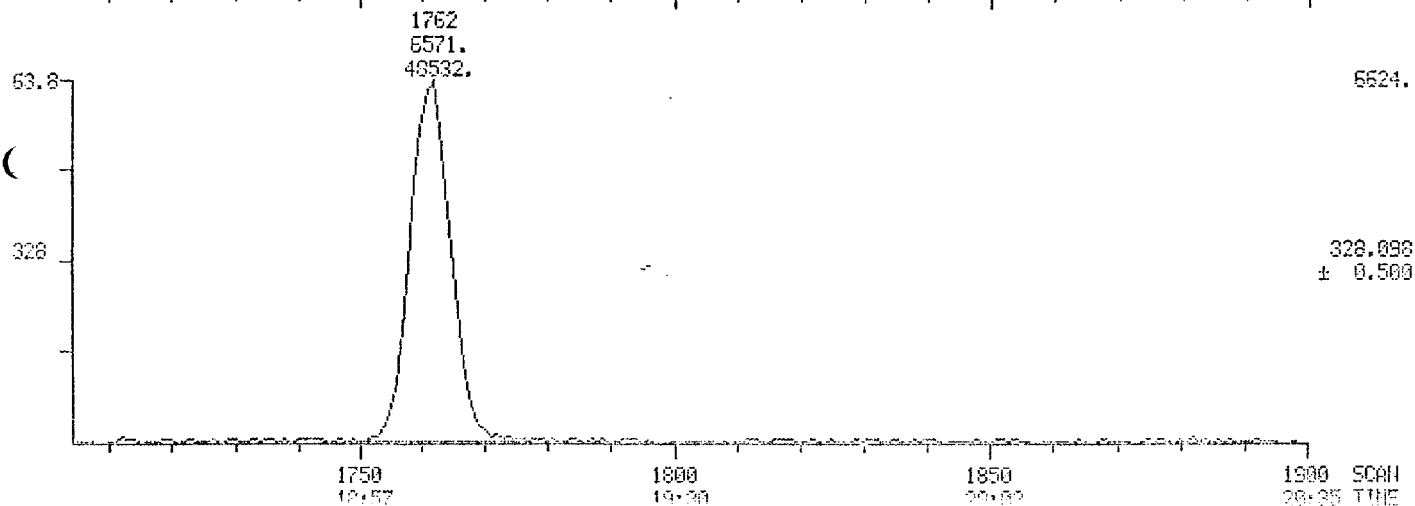
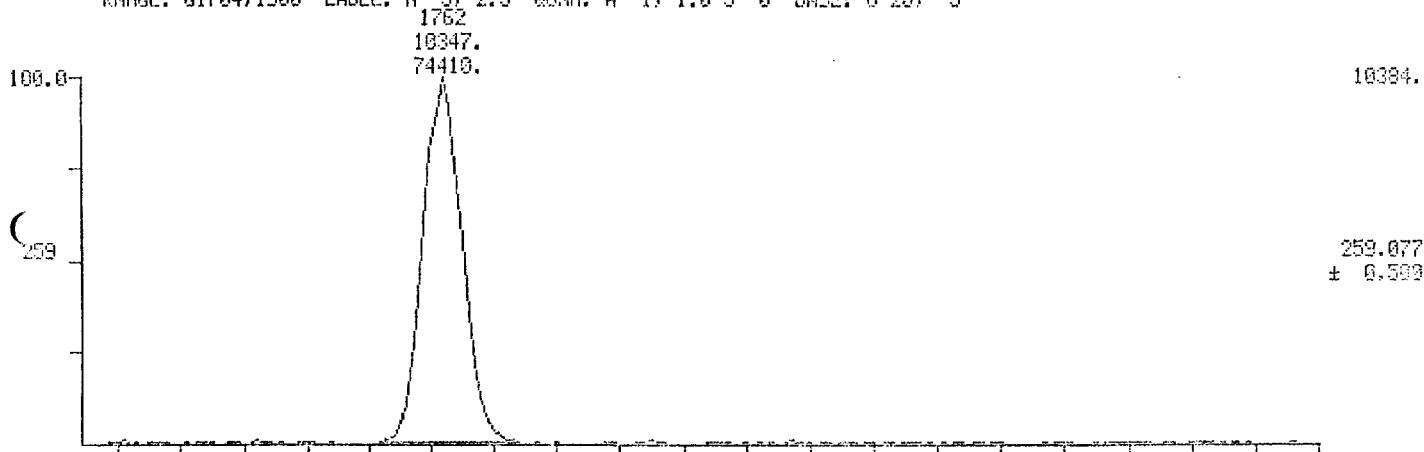
04/23/87 10:42:00

CALI: CAL042007 #5

SAMPLE: CALIBRATION SOLN III

CONDS.: IUL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704,1900 LABEL: H 5, 2.5 QUIN: A 1, 1.0 J 0 BASE: U 20, 3



069110

MID MASS CHROMATOGRAMS

DATA: APR2305 81

SCANS 1704 TO 1900

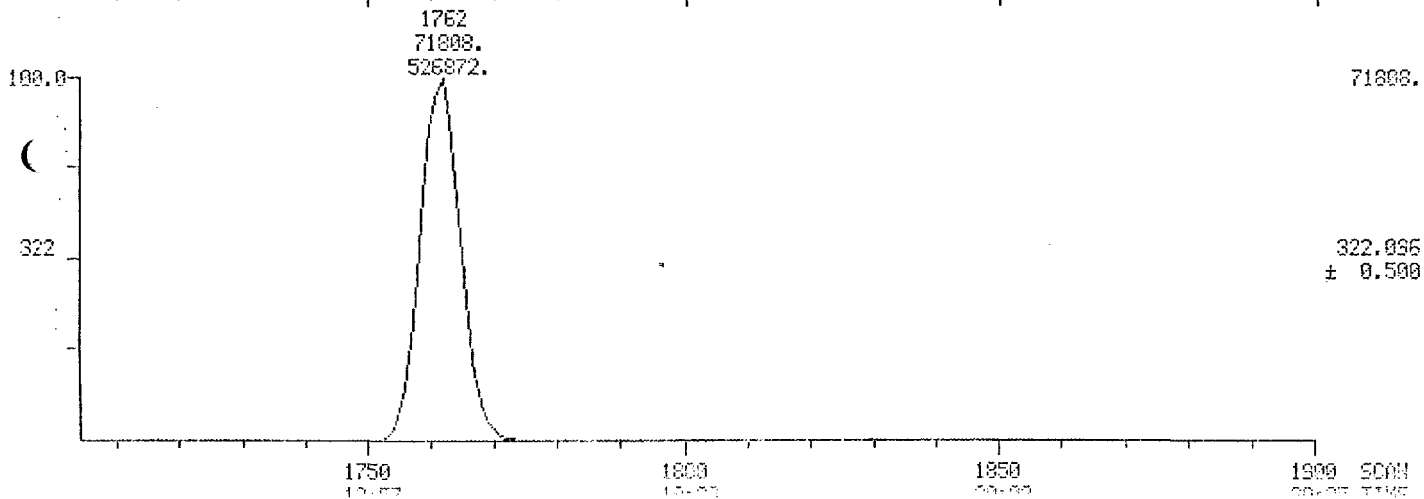
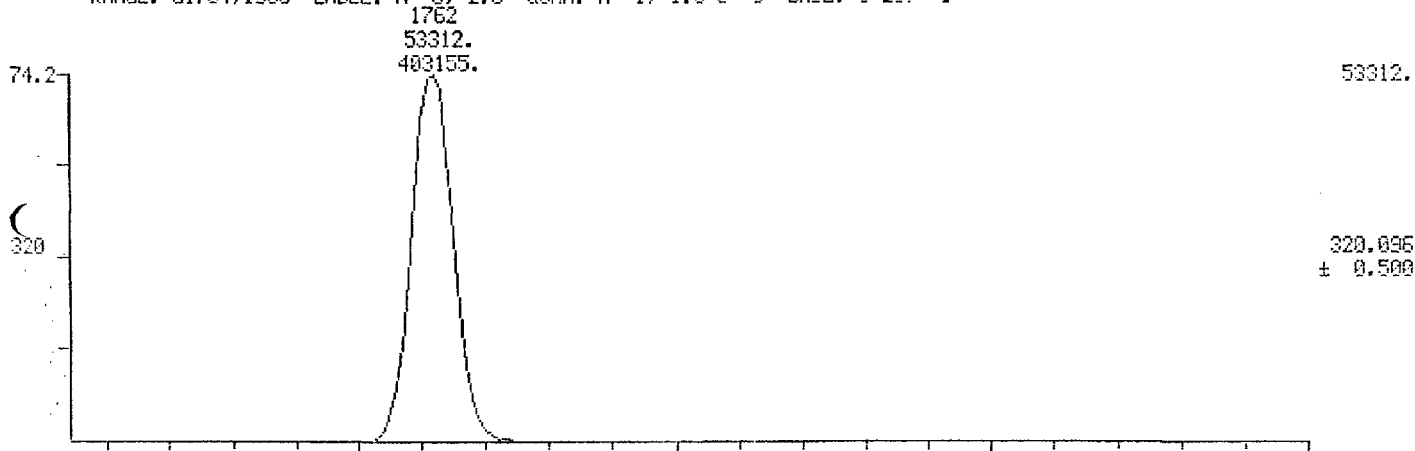
04/23/87 10:42:00

CALI: CAL042387 05

SAMPLE: CALIBRATION SOLN III

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704,1900 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



169110

MID MASS CHROMATOGRAMS

DATA: GPR2005 #1

SCANS 1784 TO 1900

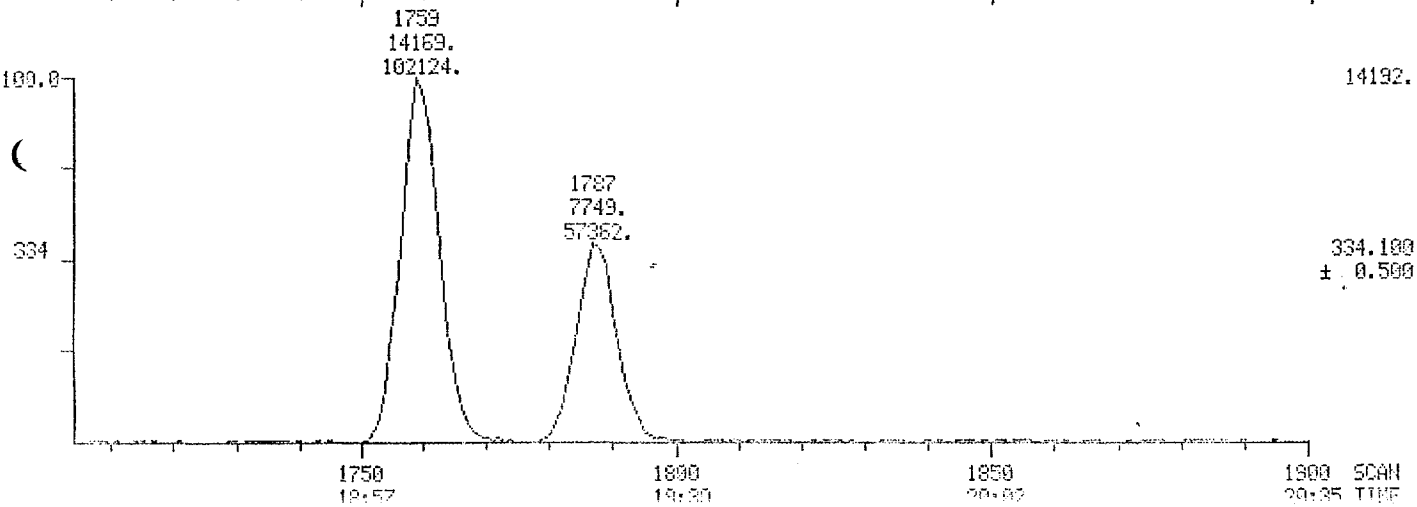
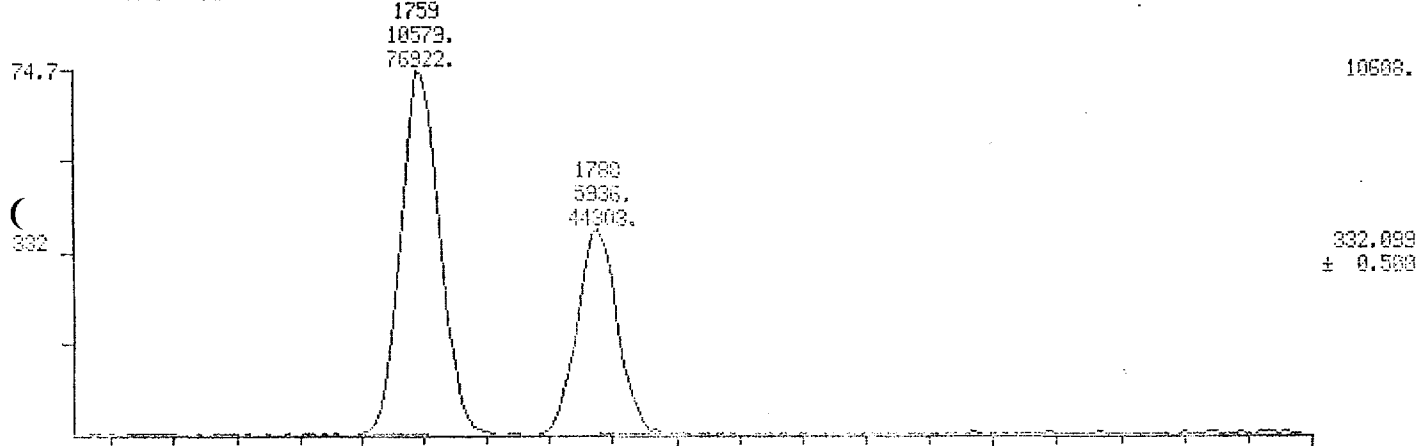
04/23/97 10:42:00

CALL: CAL042007 #5

SAMPLE: CALIBRATION SOLN III

CONDS.: IUL/SP2331/100-200@25/200-240@4/HOLD10

RANGE: G1704.1900 LABEL: M 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1750 19:57 1900 19:30 1850 20:00 1900 SCAN 20:35 TIME

011699

MID RIC

DATA: 672312 01

SCANS 170: TO 1900

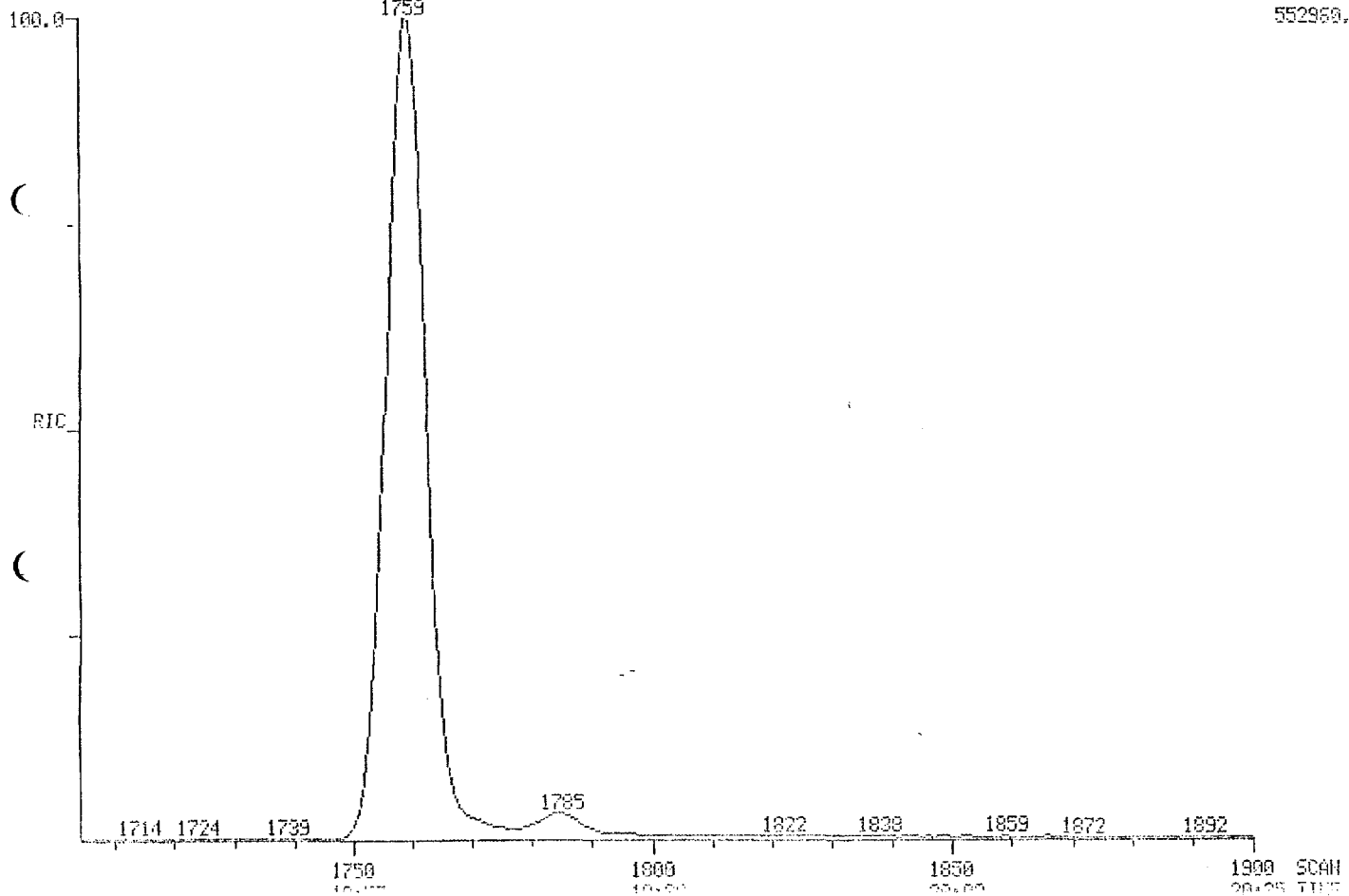
04/23/97 14:03:00

CALI: CAL042387 05

SAMPLE: CALIBRATION SOLN IJ

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: 01704.1900 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



552950

1900 SCAN
20:05 TIME

011693

HID MASS CHROMATOGRAMS

04/23/87 14:03:00

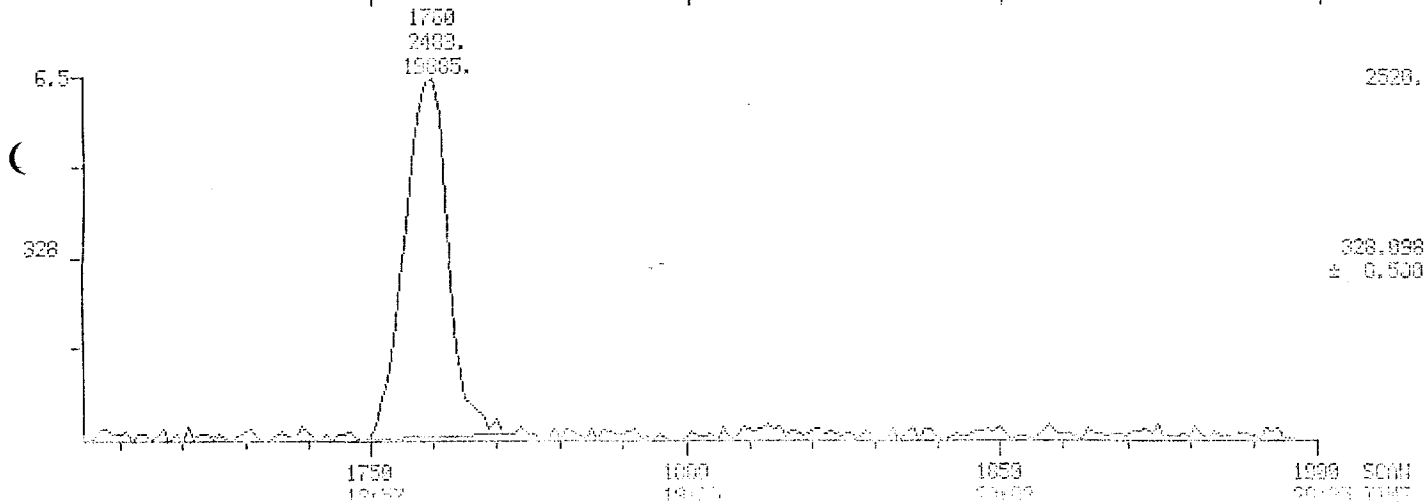
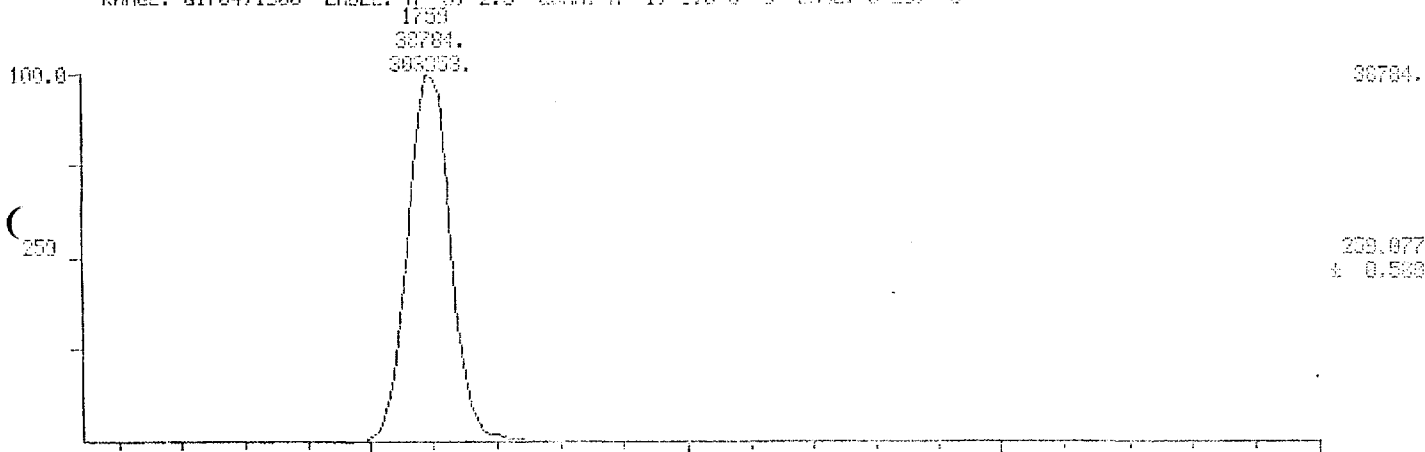
SAMPLE: CALIBRATION SOLN IV

COND5.: 1UL/SP2331/100-200025/200-24004/110L016

RANGE: 01704.1500 LABEL: II 5, 2.5 QMS: A 1, 1.0 U 0 BASE: U 20, 0

DATE ACQUIRED: 04/23/87 14:03:00

011693 TO 011694



011694

HID NASS CHROMATOGRAM

DATE: 01/23/87

TIME: 17:00:00

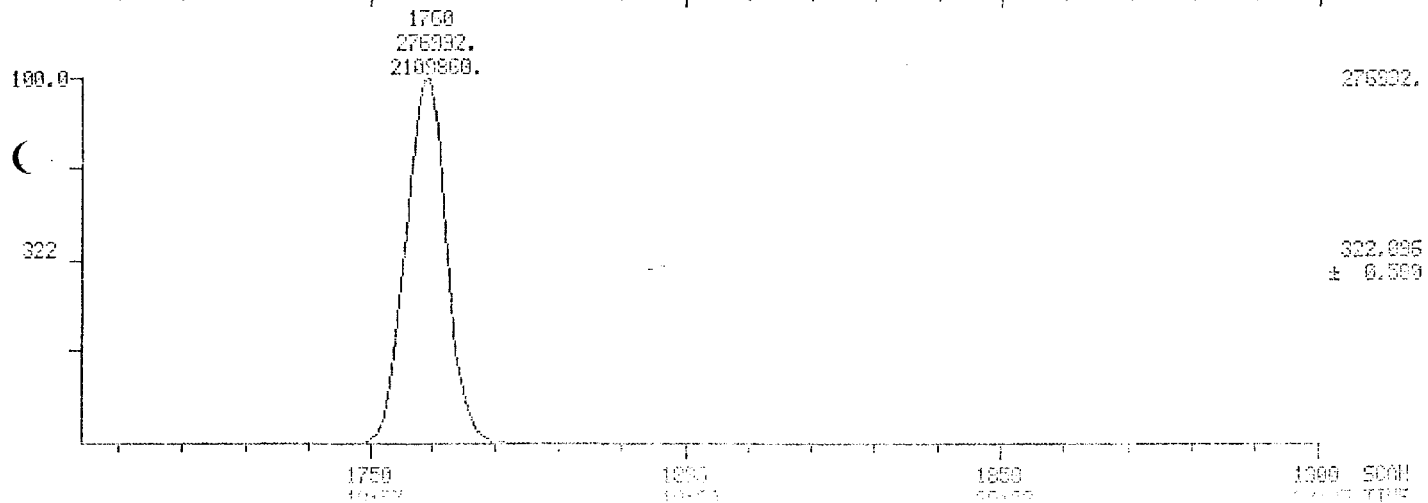
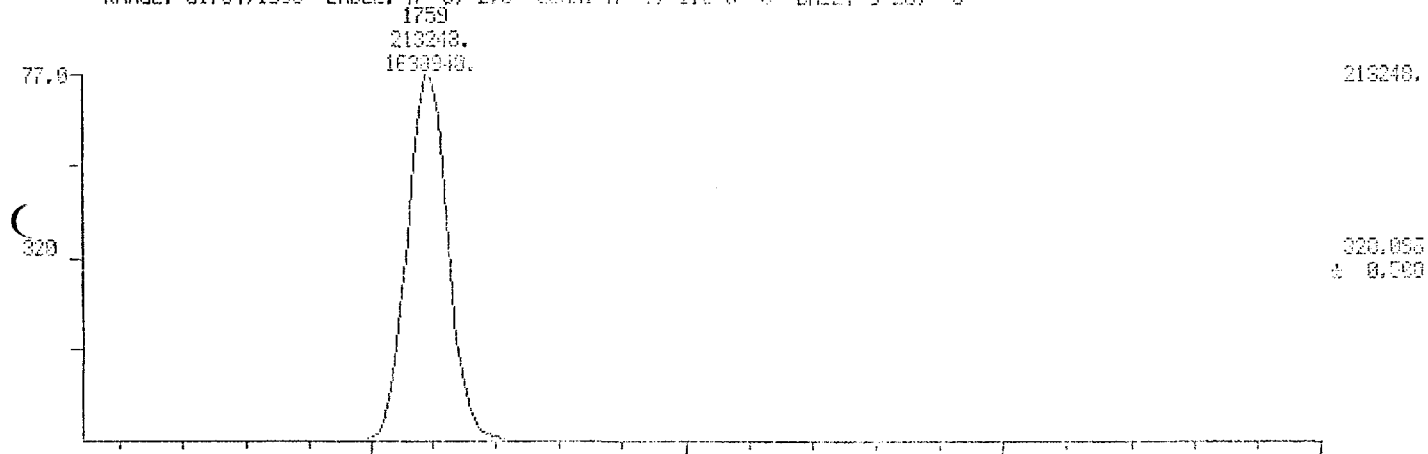
01/23/87 14:03:03

OFF: 001100010

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200025/200-24001420.10

RANGE: 01704,1900 LABEL: H 5, 2.5 CONC: A 1, 1.0 J 0 BASE: U 30, 3



0116910

MID MASS CHROMATOGRAMS

1.000 APR 23 1987

SCANS 1701 TO 1999

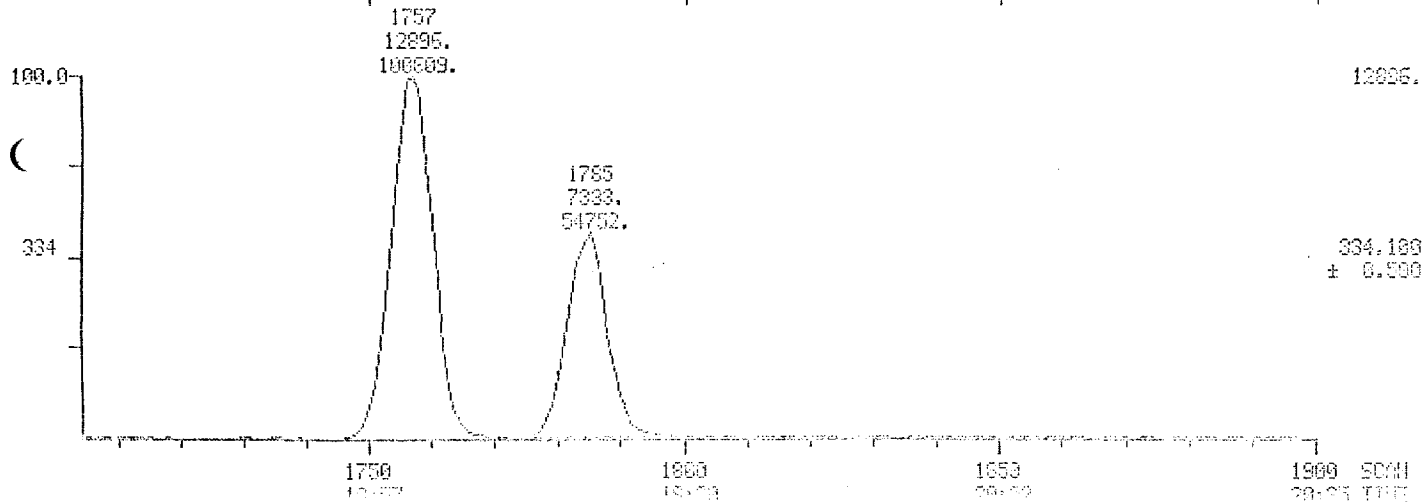
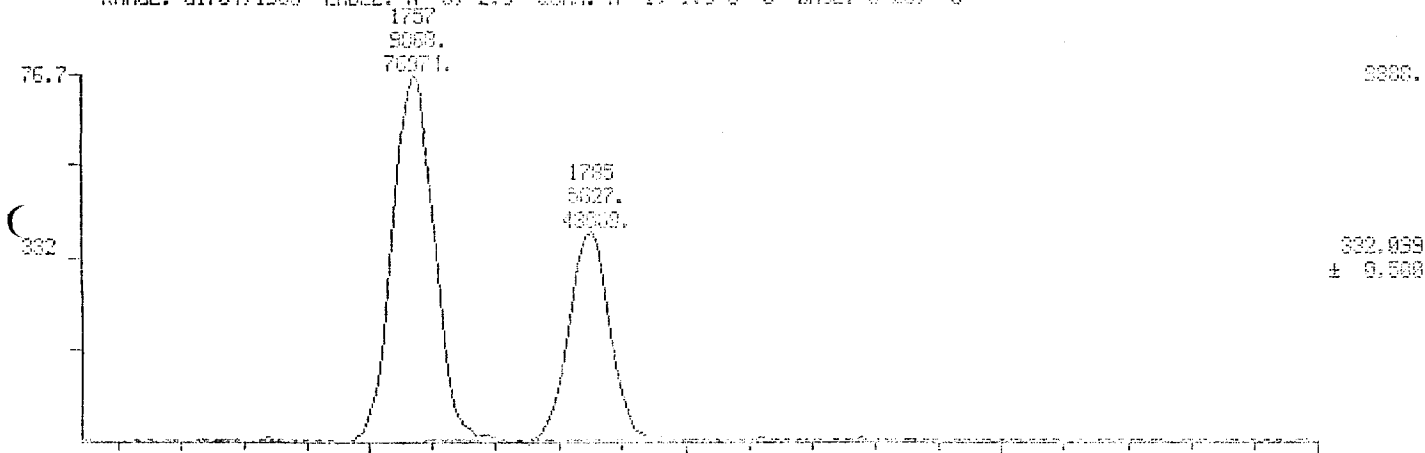
04/23/87 14:09:00

FILE: 010719007.D

SAMPLE: CALIBRATION SOLN IV

COND.: 1UL/SP2331/100-200025/200-2100/4100.D10

RANGE: G1704.1900 LABEL: H 5, 2.5 QUCH: A 1, 1.0 U 0 BASE: U 29, 3



369110

MID RIC

04/23/87 14:32:00

SAMPLE: CALIBRATION SOLN IV

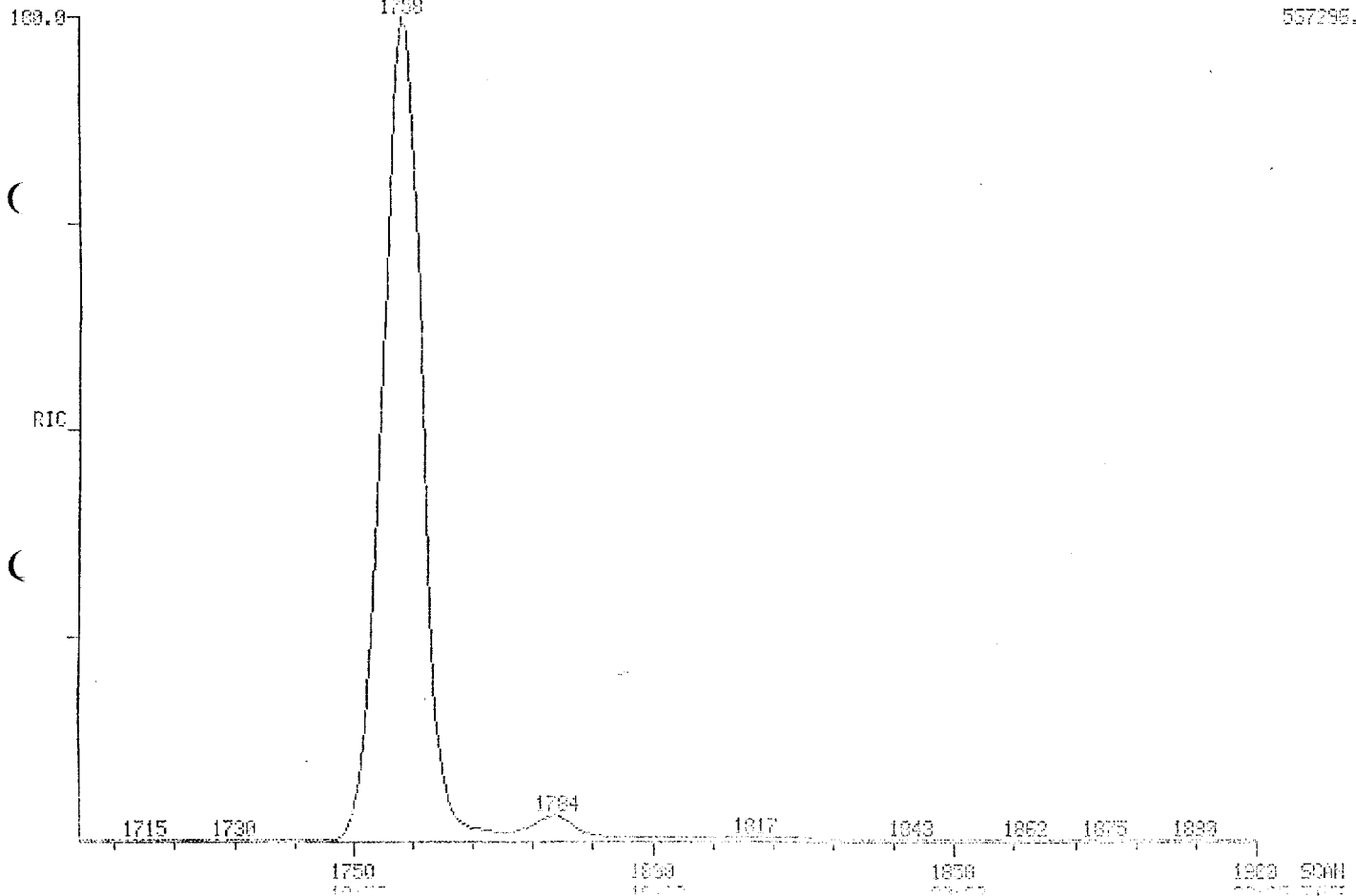
CONDS.: 1UL/5P2331/100-200015/200-2400/110.010

RANGE: 61704.1500 LABEL: H 0, 4.0 0.000; A 0, 1.0 0.0 BASE: 0.20, 3

DATA: 04/23/87 14:32:00

FILE: 04/23/87 14:32:00

SCANS: 1701 TO 1830



169110

MID MASS CHROMATOGRAMS

DATE: 04/23/87

TIME: 17:04 TO 19:00

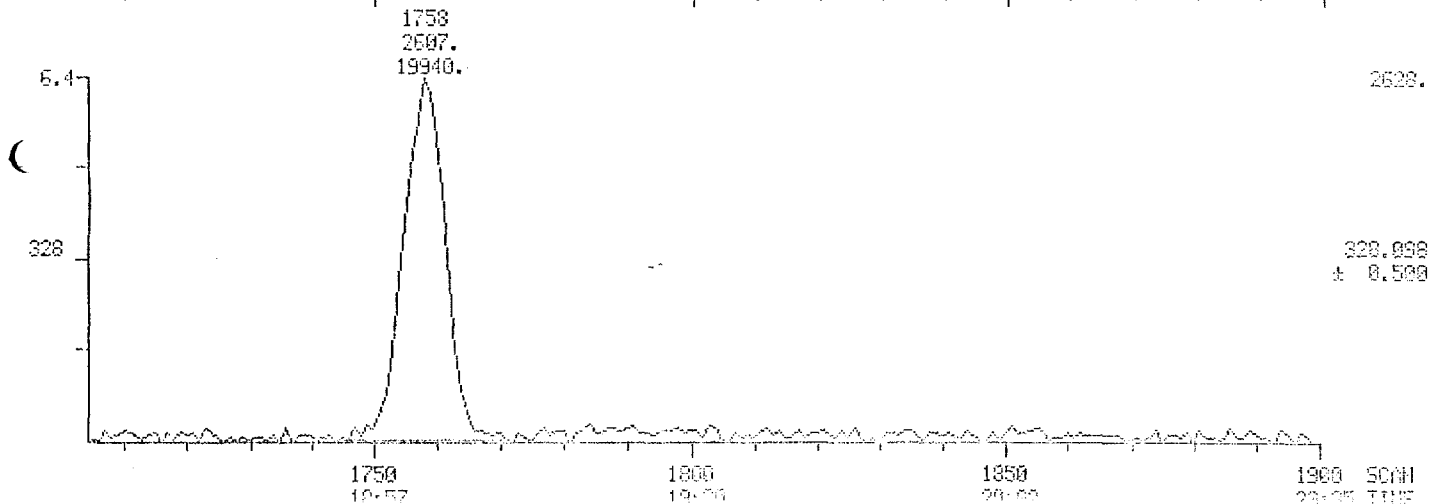
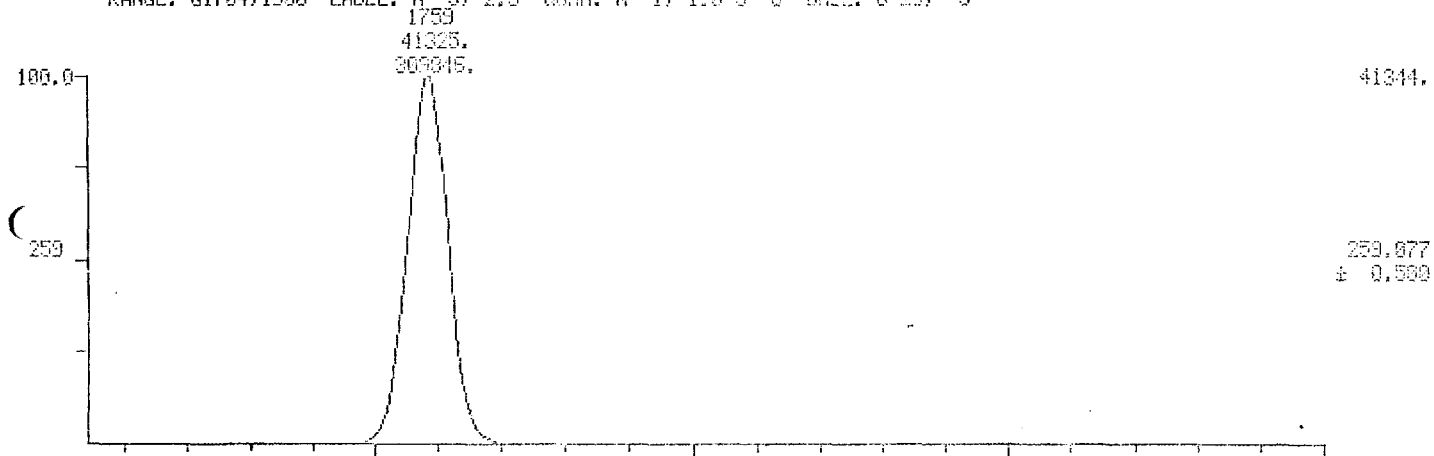
04/23/87 14:32:00

CALL: WLD12307 00

SAMPLE: CALIBRATION SOLN IV

COND5.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: 61704.1900 LABEL: N 5, 2.5 OUCH: 0 1, 1.0 J 0 WISE: U 20, 3



01169T0

RID MASS CHROMATOGRAM

DATA: 870319.D1

SCANS 100 TO 1000

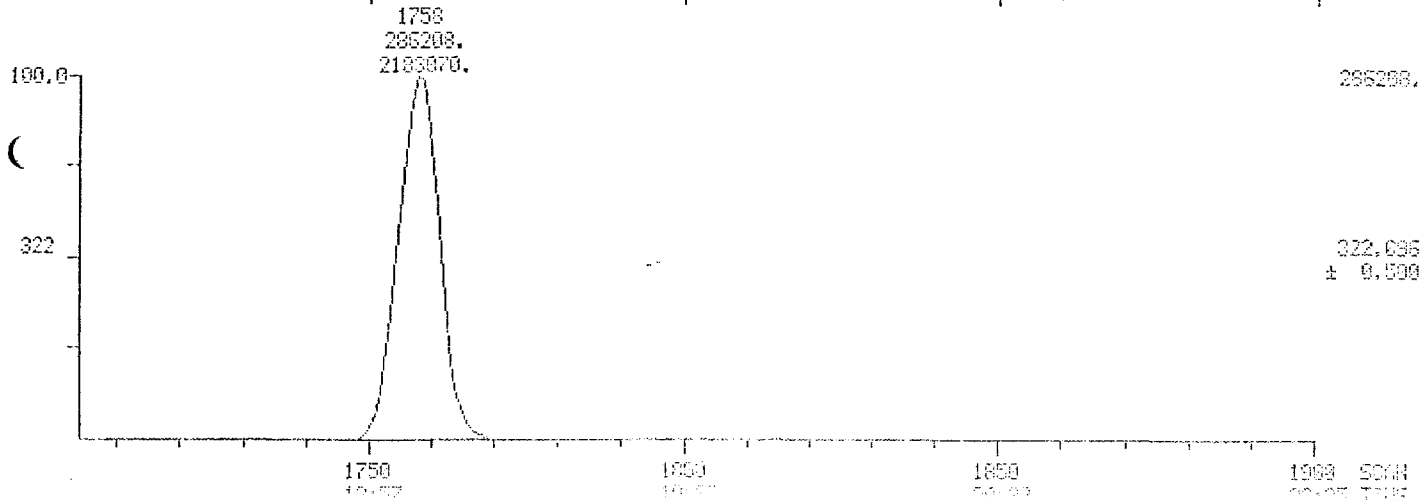
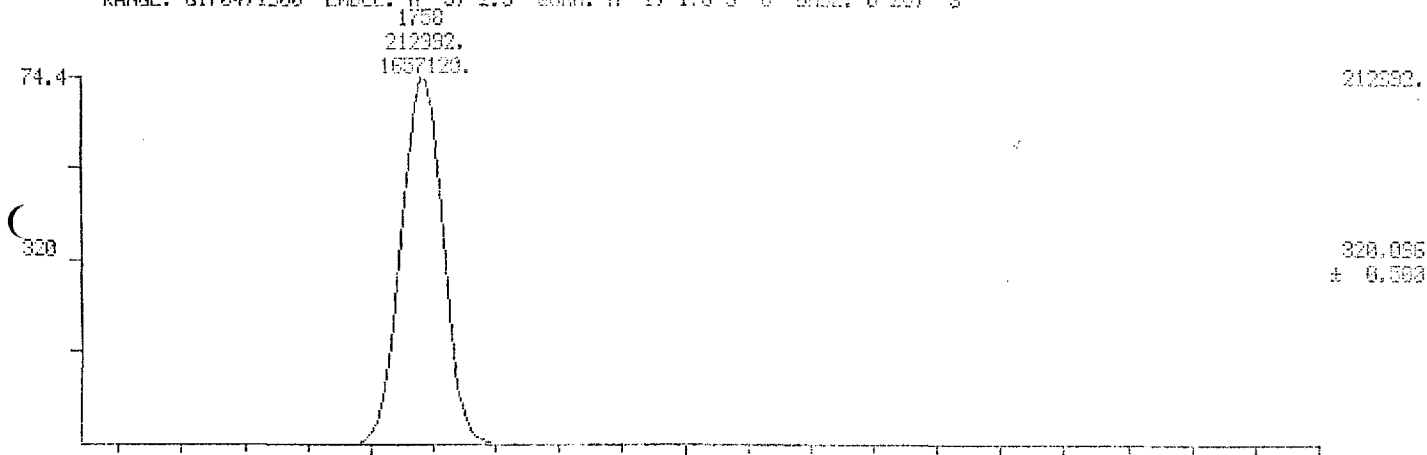
04/23/87 14:32:00

SOLN: CALIBRATION

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200005/200-24004/HOLD10

RANGE: 01704.1900 LABEL: H 5, 2.5 QUANT: A 1, 1.0 U 0 BASE: U 20, 3



369110

MID MASS CHROMATOGRAMS

DATE: APR23IS 81

SCANS: 1704 TO 1900

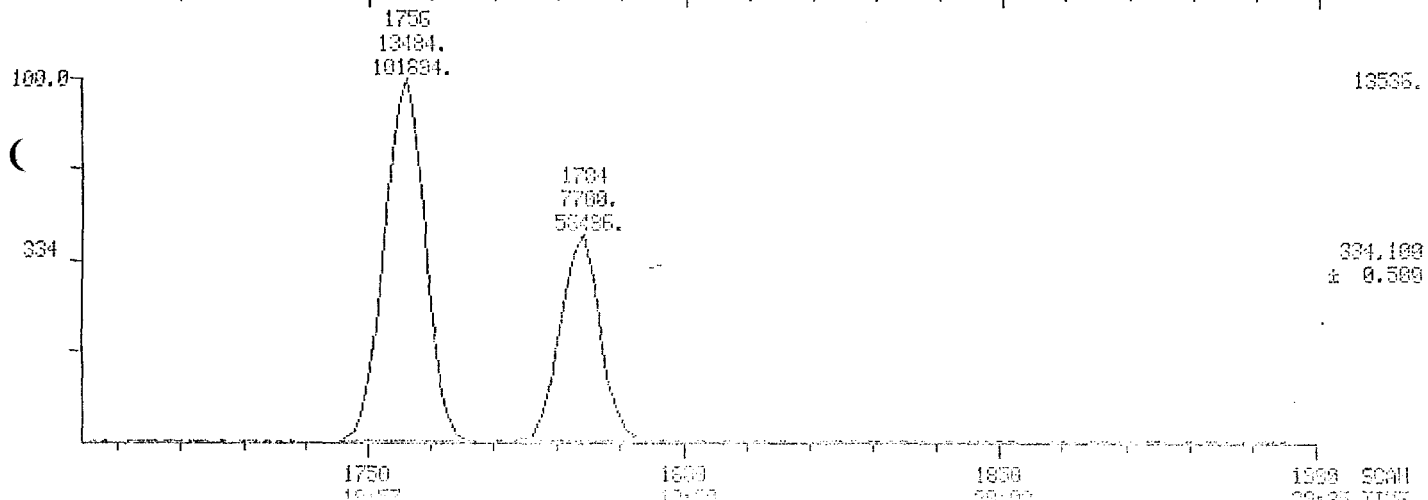
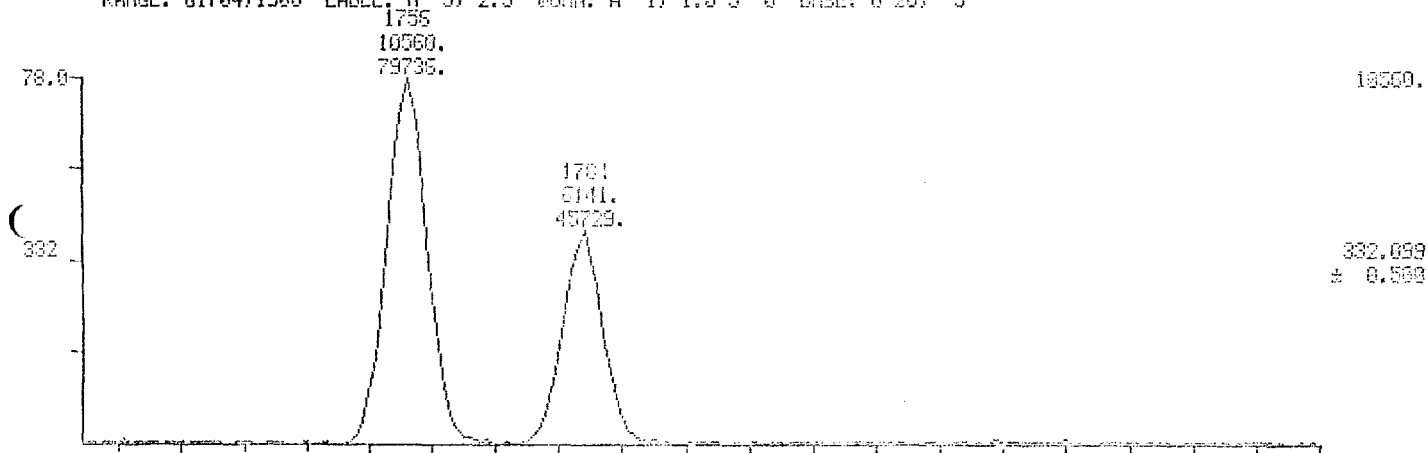
04/23/87 14:32:00

QNTY: 0.1842287 SS

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200@25/200-240@4/110LD10

RANGE: G1704.1900 LABEL: M 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



13535.
332.039
± 0.500
13535.
334.100
± 0.500
1909 SCAN
00-00 Y107

011700

MID RIC

DATA: 04/23/87 01

COND: 1704 10 1000

04/23/87 9:43:00

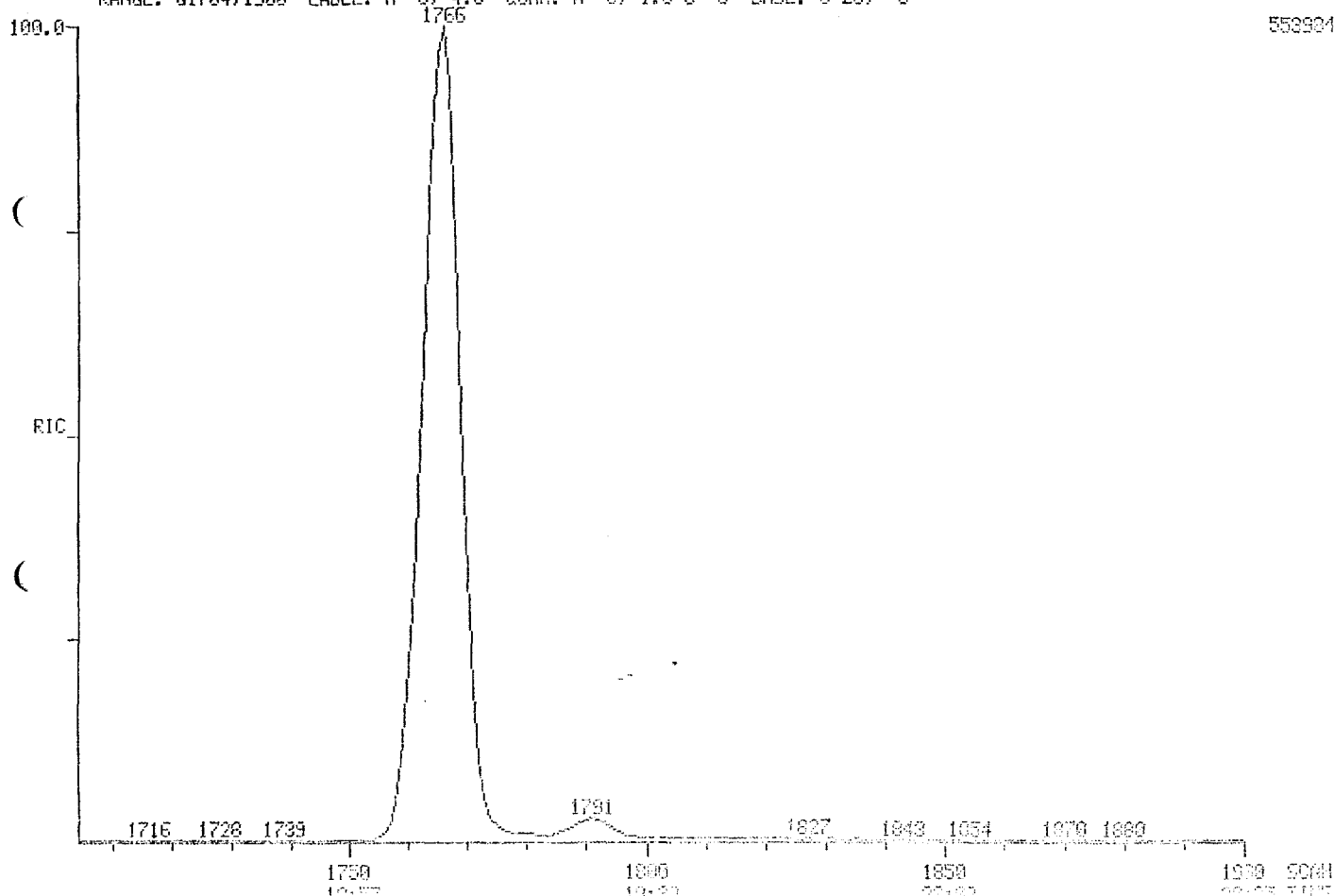
CALI: CALS42007 03

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704.1900 LABEL: H 0, 4.0 GUSH: A 0, 1.0 J 0 DASE: U 20, 3

553904.



101110

MID MASS CHROMATOGRAMS

DATA: 04/21/87 01

SCANS 1701 TO 1900

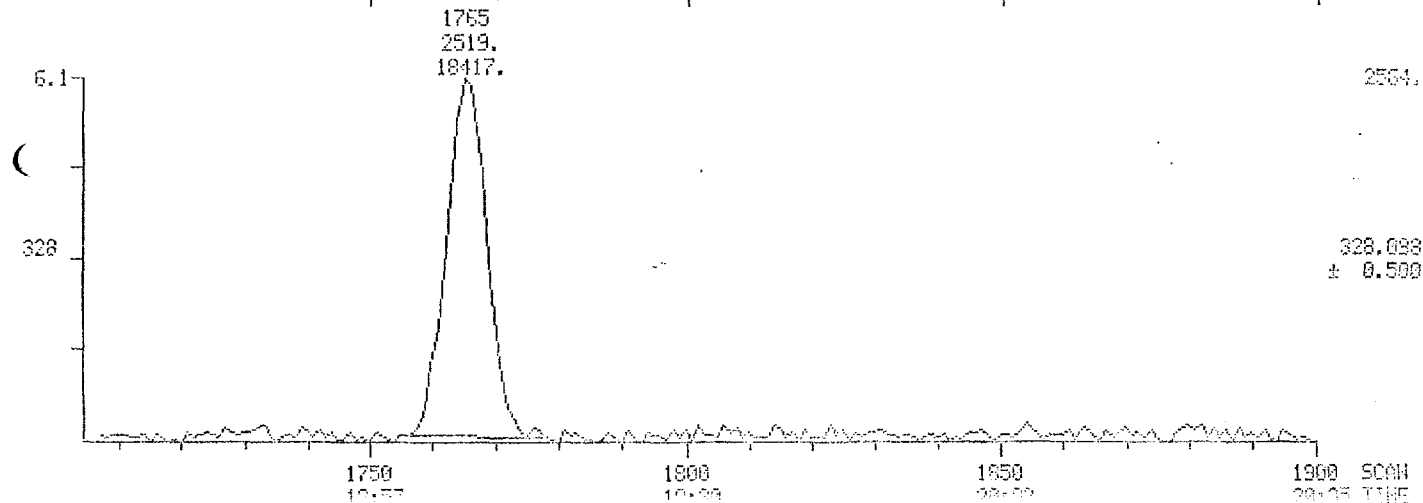
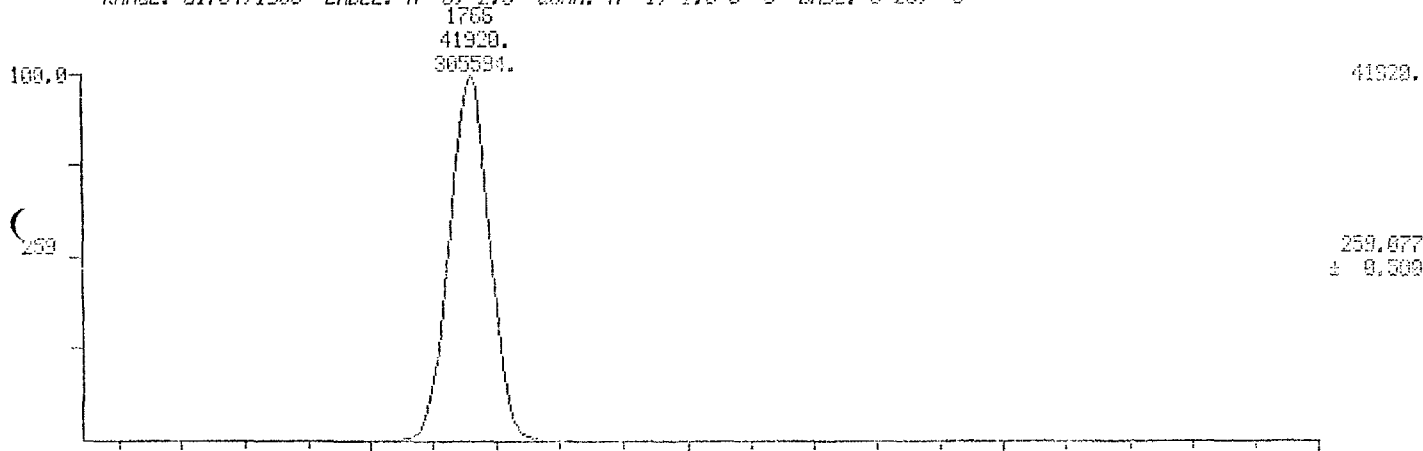
04/23/87 9:43:00

CELL: G10112007 05

SAMPLE: CALIBRATION SOLN IV

COND. : 1UL/SP2331/100-200025/299-24034/HOLD10

RANGE: G1704.1900 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 9 BASE: U 20, 3



1750 10:57 1900 10:59 1950 10:59 1900 SCAN 20:05 TIME

302110

HID MASS CHROMATOGRAMS

DATA: AFD2100 01

SCANS 0704 TO 1010

04/23/87 9:43:00

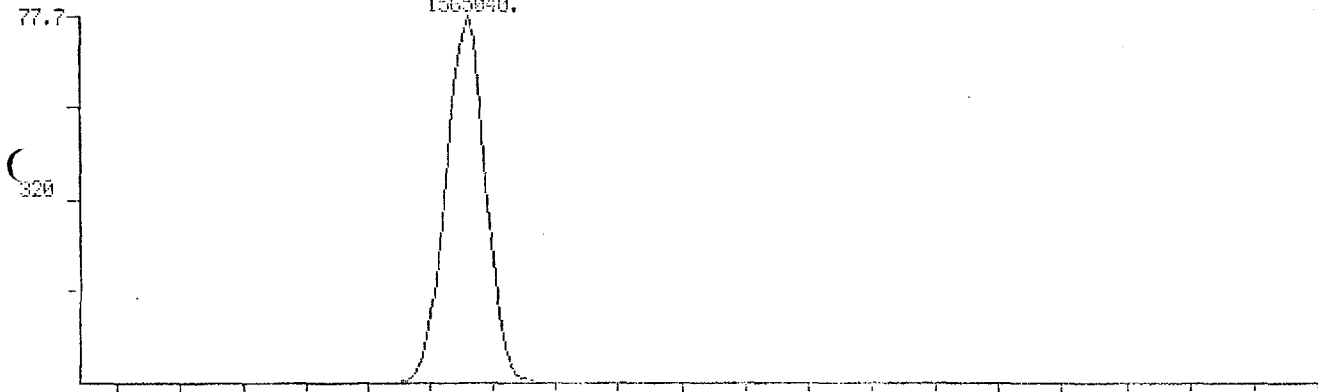
CALIB: CALIB40207 00

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200025/200-24004/10LD10

RANGE: G1704.1900 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 DATE: U 20, 3

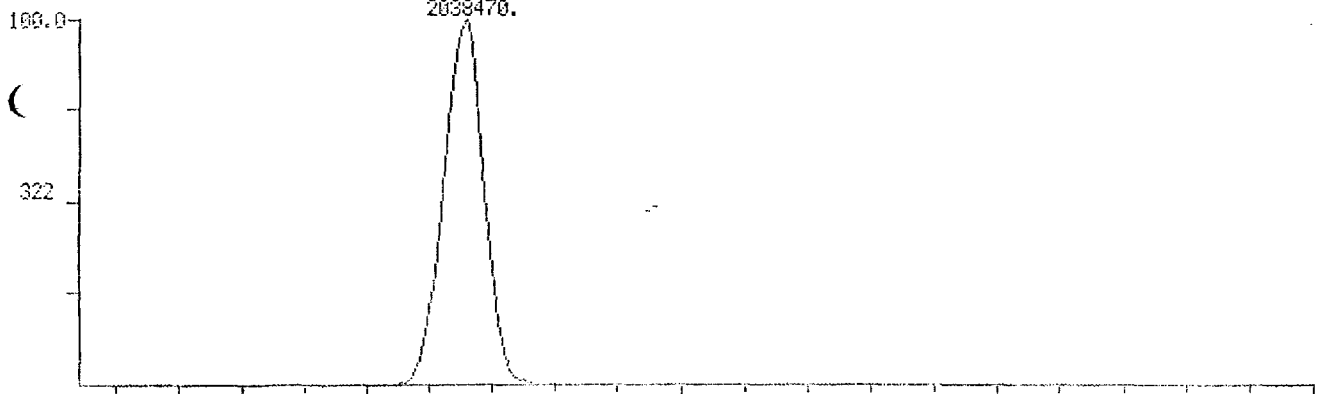
1766
214016.
1565040.



214016.

320.005
± 0.500

1766
275456.
2038470.



275456.

322.095
± 0.500

1750 1800 1850 1900 SCAN
10.000 10.000 10.000 10.000 TIME

301110

MID MASS CHROMATOGRAMS

DATA: APR2103 #1

SCANS 1784 TO 1990

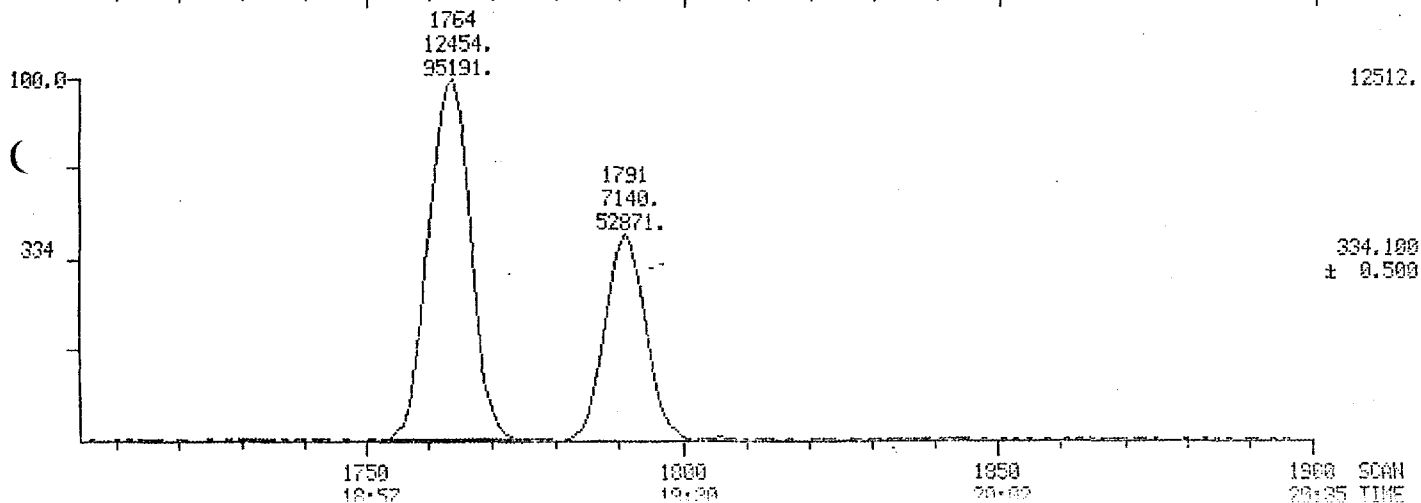
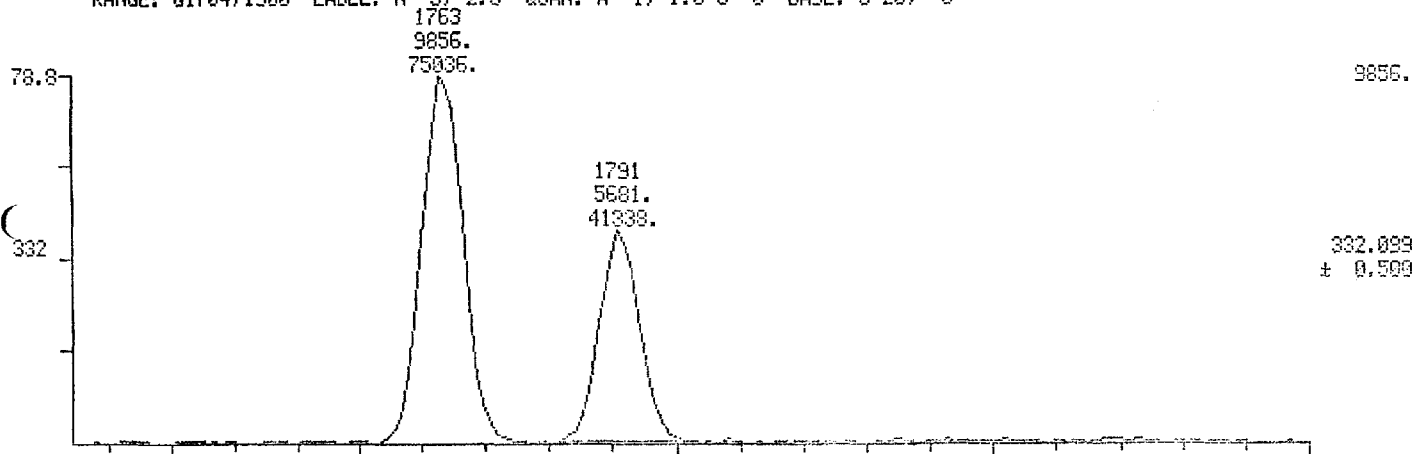
04/23/87 9:43:00

CALI: CAL042387 #5

SAMPLE: CALIBRATION SOLN IV

CONDS.: 1UL/SP2331/100-200@25/200-240@4/HOLD10

RANGE: G1704,1900 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011704

MID RIC

94/23/87 15:02:00

SAMPLE: COLUMN PERFORMANCE MIX

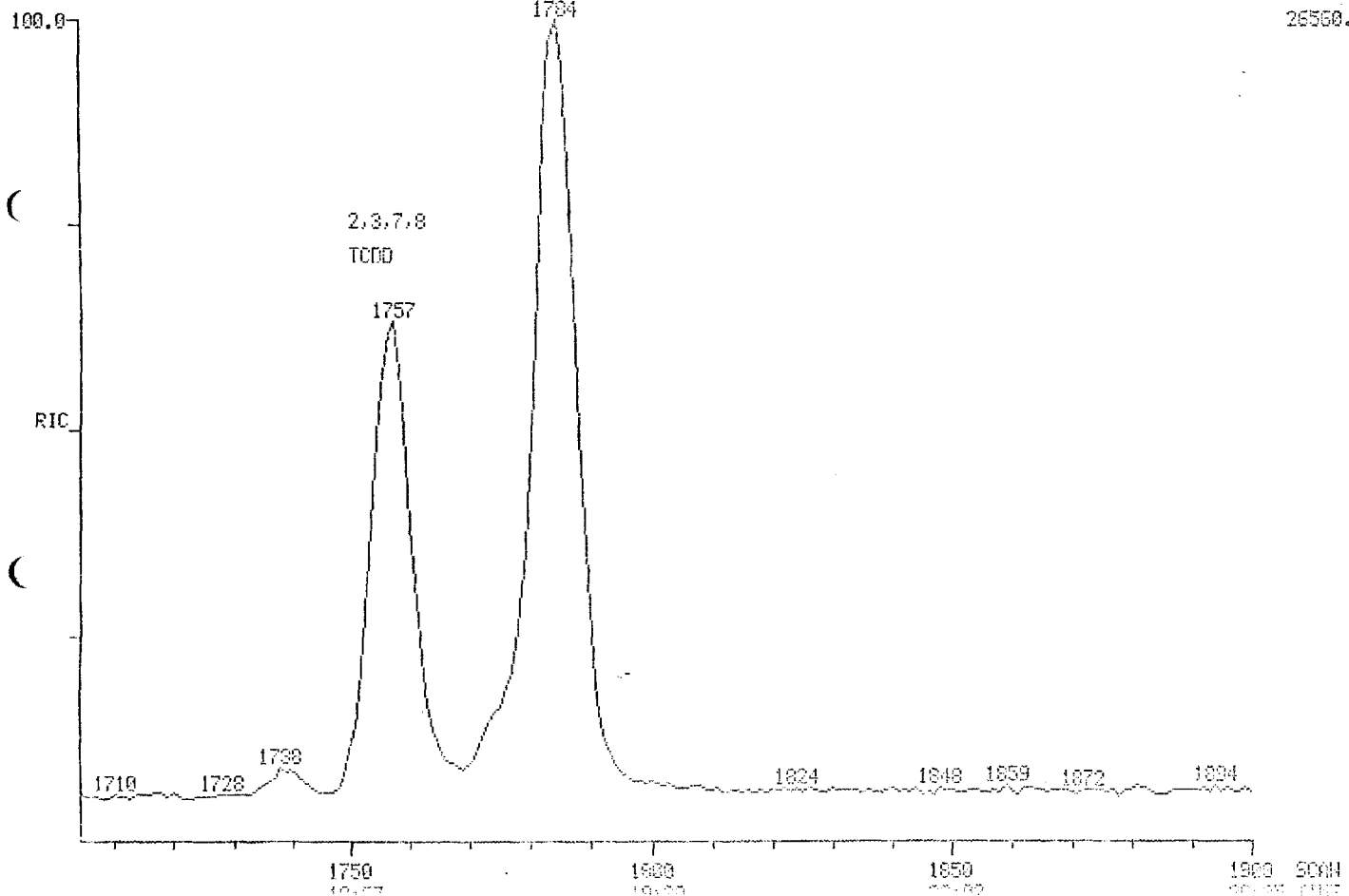
CONDS.: 1UL/SP2331/100-200025/200-24004/HOLD10

RANGE: G1704,1500 LABEL: N 0, 1.0 GUMM: A 0, 1.0 J 0 BASE: U 20, 3

DATE: APR23/84 41

CALL: CAL042387 35

SCANS 1704 TO 1800



011700

MID MASS CHROMATOGRAMS

DATE: APR23/87

SCANS 1704 TO 1900

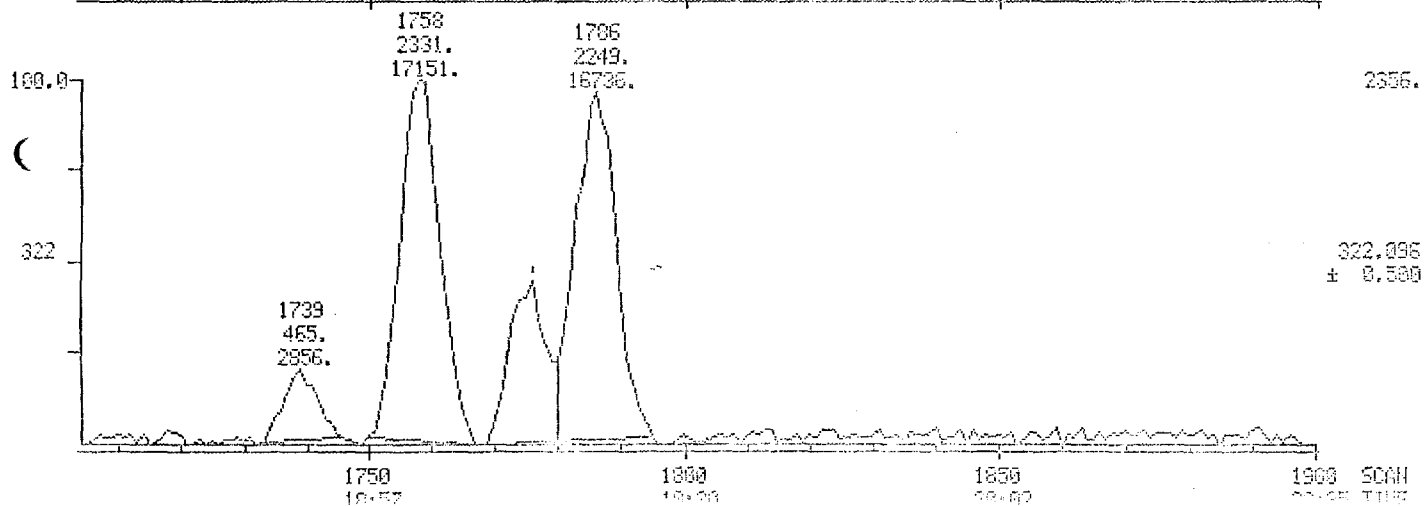
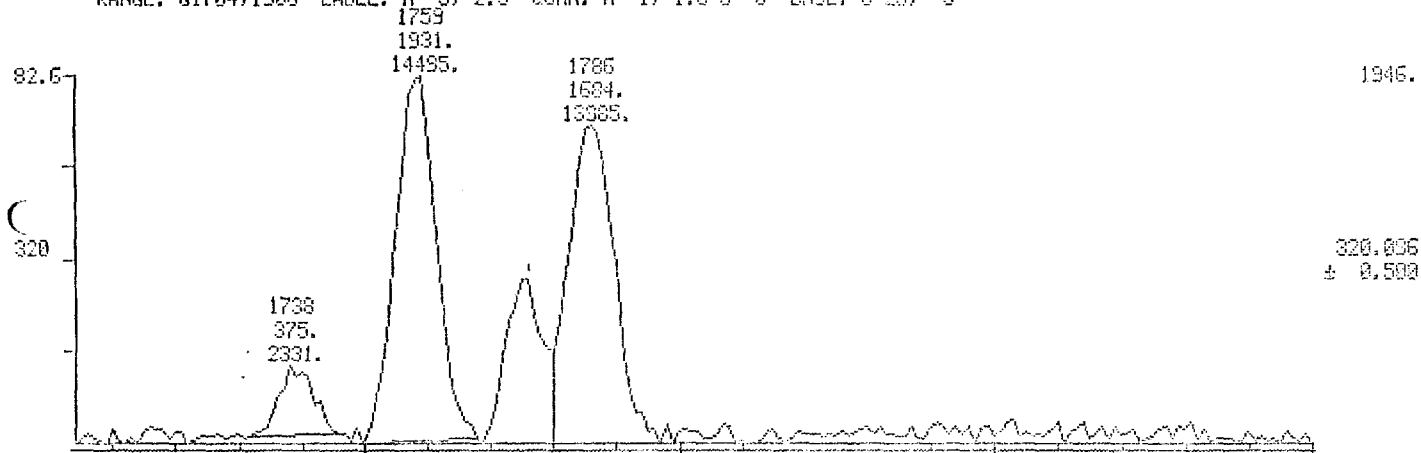
04/23/87 15:02:00

CAL: CAL042007 45

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 1UL/SP2331/100-200@25/200-240@4/HOLD10

RANGE: G1704.1900 LABEL: N 5, 2.5 QUAN: a 1, 1.0 J 0 BASE: U 20, 3



1750 18:57 1800 19:00 1850 19:00 1900 SCAN

302110

MID MASS CHROMATOGRAMS

DATA: APR2314 #1
CALI: CAL942387 #5

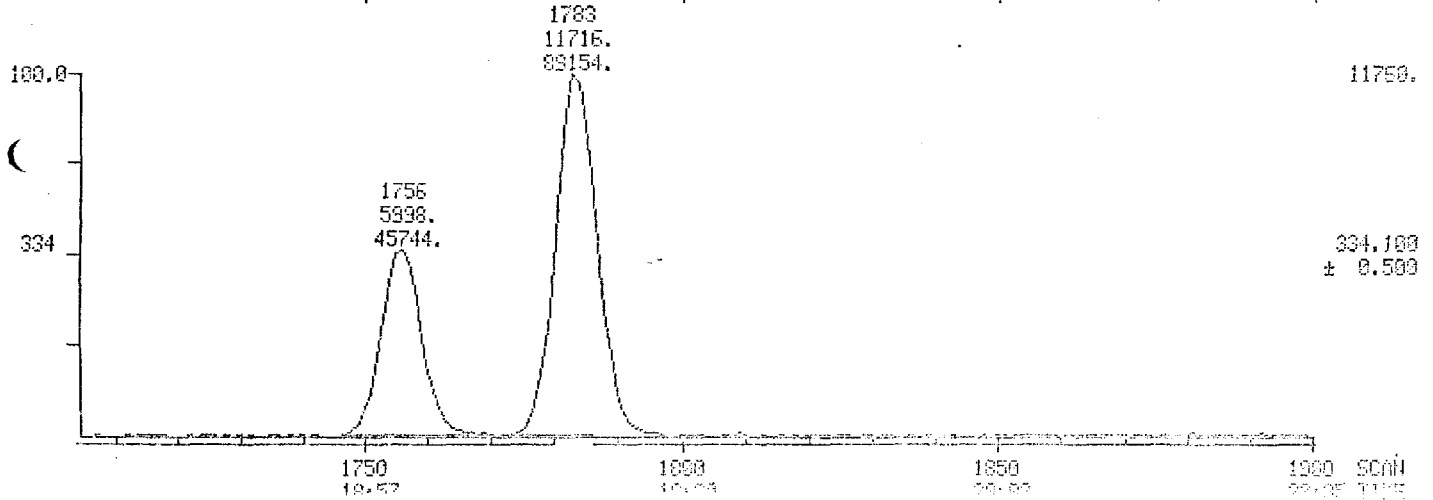
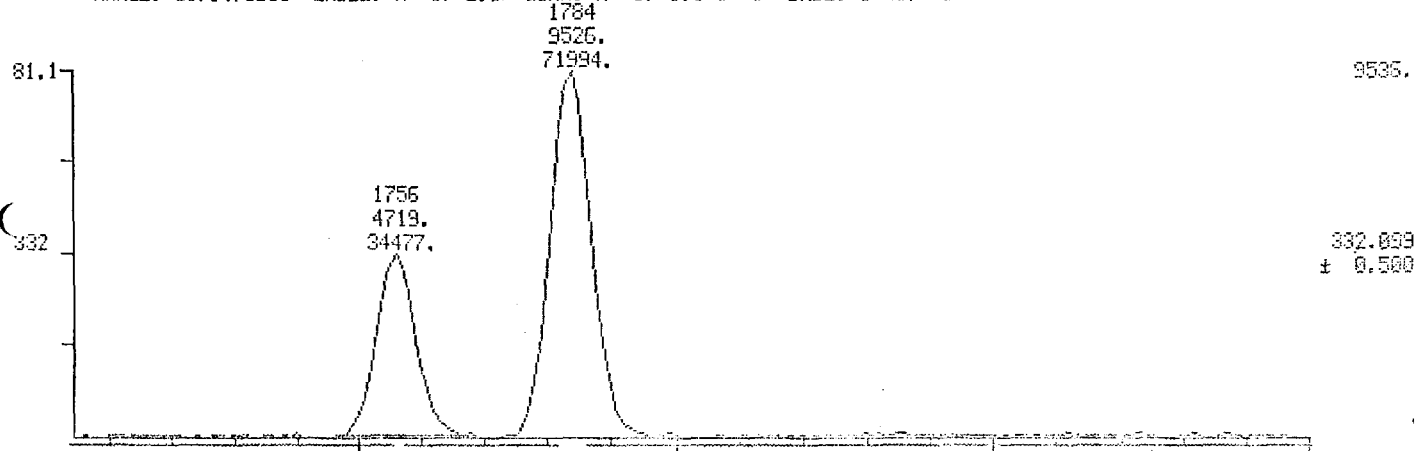
SCANS 1784 TO 1900

04/23/87 15:02:00

SAMPLE: COLUMN PERFORMANCE MIX

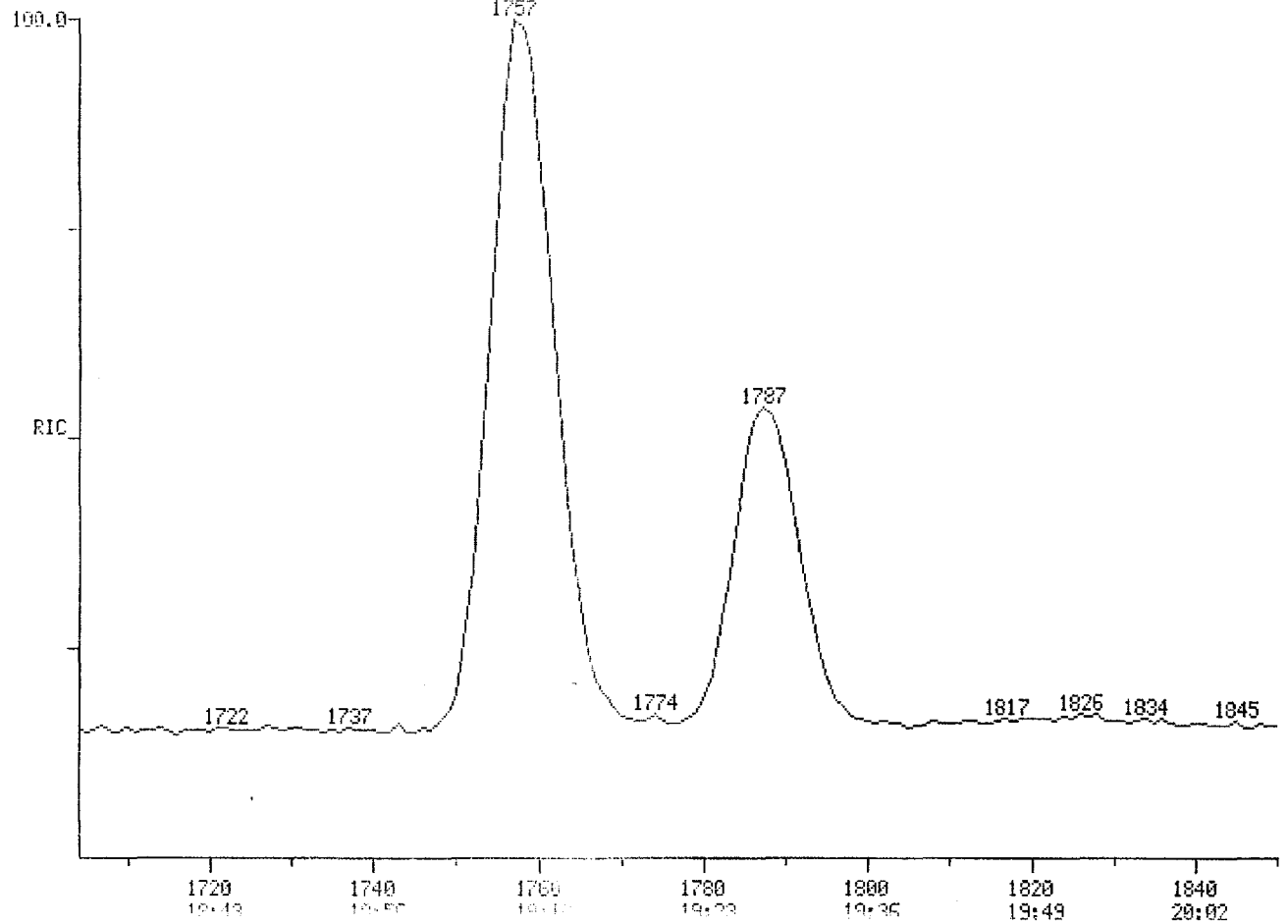
CONDS.: 1UL/SP2331/100-200025/200-24004 110LD10

RANGE: G1704,1900 LABEL: N 5, 2.5. QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1750 1800 1850 1900 SCAN
19.57 19.94 20.00 20.05 TIME

HID RIC DATA: SEP2803 #1 SCANS 1704 TO 1850
03/28/87 21:56:00 CALI: CAL092587 #3
SAMPLE: CAL 1 SOLN
CONDS.: 60M SP2331/100/100-200025/200-24004/8
RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



16016.

SCAN TIME

302110

MID MASS CHROMATOGRAMS

DATA: SEP2803 #1

SCANS 1704 TO 1850

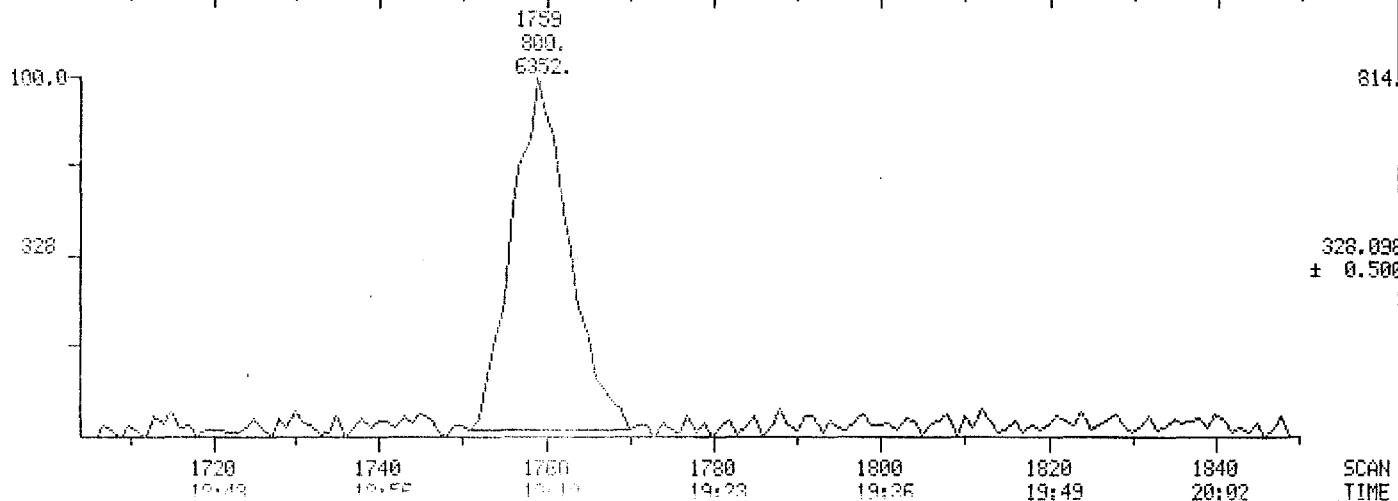
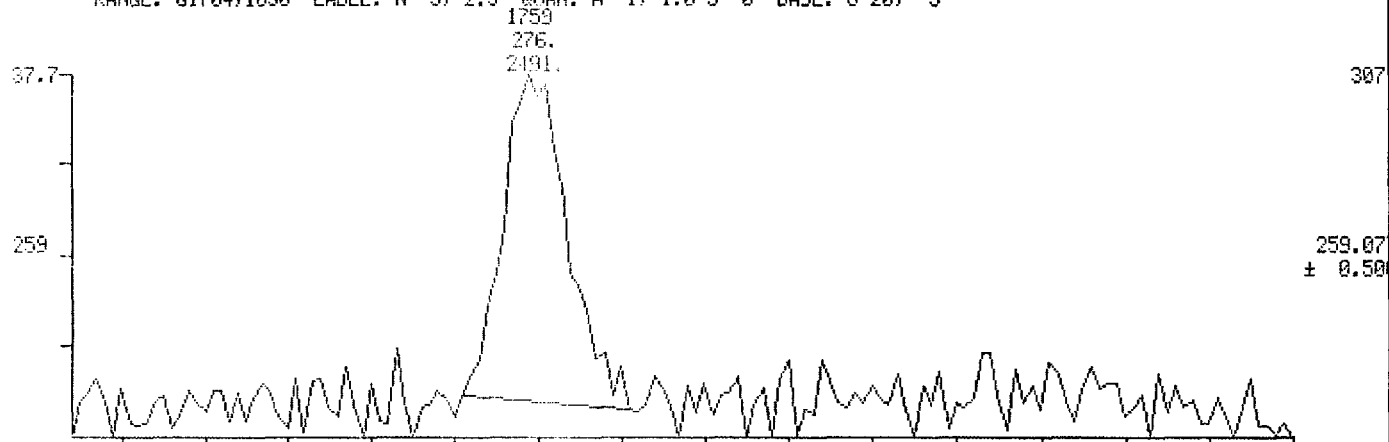
09/28/87 21:56:00

CALI: CAL092587 #3

SAMPLE: CAL 1 SOLN

CONDS.: 60M SP2331/100/100-200@25/200-240@4/3

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



302110

MID MASS CHROMATOGRAMS

DATA: SEP2803 #1

SCANS 1704 TO 1850

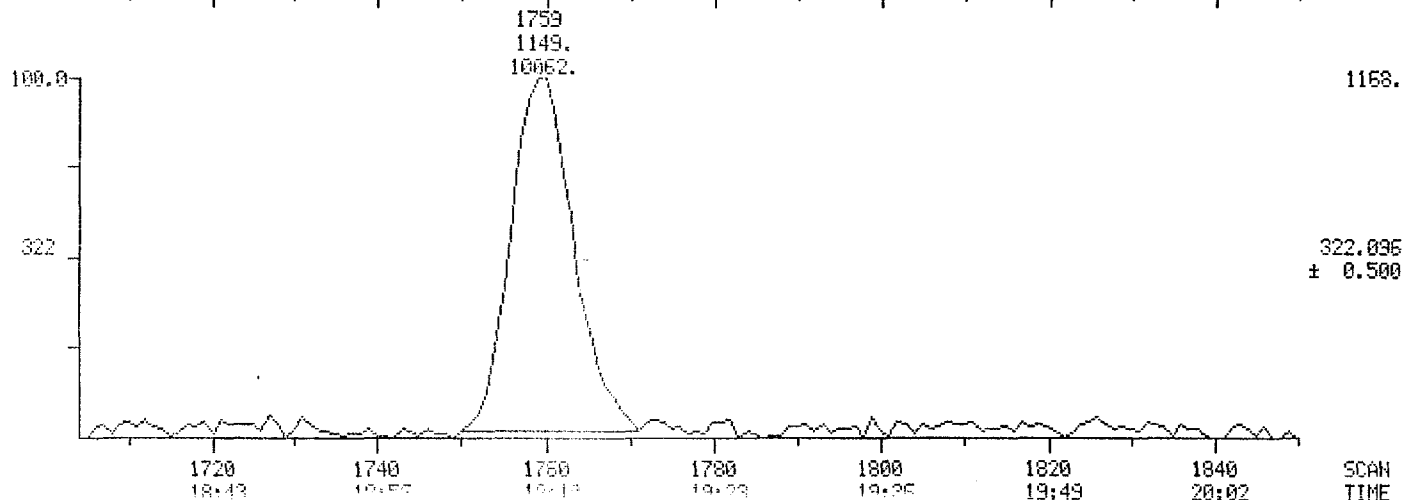
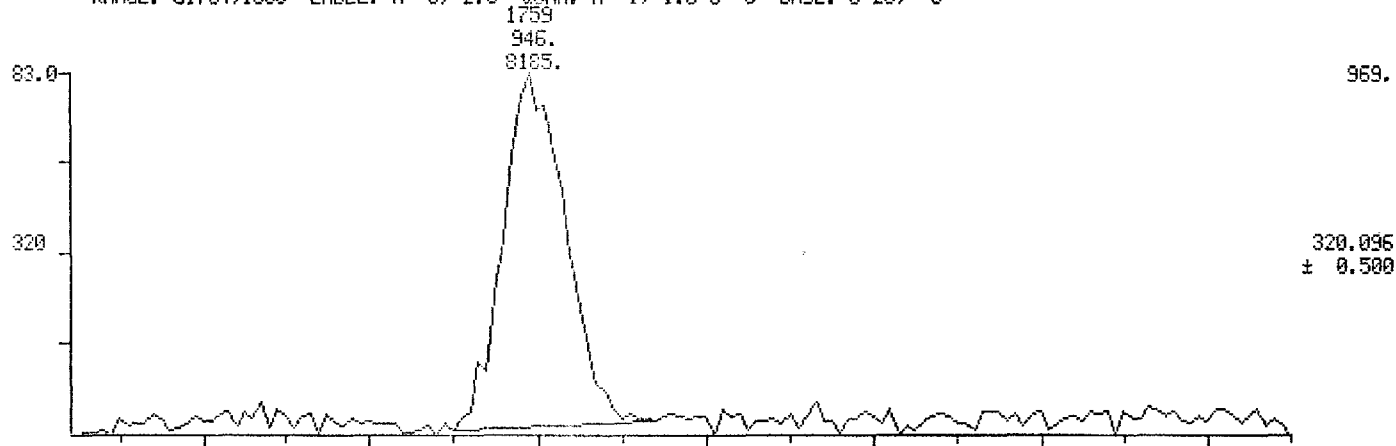
09/28/87 21:56:00

CALI: CAL092587 #3

SAMPLE: CAL 1 SOLM

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1720
18:43

1740
19:57

1759
19:18

1780
19:23

1800
19:26

1820
19:49

1840
20:02

SCAN
TIME

012110

MID MASS CHROMATOGRAMS

DATA: SEP2883 #1

SCANS 1704 TO 1850

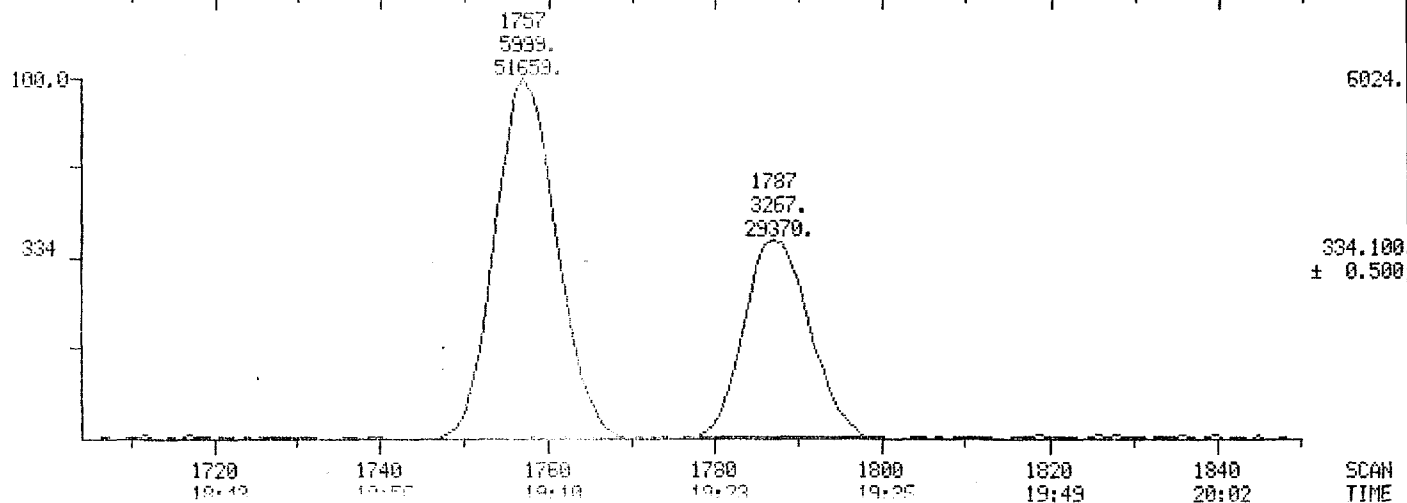
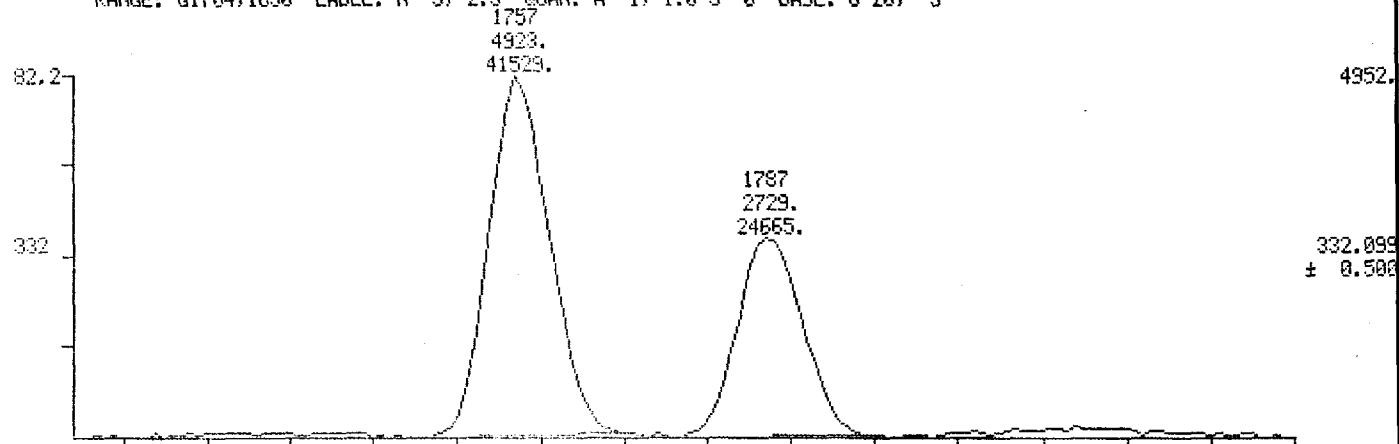
09/28/87 21:56:00

CALI: CAL092587 #3

SAMPLE: CAL 1 SOLN

CONDS.: 60M 5P2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



111110

MID RIC

10/01/87 13:03:00

SAMPLE: CALIBRATION SOLN 1

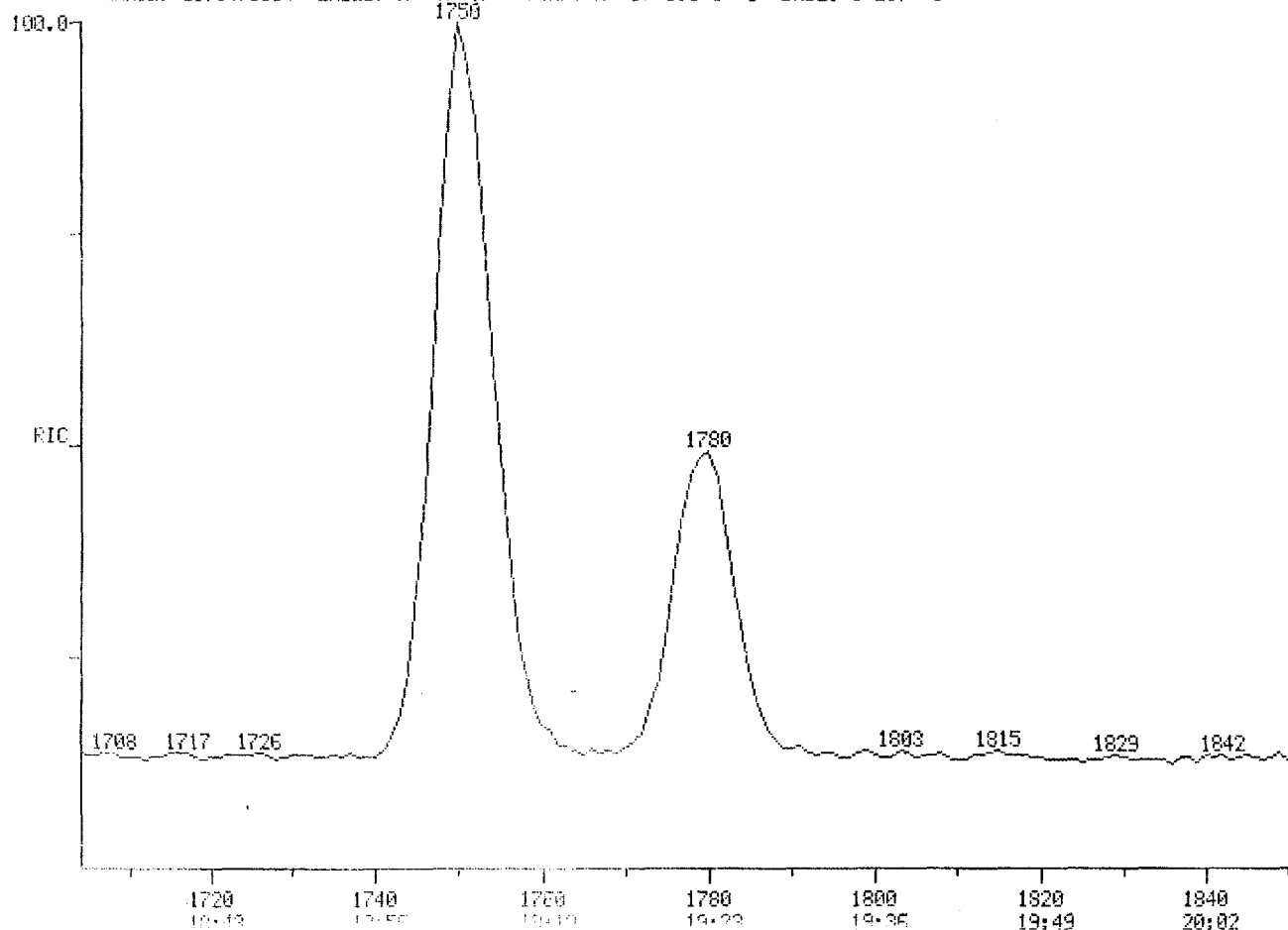
CONDS.: 60M 5P2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0, 4.0 GUSH: A 0, 1.0 J 0 BASE: U 20, 3

DATA: OCT0101 #1

CALI: CAL092587 #3

SCANS 1704 TO 1850



19552

SCAN
TIME

011711

MID MASS CHROMATOGRAMS

DATA: OCT0101 #1

SCANS 1704 TO 1850

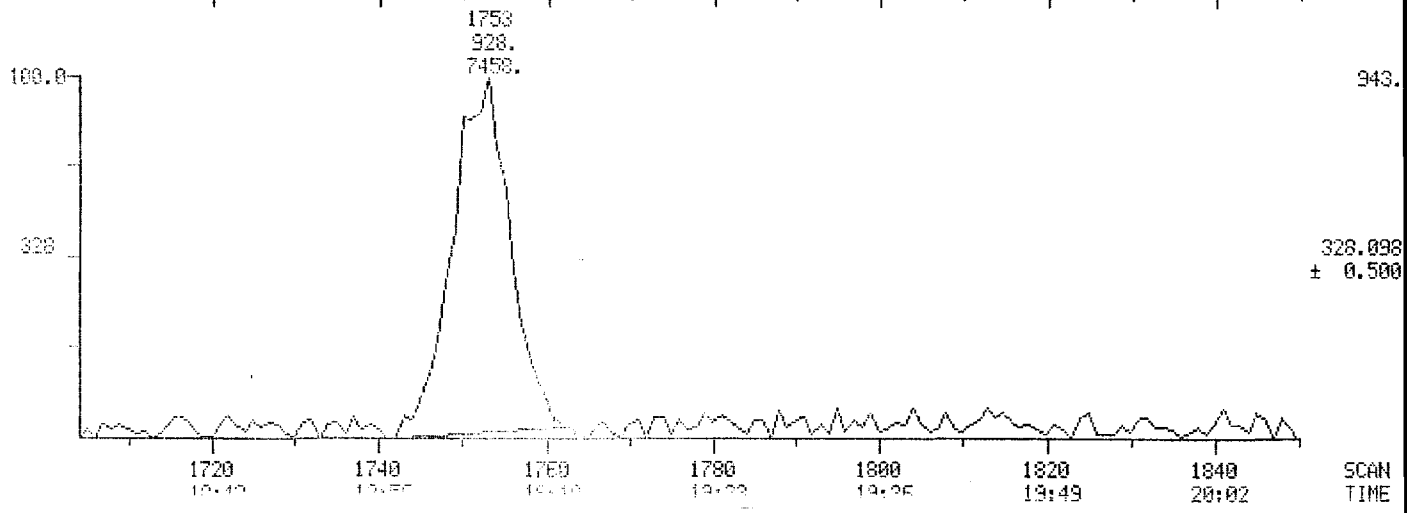
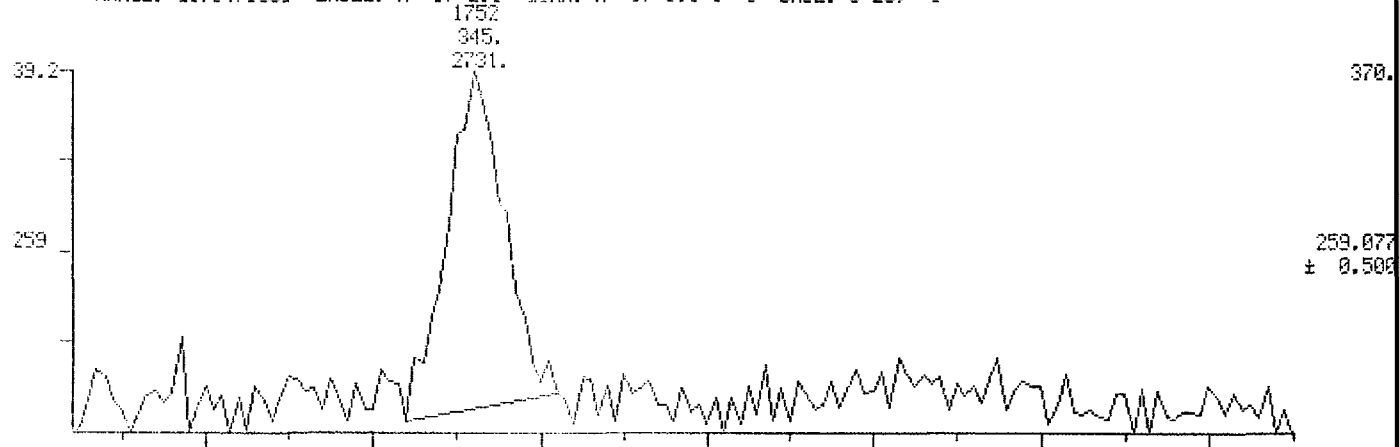
10/01/87 13:03:00

CALI: CAL092587 #3

SAMPLE: CALIBRATION SOLN 1

CONDS.: 60M SP2331/100/100-200025/200-24004/S

RANGE: G1704.1850 LABEL: N S. 2.5 QUANT: A 1. 1.0 J 0 BASE: U 20. 3



312110

MID MASS CHROMATOGRAMS

DATA: OCT0101 #1

SCANS 1704 TO 1850

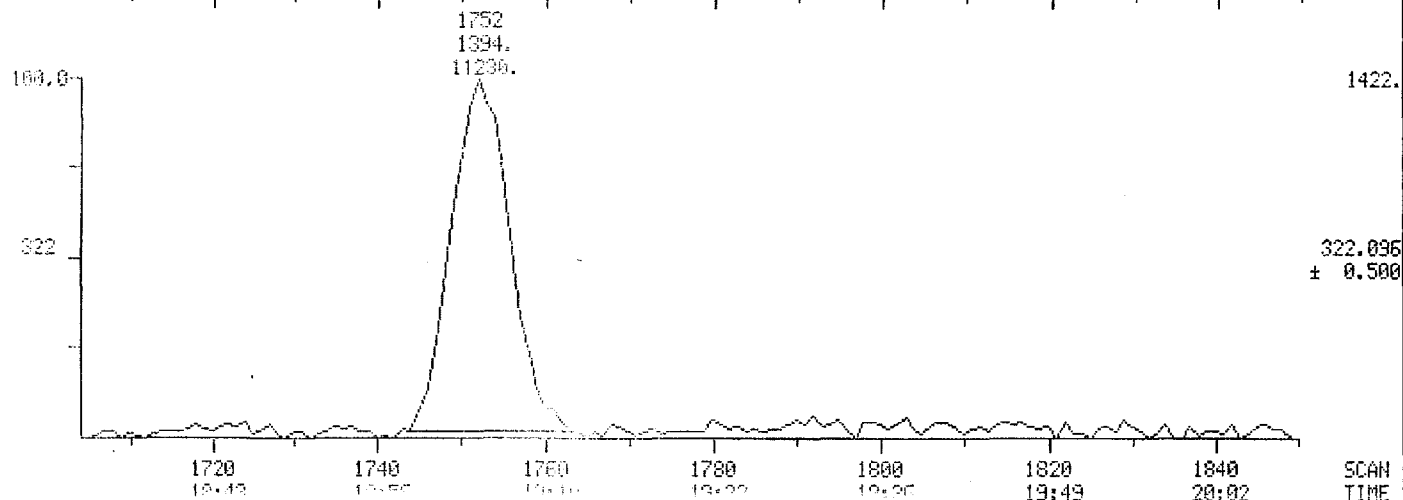
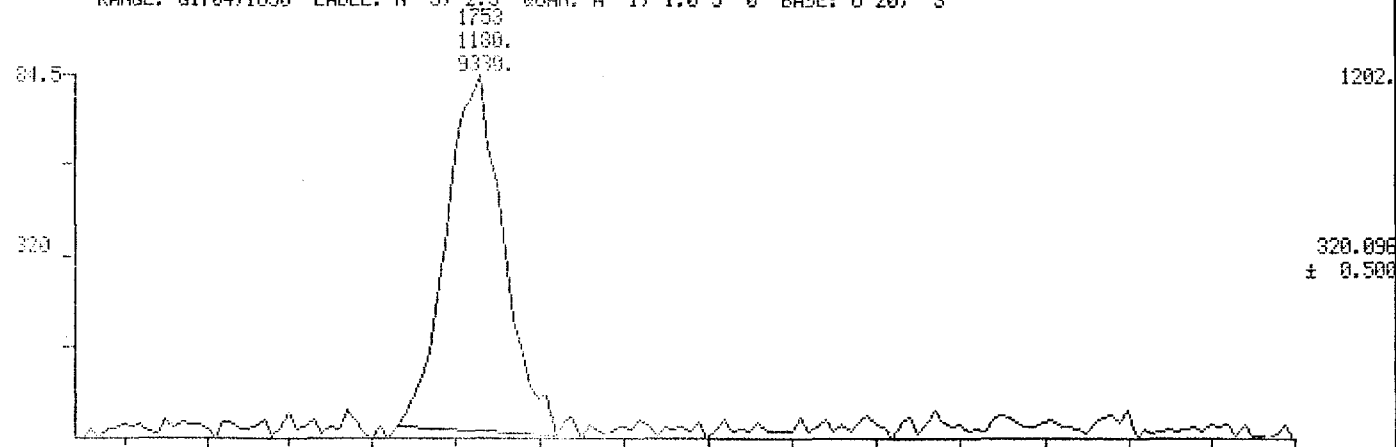
10/01/87 13:03:00

CALI: CAL092587 #3

SAMPLE: CALIBRATION SOLN 1

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5: 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



111110

MID MASS CHROMATOGRAMS

DATA: OCT0101 #1

SCANS 1704 TO 1850

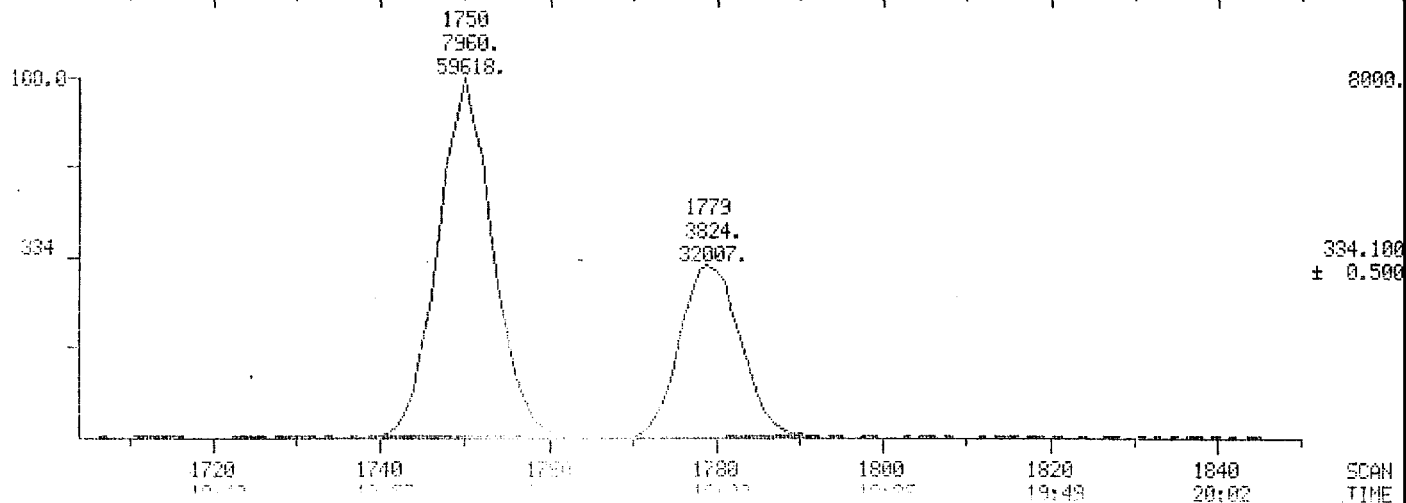
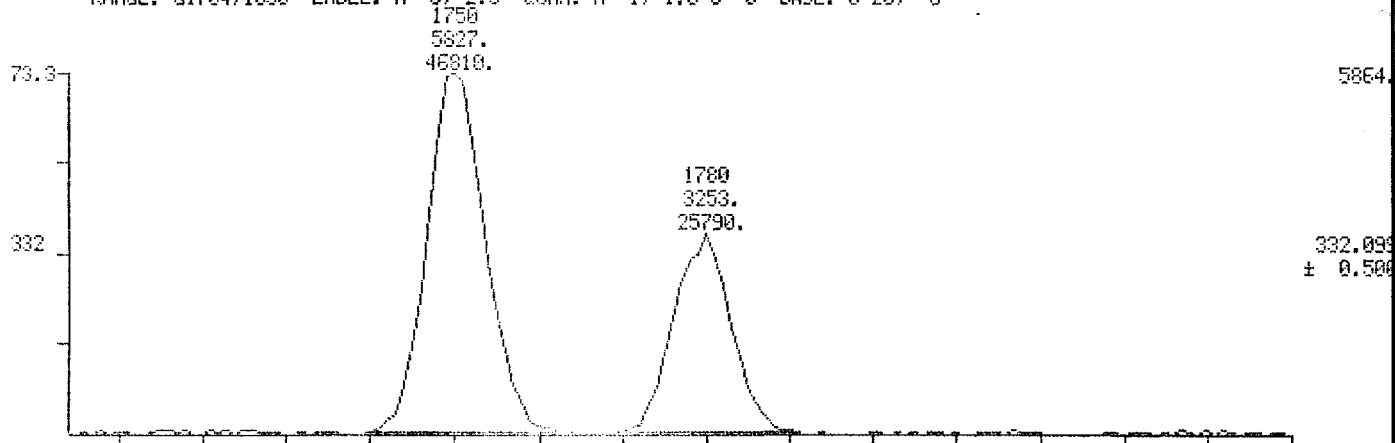
10/01/87 13:03:00

CALI: CAL092587 #3

SAMPLE: CALIBRATION SOLN 1

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



312110

8017-07

MID RIC

09/28/87 22:33:00

SAMPLE: COLUMN PERFORMANCE MIX

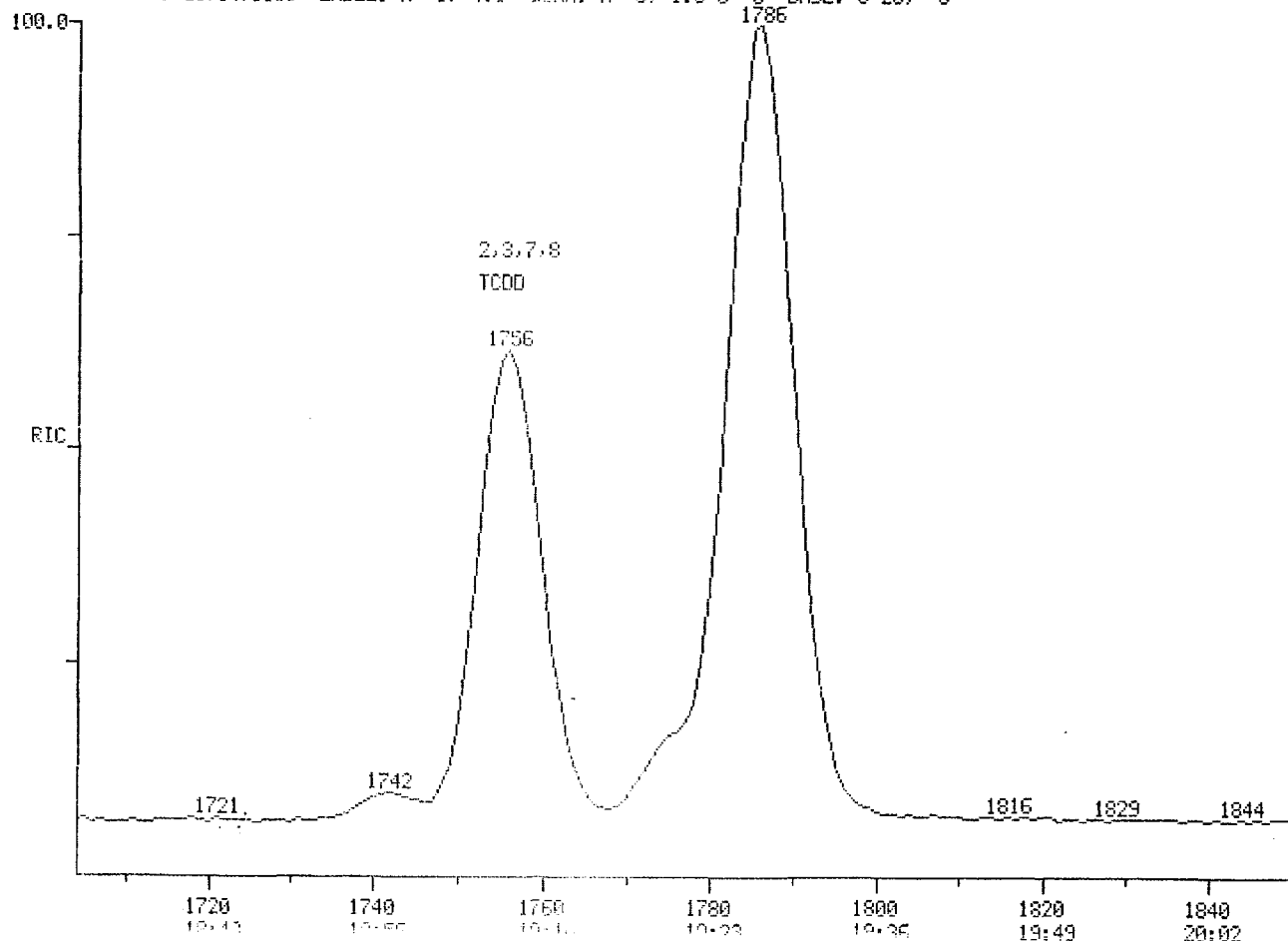
CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: SEP2804 #1

SCANS 1704 TO 1850

CALI: CAL092587 #3



34624

SCAN TIME

111111

MID MASS CHROMATOGRAMS

DATA: SEP2004 #1

SCANS 1704 TO 1850

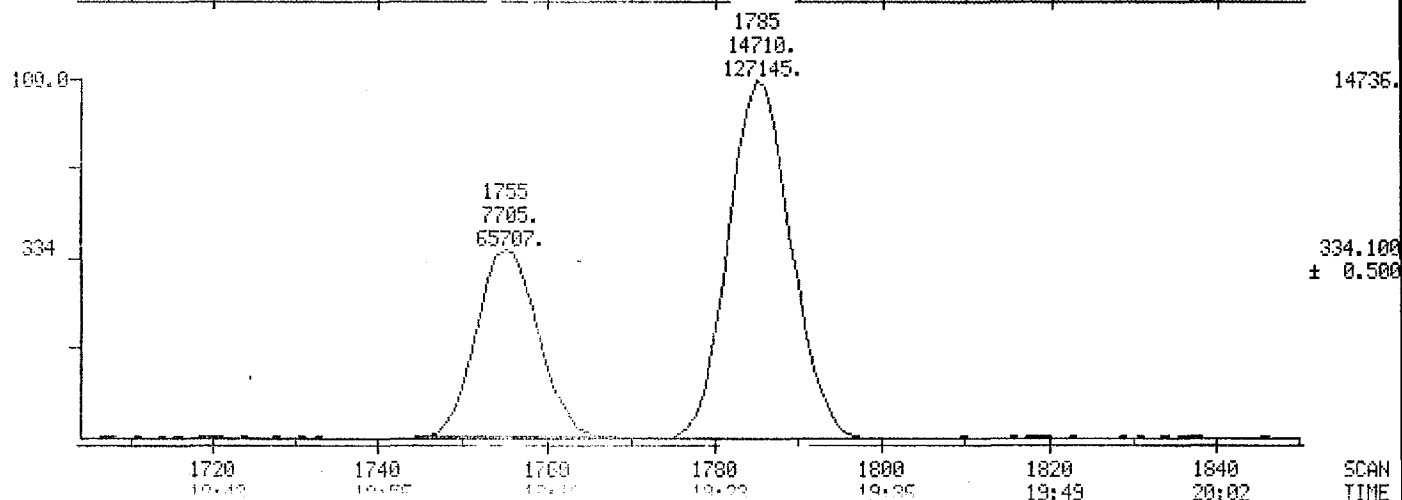
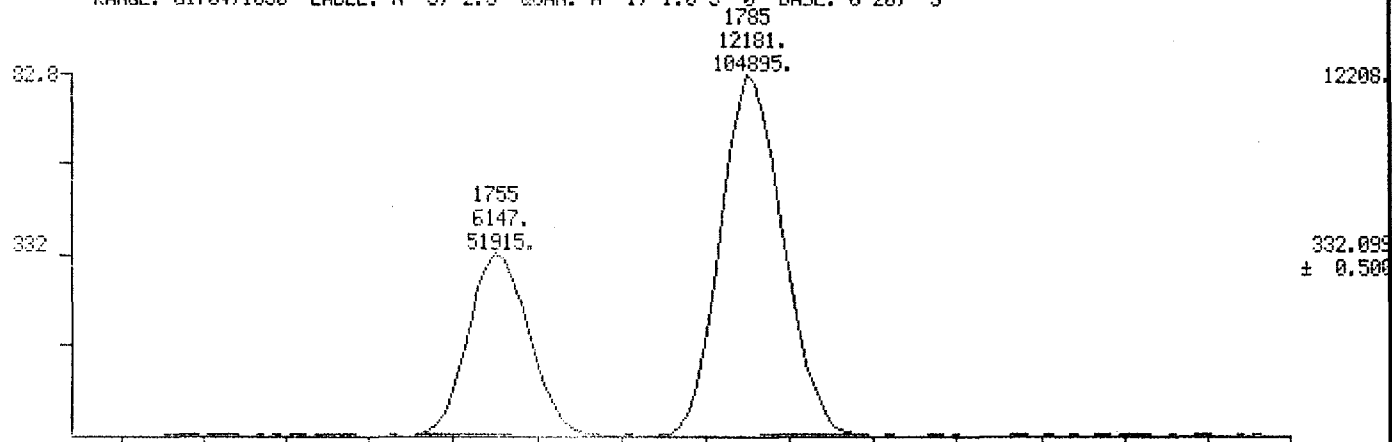
09/28/87 22:33:00

CALI: CAL092567 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



312110

MID RIC

DATA: SEP2827 #1

SCANS 1704 TO 1850

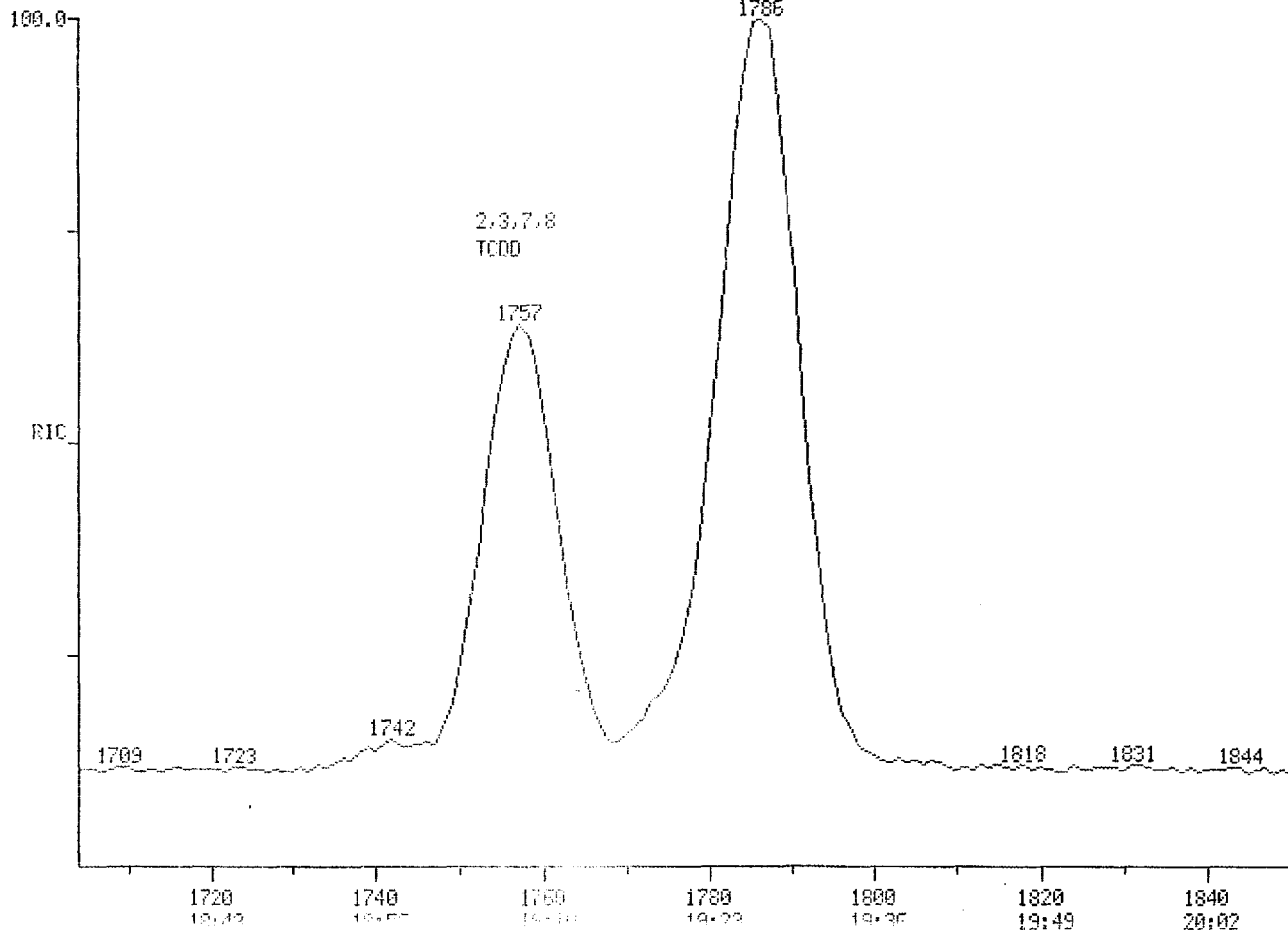
09/29/87 9:25:00

CALI: CAL092507 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



21824

SCAN TIME

312110

HID MASS CHROMATOGRAMS

DATA: SEP2827 #1

SCANS 1704 TO 1850

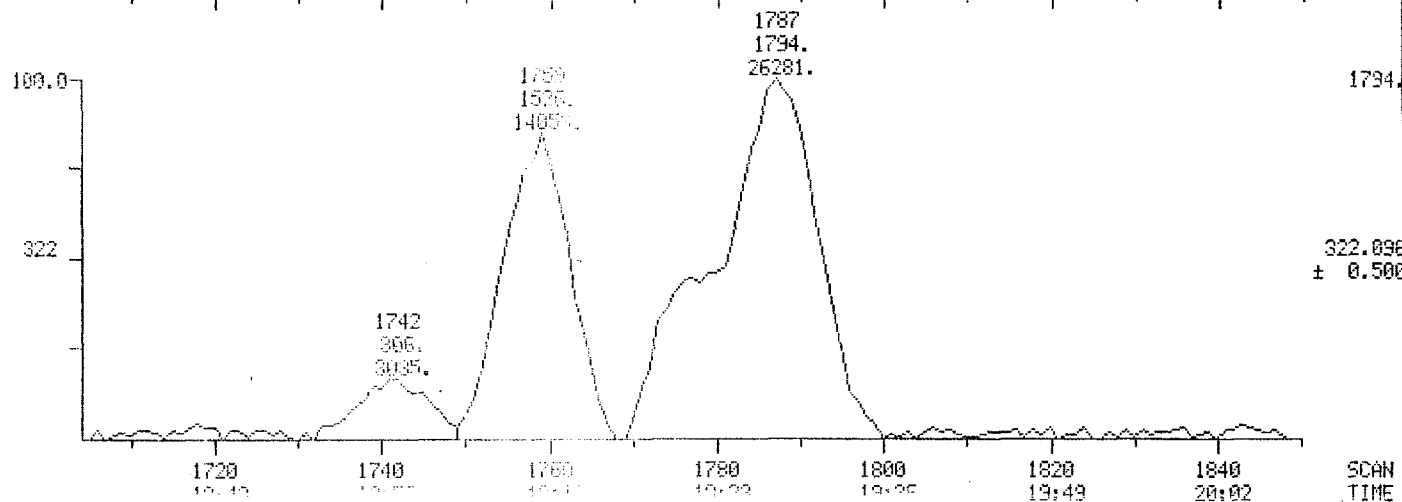
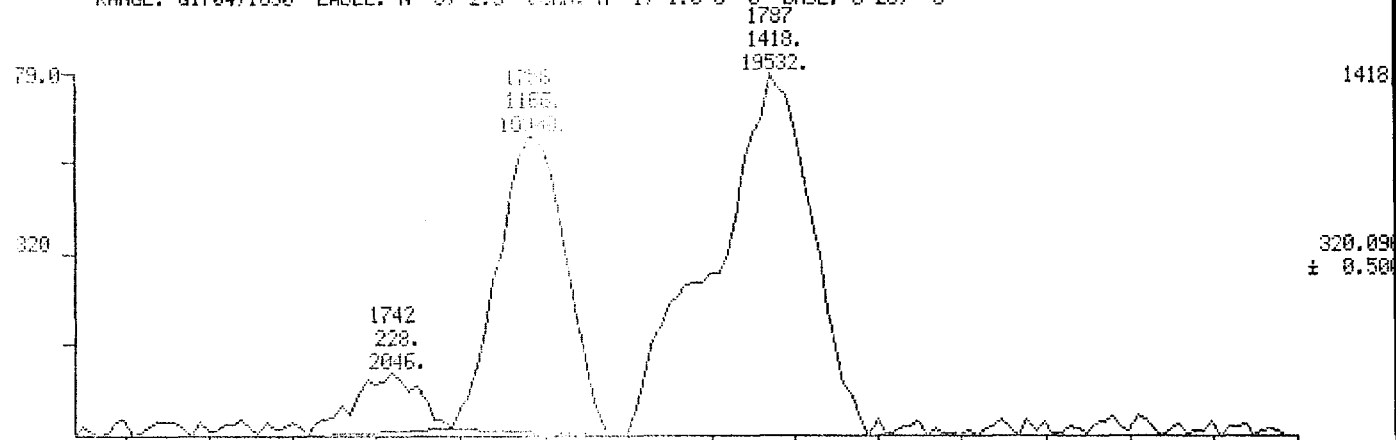
09/29/87 9:25:00

CALL: CAL092537 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200 24001/3

RANGE: G1704.1850 LABEL: N 5, 2.5 PUSH: A 1, 1.0 J 0 BASE: U 20, 3



SCAN TIME

011720

MID MASS CHROMATOGRAMS

DATA: SEP2827 #1

SCANS 1704 TO 1850

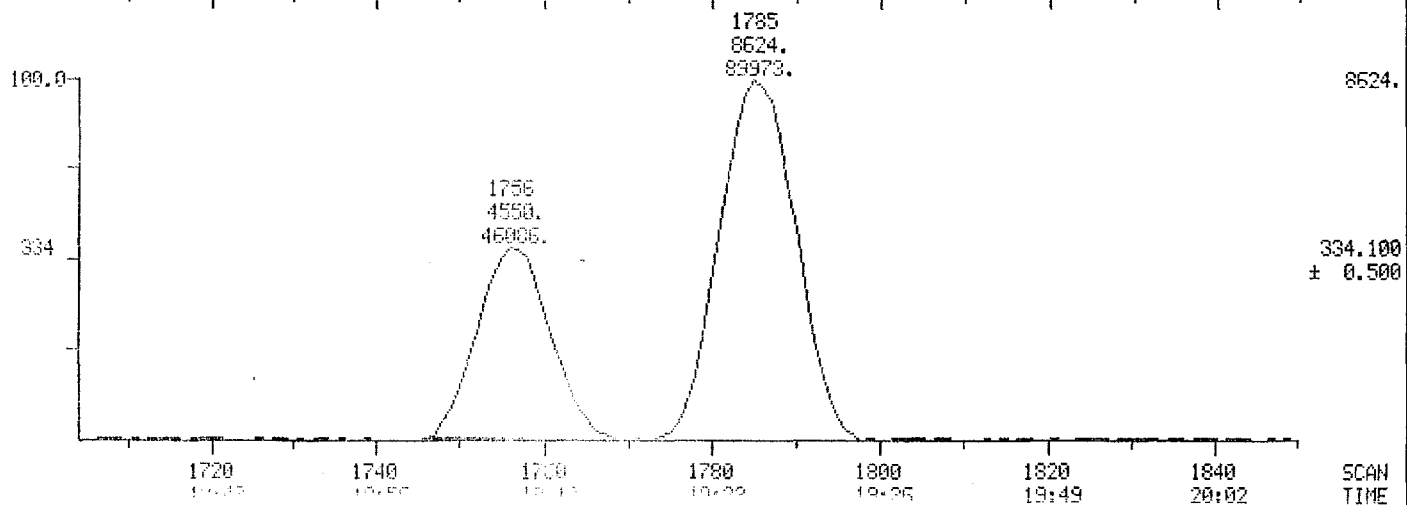
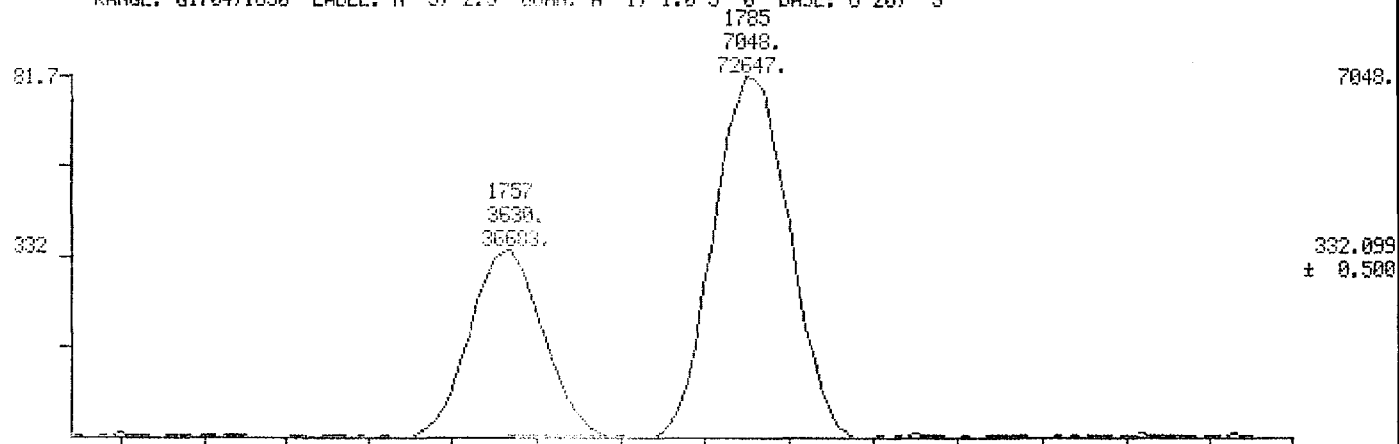
09/29/87 9:25:00

CALL: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDOS.: 60M SP2331/100/100-200@25/200-240@4/3

RANGE: G1704,1850 LABEL: N 5; 2.5 QUAD: A 1; 1.0 J 0 BASE: U 20; 3



121121

MID RIC

DATA: SEP3002 #1

SCANS 1 TO 180

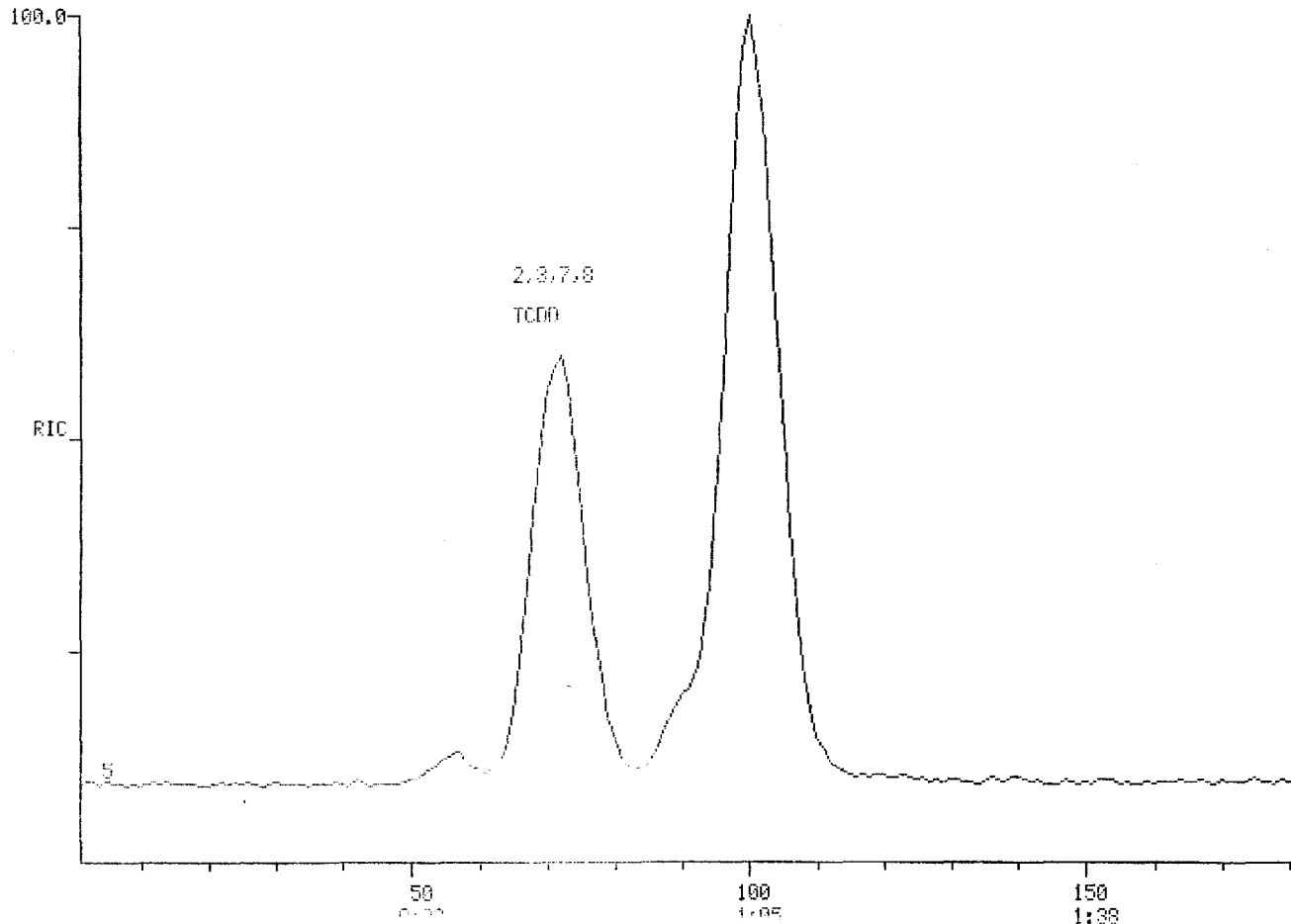
09/30/87 12:44:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G 1: 24 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



24224

SCAN
TIME

011723

MID MASS CHROMATOGRAMS

DATA: SEP3002 #1

SCANS 1 TO 180

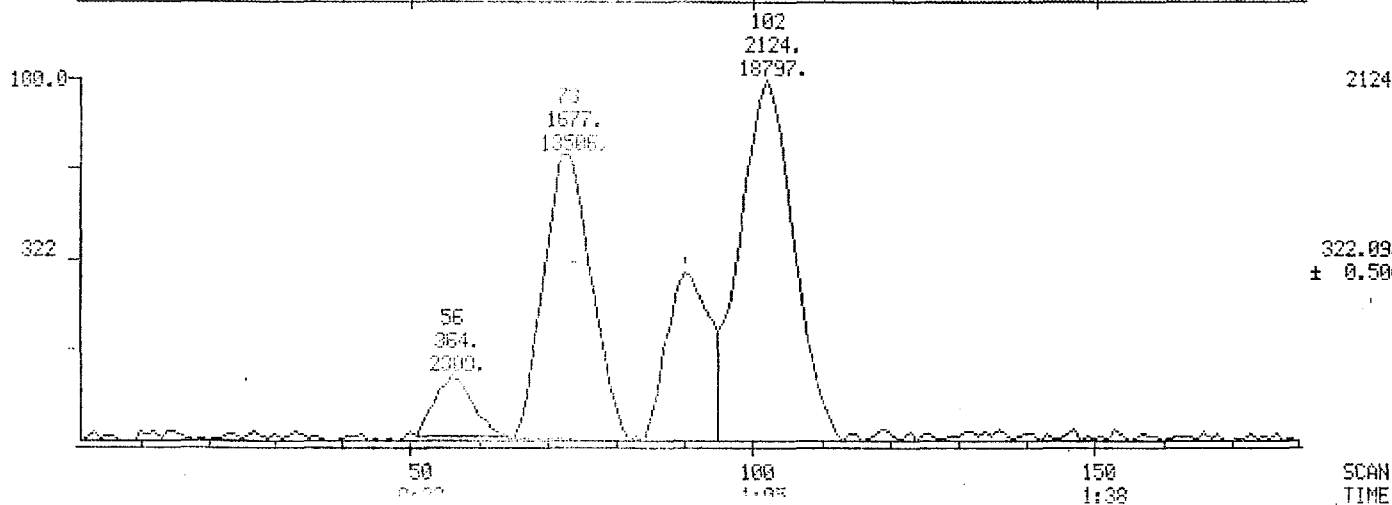
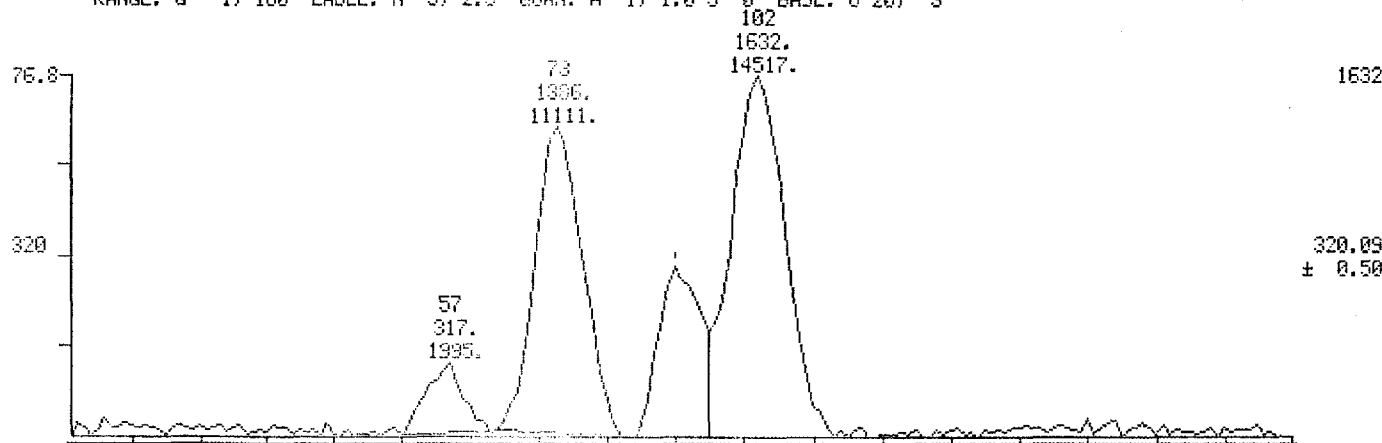
09/30/87 12:44:00

CAL1: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G 1, 180 LABEL: N 5, 2.5 QUAN: A 1, 1.0 U 0 BASE: U 20, 3



SCAN TIME

011720

MID MASS CHROMATOGRAMS

DATA: SEP3002 #1

SCANS 1 TO 180

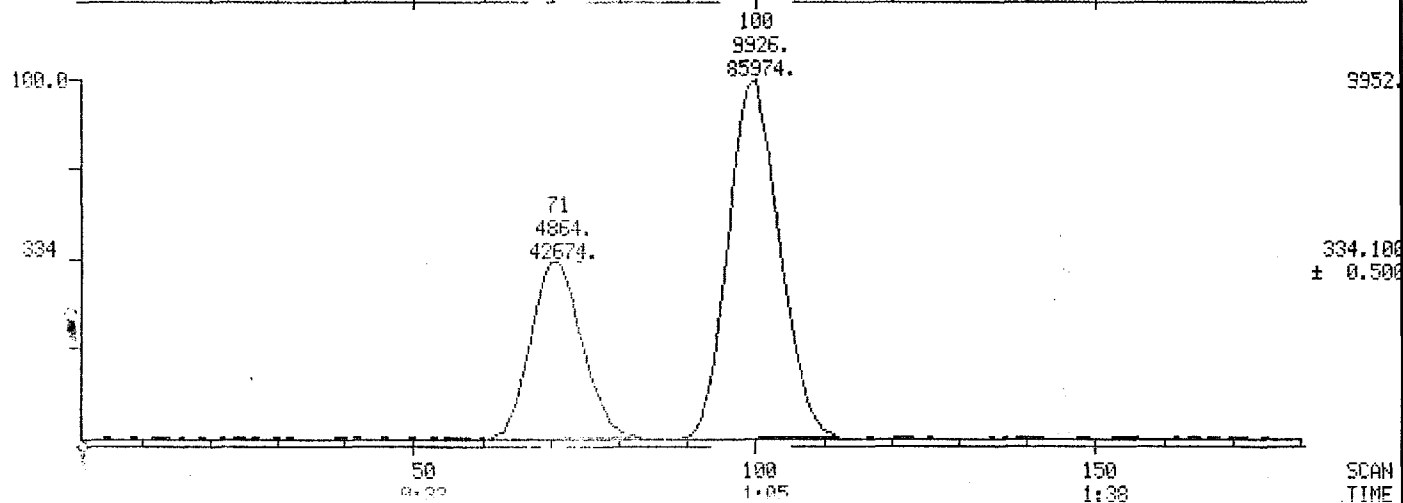
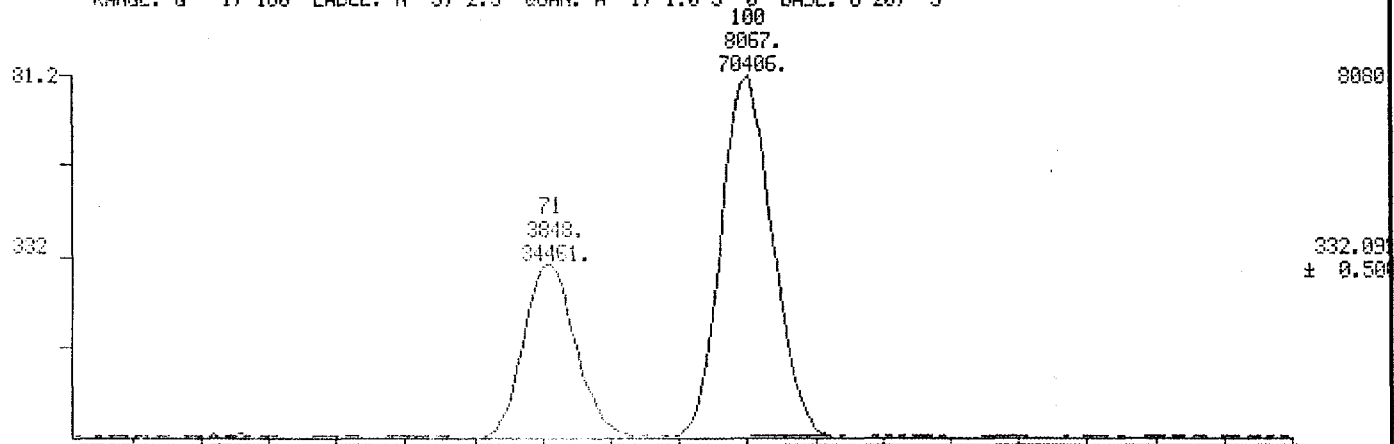
09/30/87 12:44:00

CALI: CAL092507 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G 1, 180 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



SCAN TIME

011724

MID RIC

DATA: SEP009 #1

SCANS 1704 TO 1850

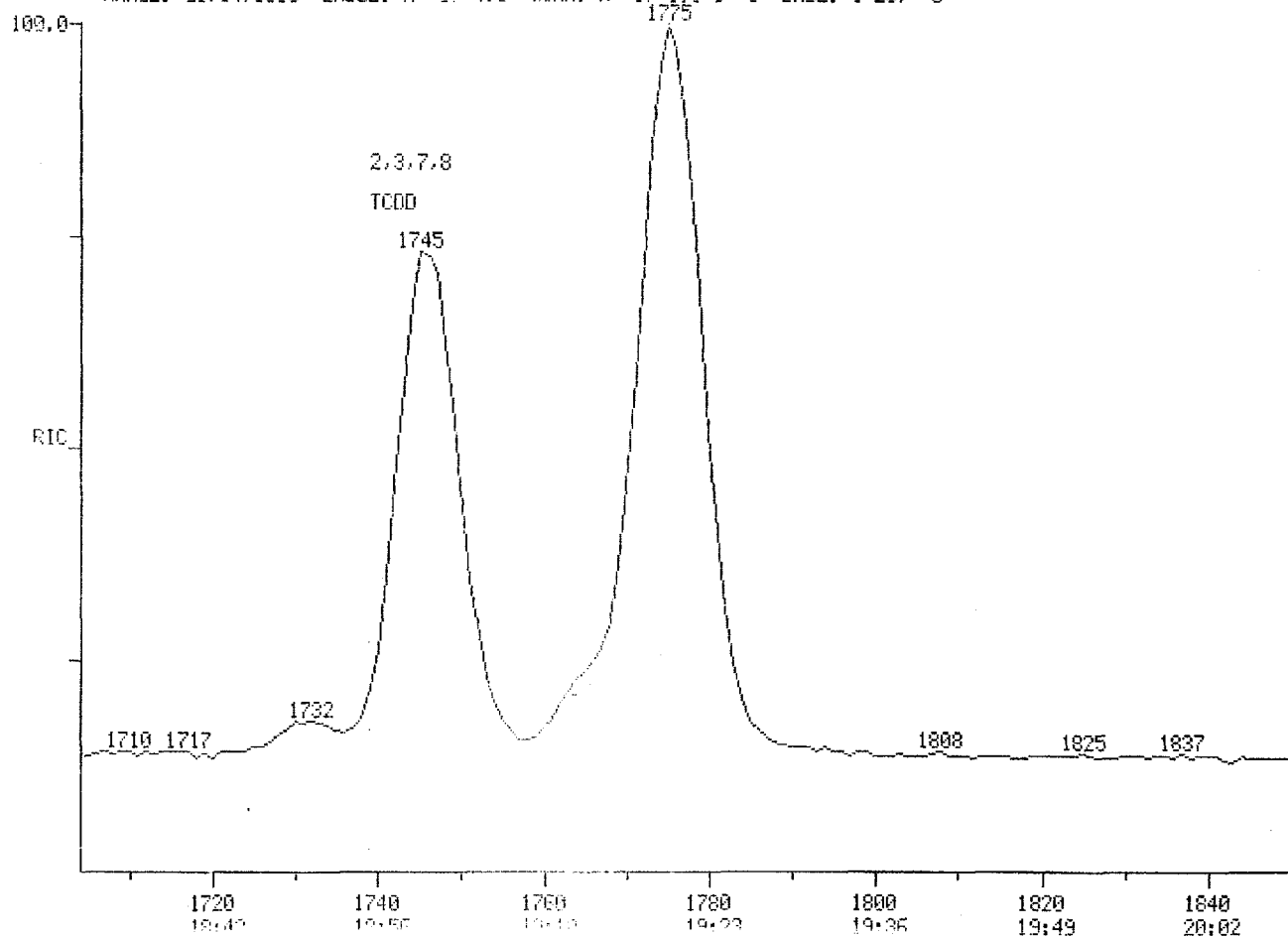
09/30/87 21:32:00

CAL1: CNL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 50M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: H 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



23104

SCAN TIME

01172E

MID MASS CHROMATOGRAMS

DATE: SEP09 1987 #1

SCANS 1704 TO 1850

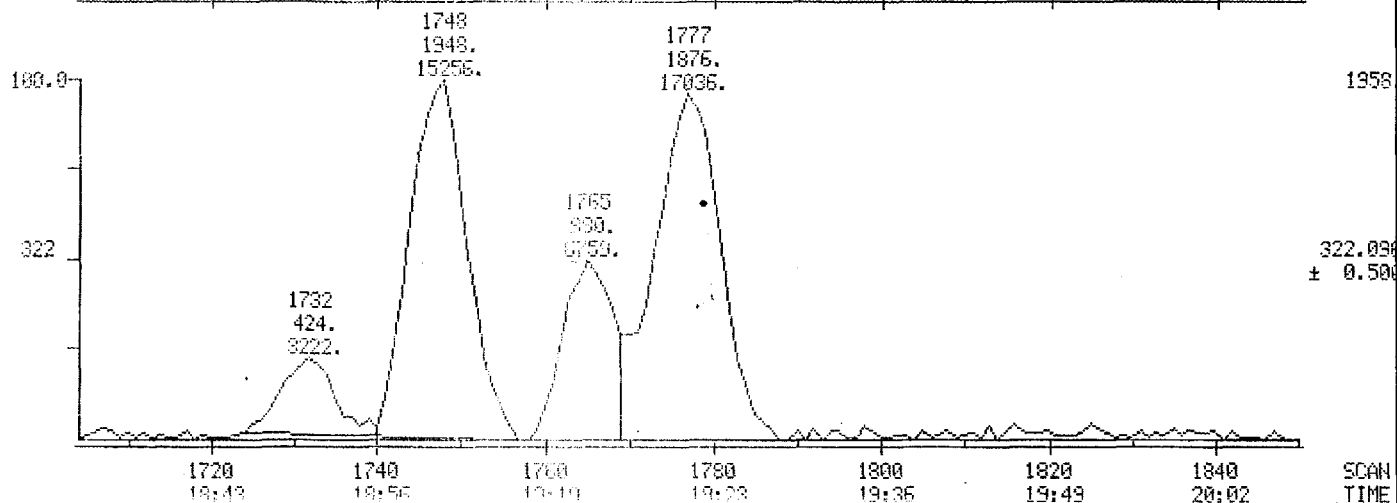
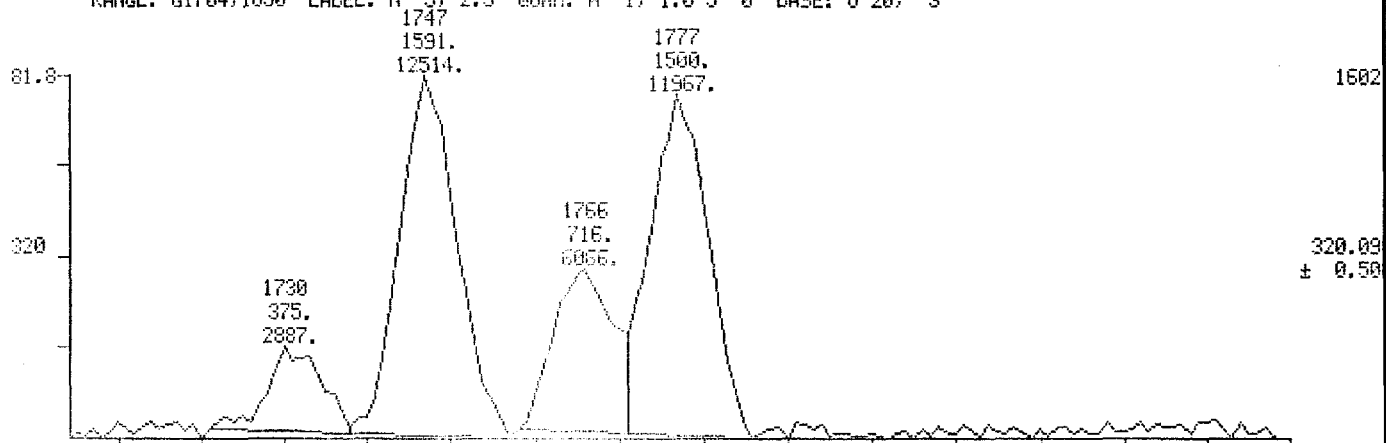
09/30/87 21:32:00

CALI: CAL092537 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011726

MID MASS CHROMATOGRAMS

DATA: SEP3009 #1

SCANS 1704 TO 1850

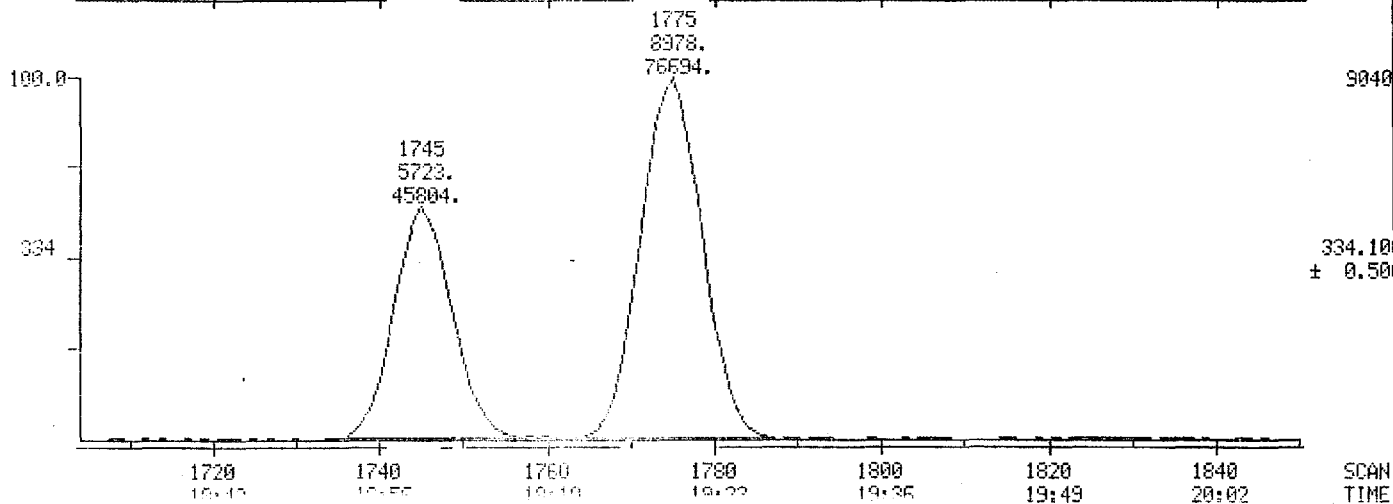
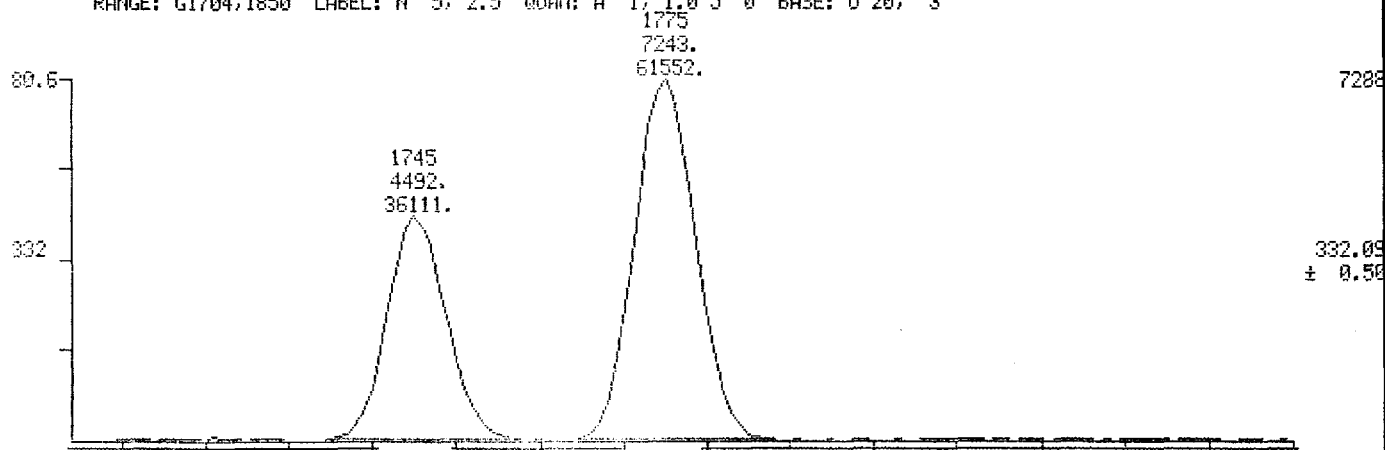
09/30/87 21:32:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5. 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1720
18:40

1740
19:55

1760
19:10

1780
19:22

1800
19:35

1820
19:49

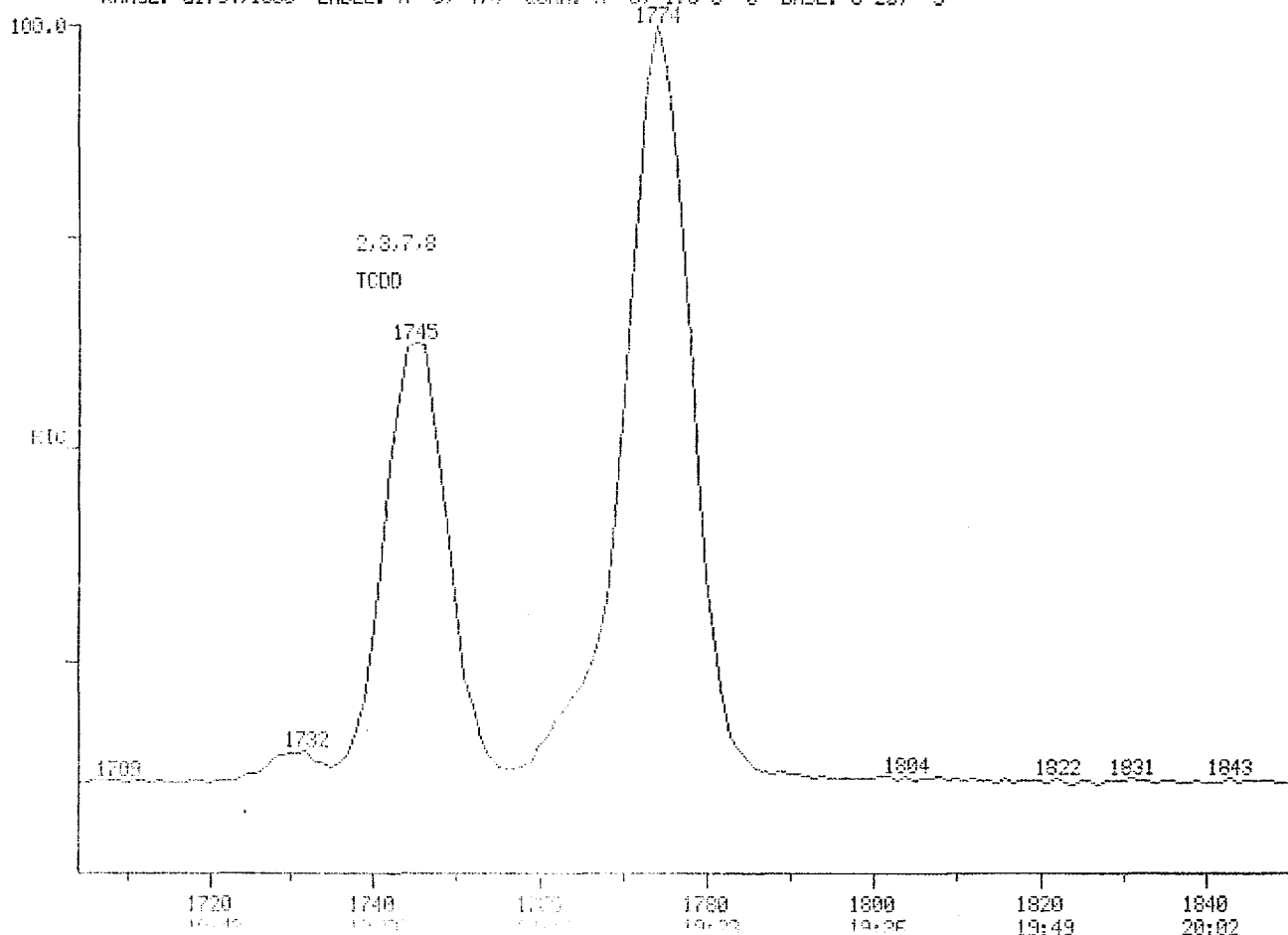
1840
20:02

SCAN
TIME

011727

MID RIC DATA: OCT0102 #1 SCANS 1704 TO 1850
10/01/87 13:33:00 CALL: CAL092587 #3
SAMPLE: COLUMN PERFORMANCE MIX
CONDS.: 60M SP2331/100/100-200025/200-24001/0
RANGE: G1704.1850 LABEL: H 0, 4.0 CURVE: A 0, 1.0 J 0 BASE: U 20, 3

25632



SCAN TIME

011722

MID MASS CHROMATOGRAMS

DATA: OCT0102 #1

SCANS 1704 TO 1850

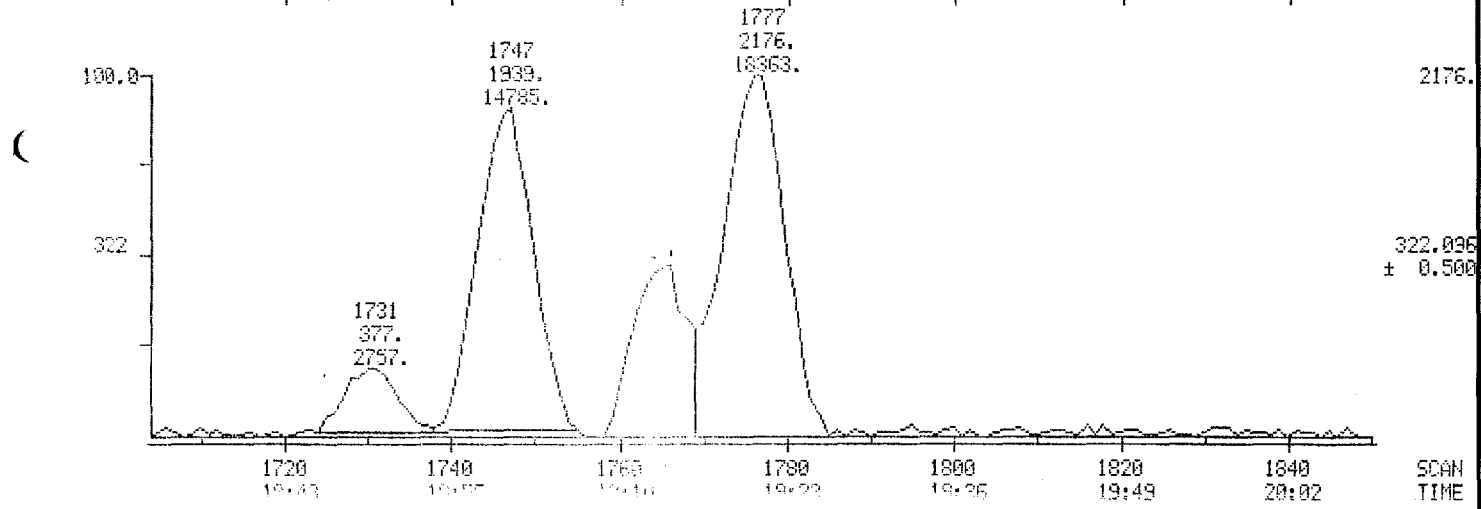
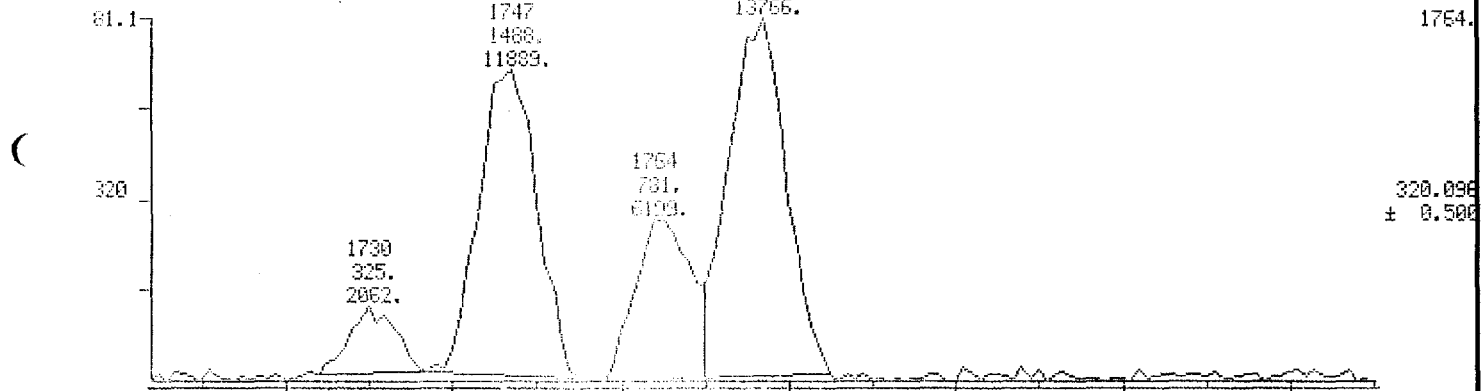
10/01/87 13:33:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: EOM SP2331/100/100-200025/200-24004/8

RANGE: 61704.1850 LABEL: N 5. 2.5 QUAR: A 1. 1.0 J 0 BASE: U 20. 3



322110

MID MASS CHROMATOGRAMS

DATA: OCT0102 #1

SCANS 1704 TO 1850

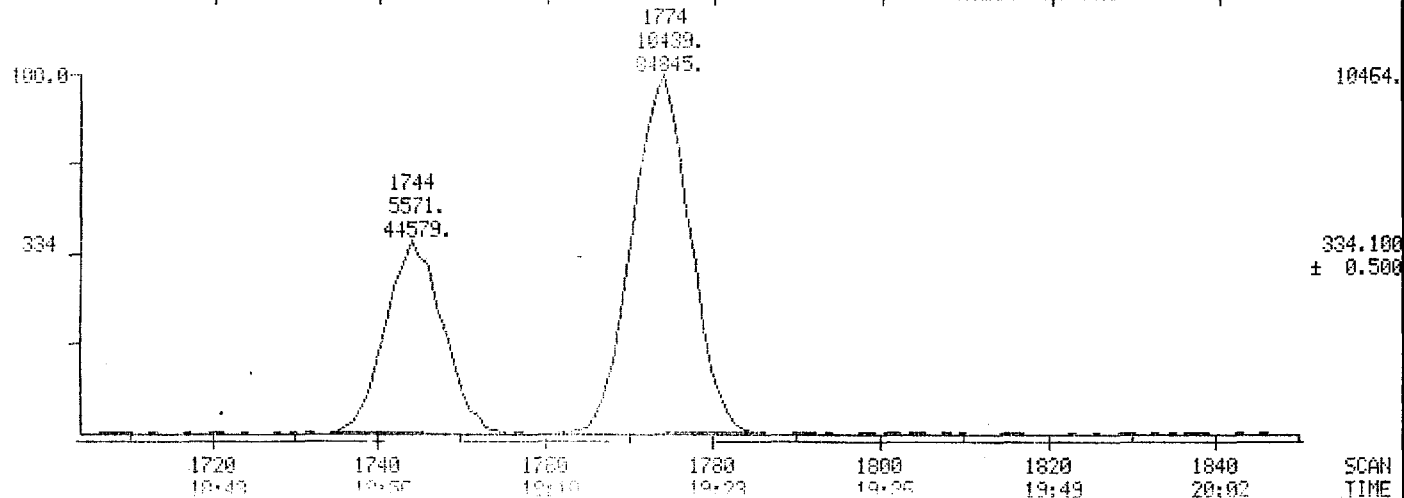
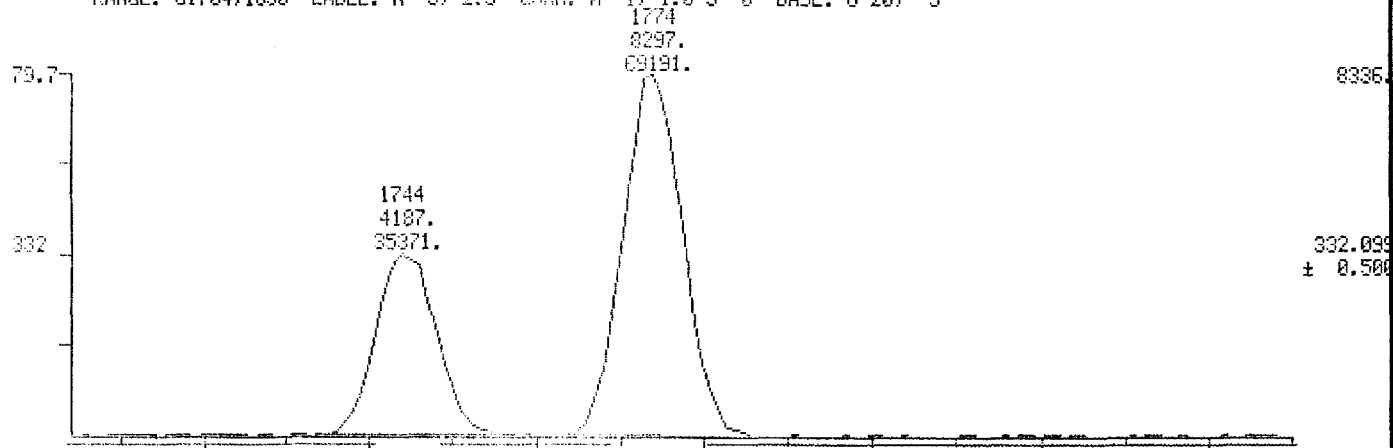
10/01/87 13:33:00

CALL: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100-100-200025/200-24064/3

RANGE: G1704.1850 LABEL: N 5, 2.5 @MID: A 1, 1.0 J 0 BASE: U 20, 3



011730

MID RIC

DATA: OCT0110 #1

SCANS 1704 TO 1850

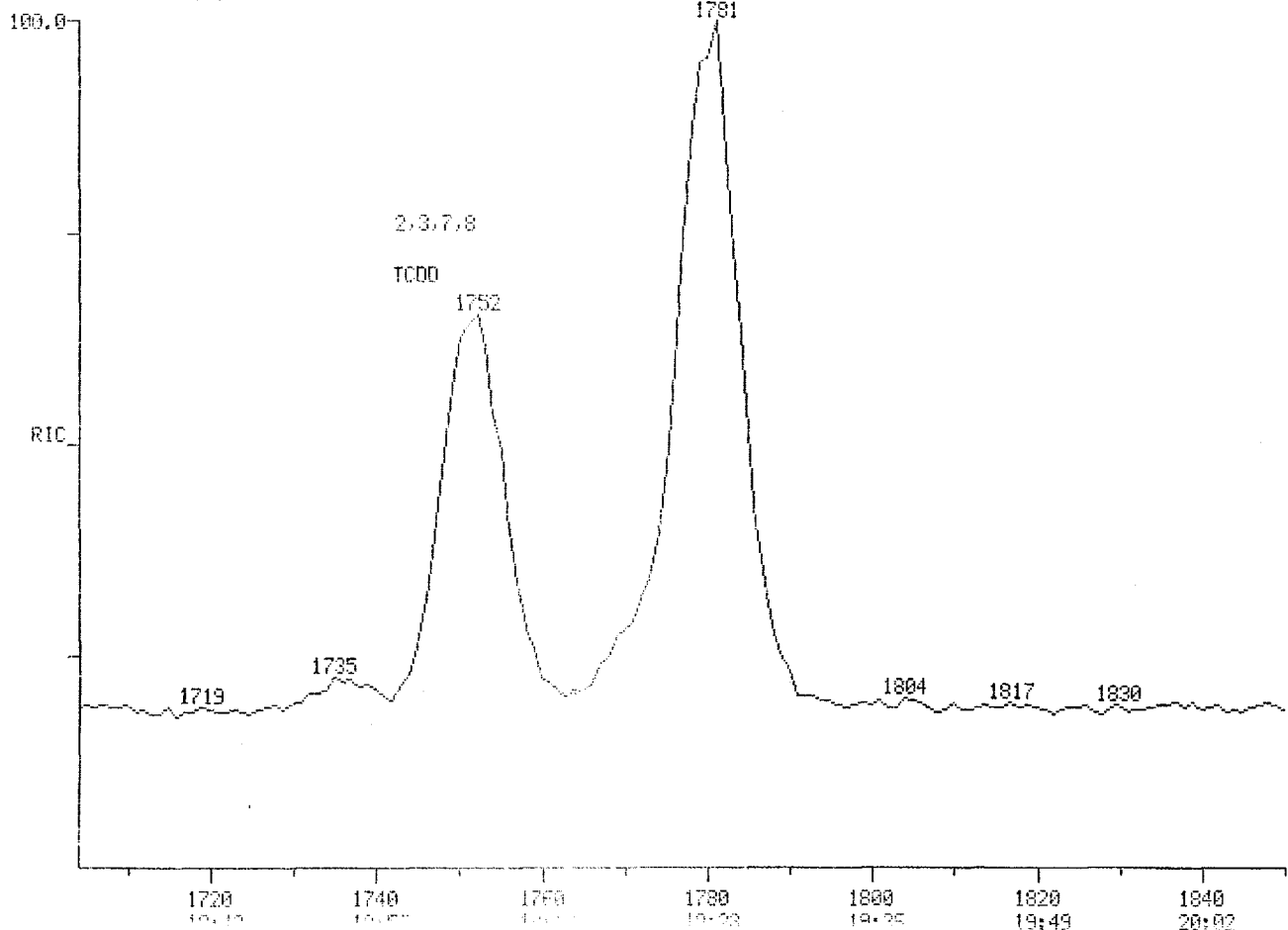
10/01/87 20:18:00

CALI: CAL092587 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 68N SP2331/100/100-200025*200-21004/8

RANGE: G1704.1850 LABEL: H 0, 4.0 QUANT: A 0, 1.0 J 0 BASE: U 20, 3



13504

SCAN TIME

182110

MID MASS CHROMATOGRAMS

DATA: OCT0110 #1

SCANS 1704 TO 1850

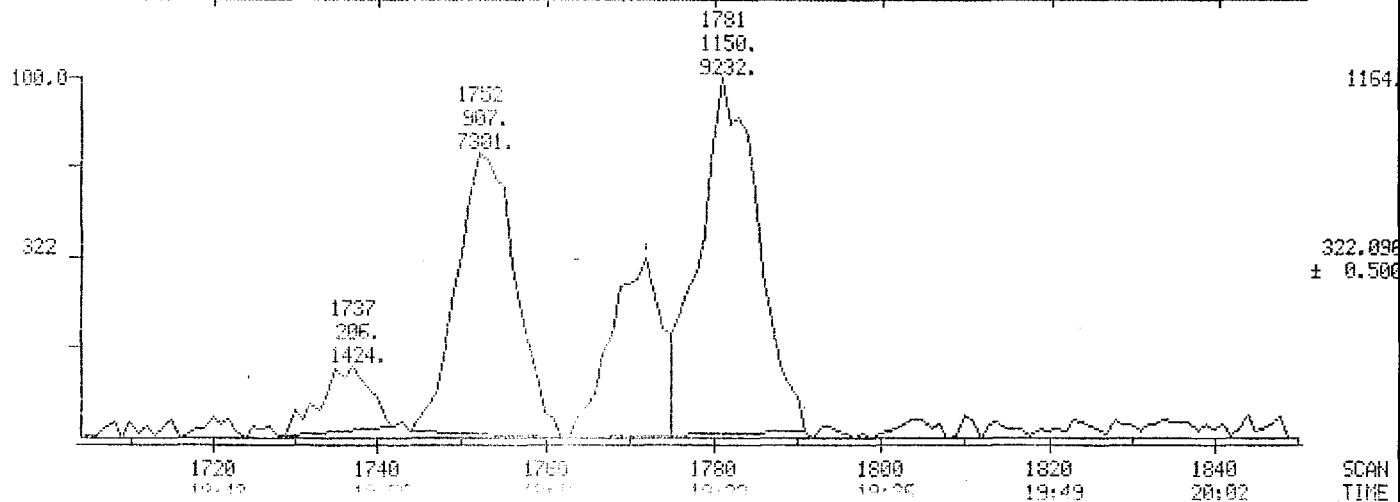
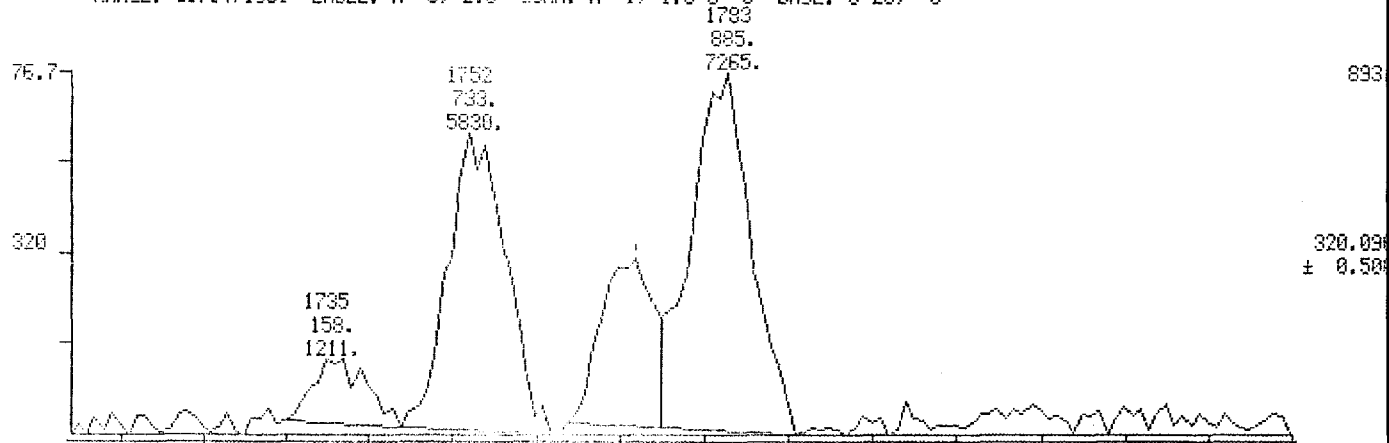
10/01/87 20:18:00

CALI: CAL092507 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



382110

MID MASS CHROMATOGRAMS

DATA: OCT0110 #1

SCANS 1704 TO 1850

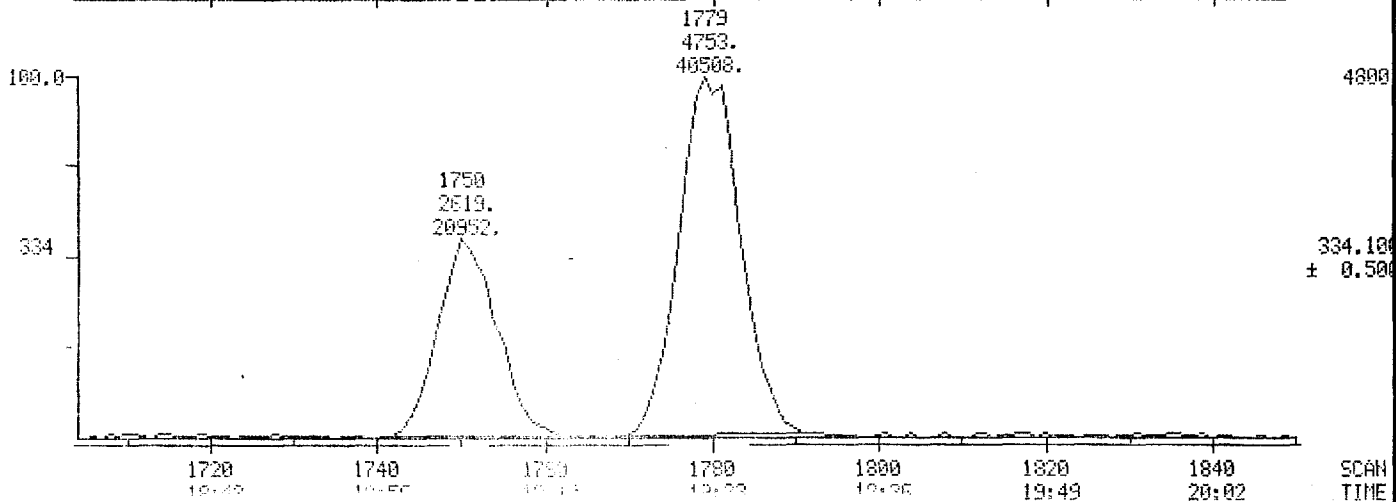
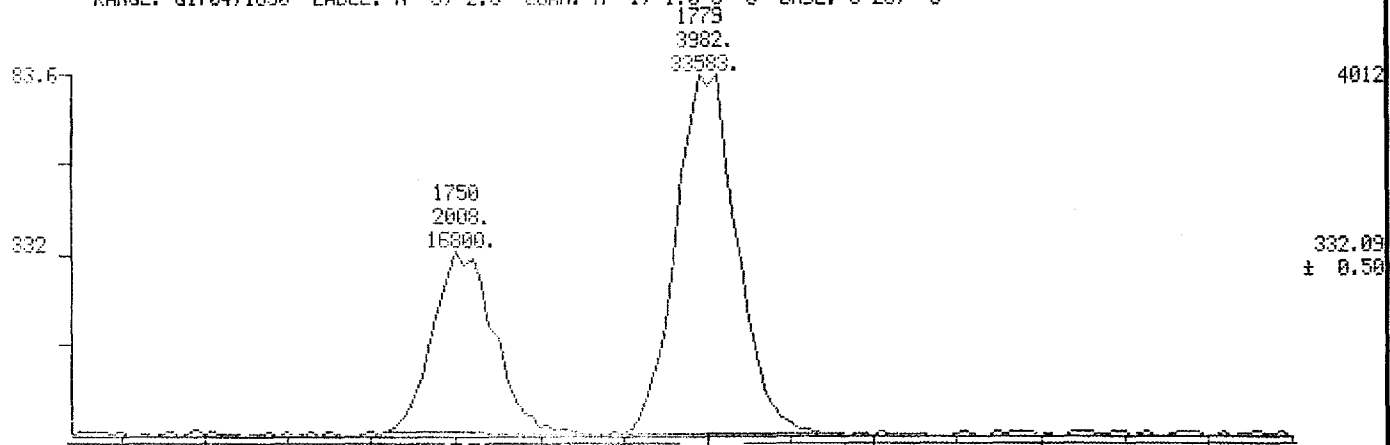
10/01/87 20:18:00

CALI: CAL092597 #3

SAMPLE: COLUMN PERFORMANCE MIX

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: H 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



382110

8019-10

MID RIC

DATA: SEP3007 #1

SCANS 1704 TO 1850

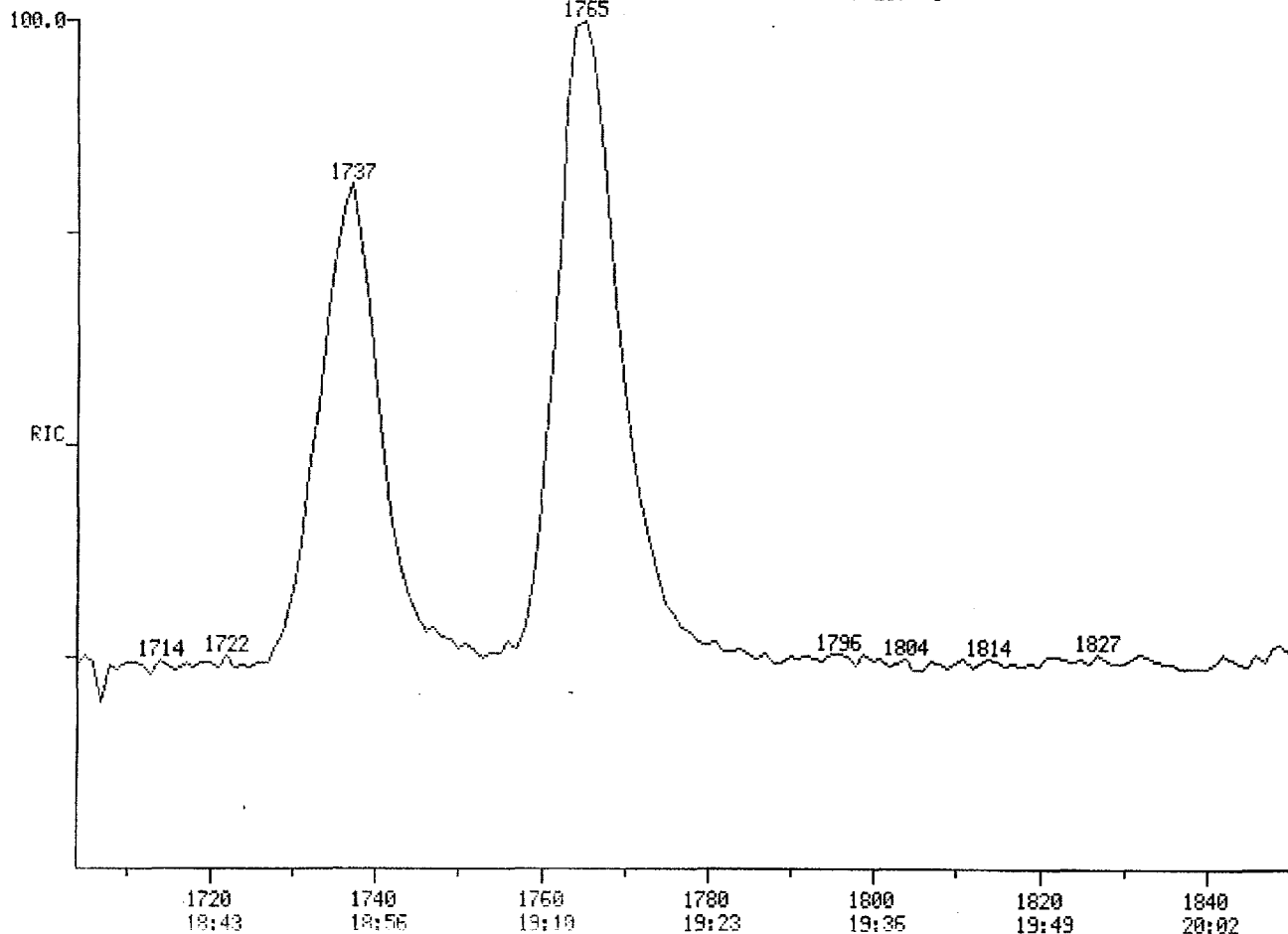
09/30/87 18:10:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/M.B./10.18G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0. 4.0 QUAN: A 0. 1.0 J 0 BASE: U 20, 3



9104

SCAN
TIME

011734

MID MASS CHROMATOGRAMS

DATA: SEP3007 #1

SCANS 1704 TO 1850

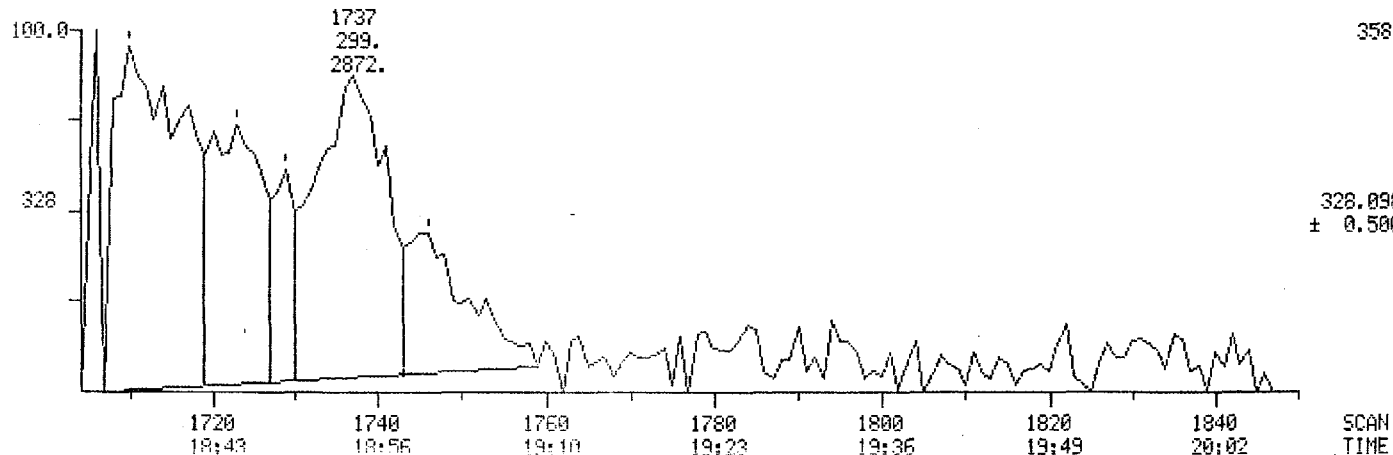
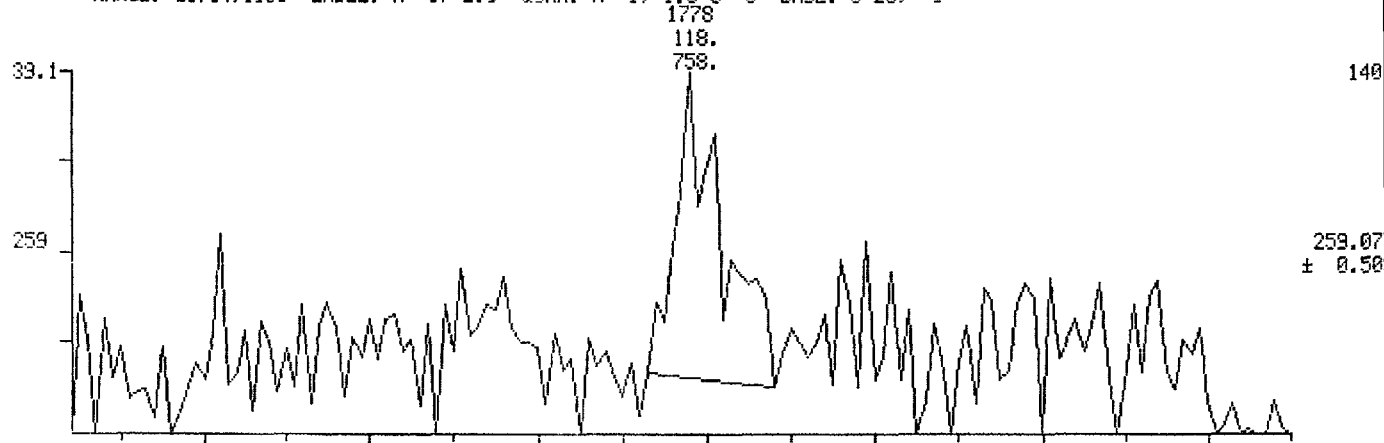
09/30/87 18:10:00

CALI: CAL092587 #3

SAMPLE: CASE 8019:BATCH3/M.B./10.18G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5. 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



01173E

MID MASS CHROMATOGRAMS

DATA: SEP3007 #1

SCANS 1704 TO 1850

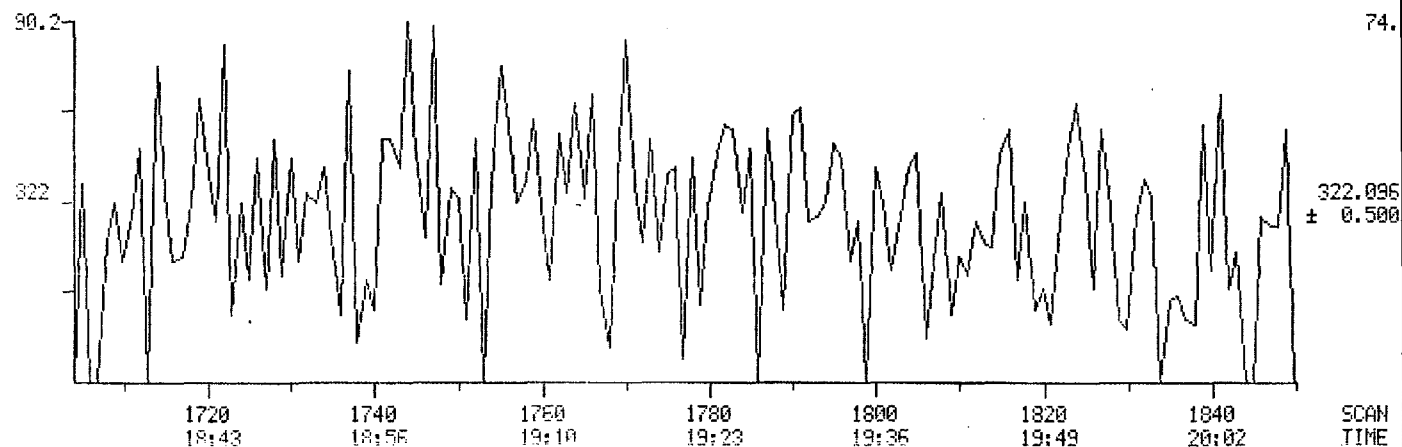
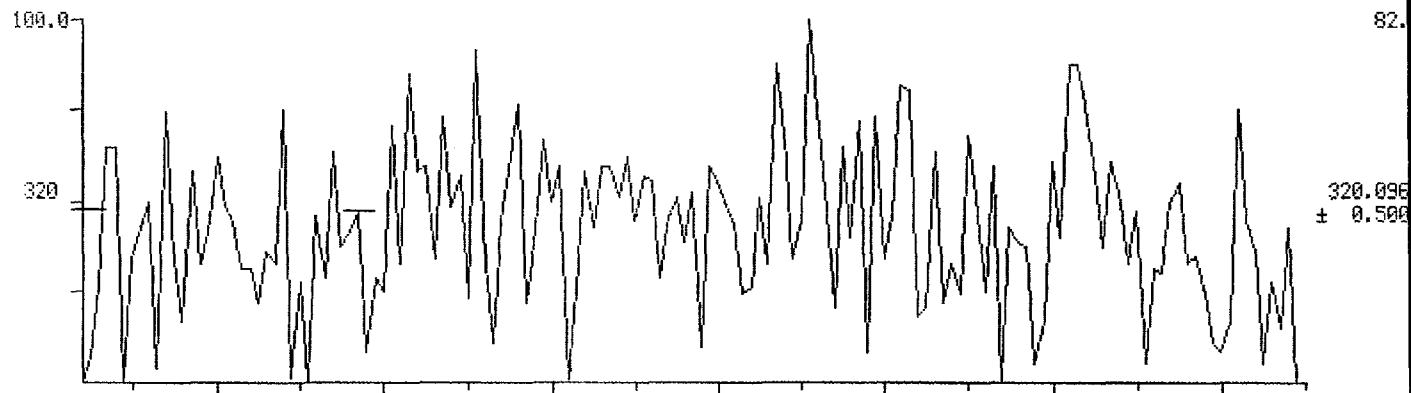
09/30/87 18:10:00

CALI: CAL092587 #3

SAMPLE: CASE 8819: BATCH3-M.B./10.18G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



382110

MID MASS CHROMATOGRAMS

DATA: SEP3007 #1

SCANS 1704 TO 1850

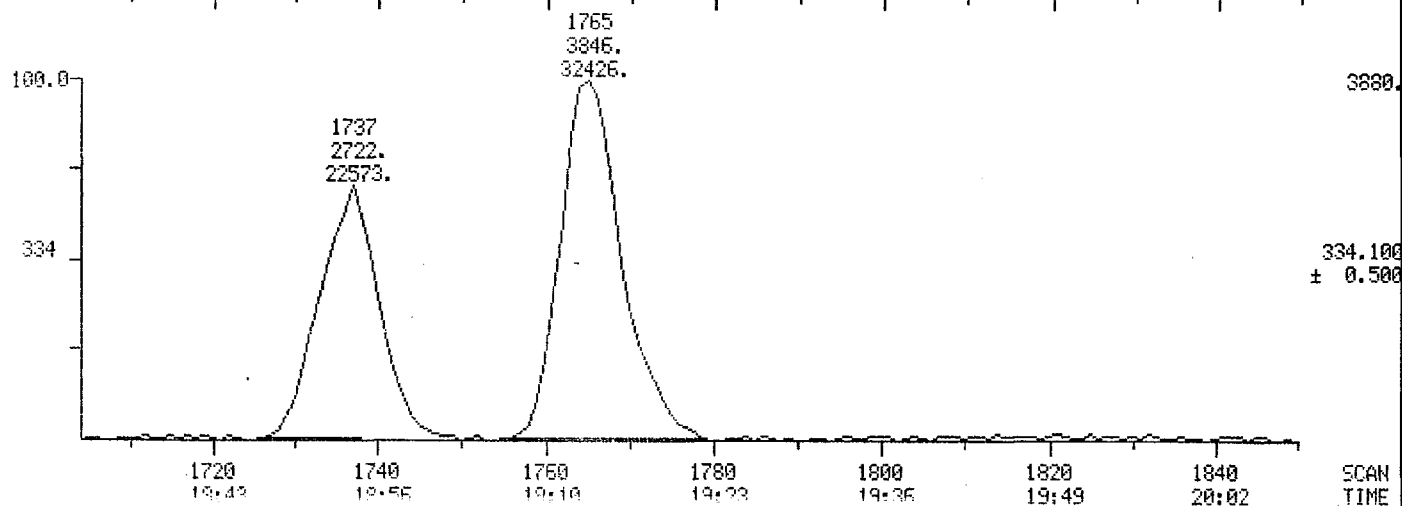
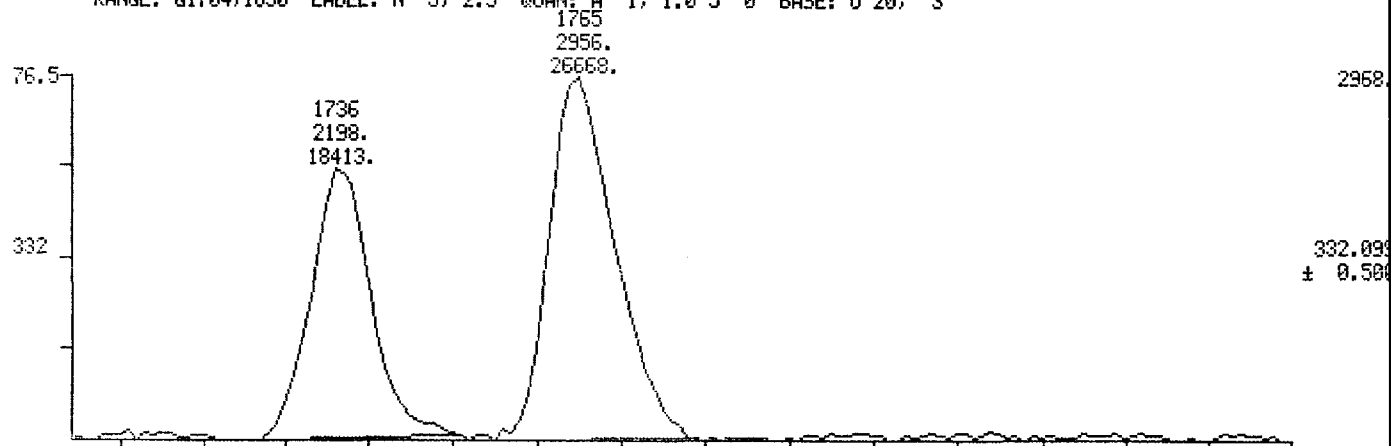
09/30/87 18:10:00

CALI: CAL092587 #3

SAMPLE: CASE 8019:BATCH3/M.B./10.18G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: 0 1, 1.0 J 0 BASE: U 20, 3



11737

MID RIC

DATA: OCT0107 #1

SCANS 1704 TO 1850

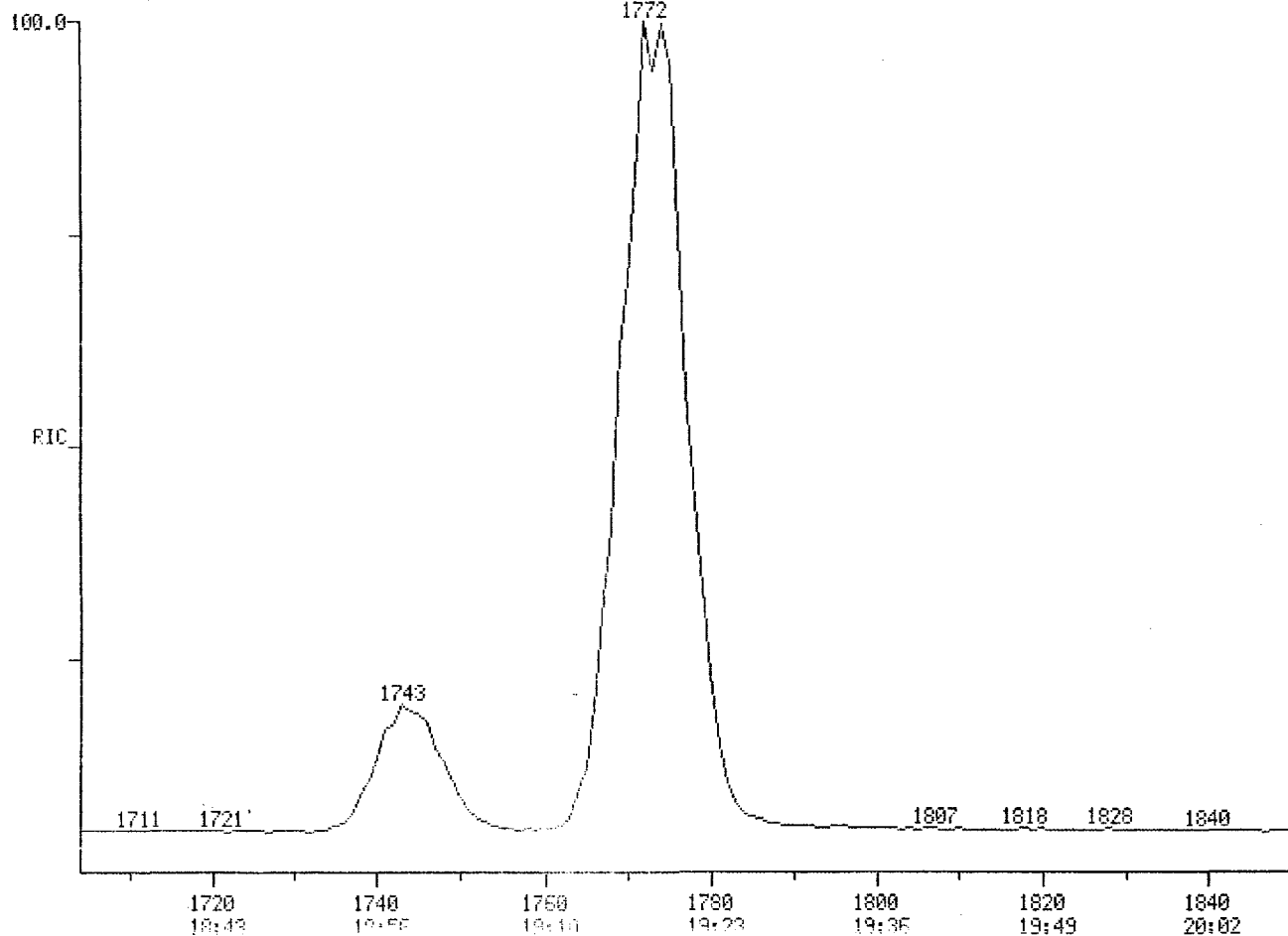
10/01/87 17:15:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/212-19/9.96G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



64704

SCAN
TIME

3E2110

MID MASS CHROMATOGRAMS

DATA: OCT0107 #1

SCANS 1704 TO 1850

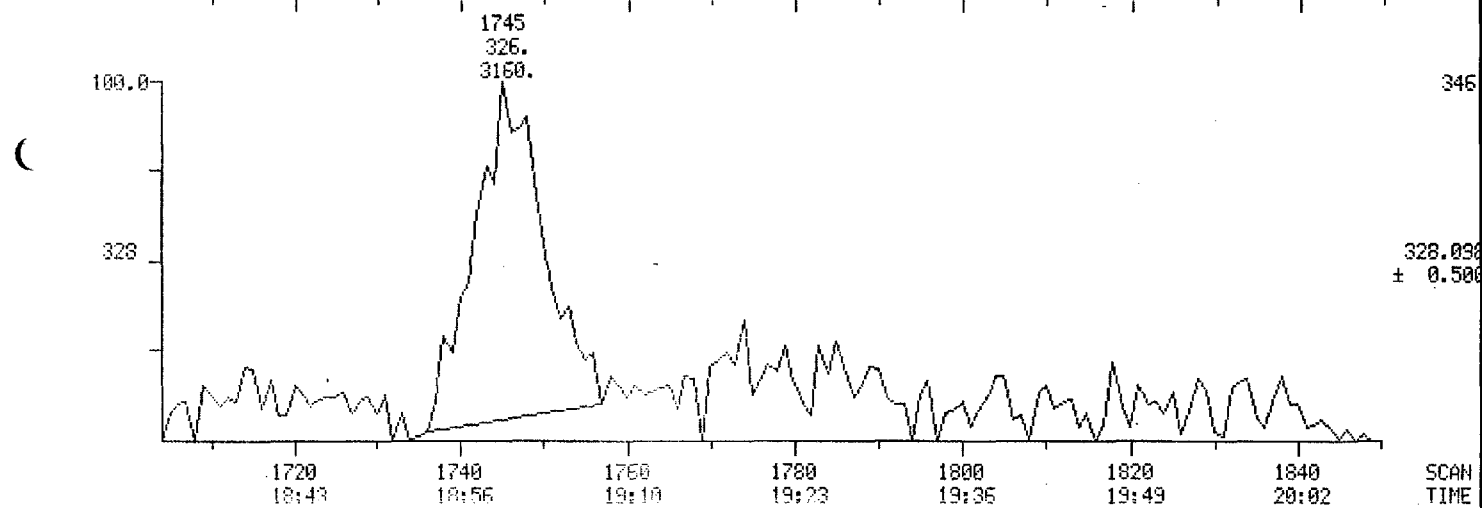
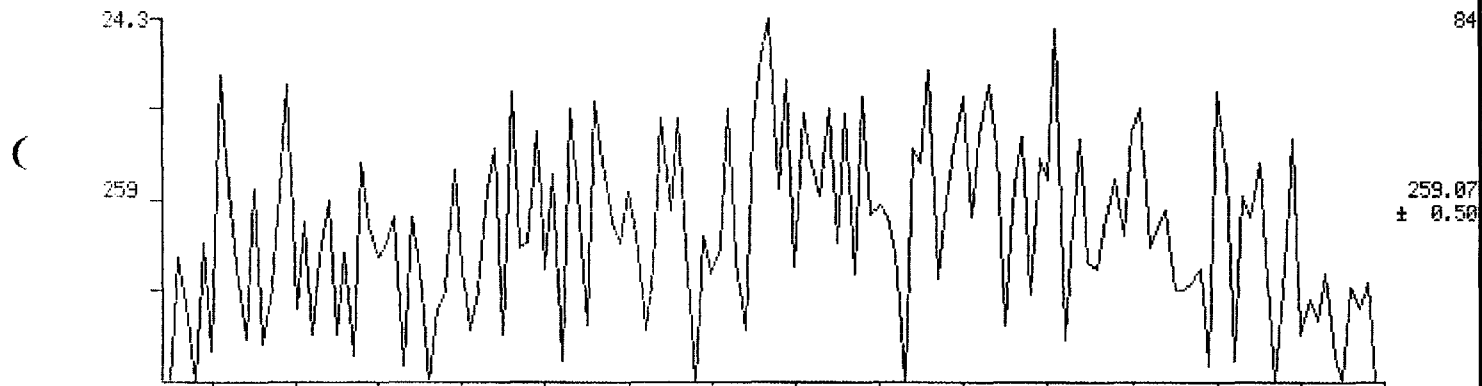
10/01/87 17:15:00

CALI: CAL092597 #3

SAMPLE: CASE 8019: BATCH3/212-19/3.96G

CONDOS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



382110

MID MASS CHROMATOGRAMS

DATA: OCT0187 #1

SCANS 1704 TO 1850

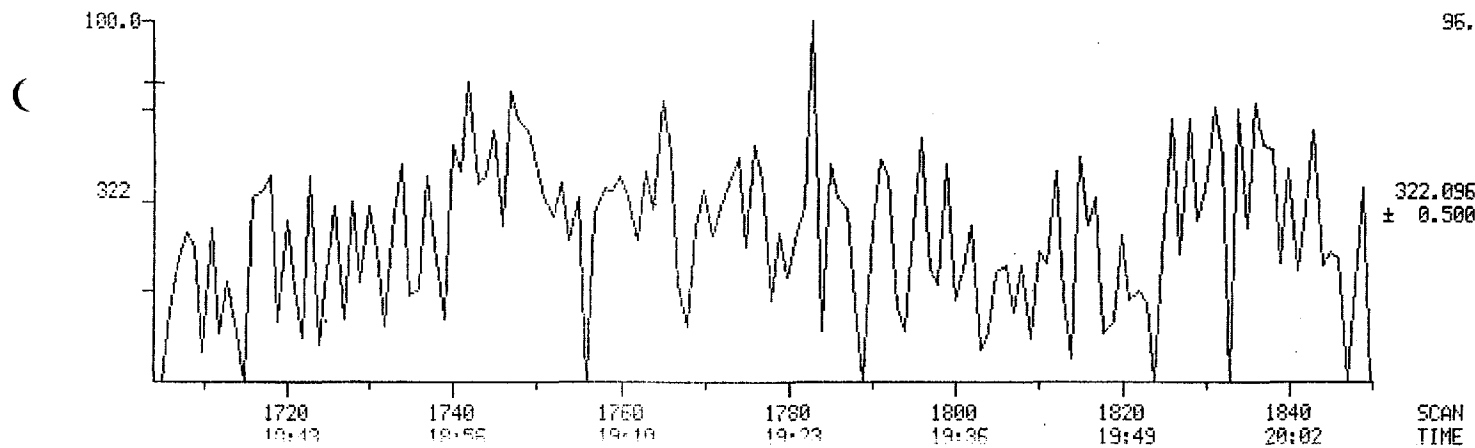
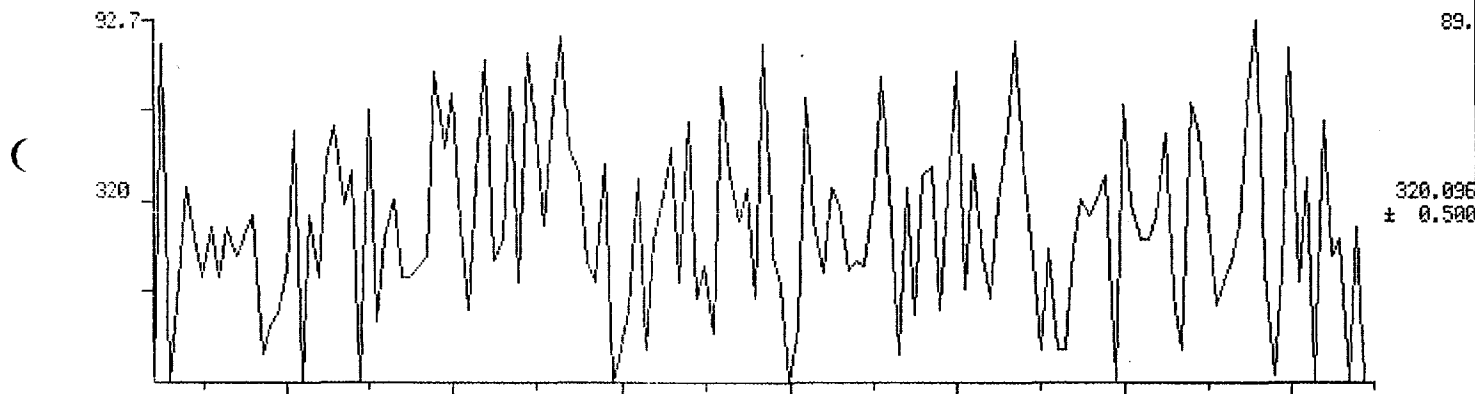
10/01/87 17:15:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/212-19/9.96G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



SCAN TIME

01174C

MID MASS CHROMATOGRAMS

DATA: OCT0107 #1

SCANS 1704 TO 1850

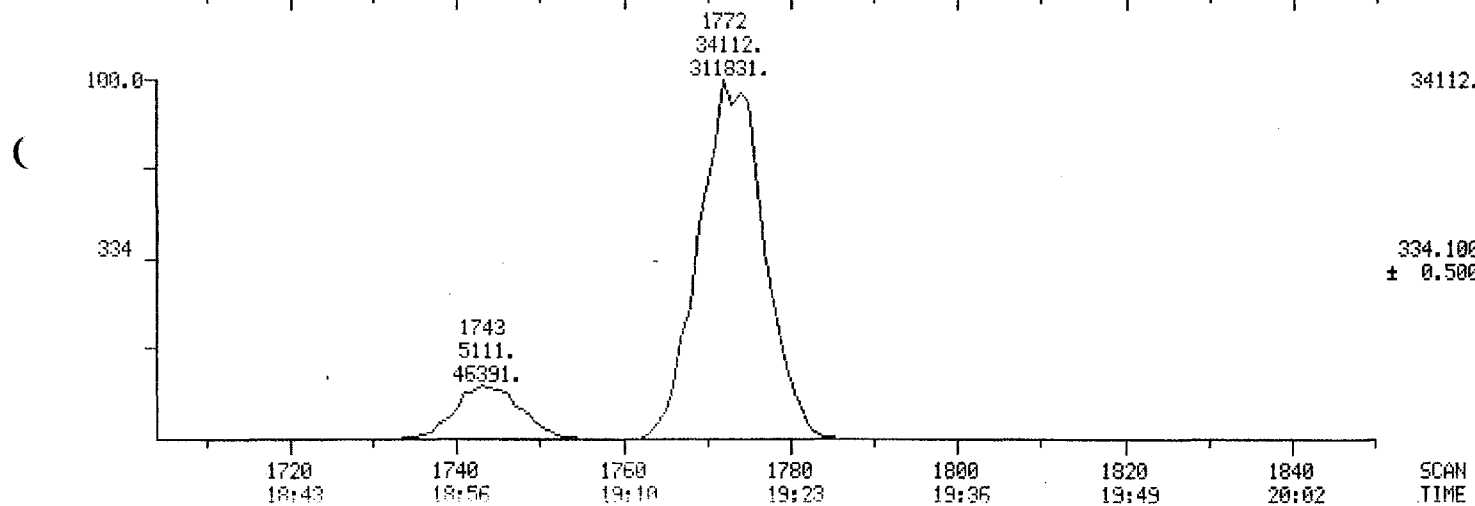
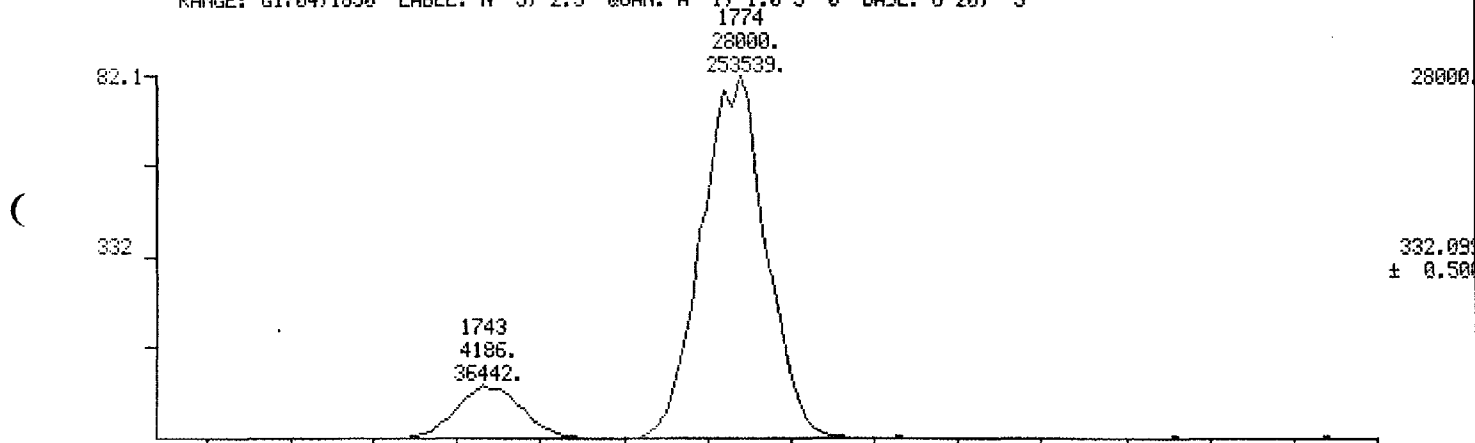
10/01/87 17:15:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/212-19/9.96G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



111741

MID RIC

09/30/87 12:59:00

DATA: SEP3003 #1

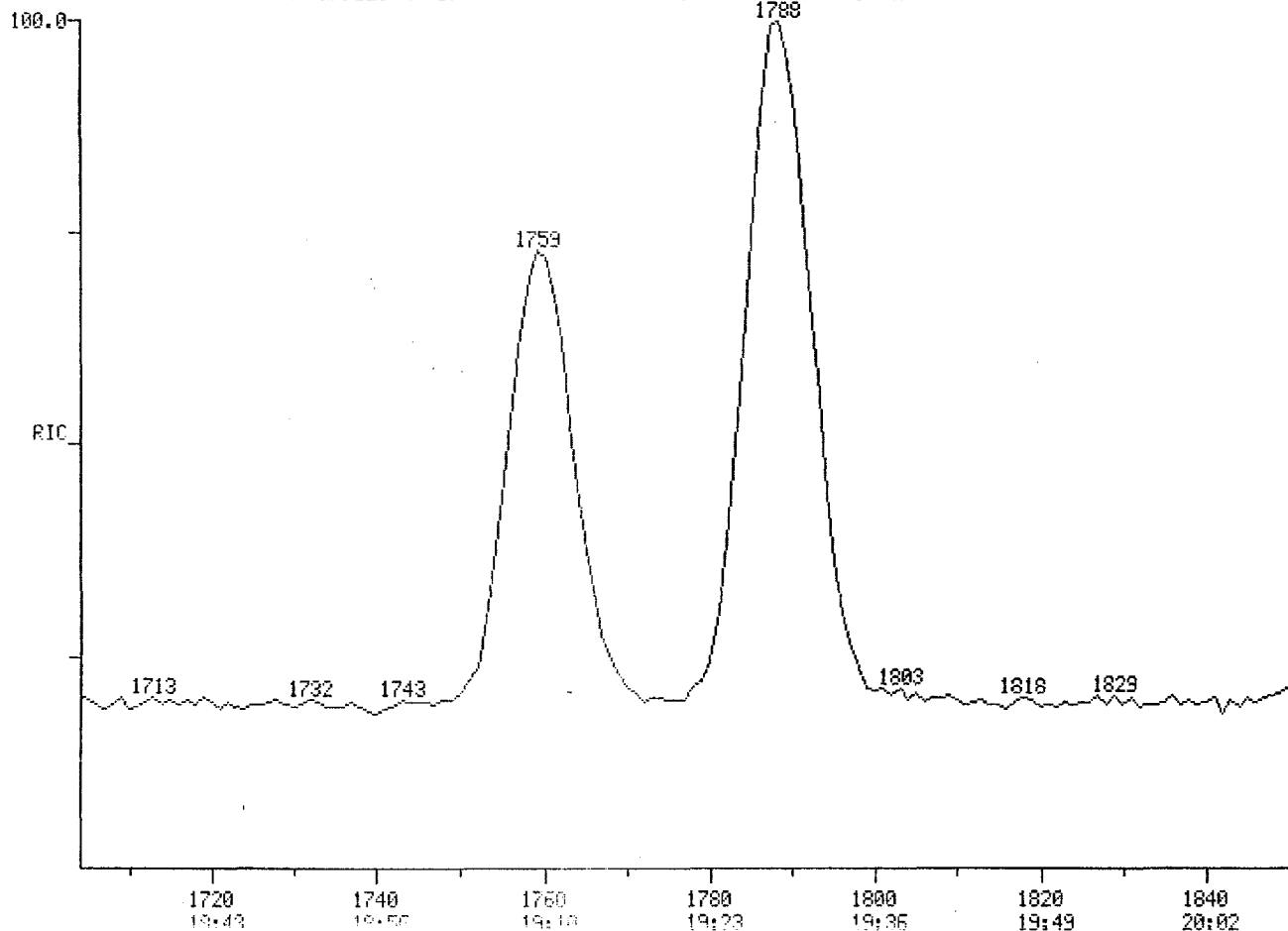
CALI: CAL092587 #3

SCANS 1704 TO 1850

SAMPLE: CASE 8019; BATCH3/212-20/10.03G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



10528

SCAN TIME

011743

MID MASS CHROMATOGRAMS

DATA: SEP3003 #1

SCANS 1704 TO 1850

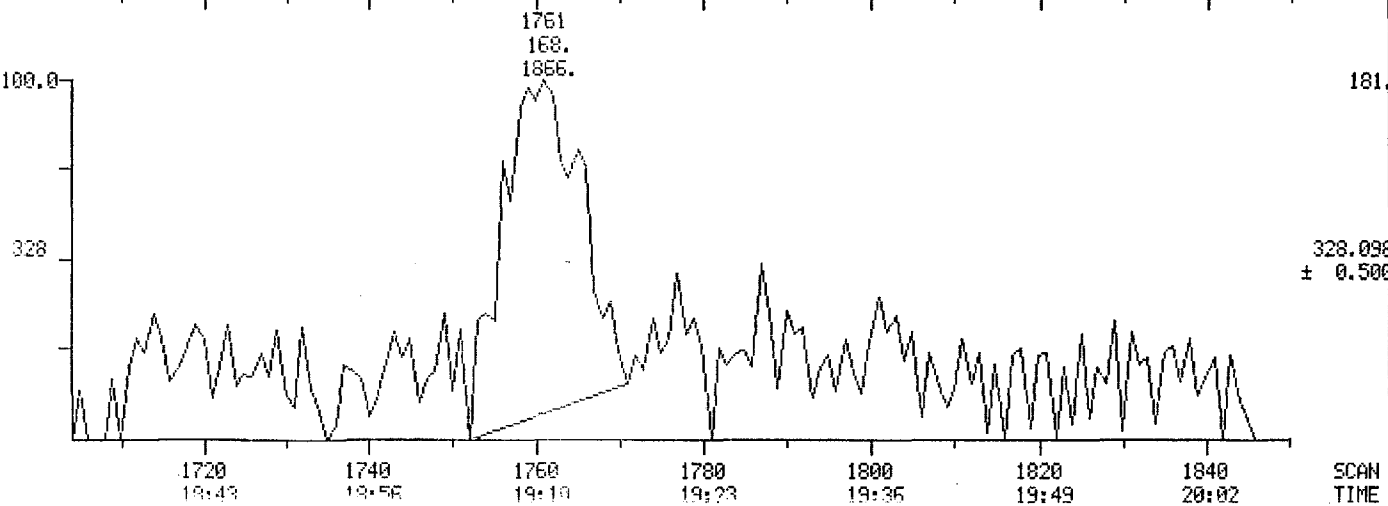
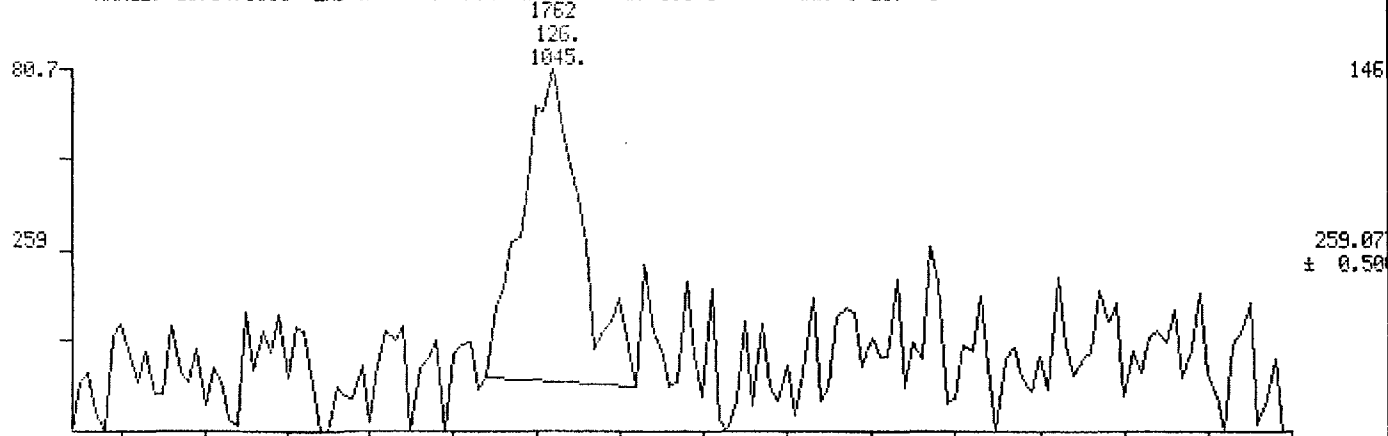
09/30/87 12:59:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/212-20/10.03G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011743

MID MASS CHROMATOGRAMS

DATA: SEP3003 #1

SCANS 1704 TO 1850

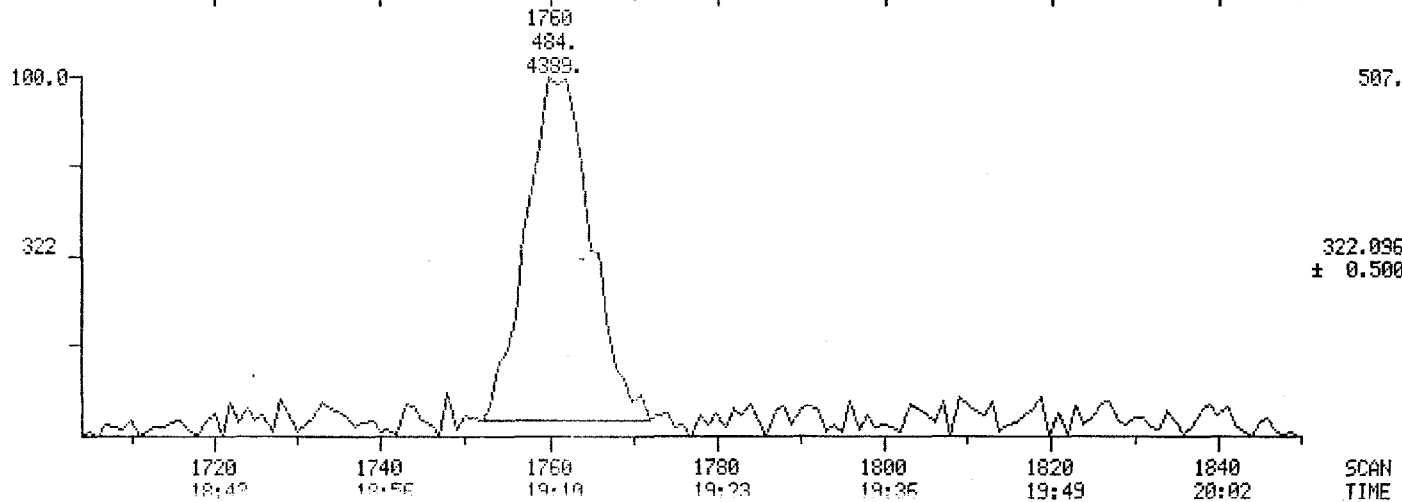
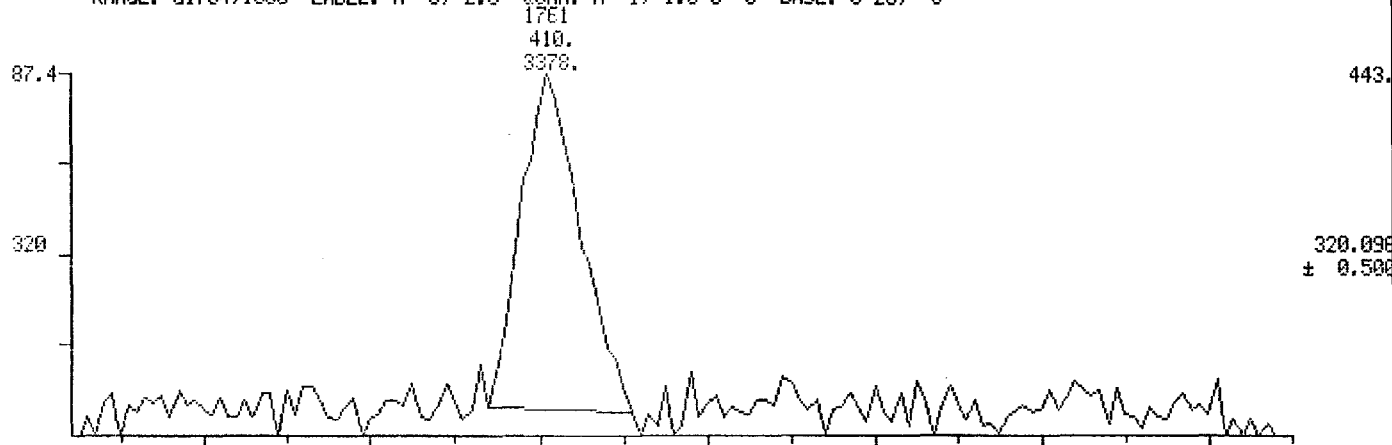
09/30/87 12:59:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/212-20/10.03G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011744

MID MASS CHROMATOGRAMS

DATA: SEP003 #1

SCANS 1704 TO 1850

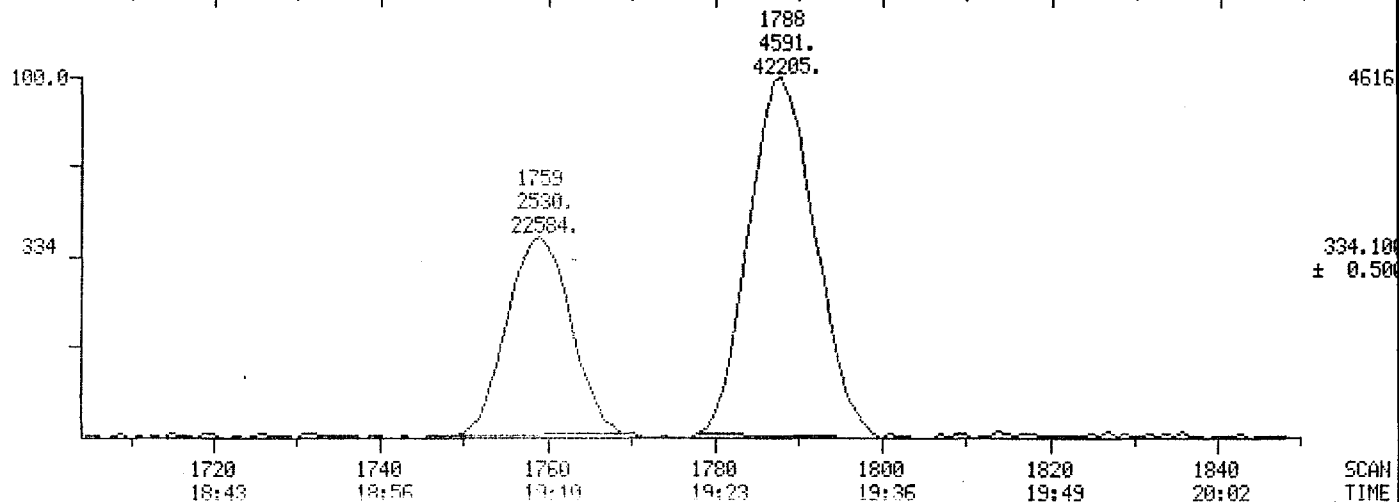
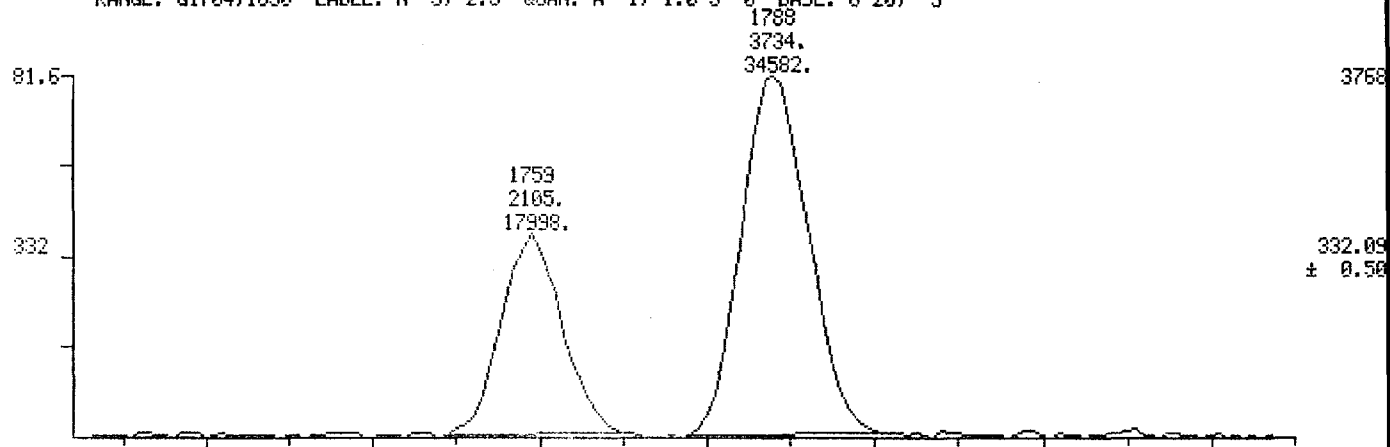
09/30/87 12:59:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/212-20/10.03G

CONDOS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



01174E

MID RIC

Date: SEP3004 #1

SCANS 1704 TO 1850

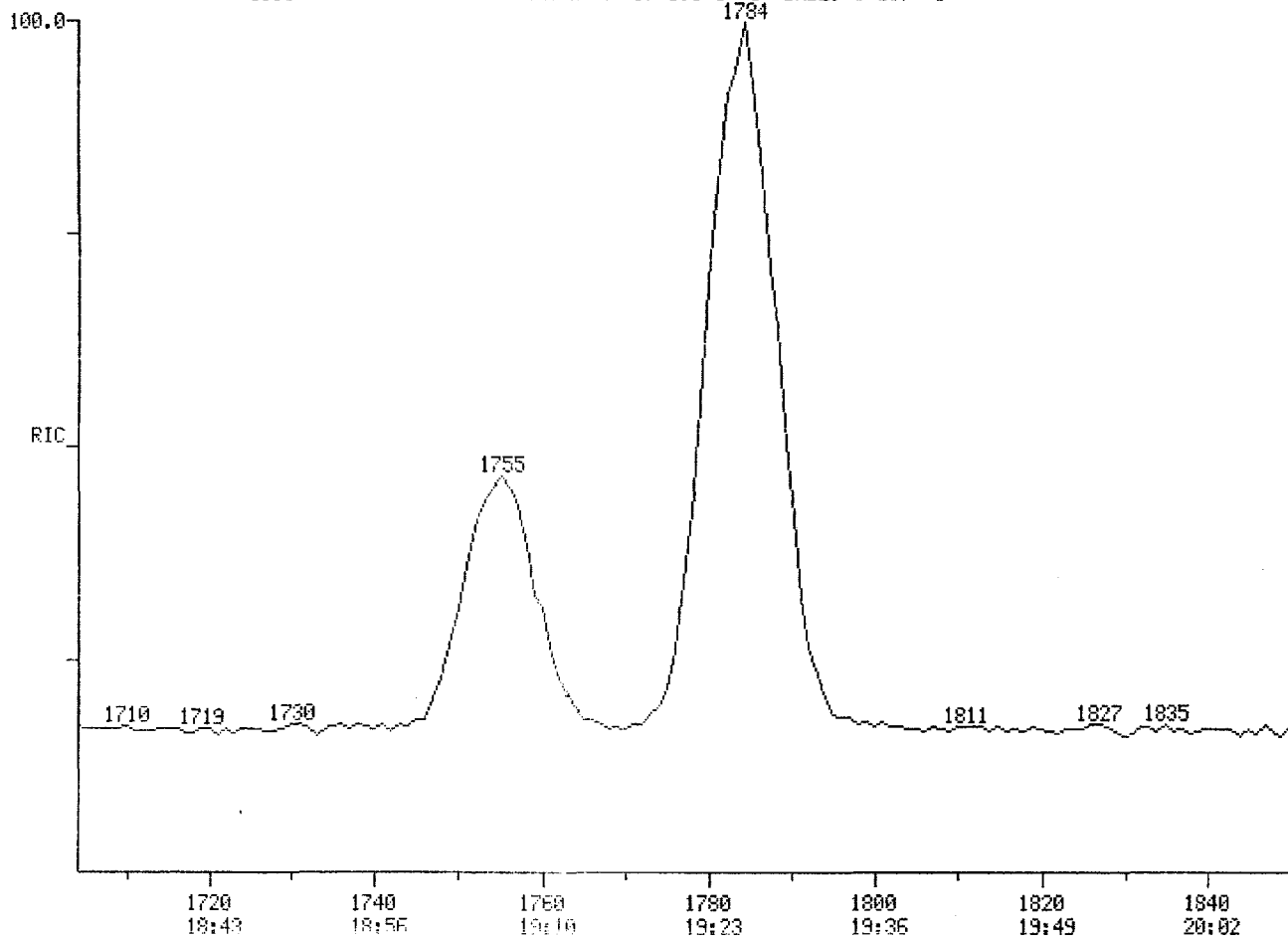
09/30/87 13:27:00

CALI: CAL092587 #3

SAMPLE: CASE 8819: BATCH3/212-21/10.07G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



12816

SCAN
TIME

011746

MID MASS CHROMATOGRAMS

DATA: SEP3004 #1

SCANS 1704 TO 1850

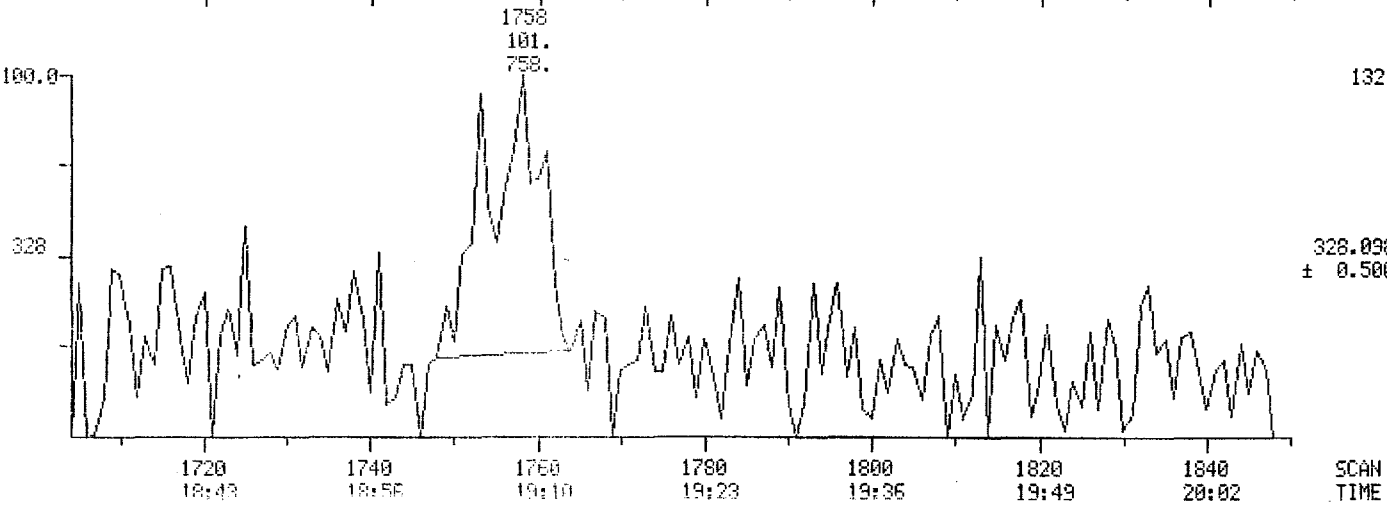
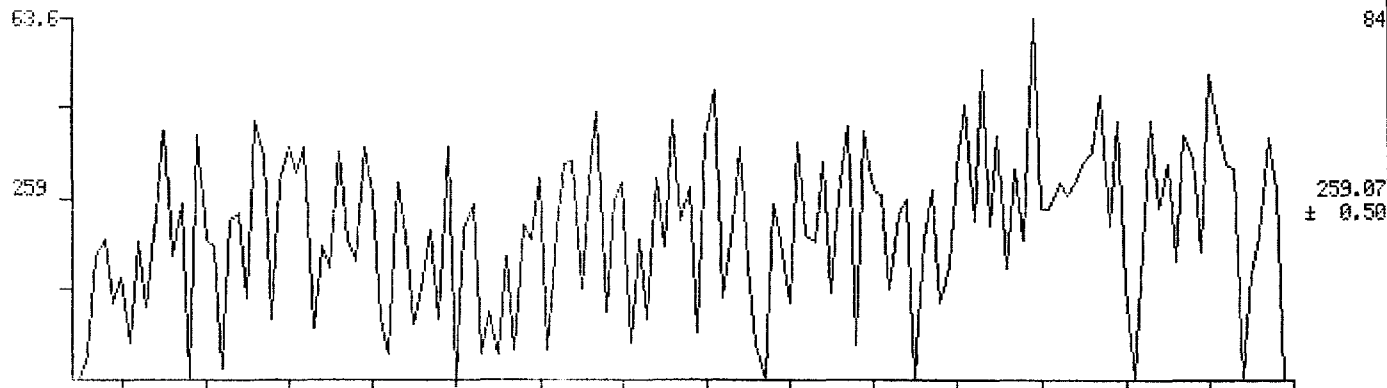
09/30/87 13:27:00

CALI: CAL032587 #3

SAMPLE: CASE 8019: BATCH3/212-21/10.07G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1720 18:49 1740 18:56 1758 19:10 1780 19:23 1800 19:36 1820 19:49 1840 20:02

SCAN TIME

112110

MID MASS CHROMATOGRAMS

DATA: SEP3004 #1

SCANS 1704 TO 1850

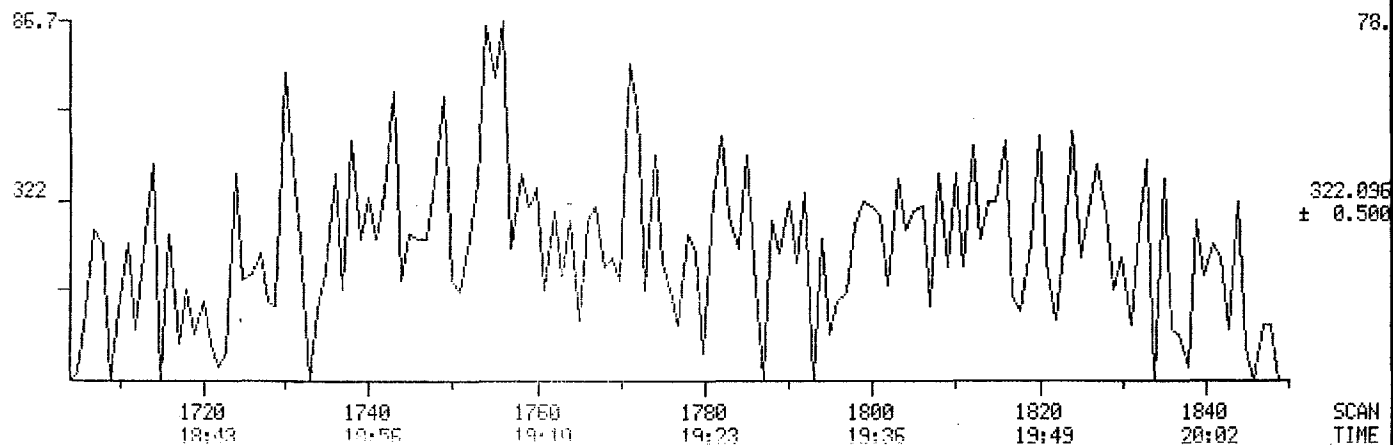
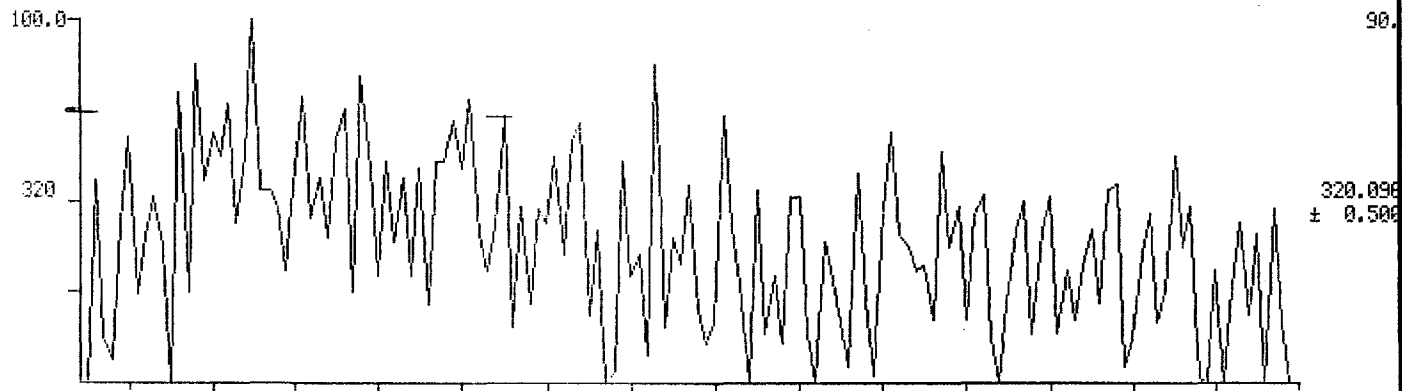
09/30/87 13:27:00

CALI: CAL092587 #3

SAMPLE: CASE 8019:BATCH3/212-21/10.07G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/3

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



372110

MID MASS CHROMATOGRAMS

DATA: SEP3004 #1

SCANS 1704 TO 1850

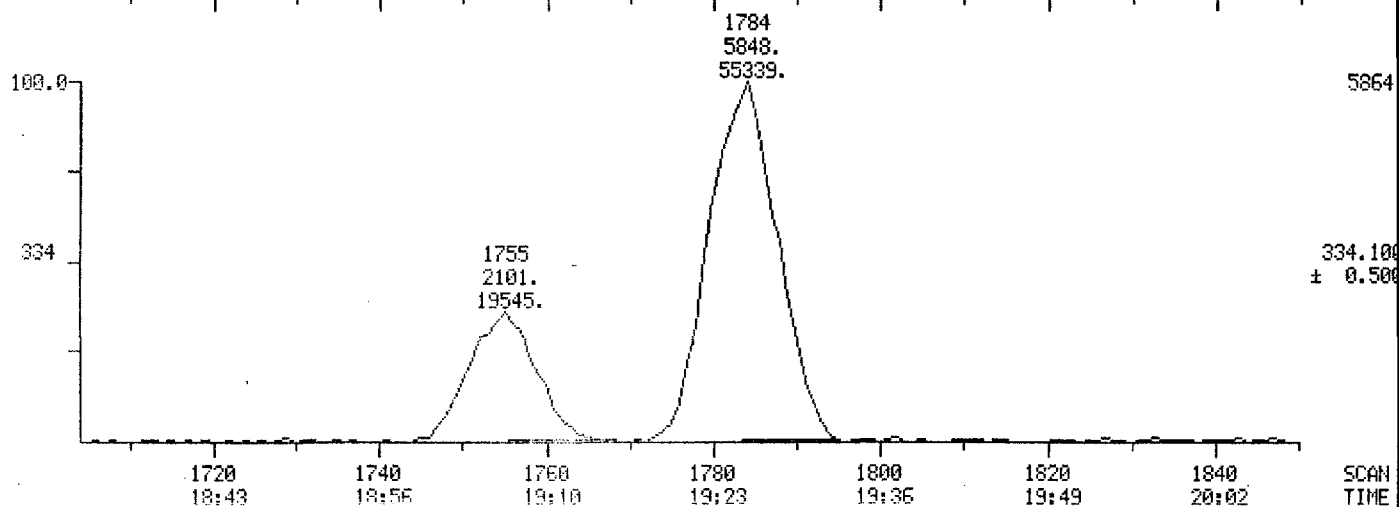
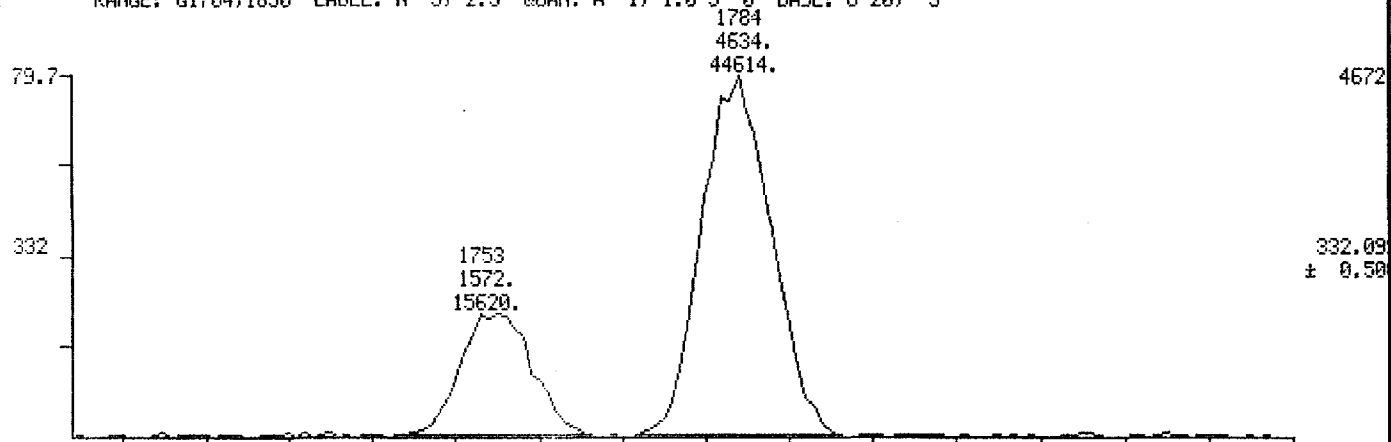
09/30/87 13:27:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/212-21/10.07G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5; 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1720
18:43

1740
18:56

1760
19:10

1780
19:23

1800
19:36

1820
19:49

1840
20:02

SCAN
TIME

372110

MID RIC

DATA: SEP2823 #1

SCANS 1704 TO 1850

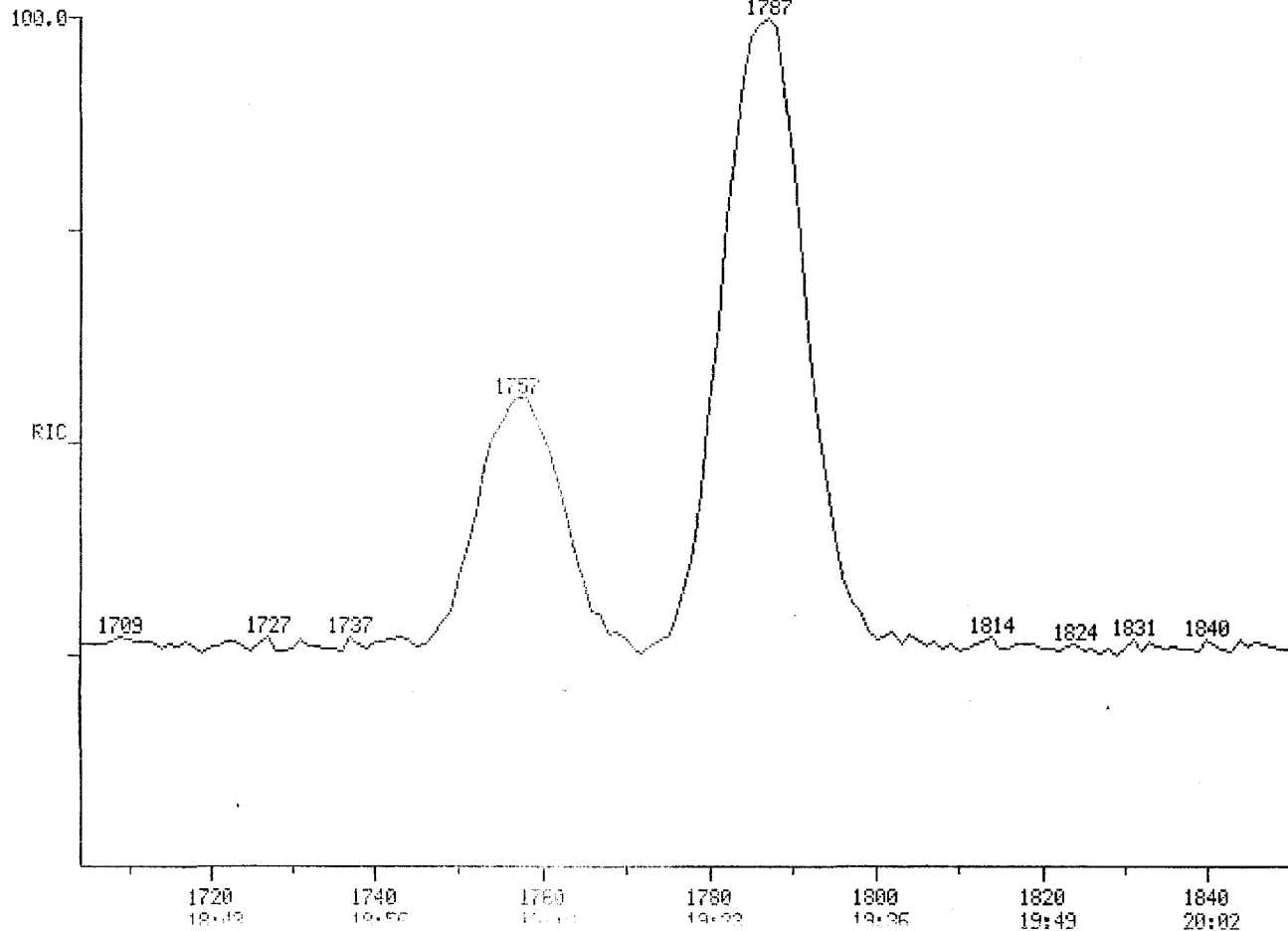
09/29/87 7:33:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/212-22/10.16G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0. 4.0 QUAN: A 0. 1.0 J 0. BASE: U 20. 3



11024

SCAN
TIME

011750

MID MASS CHROMATOGRAMS

DATA: SEP2823 #1

SCANS 1704 TO 1850

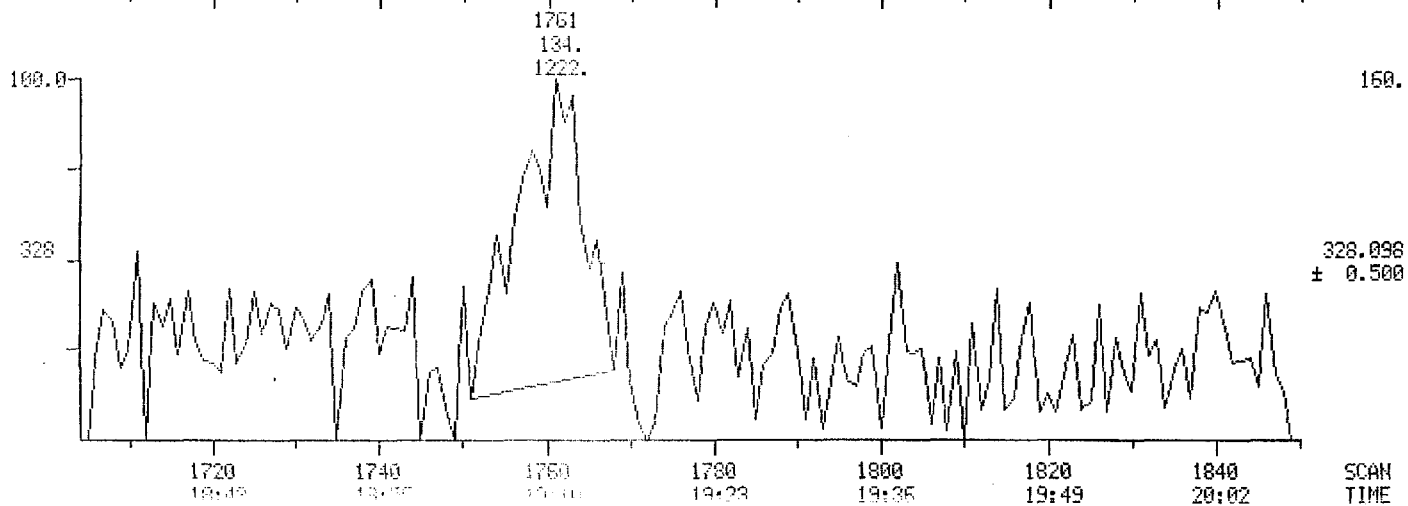
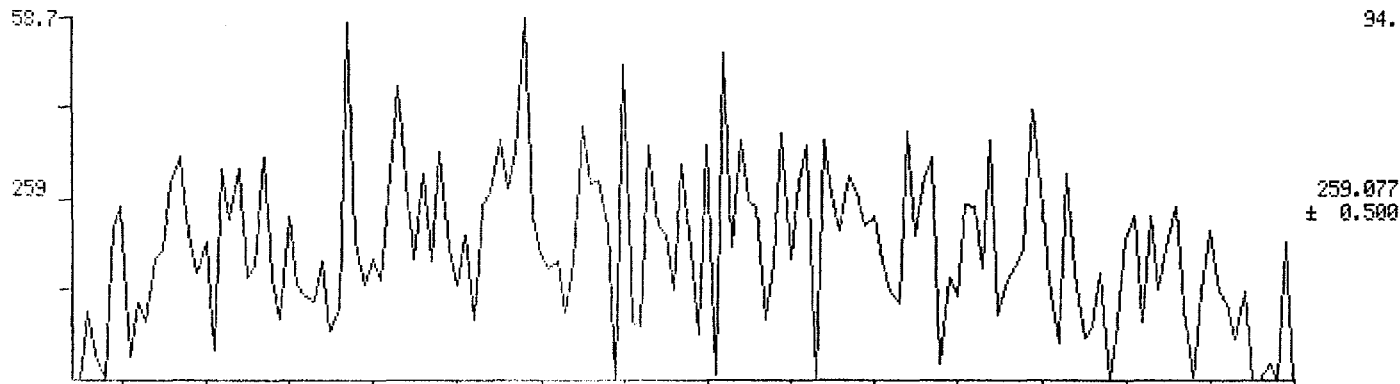
09/29/87 7:33:00

CAL: CAL092587 #3

SAMPLE: CASE 8819: BATCH3/212-22/10.16G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/S

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011751

MID MASS CHROMATOGRAMS

DATA: SEP2823 #1

SCANS 1704 TO 1850

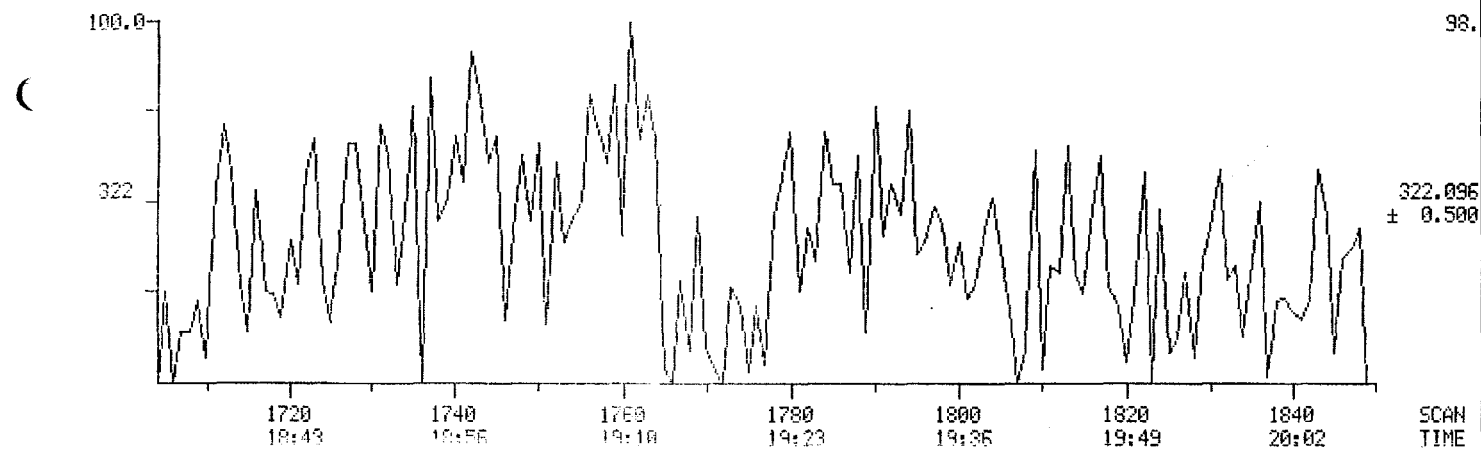
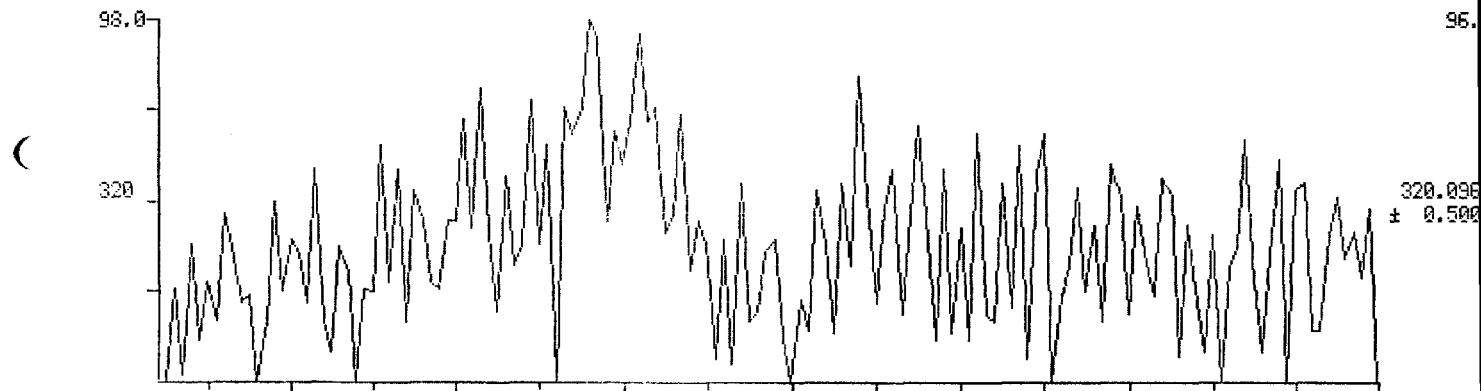
09/29/87 7:33:00

CALI: CAL092587 #3

SAMPLE: CASE 8019; BATCHS/212-22/10.16G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/0

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



SCAN TIME

392110

MID MASS CHROMATOGRAMS

DATA: SEP2823 #1

SCANS 1704 TO 1850

09/29/87 7:33:00

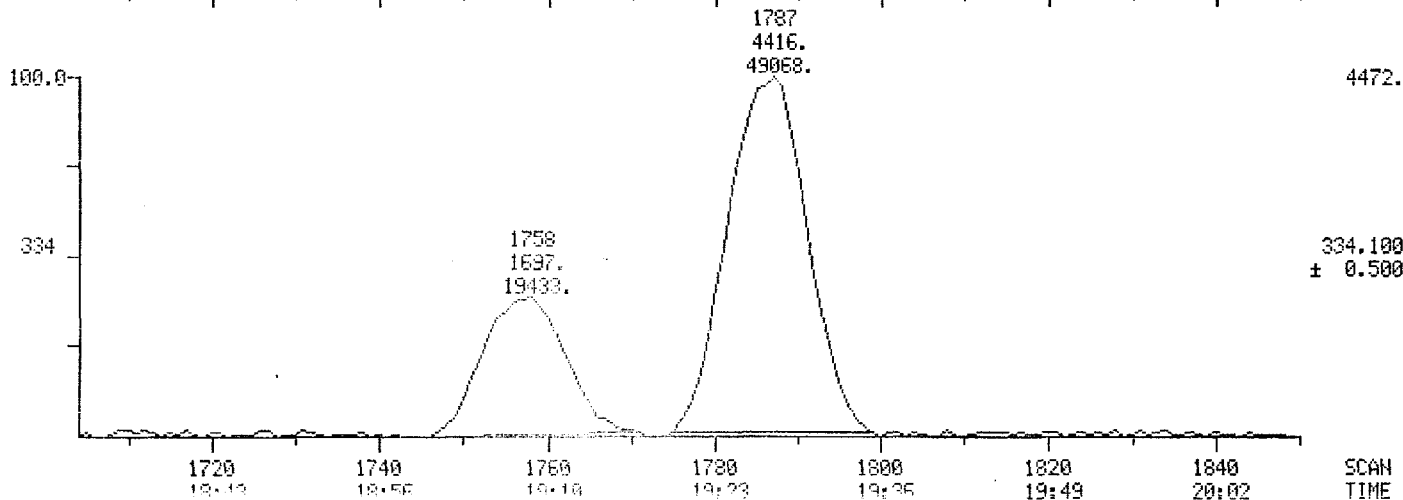
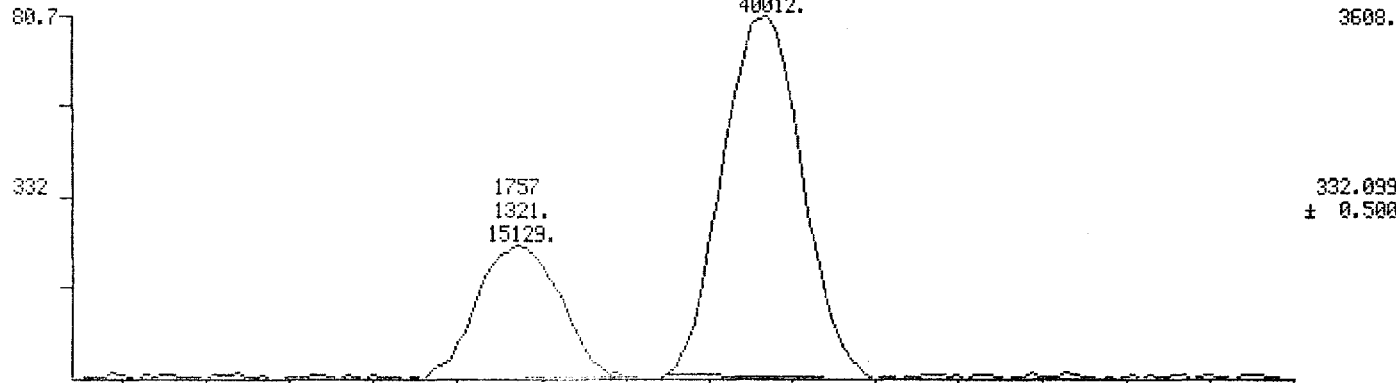
CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/212-22/10.16G

CONDS.: 60M SP2331/100/100-200025/200-24004/3

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3

1787
3586.
40012.



392110

MID RIC

DATA: SEP2824 #1

SCANS 1704 TO 1850

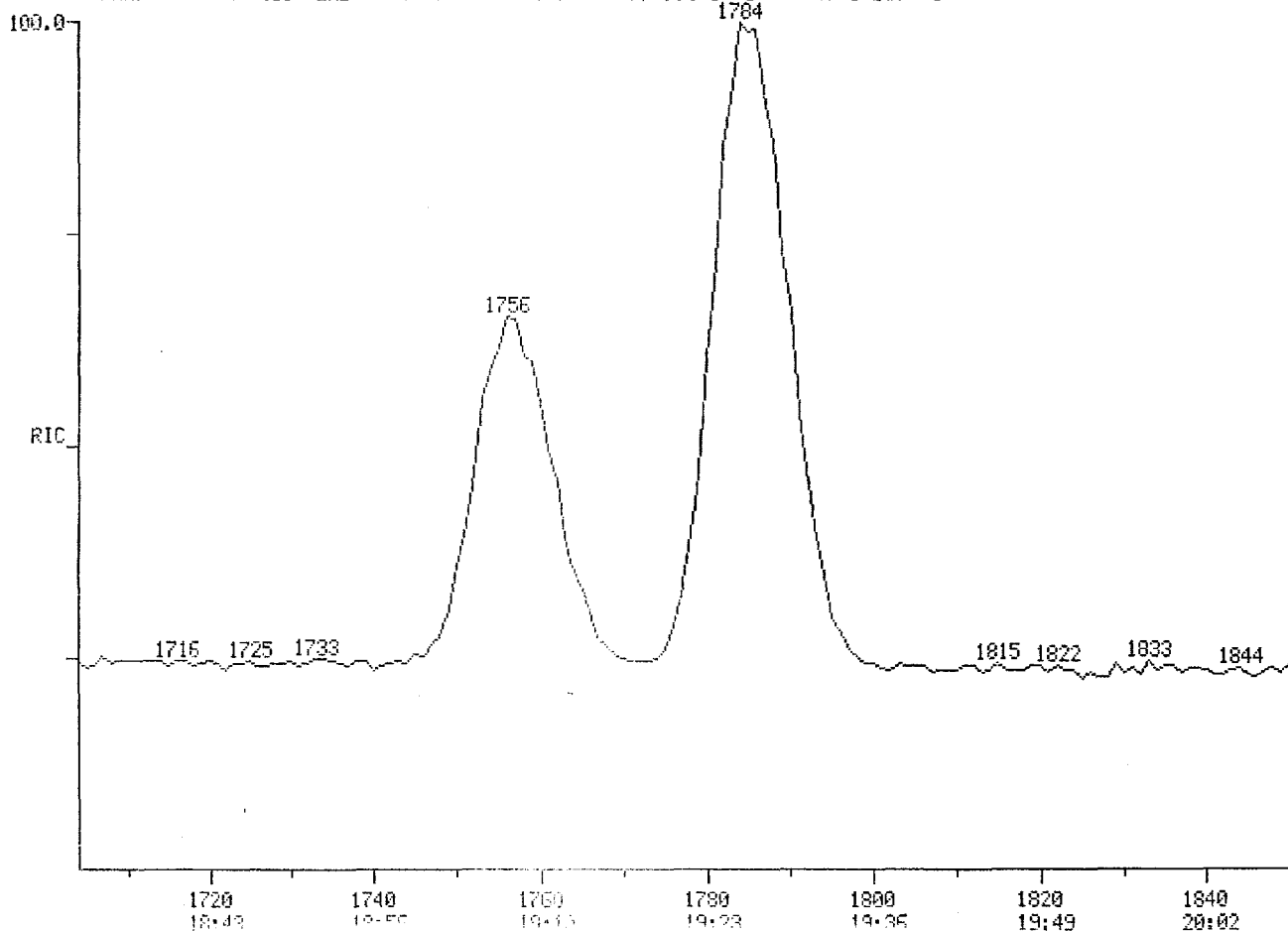
09/29/87 8:01:00

CALI: CAL002587 #3

SAMPLE: CASE 8019: BATCH3/213-02/10.00G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



11952

SCAN
TIME

1175

MID MASS CHROMATOGRAMS

DATA: SEP2824 #1

SCANS 1704 TO 1850

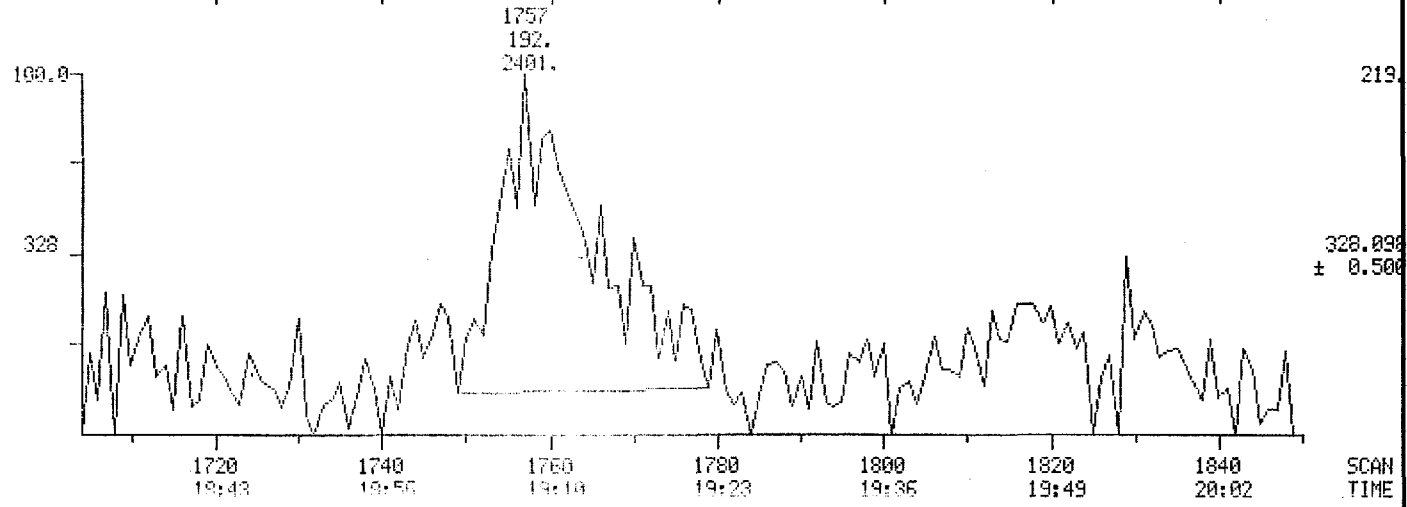
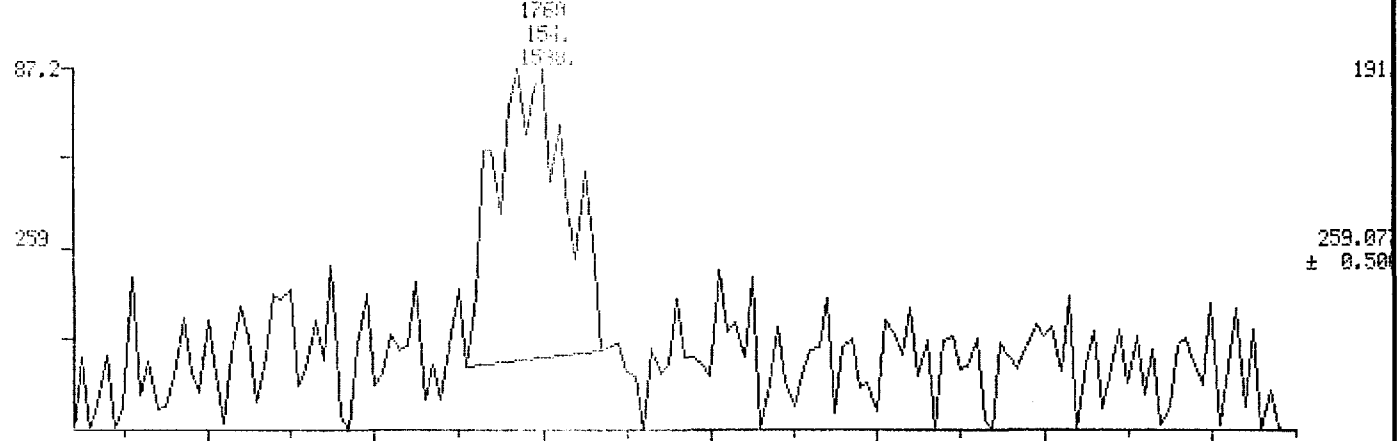
09/29/87 8:01:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/213-02/10.06G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5. 2.5 QUAN: A 1. 1.0 J 0 BASE: U 20. 3



392110

MID MASS CHROMATOGRAMS

DATA: SEP2324 #1

SCANS 1704 TO 1850

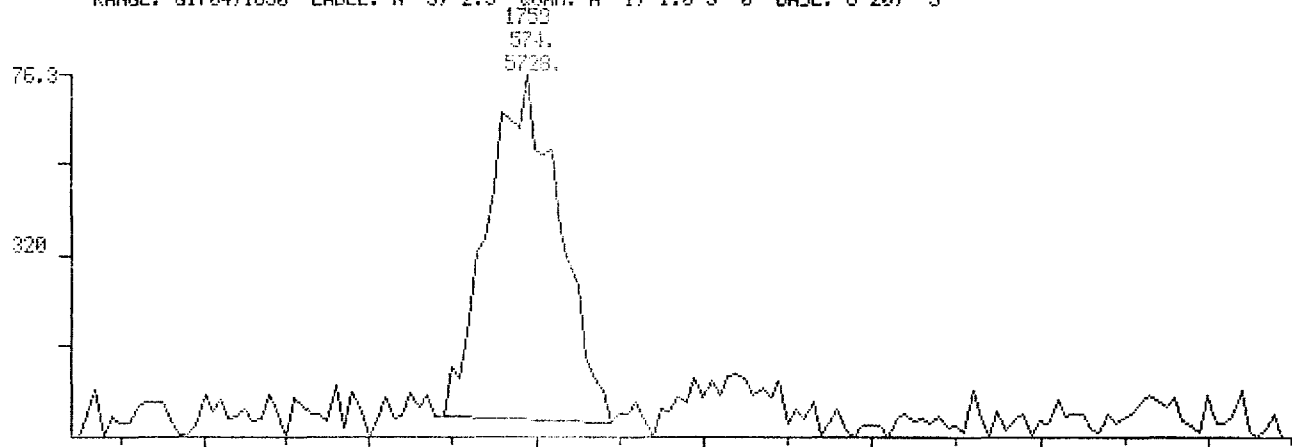
09/23/87 8:01:00

CALL: CAL092587 #3

SAMPLE: CASE 8819; BATCH3/213-02/10.08G

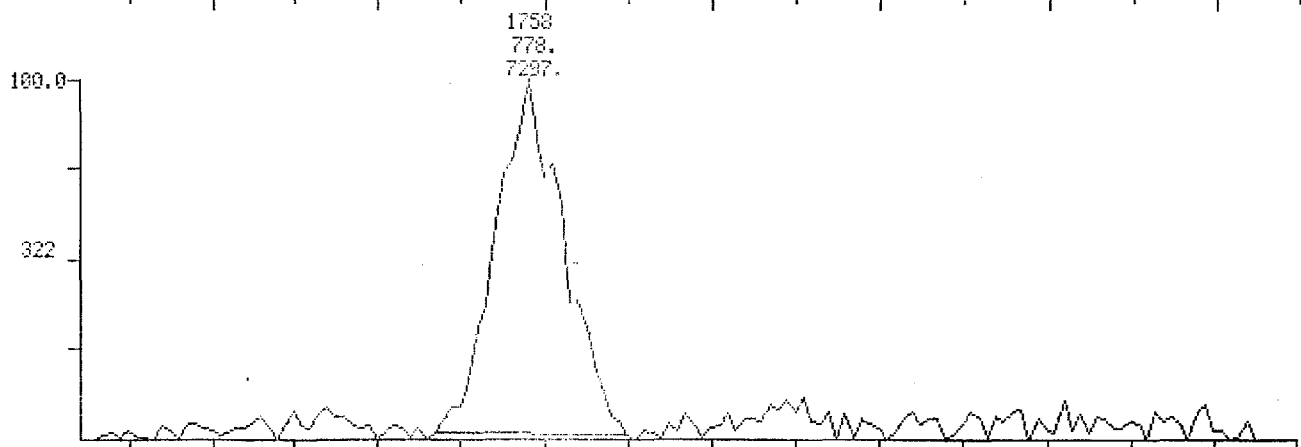
CONDS.: 60M SP2331/100/100-200E25/200-240B4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



603

320.096
± 0.500



790

322.096
± 0.500

1720
19:33

1740
19:37

1760
19:40

1780
19:23

1800
19:36

1820
19:49

1840
20:02

SCAN
TIME

992110

MID MASS CHROMATOGRAMS

DATA: SEP2824 #1

SCANS 1704 TO 1850

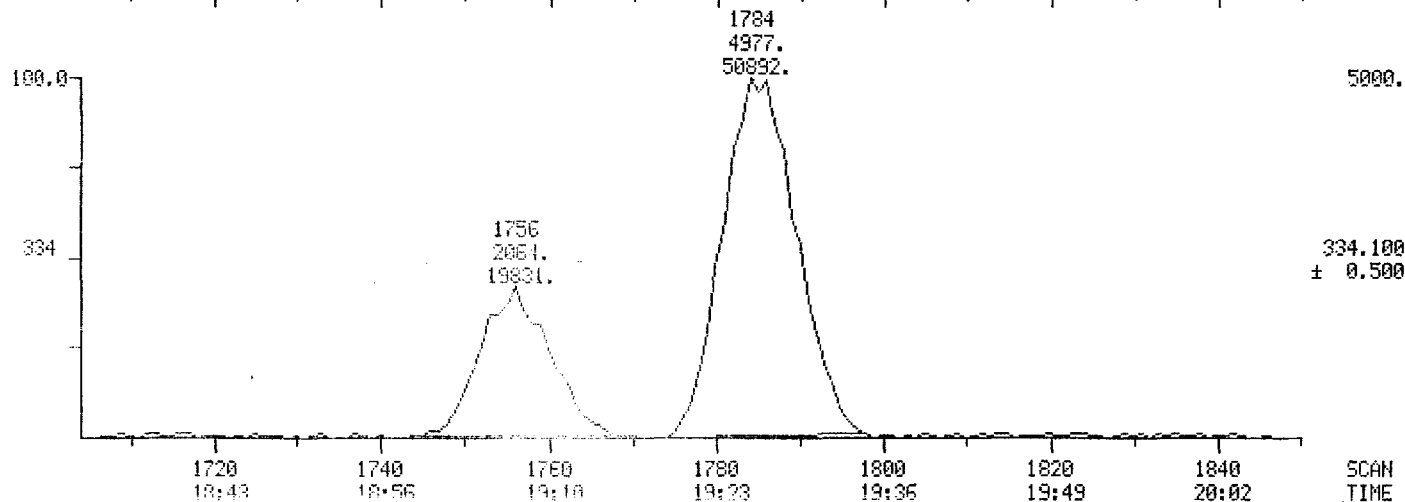
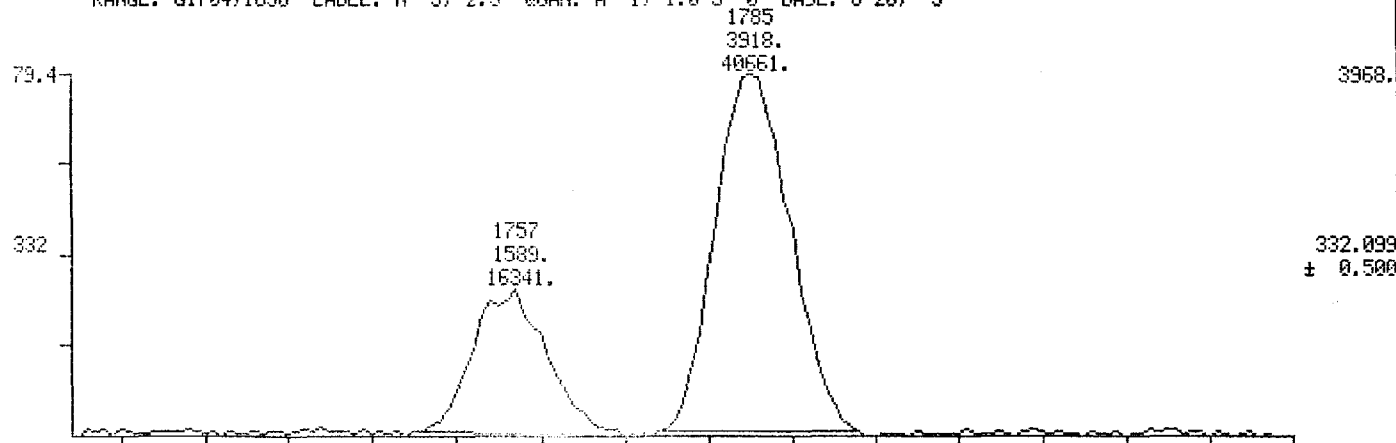
09/29/87 8:01:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/213-02/10.08G

CONDS.: 60M SP2331/100/100-200025/200-24004/3

RANGE: G1704:1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



SCAN
TIME

011757

MID RIC
09/30/87 14:25:00

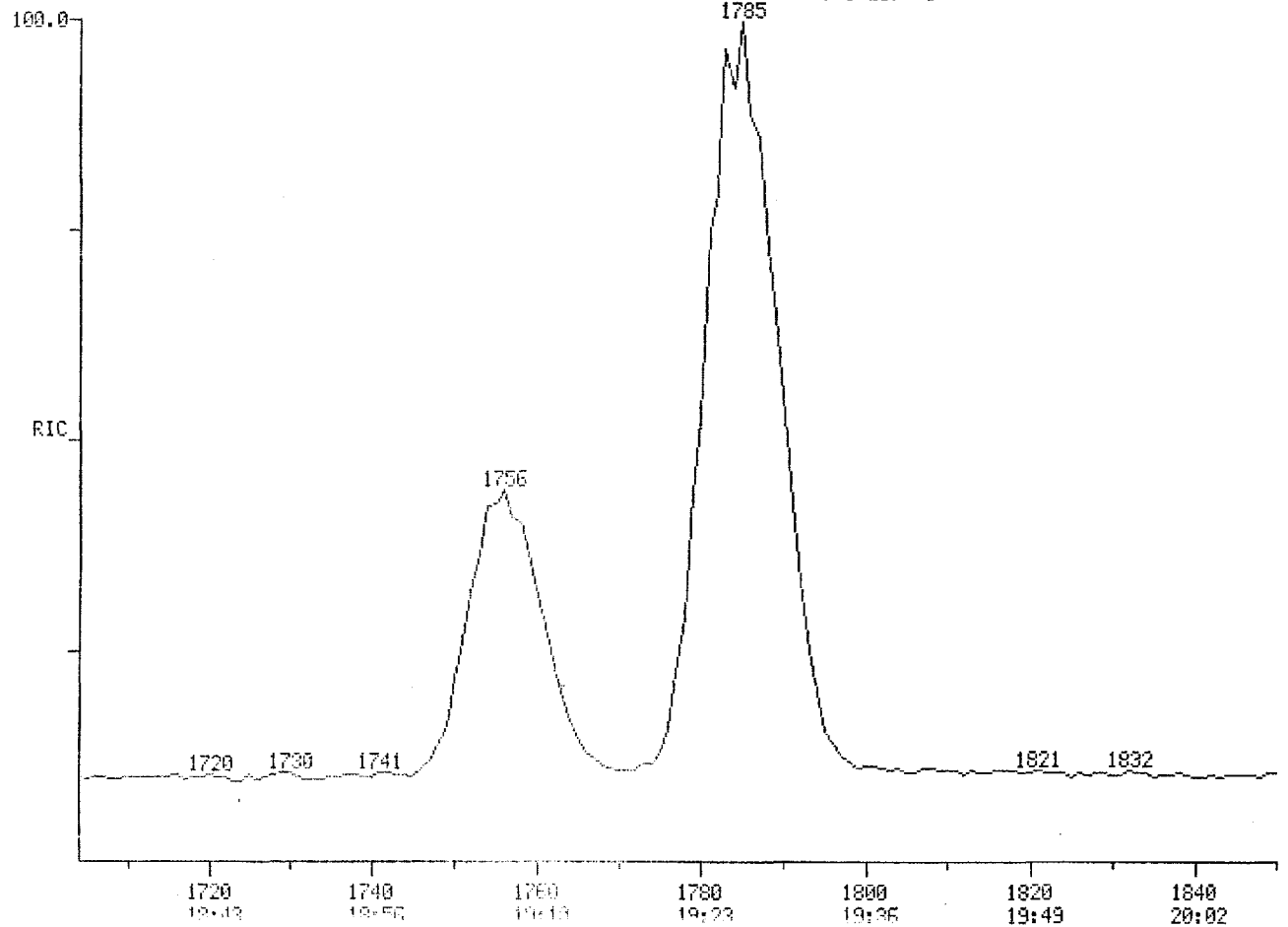
Date: SEP005 #1
Cell: CAL092587 #3

SCANS 1704 TO 1850

SAMPLE: CASE 8019: BATCH3/213-03/10.04G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



25664

SCAN
TIME

011755

MID MASS CHROMATOGRAMS

DATA: SEP005 #1

SCANS 1704 TO 1850

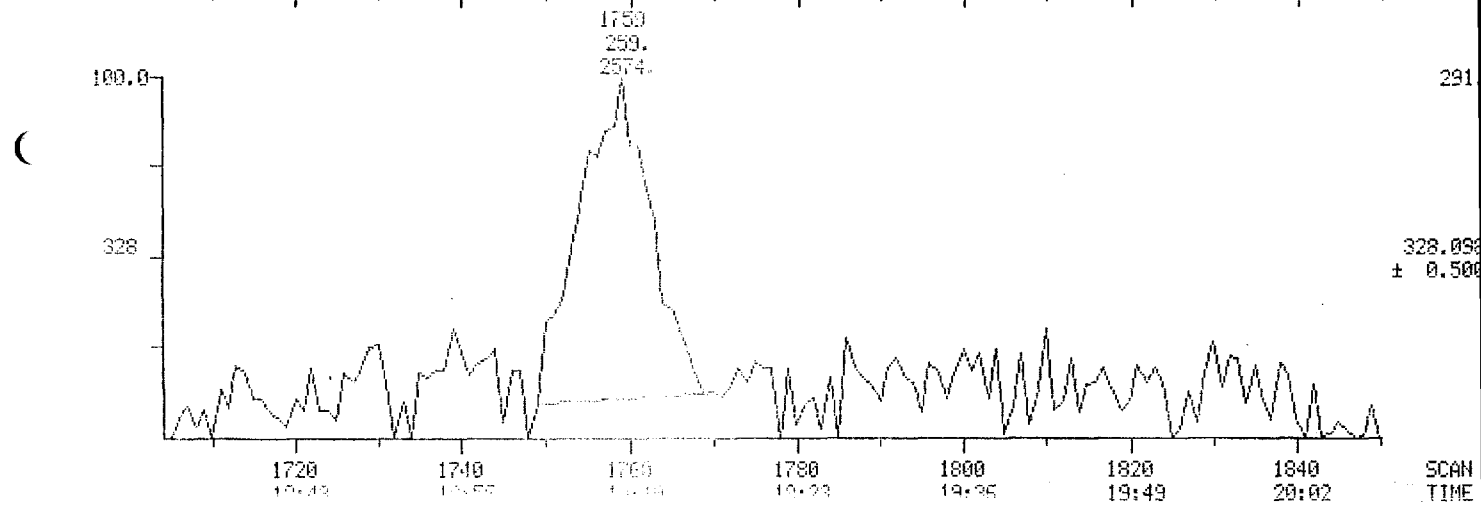
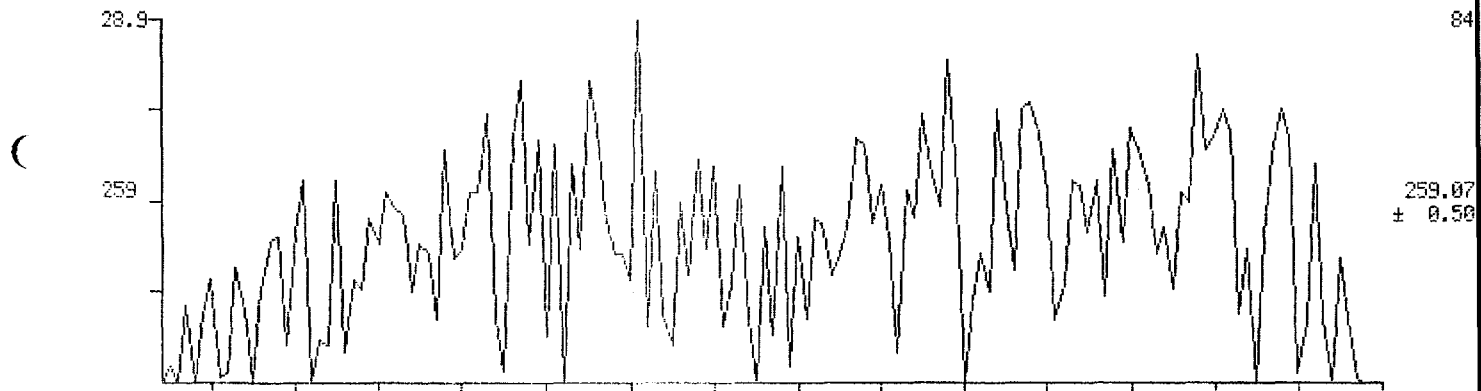
09/30/87 14:25:00

CAL1: CAL092587 #3

SAMPLE: CASE 8819; BATCH3/213-03/10.04G

CONDS.: 60M SP2331/100/100-200@25/200-240@1/3

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



392110

MID MASS CHROMATOGRAMS

DATA: SEP3005 #1

SCANS 1704 TO 1850

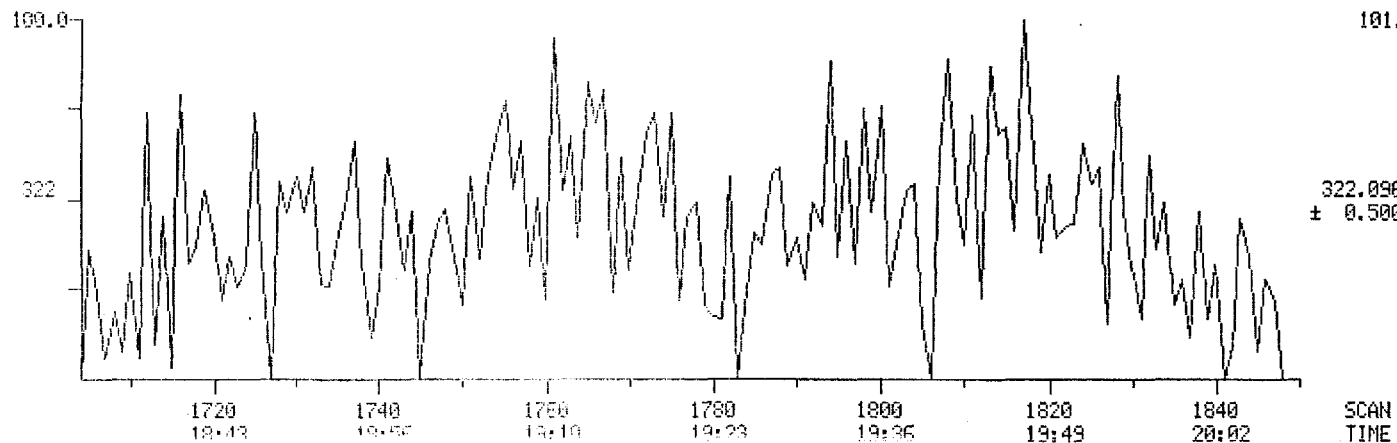
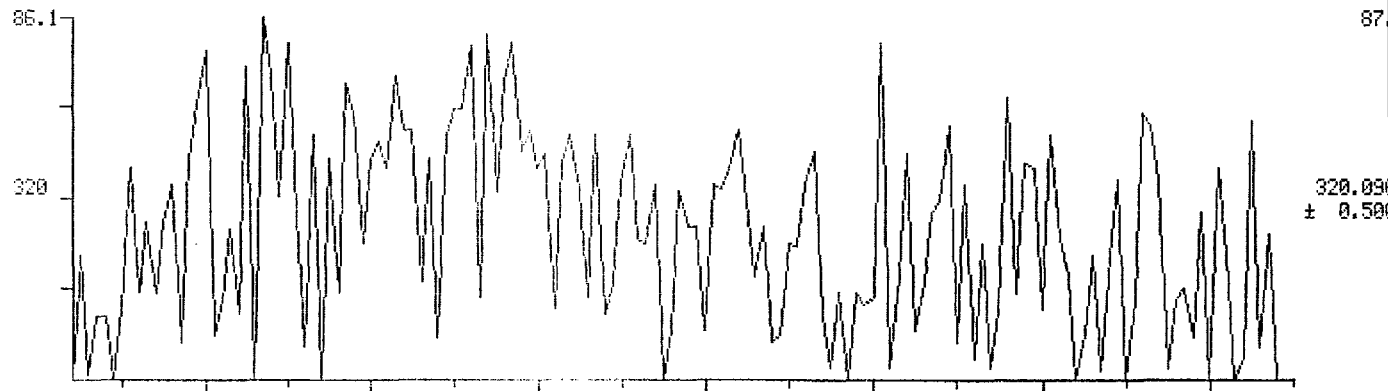
09/30/87 14:25:00

CALL: CAL932587 #3

SAMPLE: CASE 8019; BATCH3/213-03/10.04G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUANT: A 1, 1.0 J 0 BASE: U 20, 3



092110

MID MASS CHROMATOGRAMS

DATE: SEP3005 #1

SCANS 1704 TO 1850

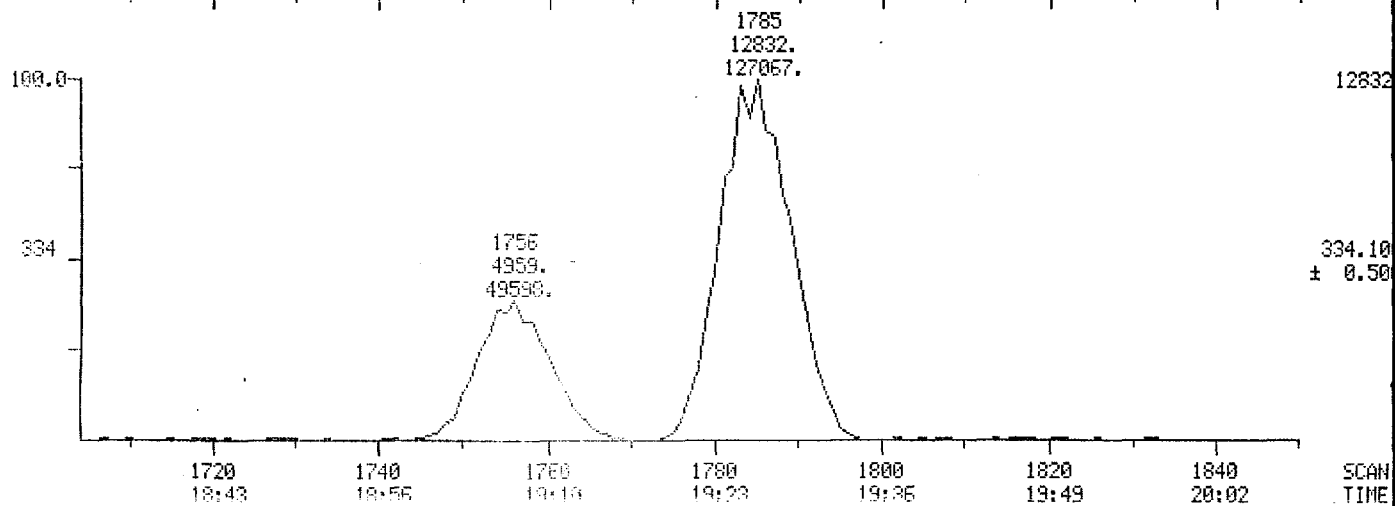
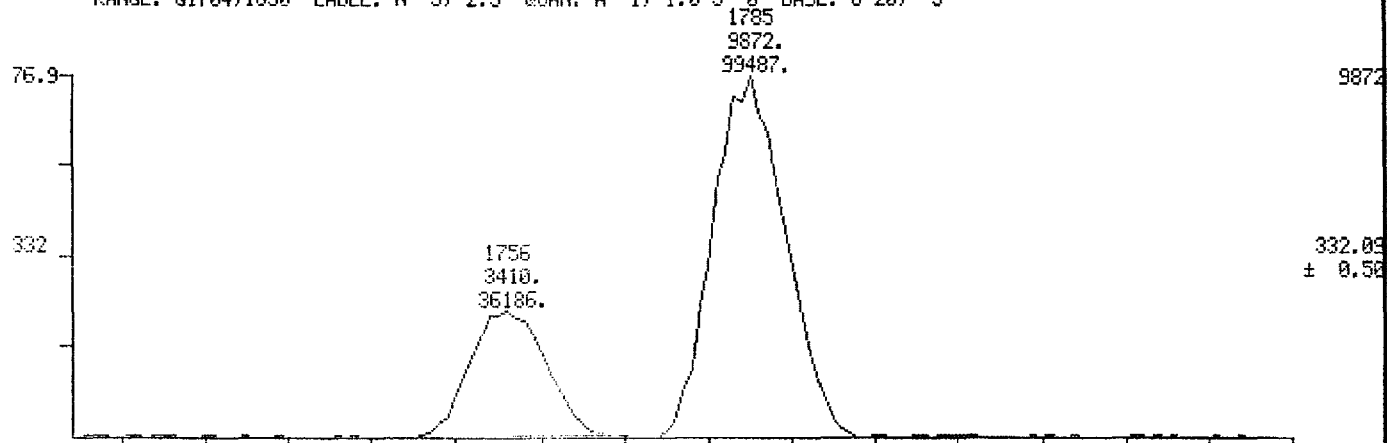
09/30/87 14:25:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/213-03/10.04G

CONDS.: 60M SP2331/100/100-200@25/200-240@4/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



192110

MID RIC

DATA: SEP006 #1

SCANS 1704 TO 1850

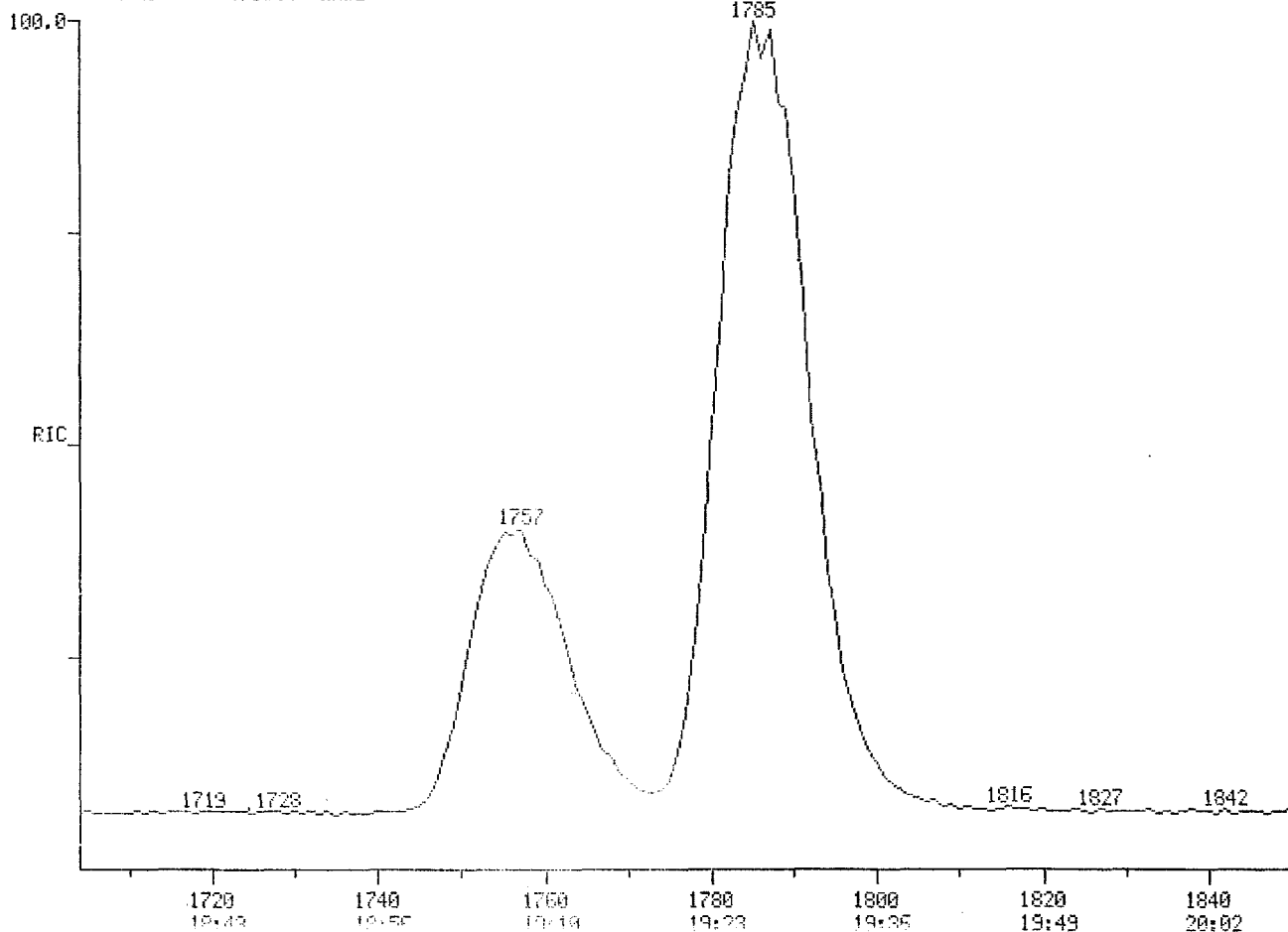
09/30/87 18:38:00

CALI: CAL002587 #3

SAMPLE: CASE 8019: BATCH3/213-03 DUP/10.01G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0. 4.0 QUAN: A 0. 1.0 J 0 BASE: U 20. 3



39552

SCAN
TIME

392110

MID MASS CHROMATOGRAMS

DATA: SEP3006 #1

SCANS 1704 TO 1850

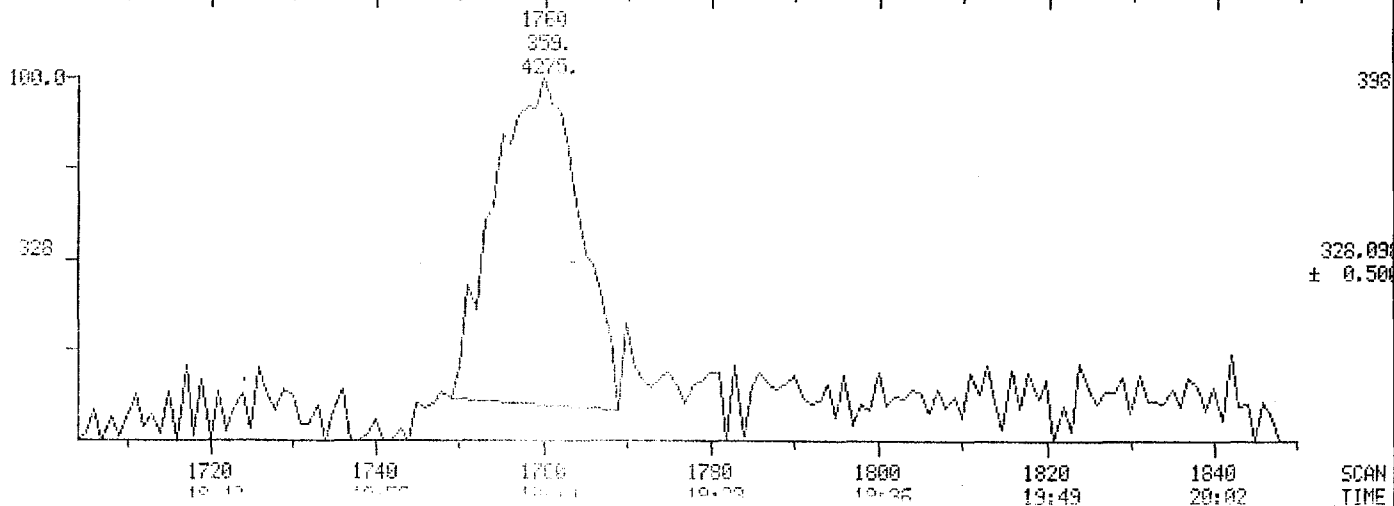
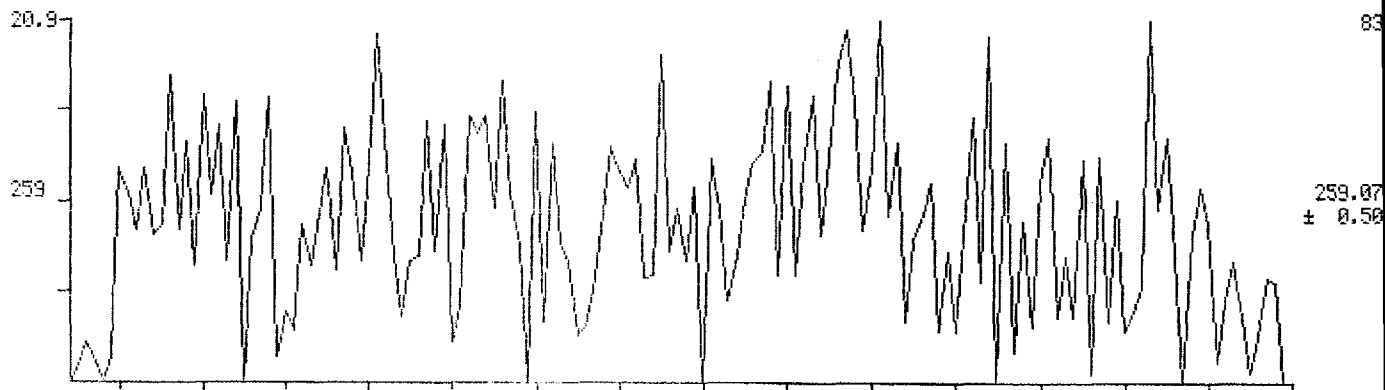
09/30/87 18:38:00

CALI: CAL032587 #3

SAMPLE: CASE 8019: BATCH3/213-03 DUP/10.01G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: H 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



392110

MID MASS CHROMATOGRAMS

DATA: SEP006 #1

SCANS 1704 TO 1850

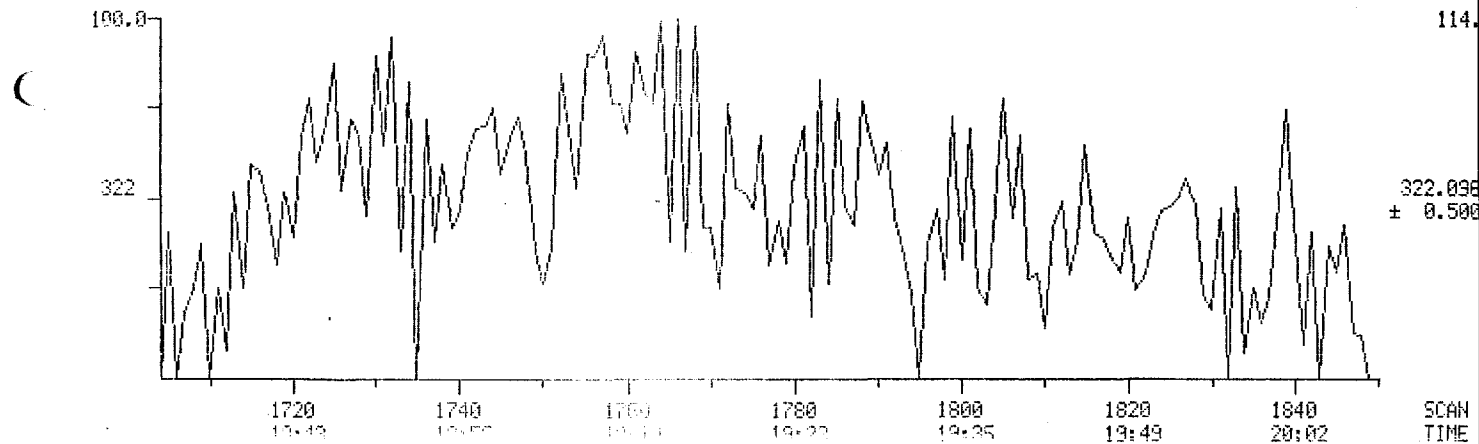
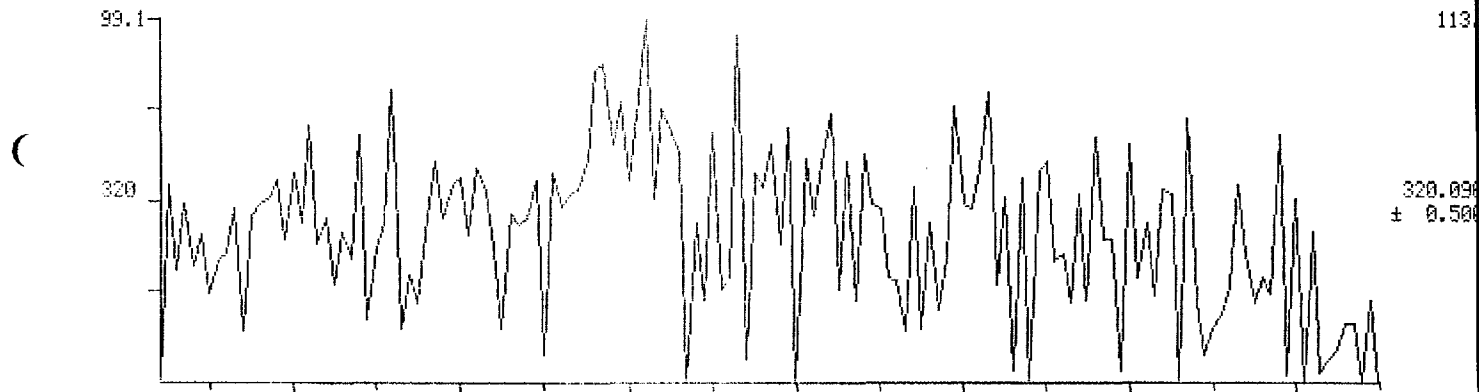
09/30/87 18:38:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/213-03 DUP/10.01G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



011264

MID MASS CHROMATOGRAMS

DATA: SEP3006 #1

SCANS 1704 TO 1850

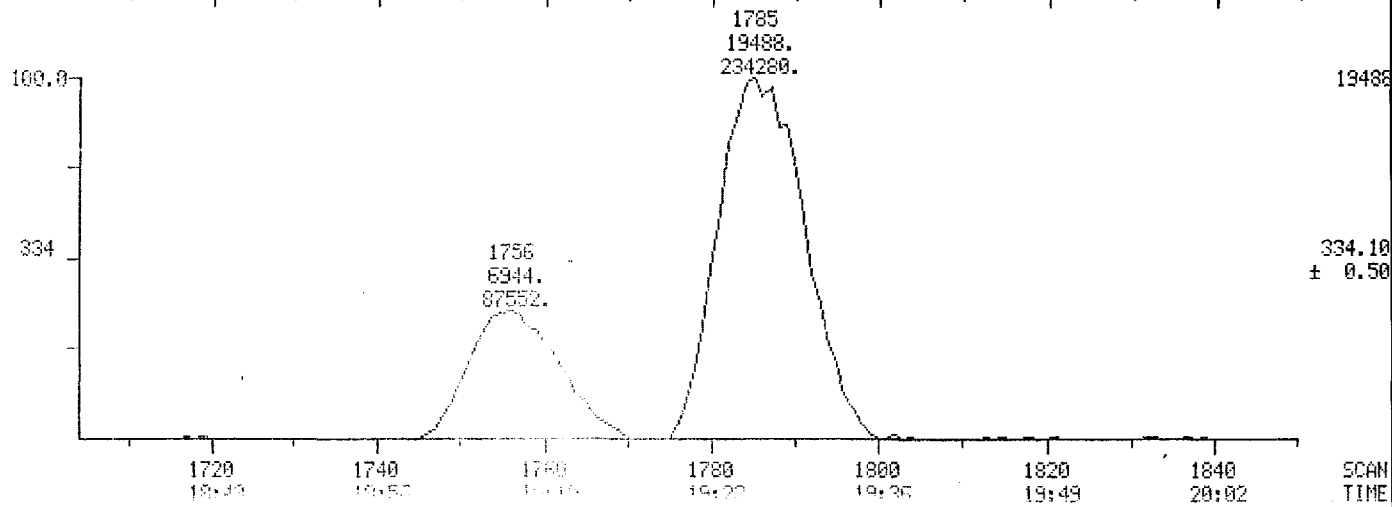
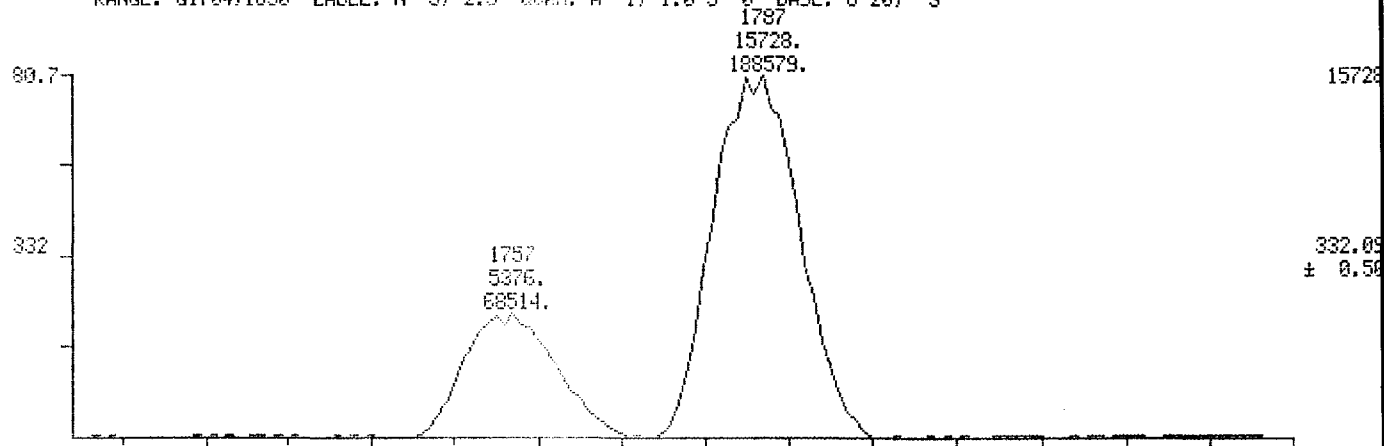
09/30/87 18:38:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/213-03 DUP/10.01G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1720
18:49

1740
19:57

1760
20:05

1780
19:22

1800
19:35

1820
19:49

1840
20:02

SCAN
TIME

392110

MID RIC

DATA: SEP2825 #1

SCANS 1704 TO 1850

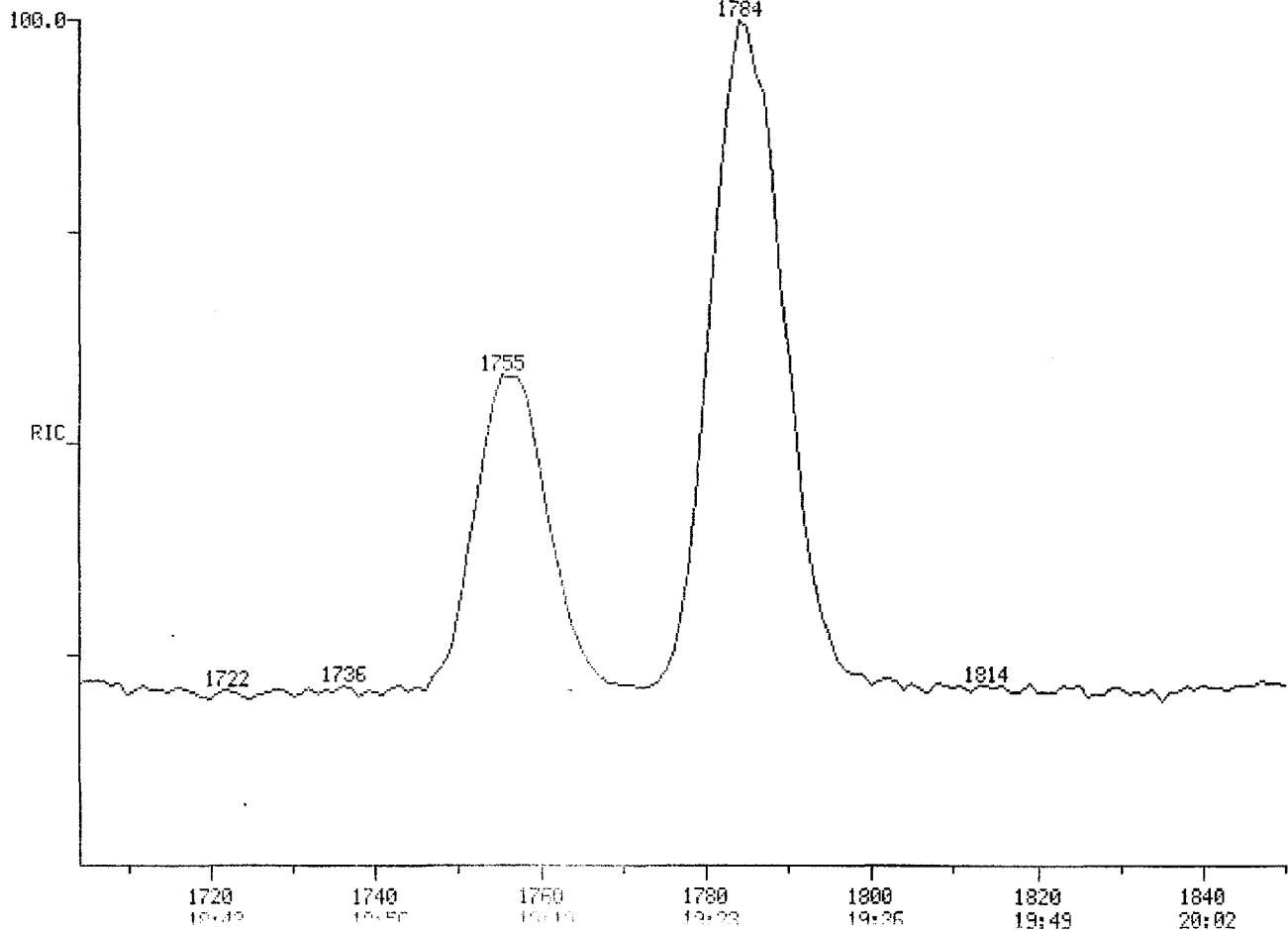
09/29/87 8:57:00

CALL: OHL092587 #3

SAMPLE: CASE 8019: BATCH3/213-01/10.04G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 0. 4.0 QUAN: A 0. 1.0 J 0 BASE: U 20, 3



12752

SCAN
TIME

011766

MID MASS CHROMATOGRAMS

DATA: SEP2826 #1

SCANS 1704 TO 1850

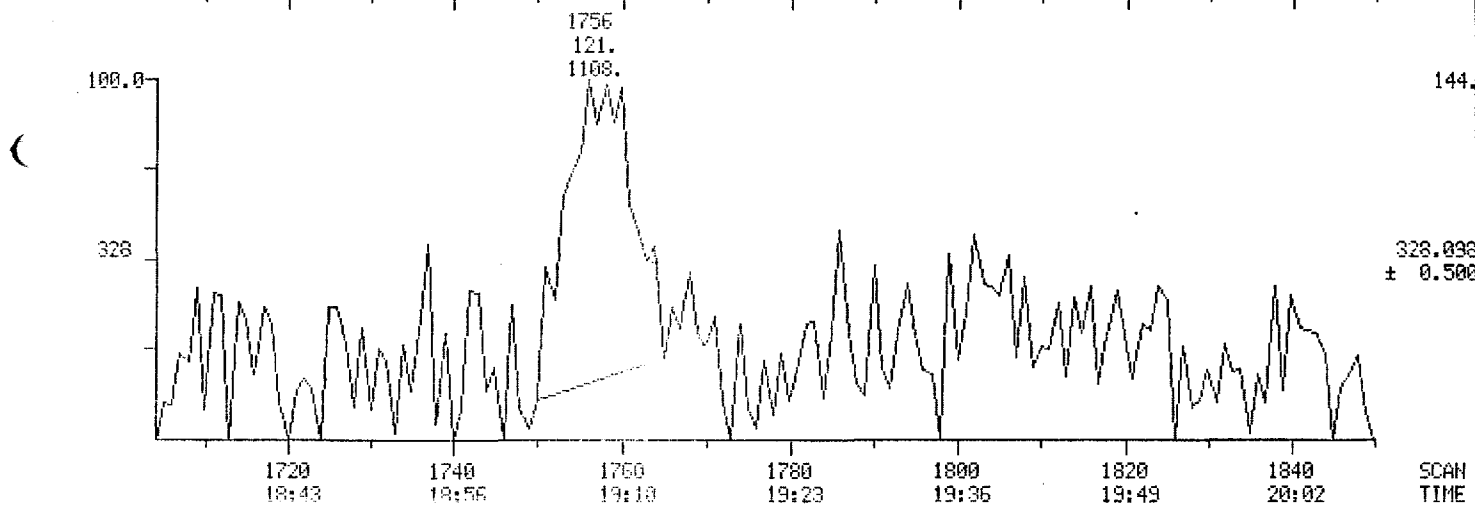
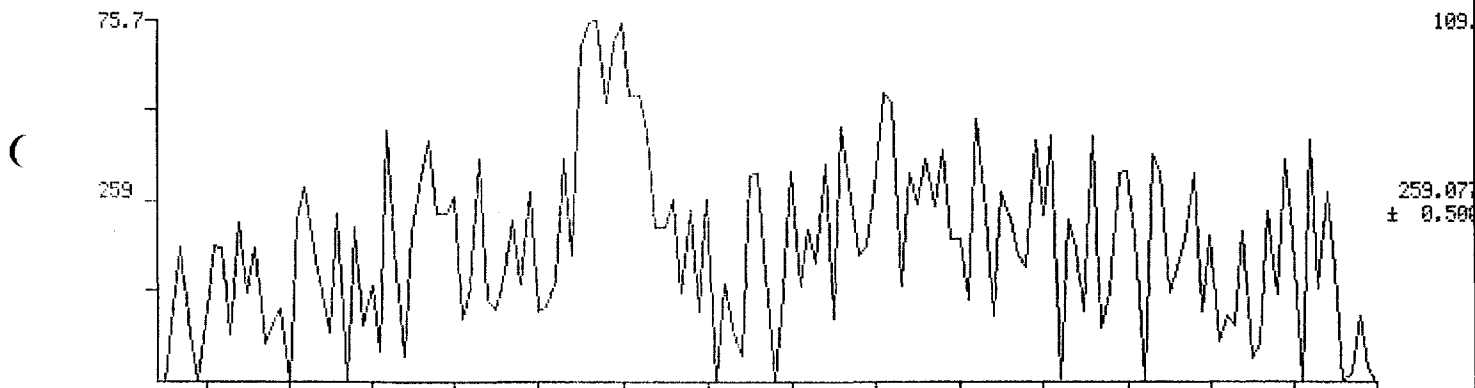
09/29/87 8:57:00

CALL: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/213-01/10.04G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



292110

MID MASS CHROMATOGRAMS

DATA: SEP2826 #1

SCANS 1704 TO 1850

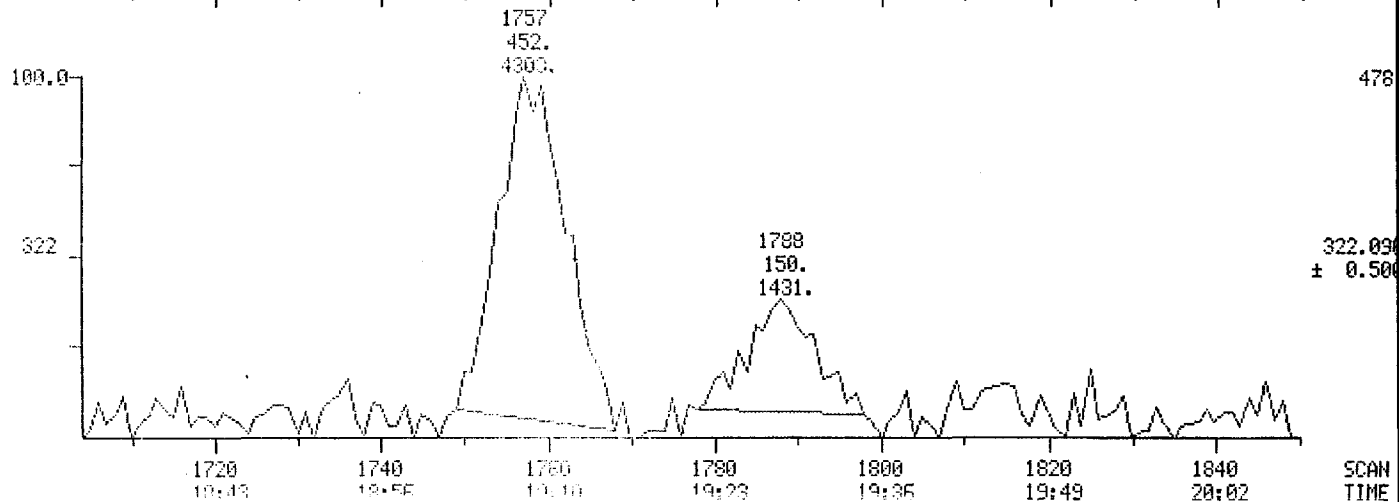
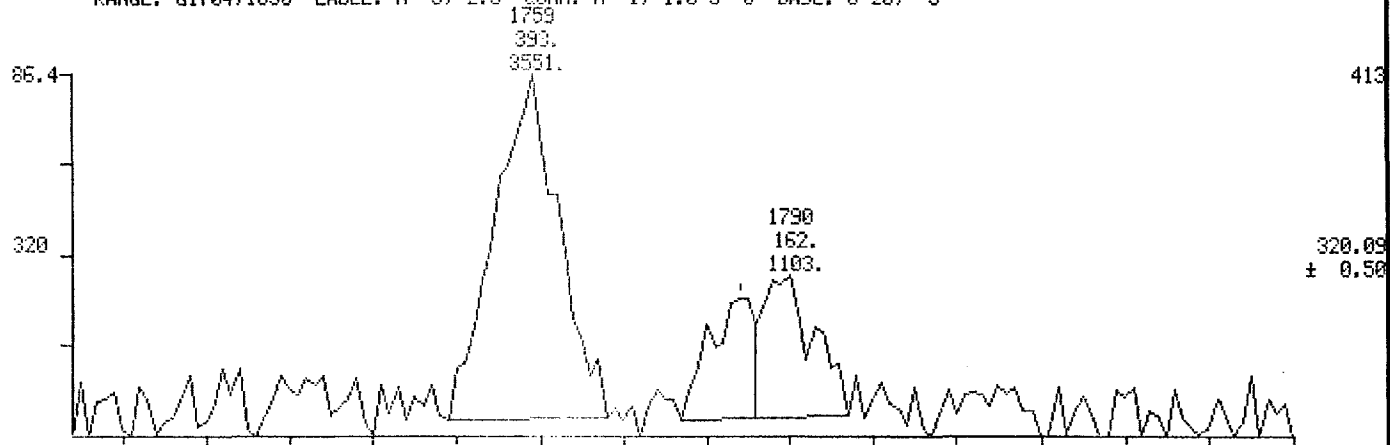
09/29/87 8:57:00

CALI: CAL092587 #3

SAMPLE: CASE 8019: BATCH3/213-01/10.04G

CONDS.: 60N SP2331/100/100-200025/200-24004/8

RANGE: G1704,1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



1720
19:43

1740
19:55

1760
19:10

1780
19:23

1800
19:35

1820
19:49

1840
20:02

SCAN
TIME

392110

MID MASS CHROMATOGRAMS

DATA: SEP2826 #1

SCANS 1704 TO 1850

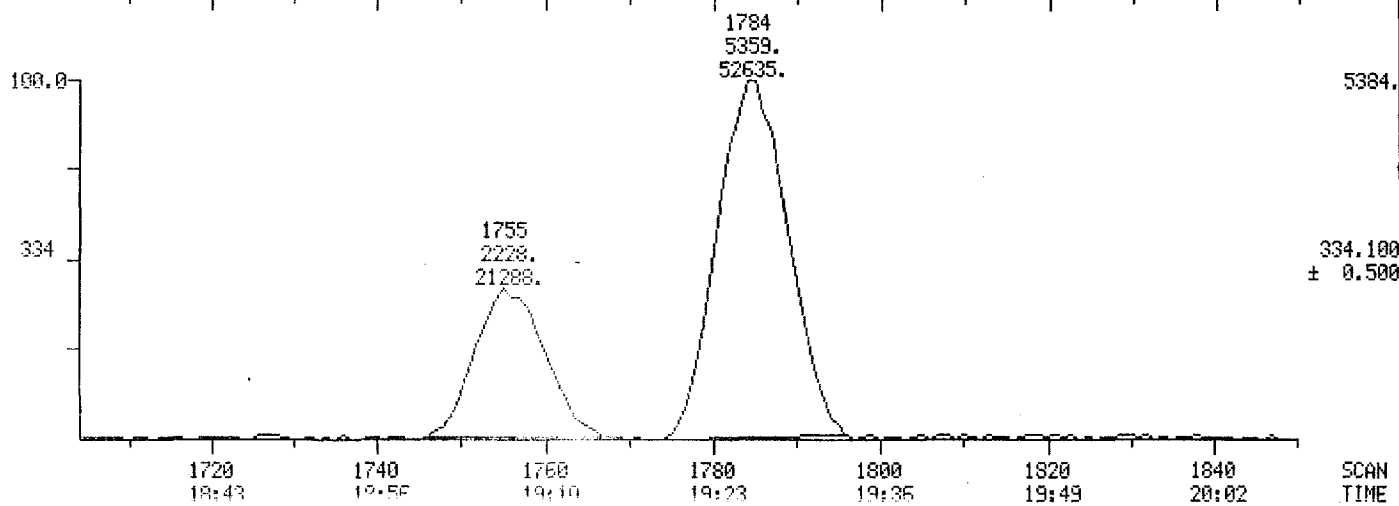
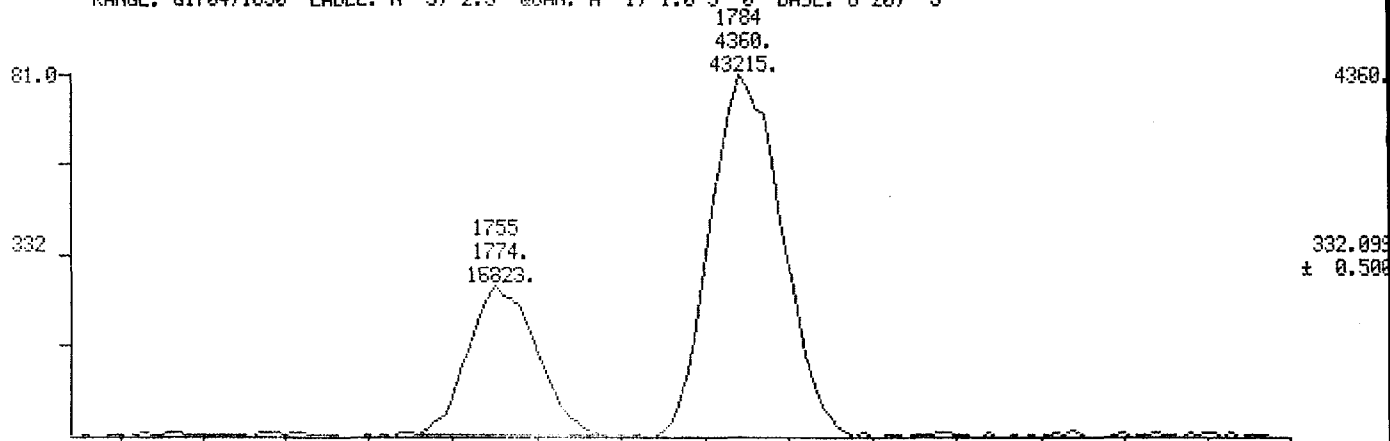
09/29/87 8:57:00

CALI: CAL092587 #3

SAMPLE: CASE 8019; BATCH3/213-01/10.04G

CONDS.: 60M SP2331/100/100-200025/200-24004/8

RANGE: G1704.1850 LABEL: N 5, 2.5 QUAN: A 1, 1.0 J 0 BASE: U 20, 3



SCAN TIME