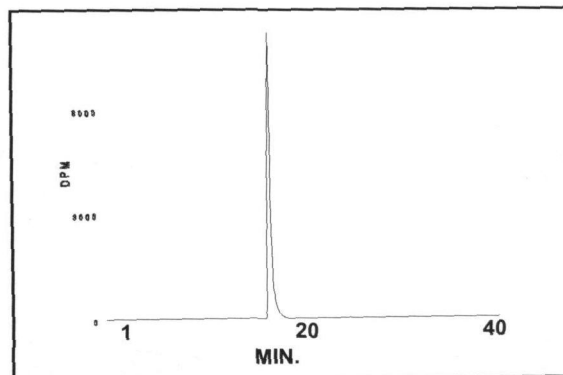
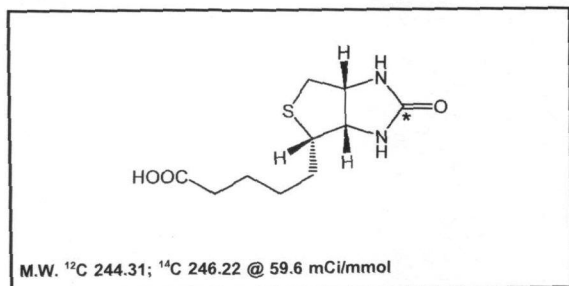




Product Data Sheet

MC-2345

***d*-Biotin, [thieno[3,4-*d*]imidazo-carbonyl-¹⁴C]-**



Lot #: 198-011-0596-A-20100402-ZX

Specific Activity: 59.6 mCi/mmol

Concentration: 0.1 mCi/ml; 413.12 µg/ml

Packaged in: DMSO with 50mM 2-mercaptoethanol

Date of Analysis: April 12, 2010

Radiochemical Purity: 99.8%

HPLC ANALYSIS LOT 198-011-0596-A-20100402-ZX
File Name: intk1734 Date and Time: 4/12/2010 3:08:24 PM
Unit 20 Radio

Peak #	Area %	Time	Area
1	0.15	4.40330	27.81047
2	99.83	16.65670	19089.57450
3	0.03	19.11000	5.14320
Totals	100.00		19122.52817

Storage Recommendation: Store at -20°C.

Product Warranty: Stated on the reverse side of this Product Data Sheet.

Caution: Not For Use In Humans Or Clinical Diagnosis. This product is intended for investigational or manufacturing use only. It is pharmaceutically unrefined and is not intended for use in humans. Responsibility for its use in humans, as a diagnostic reagent, and compliance with federal laws rests solely with the purchaser.

MC-2345

***d*-Biotin, [thieno[3,4-*d*]imidazo-carbonyl-¹⁴C]-**

Lot 198-011-0596-A-20100402-ZX

A) All chromatograms were run using the HPLC method described on the Product Data Sheet.

Concentrations and volumes:

Standard solution concentration was 1.0 mg/ml.

¹⁴**C Material** concentration was 0.1 mCi/ml.

Volume of standard alone injection was 1.0 µl.

Volume of ¹⁴**C Material** alone injection was 1.0 µl.

Co-injection solution consisted of 1.0 µl ¹⁴**C Material** + 1.0 µl standard.

Volume of co-injection was 2.0 µl.

Volume of blank injection was 1.0 µl.

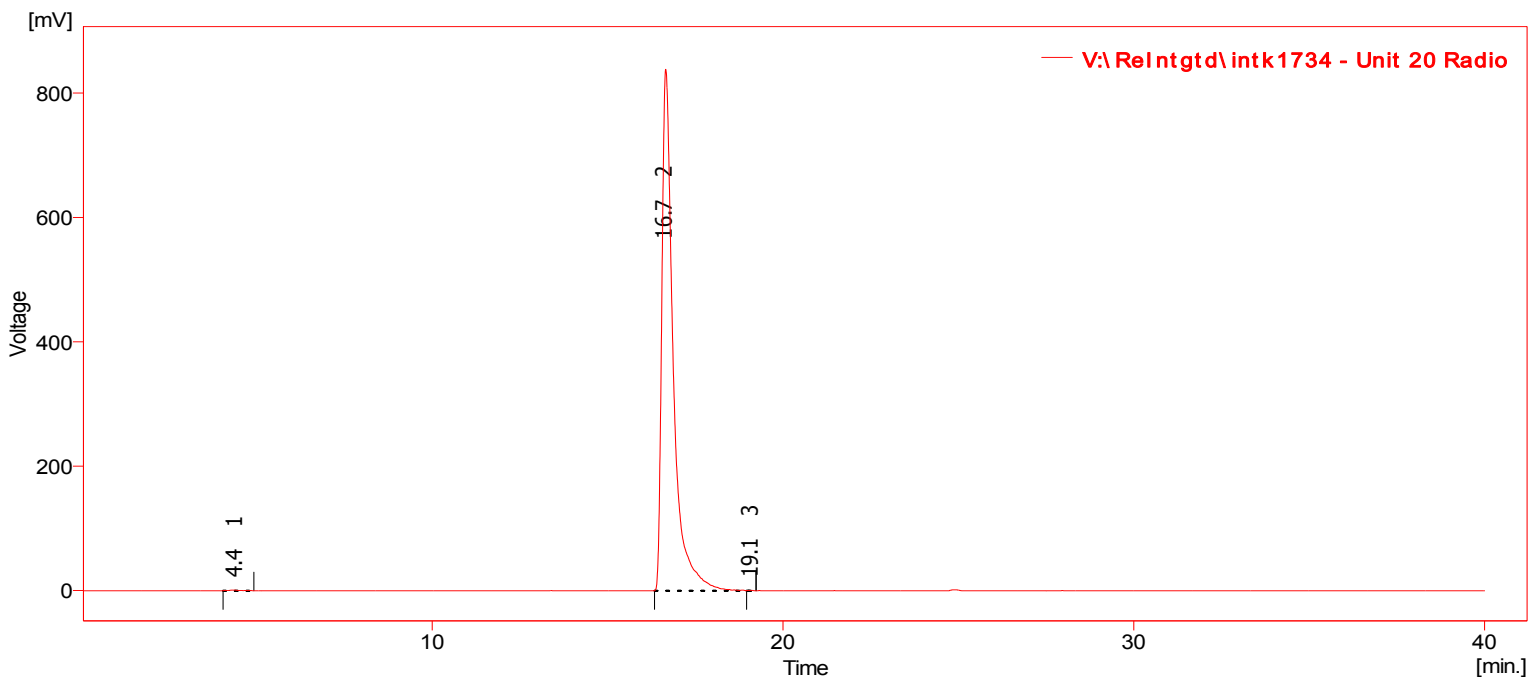
B) Mass spectrometry – Negative mode

C) NMR

MC-2345
d-Biotin, [thieno[3,4-d]imidazo-carbonyl-14C]-
Lot 198-011-0596-A-20100402-ZX

Chromatogram Info:

File Name	: V:\ReIntgtd\intk1734	File Created	: 5/14/2014 4:18:38 PM
Origin	: Acquired, Acquisition started 4/12/2010 2:28:26 PM	Acquired Date	: 4/12/2010 3:08:24 PM
Project	: Work1	By	: Administrator
Method	: Unit20_40_min_run	By	: Administrator
Description	: Radiochemical trace of 14C material alone	Modified	: 5/14/2014 4:30 PM
Created	: 4/9/2008 10:56 AM		
Column	:	Detection	: Radiochemical
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



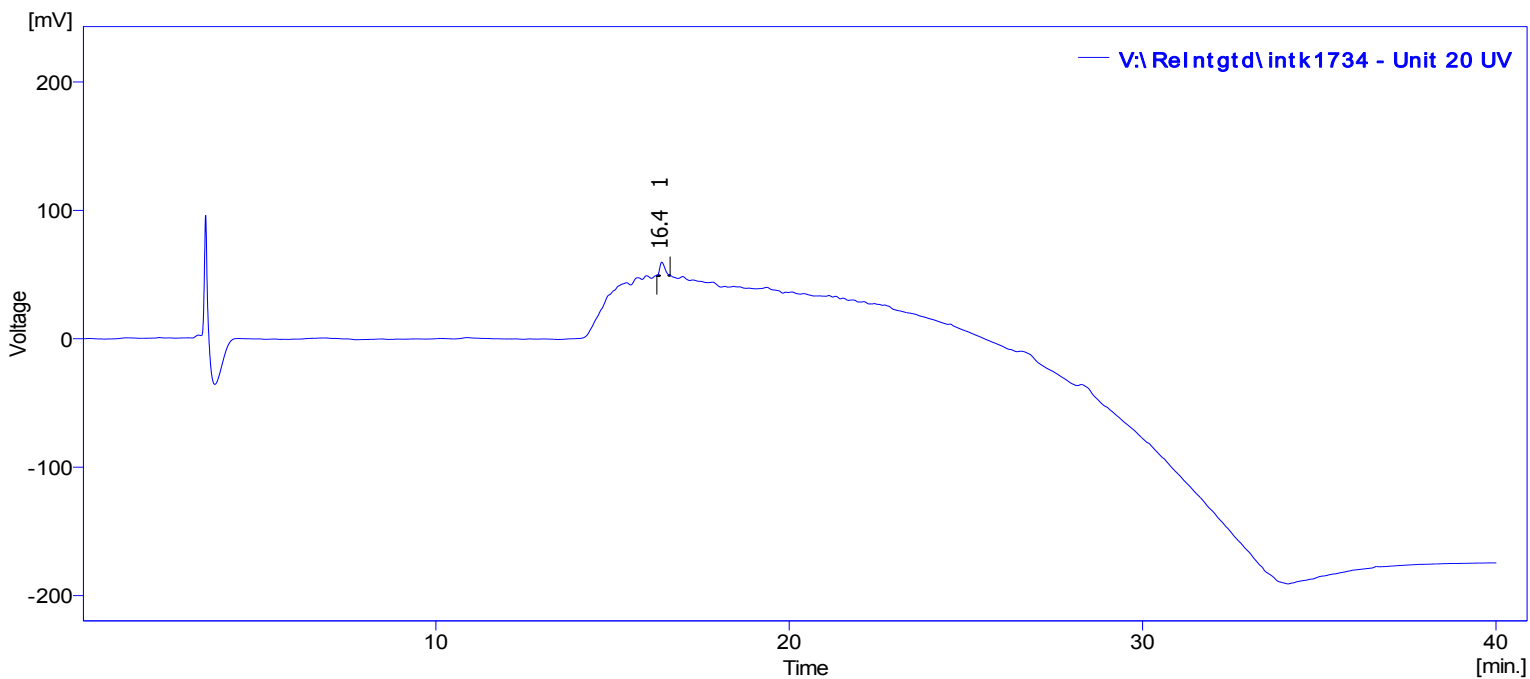
Result Table (Uncal - V:\ReIntgtd\intk1734 - Unit 20 Radio)

	Compound Name	Reten. Time [min]	Area [mV.s]	Height [mV]	Area [%]	Height [%]	W05 [min]	Efficiency [th.pl]	Eff/I [t.p./m]	Resolution [-]	Symmetry/Tailing [-]	Response Factor
1		4.40	27.810	0.98	0.15	0.1	0.29	1248	24968		1.15	
2		16.66	19089.575	838.55	99.83	99.8	0.31	15656	313114	23.83	4.47	
3		19.11	5.143	0.47	0.03	0.1	0.19	58063	1161255	5.79	0.78	
	Total		19122.528	840.00	100.00	100.0						

MC-2345
d-Biotin, [thieno[3,4-d]imidazo-carbonyl-14C]-
Lot 198-011-0596-A-20100402-ZX

Chromatogram Info:

File Name	: V:\Relntgtd\intk1734	File Created	: 5/14/2014 4:18:38 PM
Origin	: Acquired, Acquisition started 4/12/2010 2:28:26 PM	Acquired Date	: 4/12/2010 3:08:24 PM
Project	: Work1	By	: Administrator
Method	: Unit20_40_min_run	By	: Administrator
Description	: UV trace of 14C material alone		
Created	: 4/9/2008 10:56 AM	Modified	: 5/14/2014 4:18 PM
Column	:	Detection	: UV 210nm
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



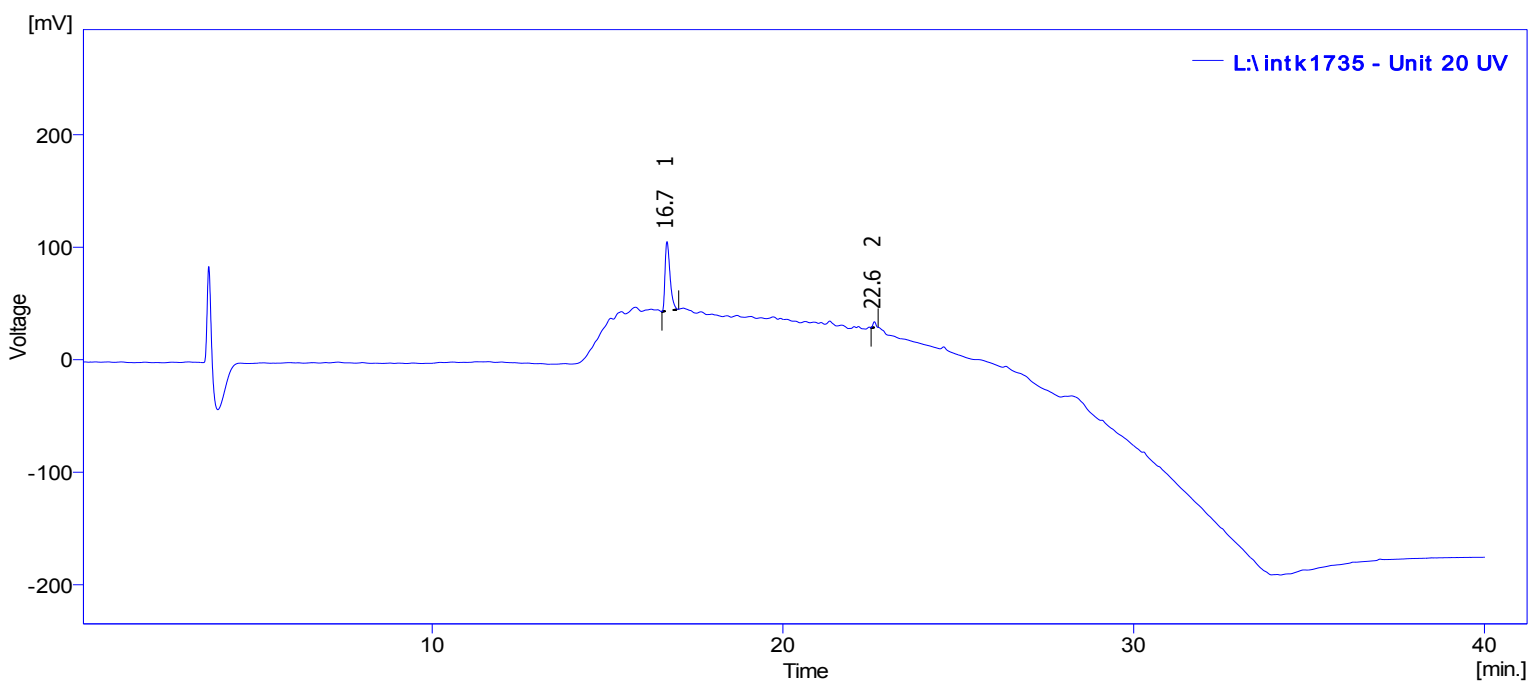
Result Table (Uncal - V:\Relntgtd\intk1734 - Unit 20 UV)

Compound Name	Reten. Time [min]	Area [mV.s]	Height [mV]	Area [%]	Height [%]	W05 [min]	Efficiency [th.pl]	Eff/l [t.p./m]	Resolution [-]	Symmetry/Tailing [-]	Response Factor
1	16.39	101.310	10.42	100.00	100.0	0.16	58157	1163146		1.39	
Total		101.310	10.42	100.00	100.0						

MC-2345
d-Biotin, [thieno[3,4-d]imidazo-carbonyl-14C]-
Lot 198-011-0596-A-20100402-ZX

Chromatogram Info:

File Name	: L:\intk1735	File Created	: 5/14/2014 4:07:24 PM
Origin	: Acquired, Acquisition started 4/12/2010 4:16:22 PM	Acquired Date	: 4/12/2010 4:56:20 PM
Project	: Work1	By	: Administrator
Method	: Unit20_40_min_run	By	: Administrator
Description	: UV trace of standard material alone		
Created	: 4/9/2008 10:56 AM	Modified	: 5/14/2014 4:31 PM
Column	:	Detection	: UV 210nm
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



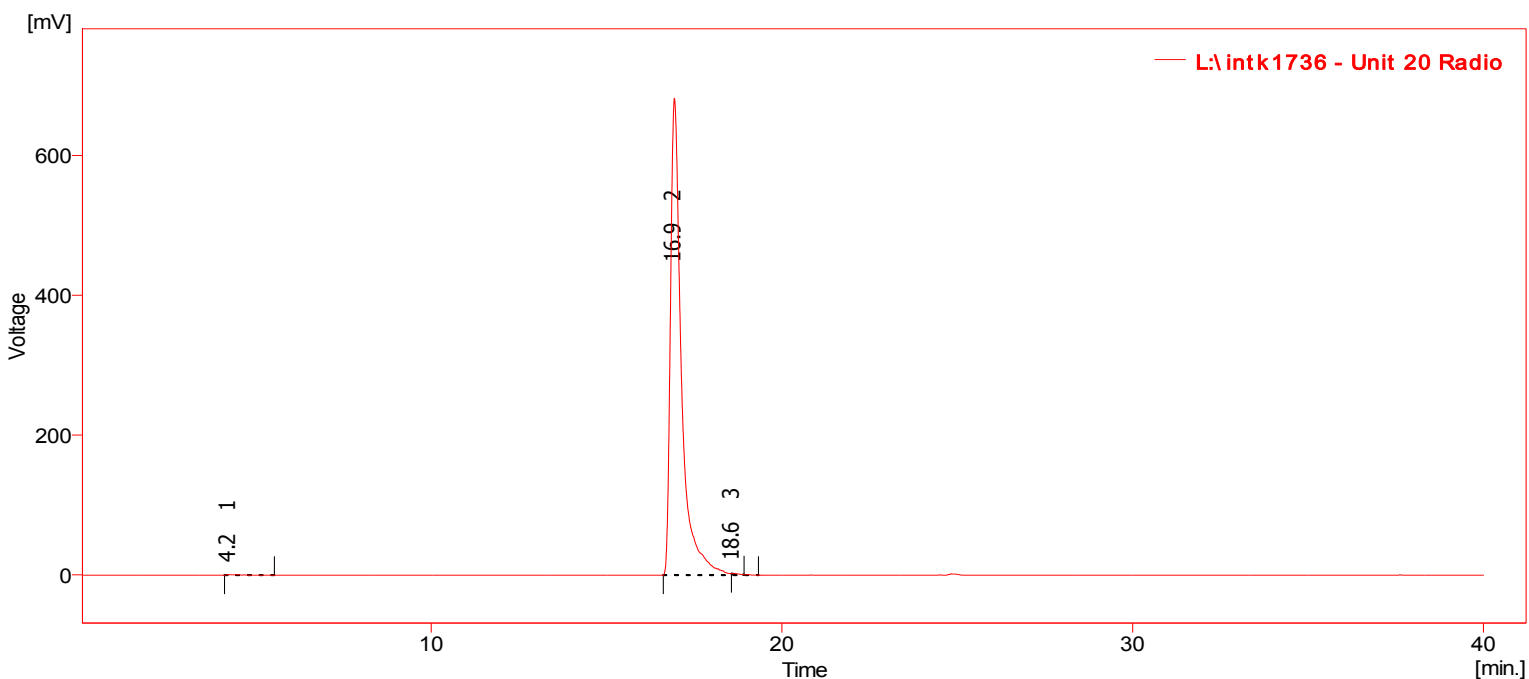
Result Table (Uncal - L:\intk1735 - Unit 20 UV)

	Compound Name	Reten. Time [min]	Area [mV.s]	Height [mV]	Area [%]	Height [%]	W05 [min]	Efficiency [th.pl]	Eff/I [t.p./m]	Resolution [-]	Symmetry/Tailing [-]	Response Factor
1		16.69	604.198	61.70	95.54	92.3	0.15	65663	1313266		1.59	
2		22.61	28.178	5.17	4.46	7.7	0.09	325019	6500388	28.29	1.04	
	Total		632.376	66.88	100.00	100.0						

MC-2345
d-Biotin, [thieno[3,4-d]imidazo-carbonyl-14C]-
Lot 198-011-0596-A-20100402-ZX

Chromatogram Info:

File Name	: L:\intk1736	File Created	: 5/14/2014 4:07:24 PM
Origin	: Acquired, Acquisition started 4/12/2010 5:05:02 PM	Acquired Date	: 4/12/2010 5:45:01 PM
Project	: Work1	By	: Administrator
Method	: Unit20_40_min_run	By	: Administrator
Description	: Radiochemical trace of 14C material co-injected with standard		
Created	: 4/9/2008 10:56 AM	Modified	: 5/14/2014 4:33 PM
Column	:	Detection	: Radiochemical
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



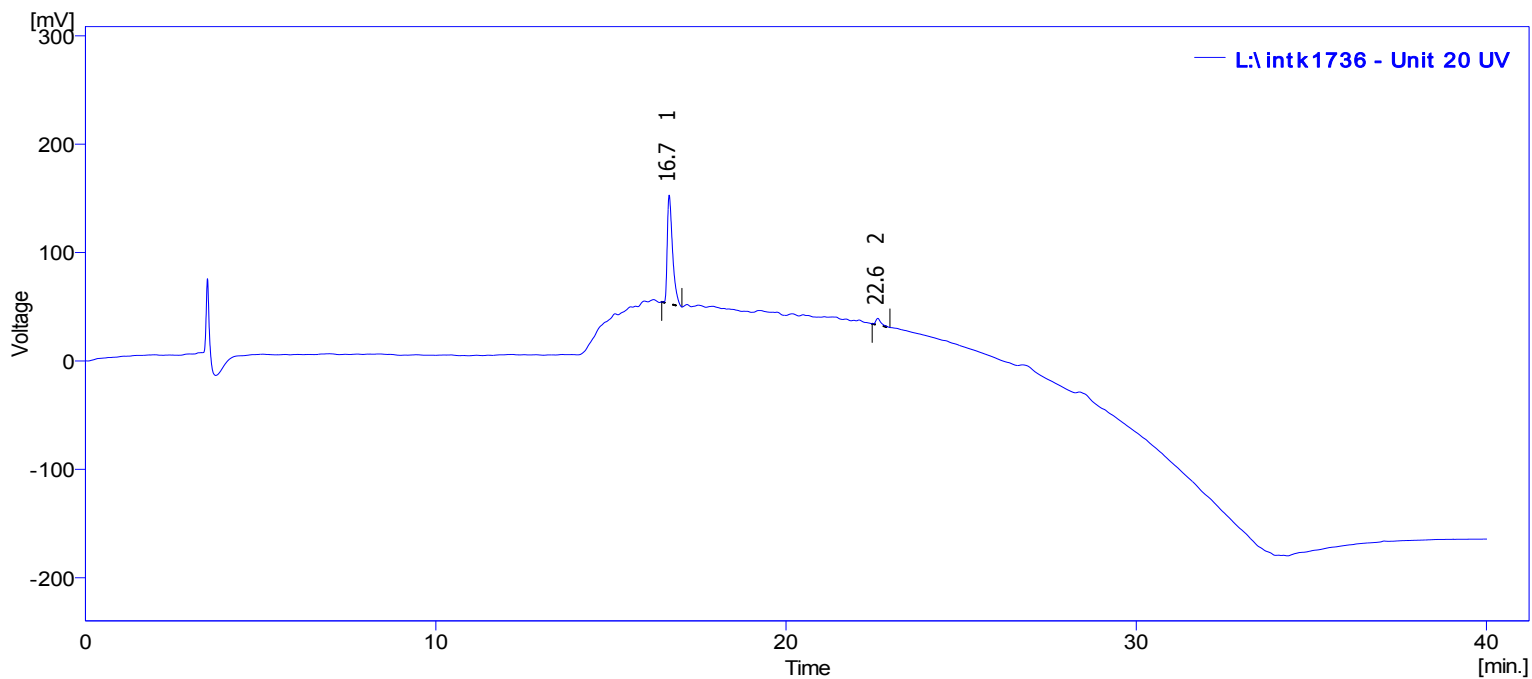
Result Table (Uncal - L:\intk1736 - Unit 20 Radio)

Compound Name	Reten. Time [min]	Area [mV.s]	Height [mV]	Area [%]	Height [%]	W05 [min]	Efficiency [th.pl]	Eff/I [t.p./m]	Resolution [-]	Symmetry/Tailing [-]	Response Factor
1	4.24	17.124	0.93	0.11	0.1	0.39	655	13096		1.99	
2	16.93	14946.883	682.19	99.83	99.8	0.30	17650	353006	21.71	4.11	
3	18.60	7.835	0.54	0.05	0.1	0.04	1197457	23949144	5.77	4.77	
Total		14971.842	683.66	100.00	100.0						

MC-2345
d-Biotin, [thieno[3,4-d]imidazo-carbonyl-14C]-
Lot 198-011-0596-A-20100402-ZX

Chromatogram Info:

File Name	: L:\intk1736	File Created	: 5/14/2014 4:07:24 PM
Origin	: Acquired, Acquisition started 4/12/2010 5:05:02 PM	Acquired Date	: 4/12/2010 5:45:01 PM
Project	: Work1	By	: Administrator
Method	: Unit20_40_min_run	By	: Administrator
Description	: UV trace of 14C material co-injected with standard	Modified	: 5/14/2014 4:16 PM
Created	: 4/9/2008 10:56 AM		
Column	:	Detection	: UV 210nm
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



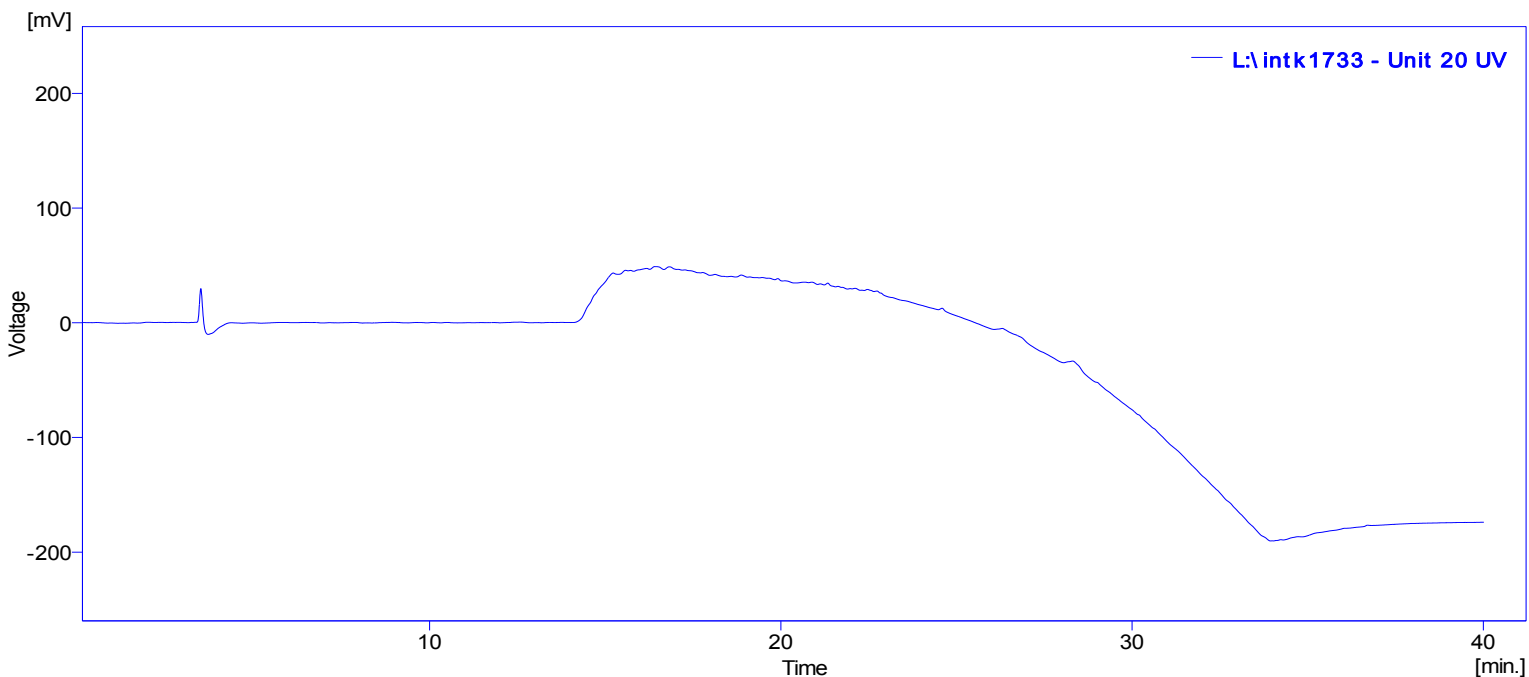
Result Table (Uncal - L:\intk1736 - Unit 20 UV)

	Compound Name	Reten. Time [min]	Area [mV.s]	Height [mV]	Area [%]	Height [%]	W05 [min]	Efficiency [th.pl]	Eff/I [t.p./m]	Resolution [-]	Symmetry/Tailing [-]	Response Factor
1		16.66	1047.884	100.24	94.34	94.2	0.16	62673	1253460		1.71	
2		22.62	62.888	6.12	5.66	5.8	0.14	137975	2759501	23.43	1.68	
	Total		1110.772	106.36	100.00	100.0						

MC-2345
d-Biotin, [thieno[3,4-d]imidazo-carbonyl-14C]-
Lot 198-011-0596-A-20100402-ZX

Chromatogram Info:

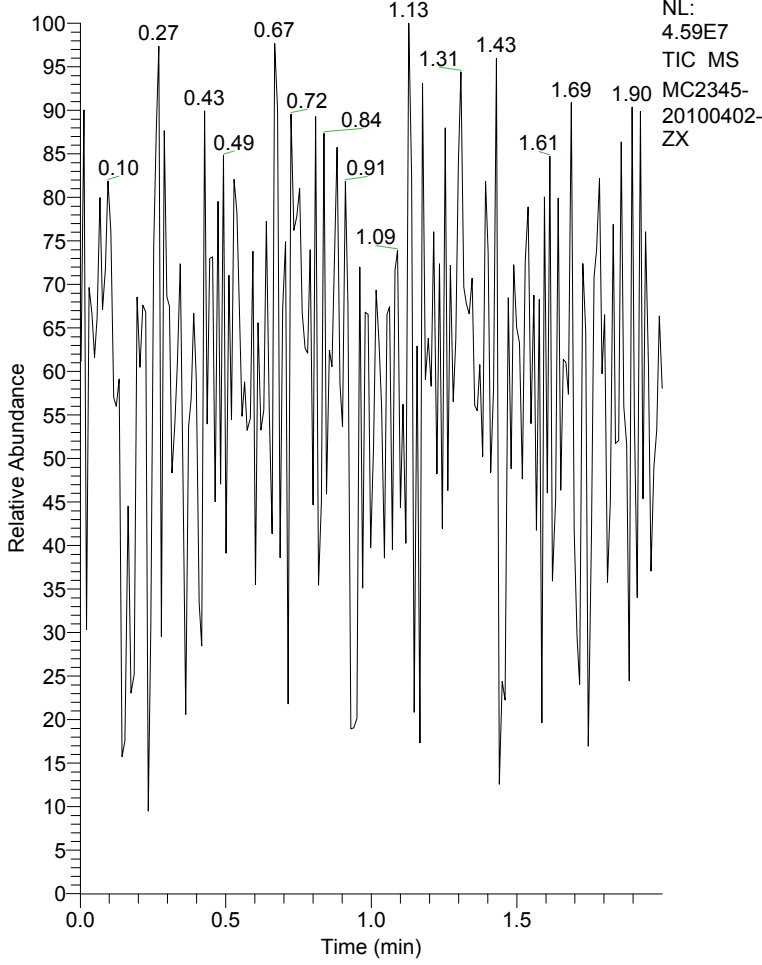
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Origin	: Acquired, Acquisition started 4/12/2010 1:36:31 PM	Acquired Date	: 4/12/2010 2:16:30 PM
Project	: Work1	By	: Administrator
Method	: Unit20_40_min_run	By	: Administrator
Description	: UV trace of blank injection		
Created	: 4/9/2008 10:56 AM	Modified	: 5/14/2014 4:14 PM
Column	:	Detection	: UV 210nm
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



Result Table (Uncal - L:\intk1733 - Unit 20 UV)

Compound Name	Reten. Time [min]	Area [mV.s]	Height [mV]	Area [%]	Height [%]	W05 [min]	Efficiency [th.pl]	Eff/l [t.p./m]	Resolution [-]	Symmetry/Tailing [-]	Response Factor
No peak to report											

RT: 0.00 - 2.00

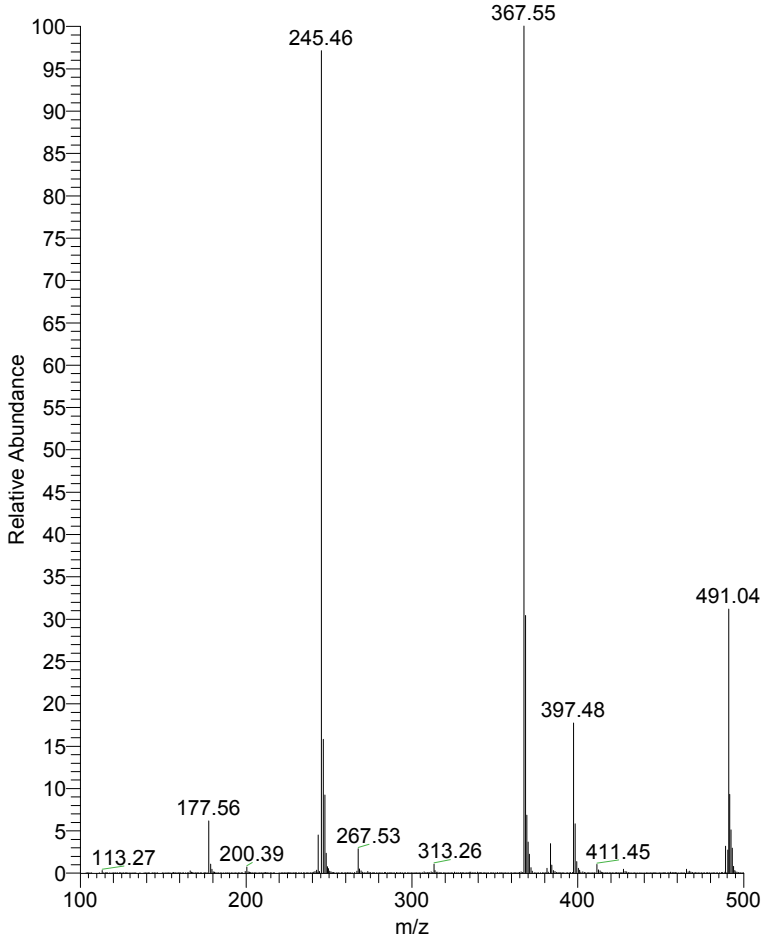


MC2345-20100402-ZX #1-213 RT: 0.00-2.00

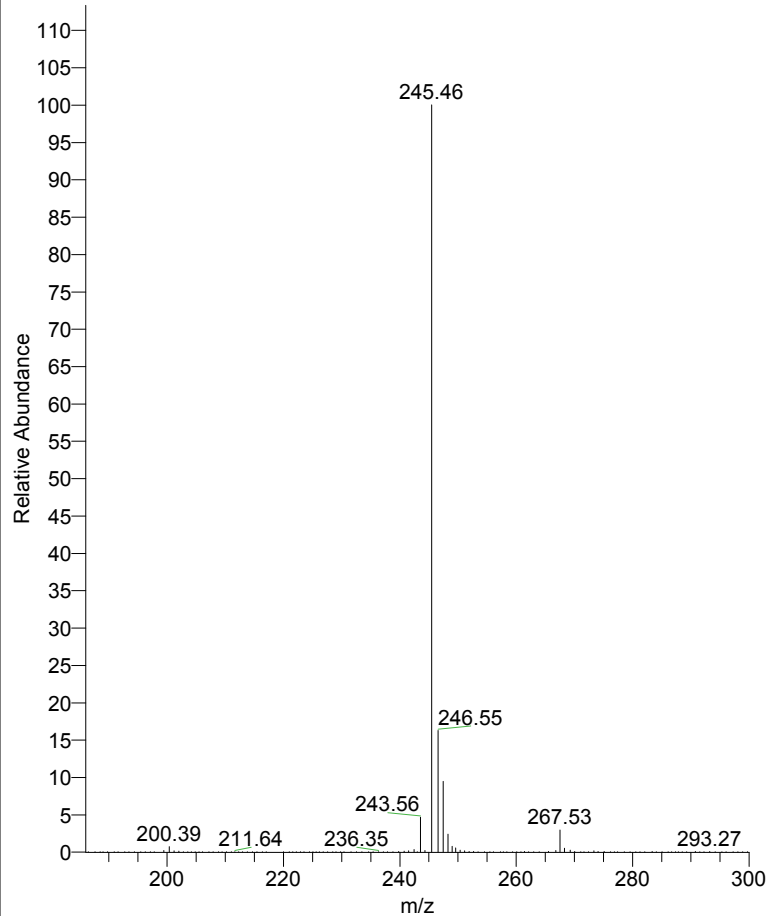
T: - c NSI Full ms [100.00-500.00]

m/z	Intensity	Relative
177.56	429885.3	6.13
243.56	315285.0	4.49
245.46	6812746.6	97.10
246.55	1107054.7	15.78
247.46	644810.8	9.19
248.26	163013.2	2.32
267.53	199224.3	2.84
367.55	7015991.2	100.00
368.47	2132725.0	30.40
369.23	479180.7	6.83
369.95	256601.8	3.66
383.45	243260.4	3.47
397.48	1242965.4	17.72
398.44	407489.8	5.81
489.17	221179.2	3.15
490.41	188347.9	2.68
491.04	2186976.9	31.17
491.68	651371.6	9.28
492.40	356571.4	5.08
493.21	204986.2	2.92

MC2345-20100402-ZX #1-213 RT: 0.00-2.00 AV: 213 NL: 7.02E6
T: - c NSI Full ms [100.00-500.00]



MC2345-20100402-ZX #1-213 RT: 0.00-2.00 AV: 213 NL: 6.81E6
T: - c NSI Full ms [100.00-500.00]



MC2345 1H NMR in D2O
Batch 20100402-ZX



MC2345
NAME
EXPNO 1
PROCNO 1
Date_ 20100413
Time 8.58
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT D2O
NS 32
DS 2
SWH 8278.146 Hz
FIDRES 0.126314 Hz
AQ 3.9584243 sec
RG 181
DW 60.400 usec
DE 6.50 usec
TE 294.2 K
D1 1.00000000 sec
TD0 1
===== CHANNEL f1 =====
NUC1 1H
P1 14.50 usec
PL1 -0.70 dB
PL1W 10.03411102 W
SF01 400.1324710 MHz
SI 32768
SF 400.1299812 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

