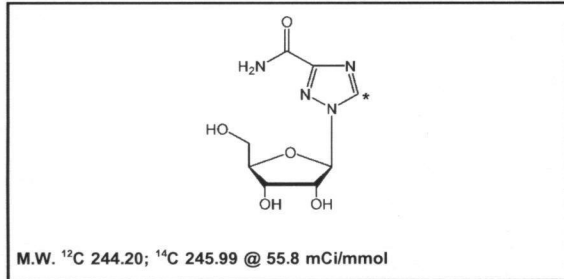




# Product Data Sheet

**MC-2011**

**D-Ribavirin, [5-<sup>14</sup>C]-**



**Lot #:** 165-078-0558-A-20081113-ZX

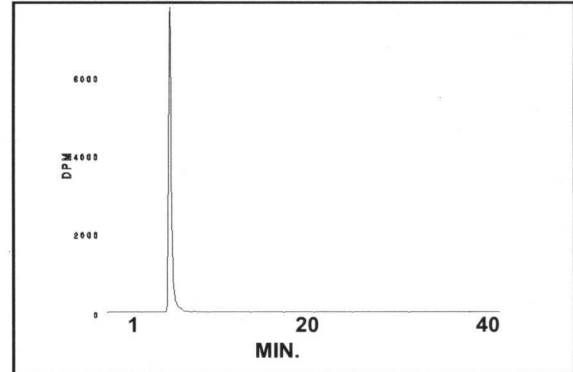
**Specific Activity:** 55.8 mCi/mmol

**Concentration:** 0.1 mCi/ml; 440.84 µg/ml

**Packaged in:** Ethanol solution

**Date of Analysis:** May 13, 2009

**Radiochemical Purity:** 99.3%



HPLC ANALYSIS LOT 165-078-0558-A-20081113-ZX  
File Name: inth806 Date and Time: 5/13/2009 2:35:15 PM  
Unit 17 Radio

Peak #	Area %	Time	Area
1	0.07	0.32330	10.68585
2	99.36	6.45670	16209.04192
3	0.16	7.45670	25.75612
4	0.12	8.29670	19.27976
5	0.29	9.00670	48.01030
Totals	100.00		16312.77395

**Stability and 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-2011**

**D-Ribavirin, [5-<sup>14</sup>C]-**

**Lot 165-078-0558-A-20081113-ZX**

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

**Concentrations and volumes:**

Standard solution concentration was 2.4 mg/mL.

**D-Ribavirin, [5-<sup>14</sup>C]-** concentration was 54.0 µCi/mL.

Volume of standard alone injection was 1.0 µL

Volume of **D-Ribavirin, [5-<sup>14</sup>C]-** alone injection was 2.0 µL.

Co-injection solution consisted of 2.0 µL **D-Ribavirin, [5-<sup>14</sup>C]-** + 1.0 µL standard.

Volume of co-injection was 3.0 µL.

Volume of blank injection was 2.0 µL.

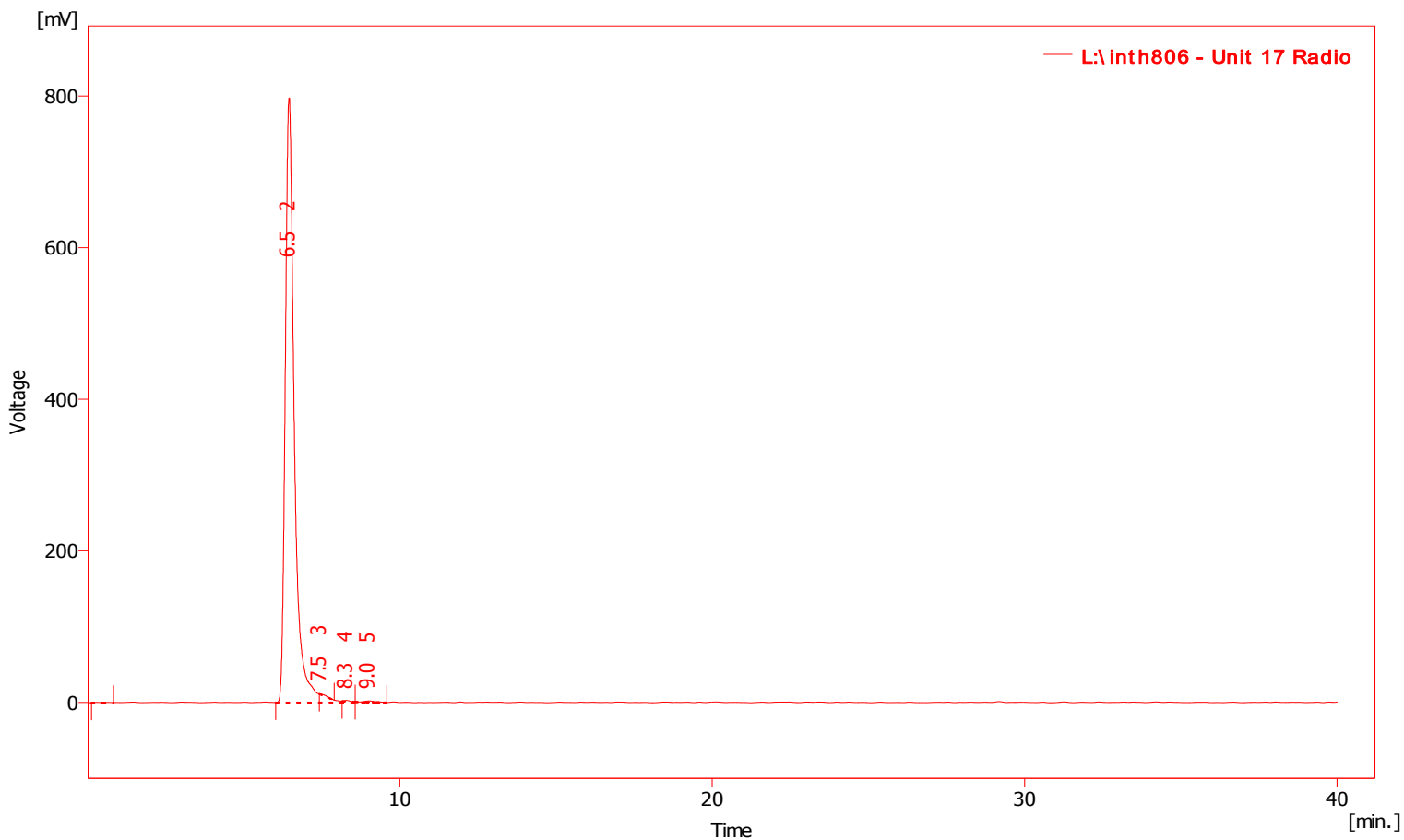
**B) Mass spectrometry – Positive mode**

**C) NMR**

**MC-2011**  
**D-Ribavirin, [5-14C]-**  
**Lot 165-078-0558-A-20081113-ZX**

Chromatogram Info:

File Name	: L:\inth806	File Created	: 2/11/2014 8:47:39 AM
Origin	: Acquired, Acquisition started 5/13/2009 1:55:17 PM	Acquired Date	: 5/13/2009 2:35:15 PM
Project	: Test	By	: Administrator
Method	: Unit17_40_min_run	By	: Administrator
Description	: Radiochemical trace of 14C material alone	Modified	: 2/11/2014 9:00 AM
Created	: 8/9/2007 8:59 AM		
Column	:	Detection	: Radiochemical
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



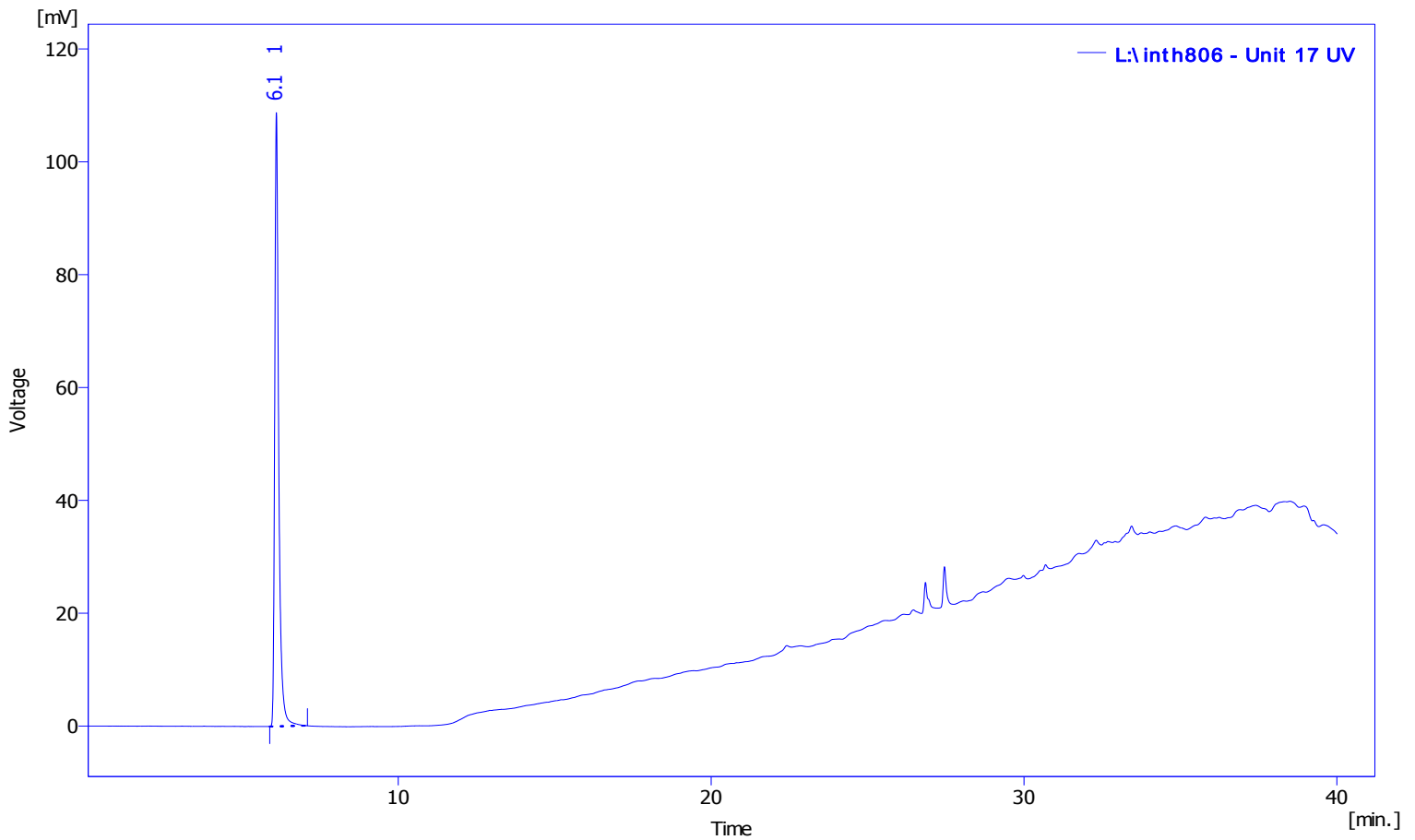
Result Table (Uncal - L:\inth806 - Unit 17 Radio)

	Compound Name	Reten. Time [min]	Area [mV.s]	Height [mV]	Area [%]	Height [%]	Efficiency [th.pl]	Eff/l [t.p./m]	Symmetry/Tailing [-]	Response Factor	Resolution [-]
1		0.32	10.686	0.44	0.07	0.05	6.84	136.76	1.86		
2		6.46	16209.042	797.80	99.36	99.43	0.00	0.00	4.20		14.4
3		7.46	25.756	0.90	0.16	0.11	5156.51	103130.23	7.89		3.6
4		8.30	19.280	1.46	0.12	0.18	10447.97	208959.34	1.23		3.7
5		9.01	48.010	1.80	0.29	0.22	2114.80	42295.97	1.26		1.4
		Total	16312.774	802.39	100.00	100.00					

**MC-2011**  
**D-Ribavirin, [5-14C]-**  
**Lot 165-078-0558-A-20081113-ZX**

Chromatogram Info:

File Name	: L:\inth806	File Created	: 2/11/2014 8:47:39 AM
Origin	: Acquired, Acquisition started 5/13/2009 1:55:17 PM	Acquired Date	: 5/13/2009 2:35:15 PM
Project	: Test	By	: Administrator
Method	: Unit17_40_min_run	By	: Administrator
Description	: UV trace of 14C material alone	Modified	: 2/11/2014 9:00 AM
Created	: 8/9/2007 8:59 AM		
Column	:	Detection	: UV 215nm
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



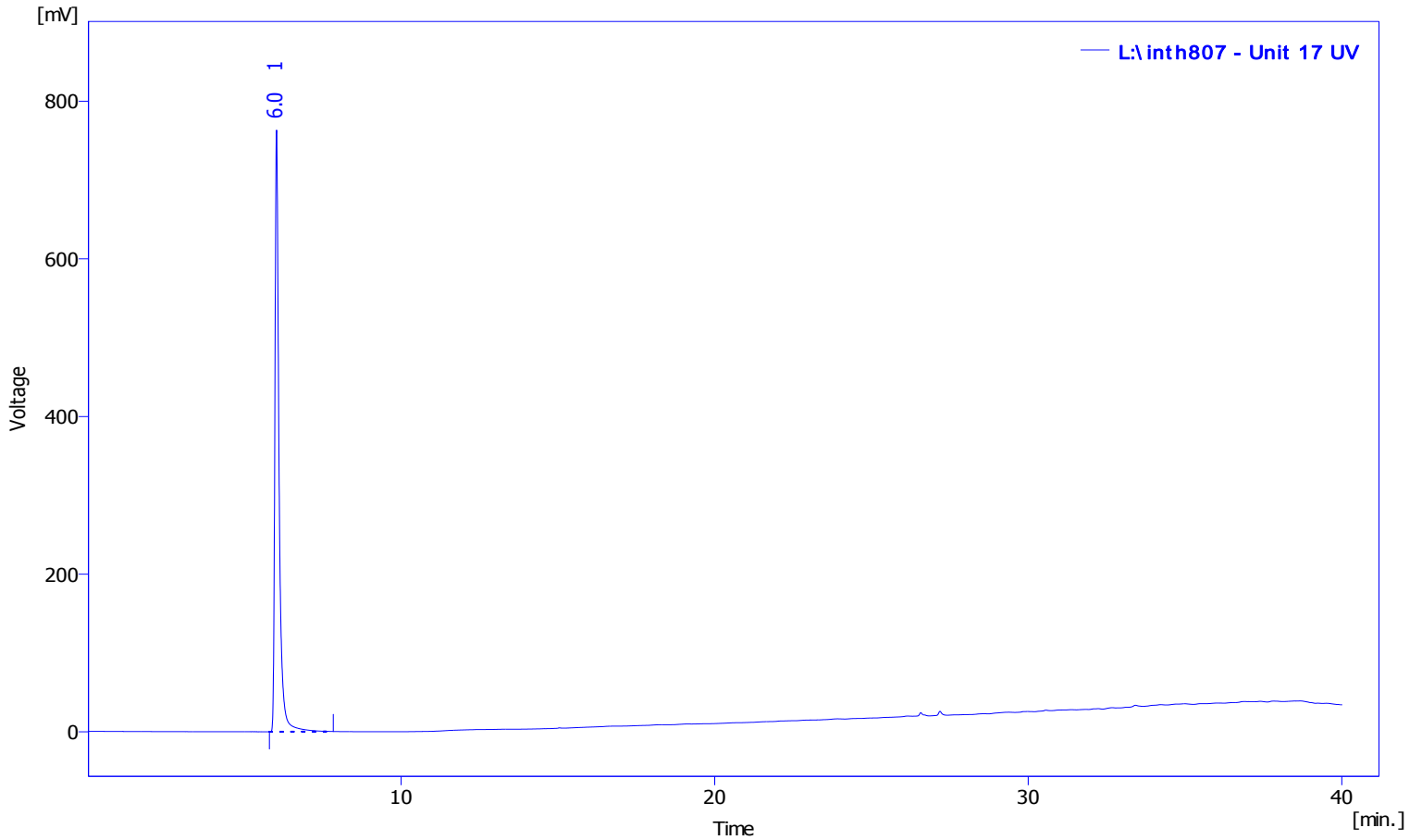
Result Table (Uncal - L:\inth806 - Unit 17 UV)

	Compound Name	Reten. Time [min]	Area [mV.s]	Height [mV]	Area [%]	Height [%]	Efficiency [th.pl]	Eff/l [t.p./m]	Symmetry/Tailing [-]	Response Factor	Resolution [-]
1		6.10	966.146	108.77	100.00	100.00	3953.64	79072.88	1.49		
		Total	966.146	108.77	100.00	100.00					

**MC-2011**  
**D-Ribavirin, [5-14C]-**  
**Lot 165-078-0558-A-20081113-ZX**

Chromatogram Info:

File Name	: L:\inth807	File Created	: 2/11/2014 8:47:39 AM
Origin	: Acquired, Acquisition started 5/13/2009 2:50:22 PM	Acquired Date	: 5/13/2009 3:30:21 PM
Project	: Test	By	: Administrator
Method	: Unit17_40_min_run	By	: Administrator
Description	: UV trace of standard alone	Modified	: 2/11/2014 9:01 AM
Created	: 8/9/2007 8:59 AM		
Column	:	Detection	: UV 215nm
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



Result Table (Uncal - L:\inth807 - Unit 17 UV)

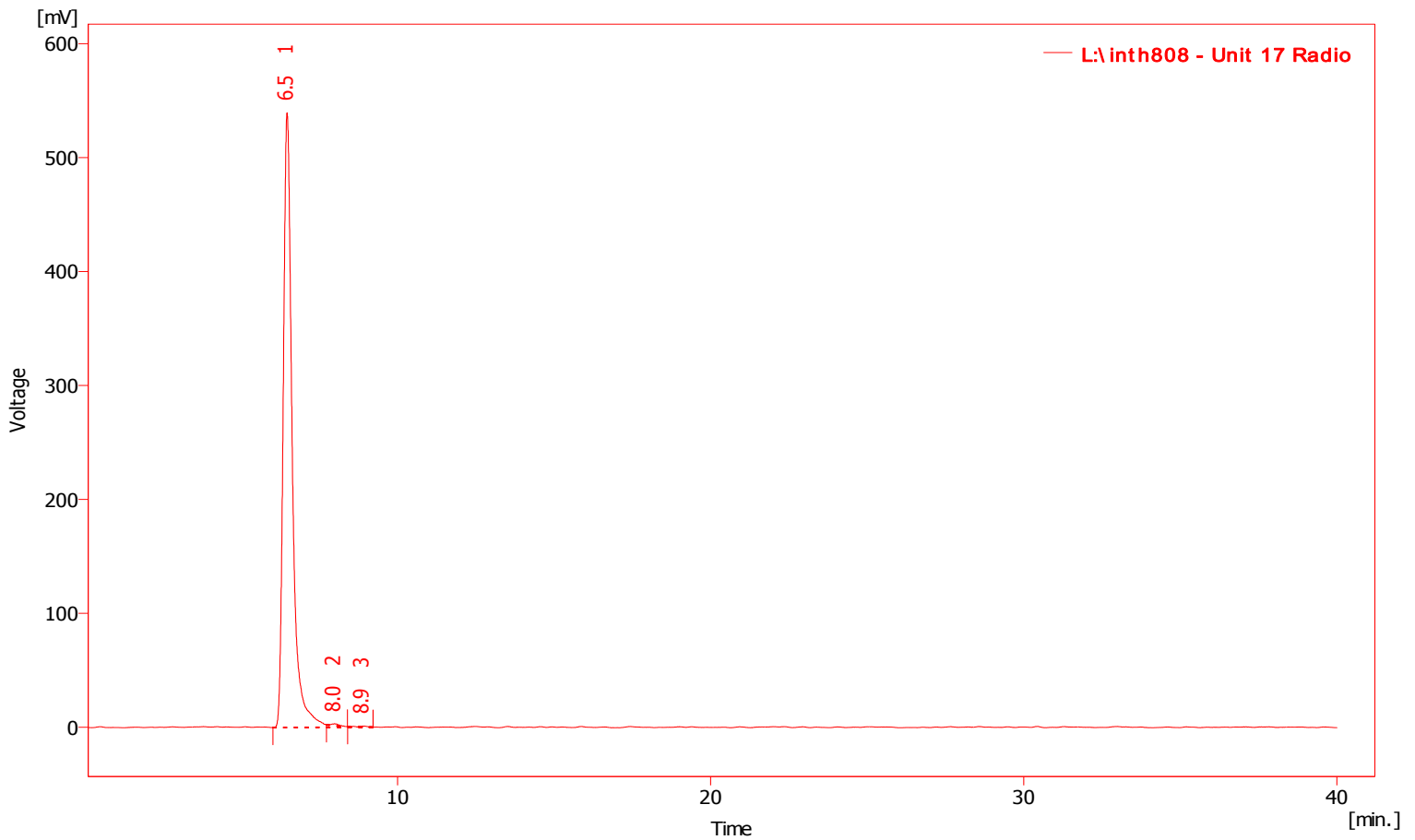
	Compound Name	Reten. Time [min]	Area [mV.s]	Height [mV]	Area [%]	Height [%]	Efficiency [th.pl]	Eff/l [t.p./m]	Symmetry/Tailing [-]	Response Factor	Resolution [-]
1		6.03	7101.414	763.22	100.00	100.00	1714.11	34282.12	1.57		
		Total	7101.414	763.22	100.00	100.00					



**MC-2011**  
**D-Ribavirin, [5-14C]-**  
**Lot 165-078-0558-A-20081113-ZX**

Chromatogram Info:

File Name	: L:\inth808	File Created	: 2/11/2014 8:47:39 AM
Origin	: Acquired, Acquisition started 5/13/2009 3:44:15 PM	Acquired Date	: 5/13/2009 4:24:13 PM
Project	: Test	By	: Administrator
Method	: Unit17_40_min_run	By	: Administrator
Description	: Radiochemical trace of 14C material co-injected with standard	Modified	: 2/11/2014 9:24 AM
Created	: 8/9/2007 8:59 AM		
Column	:	Detection	: Radiochemical
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



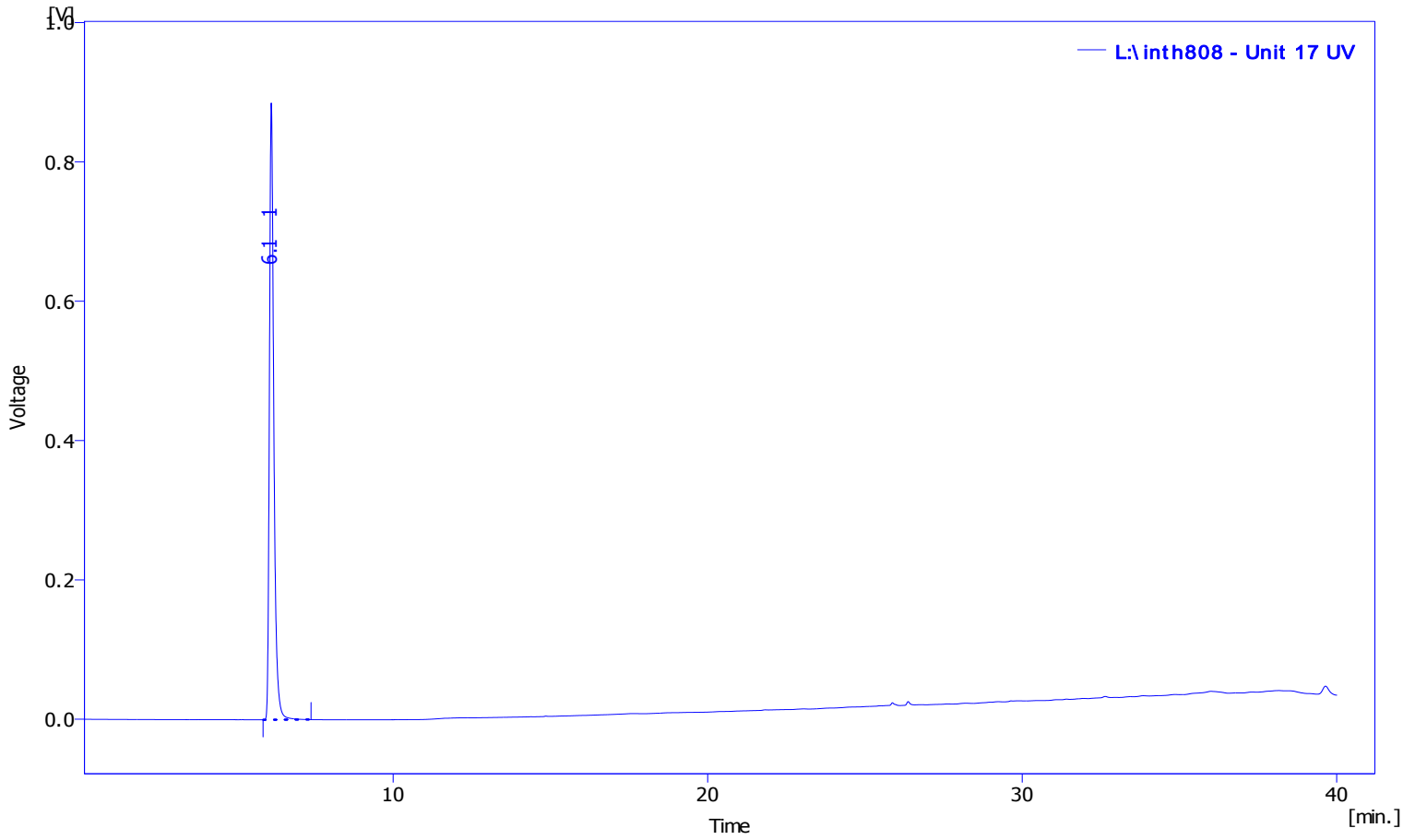
Result Table (Uncal - L:\inth808 - Unit 17 Radio)

	Compound Name	Reten. Time [min]	Area [mV.s]	Height [mV]	Area [%]	Height [%]	Efficiency [th.pl]	Eff/I [t.p./m]	Symmetry/Tailing [-]	Response Factor	Resolution [-]
1		6.47	10791.503	539.57	99.55	99.49	0.00	0.00	3.53		
2		7.99	29.775	1.80	0.27	0.33	4107.97	82159.46	1.18		3.2
3		8.89	18.881	0.97	0.17	0.18	2162.72	43254.37	1.68		2.2
		Total	10840.160	542.33	100.00	100.00					

**MC-2011**  
**D-Ribavirin, [5-14C]-**  
**Lot 165-078-0558-A-20081113-ZX**

Chromatogram Info:

File Name	: L:\inth808	File Created	: 2/11/2014 8:47:39 AM
Origin	: Acquired, Acquisition started 5/13/2009 3:44:15 PM	Acquired Date	: 5/13/2009 4:24:13 PM
Project	: Test	By	: Administrator
Method	: Unit17_40_min_run	By	: Administrator
Description	: UV trace of 14C material co-injected with standard	Modified	: 2/11/2014 9:27 AM
Created	: 8/9/2007 8:59 AM		
Column	:	Detection	: UV 215nm
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



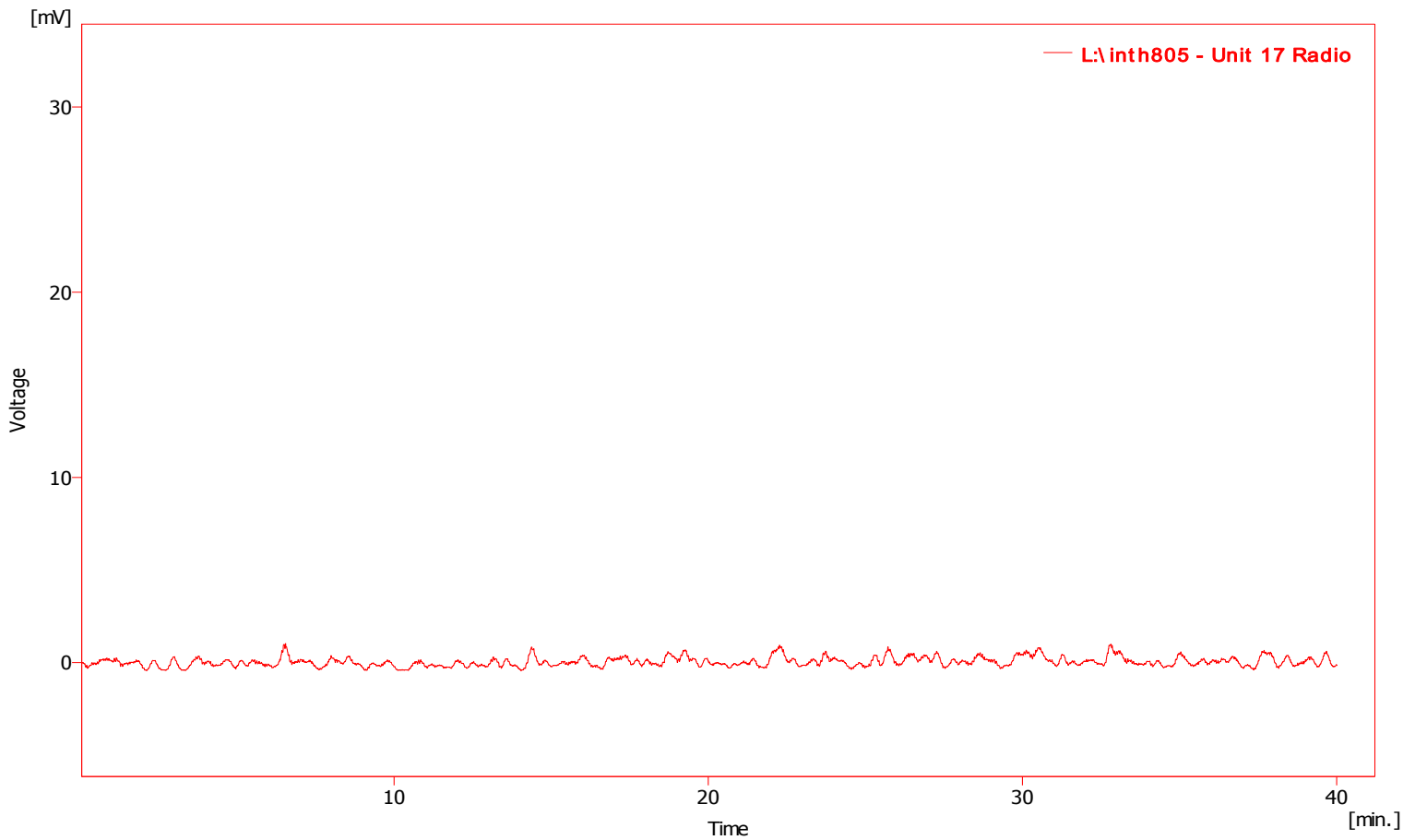
Result Table (Uncal - L:\inth808 - Unit 17 UV)

	Compound Name	Reten. Time [min]	Area [mV.s]	Height [mV]	Area [%]	Height [%]	Efficiency [th.pl]	Eff/I [t.p./m]	Symmetry/Tailing [-]	Response Factor	Resolution [-]
1		6.12	8659.212	885.35	100.00	100.00	4350.82	87016.48	1.41		
		Total	8659.212	885.35	100.00	100.00					

**MC-2011**  
**D-Ribavirin, [5-14C]-**  
**Lot 165-078-0558-A-20081113-ZX**

Chromatogram Info:

File Name	: L:\inth805	File Created	: 2/11/2014 8:47:39 AM
Origin	: Acquired, Acquisition started 5/13/2009 12:52:42 PM	Acquired Date	: 5/13/2009 1:32:41 PM
Project	: Test	By	: Administrator
Method	: Unit17_40_min_run	By	: Administrator
Description	: Radiochemical trace of blank injection	Modified	: 2/11/2014 9:29 AM
Created	: 8/9/2007 8:59 AM		
Column	:	Detection	: Radiochemical
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



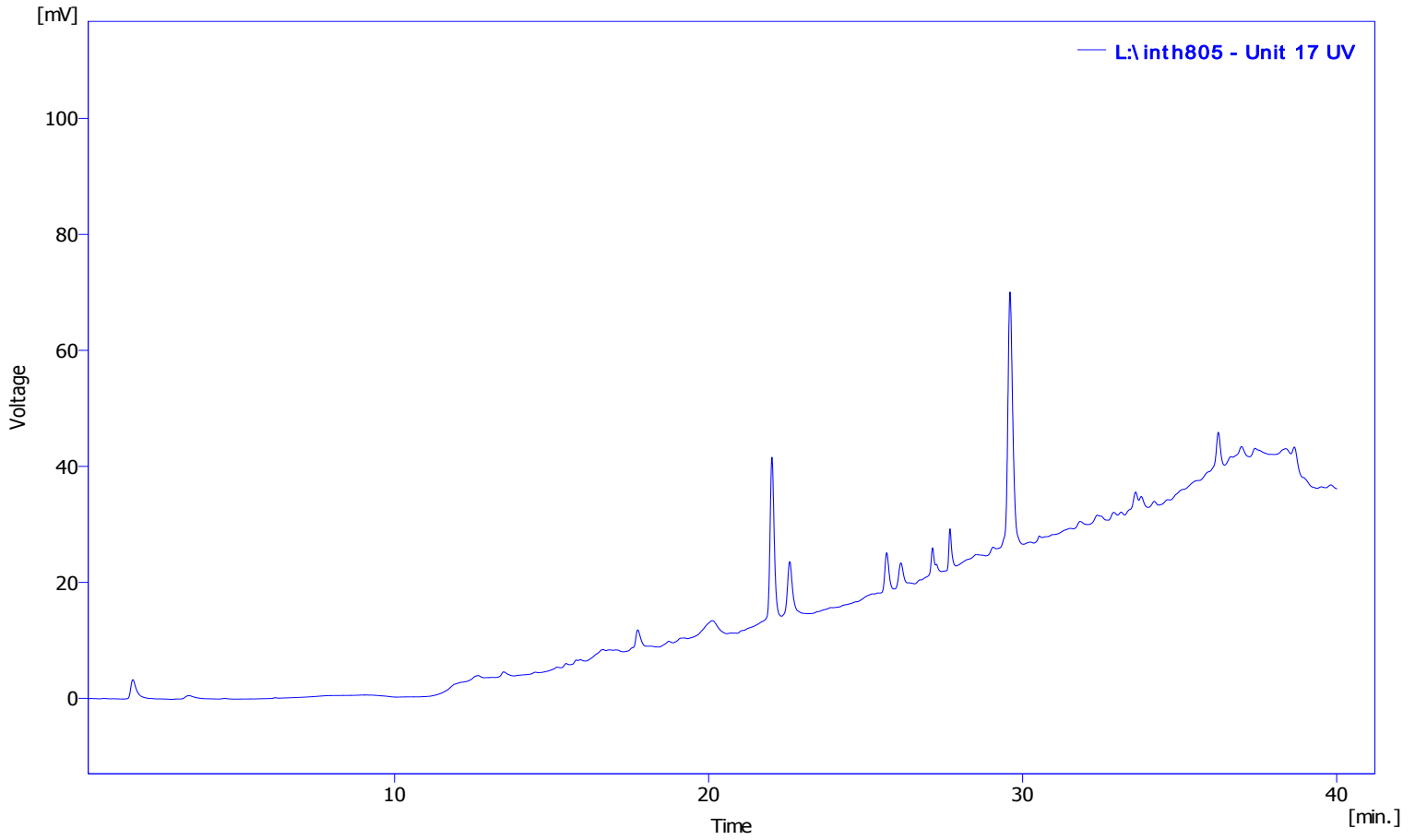
Result Table (Uncal - L:\inth805 - Unit 17 Radio)

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

**MC-2011**  
**D-Ribavirin, [5-14C]-**  
**Lot 165-078-0558-A-20081113-ZX**

Chromatogram Info:

File Name	: L:\inth805	File Created	: 2/11/2014 8:47:39 AM
Origin	: Acquired, Acquisition started 5/13/2009 12:52:42 PM	Acquired Date	: 5/13/2009 1:32:41 PM
Project	: Test	By	: Administrator
Method	: Unit17_40_min_run	By	: Administrator
Description	: UV trace of blank injection	Modified	: 2/11/2014 9:30 AM
Created	: 8/9/2007 8:59 AM		
Column	:	Detection	: UV 215nm
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		

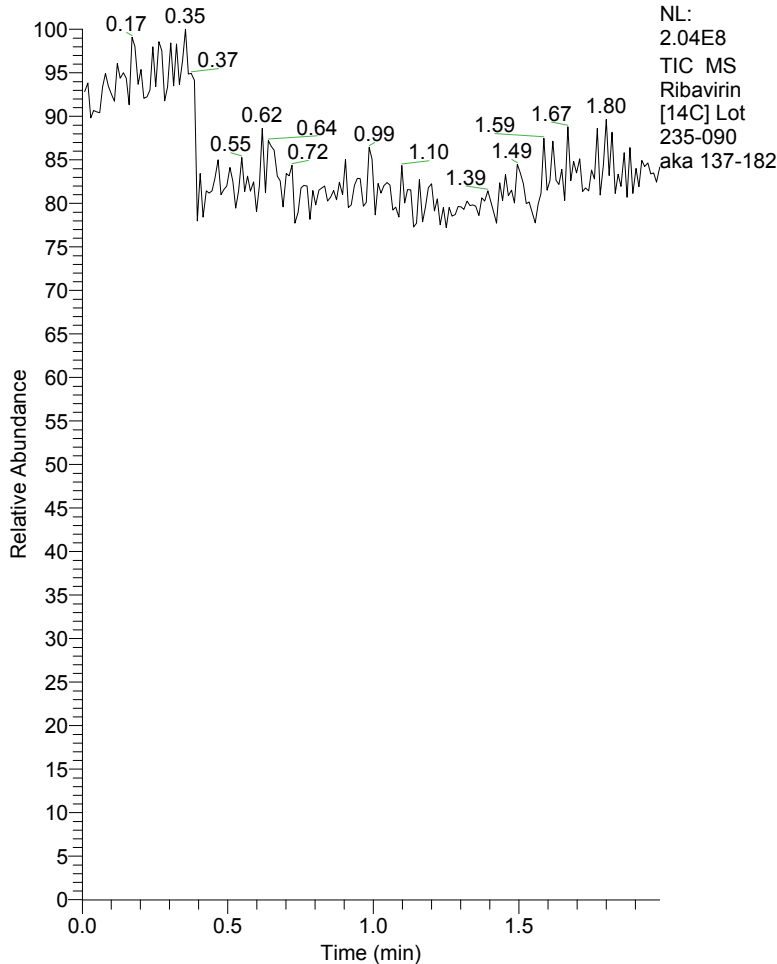


*Result Table (Uncal - L:\inth805 - Unit 17 UV)*

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



RT: 0.00 - 1.98



Ribavirin [14C] Batch# 20081113-ZX

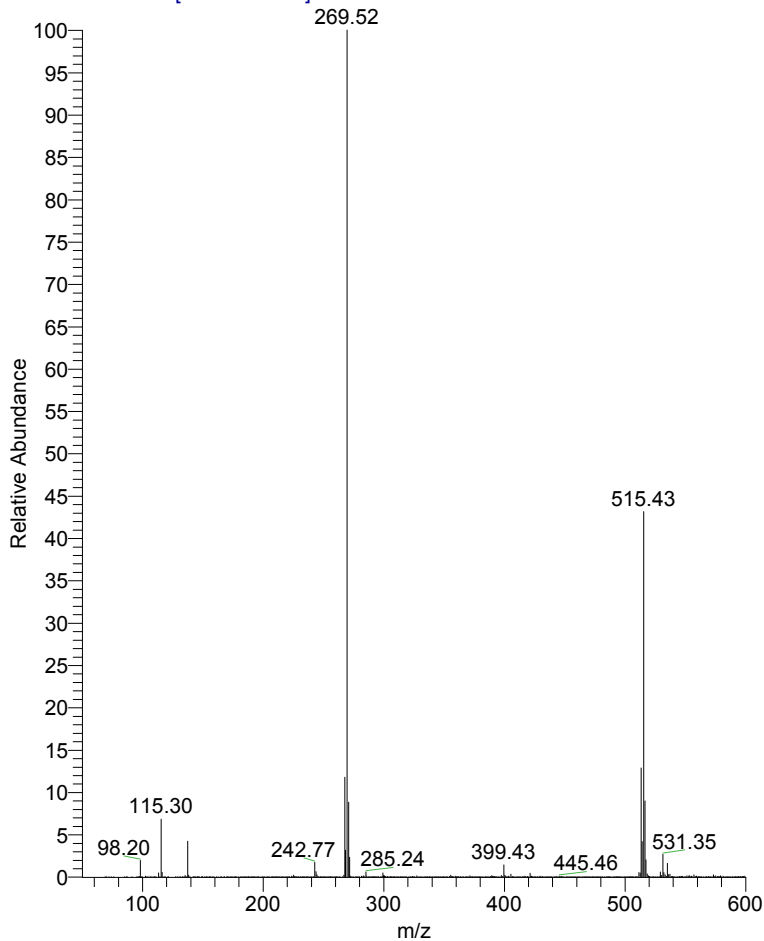
T: + c NSI Full ms [50.00-600.00]

m/z = 250.88-295.61

m/z	Intensity	Relative
261.98	4524.0	0.01
263.00	2506.5	0.00
263.79	3531.0	0.00
265.57	24429.3	0.03
266.90	143887.1	0.20
267.65	8555451.7	11.78
268.22	2289947.9	3.15
269.52	72654149.8	100.00
270.77	6405987.0	8.82
271.56	1675119.1	2.31
272.27	74634.7	0.10
273.21	19006.8	0.03
274.40	668.2	0.00
275.24	1246.8	0.00
276.51	2393.2	0.00
277.19	2434.2	0.00
277.98	3303.7	0.00
278.71	3113.9	0.00
279.96	3727.8	0.01
281.37	55805.6	0.08
282.04	5894.3	0.01
282.74	26040.4	0.04
283.39	93274.0	0.13
284.23	22759.2	0.03

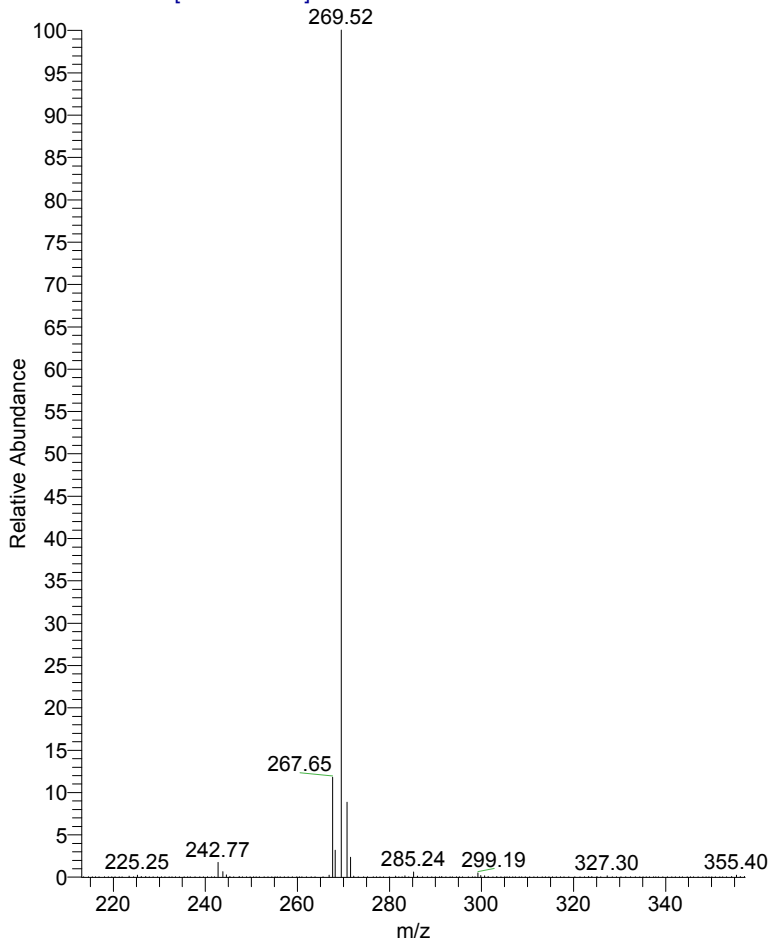
Ribavirin [14C] Batch # 20081113-ZX RT: 0.01-1.98 AV: 195 NL:

T: + c NSI Full ms [50.00-600.00]



Ribavirin [14C] Batch# 20081113-ZX RT: 0.01-1.98 AV: 195 NL:

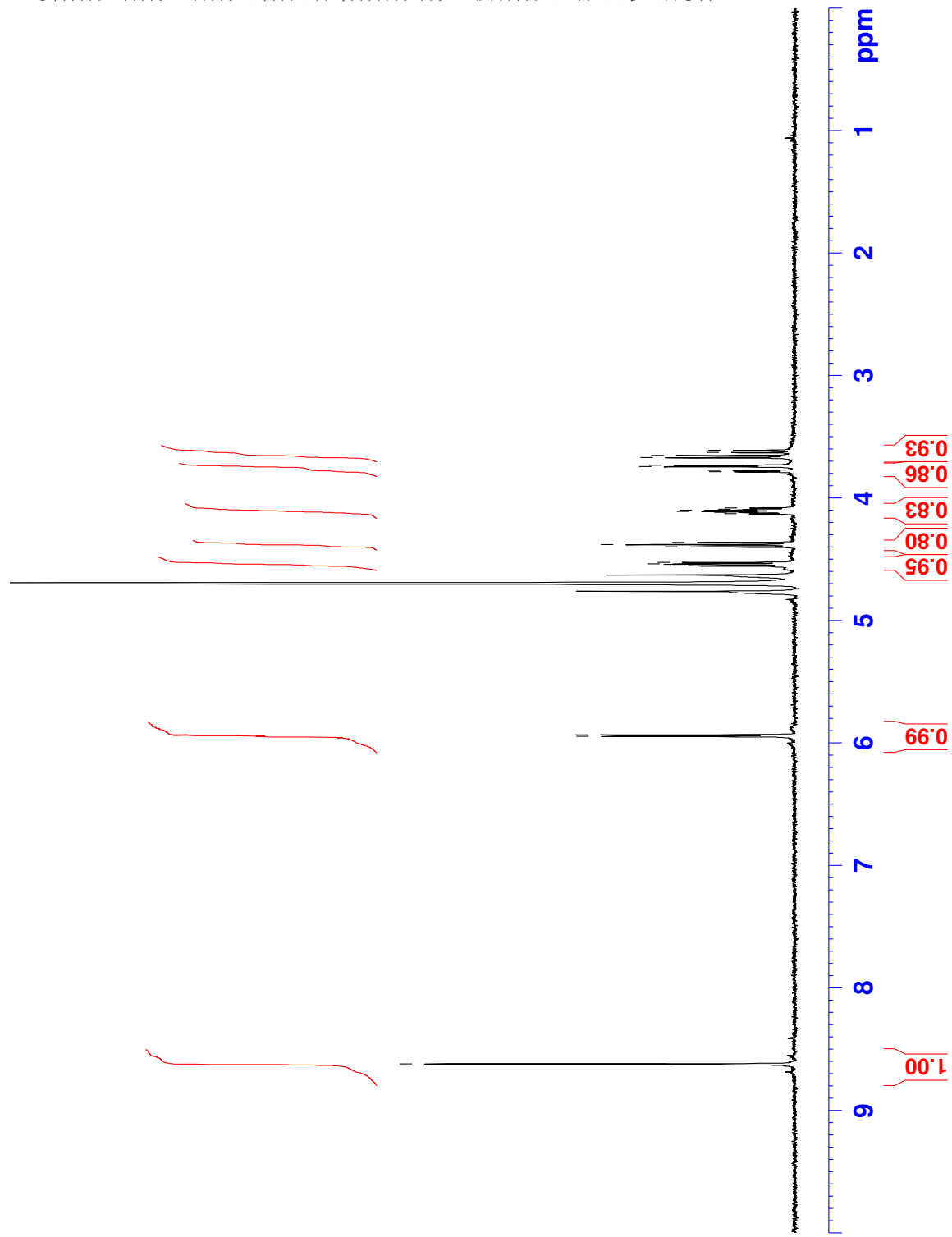
T: + c NSI Full ms [50.00-600.00]



MC2011 1H NMR in D2O  
Batch 20081113-ZX



8.620  
5.946  
5.934  
4.555  
4.542  
4.538  
4.526  
4.399  
4.381  
4.363  
4.128  
4.117  
4.110  
4.099  
4.092  
4.081  
3.786  
3.775  
3.744  
3.733  
3.670  
3.652  
3.628  
3.610



Current Data Parameters  
NAME MC2011-20081113-ZX  
EXPNO 1  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20090514  
Time 16.02  
INSTRUM spect  
PROBHD 5 mm DUX 3H-1H  
PULPROG zg30  
TD 65536  
SOLVENT D2O  
NS 496  
DS 2  
SWH 6172.839 Hz  
FIDRES 0.094190 Hz  
AQ 5.3084660 sec  
RG 362  
DE 81.000 usec  
TE 6.00 usec  
D1 300.0 K  
D0 1.0000000 sec  
TD0 1

==== CHANNEL f1 =====  
NUC1 1H  
P1 10.25 usec  
PL1 0.00 dB  
SF01 300.1318534 MHz

F2 - Processing parameters  
SI 32768  
SF 300.1300000 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00