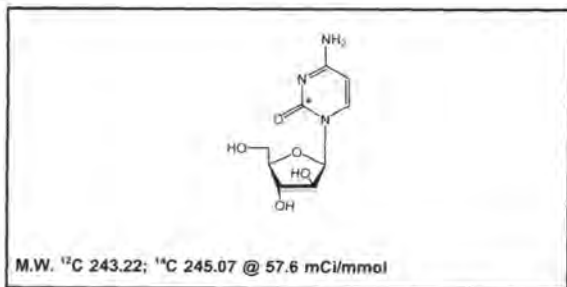




Product Data Sheet

MC-109

Cytarabine, [cytosine-2-¹⁴C]



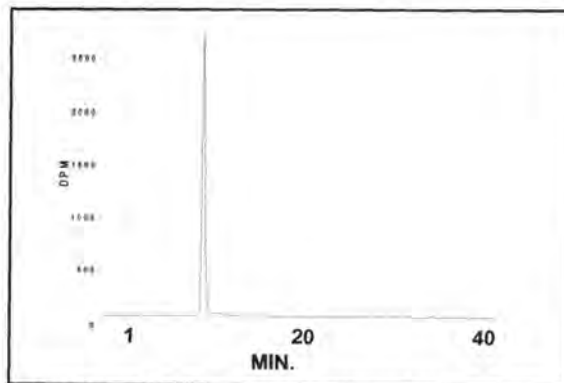
Lot #: 247-175-0576-A-20130506-PVA

Specific Activity: 57.6 mCi/mmol

Packaged as: Solid

Date of Analysis: May 7, 2013

Radiochemical Purity: 98.0%



HPLC ANALYSIS LOT 247-175-0576-A-20130506-PVA
File Name: intr2725 Date and Time: 5/7/2013 1:14:30 PM
Unit R Radio

Peak #	Area %	Time	Area
1	98.02	10.20800	5855.01789
2	0.11	10.79600	6.71425
3	0.08	11.01200	4.89643
4	0.37	11.29600	22.27149
5	0.92	11.96000	55.07738
6	0.49	12.55200	29.38200
Totals	100.00		5973.35944

Stability and Storage Recommendation: The rate of decomposition is approximately 0.5%/month for the first six months after purification when stored 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-109

Cytarabine, [cytosine-2-¹⁴C]

Lot 247-175-0576-A-20130506-PVA

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.

Cytarabine, [cytosine-2-¹⁴C] concentration was 0.1 mCi/mL.

Volume of standard alone injection was 1.0 µL.

Volume of **Cytarabine, [cytosine-2-¹⁴C]** alone injection was 1.0 µL.

Co-injection solution consisted of 0.5 µL **Cytarabine, [cytosine-2-¹⁴C]** + 0.5 µL standard.

Volume of co-injection was 1.0 µL.

Volume of blank injection was 5.0 µL.

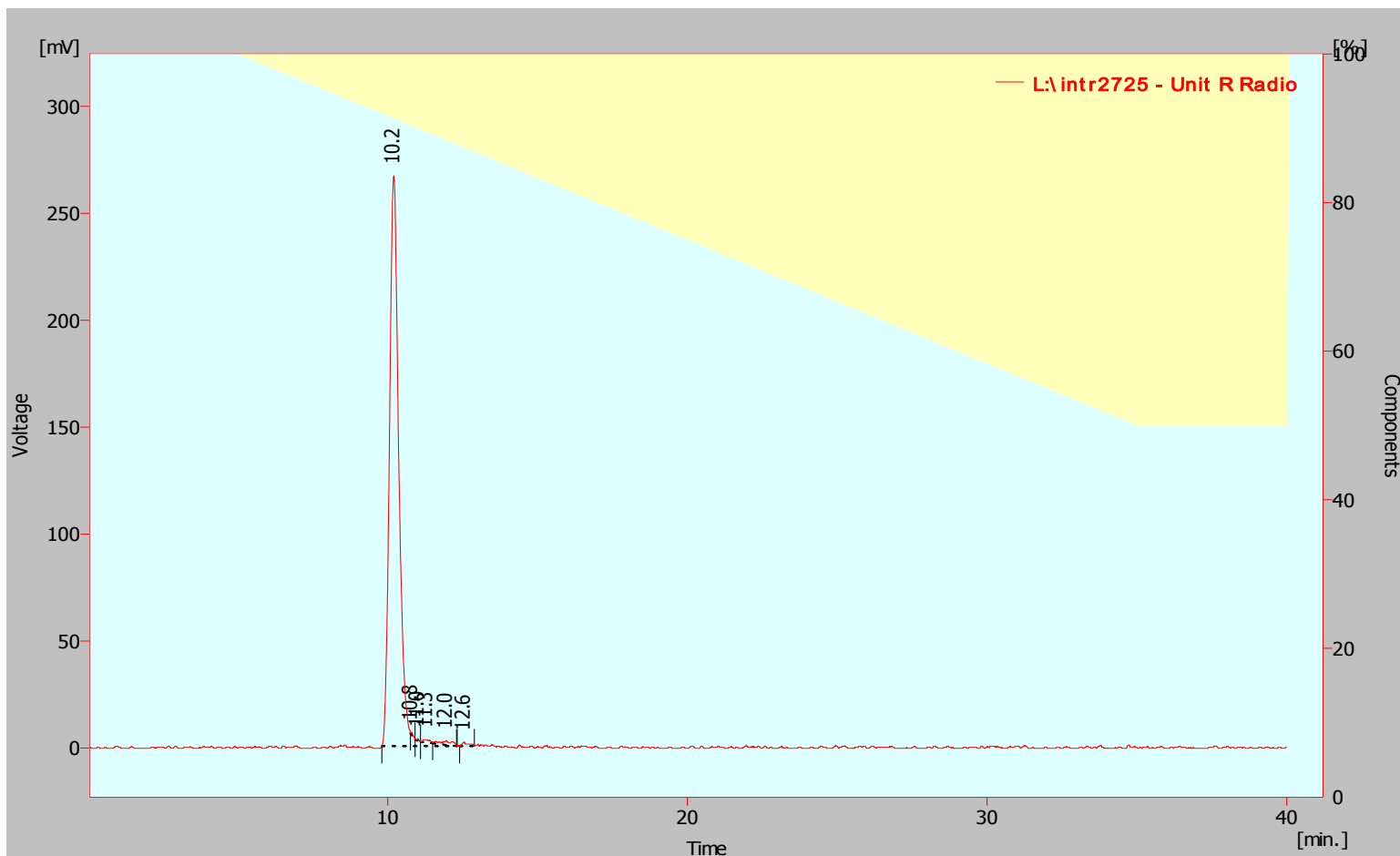
B) Mass spectrometry- Positive mode

C) NMR

MC-109
Cytarabine, [cytosine-2-14C]-
Lot 247-175-0576-A-20130506-PVA

Chromatogram Info:

File Name	: L:\intr2725	File Created	: 5/7/2013 1:14:55 PM
Origin	: Acquired, Acquisition started 5/7/2013 12:34:30 PM	Acquired Date	: 5/7/2013 1:14:30 PM
Project	: Test	By	: Administrator
Method	: nucloside	By	: Lab
Description	: Radiochemical trace of 14C material alone	Modified	: 10/2/2013 10:35 AM
Created	: 8/15/2011 8:56 AM	Detection	: Radiochemical
Column	:	Temperature	:
Mobile Phase	:	Pressure	:
Flow Rate	:	Note	:



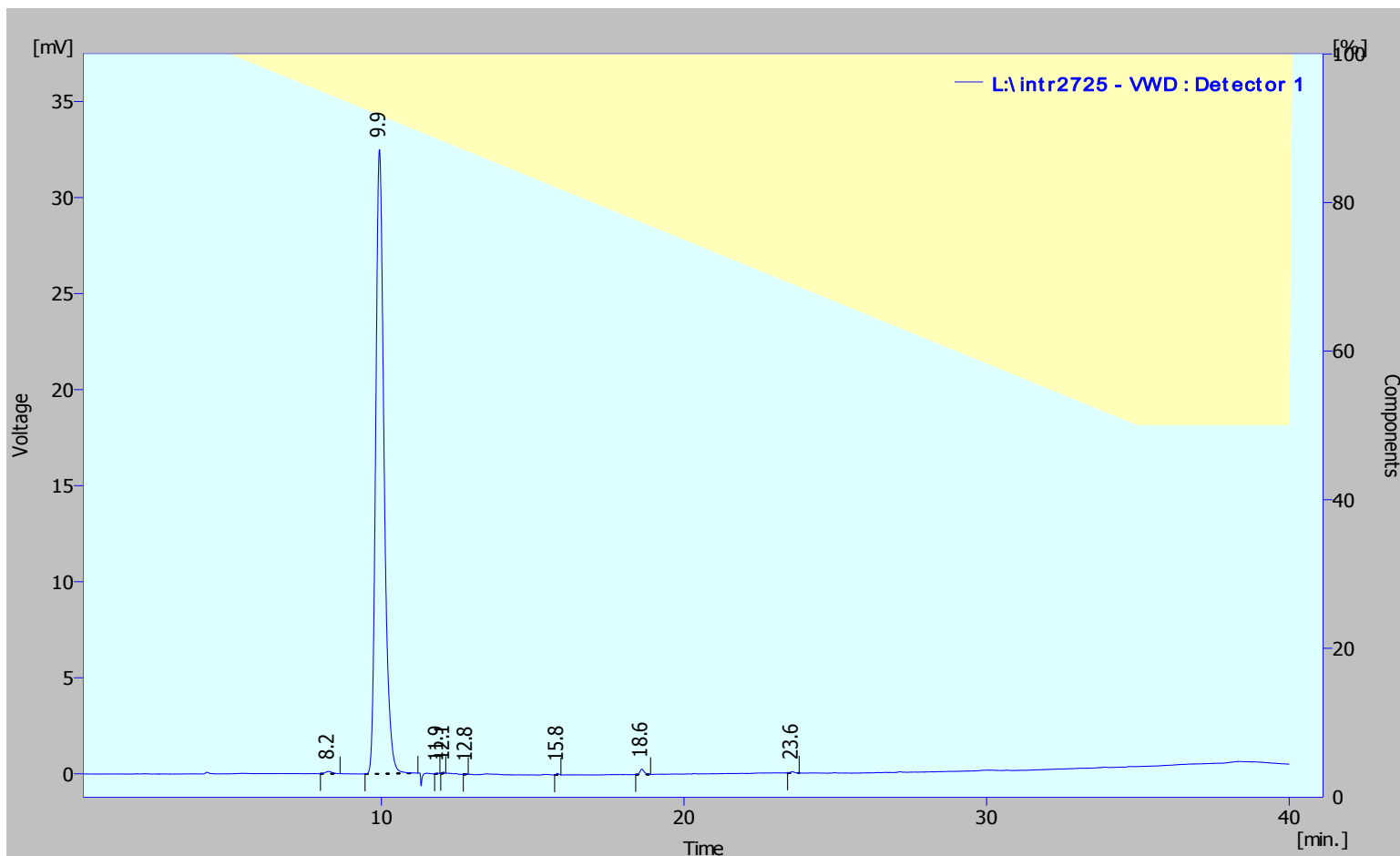
Result Table (Uncal - L:\intr2725 - Unit R Radio)

	Compound Name	Reten. Time [min]	Area [%]	Area [mV.s]	Height [mV]	Height [%]	Efficiency [th.pl]
1		10.21	98.02	5855.02	266.72	97.15	5499.22
2		10.80	0.11	6.71	1.20	0.44	139642.52
3		11.01	0.08	4.90	1.03	0.37	41003.62
4		11.30	0.37	22.27	1.35	0.49	8522.64
5		11.96	0.92	55.08	2.23	0.81	24458.35
6		12.55	0.49	29.38	2.03	0.74	69582.43
		Total	100.00	5973.36	274.55	100.00	

MC-109
Cytarabine, [cytosine-2-14C]-
Lot 247-175-0576-A-20130506-PVA

Chromatogram Info:

File Name	: L:\intr2725	File Created	: 5/7/2013 1:14:55 PM
Origin	: Acquired, Acquisition started 5/7/2013 12:34:30 PM	Acquired Date	: 5/7/2013 1:14:30 PM
Project	: Test	By	: Administrator
Method	: nucloside	By	: Lab
Description	: UV trace of 14C material alone	Modified	: 10/2/2013 10:36 AM
Created	: 8/15/2011 8:56 AM		
Column	:	Detection	: UV 254nm
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



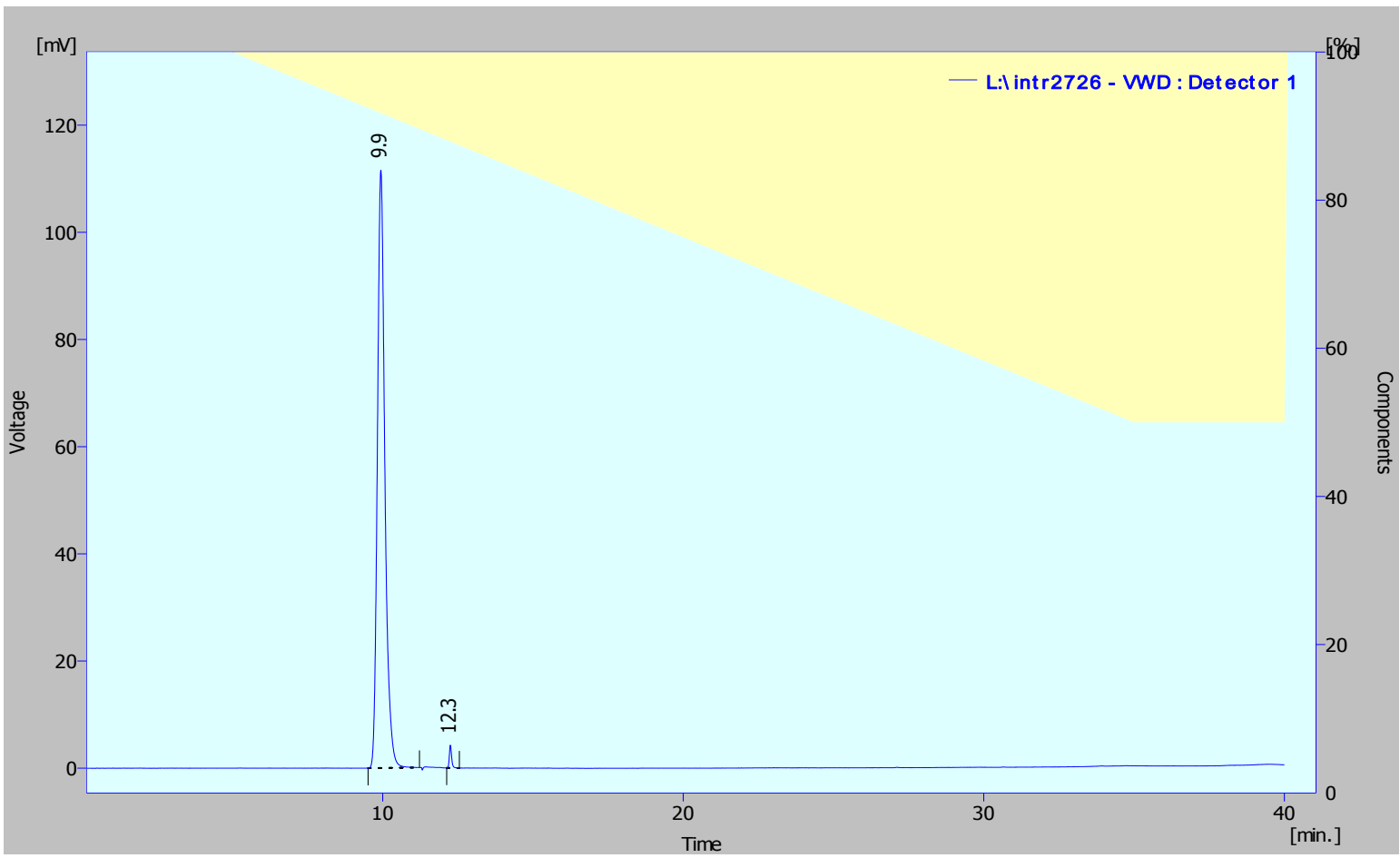
Result Table (Uncal - L:\intr2725 - VWD : Detector 1)

	Compound Name	Reten. Time [min]	Area [%]	Area [mAU.s]	Height [mAU]	Height [%]	Efficiency [th.pl]
1		8.25	0.30	1.91	0.12	0.37	7173.51
2		9.94	98.97	624.13	32.50	97.82	6456.14
3		11.86	0.02	0.14	0.04	0.11	229846.83
4		12.06	0.05	0.34	0.08	0.24	168440.08
5		12.81	0.03	0.21	0.05	0.14	155741.10
6		15.82	0.08	0.50	0.08	0.25	143668.42
7		18.60	0.44	2.78	0.29	0.87	95146.39
8		23.58	0.10	0.62	0.07	0.21	161098.90
		Total	100.00	630.63	33.23	100.00	

MC-109
Cytarabine, [cytosine-2-14C]-
Lot 247-175-0576-A-20130506-PVA

Chromatogram Info:

File Name	: L:\intr2726	File Created	: 5/7/2013 2:44:11 PM
Origin	: Acquired, Acquisition started 5/7/2013 2:03:47 PM	Acquired Date	: 5/7/2013 2:43:48 PM
Project	: Test	By	: Administrator
Method	: nucloside	By	: Lab
Description	: UV trace of standard alone	Modified	: 5/8/2013 11:01 AM
Created	: 8/15/2011 8:56 AM	Detection	: UV 254nm
Column	:	Temperature	:
Mobile Phase	:	Pressure	:
Flow Rate	:	Note	:



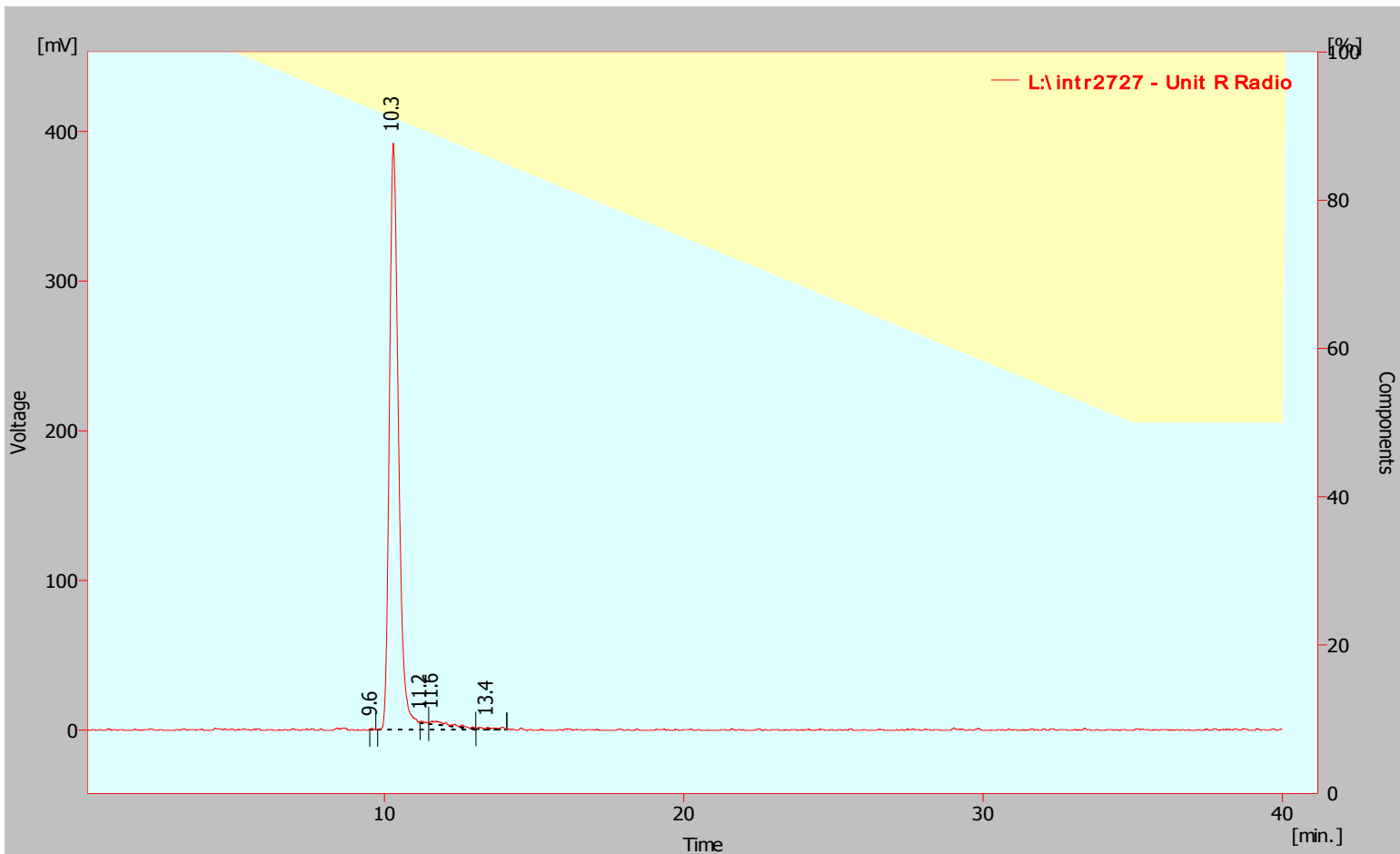
Result Table (Uncal - L:\intr2726 - VWD : Detector 1)

	Compound Name	Reten. Time [min]	Area [%]	Area [mAU.s]	Height [mAU]	Height [%]	Efficiency [th.pl]
1		9.94	98.86	1933.16	111.55	96.32	8196.65
2		12.25	1.14	22.38	4.26	3.68	118724.49
		Total	100.00	1955.53	115.81	100.00	

MC-109
Cytarabine, [cytosine-2-14C]-
Lot 247-175-0576-A-20130506-PVA

Chromatogram Info:

File Name	: L:\intr2727	File Created	: 5/7/2013 3:35:20 PM
Origin	: Acquired, Acquisition started 5/7/2013 2:54:55 PM	Acquired Date	: 5/7/2013 3:34:56 PM
Project	: Test	By	: Administrator
Method	: nucloside	By	: Lab
Description	: Radiochemical trace of 14C material co-injected with standard	Modified	: 10/2/2013 10:39 AM
Created	: 8/15/2011 8:56 AM		
Column	:	Detection	: Radiochemical
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



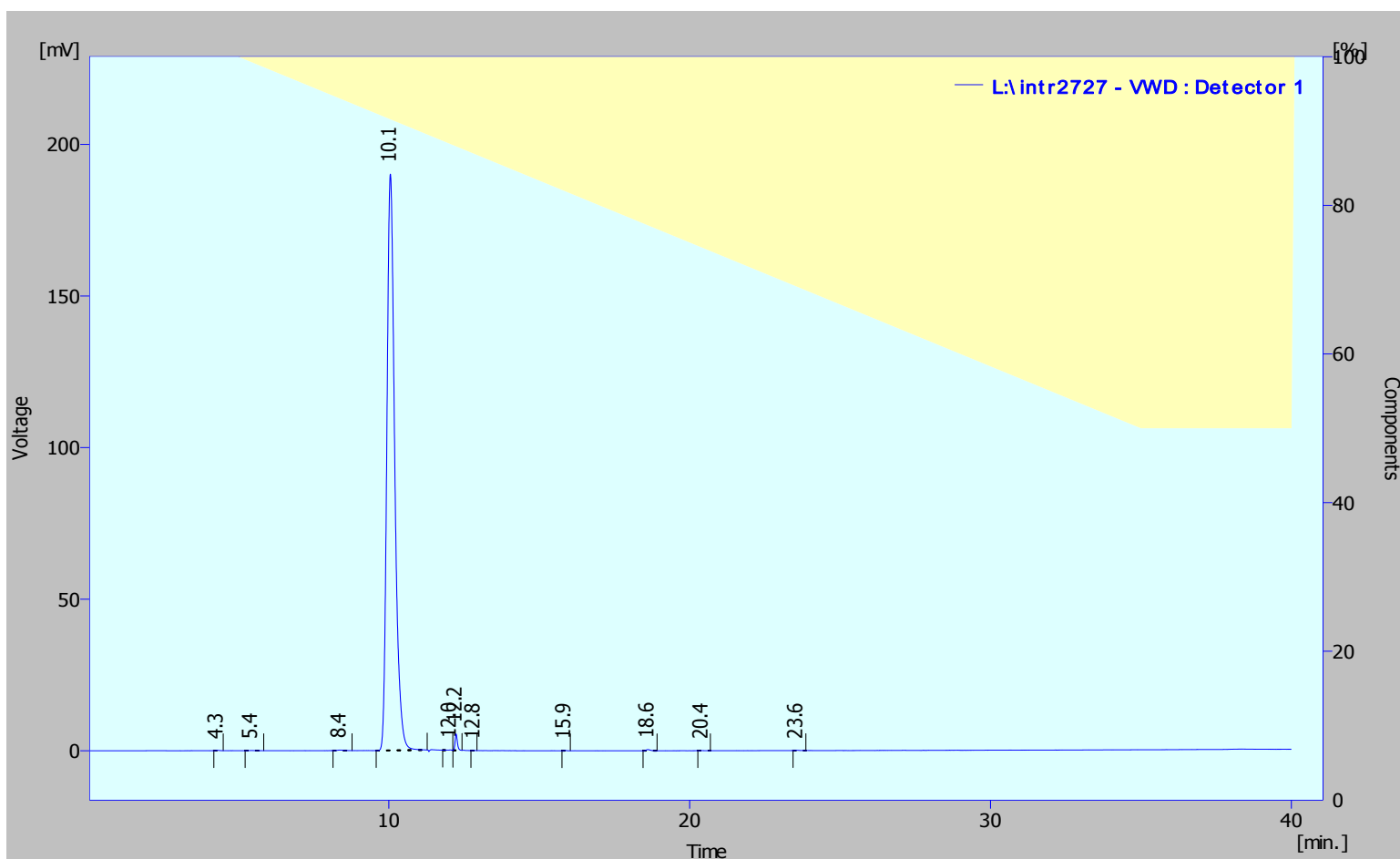
Result Table (Uncal - L:\intr2727 - Unit R Radio)

	Compound Name	Reten. Time [min]	Area [%]	Area [mV.s]	Height [mV]	Height [%]	Efficiency [th.pl]
1		9.56	0.04	3.67	1.01	0.26	646357.57
2		10.30	98.05	8587.38	391.84	98.52	5735.18
3		11.23	0.15	13.18	1.35	0.34	69841.66
4		11.60	1.23	107.88	2.33	0.59	5383.20
5		13.44	0.53	46.35	1.19	0.30	41120.57
		Total	100.00	8758.45	397.73	100.00	

MC-109
Cytarabine, [cytosine-2-14C]-
Lot 247-175-0576-A-20130506-PVA

Chromatogram Info:

File Name	: L:\intr2727	File Created	: 5/7/2013 3:35:20 PM
Origin	: Acquired, Acquisition started 5/7/2013 2:54:55 PM	Acquired Date	: 5/7/2013 3:34:56 PM
Project	: Test	By	: Administrator
Method	: nucloside	By	: Lab
Description	: UV trace of 14C material co-injected with standard	Modified	: 5/8/2013 11:04 AM
Created	: 8/15/2011 8:56 AM		
Column	:	Detection	: UV 254nm
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



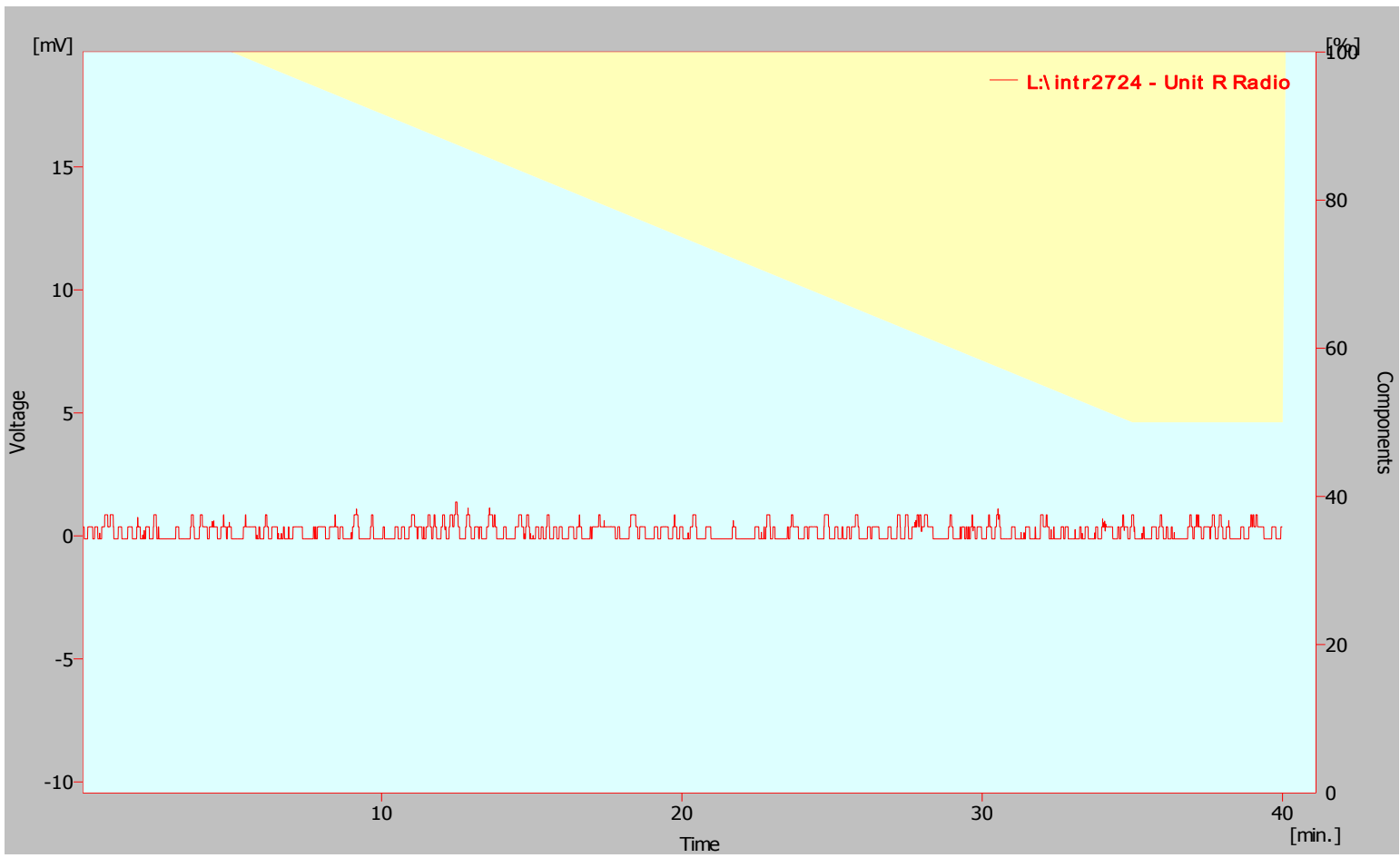
Result Table (Uncal - L:\intr2727 - VWD : Detector 1)

	Compound Name	Reten. Time [min]	Area [%]	Area [mAU.s]	Height [mAU]	Height [%]	Efficiency [th.pl]
1		4.29	0.03	1.05	0.13	0.07	6672.92
2		5.43	0.02	0.82	0.05	0.02	3107.18
3		8.38	0.08	2.63	0.18	0.09	7896.56
4		10.05	98.85	3445.31	190.11	96.64	7316.95
5		12.04	0.03	1.03	0.13	0.06	137551.30
6		12.23	0.82	28.45	5.40	2.75	118372.14
7		12.83	0.01	0.35	0.07	0.04	172192.56
8		15.85	0.02	0.77	0.12	0.06	134081.68
9		18.61	0.11	3.83	0.40	0.20	86225.02
10		20.41	0.01	0.36	0.04	0.02	142280.23
11		23.56	0.02	0.85	0.09	0.05	200923.84
		Total	100.00	3485.45	196.71	100.00	

MC-109
Cytarabine, [cytosine-2-14C]-
Lot 247-175-0576-A-20130506-PVA

Chromatogram Info:

File Name	: L:\intr2724	File Created	: 5/7/2013 12:23:42 PM
Origin	: Acquired, Acquisition started 5/7/2013 11:43:22 AM	Acquired Date	: 5/7/2013 12:23:23 PM
Project	: Test	By	: Administrator
Method	: nucloside	By	: Lab
Description	: Radiochemical trace of blank injection		
Created	: 8/15/2011 8:56 AM	Modified	: 5/8/2013 11:12 AM
Column	:	Detection	: Radiochemical
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



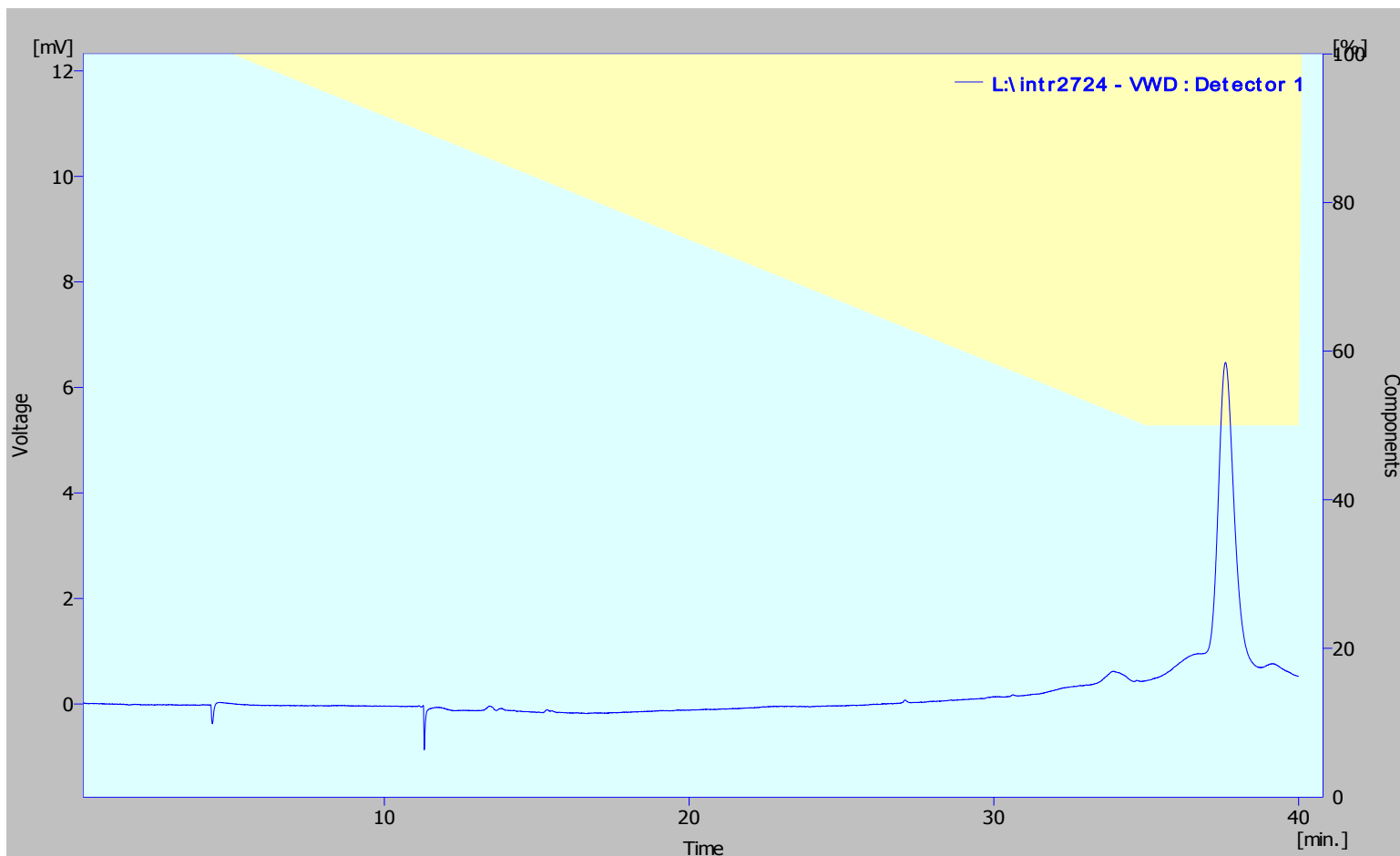
Result Table (Uncal - L:\intr2724 - Unit R Radio)

Compound Name	Reten. Time [min]	Area [%]	Area [mV.s]	Height [mV]	Height [%]	Efficiency [th.pl]
No peak to report						

MC-109
Cytarabine, [cytosine-2-14C]-
Lot 247-175-0576-A-20130506-PVA

Chromatogram Info:

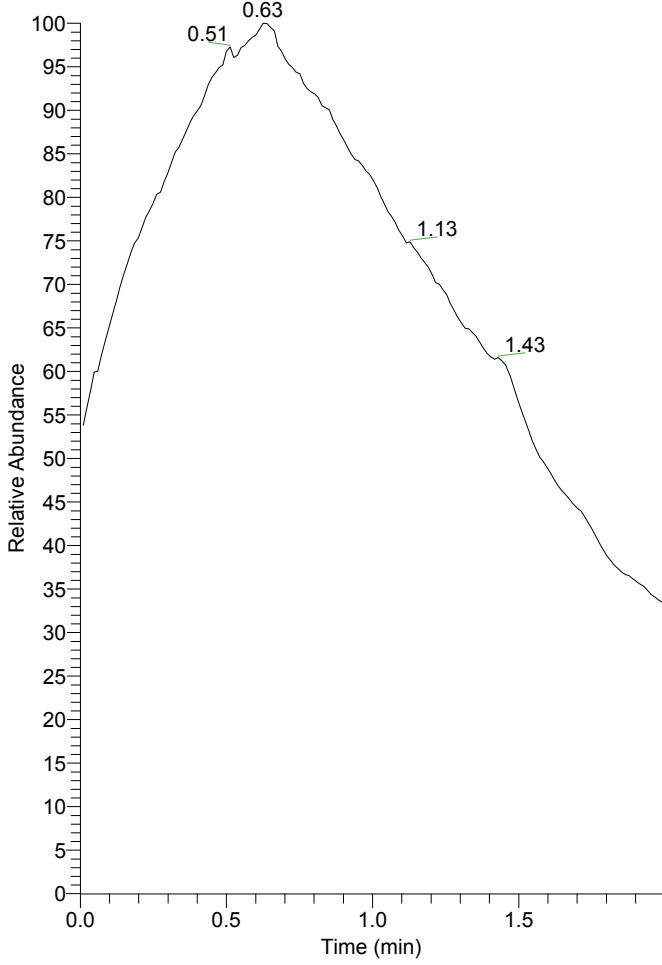
File Name	: L:\intr2724	File Created	: 5/7/2013 12:23:42 PM
Origin	: Acquired, Acquisition started 5/7/2013 11:43:22 AM	Acquired Date	: 5/7/2013 12:23:23 PM
Project	: Test	By	: Administrator
Method	: nucloside	By	: Lab
Description	: UV trace of blank injection	Modified	: 10/2/2013 10:33 AM
Created	: 8/15/2011 8:56 AM		
Column	:	Detection	: UV 254nm
Mobile Phase	:	Temperature	:
Flow Rate	:	Pressure	:
Note	:		



Result Table (Uncal - L:\intr2724 - VWD : Detector 1)

Compound Name	Reten. Time [min]	Area [%]	Area [mAU.s]	Height [mAU]	Height [%]	Efficiency [th.pl]
No peak to report						

RT: 0.00 - 1.99



NL:
5.98E7
TIC F: MS
MC109-
20130506-
PVA

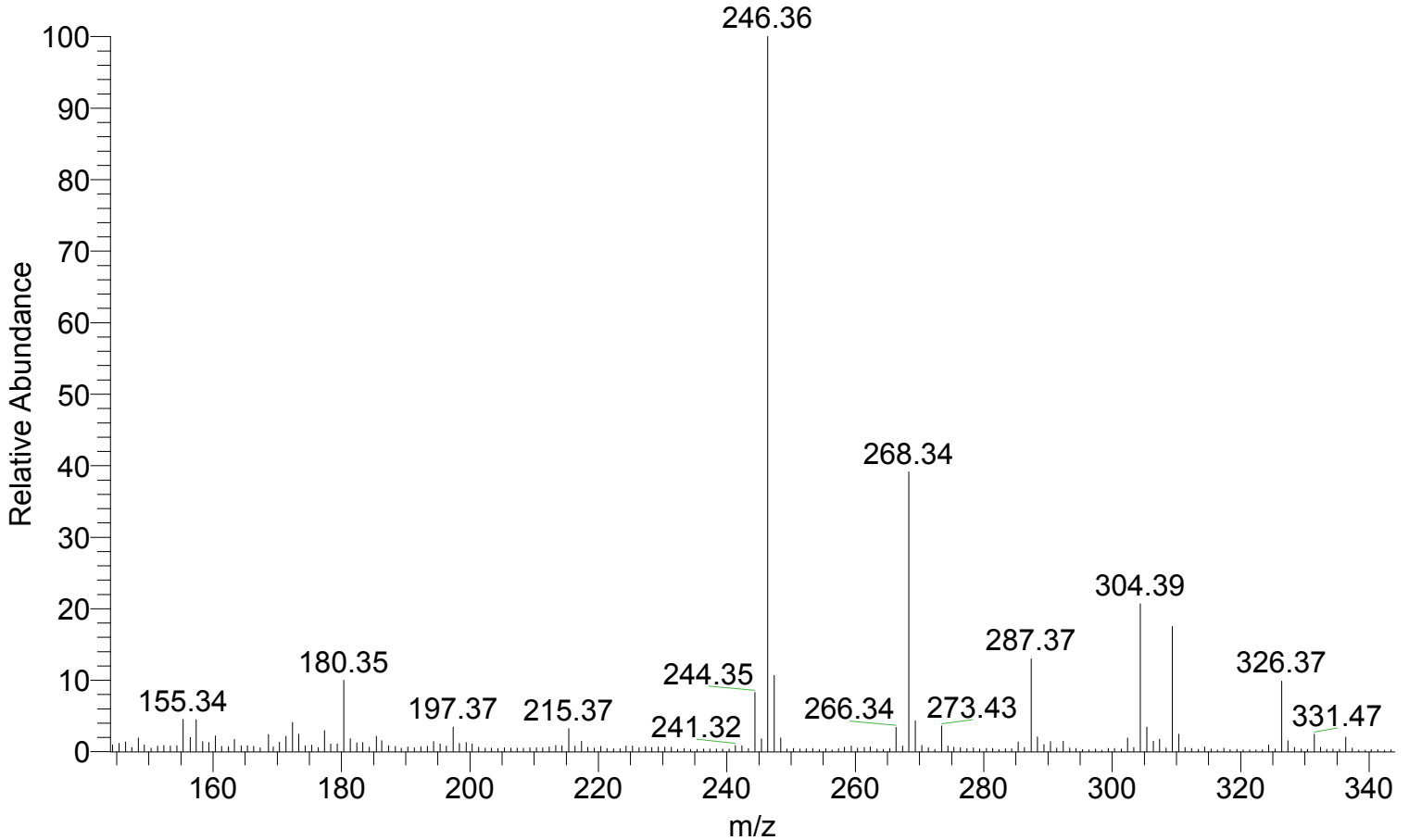
MC109-20130506-PVA#32-72 RT: 0.40-0.90
T: + c sid=-10.00 Q3MS [144.00-344.00]

m/z = 237.43-264.49

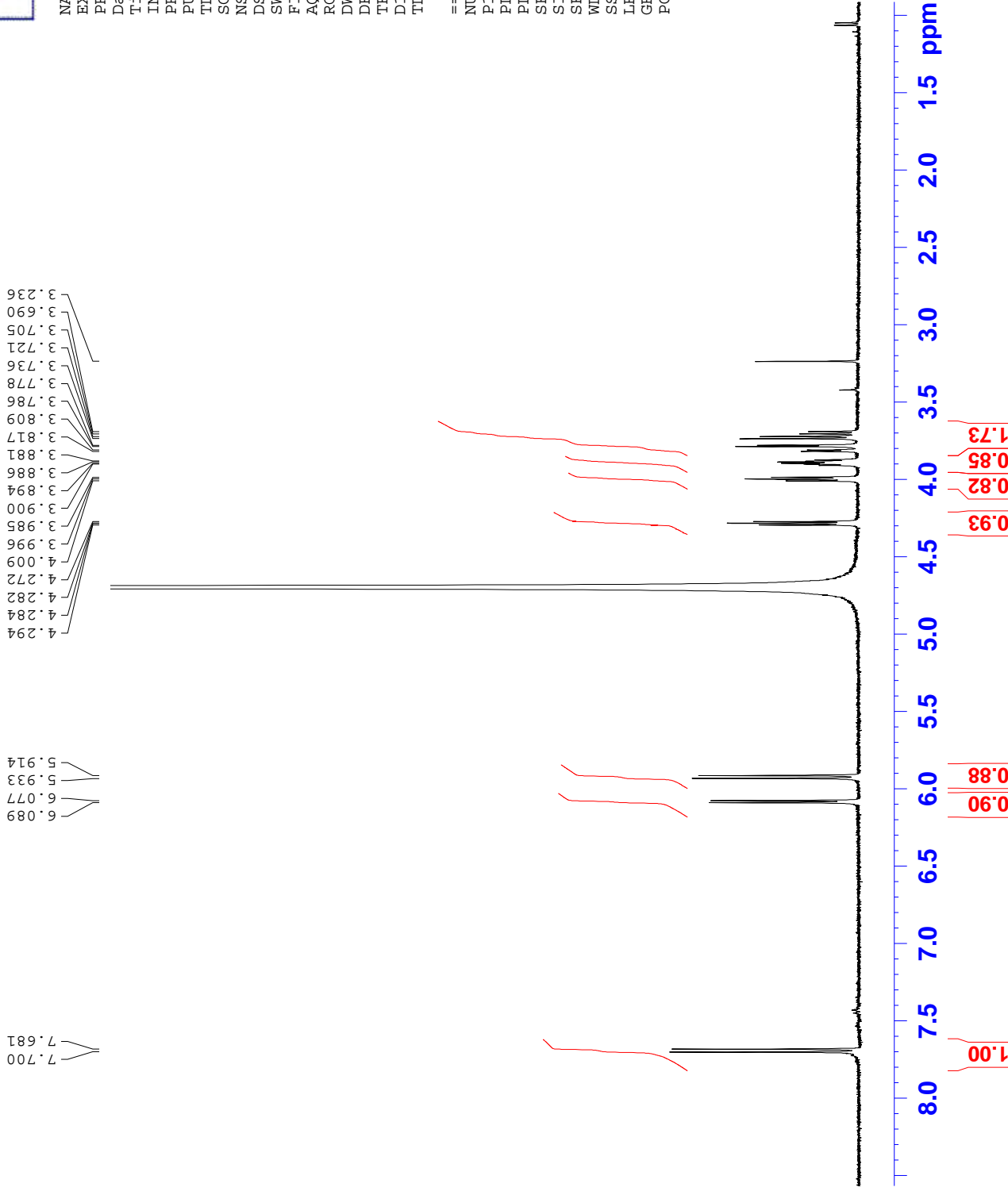
m/z	Intensity	Relative
242.35	115952.7	0.82
243.35	63741.1	0.45
244.35	1166256.1	8.28
245.40	246682.5	1.75
246.36	14081422.8	100.00
247.36	1494856.9	10.62
248.37	263715.4	1.87
249.36	52408.0	0.37
250.35	64101.5	0.46
251.37	52483.6	0.37
252.37	54797.9	0.39
253.38	60901.6	0.43
255.38	58178.3	0.41
257.37	53541.3	0.38
258.33	87320.7	0.62
259.35	105648.9	0.75
260.34	65310.4	0.46
261.38	76961.4	0.55
262.34	90887.9	0.65

MC109-20130506-PVA #32-72 RT: 0.40-0.90 AV: 41 NL: 1.41E7

T: + c sid=-10.00 Q3MS [144.00-344.00]



MC109 Cytarabine 14C
 #247-175-0576-A-20130506-PVA
 1H NMR in D2O



```

NAME          MC109
EXPNO         1
PROCNO        1
Date_         20130508
Time          10.06
INSTRUM       spect
PROBHD        5 mm PABBO BB-
PULPROG       zg30
TD            65536
SOLVENT       D2O
NS            64
DS            2
SWH           8278.146 Hz
FIDRES        0.126314 Hz
AQ            3.9584243 sec
RG            512
DW            60.400 usec
DE            6.50 usec
TE            294.5 K
D1            1.00000000 sec
TD0           1
  
```

```

===== CHANNEL f1 =====
NUC1          1H
P1            14.00 usec
PL1          -1.00 dB
PL1W         10.75174427 W
SFO1         400.1324710 MHz
SI           32768
SF           400.1300019 MHz
WDW          no
SSB          0
LB           0.00 Hz
GB           0
PC           1.00
  
```