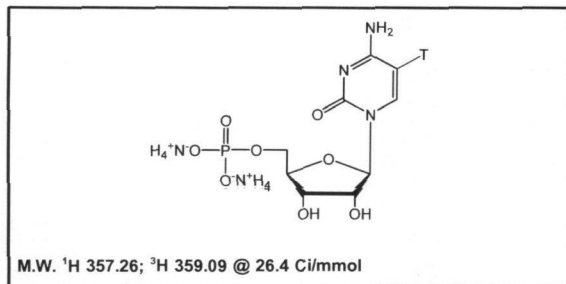




Product Data Sheet

MT-762

Cytidine 5'-monophosphate, diammonium salt, [5-³H]-



Lot #: 211-179-0264-A-20110614-NT

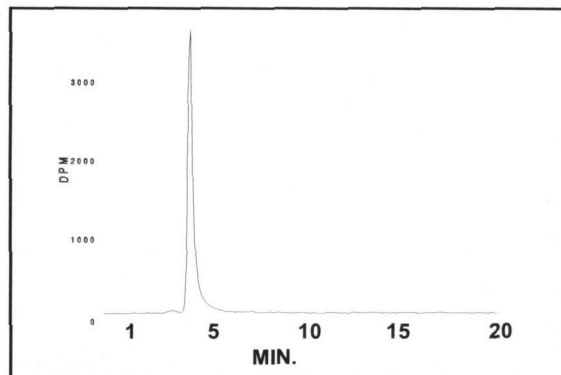
Specific Activity: 26.4 Ci/mmol

Concentration: 1.0 mCi/ml; 13.60 µg/ml

Packaged in: Ethanol : water (1 : 1) solution

Date of Analysis: September 02, 2011

Radiochemical Purity: 98.1%



HPLC ANALYSIS LOT 211-179-0264-A-20110614-NT
File Name: int21288 Date and Time: 9/2/2011 10:52:32 AM
Unit 2 Radio

| Peak # | Area % | Time | Area |
|--------|--------|---------|------------|
| 1 | 1.18 | 3.61670 | 91.12279 |
| 2 | 98.13 | 4.41330 | 7587.93105 |
| 3 | 0.69 | 7.63000 | 53.66719 |
| Totals | 100.00 | | 7732.72103 |

Stability and Storage Recommendation: The rate of decomposition is approximately 1%/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.

MT-762

Cytidine 5'-monophosphate, diammonium salt, [5-³H]-

Lot 211-179-0264-A-20110614-NT

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.

Cytidine 5'-monophosphate, diammonium salt, [5-³H]- concentration was 0.2 mCi/ml.

Volume of standard alone injection was 1.5 µl.

Volume of **Cytidine 5'-monophosphate, diammonium salt, [5-³H]-** alone injection was 1.0 µl.

Co-injection solution consisted of 1.5 µl **Cytidine 5'-monophosphate, diammonium salt, [5-³H]-** + 1.0 µl standard.

Volume of co-injection was 2.5 µl.

Volume of blank injection was 1.0 µl.

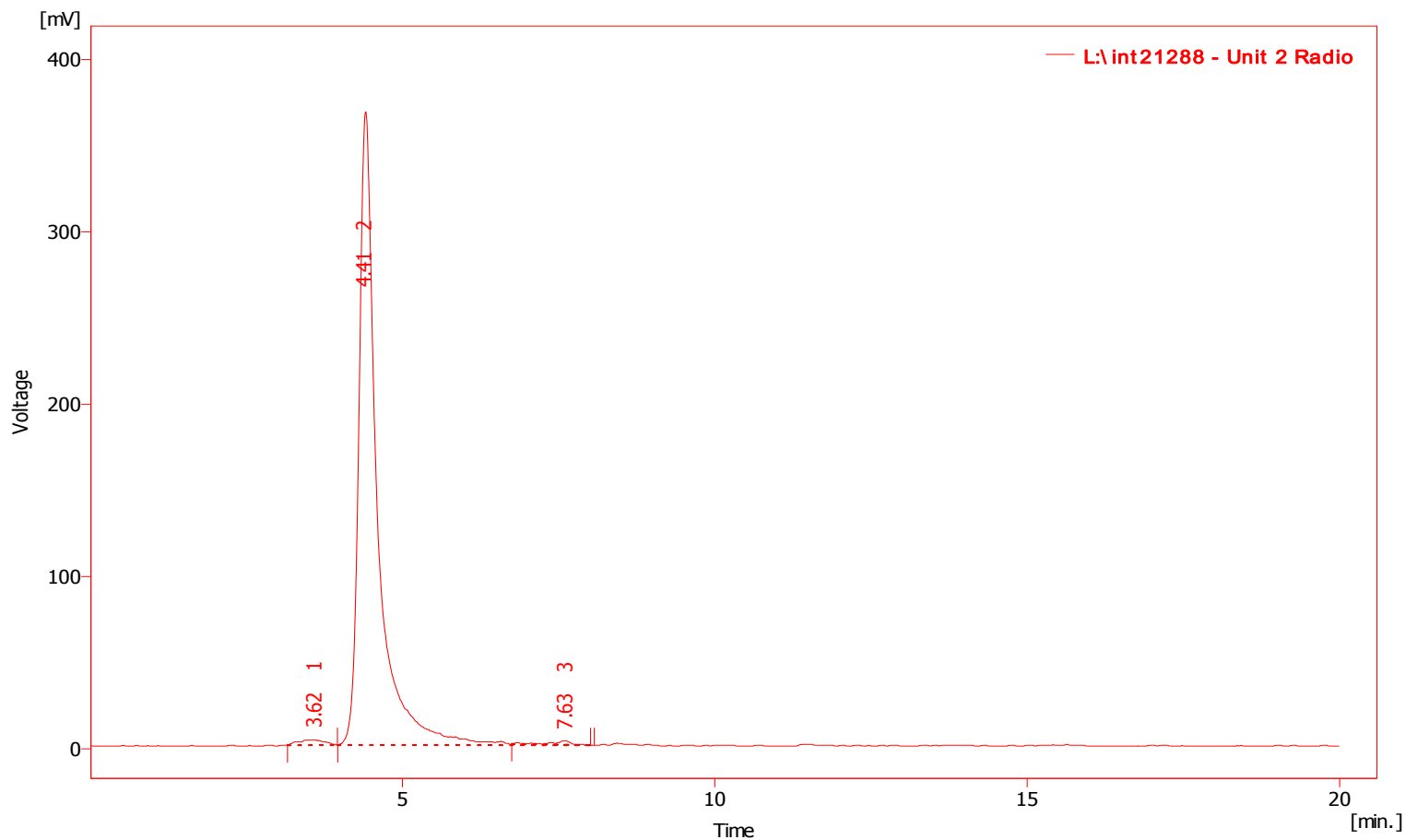
B) Mass spectrometry – Negative mode

C) NMR

MT-762
Cytidine 5'-monophosphate, diammonium salt, [5-3H]-
Lot 211-179-0264-A-20110614-NT

Chromatogram Info:

| | | | |
|--------------|--|---------------|------------------------|
| File Name | : L:\int21288 | File Created | : 3/11/2014 9:21:32 AM |
| Origin | : Acquired, Acquisition started 9/2/2011 10:32:32 AM | Acquired Date | : 9/2/2011 10:52:32 AM |
| Project | : Test | By | : Administrator |
| Method | : unit2-20minrun | By | : Administrator |
| Description | : Radiochemical trace of 3H material alone | Modified | : 3/11/2014 9:34 AM |
| Created | : 8/8/2007 9:12 AM | | |
| Column | : | Detection | : Radiochemical |
| Mobile Phase | : | Temperature | : |
| Flow Rate | : | Pressure | : |
| Note | : | | |



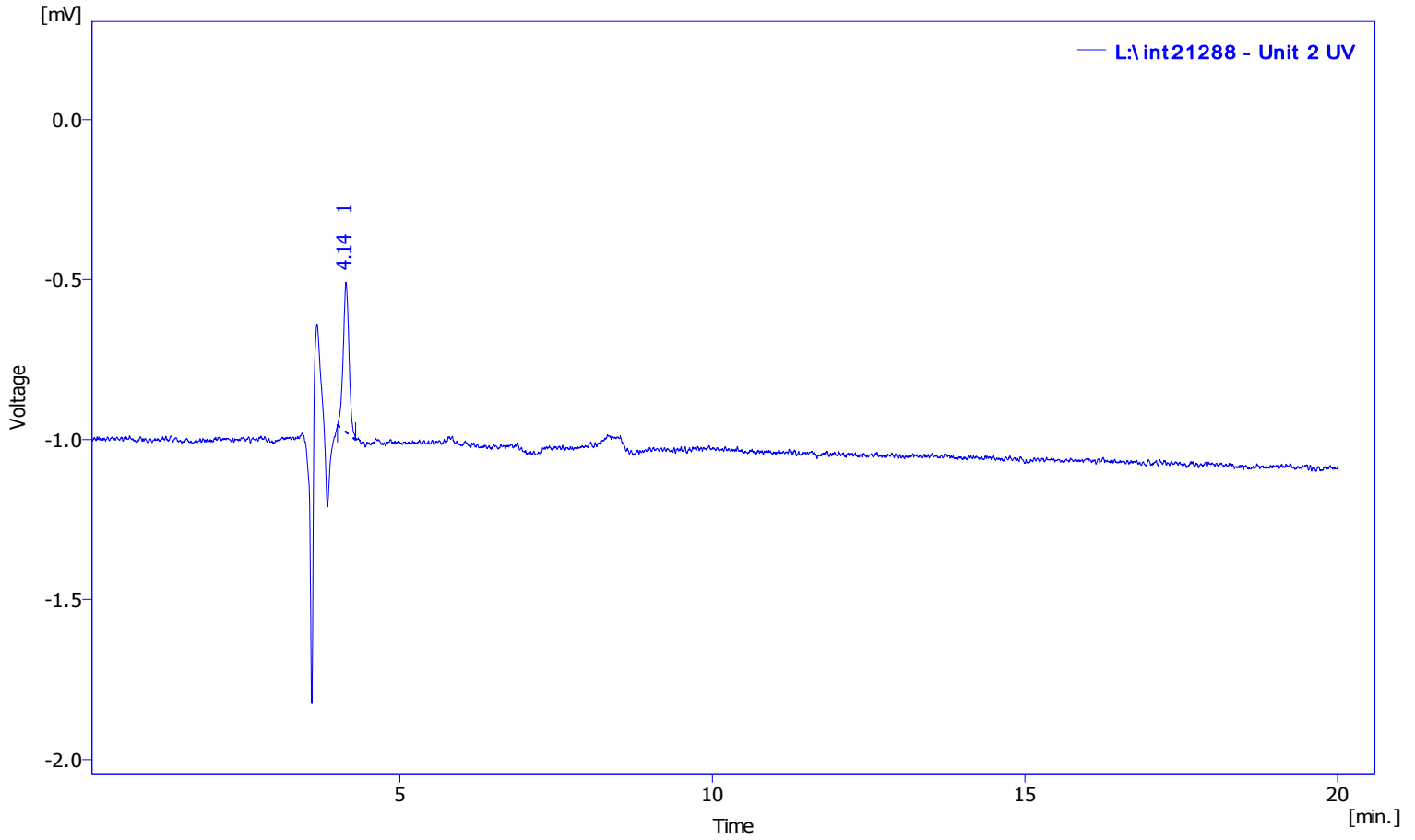
Result Table (Uncal - L:\int21288 - Unit 2 Radio)

| | 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 | | 3.62 | 91.123 | 3.03 | 1.18 | 0.81 | 225.67 | 4513.37 | 0.85 | | |
| 2 | | 4.41 | 7587.931 | 367.37 | 98.13 | 98.58 | 1637.96 | 32759.27 | 4.51 | | 1.1 |
| 3 | | 7.63 | 53.667 | 2.26 | 0.69 | 0.61 | 7086.66 | 141733.14 | 0.86 | | 8.1 |
| | | Total | 7732.721 | 372.66 | 100.00 | 100.00 | | | | | |

MT-762
Cytidine 5'-monophosphate, diammonium salt, [5-3H]-
Lot 211-179-0264-A-20110614-NT

Chromatogram Info:

| | | | |
|--------------|--|---------------|------------------------|
| File Name | : L:\int21288 | File Created | : 3/11/2014 9:21:32 AM |
| Origin | : Acquired, Acquisition started 9/2/2011 10:32:32 AM | Acquired Date | : 9/2/2011 10:52:32 AM |
| Project | : Test | By | : Administrator |
| Method | : unit2-20minrun | By | : Administrator |
| Description | : UV trace of 3H material alone | Modified | : 3/11/2014 9:35 AM |
| Created | : 8/8/2007 9:12 AM | | |
| Column | : | Detection | : UV 271nm |
| Mobile Phase | : | Temperature | : |
| Flow Rate | : | Pressure | : |
| Note | : | | |



Result Table (Uncal - L:\int21288 - Unit 2 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 | | 4.14 | 3.022 | 0.47 | 100.00 | 100.00 | 9480.05 | 189601.08 | 1.03 | | |
| | | Total | 3.022 | 0.47 | 100.00 | 100.00 | | | | | |

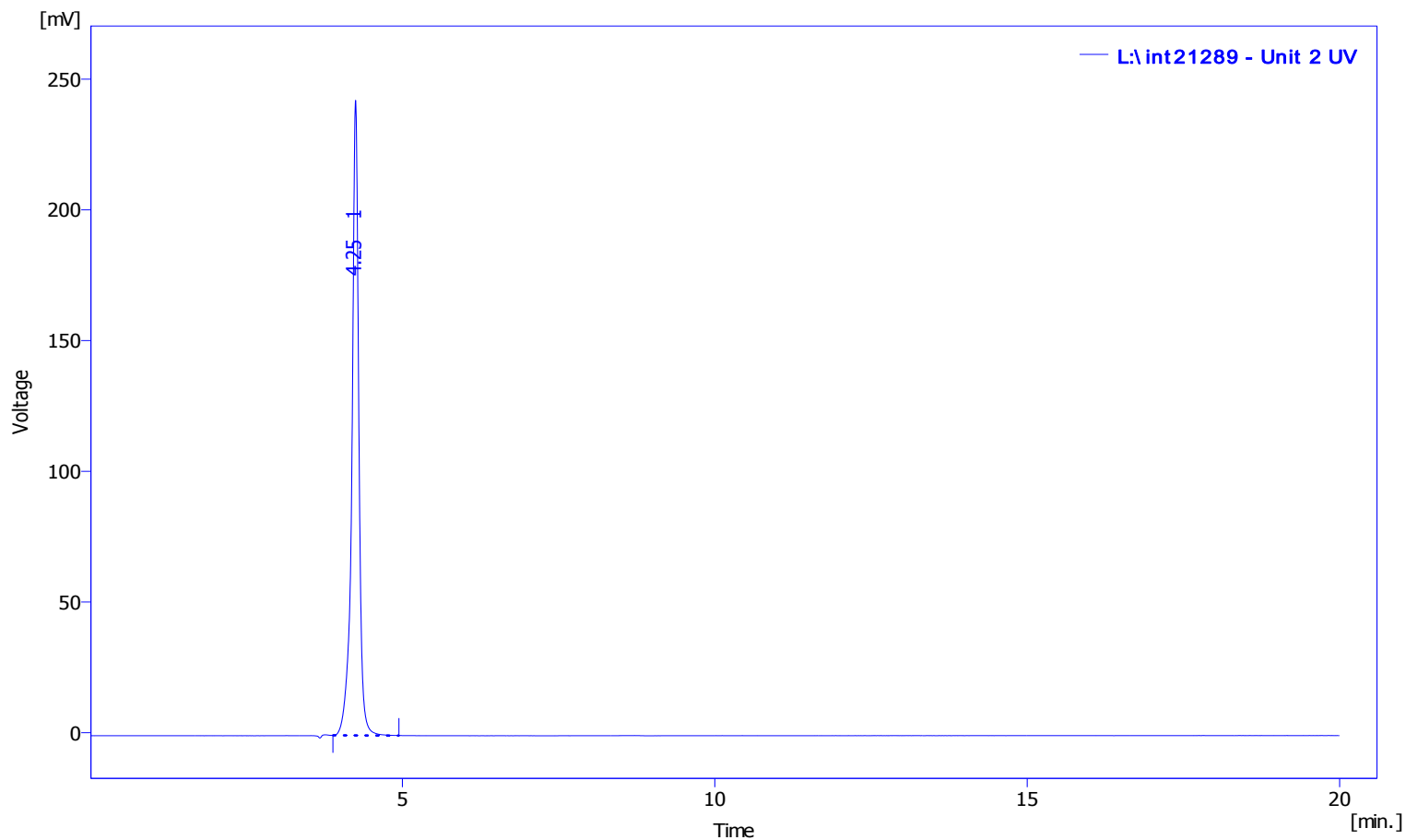
MT-762
Cytidine 5'-monophosphate, diammonium salt, [5-3H]-
Lot 211-179-0264-A-20110614-NT

Chromatogram Info:

| | | | |
|-----------|--|---------------|------------------------|
| File Name | : L:\int21289 | File Created | : 3/11/2014 9:21:32 AM |
| Origin | : Acquired, Acquisition started 9/2/2011 11:18:12 AM | Acquired Date | : 9/2/2011 11:38:12 AM |
| Project | : Test | By | : Administrator |

| | | | |
|-------------|---------------------------------------|----------|---------------------|
| Method | : unit2-20minrun | By | : Administrator |
| Description | : UV trace of standard material alone | | |
| Created | : 8/8/2007 9:12 AM | Modified | : 3/11/2014 9:36 AM |

| | | | |
|--------------|---|-------------|------------|
| Column | : | Detection | : UV 271nm |
| Mobile Phase | : | Temperature | : |
| Flow Rate | : | Pressure | : |
| Note | : | | |



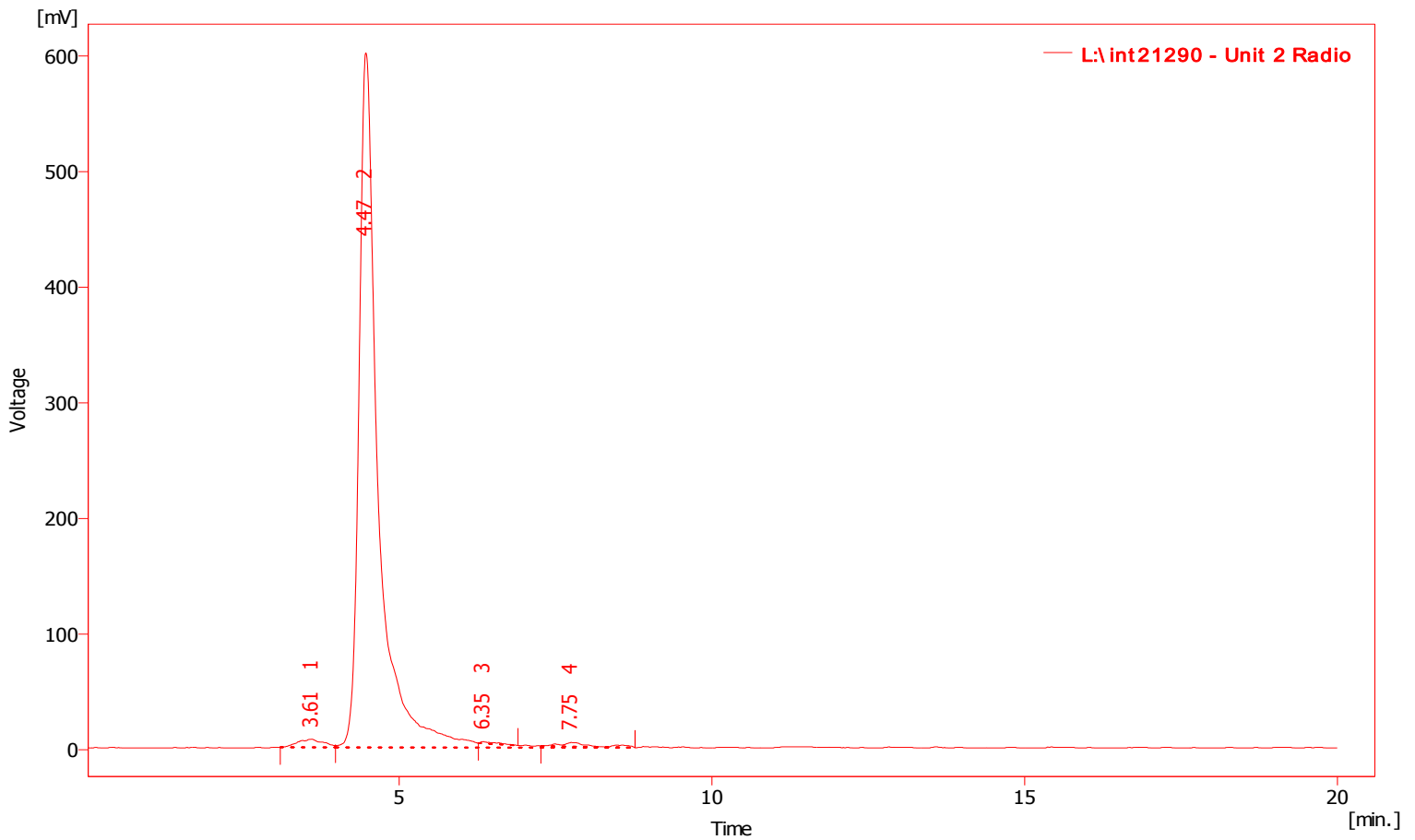
Result Table (Uncal - L:\int21289 - Unit 2 UV)

| | 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 | | 4.25 | 1875.793 | 242.92 | 100.00 | 100.00 | 8794.89 | 175897.71 | 0.87 | | |
| | | Total | 1875.793 | 242.92 | 100.00 | 100.00 | | | | | |

MT-762
Cytidine 5'-monophosphate, diammonium salt, [5-3H]-
Lot 211-179-0264-A-20110614-NT

Chromatogram Info:

| | | | |
|--------------|--|---------------|------------------------|
| File Name | : L:\int21290 | File Created | : 3/11/2014 9:21:31 AM |
| Origin | : Acquired, Acquisition started 9/2/2011 11:42:25 AM | Acquired Date | : 9/2/2011 12:02:25 PM |
| Project | : Test | By | : Administrator |
| Method | : unit2-20minrun | By | : Administrator |
| Description | : Radiochemical trace of 3H material co-injected with standard | Modified | : 3/11/2014 9:38 AM |
| Created | : 8/8/2007 9:12 AM | | |
| Column | : | Detection | : Radiochemical |
| Mobile Phase | : | Temperature | : |
| Flow Rate | : | Pressure | : |
| Note | : | | |



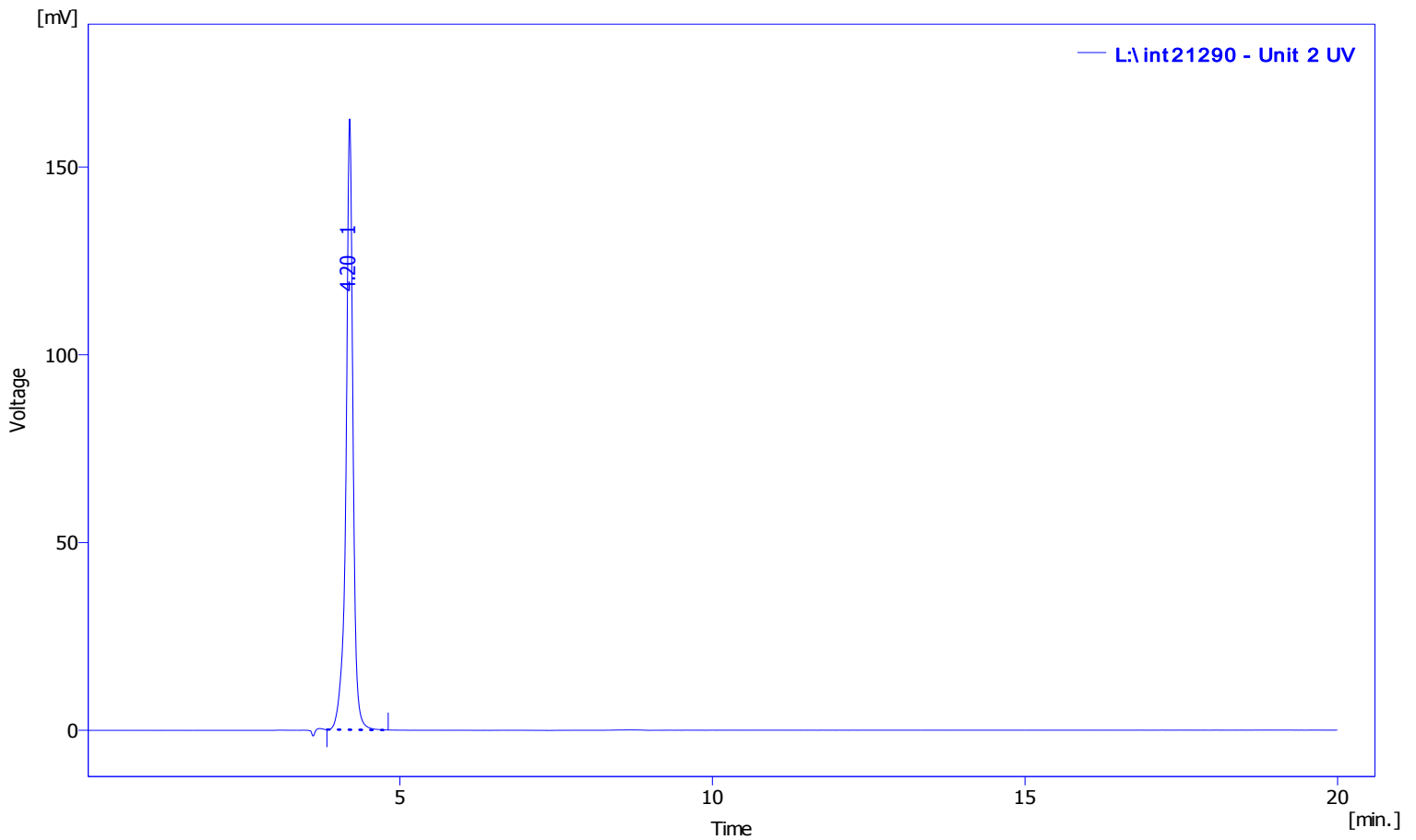
Result Table (Uncal - L:\int21290 - Unit 2 Radio)

| | 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 | | 3.61 | 202.873 | 7.09 | 1.53 | 1.16 | 284.45 | 5689.06 | 0.90 | | |
| 2 | | 4.47 | 12918.521 | 600.61 | 97.24 | 97.97 | 1554.32 | 31086.33 | 4.96 | | 1.3 |
| 3 | | 6.35 | 33.055 | 1.64 | 0.25 | 0.27 | 13937.61 | 278752.24 | 3.64 | | 5.7 |
| 4 | | 7.75 | 131.386 | 3.69 | 0.99 | 0.60 | 5055.31 | 101106.19 | 1.54 | | 4.3 |
| | | Total | 13285.836 | 613.03 | 100.00 | 100.00 | | | | | |

MT-762
Cytidine 5'-monophosphate, diammonium salt, [5-3H]-
Lot 211-179-0264-A-20110614-NT

Chromatogram Info:

| | | | |
|--------------|--|---------------|------------------------|
| File Name | : L:\int21290 | File Created | : 3/11/2014 9:21:31 AM |
| Origin | : Acquired, Acquisition started 9/2/2011 11:42:25 AM | Acquired Date | : 9/2/2011 12:02:25 PM |
| Project | : Test | By | : Administrator |
| Method | : unit2-20minrun | By | : Administrator |
| Description | : UV trace of 3H material co-injected with standard | Modified | : 3/11/2014 9:37 AM |
| Created | : 8/8/2007 9:12 AM | | |
| Column | : | Detection | : UV 271nm |
| Mobile Phase | : | Temperature | : |
| Flow Rate | : | Pressure | : |
| Note | : | | |



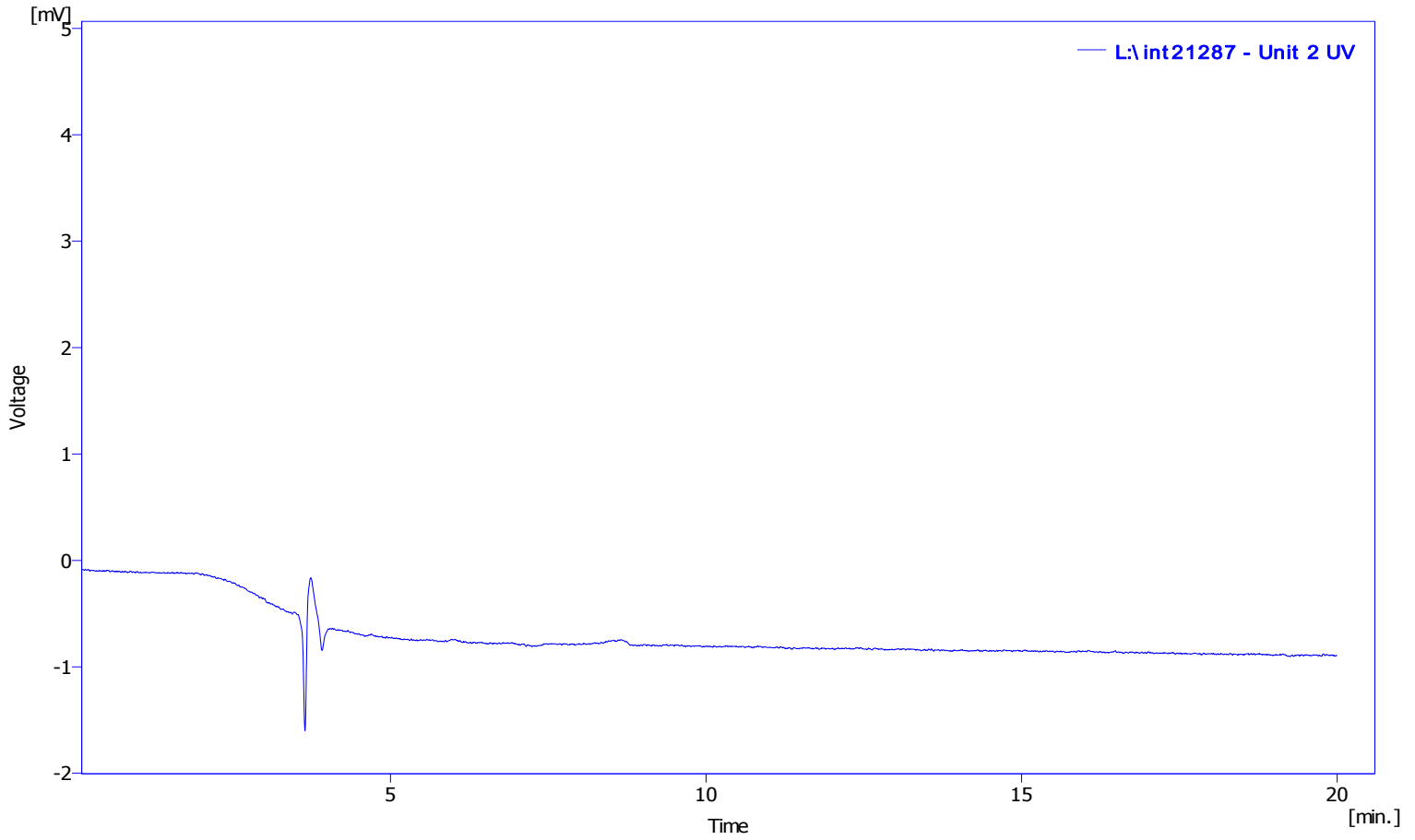
Result Table (Uncal - L:\int21290 - Unit 2 UV)

| | 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 | | 4.20 | 1260.451 | 162.68 | 100.00 | 100.00 | 8063.68 | 161273.62 | 0.89 | | |
| | | Total | 1260.451 | 162.68 | 100.00 | 100.00 | | | | | |

MT-762
Cytidine 5'-monophosphate, diammonium salt, [5-3H]-
Lot 211-179-0264-A-20110614-NT

Chromatogram Info:

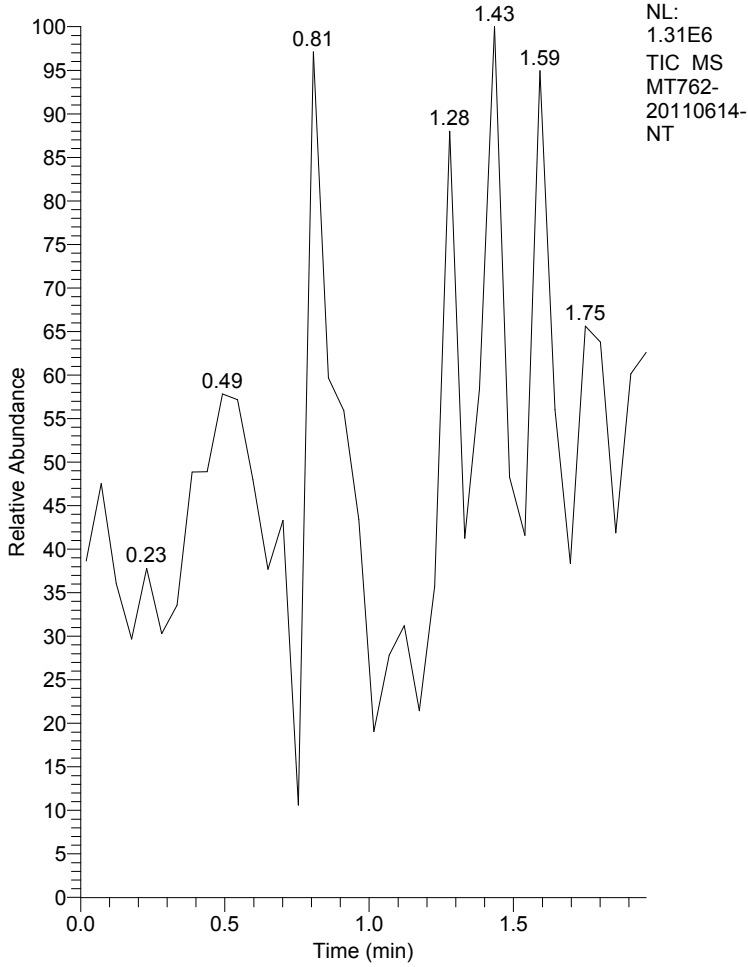
| | | | |
|--------------|---|---------------|------------------------|
| File Name | : L:\int21287 | File Created | : 3/11/2014 9:21:32 AM |
| Origin | : Acquired, Acquisition started 9/2/2011 9:58:39 AM | Acquired Date | : 9/2/2011 10:18:39 AM |
| Project | : Test | By | : Administrator |
| Method | : unit2-20minrun | By | : Administrator |
| Description | : UV trace of blank injection | Modified | : 3/11/2014 9:39 AM |
| Created | : 8/8/2007 9:12 AM | | |
| Column | : | Detection | : UV 271nm |
| Mobile Phase | : | Temperature | : |
| Flow Rate | : | Pressure | : |
| Note | : | | |



Result Table (Uncal - L:\int21287 - Unit 2 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 - 1.96



NL:
1.31E6
TIC MS
MT762-
20110614-
NT

MT762-20110614-NT#1-38 RT: 0.02-1.96 AV:

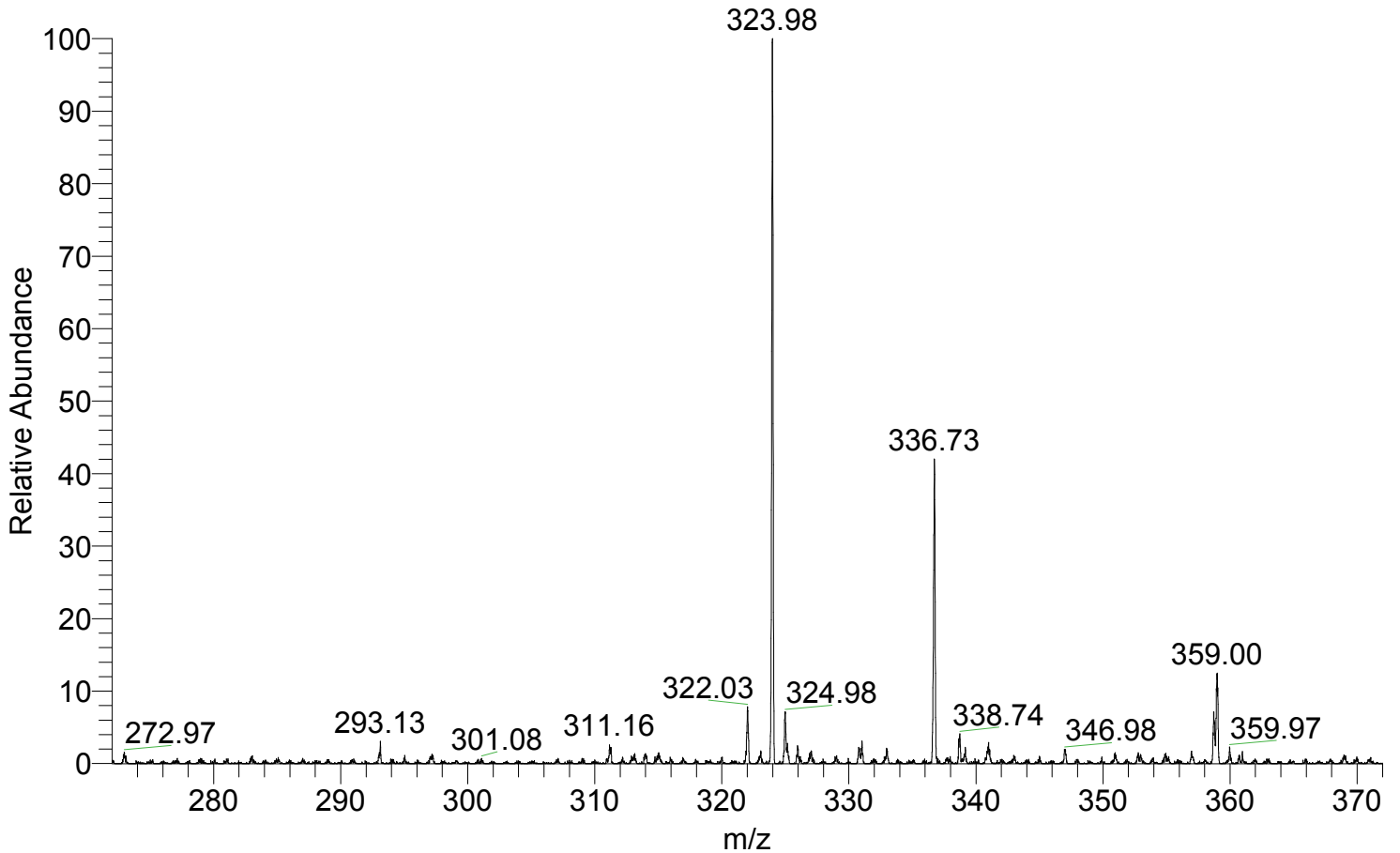
T: - p NSI Z ms [272.00-372.00]

m/z = 316.46-334.93

| m/z | Intensity | Relative |
|--------|-----------|----------|
| 319.98 | 1832.9 | 0.90 |
| 320.98 | 1471.2 | 0.72 |
| 322.01 | 18236.6 | 8.98 |
| 323.02 | 4729.0 | 2.33 |
| 323.98 | 203081.1 | 100.00 |
| 325.02 | 21040.1 | 10.36 |
| 326.01 | 6221.2 | 3.06 |
| 326.99 | 6265.8 | 3.09 |
| 327.96 | 1204.7 | 0.59 |
| 329.01 | 3116.0 | 1.53 |
| 329.97 | 810.1 | 0.40 |
| 330.92 | 10275.5 | 5.06 |
| 331.97 | 2282.4 | 1.12 |
| 332.95 | 6166.4 | 3.04 |
| 333.91 | 1308.3 | 0.64 |

MT762-20110614-NT #1-38 RT: 0.02-1.96 AV: 38 NL: 7.79E3

T: - p NSI Z ms [272.00-372.00]



MT762 3H NMR in D2O
Batch 20110614-NT



BRUKER

6.108
6.104
6.104
6.055
6.030

NAME MT762-20110614-NT
EXPNO 2
PROCNO 1
Date_ 20110909
Time_ 12.59
INSTRUM spect
PROBHD 5 mm DUX 3H-1H
PULPROG zg
TD 16384
SOLVENT D2O
NS 2733
DS 2
SWH 6172.839 Hz
FIDRES 0.376760 Hz
AQ 1.3271540 sec
RG 46341
DW 81.000 usec
DE 6.00 usec
TE 300.0 K
D1 2.00000000 sec
TD0 1

==== CHANNEL f1 =====
NUC1 3H
P1 10.00 usec
PL1 2.00 dB
SF01 320.1321857 MHz
SI 32768
SF 320.1305850 MHz
WDW no
SSB 0
LB 0.00 Hz
GB 0
PC 1.00

