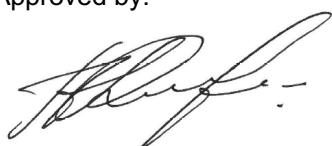


Name:	Verapamil-D7 Hydrochloride
Lot#:	GR-12-145
Test Date:	02/09/2024 (re-test date: 02/09/2029)
CAS No.:	1188265-55-5
MF:	C ₂₇ H ₃₂ D ₇ ClN ₂ O ₄
MW:	498.11
Appearance:	White Solid
Purity:	99.7% by HPLC (average of two sample preparations); >98% atom D
¹H-NMR:	Conforms (shows a trace of IPA and MTBE)
MS-ESI (+)	Conforms (shows peak at m/z = 462.39 [M _{free base} +H] ⁺)
Storage	Store at -18°C in a dry place away from direct sunlight

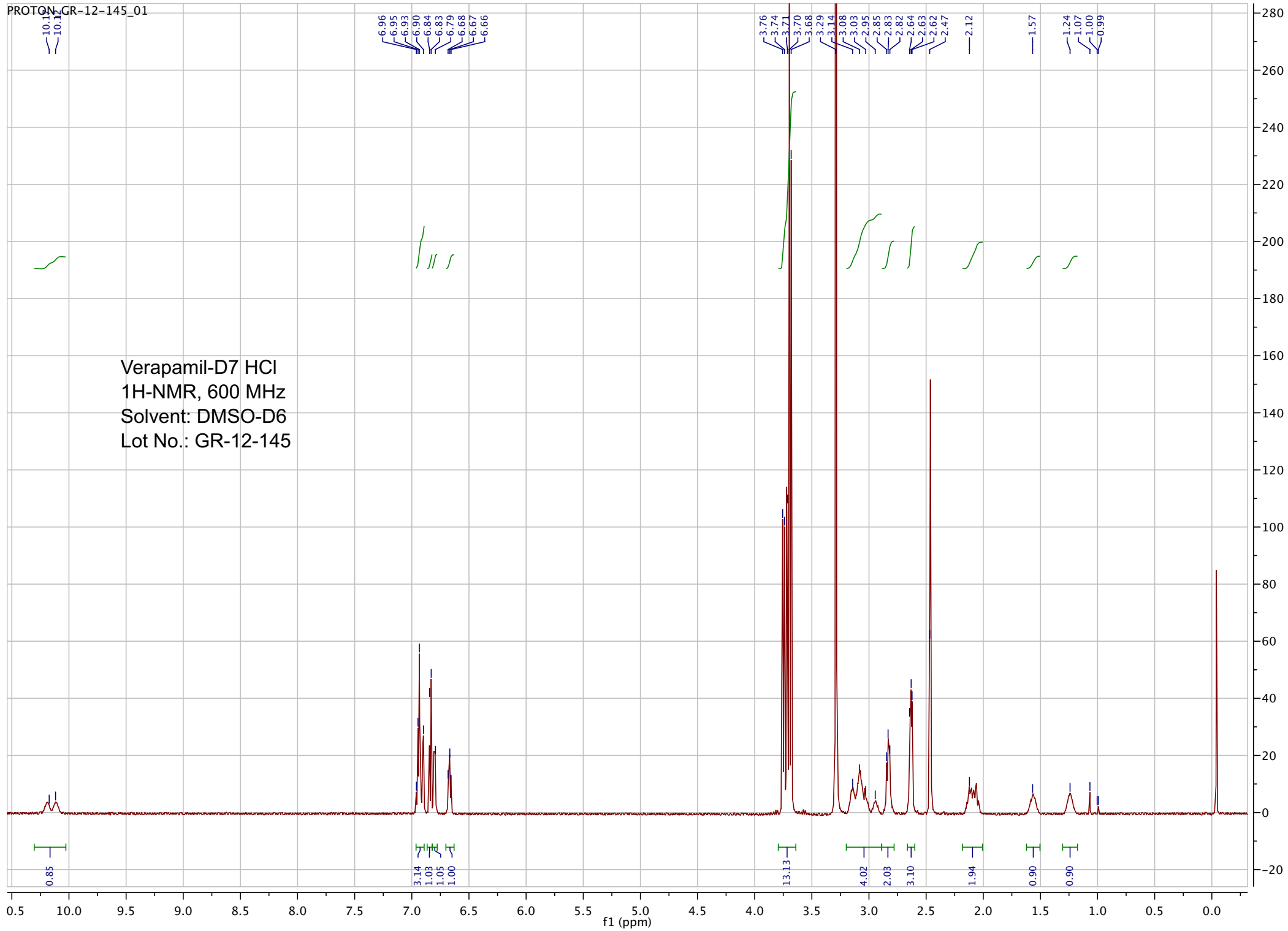
Approved by:

Date: 02/09/2024



Viorica Rusu, QC/QA Manager

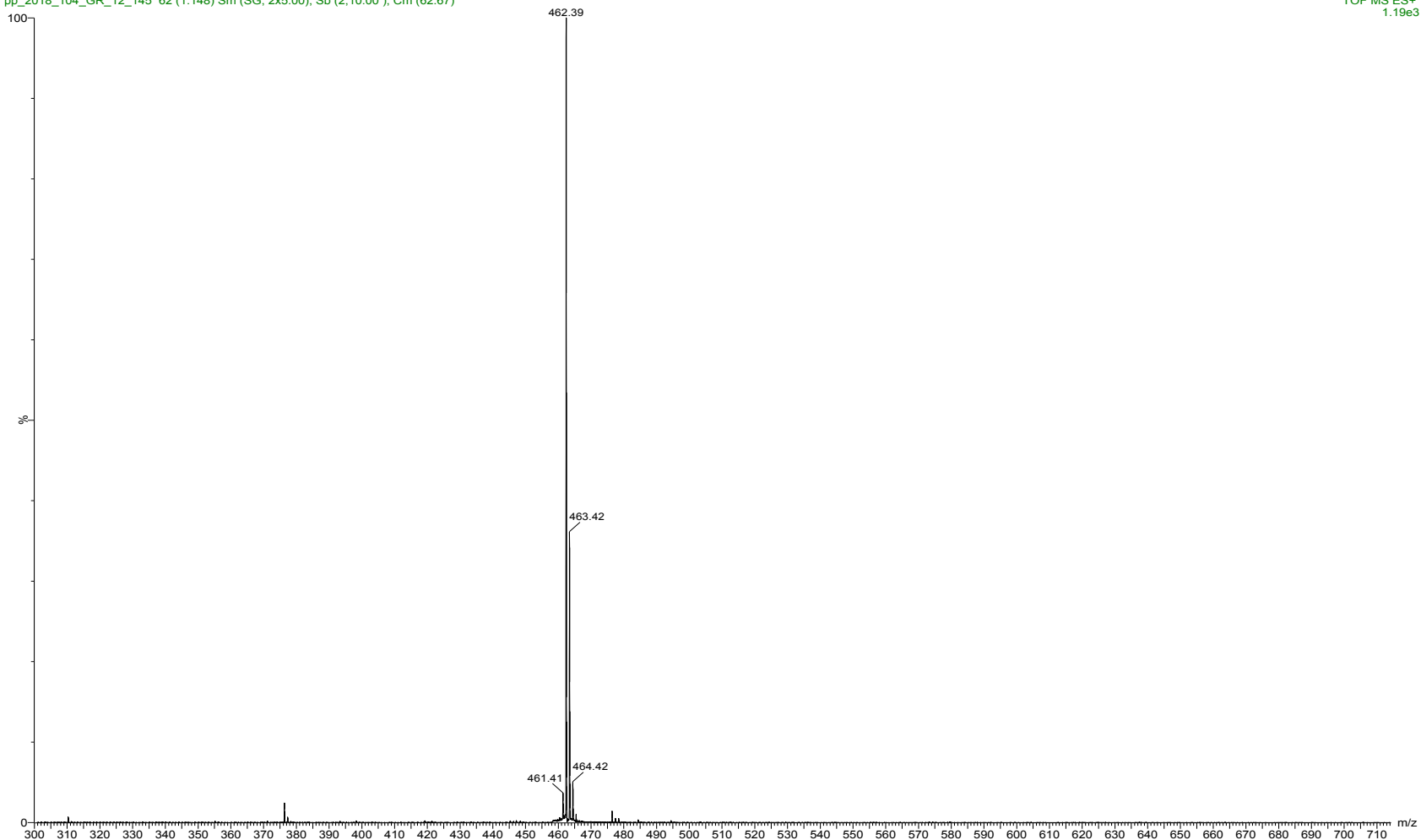
Verapamil-D7 HCl
1H-NMR, 600 MHz
Solvent: DMSO-D6
Lot No.: GR-12-145



pp_2018_104_GR_12_145 62 (1.148) Sm (SG, 2x5.00); Sb (2,10.00); Cm (62:67)

7.0000000

04-Oct-2018, 13:18:41
TOF MS ES+
1.19e3

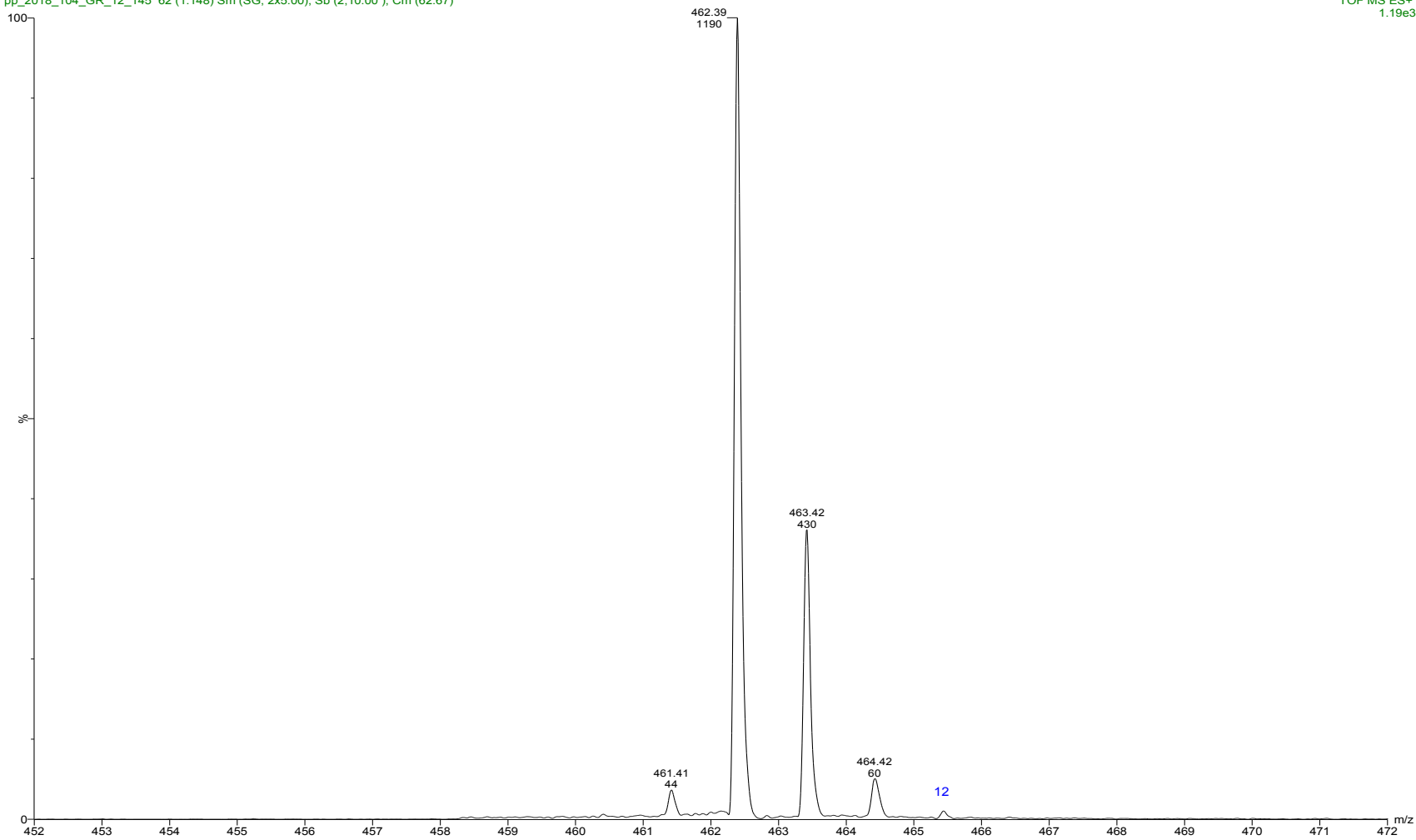


ESI-MS spectrum for sample GR-12-145. Shows monoisotopic [M+H]⁺ mass.

pp_2018_104_GR_12_145 62 (1.148) Sm (SG, 2x5.00); Sb (2,10.00); Cm (62:67)

7.0000000

04-Oct-2018, 13:18:41
TOF MS ES+
1.19e3

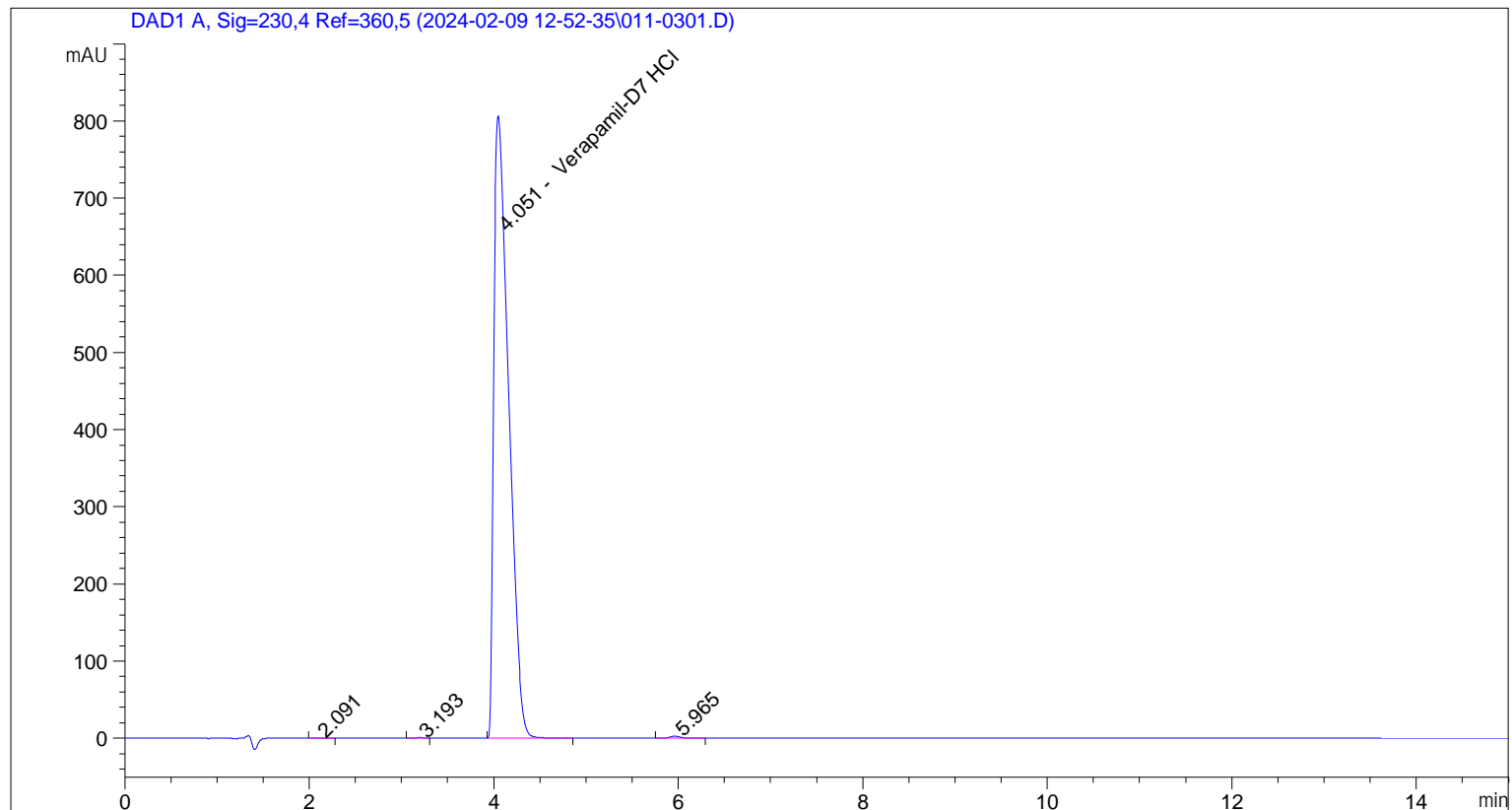


Expansion of above showing intensity.

Sample Name: GR-12-145 spl-2

=====

Acq. Operator	: vrusu	Seq. Line	: 3
Acq. Instrument	: Instrument 1	Location	: Vial 11
Injection Date	: 2/9/2024 1:28:47 PM	Inj	: 1
		Inj Volume	: 10.0 µl
Acq. Method	: C:\CHEM32\1\DATA\2024-02-09 12-52-35\VR020924_145.M		
Last changed	: 2/9/2024 12:52:30 PM by vrusu		
Analysis Method	: C:\CHEM32\1\METHODS\VR020924_145_PM.M		
Last changed	: 2/9/2024 1:55:16 PM by vrusu		



Area Percent Report

Sorted By : Signal
Calib. Data Modified : 2/9/2024 1:54:11 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=230,4 Ref=360,5

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	4.051	VB	0.1738	9114.19238	99.6650	Verapamil-D7 HCl

Totals : 9114.19238 99.6650

Uncalibrated Peaks:

Sample Name: GR-12-145 spl-2

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	2.091	BB	0.0999	2.95140	0.0323	?
2	3.193	BB	0.0816	4.67434	0.0511	?
3	5.965	BB	0.1358	23.00739	0.2516	?
Uncalib. totals :				30.63313	0.3350	

=====
*** End of Report ***

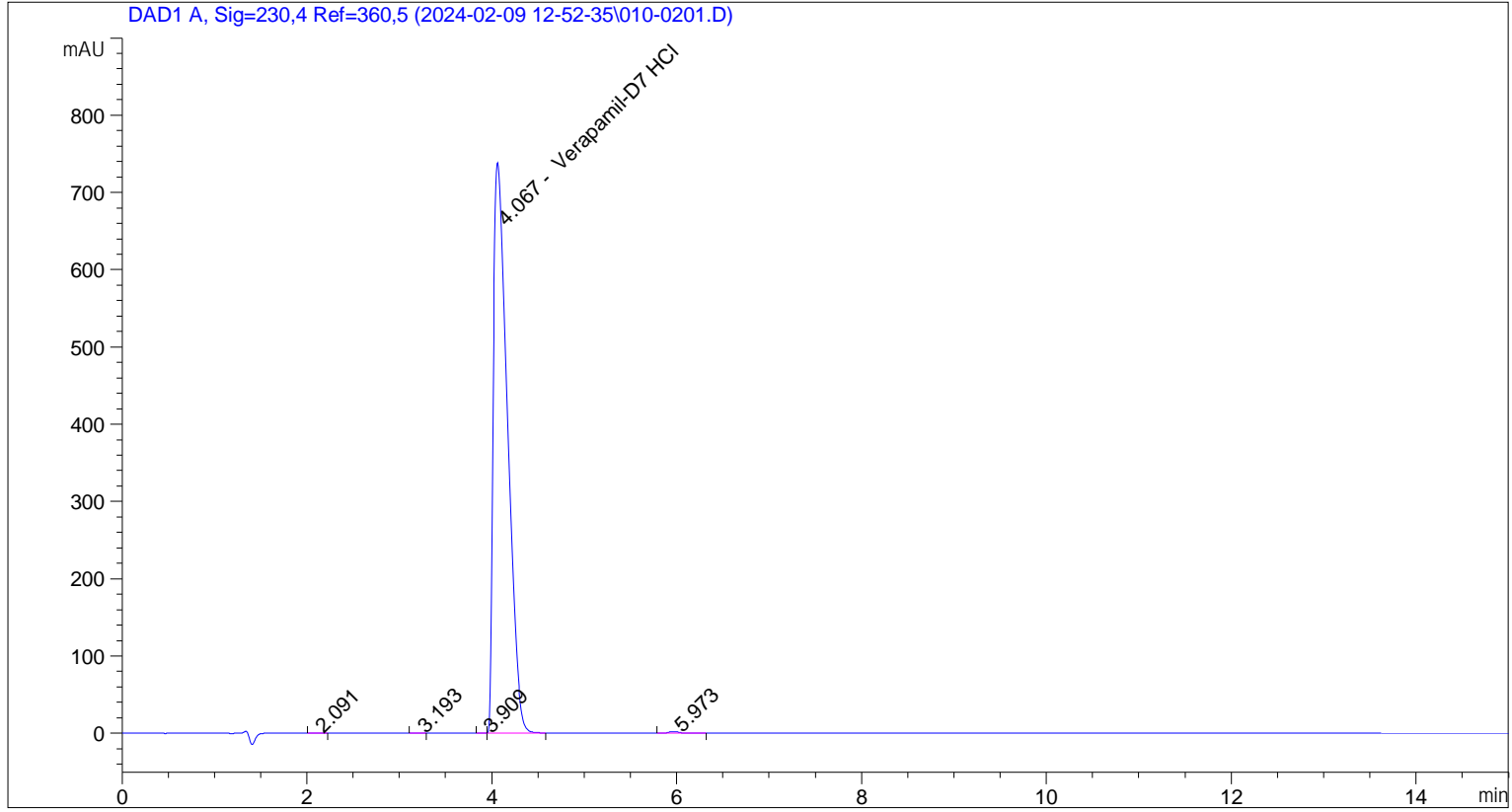
Sample Name: GR-12-145

```

=====
Acq. Operator   : vrusu                               Seq. Line :    2
Acq. Instrument : Instrument 1                         Location  : Vial 10
Injection Date  : 2/9/2024 1:11:20 PM                 Inj       :    1
                                                    Inj Volume: 10.0 µl

Acq. Method     : C:\CHEM32\1\DATA\2024-02-09 12-52-35\VR020924_145.M
Last changed    : 2/9/2024 12:52:30 PM by vrusu
Analysis Method : C:\CHEM32\1\METHODS\VR020924_145_PM.M
Last changed    : 2/9/2024 1:55:16 PM by vrusu
=====

```



```

=====
                          Area Percent Report
=====

```

```

Sorted By           :      Signal
Calib. Data Modified :      2/9/2024 1:54:11 PM
Multiplier:         :      1.0000
Dilution:           :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs

```

Signal 1: DAD1 A, Sig=230,4 Ref=360,5

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	4.067	VB	0.1653	7930.89160	99.7044	Verapamil-D7 HCl

```
Totals :                      7930.89160  99.7044
```

Uncalibrated Peaks:

Sample Name: GR-12-145

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	2.091	BB	0.0821	2.02564	0.0255	?
2	3.193	BB	0.0665	2.42596	0.0305	?
3	3.909	BV	0.0610	8.16493e-1	0.0103	?
4	5.973	BB	0.1299	18.24615	0.2294	?

Uncalib. totals : 23.51423 0.2956

=====
*** End of Report ***