

Name:	4,5-Dihydro-5α-methoxy Levonorgestrel (Levonorgestrel EP Impurity O)
Lot#:	GR-19-067
Test Date:	02/05/2024 (re-test date: 02/05/2029)
CAS No.:	155683-60-6
MF:	C ₂₂ H ₃₂ O ₃
MW:	344.49
Appearance:	White solid
Purity:	98.5% by HPLC (average of two sample preparations)
¹H-NMR:	Conforms (contains a trace of THF)
MS-ESI (+)	(shows peaks at m/z = 313.22 [M-MeOH+H] ⁺ , 345.24 [M+H] ⁺ and 367.22 [M+Na] ⁺)
Storage	Store at -18°C in a dry place away from direct sunlight

Approved by:

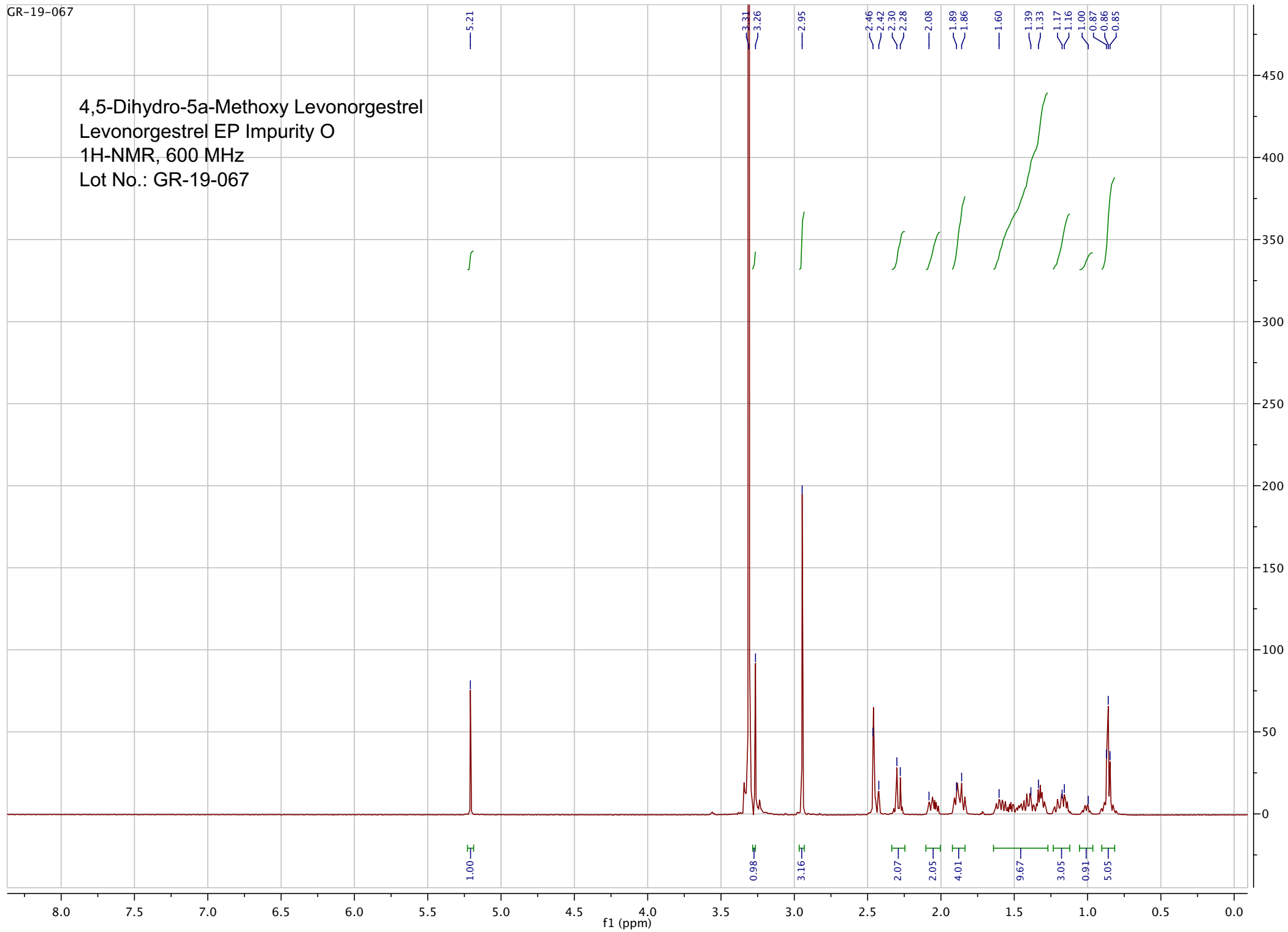
Date: 02/06/2024



Viorica Rusu, QC/QA Manager

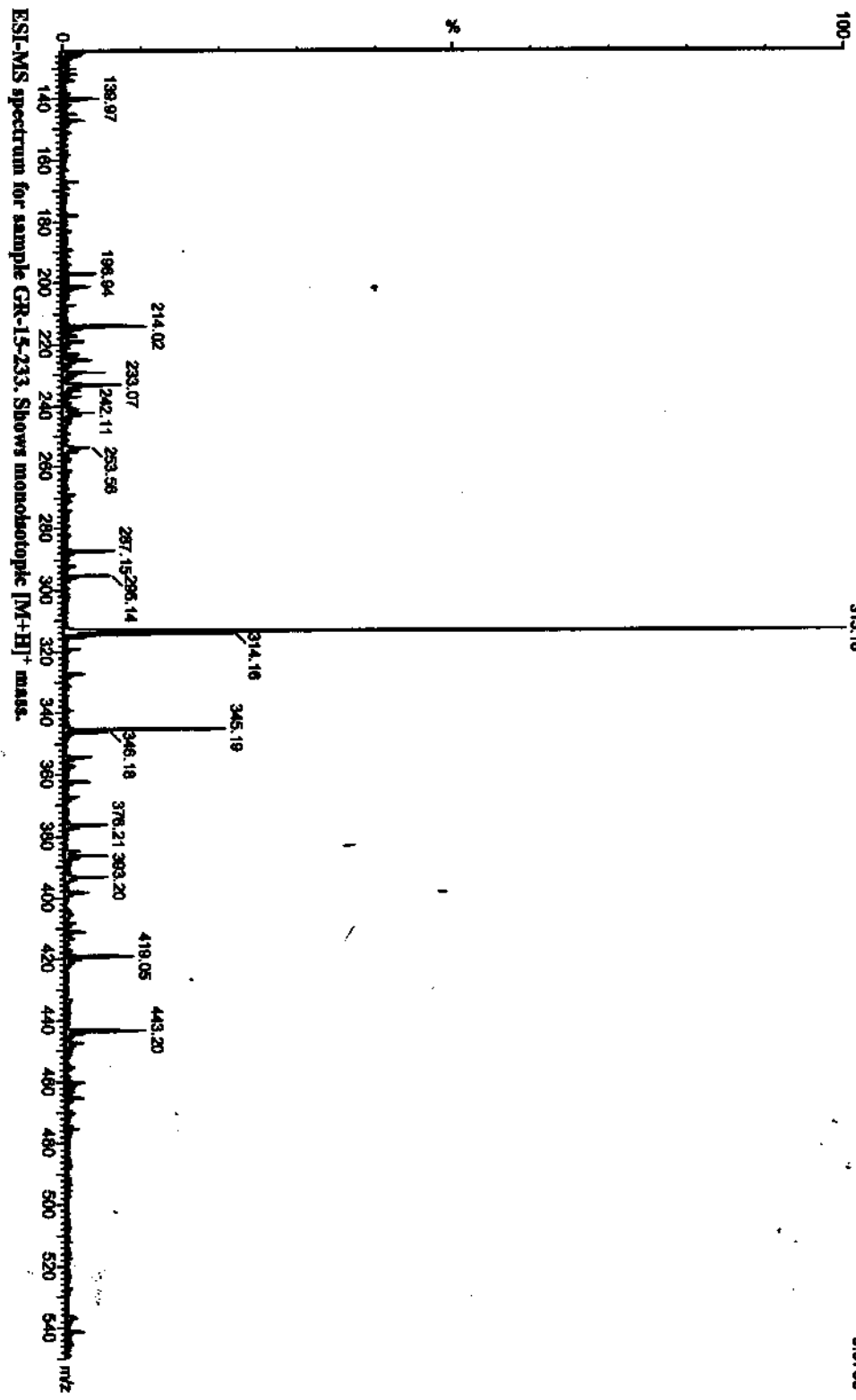
GR-19-067

4,5-Dihydro-5a-Methoxy Levonorgestrel
Levonorgestrel EP Impurity O
1H-NMR, 600 MHz
Lot No.: GR-19-067



pp_2021_010_GR_15_233_1_16 (0.896) Sm (93, 240.50); Sb (2, 10.00); Cm (15, 16)
313.16

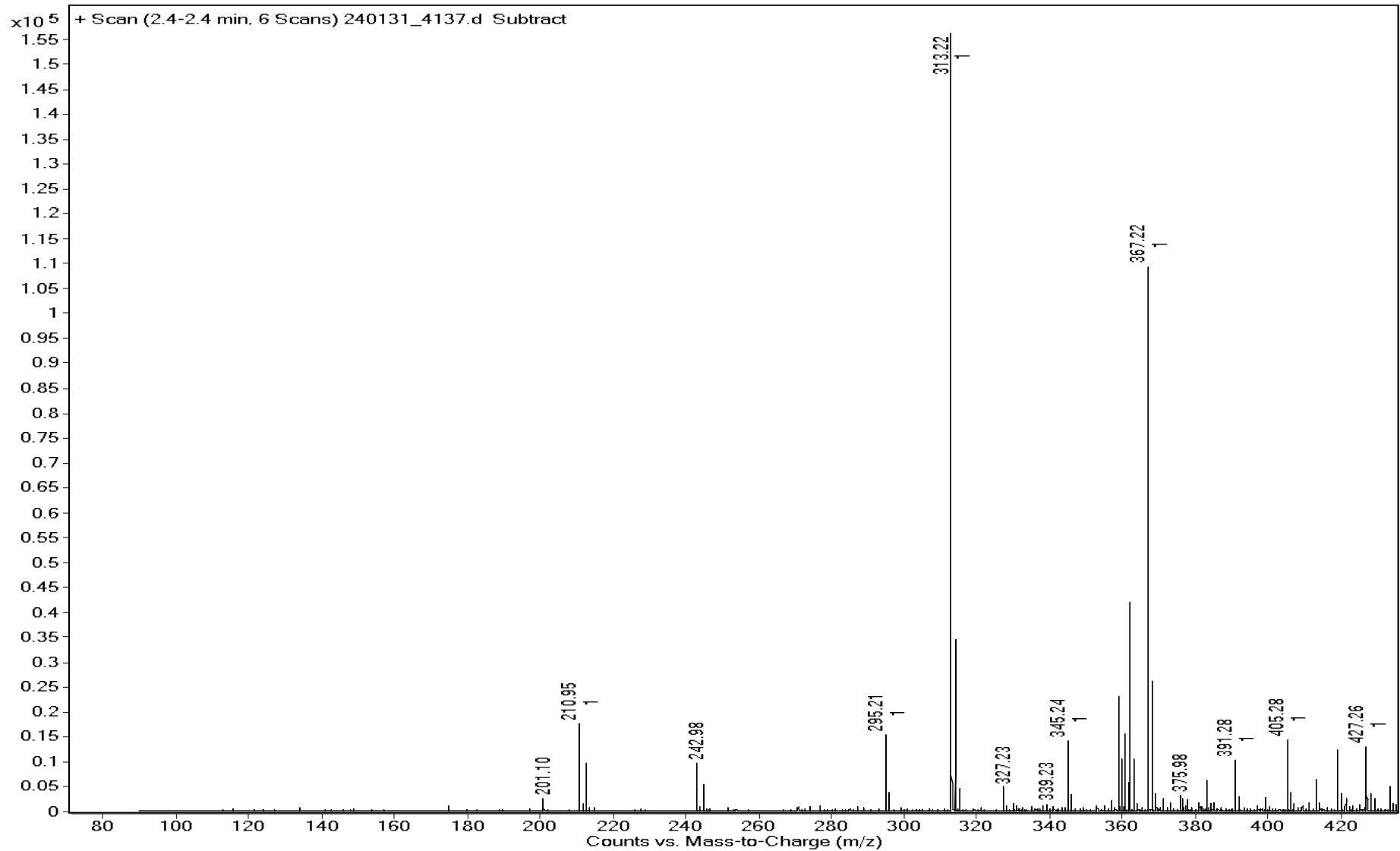
04-Mar-2021, 12:56:50
1: Scan ES+
5.07e6



Sample Name GR-19-067
DA Method AIMS_Accurate_Mass.m
Comment ESI+, low fragments

Data File 240131_4137.d
Instrument Agilent 6538 UHD

Acq Method HRMS.m
Acq Date, Time 31/01/2024 11:52:30 AM



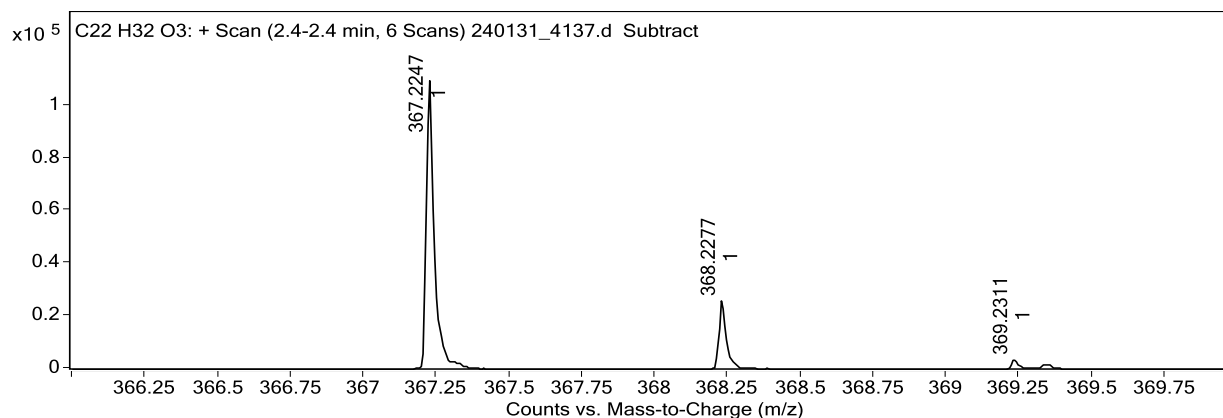
Sample Name	GR-19-067	Data File	240131_4137.d
Acq Method	HRMS.m	DA Method	AIMS_Accurate_Mass.m
Instrument	Agilent 6538 UHD	Acq Date, Time	31/01/2024 11:52:30 AM
Comment	ESI+, low fragments		

Target Ion Species

Ion Species	m/z	Ionic Formula
(M+Na) ⁺	367.2247	C ₂₂ H ₃₂ Na O ₃

MFG Calculator Results

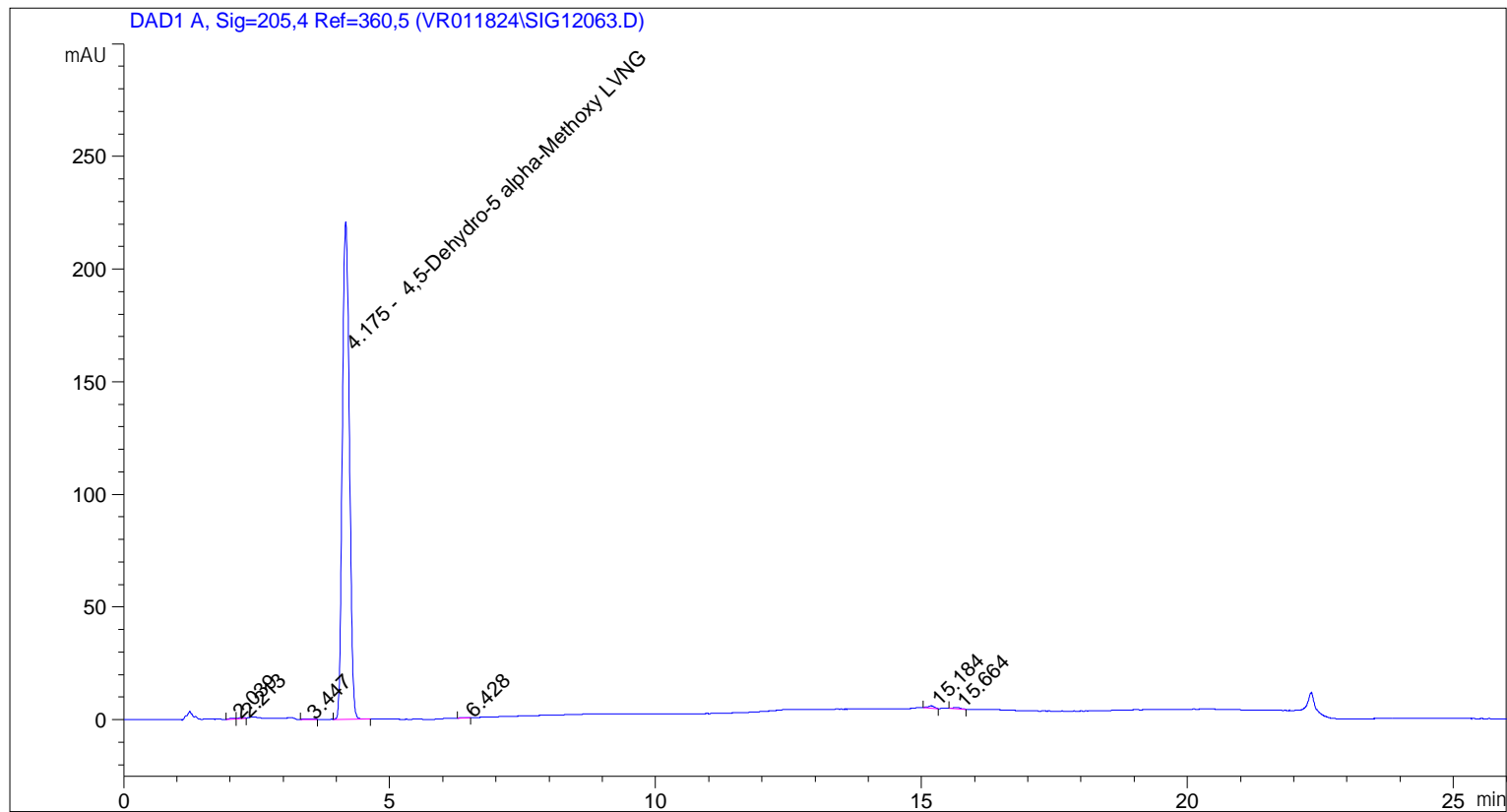
Target m/z	Ionic Formula	Calc m/z	+/- (mDa)	+/- (ppm)	DBE	MFG Score
367.2247	C ₂₂ H ₃₂ Na O ₃	367.2244	0.3	0.8	7.0	99.54
367.2247	C ₁₈ H ₂₈ N ₆ Na O	367.2217	3.0	8.2	8.0	77.54



Predicted Isotope Match Table

Isotope	m/z	Calc m/z	Diff (mDa)	Abund (%)	Calc Abund (%)	+/-
1	367.2247	367.2244	0.3	100.0	100.0	0.0
2	368.2277	368.2278	-0.1	24.2	24.3	0.1
3	369.2311	369.2307	0.4	3.5	3.4	-0.1

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Acq. Operator : vrusu
Acq. Instrument : Instrument 1 Location : Vial 13
Injection Date : 2/5/2024 12:22:28 PM Inj Volume : 50.0 µl
Acq. Method : C:\CHEM32\1\METHODS\VR020524_067.M
Last changed : 2/5/2024 12:20:30 PM by vrusu
Analysis Method : C:\CHEM32\1\METHODS\VR020524_067_PM.M
Last changed : 2/5/2024 1:47:01 PM by vrusu



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Area Percent Report
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Sorted By : Signal
Calib. Data Modified : 2/5/2024 1:45:58 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=205,4 Ref=360,5

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	4.175	BB	0.1476	2036.82959	98.9838	4,5-Dehydro-5 alpha-Methoxy LVNG

Totals : 2036.82959 98.9838

Uncalibrated Peaks:

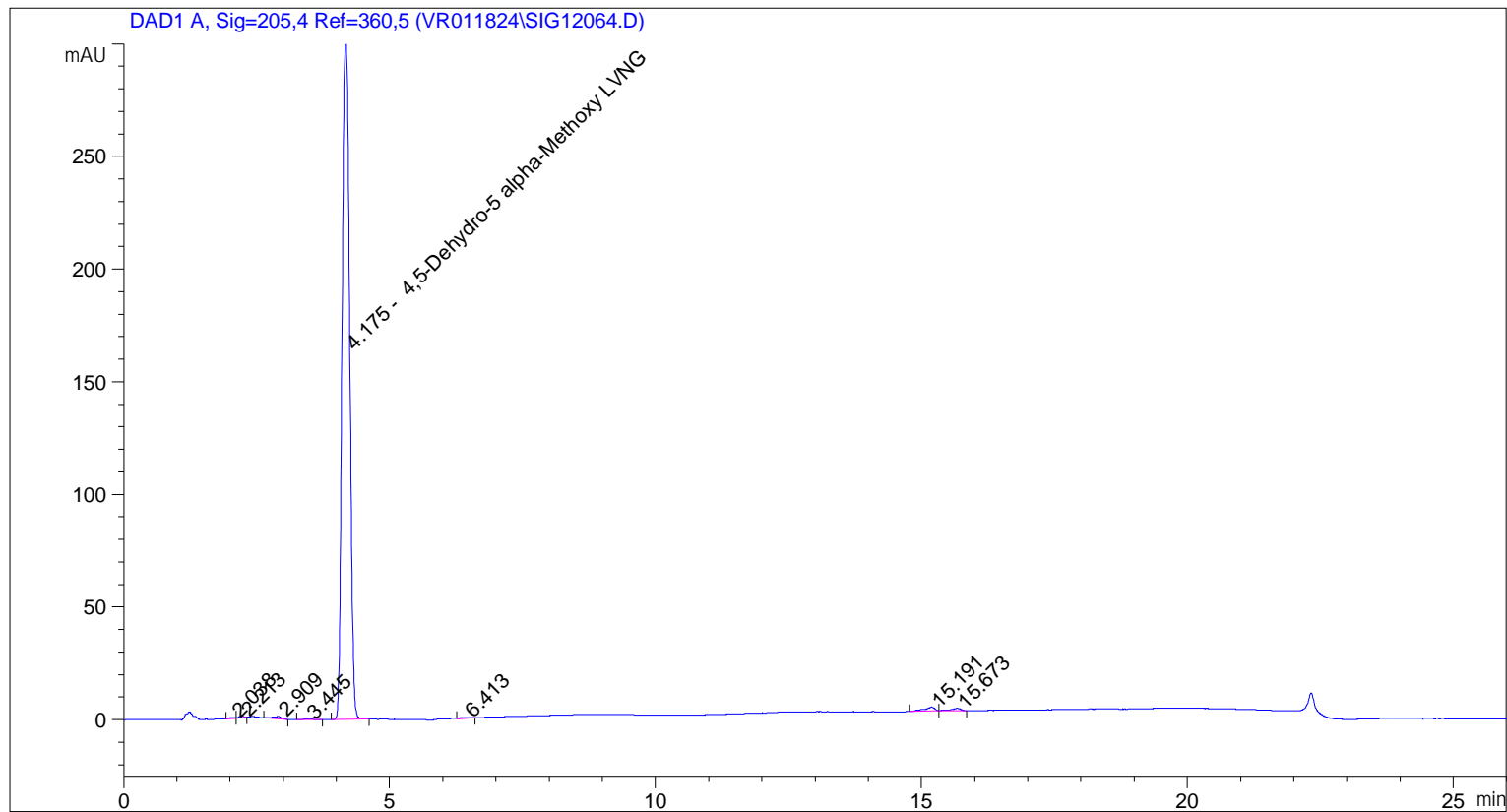
Sample Name: GR-19-067

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	2.039	BV	0.0985	2.20173	0.1070	?
2	2.213	VB	0.0996	2.29945	0.1117	?
3	3.447	BB	0.1291	2.19411	0.1066	?
4	6.428	BB	0.1194	1.74122	0.0846	?
5	15.184	BB	0.1271	7.34978	0.3572	?
6	15.664	BB	0.1247	5.12428	0.2490	?

Uncalib. totals : 20.91057 1.0162

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*** End of Report ***

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Acq. Operator : vrusu
Acq. Instrument : Instrument 1 Location : Vial 14
Injection Date : 2/5/2024 12:58:05 PM Inj Volume : 50.0 µl
Acq. Method : C:\CHEM32\1\METHODS\VR020524_067.M
Last changed : 2/5/2024 12:56:07 PM by vrusu
Analysis Method : C:\CHEM32\1\METHODS\VR020524_067_PM.M
Last changed : 2/5/2024 1:47:01 PM by vrusu



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Area Percent Report
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Sorted By : Signal
Calib. Data Modified : 2/5/2024 1:45:58 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=205,4 Ref=360,5

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	4.175	BB	0.1575	2962.31592	97.9718	4,5-Dehydro-5 alpha-Methoxy LVNG

Totals : 2962.31592 97.9718

Uncalibrated Peaks:

Sample Name: GR-19-067 spl-2

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	2.038	BV	0.0915	3.03190	0.1003	?
2	2.213	VB	0.0885	4.20299	0.1390	?
3	2.909	BB	0.1501	9.87377	0.3266	?
4	3.445	BB	0.1795	4.35190	0.1439	?
5	6.413	VB	0.1464	4.72709	0.1563	?
6	15.191	BB	0.1924	22.25613	0.7361	?
7	15.673	BB	0.1752	12.88306	0.4261	?

Uncalib. totals : 61.32684 2.0282

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*** End of Report ***