

Name:	delta-5(6)-Levonorgestrel Levonorgestrel EP Impurity P
Lot#:	GR-15-175
Test Date:	01/12/2021 (re-test date: 01/12/2026)
CAS No.:	100021-05-4
MF:	C ₂₁ H ₂₈ O ₂
MW:	312.45
Appearance:	White solid
Purity:	96.6% by HPLC (average of two sample preparations)
¹H-NMR:	Conforms (shows a trace of EtOAc)
MS-ESI (+)	Conforms (shows peak at m/z = 313.22 [M+H] ⁺)
Storage	Long term store at -20° C in a dry place away from direct sunlight

Approved by:

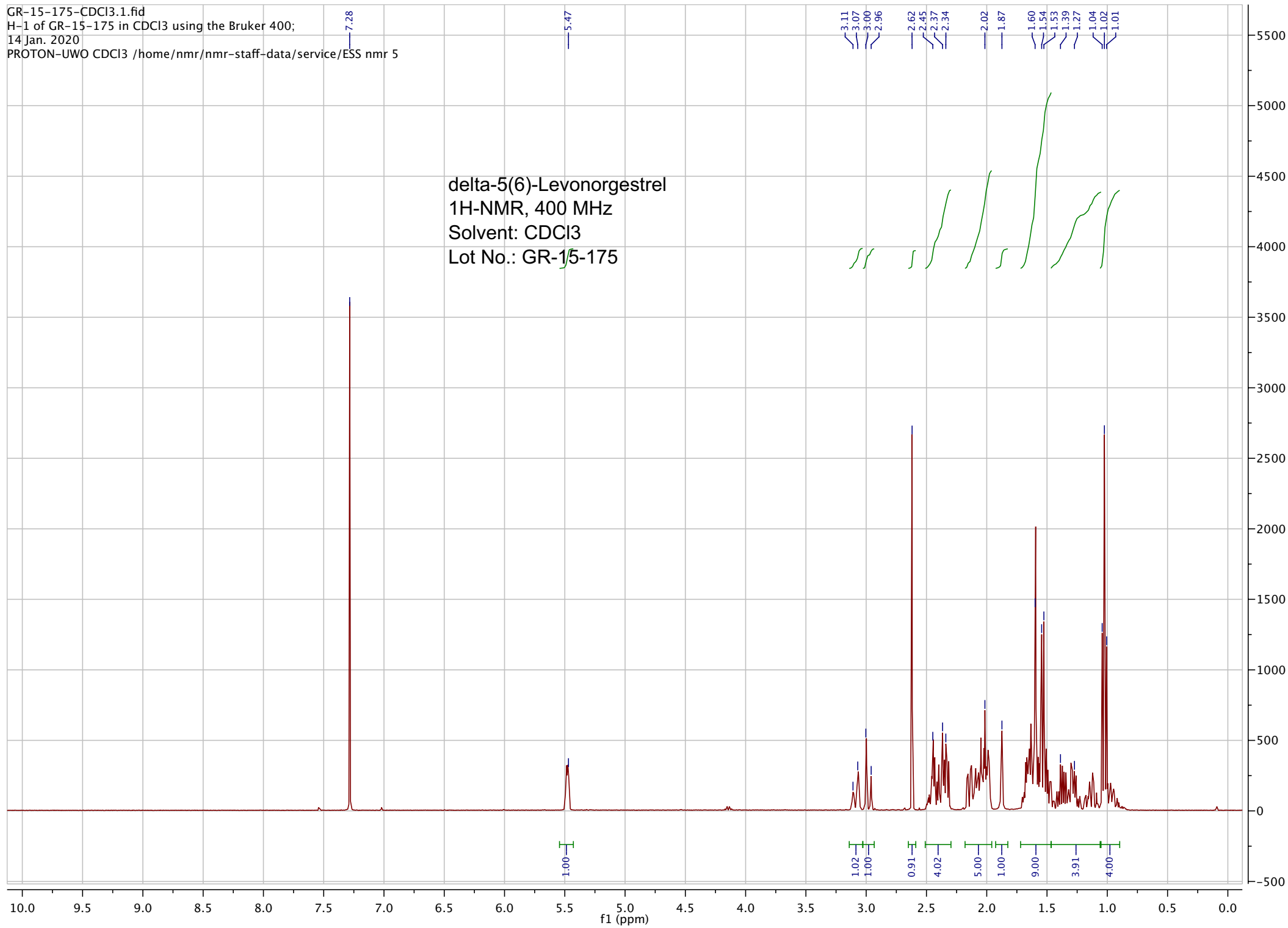
Date: 01/15/2021



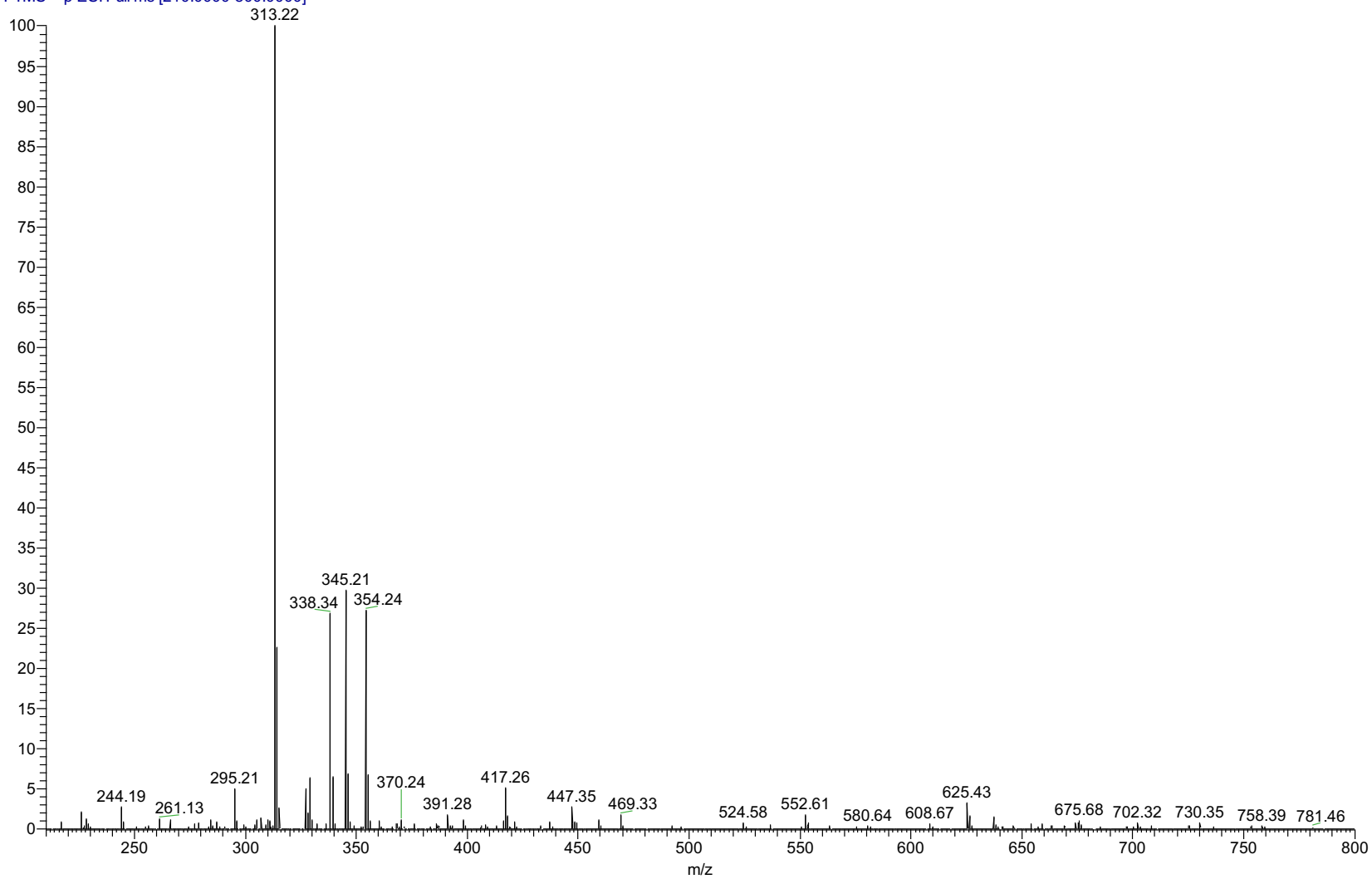
Viorica Rusu, QC/QA Manager

GR-15-175-CDCl3.1.fid
H-1 of GR-15-175 in CDCl3 using the Bruker 400;
14 Jan. 2020
PROTON-UWO CDCl3 /home/nmr/nmr-staff-data/service/ESS nmr 5

delta-5(6)-Levonorgestrel
1H-NMR, 400 MHz
Solvent: CDCl3
Lot No.: GR-15-175

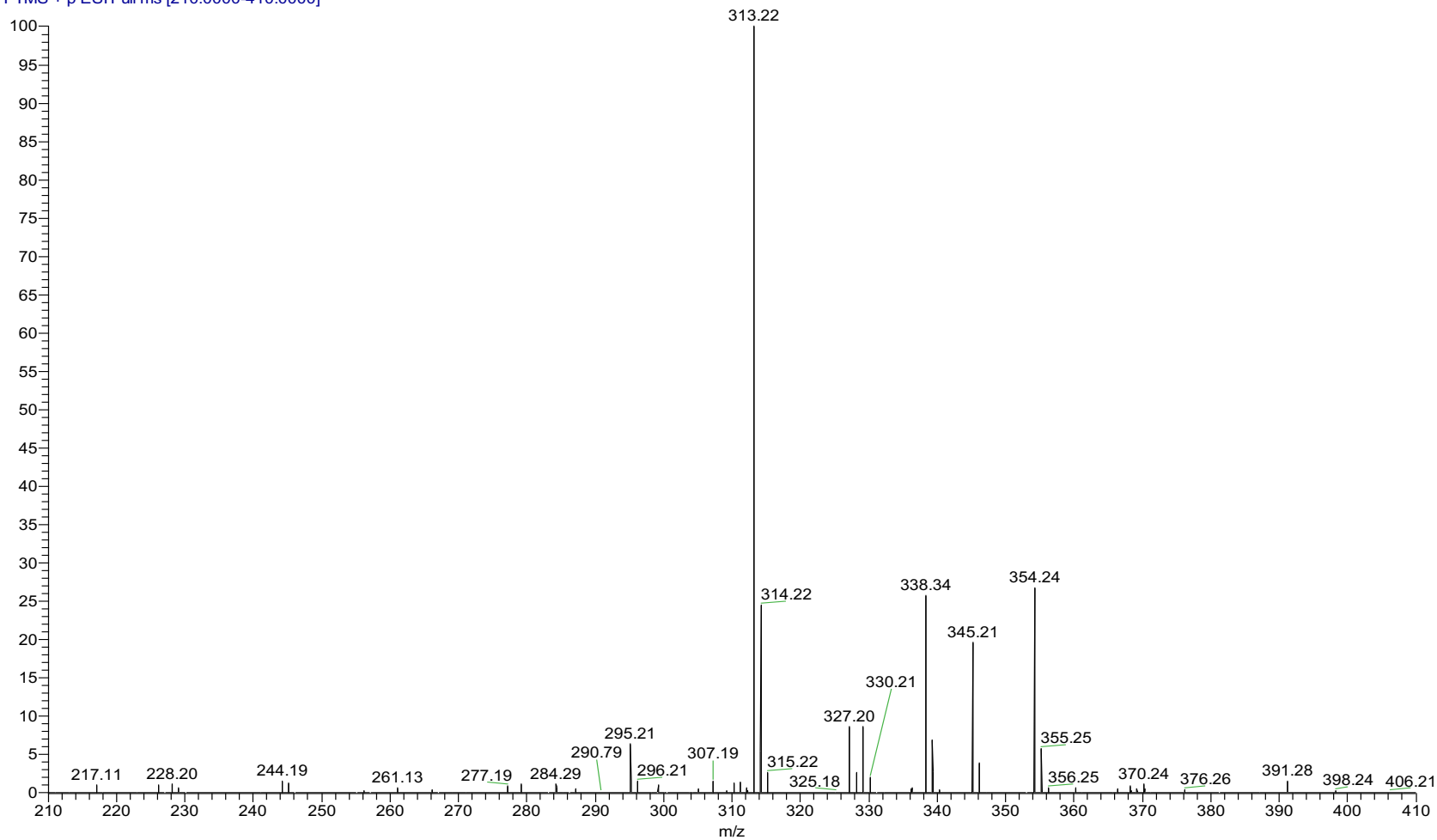


pp_2021_003_GR_15_175_1 #1246 RT: 2.80 AV: 1 NL: 1.13E8
T: FTMS + p ESI Full ms [210.0000-800.0000]



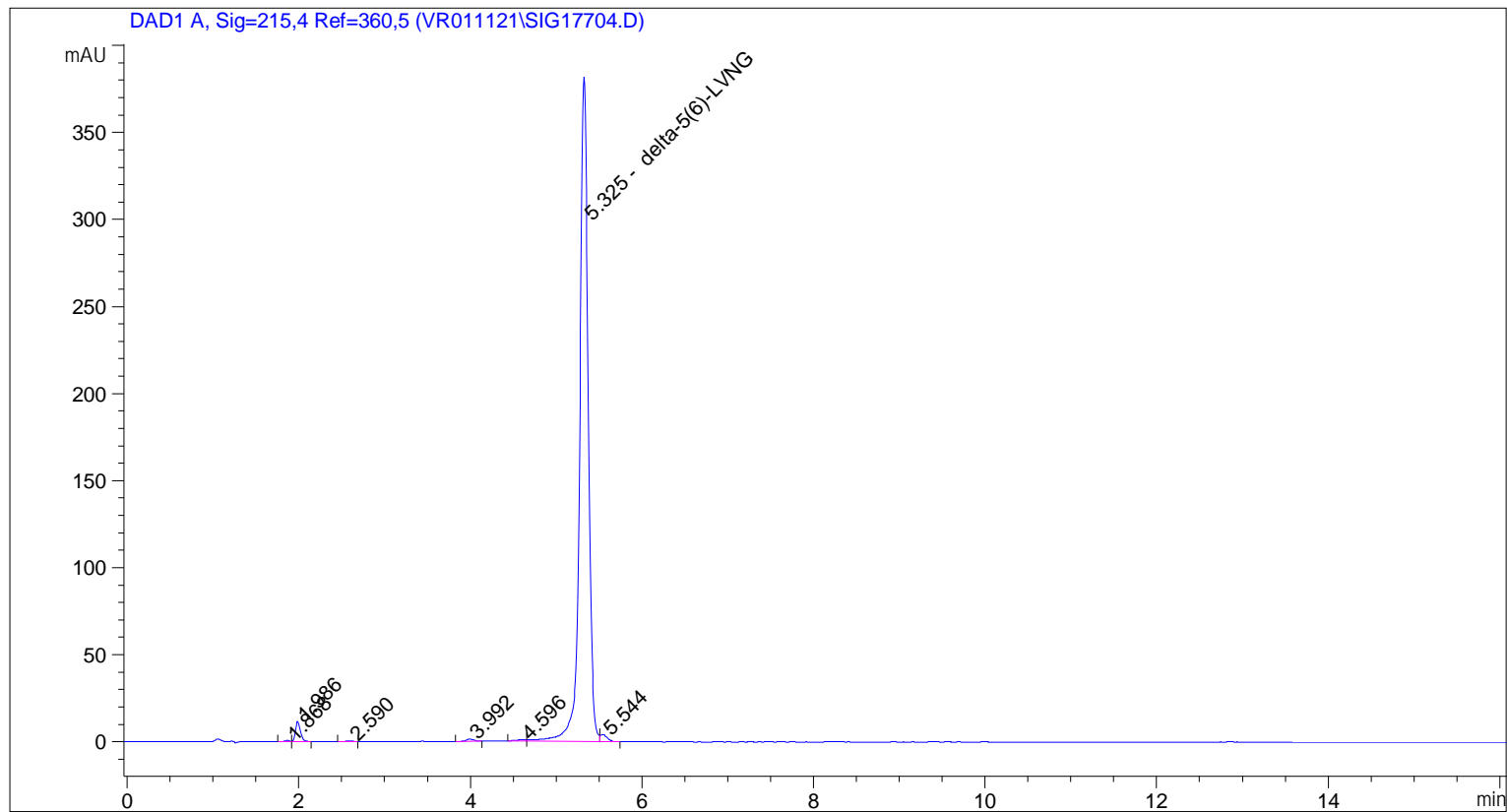
ESI-MS spectrum for sample GR-15-175. Shows monoisotopic [M+H]⁺ mass.

pp_2021_003_GR_15_175_1 #1057 RT: 2.37 AV: 1 NL: 9.77E7
T: FTMS + p ESI Full ms [210.0000-410.0000]



ESI-MS spectrum for sample GR-15-175. Shows monoisotopic [M+H]⁺ mass, narrow mass range.

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Acq. Operator : vrusu
Acq. Instrument : Instrument 1 Location : Vial 88
Injection Date : 1/12/2021 2:53:15 PM Inj Volume : 10.0 µl
Acq. Method : C:\CHEM32\1\METHODS\VR011221_175.M
Last changed : 1/12/2021 2:52:11 PM by vrusu
Analysis Method : C:\CHEM32\1\METHODS\VR011221_175PM.M
Last changed : 1/12/2021 3:13:18 PM by vrusu



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Area Percent Report
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Sorted By : Signal
Calib. Data Modified : 1/12/2021 3:13:05 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=215,4 Ref=360,5

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	1.868	VV	0.0669	2.79387	0.1027	?
2	1.986	VV	0.0617	47.25348	1.7371	?
3	2.590	BV	0.0772	2.55201	0.0938	?
4	3.992	BV	0.0899	8.57461	0.3152	?
5	4.596	BV	0.1123	4.81203	0.1769	?
6	5.325	VV	0.1044	2631.58179	96.7412	delta-5(6)-LVNG
7	5.544	VB	0.0865	22.66039	0.8330	?

Sample Name: GR-15-175

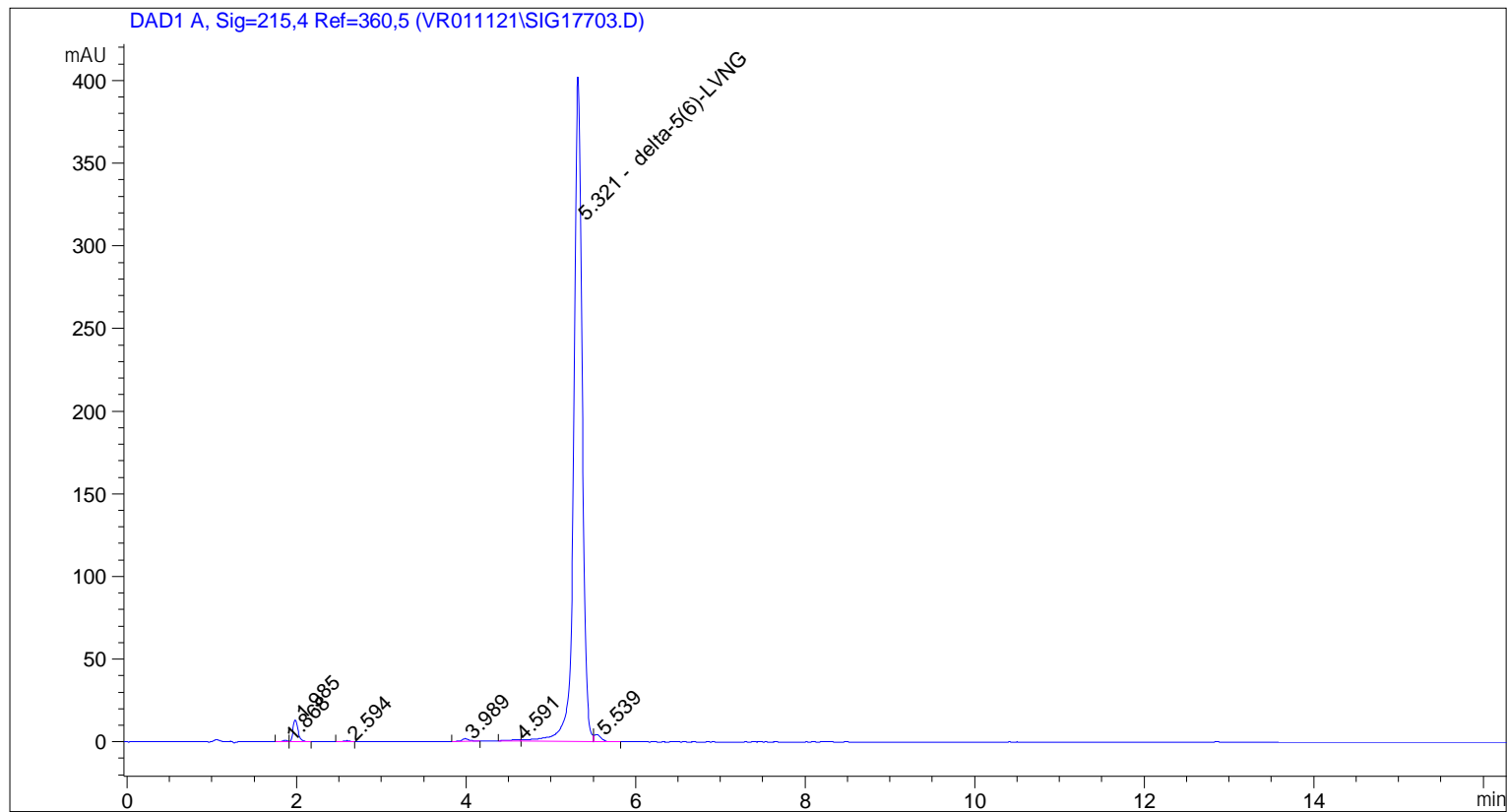
Totals : 2720.22818

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*** End of Report ***

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Acq. Operator   : vrusu
Acq. Instrument : Instrument 1                Location : Vial 87
Injection Date  : 1/12/2021 2:35:17 PM
                                           Inj Volume : 10.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\VR011221_175.M
Last changed    : 1/12/2021 2:34:10 PM by vrusu
Analysis Method : C:\CHEM32\1\METHODS\VR011221_175PM.M
Last changed    : 1/12/2021 3:13:18 PM by vrusu
  
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 Area Percent Report
 =====

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Sorted By           :      Signal
Calib. Data Modified :      1/12/2021 3:13:05 PM
Multiplier:         :      1.0000
Dilution:           :      1.0000
Use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=215,4 Ref=360,5

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	1.868	VV	0.0605	3.12832	0.1085	?
2	1.985	VB	0.0636	53.87589	1.8682	?
3	2.594	VV	0.0755	3.03570	0.1053	?
4	3.989	BB	0.0877	9.38549	0.3255	?
5	4.591	BV	0.1175	5.79742	0.2010	?
6	5.321	VV	0.1048	2784.14819	96.5430	delta-5(6)-LVNG
7	5.539	VB	0.0877	24.47076	0.8485	?

Sample Name: GR-15-175

Totals : 2883.84177

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*** End of Report ***