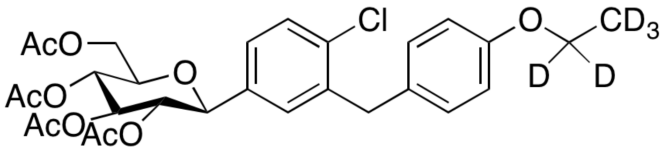
Certificate of Analysis

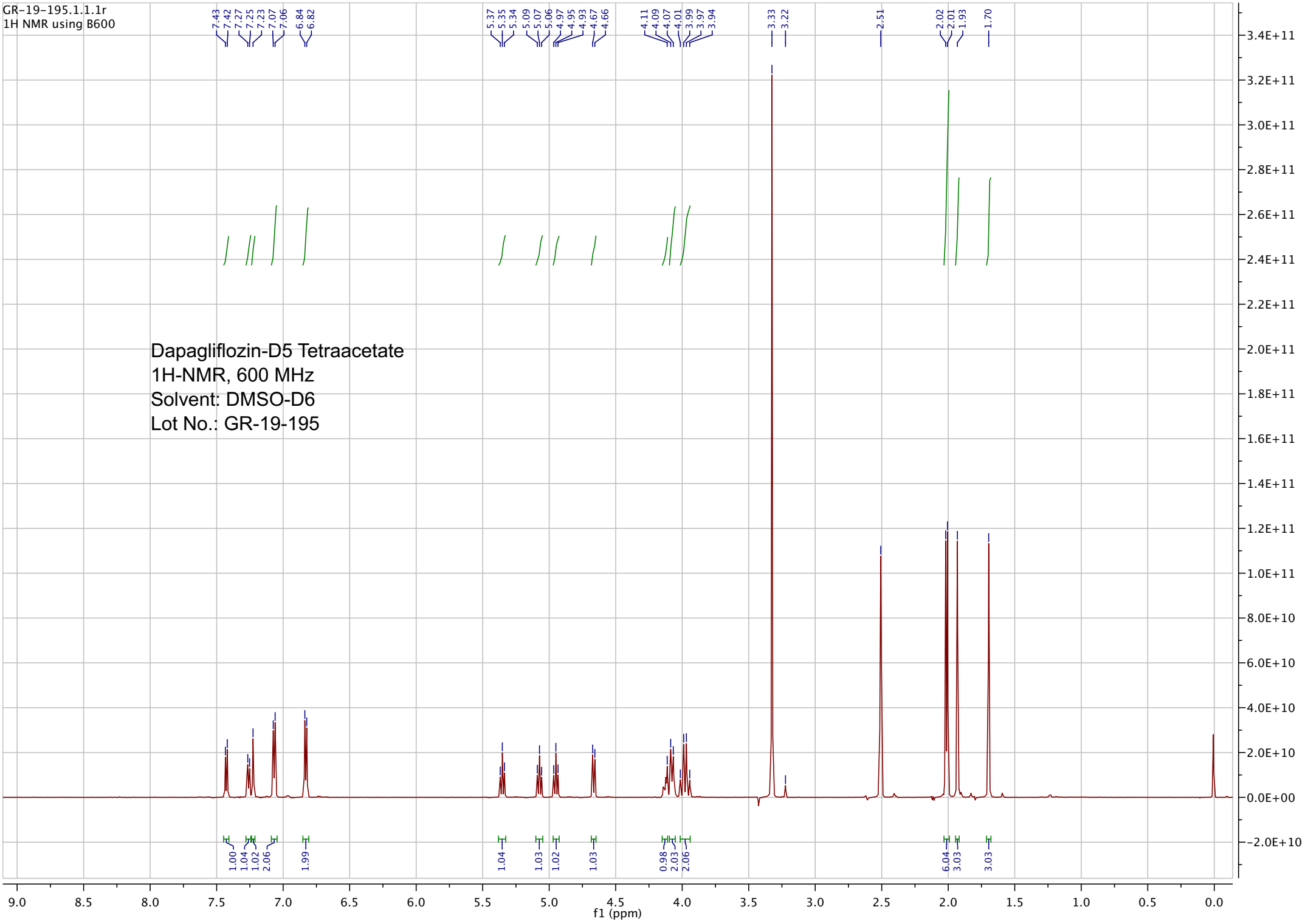


Name:	**Dapagliflozin-D5 Tetraacetate**
Lot#:	GR-19-195
Test Date:	11/28/2024 (re-test date: 11/28/2029)
CAS No.:	461432-25-7 unlabeled
MF:	$C_{29}H_{28}D_5ClO_{10}$
MW:	582.05
Appearance:	White solid
Purity:	98.7% by HPLC (average of two sample preparations); 99.7% atom D
^{1}H-NMR:	Conforms (shows a trace of MeOH)
MS-ESI (+)	Conforms (shows peaks at m/z = 599.24, 601.24 $[M+NH_4]^+$; 604.20, 606.20 $[M+Na]^+$ exhibits the expected pattern for mono-chloro compounds)
Storage	Store at -18°C in a dry place away from direct sunlight

Approved by: Date: 12/20/2024

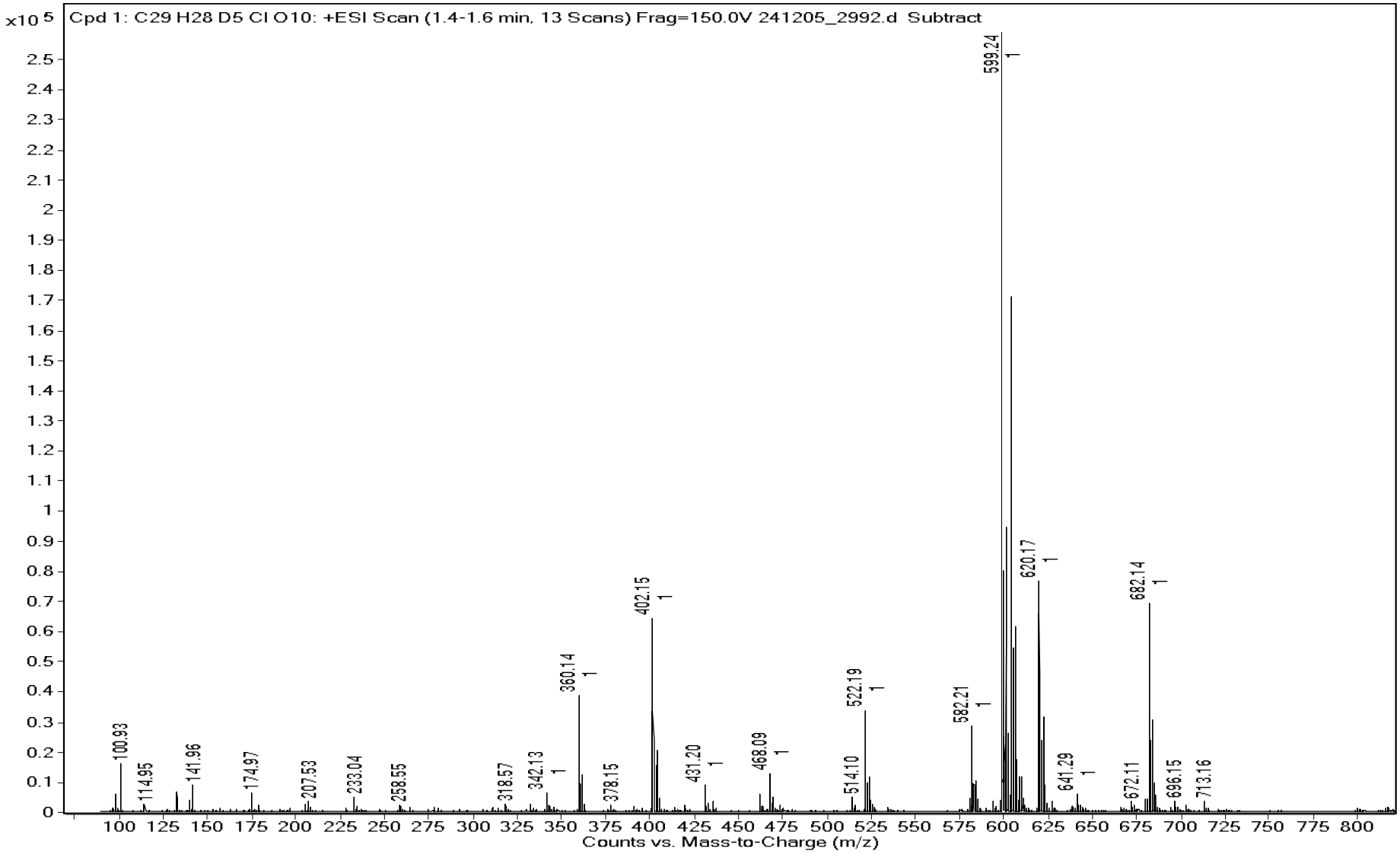
Viorica Rusu, QC/QA Manager

700, Collip Circle, The Research Park, London, ON, N6G 4X8
Ph: (647)4079078, e-mail: grusu@esschemco.com, www.esschemco.com


GR-19-195.1.1.1r
1H NMR using B600
7.43
7.42
7.27
7.25
7.23
7.07
7.06
6.84
6.82
5.37
5.35
5.34
5.09
5.07
5.06
4.97
4.95
4.93
4.67
4.66
4.11
4.09
4.07
4.01
3.99
3.97
3.94
3.33
3.22
2.51
2.02
2.01
1.93
1.70
Dapagliflozin-D5 Tetraacetate
1H-NMR, 600 MHz
Solvent: DMSO-D6
Lot No.: GR-19-195
1.00
1.04
1.02
2.06
1.99
1.04
1.03
1.02
1.03
0.98
2.03
2.06
6.04
3.03
3.03
3.4E+11
3.2E+11
3.0E+11
2.8E+11
2.6E+11
2.4E+11
2.2E+11
2.0E+11
1.8E+11
1.6E+11
1.4E+11
1.2E+11
1.0E+11
8.0E+10
6.0E+10
4.0E+10
2.0E+10
0.0E+00
-2.0E+10
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
f1 (ppm)

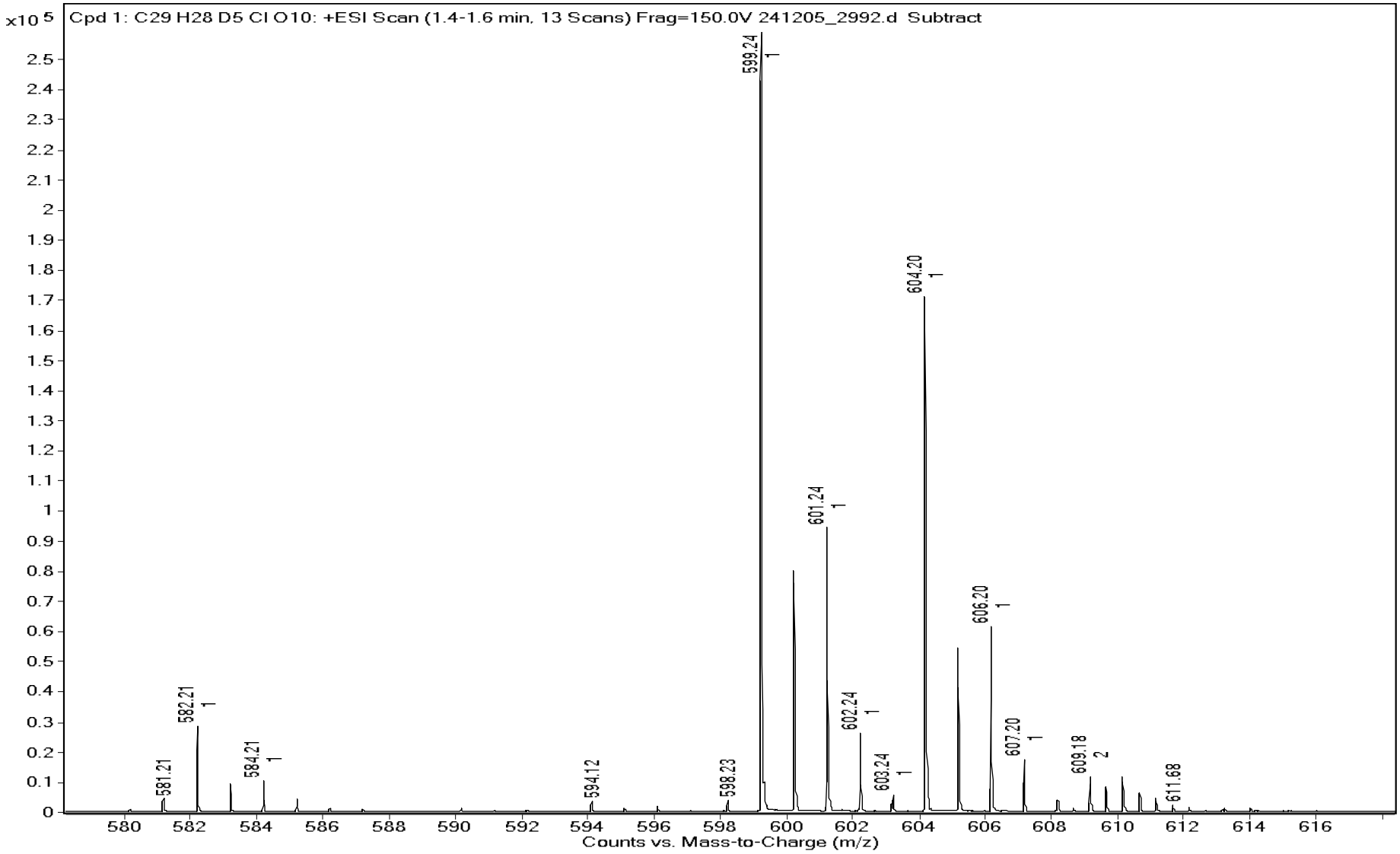
ESI Mass Spectrum

Sample Name	GR-19-195	**Data File**	241205_2992.d	**Acq Method**	HRMS.m
DA Method	AIMS_Accurate_Mass.m	**Instrument**	Agilent 6538 UHD	**Acq Date, Time**	05/12/2024 2:51:55 PM
Comment	ESI+				



ESI Mass Spectrum

Sample Name	GR-19-195	**Data File**	241205_2992.d	**Acq Method**	HRMS.m
DA Method	AIMS_Accurate_Mass.m	**Instrument**	Agilent 6538 UHD	**Acq Date, Time**	05/12/2024 2:51:55 PM
Comment	ESI+				



ESI-MS Report
Molecular Formula Generation (MFG)

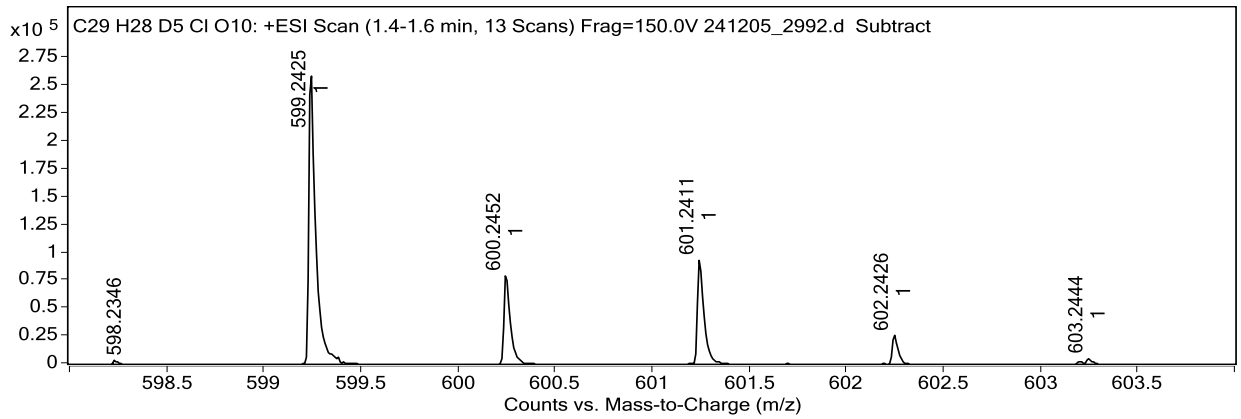
Sample Name	GR-19-195	**Data File**	241205_2992.d
Acq Method	HRMS.m	**DA Method**	AIMS_Accurate_Mass.m
Instrument	Agilent 6538 UHD	**Acq Date, Time**	05/12/2024 2:51:55 PM
Comment	ESI+		

Target Ion Species

Ion Species	*m/z*	*Ionic Formula*
(M+NH4)+	599.2425	C29 H32 D5 Cl N O10

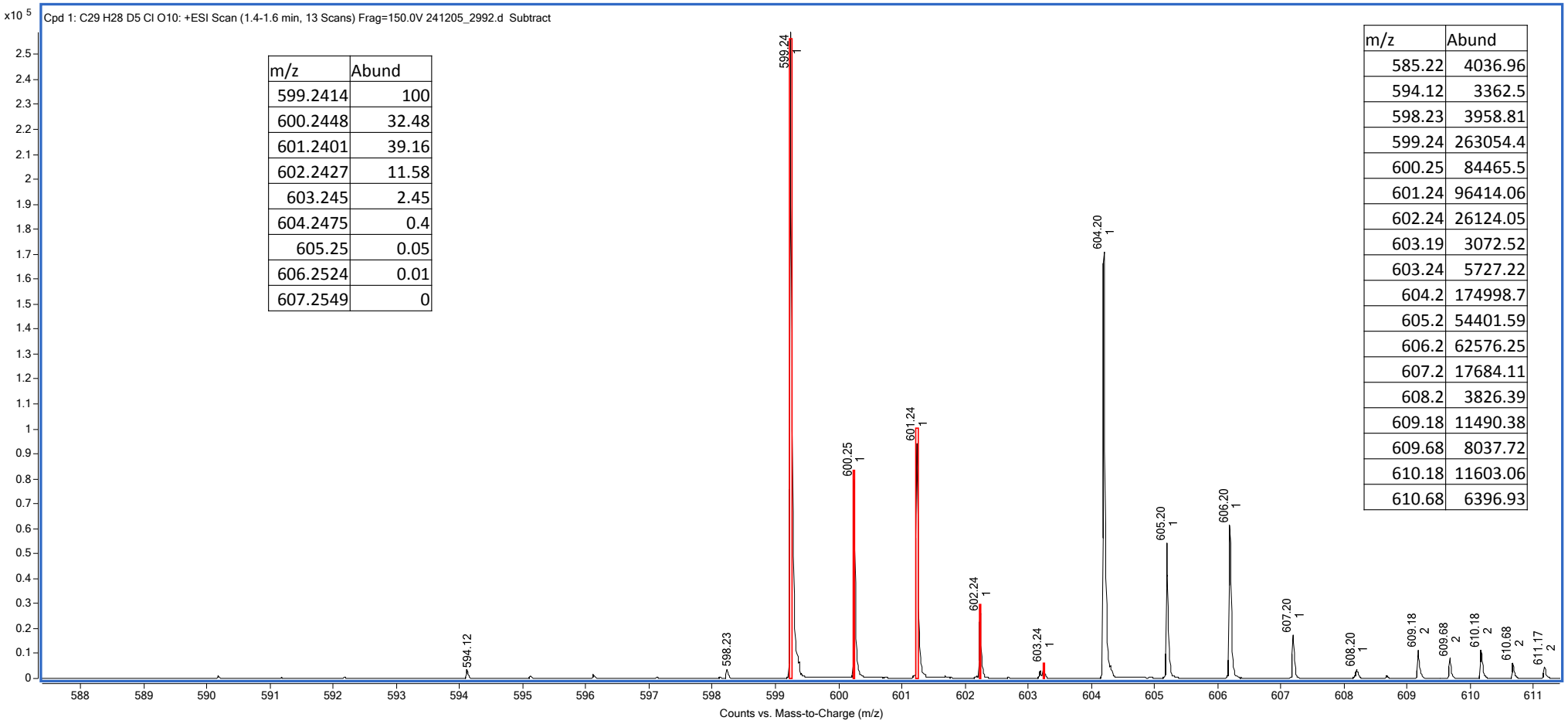
MFG Calculator Results

Target m/z	*Ionic Formula*	*Calc m/z*	*+/- (mDa)*	*+/- (ppm)*	*DBE*	*MFG Score*
599.2425	C30 H28 D5 Cl N5 O6	599.2428	-0.3	-0.5	18.0	98.82
599.2425	C29 H32 D5 Cl N O10	599.2414	1.1	1.8	13.0	97.96
599.2425	C31 H24 D5 Cl N9 O2	599.2441	-1.6	-2.7	23.0	93.51
599.2425	C26 H24 D5 Cl N11 O4	599.2401	2.4	4.0	19.0	90.62
599.2425	C17 H36 D5 Cl N3 O17	599.2433	-0.8	-1.3	0.0	85.20
599.2425	C18 H32 D5 Cl N7 O13	599.2446	-2.1	-3.5	5.0	84.18
599.2425	C25 H28 D5 Cl N7 O8	599.2387	3.8	6.3	14.0	80.85
599.2425	C19 H28 D5 Cl N11 O9	599.2460	-3.5	-5.8	10.0	79.47
599.2425	C35 H28 D5 Cl N3 O4	599.2468	-4.3	-7.2	22.0	71.70
599.2425	C24 H32 D5 Cl N3 O12	599.2374	5.1	8.5	9.0	69.59



Predicted Isotope Match Table

Isotope	*m/z*	*Calc m/z*	Diff (mDa)	Abund (%)	Calc Abund (%)	+/-
1	599.2425	599.2414	1.1	100.0	100.0	0.0
2	600.2452	600.2448	0.4	32.1	32.5	0.4
3	601.2411	601.2401	1.0	36.7	39.2	2.5
4	602.2426	602.2427	-0.1	9.9	11.6	1.7
5	603.2444	603.2450	-0.6	2.2	2.5	0.3



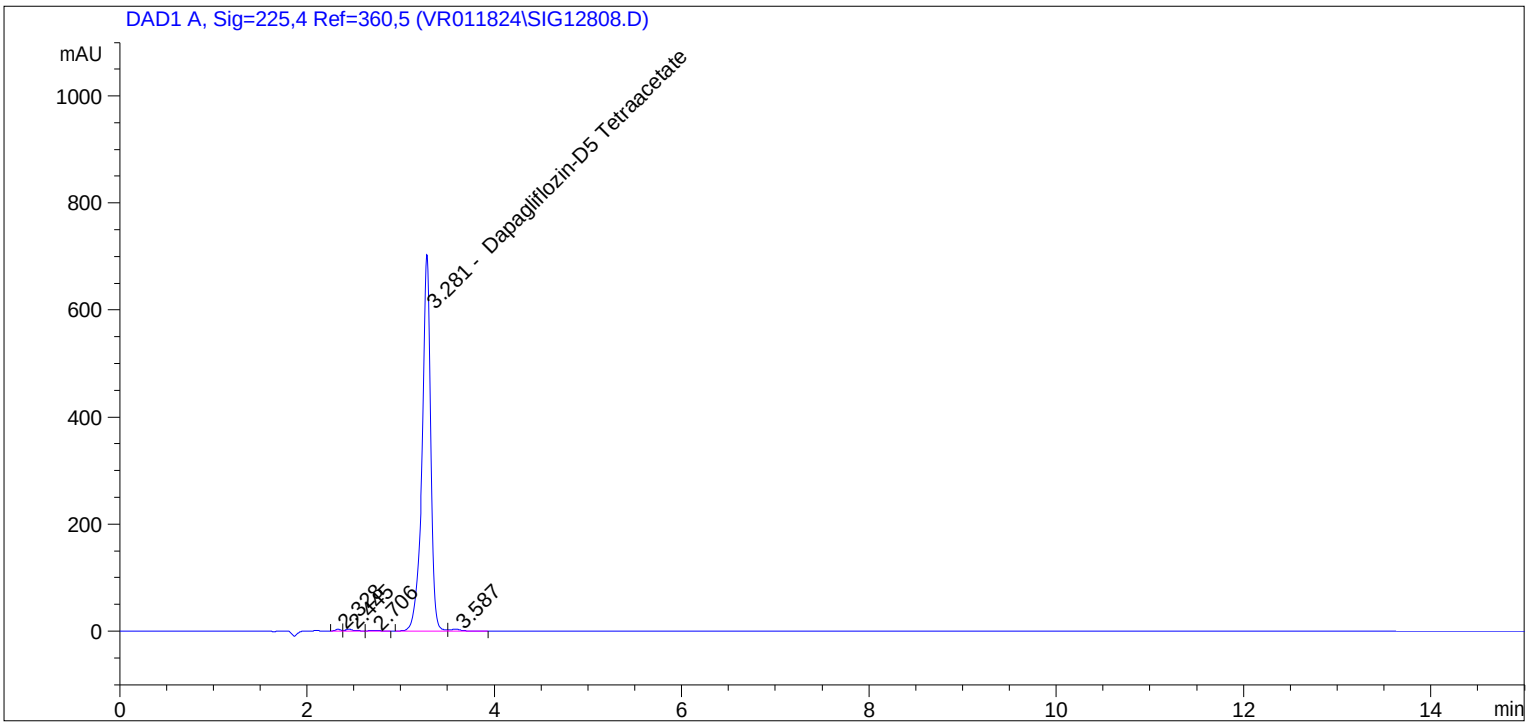
m/z	Abund
599.2414	100
600.2448	32.48
601.2401	39.16
602.2427	11.58
603.245	2.45
604.2475	0.4
605.25	0.05
606.2524	0.01
607.2549	0

m/z	Abund
585.22	4036.96
594.12	3362.5
598.23	3958.81
599.24	263054.4
600.25	84465.5
601.24	96414.06
602.24	26124.05
603.19	3072.52
603.24	5727.22
604.2	174998.7
605.2	54401.59
606.2	62576.25
607.2	17684.11
608.2	3826.39
609.18	11490.38
609.68	8037.72
610.18	11603.06
610.68	6396.93

Data File C:\CHEM32\1\DATA\VR011824\SIG12808.D
Sample Name: GR-19-195

==========

Acq. Operator :
Acq. Instrument : Instrument 1 Location : Vial 49
Injection Date : 11/28/2024 9:33:30 AM
Inj Volume : 5.0 µl
Acq. Method : C:\CHEM32\1\METHODS\VR112824_195.M
Last changed : 11/28/2024 9:32:30 AM
Analysis Method : C:\CHEM32\1\METHODS\VR112824_195PM.M
Last changed : 11/28/2024 11:21:47 AM by vrusu



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Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : 11/28/2024 11:20:56 AM
Multiplier: : 1.603e3
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=225,4 Ref=360,5

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	2.328	BV	0.0640	12.46052	0.2751	?
2	2.445	VV	0.0785	18.27835	0.4035	?
3	2.706	VB	0.0866	7.84227	0.1731	?
4	3.281	BV	0.0939	4466.86816	98.6081	Dapagliflozin-D5 Tetraacetate
5	3.587	VB	0.1021	24.46958	0.5402	?

Totals : 4529.91888

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\VR011824\SIG12809.D
Sample Name: GR-19-195 spl-2

```
==========================================================================
Acq. Operator   :
Acq. Instrument : Instrument 1                    Location : Vial 50
Injection Date  : 11/28/2024 10:07:23 AM
                                                  Inj Volume : 5.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\VR112824_195.M
Last changed    : 11/28/2024 10:06:26 AM
Analysis Method : C:\CHEM32\1\METHODS\VR121824_143PM.M
Last changed    : 12/20/2024 9:58:33 AM by vrusu
                  (modified after loading)
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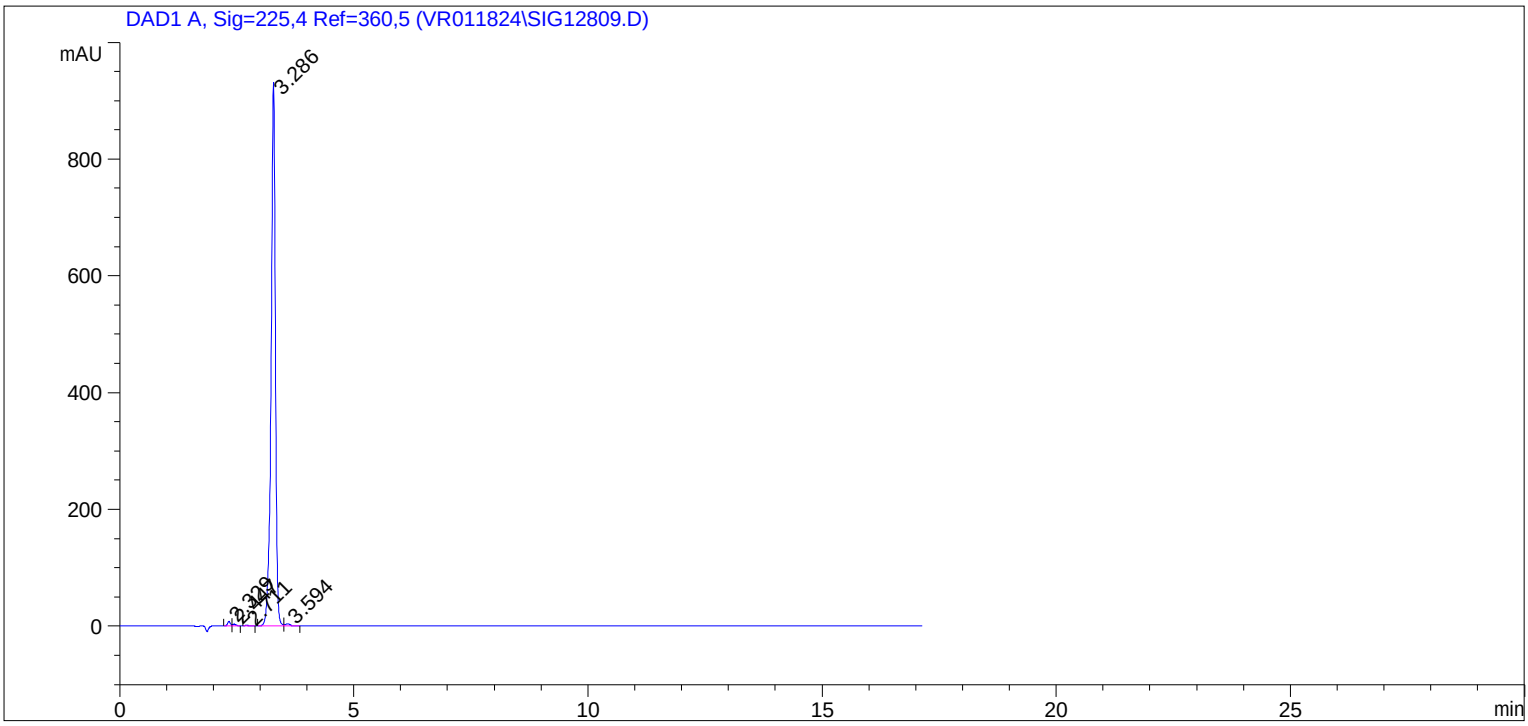


```
==========================================================================
                          Area Percent Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      12/18/2024 4:03:46 PM
Multiplier:                   :    1.603e3
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: DAD1 A, Sig=225,4 Ref=360,5
```

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	2.329	BV	0.0644	32.28525	0.5401	?
2	2.447	VB	0.0696	13.83801	0.2315	?
3	2.711	BB	0.0755	5.53436	0.0926	?
4	3.286	BV	0.0938	5899.77051	98.6982	?
5	3.594	VB	0.0976	26.15736	0.4376	?

```
Totals :                    5977.58549
```

Signal 2: DAD1 A, Sig=240,4 Ref=360,5 not found

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	6.200		0.0000	0.00000	0.0000	Norethindrone Acetate-D6
Totals :				0.00000		

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

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*** End of Report ***