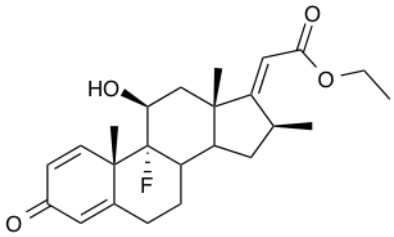
Certificate of Analysis

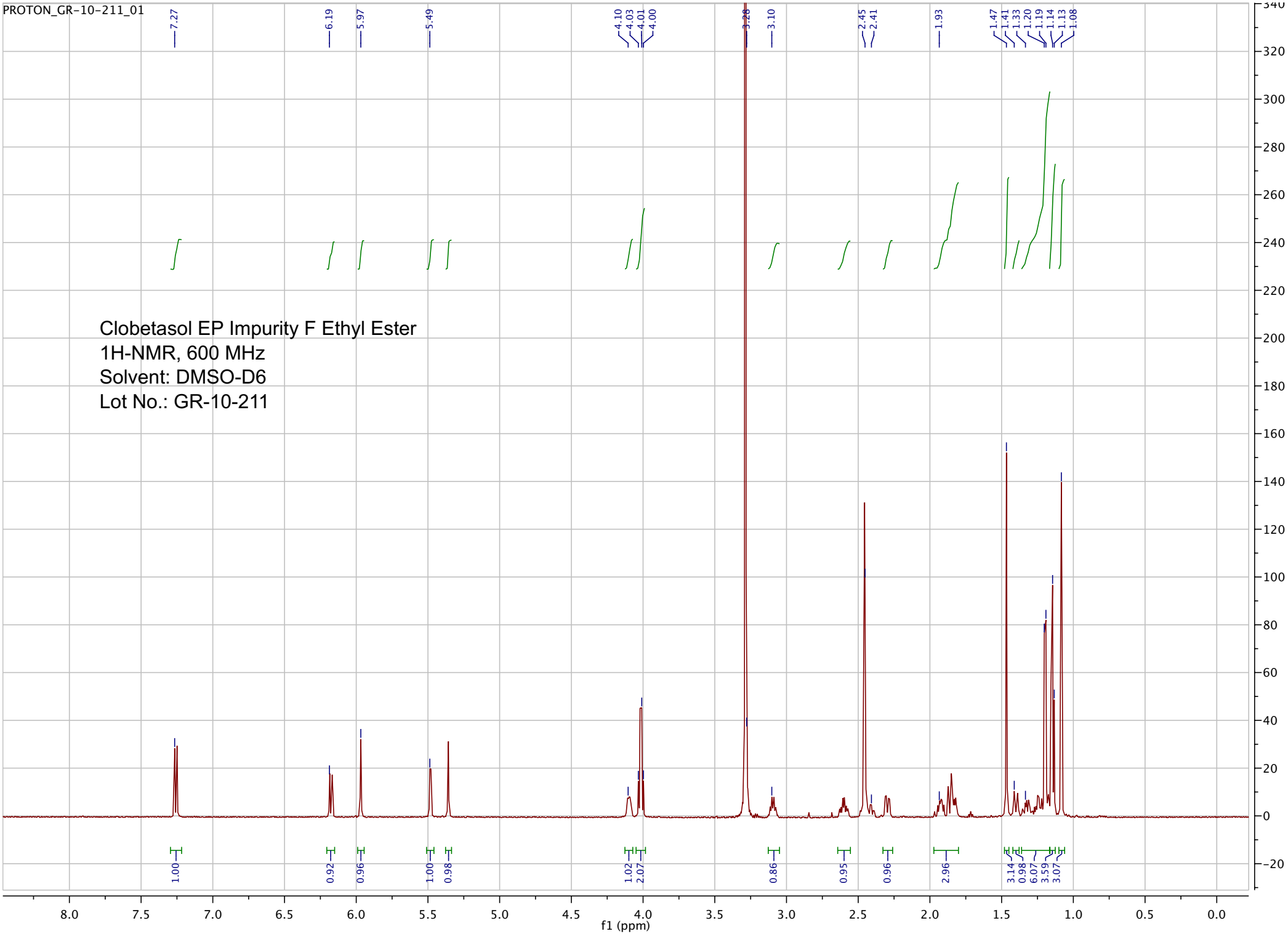


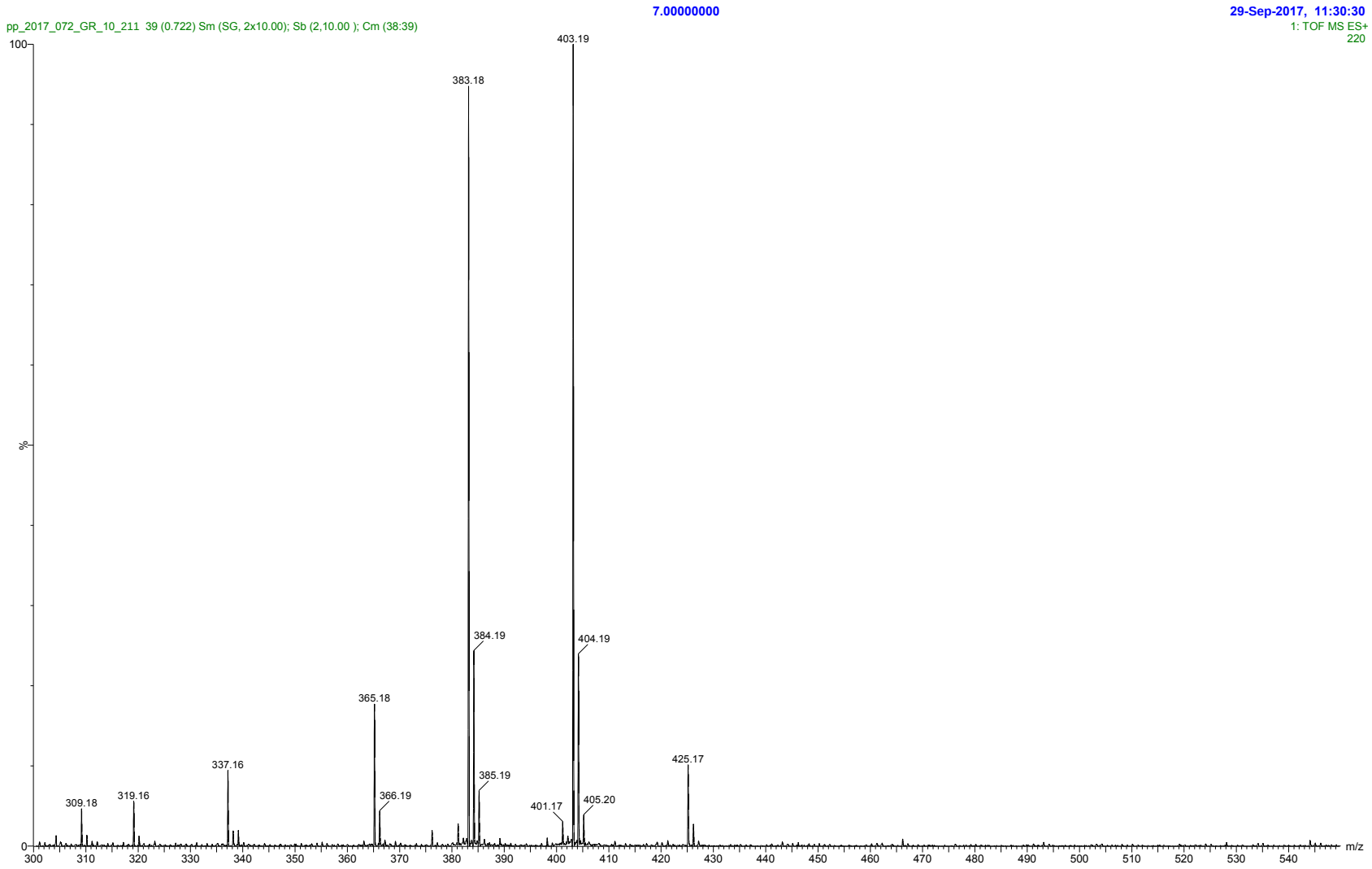
Name:	**Clobetasol Propionate EP Impurity F Ethyl Ester**
Lot#:	GR-10-211
Test Date:	03/25/2022 (re-test date: 03/25/2027)
CAS No.:	N/A
MF:	$C_{24}H_{31}FO_4$
MW:	402.51
Appearance:	White solid
Purity:	95.8% by HPLC (average of two sample preparations)
^{1}H-NMR:	Conforms
MS-ESI (+)	Conforms (shows peaks at m/z = 403.19 $[M+H]^+$, 383.18 $[M-HF+H]^+$)
Storage	Store at 0-5°C in a dry place away from direct sunlight

Approved by: Date: 03/25/2022

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


PROTON_GR-10-211_01
7.27
6.19
5.97
5.49
4.10
4.03
4.01
4.00
3.28
3.10
2.45
2.41
1.93
1.47
1.41
1.33
1.20
1.19
1.14
1.13
1.08
Clobetasol EP Impurity F Ethyl Ester
1H-NMR, 600 MHz
Solvent: DMSO-D6
Lot No.: GR-10-211
1.00
0.92
0.96
1.00
0.98
1.02
2.07
0.86
0.95
0.96
2.96
3.14
0.98
6.07
3.59
3.07
f1 (ppm)

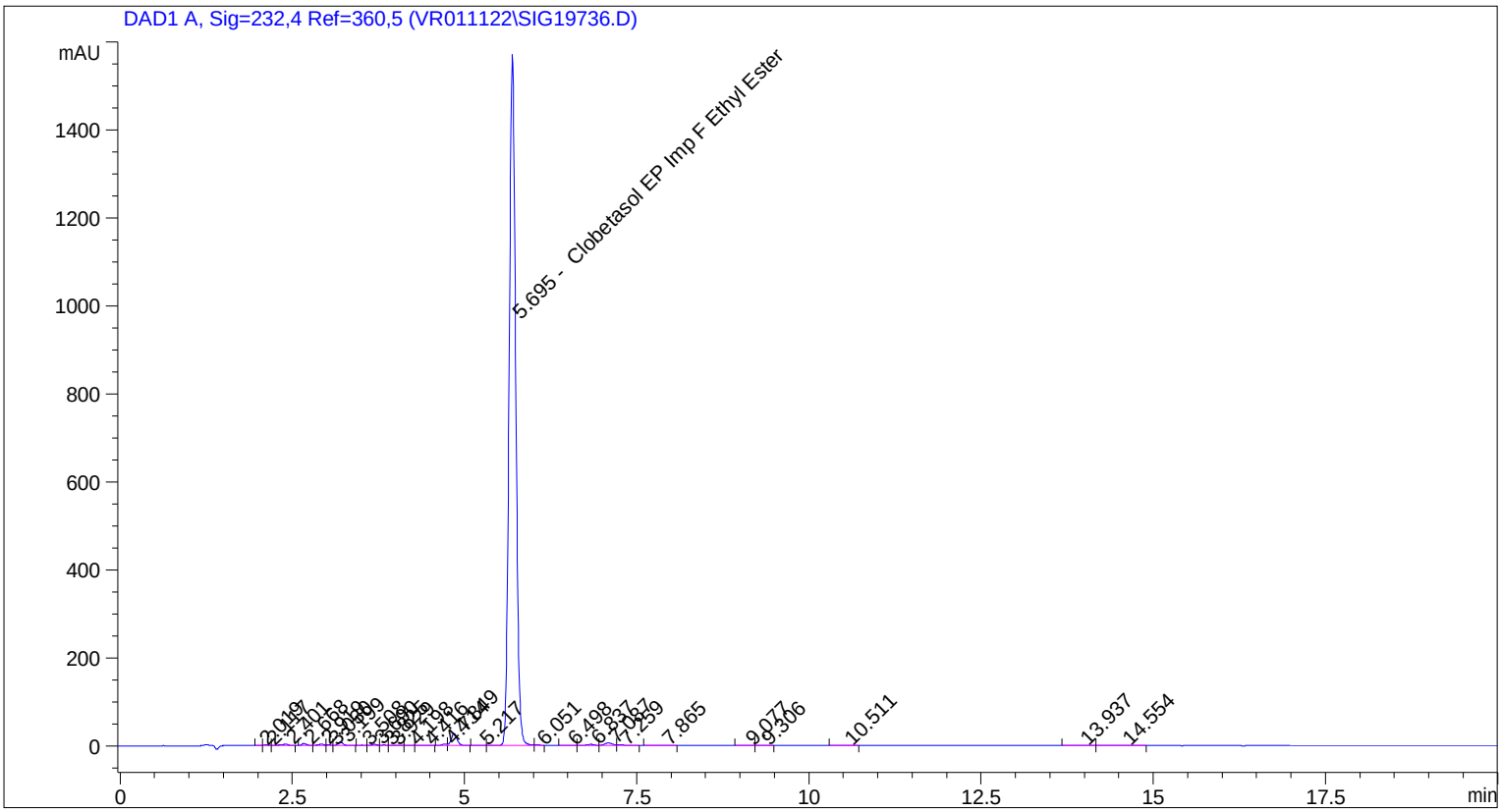


ESI-MS spectrum for sample GR-10-211. Shows monoisotopic [M+H]+ mass.

Data File C:\CHEM32\1\DATA\VR011122\SIG19736.D
Sample Name: GR-10-211

==========

Acq. Operator : vrusu
Acq. Instrument : Instrument 1 Location : Vial 11
Injection Date : 3/25/2022 10:03:28 AM
Inj Volume : 5.0 µl
Acq. Method : C:\CHEM32\1\METHODS\VR032522_089.M
Last changed : 3/25/2022 10:02:29 AM by vrusu
Analysis Method : C:\CHEM32\1\METHODS\VR032422_087PM.M
Last changed : 3/25/2022 12:59:50 PM by vrusu



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Area Percent Report

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Sorted By : Signal
Calib. Data Modified : 3/25/2022 12:57:17 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=232,4 Ref=360,5

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	2.019	VV	0.0685	4.11149	0.0380	?
2	2.117	VB	0.0618	5.72249	0.0529	?
3	2.401	BB	0.0930	20.46411	0.1891	?
4	2.668	BB	0.0660	20.19356	0.1866	?
5	2.919	BV	0.0728	13.95505	0.1289	?
6	3.030	VV	0.0766	5.16897	0.0478	?
7	3.199	VB	0.0728	40.81148	0.3771	?
8	3.508	BB	0.0652	4.14791	0.0383	?

Data File C:\CHEM32\1\DATA\VR011122\SIG19736.D
Sample Name: GR-10-211

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
9	3.690	BV	0.0755	12.53442	0.1158	?
10	3.825	VV	0.0710	5.96130	0.0551	?
11	3.929	VB	0.0843	3.32229	0.0307	?
12	4.198	BV	0.0719	3.82999	0.0354	?
13	4.416	VB	0.1138	4.03477	0.0373	?
14	4.714	BV	0.0723	16.59792	0.1534	?
15	4.849	VB	0.0908	161.99387	1.4968	?
16	5.217	BB	0.0847	3.23887	0.0299	?
17	5.695	BV	0.1031	1.03683e4	95.8038	Clobetasol EP Imp F Ethyl Ester
18	6.051	VB	0.0845	4.45023	0.0411	?
19	6.498	BB	0.1046	2.53272	0.0234	?
20	6.837	BV	0.1264	22.26584	0.2057	?
21	7.087	VV	0.1273	50.36526	0.4654	?
22	7.259	VB	0.1131	14.35616	0.1327	?
23	7.865	BB	0.1539	5.87444	0.0543	?
24	9.077	VV	0.1343	5.12930	0.0474	?
25	9.306	VB	0.1229	1.53600	0.0142	?
26	10.511	BB	0.1630	2.09846	0.0194	?
27	13.937	BV	0.1954	4.47115	0.0413	?
28	14.554	VB	0.2148	14.96044	0.1382	?

Totals : 1.08225e4

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*** End of Report ***

Data File C:\CHEM32\1\DATA\VR011122\SIG19737.D
Sample Name: GR-10-211 spl-2

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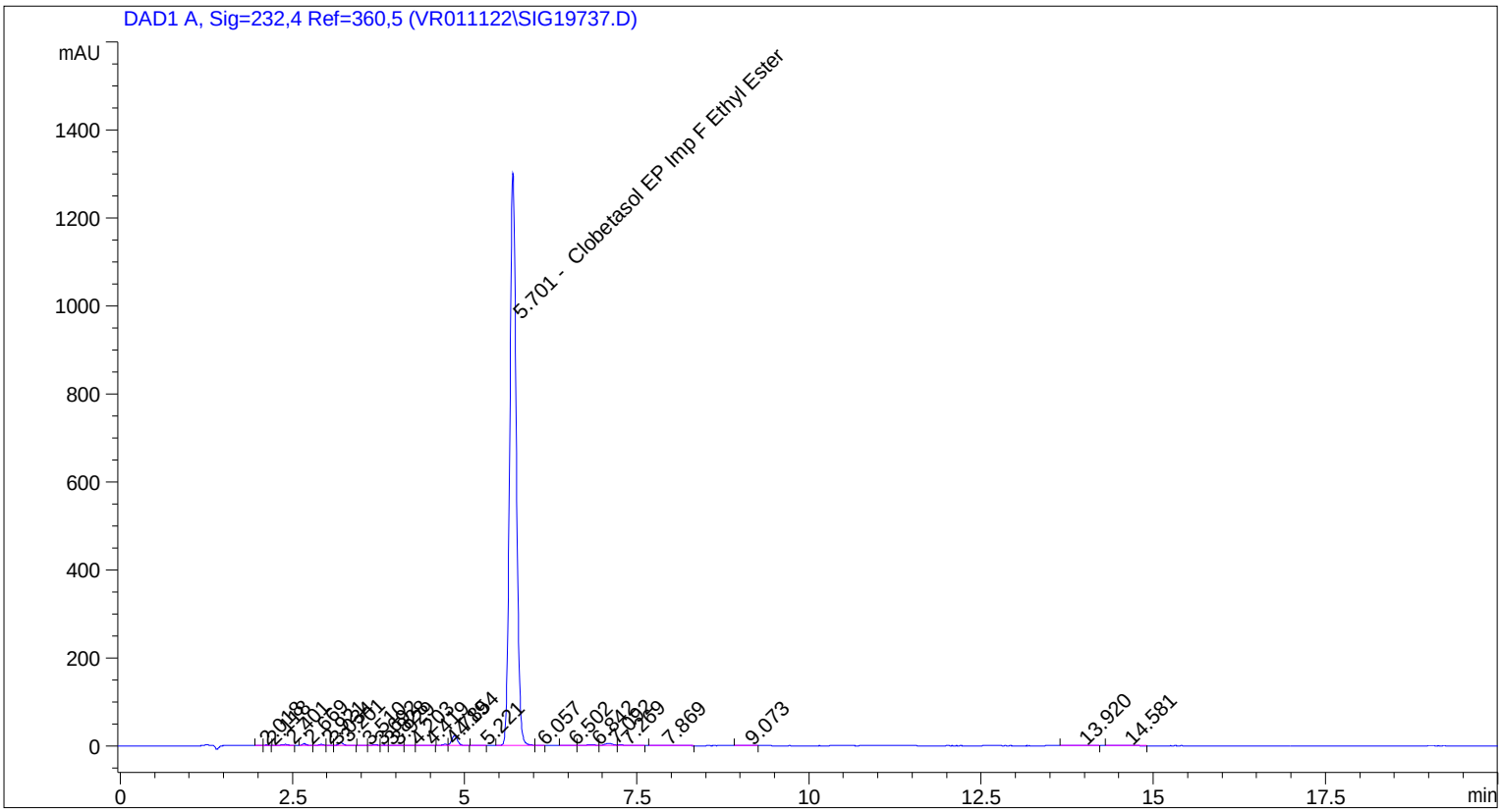
Acq. Operator : vrusu
Acq. Instrument : Instrument 1 Location : Vial 12
Injection Date : 3/25/2022 10:25:25 AM
Inj Volume : 5.0 µl
Acq. Method : C:\CHEM32\1\METHODS\VR032522_089.M
Last changed : 3/25/2022 10:24:28 AM by vrusu
Analysis Method : C:\CHEM32\1\METHODS\VR032422_087PM.M
Last changed : 3/25/2022 12:59:50 PM by vrusu



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Area Percent Report

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Sorted By : Signal
Calib. Data Modified : 3/25/2022 12:57:17 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=232,4 Ref=360,5

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
1	2.018	VV	0.0723	3.70715	0.0413	?
2	2.118	VB	0.0606	4.50664	0.0503	?
3	2.401	BB	0.0917	17.18712	0.1917	?
4	2.669	BB	0.0659	16.63770	0.1856	?
5	2.921	BV	0.0724	11.46585	0.1279	?
6	3.034	VV	0.0757	4.01449	0.0448	?
7	3.201	VB	0.0725	33.38336	0.3723	?
8	3.510	BV	0.0708	4.62883	0.0516	?

Data File C:\CHEM32\1\DATA\VR011122\SIG19737.D
Sample Name: GR-10-211 spl-2

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Area %	Name
9	3.692	VV	0.0805	12.72979	0.1420	?
10	3.828	VV	0.0758	6.10573	0.0681	?
11	3.929	VB	0.0882	3.36289	0.0375	?
12	4.203	BV	0.0739	3.40633	0.0380	?
13	4.419	VB	0.1185	3.52157	0.0393	?
14	4.719	BV	0.0727	14.01177	0.1563	?
15	4.854	VB	0.0909	134.01051	1.4947	?
16	5.221	BB	0.0913	2.63529	0.0294	?
17	5.701	BV	0.1030	8587.40137	95.7781	Clobetasol EP Imp F Ethyl Ester
18	6.057	VB	0.0803	3.05294	0.0341	?
19	6.502	BB	0.1114	2.53351	0.0283	?
20	6.842	BV	0.1290	19.14679	0.2136	?
21	7.092	VV	0.1284	42.42081	0.4731	?
22	7.269	VB	0.1124	11.92648	0.1330	?
23	7.869	BB	0.1967	6.88076	0.0767	?
24	9.073	BB	0.1275	2.94598	0.0329	?
25	13.920	BB	0.1800	3.44229	0.0384	?
26	14.581	BB	0.2140	10.86636	0.1212	?
Totals :				8965.93228		

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*** End of Report ***