

Name: *rac*- α -Lipoic Acid-D5

Lot#: GR-19-281

Test Date: 07/08/2025 (re-test date: 07/08/2030)

CAS No.: 1189471-66-6 (unlabeled)

MF: C₈H₉D₅O₂S₂

MW: 211.35

Appearance: Yellow Solid

Purity: 98.1% by HPLC (average of two sample preparations); >98% atom D

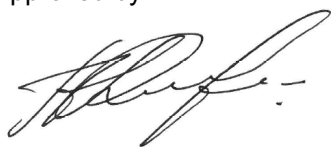
¹H-NMR: Conforms

MS-ESI (-) Conforms (show peaks at m/z = 210.07, 209.06 and 212.07 [M-H]⁻ for D5 compound; exhibits expected isotope pattern)

Storage Store at 0-8°C in a dry place away from direct sunlight

Approved by:

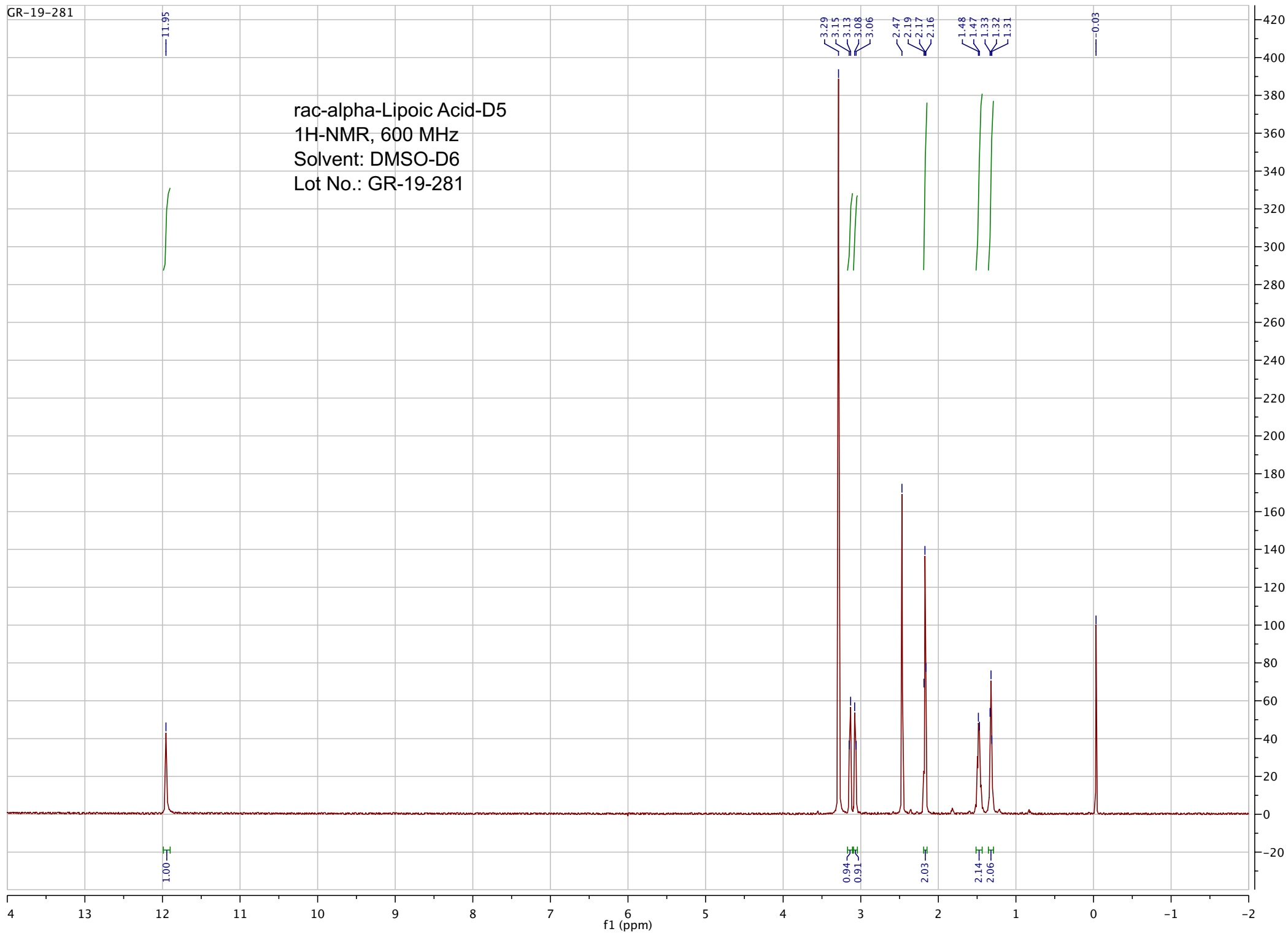
Date: 07/08/2025



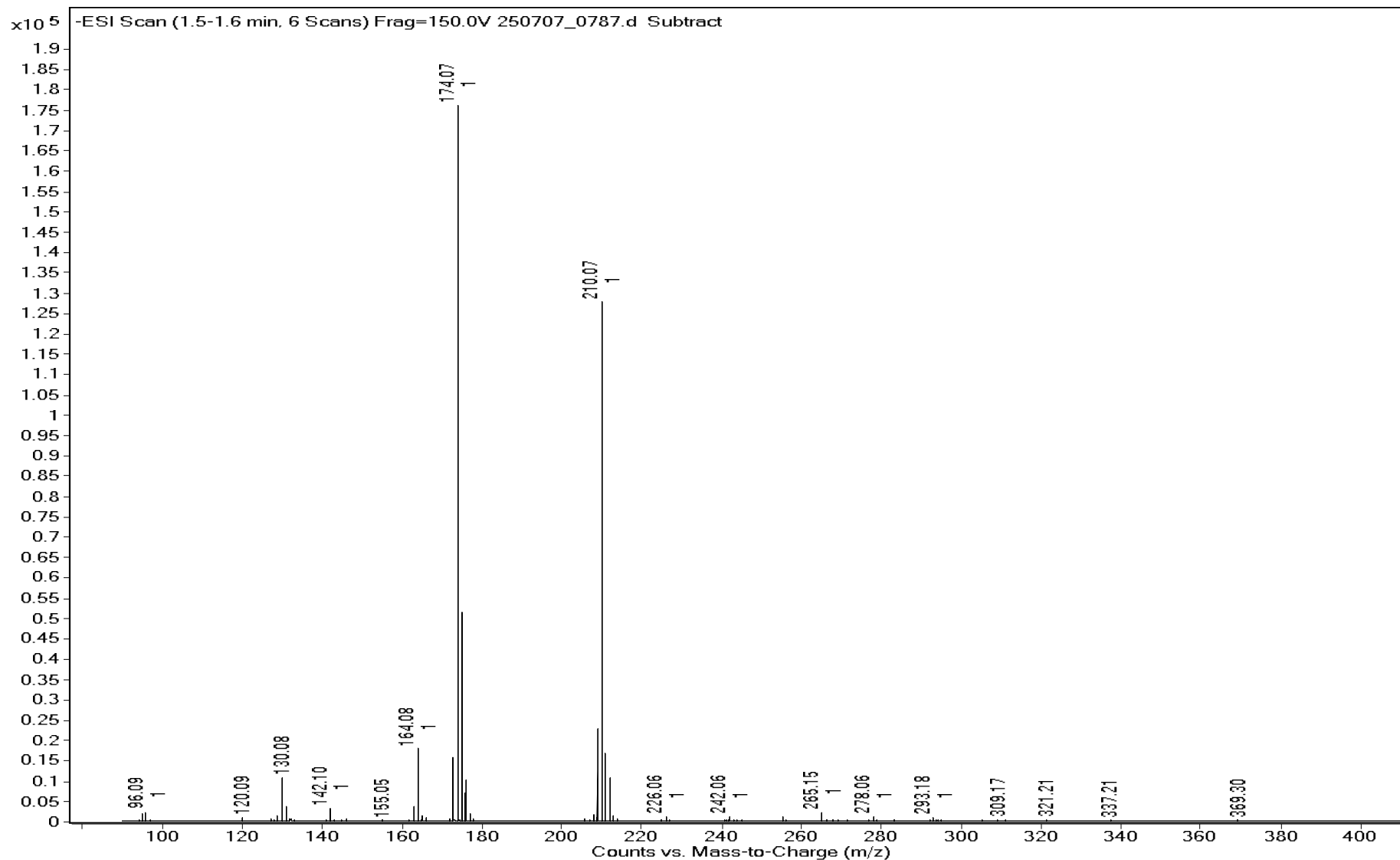
Viorica Rusu, QC/QA Manager

GR-19-281

rac-alpha-Lipoic Acid-D5
1H-NMR, 600 MHz
Solvent: DMSO-D6
Lot No.: GR-19-281



Sample Name	GR-19-281	Data File	250707_0787.d	Acq Method	HRMS_Negative.m
DA Method	AIMS_Accurate_Mass.m	Instrument	Agilent 6538 UHD	Acq Date, Time	07/07/2025 12:55:45 PM
Comment	ESI-				



ESI-MS Report

Molecular Formula Generation (MFG)

Sample Name GR-19-281
Acq Method HRMS_Negative.m
Instrument Agilent 6538 UHD
Comment ESI-

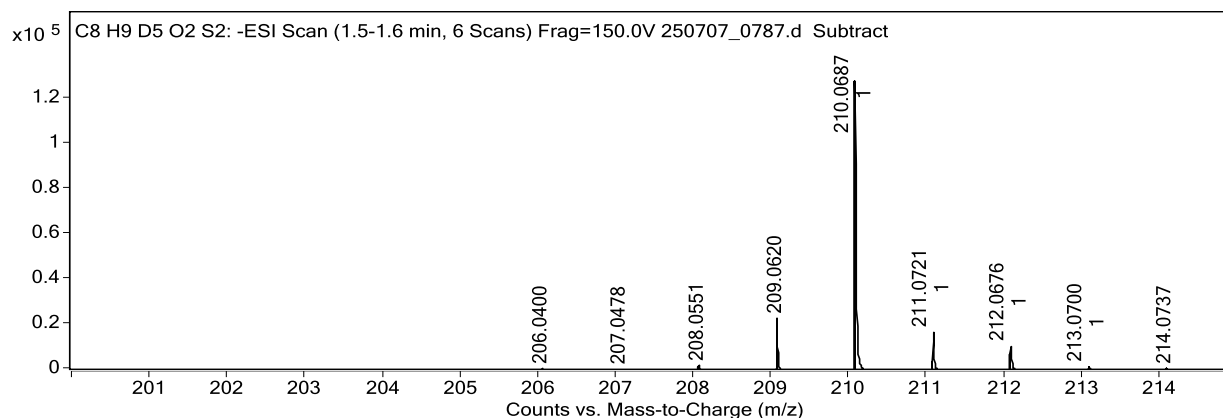
Data File 250707_0787.d
DA Method AIMS_Accurate_Mass.m
Acq Date, Time 07/07/2025 12:55:45 PM

Target Ion Species

Ion Species	m/z	Ionic Formula
(M-H) ⁻	210.0687	C8 H8 D5 O2 S2

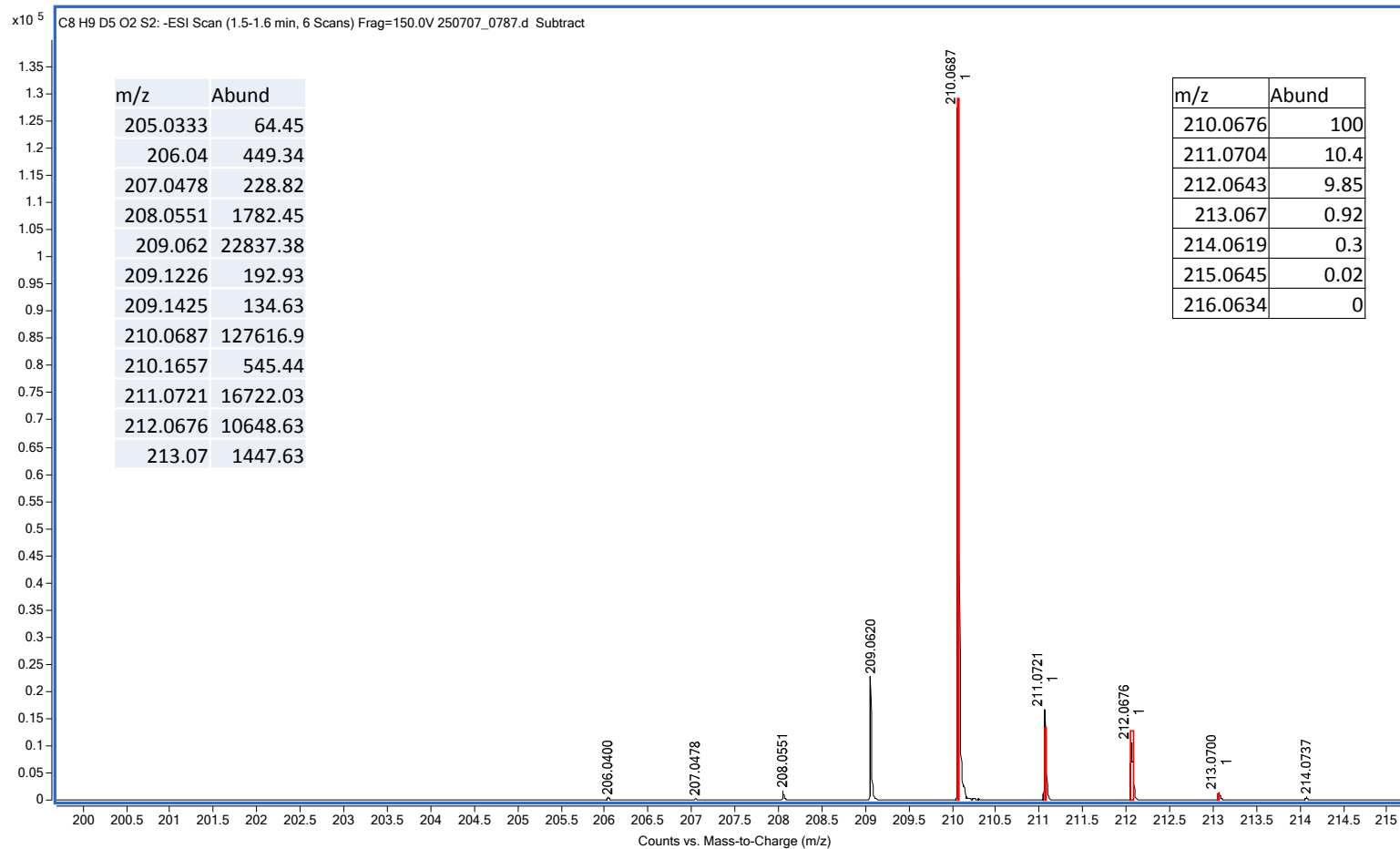
MFG Calculator Results

Target m/z	Ionic Formula	Calc m/z	+/- (mDa)	+/- (ppm)	DBE	MFG Score
210.0687	C11 H8 D3 O2 S	210.0674	1.3	6.2	6.0	88.35
210.0687	C8 H8 D5 O2 S2	210.0676	1.1	5.2	2.0	86.47
210.0687	C9 H8 D2 N3 O S	210.0676	1.1	5.2	6.0	86.46
210.0687	C11 H12 D O2 S	210.0705	-1.8	-8.6	5.0	85.27
210.0687	C6 H8 D4 N3 O S2	210.0678	0.9	4.3	2.0	82.48
210.0687	C7 H8 D N6 S	210.0678	0.9	4.3	6.0	82.18
210.0687	C9 H12 N3 O S	210.0707	-2.0	-9.5	5.0	81.39
210.0687	C8 H12 D3 O2 S2	210.0707	-2.0	-9.5	1.0	80.12
210.0687	C8 D5 N4 O3	210.0681	0.6	2.9	8.0	76.33
210.0687	C6 H12 D2 N3 O S2	210.0709	-2.2	-10.5	1.0	74.25

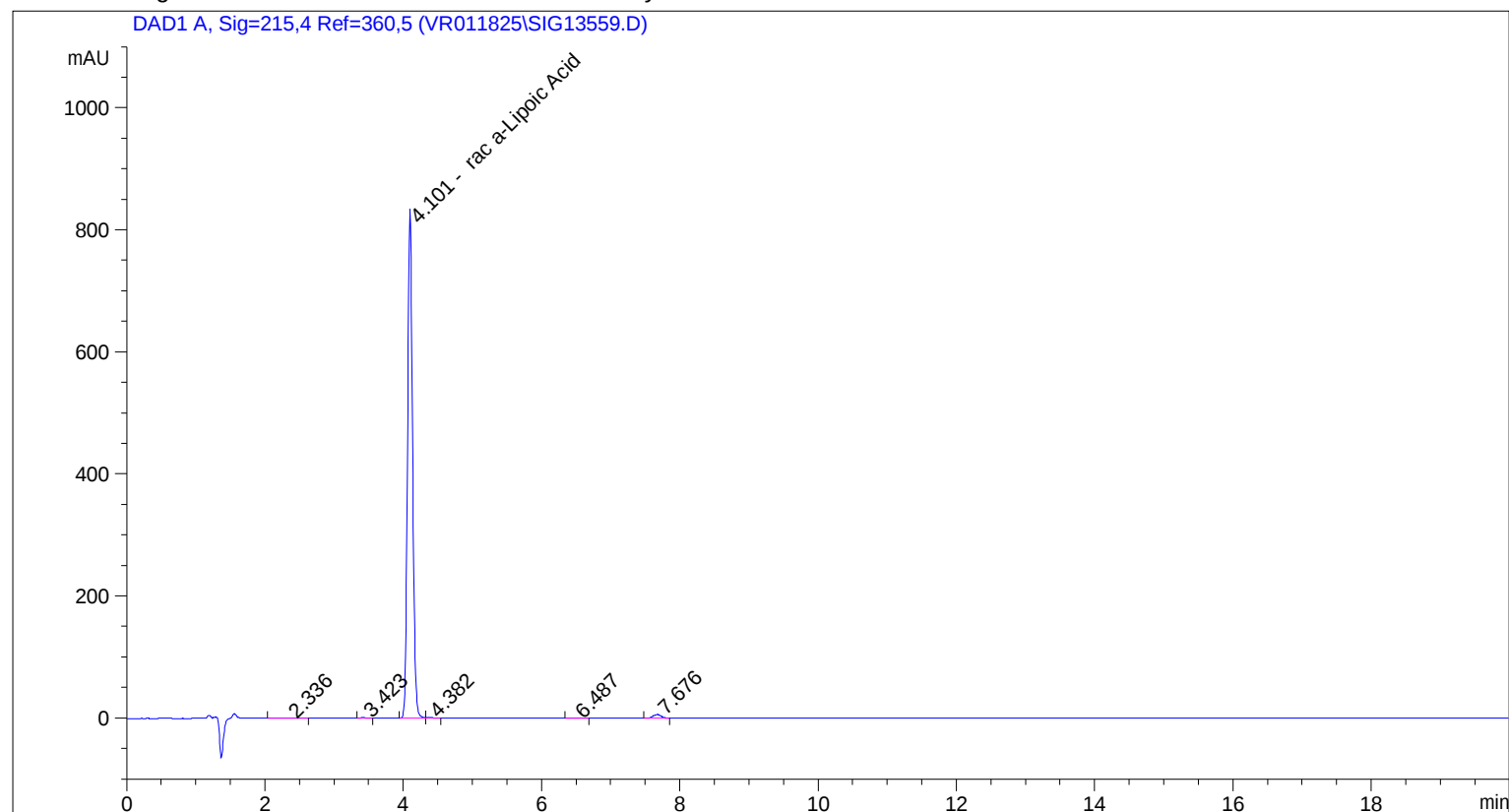


Predicted Isotope Match Table

Isotope	m/z	Calc m/z	Diff (mDa)	Abund (%)	Calc Abund (%)	+/-
1	210.0687	210.0676	1.1	100.0	100.0	0.0
2	211.0721	211.0704	1.7	13.1	10.4	-2.7
3	212.0676	212.0643	3.3	8.3	9.8	1.5
4	213.0700	213.0670	3.0	1.1	0.9	-0.2



=====
Acq. Operator : vrusu
Acq. Instrument : Instrument 1 Location : Vial 10
Injection Date : 7/8/2025 9:52:20 AM Inj Volume : 10.0 µl
Acq. Method : C:\CHEM32\1\METHODS\VR070825_281.M
Last changed : 7/8/2025 9:51:17 AM by vrusu
Analysis Method : C:\CHEM32\1\METHODS\VR070725_281PM.M
Last changed : 7/8/2025 11:07:42 AM by vrusu



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

Sorted By : Signal
Calib. Data Modified : 7/8/2025 10:41:16 AM
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	2.336	BB	0.2484	13.51318	0.3131	?
2	3.423	BB	0.0921	4.79336	0.1111	?
3	4.101	BV	0.0791	4234.20801	98.1076	rac a-Lipoic Acid
4	4.382	VB	0.0922	7.31437	0.1695	?
5	6.487	BB	0.1112	5.55945	0.1288	?
6	7.676	BB	0.1292	50.49152	1.1699	?

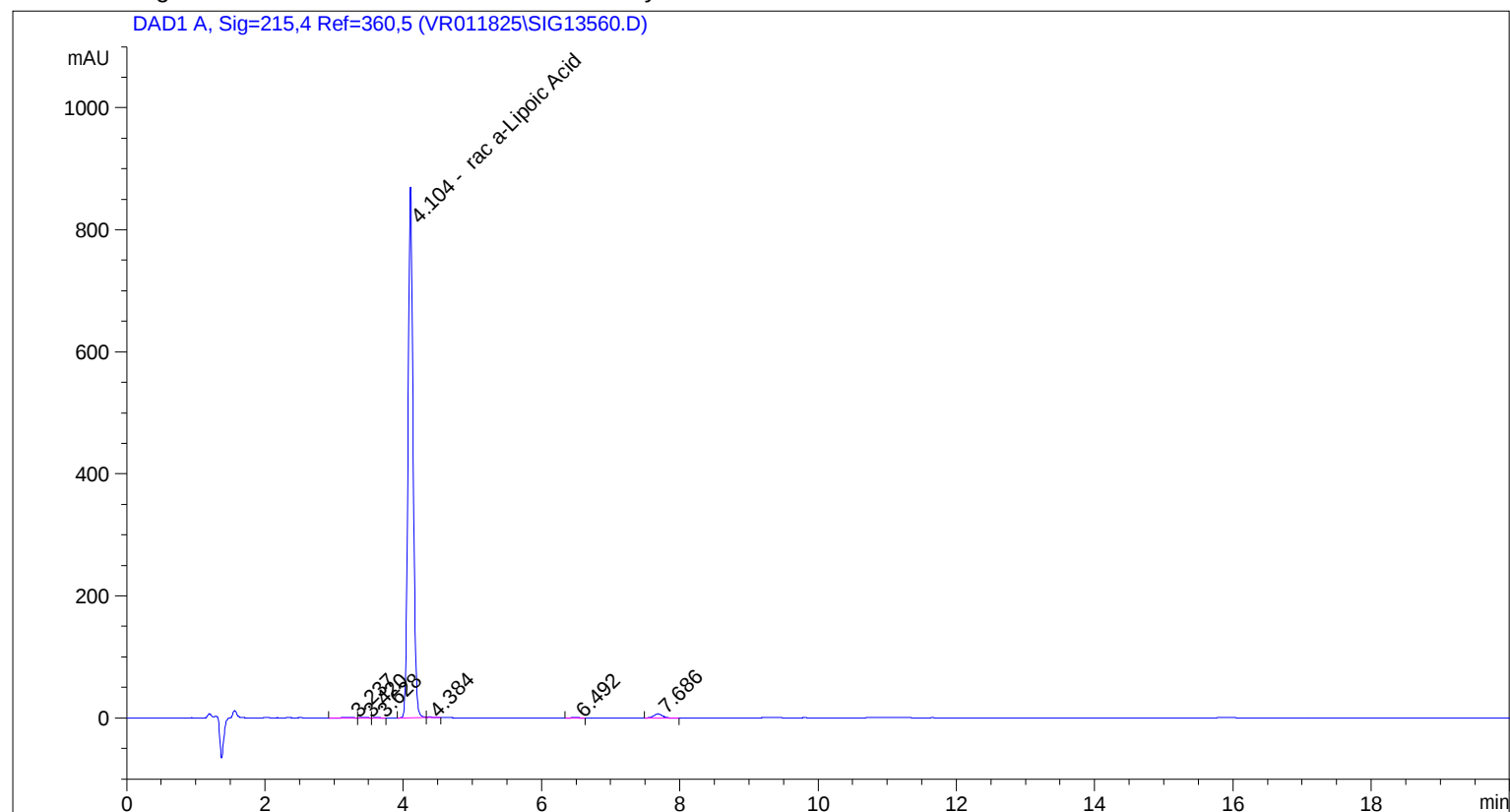
Totals : 4315.87989

Sample Name: GR-19-281

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

Sample Name: GR-19-281 spl-2

```
=====
Acq. Operator   : vrusu
Acq. Instrument : Instrument 1                Location : Vial 11
Injection Date  : 7/8/2025 10:14:42 AM
                                           Inj Volume : 10.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\VR070825_281.M
Last changed    : 7/8/2025 10:13:46 AM by vrusu
Analysis Method : C:\CHEM32\1\METHODS\VR070725_281PM.M
Last changed    : 7/8/2025 11:07:42 AM by vrusu
=====
```



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

```
Sorted By           :      Signal
Calib. Data Modified :      7/8/2025 10:41:16 AM
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	3.237	BV	0.1715	9.81702	0.2173	?
2	3.420	VV	0.0975	6.44094	0.1426	?
3	3.628	VB	0.1117	3.05383	0.0676	?
4	4.104	BV	0.0794	4430.30273	98.0854	rac a-Lipoic Acid
5	4.384	VB	0.0858	6.93278	0.1535	?
6	6.492	BB	0.1040	5.35589	0.1186	?
7	7.686	BB	0.1304	54.87690	1.2150	?

Sample Name: GR-19-281 spl-2

Totals : 4516.78010

=====

*** End of Report ***