REVIEWED
By Anne Nord at 1:29 pm, Jul 11, 2023

7/11/2023

Worklist: 6429

LAB_CASE	ITEM	ITEM_TYPE	DESCRIPTION
C2023-1133	1	BCK	AM 27 Blood THC Quant by LC-QQQ
M2023-1992	1	BCK	AM 27 Blood THC Quant by LC-QQQ
M2023-2090	1	BCK	AM 27 Blood THC Quant by LC-QQQ
M2023-2125	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2023-1603	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2023-1605	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2023-1606	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2023-1655	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2023-1676	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2023-1712	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2023-1713	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2023-1748	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2023-1760	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2023-1765	1	BCK	AM 27 Blood THC Quant by LC-QQQ

AM# 27: Quantitation of THC and Metabolites in Blood and Urine by LC-MS/MS

Extraction Date: 07/07/2023
Analyst: Celena Shrum
Plate lot#: 220802
Plate Retest Date: 07/23/2023
Mobile phase A: 0.1% Formic Acid in LCMS Water
Mobile phase B: 0.1% Formic acid in Acetonitrile
Blank Blood Lot: Lampire 23A52594
Column: Phenomenex Phenyl Hexyl (4.6x50mm, 2.6um)
LCMS-QQQ ID: 069901

Pre-Analytic:

☒ 1. Check levels of mobile phases and needle wash refill as needed. Ensure waste is not full.
☒ 2. Ensure correct column is installed and begin mobile phase flow allow to equilibrate ~ 30 minutes.

Analytic:

☒ 1. Remove standards, plate, controls, and samples from cold storage. Allow to reach room temperature.
☐ 2. Urine hydrolysis (if applicable): add 1.5mL urine to blank plate, add 250µl 1N KOH. Shake and incubate at 40 degrees for 15 minutes.
☒ 3. Using a calibrated pipette, add **1000µl blood or 1000µl hydrolyzed urine** into the appropriate wells of the analytical (standards) plate. **Pipette ID: #42**
☒ 4. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
☒ 5. Add **500µL of 0.1% formic acid in water to blood samples or 500µl of saturated phosphate buffer to urine samples** to the appropriate wells of the analytical plate.
☒ 6. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
☒ 7. Transfer **800µL of blood+acid mixture or urine+acid** to corresponding wells of SLE+ plate.
☒ 8. Apply positive pressure for approx. 10-15 seconds (or until no liquid remains on top of sorbent). ***(Load at 85-100 PSI- Selector to the right)*** Manifold ID: 067104
☒ 9. Wait 5 minutes.
☒ 10. Add **2.25mL MTBE. (*Add in 3 increments of 750uL)***
☒ 11. Wait 5 minutes.
☒ 12. Apply positive pressure for approx. 15 seconds. ***(10-15 PSI- Selector to the left).***
☒ 13. Add **2.25mL Hexane. (*Add in 3 increments of 750uL)***
☒ 14. Wait 5 minutes.
☒ 15. Apply positive pressure for approx. 15 seconds. ***(10-15 PSI- Selector to the left).***
☒ 16. Remove plate containing eluate. Place on SPE Dry and evaporate to dryness at approx. 35°C. *SPE Dry ID: 067103*
☒ 16. Reconstitute in **100µL 100% MeOH** and heat seal plate with foil. Place in autosampler and run worklist.

Post-Analytic

☒ 1. Create batch and process data.
☒ 2. Make any necessary integration changes, Curve weighting of Linear 1/x with r^2 values ≥0.98 for each analyte
☒ 3. RT +/- 3% or 0.100 min, whichever is greater, +/- 20% Accuracy for greater than (+/- 30% for 10ng/ml or less). Ion ratios must be within +/- 20% of the averaged calibrators
☒ 4. Case sample response for THC 1ng/mL and OH-THC 3ng/mL (quantitative), Carboxy-THC: 5ng/mL (qualitative only) will be reported. Samples with a THC or OH-THC response over 50 ng/mL will be reported out as greater than 50 ng/mL. THC concentrations of 1-3ng/mL will be reported qualitatively.
☒ 5. Did all QCs pass for each analyte? (if not, describe in comments section)
☒ 6. Enter QCs into control charting.
☒ 7. Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS:

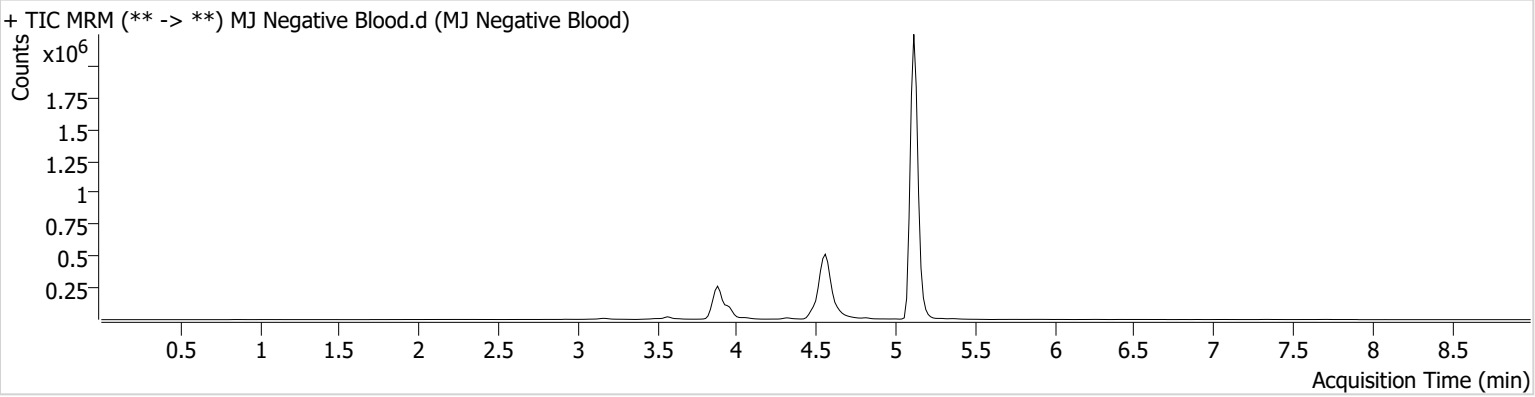
	1	2	3	4	5	6
A	IS + Cal. 1	QC2	P2023-1655-1			
B	IS + Cal. 2	NEG Blood	P2023-1676-1			
C	IS + Cal. 3	M2023-1992-1	P2023-1712-1			
D	IS + Cal. 4	M2023-2090-1	P2023-1713-1			
E	IS + Cal. 5	M2023-2125-1	P2023-1748-1			
F	IS + Cal. 6	P2023-1603-1	P2023-1760-1			
G	IS + Cal. 7	P2023-1605-1	P2023-1765-1			
H	QC1	P2023-1606-1	C2023-1133-1			

AM #27 Cannabinoids Quant. Results

Batch results	D:\MassHunter\Data\2023\AM 27 28\070723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update	7/11/2023 8:37:32 AM

Instrument	Falco (069901)	**Data File**	MJ Negative Blood.d
Type	Sample	**Sample**	MJ Negative Blood
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-B2	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods.
Injection Volume	10		
Acq. Date-Time	7/7/2023 4:56:07 PM		
Sample Info.			

Sample Chromatogram

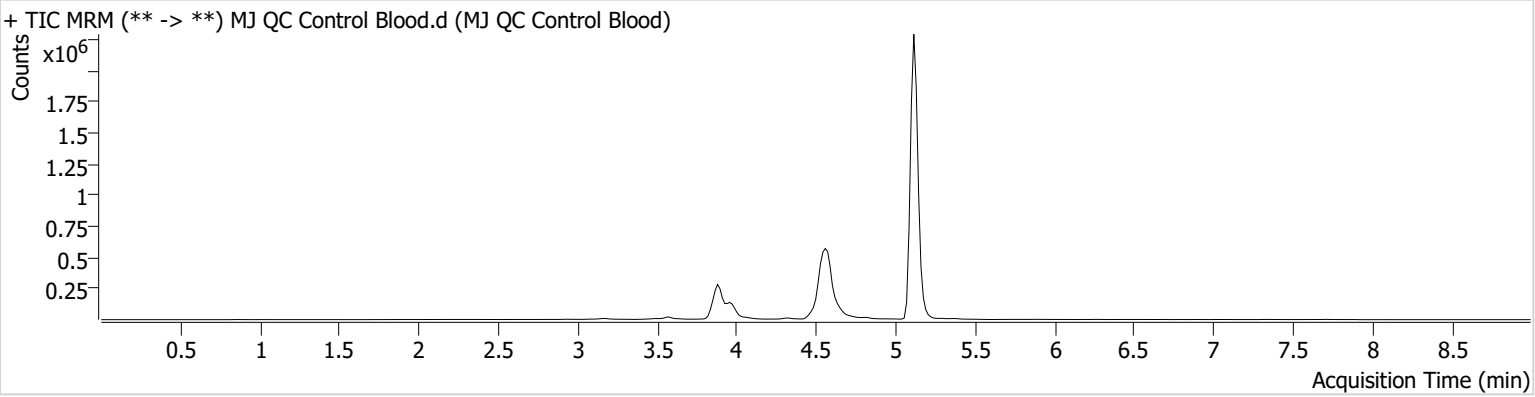


AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2023\AM 27 28\070723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 7/11/2023 8:37:32 AM

Instrument	Falco (069901)	**Data File**	MJ QC Control Blood.d
Type	QC	**Sample**	MJ QC Control Blood
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-H1	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods.
Injection Volume	10		
Acq. Date-Time	7/7/2023 4:29:54 PM		
Sample Info.			

Sample Chromatogram



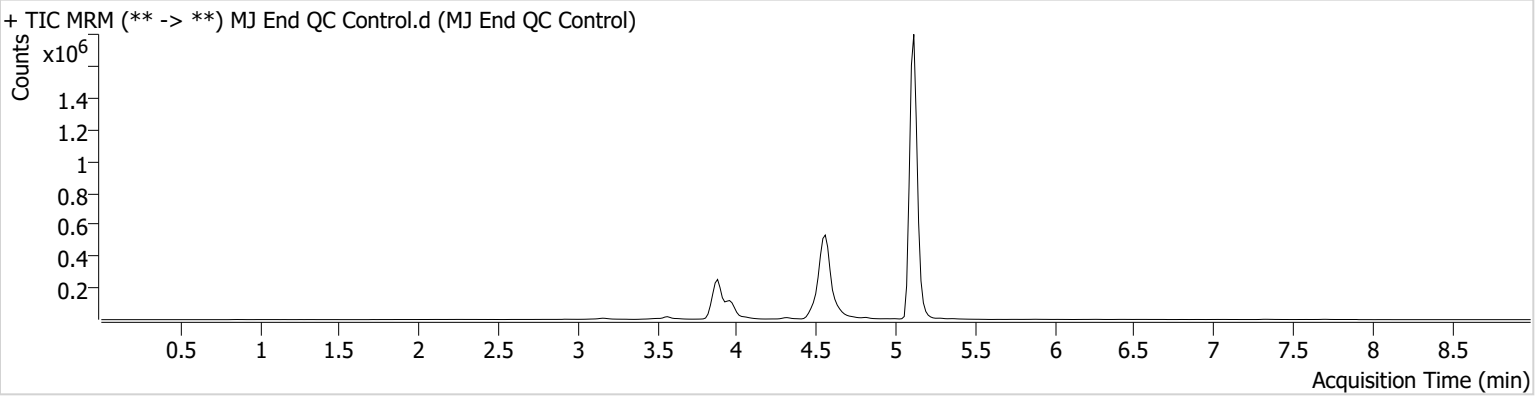
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.120	313064	∞	24.8	∞	7223444	4.8498 ng/ml
THC-COOH	3.969	31715	270.13	213.0	∞	291819	14.9860 ng/ml
THC-OH	3.896	102052	∞	14.9	∞	1044495	4.7103 ng/ml

AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2023\AM 27 28\070723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 7/11/2023 8:37:32 AM

Instrument	Falco (069901)	**Data File**	MJ End QC Control.d
Type	QC	**Sample**	MJ End QC Control
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-A2	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods.
Injection Volume	10		
Acq. Date-Time	7/7/2023 11:29:10 PM		
Sample Info.			

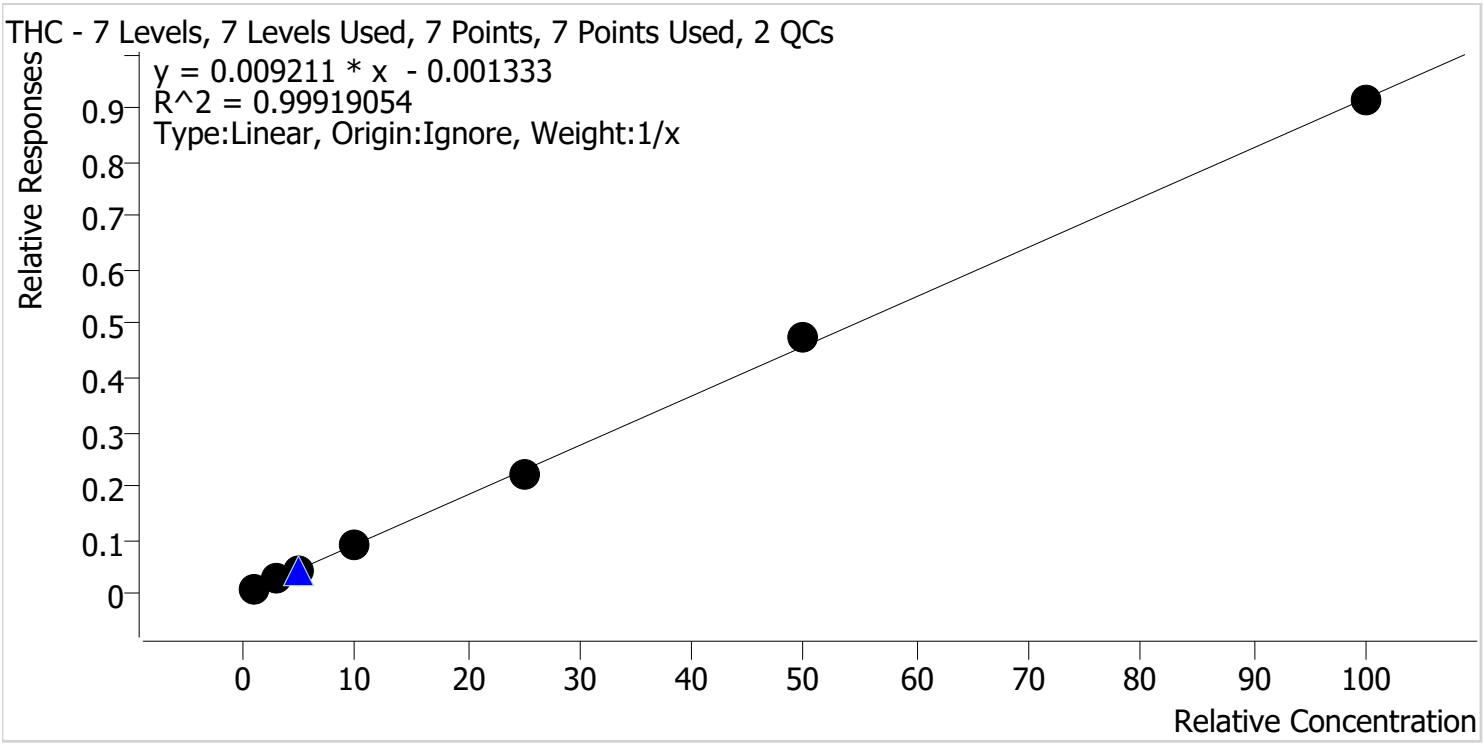
Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.120	252276	∞	24.5	∞	5689530	4.9585 ng/ml
THC-COOH	3.969	28500	1170.57	213.6	∞	259759	15.1263 ng/ml
THC-OH	3.881	89295	∞	14.1	∞	949192	4.5387 ng/ml

AM #27 Cannabinoids Quant. Calibration Curve Report

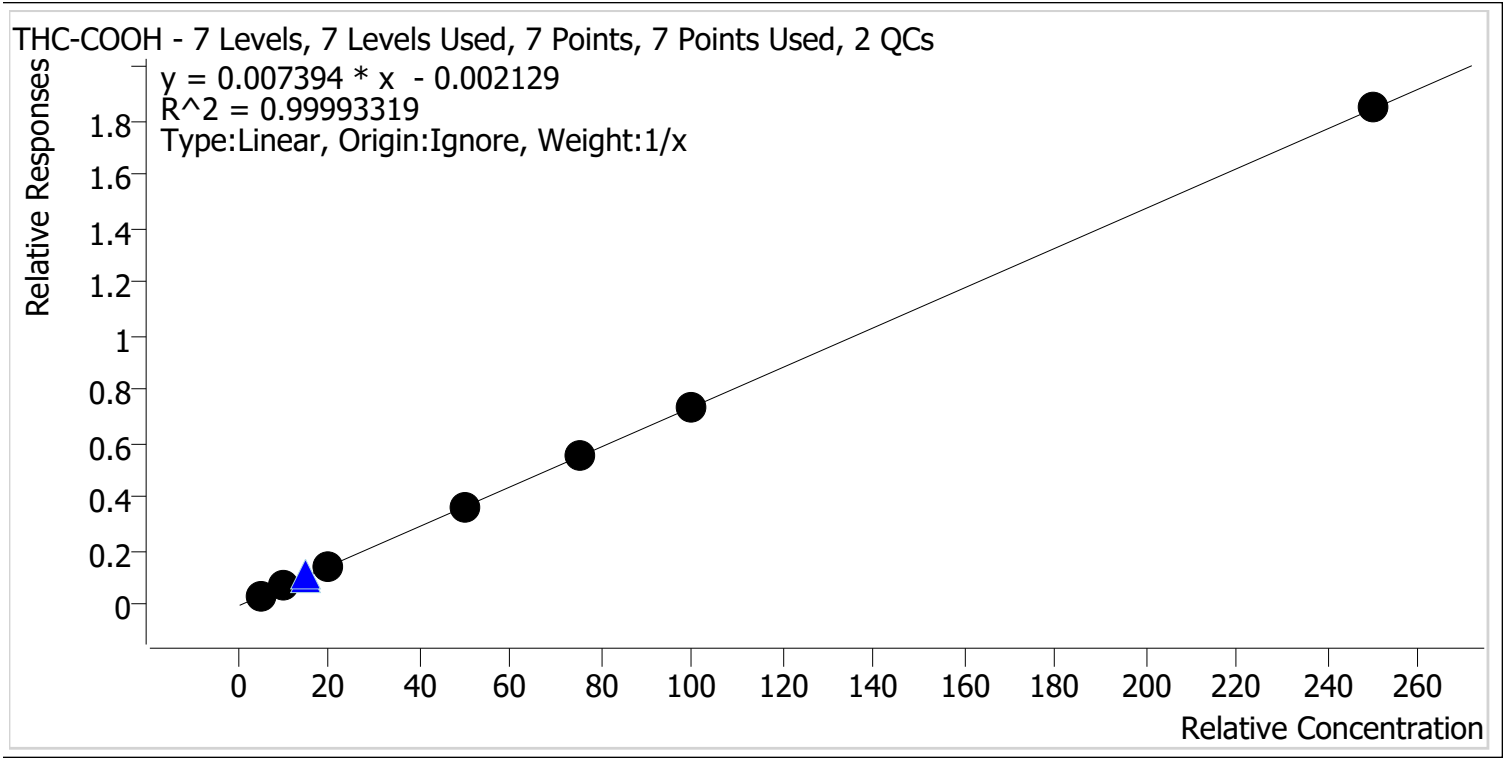
Batch results	D:\MassHunter\Data\2023\AM 27 28\070723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Last Cal. Update	7/11/2023 8:37 AM
Analyst Name	ISP\Datastor
Analyte	THC
Internal Standard	THC-D3



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✔	1.0	1.1	109.7
Cal 2 MJ	2	✔	3.0	2.9	98.1
Cal 3 MJ	3	✔	5.0	4.8	96.2
Cal 4 MJ	4	✔	10.0	9.6	95.9
Cal 5 MJ	5	✔	25.0	24.2	96.7
Cal 6 MJ	6	✔	50.0	51.9	103.7
Cal 7 MJ	7	✔	100.0	99.5	99.5

AM #27 Cannabinoids Quant. Calibration Curve Report

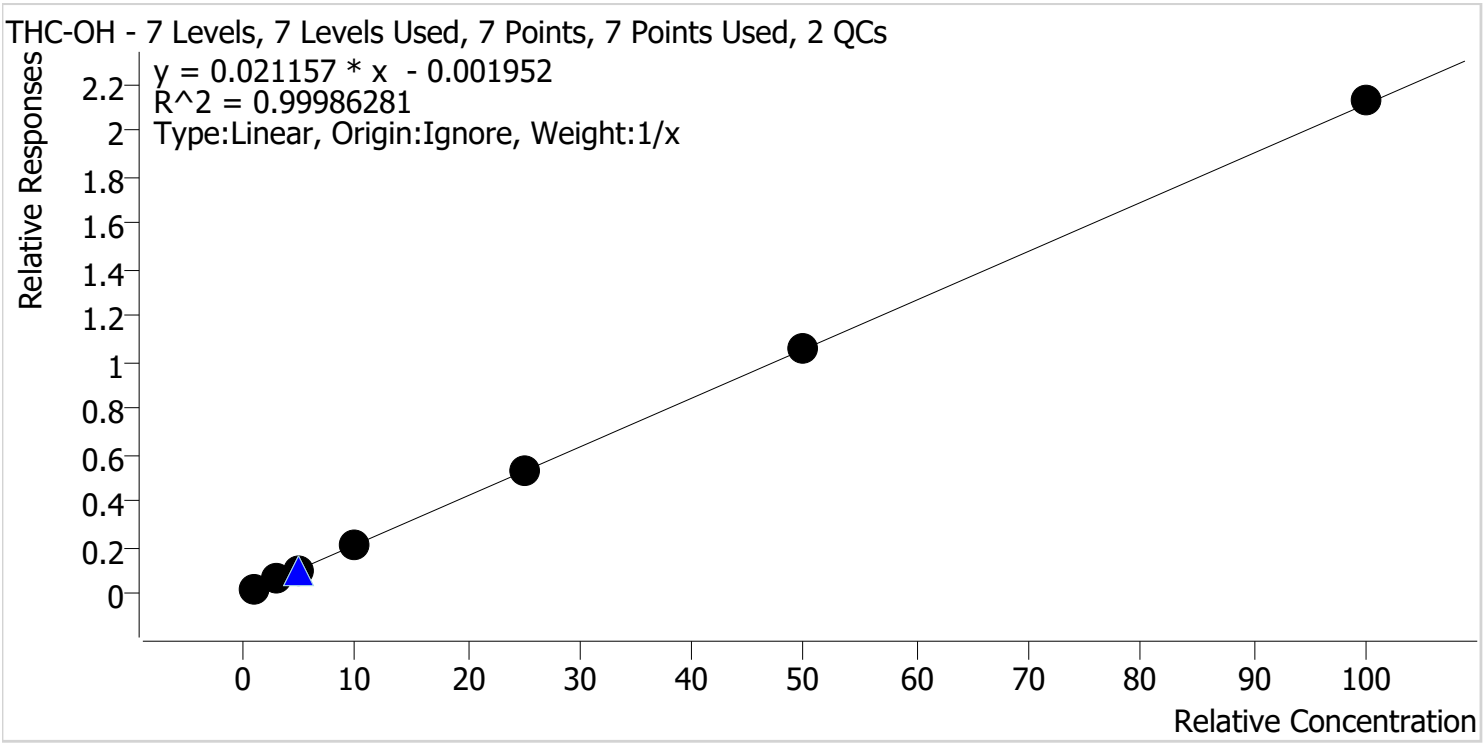
Batch results	D:\MassHunter\Data\2023\AM 27 28\070723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Last Cal. Update	7/11/2023 8:37 AM
Analyst Name	ISP\Datastor
Analyte	THC-COOH
Internal Standard	THC-COOH-D9



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✔	5.0	5.1	102.5
Cal 2 MJ	2	✔	10.0	9.7	96.6
Cal 3 MJ	3	✔	20.0	20.2	101.0
Cal 4 MJ	4	✔	50.0	50.3	100.5
Cal 5 MJ	5	✔	75.0	74.8	99.7
Cal 6 MJ	6	✔	100.0	99.3	99.3
Cal 7 MJ	7	✔	250.0	250.7	100.3

AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results	D:\MassHunter\Data\2023\AM 27 28\070723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Last Cal. Update	7/11/2023 8:37 AM
Analyst Name	ISP\Datastor
Analyte	THC-OH
Internal Standard	THC-OH-D3



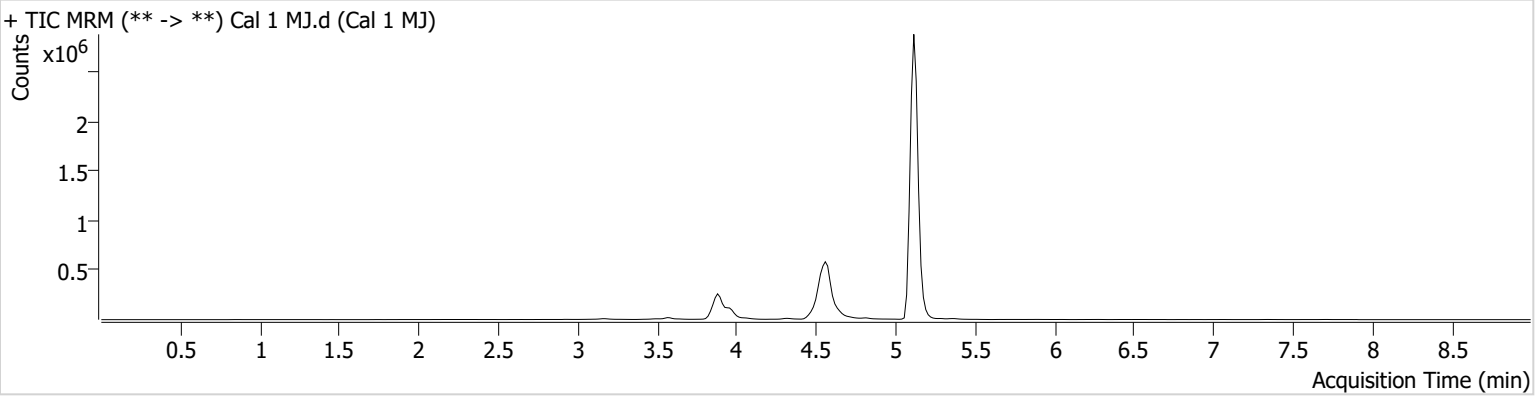
Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✔	1.0	1.1	106.5
Cal 2 MJ	2	✔	3.0	3.0	99.7
Cal 3 MJ	3	✔	5.0	4.8	96.6
Cal 4 MJ	4	✔	10.0	9.8	97.8
Cal 5 MJ	5	✔	25.0	24.8	99.1
Cal 6 MJ	6	✔	50.0	49.8	99.7
Cal 7 MJ	7	✔	100.0	100.7	100.7

AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2023\AM 27 28\070723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 7/11/2023 8:37:32 AM

Instrument	Falco (069901)	**Data File**	Cal 1 MJ.d
Type	Cal	**Sample**	Cal 1 MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-A1	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods.
Injection Volume	10		
Acq. Date-Time	7/7/2023 2:45:01 PM		
Sample Info.			

Sample Chromatogram



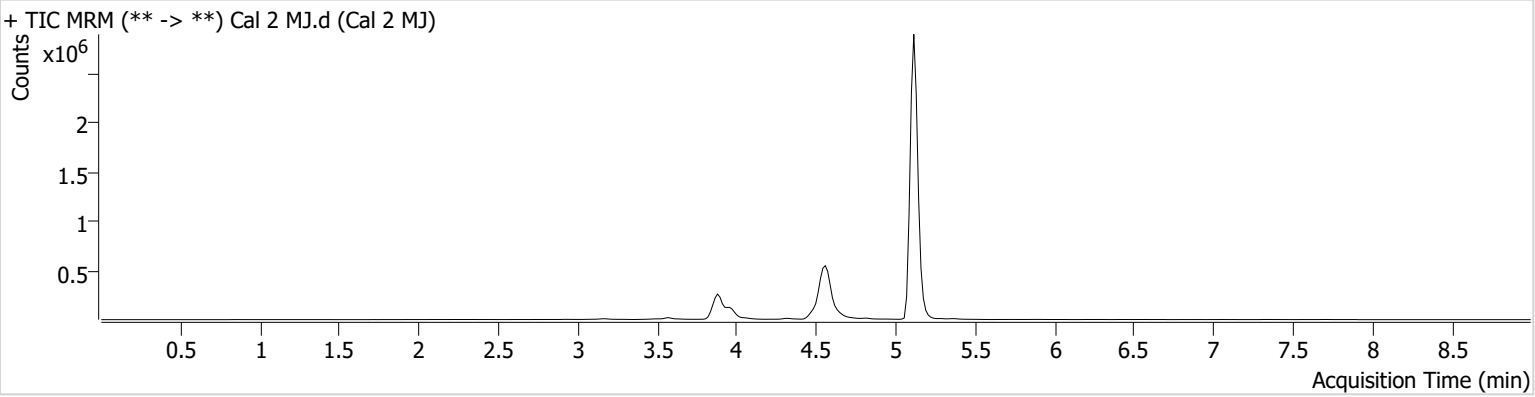
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.120	85721	1486.96	23.7	∞	9768244	1.0974 ng/ml
THC-COOH	3.969	11458	112.15	199.3	246.89	320201	5.1273 ng/ml
THC-OH	3.896	21788	∞	12.9	11.86	1058933	1.0647 ng/ml

AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2023\AM 27 28\070723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 7/11/2023 8:37:32 AM

Instrument	Falco (069901)	**Data File**	Cal 2 MJ.d
Type	Cal	**Sample**	Cal 2 MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-B1	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods.
Injection Volume	10		
Acq. Date-Time	7/7/2023 2:58:16 PM		
Sample Info.			

Sample Chromatogram



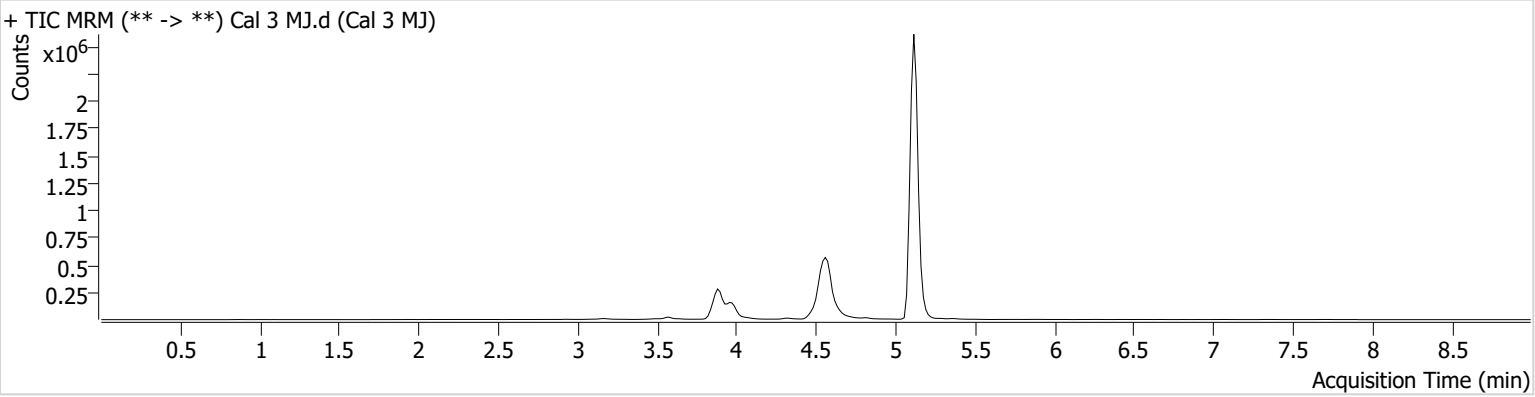
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.120	242986	∞	23.6	∞	9422547	2.9443 ng/ml
THC-COOH	3.969	21261	∞	205.0	453.78	306779	9.6607 ng/ml
THC-OH	3.896	62142	118.62	13.4	262.08	1013673	2.9898 ng/ml

AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2023\AM 27 28\070723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 7/11/2023 8:37:32 AM

Instrument	Falco (069901)	**Data File**	Cal 3 MJ.d
Type	Cal	**Sample**	Cal 3 MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-C1	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods.
Injection Volume	10		
Acq. Date-Time	7/7/2023 3:11:22 PM		
Sample Info.			

Sample Chromatogram



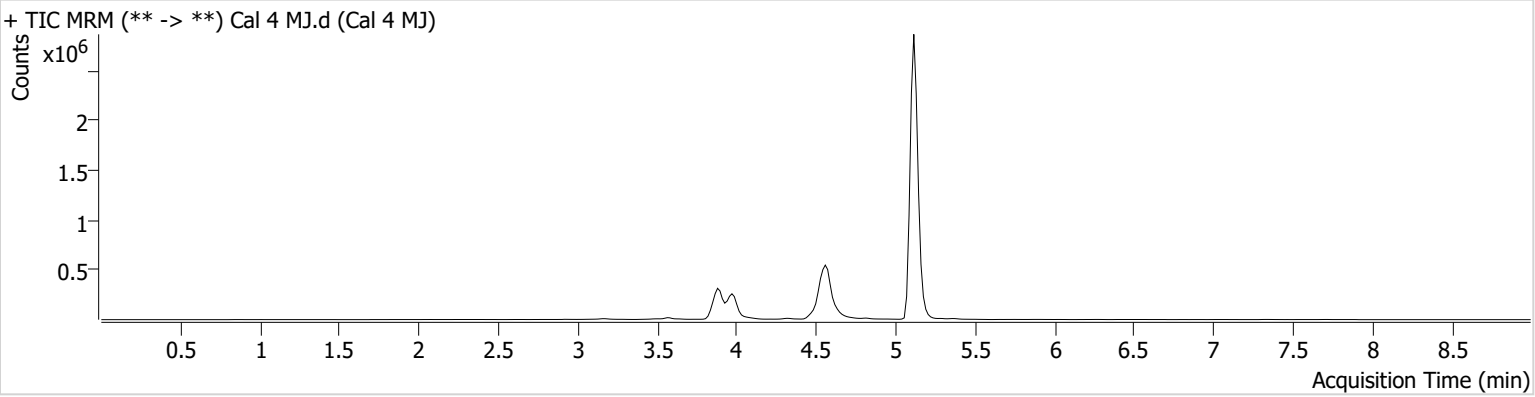
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.120	368177	∞	25.6	∞	8563791	4.8121 ng/ml
THC-COOH	3.985	47065	960.74	206.8	∞	319528	20.2085 ng/ml
THC-OH	3.896	107771	∞	15.2	∞	1075631	4.8279 ng/ml

AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2023\AM 27 28\070723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 7/11/2023 8:37:32 AM

Instrument	Falco (069901)	**Data File**	Cal 4 MJ.d
Type	Cal	**Sample**	Cal 4 MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-D1	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods.
Injection Volume	10		
Acq. Date-Time	7/7/2023 3:24:28 PM		
Sample Info.			

Sample Chromatogram



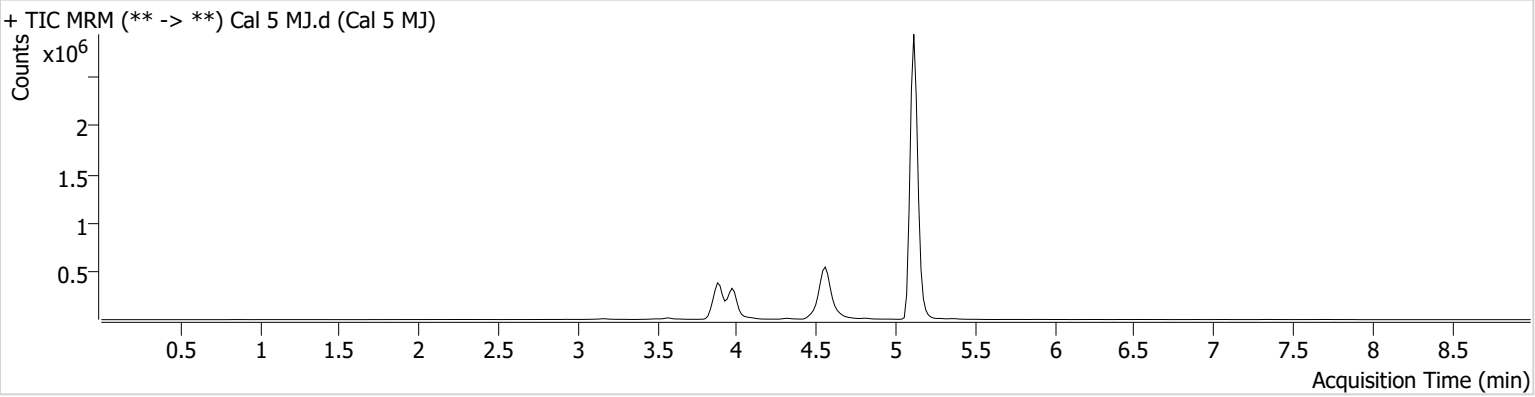
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.120	760626	37049.24	25.1	669.94	8738507	9.5944 ng/ml
THC-COOH	3.969	116849	2141.44	197.9	2734.75	316198	50.2664 ng/ml
THC-OH	3.896	223120	∞	14.9	∞	1088816	9.7778 ng/ml

AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2023\AM 27 28\070723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 7/11/2023 8:37:32 AM

Instrument	Falco (069901)	**Data File**	Cal 5 MJ.d
Type	Cal	**Sample**	Cal 5 MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-E1	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods.
Injection Volume	10		
Acq. Date-Time	7/7/2023 3:37:34 PM		
Sample Info.			

Sample Chromatogram



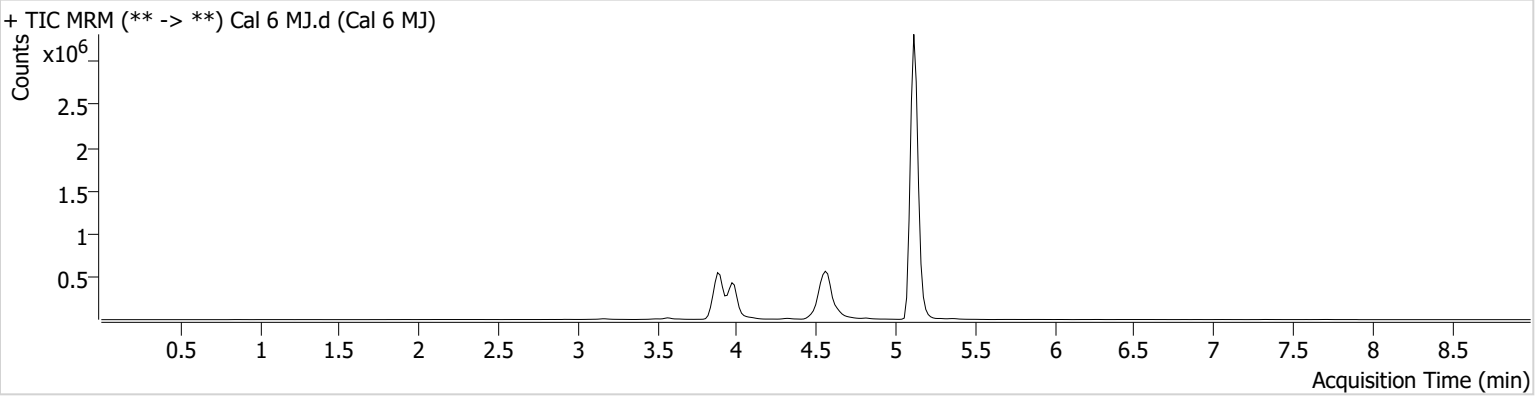
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.120	1719727	38073.50	24.9	∞	7771200	24.1693 ng/ml
THC-COOH	3.969	153388	∞	204.0	5543.88	278426	74.7949 ng/ml
THC-OH	3.896	528757	∞	15.0	∞	1012094	24.7853 ng/ml

AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2023\AM 27 28\070723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 7/11/2023 8:37:32 AM

Instrument	Falco (069901)	**Data File**	Cal 6 MJ.d
Type	Cal	**Sample**	Cal 6 MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-F1	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods.
Injection Volume	10		
Acq. Date-Time	7/7/2023 3:50:38 PM		
Sample Info.			

Sample Chromatogram



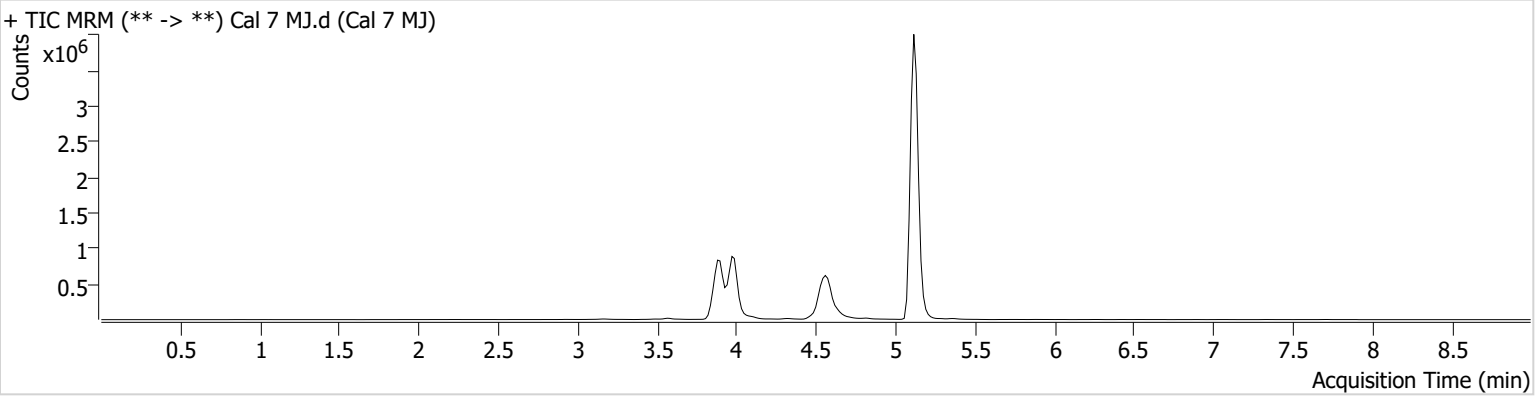
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.120	3369851	38309.01	25.0	∞	7072955	51.8688 ng/ml
THC-COOH	3.969	217808	1287.81	197.3	5696.66	297568	99.2804 ng/ml
THC-OH	3.896	1131073	∞	15.0	∞	1074747	49.8342 ng/ml

AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2023\AM 27 28\070723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 7/11/2023 8:37:32 AM

Instrument	Falco (069901)	**Data File**	Cal 7 MJ.d
Type	Cal	**Sample**	Cal 7 MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-G1	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods.
Injection Volume	10		
Acq. Date-Time	7/7/2023 4:03:44 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.120	5952952	67874.67	24.8	∞	6503769	99.5137 ng/ml
THC-COOH	3.969	491691	14335.63	204.4	9032.23	265595	250.6617 ng/ml
THC-OH	3.896	2288111	∞	15.1	∞	1074724	100.7203 ng/ml