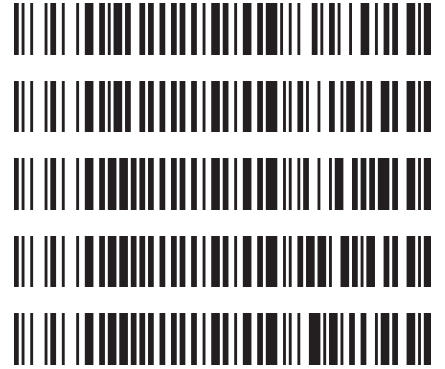




Worklist: 6657

<u>LAB CASE</u>	<u>ITEM</u>	<u>ITEM TYPE</u>	<u>DESCRIPTION</u>
M2023-4659	2	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ
M2023-4769	2	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ
P2023-3680	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ
P2023-3830	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ
P2023-4026	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ



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

Extraction Date: 01/19/2024

Plate lot#: 220802

Mobile phase A: 0.1% Formic Acid in LCMS Water

Blank Blood Lot: Lampire 23E52981

LCMS-QQQ ID: 069901

Analyst: Celena Shrum

Plate Retest Date: 07/23/2023- external control used

Mobile phase B: 0.1% Formic acid in Acetonitrile

Column: Phenomenex Phenyl Hexyl (4.6x50mm, 2.6um)

Blank Urine Lot: POC021022

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: THC evaluated qualitatively due to control being out of tolerances.

	1	2	3	4	5	6
a					M2023-4769-2	QC 1
b					P2023-3680-1	cal 100 ng
c					P2023-3830-1	cal 50 ng
d					P2023-4026-1	cal 25 ng
e					NEG Urine	cal 10ng
f					Blood External Ctrl	cal 5 ng
g					NEG Blood	cal 3 ng
h				M2023-4659-2	QC 2	cal 1ng

28

28

	1	2	3	4	5	6
a		M2023-4769-2	QC 1			
b		P2023-3680-1	cal 100 ng			
c		P2023-3830-1	cal 50 ng			
d		P2023-4026-1	cal 25 ng			
e		NEG Urine	cal 10ng			
f		Blood External Ctrl	cal 5 ng			
g		NEG Blood	cal 3 ng			
h	M2023-4659-2	QC 2	cal 1ng			

SLE Plate Map

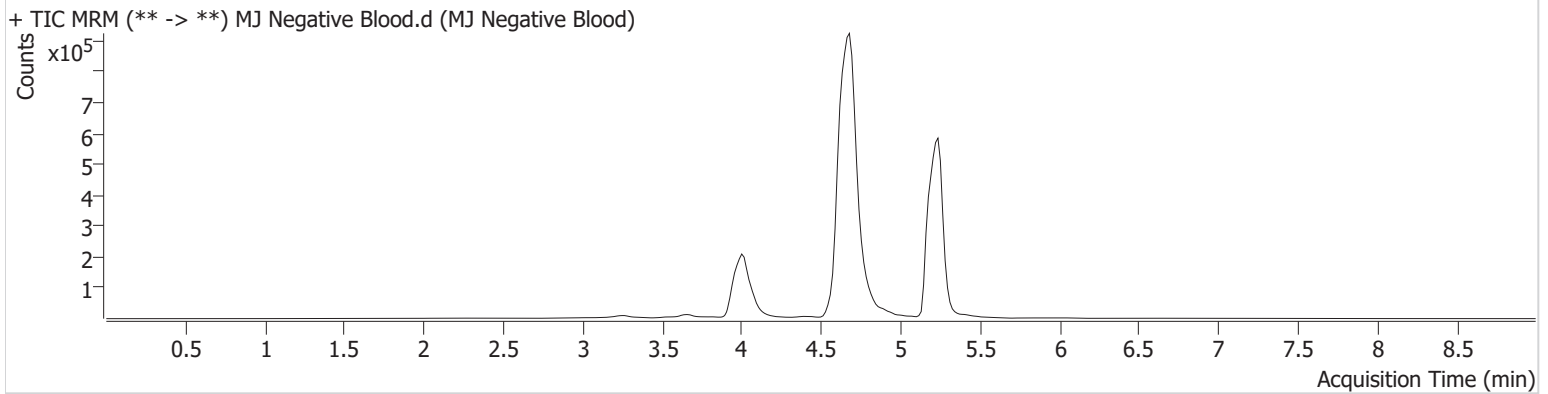


AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2024\AM 27 28\011924 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 1/22/2024 7:59:53 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-G2	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	1/19/2024 5:29:12 PM		
Sample Info.			

Sample Chromatogram



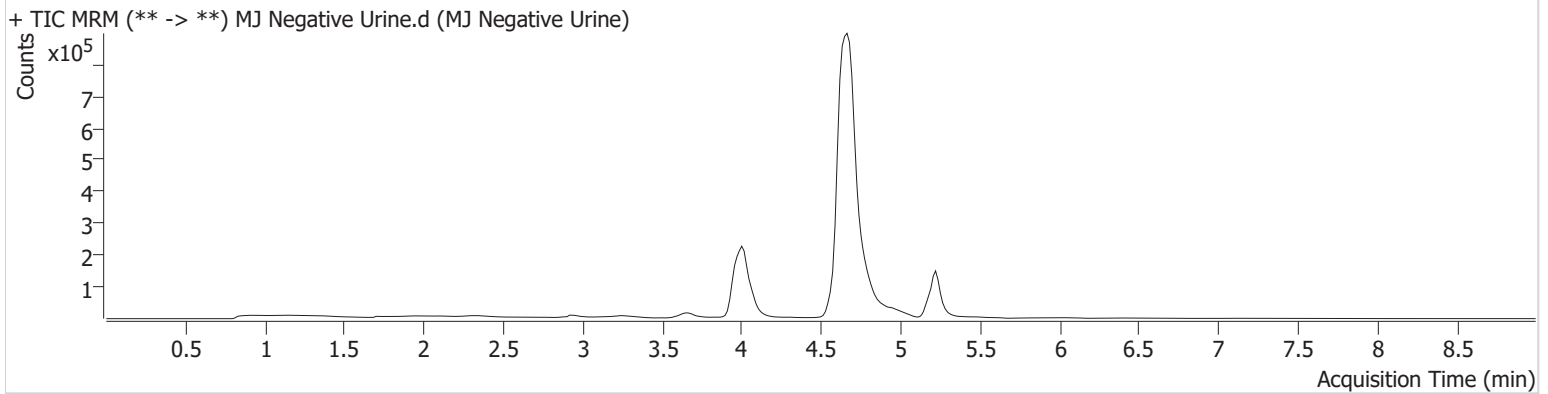


AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2024\AM 27 28\011924 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 1/22/2024 7:59:53 AM

Instrument	Falco (069901)	Data File	MJ Negative Urine.d
Type	Sample	Sample	MJ Negative Urine
Acq. Method	AM 27 Agilent Method.m	Operator	Celena Shrum
Sample Position	P1-E2	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	1/19/2024 5:55:28 PM		
Sample Info.			

Sample Chromatogram





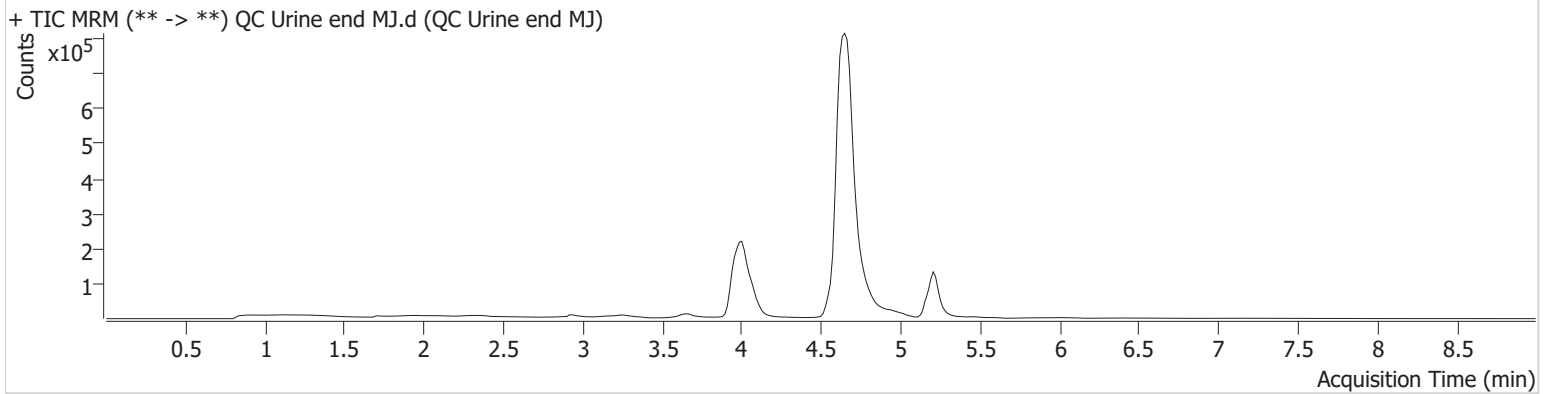
AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2024\AM 27 28\011924 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 1/22/2024 7:59:53 AM

Instrument Falco (069901) **Data File** QC Urine end MJ.d
Type QC **Sample** QC Urine end MJ
Acq. Method AM 27 Agilent Method.m **Operator** Celena Shrum
Sample Position P1-H2 **Comment**
Injection Volume 10
Acq. Date-Time 1/19/2024 8:59:05 PM
Sample Info.

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.

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.210	26796	∞	29.6	∞	633267	4.7552 ng/ml
THC-COOH	4.075	25418	228.30	207.7	213.93	258368	13.7353 ng/ml
THC-OH	4.001	91065	∞	13.3	∞	1100946	4.8513 ng/ml



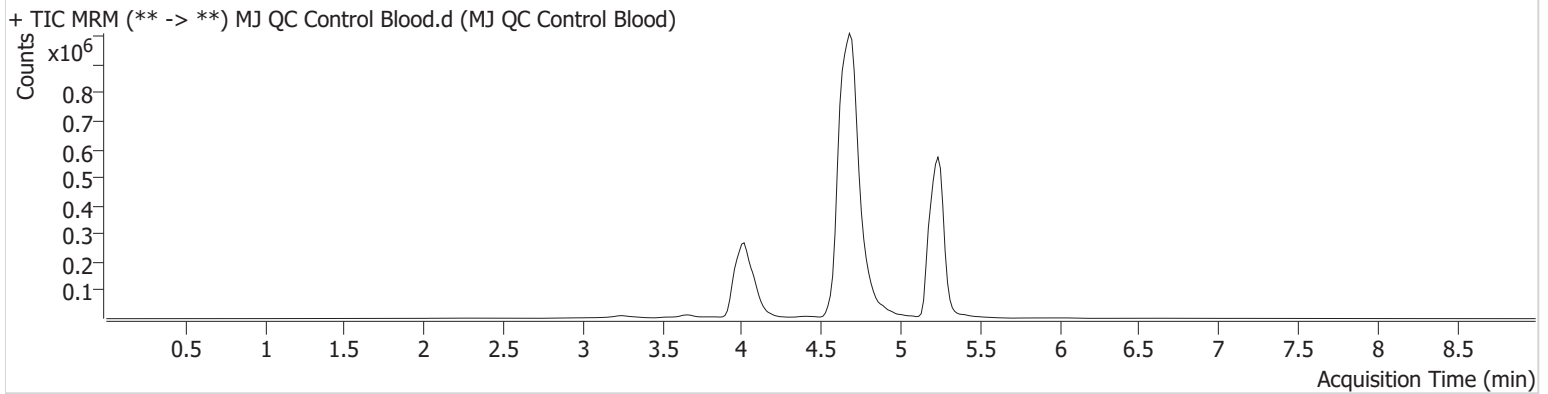
AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2024\AM 27 28\011924 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 1/22/2024 7:59:53 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-A3 **Comment**
Injection Volume 10
Acq. Date-Time 1/19/2024 5:02:59 PM
Sample Info.

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.

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.240	145029	∞	25.9	∞	3233879	5.0249 ng/ml
THC-COOH	4.075	45098	126.52	209.9	∞	432803	14.5037 ng/ml
THC-OH	4.001	100379	∞	15.2	∞	1263805	4.6707 ng/ml



AM #27 Cannabinoids Quant. Results

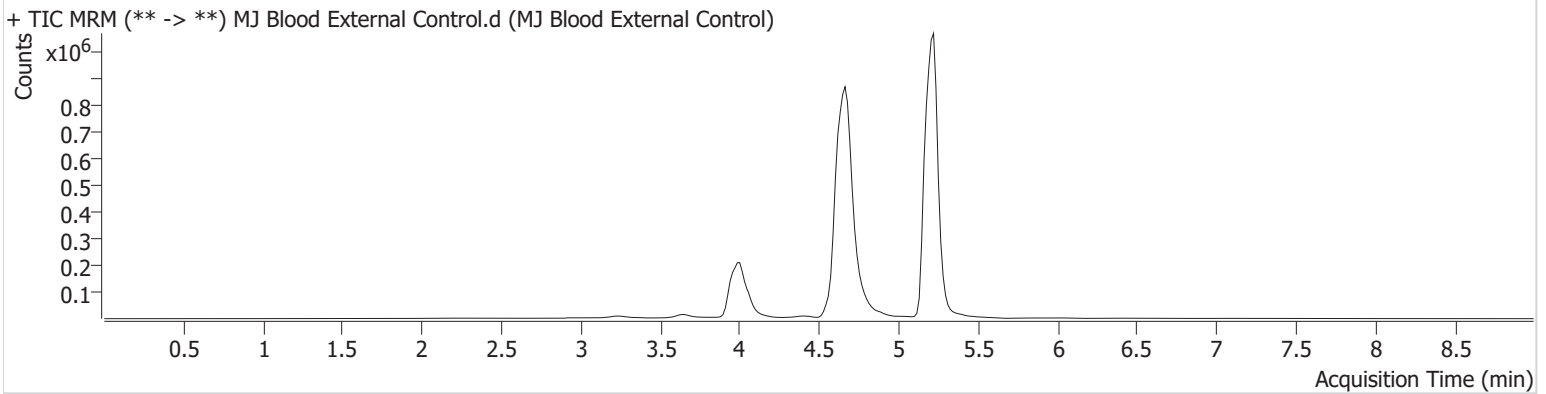
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Calibration Last Update 1/22/2024 7:59:53 AM

Instrument Falco (069901)
Type Sample
Acq. Method AM 27 Agilent Method.m
Sample Position P1-F2
Injection Volume 10
Acq. Date-Time 1/19/2024 6:21:43 PM
Sample Info.

Data File MJ Blood External Control.d
Sample MJ Blood External Control
Operator Celena Shrum
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.

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.225	1164302	∞	25.3	∞	4217034	29.6568 ng/ml



Idaho State Police
Forensic Services

**AM #26 Screening of THC and Metabolites and AM #27
Confirmation of THC and Metabolites Blood External
Control Prep Sheet**

Methanol External Control Solution (Lot: WS091323)

10 μ L of 1mg/mL THC in 9990 μ L MeOH

Approximate concentration 1ug/mL.

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>	<i>Expiration Date</i>
Methanol (LCMS)	Fisher	217005	-
THC	Cerilliant	FE05252135	02/28/2027
Prepared:	09/13/2023		
Expires:	09/13/2024		
Prepared By:	Tamara Salazar		

Blood External Control Solution (Lot: 091323)

500 ul of methanol external control solution was added to 9500 ul of blood.

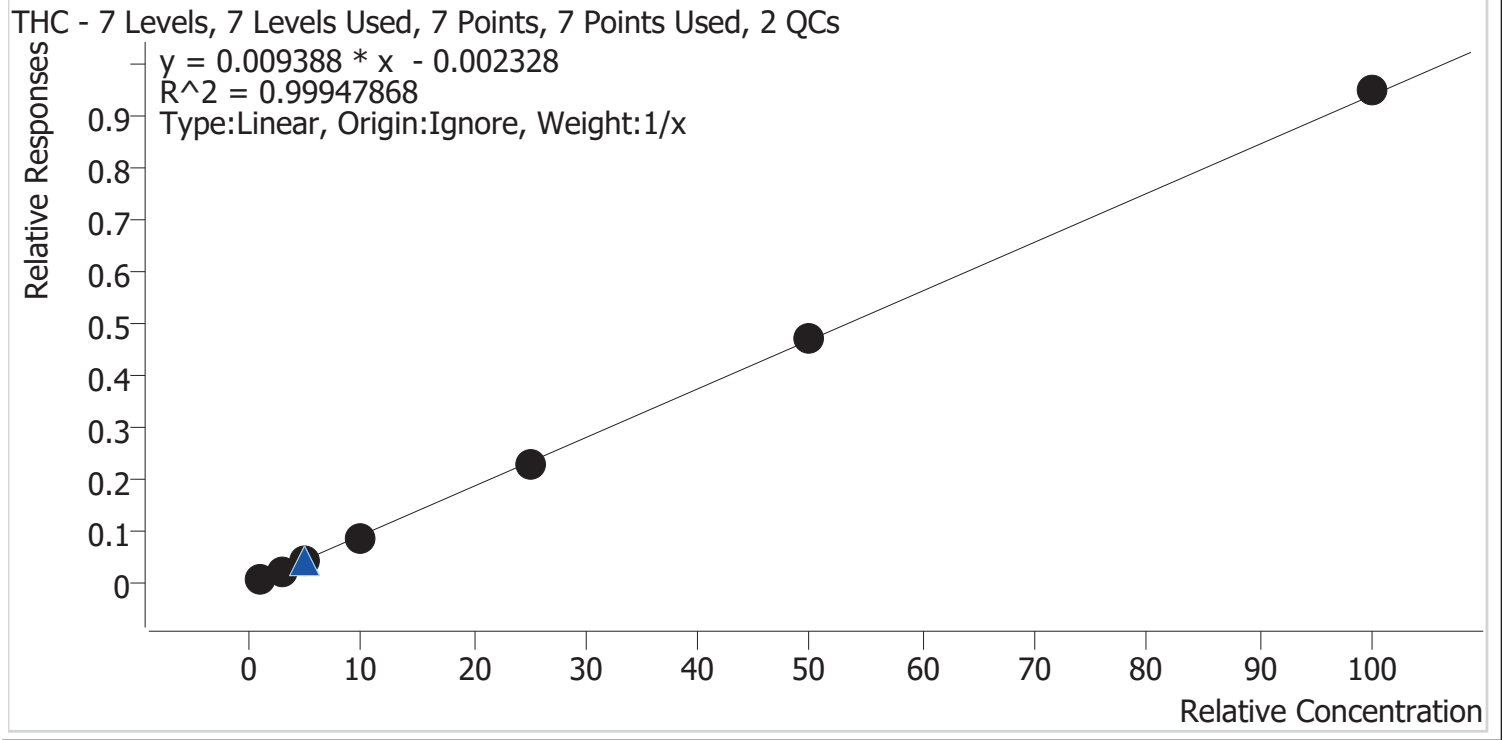
Approximately 50ng/mL each

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>
Negative Blood	Lampire	23E52981
Methanol External Control Solution	-	WS101322
Prepared:	09/13/2023	
Expires:	09/13/2024	
Prepared by:	Tamara Salazar	



AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results D:\MassHunter\Data\2024\AM 27 28\011924 AM 27 28 CS\QuantResults\AM 27.batch.bin
Last Cal. Update 1/22/2024 7:59 AM
Analyst Name ISP\datastor
Analyte THC **Internal Standard** THC-D3

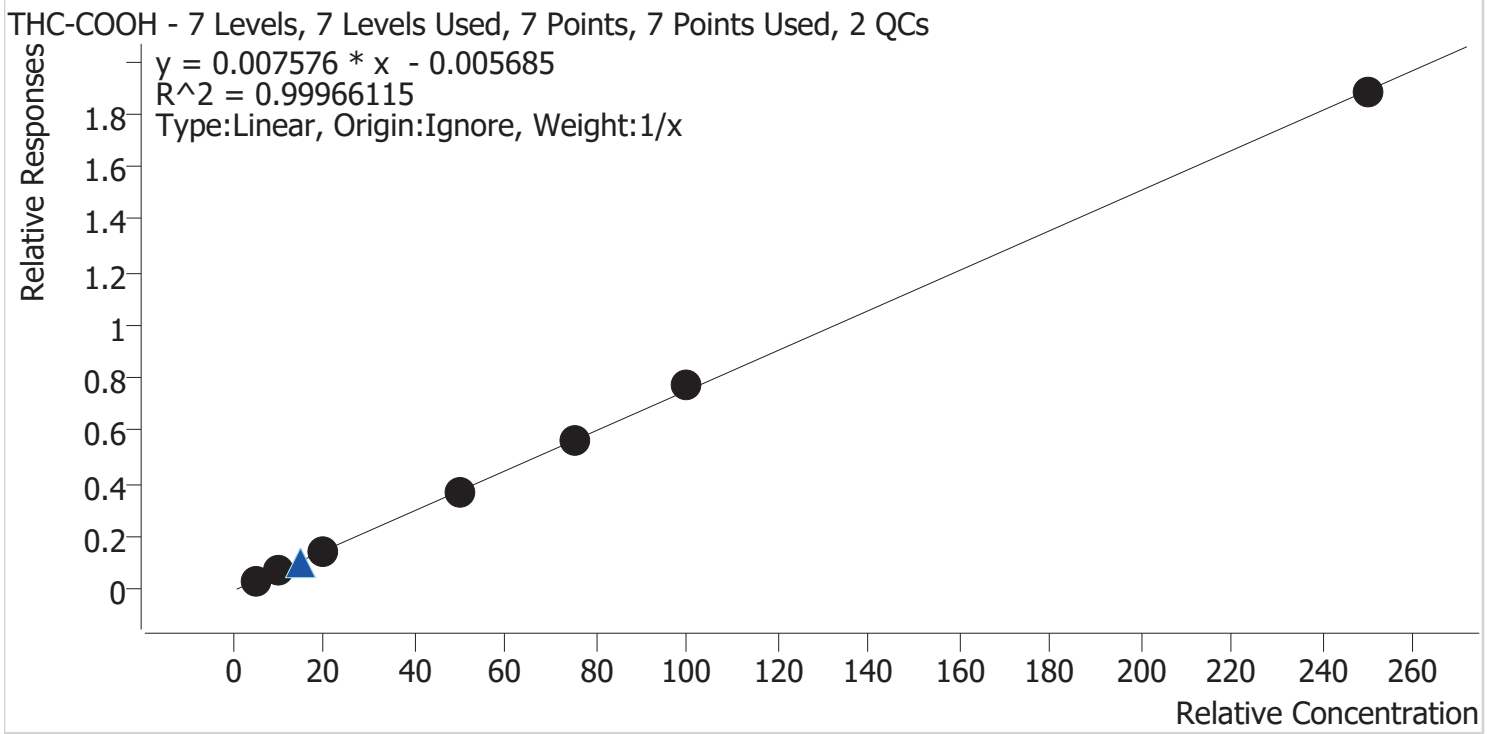


Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✓	1.0	1.1	114.0
Cal 2 MJ	2	✓	3.0	2.9	96.9
Cal 3 MJ	3	✓	5.0	4.8	95.2
Cal 4 MJ	4	✓	10.0	9.4	93.7
Cal 5 MJ	5	✓	25.0	24.8	99.1
Cal 6 MJ	6	✓	50.0	50.1	100.2
Cal 7 MJ	7	✓	100.0	101.0	101.0



AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results D:\MassHunter\Data\2024\AM 27 28\011924 AM 27 28 CS\QuantResults\AM 27.batch.bin
Last Cal. Update 1/22/2024 7:59 AM
Analyst Name ISP\datastor
Analyte THC-COOH **Internal Standard** THC-COOH-D9



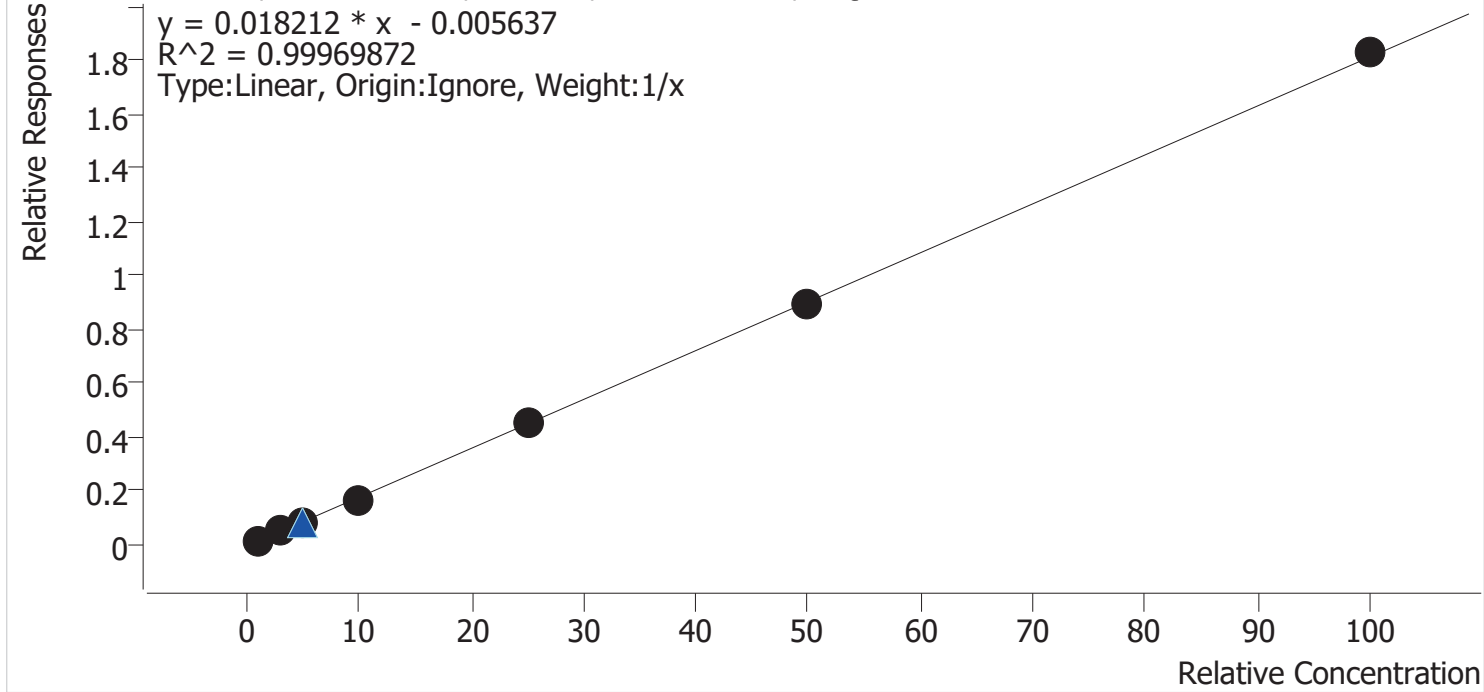
Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✓	5.0	5.0	99.6
Cal 2 MJ	2	✓	10.0	10.3	103.4
Cal 3 MJ	3	✓	20.0	19.4	97.1
Cal 4 MJ	4	✓	50.0	49.0	98.0
Cal 5 MJ	5	✓	75.0	74.6	99.5
Cal 6 MJ	6	✓	100.0	102.8	102.8
Cal 7 MJ	7	✓	250.0	248.8	99.5



AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results D:\MassHunter\Data\2024\AM 27 28\011924 AM 27 28 CS\QuantResults\AM 27.batch.bin
Last Cal. Update 1/22/2024 7:59 AM
Analyst Name ISP\datastor
Analyte THC-OH **Internal Standard** THC-OH-D3

THC-OH - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 2 QCs



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✓	1.0	1.1	111.0
Cal 2 MJ	2	✓	3.0	2.9	98.1
Cal 3 MJ	3	✓	5.0	4.7	94.0
Cal 4 MJ	4	✓	10.0	9.7	96.9
Cal 5 MJ	5	✓	25.0	24.9	99.5
Cal 6 MJ	6	✓	50.0	49.8	99.6
Cal 7 MJ	7	✓	100.0	100.9	100.9



AM #27 Cannabinoids Quant. Results

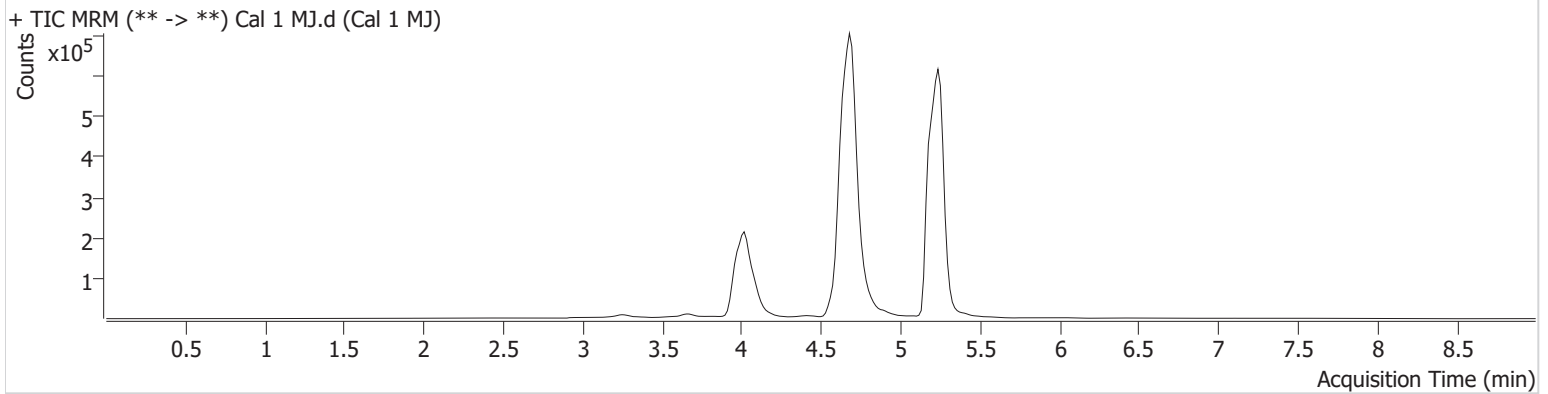
Batch results D:\MassHunter\Data\2024\AM 27 28\011924 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 1/22/2024 7:59:53 AM

Instrument Falco (069901)
Type Cal
Acq. Method AM 27 Agilent Method.m
Sample Position P1-H3
Injection Volume 10
Acq. Date-Time 1/19/2024 3:17:58 PM
Sample Info.

Data File Cal 1 MJ.d
Sample Cal 1 MJ
Operator Celena Shrum
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.

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.255	32252	∞	25.2	∞	3849594	1.1404 ng/ml
THC-COOH	4.075	13047	75.96	212.5	∞	406899	4.9824 ng/ml
THC-OH	4.001	15923	∞	14.0	17.05	1091888	1.1103 ng/ml



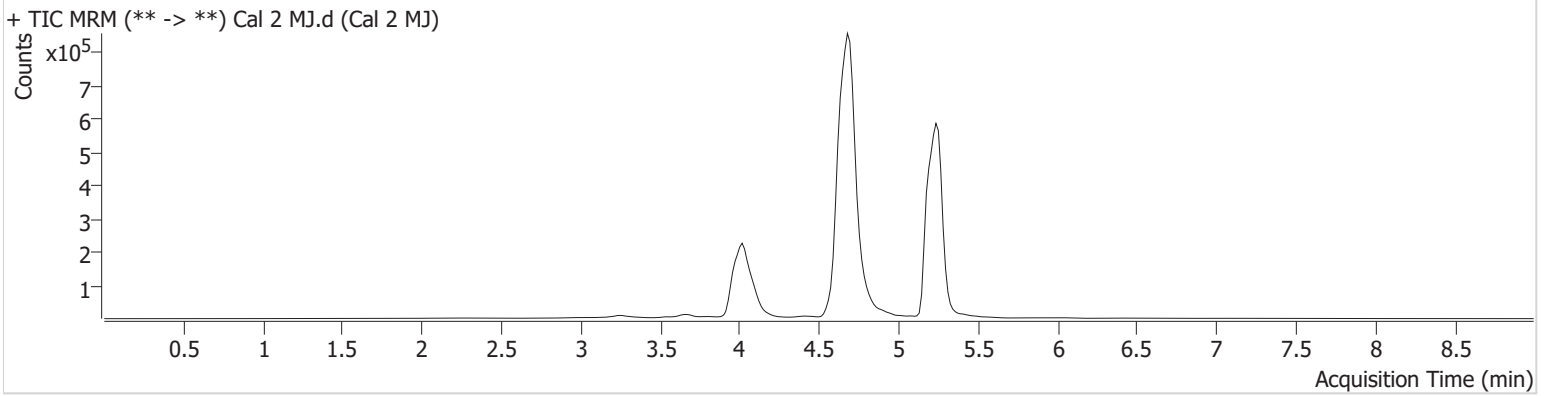
AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2024\AM 27 28\011924 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 1/22/2024 7:59:53 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-G3 **Comment**
Injection Volume 10
Acq. Date-Time 1/19/2024 3:31:14 PM
Sample Info.

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.

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.255	89588	∞	24.6	∞	3588006	2.9076 ng/ml
THC-COOH	4.075	27772	∞	200.6	∞	382344	10.3377 ng/ml
THC-OH	4.001	52758	∞	14.4	100.99	1100451	2.9420 ng/ml



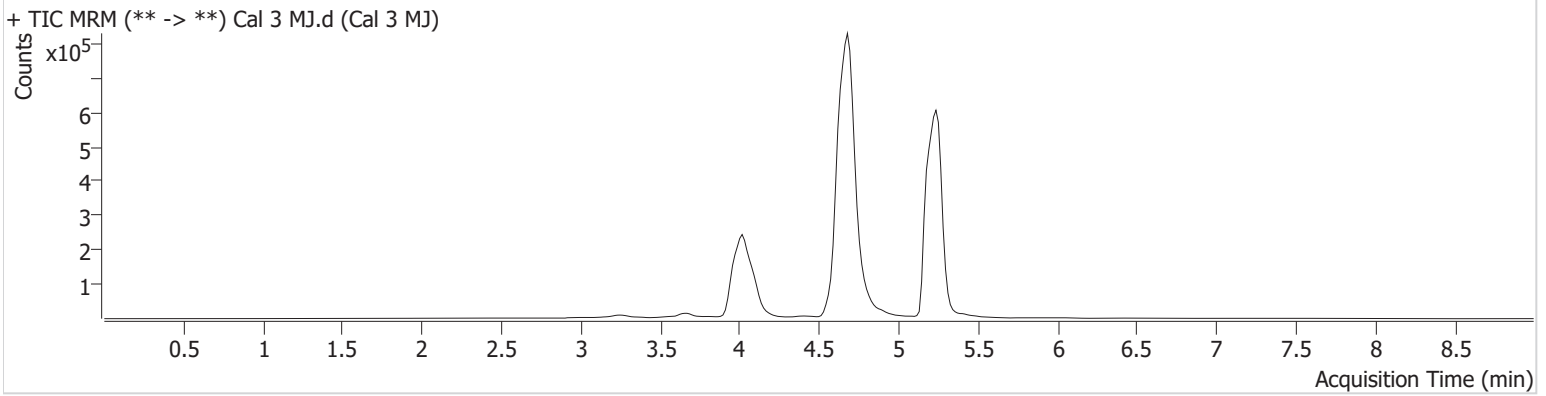
AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2024\AM 27 28\011924 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 1/22/2024 7:59:53 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-F3 **Comment**
Injection Volume 10
Acq. Date-Time 1/19/2024 3:44:20 PM
Sample Info.

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.

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.240	157739	∞	24.7	∞	3725741	4.7577 ng/ml
THC-COOH	4.075	55919	409.40	211.8	∞	395221	19.4254 ng/ml
THC-OH	4.001	89450	∞	14.3	∞	1118243	4.7018 ng/ml



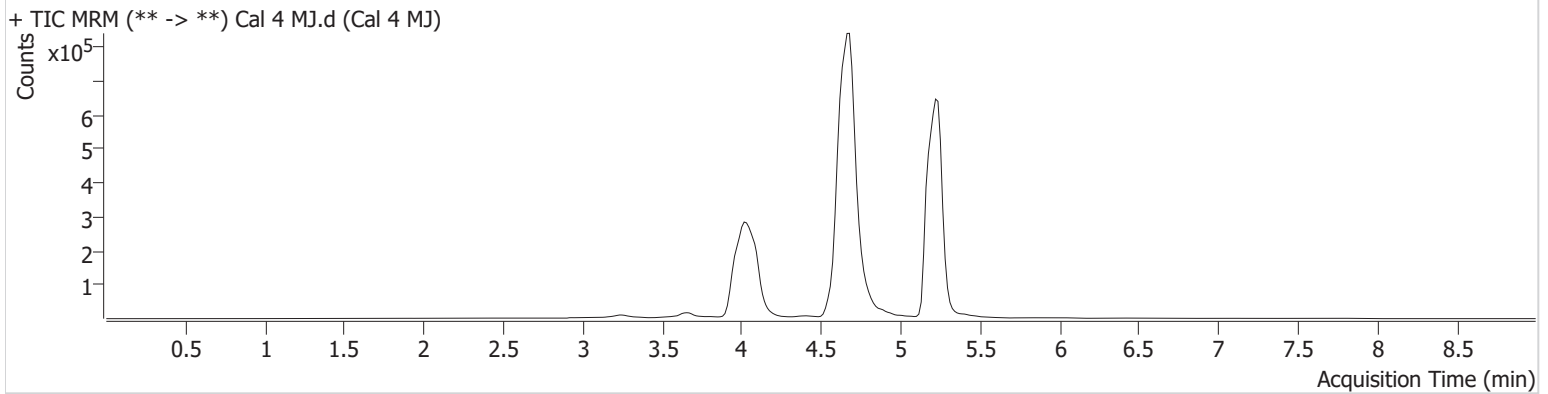
AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2024\AM 27 28\011924 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 1/22/2024 7:59:53 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-E3 **Comment**
Injection Volume 10
Acq. Date-Time 1/19/2024 3:57:26 PM
Sample Info.

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.

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.240	311308	∞	26.2	∞	3637083	9.3651 ng/ml
THC-COOH	4.075	139947	∞	211.6	∞	382679	49.0197 ng/ml
THC-OH	4.001	188035	∞	13.9	∞	1100618	9.6904 ng/ml



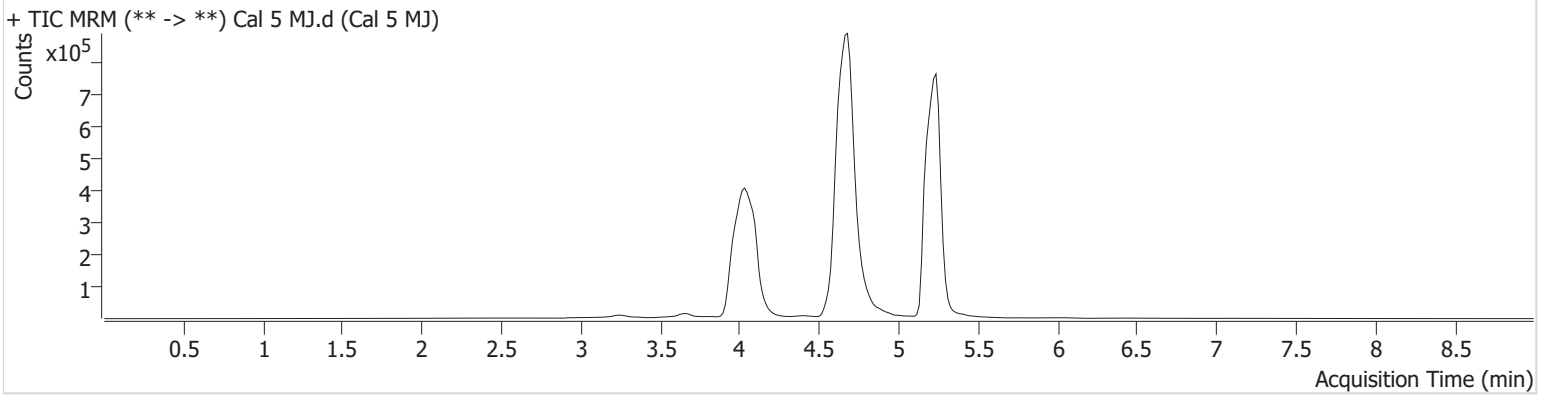
AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2024\AM 27 28\011924 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 1/22/2024 7:59:53 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-D3 **Comment**
Injection Volume 10
Acq. Date-Time 1/19/2024 4:10:32 PM
Sample Info.

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.

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.240	853223	∞	25.0	∞	3706222	24.7696 ng/ml
THC-COOH	4.075	231591	1788.34	211.3	∞	413756	74.6288 ng/ml
THC-OH	4.001	559059	∞	13.6	∞	1250019	24.8669 ng/ml



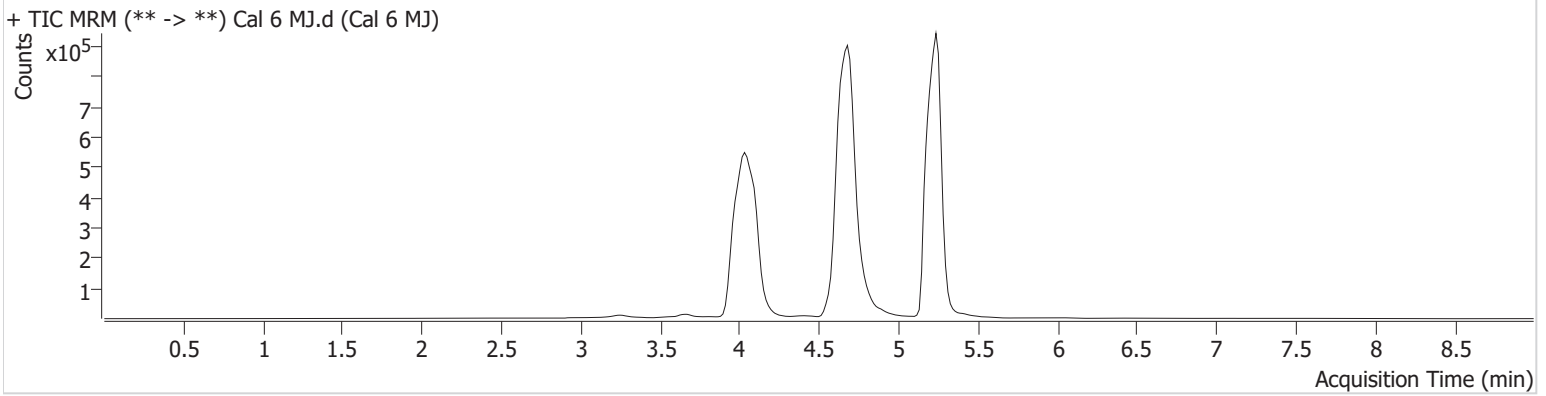
AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2024\AM 27 28\011924 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 1/22/2024 7:59:53 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-C3 **Comment**
Injection Volume 10
Acq. Date-Time 1/19/2024 4:23:39 PM
Sample Info.

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.

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.240	1716281	∞	25.3	∞	3667254	50.0981 ng/ml
THC-COOH	4.090	324262	∞	197.4	6953.49	419527	102.7683 ng/ml
THC-OH	4.001	1173323	∞	13.7	∞	1301502	49.8104 ng/ml



AM #27 Cannabinoids Quant. Results

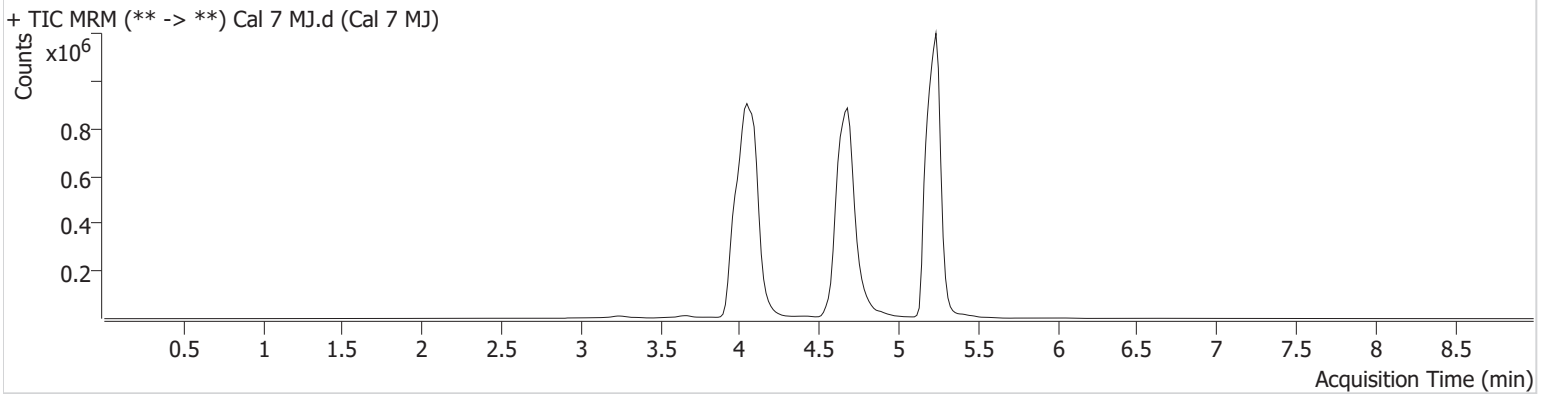
Batch results D:\MassHunter\Data\2024\AM 27 28\011924 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 1/22/2024 7:59:53 AM

Instrument Falco (069901)
Type Cal
Acq. Method AM 27 Agilent Method.m
Sample Position P1-B3
Injection Volume 10
Acq. Date-Time 1/19/2024 4:36:46 PM
Sample Info.

Data File Cal 7 MJ.d
Sample Cal 7 MJ
Operator Celena Shrum
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.

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.240	3133144	∞	26.0	∞	3313682	100.9616 ng/ml
THC-COOH	4.075	686221	∞	205.4	∞	365090	248.8377 ng/ml
THC-OH	4.001	2081745	∞	14.0	∞	1136594	100.8782 ng/ml