

REVIEWED
By Sarah Pickle at 12:30 pm, Sep 23, 2020

9/21/2020

Worklist: 4526

<u>LAB CASE</u>	<u>ITEM</u>	<u>ITEM TYPE</u>	<u>DESCRIPTION</u>
P2020-2795	1.10	CBUK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ
P2020-2795	1.3	CBUK	AM 27 Blood THC Quant by LC-QQQ



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

Extraction Date: 09/17/20

Plate lot#: IDP-108-2-200723

Mobile phase A: 0.1% Formic Acid in LCMS Water

Blank Blood Lot: Hemostat 445283-4

Blank Urine Lot: POCO31319

LCMS-QQQ ID: 069901

Analyst: Sophia Jackson

Plate Expiration: 01/23/2021

Mobile phase B: 0.1% Formic acid in Acetonitrile

Column: UCT Selectra DA 100 x 2.1mm 3um

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: add 1.5mL urine to blank plate, add 250µl 1N KOH. Shake and incubate at 40 degrees for 15 minutes. Using a calibrated pipette, add **1000µl blood and urine (if applicable) (calibrated pipette)** into the appropriate wells of analytical (standards) plate. **Pipette ID:** 3382167
- 3. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
- 4. Pipette **500µL 0.1% formic acid in water blood sample, 500 µL saturated phosphate buffer in urine** in wells of analytical plate.
- 5. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
- 6. Transfer **700-800µL of blood+acid or urine+acid** mixture to corresponding wells of SLE+ plate. Amount transferred: 800 uL
- 7. 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)**
- 8. Wait 5 minutes.
- 9. Add **2.25mL MTBE. (Add in 3 increments of 750uL)**
- 10. Wait 5 minutes.
- 11. Apply positive pressure for approx. 15 seconds. **(10-15 PSI- Selector to the left).**
- 12. Add **2.25mL Hexane. (Add in 3 increments of 750uL)**
- 13. Wait 5 minutes.
- 14. Apply positive pressure for approx. 15 seconds. **(10-15 PSI- Selector to the left).**
- 15. Remove plate containing eluate. Place on SPE Dry and evaporate to dryness at approx. 35°C.
- 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 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.
- 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: *Did not evaluate THC-OH*
Curves limited: THC 3-100

SJ

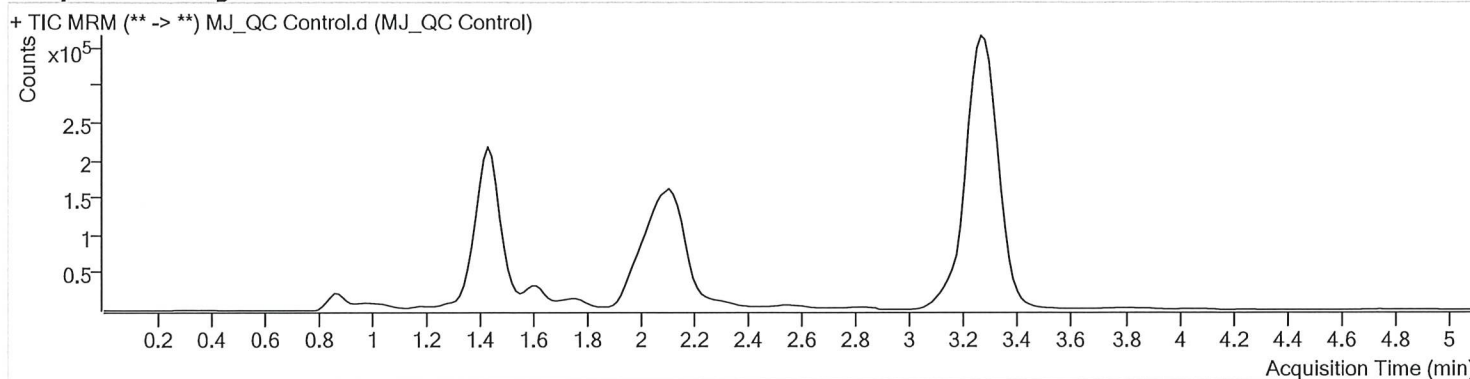


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2020\AM 27-28\091720 AM 27 AM 28 P1 P2 SJ comp test\QuantResults\AM 27.batch.bin
Calibration Last Update 9/21/2020 9:59:51 AM

Instrument	Falco	Data File	MJ_QC Control.d
Type	Sample	Sample	MJ_QC Control
Acq. Method	AM 27 THC quant.m	Operator	Sophia Jackson
Sample Position	P3-A6	Comment	
Injection Volume	10		
Acq. Date-Time	9/17/2020 7:37:45 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.468	162380	∞	7.3 Low	100.97	837015	5.0256 ng/ml *
THC-COOH	1.459	85138	∞	59.7	∞	203948	16.5660 ng/ml
THC	3.285	120910	517.13	29.7	243.20	2962859	4.6926 ng/ml

21/21/20 SJ

* Compound not evaluated

SJ

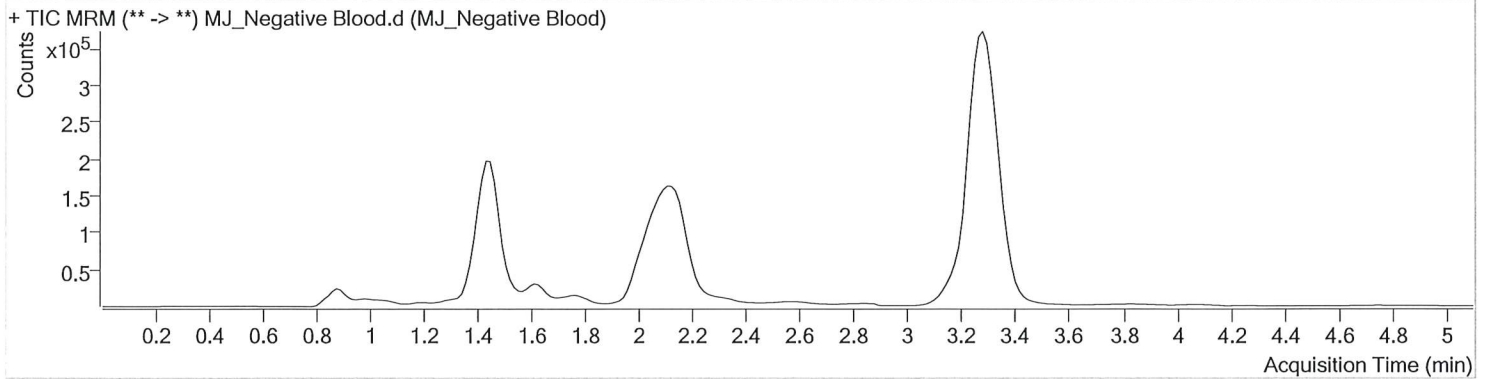


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2020\AM 27-28\091720 AM 27 AM 28 P1 P2 SJ comp test\QuantResults\AM 27.batch.bin
Calibration Last Update 9/21/2020 9:59:51 AM

Instrument	Falco	Data File	MJ_Negative Blood.d
Type	Sample	Sample	MJ_Negative Blood
Acq. Method	AM 27 THC quant.m	Operator	Sophia Jackson
Sample Position	P3-H5	Comment	
Injection Volume	10		
Acq. Date-Time	9/17/2020 7:52:57 PM		
Sample Info.			

Sample Chromatogram





Idaho State Police Forensic Services

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

Methanol External Control Solution (Lot: WS011620)

10 μ L of 1mg/mL THC, 100 μ L of 100 μ g/mL THC-OH, C-THC in 9790 μ L MeOH

Approximate concentration 1 μ g/mL.

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>	<i>Expiration Date</i>
Methanol (LCMS)	Fisher	193941	
THC	Cerilliant	FE09101501	11/30/2020
C-THC	Cerilliant	FE07171501	09/30/2020
THC-OH	Cerilliant	FE07221601	07/31/2021
Prepared:	01/16/2020		
Prepared By:	Tamara Salazar		
Expires:	09/30/2020		

Urine External Control Solution (Lot: 090120)

200 μ L of methanol external control solution was added to 9800 μ L of urine.

Approximately 20ng/mL each

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>
Negative Urine	Pocatello Lab	POC031319
Methanol External Control Solution	-	WS011620
Prepared:	09/01/2020	
Prepared by:	Sarah Pickle	

SJ

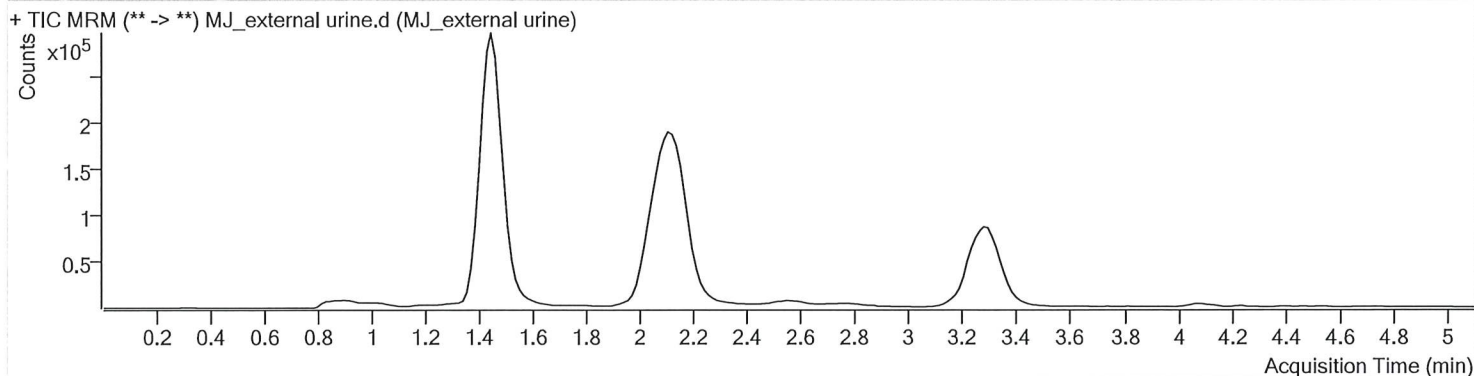


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2020\AM 27-28\091720 AM 27 AM 28 P1 P2 SJ comp test\QuantResults\AM 27.batch.bin
Calibration Last Update 9/21/2020 9:59:51 AM

Instrument	Falco	Data File	MJ_external urine.d
Type	Sample	Sample	MJ_external urine
Acq. Method	AM 27 THC quant.m	Operator	Sophia Jackson
Sample Position	P3-G5	Comment	
Injection Volume	10		
Acq. Date-Time	9/17/2020 8:23:22 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.453	185806	255.90	13.8 High	810.30	1038869	4.1798 ng/ml *
THC-COOH	1.474	89387	∞	64.5	∞	276634	13.1031 ng/ml
THC	3.300	49195	218.90	28.5	29.82	685844	7.9707 ng/ml

9/22/20 SJ

* Compound not evaluated

SJ

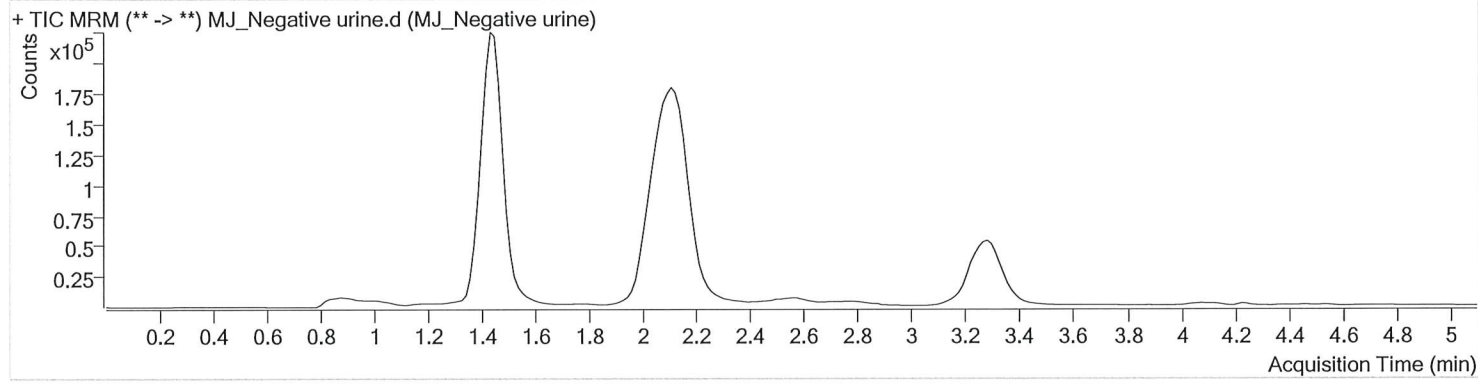


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2020\AM 27-28\091720 AM 27 AM 28 P1 P2 SJ comp test\QuantResults\AM 27.batch.bin
Calibration Last Update 9/21/2020 9:59:51 AM

Instrument	Falco	Data File	MJ_Negative urine.d
Type	Sample	Sample	MJ_Negative urine
Acq. Method	AM 27 THC quant.m	Operator	Sophia Jackson
Sample Position	P3-F5	Comment	
Injection Volume	10		
Acq. Date-Time	9/17/2020 8:08:10 PM		
Sample Info.			

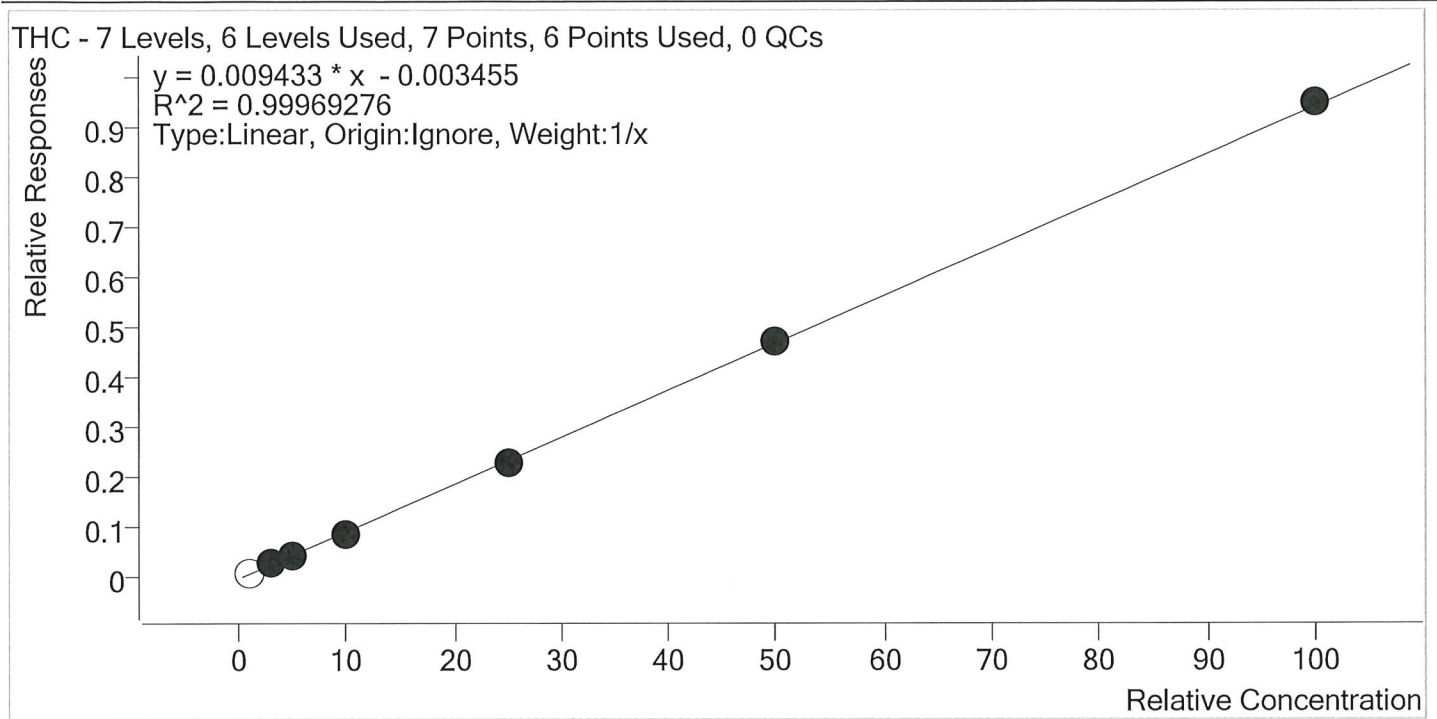
Sample Chromatogram





AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results D:\MassHunter\Data\2020\AM 27-28\091720 AM 27 AM 28 P1 P2 SJ comp test\QuantResults\AM 27.batch.bin
Last Cal. Update 9/21/2020 9:59 AM
Analyst Name ISP\datastor
Analyte THC **Internal Standard** THC-D3

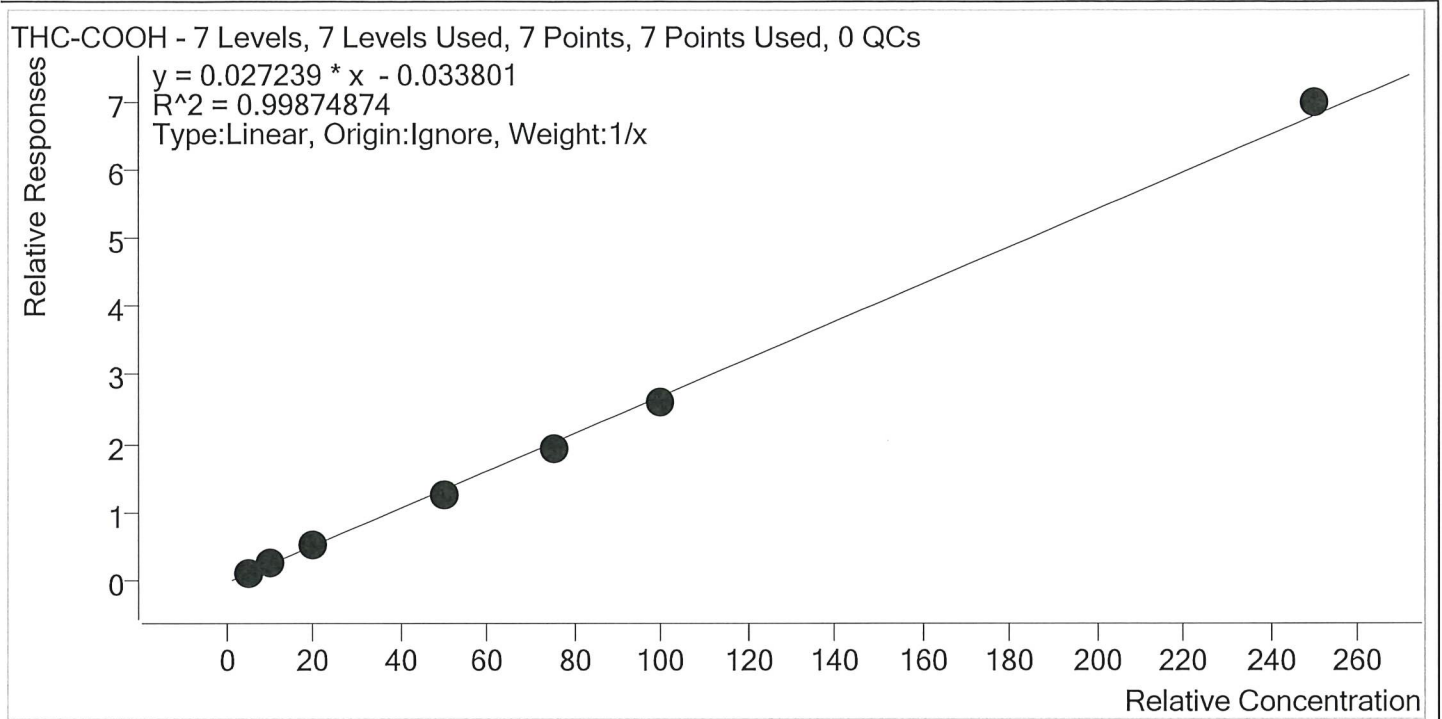


Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
MJ Cal 1	1	×	1.0	1.3	125.0
MJ Cal 2	2	✓	3.0	3.1	104.0
MJ Cal 3	3	✓	5.0	5.1	101.3
MJ Cal 4	4	✓	10.0	9.7	96.6
MJ Cal 5	5	✓	25.0	24.3	97.3
MJ Cal 6	6	✓	50.0	50.0	99.9
MJ Cal 7	7	✓	100.0	100.9	100.9



AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results D:\MassHunter\Data\2020\AM 27-28\091720 AM 27 AM 28 P1 P2 SJ comp test\QuantResults\AM 27.batch.bin
Last Cal. Update 9/21/2020 9:59 AM
Analyst Name ISP\datastor
Analyte THC-COOH **Internal Standard** THC-COOH-D9

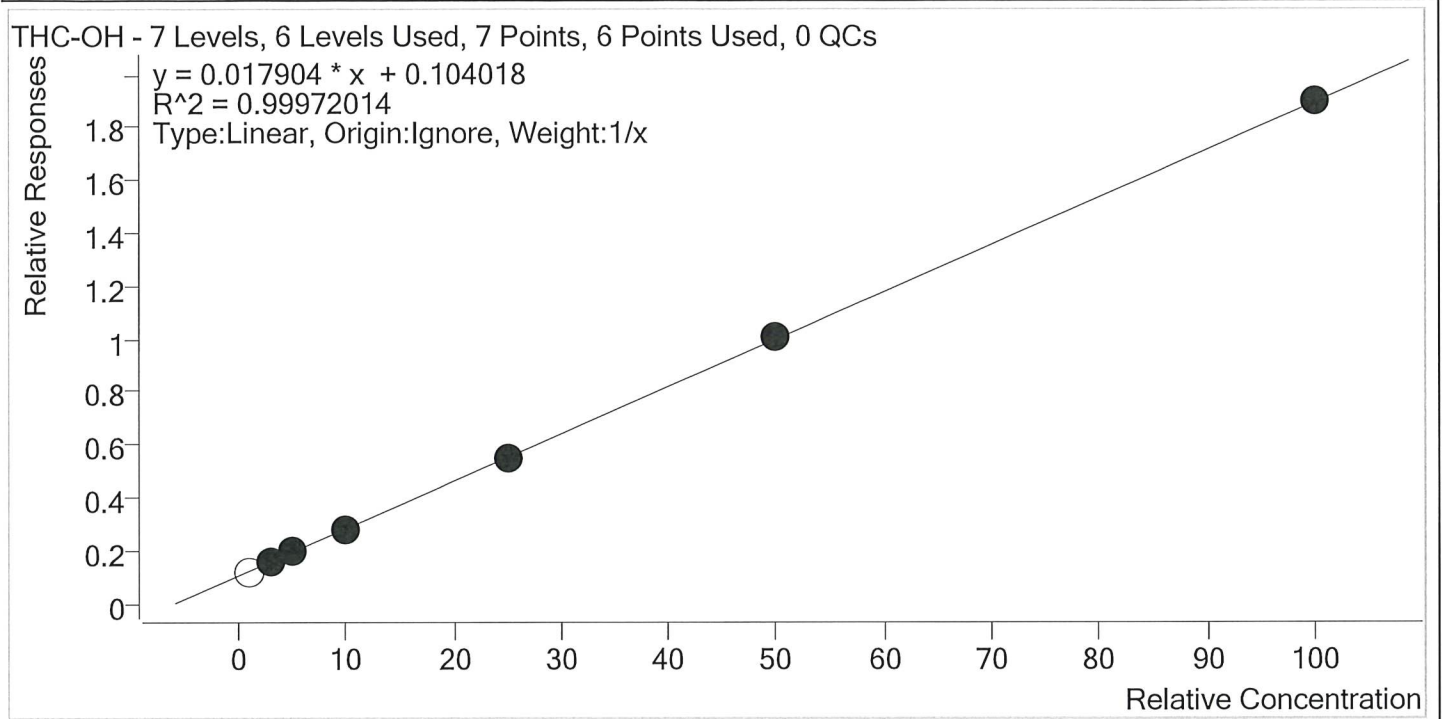


Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
MJ Cal 1	1	✓	5.0	5.3	105.8
MJ Cal 2	2	✓	10.0	10.4	103.7
MJ Cal 3	3	✓	20.0	19.6	98.0
MJ Cal 4	4	✓	50.0	47.9	95.7
MJ Cal 5	5	✓	75.0	72.4	96.5
MJ Cal 6	6	✓	100.0	97.5	97.5
MJ Cal 7	7	✓	250.0	257.0	102.8



AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results D:\MassHunter\Data\2020\AM 27-28\091720 AM 27 AM 28 P1 P2 SJ comp test\QuantResults\AM 27.batch.bin
Last Cal. Update 9/21/2020 9:59 AM
Analyst Name ISP\datastor
Analyte THC-OH **Internal Standard** THC-OH-D3



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
MJ Cal 1	1	×	1.0	0.8	83.6
MJ Cal 2	2	✓	3.0	2.9	96.6
MJ Cal 3	3	✓	5.0	5.3	106.9
MJ Cal 4	4	✓	10.0	9.7	97.2
MJ Cal 5	5	✓	25.0	24.7	98.8
MJ Cal 6	6	✓	50.0	50.2	100.3
MJ Cal 7	7	✓	100.0	100.2	100.2

Did not evaluate

SJ

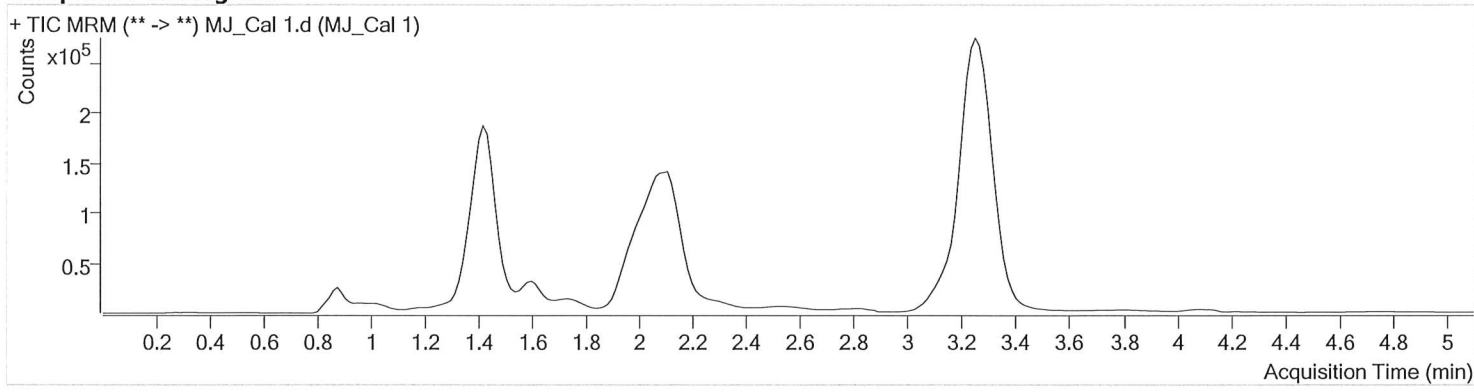


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2020\AM 27-28\091720 AM 27 AM 28 P1 P2 SJ comp test\QuantResults\AM 27.batch.bin
 Calibration Last Update 9/21/2020 9:59:51 AM

Instrument	Falco	Data File	MJ_Cal 1.d
Type	Cal	Sample	MJ_Cal 1
Acq. Method	AM 27 THC quant.m	Operator	Sophia Jackson
Sample Position	P3-H6	Comment	
Injection Volume	10		
Acq. Date-Time	9/17/2020 6:36:45 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.483 High	101941	∞	4.1 Low	35.02	856698	0.8364 ng/ml Low
THC-COOH	1.444	24728	∞	57.1	∞	224159	5.2908 ng/ml
THC	3.270	20129	47.37	46.1 High	∞	2414319	1.2502 ng/ml Low

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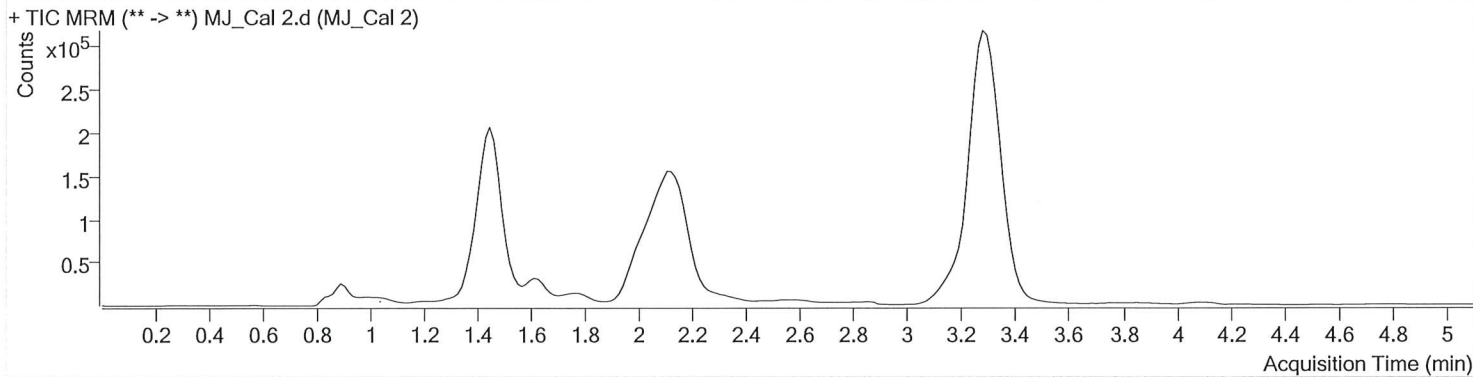


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2020\AM 27-28\091720 AM 27 AM 28 P1 P2 SJ comp test\QuantResults\AM 27.batch.bin
Calibration Last Update 9/21/2020 9:59:51 AM

Instrument	Falco	Data File	MJ_Cal 2.d
Type	Cal	Sample	MJ_Cal 2
Acq. Method	AM 27 THC quant.m	Operator	Sophia Jackson
Sample Position	P3-G6	Comment	
Injection Volume	10		
Acq. Date-Time	9/17/2020 6:44:29 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.498 High	135418	∞	6.0 Low	∞	868627	2.8976 ng/ml Low
THC-COOH	1.474	56190	97.01	56.6	∞	225980	10.3693 ng/ml
THC	3.300	68650	115.80	27.8	25.91	2641733	3.1213 ng/ml

SJ

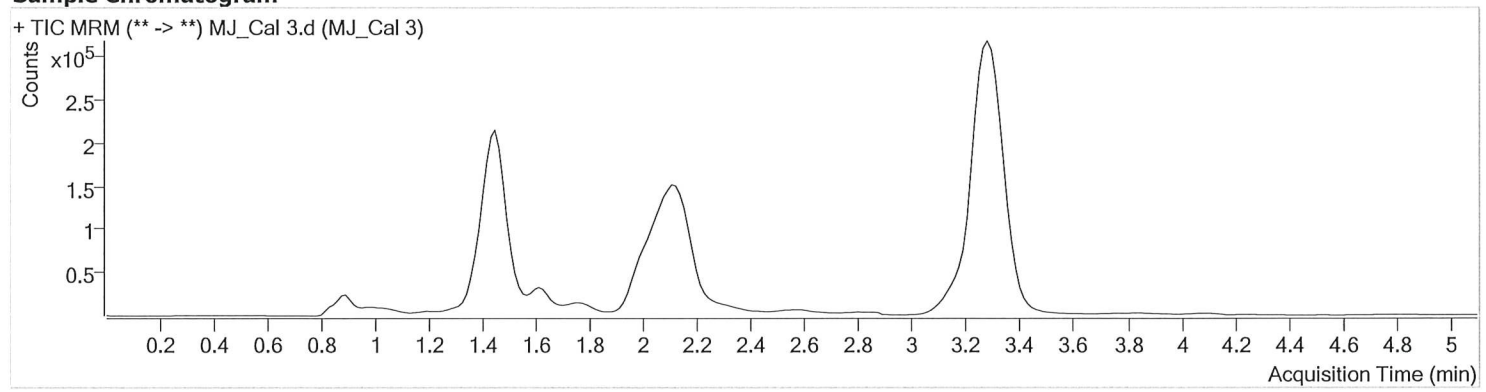


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2020\AM 27-28\091720 AM 27 AM 28 P1 P2 SJ comp test\QuantResults\AM 27.batch.bin
Calibration Last Update 9/21/2020 9:59:51 AM

Instrument	Falco	Data File	MJ_Cal 3.d
Type	Cal	Sample	MJ_Cal 3
Acq. Method	AM 27 THC quant.m	Operator	Sophia Jackson
Sample Position	P3-F6	Comment	
Injection Volume	10		
Acq. Date-Time	9/17/2020 6:52:05 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.468	162955	∞	7.8 Low	∞	815845	5.3461 ng/ml
THC-COOH	1.474	106961	185.09	57.8	2464.14	213880	19.6001 ng/ml
THC	3.300	114900	119.19	26.9	22.35	2592804	5.0644 ng/ml

SJ

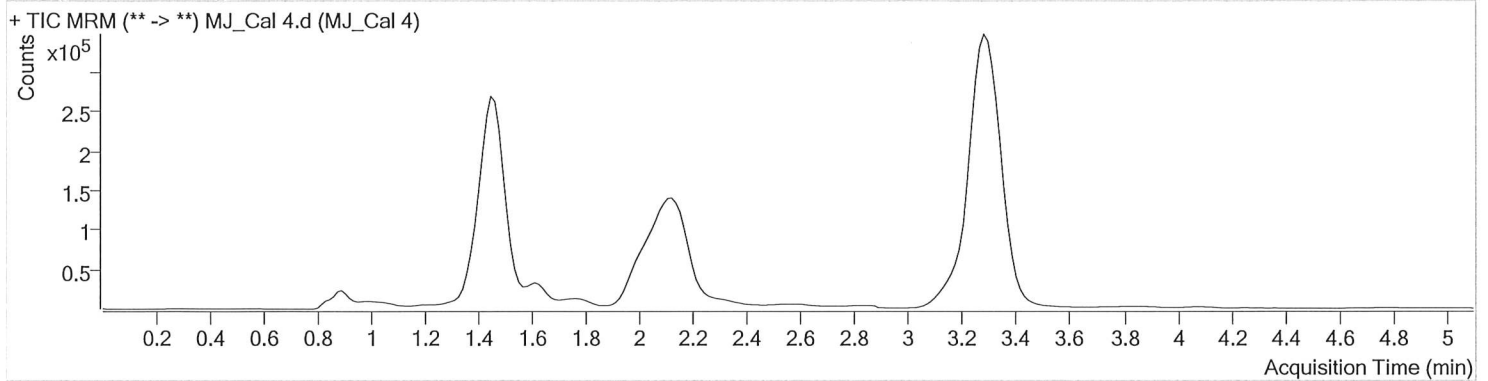


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2020\AM 27-28\091720 AM 27 AM 28 P1 P2 SJ comp test\QuantResults\AM 27.batch.bin
Calibration Last Update 9/21/2020 9:59:51 AM

Instrument	Falco	Data File	MJ_Cal 4.d
Type	Cal	Sample	MJ_Cal 4
Acq. Method	AM 27 THC quant.m	Operator	Sophia Jackson
Sample Position	P3-E6	Comment	
Injection Volume	10		
Acq. Date-Time	9/17/2020 6:59:41 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.453	232103	∞	9.5	231.95	834852	9.7182 ng/ml
THC-COOH	1.474	276080	∞	59.3	∞	217437	47.8534 ng/ml
THC	3.300	235161	∞	28.6	96.72	2682661	9.6596 ng/ml

SJ

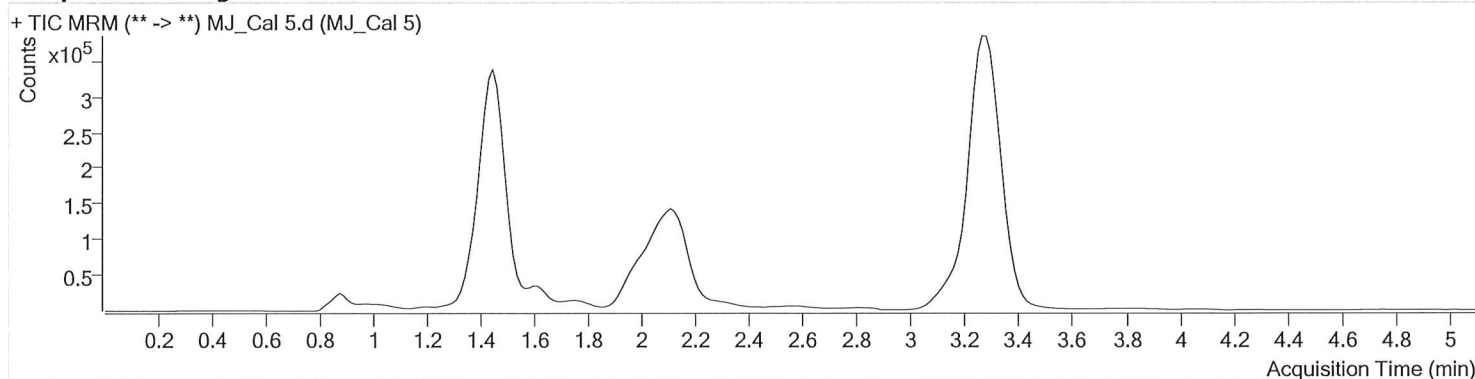


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2020\AM 27-28\091720 AM 27 AM 28 P1 P2 SJ comp test\QuantResults\AM 27.batch.bin
Calibration Last Update 9/21/2020 9:59:51 AM

Instrument	Falco	Data File	MJ_Cal 5.d
Type	Cal	Sample	MJ_Cal 5
Acq. Method	AM 27 THC quant.m	Operator	Sophia Jackson
Sample Position	P3-D6	Comment	
Injection Volume	10		
Acq. Date-Time	9/17/2020 7:07:18 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.438	449858	∞	10.7	445.67	823415	24.7041 ng/ml
THC-COOH	1.474	415277	∞	60.7	1346.88	214385	72.3532 ng/ml
THC	3.285	597925	2762.24	25.2	726.65	2646640	24.3172 ng/ml

SJ

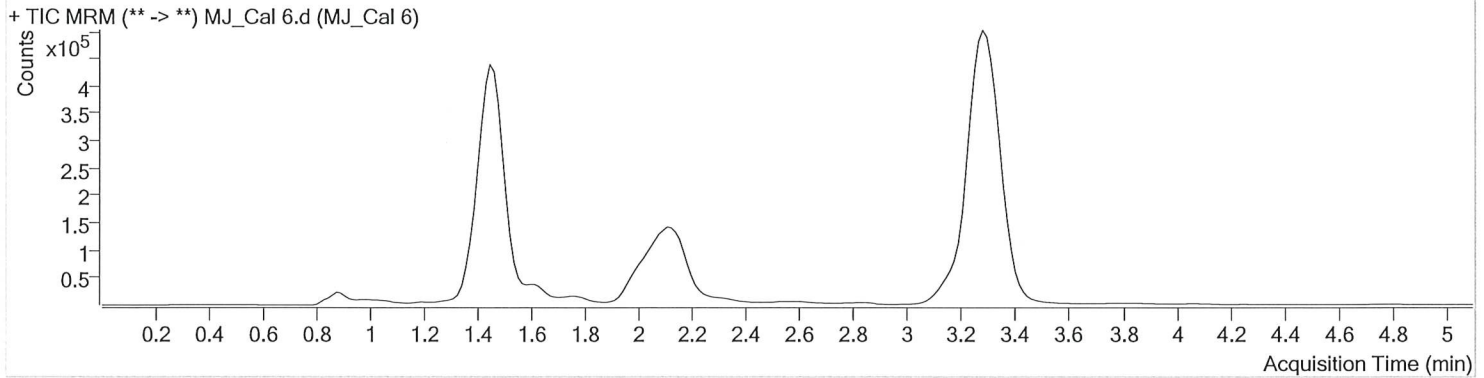


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2020\AM 27-28\091720 AM 27 AM 28 P1 P2 SJ comp test\QuantResults\AM 27.batch.bin
Calibration Last Update 9/21/2020 9:59:51 AM

Instrument	Falco	Data File	MJ_Cal 6.d
Type	Cal	Sample	MJ_Cal 6
Acq. Method	AM 27 THC quant.m	Operator	Sophia Jackson
Sample Position	P3-C6	Comment	
Injection Volume	10		
Acq. Date-Time	9/17/2020 7:14:54 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.438	823253	∞	12.0 High	1338.23	821572	50.1567 ng/ml
THC-COOH	1.474	556954	3446.67	60.4	1000.36	212411	97.5002 ng/ml
THC	3.300	1281509	1289.41	25.9	1669.66	2739126	49.9661 ng/ml

57

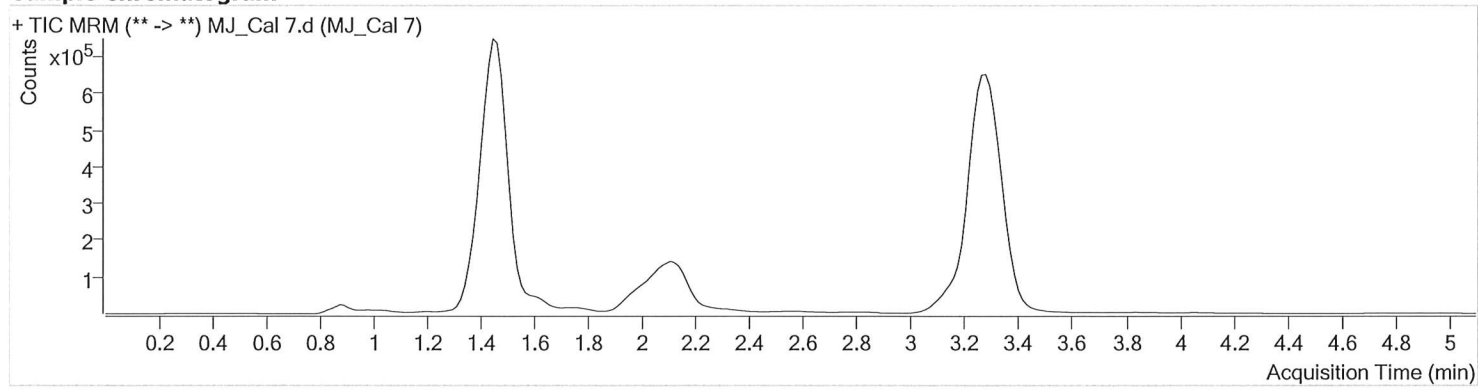


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2020\AM 27-28\091720 AM 27 AM 28 P1 P2 SJ comp test\QuantResults\AM 27.batch.bin
Calibration Last Update 9/21/2020 9:59:51 AM

Instrument	Falco	Data File	MJ_Cal 7.d
Type	Cal	Sample	MJ_Cal 7
Acq. Method	AM 27 THC quant.m	Operator	Sophia Jackson
Sample Position	P3-B6	Comment	
Injection Volume	10		
Acq. Date-Time	9/17/2020 7:22:31 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.438	1523927	∞	12.8 High	1743.25	803066	100.1772 ng/ml
THC-COOH	1.474	1387463	∞	58.6	∞	199129	257.0330 ng/ml
THC	3.285	2524976	7175.10	25.1	5521.50	2663421	100.8714 ng/ml