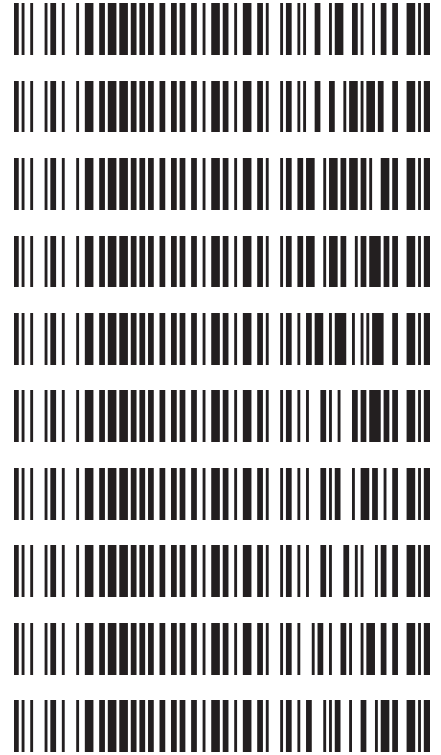


Worklist: 5027

<u>LAB CASE</u>	<u>ITEM</u>	<u>ITEM TYPE</u>	<u>DESCRIPTION</u>
P2021-1336	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2021-1339	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2021-1509	1	CBUK	AM 27 Blood THC Quant by LC-QQQ
P2021-1517	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2021-1593	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2021-1609	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2021-1611	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2021-1613	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2021-1620	1	BCK	AM 27 Blood THC Quant by LC-QQQ
P2021-1661	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: 06/04/2021

Analyst: Celena Shrum

Plate lot#: IDP-108-2-210412

Plate Expiration: 10/12/2021

Mobile phase A: 0.1% Formic Acid in LCMS Water

Mobile phase B: 0.1% Formic acid in Acetonitrile

Blank Blood Lot: Lampire 20L20723

Column: UCT Selectra DA 100 x 2.1mm 3um

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. Using a calibrated pipette, add **1000µl blood and urine (if applicable) (calibrated pipette)** into the appropriate wells of analytical (standards) plate. **Pipette ID: #42**
- 3. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
- 4. Pipette **500µL 0.1% formic acid in water blood sample** of analytical plate.
- 5. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
- 6. Transfer **800µL of blood+acid or urine+acid** mixture to corresponding wells of SLE+ plate.
- 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 r² 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.
- 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: Curve Limits: THC-OH not evaluated. This is due to the ratios for calibrators 1, 2, 7, and 8 not meeting requirements.

06/10/21 c5

External control was not required for this run but was included to check the concentrations.

	1	2	3	4	5	6
a					P2021-1611-1	QC 1
b					P2021-1609-1	cal 100 ng
c					P2021-1593-1	cal 50 ng
d					P2021-1517-1	cal 25 ng
e				External Ctrl.	P2021-1509-1	cal 10ng
f				P2021-1661-1	P2021-1339-1	cal 5 ng
g				P2021-1620-1	P2021-1336-1	cal 3 ng
h				P2021-1613-1	Blood NC	cal 1ng

P2021-1336-1 moved to D4 during the extraction procedure due to clogging.

P2021-1613-1 moved to C4 during the extraction procedure due to clogging.



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: WS03052021)

10 µL of 1mg/mL THC, 100 µL of 100 µg/mL THC-OH, C-THC in 9790 µL MeOH
Approximate concentration 1ug/mL.

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>	<i>Expiration Date</i>
Methanol (LCMS)	Fisher	200921	
THC	Cerilliant	FE01041701	03/31/2022
C-THC	Cerilliant	FE08011801	08/31/2023
THC-OH	Cerilliant	FE07221601	07/31/2021
Prepared:	03/05/2021		
Expires:	07/31/2021		
Prepared By:	Tamara Salazar/Amber Gerheart		

Blood External Control Solution (Lot: 060421)

100 ul of methanol external control solution was added to 9900 ul of blood.
Approximately 10ng/mL each

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>
Negative Blood	Lampire	20L20723
Methanol External Control Solution	-	WS03052021
Prepared:	06/04/2021	
Expires:	07/31/2021	
Prepared by:	Celena Shrum	

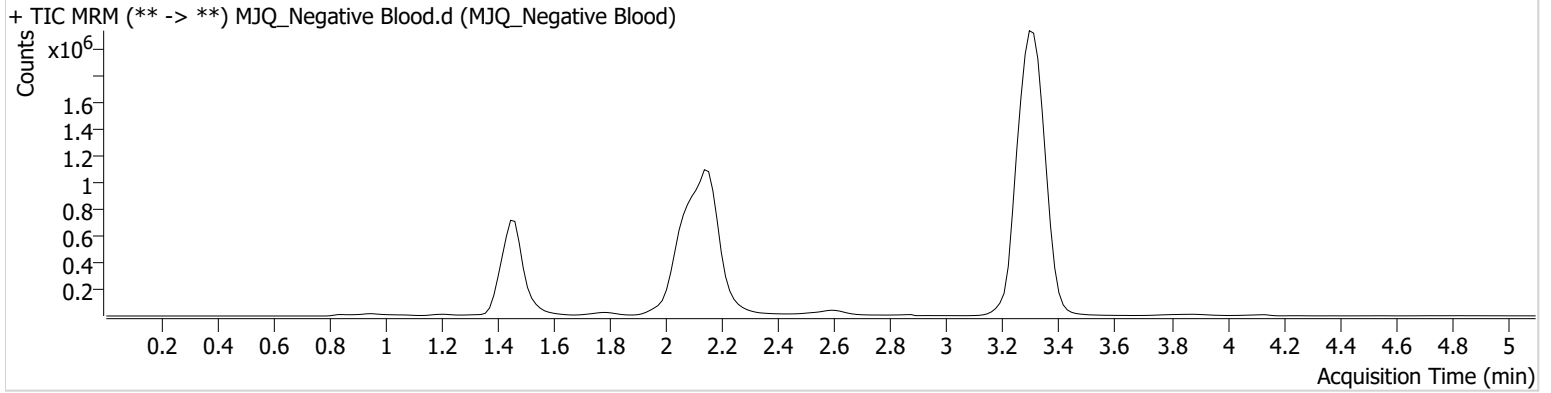
AM #27 Cannabinoid Quant. Results



Batch results D:\MassHunter\Data\2021\AM 27-28\060421 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 6/8/2021 12:20:22 PM

Instrument	Falco (069901)	Data File	MJQ_Negative Blood.d
Type	Sample	Sample	MJQ_Negative Blood
Acq. Method	AM 27 THCQ.m	Operator	Celena Shrum
Sample Position	P5-H5	Comment	
Injection Volume	10		
Acq. Date-Time	6/4/2021 4:03:39 PM		
Sample Info.			

Sample Chromatogram



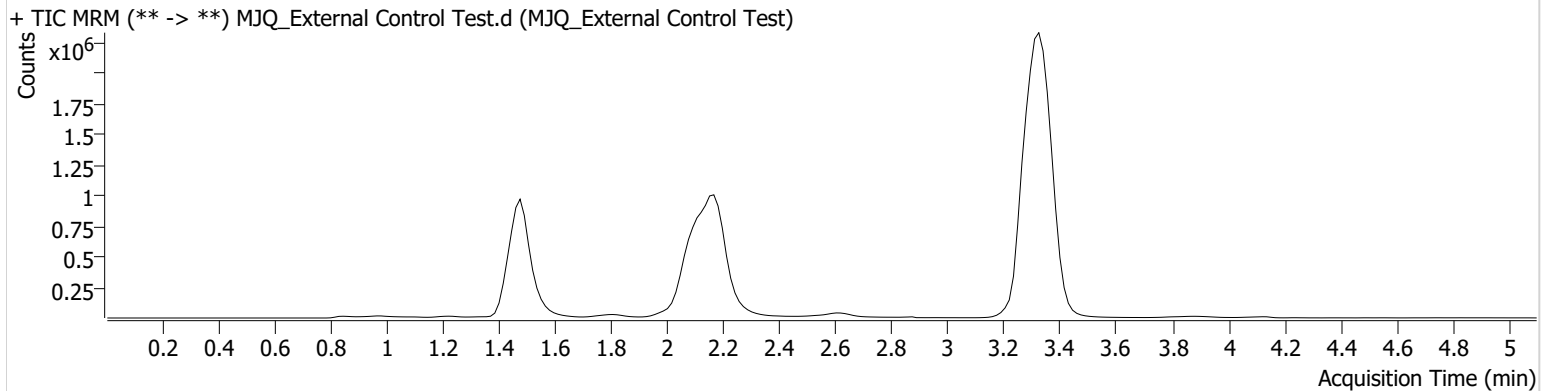
AM #27 Cannabinoid Quant. Results



Batch results D:\MassHunter\Data\2021\AM 27-28\060421 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 6/8/2021 12:20:22 PM

Instrument	Falco (069901)	Data File	MJQ_External Control Test.d
Type	Sample	Sample	MJQ_External Control Test
Acq. Method	AM 27 THCQ.m	Operator	Celena Shrum
Sample Position	P5-E4	Comment	
Injection Volume	10		
Acq. Date-Time	6/4/2021 7:06:16 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-COOH	1.504	207548	471.04	54.5	1271.72	931543	8.8005 ng/ml
THC-OH	1.483	584406	∞	8.1	199.92	3340992	7.7461 ng/ml
THC	3.345	1126194	5083.63	26.7	352.80	15095423	7.3642 ng/ml

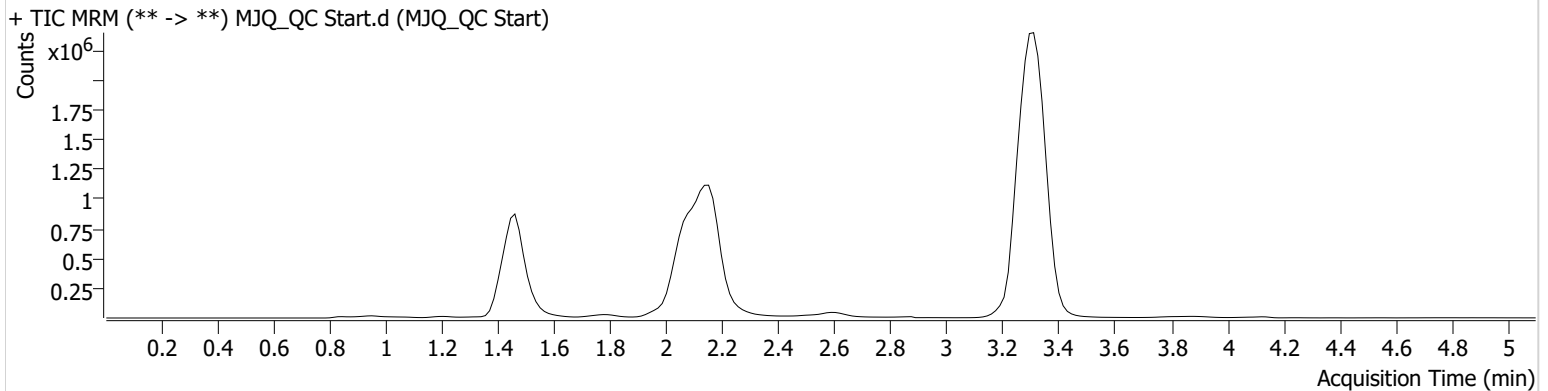
AM #27 Cannabinoid Quant. Results



Batch results D:\MassHunter\Data\2021\AM 27-28\060421 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 6/8/2021 12:20:22 PM

Instrument	Falco (069901)	Data File	MJQ_QC Start.d
Type	Sample	Sample	MJQ_QC Start
Acq. Method	AM 27 THCQ.m	Operator	Celena Shrum
Sample Position	P5-A6	Comment	
Injection Volume	10		
Acq. Date-Time	6/4/2021 4:18:50 PM		

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-COOH	1.489	319257	∞	55.1	2330.88	858079	14.6415 ng/ml
THC-OH	1.468	400880	∞	6.8	∞	312532	4.4856 ng/ml
THC	3.330	715695	10443.25	26.5	∞	15940203	4.5213 ng/ml

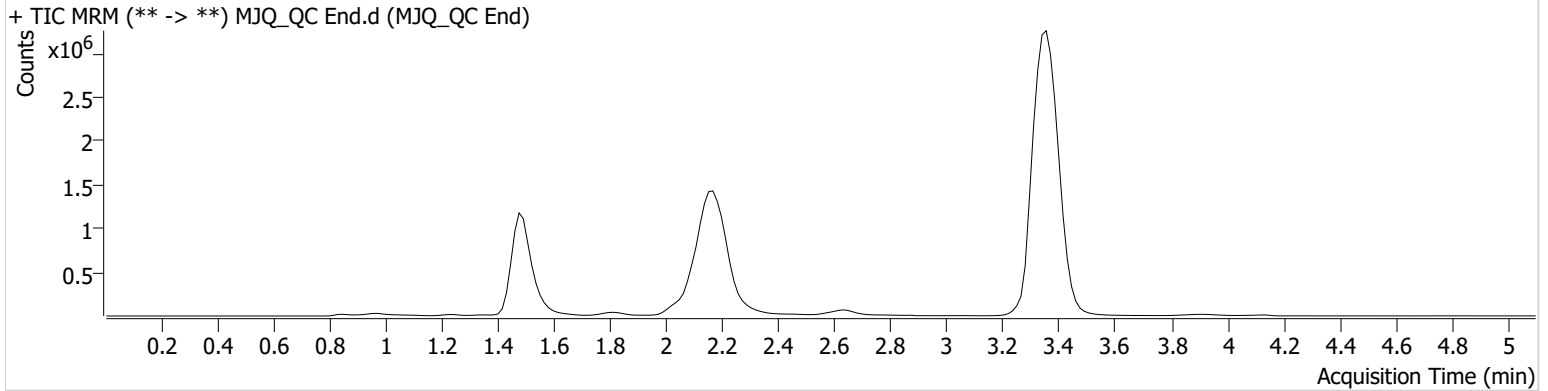
AM #27 Cannabinoid Quant. Results



Batch results D:\MassHunter\Data\2021\AM 27-28\060421 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 6/8/2021 12:20:22 PM

Instrument	Falco (069901)	Data File	MJQ_QC End.d
Type	Sample	Sample	MJQ_QC End
Acq. Method	AM 27 THCQ.m	Operator	Celena Shrum
Sample Position	P5-A6	Comment	
Injection Volume	10		
Acq. Date-Time	6/4/2021 7:21:30 PM		
Sample Info.			

Sample Chromatogram

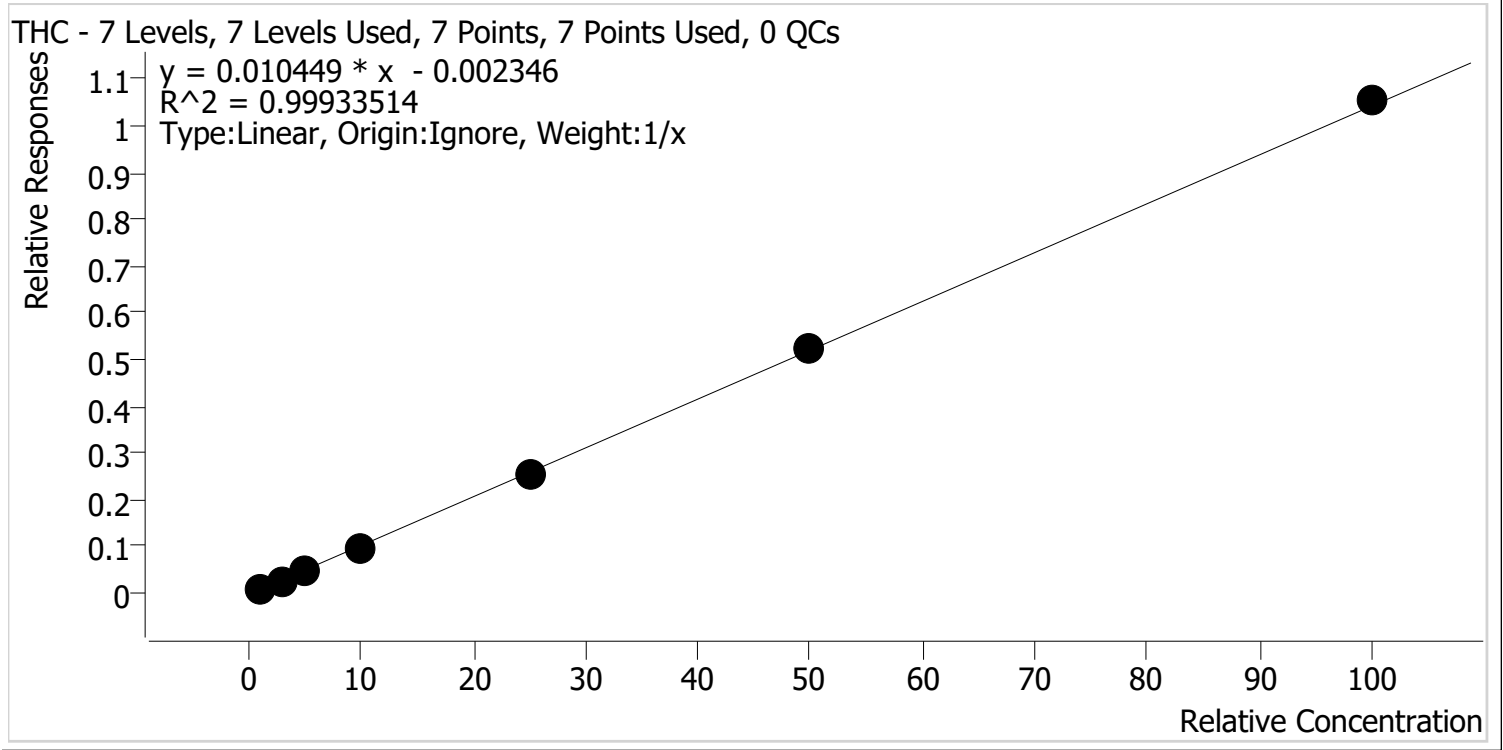


Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-COOH	1.519	362679	∞	55.6	∞	954437	14.9519 ng/ml
THC-OH	1.498	469240	∞	6.8	∞	3752323	4.2615 ng/ml
THC	3.375	942035	∞	25.5	∞	20122961	4.7046 ng/ml



AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results D:\MassHunter\Data\2021\AM 27-28\060421 AM 27 28 CS\QuantResults\AM 27.batch.bin
Last Cal. Update 6/8/2021 12:20 PM
Analyst Name ISP\datastor
Analyte THC **Internal Standard** THC-D3

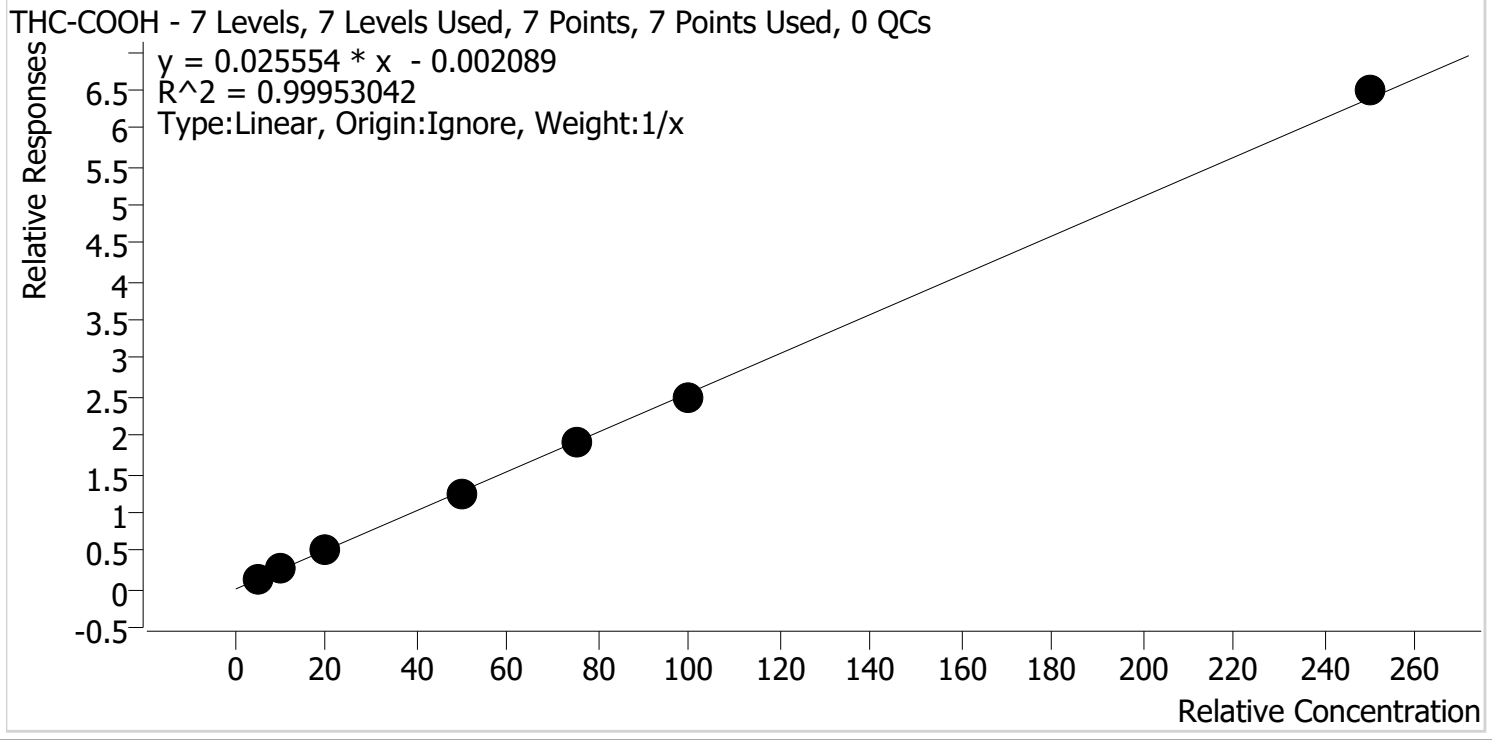


Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
MJQ_Cal 1	1	✓	1.0	1.2	116.0
MJQ_Cal 2	2	✓	3.0	2.9	95.3
MJQ_Cal 3	3	✓	5.0	4.8	95.8
MJQ_Cal 4	4	✓	10.0	9.3	92.8
MJQ_Cal 5	5	✓	25.0	24.7	98.7
MJQ_Cal 6	6	✓	50.0	50.2	100.3
MJQ_Cal 7	7	✓	100.0	101.1	101.1



AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results D:\MassHunter\Data\2021\AM 27-28\060421 AM 27 28 CS\QuantResults\AM 27.batch.bin
Last Cal. Update 6/8/2021 12:20 PM
Analyst Name ISP\datastor
Analyte THC-COOH **Internal Standard** THC-COOH-D9

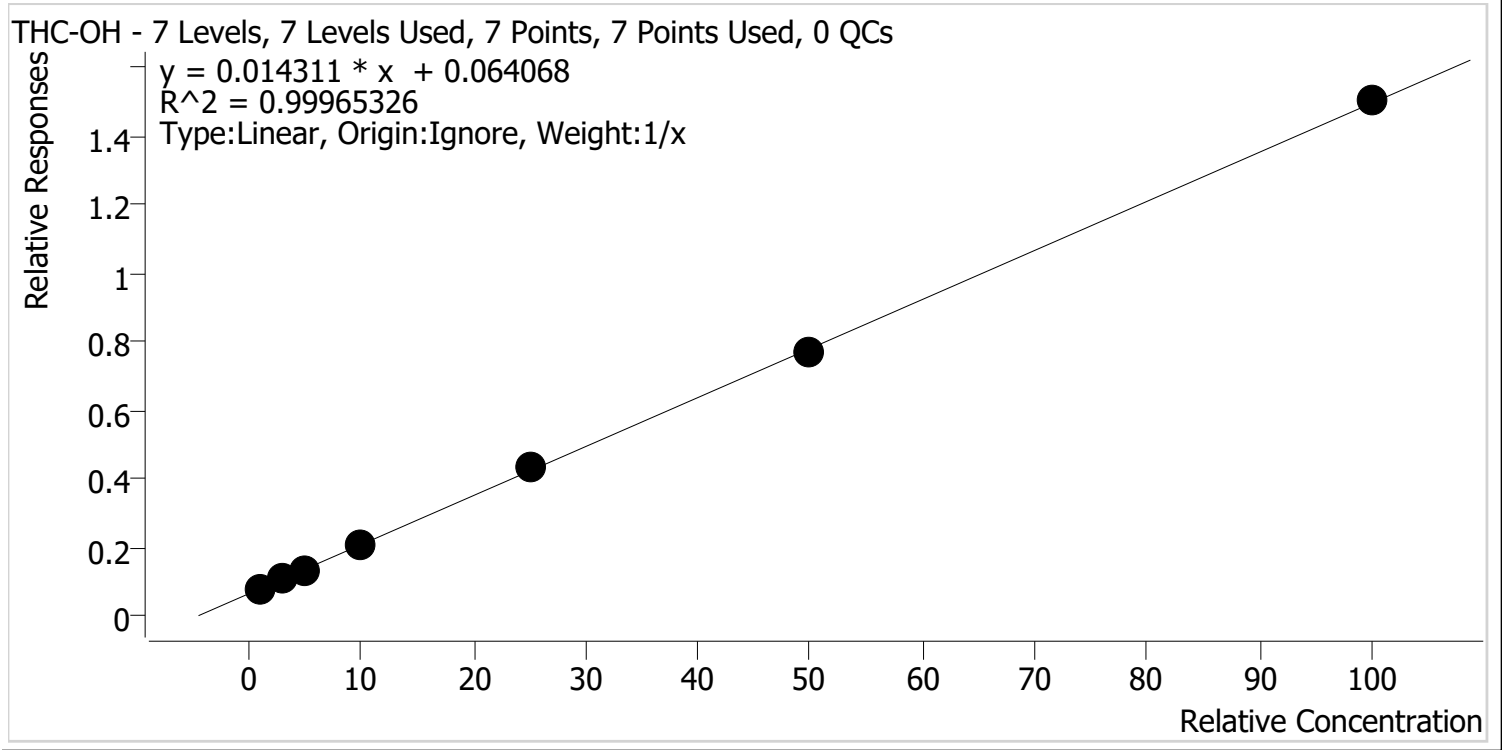


Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
MJQ_Cal 1	1	✓	5.0	5.3	106.4
MJQ_Cal 2	2	✓	10.0	10.1	100.7
MJQ_Cal 3	3	✓	20.0	19.2	96.2
MJQ_Cal 4	4	✓	50.0	48.8	97.5
MJQ_Cal 5	5	✓	75.0	74.6	99.4
MJQ_Cal 6	6	✓	100.0	98.1	98.1
MJQ_Cal 7	7	✓	250.0	253.9	101.6



AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results D:\MassHunter\Data\2021\AM 27-28\060421 AM 27 28 CS\QuantResults\AM 27.batch.bin
Last Cal. Update 6/8/2021 12:20 PM
Analyst Name ISP\datastor Not evaluated.
Analyte THC-OH **Internal Standard** THC-OH-D3



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
MJQ_Cal 1	1	✓	1.0	1.0	102.3
MJQ_Cal 2	2	✓	3.0	3.0	100.5
MJQ_Cal 3	3	✓	5.0	4.9	97.4
MJQ_Cal 4	4	✓	10.0	9.8	98.1
MJQ_Cal 5	5	✓	25.0	25.8	103.2
MJQ_Cal 6	6	✓	50.0	49.0	98.0
MJQ_Cal 7	7	✓	100.0	100.5	100.5

THC-OH not evaluated due to the ratios for calibrators 1, 2, 7, and 8 not meeting requirements.

6/10/21 *cy*

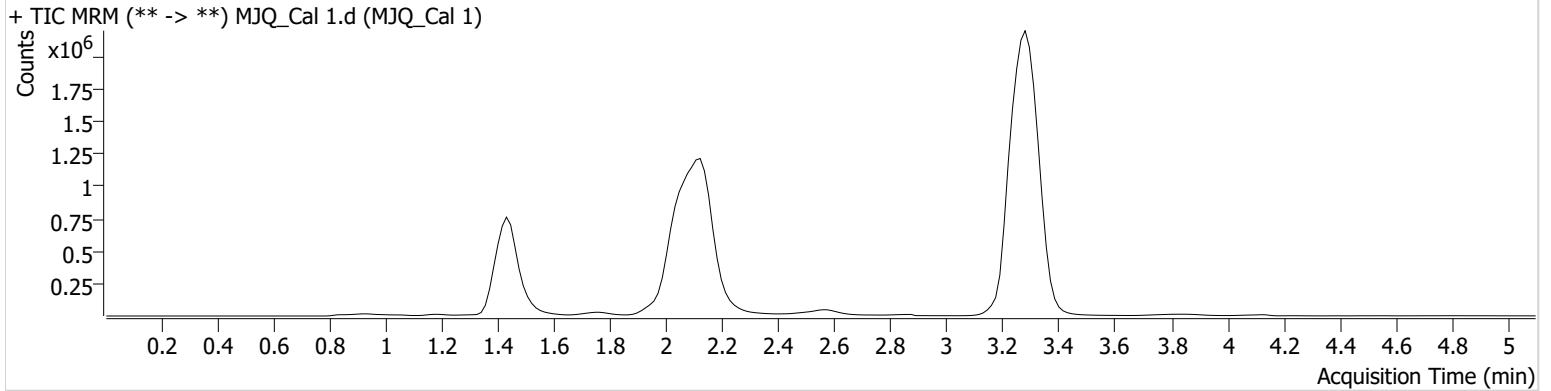
AM #27 Cannabinoid Quant. Results



Batch results D:\MassHunter\Data\2021\AM 27-28\060421 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 6/8/2021 12:20:22 PM

Instrument	Falco (069901)	Data File	MJQ_Cal 1.d
Type	Cal	Sample	MJQ_Cal 1
Acq. Method	AM 27 THCQ.m	Operator	Celena Shrum
Sample Position	P5-H6	Comment	
Injection Volume	10		
Acq. Date-Time	6/4/2021 3:02:41 PM		

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-COOH	1.474	110528	∞	49.9	495.80	825337	5.3223 ng/ml
THC-OH	1.498	242353	∞	4.1 Low	∞	3079391	1.0226 ng/ml Low
THC	3.300	153019	674.33	31.4	74.44	15648862	1.1603 ng/ml

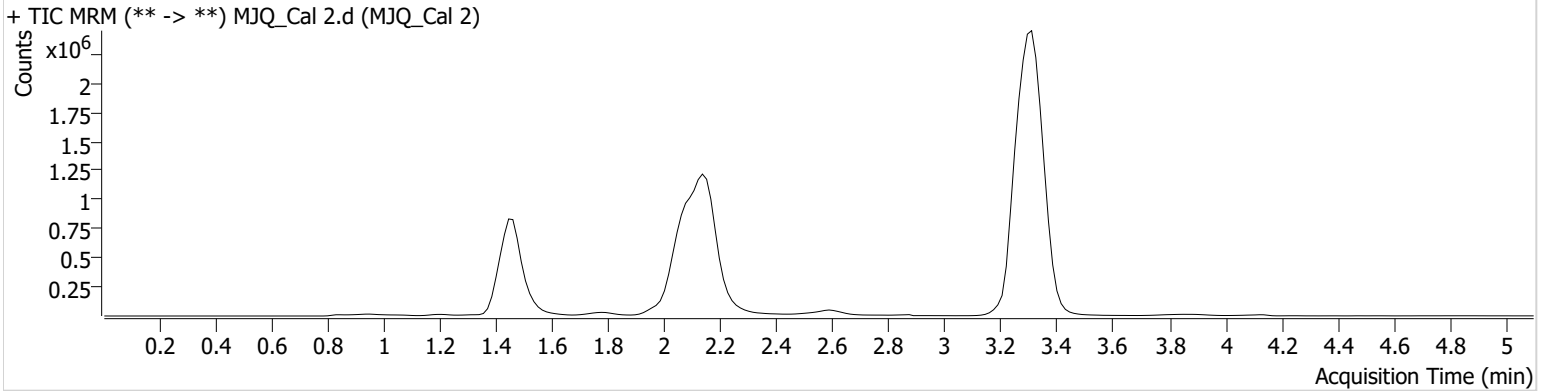
AM #27 Cannabinoid Quant. Results



Batch results D:\MassHunter\Data\2021\AM 27-28\060421 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 6/8/2021 12:20:22 PM

Instrument	Falco (069901)	Data File	MJQ_Cal 2.d
Type	Cal	Sample	MJQ_Cal 2
Acq. Method	AM 27 THCQ.m	Operator	Celena Shrum
Sample Position	P5-G6	Comment	
Injection Volume	10		
Acq. Date-Time	6/4/2021 3:10:27 PM		

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-COOH	1.489	215862	175.67	53.0	723.04	845303	10.0749 ng/ml
THC-OH	1.528	340383	∞	5.9 Low	∞	3174362	3.0160 ng/ml
THC	3.315	458800	∞	26.6	∞	16662268	2.8597 ng/ml

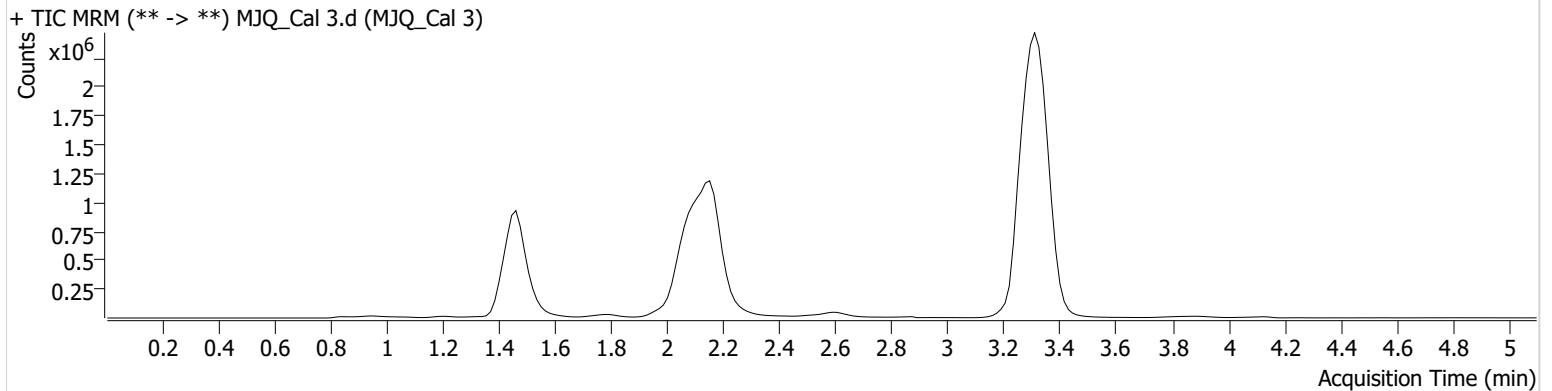
AM #27 Cannabinoid Quant. Results



Batch results D:\MassHunter\Data\2021\AM 27-28\060421 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 6/8/2021 12:20:22 PM

Instrument	Falco (069901)	Data File	MJQ_Cal 3.d
Type	Cal	Sample	MJQ_Cal 3
Acq. Method	AM 27 THCQ.m	Operator	Celena Shrum
Sample Position	P5-F6	Comment	
Injection Volume	10		
Acq. Date-Time	6/4/2021 3:18:02 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-COOH	1.489	423534	∞	56.1	1226.58	865346	19.2348 ng/ml
THC-OH	1.468	428631	57.57	6.6	461.67	3204296	4.8705 ng/ml
THC	3.330	777026	∞	26.2	216.01	16290737	4.7892 ng/ml

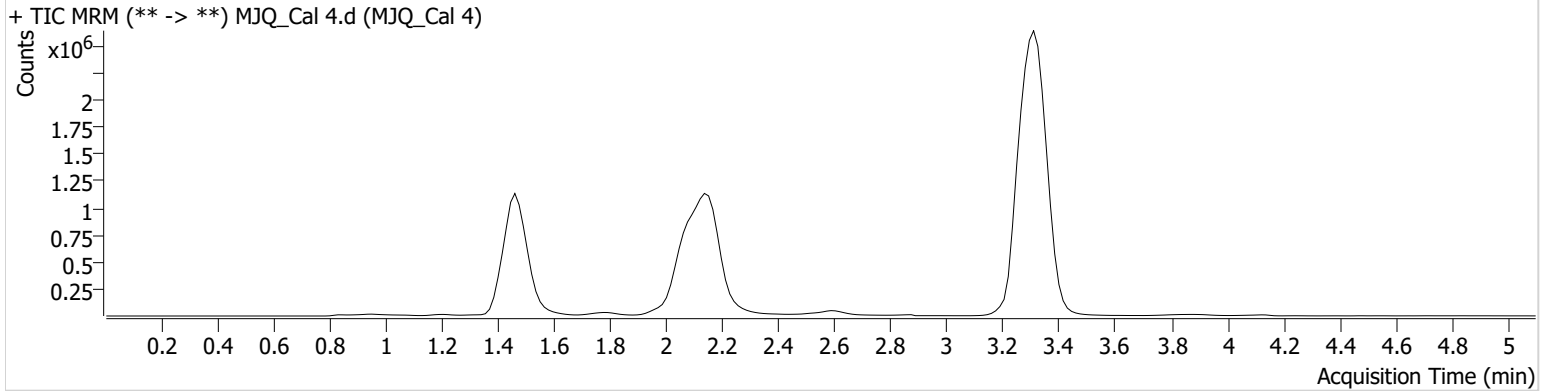
AM #27 Cannabinoid Quant. Results



Batch results D:\MassHunter\Data\2021\AM 27-28\060421 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 6/8/2021 12:20:22 PM

Instrument	Falco (069901)	Data File	MJQ_Cal 4.d
Type	Cal	Sample	MJQ_Cal 4
Acq. Method	AM 27 THCQ.m	Operator	Celena Shrum
Sample Position	P5-E6	Comment	
Injection Volume	10		
Acq. Date-Time	6/4/2021 3:25:38 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-COOH	1.489	1062803	∞	55.9	∞	854400	48.7596 ng/ml
THC-OH	1.468	664373	97.58	7.8	165.21	3249345	9.8105 ng/ml
THC	3.330	1576728	6046.12	26.0	∞	16670128	9.2762 ng/ml

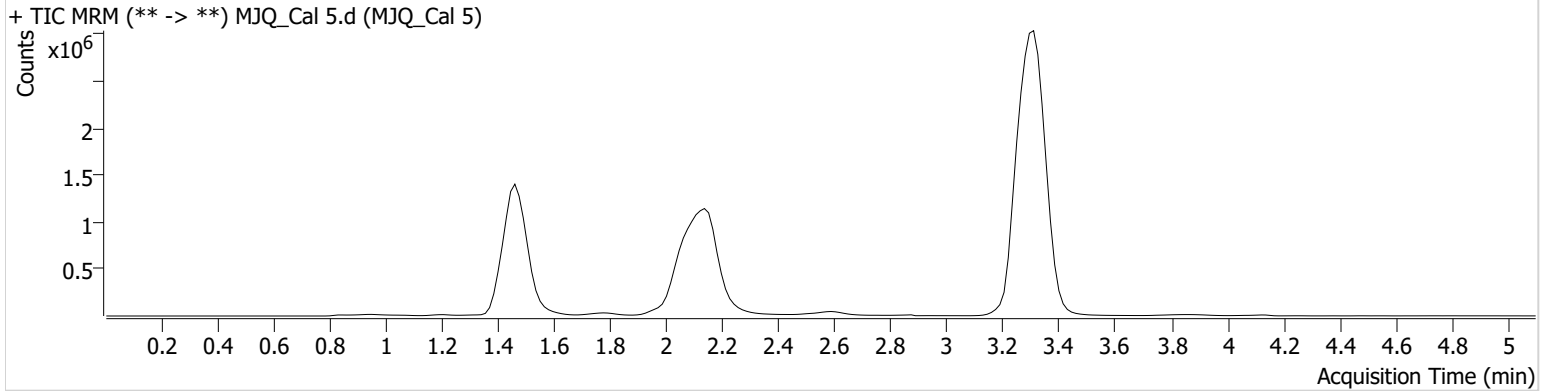


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2021\AM 27-28\060421 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 6/8/2021 12:20:22 PM

Instrument	Falco (069901)	Data File	MJQ_Cal 5.d
Type	Cal	Sample	MJQ_Cal 5
Acq. Method	AM 27 THCQ.m	Operator	Celena Shrum
Sample Position	P5-D6	Comment	
Injection Volume	10		
Acq. Date-Time	6/4/2021 3:33:15 PM		

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-COOH	1.489	1594394	1330.13	55.7	33786.8 3	837502	74.5807 ng/ml
THC-OH	1.453	1405118	∞	9.5	∞	3241618	25.8123 ng/ml
THC	3.315	4224065	54440.30	25.6	∞	16533164	24.6748 ng/ml

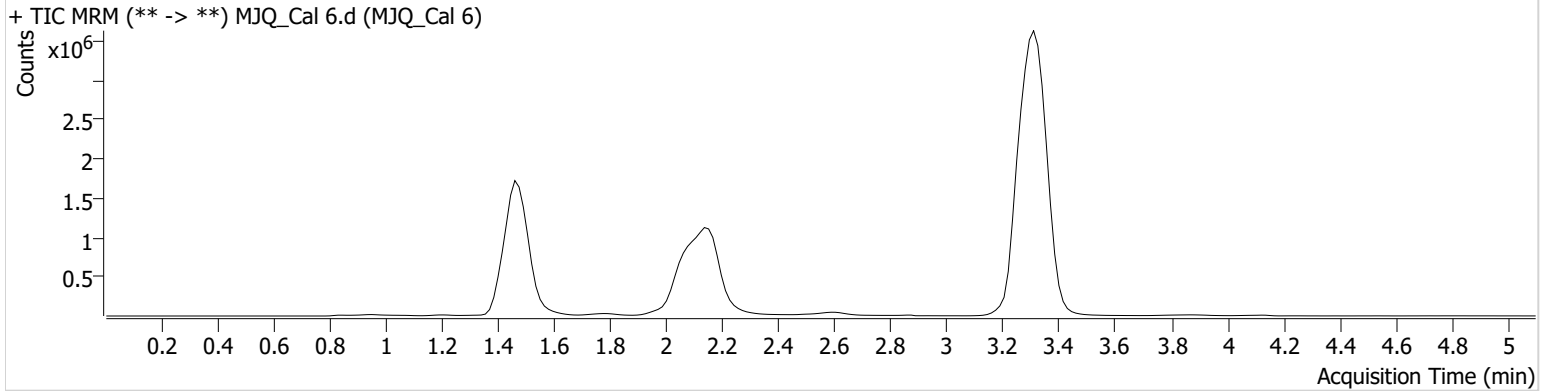


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2021\AM 27-28\060421 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 6/8/2021 12:20:22 PM

Instrument	Falco (069901)	Data File	MJQ_Cal 6.d
Type	Cal	Sample	MJQ_Cal 6
Acq. Method	AM 27 THCQ.m	Operator	Celena Shrum
Sample Position	P5-C6	Comment	
Injection Volume	10		
Acq. Date-Time	6/4/2021 3:40:51 PM		

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-COOH	1.489	2050076	∞	56.8	5643.73	818485	98.0983 ng/ml
THC-OH	1.468	2385733	∞	11.0 High	∞	3118776	48.9763 ng/ml
THC	3.330	8200902	∞	25.6	7649.58	15716080	50.1619 ng/ml

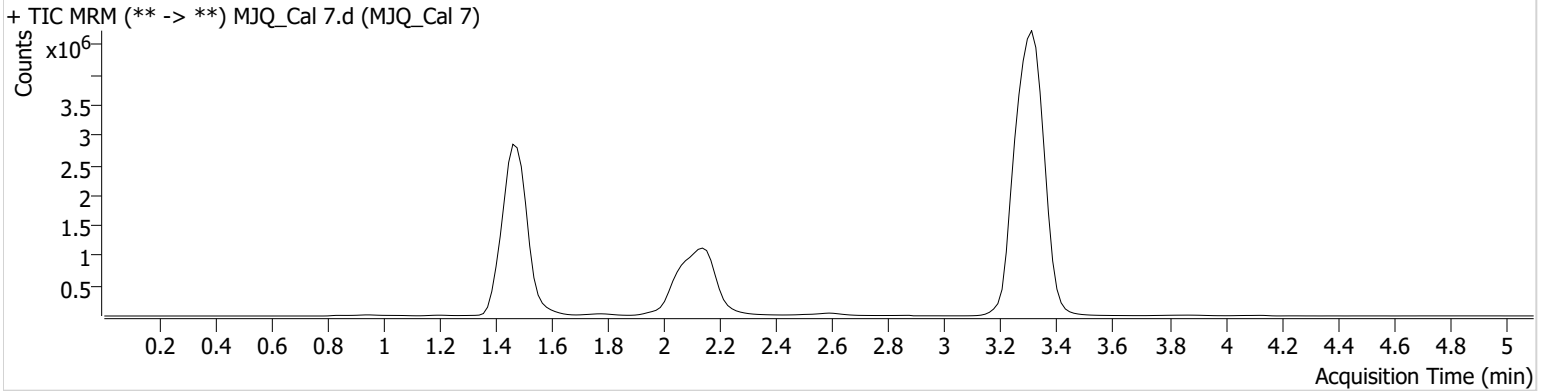


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2021\AM 27-28\060421 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 6/8/2021 12:20:22 PM

Instrument Falco (069901) **Data File** MJQ_Cal 7.d
Type Cal **Sample** MJQ_Cal 7
Acq. Method AM 27 THCQ.m **Operator** Celena Shrum
Sample Position P5-B6 **Comment**
Injection Volume 10
Acq. Date-Time 6/4/2021 3:48:27 PM
Sample Info.

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-COOH	1.489	4861715	∞	57.1	18536.59	749473	253.9294 ng/ml
THC-OH	1.453	4483421	∞	11.3 High	∞	2984594	100.4919 ng/ml
THC	3.315	15778398	∞	25.8	∞	14972018	101.0780 ng/ml