8/4/2021

REVIEWED
By Tamara Salazar at 6:37 am, Aug 05, 2021

Worklist: 5154

LAB_CASE	ITEM	ITEM_TYPE	DESCRIPTION	
M2021-2780	4	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ	
P2021-2188	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ	
P2021-2328	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ	
P2021-2377	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ	
P2021-2438	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: 07/28/2021
Plate lot#: IDP-108-2-201206
Mobile phase A: 0.1% Formic Acid in LCMS Water
Blank Blood Lot: Lampire 20L20724
LCMS-QQQ ID: 069901

Analyst: Celena Shrum
Plate Retest Date: 06/06/2021
Mobile phase B: 0.1% Formic acid in Acetonitrile
Column: UCT Selectra DA 100 x 2.1mm 3um
Blank Urine Lot: POC031319

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 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.
☒ 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: Only THC-COOH was evaluated. P2021-2438-1 was reinjected due to low ISTD responses (the QC and blanks were also reinjected before and after the reinjected sample).

	1	2	3	4	5	6
a					P2021-2377-1	QC 1
b					P2021-2328-1	cal 100 ng
c					P2021-2188-1	cal 50 ng
d					M2021-2780-4	cal 25 ng
e					Urine External	cal 10ng
f					Negative Urine	cal 5 ng
g					Blood External	cal 3 ng
h				P2021-2438-1	Negative Blood	cal 1ng

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.

Component	*Source*	*Source Lot Number*	*Expiration Date*
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: 072821)
200 ul of methanol external control solution was added to 9900 ul of blood.
Approximately 20ng/mL each

Component	*Source*	*Source Lot Number*
Negative Blood	Lampire	20L20724
Methanol External Control Solution	-	WS03052021
Prepared:	07/28/2021	
Expires:	07/31/2021	
Prepared by:	Celena Shrum	

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.

Component	*Source*	*Source Lot Number*	*Expiration Date*
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		

Urine External Control Solution (Lot: 072821)
200 ul of methanol external control solution was added to 9900 ul of blood.
Approximately 20ng/mL each

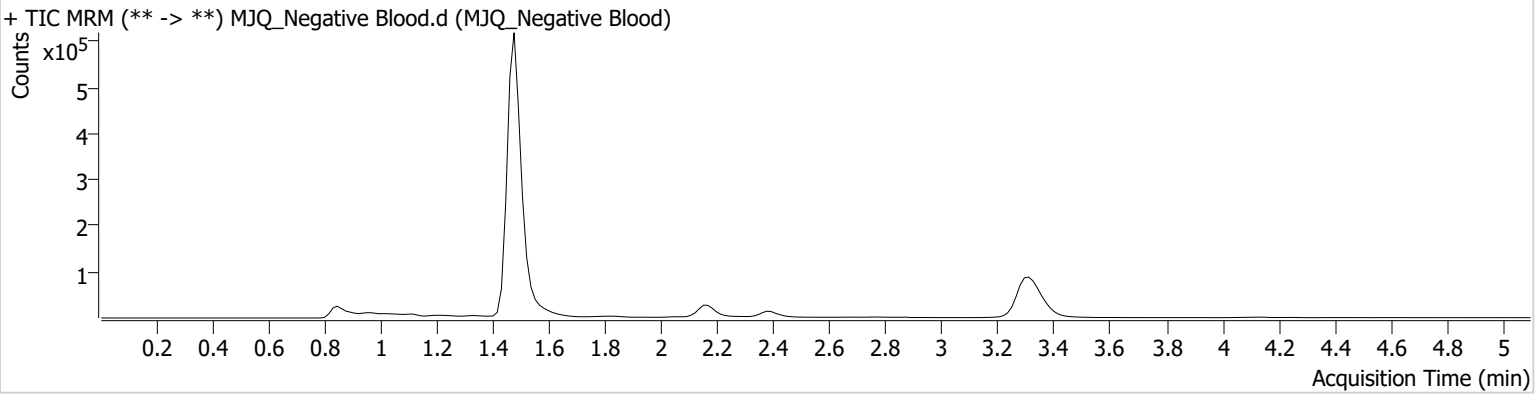
Component	*Source*	*Source Lot Number*
Negative Urine	Pocatello Lab	POC031319
Methanol External Control Solution	-	WS03052021
Prepared:	07/28/2021	
Prepared by:	Celena Shrum	

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\072821 AM 27 28 CS\QuantResults\AM 27 THC-COOH Only CS.batch.bin
Calibration Last Update	8/3/2021 12:07:11 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	P1-H5	**Comment**	
Injection Volume	10		
Acq. Date-Time	7/29/2021 3:34:30 PM		
Sample Info.			

Sample Chromatogram

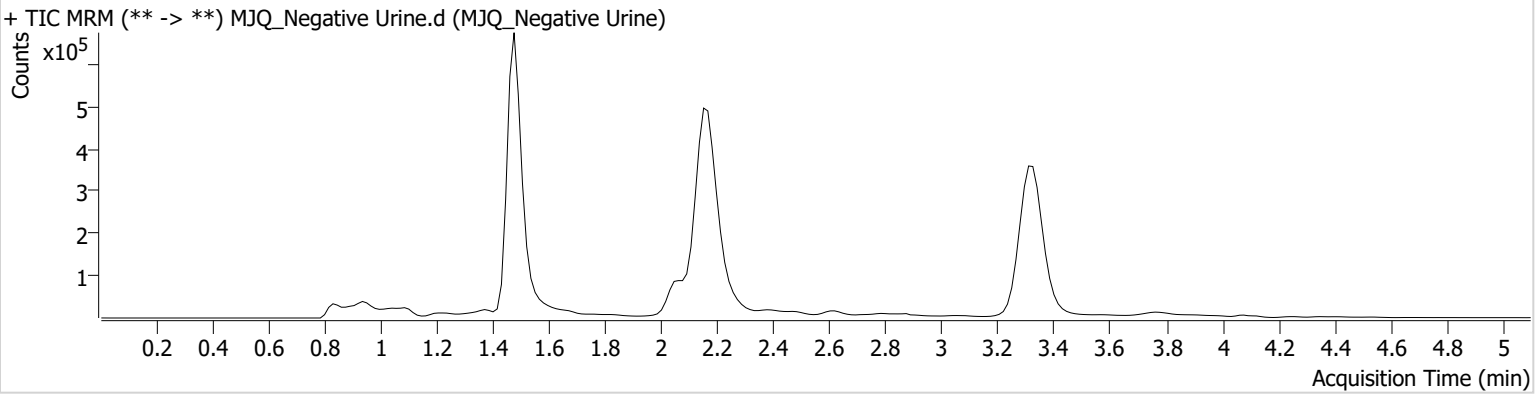


AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\072821 AM 27 28 CS\QuantResults\AM 27 THC-COOH Only CS.batch.bin
Calibration Last Update	8/3/2021 12:07:11 PM

Instrument	Falco (069901)	**Data File**	MJQ_Negative Urine.d
Type	Sample	**Sample**	MJQ_Negative Urine
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-F5	**Comment**	
Injection Volume	10		
Acq. Date-Time	7/29/2021 4:04:58 PM		
Sample Info.			

Sample Chromatogram

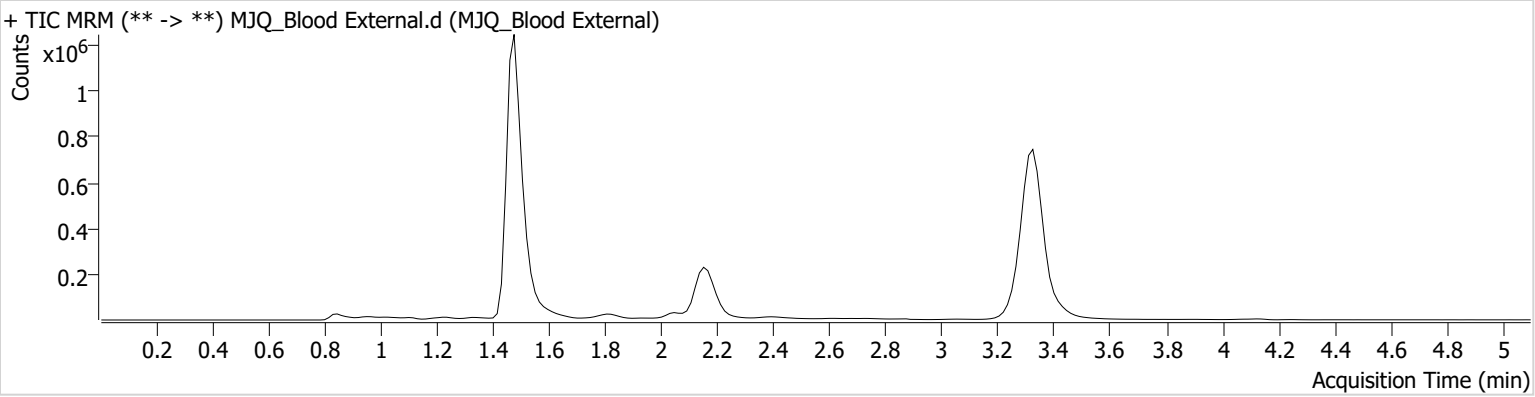


AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\072821 AM 27 28 CS\QuantResults\AM 27 THC-COOH Only CS.batch.bin
Calibration Last Update	8/3/2021 12:07:11 PM

Instrument	Falco (069901)	**Data File**	MJQ_Blood External.d
Type	Sample	**Sample**	MJQ_Blood External
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-G5	**Comment**	
Injection Volume	10		
Acq. Date-Time	7/29/2021 3:49:44 PM		
Sample Info.			

Sample Chromatogram



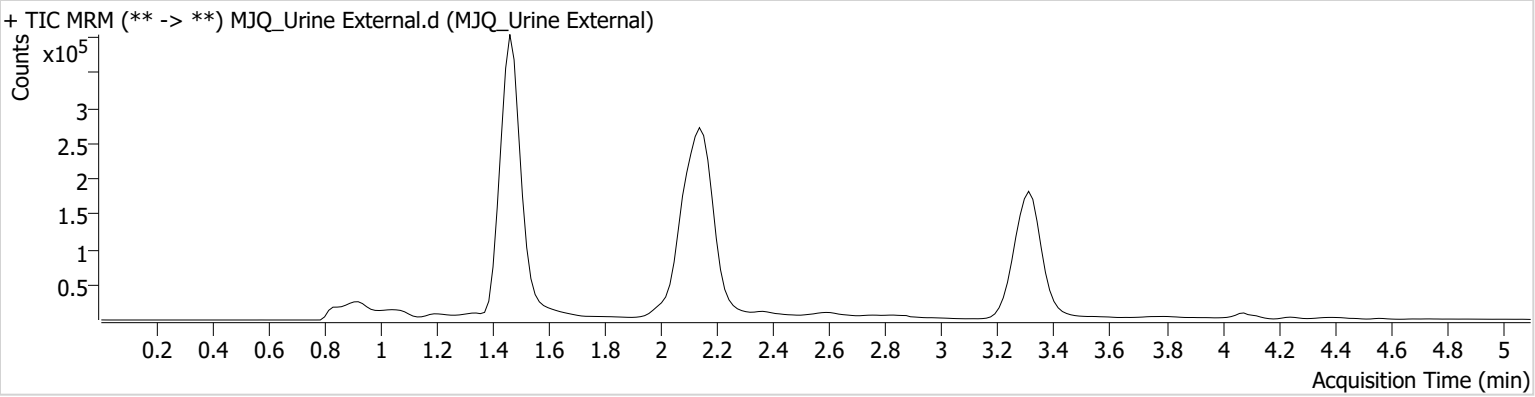
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.504	251545	∞	56.6	∞	555233	19.8333	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\072821 AM 27 28 CS\QuantResults\AM 27 THC-COOH Only CS.batch.bin
Calibration Last Update	8/3/2021 12:07:11 PM

Instrument	Falco (069901)	**Data File**	MJQ_Urine External.d
Type	Sample	**Sample**	MJQ_Urine External
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-E5	**Comment**	
Injection Volume	10		
Acq. Date-Time	7/29/2021 4:20:10 PM		
Sample Info.			

Sample Chromatogram



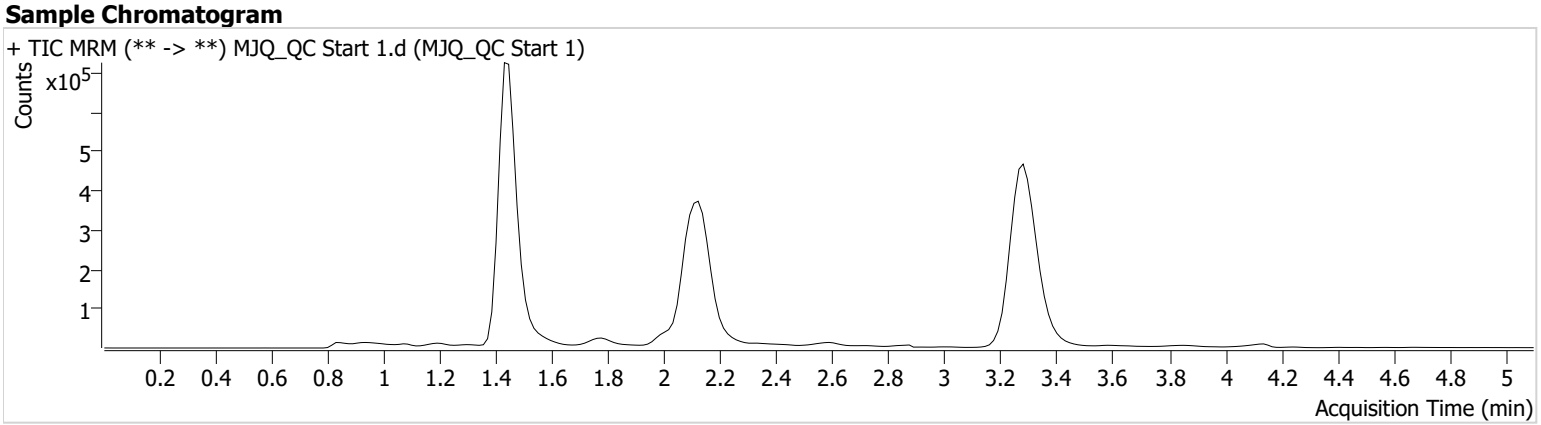
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.489	143381	∞	58.7	∞	292907	21.3333	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\072821 AM 27 28 CS\QuantResults\AM 27 THC-COOH Only CS.batch.bin
Calibration Last Update	8/3/2021 12:07:11 PM

Instrument	Falco (069901)	**Data File**	MJQ_QC Start 1.d
Type	Sample	**Sample**	MJQ_QC Start 1
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-A6	**Comment**	
Injection Volume	10		
Acq. Date-Time	7/29/2021 3:19:07 PM		
Sample Info.			

Sample Chromatogram



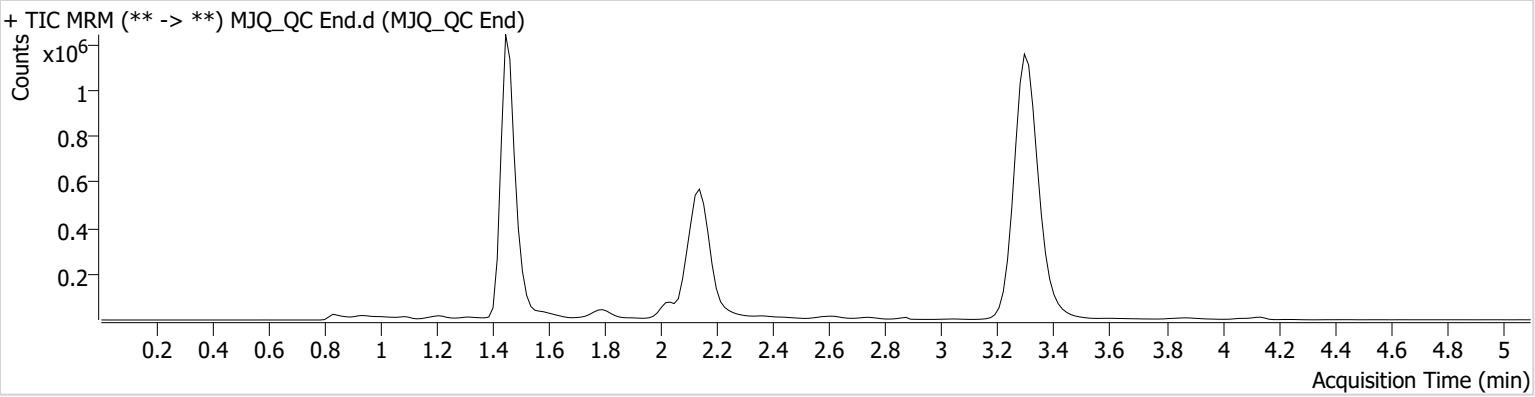
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.474	146817	∞	57.4	446.28	469639	14.0568	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\072821 AM 27 28 CS\QuantResults\AM 27 THC-COOH Only CS.batch.bin
Calibration Last Update	8/3/2021 12:07:11 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	P1-A6	**Comment**	
Injection Volume	10		
Acq. Date-Time	7/29/2021 9:09:54 PM		
Sample Info.			

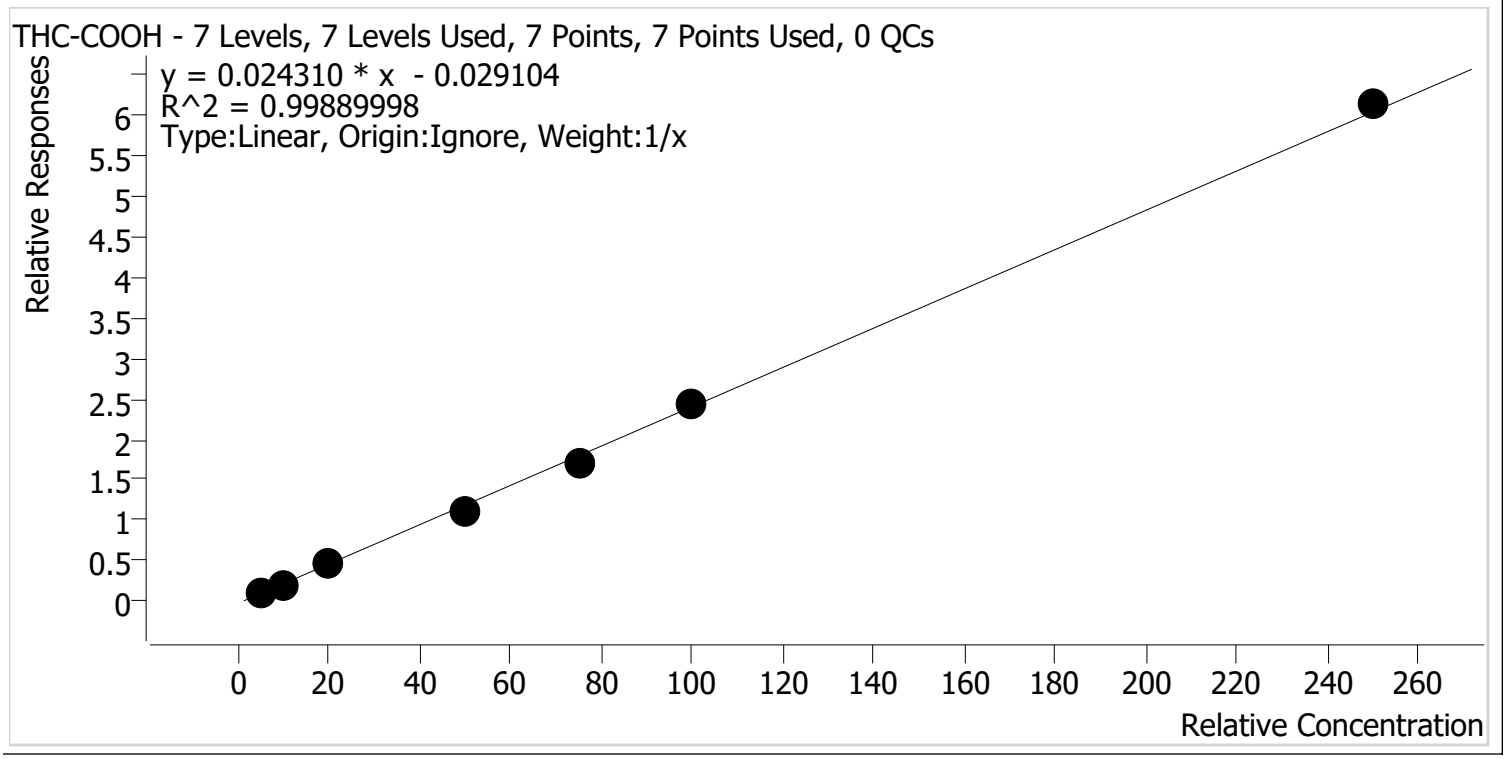
Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.489	195460	∞	57.6	∞	673384	13.1373	ng/ml

AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results	D:\MassHunter\Data\2021\AM 27-28\072821 AM 27 28 CS\QuantResults\AM 27 THC-COOH Only CS.batch.bin
Last Cal. Update	8/3/2021 12:07 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	5.5	110.3
MJQ_Cal 2	2	✔	10.0	9.6	96.1
MJQ_Cal 3	3	✔	20.0	19.9	99.7
MJQ_Cal 4	4	✔	50.0	47.4	94.7
MJQ_Cal 5	5	✔	75.0	71.9	95.9
MJQ_Cal 6	6	✔	100.0	101.8	101.8
MJQ_Cal 7	7	✔	250.0	253.9	101.6

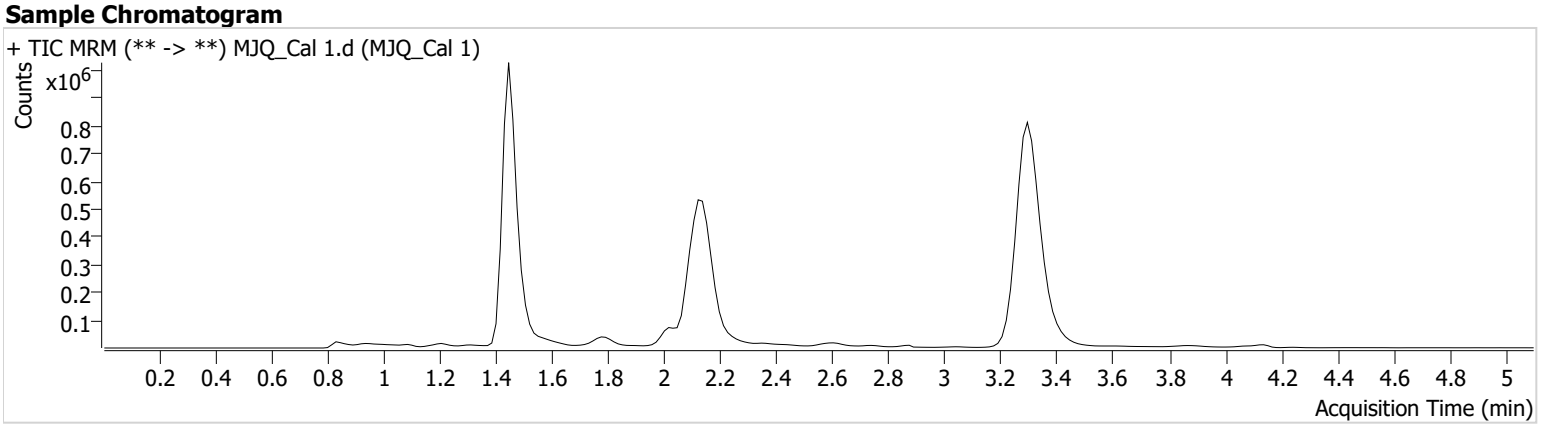
Generated at 7:56 AM on 8/4/2021

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\072821 AM 27 28 CS\QuantResults\AM 27 THC-COOH Only CS.batch.bin
Calibration Last Update	8/3/2021 12:07:11 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	P1-H6	**Comment**	
Injection Volume	10		
Acq. Date-Time	7/29/2021 1:23:23 PM		
Sample Info.			

Sample Chromatogram



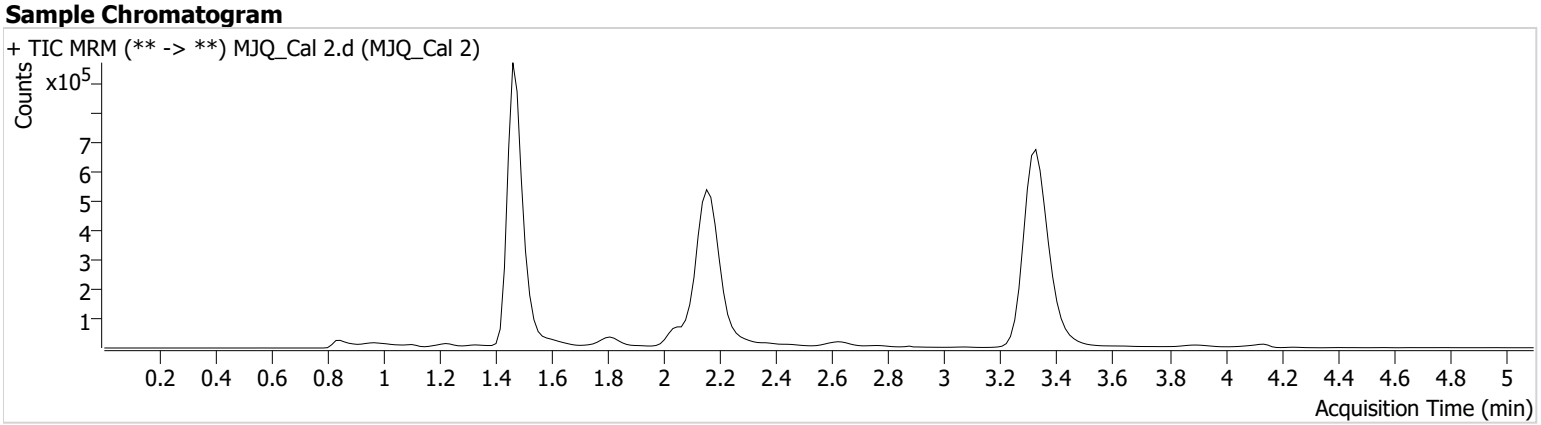
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.474	63688	∞	52.2	∞	606547	5.5164	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\072821 AM 27 28 CS\QuantResults\AM 27 THC-COOH Only CS.batch.bin
Calibration Last Update	8/3/2021 12:07:11 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	P1-G6	**Comment**	
Injection Volume	10		
Acq. Date-Time	7/29/2021 1:31:08 PM		
Sample Info.			

Sample Chromatogram



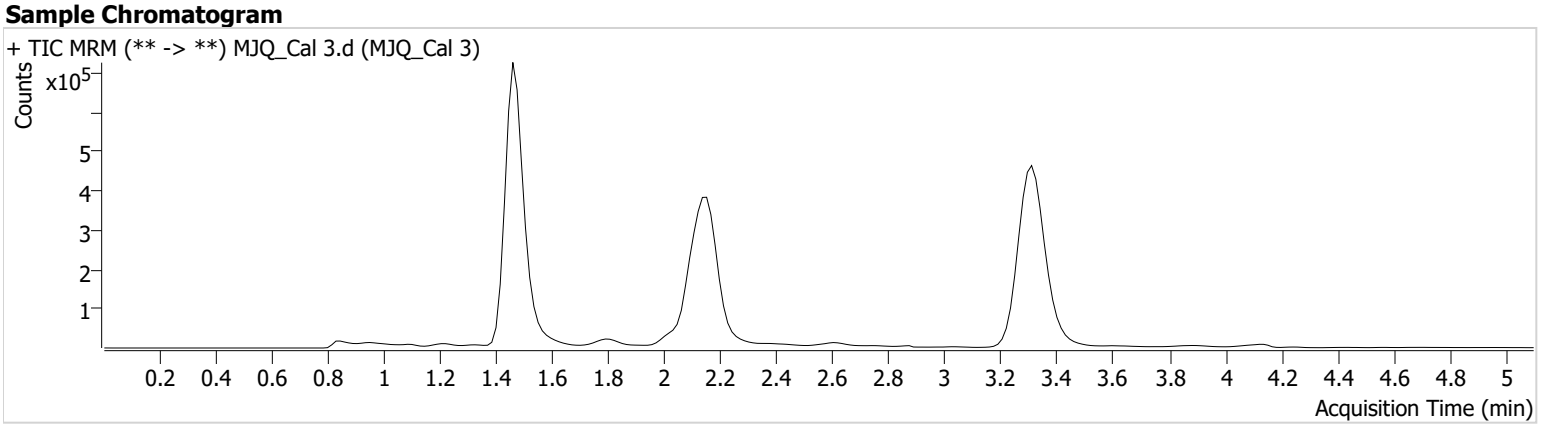
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.504	115688	∞	57.8	∞	565971	9.6055	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\072821 AM 27 28 CS\QuantResults\AM 27 THC-COOH Only CS.batch.bin
Calibration Last Update	8/3/2021 12:07:11 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	P1-F6	**Comment**	
Injection Volume	10		
Acq. Date-Time	7/29/2021 1:38:43 PM		
Sample Info.			

Sample Chromatogram



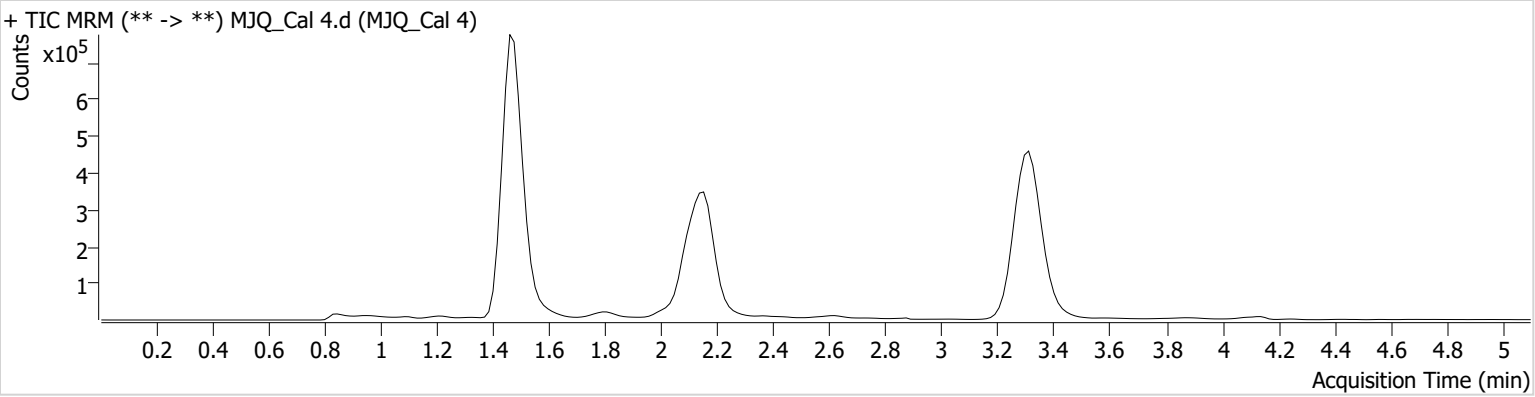
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.489	218890	∞	53.5	∞	480561	19.9338	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\072821 AM 27 28 CS\QuantResults\AM 27 THC-COOH Only CS.batch.bin
Calibration Last Update	8/3/2021 12:07:11 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	P1-E6	**Comment**	
Injection Volume	10		
Acq. Date-Time	7/29/2021 1:46:19 PM		
Sample Info.			

Sample Chromatogram



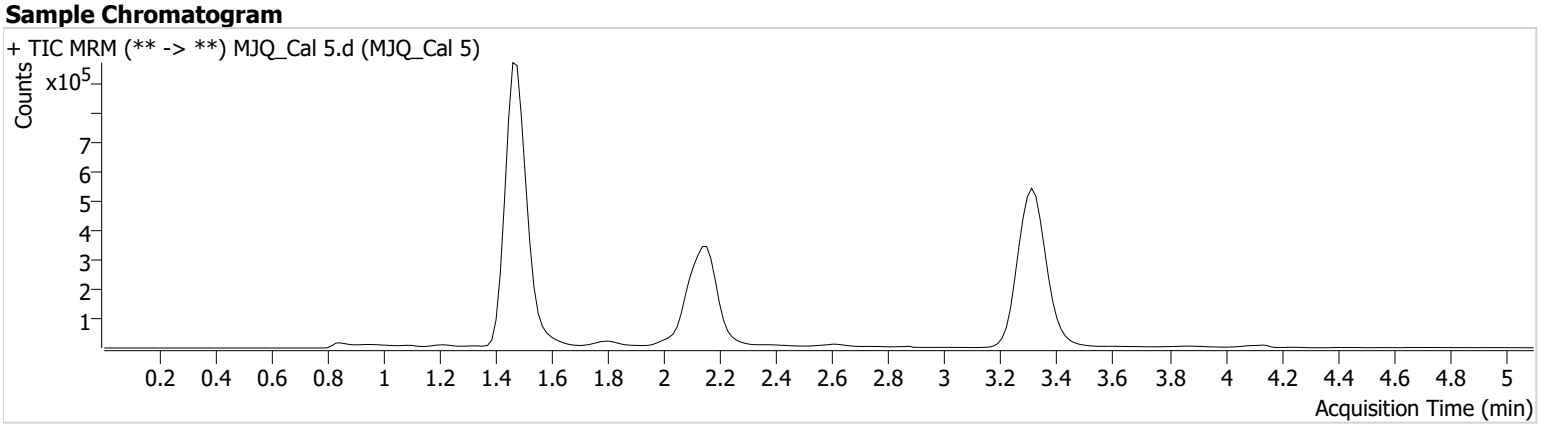
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.489	515440	1147.89	55.2	∞	459334	47.3570	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\072821 AM 27 28 CS\QuantResults\AM 27 THC-COOH Only CS.batch.bin
Calibration Last Update	8/3/2021 12:07:11 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	P1-D6	**Comment**	
Injection Volume	10		
Acq. Date-Time	7/29/2021 1:53:54 PM		
Sample Info.			

Sample Chromatogram



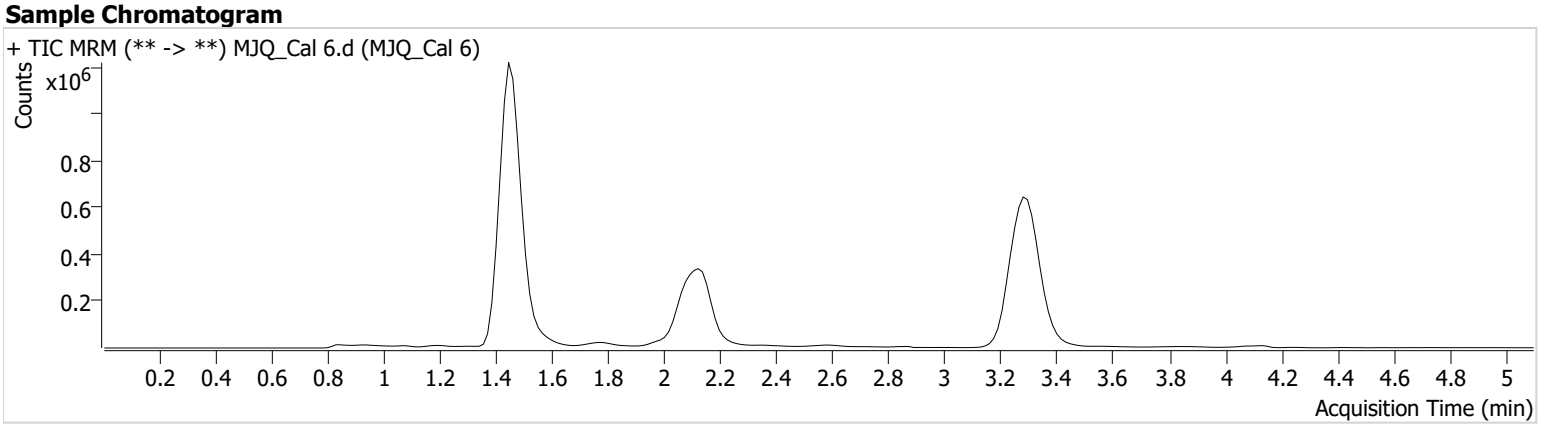
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.489	792630	∞	59.1	∞	460937	71.9338	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\072821 AM 27 28 CS\QuantResults\AM 27 THC-COOH Only CS.batch.bin
Calibration Last Update	8/3/2021 12:07:11 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	P1-C6	**Comment**	
Injection Volume	10		
Acq. Date-Time	7/29/2021 2:01:35 PM		
Sample Info.			

Sample Chromatogram



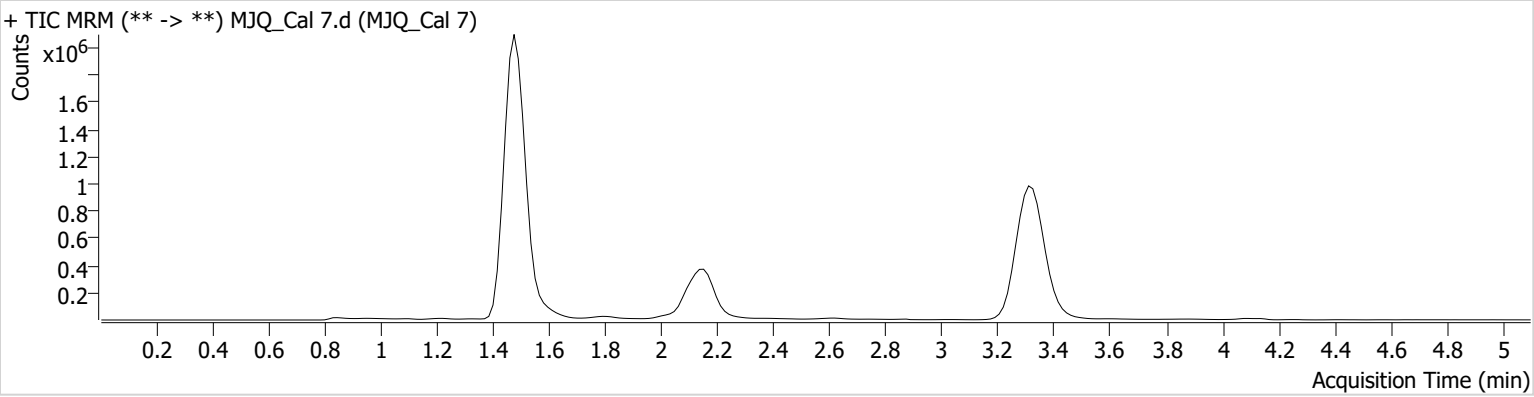
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.474	1109756	∞	56.3	∞	453917	101.7664	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\072821 AM 27 28 CS\QuantResults\AM 27 THC-COOH Only CS.batch.bin
Calibration Last Update	8/3/2021 12:07:11 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	P1-B6	**Comment**	
Injection Volume	10		
Acq. Date-Time	7/29/2021 2:09:11 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.489	2704474	∞	53.3	∞	440260	253.8870	ng/ml