REVIEWED
By Anne Nord at 3:27 pm, Nov 12, 2021

11/9/2021

Worklist: 5371

LAB_CASE	ITEM	ITEM_TYPE	DESCRIPTION
P2021-3283	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ
P2021-3526	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ
P2021-3616	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: 11/09/2021
Plate lot#: 210609
Mobile phase A: 0.1% Formic Acid in LCMS Water
Blank Blood Lot: Lampire 20L20725
LCMS-QQQ ID: 069901

Analyst: Celena Shrum
Plate Retest Date: 12/09/2021
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.

	1	2	3	4	5	6
a	cal 1ng	NEG Blood				
b	cal 3 ng	NEG Urine				
c	cal 5 ng	Urine External				
d	cal 10ng	P2021-3283-1				
e	cal 25 ng	P2021-3526-1				
f	cal 50 ng	P2021-3616-1				
g	cal 100 ng					
h	QC 1					

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: 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		
Prepared By:	Tamara Salazar/Amber Gerheart		

Urine External Control Solution (Lot: 110521)
200 ul of methanol external control solution was added to 9800 ul of urine.
Approximately 20ng/mL each

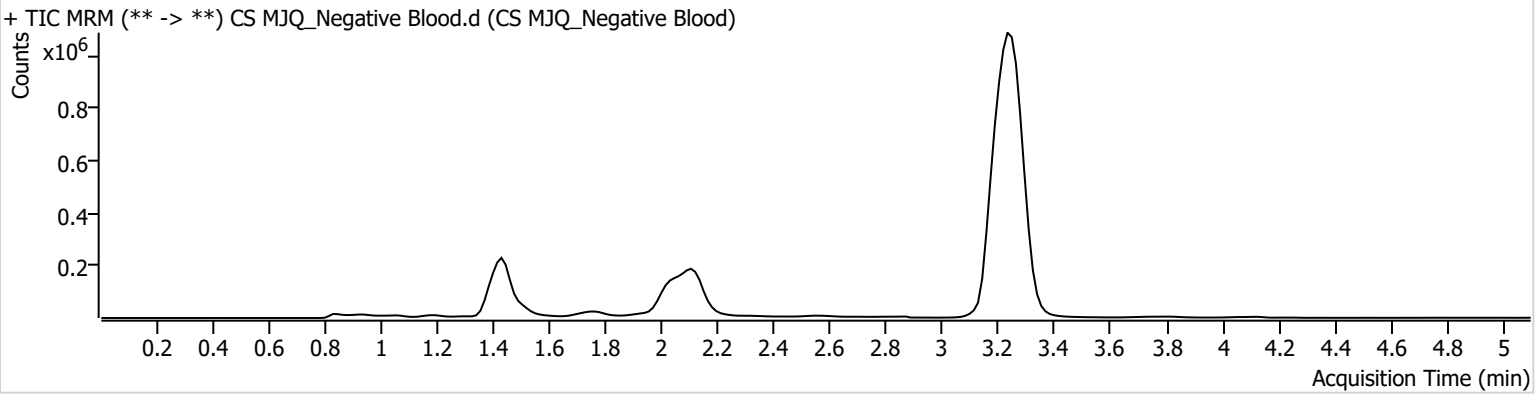
Component	*Source*	*Source Lot Number*
Negative Urine	Pocatello Lab	POC031319
Methanol External Control Solution	-	WS03052021
Prepared:	11/05/2021	
Prepared by:	Celena Shrum	

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\110821 AM 27 28 TS CS\QuantResults\AM 27 C-THC Only CS.batch.bin
Calibration Last Update	11/10/2021 3:27:05 PM

Instrument	Falco (069901)	**Data File**	CS MJQ_Negative Blood.d
Type	Sample	**Sample**	CS MJQ_Negative Blood
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-A2	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/10/2021 12:11:48 AM		
Sample Info.			

Sample Chromatogram

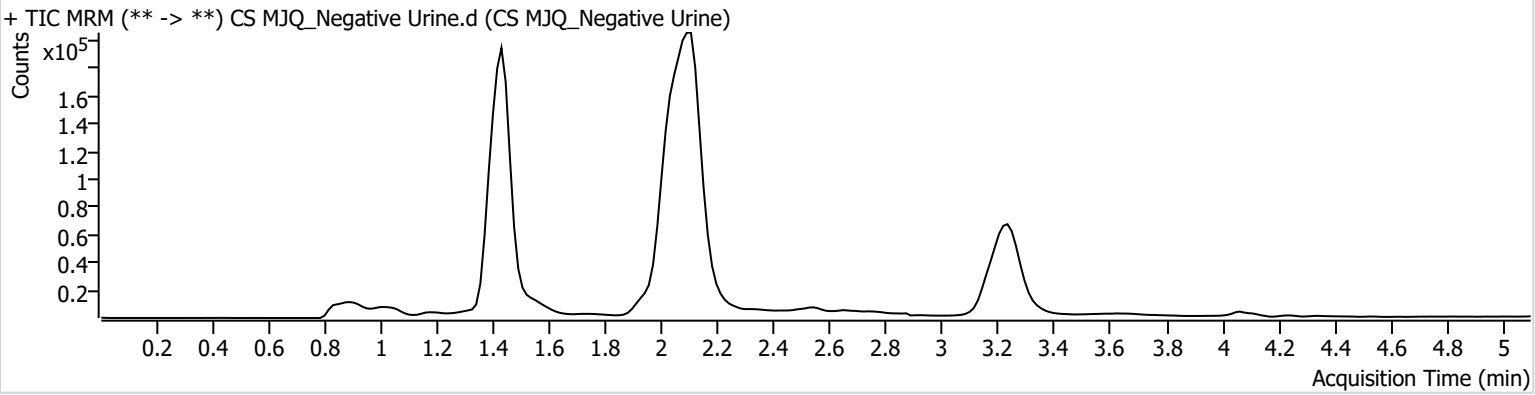


AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\110821 AM 27 28 TS CS\QuantResults\AM 27 C-THC Only CS.batch.bin
Calibration Last Update	11/10/2021 3:27:05 PM

Instrument	Falco (069901)	**Data File**	CS MJQ_Negative Urine.d
Type	Sample	**Sample**	CS MJQ_Negative Urine
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-B2	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/10/2021 12:27:01 AM		
Sample Info.			

Sample Chromatogram

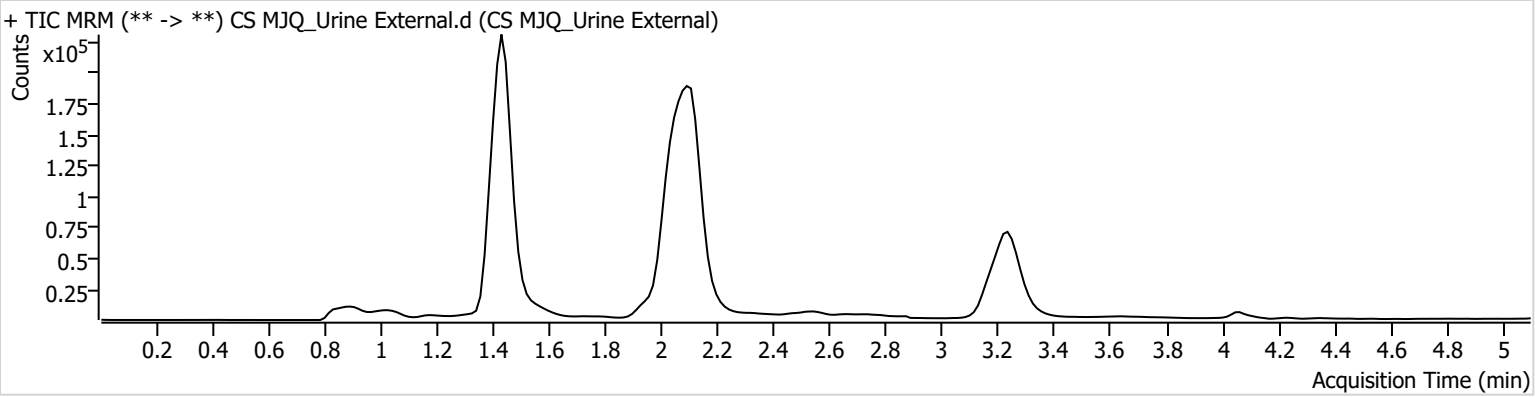


AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2021\AM 27-28\110821 AM 27 28 TS CS\QuantResults\AM 27 C-THC Only CS.batch.bin
Calibration Last Update 11/10/2021 3:27:05 PM

Instrument	Falco (069901)	**Data File**	CS MJQ_Urine External.d
Type	Sample	**Sample**	CS MJQ_Urine External
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-C2	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/10/2021 12:42:14 AM		
Sample Info.			

Sample Chromatogram



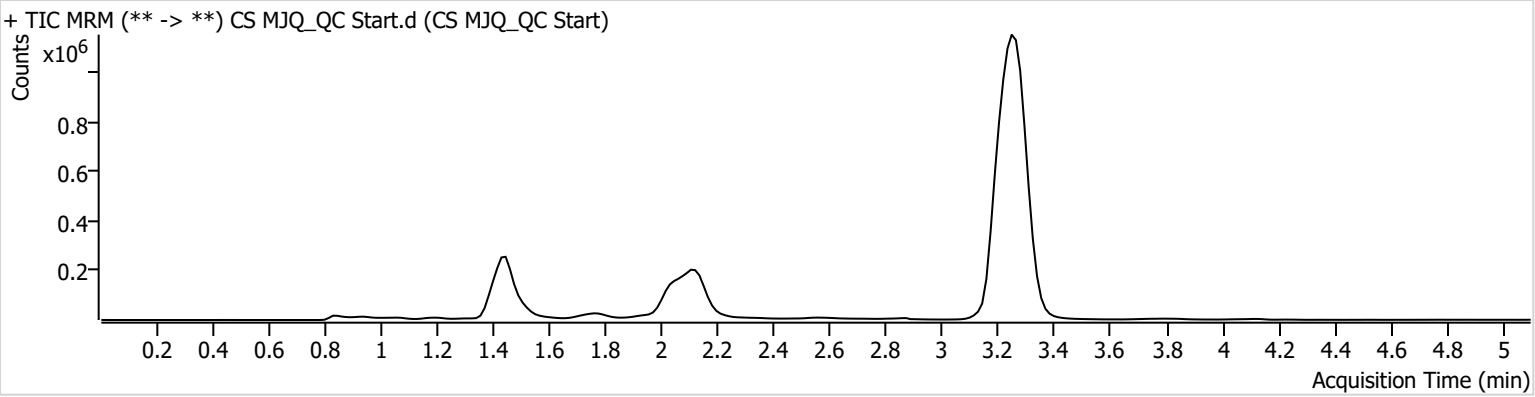
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.459	70771	∞	68.3	∞	182668	17.4395	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\110821 AM 27 28 TS CS\QuantResults\AM 27 C-THC Only CS.batch.bin
Calibration Last Update	11/10/2021 3:27:05 PM

Instrument	Falco (069901)	**Data File**	CS MJQ_QC Start.d
Type	Sample	**Sample**	CS MJQ_QC Start
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-H1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/9/2021 11:56:35 PM		
Sample Info.			

Sample Chromatogram



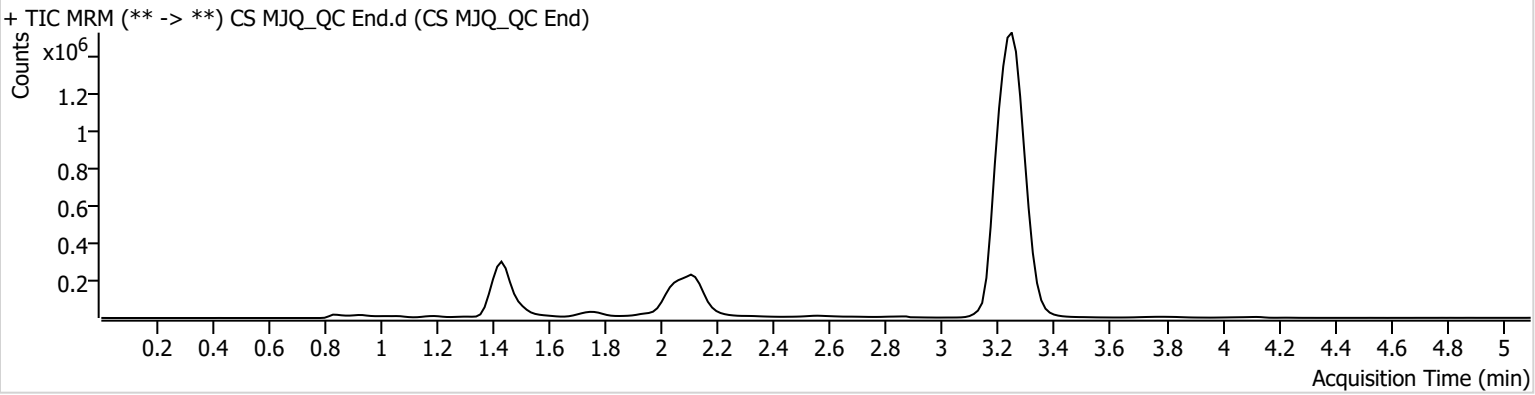
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.474	67889	∞	72.0	∞	209252	14.9063	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\110821 AM 27 28 TS CS\QuantResults\AM 27 C-THC Only CS.batch.bin
Calibration Last Update	11/10/2021 3:27:05 PM

Instrument	Falco (069901)	**Data File**	CS MJQ_QC End.d
Type	Sample	**Sample**	CS MJQ_QC End
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-H1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/10/2021 1:43:03 AM		
Sample Info.			

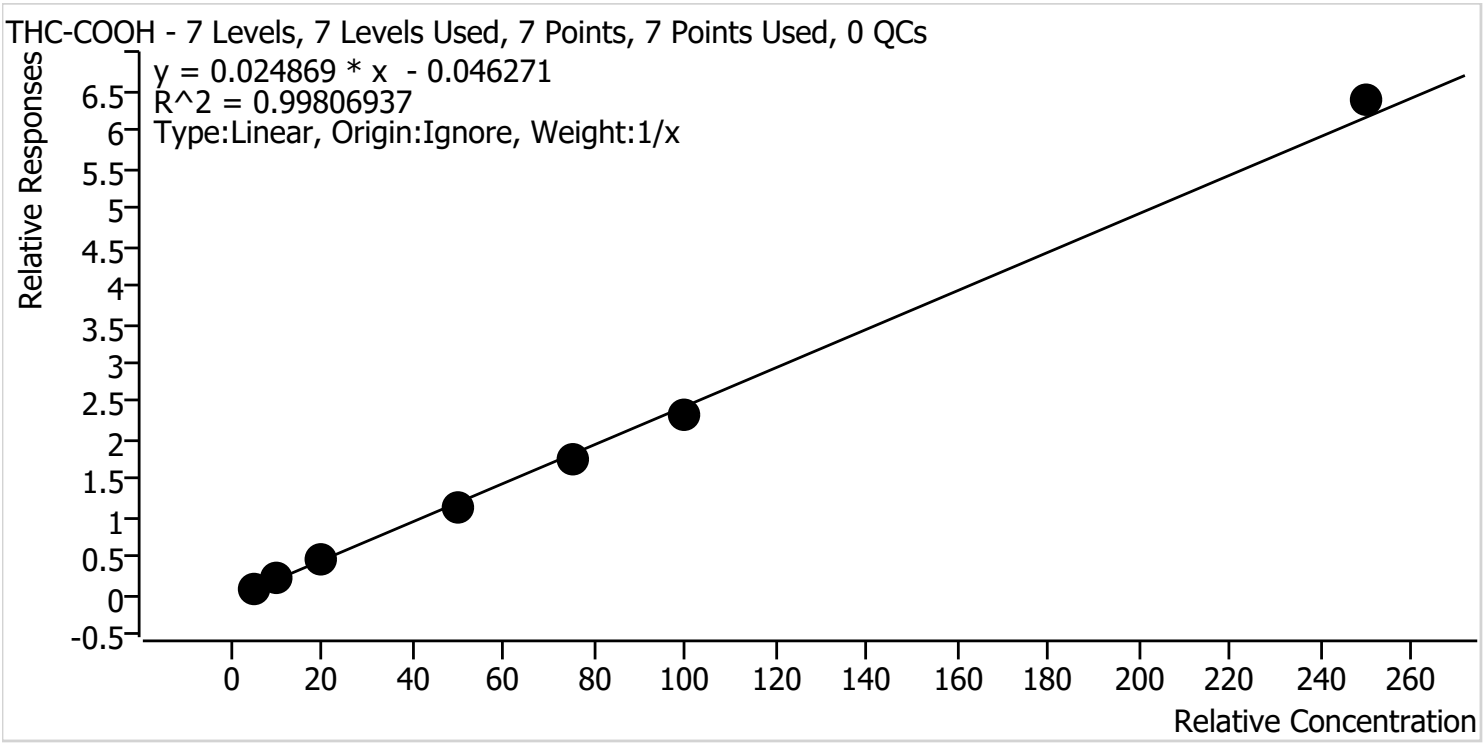
Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.459	71742	∞	68.4	558.42	222027	14.8536	ng/ml

AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results	D:\MassHunter\Data\2021\AM 27-28\110821 AM 27 28 TS CS\QuantResults\AM 27 C-THC Only CS.batch.bin
Last Cal. Update	11/10/2021 3:27 PM
Analyst Name	ISP\datastor
Analyte	THC-COOH
Internal Standard	THC-COOH-D9



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
CS MJQ_Cal 1	1	✔	5.0	5.4	108.2
CS MJQ_Cal 2	2	✔	10.0	10.2	102.0
CS MJQ_Cal 3	3	✔	20.0	19.6	98.2
CS MJQ_Cal 4	4	✔	50.0	47.8	95.7
CS MJQ_Cal 5	5	✔	75.0	73.0	97.3
CS MJQ_Cal 6	6	✔	100.0	95.1	95.1
CS MJQ_Cal 7	7	✔	250.0	258.9	103.5

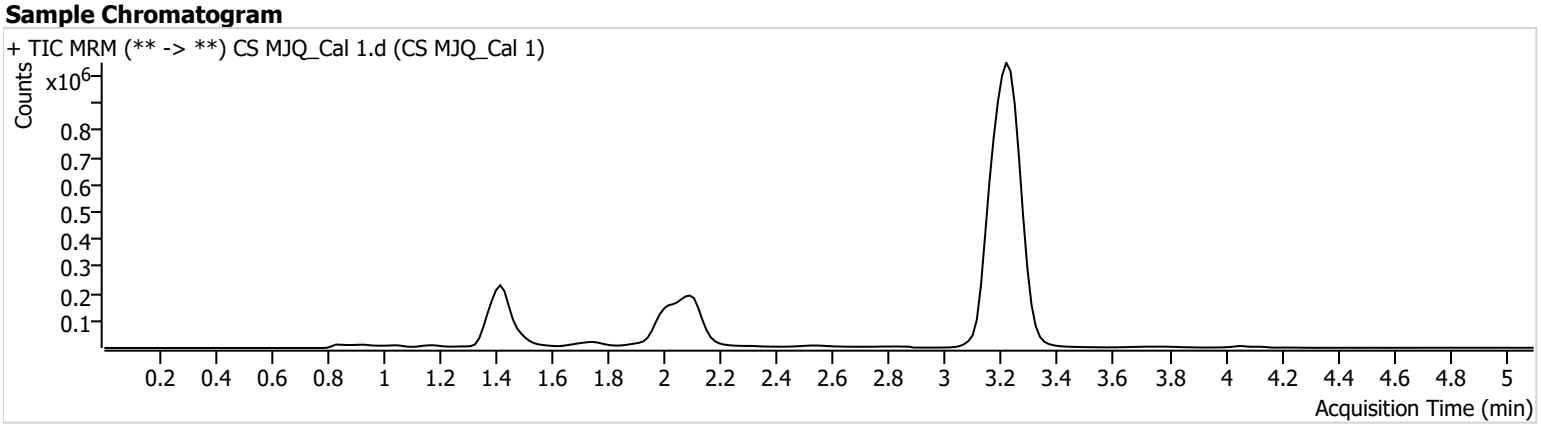
Generated at 12:00 PM on 11/12/2021

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\110821 AM 27 28 TS CS\QuantResults\AM 27 C-THC Only CS.batch.bin
Calibration Last Update	11/10/2021 3:27:05 PM

Instrument	Falco (069901)	**Data File**	CS MJQ_Cal 1.d
Type	Cal	**Sample**	CS MJQ_Cal 1
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-A1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/9/2021 10:55:42 PM		
Sample Info.			

Sample Chromatogram



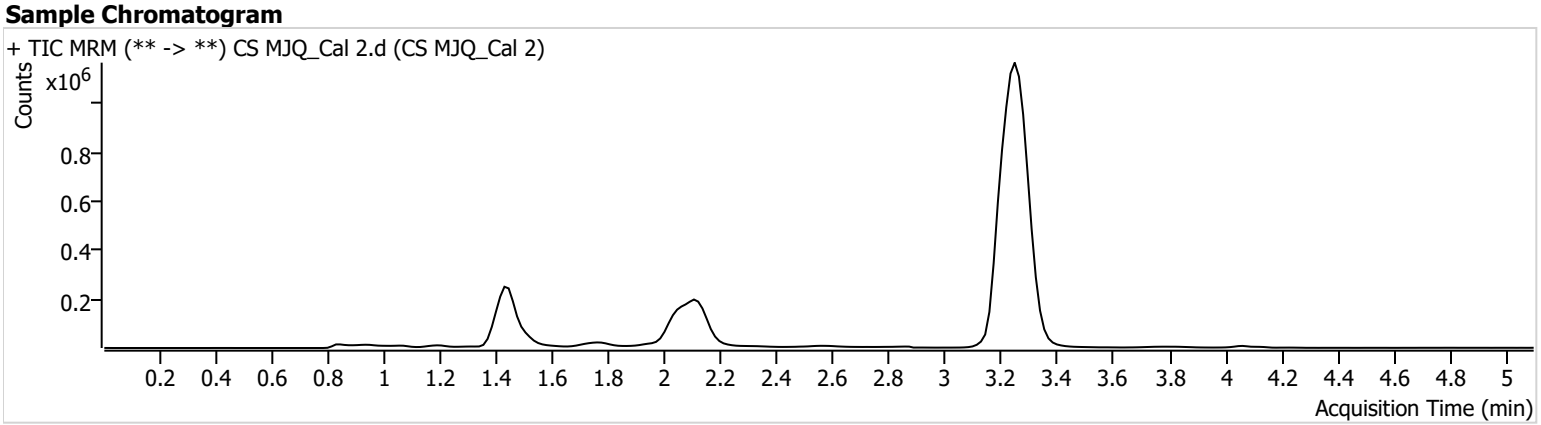
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.444	20143	∞	80.9	∞	228268	5.4089	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\110821 AM 27 28 TS CS\QuantResults\AM 27 C-THC Only CS.batch.bin
Calibration Last Update	11/10/2021 3:27:05 PM

Instrument	Falco (069901)	**Data File**	CS MJQ_Cal 2.d
Type	Cal	**Sample**	CS MJQ_Cal 2
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-B1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/9/2021 11:03:27 PM		
Sample Info.			

Sample Chromatogram



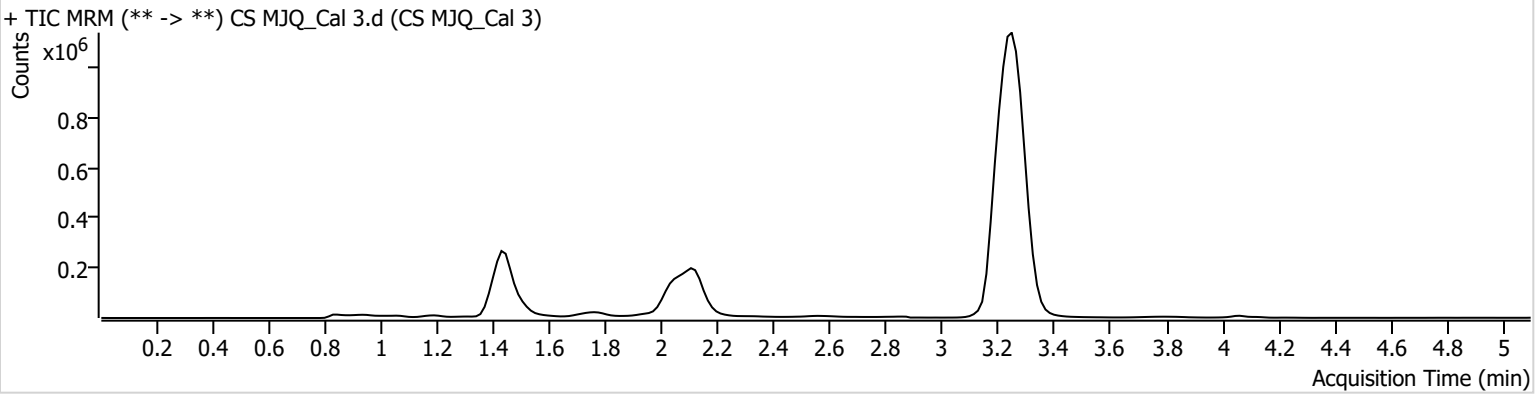
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.459	44615	∞	70.0	319.34	215029	10.2036	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2021\AM 27-28\110821 AM 27 28 TS CS\QuantResults\AM 27 C-THC Only CS.batch.bin
Calibration Last Update 11/10/2021 3:27:05 PM

Instrument	Falco (069901)	**Data File**	CS MJQ_Cal 3.d
Type	Cal	**Sample**	CS MJQ_Cal 3
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-C1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/9/2021 11:11:03 PM		
Sample Info.			

Sample Chromatogram



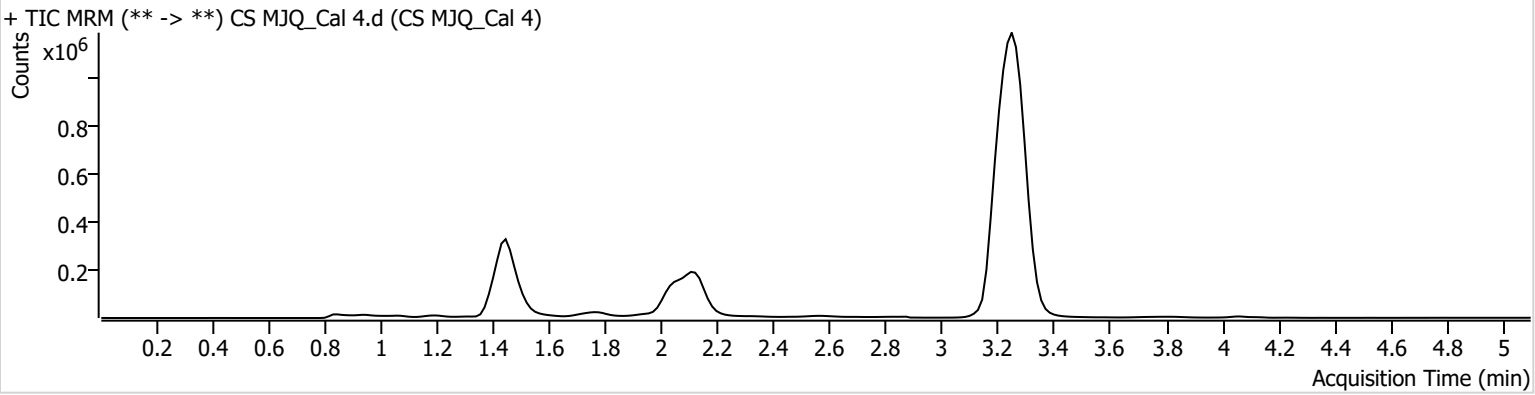
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.459	93556	∞	63.8	∞	211636	19.6360	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\110821 AM 27 28 TS CS\QuantResults\AM 27 C-THC Only CS.batch.bin
Calibration Last Update	11/10/2021 3:27:05 PM

Instrument	Falco (069901)	**Data File**	CS MJQ_Cal 4.d
Type	Cal	**Sample**	CS MJQ_Cal 4
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-D1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/9/2021 11:18:38 PM		
Sample Info.			

Sample Chromatogram



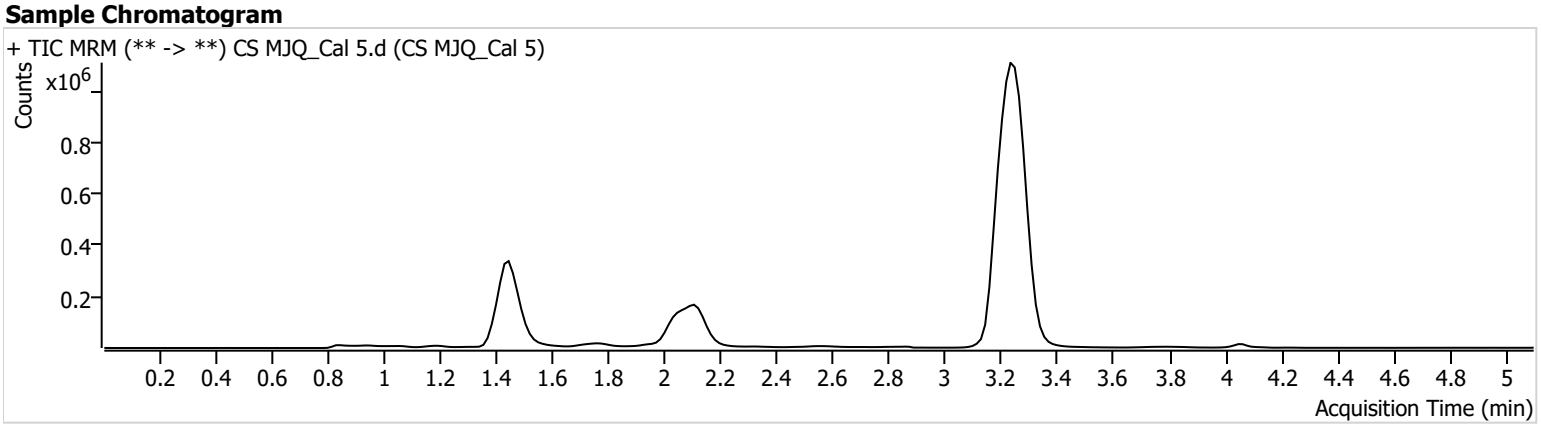
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.474	243683	∞	64.8	1631.83	213095	47.8431	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results	D:\MassHunter\Data\2021\AM 27-28\110821 AM 27 28 TS CS\QuantResults\AM 27 C-THC Only CS.batch.bin
Calibration Last Update	11/10/2021 3:27:05 PM

Instrument	Falco (069901)	**Data File**	CS MJQ_Cal 5.d
Type	Cal	**Sample**	CS MJQ_Cal 5
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-E1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/9/2021 11:26:13 PM		
Sample Info.			

Sample Chromatogram



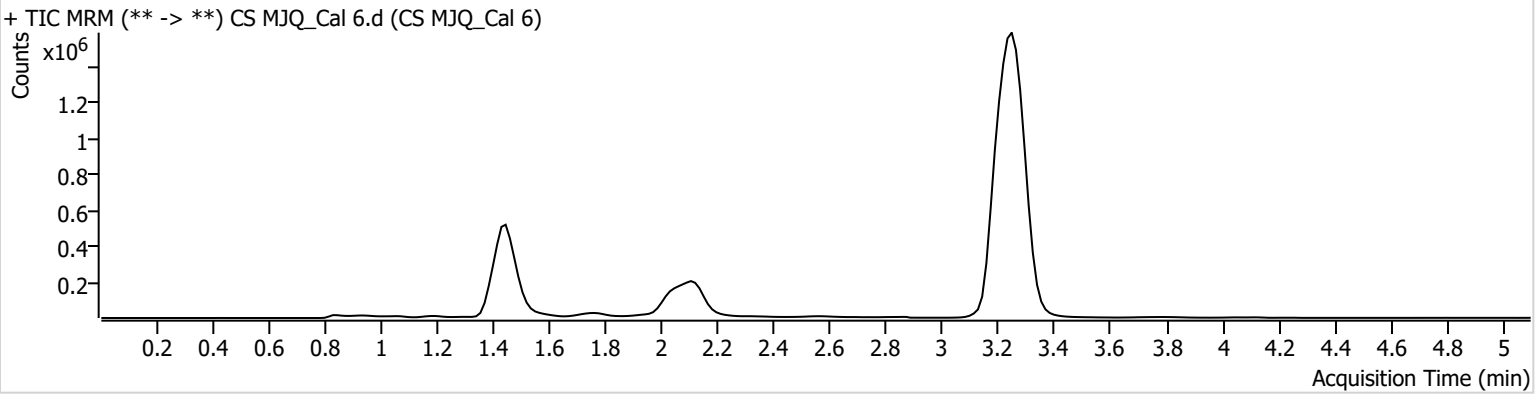
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.459	319152	∞	63.1	∞	180459	72.9753	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2021\AM 27-28\110821 AM 27 28 TS CS\QuantResults\AM 27 C-THC Only CS.batch.bin
Calibration Last Update 11/10/2021 3:27:05 PM

Instrument	Falco (069901)	**Data File**	CS MJQ_Cal 6.d
Type	Cal	**Sample**	CS MJQ_Cal 6
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-F1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/9/2021 11:33:49 PM		
Sample Info.			

Sample Chromatogram



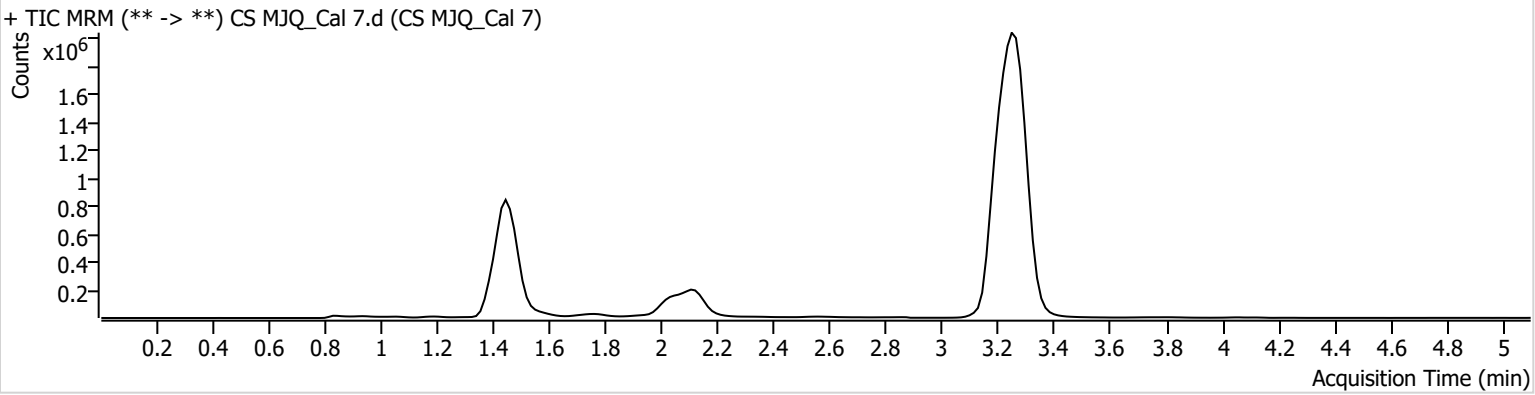
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.459	496981	∞	69.5	∞	214382	95.0771	ng/ml

AM #27 Cannabinoid Quant. Results

Batch results D:\MassHunter\Data\2021\AM 27-28\110821 AM 27 28 TS CS\QuantResults\AM 27 C-THC Only CS.batch.bin
Calibration Last Update 11/10/2021 3:27:05 PM

Instrument	Falco (069901)	**Data File**	CS MJQ_Cal 7.d
Type	Cal	**Sample**	CS MJQ_Cal 7
Acq. Method	AM 27 THCQ.m	**Operator**	Celena Shrum
Sample Position	P1-G1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/9/2021 11:41:24 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-COOH	1.459	1256335	∞	61.8	6636.16	196571	258.8560	ng/ml