



7/1/2021

Worklist: 5076**REVIEWED**

By Brittany Wylie at 5:59 pm, Jul 01, 2021

<u>LAB CASE</u>	<u>ITEM</u>	<u>ITEM TYPE</u>	<u>DESCRIPTION</u>	
C2021-1279	2	BCK	AM 27 Blood THC Quant by LC-QQQ	
C2021-1340	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
C2021-1353	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ	
C2021-1354	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ	
C2021-1356	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ	
C2021-1394	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
C2021-1396	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ	
C2021-1437	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
C2021-1438	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
C2021-1443	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ	
C2021-1450	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
C2021-1458	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ	
C2021-1503	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
C2021-1508	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 6/29/21
Plate lot#: 210412

Analyst: Anne Nord
Plate Expiration: 10/12/21

Mobile phase A: 0.1% Formic Acid in LCMS Water
MTBE LCMS Methanol

Mobile phase B: 0.1% Formic acid in Acetonitrile
Hexane

Blank Blood Lot: 21D52496 **Urine Blank:** 5621 **Column:** UCT Selectra DA 100 x 2.1mm 3um
LCMS-QQQ ID: 69679

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:

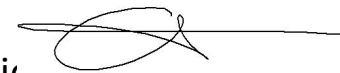
- 1. Remove standards, plate, controls, and samples from cold storage. Allow to reach room temperature.
- 2. Urine hydrolysis: add 1.5 ml urine to blank plate, add 250 ul 1N KOH mix and incubate at 40 degrees for 15 minutes.
Pipette 1000µL blood (calibrated pipette) Pipette ID: k52558g in wells of analytical (standards) plate.
- 3. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
- 4. Pipette 500µL 0.1% formic acid in water blood sample, 500 ul saturated phosphate buffer in urine in wells 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) Manifold ID: 66792
- 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.
SPE Dry ID: 66819
- 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, OH-THC 3ng/mL (quantitative blood), Carboxy-THC: 5 ng/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 is it 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 curve range 1-50*

Toxicology AM method 27/26 external prep informati



working solution 15 ug/ml in meoh C-THC, THC-OH, 7.5 ug/ml THC

Stock solution 1mg/ml 7.5 ul each THC, 100 ug/ml 150 ul C-THC, 150 ul THC-OH in 9692.5 ul meOH

Ppd 8/26/20 Exp: 7/1/21 lot 82620 by AMN

Drug	lot	expiration
C-THC	FE01061702	3/1/2022
THC-OH	FE07221601	7/1/2021
THC	FE01041701	3/1/2022

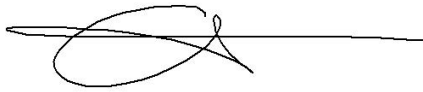
AM 27/26 blood control 100 ul working solution lot () in 9900 ul blood lot ()

		Concentration 7.5 ng/ml THC, 15 ng/ml C-THC, THC-OH	
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AM 27/26 urine control 400 ul working solution lot (82620) in 9600 ul urine

out of use

ppd 8/26/20 Exp 7/1/21 neg urine lot 73020	lot u82620	Concentration 30 ng/ml THC, and 60 ng/ml C-THC, THC-OH	by amn	10/4/2020
ppd 10/5/20 Exp 7/1/21 neg urine lot 10120	lot 10520	Concentration 30 ng/ml THC, and 60 ng/ml C-THC, THC-OH	by amn	1/12/2021
ppd 1/13/21 Exp 7/1/21 neg urine lot 10120	lot 11321	Concentration 30 ng/ml THC, and 60 ng/ml C-THC, THC-OH	by amn	3/28/2021
ppd 3/29/21 Exp 7/1/21 neg urine lot 2121	lot 32921	Concentration 30 ng/ml THC, and 60 ng/ml C-THC, THC-OH	by amn	5/27/2021
ppd 5/28/21 Exp 7/1/21 neg urine lot 5621	lot 52821	Concentration 30 ng/ml THC, and 60 ng/ml C-THC, THC-OH	by amn	



	1	2	3	4	5	6
a	cal 1	neg blood	1508-1	1458-1		QC 1
b	cal 2	1279-2	neg urine	1019-1		cal 100 ng
c	cal 3	1340-1	urine control	1039-1		cal 50 ng
d	cal 4	1394-1	1353-1			cal 25 ng
e	Cal 5	1437-1	1354-1			cal 10ng
f	cal 6	1438-1	1356-1			cal 5 ng
g	cal 7	1450-1	1396-1			cal 3 ng
h	Internal control	1503-1	1443-1			cal 1ng

C2021-____-__

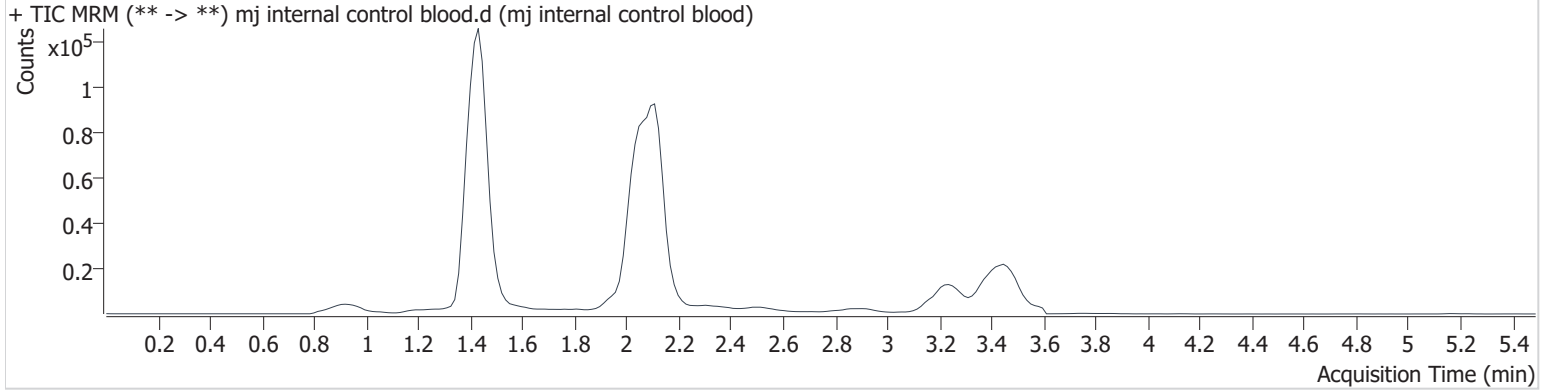
AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Calibration Last Update 6/30/2021 9:35:31 AM

Instrument	69679	Data File	mj internal control blood.d
Type	QC	Sample	mj internal control blood
Acq. Method	AM 27 THC quant.m	Operator	Anne Nord
Sample Position	P3-H1	Comment	
Injection Volume	10		
Acq. Date-Time	6/29/2021 7:38:03 PM		

Sample Info.

Sample Chromatogram



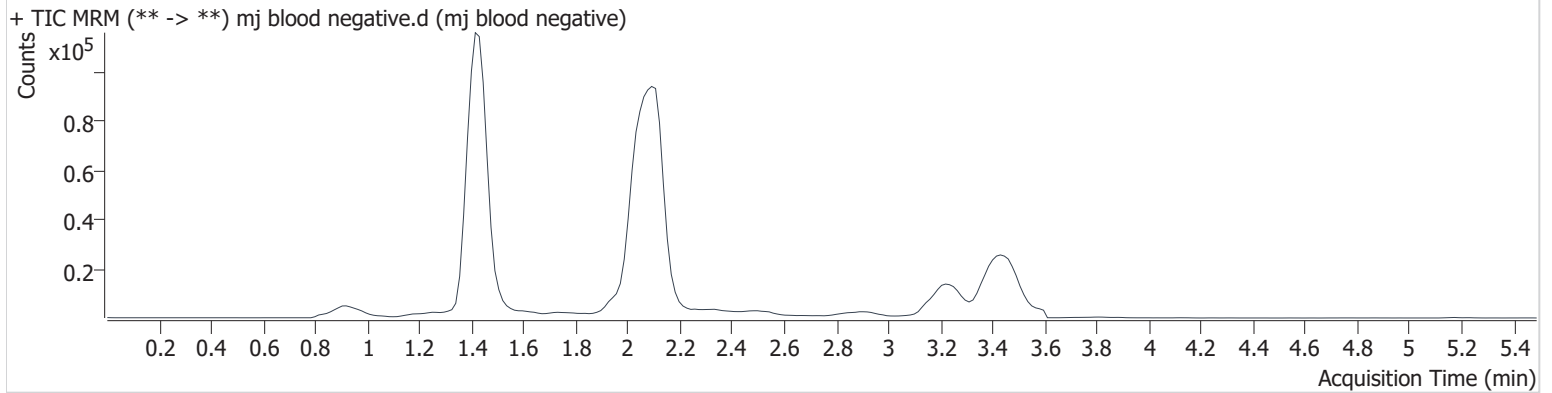
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.424	7401	∞	852.4	∞	487560	4.843 ng/ml
THC-COOH	1.461	16595	38.0	38.2	6367.2	85945	14.082 ng/ml
THC	3.257	6134	252.8	29.6	12.0	52352	4.647 ng/ml

AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Calibration Last Update 6/30/2021 9:35:31 AM

Instrument	69679	Data File	mj blood negative.d
Type	Sample	Sample	mj blood negative
Acq. Method	AM 27 THC quant.m	Operator	Anne Nord
Sample Position	P3-A2	Comment	
Injection Volume	10		
Acq. Date-Time	6/29/2021 7:44:45 PM		
Sample Info.			

Sample Chromatogram

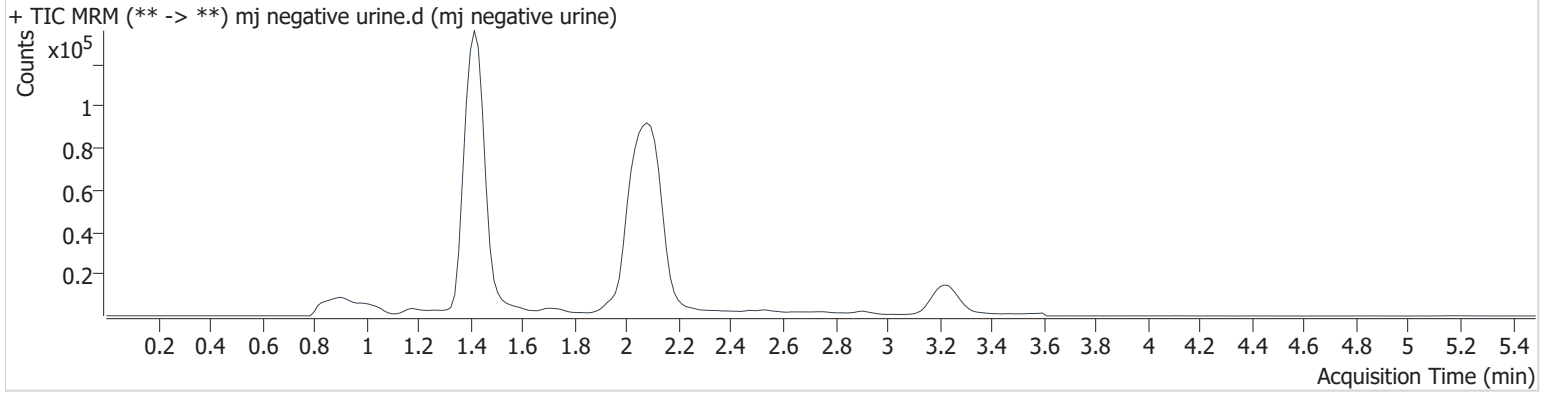


AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Calibration Last Update 6/30/2021 9:35:31 AM

Instrument	69679	Data File	mj negative urine.d
Type	Sample	Sample	mj negative urine
Acq. Method	AM 27 THC quant.m	Operator	Anne Nord
Sample Position	P3-B3	Comment	
Injection Volume	10		
Acq. Date-Time	6/29/2021 9:44:53 PM		
Sample Info.			

Sample Chromatogram



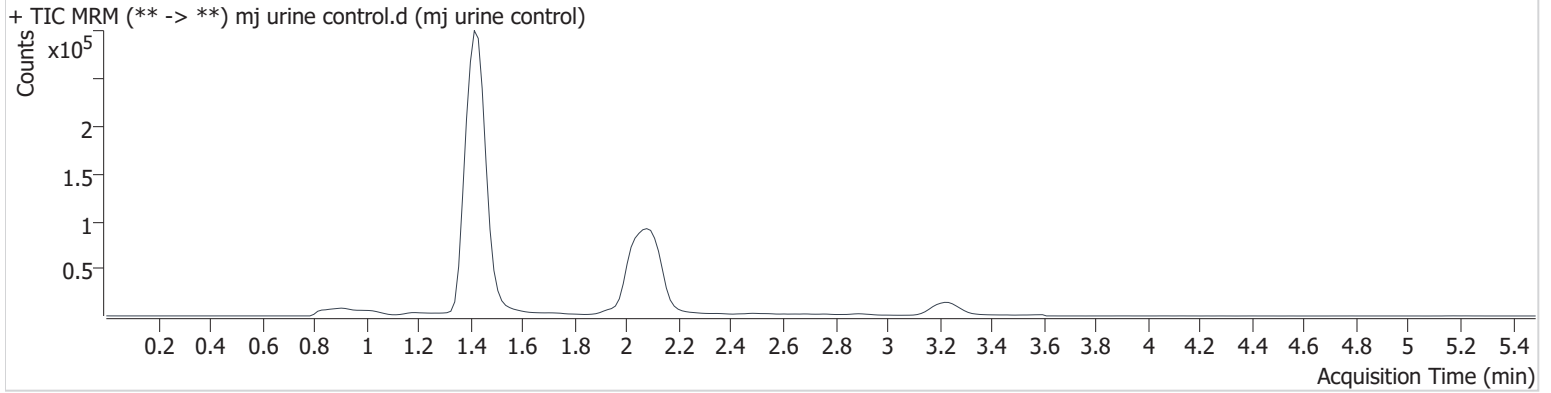
AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Calibration Last Update 6/30/2021 9:35:31 AM

Instrument	69679	Data File	mj urine control.d
Type	Sample	Sample	mj urine control
Acq. Method	AM 27 THC quant.m	Operator	Anne Nord
Sample Position	P3-C3	Comment	
Injection Volume	10		
Acq. Date-Time	6/29/2021 9:51:37 PM		

Sample Info.

Sample Chromatogram



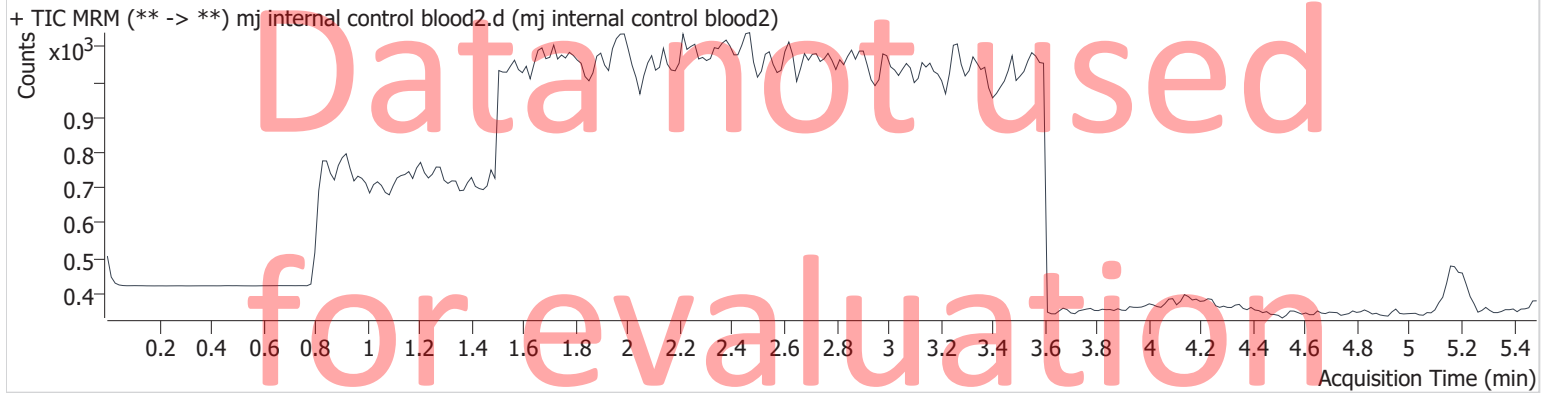
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.424	90077	∞	803.0	∞	643941	43.510 ng/ml
THC-COOH	1.461	47032	199.9	33.0	233.5	81624	40.085 ng/ml
THC	3.242	17701	∞	27.6	∞	73334	9.221 ng/ml

AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Calibration Last Update 6/30/2021 9:35:31 AM

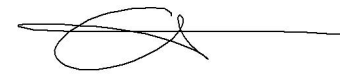
Instrument	69679	Data File	mj internal control blood2.d
Type	QC	Sample	mj internal control blood2
Acq. Method	AM 27 THC quant.m	Operator	Anne Nord
Sample Position	P3-H1	Comment	
Injection Volume	10		
Acq. Date-Time	6/29/2021 11:45:10 PM		
Sample Info.			

Sample Chromatogram



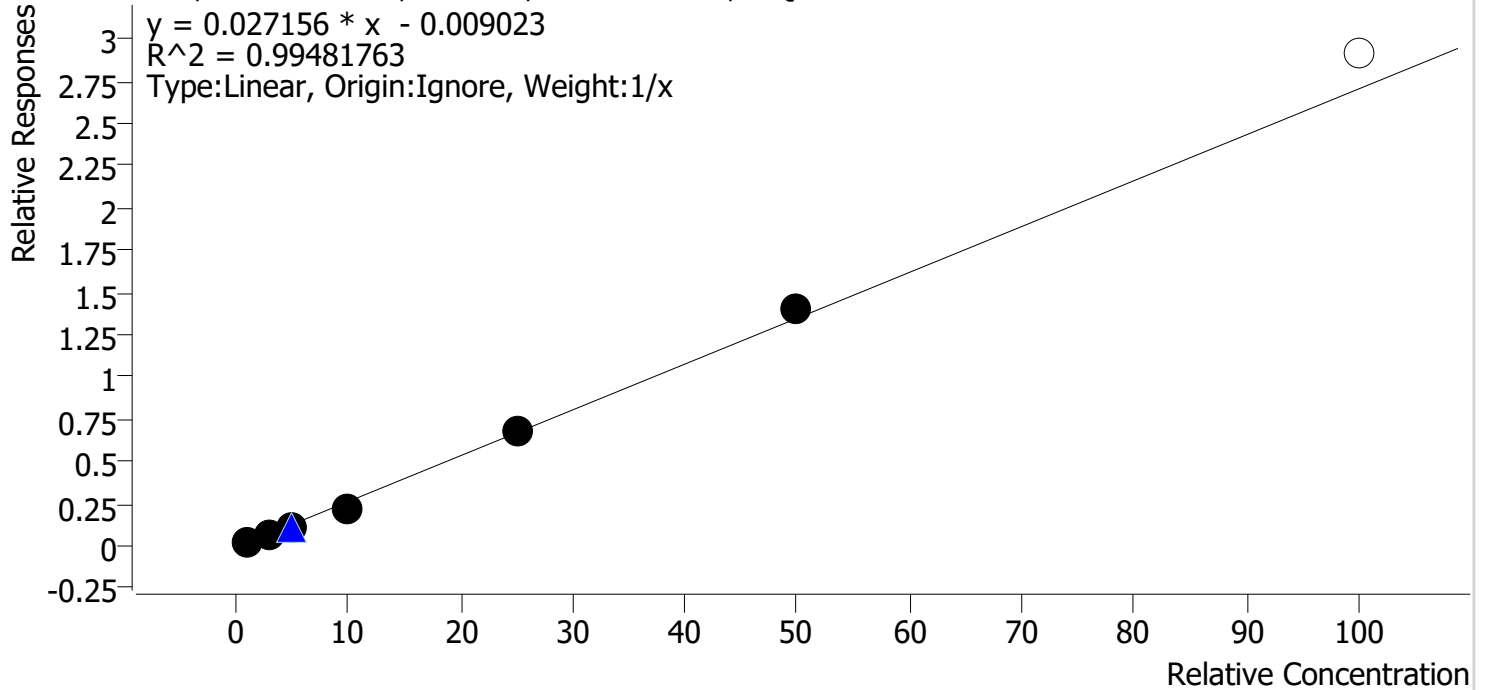
Internal blood control injected at the end of the run, sample had evaporated, not evaluated.

Compound Calibration Report



Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Last Cal. Update 6/30/2021 9:35 AM
Analyst Name ISP\datastor
Analyte THC **Internal Standard** THC-d3

THC - 7 Levels, 6 Levels Used, 7 Points, 6 Points Used, 1 QCs



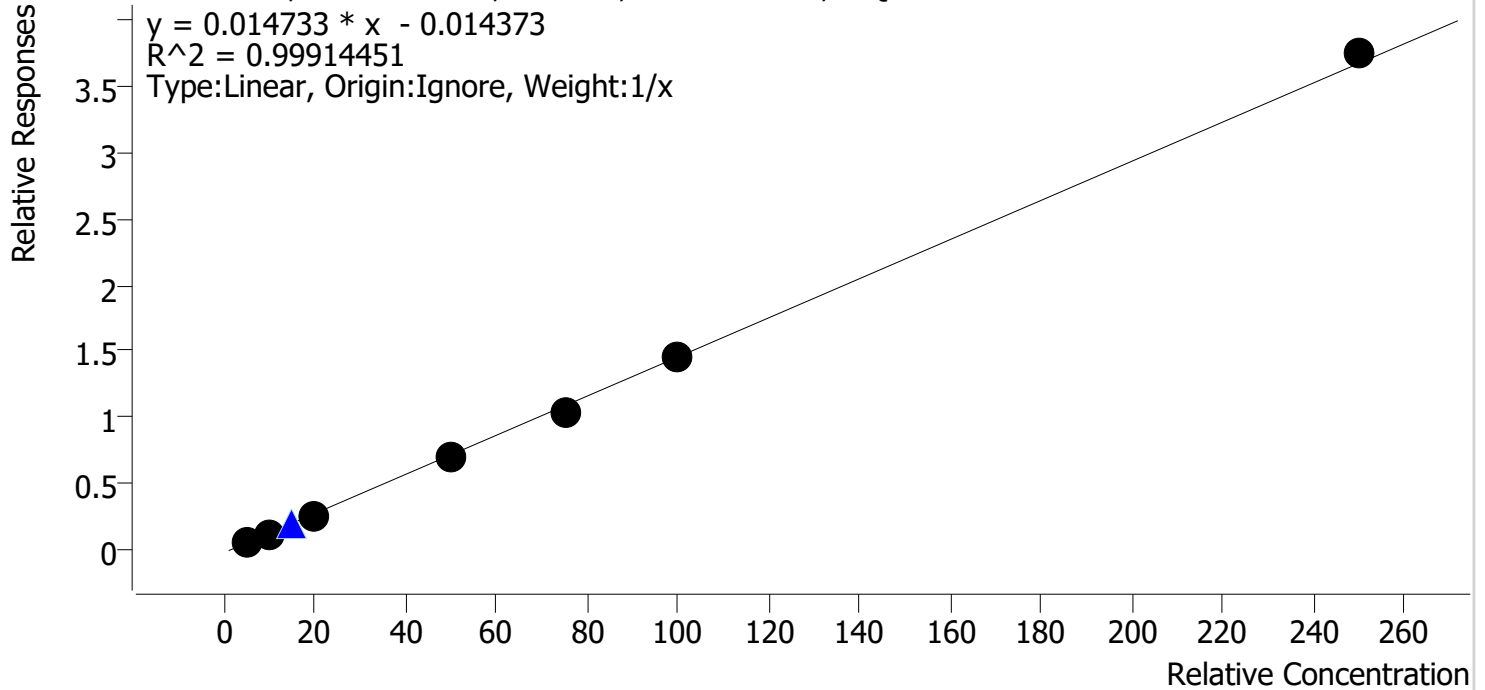
Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
mj cal1	1	✓	1.0	1.3	126.0
mj cal2	2	✓	3.0	2.8	94.9
mj cal 3	3	✓	5.0	4.4	88.8
mj cal 4	4	✓	10.0	8.6	86.5
mj cal 5	5	✓	25.0	25.1	100.4
mj cal 6	6	✓	50.0	51.7	103.4
mj cal 7	7	x	100.0	107.7	107.7

Cal 7 dropped, due to accuracy.

Compound Calibration Report

Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Last Cal. Update 6/30/2021 9:35 AM
Analyst Name ISP\datastor
Analyte THC-COOH **Internal Standard** THC-COOH-d9

THC-COOH - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 1 QCs

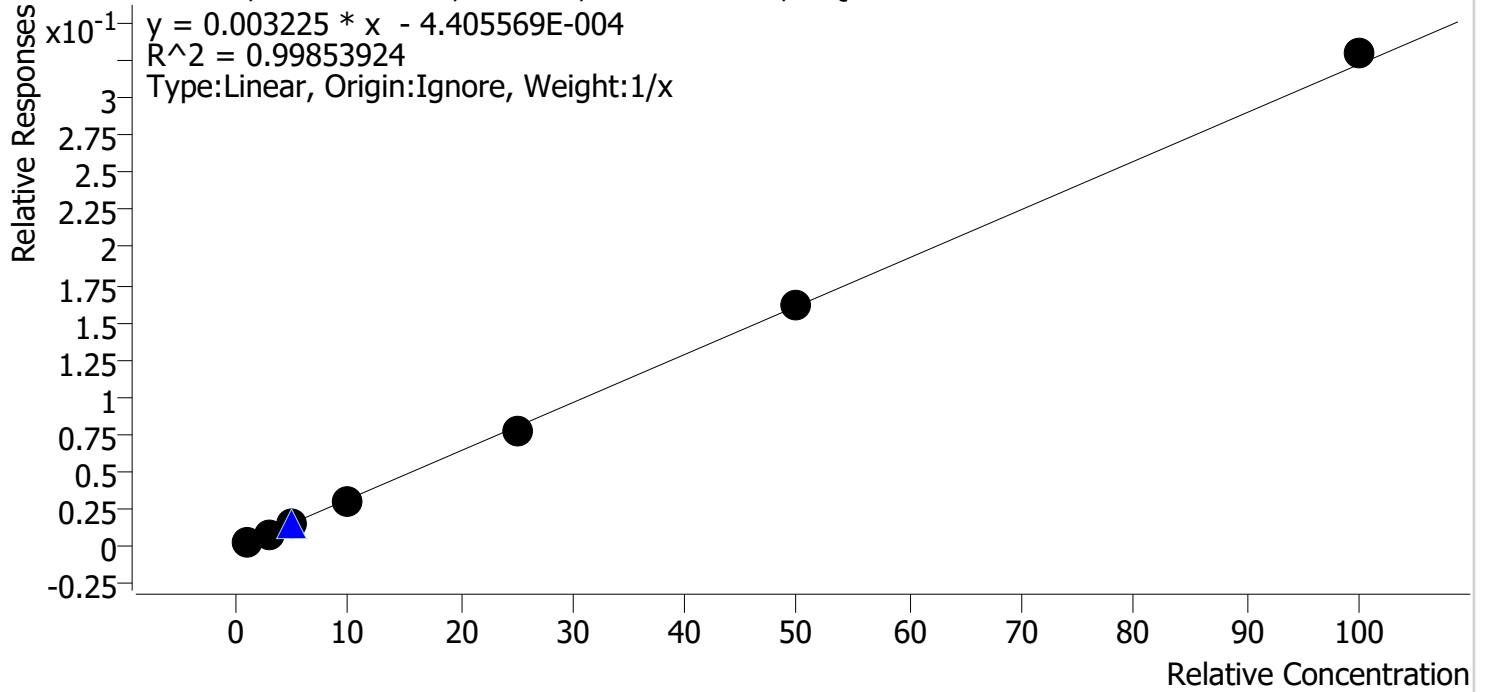


Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
mj cal1	1	✓	5.0	5.5	110.7
mj cal2	2	✓	10.0	9.8	97.8
mj cal 3	3	✓	20.0	19.2	96.1
mj cal 4	4	✓	50.0	48.8	97.7
mj cal 5	5	✓	75.0	72.1	96.1
mj cal 6	6	✓	100.0	99.6	99.6
mj cal 7	7	✓	250.0	254.9	102.0

Compound Calibration Report

Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Last Cal. Update 6/30/2021 9:35 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, 1 QCs



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
mj cal1	1	✓	1.0	1.2	121.5
mj cal2	2	✓	3.0	2.8	94.5
mj cal 3	3	✓	5.0	4.7	94.8
mj cal 4	4	✓	10.0	9.2	91.8
mj cal 5	5	✓	25.0	23.8	95.3
mj cal 6	6	✓	50.0	50.0	100.0
mj cal 7	7	✓	100.0	102.2	102.2

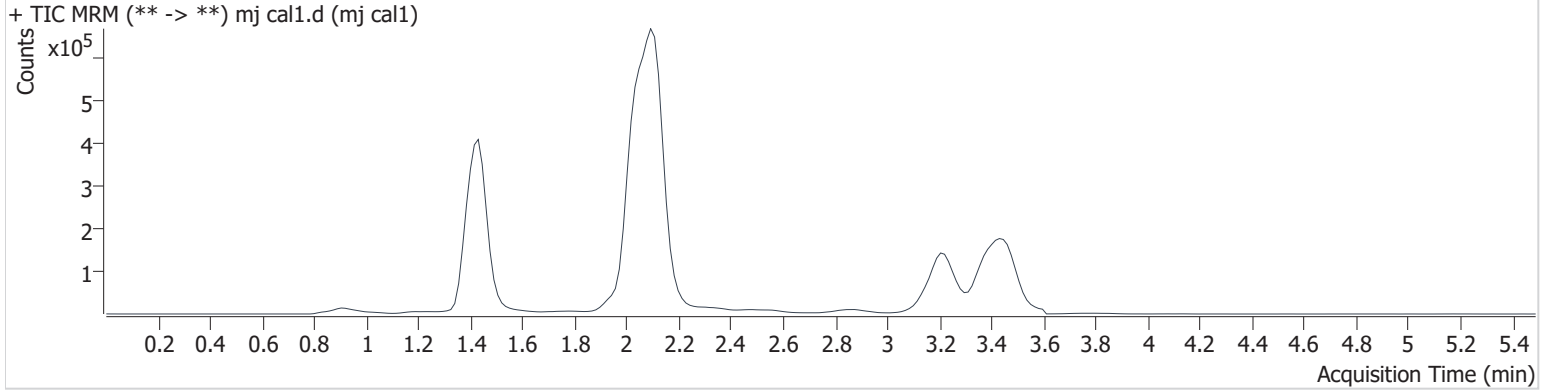
AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Calibration Last Update 6/30/2021 9:35:31 AM

Instrument	69679	Data File	mj cal1.d
Type	Cal	Sample	mj cal1
Acq. Method	AM 27 THC quant.m	Operator	Anne Nord
Sample Position	P3-A1	Comment	
Injection Volume	10		
Acq. Date-Time	6/29/2021 6:51:05 PM		

Sample Info.

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-OH	1.439	5843	∞	730.8	∞	1680179	1.215 ng/ml	Low
THC-COOH	1.461	30599	31.7	35.3	13813.3	455442	5.536 ng/ml	
THC	3.242	9624	∞	30.1	52.5	382187	1.260 ng/ml	

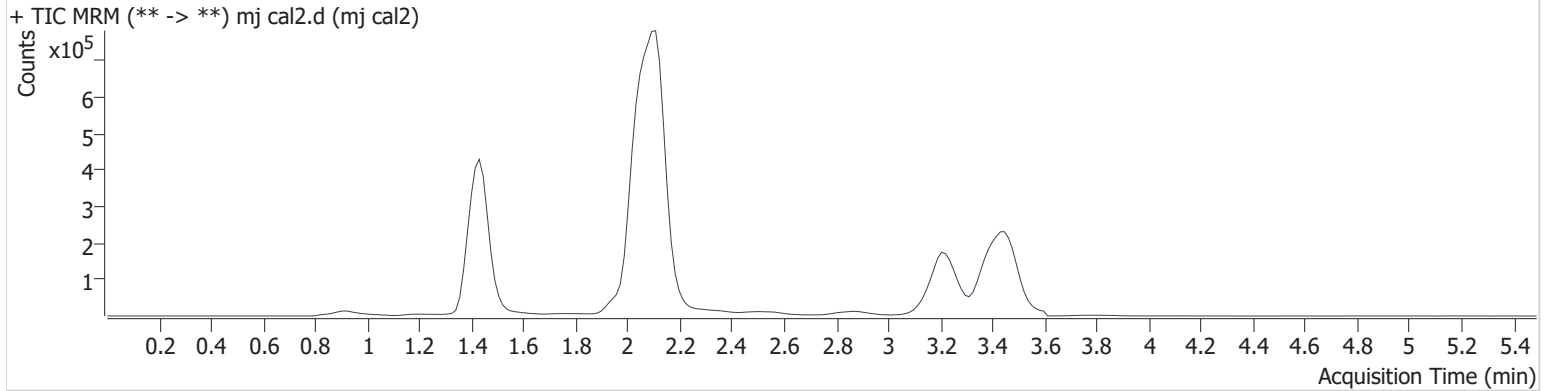
AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Calibration Last Update 6/30/2021 9:35:31 AM

Instrument	69679	Data File	mj cal2.d
Type	Cal	Sample	mj cal2
Acq. Method	AM 27 THC quant.m	Operator	Anne Nord
Sample Position	P3-B1	Comment	
Injection Volume	10		
Acq. Date-Time	6/29/2021 6:57:49 PM		

Sample Info.

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-OH	1.439	13990	∞	886.0	∞	1608288	2.834 ng/ml	Low
THC-COOH	1.461	56239	155.3	33.9	69.2	433601	9.779 ng/ml	
THC	3.242	31109	∞	24.7	∞	455330	2.848 ng/ml	

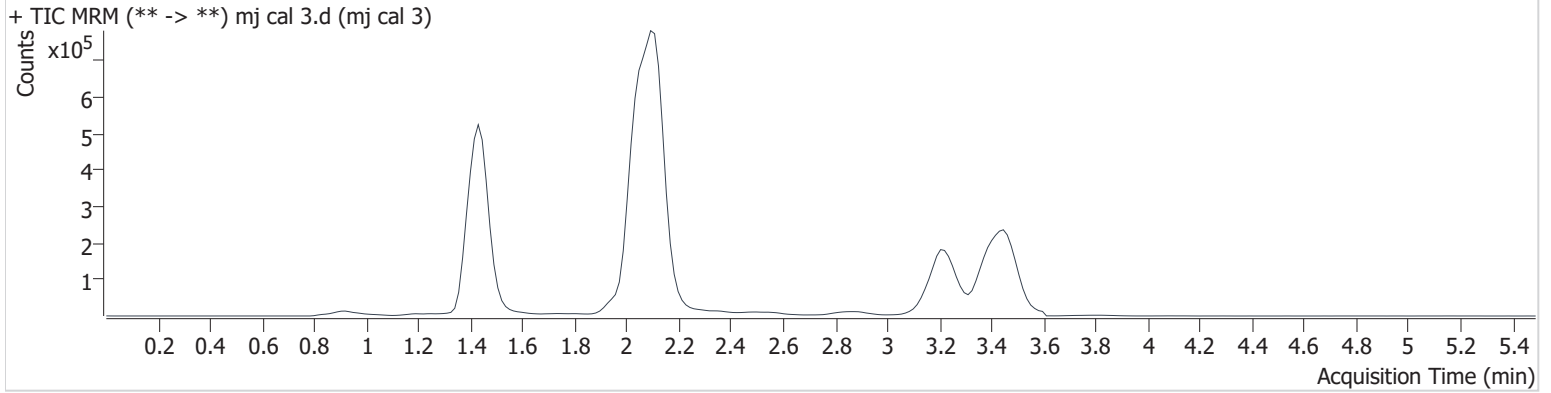
AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Calibration Last Update 6/30/2021 9:35:31 AM

Instrument	69679	Data File	mj cal 3.d
Type	Cal	Sample	mj cal 3
Acq. Method	AM 27 THC quant.m	Operator	Anne Nord
Sample Position	P3-C1	Comment	
Injection Volume	10		
Acq. Date-Time	6/29/2021 7:04:30 PM		

Sample Info.

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.439	26217	∞	811.3	∞	1766150	4.739 ng/ml
THC-COOH	1.461	140438	637.5	34.7	161.4	522297	19.226 ng/ml
THC	3.257	52439	∞	26.0	∞	470035	4.441 ng/ml

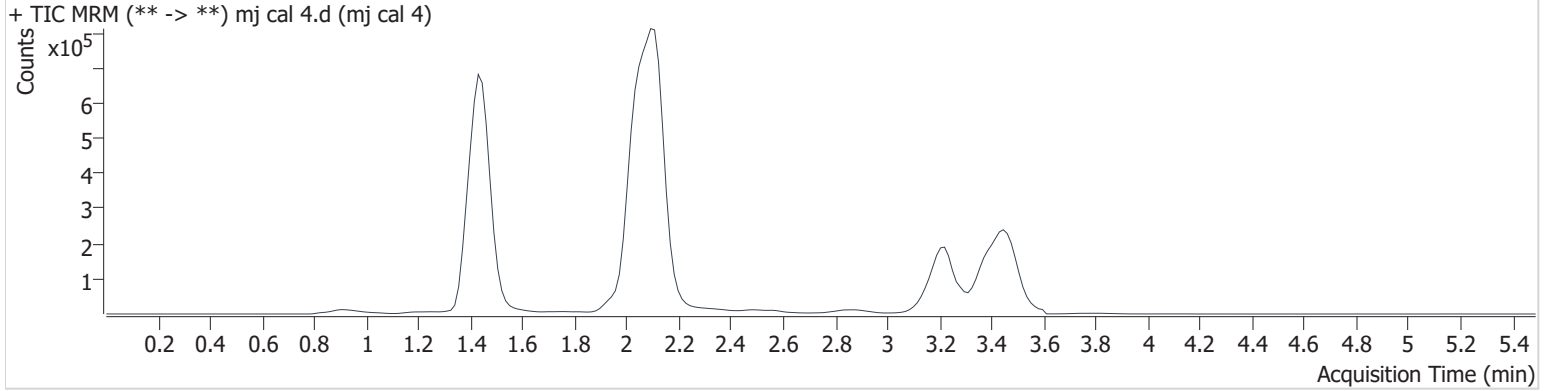
AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Calibration Last Update 6/30/2021 9:35:31 AM

Instrument	69679	Data File	mj cal 4.d
Type	Cal	Sample	mj cal 4
Acq. Method	AM 27 THC quant.m	Operator	Anne Nord
Sample Position	P3-D1	Comment	
Injection Volume	10		
Acq. Date-Time	6/29/2021 7:11:15 PM		

Sample Info.

Sample Chromatogram



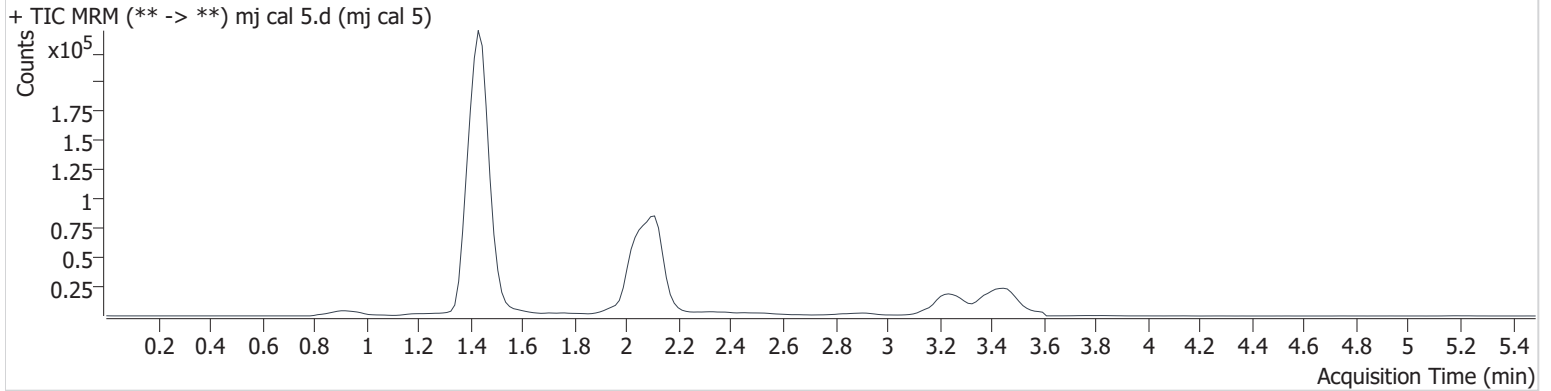
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.439	52396	∞	989.4	∞	1797238	9.176 ng/ml
THC-COOH	1.461	369221	1585.2	35.7	20583	523642	48.834 ng/ml
THC	3.242	100627	∞	26.1	9.3	445702	8.646 ng/ml

AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Calibration Last Update 6/30/2021 9:35:31 AM

Instrument	69679	Data File	mj cal 5.d
Type	Cal	Sample	mj cal 5
Acq. Method	AM 27 THC quant.m	Operator	Anne Nord
Sample Position	P3-E1	Comment	
Injection Volume	10		
Acq. Date-Time	6/29/2021 7:17:57 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.439	43352	∞	918.2	∞	567510	23.823 ng/ml
THC-COOH	1.461	98648	161279.7	35.3	914.4	94154	72.089 ng/ml
THC	3.257	40344	∞	26.4	∞	59962	25.109 ng/ml

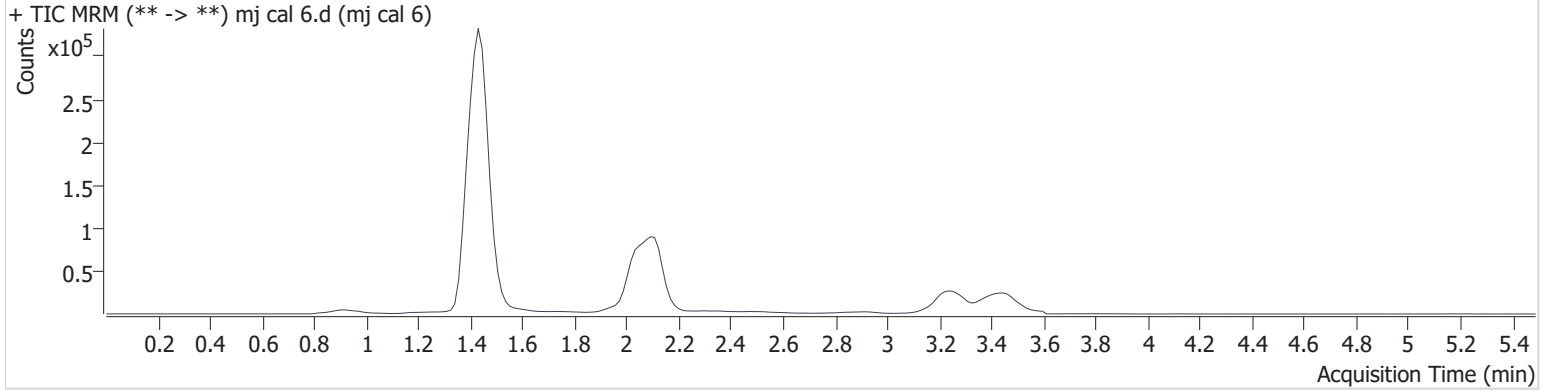
AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Calibration Last Update 6/30/2021 9:35:31 AM

Instrument	69679	Data File	mj cal 6.d
Type	Cal	Sample	mj cal 6
Acq. Method	AM 27 THC quant.m	Operator	Anne Nord
Sample Position	P3-F1	Comment	
Injection Volume	10		
Acq. Date-Time	6/29/2021 7:24:39 PM		

Sample Info.

Sample Chromatogram



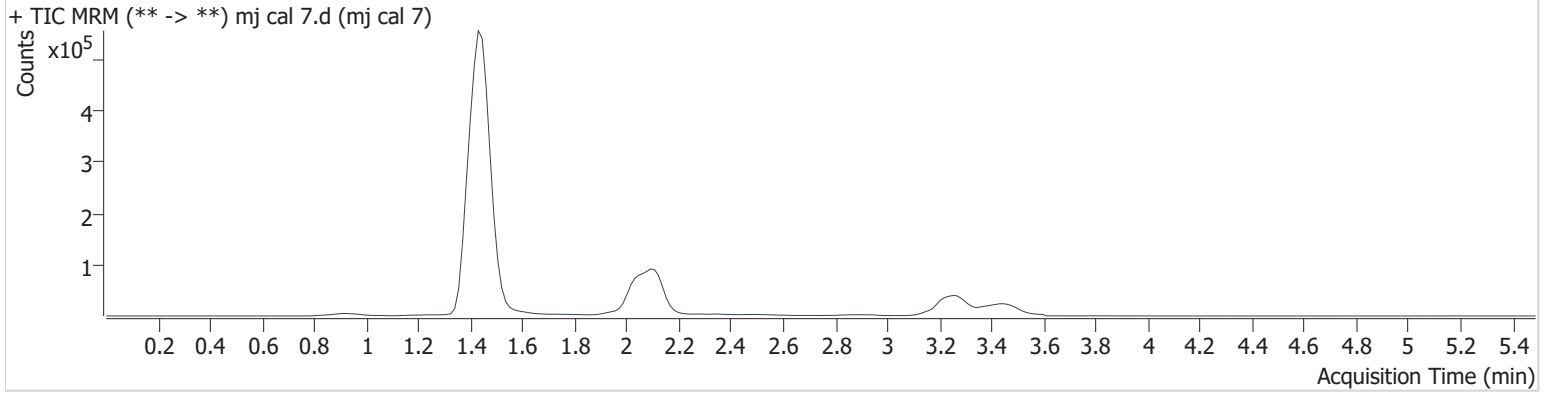
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.439	87542	∞	873.1	∞	544468	49.991 ng/ml
THC-COOH	1.461	130343	2558.0	35.6	10379	89695	99.609 ng/ml
THC	3.257	84067	∞	25.6	∞	60271	51.696 ng/ml

AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2021\am 27-28\062921\QuantResults\cann.batch.bin
Calibration Last Update 6/30/2021 9:35:31 AM

Instrument	69679	Data File	mj cal 7.d
Type	Cal	Sample	mj cal 7
Acq. Method	AM 27 THC quant.m	Operator	Anne Nord
Sample Position	P3-G1	Comment	
Injection Volume	10		
Acq. Date-Time	6/29/2021 7:31:21 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.439	171704	∞	886.8	∞	521522	102.222 ng/ml
THC-COOH	1.461	322769	1178.8	35.7	18643	86267	254.928 ng/ml
THC	3.257	167494	∞	24.6	∞	57468	107.661 ng/ml