REVIEWED
By Sarah Collins at 12:32 pm, Sep 18, 2023

Worklist: 6497

LAB_CASE	ITEM	ITEM_TYPE	DESCRIPTION	
C2023-1953	2	BCK	AM 27 Blood THC Quant by LC-QQQ	
C2023-1959	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
C2023-1974	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ	
C2023-1979	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
C2023-2003	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
C2023-2077	1	UCK	AM 27 Urine Cannabinoids Confirmation by LC-QQQ	
C2023-2088	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 9/14/23 Analyst: Anne Nord
Plate lot#: 230627 Plate re-test: 12/27/2023

Mobile phase A: 0.1% Formic Acid in LCMS Water **Mobile phase B:** 0.1% Formic acid in Acetonitrile
MTBE LCMS Methanol Hexane
Blank Blood Lot: 23C57106 **Urine Blank:** 8423 **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 (calibrated pipette) blood or 1000µL hydrolyzed urine 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. SN > 10
☒ 4. Case sample response for THC 1ng/ml LOD 3ng/ml LOQ, OH-THC 3ng/mL LOD and LOQ, Carboxy-THC: 5 ng/mL (qualitative only). 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. Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS:

	1	2	3	4	5	6
a	cal 1	Internal control urine	2077-1			
b	cal 2	negative blood	2088-1			
c	cal 3	1953-2				
d	cal 4	1959-1				
e	cal 5	1979-1				
f	cal 6	2003-1				
g	cal 7	negative urine				
h	Internal control (blood)	1974-1				

Plate position 3

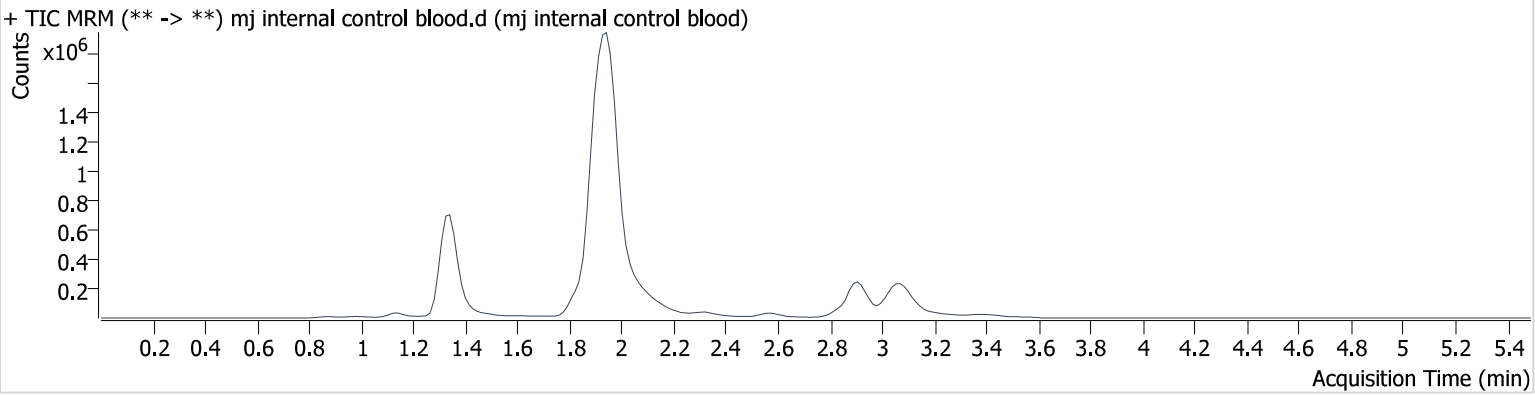
c2023-____-_

AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Calibration Last Update 9/15/2023 8:26:00 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**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods
Injection Volume	10		
Acq. Date-Time	9/14/2023 5:05:48 PM		
Sample Info.			

Sample Chromatogram



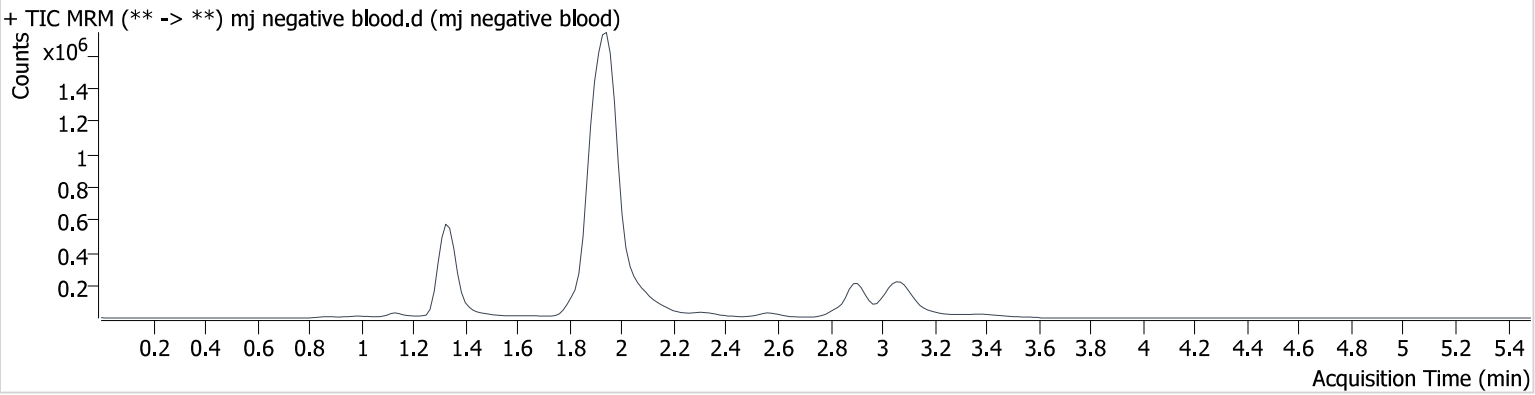
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.334	25835	∞	996.16	∞	2076723	4.197 ng/ml
THC-COOH	1.358	41087	257.9	286.41	∞	555065	14.461 ng/ml
THC	2.926	120835	1739.4	24.93	199.1	995094	4.147 ng/ml

AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Calibration Last Update 9/15/2023 8:26:00 AM

Instrument	69679	**Data File**	mj negative blood.d
Type	Sample	**Sample**	mj negative blood
Acq. Method	AM 27 THC quant.m	**Operator**	Anne Nord
Sample Position	P3-B2	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods
Injection Volume	10		
Acq. Date-Time	9/14/2023 5:12:25 PM		
Sample Info.			

Sample Chromatogram

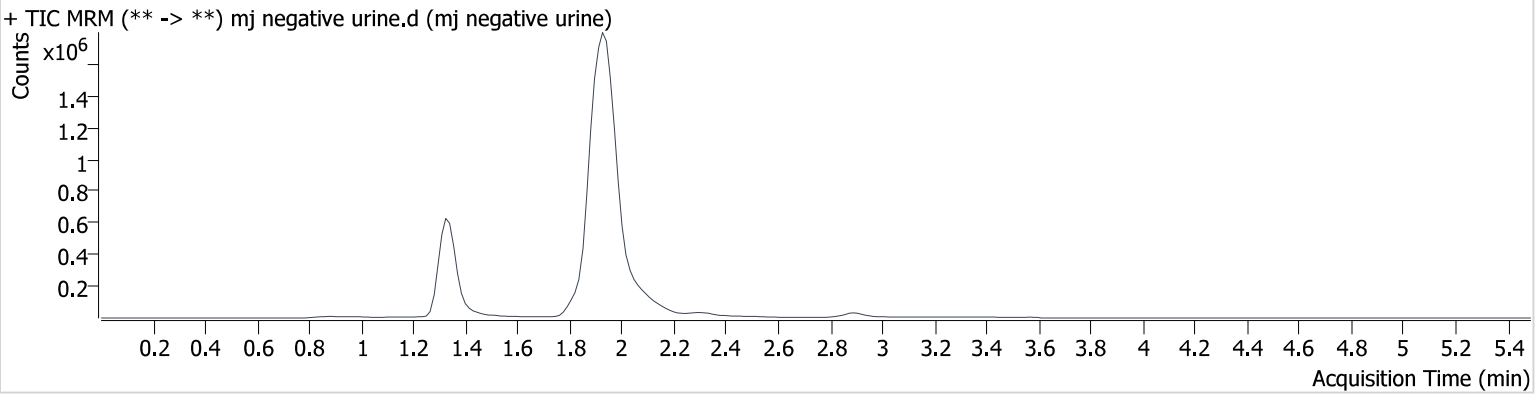


AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Calibration Last Update 9/15/2023 8:26:00 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-G2	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods
Injection Volume	10		
Acq. Date-Time	9/14/2023 6:11:52 PM		
Sample Info.			

Sample Chromatogram

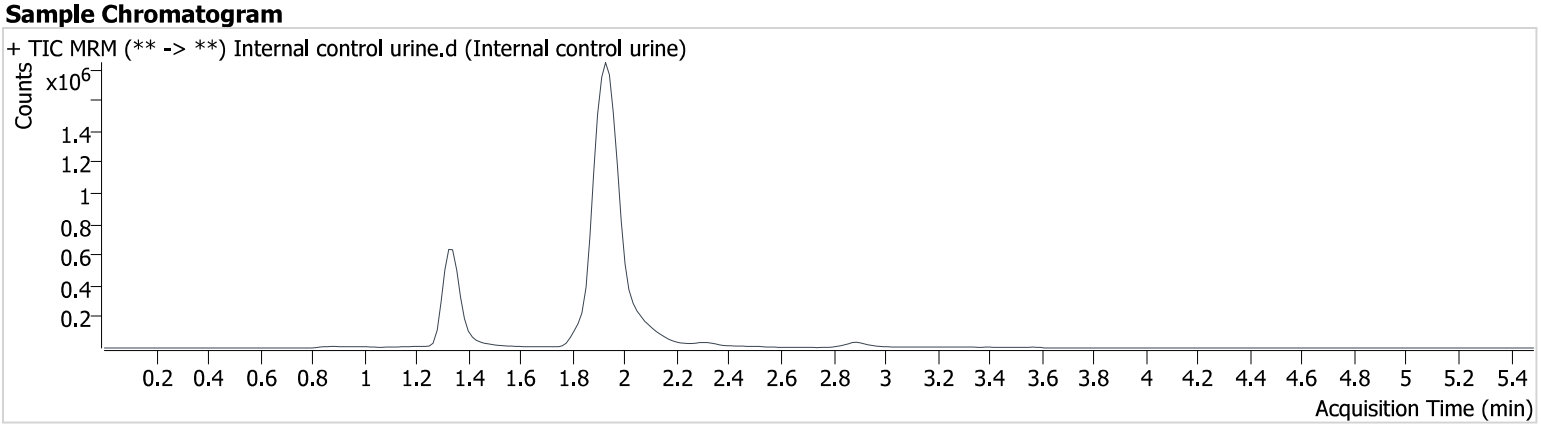


AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Calibration Last Update 9/15/2023 8:26:00 AM

Instrument	69679	**Data File**	Internal control urine.d
Type	Sample	**Sample**	Internal control urine
Acq. Method	AM 27 THC quant.m	**Operator**	Anne Nord
Sample Position	P3-A2	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods
Injection Volume	10		
Acq. Date-Time	9/14/2023 6:58:07 PM		
Sample Info.			

Sample Chromatogram



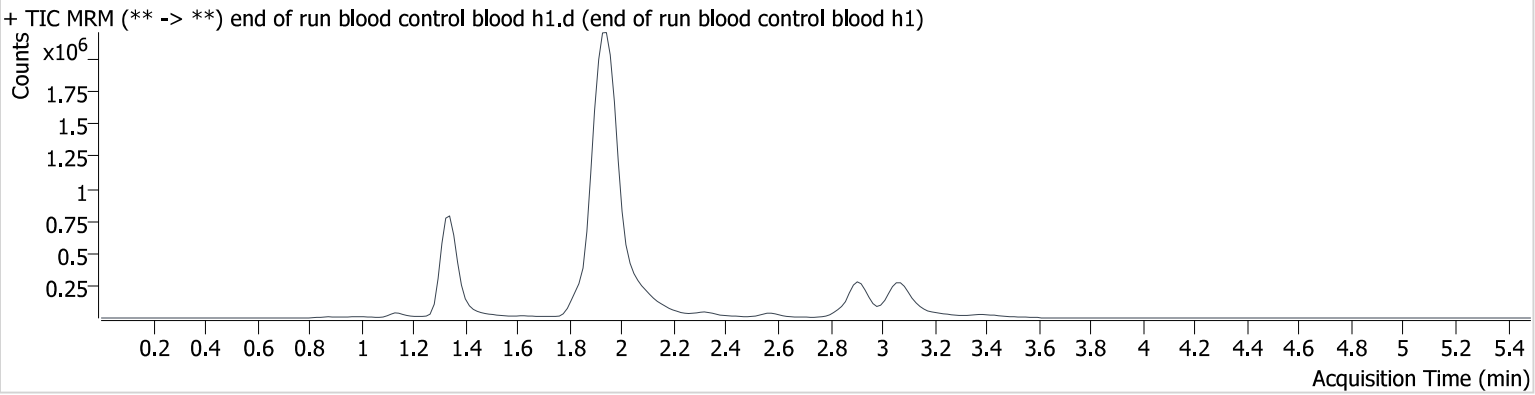
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.334	26180	∞	819.64	∞	1983234	4.440 ng/ml
THC-COOH	1.358	33996	966.7	273.14	957.7	465956	14.275 ng/ml
THC	2.911	22803	485.0	23.39	47.4	194173	4.022 ng/ml

AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Calibration Last Update 9/15/2023 8:26:00 AM

Instrument	69679	**Data File**	end of run blood control blood h1.d
Type	Sample	**Sample**	end of run blood control blood h1
Acq. Method	AM 27 THC quant.m	**Operator**	Anne Nord
Sample Position	P3-H1	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods
Injection Volume	10		
Acq. Date-Time	9/14/2023 7:04:43 PM		
Sample Info.			

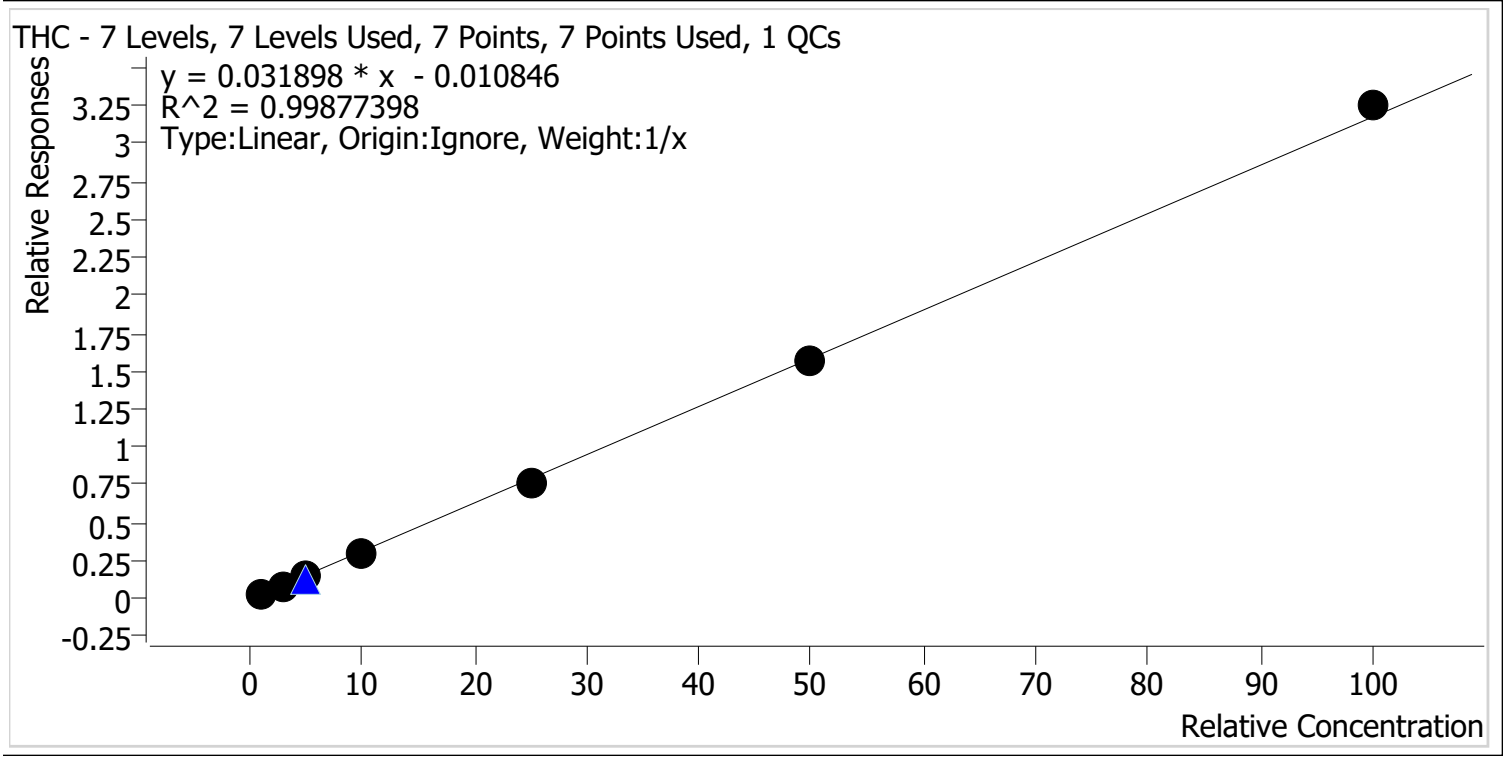
Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.334	30781	∞	910.44	∞	2247192	4.598 ng/ml
THC-COOH	1.358	45170	488.2	283.54	598.1	603086	14.614 ng/ml
THC	2.926	137190	∞	23.99	600.2	1153408	4.069 ng/ml

Compound Calibration Report

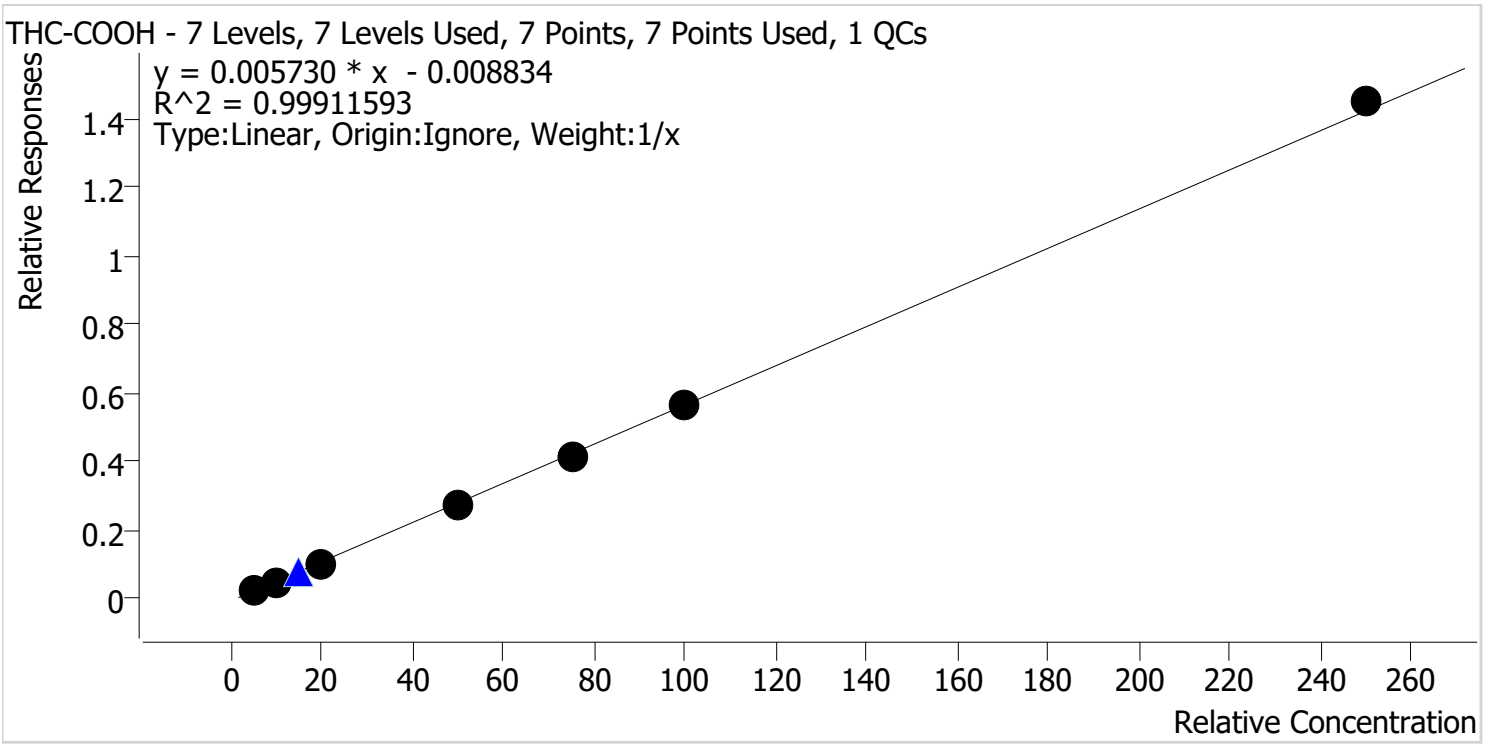
Batch results	D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Last Cal. Update	9/15/2023 8:26 AM
Analyst Name	ISP\datastor
Analyte	THC
Internal Standard	THC-d3



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
mj cal 1	1	✔	1.0	1.2	118.3
mj cal 2	2	✔	3.0	2.9	97.6
mj cal 3	3	✔	5.0	4.7	94.2
mj cal 4	4	✔	10.0	9.2	91.7
mj cal 5	5	✔	25.0	24.3	97.1
mj cal 6	6	✔	50.0	49.4	98.8
mj cal 7	7	✔	100.0	102.3	102.3

Compound Calibration Report

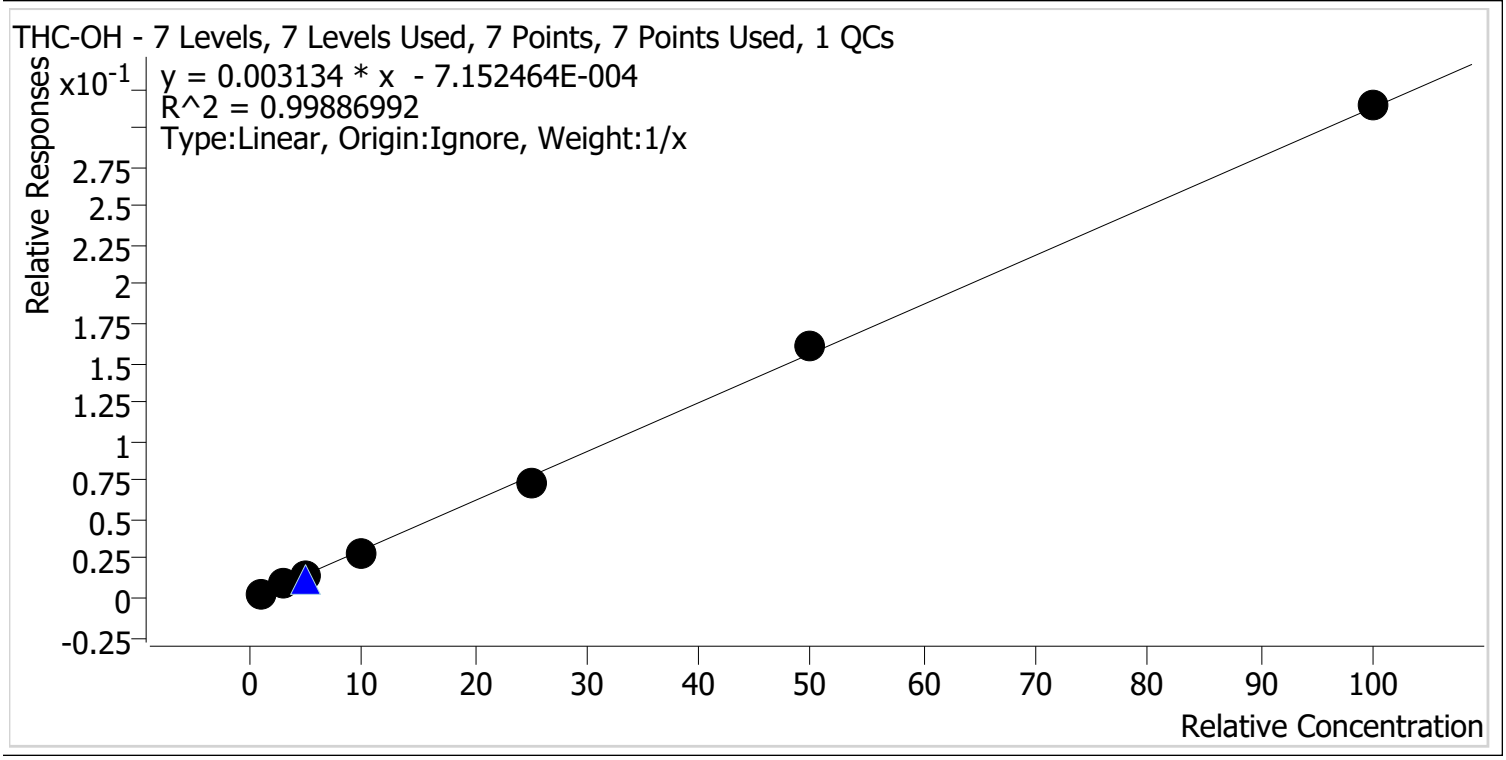
Batch results	D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Last Cal. Update	9/15/2023 8:26 AM
Analyst Name	ISP\datastor
Analyte	THC-COOH
Internal Standard	THC-COOH-d9



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
mj cal 1	1	✔	5.0	5.6	112.2
mj cal 2	2	✔	10.0	9.8	97.8
mj cal 3	3	✔	20.0	18.9	94.5
mj cal 4	4	✔	50.0	48.4	96.7
mj cal 5	5	✔	75.0	73.0	97.3
mj cal 6	6	✔	100.0	99.6	99.6
mj cal 7	7	✔	250.0	254.8	101.9

Compound Calibration Report

Batch results	D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Last Cal. Update	9/15/2023 8:26 AM
Analyst Name	ISP\datastor
Analyte	THC-OH
Internal Standard	THC-OH-d3



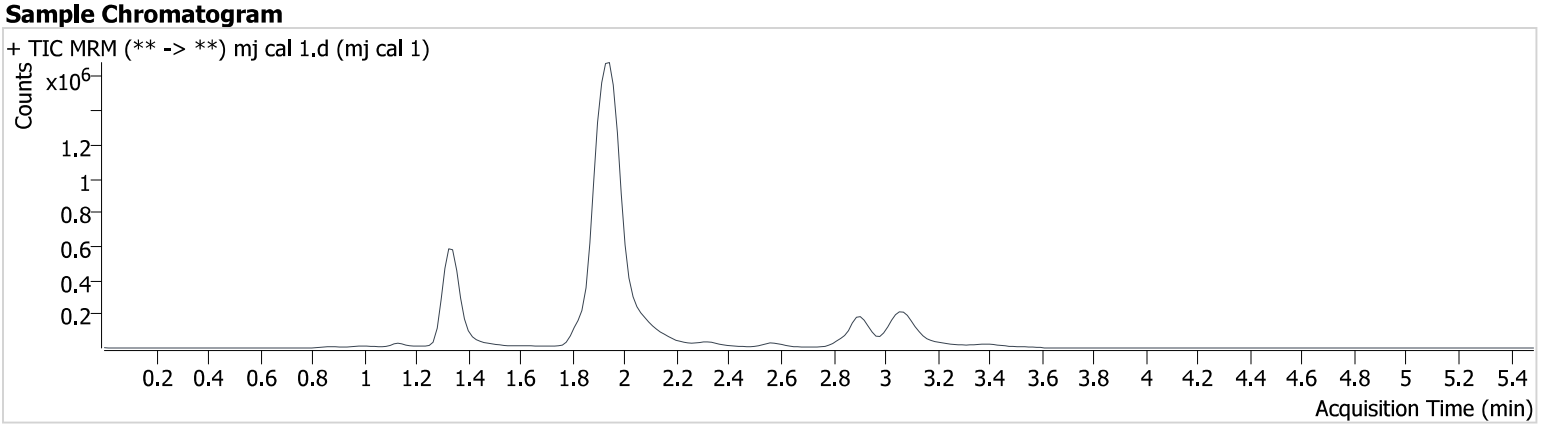
Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
mj cal 1	1	✔	1.0	1.1	110.0
mj cal 2	2	✔	3.0	3.0	99.5
mj cal 3	3	✔	5.0	4.9	97.1
mj cal 4	4	✔	10.0	9.6	96.1
mj cal 5	5	✔	25.0	23.4	93.6
mj cal 6	6	✔	50.0	51.6	103.3
mj cal 7	7	✔	100.0	100.4	100.4

AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Calibration Last Update 9/15/2023 8:26:00 AM

Instrument	69679	**Data File**	mj cal 1.d
Type	Cal	**Sample**	mj cal 1
Acq. Method	AM 27 THC quant.m	**Operator**	Anne Nord
Sample Position	P3-A1	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods
Injection Volume	10		
Acq. Date-Time	9/14/2023 4:19:27 PM		
Sample Info.			

Sample Chromatogram



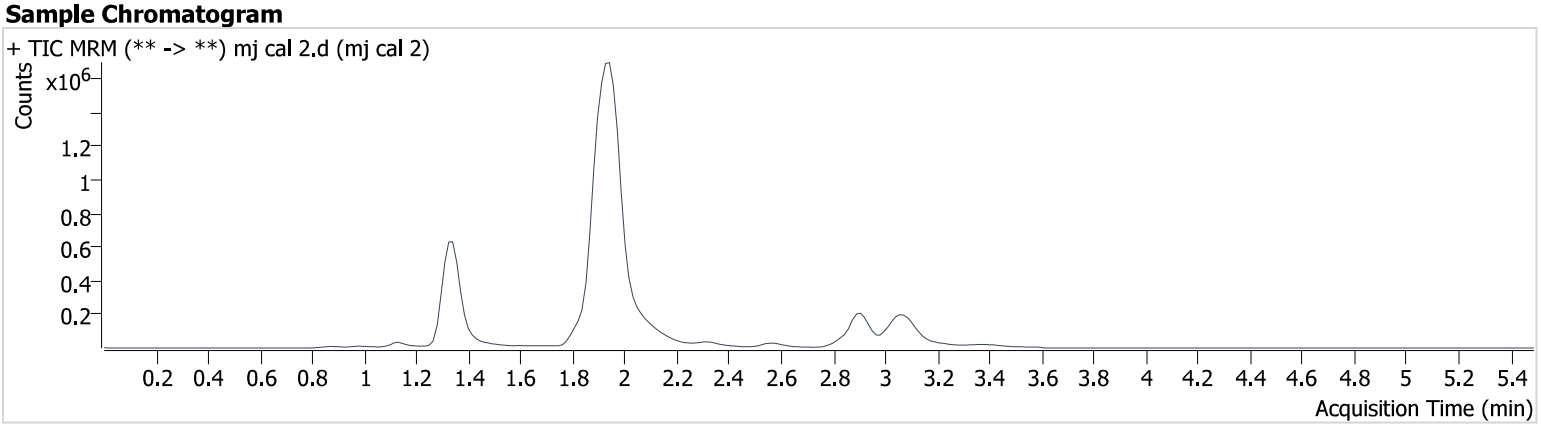
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-OH	1.334	5502	∞	1060.64	∞	2013799	1.100 ng/ml	Low
THC-COOH	1.358	10995	162.8	307.13	469.2	471875	5.608 ng/ml	
THC	2.926	20933	575.3	23.85	135.2	778372	1.183 ng/ml	

AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Calibration Last Update 9/15/2023 8:26:00 AM

Instrument	69679	**Data File**	mj cal 2.d
Type	Cal	**Sample**	mj cal 2
Acq. Method	AM 27 THC quant.m	**Operator**	Anne Nord
Sample Position	P3-B1	**Comment**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods
Injection Volume	10		
Acq. Date-Time	9/14/2023 4:26:14 PM		
Sample Info.			

Sample Chromatogram



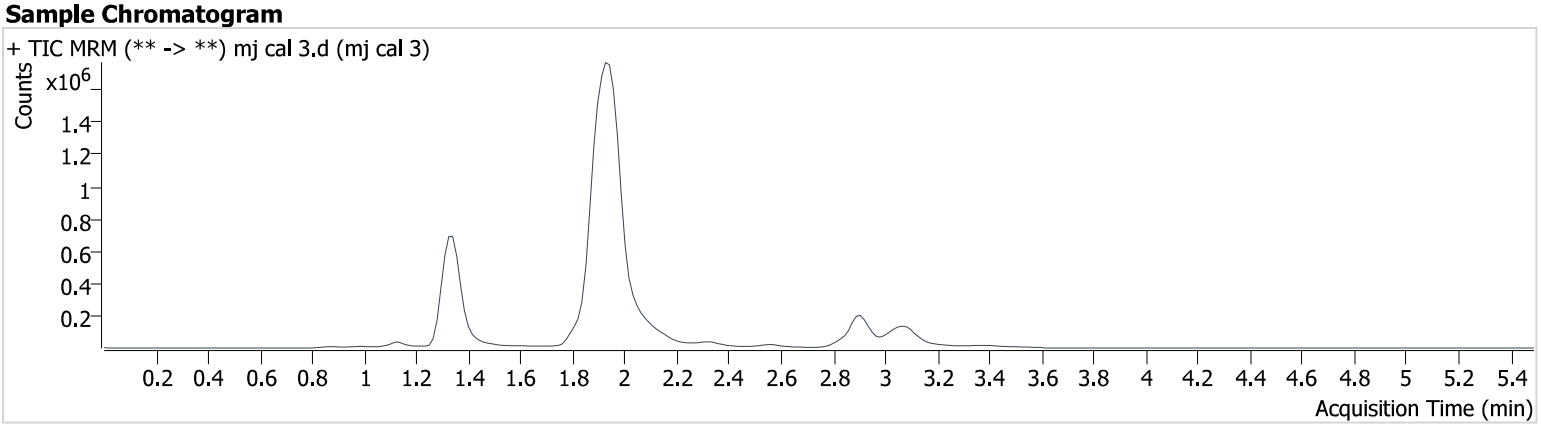
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.	
THC-OH	1.334	17670	∞	866.69	∞	2044747	2.985 ng/ml	Low
THC-COOH	1.358	25220	270.8	314.86	∞	534203	9.782 ng/ml	
THC	2.911	70064	520.5	25.58	212.9	849201	2.927 ng/ml	

AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Calibration Last Update 9/15/2023 8:26:00 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**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods
Injection Volume	10		
Acq. Date-Time	9/14/2023 4:32:50 PM		
Sample Info.			

Sample Chromatogram



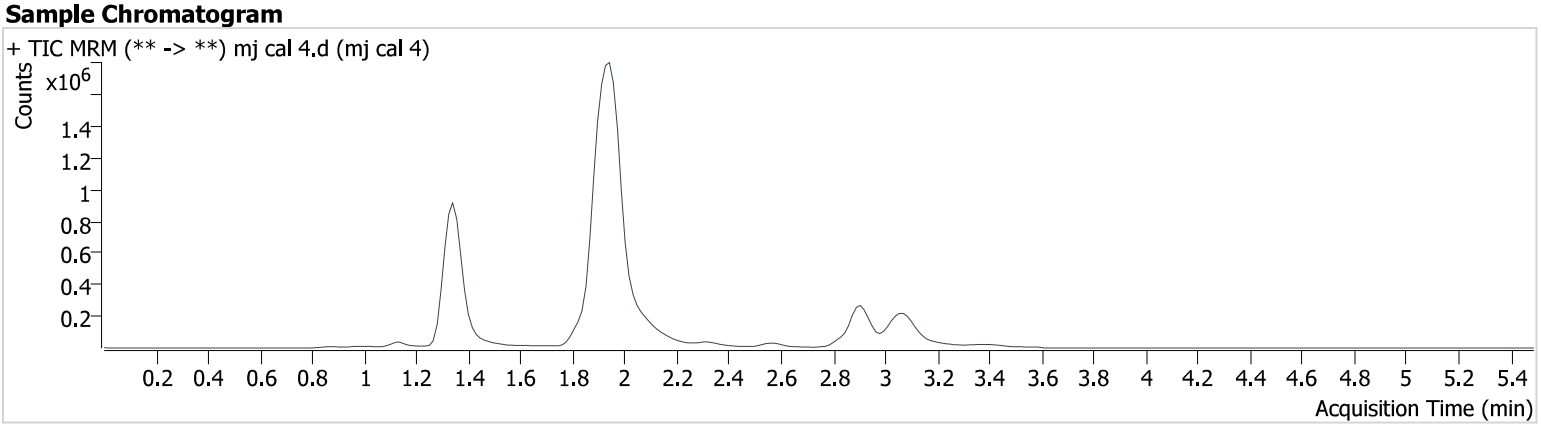
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.334	29664	1042.3	831.17	∞	2044942	4.856 ng/ml
THC-COOH	1.358	57397	∞	288.75	∞	577061	18.901 ng/ml
THC	2.911	116953	1854.9	23.90	∞	838991	4.710 ng/ml

AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Calibration Last Update 9/15/2023 8:26:00 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**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods
Injection Volume	10		
Acq. Date-Time	9/14/2023 4:39:26 PM		
Sample Info.			

Sample Chromatogram



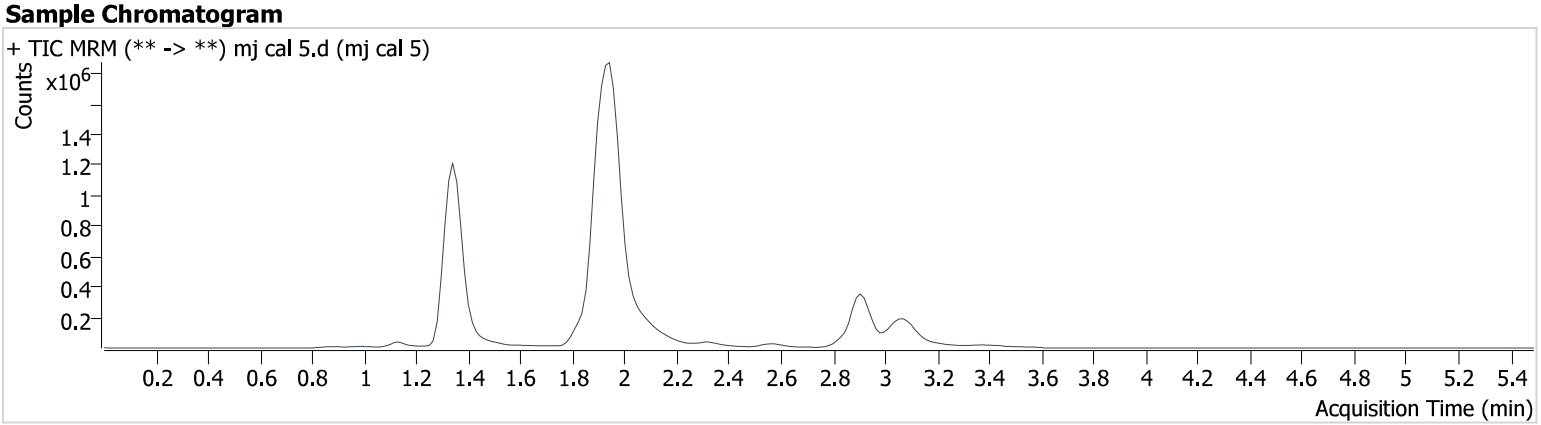
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.334	61098	∞	878.42	∞	2078066	9.608 ng/ml
THC-COOH	1.358	146093	2984.7	275.38	∞	544612	48.360 ng/ml
THC	2.911	266146	3125.3	25.89	544.8	945319	9.166 ng/ml

AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Calibration Last Update 9/15/2023 8:26:00 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**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods
Injection Volume	10		
Acq. Date-Time	9/14/2023 4:46:02 PM		
Sample Info.			

Sample Chromatogram



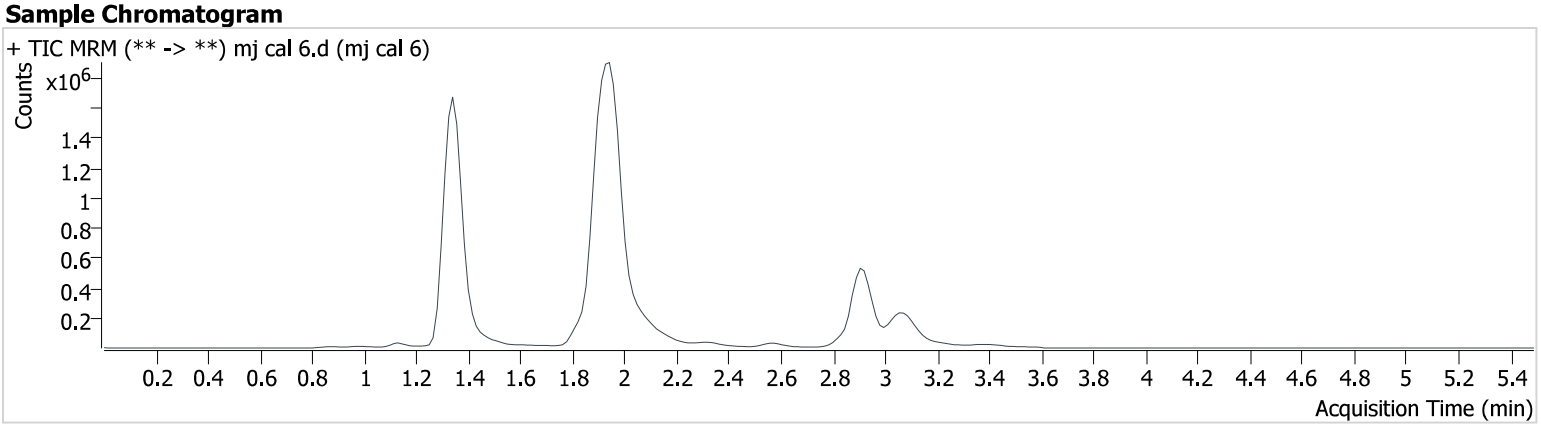
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.334	144616	4579.0	923.56	∞	1990713	23.404 ng/ml
THC-COOH	1.358	226130	∞	289.89	∞	552597	72.962 ng/ml
THC	2.911	692261	12012.2	25.32	638.3	906442	24.282 ng/ml

AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Calibration Last Update 9/15/2023 8:26:00 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**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods
Injection Volume	10		
Acq. Date-Time	9/14/2023 4:52:38 PM		
Sample Info.			

Sample Chromatogram



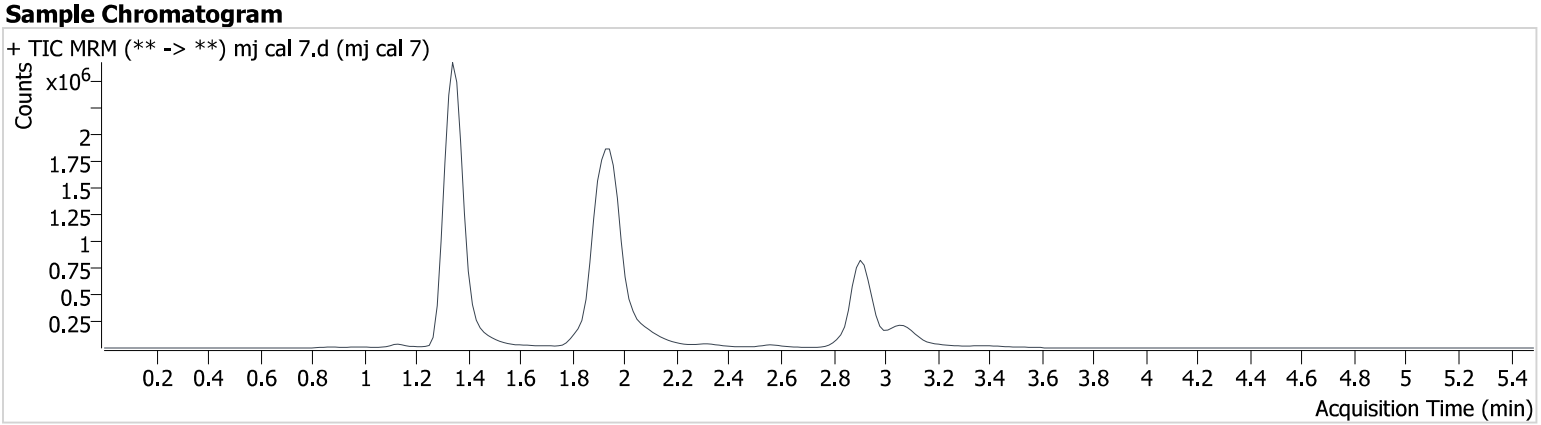
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.334	339933	∞	856.11	∞	2109338	51.643 ng/ml
THC-COOH	1.358	297636	6061.9	275.98	2968.9	529817	99.588 ng/ml
THC	2.926	1494181	∞	25.79	2401.7	954520	49.414 ng/ml

AM #27 Cannabinoids

Batch results D:\MassHunter\Data\2023\am 27-28\091423\QuantResults\cann.batch.bin
Calibration Last Update 9/15/2023 8:26:00 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**	Only drugs and concentrations listed on the laboratory report itself are appropriate to be used for interpretation purposes. Any drugs or values included in the notes but not included on the report are used by laboratory personnel to make determinations/reach conclusions within the confines of the methods
Injection Volume	10		
Acq. Date-Time	9/14/2023 4:59:14 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.334	589481	∞	889.60	∞	1877354	100.404 ng/ml
THC-COOH	1.358	689015	∞	271.34	∞	474829	254.799 ng/ml
THC	2.911	2980439	39275.6	25.88	∞	916242	102.318 ng/ml