11/28/2023

Worklist: 6583

LAB CASE	ITEM	ITEM TYPE	DESCRIPTION	
M2023-4304	1	BLOOD	AM 27 Blood THC Quant by LC-QQQ	
M2023-4460	2	BCK	AM 27 Blood THC Quant by LC-QQQ	
M2023-4537	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
M2023-4543	3	BCK	AM 27 Blood THC Quant by LC-QQQ	
M2023-4679	2	BCK	AM 27 Blood THC Quant by LC-QQQ	
M2023-4746	3	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2023-3312	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2023-3323	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2023-3364	2	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2023-3396	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2023-3411	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2023-3411	2	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2023-3452	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2023-3455	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
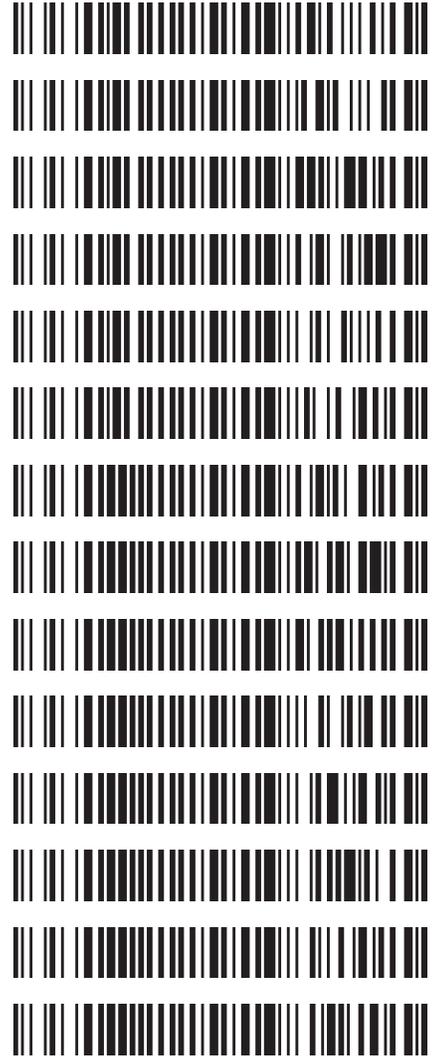
AM# 27: Quantitation of THC and Metabolites in Blood and Urine by LC-MS/MS

Extraction Date: 11/27/2023   Analyst: Celena Shrum
Plate lot#: 230627   Plate Retest Date: 12/27/2023
Mobile phase A: 0.1% Formic Acid in LCMS Water   **Mobile phase B:** 0.1% Formic acid in Acetonitrile
Blank Blood Lot: Lampire 23E52981   **Column**: Phenomenex Phenyl Hexyl (4.6x50mm, 2.6um)
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.   Urine hydrolysis (if applicable): add 1.5mL urine to blank plate, add 250μl 1N KOH. Shake and incubate at 40 degrees for 15 minutes.
☒ 3.   Using a calibrated pipette, add **1000μl blood or 1000μl hydrolyzed urine** into the appropriate wells of the analytical (standards) plate. **Pipette ID: #42**
☒ 4.   Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
☒ 5.   Add **500μL of 0.1% formic acid in water to blood samples or 500μl of saturated phosphate buffer to urine samples** to the appropriate wells of the analytical plate.
☒ 6.   Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
☒ 7.   Transfer **800μL of blood+acid mixture or urine+acid** to corresponding wells of SLE+ plate.
☒ 8.   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: 067104
☒ 9.   Wait 5 minutes.
☒ 10. Add **2.25mL MTBE. (*Add in 3 increments of 750uL*)**
☒ 11. Wait 5 minutes.
☒ 12. Apply positive pressure for approx. 15 seconds. *(10-15 PSI- Selector to the left).*
☒ 13. Add **2.25mL Hexane. (*Add in 3 increments of 750uL*)**
☒ 14. Wait 5 minutes.
☒ 15. Apply positive pressure for approx. 15 seconds. *(10-15 PSI- Selector to the left).*
☒ 16. Remove plate containing eluate. Place on SPE Dry and evaporate to dryness at approx. 35°C.
         SPE Dry ID: 067103
☒ 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. THC concentrations of 1-3ng/mL will be reported qualitatively.
☒ 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 ~~3-50~~ (Cal 1 dropped due to ratio).

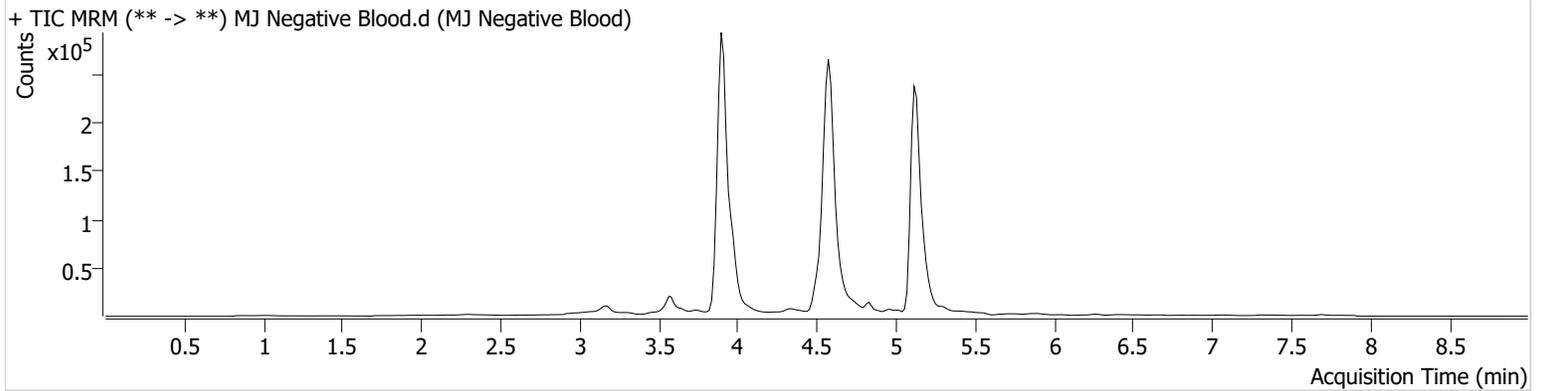|	1	2	3	4	5	6
A	IS + Cal. 1	QC2	P2023-3312-1			
B	IS + Cal. 2	NEG Blood	P2023-3323-1			
C	IS + Cal. 3	M2023-4304-1	P2023-3364-2			
D	IS + Cal. 4	M2023-4460-2	P2023-3396-1			
E	IS + Cal. 5	M2023-4537-1	P2023-3411-1			
F	IS + Cal. 6	M2023-4543-3	P2023-3411-2			
G	IS + Cal. 7	M2023-4679-2	P2023-3452-1			
H	QC1	M2023-4746-3	P2023-3455-1			

AM #27 Cannabinoids Quant. Results

Batch results   D:\MassHunter\Data\2023\AM 27 28\112723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update   11/28/2023 11:42:37 AM

|			
Instrument	Falco (069901)	**Data File**	MJ Negative Blood.d
Type	Sample	**Sample**	MJ Negative Blood
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-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	11/27/2023 4:59:44 PM		
Sample Info.			

Sample Chromatogram

AM #27 Cannabinoids Quant. Results

Batch results   D:\MassHunter\Data\2023\AM 27 28\112723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 11/28/2023 11:42:37 AM

Instrument	Falco (069901)	**Data File**	MJ QC Control Blood.d
Type	QC	**Sample**	MJ QC Control Blood
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-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	11/27/2023 4:33:30 PM		
Sample Info.			

Sample Chromatogram

+ TIC MRM (** -> **) MJ QC Control Blood.d (MJ QC Control Blood)
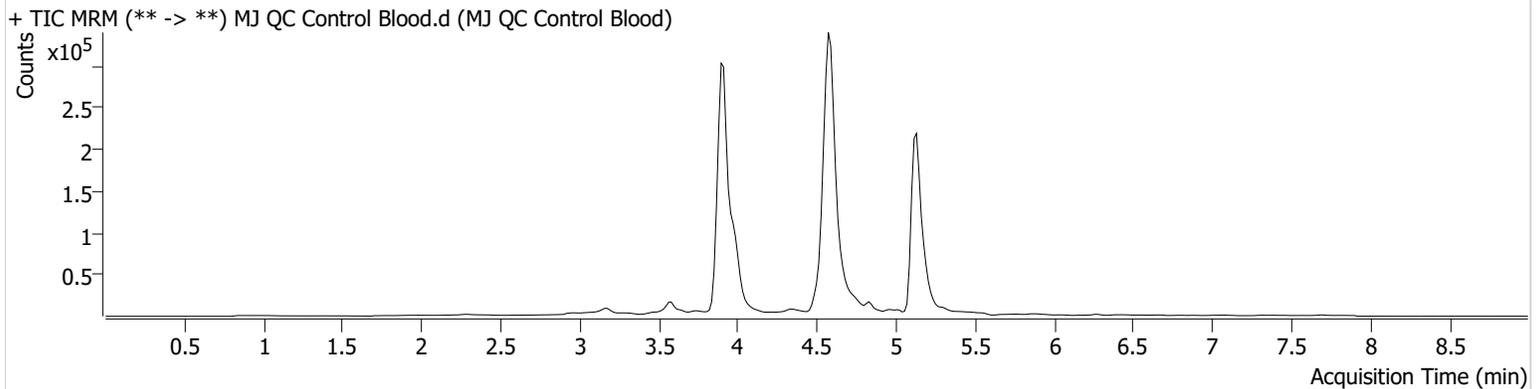
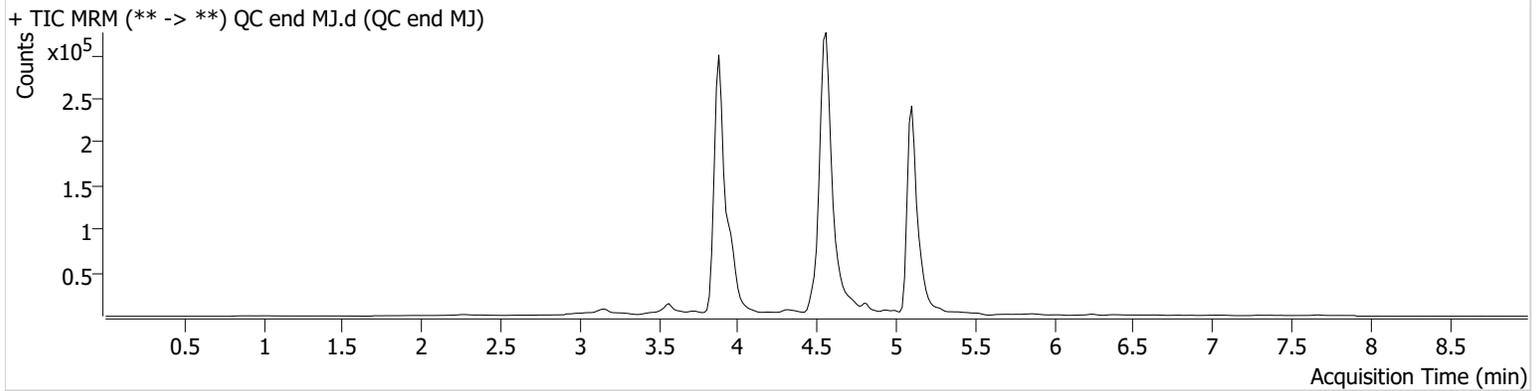| Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.135	30177	∞	32.2	∞	827776	4.5680 ng/ml
THC-COOH	3.985	19572	∞	223.4	314.59	195049	15.4286 ng/ml
THC-OH	3.911	76371	∞	13.0	∞	1227276	4.6553 ng/ml

AM #27 Cannabinoids Quant. Results

Batch results   D:\MassHunter\Data\2023\AM 27 28\112723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update   11/28/2023 11:42:37 AM

Instrument	Falco (069901)	**Data File**	QC end MJ.d
Type	QC	**Sample**	QC end MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-H1	**Comment**	Only drugs and concentrations listed on the laboratory
Injection Volume	10		report itself are appropriate to be used for
Acq. Date-Time	11/27/2023 11:33:10 PM		interpretation purposes. Any drugs or values included
Sample Info.			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.

Sample Chromatogram

+ TIC MRM (** -> **) QC end MJ.d (QC end MJ)

Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.105	30081	∞	33.7	∞	862857	4.3903 ng/ml
THC-COOH	3.969	17090	∞	231.6	264.31	175908	14.9675 ng/ml
THC-OH	3.881	65442	∞	14.1	∞	1141727	4.3006 ng/ml

AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results D:\MassHunter\Data\2023\AM 27 28\112723 AM 27 28 CS\QuantResults\AM 27.batch.bin

Last Cal. Update 11/28/2023 11:42 AM

Analyst Name ISP\Datastor

Analyte THC **Internal Standard** THC-D3
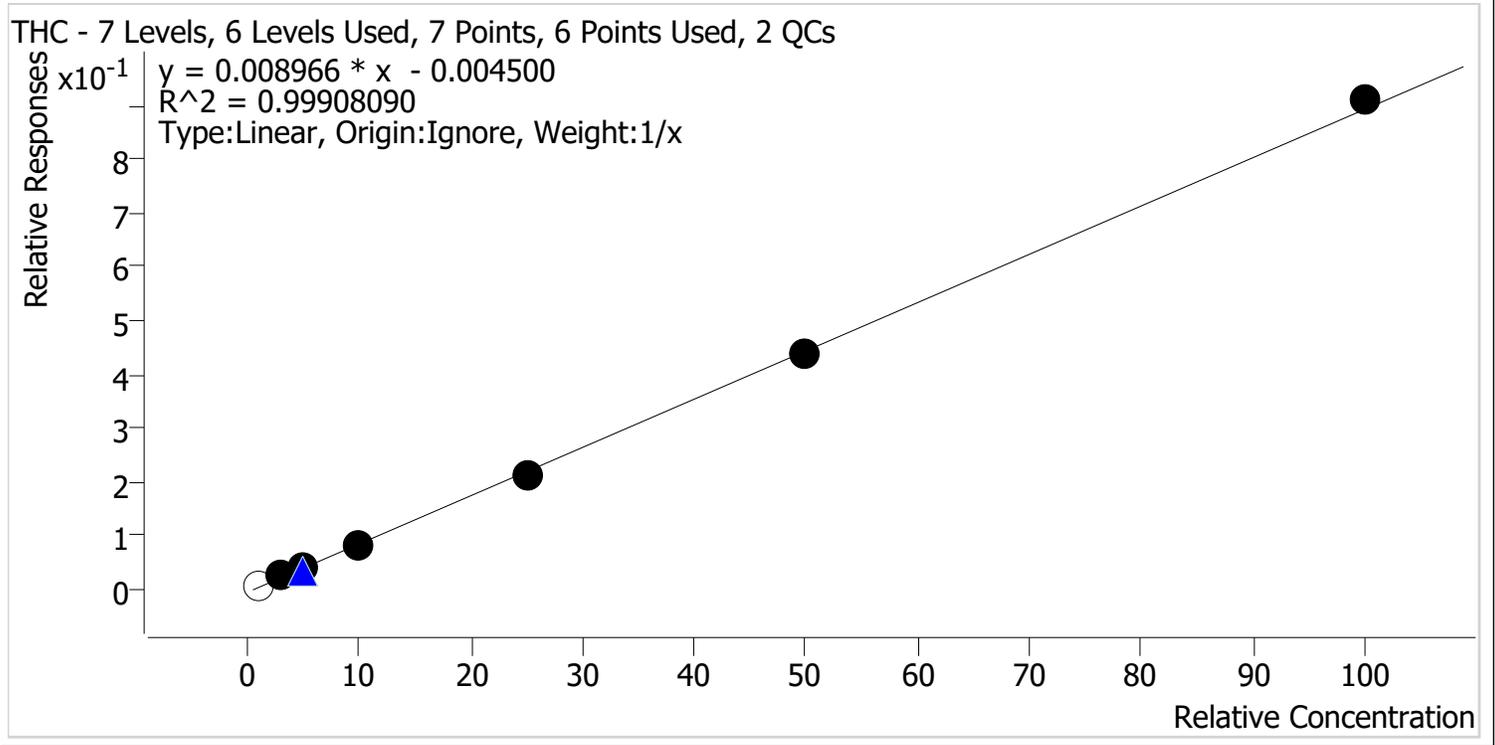
THC - 7 Levels, 6 Levels Used, 7 Points, 6 Points Used, 2 QCs

$y = 0.008966 * x - 0.004500$
$R^2 = 0.99908090$
Type:Linear, Origin:Ignore, Weight:1/x

Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✗	1.0	1.5	145.4
Cal 2 MJ	2	✔	3.0	3.3	108.5
Cal 3 MJ	3	✔	5.0	4.9	98.8
Cal 4 MJ	4	✔	10.0	9.6	96.5
Cal 5 MJ	5	✔	25.0	23.9	95.5
Cal 6 MJ	6	✔	50.0	49.4	98.8
Cal 7 MJ	7	✔	100.0	101.9	101.9

AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results   D:\MassHunter\Data\2023\AM 27 28\112723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Last Cal. Update   11/28/2023 11:42 AM
Analyst Name   ISP\Datastor
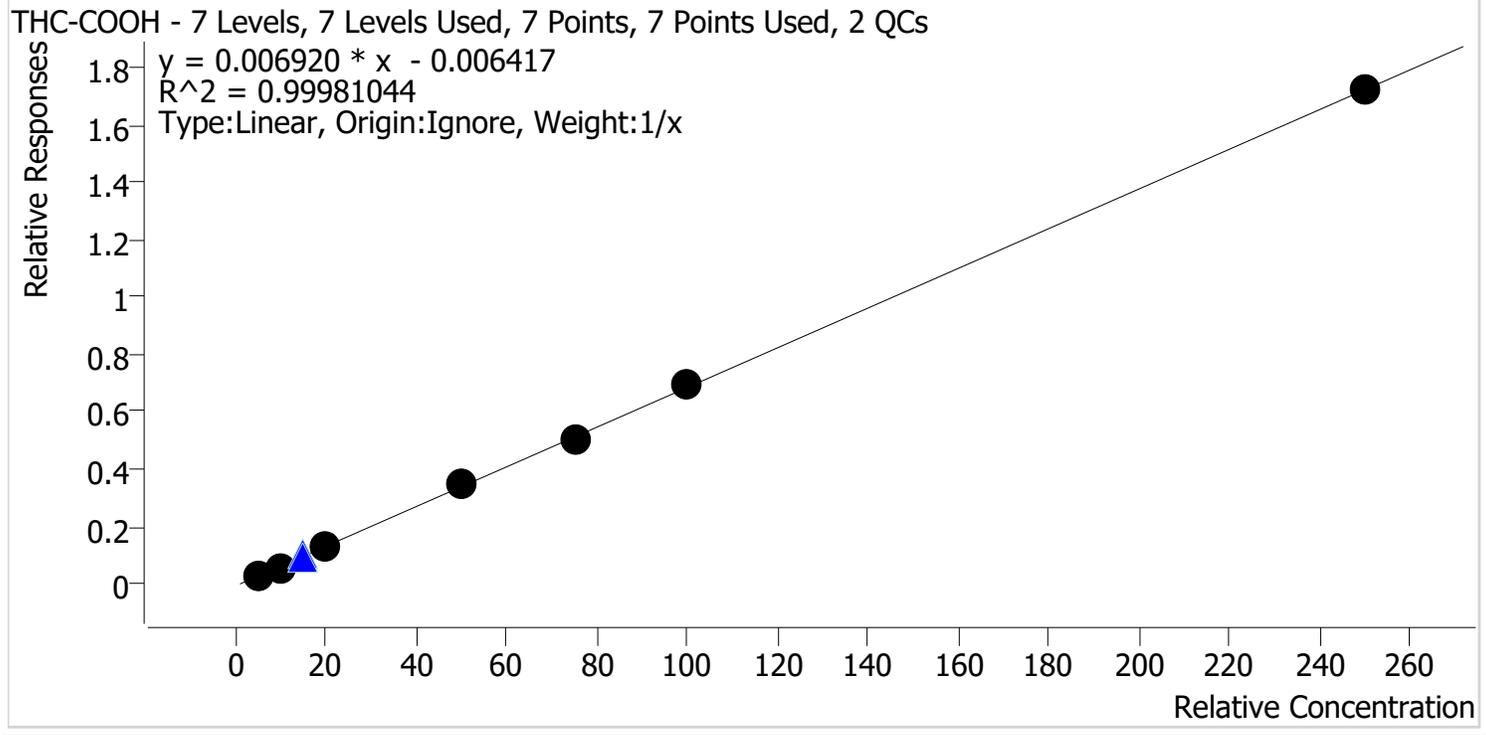**Analyte**   THC-COOH   **Internal Standard**   THC-COOH-D9

THC-COOH - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 2 QCs

$y = 0.006920 * x - 0.006417$
$R^2 = 0.99981044$
Type:Linear, Origin:Ignore, Weight:1/x

Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✔	5.0	5.3	105.8
Cal 2 MJ	2	✔	10.0	9.5	94.7
Cal 3 MJ	3	✔	20.0	19.7	98.4
Cal 4 MJ	4	✔	50.0	50.6	101.3
Cal 5 MJ	5	✔	75.0	74.2	99.0
Cal 6 MJ	6	✔	100.0	100.9	100.9
Cal 7 MJ	7	✔	250.0	249.8	99.9

AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results   D:\MassHunter\Data\2023\AM 27 28\112723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Last Cal. Update   11/28/2023 11:42 AM
Analyst Name   ISP\Datastor
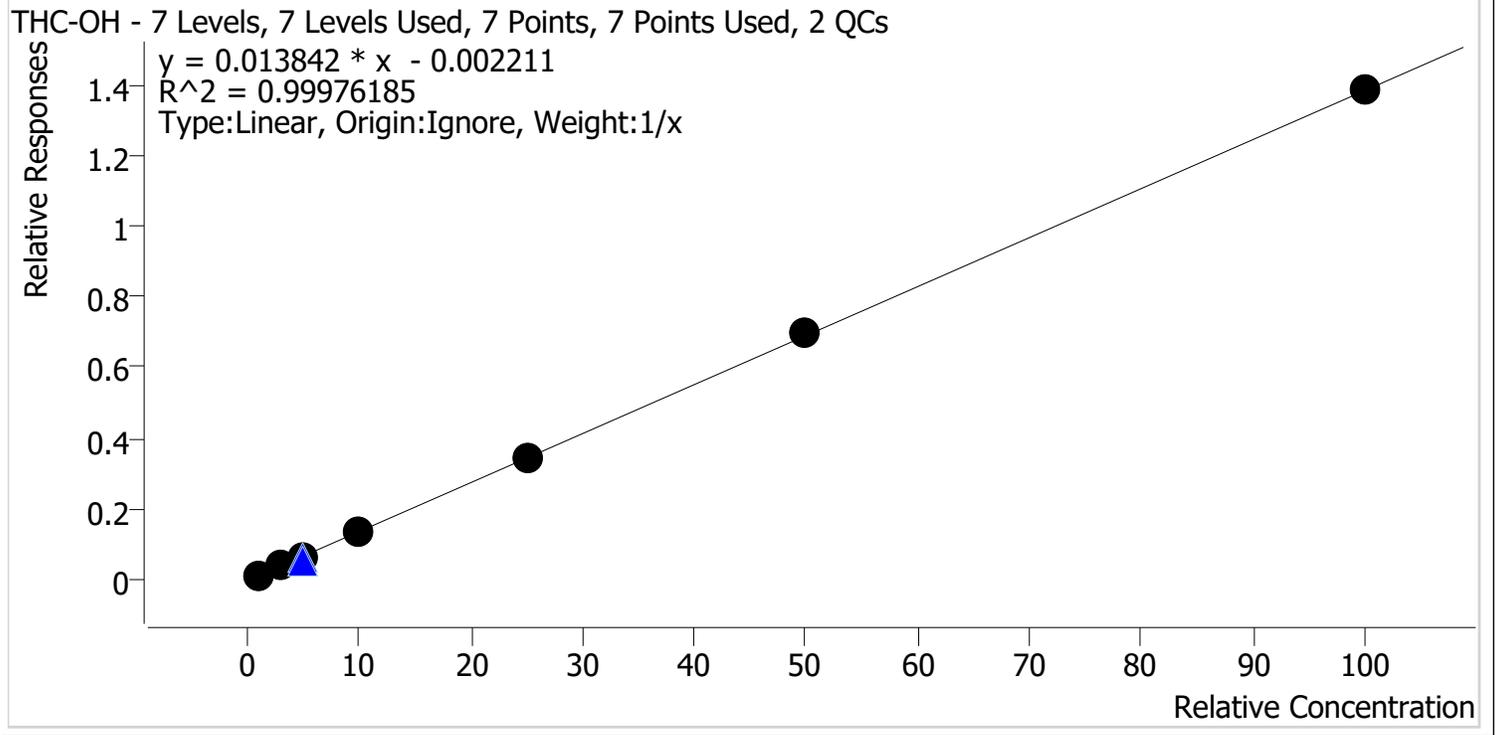**Analyte**   THC-OH   **Internal Standard**   THC-OH-D3

THC-OH - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 2 QCs

$y = 0.013842 * x - 0.002211$
$R^2 = 0.99976185$
Type:Linear, Origin:Ignore, Weight:1/x

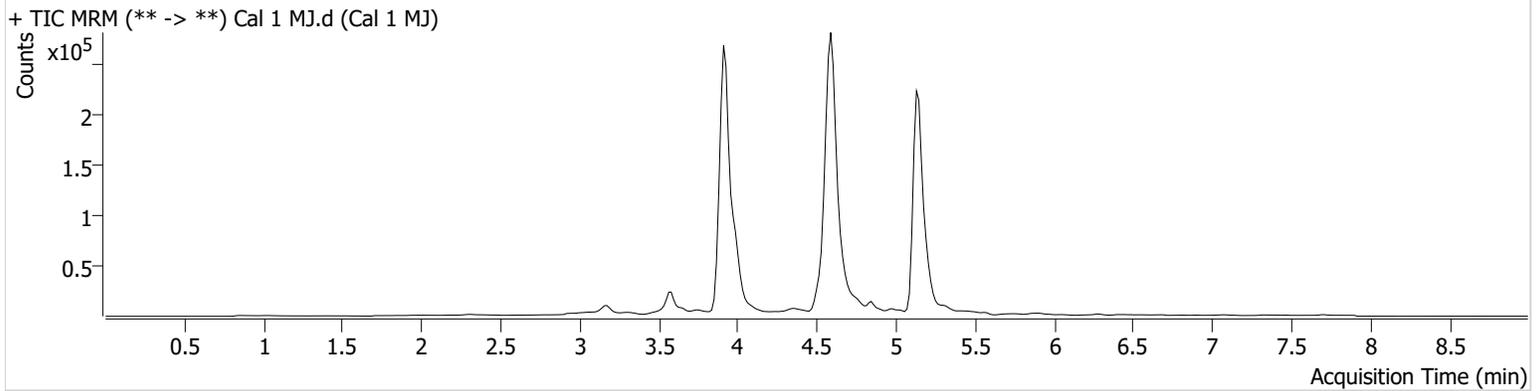| Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✔	1.0	1.1	108.9
Cal 2 MJ	2	✔	3.0	2.9	97.8
Cal 3 MJ	3	✔	5.0	4.8	96.3
Cal 4 MJ	4	✔	10.0	9.6	96.4
Cal 5 MJ	5	✔	25.0	24.8	99.1
Cal 6 MJ	6	✔	50.0	50.6	101.3
Cal 7 MJ	7	✔	100.0	100.1	100.1

AM #27 Cannabinoids Quant. Results

Batch results   D:\MassHunter\Data\2023\AM 27 28\112723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update   11/28/2023 11:42:37 AM

Instrument	Falco (069901)	**Data File**	Cal 1 MJ.d
Type	Cal	**Sample**	Cal 1 MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-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	11/27/2023 2:48:31 PM		
Sample Info.			

Sample Chromatogram

+ TIC MRM (** -> **) Cal 1 MJ.d (Cal 1 MJ)

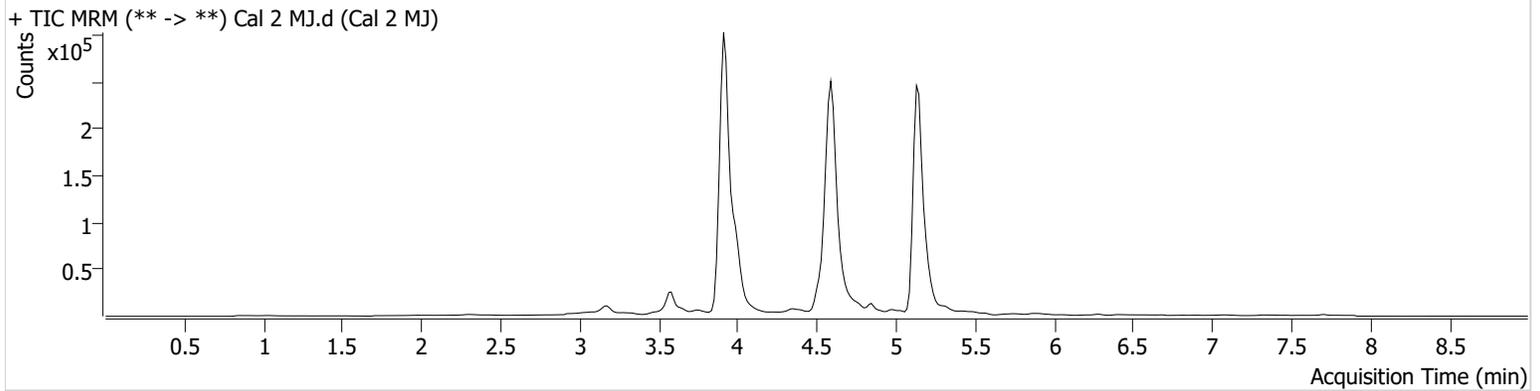| Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.150	7248	∞	45.6 **High**	∞	849367	1.4537 ng/ml
THC-COOH	4.000	5361	∞	261.0	∞	177479	5.2925 ng/ml
THC-OH	3.926	14247	∞	12.3	∞	1107185	1.0894 ng/ml

AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2023\AM 27 28\112723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 11/28/2023 11:42:37 AM

Instrument	Falco (069901)	**Data File**	Cal 2 MJ.d
Type	Cal	**Sample**	Cal 2 MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-B1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/27/2023 3:01:47 PM		
Sample Info.			

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.

Sample Chromatogram

+ TIC MRM (** -> **) Cal 2 MJ.d (Cal 2 MJ)

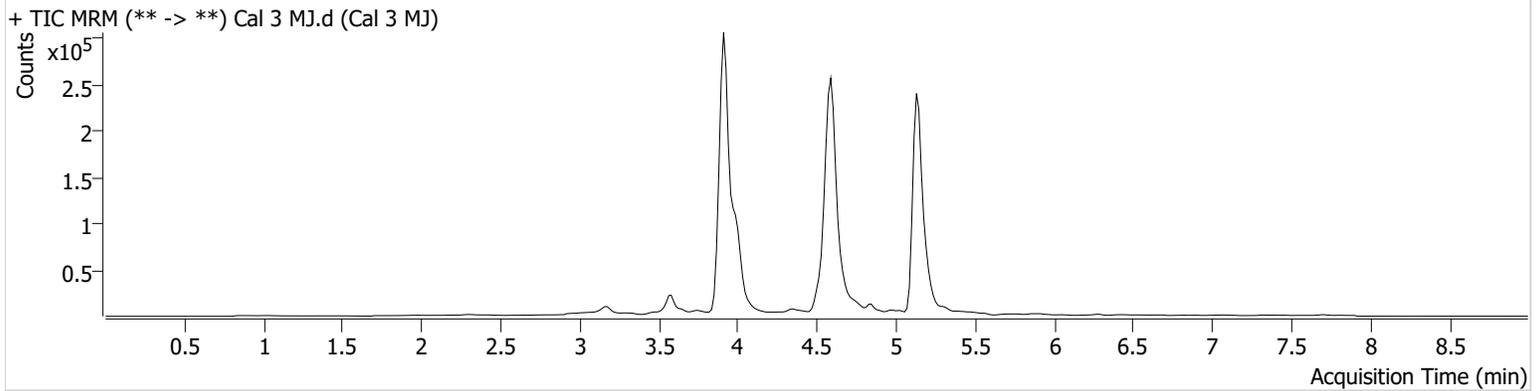| Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.150	22628	∞	34.1	∞	916343	3.2561 ng/ml
THC-COOH	4.000	10987	159.14	244.3	205.02	185814	9.4727 ng/ml
THC-OH	3.926	45905	∞	14.0	∞	1195015	2.9349 ng/ml

AM #27 Cannabinoids Quant. Results

Batch results   D:\MassHunter\Data\2023\AM 27 28\112723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 11/28/2023 11:42:37 AM

Instrument	Falco (069901)	**Data File**	Cal 3 MJ.d
Type	Cal	**Sample**	Cal 3 MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-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	11/27/2023 3:14:53 PM		
Sample Info.			

Sample Chromatogram

+ TIC MRM (** -> **) Cal 3 MJ.d (Cal 3 MJ)

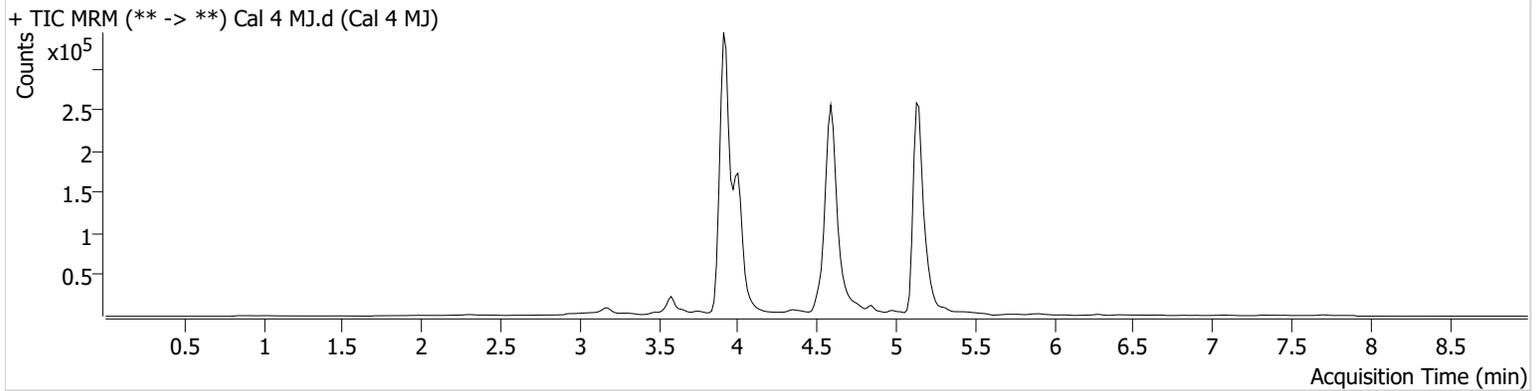| Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.150	34925	∞	31.9	∞	877221	4.9425 ng/ml
THC-COOH	4.000	23553	∞	238.6	∞	181569	19.6741 ng/ml
THC-OH	3.926	75803	∞	14.0	∞	1176737	4.8135 ng/ml

AM #27 Cannabinoids Quant. Results

Batch results   D:\MassHunter\Data\2023\AM 27 28\112723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update   11/28/2023 11:42:37 AM

Instrument	Falco (069901)	**Data File**	Cal 4 MJ.d
Type	Cal	**Sample**	Cal 4 MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-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	11/27/2023 3:28:00 PM		
Sample Info.			

Sample Chromatogram

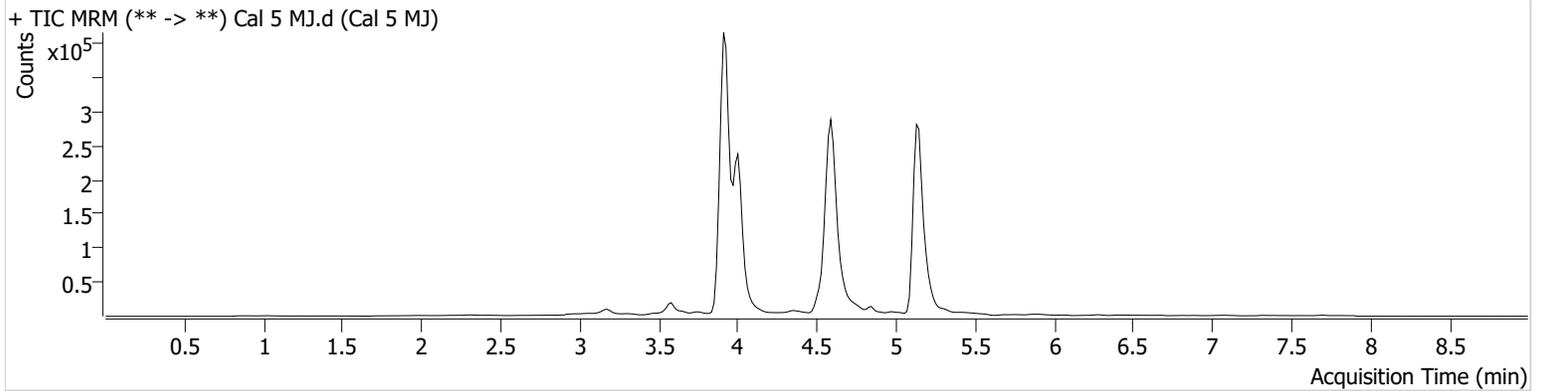| Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.150	75773	∞	27.8	∞	923977	9.6486 ng/ml
THC-COOH	4.000	66208	1155.02	233.4	∞	192500	50.6319 ng/ml
THC-OH	3.926	164858	∞	13.2	∞	1255676	9.6445 ng/ml

AM #27 Cannabinoids Quant. Results

Batch results   D:\MassHunter\Data\2023\AM 27 28\112723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update   11/28/2023 11:42:37 AM

Instrument	Falco (069901)	**Data File**	Cal 5 MJ.d
Type	Cal	**Sample**	Cal 5 MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-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	11/27/2023 3:41:06 PM		
Sample Info.			

Sample Chromatogram

+ TIC MRM (** -> **) Cal 5 MJ.d (Cal 5 MJ)

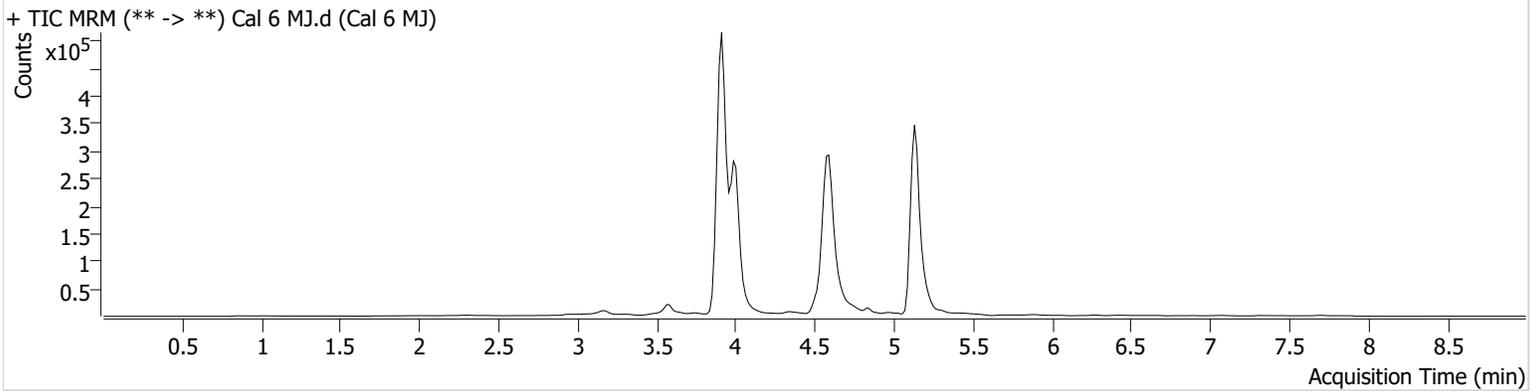| Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.150	184991	∞	27.0	∞	883203	23.8634 ng/ml
THC-COOH	4.000	99096	1996.71	229.4	1826.25	195316	74.2494 ng/ml
THC-OH	3.926	428758	∞	13.8	∞	1257852	24.7847 ng/ml

AM #27 Cannabinoids Quant. Results

Batch results   D:\MassHunter\Data\2023\AM 27 28\112723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 11/28/2023 11:42:37 AM

Instrument	Falco (069901)	**Data File**	Cal 6 MJ.d
Type	Cal	**Sample**	Cal 6 MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-F1	**Comment**	Only drugs and concentrations listed on the laboratory
Injection Volume	10		report itself are appropriate to be used for
Acq. Date-Time	11/27/2023 3:54:12 PM		interpretation purposes. Any drugs or values included
Sample Info.			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.

Sample Chromatogram

+ TIC MRM (** -> **) Cal 6 MJ.d (Cal 6 MJ)

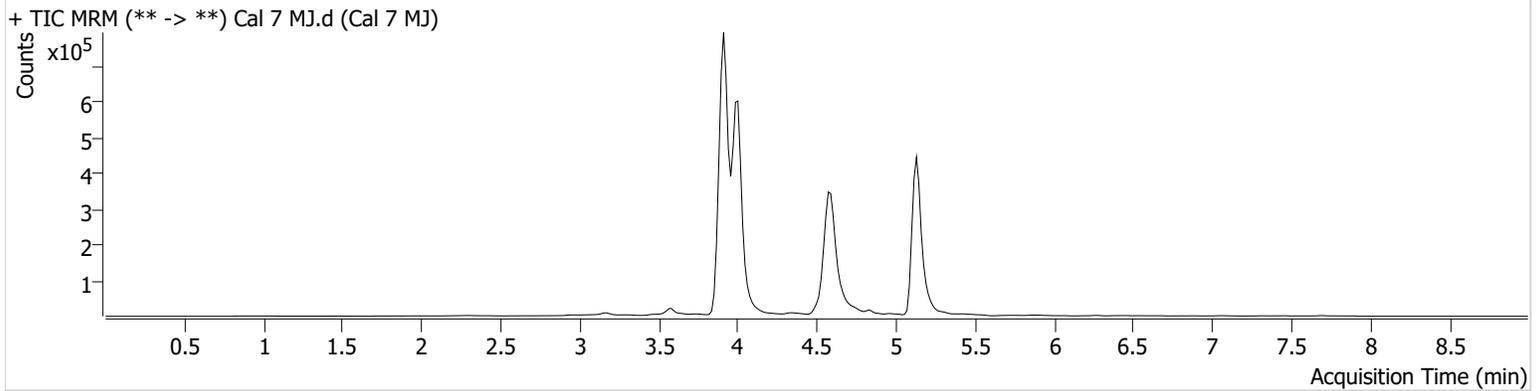| Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.135	369595	∞	25.1	∞	843315	49.3837 ng/ml
THC-COOH	4.000	122160	977.65	233.6	∞	176652	100.8636 ng/ml
THC-OH	3.911	833070	∞	13.8	∞	1191982	50.6496 ng/ml

AM #27 Cannabinoids Quant. Results

Batch results D:\MassHunter\Data\2023\AM 27 28\112723 AM 27 28 CS\QuantResults\AM 27.batch.bin
Calibration Last Update 11/28/2023 11:42:37 AM

Instrument	Falco (069901)	**Data File**	Cal 7 MJ.d
Type	Cal	**Sample**	Cal 7 MJ
Acq. Method	AM 27 Agilent Method.m	**Operator**	Celena Shrum
Sample Position	P1-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	11/27/2023 4:07:18 PM		
Sample Info.			

Sample Chromatogram

+ TIC MRM (** -> **) Cal 7 MJ.d (Cal 7 MJ)

Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	5.135	733760	∞	24.6	∞	807068	101.9056 ng/ml
THC-COOH	4.000	314069	∞	231.3	∞	182363	249.8157 ng/ml
THC-OH	3.911	1775738	∞	14.2	∞	1283816	100.0835 ng/ml