






**REVIEWED**  
By Tamara Salazar at 2:31 pm, Mar 16, 2022

**Worklist: 5682**

<u>LAB CASE</u>	<u>ITEM</u>	<u>ITEM TYPE</u>	<u>DESCRIPTION</u>	
M2022-0731	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
M2022-0746	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
M2022-0875	2	BCK	AM 27 Blood THC Quant by LC-QQQ	
M2022-0889	2	BCK	AM 27 Blood THC Quant by LC-QQQ	
M2022-0960	3	BCK	AM 27 Blood THC Quant by LC-QQQ	
M2022-0976	2	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2022-0567	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2022-0568	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2022-0596	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2022-0615	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2022-0616	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2022-0617	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2022-0618	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2022-0619	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2022-0654	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2022-0655	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2022-0665	1	BCK	AM 27 Blood THC Quant by LC-QQQ	
P2022-0666	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: 03/11/2022

Analyst: Celena Shrum

Plate lot#: 211018

Plate Retest Date: 04/18/2022

**Mobile phase A:** 0.1% Formic Acid in LCMS Water

**Mobile phase B:** 0.1% Formic acid in Acetonitrile

**Blank Blood Lot:** Lampire 20L20725

**Column:** UCT Selectra DA 100 x 2.1mm 3um

**LCMS-QQQ ID:** 069901

**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<sup>2</sup> 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: The boxes for P2022-0654-1 and P2022-0656-1 (and the preceding blanks) were not-check marked in the instrument sequence, so they were not injected on 3/11/2022 with the other samples. They were injected on 3/15/2022.

	1	2	3	4	5	6
a	cal 1ng	QC 2	M2022-0976-2	P2022-0619-1	P2022-0654-1**	
b	cal 3 ng	Blood NEG	P2022-0567-1	P2022-0620-1	EMPTY	
c	cal 5 ng	M2022-0731-1	P2022-0568-1	P2022-0655-1	P2022-0665-1**	
d	cal 10ng	M2022-0746-1	P2022-0596-1*	P2022-0656-1		
e	cal 25 ng	M2022-0875-2	P2022-0615-1	P2022-0666-1		
f	cal 50 ng	M2022-0889-2	P2022-0616-1*	P2022-0667-1		
g	cal 100 ng	M2022-0904-2	P2022-0617-1	P2022-0596-1		
h	QC 1	M2022-0960-3	P2022-0618-1	P2022-0616-1		

\*Moved during SLE portion of the extraction due to blood clots

\*\*Samples were in G4 and H4 of extraction plate and put into current positions on SLE plate due to other samples being moved.

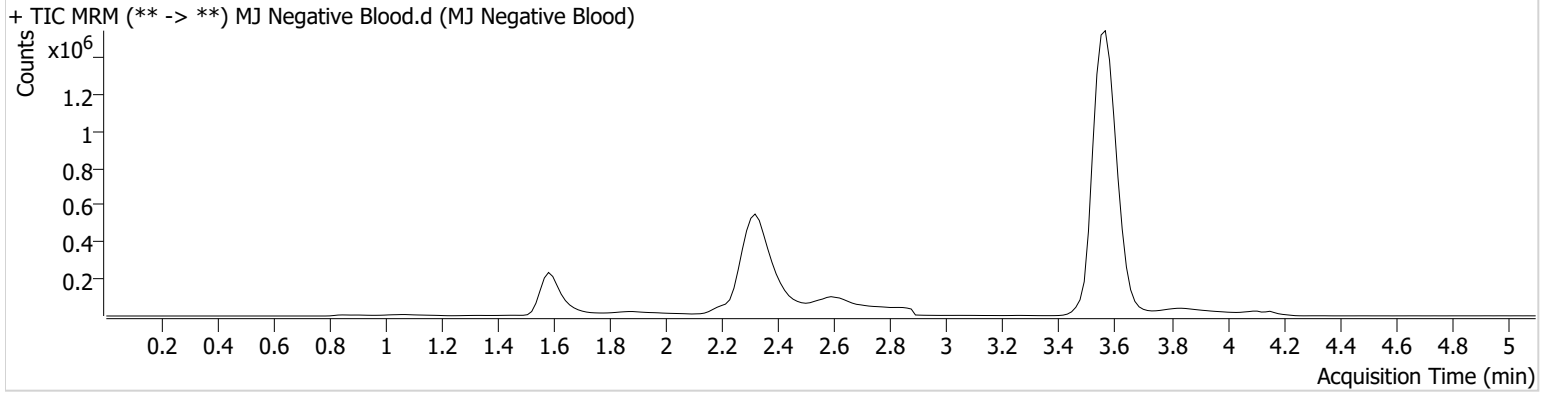
# AM #27 Cannabinoid Quant. Results



**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Calibration Last Update** 3/16/2022 9:12:17 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	MJ Negative Blood.d
<b>Type</b>	Sample	<b>Sample</b>	MJ Negative Blood
<b>Acq. Method</b>	AM 27 THCQ.m	<b>Operator</b>	Celena Shrum
<b>Sample Position</b>	P5-B2	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	3/11/2022 4:10:51 PM		
<b>Sample Info.</b>			

## Sample Chromatogram



CS

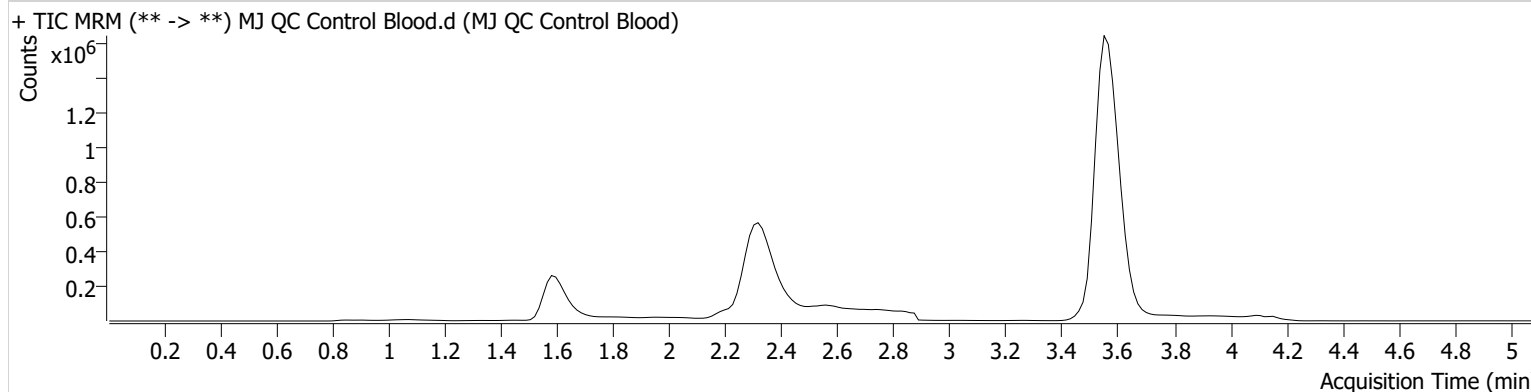


# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Calibration Last Update** 3/16/2022 9:12:17 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	MJ QC Control Blood.d
<b>Type</b>	QC	<b>Sample</b>	MJ QC Control Blood
<b>Acq. Method</b>	AM 27 THCQ.m	<b>Operator</b>	Celena Shrum
<b>Sample Position</b>	P5-H1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	3/11/2022 3:55:36 PM		

## Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.588	73386	∞	14.2	∞	793395	5.3301 ng/ml
THC-COOH	1.625	107277	∞	58.6	552.85	308303	15.3505 ng/ml
THC	3.570	423439	2722.28	25.6	∞	9573707	4.7956 ng/ml

CS

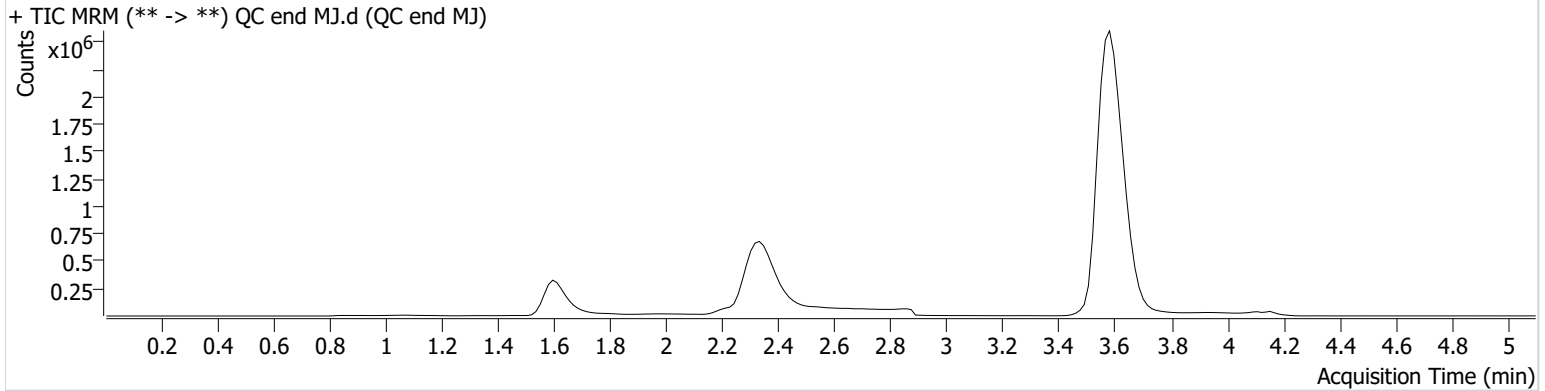


# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Calibration Last Update** 3/16/2022 9:12:17 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	QC end MJ.d
<b>Type</b>	QC	<b>Sample</b>	QC end MJ
<b>Acq. Method</b>	AM 27 THCQ.m	<b>Operator</b>	Celena Shrum
<b>Sample Position</b>	P5-A2	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	3/11/2022 9:31:11 PM		

**Sample Chromatogram**



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.603	89716	∞	13.3	∞	989028	5.2267 ng/ml
THC-COOH	1.640	130173	∞	57.6	∞	381554	15.0375 ng/ml
THC	3.586	720941	12690.87	25.4	869.93	15997975	4.8822 ng/ml

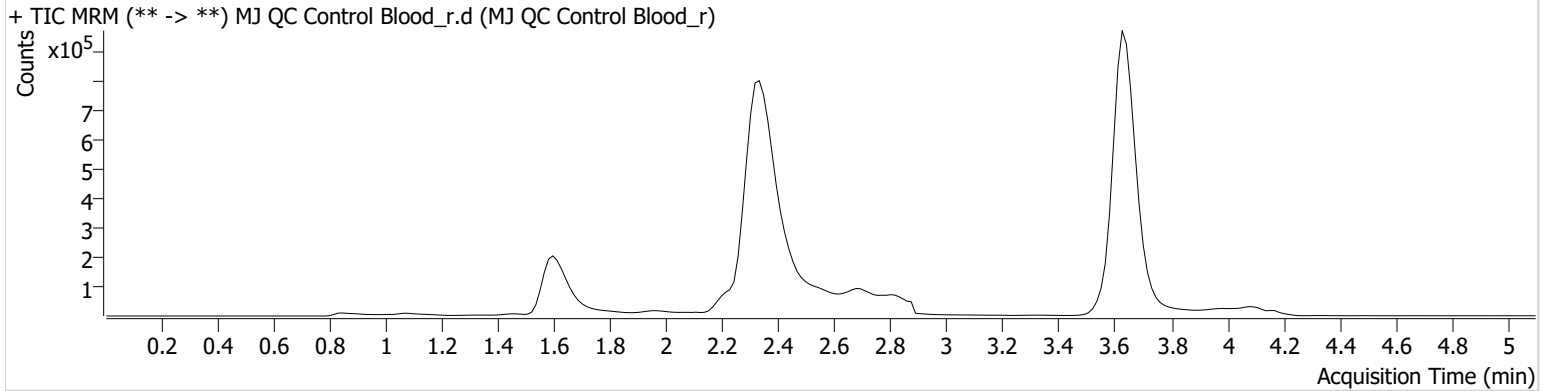


# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Calibration Last Update** 3/16/2022 9:12:17 AM

**Instrument** Falco (069901) **Data File** MJ QC Control Blood\_r.d  
**Type** QC **Sample** MJ QC Control Blood\_r  
**Acq. Method** AM 27 THCQ.m **Operator** Celena Shrum  
**Sample Position** P5-H1 **Comment**  
**Injection Volume** 10  
**Acq. Date-Time** 3/15/2022 10:29:12 AM  
**Sample Info.** Used for bracketing reinjection samples.

## Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.588	58476	∞	14.5	319.41	659792	5.1059 ng/ml
THC-COOH	1.625	95675	1222.72	59.3	∞	287275	14.6636 ng/ml
THC	3.631	221861	∞	25.3	326.97	5436701	4.4408 ng/ml

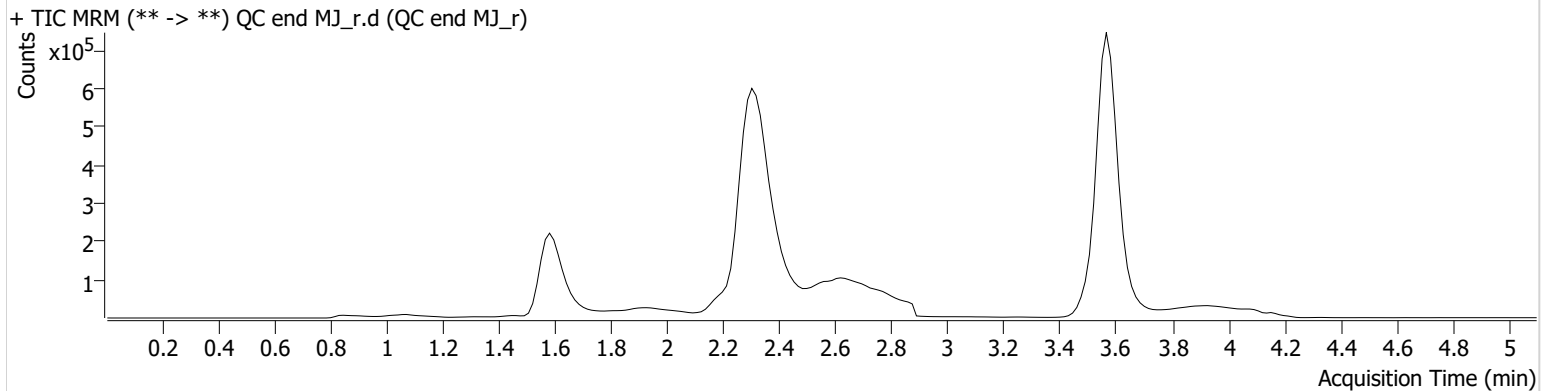
# AM #27 Cannabinoid Quant. Results



**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Calibration Last Update** 3/16/2022 9:12:17 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	QC end MJ_r.d
<b>Type</b>	QC	<b>Sample</b>	QC end MJ_r
<b>Acq. Method</b>	AM 27 THCQ.m	<b>Operator</b>	Celena Shrum
<b>Sample Position</b>	P5-A2	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	3/15/2022 2:18:07 PM		
<b>Sample Info.</b>			Used for bracketing reinjection samples.

## Sample Chromatogram



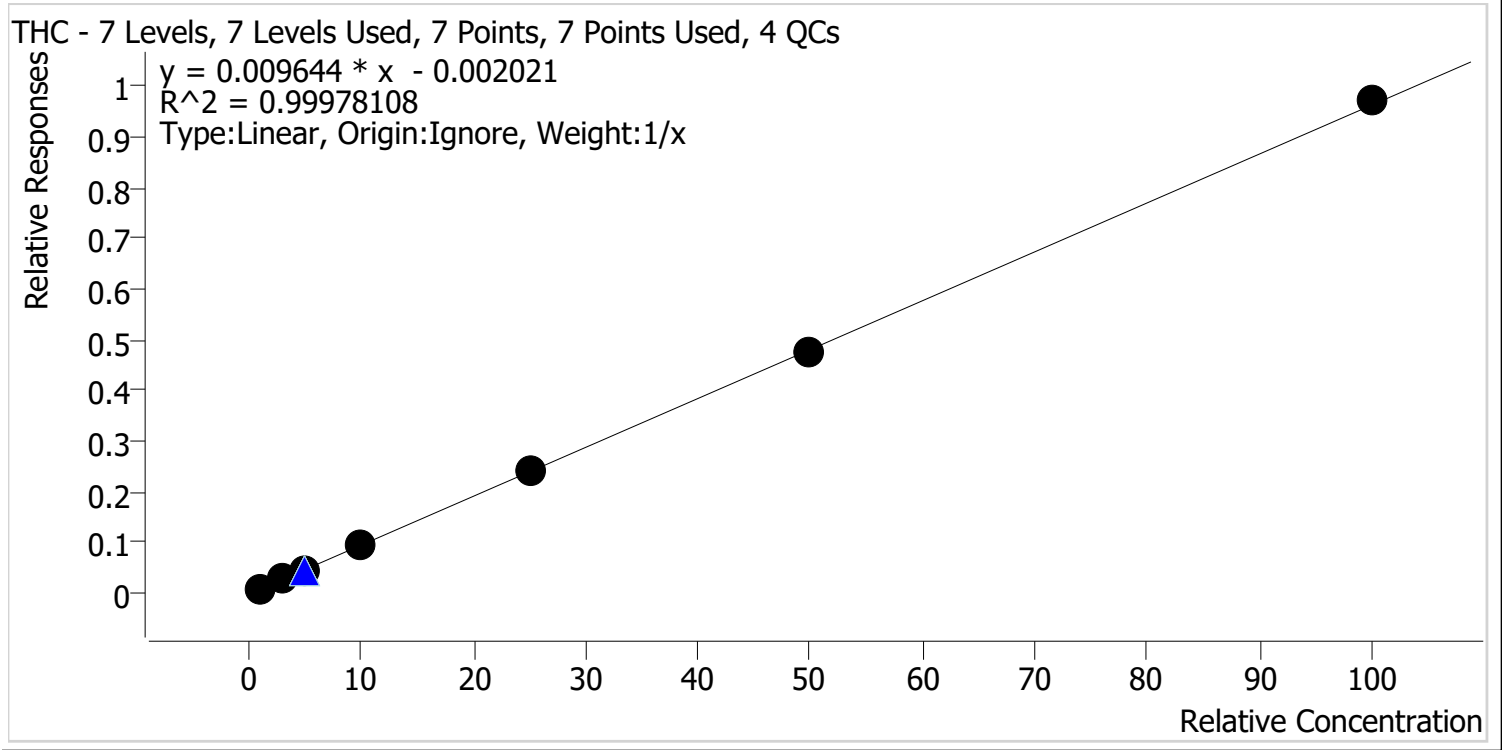
Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.588	58419	∞	14.4	81.65	688729	4.8853 ng/ml
THC-COOH	1.610	97359	∞	69.6	∞	276758	15.5265 ng/ml
THC	3.570	166161	∞	26.4	∞	4063160	4.4498 ng/ml





# AM #27 Cannabinoids Quant. Calibration Curve Report

**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Last Cal. Update** 3/16/2022 9:12 AM  
**Analyst Name** ISP\Datastor  
**Analyte** THC **Internal Standard** THC-D3

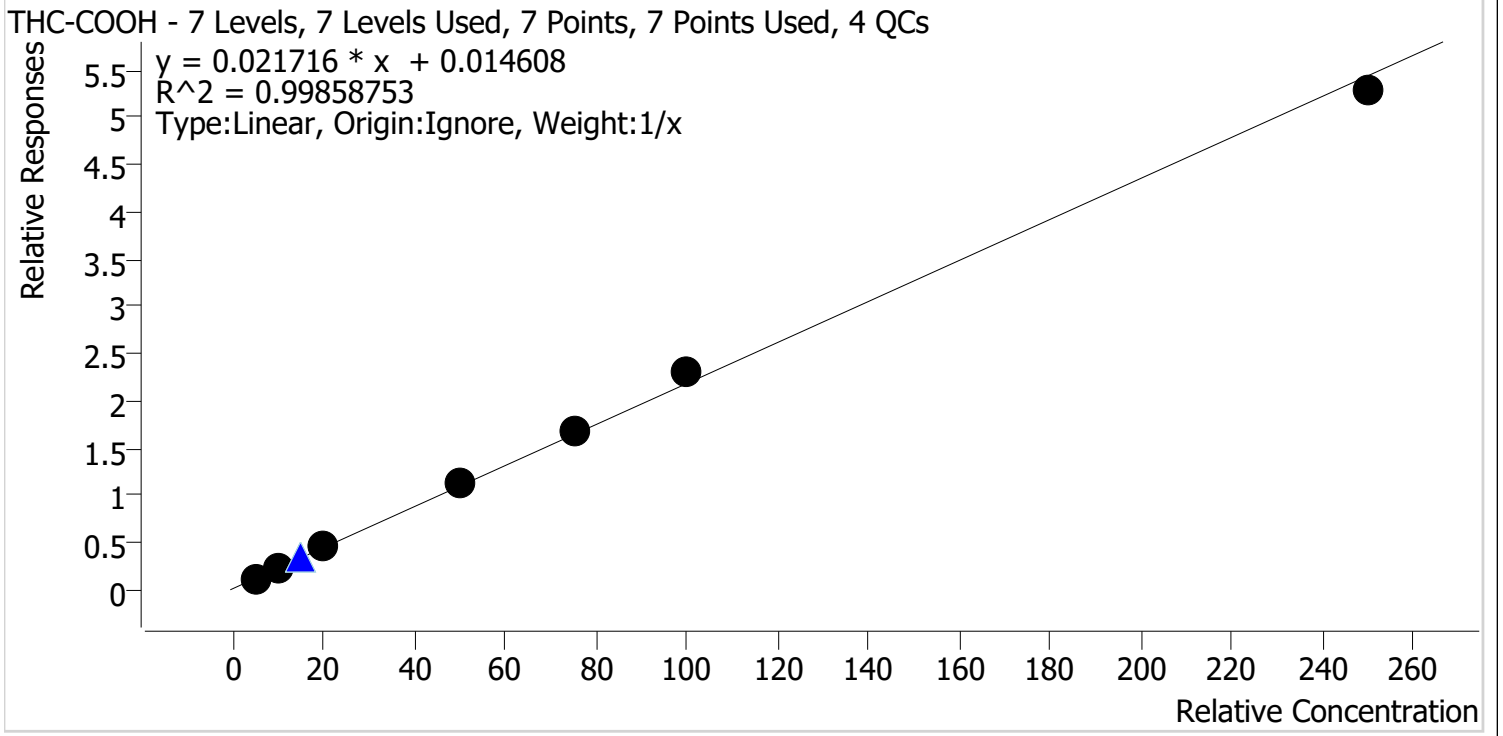


Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✓	1.0	1.1	109.3
Cal 2 MJ	2	✓	3.0	2.9	97.6
Cal 3 MJ	3	✓	5.0	4.8	95.7
Cal 4 MJ	4	✓	10.0	9.8	97.6
Cal 5 MJ	5	✓	25.0	24.9	99.6
Cal 6 MJ	6	✓	50.0	49.7	99.3
Cal 7 MJ	7	✓	100.0	100.9	100.9



# AM #27 Cannabinoids Quant. Calibration Curve Report

**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Last Cal. Update** 3/16/2022 9:12 AM  
**Analyst Name** ISP\Datastor  
**Analyte** THC-COOH **Internal Standard** THC-COOH-D9

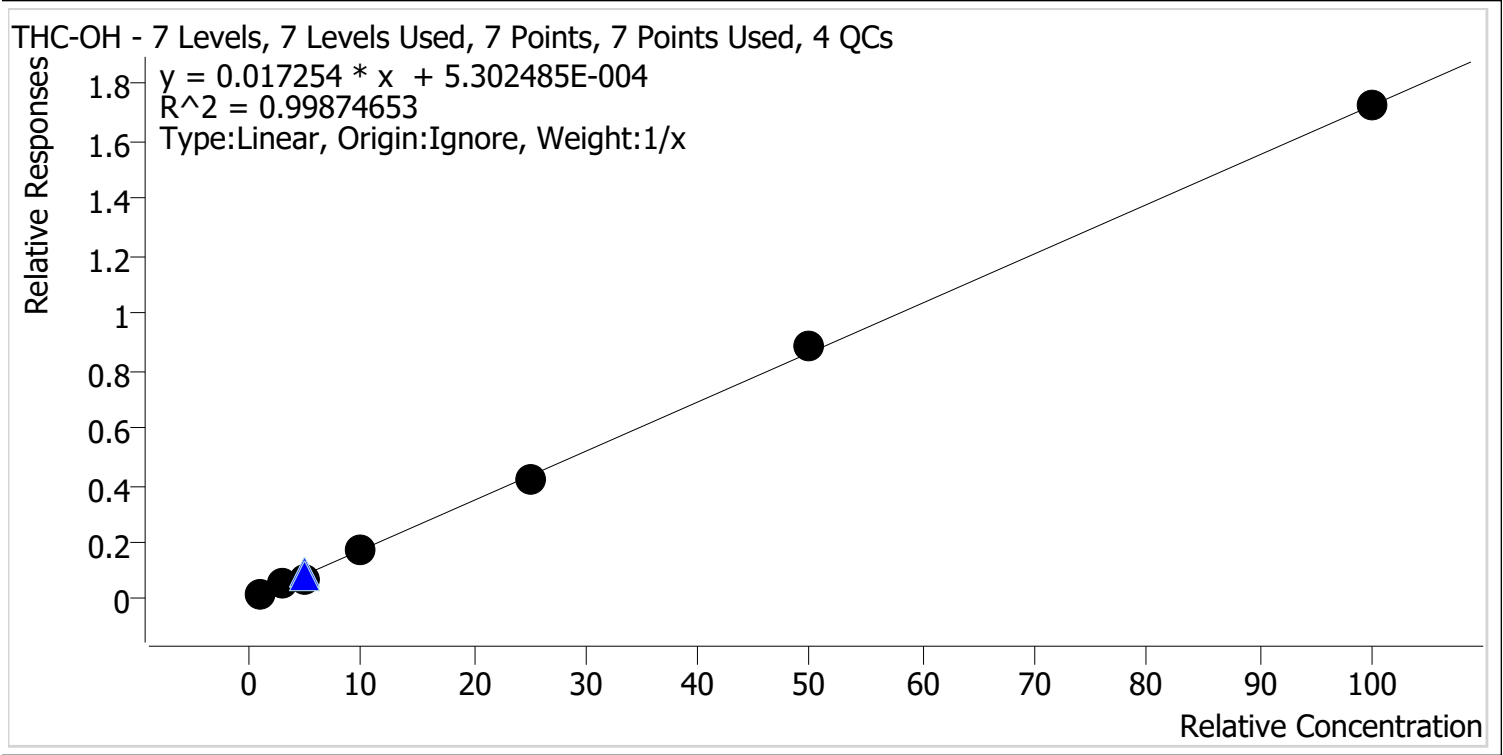


Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✓	5.0	4.7	94.8
Cal 2 MJ	2	✓	10.0	9.9	99.0
Cal 3 MJ	3	✓	20.0	20.0	100.1
Cal 4 MJ	4	✓	50.0	50.9	101.8
Cal 5 MJ	5	✓	75.0	76.4	101.9
Cal 6 MJ	6	✓	100.0	105.3	105.3
Cal 7 MJ	7	✓	250.0	242.7	97.1



# AM #27 Cannabinoids Quant. Calibration Curve Report

**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Last Cal. Update** 3/16/2022 9:12 AM  
**Analyst Name** ISP\Datastor  
**Analyte** THC-OH **Internal Standard** THC-OH-D3



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✓	1.0	1.2	115.8
Cal 2 MJ	2	✓	3.0	3.0	101.3
Cal 3 MJ	3	✓	5.0	4.2	83.3
Cal 4 MJ	4	✓	10.0	9.9	99.0
Cal 5 MJ	5	✓	25.0	24.5	98.0
Cal 6 MJ	6	✓	50.0	51.3	102.5
Cal 7 MJ	7	✓	100.0	100.0	100.0

CS

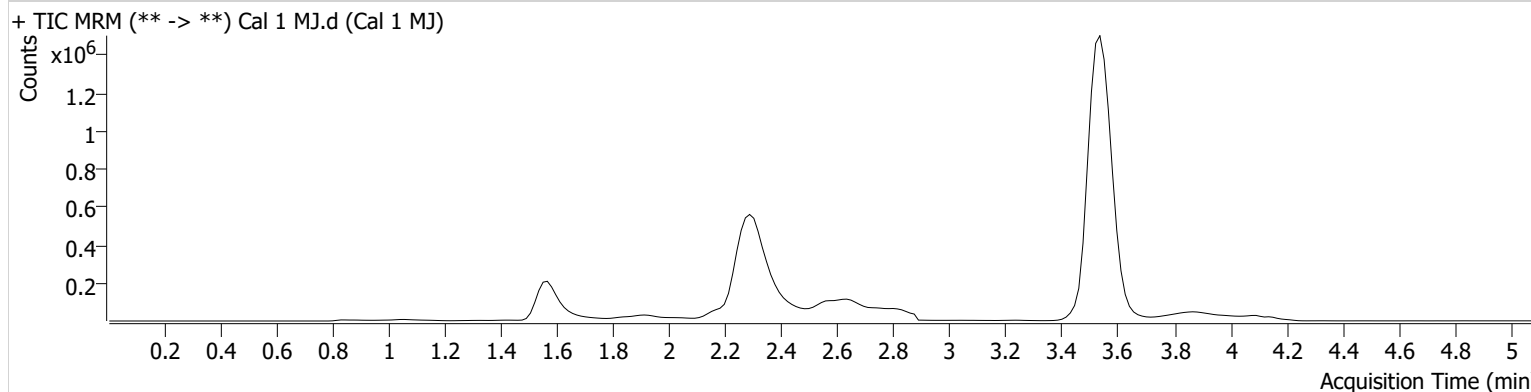


# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Calibration Last Update** 3/16/2022 9:12:17 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	Cal 1 MJ.d
<b>Type</b>	Cal	<b>Sample</b>	Cal 1 MJ
<b>Acq. Method</b>	AM 27 THCQ.m	<b>Operator</b>	Celena Shrum
<b>Sample Position</b>	P5-A1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	3/11/2022 2:54:37 PM		

## Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.573	15982	∞	12.2	10.44	779180	1.1581 ng/ml <b>Low</b>
THC-COOH	1.595	32176	∞	55.0	137.43	273825	4.7384 ng/ml <b>Low</b>
THC	3.540	76004	371.29	28.4	∞	8919284	1.0931 ng/ml

CS

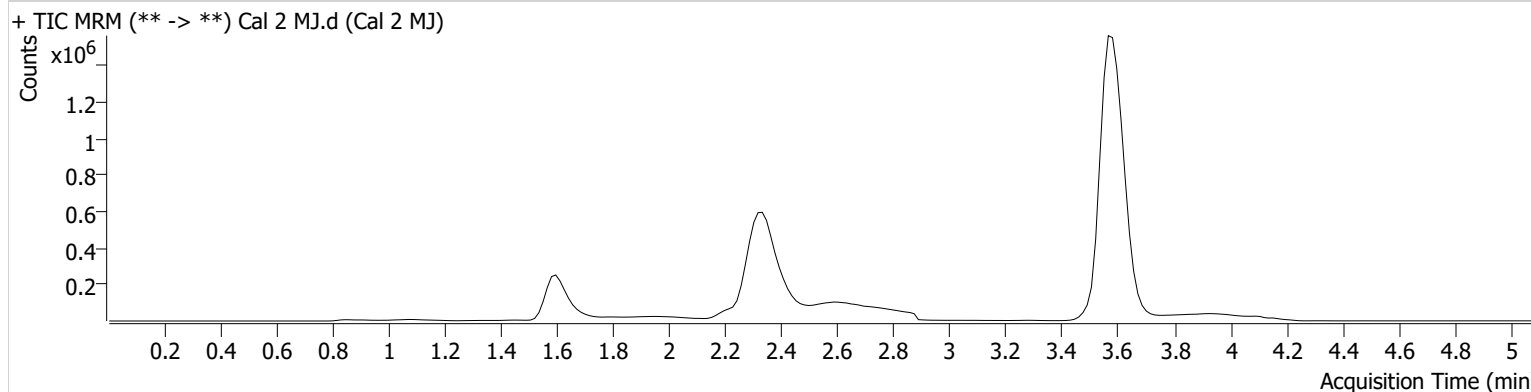


# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Calibration Last Update** 3/16/2022 9:12:17 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	Cal 2 MJ.d
<b>Type</b>	Cal	<b>Sample</b>	Cal 2 MJ
<b>Acq. Method</b>	AM 27 THCQ.m	<b>Operator</b>	Celena Shrum
<b>Sample Position</b>	P5-B1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	3/11/2022 3:02:23 PM		

## Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.603	42384	109.41	13.6	459.07	799878	3.0403 ng/ml
THC-COOH	1.625	69948	∞	55.7	740.70	304554	9.9035 ng/ml
THC	3.586	241455	3556.82	25.9	∞	9205563	2.9292 ng/ml

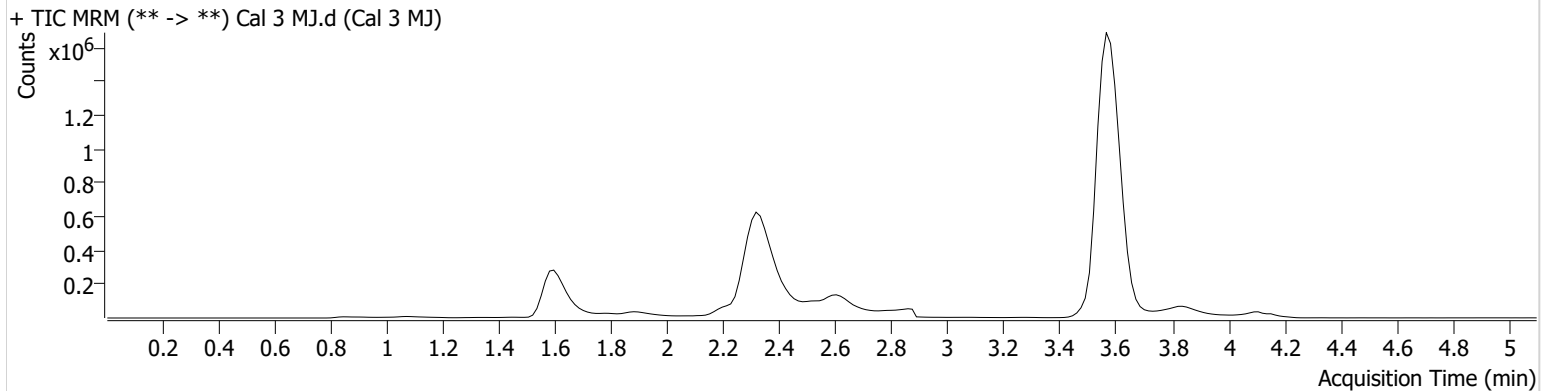
# AM #27 Cannabinoid Quant. Results



**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Calibration Last Update** 3/16/2022 9:12:17 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	Cal 3 MJ.d
<b>Type</b>	Cal	<b>Sample</b>	Cal 3 MJ
<b>Acq. Method</b>	AM 27 THCQ.m	<b>Operator</b>	Celena Shrum
<b>Sample Position</b>	P5-C1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	3/11/2022 3:09:59 PM		

## Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.588	74000	∞	13.5	86.37	1021647	4.1672 ng/ml
THC-COOH	1.625	144715	∞	58.8	491.84	322051	20.0196 ng/ml
THC	3.586	416627	5666.94	25.2	247.52	9443507	4.7840 ng/ml

CS

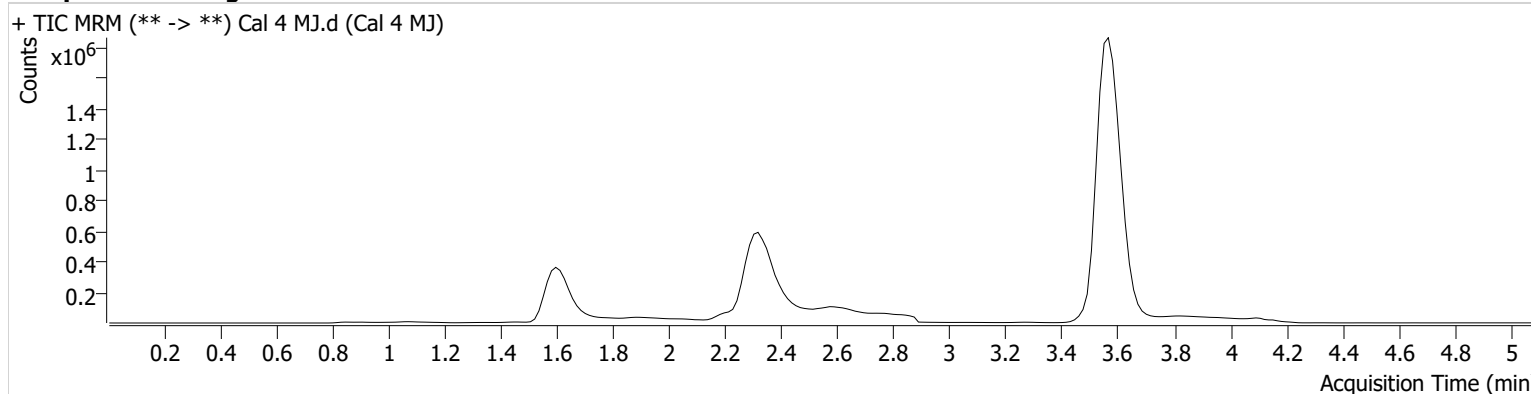


# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Calibration Last Update** 3/16/2022 9:12:17 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	Cal 4 MJ.d
<b>Type</b>	Cal	<b>Sample</b>	Cal 4 MJ
<b>Acq. Method</b>	AM 27 THCQ.m	<b>Operator</b>	Celena Shrum
<b>Sample Position</b>	P5-D1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	3/11/2022 3:17:36 PM		

**Sample Chromatogram**



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.588	148999	338.92	13.6	352.03	869966	9.8956 ng/ml
THC-COOH	1.625	366278	∞	58.9	∞	326923	50.9194 ng/ml
THC	3.570	947339	∞	25.1	4354.95	10285384	9.7597 ng/ml

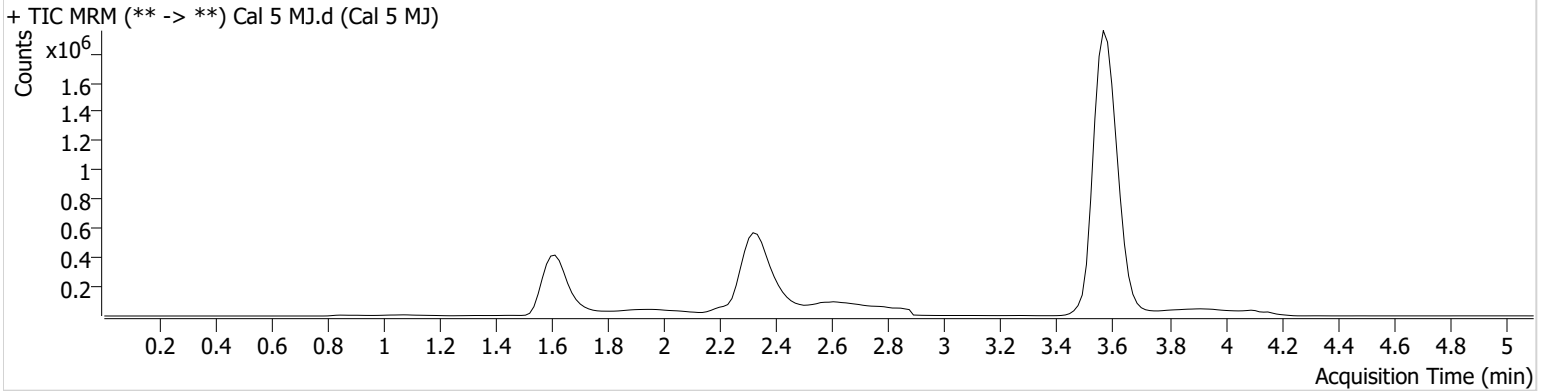


# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Calibration Last Update** 3/16/2022 9:12:17 AM

**Instrument** Falco (069901) **Data File** Cal 5 MJ.d  
**Type** Cal **Sample** Cal 5 MJ  
**Acq. Method** AM 27 THCQ.m **Operator** Celena Shrum  
**Sample Position** P5-E1 **Comment**  
**Injection Volume** 10  
**Acq. Date-Time** 3/11/2022 3:25:12 PM  
**Sample Info.**

## Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.588	349274	∞	14.0	546.55	824847	24.5108 ng/ml
THC-COOH	1.625	513967	5059.77	60.0	4985.86	306940	76.4354 ng/ml
THC	3.570	2179127	∞	24.9	2444.21	9153442	24.8938 ng/ml



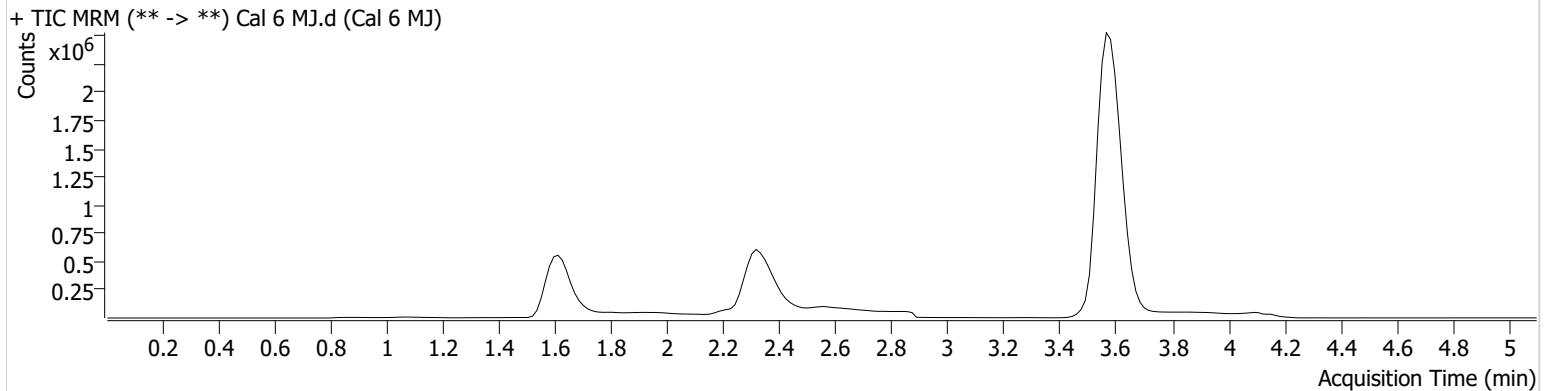
# AM #27 Cannabinoid Quant. Results



**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Calibration Last Update** 3/16/2022 9:12:17 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	Cal 6 MJ.d
<b>Type</b>	Cal	<b>Sample</b>	Cal 6 MJ
<b>Acq. Method</b>	AM 27 THCQ.m	<b>Operator</b>	Celena Shrum
<b>Sample Position</b>	P5-F1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	3/11/2022 3:32:47 PM		

## Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.588	728360	2793.48	14.1	1671.32	822806	51.2740 ng/ml
THC-COOH	1.625	704448	∞	69.9	∞	306232	105.2567 ng/ml
THC	3.586	4692317	∞	25.3	10766.3 4	9840099	49.6531 ng/ml

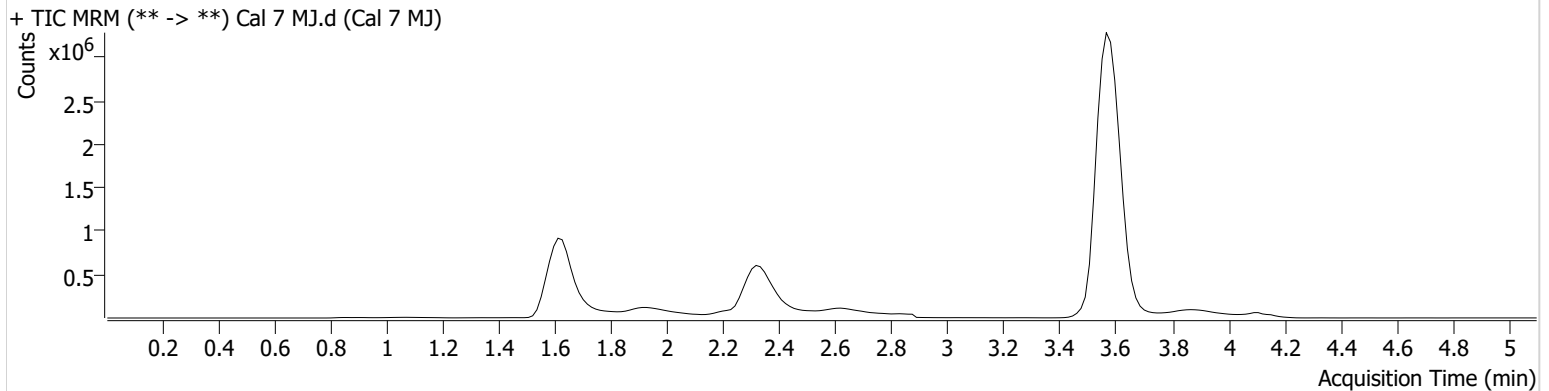
# AM #27 Cannabinoid Quant. Results



**Batch results** D:\MassHunter\Data\2022\AM 27-28\031122 AM 27 28 CS\QuantResults\AM 27 THC.batch.bin  
**Calibration Last Update** 3/16/2022 9:12:17 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	Cal 7 MJ.d
<b>Type</b>	Cal	<b>Sample</b>	Cal 7 MJ
<b>Acq. Method</b>	AM 27 THCQ.m	<b>Operator</b>	Celena Shrum
<b>Sample Position</b>	P5-G1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	3/11/2022 3:40:23 PM		

## Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC-OH	1.588	1334512	2486.35	14.2	∞	773569	99.9539 ng/ml
THC-COOH	1.625	1465634	1892.57	63.5	∞	277284	242.7270 ng/ml
THC	3.570	8775567	∞	25.1	∞	9037823	100.8871 ng/ml