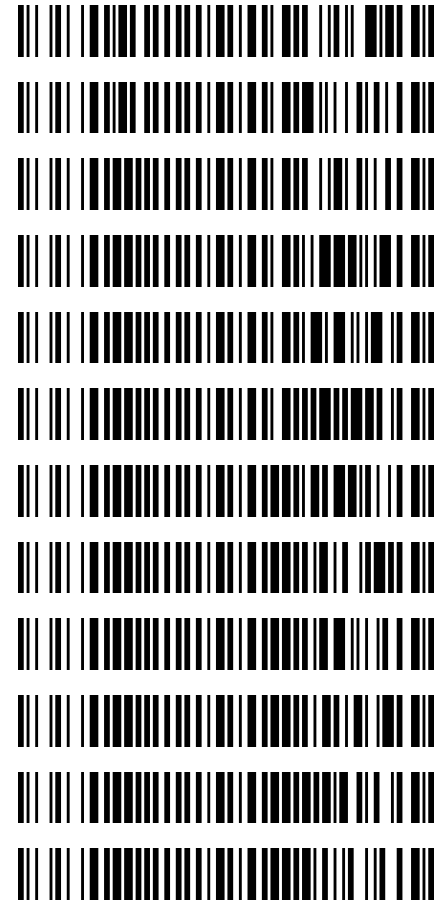


Worklist: 3475

<u>LAB_CASE</u>	<u>ITEM</u>	<u>TASK_ID</u>	<u>DESCRIPTION</u>
M2019-2201	1	154631	AM 27 Blood THC Quant by LC-QQQ
M2019-2338	1	154632	AM 27 Blood THC Quant by LC-QQQ
P2019-1446	1	154633	AM 27 Blood THC Quant by LC-QQQ
P2019-1497	1	154634	AM 27 Blood THC Quant by LC-QQQ
P2019-1524	1	154635	AM 27 Blood THC Quant by LC-QQQ
P2019-1562	1	154636	AM 27 Blood THC Quant by LC-QQQ
P2019-1586	1	154637	AM 27 Blood THC Quant by LC-QQQ
P2019-1616	1	154638	AM 27 Blood THC Quant by LC-QQQ
P2019-1617	1	154639	AM 27 Blood THC Quant by LC-QQQ
P2019-1621	1	154640	AM 27 Blood THC Quant by LC-QQQ
P2019-1647	1	154641	AM 27 Blood THC Quant by LC-QQQ
P2019-1671	1	154642	AM 27 Blood THC Quant by LC-QQQ



AM# 27: Quantitation of THC and Metabolites in Blood by LC-MS/MS

Extraction Date: 6/13/19
 Plate lot#: 0539904

Analyst: Sarah Pickle
 Plate Expiration: 9/10/19

Mobile phase A: 0.1% Formic Acid in LCMS Water MTBE
Mobile phase B: 0.1% Formic acid in Acetonitrile Hexane

Blank Blood Lot: 445283-2
LCMS-QQQ ID: 069901
Column: UCT Selectra DA 100 x 2.1mm 3um

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. Pipette **1000 µL blood (calibrated pipette)** in wells of analytical (standards) plate. **Pipette ID: #3**
- 3. Place on shaking incubator at ambient temp., 900rpm for 15 minutes. *Shaker ID: 067105*
- 4. Pipette **500 µL 0.1% formic acid in LCMS water** in wells of analytical plate.
- 5. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
- 6. Transfer **800 µL of blood+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 85-95 PSI- Selector to the right) Manifold ID: 067104
- 8. Wait 5 minutes.
- 9. Add **2.25 mL MTBE. (Add in 3 increments of 750 µL)**
- 10. Wait 5 minutes.
- 11. Apply positive pressure for approx. 15 seconds. *(12-15 PSI- Selector to the left).*
- 12. Add **2.25 mL Hexane. (Add in 3 increments of 750 µL)**
- 13. Wait 5 minutes.
- 14. Apply positive pressure for approx. 15 seconds. *(12-15 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: 067103
- 16. Reconstitute in **100 µL 100% MeOH** and heat seal plate with foil. Place in autosampler and run worklist.

Post-Analytic

- 1. Create batch and process data.
 Worklist path: D:\MassHunter\Data\2019\AM 27\061319 MDS THCQ SP Batch Name: THCQ
- 2. Make any necessary integration changes, Curve weighting of Linear 1/x with r² 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 and OH-THC 3ng/mL (quantitative), Carboxy-THC: 10ng/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? Y / N
- 6. Enter QCs into control charting.
- 7. Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS: *Curve Range limited: THC-COOH 5-100*

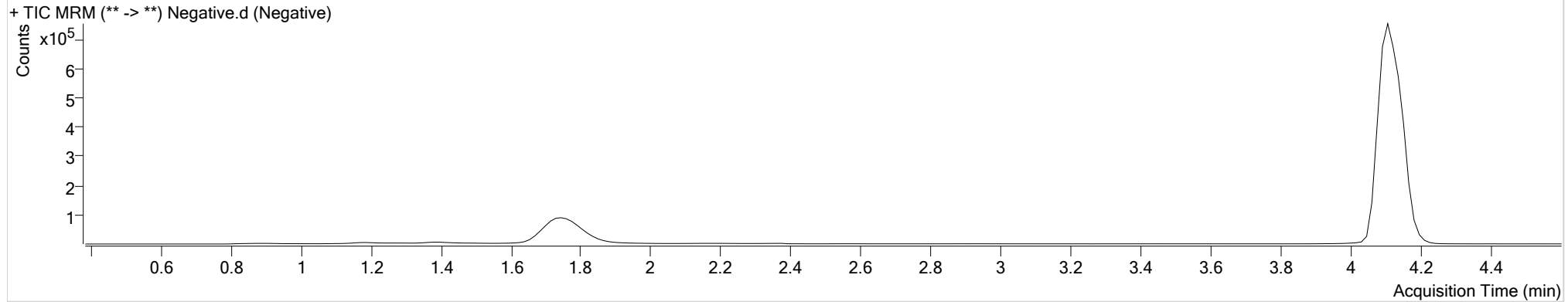
AM #27 Cannabinoids Quant. Results



Batch results D:\MassHunter\Data\2019\AM 25\061319 MDS THCQ SP\QuantResults\THCQ.batch.bin
Calibration Last Update 6/14/2019 7:47:50 AM

Instrument Type	Falco Sample	Data File	Negative.d
Acq. Method	AM 27 THC quant.m	Sample	Negative
Sample Position	P3-H5	Comment	
Injection Volume	10		
Acq. Date-Time	6/13/2019 6:57:08 PM		
Sample Info.			

Sample Chromatogram



AM #27 Cannabinoids Quant. Results

**Batch results**

D:\MassHunter\Data\2019\AM 25\061319 MDS THCQ SP\QuantResults\THCQ.batch.bin

Calibration Last Update

6/14/2019 7:47:50 AM

Instrument

Falco

Data File

External Control-1.d

Type

Sample

Sample

External Control-1

Acq. Method

AM 27 THC quant.m

Sample Position

P3-G5

Comment**Injection Volume**

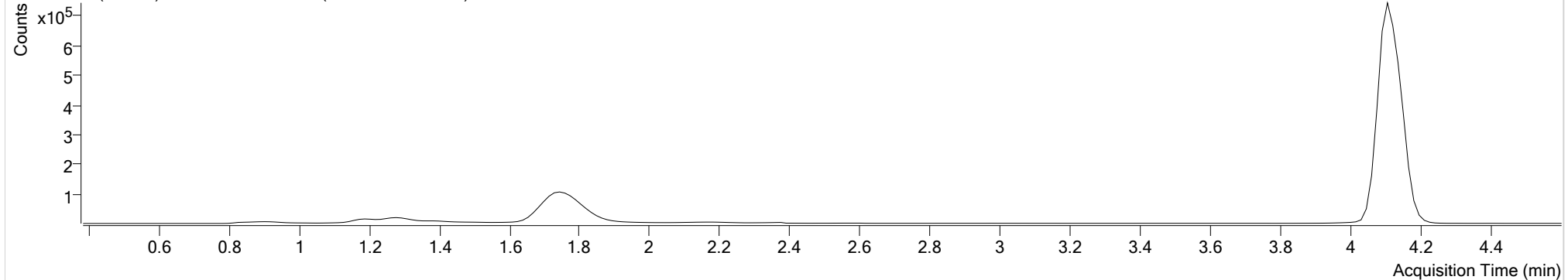
10

Acq. Date-Time

6/13/2019 7:12:18 PM

Sample Info.**Sample Chromatogram**

+ TIC MRM (** -> **) External Control-1.d (External Control-1)



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	4.108	176007	3313.06	29.7	∞	3295350	7.0049 ng/ml
THC-COOH	1.820	38086	81.49	53.6	390.14	219972	7.4811 ng/ml
THC-OH	1.753	71157	279.43	10.9	137.55	507097	7.8543 ng/ml

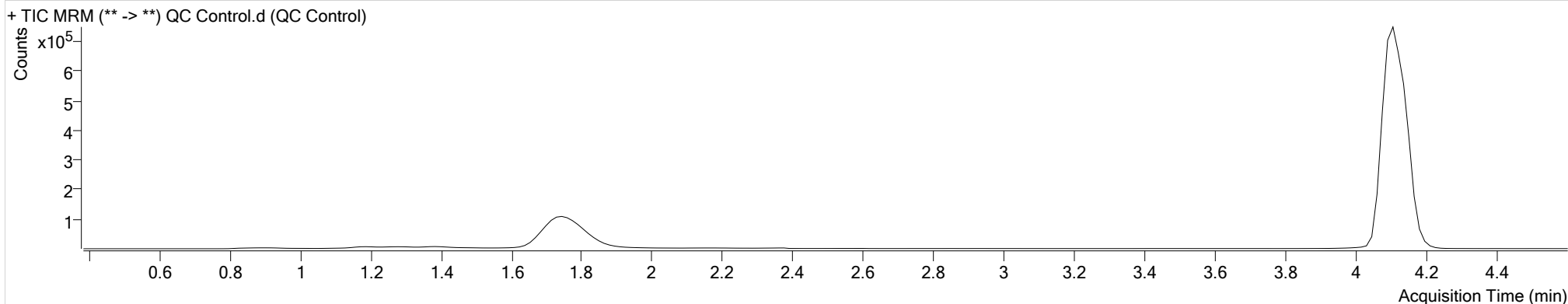
AM #27 Cannabinoids Quant. Results



Batch results D:\MassHunter\Data\2019\AM 25\061319 MDS THCQ SP\QuantResults\THCQ.batch.bin
Calibration Last Update 6/14/2019 7:47:50 AM

Instrument	Falco	Data File	QC Control.d
Type	Sample	Sample	QC Control
Acq. Method	AM 27 THC quant.m	Comment	
Sample Position	P3-A6		
Injection Volume	10		
Acq. Date-Time	6/13/2019 6:41:55 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	4.108	133182	1567.37	30.6	85.73	3467822	5.0268 ng/ml
THC-COOH	1.805	50691	199.10	51.1	326.04	220501	10.2505 ng/ml
THC-OH	1.753	54895	∞	11.1	48.32	540617	5.1405 ng/ml



Idaho State Police Forensic Services

AM #27 Quantitative Analysis of THC and Metabolites in Blood by LCMS-QQQ

Methanol External Control Solution (Lot: WS041619)

10 ul of 1mg/mL THC, 100 ul of 100 ug/mL THC-OH, C-THC in 9790 ul MeOH
Approximate concentration 1ug/mL.

Component	Source	Source Lot Number	Expiration Date
Methanol (LCMS)	Fisher	184782	
THC	Cerilliant	FE09101501	11/30/2020
C-THC	Cerilliant	FE07171501	09/30/2019
THC-OH	Cerilliant	FE01121503	01/31/2020
Prepared:	04/16/2019		
Prepared By:	Tamara Salazar		
Expires:	01/31/2020		

Blood External Control Solution (Lot: 041619)

100 ul of methanol external control solution was added to 9900 ul of blood.
Approximately 10ng/mL of each compound.

Component	Source	Source Lot Number
Negative Blood	Hemostat	445283-1
Methanol External Control Solution	-	WS041619
Prepared:	04/16/19	
Prepared by:	Tamara Salazar	
Expires:	01/31/2020	

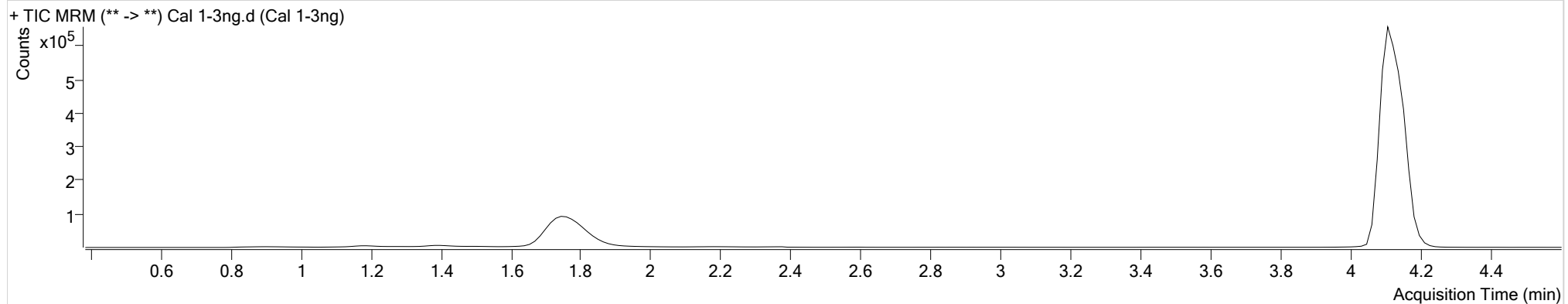
AM #27 Cannabinoids Quant. Results



Batch results D:\MassHunter\Data\2019\AM 25\061319 MDS THCQ SP\QuantResults\THCQ.batch.bin
Calibration Last Update 6/14/2019 7:47:50 AM

Instrument	Falco	Data File	Cal 1-3ng.d
Type	Cal	Sample	Cal 1-3ng
Acq. Method	AM 27 THC quant.m	Comment	
Sample Position	P3-G6		
Injection Volume	10		
Acq. Date-Time	6/13/2019 5:56:17 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	4.108	72176	524.86	34.3	270.88	3006617	3.1285 ng/ml
THC-COOH	1.820	18951	85.33	38.2 Low	200.00	194081	3.7969 ng/ml
THC-OH	1.768	35552	452.31	10.2	18.03	473845	3.2852 ng/ml

AM #27 Cannabinoids Quant. Results

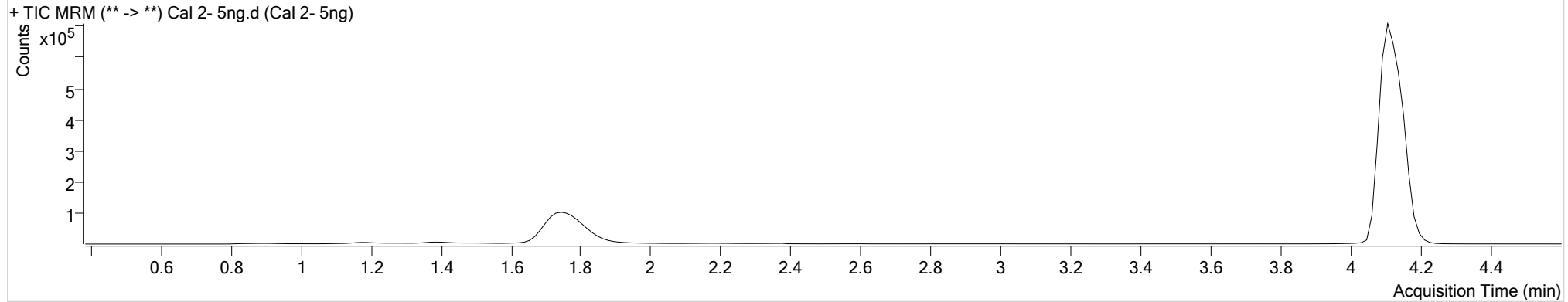


Batch results D:\MassHunter\Data\2019\AM 25\061319 MDS THCQ SP\QuantResults\THCQ.batch.bin
Calibration Last Update 6/14/2019 7:47:50 AM

Instrument Falco
Type Cal
Acq. Method AM 27 THC quant.m
Sample Position P3-F6
Injection Volume 10
Acq. Date-Time 6/13/2019 6:03:53 PM
Sample Info.

Data File Cal 2- 5ng.d
Sample Cal 2- 5ng
Comment

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	4.108	124816	2726.19	30.1	362.06	3198086	5.1089 ng/ml
THC-COOH	1.820	27555	555.88	44.8	∞	211265	5.3969 ng/ml
THC-OH	1.753	49089	136.87	11.1	31.98	507878	4.7985 ng/ml

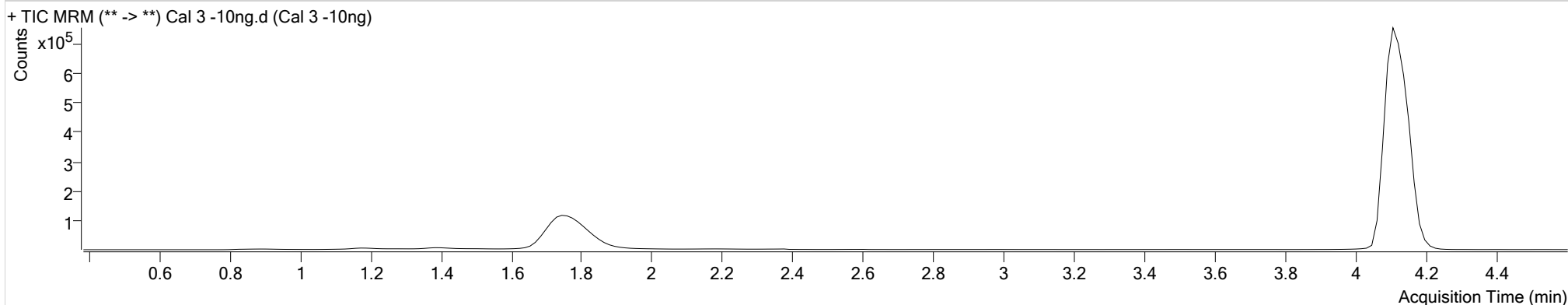
AM #27 Cannabinoids Quant. Results



Batch results D:\MassHunter\Data\2019\AM 25\061319 MDS THCQ SP\QuantResults\THCQ.batch.bin
Calibration Last Update 6/14/2019 7:47:50 AM

Instrument	Falco	Data File	Cal 3 -10ng.d
Type	Cal	Sample	Cal 3 -10ng
Acq. Method	AM 27 THC quant.m	Comment	
Sample Position	P3-E6		
Injection Volume	10		
Acq. Date-Time	6/13/2019 6:11:29 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	4.108	231648	6067.16	29.7	617.64	3267694	9.3092 ng/ml
THC-COOH	1.820	49330	342.05	51.3	302.32	228158	9.5830 ng/ml
THC-OH	1.753	91420	∞	11.9	450.13	551840	9.6276 ng/ml

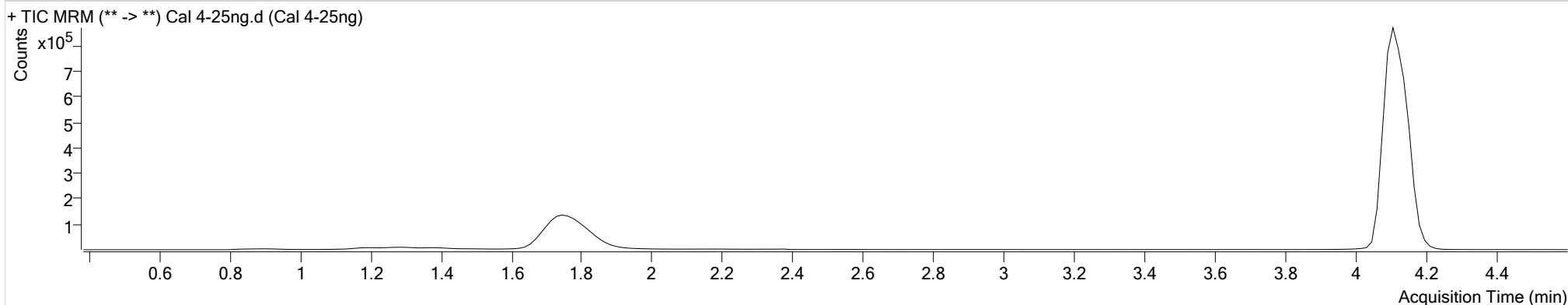
AM #27 Cannabinoids Quant. Results



Batch results D:\MassHunter\Data\2019\AM 25\061319 MDS THCQ SP\QuantResults\THCQ.batch.bin
Calibration Last Update 6/14/2019 7:47:50 AM

Instrument	Falco	Data File	Cal 4-25ng.d
Type	Cal	Sample	Cal 4-25ng
Acq. Method	AM 27 THC quant.m		
Sample Position	P3-D6	Comment	
Injection Volume	10		
Acq. Date-Time	6/13/2019 6:19:06 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	4.108	645379	3752.33	27.7	628.15	3375364	25.1697 ng/ml
THC-COOH	1.820	109273	296.36	56.8	420.95	213708	23.9844 ng/ml
THC-OH	1.753	199065	720.68	13.4	175.94	528136	24.4111 ng/ml

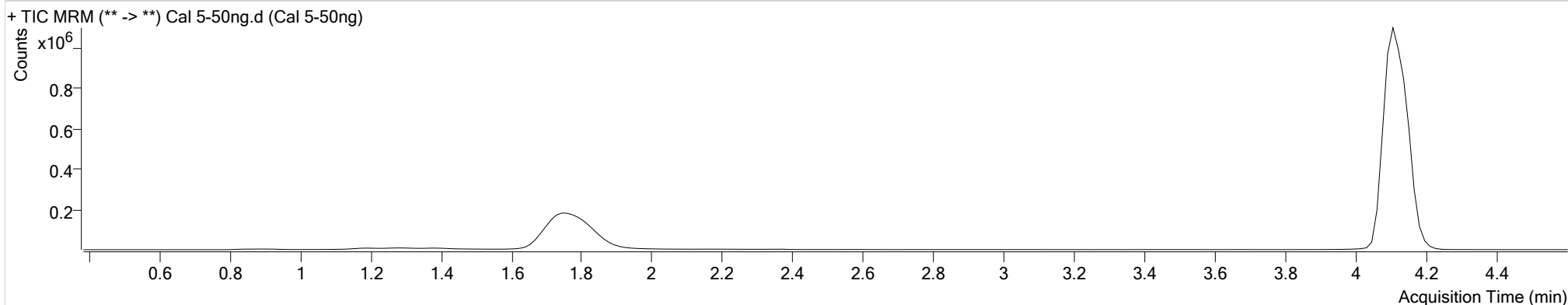
AM #27 Cannabinoids Quant. Results



Batch results D:\MassHunter\Data\2019\AM 25\061319 MDS THCQ SP\QuantResults\THCQ.batch.bin
Calibration Last Update 6/14/2019 7:47:50 AM

Instrument	Falco	Data File	Cal 5-50ng.d
Type	Cal	Sample	Cal 5-50ng
Acq. Method	AM 27 THC quant.m	Comment	
Sample Position	P3-C6		
Injection Volume	10		
Acq. Date-Time	6/13/2019 6:26:42 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	4.108	1336482	13869.22	27.8	2656.44	3557938	49.4828 ng/ml
THC-COOH	1.820	231358	∞	56.8	∞	224783	49.2595 ng/ml
THC-OH	1.753	408492	1290.98	13.7	459.46	553008	49.7260 ng/ml

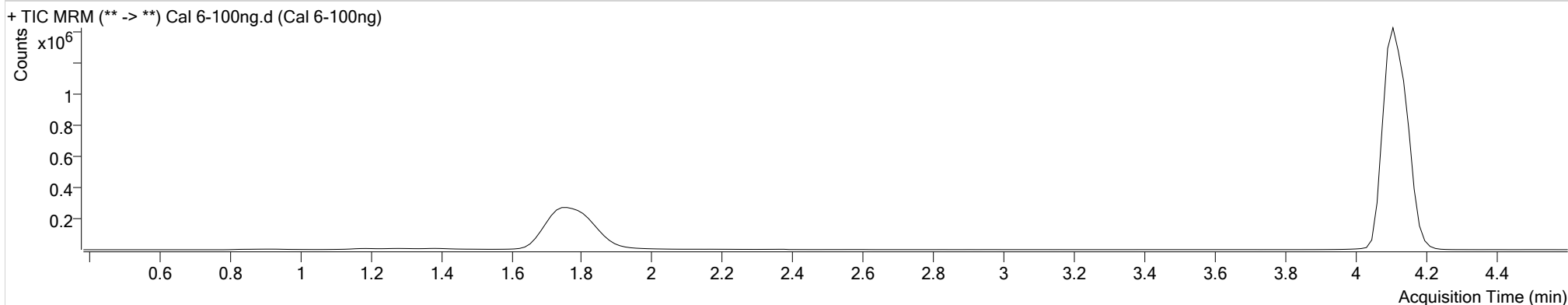
AM #27 Cannabinoids Quant. Results



Batch results D:\MassHunter\Data\2019\AM 25\061319 MDS THCQ SP\QuantResults\THCQ.batch.bin
Calibration Last Update 6/14/2019 7:47:50 AM

Instrument	Falco	Data File	Cal 6-100ng.d
Type	Cal	Sample	Cal 6-100ng
Acq. Method	AM 27 THC quant.m	Comment	
Sample Position	P3-B6		
Injection Volume	10		
Acq. Date-Time	6/13/2019 6:34:19 PM		
Sample Info.			

Sample Chromatogram

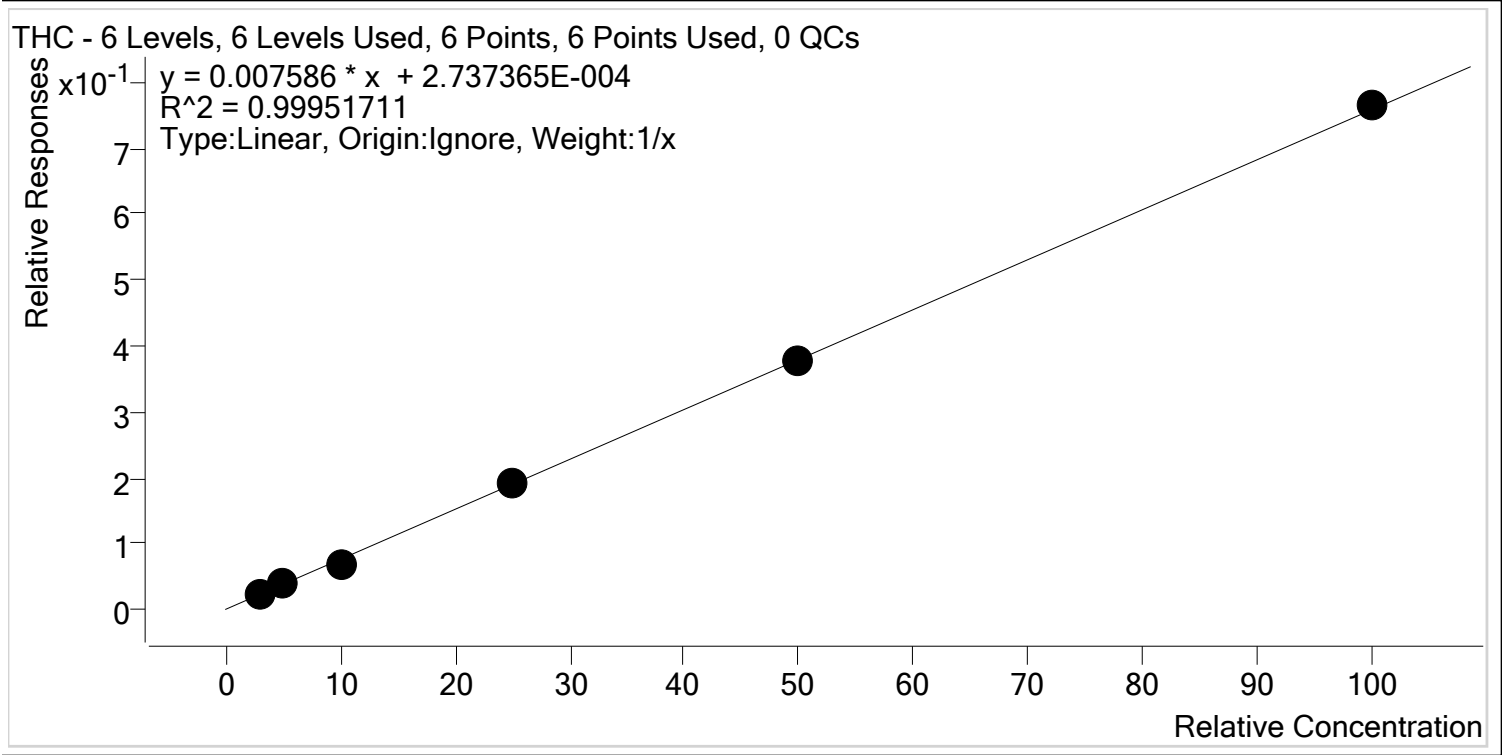


Name	RT	Resp.	S/N	Ratio	S/N	ISTD Resp.	Final Conc.
THC	4.108	2697620	39145.76	27.5	4562.35	3526693	100.8008 ng/ml
THC-COOH	1.820	465105	1647.24	58.2	3504.02	220910	101.7762 ng/ml
THC-OH	1.738	827864	∞	14.2	1092.76	561818	101.1516 ng/ml



AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results D:\MassHunter\Data\2019\AM 25\061319 MDS THCQ SP\QuantResults\THCQ.batch.bin
Last Cal. Update 6/14/2019 7:47 AM
Analyst Name ISP\datastor
Analyte THC **Internal Standard** THC-D3

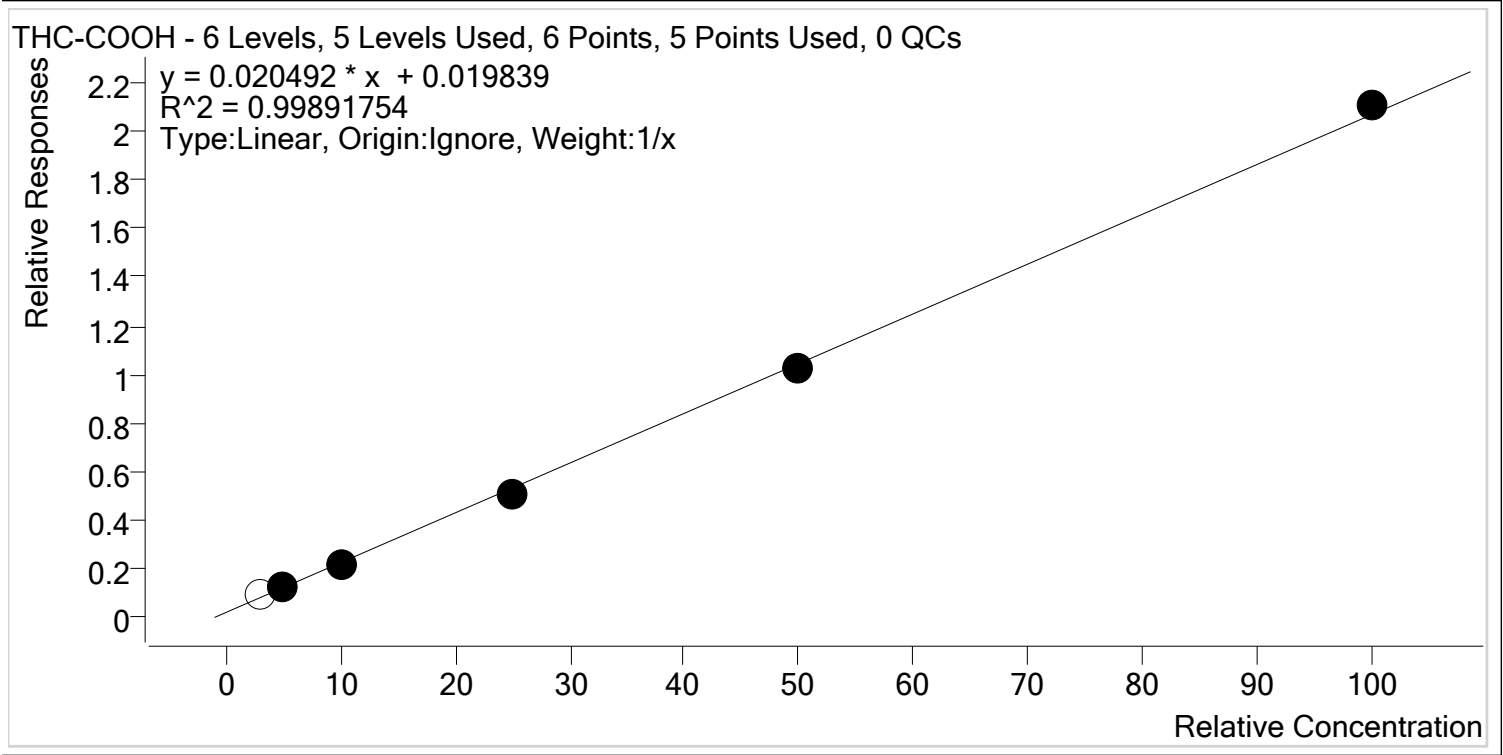


Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1-3ng	1	✓	3.0	3.1	104.3
Cal 2- 5ng	2	✓	5.0	5.1	102.2
Cal 3 -10ng	3	✓	10.0	9.3	93.1
Cal 4-25ng	4	✓	25.0	25.2	100.7
Cal 5-50ng	5	✓	50.0	49.5	99.0
Cal 6-100ng	6	✓	100.0	100.8	100.8



AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results D:\MassHunter\Data\2019\AM 25\061319 MDS THCQ SP\QuantResults\THCQ.batch.bin
Last Cal. Update 6/14/2019 7:47 AM
Analyst Name ISP\datastor
Analyte THC-COOH **Internal Standard** THC-COOH-D9

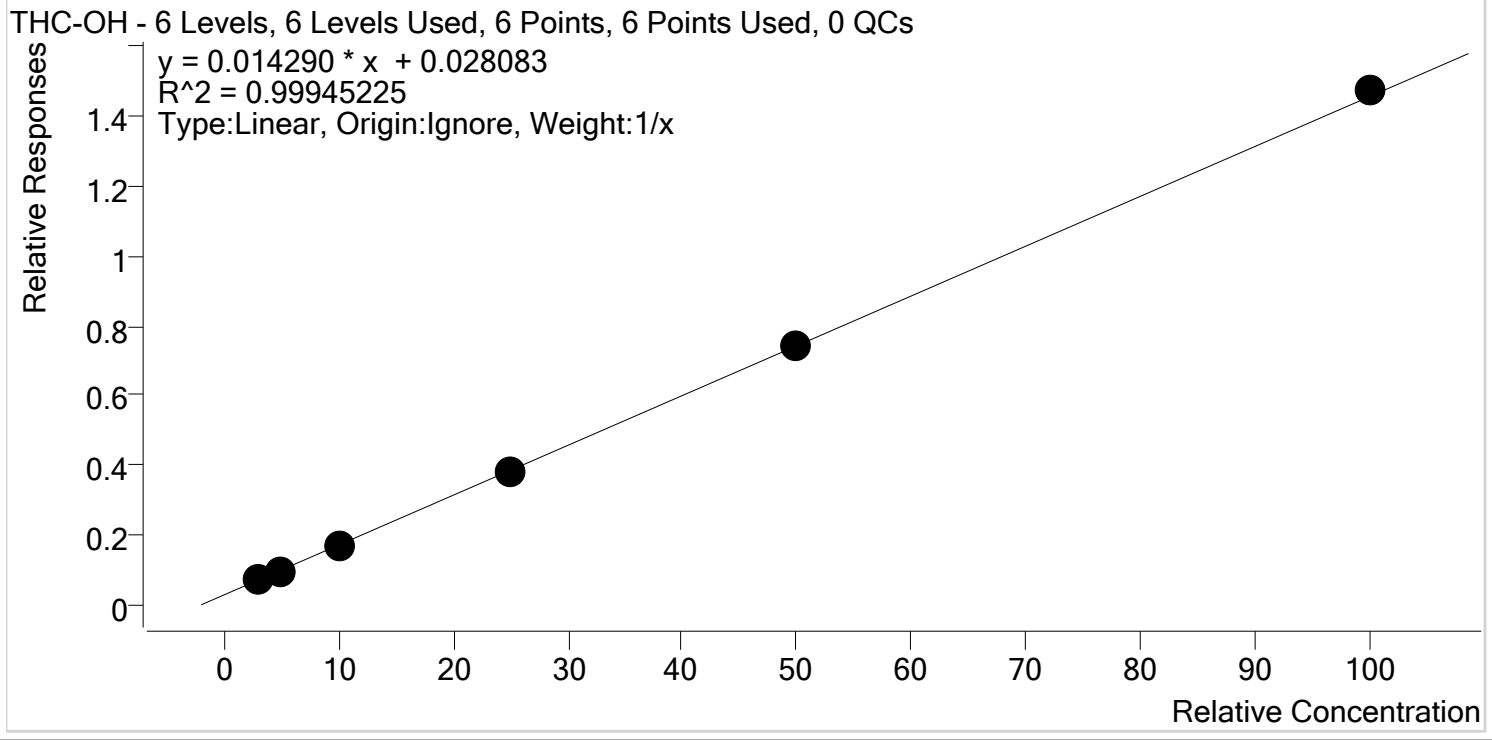


Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1-3ng	1	x	3.0	3.8	126.6
Cal 2- 5ng	2	✓	5.0	5.4	107.9
Cal 3 -10ng	3	✓	10.0	9.6	95.8
Cal 4-25ng	4	✓	25.0	24.0	95.9
Cal 5-50ng	5	✓	50.0	49.3	98.5
Cal 6-100ng	6	✓	100.0	101.8	101.8



AM #27 Cannabinoids Quant. Calibration Curve Report

Batch results D:\MassHunter\Data\2019\AM 25\061319 MDS THCQ SP\QuantResults\THCQ.batch.bin
Last Cal. Update 6/14/2019 7:47 AM
Analyst Name ISP\datastor
Analyte THC-OH **Internal Standard** THC-OH-D3



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1-3ng	1	✓	3.0	3.3	109.5
Cal 2- 5ng	2	✓	5.0	4.8	96.0
Cal 3 -10ng	3	✓	10.0	9.6	96.3
Cal 4-25ng	4	✓	25.0	24.4	97.6
Cal 5-50ng	5	✓	50.0	49.7	99.5
Cal 6-100ng	6	✓	100.0	101.2	101.2