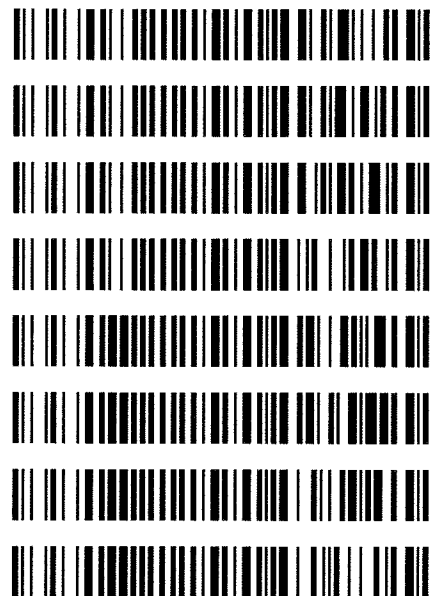


Worklist: 2701

<u>LAB CASE</u>	<u>ITEM</u>	<u>TASK ID</u>	<u>DESCRIPTION</u>
C2018-1736	2	127471	AM 27 Blood THC Quant by LC-QQQ
C2018-1760	1	127472	AM 27 Blood THC Quant by LC-QQQ
C2018-1763	1	127473	AM 27 Blood THC Quant by LC-QQQ
C2018-1804	1	127474	AM 27 Blood THC Quant by LC-QQQ
P2018-2427	1	127475	AM 27 Blood THC Quant by LC-QQQ
P2018-2428	1	127476	AM 27 Blood THC Quant by LC-QQQ
P2018-2599	1	127477	AM 27 Blood THC Quant by LC-QQQ
P2018-2605	1	127478	AM 27 Blood THC Quant by LC-QQQ



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

Extraction Date: 9/20/18
Plate lot#: 0515037

Analyst: Anne Nord
Plate Expiration: 09/28/2018

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

Mobile phase B: 0.1% Formic acid in Acetonitrile
Hexane

Blank Blood Lot: 18G207D7

Column: UCT Selectra DA 100 x 2.1mm 3um

LCMS-QQQ ID: 62340

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.
- 3. Create worklist:

Analytic:

- 1. Remove standards, plate, controls, and samples from cold storage. Allow to reach room temperature.
- 2. 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. *Shaker ID: 66759*
- 4. Pipette **500µL 0.1% formic acid in water** in wells of analytical plate.
- 5. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
- 6. Transfer **800µL 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 85-100 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.
Worklist path: 092018 cann quant Batch Name: cann quant
- 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 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: *C-THC curve 5-250*



Toxicology AM method 27 external prep information
working solution 1 ug/ml in meoh C-THC, THC-OH, THC
Stock solution 1mg/ml 10 ul each THC, THC-OH 100 ug/ml 100 ul C-THC in 9890 ul meOH
Ppd 6/5/18 Exp: 4/1/19 lot 6518 by AMN

Drug	lot (cerilliant)	expiration
C-THC	FE03121501	3/1/2020
THC-OH	FE01141502	1/1/2020
THC	FE04231406	4/1/2019

AM 27 control 50 ul working solution lot (6518) in 4950 ul blood lot (17120718)
ppd 6/5/18 Exp 4/1/19 lot 6518 Concentration 10 ng/ml each by AMN
ppd 9/20/18 Exp 4/1/19 lot 92018 Concentration 10 ng/ml each by AMN



ISP FORENSICS - Cd'A Instrument # 62340

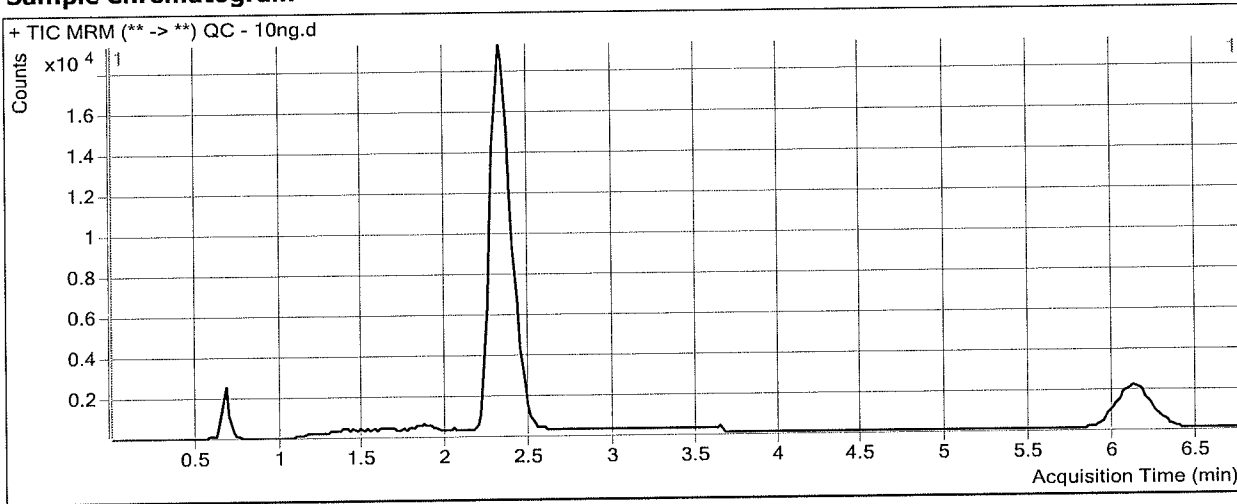
Cannabinoids Analysis Report

Batch Data Path D:\2018 Data\092118 cann quant\QuantResults\cann quant.batch.bin
Analysis Time 9/24/2018 9:31 AM **Analyst Name** ISP Tox
Report Time 9/24/2018 9:33 AM **Reporter Name** ISP Tox
Last Calib Update 9/24/2018 9:31 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-21 13:41 **Data File** QC - 10ng.d
Sample Type QC **Sample Name** QC - 10ng
Dilution 1 **Acq Method** AM 27 Quant THC 7-2017.m
Position P1-H1 **Sample Info**
Inj Vol -1 **Comment** AM 27 Cannabinoid Confirmation

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-d3	2.356	9360	105676	0.0886	9.6226
THC-COOH	THC-COOH-d9	2.426	8163	39860	0.2048	10.3329
THC	THC-d3	6.173	3382	28508	0.1186	10.0506

ISP FORENSICS - Cd'A Instrument # 62340

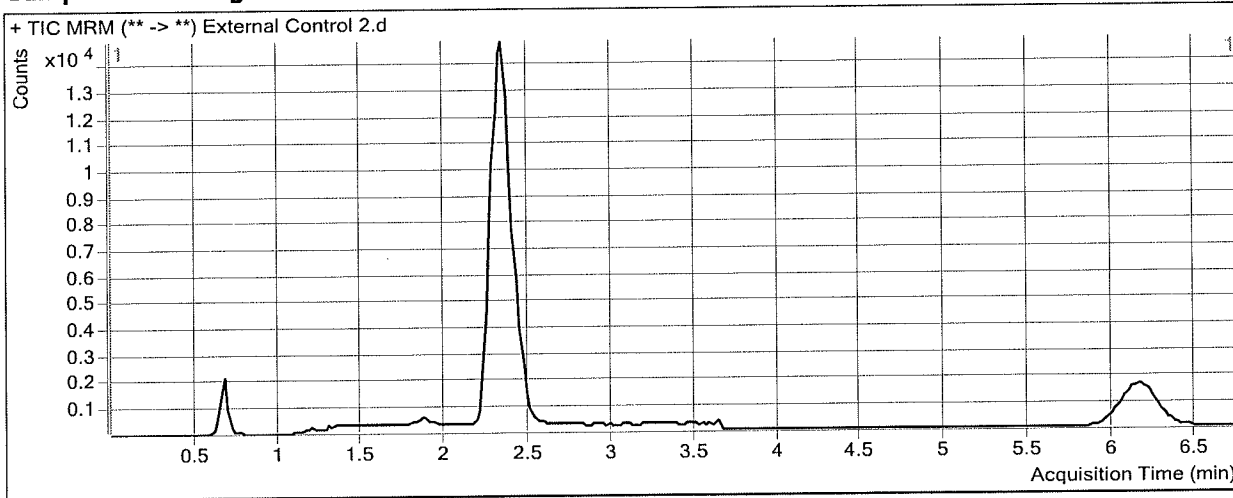
Cannabinoids Analysis Report

Batch Data Path D:\2018 Data\092118 cann quant\QuantResults\cann quant.batch.bin
Analysis Time 9/24/2018 9:31 AM **Analyst Name** ISP Tox
Report Time 9/24/2018 9:33 AM **Reporter Name** ISP Tox
Last Calib Update 9/24/2018 9:31 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-21 14:05 **Data File** External Control 2.d
Sample Type Sample **Sample Name** External Control 2
Dilution 1 **Acq Method** AM 27 Quant THC 7-2017.m
Position P1-C3 **Sample Info**
Inj Vol -1 **Comment** AM 27 Cannabinoid Confirmation

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-d3	2.356	7156	81348	0.0880	9.5595
THC-COOH	THC-COOH-d9	2.446	5660	32660	0.1733	8.6719
THC	THC-d3	6.173	3028	21721	0.1394	11.8086

ISP FORENSICS - Cd'A Instrument # 62340

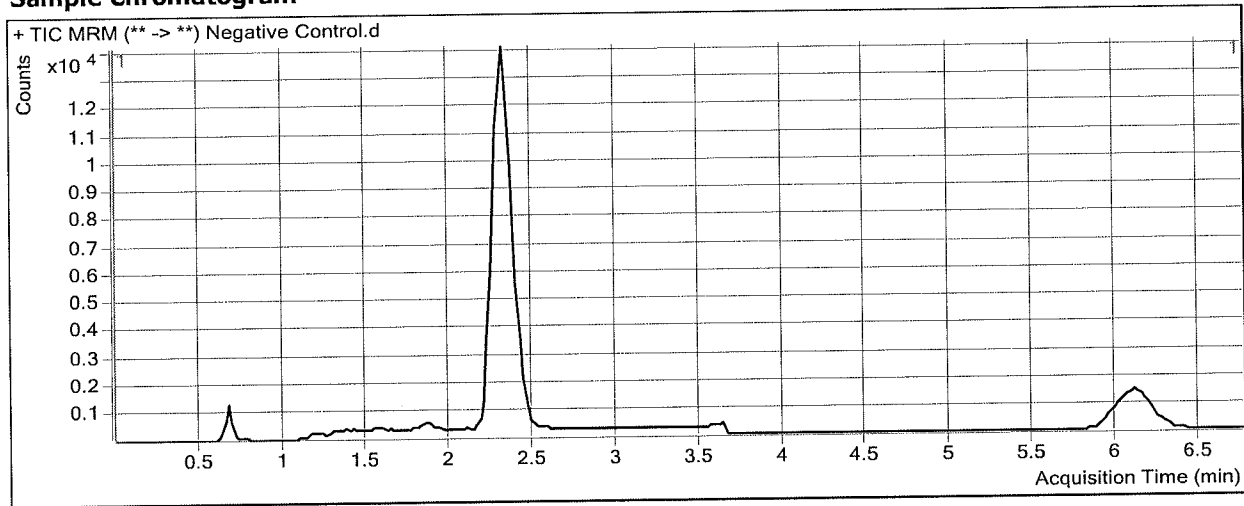
Cannabinoids Analysis Report

Batch Data Path D:\2018 Data\092118 cann quant\QuantResults\cann quant.batch.bin
Analysis Time 9/24/2018 9:31 AM **Analyst Name** ISP Tox
Report Time 9/24/2018 9:33 AM **Reporter Name** ISP Tox
Last Calib Update 9/24/2018 9:31 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-21 13:29 **Data File** Negative Control.d
Sample Type Sample **Sample Name** Negative Control
Dilution 1 **Acq Method** AM 27 Quant THC 7-2017.m
Position P1-A2 **Sample Info**
Inj Vol -1 **Comment** AM 27 Cannabinoid Confirmation

Sample Chromatogram



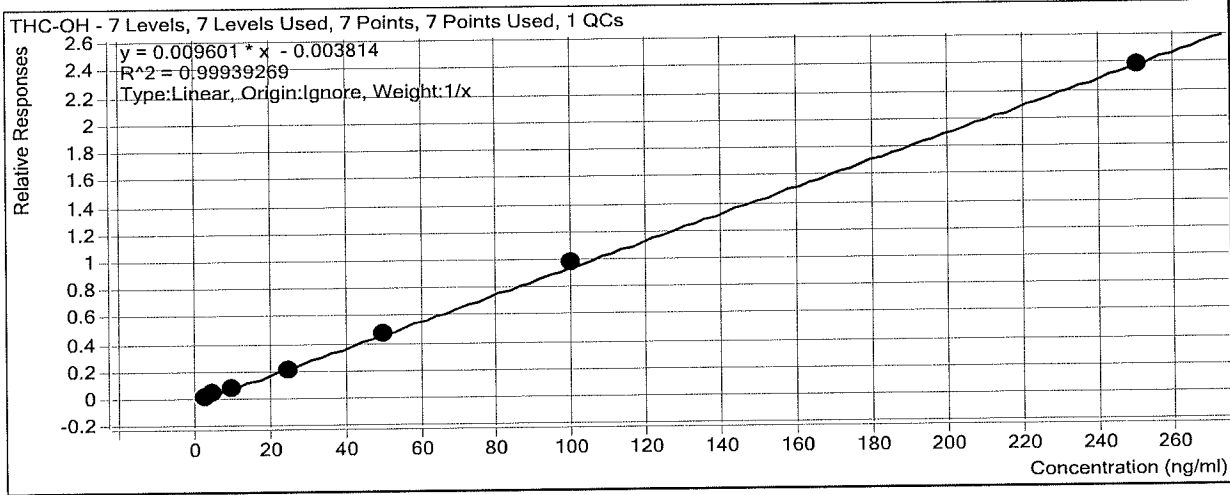
ISP Forensics Calibration Curve Report

Batch Data Path
Last Calib Update

D:\2018 Data\092118 cann quant\QuantResults\cann quant.batch.bin
9/24/2018 9:31 AM

Analyst Name ISP TOX

Target Compound *THC-OH*
Internal Standard *THC-OH-d3*



Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1 - 3ng	1	<input checked="" type="checkbox"/>	3	3.1	103.0
Cal 2 - 5ng	2	<input checked="" type="checkbox"/>	5	5.1	101.4
Cal 3 - 10ng	3	<input checked="" type="checkbox"/>	10	10.0	99.9
QC - 10ng	3	<input checked="" type="checkbox"/>	10	9.6	96.2
Cal 4 - 25ng	4	<input checked="" type="checkbox"/>	25	23.1	92.4
Cal 5 - 50ng	5	<input checked="" type="checkbox"/>	50	50.7	101.4
Cal 6 - 100ng	6	<input checked="" type="checkbox"/>	100	102.5	102.5
Cal 7 - 250ng	7	<input checked="" type="checkbox"/>	250	248.6	99.4

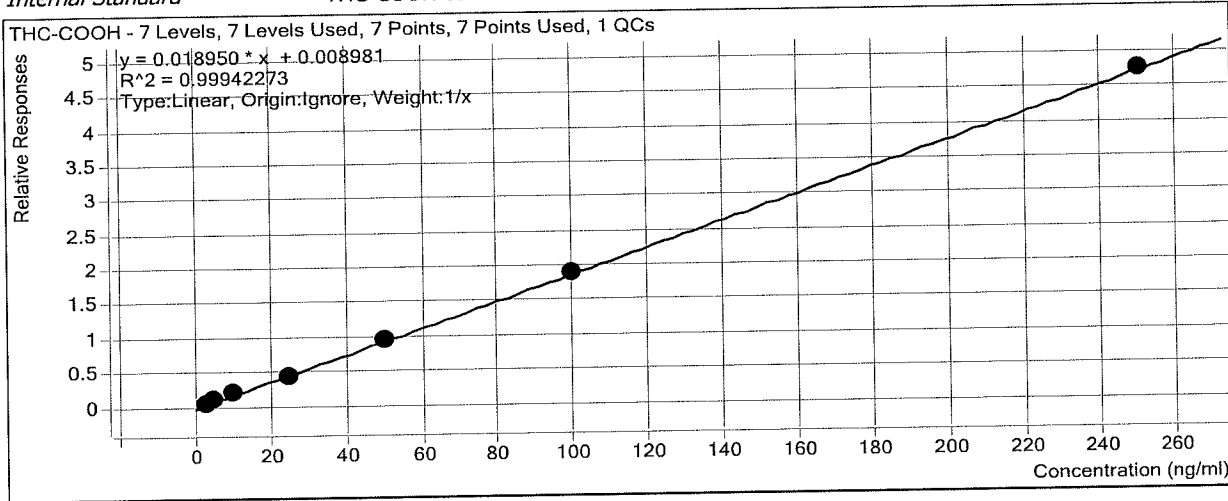
ISP Forensics Calibration Curve Report

Batch Data Path
Last Calib Update

D:\2018 Data\092118 cann quant\QuantResults\cann quant.batch.bin
9/24/2018 9:31 AM

Analyst Name ISP TOX

Target Compound *THC-COOH*
Internal Standard *THC-COOH-d9*



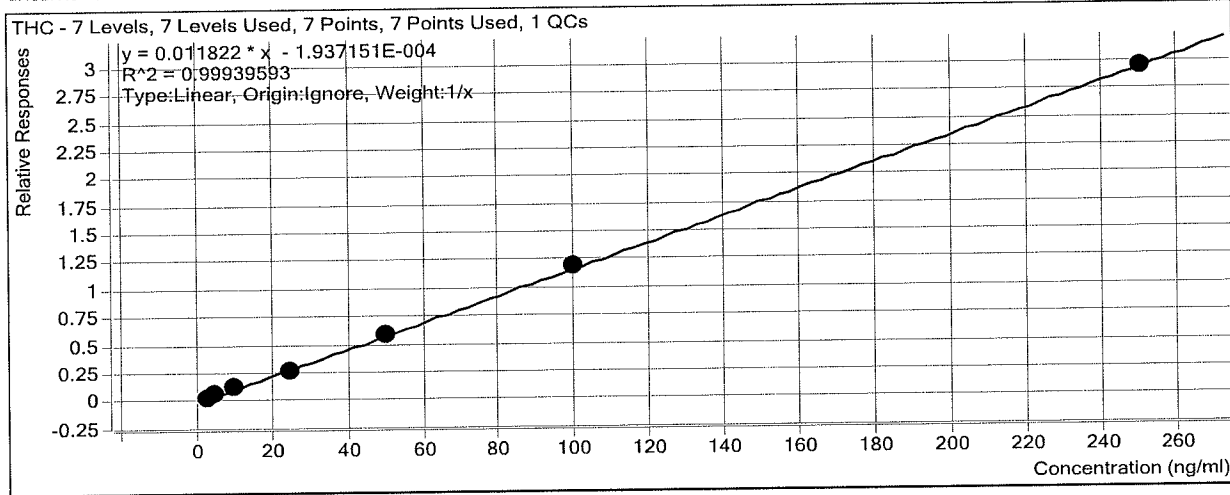
Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1 - 3ng	1	<input checked="" type="checkbox"/>	3	2.9	97.9
Cal 2 - 5ng	2	<input checked="" type="checkbox"/>	5	5.4	107.6
Cal 3 - 10ng	3	<input checked="" type="checkbox"/>	10	10.0	100.4
QC - 10ng	3	<input checked="" type="checkbox"/>	10	10.3	103.3
Cal 4 - 25ng	4	<input checked="" type="checkbox"/>	25	23.0	91.9
Cal 5 - 50ng	5	<input checked="" type="checkbox"/>	50	51.0	101.9
Cal 6 - 100ng	6	<input checked="" type="checkbox"/>	100	100.1	100.1
Cal 7 - 250ng	7	<input checked="" type="checkbox"/>	250	250.6	100.3

ISP Forensics Calibration Curve Report

Batch Data Path
Last Calib Update

D:\2018 Data\092118 cann quant\QuantResults\cann quant.batch.bin
9/24/2018 9:31 AM **Analyst Name** ISP TOX

Target Compound *THC*
Internal Standard *THC-d3*



Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1 - 3ng	1	<input checked="" type="checkbox"/>	3	3.0	101.7
Cal 2 - 5ng	2	<input checked="" type="checkbox"/>	5	5.1	101.7
Cal 3 - 10ng	3	<input checked="" type="checkbox"/>	10	10.2	102.3
QC - 10ng	3	<input checked="" type="checkbox"/>	10	10.1	100.5
Cal 4 - 25ng	4	<input checked="" type="checkbox"/>	25	23.0	91.8
Cal 5 - 50ng	5	<input checked="" type="checkbox"/>	50	50.3	100.7
Cal 6 - 100ng	6	<input checked="" type="checkbox"/>	100	102.1	102.1
Cal 7 - 250ng	7	<input checked="" type="checkbox"/>	250	249.2	99.7

ISP FORENSICS - Cd'A Instrument # 62340

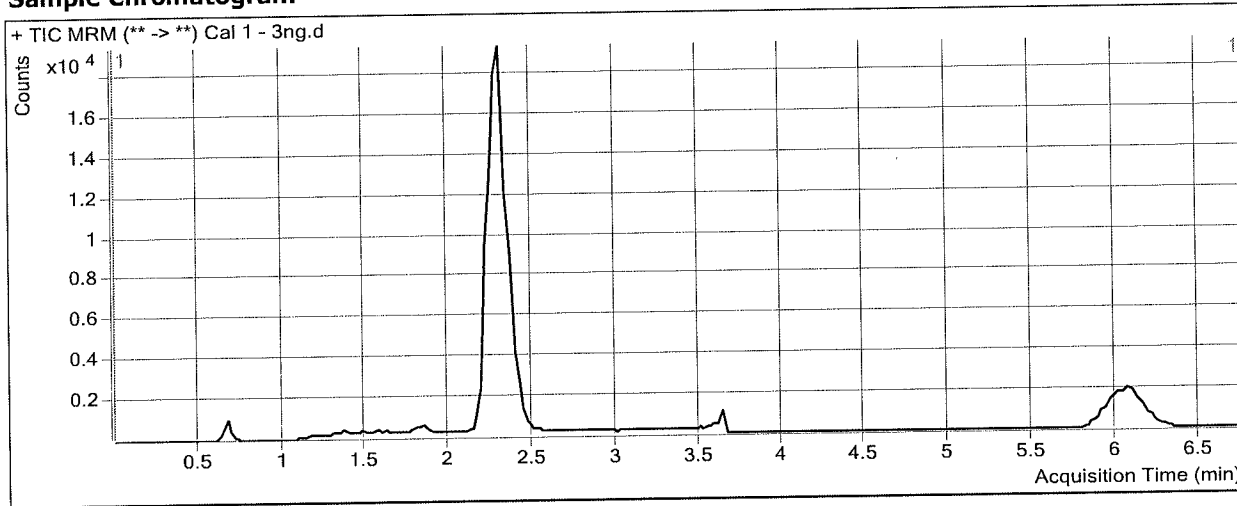
Cannabinoids Analysis Report

Batch Data Path D:\2018 Data\092118 cann quant\QuantResults\cann quant.batch.bin
Analysis Time 9/24/2018 9:31 AM **Analyst Name** ISP Tox
Report Time 9/24/2018 9:33 AM **Reporter Name** ISP Tox
Last Calib Update 9/24/2018 9:31 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-21 11:54 **Data File** Cal 1 - 3ng.d
Sample Type Calibration **Sample Name** Cal 1 - 3ng
Dilution 1 **Acq Method** AM 27 Quant THC 7-2017.m
Position P1-A1 **Sample Info**
Inj Vol -1 **Comment** AM 27 Cannabinoid Confirmation

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-d3	2.296	2818	108951	0.0259	3.0910
THC-COOH	THC-COOH-d9	2.406	2754	42613	0.0646	2.9360
THC	THC-d3	6.073	1056	29443	0.0359	3.0499

ISP FORENSICS - Cd'A Instrument # 62340

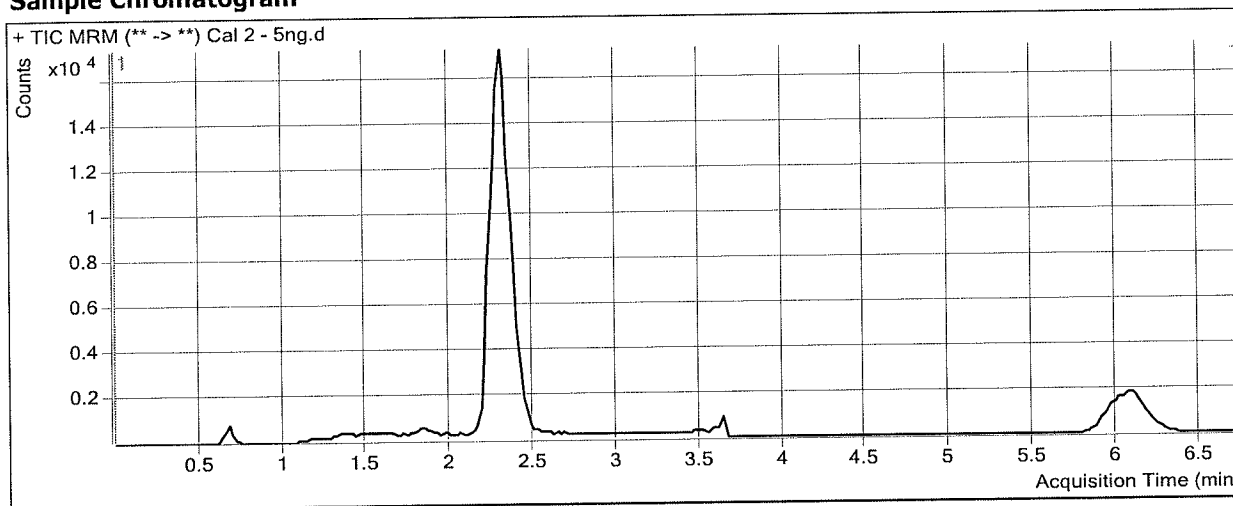
Cannabinoids Analysis Report

Batch Data Path D:\2018 Data\092118 cann quant\QuantResults\cann quant.batch.bin
Analysis Time 9/24/2018 9:31 AM **Analyst Name** ISP Tox
Report Time 9/24/2018 9:33 AM **Reporter Name** ISP Tox
Last Calib Update 9/24/2018 9:31 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-21 12:06 **Data File** Cal 2 - 5ng.d
Sample Type Calibration **Sample Name** Cal 2 - 5ng
Dilution 1 **Acq Method** AM 27 Quant THC 7-2017.m
Position P1-B1 **Sample Info**
Inj Vol -1 **Comment** AM 27 Cannabinoid Confirmation

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-d3	2.316	4355	97086	0.0449	5.0687
THC-COOH	THC-COOH-d9	2.406	4228	38117	0.1109	5.3794
THC	THC-d3	6.113	1596	26622	0.0599	5.0863

ISP FORENSICS - Cd'A Instrument # 62340

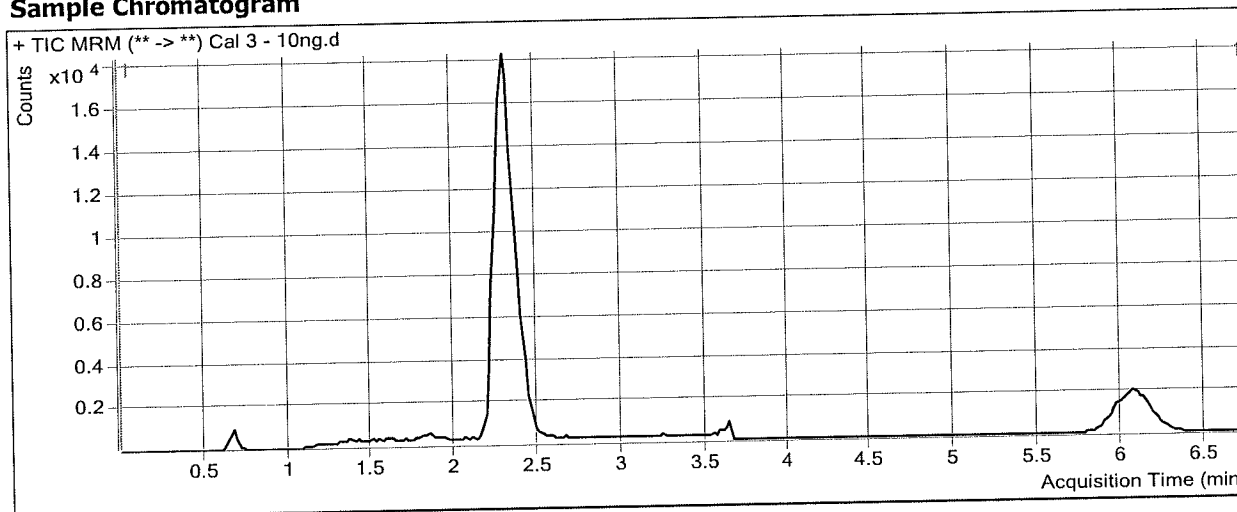
Cannabinoids Analysis Report

Batch Data Path D:\2018 Data\092118 cann quant\QuantResults\cann quant.batch.bin
Analysis Time 9/24/2018 9:31 AM **Analyst Name** ISP Tox
Report Time 9/24/2018 9:33 AM **Reporter Name** ISP Tox
Last Calib Update 9/24/2018 9:31 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-21 12:18 **Data File** Cal 3 - 10ng.d
Sample Type Calibration **Sample Name** Cal 3 - 10ng
Dilution 1 **Acq Method** AM 27 Quant THC 7-2017.m
Position P1-C1 **Sample Info**
Inj Vol -1 **Comment** AM 27 Cannabinoid Confirmation

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-d3	2.316	9028	97998	0.0921	9.9916
THC-COOH	THC-COOH-d9	2.406	7772	39002	0.1993	10.0416
THC	THC-d3	6.133	3203	26522	0.1208	10.2323

ISP FORENSICS - Cd'A Instrument # 62340

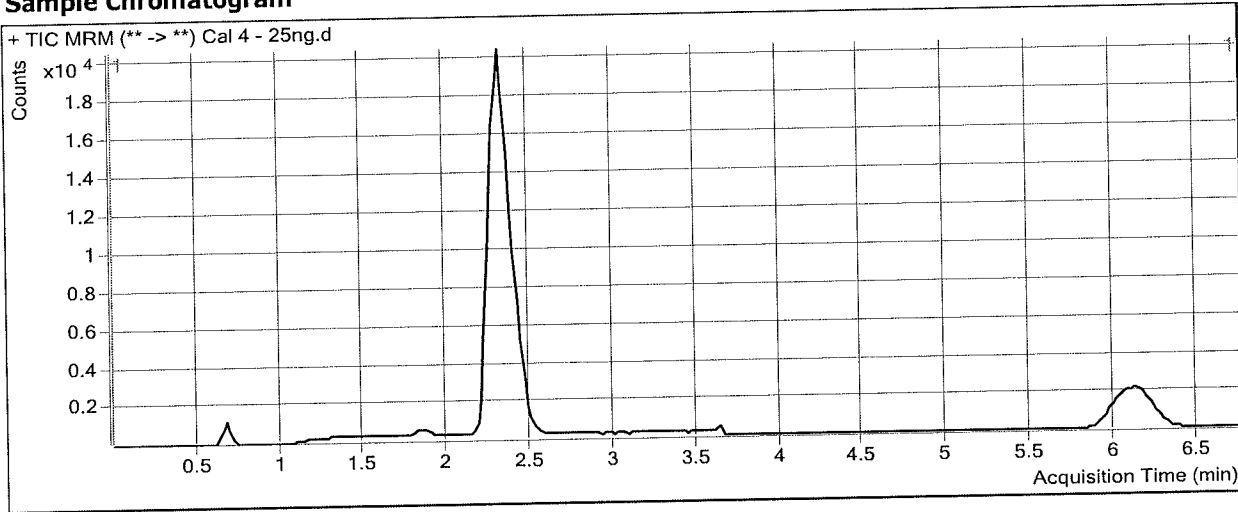
Cannabinoids Analysis Report

Batch Data Path D:\2018 Data\092118 cann quant\QuantResults\cann quant.batch.bin
Analysis Time 9/24/2018 9:31 AM **Analyst Name** ISP Tox
Report Time 9/24/2018 9:33 AM **Reporter Name** ISP Tox
Last Calib Update 9/24/2018 9:31 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-21 12:30 **Data File** Cal 4 - 25ng.d
Sample Type Calibration **Sample Name** Cal 4 - 25ng
Dilution 1 **Acq Method** AM 27 Quant THC 7-2017.m
Position P1-D1 **Sample Info**
Inj Vol -1 **Comment** AM 27 Cannabinoid Confirmation

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-d3	2.336	21607	99142	0.2179	23.0954
THC-COOH	THC-COOH-d9	2.426	17494	39381	0.4442	22.9684
THC	THC-d3	6.173	7157	26393	0.2711	22.9517

ISP FORENSICS - Cd'A Instrument # 62340

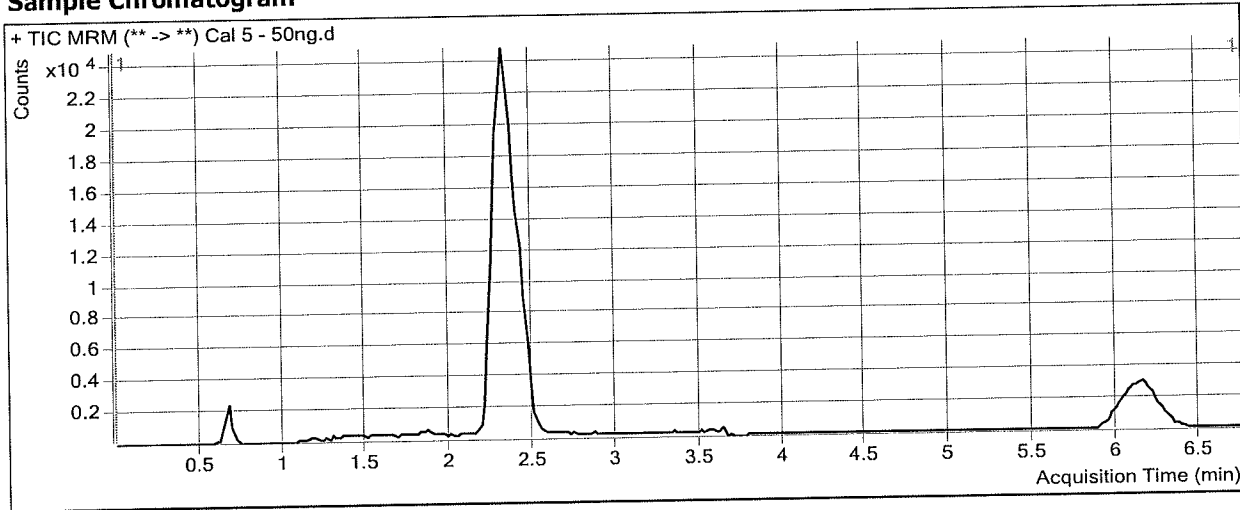
Cannabinoids Analysis Report

Batch Data Path D:\2018 Data\092118 cann quant\QuantResults\cann quant.batch.bin
Analysis Time 9/24/2018 9:31 AM **Analyst Name** ISP Tox
Report Time 9/24/2018 9:33 AM **Reporter Name** ISP Tox
Last Calib Update 9/24/2018 9:31 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-21 12:42 **Data File** Cal 5 - 50ng.d
Sample Type Calibration **Sample Name** Cal 5 - 50ng
Dilution 1 **Acq Method** AM 27 Quant THC 7-2017.m
Position P1-E1 **Sample Info**
Inj Vol -1 **Comment** AM 27 Cannabinoid Confirmation

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-d3	2.336	48107	99608	0.4830	50.6982
THC-COOH	THC-COOH-d9	2.426	37588	38558	0.9748	50.9681
THC	THC-d3	6.173	15760	26498	0.5948	50.3268

ISP FORENSICS - Cd'A Instrument # 62340

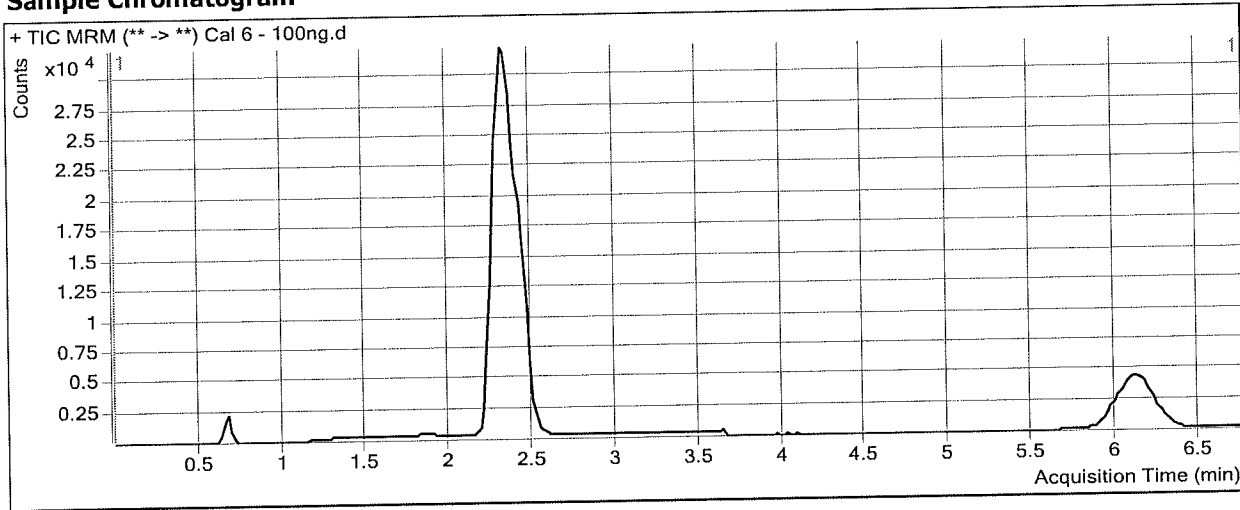
Cannabinoids Analysis Report

Batch Data Path D:\2018 Data\092118 cann quant\QuantResults\cann quant.batch.bin
Analysis Time 9/24/2018 9:31 AM **Analyst Name** ISP Tox
Report Time 9/24/2018 9:33 AM **Reporter Name** ISP Tox
Last Calib Update 9/24/2018 9:31 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-21 12:54 **Data File** Cal 6 - 100ng.d
Sample Type Calibration **Sample Name** Cal 6 - 100ng
Dilution 1 **Acq Method** AM 27 Quant THC 7-2017.m
Position P1-F1 **Sample Info**
Inj Vol -1 **Comment** AM 27 Cannabinoid Confirmation

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-d3	2.336	95138	97082	0.9800	102.4623
THC-COOH	THC-COOH-d9	2.426	70477	36993	1.9052	100.0615
THC	THC-d3	6.153	32302	26755	1.2073	102.1389

ISP FORENSICS - Cd'A Instrument # 62340

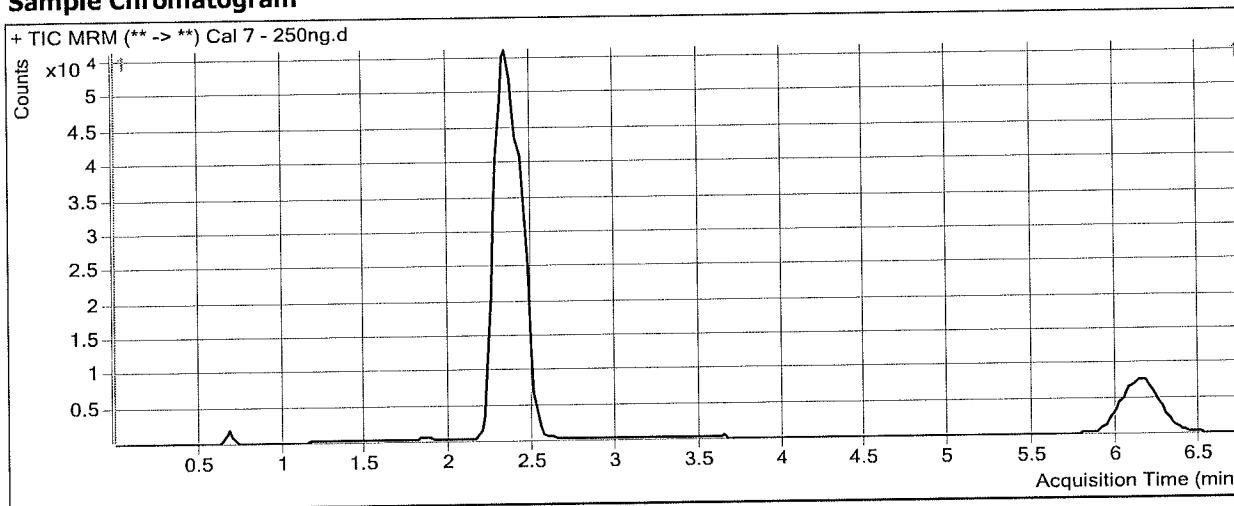
Cannabinoids Analysis Report

Batch Data Path D:\2018 Data\092118 cann quant\QuantResults\cann quant.batch.bin
Analysis Time 9/24/2018 9:31 AM **Analyst Name** ISP Tox
Report Time 9/24/2018 9:33 AM **Reporter Name** ISP Tox
Last Calib Update 9/24/2018 9:31 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-21 13:06 **Data File** Cal 7 - 250ng.d
Sample Type Calibration **Sample Name** Cal 7 - 250ng
Dilution 1 **Acq Method** AM 27 Quant THC 7-2017.m
Position P1-G1 **Sample Info**
Inj Vol -1 **Comment** AM 27 Cannabinoid Confirmation

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-d3	2.336	230034	96529	2.3830	248.5927
THC-COOH	THC-COOH-d9	2.426	169337	35585	4.7587	250.6450
THC	THC-d3	6.153	75553	25645	2.9461	249.2139