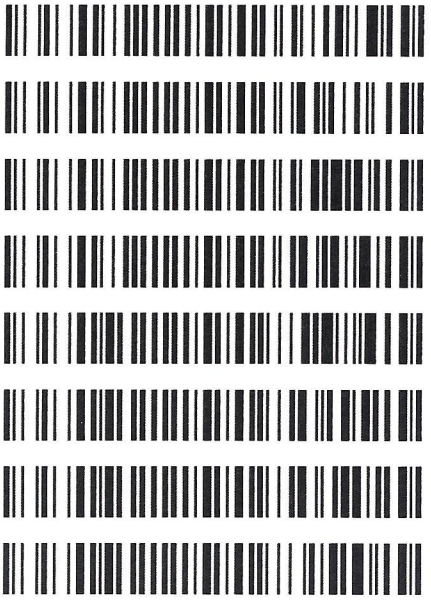
reviewed 5/29/18 amn

5/16/2018

Worklist: 2397

LAB_CASE	ITEM	TASK_ID	DESCRIPTION
C2018-0856	1	115928	AM 27 Blood THC Quant by LC-QQQ
C2018-0861	2	115929	AM 27 Blood THC Quant by LC-QQQ
C2018-0904	1	115930	AM 27 Blood THC Quant by LC-QQQ
C2018-0914	1	115931	AM 27 Blood THC Quant by LC-QQQ
M2018-1526	1	115924	AM 27 Blood THC Quant by LC-QQQ
M2018-1589	3	115925	AM 27 Blood THC Quant by LC-QQQ
M2018-1590	1	115926	AM 27 Blood THC Quant by LC-QQQ
M2018-1711	1	115927	AM 27 Blood THC Quant by LC-QQQ



C:\inetpub\wwwroot\NLIMS\reports\ORACLE\WORKLIST.RPT

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

Extraction Date: BW 9/5/17/18 Analyst: B. Wylie
Plate lot#: 0515037 Plate Expiration: 9/28/2018

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: 17J0718 **Column**: UCT Selectra DA 100 x 2.1mm 3um
LCMS-QQQ ID: 62340

Pre-Analytic:

- [x] 1. Check levels of mobile phases and needle wash refill as needed. Ensure waste is not full.
- [x] 2. Ensure correct column is installed and begin mobile phase flow allow to equilibrate ~ 30 minutes.
- [x] 3. Create worklist:

Analytic:

- [x] 1. Remove standards, plate, controls, and samples from cold storage. Allow to reach room temperature.
- [x] 2. Pipette **1000µL blood (calibrated pipette) Pipette ID: k52558g** in wells of analytical (standards) plate.
- [x] 3. Place on shaking incubator at ambient temp., 900rpm for 15 minutes. *Shaker ID: 66759*
- [x] 4. Pipette **500µL 0.1% formic acid in water** in wells of analytical plate.
- [x] 5. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
- [x] 6. Transfer **800µL of blood+acid** mixture to corresponding wells of SLE+ plate.
- [x] 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
- [x] 8. Wait 5 minutes.
- [x] 9. Add **2.25mL MTBE. (*Add in 3 increments of 750uL)***
- [x] 10. Wait 5 minutes.
- [x] 11. Apply positive pressure for approx. 15 seconds. ***(10-15 PSI- Selector to the left).***
- [x] 12. Add **2.25mL Hexane. (*Add in 3 increments of 750uL)***
- [x] 13. Wait 5 minutes.
- [x] 14. Apply positive pressure for approx. 15 seconds. ***(10-15 PSI- Selector to the left).***
- [x] 15. Remove plate containing eluate. Place on SPE Dry and evaporate to dryness at approx. 35°C. *SPE Dry ID: 66819*
- [x] 16. Reconstitute in **100µL 100% MeOH** and heat seal plate with foil. Place in autosampler and run worklist.

Post-Analytic

- [x] 1. Create batch and process data.
  Worklist path: 05182018 AM27 Cann quant Batch Name: BW 05182018 Worklist 2397 AM27
- [x] 2. Make any necessary integration changes, Curve weighting of Linear 1/x with r^2 values ≥0.98 for each analyte
- [x] 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
- [x] 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.
- [x] 5. Did all QCs pass for each analyte? (Y) N
- [x] 6 Enter QCs into control charting.
- [x] 7 Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS:

B. Wylie

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 THC, 100 ug/ml 100 ul each THC-OH, C-THC in 9880 ul meOH
Ppd 3/19/18 Exp: 9/19/18 lot 91918 by AMN

Drug	lot (cerilliant)	expiration
C-THC	FE07171501	9/1/2020
THC-OH	FE07221601	7/1/2021
THC	FE01041701	3/1/2022

AM 27 control 100 ul working solution lot (91918) in 9900 ul blood lot (17J20718)
ppd 3/19/18 Exp 6/19/18 lot 61918 Concentration 10 ng/ml each by AMN

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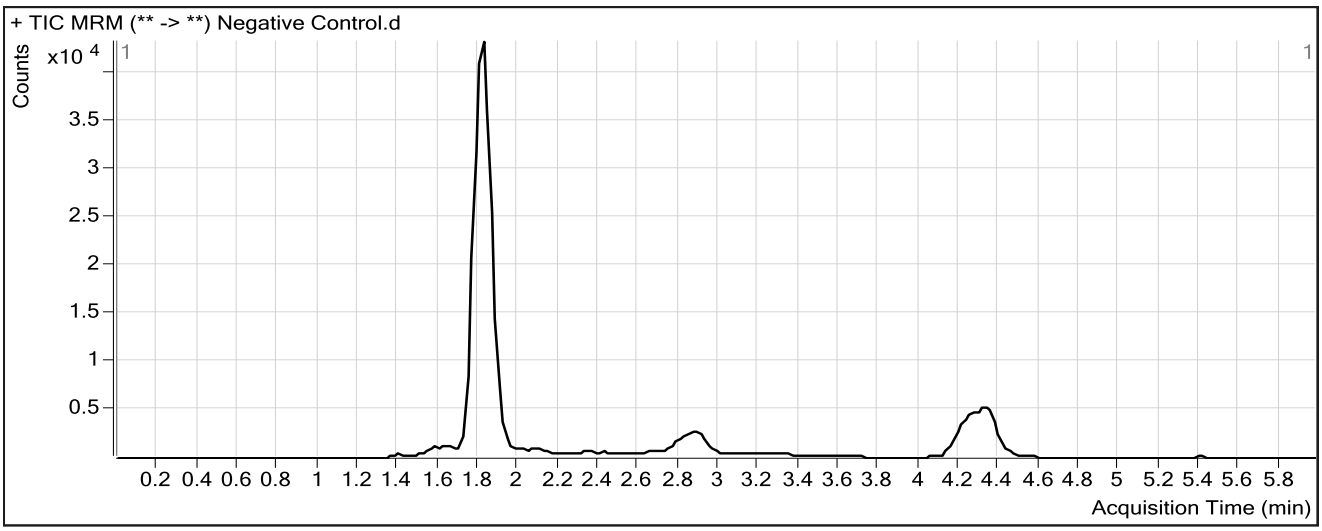
ISP FORENSICS - Cd'A Instrument # 62340
Cannabinoids Analysis Report

Batch Data Path	D:\2018 Data\05182018 AM27 cann quant\QuantResults\05182018 Worklist 2397 AM27.batch.bin		
Analysis Time	5/29/2018 7:31 AM	**Analyst Name**	ISP Tox
Report Time	5/29/2018 7:36 AM	**Reporter Name**	ISP Tox
Last Calib Update	5/29/2018 7:31 AM	**Batch State**	Processed

Analysis Info

Acq Time	2018-05-18 14:54	**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



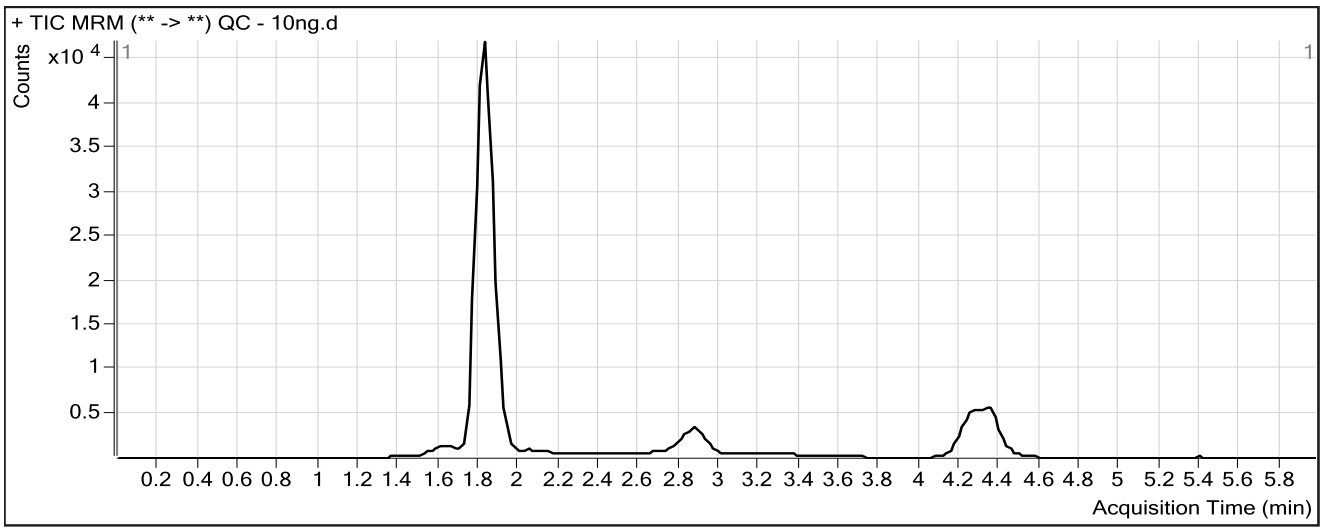
ISP FORENSICS - Cd'A Instrument # 62340
Cannabinoids Analysis Report

Batch Data Path	D:\2018 Data\05182018 AM27 cann quant\QuantResults\05182018 Worklist 2397 AM27.batch.bin		
Analysis Time	5/29/2018 7:31 AM	**Analyst Name**	ISP Tox
Report Time	5/29/2018 7:36 AM	**Reporter Name**	ISP Tox
Last Calib Update	5/29/2018 7:31 AM	**Batch State**	Processed

Analysis Info

Acq Time	2018-05-18 15:06	**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	1.835	21215	197616	0.1074	10.4307
THC-COOH	THC-COOH-d9	1.885	13957	61752	0.2260	10.8018
THC	THC-d3	4.351	7410	58266	0.1272	10.5006

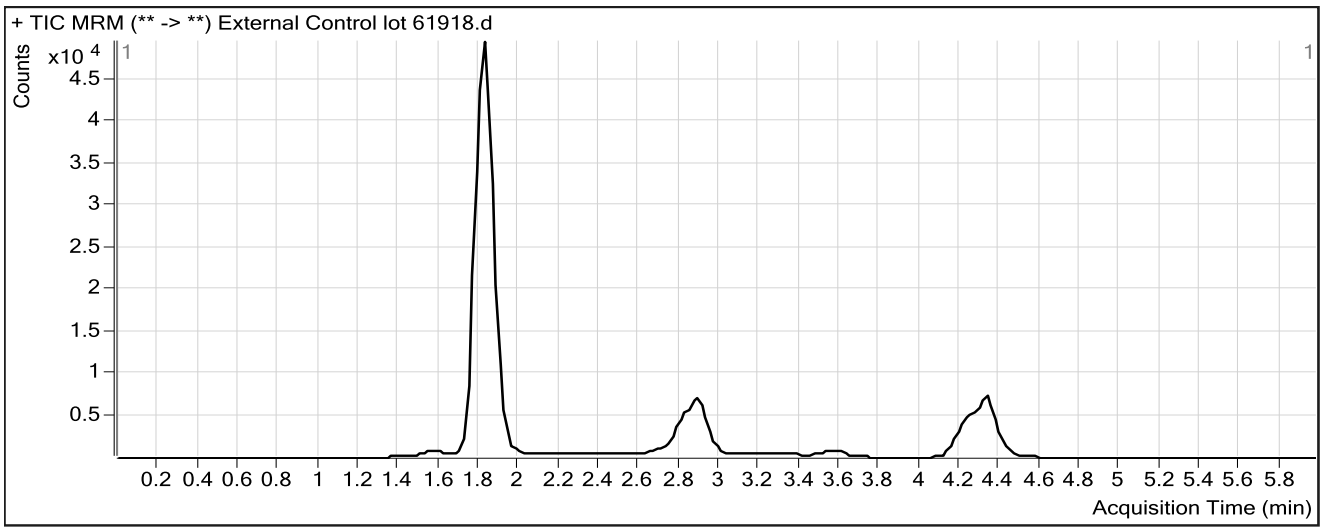
ISP FORENSICS - Cd'A Instrument # 62340
Cannabinoids Analysis Report

Batch Data Path	D:\2018 Data\05182018 AM27 cann quant\QuantResults\05182018 Worklist 2397 AM27.batch.bin		
Analysis Time	5/29/2018 7:31 AM	**Analyst Name**	ISP Tox
Report Time	5/29/2018 7:36 AM	**Reporter Name**	ISP Tox
Last Calib Update	5/29/2018 7:31 AM	**Batch State**	Processed

Analysis Info

Acq Time	2018-05-18 15:18	**Data File**	External Control lot 61918.d
Sample Type	QC	**Sample Name**	External Control lot 61918
Dilution	1	**Acq Method**	AM 27 Quant THC 7-2017.m
Position	P1-B2	**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	1.835	18017	217655	0.0828	8.0330
THC-COOH	THC-COOH-d9	1.885	12674	69493	0.1824	8.5569
THC	THC-d3	4.331	6682	69257	0.0965	8.0368

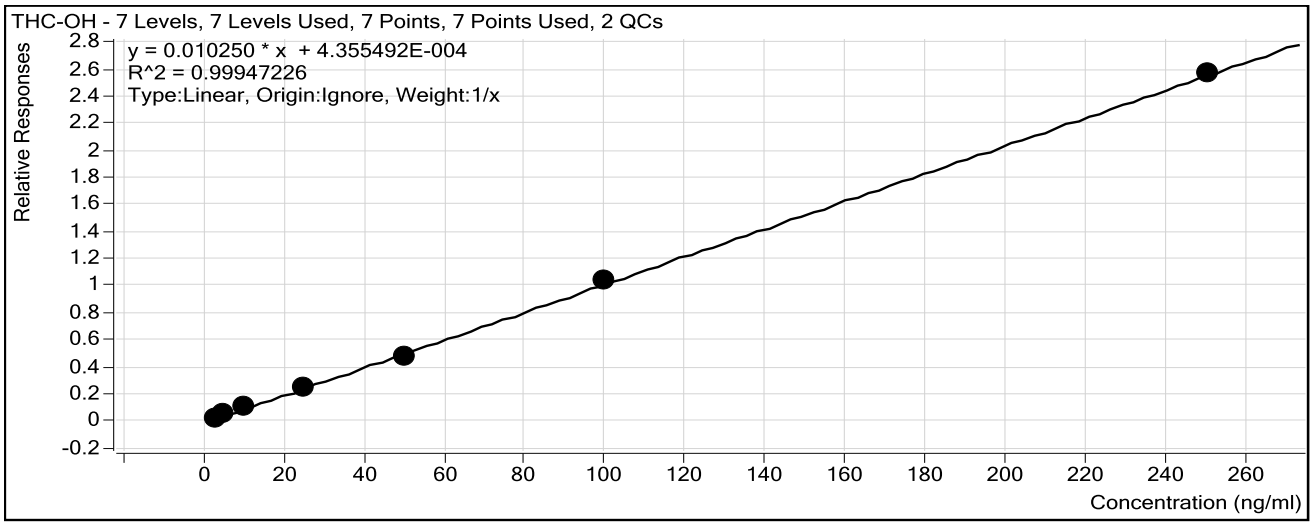
ISP Forensics
Calibration Curve Report

Batch Data Path D:\2018 Data\05182018 AM27 cann quant\QuantResults\05182018 Worklist 2397 AM27.batch.bin

Last Calib Update 5/29/2018 7:31 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	☑	3	3.0	99.7
Cal 2 - 5ng	2	☑	5	5.2	104.9
Cal 3 - 10ng	3	☑	10	10.0	100.0
QC - 10ng	3	☑	10	10.4	104.3
External Control lot 61918	3	☑	10	8.0	80.3
Cal 4 - 25ng	4	☑	25	24.4	97.7
Cal 5 - 50ng	5	☑	50	47.6	95.2
Cal 6 - 100ng	6	☑	100	102.4	102.4
Cal 7 - 250ng	7	☑	250	250.4	100.1

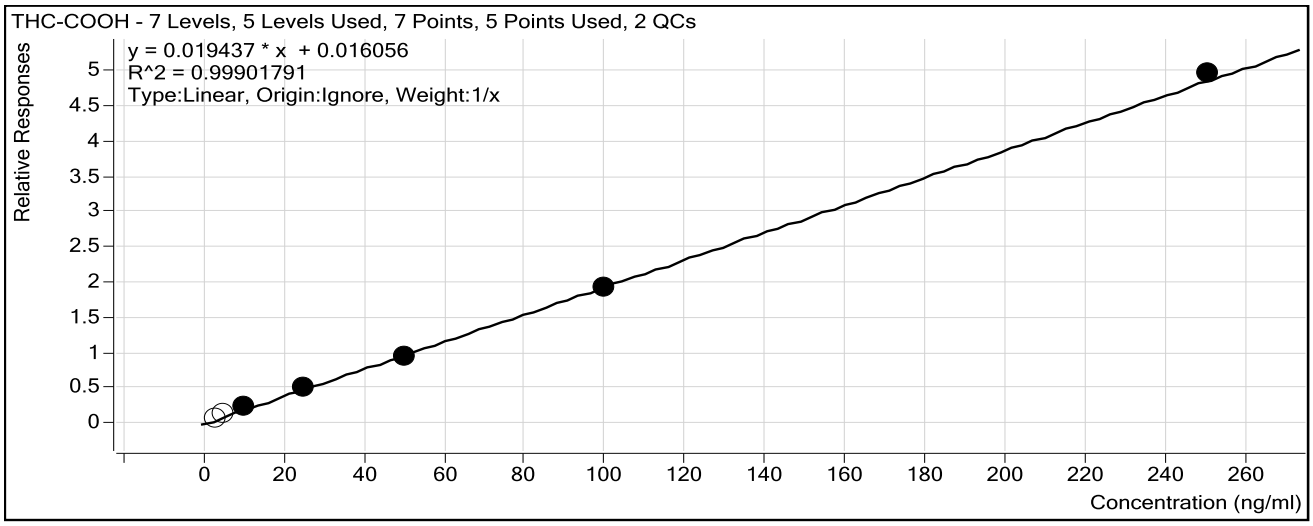
ISP Forensics
Calibration Curve Report

Batch Data Path D:\2018 Data\05182018 AM27 cann quant\QuantResults\05182018 Worklist 2397 AM27.batch.bin

Last Calib Update 5/29/2018 7:31 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	☐	3	3.6	118.6
Cal 2 - 5ng	2	☐	5	6.2	124.6
Cal 3 - 10ng	3	☑	10	10.7	106.8
QC - 10ng	3	☑	10	10.8	108.0
External Control lot 61918	3	☑	10	8.6	85.6
Cal 4 - 25ng	4	☑	25	24.6	98.5
Cal 5 - 50ng	5	☑	50	47.5	94.9
Cal 6 - 100ng	6	☑	100	98.1	98.1
Cal 7 - 250ng	7	☑	250	254.1	101.7

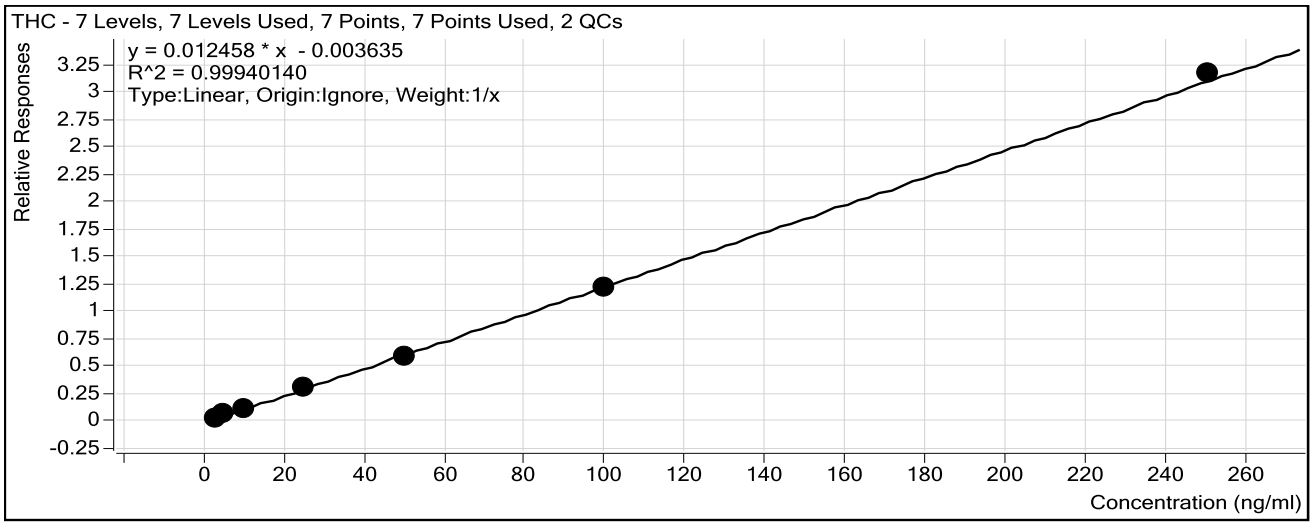
ISP Forensics
Calibration Curve Report

Batch Data Path D:\2018 Data\05182018 AM27 cann quant\QuantResults\05182018 Worklist 2397 AM27.batch.bin

Last Calib Update 5/29/2018 7:31 AM **Analyst Name** ISP TOX

Target Compound *THC*

Internal Standard *THC-d3*



Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1 - 3ng	1	☑	3	3.1	102.9
Cal 2 - 5ng	2	☑	5	5.1	102.9
Cal 3 - 10ng	3	☑	10	9.9	99.1
QC - 10ng	3	☑	10	10.5	105.0
External Control lot 61918	3	☑	10	8.0	80.4
Cal 4 - 25ng	4	☑	25	24.9	99.8
Cal 5 - 50ng	5	☑	50	48.0	96.0
Cal 6 - 100ng	6	☑	100	97.5	97.5
Cal 7 - 250ng	7	☑	250	254.4	101.7

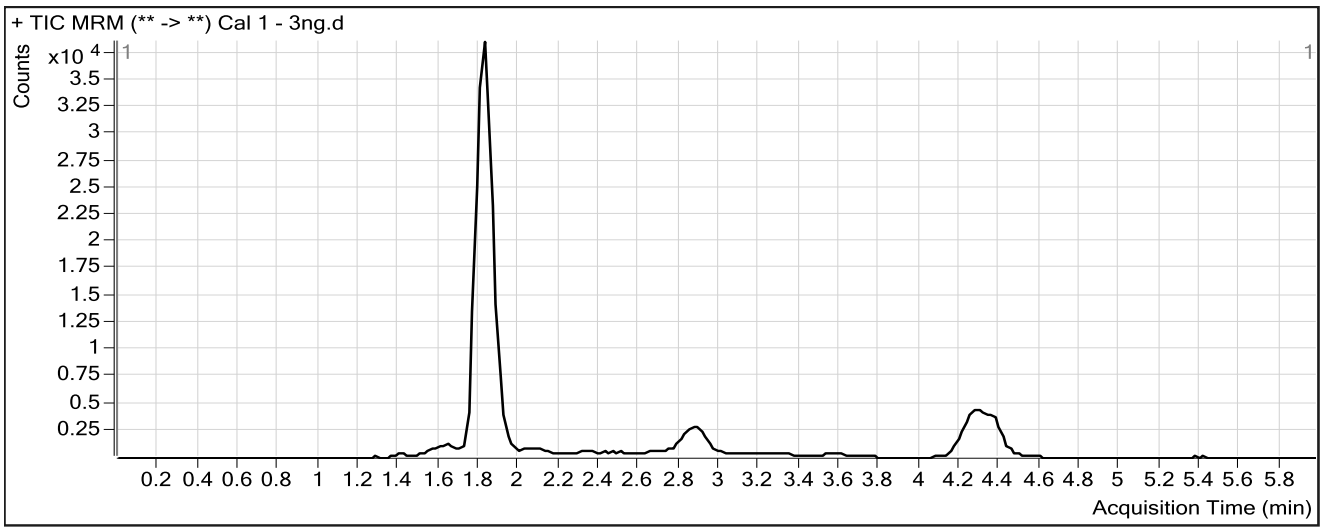
ISP FORENSICS - Cd'A Instrument # 62340
Cannabinoids Analysis Report

Batch Data Path	D:\2018 Data\05182018 AM27 cann quant\QuantResults\05182018 Worklist 2397 AM27.batch.bin		
Analysis Time	5/29/2018 7:31 AM	**Analyst Name**	ISP Tox
Report Time	5/29/2018 7:36 AM	**Reporter Name**	ISP Tox
Last Calib Update	5/29/2018 7:31 AM	**Batch State**	Processed

Analysis Info

Acq Time	2018-05-18 13:19	**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	1.835	5244	168587	0.0311	2.9922
THC-COOH	THC-COOH-d9	1.885	4490	52686	0.0852	3.5583
THC	THC-d3	4.351	1745	50106	0.0348	3.0867

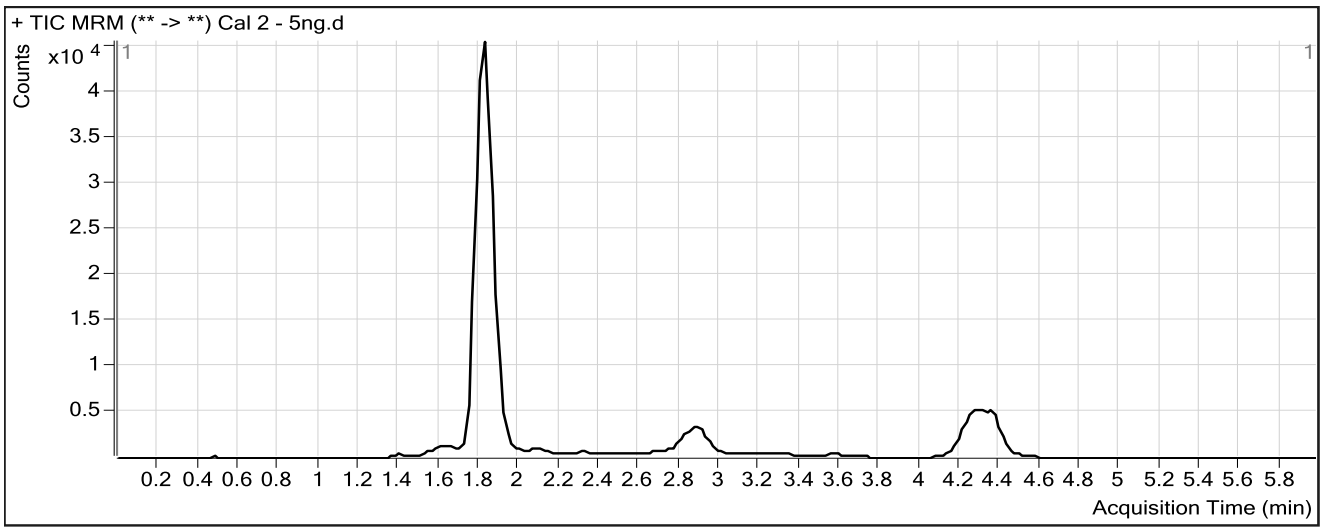
ISP FORENSICS - Cd'A Instrument # 62340
Cannabinoids Analysis Report

Batch Data Path	D:\2018 Data\05182018 AM27 cann quant\QuantResults\05182018 Worklist 2397 AM27.batch.bin		
Analysis Time	5/29/2018 7:31 AM	**Analyst Name**	ISP Tox
Report Time	5/29/2018 7:36 AM	**Reporter Name**	ISP Tox
Last Calib Update	5/29/2018 7:31 AM	**Batch State**	Processed

Analysis Info

Acq Time	2018-05-18 13:31	**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	1.835	10832	199940	0.0542	5.2427
THC-COOH	THC-COOH-d9	1.885	8617	62815	0.1372	6.2315
THC	THC-d3	4.351	3598	59512	0.0605	5.1451

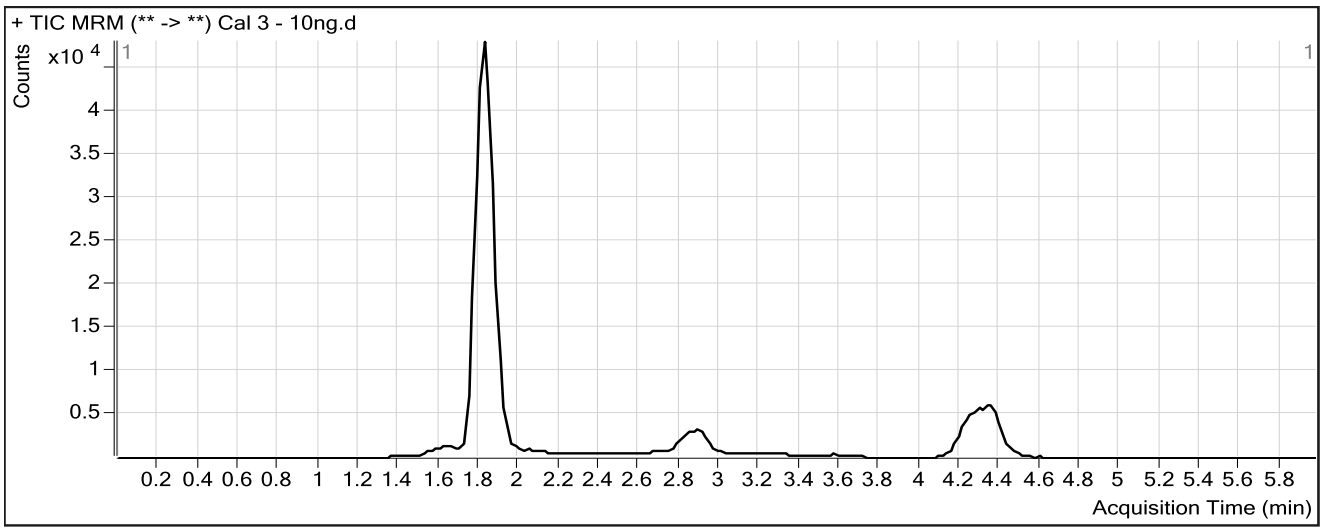
ISP FORENSICS - Cd'A Instrument # 62340
Cannabinoids Analysis Report

Batch Data Path	D:\2018 Data\05182018 AM27 cann quant\QuantResults\05182018 Worklist 2397 AM27.batch.bin		
Analysis Time	5/29/2018 7:31 AM	**Analyst Name**	ISP Tox
Report Time	5/29/2018 7:36 AM	**Reporter Name**	ISP Tox
Last Calib Update	5/29/2018 7:31 AM	**Batch State**	Processed

Analysis Info

Acq Time	2018-05-18 13:43	**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	1.835	20974	203771	0.1029	9.9989
THC-COOH	THC-COOH-d9	1.885	14321	64012	0.2237	10.6841
THC	THC-d3	4.351	7515	62692	0.1199	9.9141

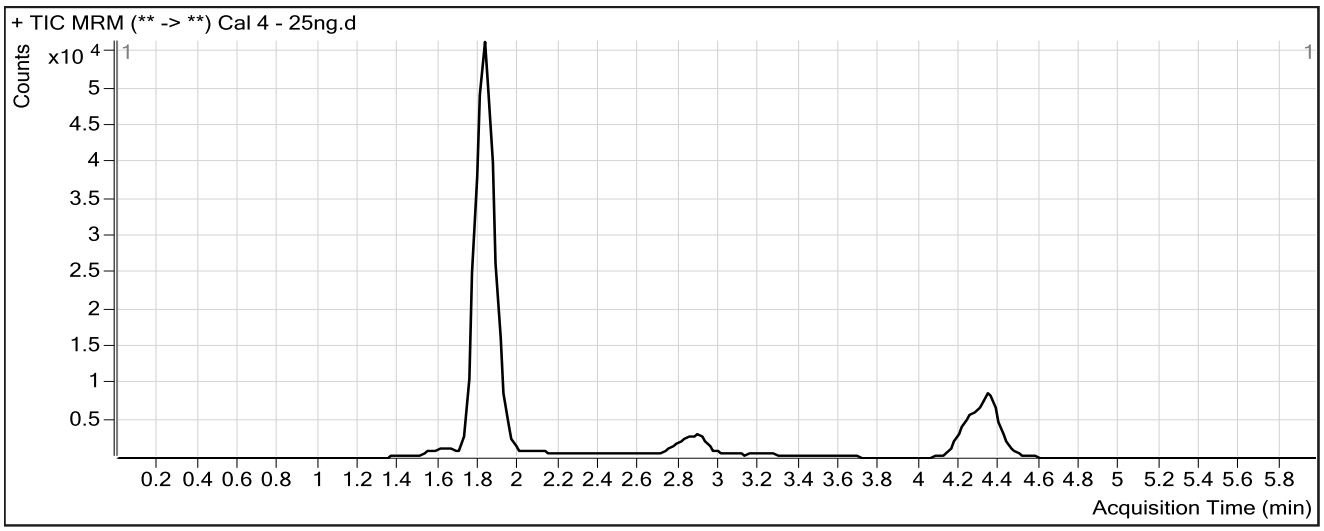
ISP FORENSICS - Cd'A Instrument # 62340
Cannabinoids Analysis Report

Batch Data Path	D:\2018 Data\05182018 AM27 cann quant\QuantResults\05182018 Worklist 2397 AM27.batch.bin		
Analysis Time	5/29/2018 7:31 AM	**Analyst Name**	ISP Tox
Report Time	5/29/2018 7:36 AM	**Reporter Name**	ISP Tox
Last Calib Update	5/29/2018 7:31 AM	**Batch State**	Processed

Analysis Info

Acq Time	2018-05-18 13:55	**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	1.835	54348	216765	0.2507	24.4172
THC-COOH	THC-COOH-d9	1.885	32331	65364	0.4946	24.6212
THC	THC-d3	4.351	20167	65682	0.3070	24.9381

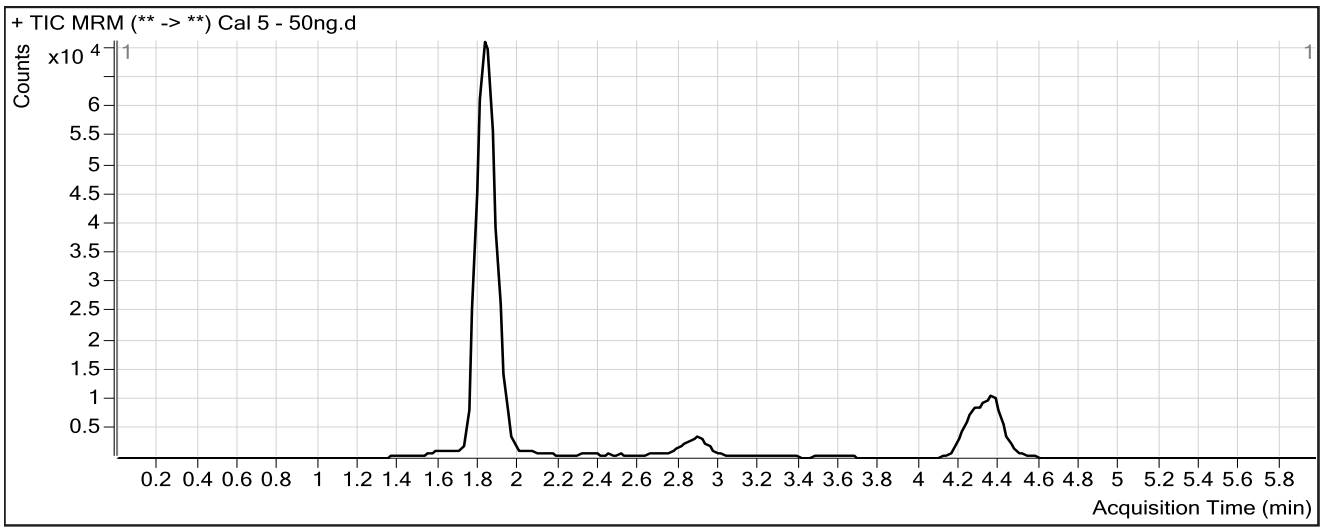
ISP FORENSICS - Cd'A Instrument # 62340
Cannabinoids Analysis Report

Batch Data Path	D:\2018 Data\05182018 AM27 cann quant\QuantResults\05182018 Worklist 2397 AM27.batch.bin		
Analysis Time	5/29/2018 7:31 AM	**Analyst Name**	ISP Tox
Report Time	5/29/2018 7:36 AM	**Reporter Name**	ISP Tox
Last Calib Update	5/29/2018 7:31 AM	**Batch State**	Processed

Analysis Info

Acq Time	2018-05-18 14:07	**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	1.835	109773	224739	0.4884	47.6090
THC-COOH	THC-COOH-d9	1.885	62781	66883	0.9387	47.4656
THC	THC-d3	4.351	40148	67517	0.5946	48.0242

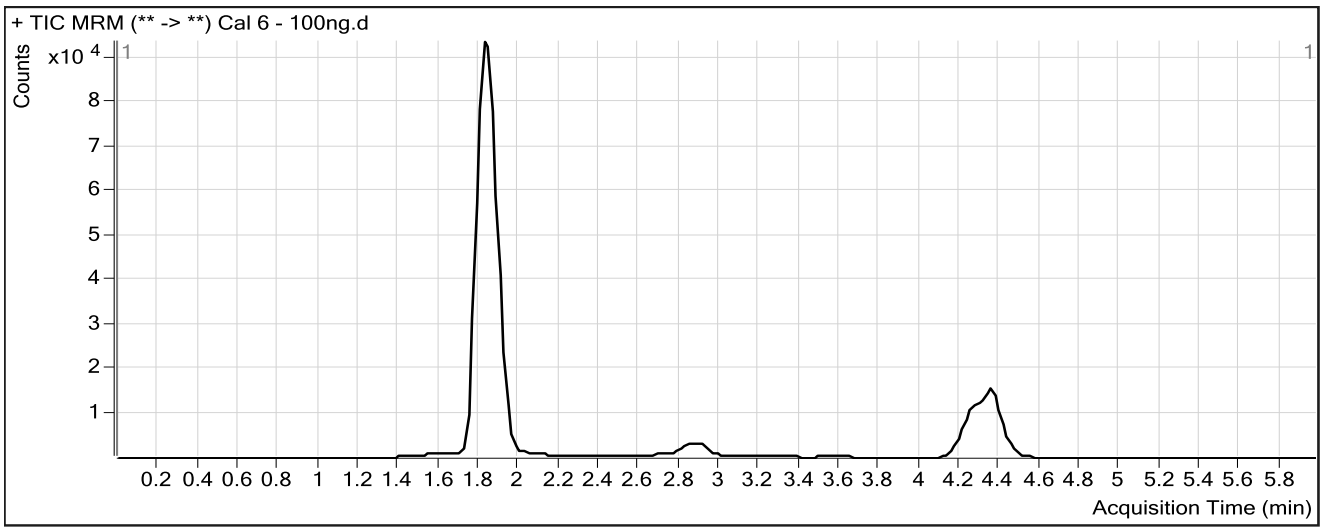
ISP FORENSICS - Cd'A Instrument # 62340
Cannabinoids Analysis Report

Batch Data Path	D:\2018 Data\05182018 AM27 cann quant\QuantResults\05182018 Worklist 2397 AM27.batch.bin		
Analysis Time	5/29/2018 7:31 AM	**Analyst Name**	ISP Tox
Report Time	5/29/2018 7:36 AM	**Reporter Name**	ISP Tox
Last Calib Update	5/29/2018 7:31 AM	**Batch State**	Processed

Analysis Info

Acq Time	2018-05-18 14:19	**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	1.835	215784	205513	1.0500	102.3899
THC-COOH	THC-COOH-d9	1.885	122183	63552	1.9226	98.0848
THC	THC-d3	4.351	77330	63845	1.2112	97.5175

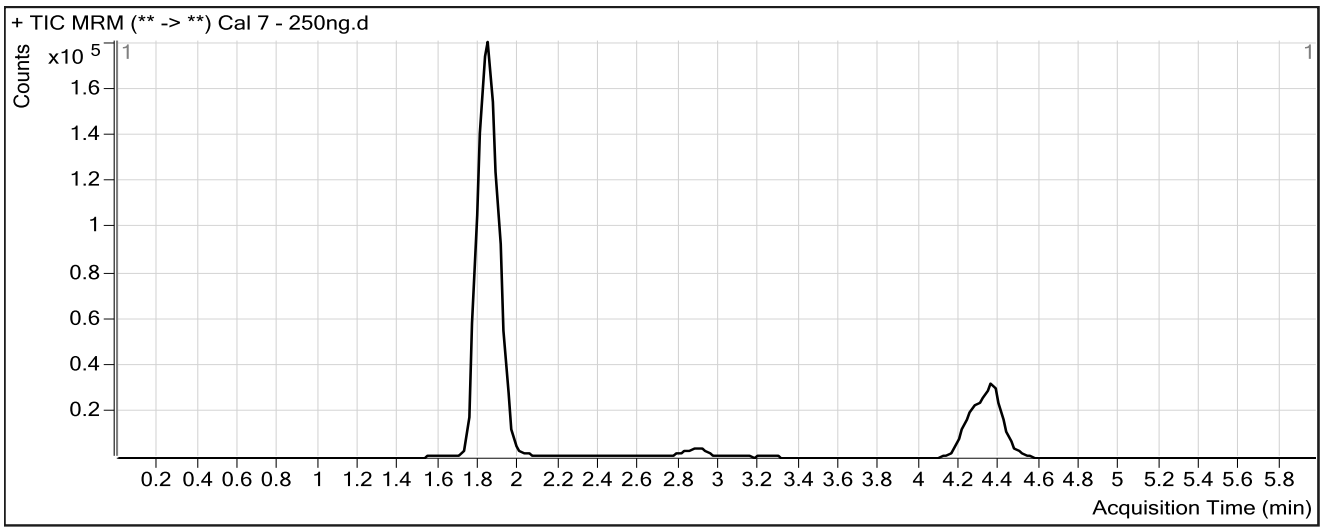
ISP FORENSICS - Cd'A Instrument # 62340
Cannabinoids Analysis Report

Batch Data Path	D:\2018 Data\05182018 AM27 cann quant\QuantResults\05182018 Worklist 2397 AM27.batch.bin		
Analysis Time	5/29/2018 7:31 AM	**Analyst Name**	ISP Tox
Report Time	5/29/2018 7:36 AM	**Reporter Name**	ISP Tox
Last Calib Update	5/29/2018 7:31 AM	**Batch State**	Processed

Analysis Info

Acq Time	2018-05-18 14:31	**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	1.835	562034	218977	2.5666	250.3501
THC-COOH	THC-COOH-d9	1.885	308327	62214	4.9559	254.1442
THC	THC-d3	4.351	207251	65476	3.1653	254.3743

ISP FORENSICS - Cd'A Instrument # 62340
Cannabinoids Analysis Report

Batch Data Path	D:\2018 Data\05182018 AM27 cann quant\QuantResults\05182018 Worklist 2397 AM27.batch.bin		
Analysis Time	5/29/2018 7:31 AM	**Analyst Name**	ISP Tox
Report Time	5/29/2018 7:36 AM	**Reporter Name**	ISP Tox
Last Calib Update	5/29/2018 7:31 AM	**Batch State**	Processed

Analysis Info

Acq Time	2018-05-18 14:42	**Data File**	blank post Calibration.d
Sample Type	Sample	**Sample Name**	blank post Calibration
Dilution	1	**Acq Method**	AM 27 Quant THC 7-2017.m
Position	Vial 2	**Sample Info**	
Inj Vol	-1	**Comment**	AM 27 Cannabinoid Confirmation

Sample Chromatogram