

Worklist: 1435

<u>LAB_CASE</u>	<u>ITEM</u>	<u>TASK_ID</u>	<u>DESCRIPTION</u>	
M2016-3216	2	72849	AM 27 Blood THC Quant by LC	
M2016-4354	1	72869	AM 27 Blood THC Quant by LC	
M2016-4987	2	72870	AM 27 Blood THC Quant by LC	
P2016-1837	1	72850	AM 27 Blood THC Quant by LC	
P2016-1909	1	72851	AM 27 Blood THC Quant by LC	
P2016-1947	1	72852	AM 27 Blood THC Quant by LC	
P2016-2042	1	72853	AM 27 Blood THC Quant by LC	
P2016-2086	1	72854	AM 27 Blood THC Quant by LC	
P2016-2160	1	72855	AM 27 Blood THC Quant by LC	
P2016-2426	1	72856	AM 27 Blood THC Quant by LC	
P2016-2486	1	72857	AM 27 Blood THC Quant by LC	
P2016-2645	1	72858	AM 27 Blood THC Quant by LC	
P2016-2648	1	72859	AM 27 Blood THC Quant by LC	
P2016-2713	4	72860	AM 27 Blood THC Quant by LC	
P2016-2731	1	72861	AM 27 Blood THC Quant by LC	
P2016-2732	1	72862	AM 27 Blood THC Quant by LC	
P2016-2767	1	72863	AM 27 Blood THC Quant by LC	
P2016-2787	1	72864	AM 27 Blood THC Quant by LC	
P2016-2826	3	72865	AM 27 Blood THC Quant by LC	
P2016-2827	1	72866	AM 27 Blood THC Quant by LC	
P2016-2830	1	72867	AM 27 Blood THC Quant by LC	
P2016-2834	1	72868	AM 27 Blood THC Quant by LC	

reviewed 12/27/16



Quantitation of THC and Metabolites in Blood by LC-MS/MS

Date: 12-23-16 Analyst: BAW

PRE-ANALYTIC

Plate Lot# 0483844-01 Plate Exp. June 15 2017

- ✓ 1. Ensure all solutions are within expiration date.

Mobile Phase A: <i>0.1% Formic Acid in LCMS Water</i>	Prep Date: _____	<i>0.1% Formic Acid in water</i>	Prep Date: _____
Mobile Phase B: <i>0.1% Formic Acid in LCMS Acetonitrile</i>	Prep Date: _____	<i>MTBE</i>	Prep Date: _____
<i>LCMS Methanol</i>	Open Date: _____	<i>Hexane</i>	Open Date: _____

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

- ✓ 2. Check levels of mobile phases and needle wash and refill as necessary. Ensure waste is not full.
- ✓ 3. Purge Pump and Load appropriate Acq. Method, allow system to equilibrate for approx. 30 min. Is pressure stable? (Y)/N
- ✓ 4. Was maintenance performed on the instrument? (Y)/N If yes, explain: _____
5. Create worklist. Data path name: 12-23-16 Blood Benzo and THC Quant

ANALYTIC

- ✓ 1. Remove standards plate, blood, and samples from cold storage. Allow to reach room temperature.
- ✓ 2. Add **1000 µL blood** to wells of analytical (standards) plate. Mix via aspirate and dispense. Place cover on Plate
Blank blood for locations containing standards/QCs and internal standards (Blank Blood Used 321632-2)
Sample blood for locations containing only internal standards
- ✓ 3. Place on shaking incubator at ambient temp., **900rpm for 15 minutes**. Shaker ID 060759
- ✓ 4. Pipette **500µL 0.1% formic acid** to all wells of standards 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). Wait 5 min.
(**Load blood samples at 85- 100 PSI- Selector to Right**)
- ✓ 8. Add **2.25mL MTBE** and allow to flow under gravity for 5 minutes. (**add in 3 increments of 750uL**)
- ✓ 9. Apply positive pressure for approx. 15 seconds (**10-15 PSI- Selector to left -**).
- ✓ 10. Add **2.25mL Hexane** and allow to flow under gravity for 5 minutes. (**add in 3 increments of 750uL**)
- ✓ 11. Apply positive pressure for approx. 15 seconds. (**10-15 PSI Selector to the left**)
- ✓ 12. Remove collection plate containing eluate.
- ✓ 13. Place collection plate on SPE Dry and evaporate to dryness at approx. 35°C. SPE Dry ID 060819
- ✓ 14. Reconstitute in **100 µL MeOH** and heat seal plate with foil. Place in autosampler and run worklist.

POST-ANALYTIC

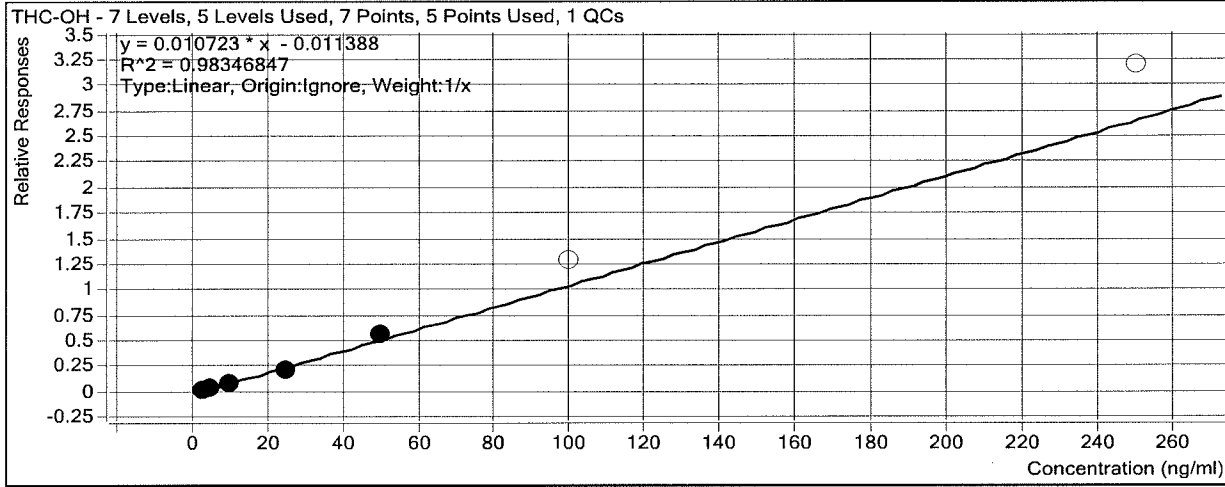
- ✓ 1. Open quantitation software and create a new quantitation batch. Batch name: 12-23-16 Blood Cannabinoids
- ✓ 2. Make any necessary integration changes. Limit curves based on validated linear ranges (3-250ng/mL).
3. Were all appropriate standards used in the curve for each analyte? (Y)/N
Are r^2 values ≥ 0.98 for each analyte? (Y)/N
4. For unknown samples, are the response ratios for each analyte within $\pm 20\%$ of the average ratios of the standards and QC's? (Y)/N
- ✓ 5. Did all QCs pass for each analyte? (Y)/N Were QCs entered into QC charting? Y/N
- ✓ 6. Central File Packet to include: ✓ LIMS Worklist: ✓ Method Checklist ✓ Calibration and Control Reports

COMMENTS

BAW

ISP Forensics Calibration Curve Report

Batch Data Path D:\2016 Data\12-23-16 Blood Benzo and THC Quant\QuantResults\12-23-16 Blood Cannabinoids.batch.bin
Last Calib Update 12/24/2016 2:06 PM **Analyst Name** ISP TOX
Target Compound *THC-OH*
Internal Standard *THC-OH-d3*



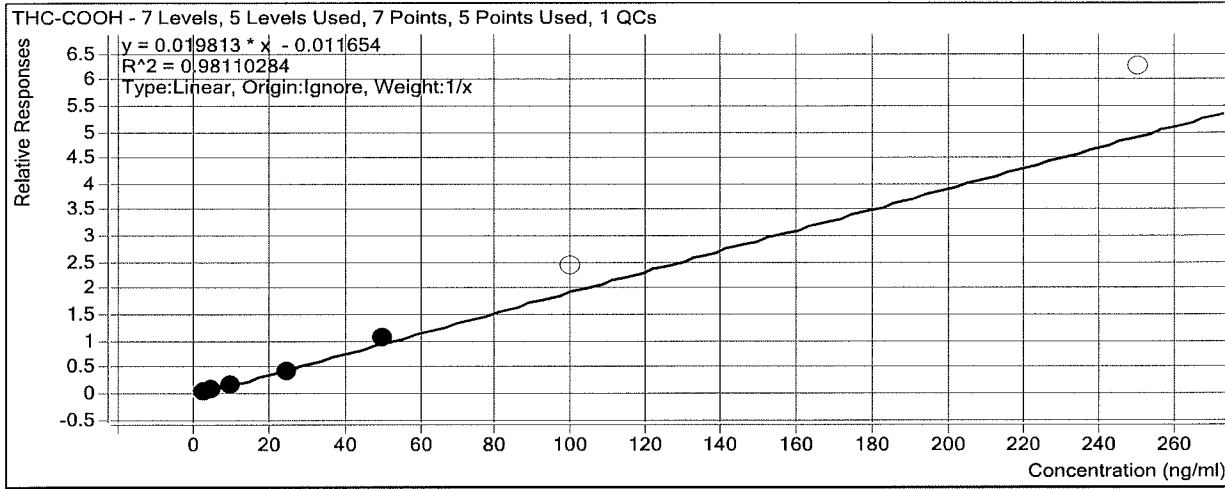
Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1	1	<input checked="" type="checkbox"/>	3	3.4	112.9
cal 2	2	<input checked="" type="checkbox"/>	5	5.0	100.9
cal 3	3	<input checked="" type="checkbox"/>	10	9.3	93.1
QC 10	3	<input checked="" type="checkbox"/>	10	8.6	86.3
cal 4	4	<input checked="" type="checkbox"/>	25	21.3	85.2
cal 5	5	<input checked="" type="checkbox"/>	50	54.0	107.9
cal 6	6	<input type="checkbox"/>	100	122.4	122.4
cal 7	7	<input type="checkbox"/>	250	299.3	119.7

ISP

ISP Forensics Calibration Curve Report

Batch Data Path D:\2016 Data\12-23-16 Blood Benzo and THC Quant\QuantResults\12-23-16 Blood Cannabinoids.batch.bin
Last Calib Update 12/24/2016 2:06 PM **Analyst Name** ISP TOX

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



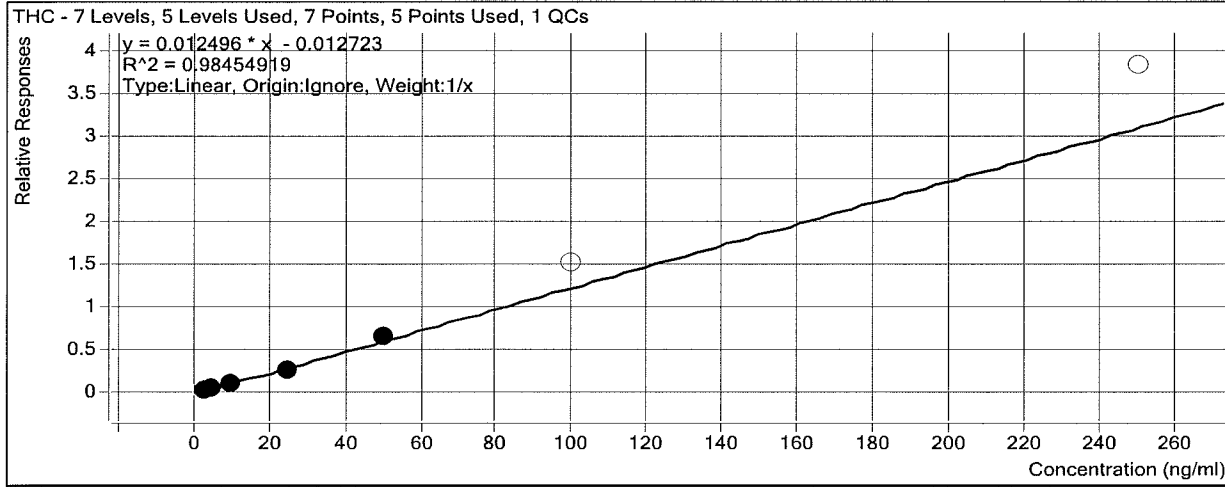
Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1	1	<input checked="" type="checkbox"/>	3	3.4	113.1
cal 2	2	<input checked="" type="checkbox"/>	5	5.1	101.6
cal 3	3	<input checked="" type="checkbox"/>	10	9.3	92.7
QC 10	3	<input checked="" type="checkbox"/>	10	8.4	84.2
cal 4	4	<input checked="" type="checkbox"/>	25	21.0	84.1
cal 5	5	<input checked="" type="checkbox"/>	50	54.2	108.5
cal 6	6	<input type="checkbox"/>	100	123.9	123.9
cal 7	7	<input type="checkbox"/>	250	316.3	126.5

JW

ISP Forensics Calibration Curve Report

Batch Data Path D:\2016 Data\12-23-16 Blood Benzo and THC Quant\QuantResults\12-23-16 Blood Cannabinoids.batch.bin
Last Calib Update 12/24/2016 2:06 PM **Analyst Name** ISP TOX

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



Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1	1	<input checked="" type="checkbox"/>	3	3.4	111.7
cal 2	2	<input checked="" type="checkbox"/>	5	5.1	102.7
cal 3	3	<input checked="" type="checkbox"/>	10	9.2	91.9
QC 10	3	<input checked="" type="checkbox"/>	10	8.7	87.1
cal 4	4	<input checked="" type="checkbox"/>	25	21.5	86.0
cal 5	5	<input checked="" type="checkbox"/>	50	53.8	107.6
cal 6	6	<input type="checkbox"/>	100	122.5	122.5
cal 7	7	<input type="checkbox"/>	250	306.9	122.7

ISP FORENSICS - Cd'A Instrument # 62340

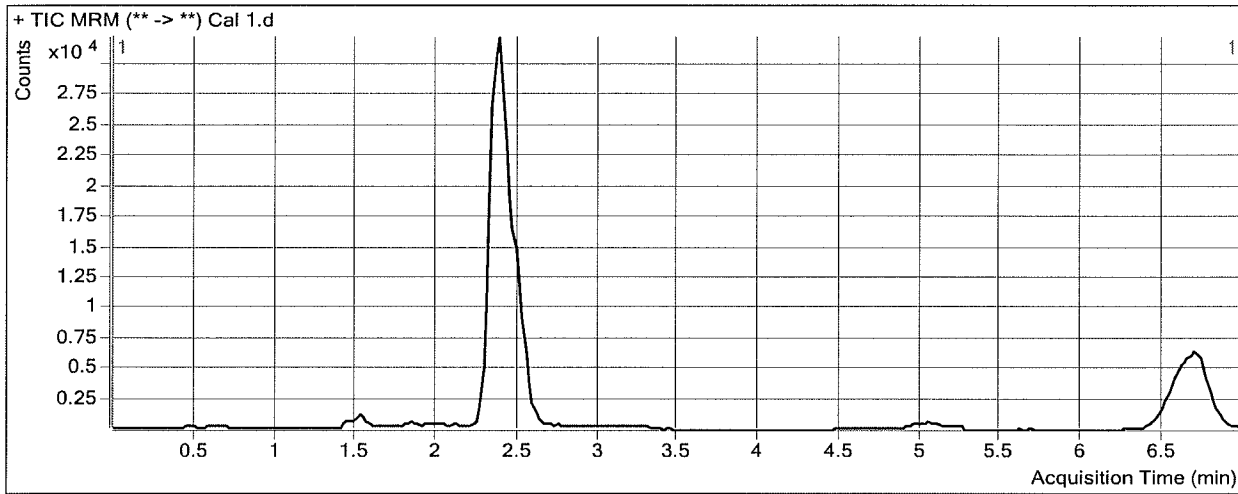
Cannabinoids Analysis Report

Batch Data Path D:\2016 Data\12-23-16 Blood Benzo and THC Quant\QuantResults\12-23-16 Blood Cannabinoids.batch.bin
Analysis Time 12/24/2016 2:06 PM **Analyst Name** ISP Tox
Report Time 12/24/2016 2:10 PM **Reporter Name** ISP Tox
Last Calib Update 12/24/2016 2:06 PM **Batch State** Processed

Analysis Info

Acq Time 2016-12-23 18:51 **Data File** Cal 1.d
Sample Type Calibration **Sample Name** Cal 1
Dilution 1 **Acq Method** Quant THC.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	2.396	5529	221818	0.0249	3.3865
THC-COOH	THC-COOH-d9	2.526	4409	79313	0.0556	3.3936
THC	THC-d3	6.733	2835	97191	0.0292	3.3521

ISP FORENSICS - Cd'A Instrument # 62340

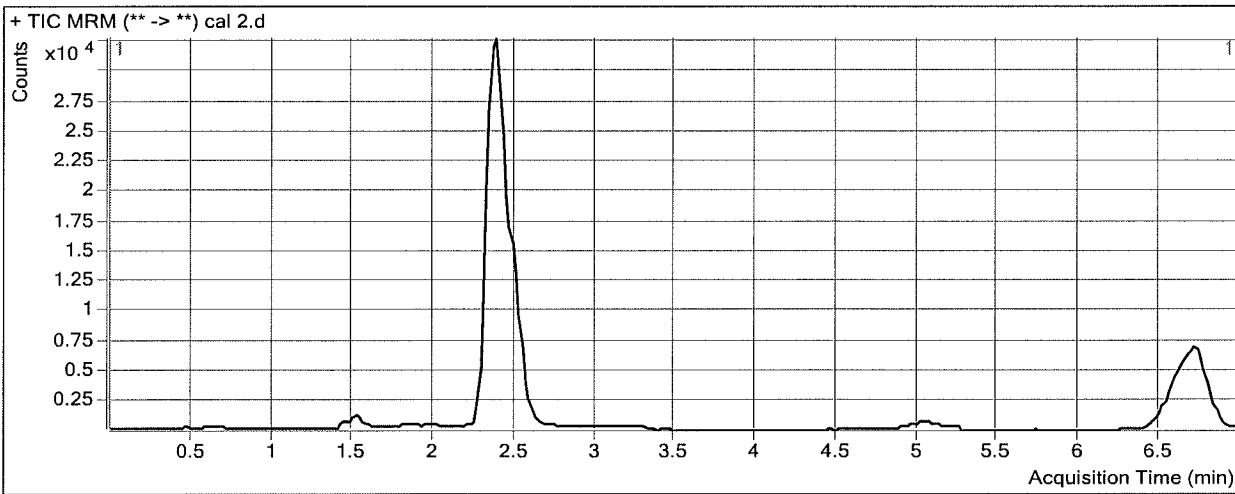
Cannabinoids Analysis Report

Batch Data Path D:\2016 Data\12-23-16 Blood Benzo and THC Quant\QuantResults\12-23-16 Blood Cannabinoids.batch.bin
Analysis Time 12/24/2016 2:06 PM **Analyst Name** ISP Tox
Report Time 12/24/2016 2:10 PM **Reporter Name** ISP Tox
Last Calib Update 12/24/2016 2:06 PM **Batch State** Processed

Analysis Info

Acq Time 2016-12-23 19:03 **Data File** cal 2.d
Sample Type Calibration **Sample Name** cal 2
Dilution 1 **Acq Method** Quant THC.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	2.396	9640	225793	0.0427	5.0434
THC-COOH	THC-COOH-d9	2.526	7116	79924	0.0890	5.0816
THC	THC-d3	6.733	5020	97570	0.0514	5.1349

ISP FORENSICS - Cd'A Instrument # 62340

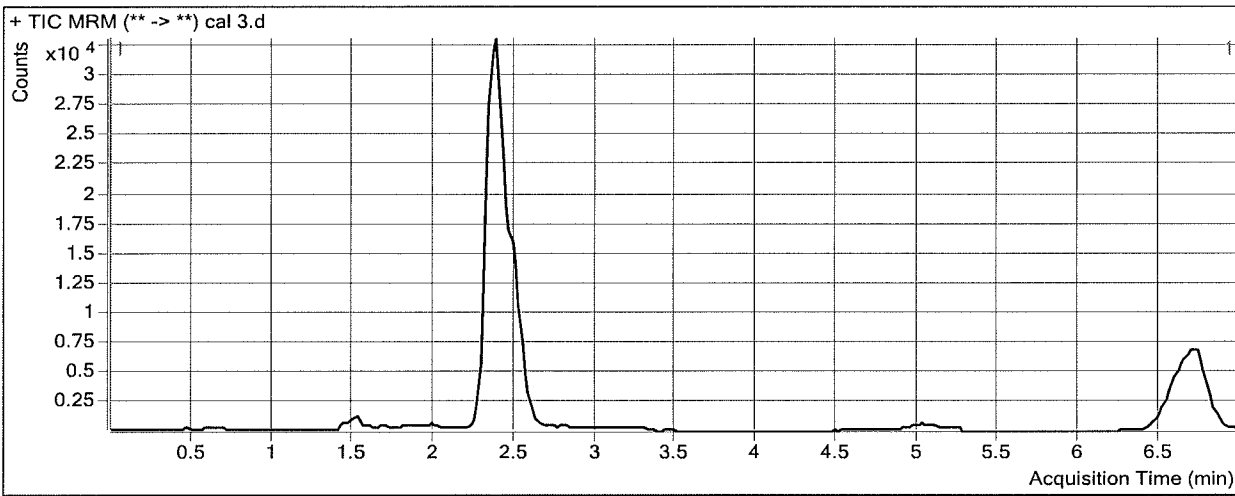
Cannabinoids Analysis Report

Batch Data Path D:\2016 Data\12-23-16 Blood Benzo and THC Quant\QuantResults\12-23-16 Blood Cannabinoids.batch.bin
Analysis Time 12/24/2016 2:06 PM **Analyst Name** ISP Tox
Report Time 12/24/2016 2:10 PM **Reporter Name** ISP Tox
Last Calib Update 12/24/2016 2:06 PM **Batch State** Processed

Analysis Info

Acq Time 2016-12-23 19:15 **Data File** cal 3.d
Sample Type Calibration **Sample Name** cal 3
Dilution 1 **Acq Method** Quant THC.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	2.396	18885	213442	0.0885	9.3132
THC-COOH	THC-COOH-d9	2.526	13224	76888	0.1720	9.2688
THC	THC-d3	6.733	9494	92927	0.1022	9.1936

BW

ISP FORENSICS - Cd'A Instrument # 62340

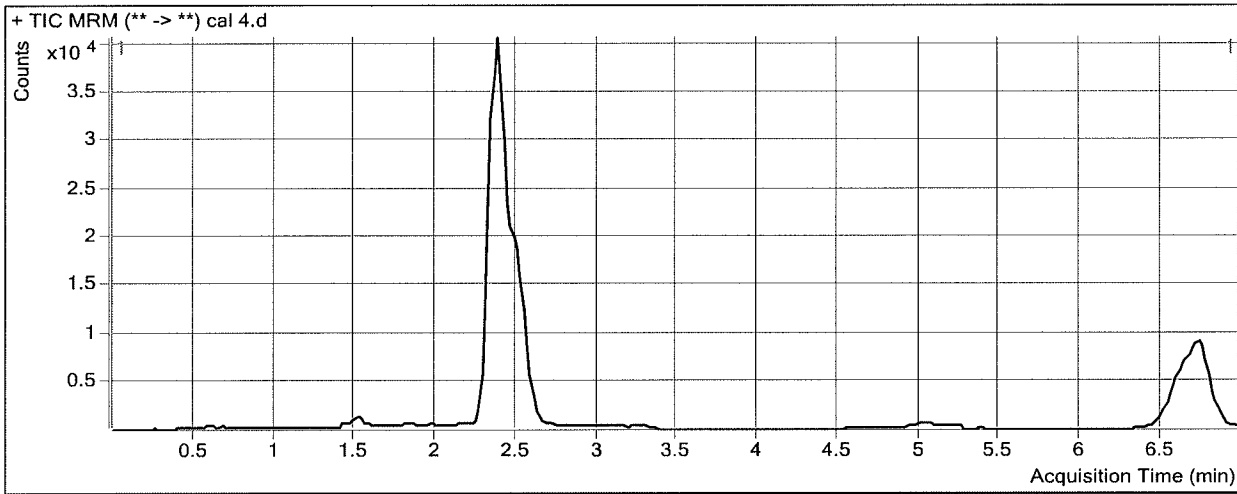
Cannabinoids Analysis Report

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Analysis Time 12/24/2016 2:06 PM **Analyst Name** ISP Tox
Report Time 12/24/2016 2:10 PM **Reporter Name** ISP Tox
Last Calib Update 12/24/2016 2:06 PM **Batch State** Processed

Analysis Info

Acq Time 2016-12-23 19:26 **Data File** cal 4.d
Sample Type Calibration **Sample Name** cal 4
Dilution 1 **Acq Method** Quant THC.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	2.396	49589	228485	0.2170	21.3020
THC-COOH	THC-COOH-d9	2.526	33177	81936	0.4049	21.0244
THC	THC-d3	6.753	25158	98314	0.2559	21.4957

BW

ISP FORENSICS - Cd'A Instrument # 62340

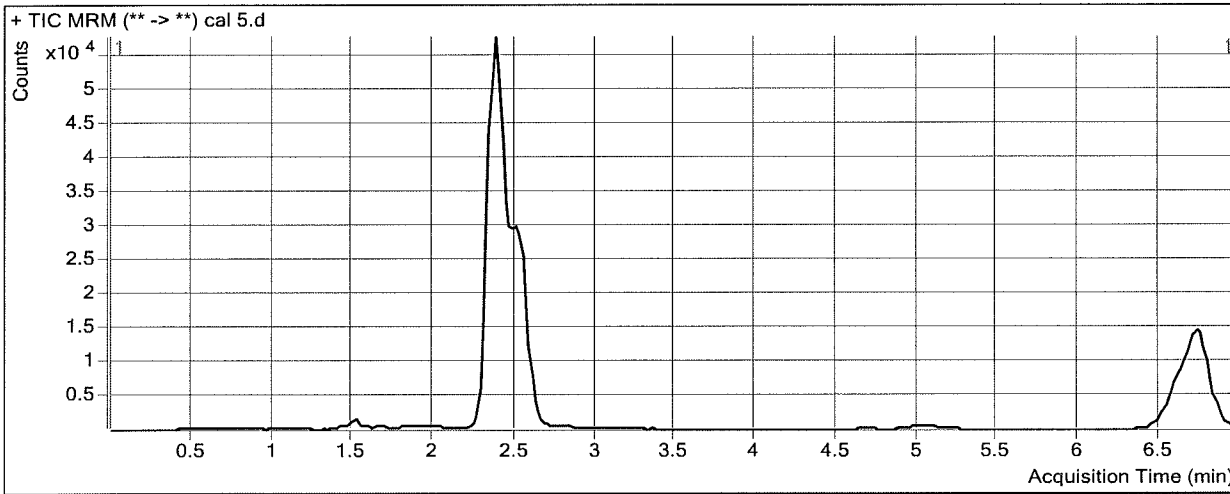
Cannabinoids Analysis Report

Batch Data Path D:\2016 Data\12-23-16 Blood Benzo and THC Quant\QuantResults\12-23-16 Blood Cannabinoids.batch.bin
Analysis Time 12/24/2016 2:06 PM **Analyst Name** ISP Tox
Report Time 12/24/2016 2:10 PM **Reporter Name** ISP Tox
Last Calib Update 12/24/2016 2:06 PM **Batch State** Processed

Analysis Info

Acq Time 2016-12-23 19:38 **Data File** cal 5.d
Sample Type Calibration **Sample Name** cal 5
Dilution 1 **Acq Method** Quant THC.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	2.396	140507	247735	0.5672	53.9549
THC-COOH	THC-COOH-d9	2.546	89176	83902	1.0629	54.2316
THC	THC-d3	6.733	70307	106544	0.6599	53.8237

BW

ISP FORENSICS - Cd'A Instrument # 62340

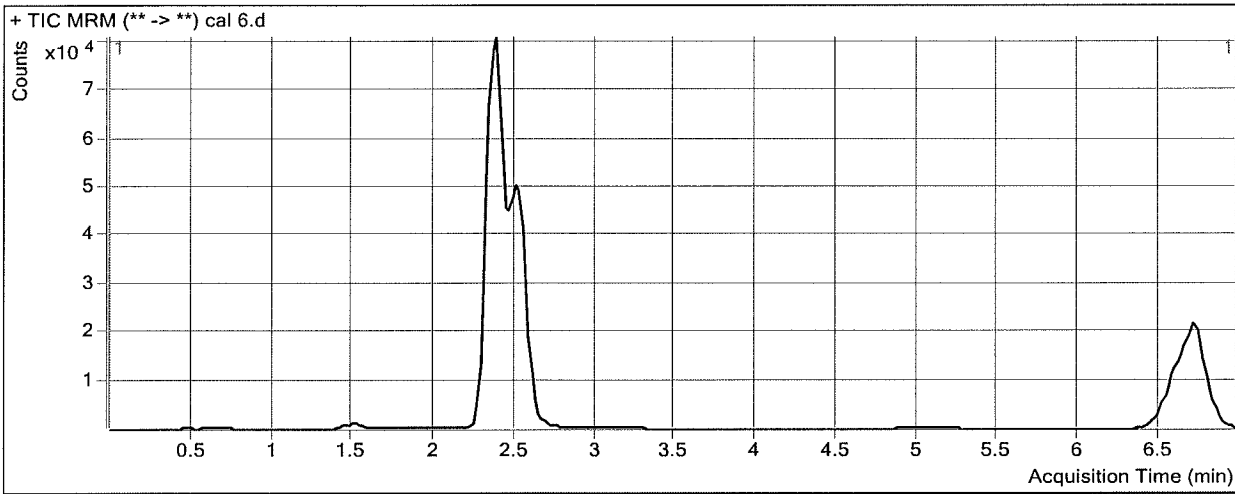
Cannabinoids Analysis Report

Batch Data Path D:\2016 Data\12-23-16 Blood Benzo and THC Quant\QuantResults\12-23-16 Blood Cannabinoids.batch.bin
Analysis Time 12/24/2016 2:06 PM **Analyst Name** ISP Tox
Report Time 12/24/2016 2:10 PM **Reporter Name** ISP Tox
Last Calib Update 12/24/2016 2:06 PM **Batch State** Processed

Analysis Info

Acq Time 2016-12-23 19:50 **Data File** cal 6.d
Sample Type Calibration **Sample Name** cal 6
Dilution 1 **Acq Method** Quant THC.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	2.396	309685	238033	1.3010	122.3923
THC-COOH	THC-COOH-d9	2.526	194968	79796	2.4433	123.9054
THC	THC-d3	6.713	151004	99448	1.5184	122.5255

[Handwritten Signature]

ISP FORENSICS - Cd'A Instrument # 62340

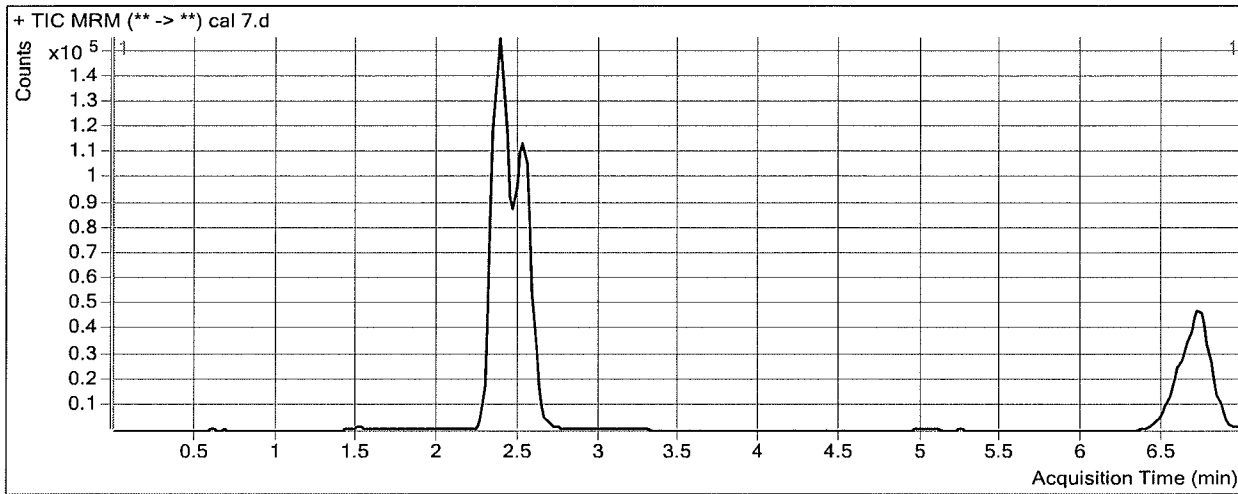
Cannabinoids Analysis Report

Batch Data Path D:\2016 Data\12-23-16 Blood Benzo and THC Quant\QuantResults\12-23-16 Blood Cannabinoids.batch.bin
Analysis Time 12/24/2016 2:06 PM **Analyst Name** ISP Tox
Report Time 12/24/2016 2:10 PM **Reporter Name** ISP Tox
Last Calib Update 12/24/2016 2:06 PM **Batch State** Processed

Analysis Info

Acq Time 2016-12-23 20:01 **Data File** cal 7.d
Sample Type Calibration **Sample Name** cal 7
Dilution 1 **Acq Method** Quant THC.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	2.396	789838	247019	3.1975	299.2531
THC-COOH	THC-COOH-d9	2.526	494872	79108	6.2557	316.3155
THC	THC-d3	6.733	403354	105534	3.8220	306.8664

ISP FORENSICS - Cd'A Instrument # 62340

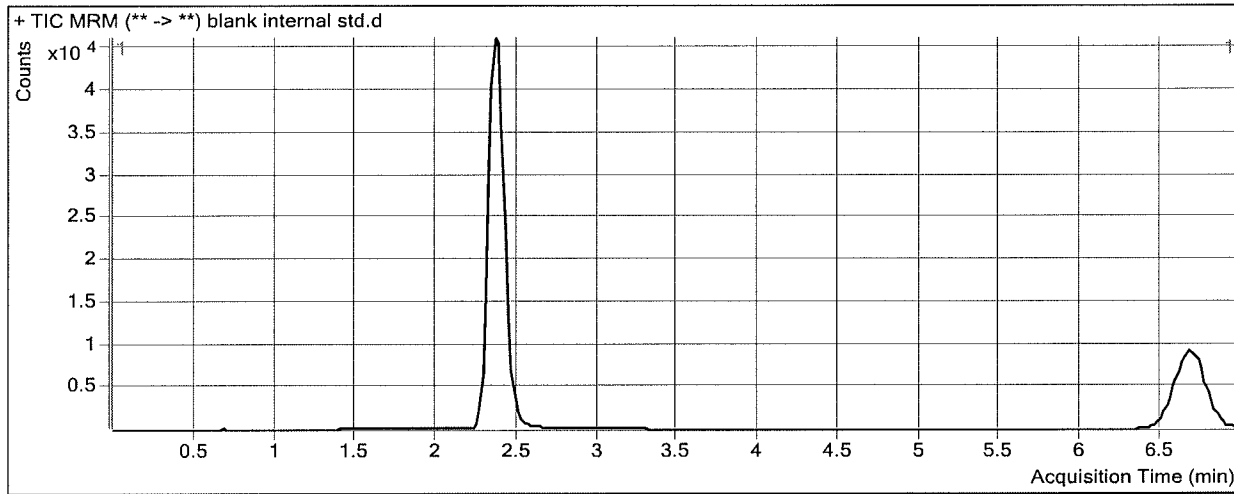
Cannabinoids Analysis Report

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Analysis Time 12/24/2016 2:06 PM **Analyst Name** ISP Tox
Report Time 12/24/2016 2:10 PM **Reporter Name** ISP Tox
Last Calib Update 12/24/2016 2:06 PM **Batch State** Processed

Analysis Info

Acq Time 2016-12-23 20:13 **Data File** blank internal std.d
Sample Type Sample **Sample Name** blank internal std
Dilution 1 **Acq Method** Quant THC.m
Position Vial 2 **Sample Info**
Inj Vol -1 **Comment** AM 27 cannabinoid confirmation

Sample Chromatogram



BW

ISP FORENSICS - Cd'A Instrument # 62340

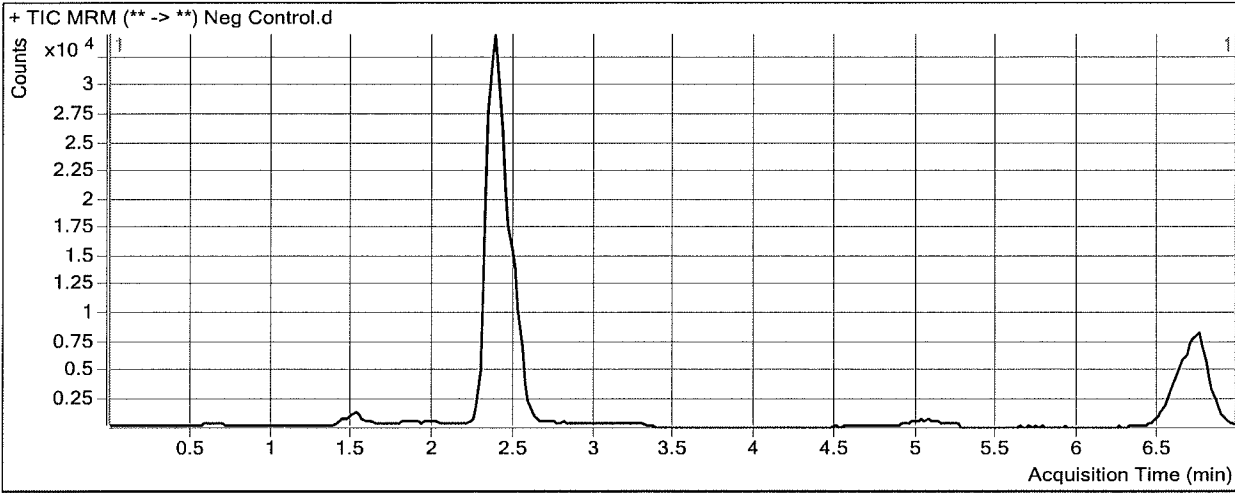
Cannabinoids Analysis Report

Batch Data Path D:\2016 Data\12-23-16 Blood Benzo and THC Quant\QuantResults\12-23-16 Blood Cannabinoids.batch.bin
Analysis Time 12/24/2016 2:06 PM **Analyst Name** ISP Tox
Report Time 12/24/2016 2:10 PM **Reporter Name** ISP Tox
Last Calib Update 12/24/2016 2:06 PM **Batch State** Processed

Analysis Info

Acq Time 2016-12-23 20:24 **Data File** Neg Control.d
Sample Type Sample **Sample Name** Neg Control
Dilution 1 **Acq Method** Quant THC.m
Position P1-h4 **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-COOH	THC-COOH-d9	2.426	1388	85888	0.0162	1.4040 < 3 BW

ISP FORENSICS - Cd'A Instrument # 62340

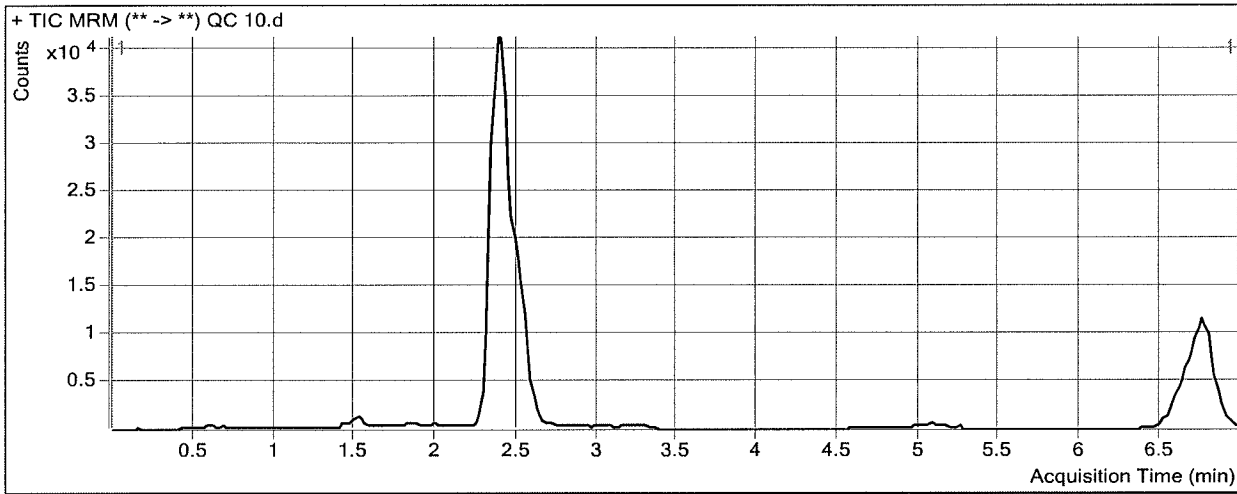
Cannabinoids Analysis Report

Batch Data Path D:\2016 Data\12-23-16 Blood Benzo and THC Quant\QuantResults\12-23-16 Blood Cannabinoids.batch.bin
Analysis Time 12/24/2016 2:06 PM **Analyst Name** ISP Tox
Report Time 12/24/2016 2:10 PM **Reporter Name** ISP Tox
Last Calib Update 12/24/2016 2:06 PM **Batch State** Processed

Analysis Info

Acq Time 2016-12-23 20:36 **Data File** QC 10.d
Sample Type QC **Sample Name** QC 10
Dilution 1 **Acq Method** Quant THC.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	2.396	22466	276963	0.0811	8.6266
THC-COOH	THC-COOH-d9	2.546	14507	93466	0.1552	8.4217
THC	THC-d3	6.773	12433	129345	0.0961	8.7099

DW

ISP FORENSICS - Cd'A Instrument # 62340

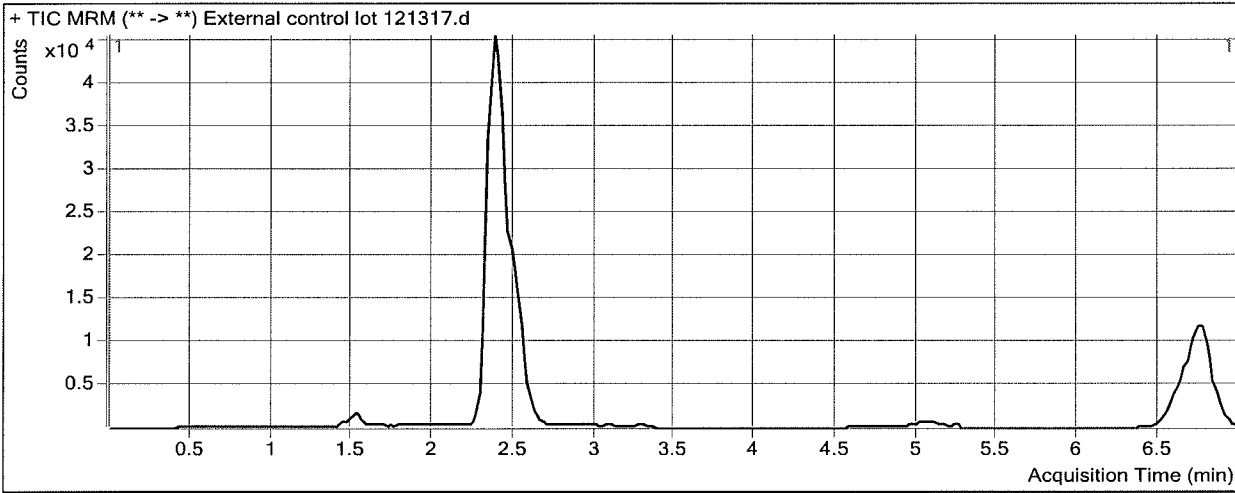
Cannabinoids Analysis Report

Batch Data Path D:\2016 Data\12-23-16 Blood Benzo and THC Quant\QuantResults\12-23-16 Blood Cannabinoids.batch.bin
Analysis Time 12/24/2016 2:06 PM **Analyst Name** ISP Tox
Report Time 12/24/2016 2:10 PM **Reporter Name** ISP Tox
Last Calib Update 12/24/2016 2:06 PM **Batch State** Processed

Analysis Info

Acq Time 2016-12-23 20:48 **Data File** External control lot 121317.d
Sample Type Sample **Sample Name** External control lot 121317
Dilution 1 **Acq Method** Quant THC.m
Position p1g4 **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	2.416	31117	292947	0.1062	10.9679
THC-COOH	THC-COOH-d9	2.546	15600	95618	0.1631	8.8225
THC	THC-d3	6.773	14179	137317	0.1033	9.2808