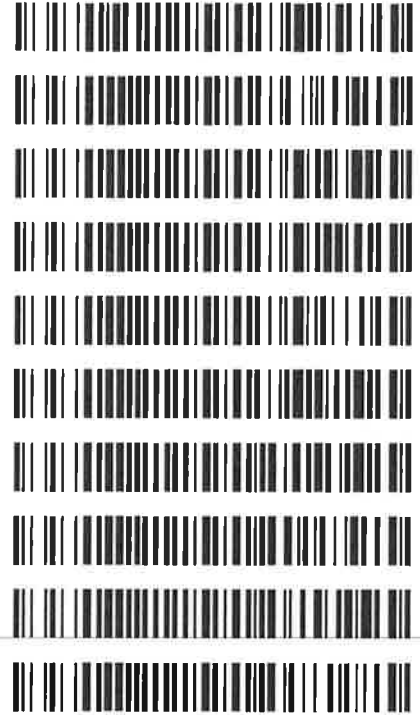


TS

Worklist: 2655

<u>LAB_CASE</u>	<u>ITEM</u>	<u>TASK_ID</u>	<u>DESCRIPTION</u>
M2018-3859	2	124908	AM 27 Blood THC Quant by LC-QQQ
P2018-2007	4	124909	AM 27 Blood THC Quant by LC-QQQ
P2018-2117	1	124910	AM 27 Blood THC Quant by LC-QQQ
P2018-2118	1	124911	AM 27 Blood THC Quant by LC-QQQ
P2018-2123	1	124912	AM 27 Blood THC Quant by LC-QQQ
P2018-2164	1	124913	AM 27 Blood THC Quant by LC-QQQ
P2018-2183	1	124914	AM 27 Blood THC Quant by LC-QQQ
P2018-2265	1	124915	AM 27 Blood THC Quant by LC-QQQ
P2018-2294	1	124916	AM 27 Blood THC Quant by LC-QQQ
P2018-2319	6	124917	AM 27 Blood THC Quant by LC-QQQ



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

Extraction Date: 08/24/18
Plate lot#: 0515037

Analyst: Tamara Salazar
Plate Expiration: 09/28/18

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

Mobile phase B: 0.1% Formic acid in Acetonitrile
Hexane

Blank Blood Lot: 361331-1
LCMS-QQQ ID: 59740

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.
- 3. Create worklist: Data Path: _____

Analytic:

- 1. Remove standards, plate, controls, and samples from cold storage. Allow to reach room temperature.
- 2. Pipette **1000µL blood/urine (calibrated pipette) Pipette ID: 27** in wells of analytical (standards) plate.
- 3. Place on shaking incubator at ambient temp., 900rpm for 15 minutes. *Shaker ID: 067105*
- 4. Pipette **500µL 0.1% formic acid in water** in wells of analytical plate for blood samples.
- 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: 067104
- 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: 067103
- 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: C:\MassHunter\Data\2018\THC Quant\ 082418 THCQ TS
Batch Name: THCQ 082418 TS wklst2655
- 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: *Curves limited: THC-COOH 10-250*



Idaho State Police Forensic Services

TS

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

Analyst: Tamara Salazar
Extraction Date: 08/24/18
Worklist Number: 2655

<i>Reagent</i>	<i>Lot Number</i>	<i>Expiration Date</i>	<i>Date in Service</i>	<i>Date Out of Service</i>	<i>Initials</i>
ToxBox THC/THC Metabolite Plate	0515037	09/28/18			
Negative Blood	361331-1		05/25/18		
Methanol External Control Solution	WS020718	02/07/19	02/07/18		
Blood External Control Solution	061718	02/07/19	06/17/18		
Methyl Tert-Butyl Ether (MTBE) 99.9%	A0375555		06/26/17		
Hexanes (ACS)	101642		10/26/17		
Methanol (LCMS Grade)	177145		04/11/18		
Water (LCMS Grade)	181370		06/21/18		
0.1% Formic Acid in Water (Mobile Phase A)	180079		08/24/18		
0.1% Formic Acid in Acetonitrile (Mobile Phase B)	176190		02/08/18		
Needle Rinse--75% LCMS MeOH in LCMS Water	081518		08/15/18		

Methanol External Control Solution (Lot: WS020718)
10 ul of 1mg/mL THC, 100 ul of 100 ug/mL THC-OH, C-THC in 9790 ul MeOH

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>	<i>Expiration Date</i>
Methanol (LCMS)	Fisher	172516	
THC	Cerilliant	FE04231406	04/30/2019
C-THC	Cayman	0497429	02/08/2019
THC-OH	Cerilliant	FE01121503	01/31/2020
Prepared:	02/07/18		
Prepared By:	Tamara Salazar		
Expires:	02/07/19		

Blood External Control Solution (Lot: ~~0261718~~ 061718) TS
100 ul of methanol external control solution was added to 9900 ul of blood.

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>
Negative Blood	Hemostat	361331-1
Methanol External Control Solution		WS020718
Prepared:	06/17/18	
Prepared by:	Tamara Salazar	
Expires:	02/07/19	

TS

Needle Rinse (75% LCMS MeOH in LCMS Water) (Lot: 081518)

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>
MeOH (LCMS Grade)	Fisher	177145
Water (LCMS Grade)	Fisher	181370
Prepared:	08/15/18	
Prepared By:	Sarah Pickle	

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ISP FORENSICS - Pocatello Instrument # 59740

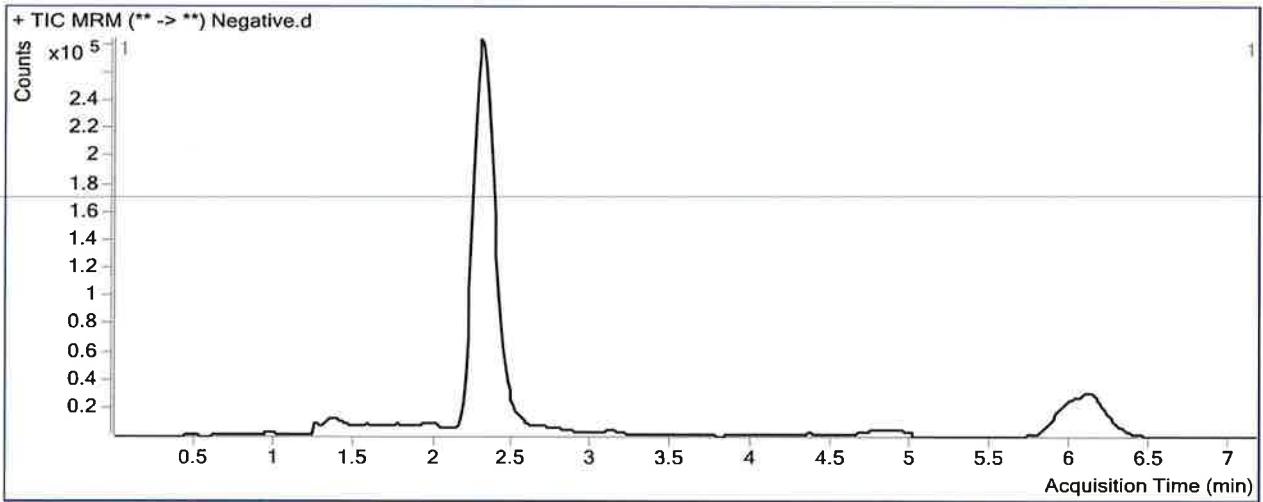
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\082418 THCQ TS\QuantResults\THCQ 082418 TS wklst2655.batch.bin
Analysis Time 8/27/2018 12:00 PM **Analyst Name** ISPUser
Report Time 8/27/2018 12:03 PM **Reporter Name** ISPUser
Last Calib Update 8/27/2018 12:00 PM **Batch State** Processed

Analysis Info

Acq Time 2018-08-24 17:25 **Data File** Negative.d
Sample Type Sample **Sample Name** Negative
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-H7 **Sample Info**
Inj Vol -1 **Comment** Hemostat 361331-1

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.172	11190	2086342	0.0054	1.2041
THC-COOH	THC-COOH-D9	2.392	52281	577563	0.0905	2.7493

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ISP FORENSICS - Pocatello Instrument # 59740

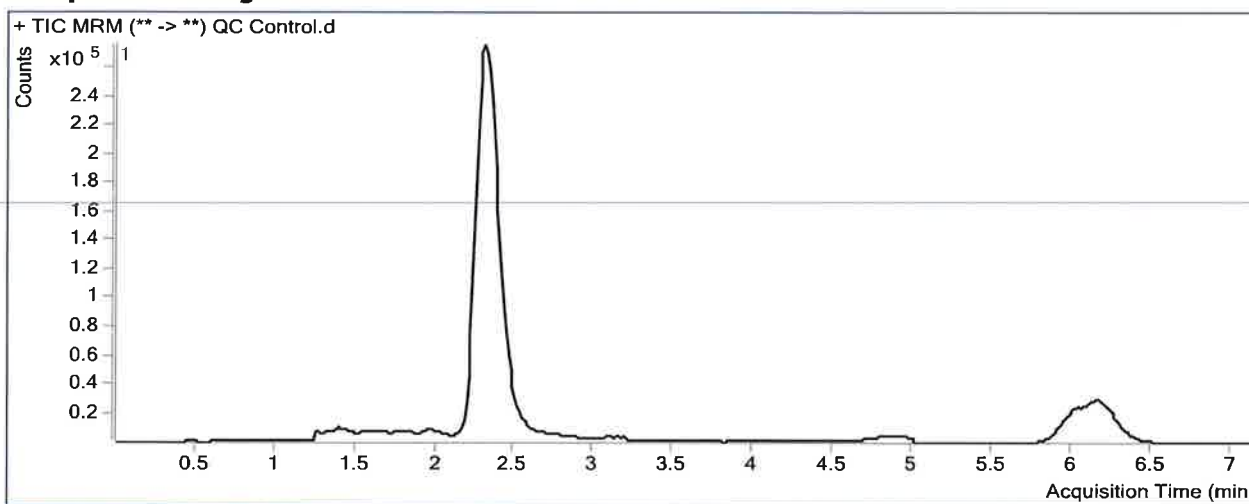
Cannabinoids Analysis Report

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Analysis Time 8/27/2018 12:00 PM **Analyst Name** ISPUser
Report Time 8/27/2018 12:03 PM **Reporter Name** ISPUser
Last Calib Update 8/27/2018 12:00 PM **Batch State** Processed

Analysis Info

Acq Time 2018-08-24 17:01 **Data File** QC Control.d
Sample Type Sample **Sample Name** QC Control
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-A6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.305	184388	1899032	0.0971	9.3176
THC-COOH	THC-COOH-D9	2.419	137043	515452	0.2659	10.7084
THC	THC-D3	6.132	57911	527461	0.1098	10.1205

TS

ISP FORENSICS - Pocatello Instrument # 59740

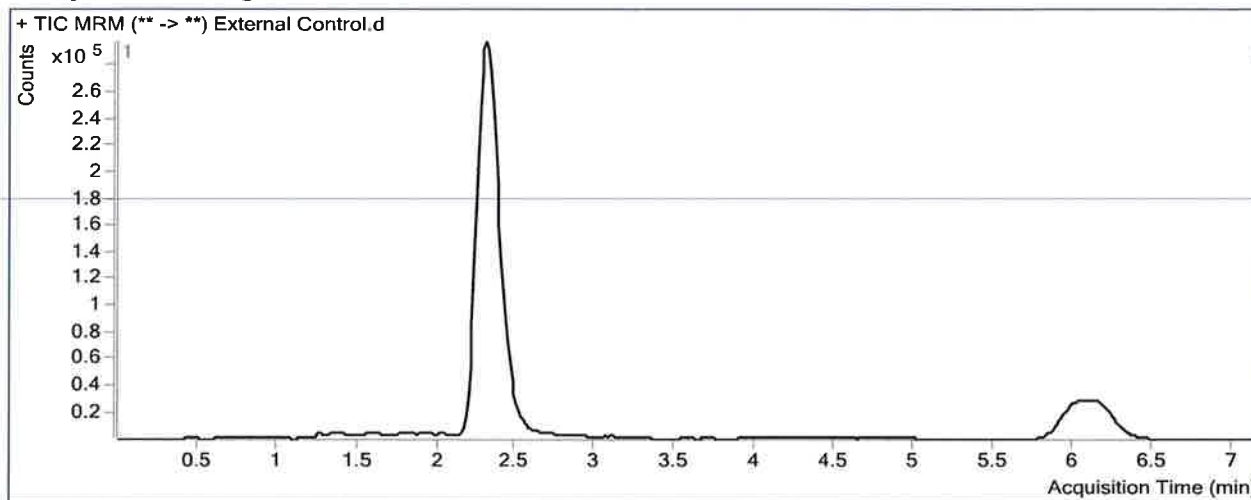
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\082418 THCQ TS\QuantResults\THCQ 082418 TS wk1st2655.batch.bin
Analysis Time 8/27/2018 12:00 PM **Analyst Name** ISPUser
Report Time 8/27/2018 12:03 PM **Reporter Name** ISPUser
Last Calib Update 8/27/2018 12:00 PM **Batch State** Processed

Analysis Info

Acq Time 2018-08-24 17:49 **Data File** External Control.d
Sample Type Sample **Sample Name** External Control
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-G7 **Sample Info**
Inj Vol -1 **Comment** Hemostat 361331-1 + WS 020718

Sample Chromatogram



Results

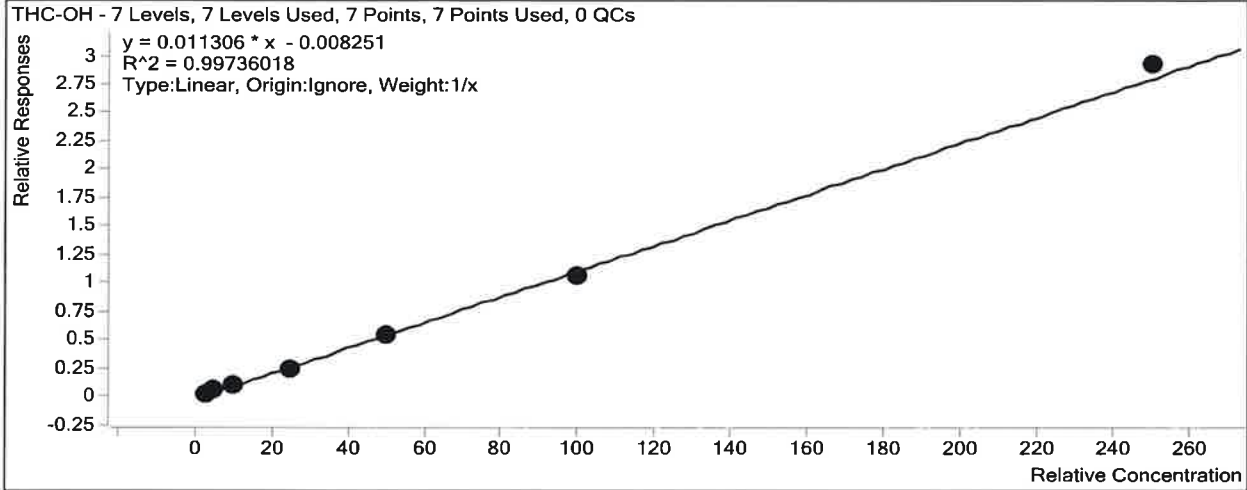
Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.305	168597	2087232	0.0808	7.8741
THC-COOH	THC-COOH-D9	2.419	118112	551201	0.2143	8.3669
THC	THC-D3	6.146	46482	568284	0.0818	7.7430

TS

ISP Forensics Calibration Curve Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\082418 THCQ TS\QuantResults\THCQ 082418 TS
wklst2655.batch.bin
Last Calib Update 8/27/2018 12:00 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	3.3	111.6
Cal 2	2	<input checked="" type="checkbox"/>	5	5.4	107.4
Cal 3	3	<input checked="" type="checkbox"/>	10	9.5	95.3
Cal 4	4	<input checked="" type="checkbox"/>	25	22.7	90.9
Cal 5	5	<input checked="" type="checkbox"/>	50	48.2	96.4
Cal 6	6	<input checked="" type="checkbox"/>	100	94.6	94.6
Cal 7	7	<input checked="" type="checkbox"/>	250	259.2	103.7

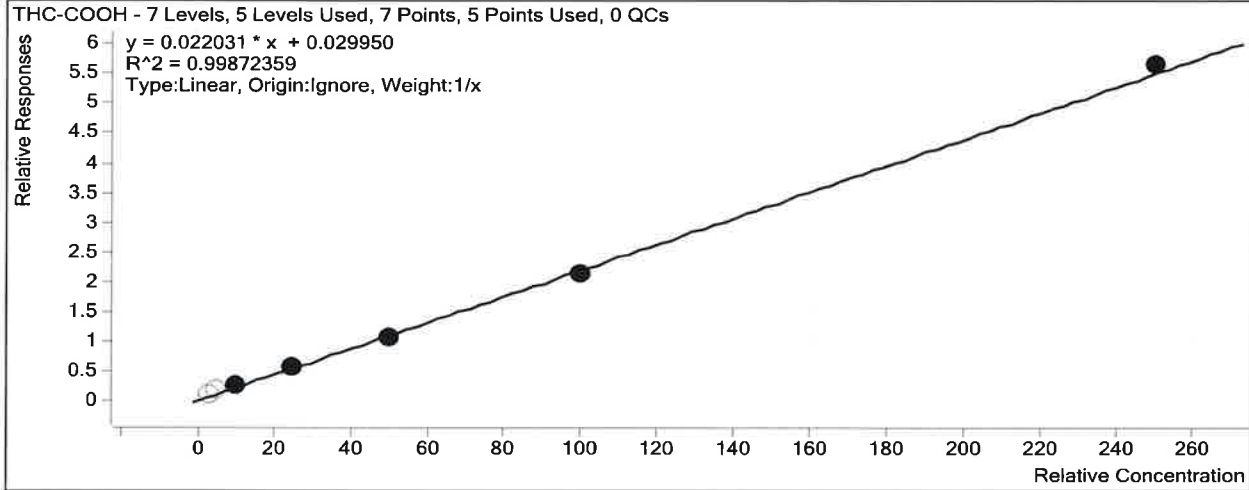
ISP Forensics Calibration Curve Report

TS

Batch Data Path C:\MassHunter\Data\2018\THC Quant\082418 THCQ TS\QuantResults\THCQ 082418 TS
wk1st2655.batch.bin

Last Calib Update 8/27/2018 12:00 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 type="checkbox"/>	3	4.6	152.8
Cal 2	2	<input type="checkbox"/>	5	6.6	132.3
Cal 3	3	<input checked="" type="checkbox"/>	10	10.5	104.8
Cal 4	4	<input checked="" type="checkbox"/>	25	25.4	101.5
Cal 5	5	<input checked="" type="checkbox"/>	50	47.5	95.1
Cal 6	6	<input checked="" type="checkbox"/>	100	96.5	96.5
Cal 7	7	<input checked="" type="checkbox"/>	250	255.1	102.0

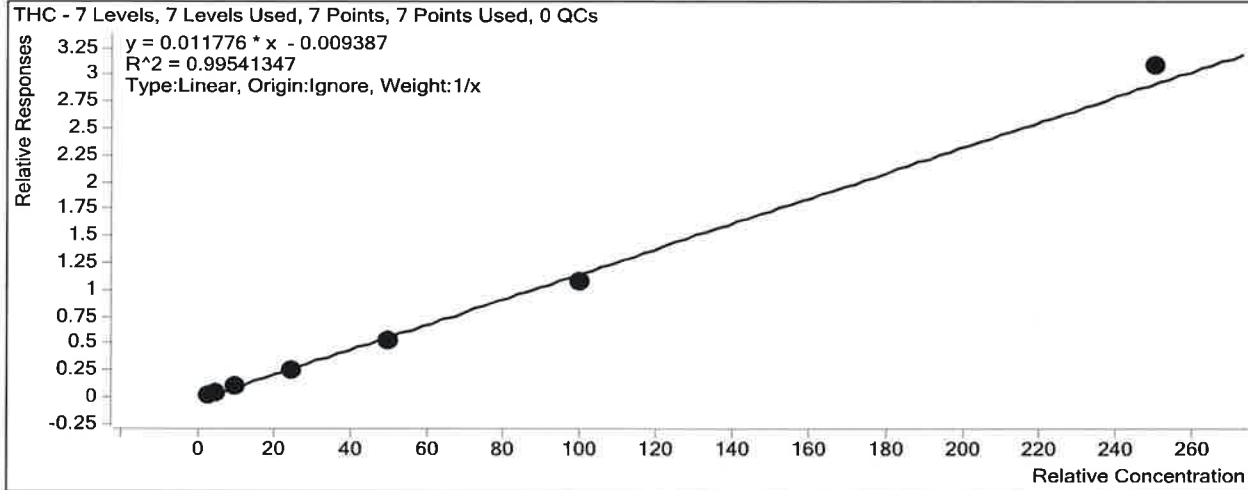
ISP Forensics Calibration Curve Report

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Batch Data Path C:\MassHunter\Data\2018\THC Quant\082418 THCQ TS\QuantResults\THCQ 082418 TS
wklst2655.batch.bin

Last Calib Update 8/27/2018 12:00 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	3.5	116.6
Cal 2	2	<input checked="" type="checkbox"/>	5	5.2	104.6
Cal 3	3	<input checked="" type="checkbox"/>	10	9.7	97.0
Cal 4	4	<input checked="" type="checkbox"/>	25	23.1	92.3
Cal 5	5	<input checked="" type="checkbox"/>	50	45.5	91.0
Cal 6	6	<input checked="" type="checkbox"/>	100	93.4	93.4
Cal 7	7	<input checked="" type="checkbox"/>	250	262.6	105.0

B

ISP FORENSICS - Pocatello Instrument # 59740

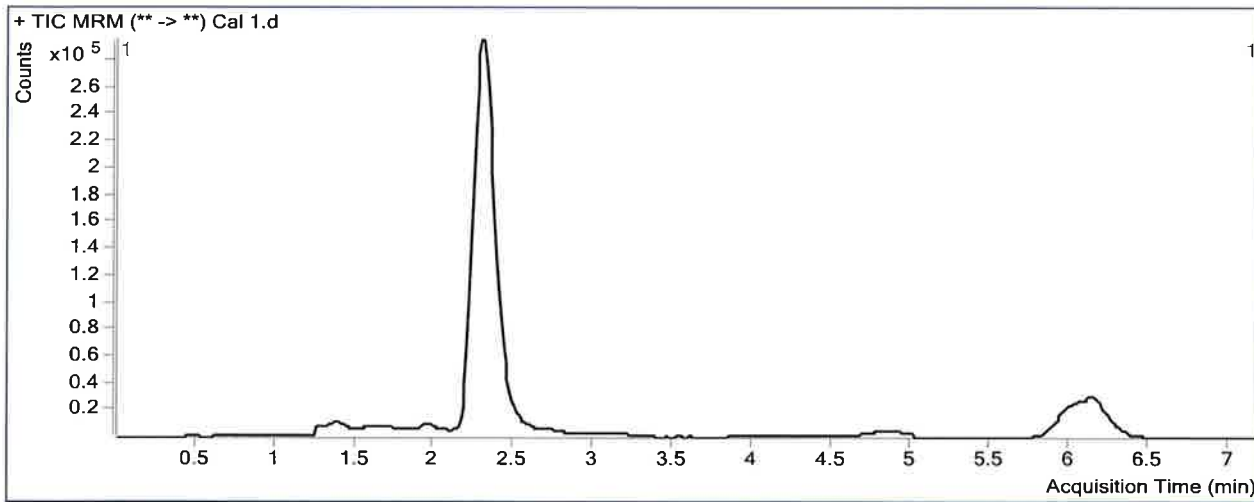
Cannabinoids Analysis Report

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Analysis Time 8/27/2018 12:00 PM **Analyst Name** ISPUser
Report Time 8/27/2018 12:02 PM **Reporter Name** ISPUser
Last Calib Update 8/27/2018 12:00 PM **Batch State** Processed

Analysis Info

Acq Time 2018-08-24 15:27 **Data File** Cal 1.d
Sample Type Calibration **Sample Name** Cal 1
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-H6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.319	62478	2110270	0.0296	3.3484
THC-COOH	THC-COOH-D9	2.406	76648	585261	0.1310	4.5851
THC	THC-D3	6.172	18209	572565	0.0318	3.4978

TS

ISP FORENSICS - Pocatello Instrument # 59740

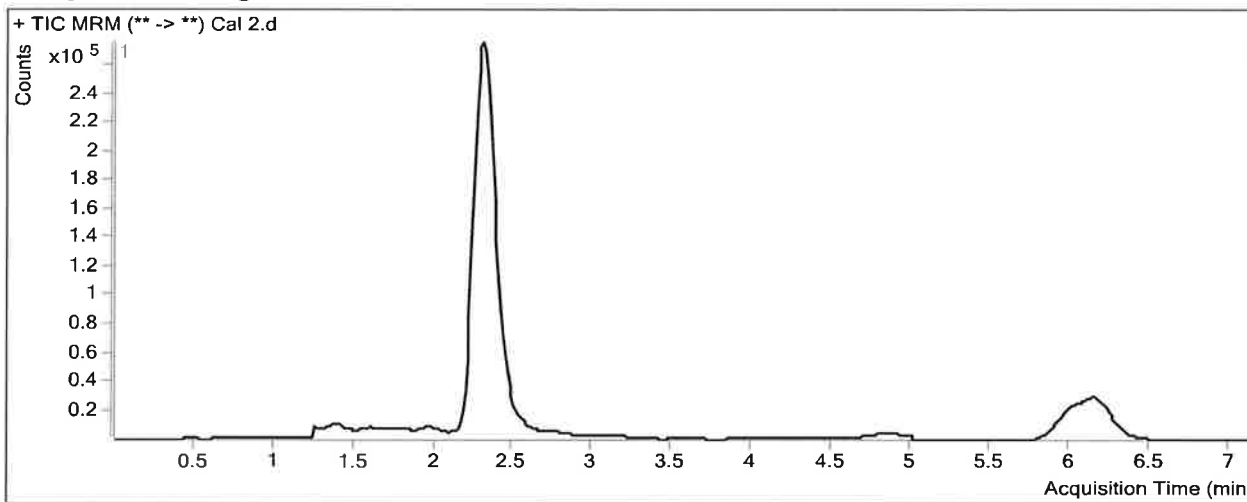
Cannabinoids Analysis Report

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Analysis Time 8/27/2018 12:00 PM **Analyst Name** ISPUser
Report Time 8/27/2018 12:02 PM **Reporter Name** ISPUser
Last Calib Update 8/27/2018 12:00 PM **Batch State** Processed

Analysis Info

Acq Time 2018-08-24 15:39 **Data File** Cal 2.d
Sample Type Calibration **Sample Name** Cal 2
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-G6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.319	101362	1931418	0.0525	5.3715
THC-COOH	THC-COOH-D9	2.406	93581	532557	0.1757	6.6165
THC	THC-D3	6.159	28918	553698	0.0522	5.2322

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ISP FORENSICS - Pocatello Instrument # 59740

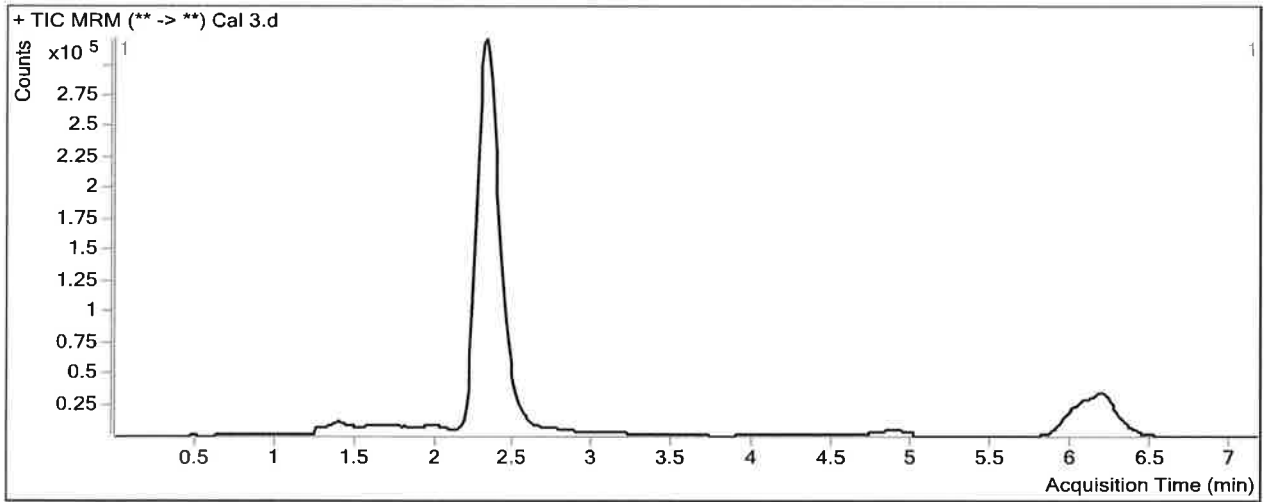
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\082418 THCQ TS\QuantResults\THCQ 082418 TS wk1st2655.batch.bin
Analysis Time 8/27/2018 12:00 PM **Analyst Name** ISPUser
Report Time 8/27/2018 12:02 PM **Reporter Name** ISPUser
Last Calib Update 8/27/2018 12:00 PM **Batch State** Processed

Analysis Info

Acq Time 2018-08-24 15:50 **Data File** Cal 3.d
Sample Type Calibration **Sample Name** Cal 3
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-F6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.319	212962	2139413	0.0995	9.5340
THC-COOH	THC-COOH-D9	2.419	156110	598381	0.2609	10.4823
THC	THC-D3	6.199	62921	600252	0.1048	9.6987

AS

ISP FORENSICS - Pocatello Instrument # 59740

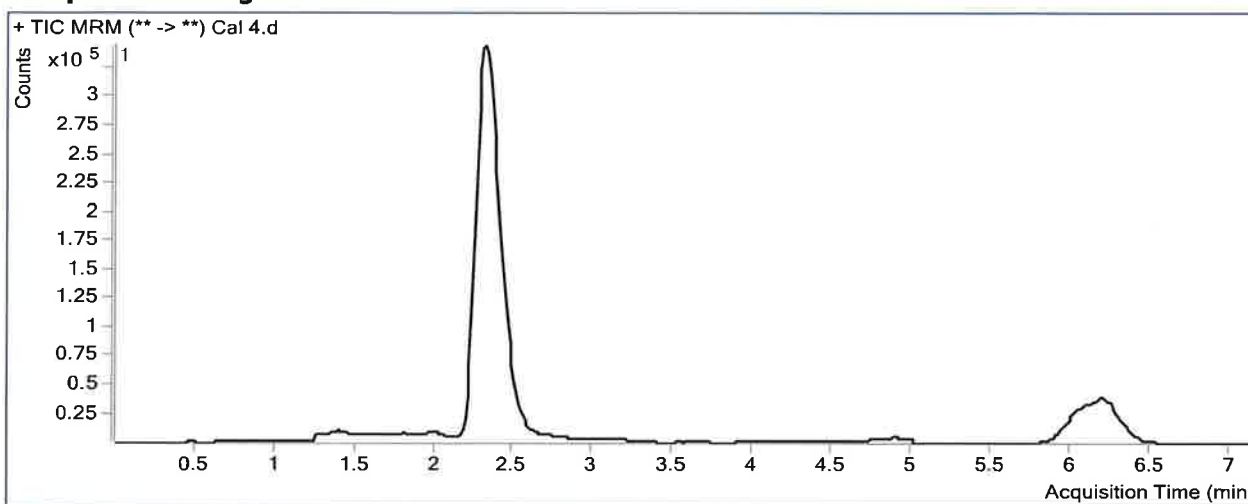
Cannabinoids Analysis Report

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Analysis Time 8/27/2018 12:00 PM **Analyst Name** ISPUser
Report Time 8/27/2018 12:02 PM **Reporter Name** ISPUser
Last Calib Update 8/27/2018 12:00 PM **Batch State** Processed

Analysis Info

Acq Time 2018-08-24 16:02 **Data File** Cal 4.d
Sample Type Calibration **Sample Name** Cal 4
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-E6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.319	512050	2058618	0.2487	22.7296
THC-COOH	THC-COOH-D9	2.419	321422	545514	0.5892	25.3850
THC	THC-D3	6.199	146314	557488	0.2625	23.0844

TS

ISP FORENSICS - Pocatello Instrument # 59740

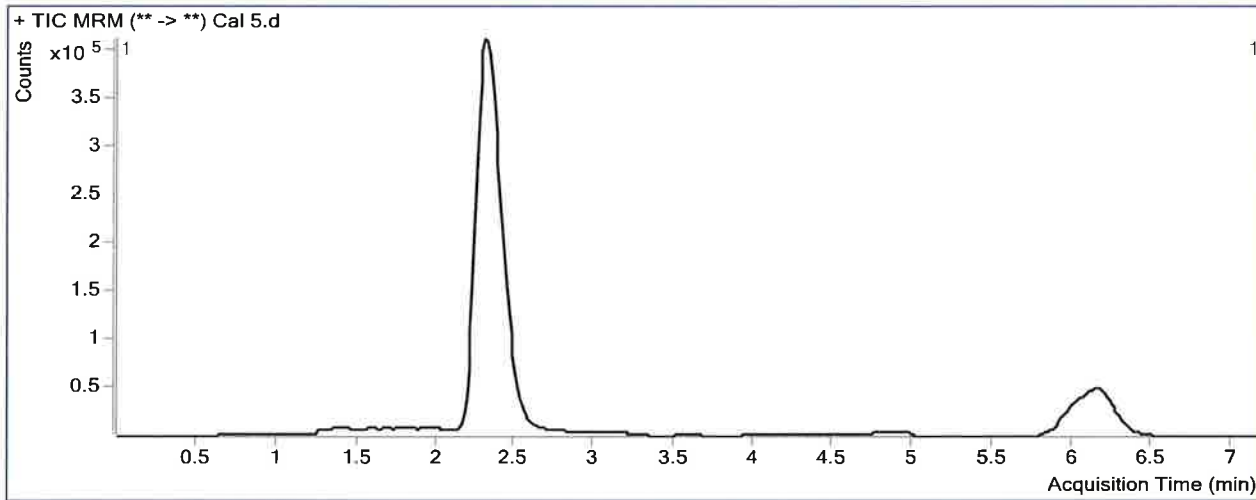
Cannabinoids Analysis Report

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Analysis Time 8/27/2018 12:00 PM **Analyst Name** ISPUser
Report Time 8/27/2018 12:02 PM **Reporter Name** ISPUser
Last Calib Update 8/27/2018 12:00 PM **Batch State** Processed

Analysis Info

Acq Time 2018-08-24 16:14 **Data File** Cal 5.d
Sample Type Calibration **Sample Name** Cal 5
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-D6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.319	1058338	1971821	0.5367	48.2019
THC-COOH	THC-COOH-D9	2.406	596217	553470	1.0772	47.5366
THC	THC-D3	6.159	282892	537406	0.5264	45.4988

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ISP FORENSICS - Pocatello Instrument # 59740

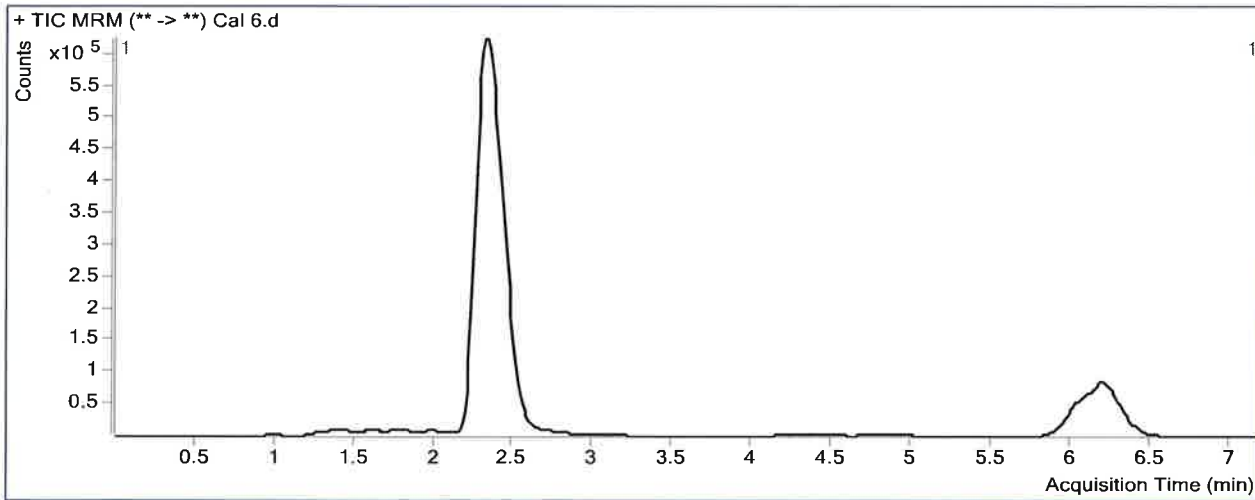
Cannabinoids Analysis Report

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Analysis Time 8/27/2018 12:00 PM **Analyst Name** ISPUser
Report Time 8/27/2018 12:03 PM **Reporter Name** ISPUser
Last Calib Update 8/27/2018 12:00 PM **Batch State** Processed

Analysis Info

Acq Time 2018-08-24 16:26 **Data File** Cal 6.d
Sample Type Calibration **Sample Name** Cal 6
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-C6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.319	2337439	2202041	1.0615	94.6148
THC-COOH	THC-COOH-D9	2.419	1265211	586593	2.1569	96.5420
THC	THC-D3	6.199	664324	609147	1.0906	93.4082

15

ISP FORENSICS - Pocatello Instrument # 59740

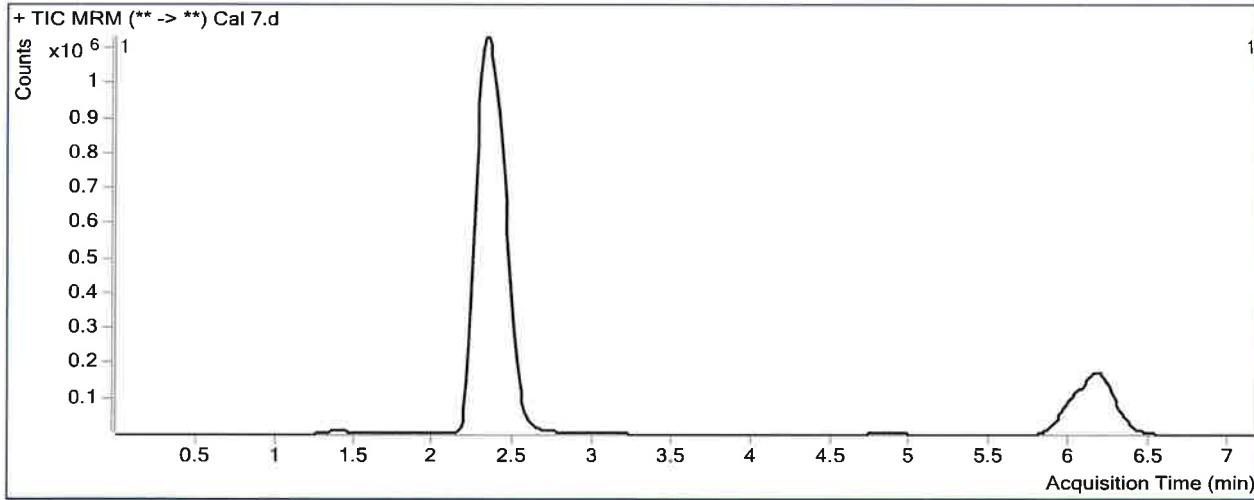
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\082418 THCQ TS\QuantResults\THCQ 082418 TS wklst2655.batch.bin
Analysis Time 8/27/2018 12:00 PM **Analyst Name** ISPUser
Report Time 8/27/2018 12:03 PM **Reporter Name** ISPUser
Last Calib Update 8/27/2018 12:00 PM **Batch State** Processed

Analysis Info

Acq Time 2018-08-24 16:38 **Data File** Cal 7.d
Sample Type Calibration **Sample Name** Cal 7
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-B6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.319	6059739	2073602	2.9223	259.1998
THC-COOH	THC-COOH-D9	2.419	3073862	544135	5.6491	255.0542
THC	THC-D3	6.172	1796329	582707	3.0827	262.5799