REVIEWED
By Tamara Salazar at 12:18 pm, Feb 25, 2020

2/13/2020

Worklist: 3999

LAB_CASE	ITEM	ITEM_TYPE	DESCRIPTION
M2019-5705	3	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
M2020-0097	3	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
M2020-0171	4	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
M2020-0306	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
M2020-0346	3	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
M2020-0424	5	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
M2020-0448	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2019-3936	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2020-0028	3	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2020-0055	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2020-0063	1	BLOOD	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2020-0136	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2020-0160	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2020-0163	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2020-0204	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2020-0262	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2020-0429	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2020-0441	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2020-0488	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2020-0489	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2020-0498	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ

Worklist: 3999

LAB_CASE	ITEM	ITEM_TYPE	DESCRIPTION	
P2020-0498	2	URINE	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ	
P2020-0498	3	URINE	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ	
P2020-0511	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ	
P2020-0512	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ	

2/14/2020

Worklist: 4004

LAB_CASE	ITEM	ITEM_TYPE	DESCRIPTION
M2020-0591	3	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
M2020-0592	3	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ

These samples were included in the worklist 3999 run. They were checked out after the worklist was already made.

CS

Idaho State Police
Forensic Services
Toxicology Discipline

Request for Departure from an Analytical Method

Date of Request
01/13/2020

Forensic Scientist
Celena Shrum

Analytical Methods
Toxicology AM #25, Toxicology AM #26/27, and AM #28

Deviation

The expiration dates listed for the current batch of PinPoint ToxBox extraction plates are as follows:
*MDS (batch IDP-107-190725)- Expiration is 1/25/2020
*THC (batch IDP-108-190716)- Expiration is 1/16/2020
*MDQ P1 (batch IDP-111-190729)- Expiration is 1/29/2020
*MDQ P2 (batch IDP-112-190730)- Expiration is 1/30/2020

I am issuing a deviation to allow for the use of the remaining plates of these batches. The controls will be used to evaluate if the plate is working as intended. In addition, at least one external control must be included for each run.

Celena Shrum

Date: 01/13/2020
Celena Shrum
Toxicology Discipline Lead

AM# 25: Multi-Drug Screen in Blood by LC-MS/MS

Extraction Date: 02/13/2020
Plate lot#: 190725

Analyst: Celena Shrum
Plate Expiration: 1/25/2020- Deviation in place

Mobile phase A: 10mM Amm Form
0.5M Ammonium Hydroxide
Blank Blood Lot: 445283-3
LCMS-QQQ ID: 069901

Mobile phase B: 0.1% Formic Acid in MeOH
Ethyl Acetate LC Methanol
Column: Phenomenex Phenyl Hexyl (4.6x50mm, 2.6um)

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. Urine Hydrolysis: In blank well, add 250µL urine, 40µL BG Turbo, and 100µL 500mM sodium phosphate buffer. Place on plate shaker for 5 minutes.
☒ 3. Using a calibrated pipette, pipette **250µL blood and urine** (if applicable) into wells of analytical (standards) plate. **Pipette ID: #42**
☒ 4. Place on shaking incubator at ambient temp., 900rpm for 15 minutes. *Shaker ID: 067105*
☒ 5. Pipette **250µL 0.5M ammonium hydroxide** in wells of analytical plate.
☒ 6. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
☒ 7. Transfer **300µL of blood+base** mixture to corresponding wells of SLE+ plate.
☒ 8. 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*
☒ 9. Wait 5 minutes.
☒ 10. Add **900uL ethyl acetate.**
☒ 11. Wait 5 minutes.
☒ 12. Apply positive pressure for approx. 15 seconds. ***(10-15 PSI- Selector to the left).***
☒ 13. Add **900uL ethyl acetate.**
☒ 14. Wait 5 minutes.
☒ 15. Apply positive pressure for approx. 15 seconds. ***(10-15 PSI- Selector to the left).***
☒ 16. Remove plate containing eluate. Place on SPE Dry and evaporate to dryness at approx. 35°C. If run contains urine, add 50µL 1% HCl in MeOH to wells and place plate cover on plate before drying. *SPE Dry ID: 067103*
☒ 17. Reconstitute in **100µL 100% LC 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.
☒ 2. Make necessary changes to integration limits
☒ 3. Evaluate samples, S/N of primary transition >5 and S/N of secondary transition >3 or evaluation of peak symmetry and resolution. Within +/- 2% or 0.1 min RT of administrative control. Calculated concentration of 5 or greater or 2-5 for discretionary range.
☒ 4. Did all QCs pass for each analyte? If no, describe issue in comments (below).
☒ 5. Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS: The calibrator was reinjected as several compounds had poor ISTD peaks. Several of the compounds had shifted and were not evaluated. 02/25/2020 Flurazepam ~~Fluoxetine~~, fentanyl, sufentanil, and zopiclone were not evaluated due to poor ISTD response and/or the peak(s) shifting out of the window. P2020-0028-3 was not evaluated for acetylnorfentanyl, codeine, dihydrocodeine, hydromorphone, morphine, norhydrocodone, and oxymorphone. P2020-0429-1 not evaluated for alpha-hydroxymidazolam, alprazolam, amphetamine, noroxycodone, and pseudoephedrine. ~~P2019-5753-3 not evaluated for oxymorphone for this run.~~ 02/25/2020

P2019-3936-1 not evaluated for oxymorphone in this run. 02/26/2020

Idaho State Police
Forensic Services

AM #25 Blood Multi-Drug Screen by LCMS-QQQ
And
AM #28 Blood Multi-Drug Confirmatory Analysis by LCMS-QQQ---Panel 1

Methanol External Control Solution (Lot: 031319)

100 ul of 1mg/mL stock was added to each drug to 9700 ul of LC MeOH.
**Made for the AM 28 urine validation*

Component	***Source***	***Source Lot Number***	***Expiration Date***
Methanol (LCMS)	Fisher	184782	
O-desmethyl Tramadol	Cerilliant	FN01241702	04/30/2022
Amphetamine	Cerilliant	FE04061701	06/30/2022
Alprazolam	Cerilliant	FE07061604	07/31/2021
Prepared:	03/13/19		
Prepared By:	Tamara Salazar		
Expires:	03/13/2020		

Blood External Control Solution (Lot: WS010820)

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

Component	***Source***	***Source Lot Number***
Negative Blood	Hemostat	445283-3
Methanol External Control Solution		031319
Prepared:	01/08/2020	
Prepared by:	Tamara Salazar	
Expires:	03/13/2020	

Idaho State Police Forensic Services

AM #25 Blood and Urine Multi-Drug Screen by LCMS-QQQ

Methanol External Control Solution (Lot: 042719)

100 ul of 1mg/mL stock was added to each drug to 9600 ul of LC MeOH.

Component	*Source*	*Source Lot Number*
Methanol (LCMS)	Fisher	184782
Morphine	Cerilliant	FE08141515
Metoprolol	Cerilliant	FN06091510
Flunitrazepam	Cerilliant	FE08051602
Trazodone	Cerilliant	FN12151403
Prepared: 04/27/19		
Prepared By:Tamara Salazar		

Urine External Control Solution (Lot: WS111519)

200 ul of methanol external control solution was added to 9800 ul of urine. Approximately 100ng/mL of each compound.

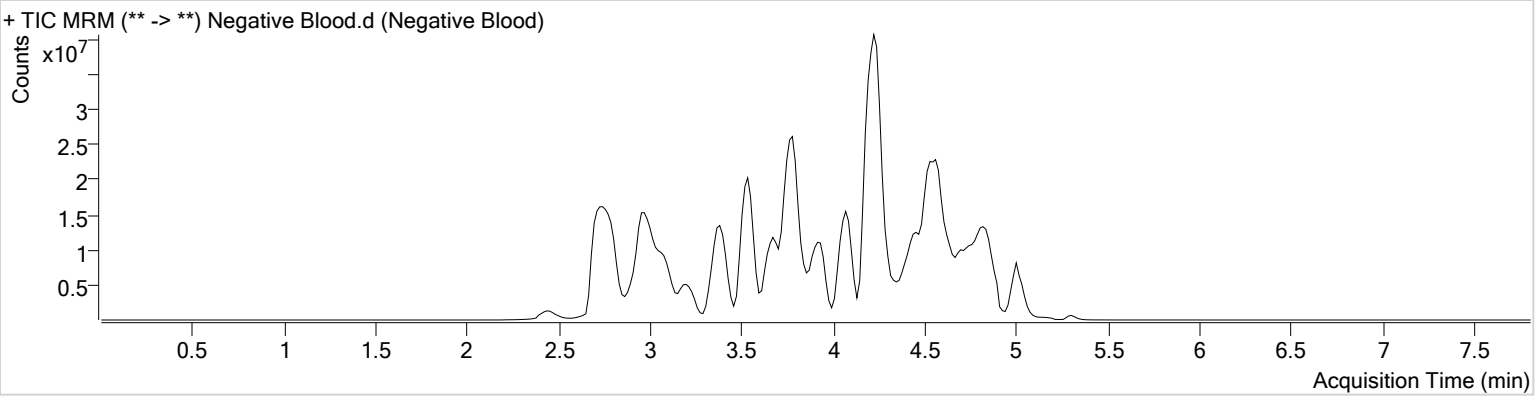
Component	*Source*	*Source Lot Number*
Negative Urine	Pocatello Lab	POC031319
Methanol External Control Solution		042719
Prepared:	11/15/19	
Prepared by:	Celena Shrum	

AM #25 Multi-Drug Screen Results

Batch results	D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\MDS.batch.bin
Calibration Last Update	2/21/2020 12:50:28 PM

Instrument	Falco	**Data File**	Negative Blood.d
Type	Sample	**Sample**	Negative Blood
Acq. Method	am 25 all.m	**Operator**	Celena Shrum
Sample Position	P1-A5	**Comment**	
Injection Volume	5		
Acq. Date-Time	2/13/2020 8:46:07 PM		
Sample Info.			

Sample Chromatogram

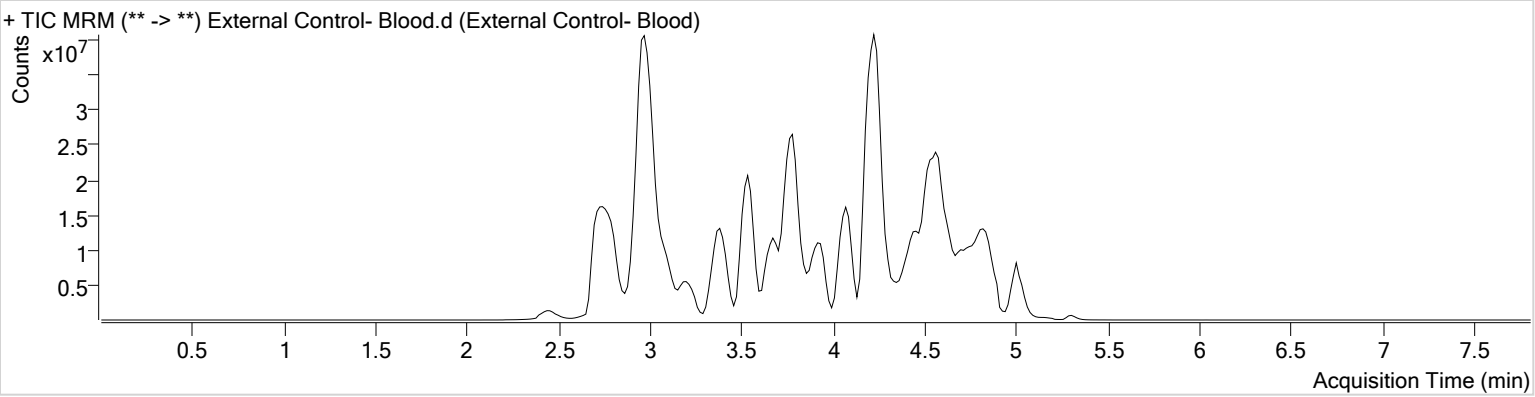


AM #25 Multi-Drug Screen Results

Batch results D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\MDS.batch.bin
Calibration Last Update 2/21/2020 12:50:28 PM

Instrument	Falco	**Data File**	External Control- Blood.d
Type	Sample	**Sample**	External Control- Blood
Acq. Method	am 25 all.m	**Operator**	Celena Shrum
Sample Position	P1-B5	**Comment**	
Injection Volume	5		
Acq. Date-Time	2/13/2020 8:54:28 PM		
Sample Info.			

Sample Chromatogram



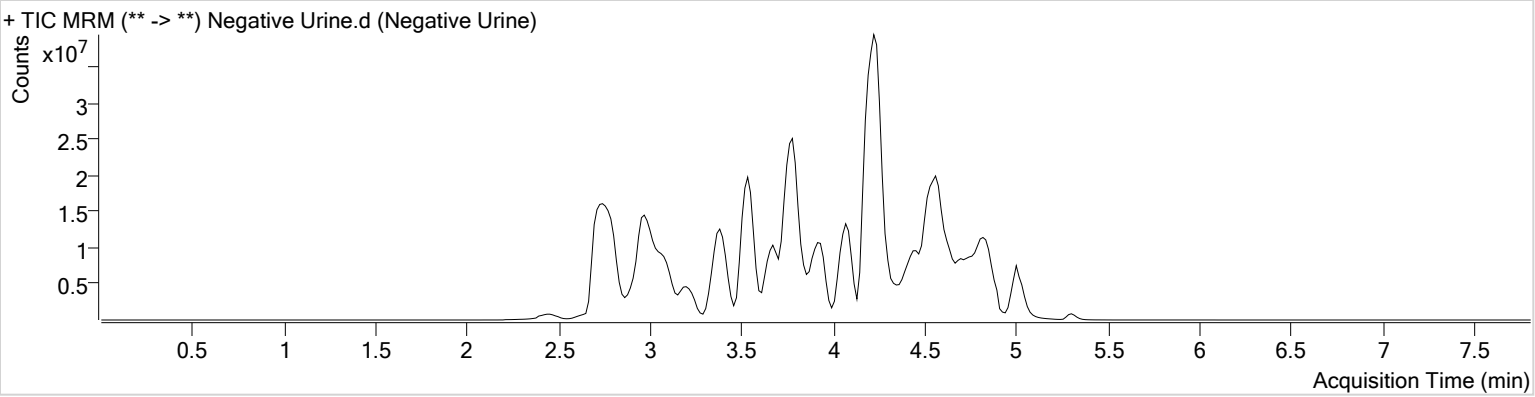
Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Alprazolam	4.594	6297117	∞	844.71	1884143	106.1255
Amphetamine	2.949	30879261	26988.95	9544.71	7429272	99.7681
O-desmethyl-tramadol	2.996	70618340	∞	∞	50110380	54.4364

AM #25 Multi-Drug Screen Results

Batch results	D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\MDS.batch.bin
Calibration Last Update	2/21/2020 12:50:28 PM

Instrument	Falco	**Data File**	Negative Urine.d
Type	Sample	**Sample**	Negative Urine
Acq. Method	am 25 all.m	**Operator**	Celena Shrum
Sample Position	P1-C5	**Comment**	
Injection Volume	5		
Acq. Date-Time	2/13/2020 9:02:47 PM		
Sample Info.			

Sample Chromatogram

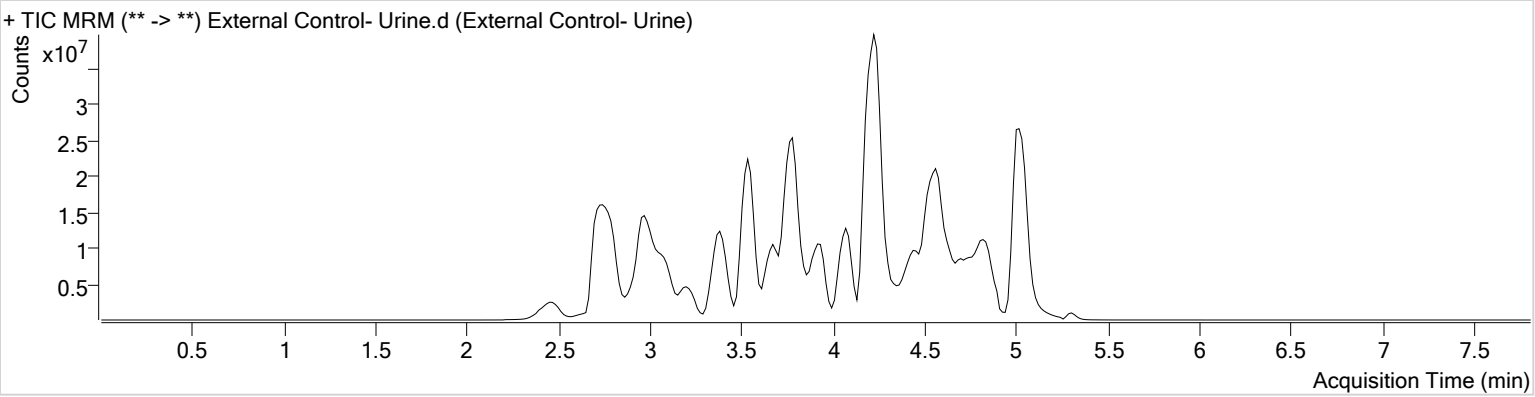


AM #25 Multi-Drug Screen Results

Batch results D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\MDS.batch.bin
Calibration Last Update 2/21/2020 12:50:28 PM

Instrument	Falco	**Data File**	External Control- Urine.d
Type	Sample	**Sample**	External Control- Urine
Acq. Method	am 25 all.m	**Operator**	Celena Shrum
Sample Position	P1-D5	**Comment**	
Injection Volume	5		
Acq. Date-Time	2/13/2020 9:11:05 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Flunitrazepam	4.564	4701558	∞	∞	70991	153.1214
Metoprolol	3.552	9169949	6206.72	∞	18330438	159.4631
Morphine	2.473	4399114	∞	7783.07	191620	100.7351
Trazodone	5.015	66382517	84048.36	∞	27054943	114.3299

AM #25 Multi-Drug Screen Results

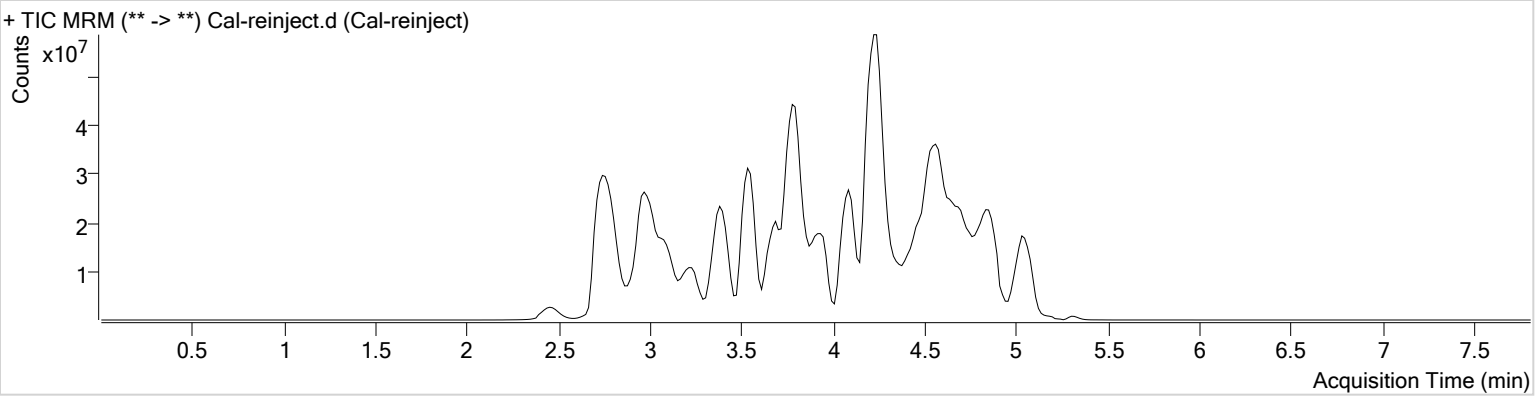
Batch results D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\MDS.batch.bin
Calibration Last Update 2/21/2020 12:50:28 PM

Instrument Falco
Type Cal
Acq. Method am 25 all.m
Sample Position P1-B1
Injection Volume 5
Acq. Date-Time 2/14/2020 12:31:58 PM
Sample Info.

Data File Cal-reinject.d
Sample Cal-reinject
Operator Celena Shrum
Comment

The calibrator had to be reinjected due to poor ISTD response for some compounds.

Sample Chromatogram



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
6-MAM	3.241	67929	33.99	19.08	1651709	10.0000
7-aminoclonazepam	3.582	384691	25152.36	19169.22	1713345	10.0000
7-aminoflunitrazepam	3.781	2530876	1320.09	9649.24	18667714	10.0000
Acetyl Fentanyl	4.454	871045	∞	57995.48	60520721	10.0000
Acetyl Norfentanyl	2.960	458669	∞	39.33	20784737	10.0000
a-hydroxyalprazolam	4.500	61787	∞	3.51 Low-OK	329874	10.0000
alpha-hydroxymidazolam	4.606	801379	94.75	∞	5277459	10.0000
alpha-PVP	3.850	9642185	8602.34	∞	38666711	10.0000
Alprazolam	4.610	827602	12.44	21.05	2627926	10.0000
Amitriptyline	4.844	3357801	∞	∞	17637115	10.0000
Amphetamine	2.965	4461115	962.61	2932.24	10708148	10.0000
Benzoylecgonine	3.367	1710479	767.48	110.45	8414186	10.0000
Buprenorphine	5.331	582215	485.42	519.04	2568720	10.0000
Bupropion	4.157	8495225	∞	2853.60	28992232	10.0000
Carbamazepine	4.234	4604889	3087.00	∞	30497467	10.0000
Carisoprodol	4.171	520766	∞	55.88	2929325	10.0000
Chlordiazepoxide	4.734	307610	∞	343.12	10781124	10.0000
Chlorpheniramine	4.169	34054	101.92	9149.75	68793336	10.0000
Citalopram	4.300	5946510	9336.89	1925.51	25411969	10.0000
Clonazepam	4.440	185658	19.79	21786.06	408399	10.0000
Cocaine	3.811	10568944	∞	∞	46121396	10.0000
Codeine	3.152	792615	844.17	685.79	3374671	10.0000
Cyclobenzaprine	4.722	5388121	∞	193.84	19779955	10.0000
Desipramine	4.653	7545274	3638.28	∞	43117843	10.0000
Dextromethorphan	4.370	5348813	∞	∞	25336133	10.0000
Dextrorphan	3.570	3956817	∞	∞	26642853	10.0000
Diazepam	4.858	948180	∞	744.45	4414977	10.0000
Dihydrocodeine	2.954	1968643	∞	∞	12491973	10.0000
Diphenhydramine	4.279	12160987	1547.83	548.90	68793336	10.0000
Doxepin	4.522	3640289	∞	∞	26415733	10.0000
Doxylamine	3.783	21653652	73302.74	∞	74455151	10.0000
EDDP	4.229	7342579	1646.03	1156.76	49528096	10.0000
Estazolam	4.535	2767615	113.99	∞	8468738	10.0000
Etizolam	4.636	273821	140.49	∞	8468738	10.0000

AM #25 Multi-Drug Screen Results

Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Fentanyl	4.683	537858	∞	8796.29	34289195	10.0000
Flunitrazepam	4.563	832182	1059.98	187.99	192405	10.0000
Fluoxetine	4.518	5634534	474.94	138.78	26811425	10.0000
Hydrocodone	3.428	1735117	∞	∞	12148511	10.0000
Hydromorphone	2.684	637232	∞	21.32	5096469	10.0000
Imipramine	4.772	10588321	3469.72	∞	39879206	10.0000
Ketamine	4.111	6311988	∞	111.19	32298610	10.0000
Lamotrigine	3.663	394130	196.56	122.23	28281129	10.0000
Levamisole	3.283	8217281	551551.56	∞	46121396	10.0000
Lorazepam	4.424	41811	23.10	45.27	408399	10.0000
Maprotiline	4.661	1051056	36.00	1674.71	17637115	10.0000
MDA	3.131	2194269	638.48	531.79	9756934	10.0000
MDEA	3.391	9142089	3613.04	2367.35	43505840	10.0000
MDMA	3.222	10364614	∞	948.41	7192620	10.0000
Meperidine	3.878	5700631	2176.88	2496.22	28281129	10.0000
Meprobamate	3.652	133583	625.24	12.28	593218	10.0000
Methadone	4.594	12509039	∞	1208.40	55375634	10.0000
Methamphetamine	3.086	7340276	322.84	∞	41599300	10.0000
Methocarbamol	3.541	186828	44.76	∞	28281129	10.0000
Methylphenidate	3.696	17891733	∞	1915.98	65672632	10.0000
Metoprolol	3.553	887219	∞	93130.39	28281129	10.0000
Midazolam	4.775	398929	80.35	54.25	4763887	10.0000
Mirtazapine	4.678	4862511	1034.36	132705.07	28281129	10.0000
Mitragynine	4.710	777958	44302.07	441779.20	26415733	10.0000
Morphine	2.488	573118	11.29	∞	251478	10.0000
Norbuprenorphine	4.097	61852	49.82	9528.04	298518	10.0000
Nordiazepam	4.708	224995	358.55	55.18	767538	10.0000
Norfentanyl	3.420	9764460	517766.84	882.62	41591043	10.0000
Norhydrocodone	3.093	68923	84.56	17.50	1867304	10.0000
Normeperidine	3.727	3629777	228.06	1964.13	13558265	10.0000
Noroxycodone	3.015	1159003	411.14	578.70	3818909	10.0000
Nortriptyline	4.694	2705093	1064.94	1562.42	6297956	10.0000
O-desmethyl-tramadol	2.989	17994315	12934.09	299.61	69508009	10.0000
Olanzapine	4.364	556287	3247.44	∞	115051	10.0000
Oxazepam	4.505	69703	10.84	3.57 **Low**-OK	536658	10.0000
Oxycodone	3.135	4238731	∞	285.19	17664429	10.0000
Oxymorphone	2.470	2905363	102.87	∞	10760595	10.0000
Paroxetine	4.683	408067	∞	26.49	14228374	10.0000
Phenazepam	4.620	334151	142.18	266.55	1670649	10.0000
Phencyclidine	4.110	10350301	234.55	332.67	46168637	10.0000
Phentermine	3.239	1113608	∞	∞	24316978	10.0000
Phenytoin	4.125	21147	1262.32	3.92 **Low**-OK	115051	10.0000
Promethazine	4.888	11533805	1460.78	403.63	56307392	10.0000
Pseudoephedrine	2.779	71000795	∞	∞	143929130	10.0000
Quetiapine	4.853	8611684	10299.15	2470.33	11670664	10.0000
Sertraline	4.916	2821412	∞	197.96	14228374	10.0000
Sufentanil	5.061	960782	691.69	∞	54925897	10.0000
Tapentadol	3.546	6569727	3411.18	1947.75	35862467	10.0000
Temazepam	4.673	354139	157.57	∞	2173079	10.0000
Tramadol	3.559	16620153	∞	161.39	66415017	10.0000
Trazodone	5.017	7918795	7078.71	18666.44	36898752	10.0000
Venlafaxine	3.952	15347219	∞	2581.14	69374763	10.0000
Zaleplon	4.365	1981837	370.93	49647.03	4678901	10.0000
Zolpidem	4.557	16680581	∞	555.36	68581558	10.0000

Cal-reinject

AM# 26: Screening of THC and Metabolites in Blood and Urine by LC-MS/MS

Extraction Date: 02/13/2020
Plate lot#: 190716

Analyst: Celena Shrum
Plate Expiration: 01/16/2020- Okay per deviation in place

Mobile phase A: 0.1% Formic Acid in LCMS Water
Blank Blood Lot: 445283-3
LCMS-QQQ ID: 069901

Mobile phase B: 0.1% Formic acid in Acetonitrile
Column: Phenomenex Phenyl Hexyl (4.6x50mm, 2.6um)
Blank Urine Lot: POC031319

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. Urine hydrolysis: add 1.5mL urine to blank plate, add 250µl 1N KOH. Shake and incubate at 40 degrees for 15 minutes.
Using a calibrated pipette, add **1000µl blood and urine (if applicable) (calibrated pipette)** into the appropriate wells of analytical (standards) plate. **Pipette ID: #42**
☒ 3. Place on shaking incubator at ambient temp., 900rpm for 15 minutes. *Shaker ID: 067105*
☒ 4. Pipette **500µL 0.1% formic acid in water blood sample, 500 µL saturated phosphate buffer in urine** in wells of analytical plate.
☒ 5. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
☒ 6. Transfer **800µL of blood+acid or urine+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.
☒ 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).
☒ 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? (if not, describe in comments section)
☒ 6 Enter QCs into control charting.
☒ 7 Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS:

Idaho State Police
Forensic Services

AM #26 Blood THC and Metabolites Screen by LCMS-QQQ
and
AM #27 Quantitative Analysis of THC and Metabolites in Blood by LCMS-QQQ

Methanol External Control Solution (Lot: WS011620)

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

Component	***Source***	***Source Lot Number***	***Expiration Date***
Methanol (LCMS)	Fisher	193941	
THC	Cerilliant	FE09101501	11/30/2020
C-THC	Cerilliant	FE07171501	09/30/2020
THC-OH	Cerilliant	FE07221601	07/31/2021
Prepared:	01/16/2020		
Prepared By:	Tamara Salazar		
Expires:	09/30/2020		

Blood External Control Solution (Lot: 021320)

200 µL of methanol external control solution was added to 9800 µL of blood.
Approximately 20 ng/mL of each compound.

Component	***Source***	***Source Lot Number***
Negative Blood	Hemostat	445283-3
Methanol External Control Solution	-	WS011620
Prepared:	02/13/2020	
Prepared by:	Celena Shrum	
Expires:	09/30/2020	

Idaho State Police Forensic Services

AM #26 Screening of THC and Metabolites in Blood and Urine by LCMS-QQQ

Methanol External Control Solution (Lot: WS021320)

100 ul of 100 ug/mL C-THC in 9900 ul MeOH

Approximate concentration 1ug/mL.

Component	*Source*	*Source Lot Number*	*Expiration Date*
Methanol (LCMS)	Fisher	193941	
C-THC	Cerilliant	FE07171501	09/30/2020
Prepared:	02/13/2020		
Prepared By:	Celena Shrum		
Expires: *	~~02/13/2020~~ 02/25/2020		

*Per AM 21- no set expiration for qualitative compounds.

Urine External Control Solution (Lot: 021320)

200 ul of methanol external control solution was added to 9800 ul of urine.

Approximately 20ng/mL

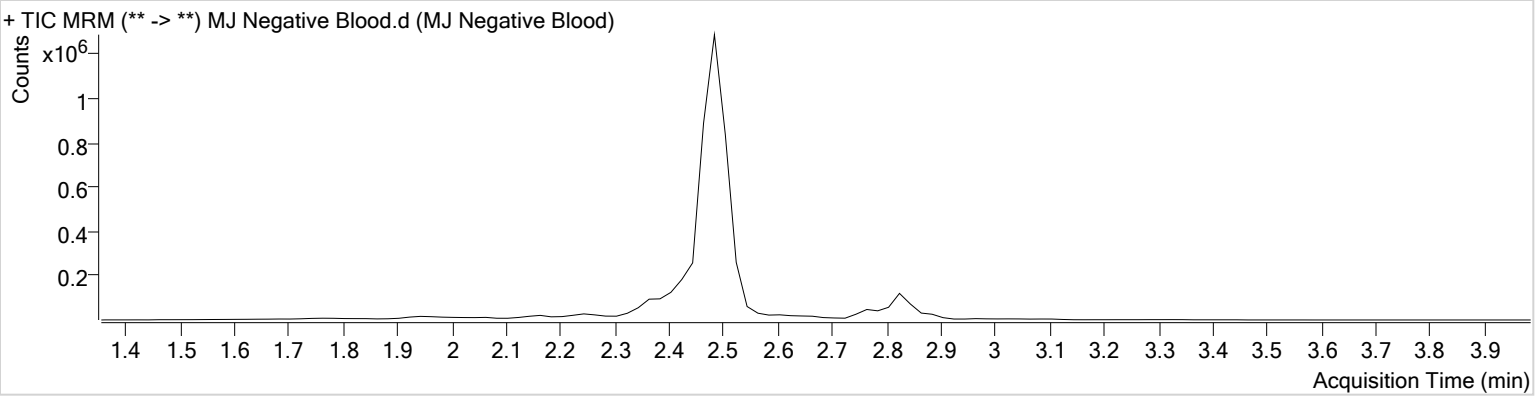
Component	*Source*	*Source Lot Number*
Negative Urine	Pocatello Lab	POC031319
Methanol External Control Solution	-	WS021320
Prepared:	02/13/2020	
Prepared by:	Celena Shrum	
Expires:	09/30/2020	

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Calibration Last Update 2/24/2020 3:15:44 PM

Instrument	Falco	**Data File**	MJ Negative Blood.d
Type	Sample	**Sample**	MJ Negative Blood
Acq. Method	am 26 test.m	**Operator**	Celena Shrum
Sample Position	P3-A2	**Comment**	
Injection Volume	10		
Acq. Date-Time	2/13/2020 4:50:09 PM		
Sample Info.			

Sample Chromatogram



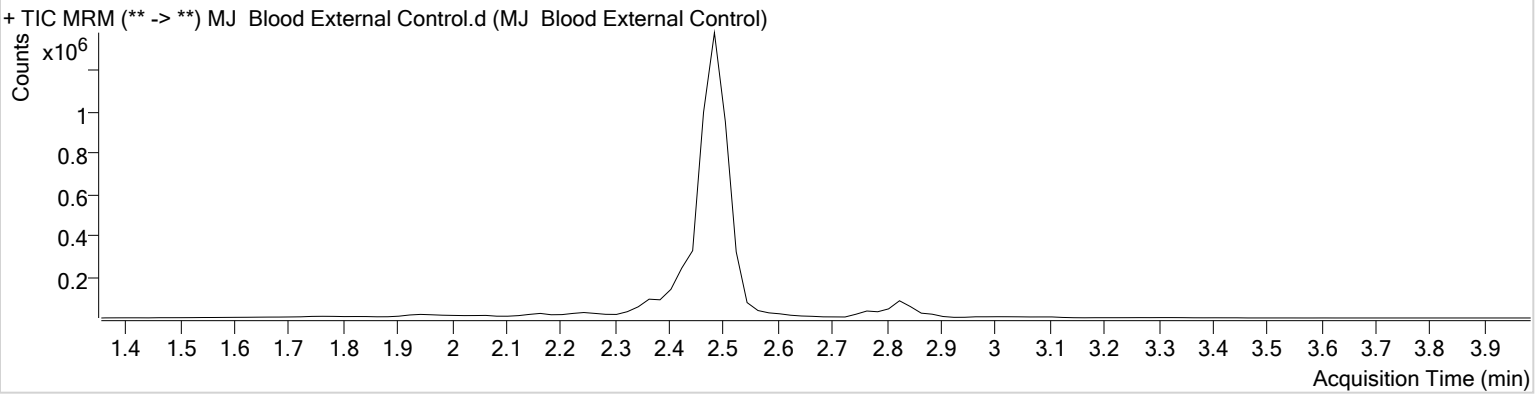
Name	RT	Resp.	ISTD Resp.	Final Conc.		
THC-OH	2.451	115580	3690345	1.7602	ng/ml	**Low**

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Calibration Last Update 2/21/2020 12:51:25 PM

Instrument	Falco	**Data File**	MJ Blood External Control.d
Type	Sample	**Sample**	MJ Blood External Control
Acq. Method	am 26 test.m	**Operator**	Celena Shrum
Sample Position	P3-B2	**Comment**	
Injection Volume	10		
Acq. Date-Time	2/13/2020 4:56:41 PM		
Sample Info.			

Sample Chromatogram



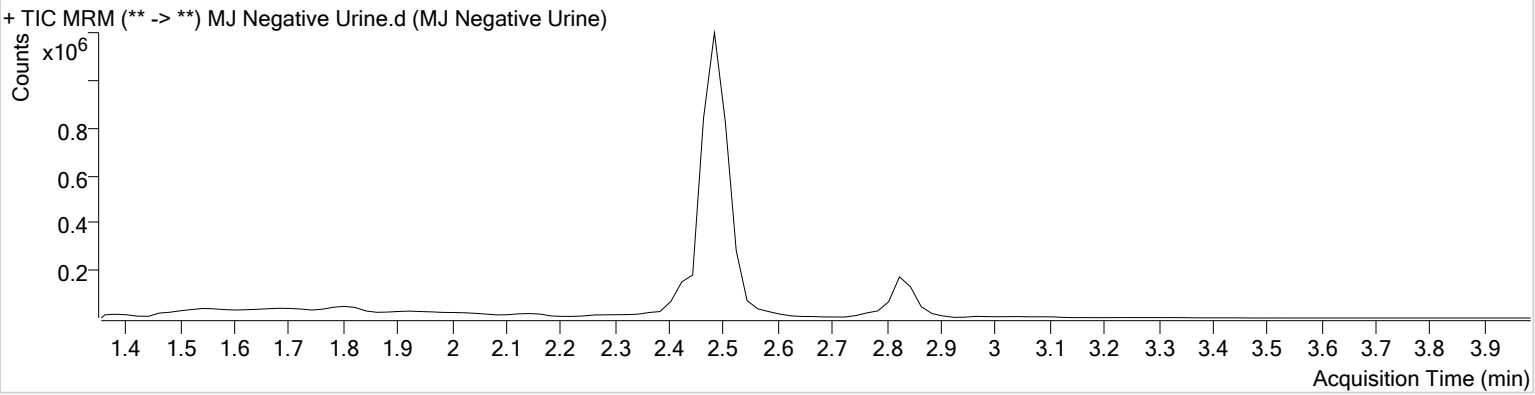
Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	2.839	22261	154878	18.7630	ng/ml
THC-COOH	2.445	120020	436667	17.9625	ng/ml
THC-OH	2.491	664898	3310670	17.1650	ng/ml

AM #26 Cannabinoids Screen Results

Batch results	D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Calibration Last Update	2/21/2020 12:51:25 PM

Instrument	Falco	**Data File**	MJ Negative Urine.d
Type	Sample	**Sample**	MJ Negative Urine
Acq. Method	am 26 test.m	**Operator**	Celena Shrum
Sample Position	P3-C2	**Comment**	
Injection Volume	10		
Acq. Date-Time	2/13/2020 5:03:14 PM		
Sample Info.			

Sample Chromatogram

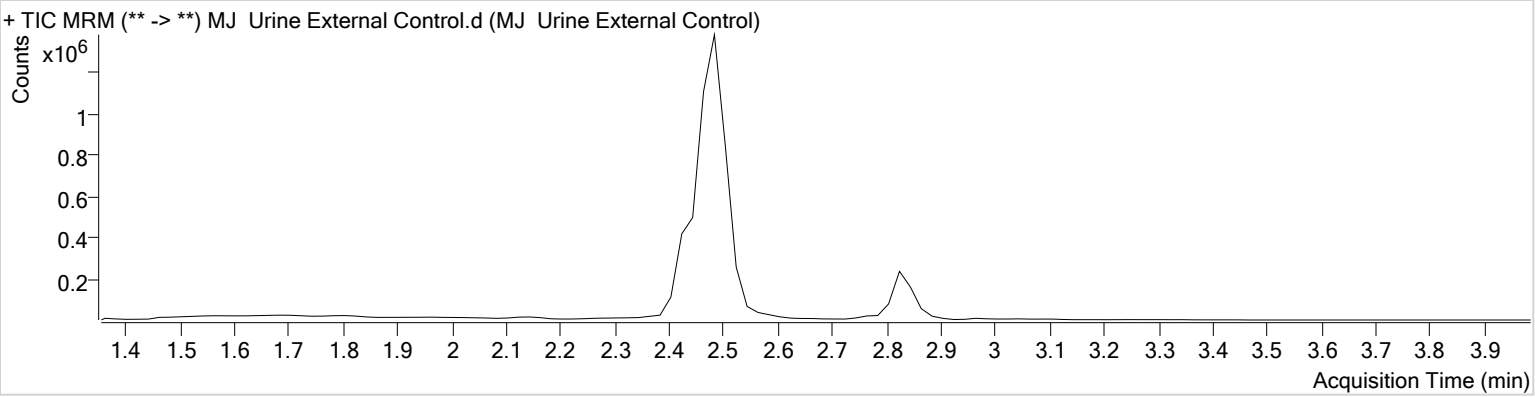


AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Calibration Last Update 2/21/2020 12:51:25 PM

Instrument	Falco	**Data File**	MJ Urine External Control.d
Type	Sample	**Sample**	MJ Urine External Control
Acq. Method	am 26 test.m	**Operator**	Celena Shrum
Sample Position	P3-D2	**Comment**	
Injection Volume	10		
Acq. Date-Time	2/13/2020 5:09:46 PM		
Sample Info.			

Sample Chromatogram



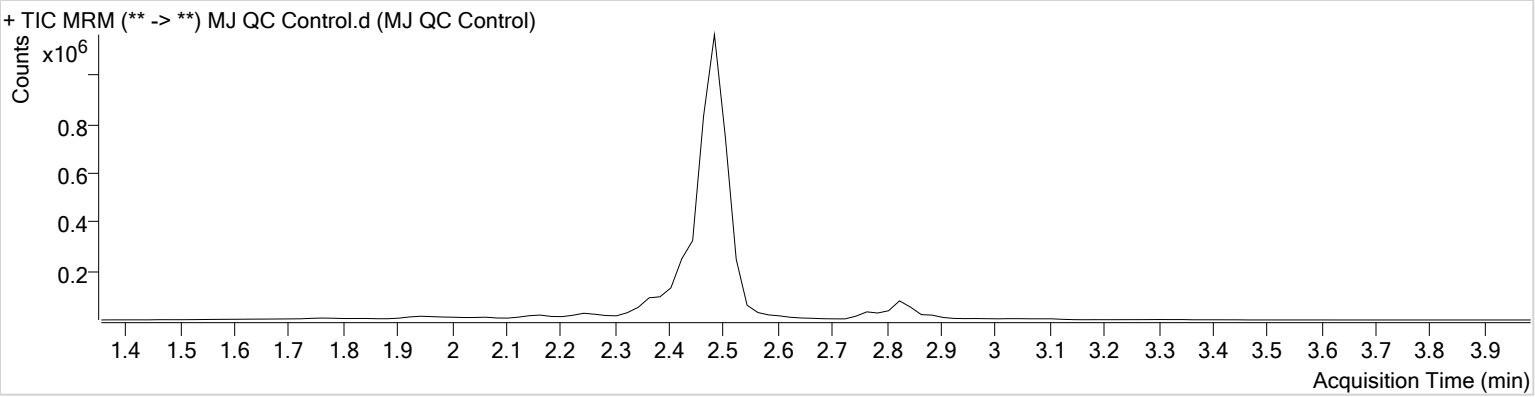
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC-COOH	2.445	403352	480075	54.3228 ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Calibration Last Update 2/21/2020 12:51:25 PM

Instrument	Falco	**Data File**	MJ QC Control.d
Type	Sample	**Sample**	MJ QC Control
Acq. Method	am 26 test.m	**Operator**	Celena Shrum
Sample Position	P3-H1	**Comment**	
Injection Volume	10		
Acq. Date-Time	2/13/2020 4:37:06 PM		
Sample Info.			

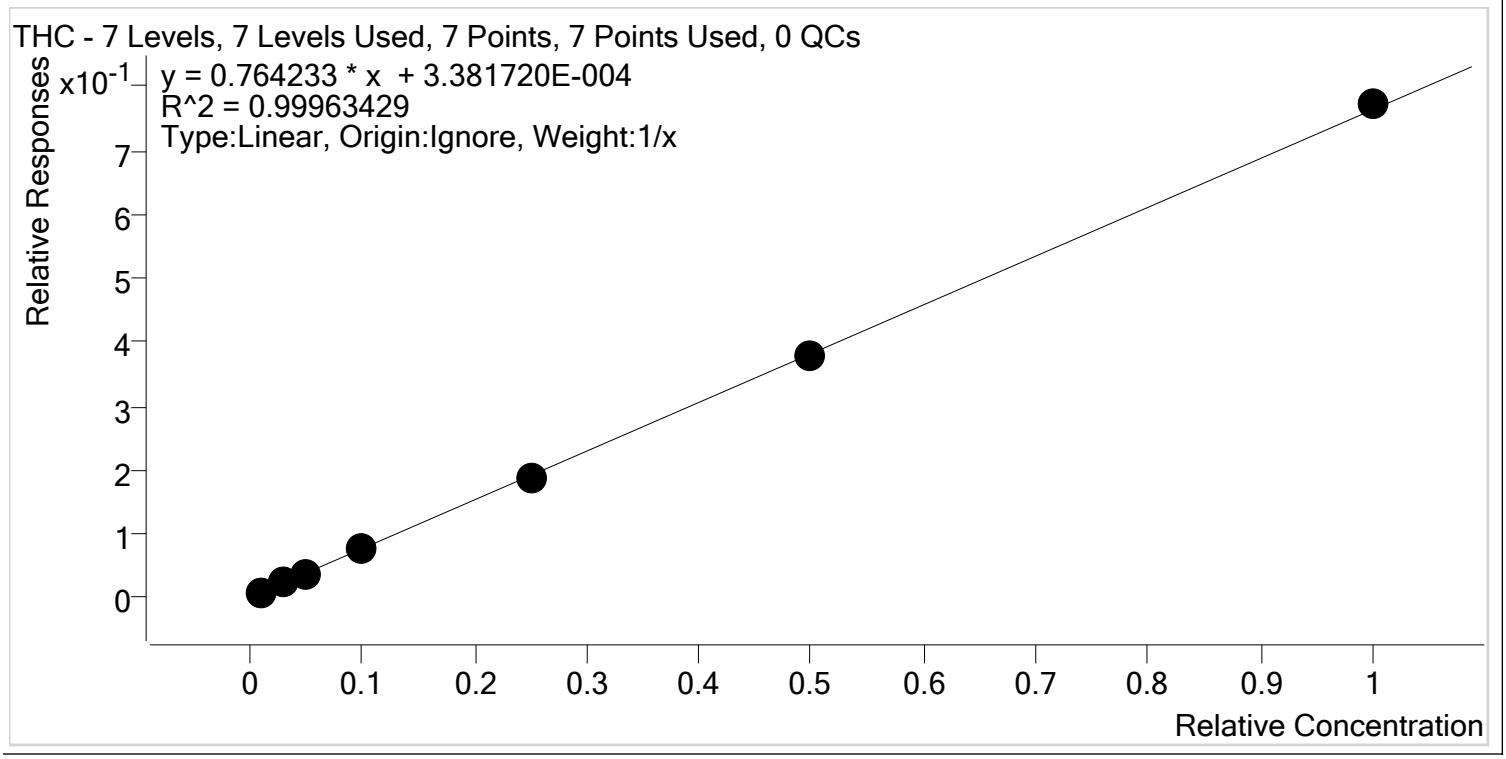
Sample Chromatogram



Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	2.839	5260	149874	4.5479	ng/ml
THC-COOH	2.445	114822	443933	16.9200	ng/ml
THC-OH	2.491	166112	3163366	3.6790	ng/ml

AM #26 Cannabinoids Screen Calibration Curve Report

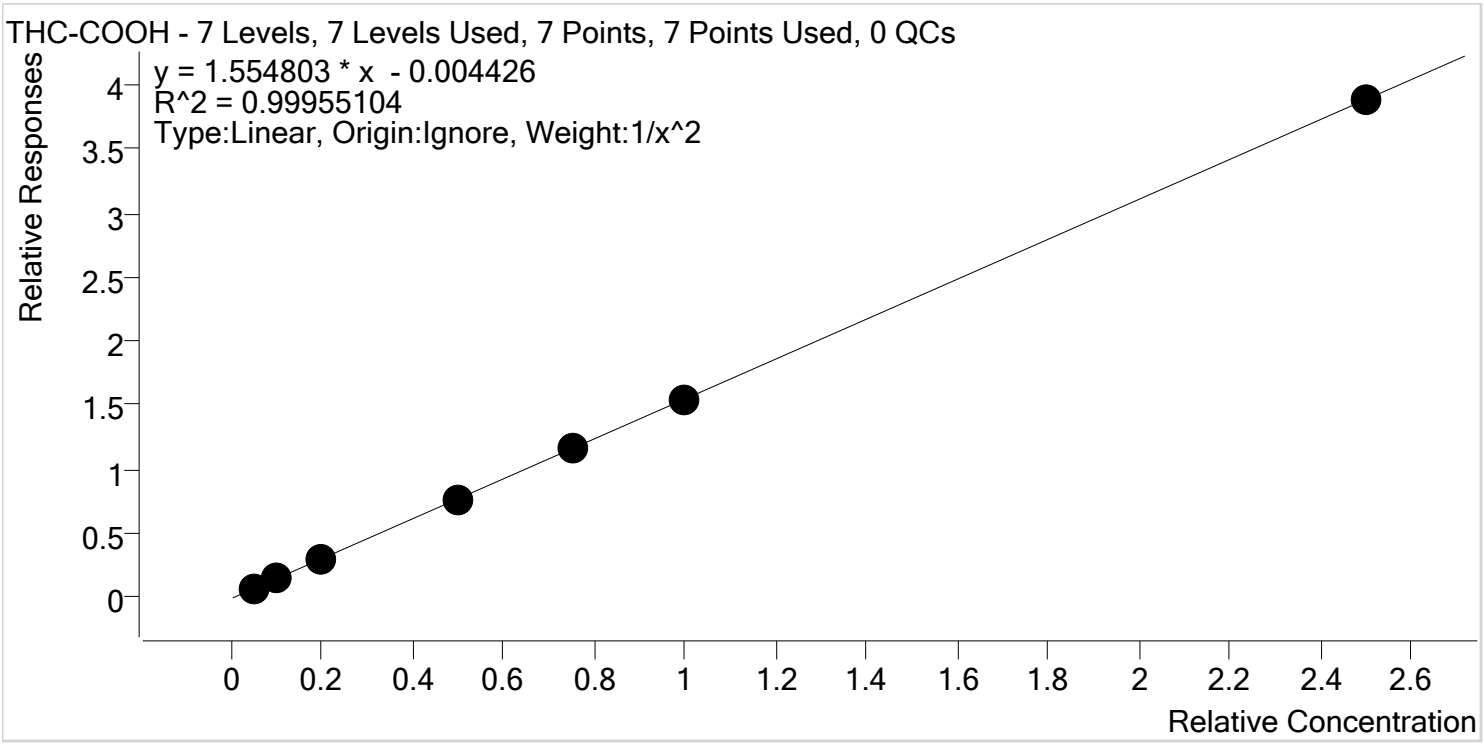
Batch results	D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Last Cal. Update	2/21/2020 12:51 PM
Analyst Name	ISP\datastor
Analyte	THC
Internal Standard	THC-d3



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
MJ Cal 1	1	✔	1.0	1.0	104.3
MJ Cal 2	2	✔	3.0	3.1	102.4
MJ Cal 3	3	✔	5.0	4.7	93.5
MJ Cal 4	4	✔	10.0	10.2	102.1
MJ Cal 5	5	✔	25.0	24.4	97.5
MJ Cal 6	6	✔	50.0	49.5	99.1
MJ Cal 7	7	✔	100.0	101.1	101.1

AM #26 Cannabinoids Screen Calibration Curve Report

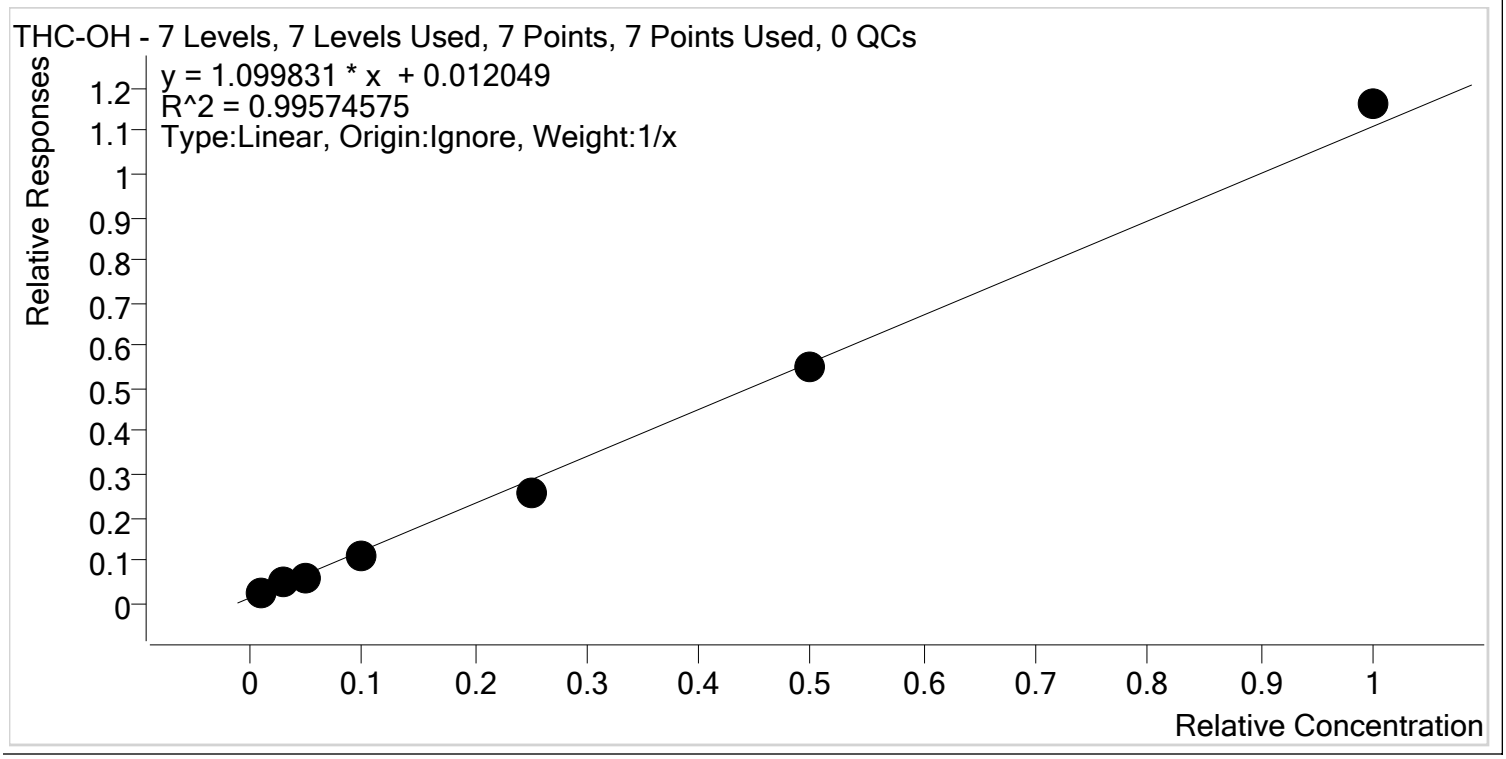
Batch results	D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Last Cal. Update	2/21/2020 12:51 PM
Analyst Name	ISP\datastor
Analyte	THC-COOH
Internal Standard	THC-COOH-d9



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
MJ Cal 1	1	✔	5.0	5.1	101.3
MJ Cal 2	2	✔	10.0	9.7	96.6
MJ Cal 3	3	✔	20.0	20.3	101.4
MJ Cal 4	4	✔	50.0	49.6	99.3
MJ Cal 5	5	✔	75.0	76.2	101.6
MJ Cal 6	6	✔	100.0	100.0	100.0
MJ Cal 7	7	✔	250.0	249.6	99.8

AM #26 Cannabinoids Screen Calibration Curve Report

Batch results	D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Last Cal. Update	2/21/2020 12:51 PM
Analyst Name	ISP\datastor
Analyte	THC-OH
Internal Standard	THC-OH-d3



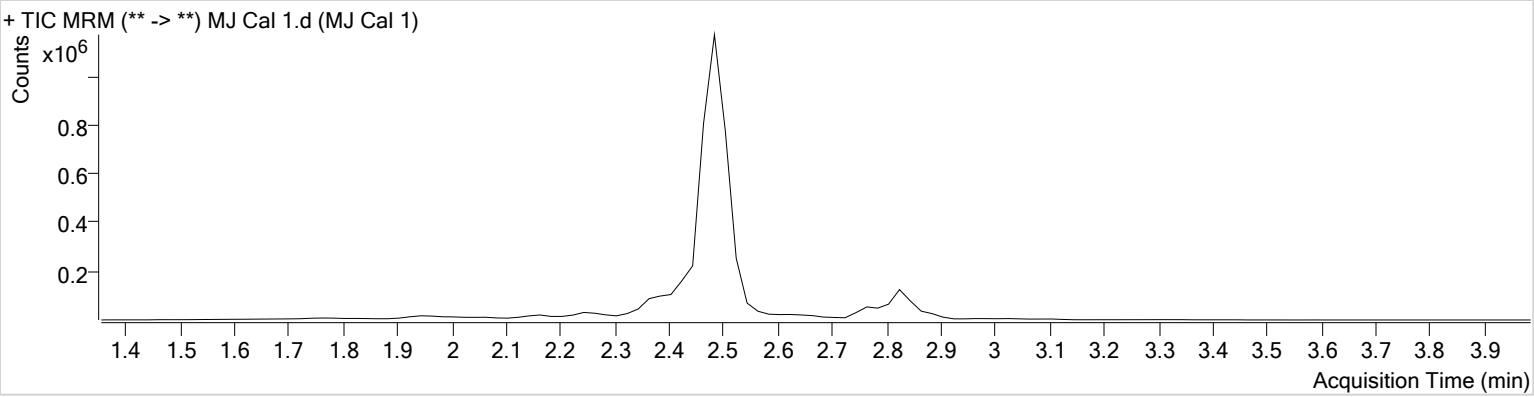
Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
MJ Cal 1	1	✔	1.0	1.2	117.4
MJ Cal 2	2	✔	3.0	3.3	109.6
MJ Cal 3	3	✔	5.0	4.5	89.4
MJ Cal 4	4	✔	10.0	9.2	91.8
MJ Cal 5	5	✔	25.0	22.4	89.4
MJ Cal 6	6	✔	50.0	48.8	97.7
MJ Cal 7	7	✔	100.0	104.7	104.7

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Calibration Last Update 2/21/2020 12:51:25 PM

Instrument	Falco	**Data File**	MJ Cal 1.d
Type	Cal	**Sample**	MJ Cal 1
Acq. Method	am 26 test.m	**Operator**	Celena Shrum
Sample Position	P3-A1	**Comment**	
Injection Volume	10		
Acq. Date-Time	2/13/2020 3:51:12 PM		
Sample Info.			

Sample Chromatogram



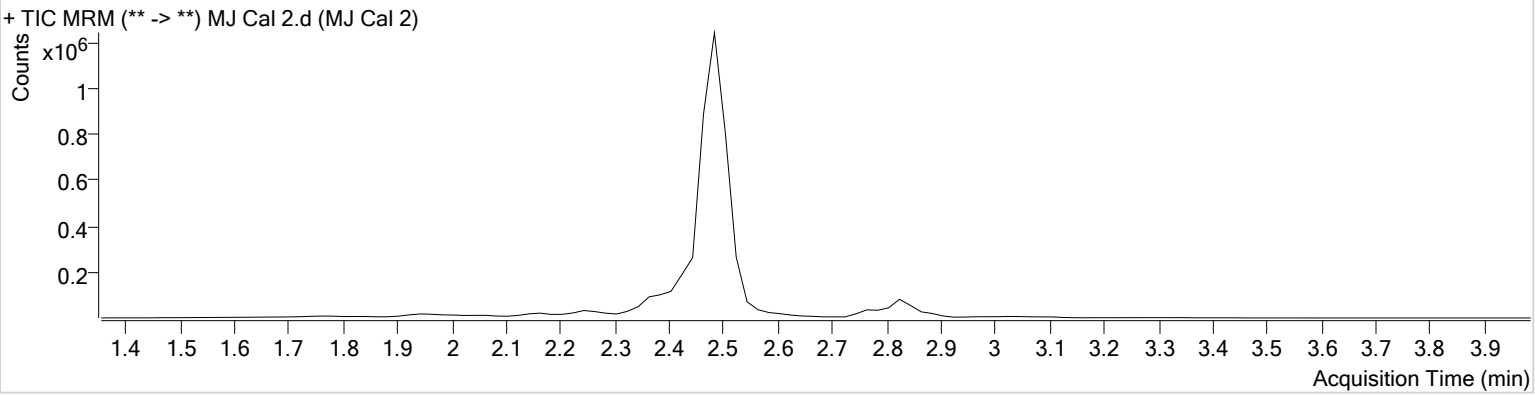
Name	RT	Resp.	ISTD Resp.	Final Conc.		
THC	2.839	2146	258317	1.0430	ng/ml	**Low**
THC-COOH	2.445	27580	370975	5.0663	ng/ml	
THC-OH	2.471	81795	3276964	1.1740	ng/ml	**Low**

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Calibration Last Update 2/21/2020 12:51:25 PM

Instrument	Falco	**Data File**	MJ Cal 2.d
Type	Cal	**Sample**	MJ Cal 2
Acq. Method	am 26 test.m	**Operator**	Celena Shrum
Sample Position	P3-B1	**Comment**	
Injection Volume	10		
Acq. Date-Time	2/13/2020 3:57:54 PM		
Sample Info.			

Sample Chromatogram



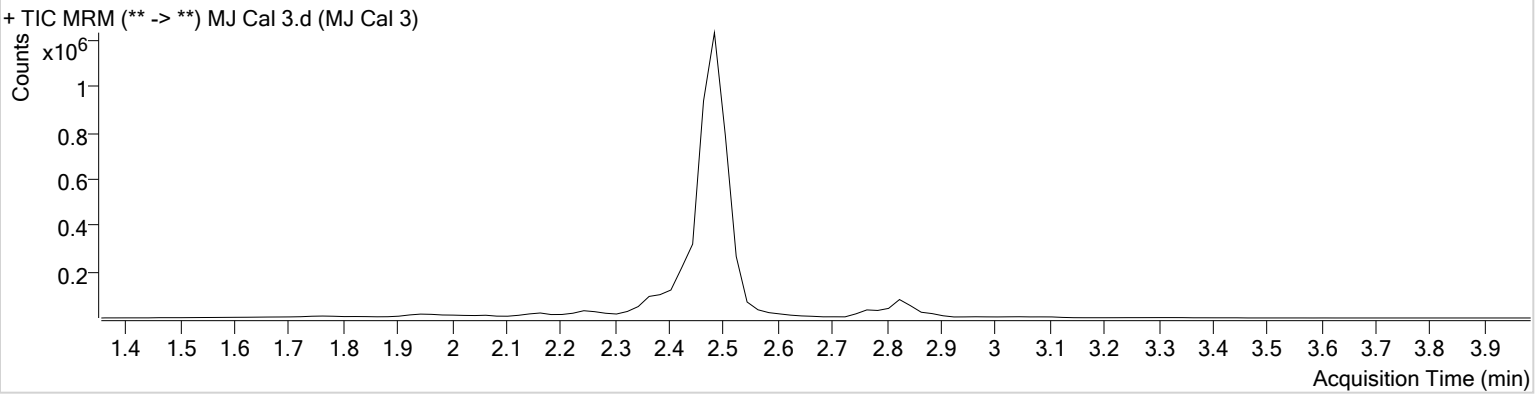
Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	2.839	4085	171496	3.0724	ng/ml
THC-COOH	2.445	59465	407909	9.6608	ng/ml
THC-OH	2.491	166498	3453078	3.2885	ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Calibration Last Update 2/21/2020 12:51:25 PM

Instrument	Falco	**Data File**	MJ Cal 3.d
Type	Cal	**Sample**	MJ Cal 3
Acq. Method	am 26 test.m	**Operator**	Celena Shrum
Sample Position	P3-C1	**Comment**	
Injection Volume	10		
Acq. Date-Time	2/13/2020 4:04:27 PM		
Sample Info.			

Sample Chromatogram



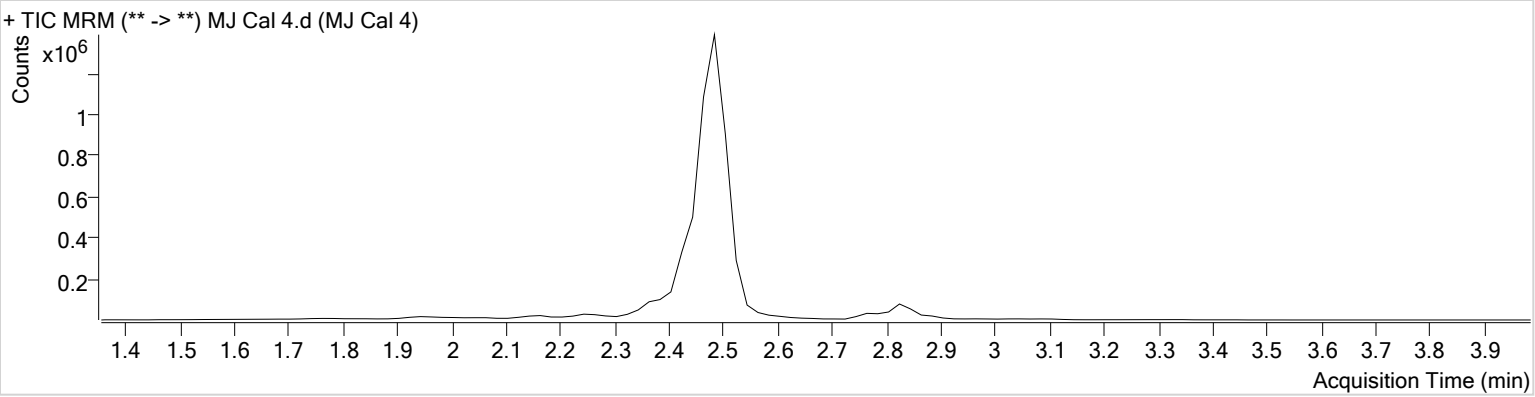
Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	2.839	5822	161437	4.6751	ng/ml
THC-COOH	2.445	124678	401201	20.2720	ng/ml
THC-OH	2.491	204977	3350105	4.4676	ng/ml

AM #26 Cannabinoids Screen Results

Batch results	D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Calibration Last Update	2/21/2020 12:51:25 PM

Instrument	Falco	**Data File**	MJ Cal 4.d
Type	Cal	**Sample**	MJ Cal 4
Acq. Method	am 26 test.m	**Operator**	Celena Shrum
Sample Position	P3-D1	**Comment**	
Injection Volume	10		
Acq. Date-Time	2/13/2020 4:10:59 PM		
Sample Info.			

Sample Chromatogram



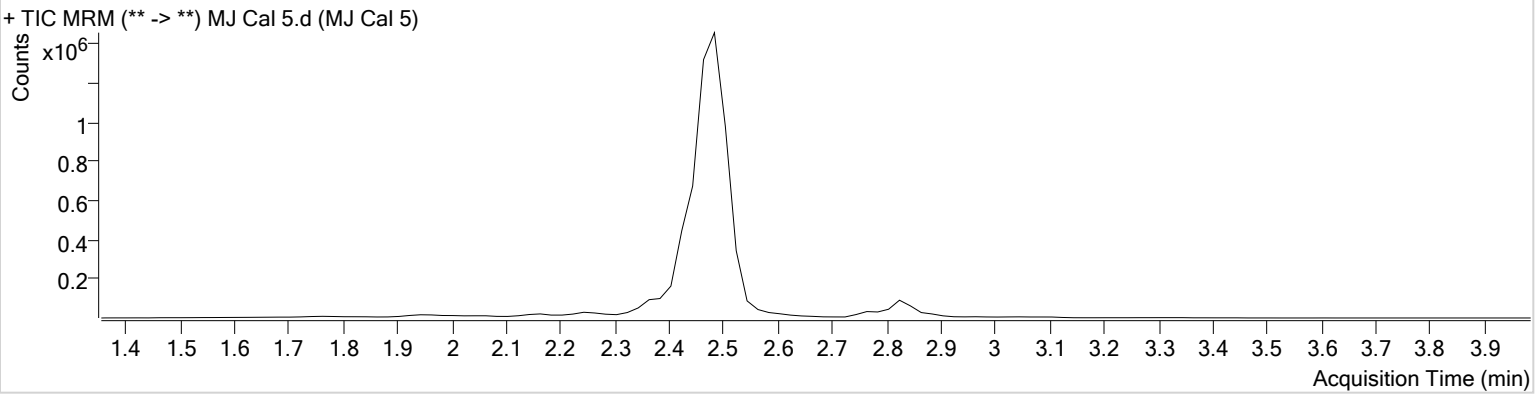
Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	2.839	11131	142043	10.2098	ng/ml
THC-COOH	2.445	333074	434102	49.6332	ng/ml
THC-OH	2.491	390190	3452082	9.1815	ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Calibration Last Update 2/21/2020 12:51:25 PM

Instrument	Falco	**Data File**	MJ Cal 5.d
Type	Cal	**Sample**	MJ Cal 5
Acq. Method	am 26 test.m	**Operator**	Celena Shrum
Sample Position	P3-E1	**Comment**	
Injection Volume	10		
Acq. Date-Time	2/13/2020 4:17:31 PM		
Sample Info.			

Sample Chromatogram



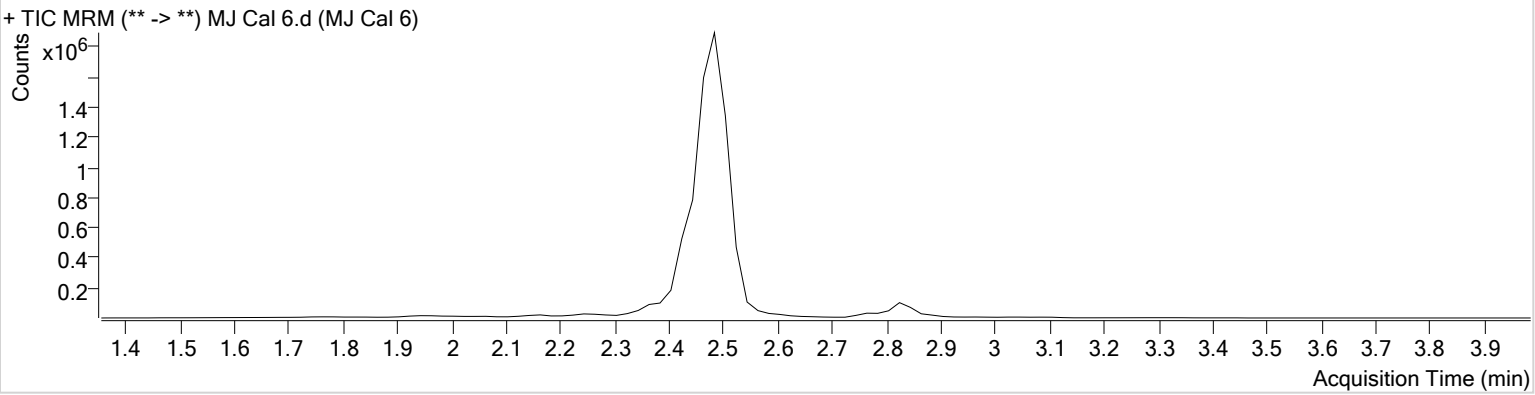
Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	2.839	30200	161757	24.3858	ng/ml
THC-COOH	2.445	514111	435749	76.1679	ng/ml
THC-OH	2.491	836797	3243659	22.3607	ng/ml

AM #26 Cannabinoids Screen Results

Batch results	D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Calibration Last Update	2/21/2020 12:51:25 PM

Instrument	Falco	**Data File**	MJ Cal 6.d
Type	Cal	**Sample**	MJ Cal 6
Acq. Method	am 26 test.m	**Operator**	Celena Shrum
Sample Position	P3-F1	**Comment**	
Injection Volume	10		
Acq. Date-Time	2/13/2020 4:24:03 PM		
Sample Info.			

Sample Chromatogram



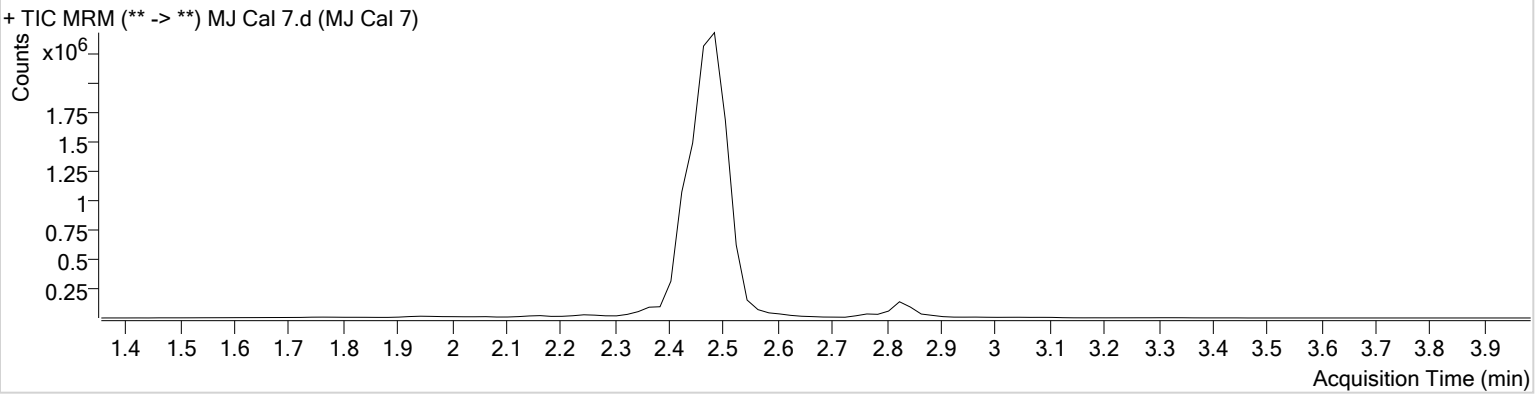
Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	2.839	59155	156144	49.5281	ng/ml
THC-COOH	2.445	673425	434156	100.0474	ng/ml
THC-OH	2.491	1829677	3331005	48.8473	ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2020\AM 25-26\AM 25-26 021320 Worklist 3999 CS\QuantResults\THCS.batch.bin
Calibration Last Update 2/21/2020 12:51:25 PM

Instrument	Falco	**Data File**	MJ Cal 7.d
Type	Cal	**Sample**	MJ Cal 7
Acq. Method	am 26 test.m	**Operator**	Celena Shrum
Sample Position	P3-G1	**Comment**	
Injection Volume	10		
Acq. Date-Time	2/13/2020 4:30:35 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	2.839	123986	160423	101.0858	ng/ml
THC-COOH	2.445	1567943	404510	249.5870	ng/ml
THC-OH	2.491	3536062	3039537	104.6803	ng/ml