REVIEWED
By Amber Gerheart at 8:54 am, Nov 21, 2022

11/15/2022

Worklist: 6163

LAB_CASE	ITEM	ITEM_TYPE	DESCRIPTION
M2022-4556	3	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
M2022-4574	2	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
M2022-4608	2	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
M2022-4616	2	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
M2022-4622	2	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3188	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2022-3246	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3248	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3314	2	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3331	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3332	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3333	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
P2022-3333	2	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3364	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3383	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3384	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3420	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3421	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3422	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3442	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3452	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ

Worklist: 6163

LAB_CASE	ITEM	ITEM_TYPE	DESCRIPTION
P2022-3455	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3457	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
P2022-3477	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ

SC

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

Extraction Date: 11/16/2022 Analyst: Sarah Collins
Plate lot#: IDP-120-2-220315 Retest Date: 09/15/22 external control ran

Mobile phase A: 10mM Amm Form **Mobile phase B:** 0.1% Formic Acid in MeOH
Instant Buffer I Ethyl Acetate LC Methanol
Blank Blood Lot: Lampire 22B52015-2 **Blank Urine Lot:** POC021022
Column: Phenomenex Phenyl Hexyl (4.6x50mm, 2.6um)
LCMS-QQQ ID: 069901

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 Instant Buffer I. 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. (SKIPPED PER DEVIATION)
☒ 5. Pipette **250µL 0.5 M ammonium hydroxide** in wells of analytical plate.
☒ 6. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
☒ 7. Transfer **200-450µL of blood+base and urine+base (if applicable)** mixture to corresponding wells of SLE+ plate. Amount transferred: 300 uL
☒ 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).***
☒ 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.
☒ 17. Reconstitute in **100µL 20% 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:

Idaho State Police
Forensic Services

Request for Departure from an Analytical Method or Quality Standard

Deviation Number (assigned by QM): TOX-22-01

Date of Request: **2/3/2022**

Requestor/Discipline: Celena Shrum/Toxicology

Analytical Method/Quality Standard, Revision #: AM #25, AM #28, AM #29, Revision 13

Temporary or Permanent Deviation: Permanent

Scope of Deviation (record specific information, e.g. affected programs, evidence types, expected end date; etc): Deviation will remain in place until the change is made in the next method revision.

Deviation Request (Describe detailed instructions of the changes being made; include reference to specific section number(s) in the method manual): 4.1.4 (Place plate on shaking incubator at approximately 900 rpm for approximately 15 minutes) of AM #25, AM # 28, and AM #29 is being removed. The removal of this step was tested in the validation "Addition of Compounds/Modifications for the MDS" (approved on 2/2/2022) and it was determined that that step is not necessary and can be removed.

Technical Justification for Analytical Method Deviations: Refer to validation "Addition of Compounds/Modifications for the MDS" (approved on 2/2/2022)

Technical Review

☒ Departure approved
Comments:

☐ Departure Not Approved
Comments:

Approver: Rachel Cutler Date: 2/10/2022
Title: Laboratory Manager

Quality Review

Quality Approver: Jason Crowe
Title: Quality Manager
Date: 2/10/2022

	1	2	3	4	5	6	7	8	9	10	11	12
A	IS + Cal. 1	p2022-3246-1	p2022-3384-1	p2022-3477-1								
B	IS + Cal. 1	p2022-3248-1	p2022-3420-1	negative urine								
C	negative blood	p2022-3314-2	p2022-3421-1	external control urine								
D	external control blood	p2022-3331-1	p2022-3422-1	m2022-4574-2								
E	m2022-4556-3	p2022-3332-1	p2022-3442-1	p2022-3188-1								
F	m2022-4608-2	p2022-3333-2	p2022-3452-1	p2022-3333-1								
G	m2022-4616-2	p2022-3364-1	p2022-3455-1									IS + Cal. 1
H	m2022-4622-2	p2022-3383-1	p2022-3457-1									IS + Cal. 1

SC

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: 042222)

100 µL of 1mg/mL stock was added to each drug to ~~9700~~ 9600 4/14/23 SC µL of LC MeOH.

Component	*Source*	*Source Lot Number*	*Expiration Date*
Methanol (LCMS)	Fisher	215245	N/A
Tramadol	Cerilliant	FE10051901	12/31/2024
Hydrocodone	Cerilliant	FE04241902	09/30/2024
Alprazolam	Cerilliant	FE06102008	06/30/2025
Buprenorphine	Cerilliant	FE03191903	06/31/2024
Prepared:	04/22/2022		
Expires:	04/22/2023		
Prepared By:	Celena Shrum		

Blood External Control Solution (Lot: WS101322)

50 µL of methanol external control solution was added to 9950 µL of blood.
Approximately 50 ng/mL of each compound.

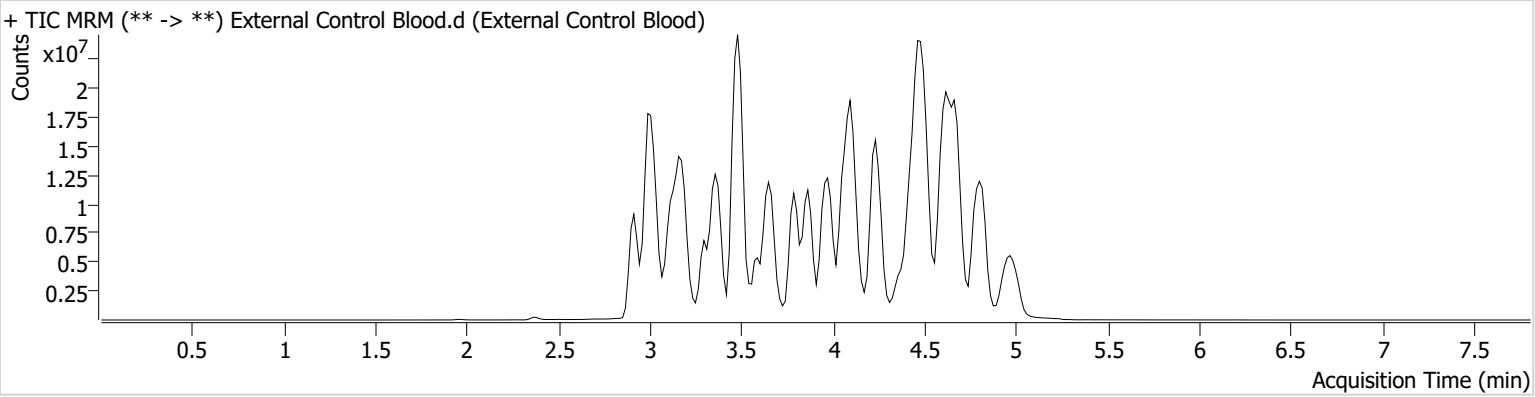
Component	*Source*	*Source Lot Number*
Negative Blood	Lampire	22B52015-1
Methanol External Control Solution		042222
Prepared:	10/13/2022	
Expires:	04/22/2023	
Prepared by:	Celena Shrum	

AM #25 Multi-Drug Screen Results

Batch results	D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 25.batch.bin
Calibration Last Update	11/17/2022 9:21:17 AM

Instrument	Falco (069901)	**Data File**	External Control Blood.d
Type	Sample	**Sample**	External Control Blood
Acq. Method	AM 25 MDS.m	**Operator**	Sarah Collins
Sample Position	P6-D1	**Comment**	
Injection Volume	5		
Acq. Date-Time	11/16/2022 12:11:23 PM		
Sample Info.			

Sample Chromatogram



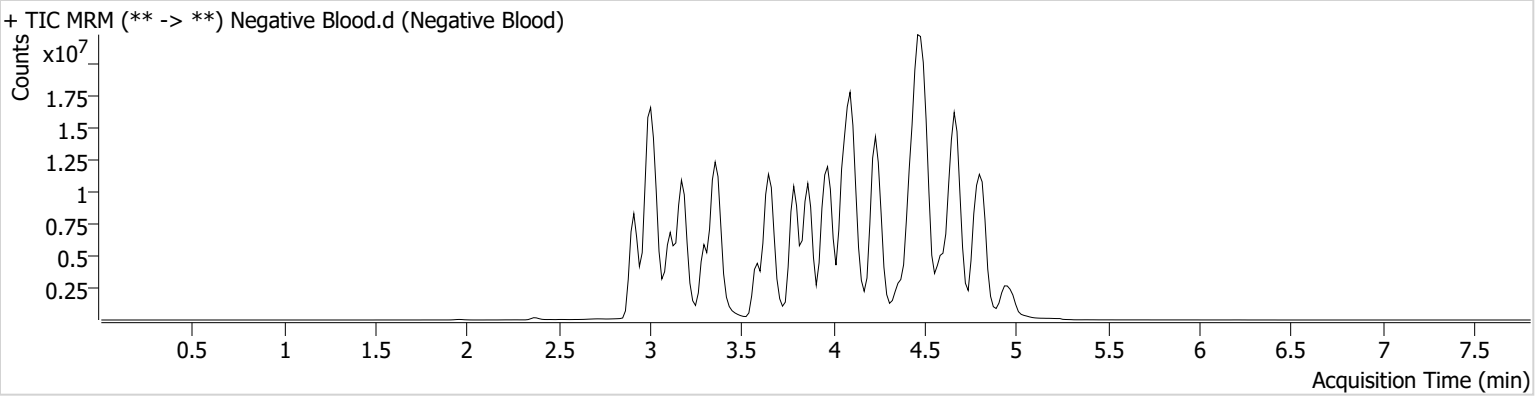
Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Alprazolam	4.620	26139310	2463.21	865.78	44522841	38.7169
Buprenorphine	4.979	12320153	555128.62	155727.84	11052252	46.8974
Hydrocodone	3.143	15745714	1501.70	554.09	24449155	35.5919
Tramadol	3.484	96869828	∞	195.11	65062799	21.4918

AM #25 Multi-Drug Screen Results

Batch results	D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 25.batch.bin
Calibration Last Update	11/17/2022 9:21:17 AM

Instrument	Falco (069901)	**Data File**	Negative Blood.d
Type	Sample	**Sample**	Negative Blood
Acq. Method	AM 25 MDS.m	**Operator**	Sarah Collins
Sample Position	P6-C1	**Comment**	
Injection Volume	5		
Acq. Date-Time	11/16/2022 12:19:47 PM		
Sample Info.			

Sample Chromatogram

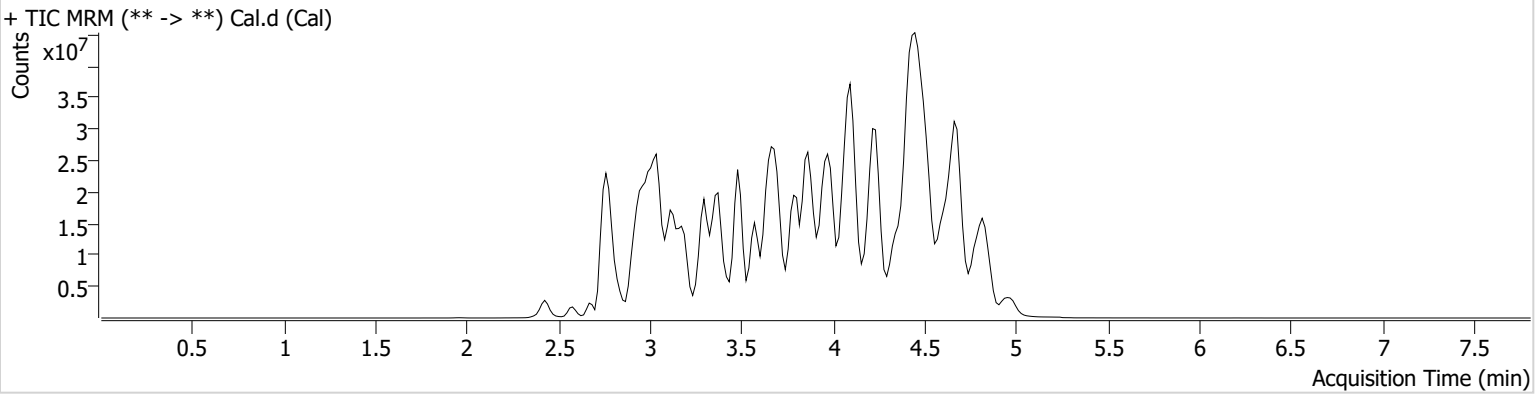


AM #25 Multi-Drug Screen Results

Batch results D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 25.batch.bin
Calibration Last Update 11/17/2022 9:21:17 AM

Instrument	Falco (069901)	**Data File**	Cal.d
Type	Cal	**Sample**	Cal
Acq. Method	AM 25 MDS.m	**Operator**	Sarah Collins
Sample Position	P6-B1	**Comment**	
Injection Volume	5		
Acq. Date-Time	11/16/2022 12:02:47 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
10-OH-Carbamazepine	3.793	8025307	112.96	1261.76	36434066	10.0000
6-MAM	3.018	125614	136.92	115827.41	3699175	10.0000
7-aminoclonazepam	3.590	2560481	414.59	405.15	10271720	10.0000
7-aminoflunitrazepam	3.790	3870932	1986.66	245.68	10271720	10.0000
9-Hydroxyrisperidone	3.982	17590043	996.19	223095.05	53884548	10.0000
Acetyl Fentanyl	4.033	1206536	341.84	215765.58	49173617	10.0000
Acetyl Norfentanyl	2.950	860799	19763.87	1103.72	49173617	10.0000
a-hydroxyalprazolam	4.525	757454	72.32	161.11	10271720	10.0000
alpha-hydroxymidazolam	4.585	5066564	605.45	365.26	10271720	10.0000
Alpha-PHP	3.917	7457706	54494.19	2416.86	49173617	10.0000
alpha-PVP	3.656	10212180	6129.04	391.68	30077450	10.0000
Alprazolam	4.620	6066510	367.85	418.88	40006293	10.0000
Amitriptyline	4.485	4300480	297.85	1154.16	15183863	10.0000
Amphetamine	2.954	8332417	8364.89	16164.76	30077450	10.0000
Benzoylecgonine	3.405	406200	67023.98	740.20	712091	10.0000
Brompheniramine	4.080	370908	399.28	1150.55	62975656	10.0000
Buprenorphine	4.979	2627076	35945.94	199747.54	11052398	10.0000
Bupropion	3.902	10906250	842.93	526.78	36667055	10.0000
Carbamazepine	4.242	20236741	∞	848.22	840827	10.0000
Carisoprodol	4.240	4453625	21299.81	275.48	17341656	10.0000
Chlordiazepoxide	4.745	4101730	435.55	1169.41	40006293	10.0000
Chlorpheniramine	4.007	21218631	219.20	172.06	62975656	10.0000
Chlorpromazine	4.695	5658297	238.79	307.29	25343212	10.0000
Citalopram	4.110	7362371	2835.57	1321.93	62975656	10.0000
Clomipramine	4.696	8632942	20881.57	4907.39	62975656	10.0000
Clonazepam	4.450	2996750	850.87	405.35	40006293	10.0000
Clonazolam	4.369	3917491	21588.04	6571.10	40006293	10.0000
Clozapine	4.493	11204058	839.31	728.58	35274273	10.0000
Cocaethylene	3.849	11660296	7146751.72	3952045.63	48632176	10.0000
Cocaine	3.666	11578365	13103.97	2547.28	48632176	10.0000
Codeine	2.945	859005	1869.94	291.38	23158613	10.0000
Cyclobenzaprine	4.393	8952922	271.80	67.43	15183863	10.0000
Desipramine	4.394	14581036	990.06	421.48	15183863	10.0000
Dextromethorphan	4.116	5242565	372.69	449.66	28011665	10.0000

AM #25 Multi-Drug Screen Results

Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Dextrorphan	3.423	7074738	952.66	456.87	28011665	10.0000
Diazepam	4.853	2966467	454.89	1191.76	40006293	10.0000
Dihydrocodeine	2.822	2772063	1064.87	553.58	23158613	10.0000
Diphenhydramine	4.086	25540666	23607.78	1633.39	62975656	10.0000
DMT	3.028	1576549	3659.90	1631.43	28011665	10.0000
Doxepin	4.207	5364147	6620.96	419.06	53879019	10.0000
Doxylamine	3.699	28317237	11500.61	24436.90	28011665	10.0000
Duloxetine	4.360	192649	18346.00	23092.22	2543540	10.0000
EDDP	4.115	1027654	192.86	2423.74	2357848	10.0000
Estazolam	4.529	12693907	611.00	665.12	40006293	10.0000
Etizolam	4.615	665744	370050.33	726277.92	40006293	10.0000
Fentanyl	4.247	868367	288.55	134515.93	39663849	10.0000
Flualprazolam	4.478	2228586	1129156.35	9883.20	40006293	10.0000
Flunitrazepam	4.558	5872058	479.00	1633.51	40006293	10.0000
Fluorofentanyl	4.292	1427588	246.11	647.84	39663849	10.0000
Fluoxetine	4.359	7570024	1437.68	202.75	11729069	10.0000
Flurazepam	4.322	10634113	7109287.39	128681.44	40006293	10.0000
Hydrocodone	3.143	4190437	808.65	592.81	23158613	10.0000
Hydromorphone	2.581	3131850	2163.13	51932.78	602934	10.0000
Hydroxyzine	4.614	9855529	980.91	1141.85	62975656	10.0000
Imipramine	4.438	13583220	2307.97	683.84	15183863	10.0000
Ketamine	3.764	8672655	970.83	435.36	27946485	10.0000
Lamotrigine	3.654	588501	429.22	3754.36	62975656	10.0000
Levamisole	3.088	6591741	1773.94	357.77	48632176	10.0000
Levetiracetam	2.677	2569039	570.07	853.26	62975656	10.0000
Lorazepam	4.434	960569	214.10	141.63	40006293	10.0000
Maprotiline	4.485	3479785	97.77	811.24	15183863	10.0000
MDA	3.059	9897349	1106.81	373.34	47968392	10.0000
MDEA	3.273	12151223	7401.52	2957.10	47968392	10.0000
MDMA	3.135	16074916	690.67	1510.45	47968392	10.0000
Meperidine	3.685	6470620	751.46	575.25	28011665	10.0000
Meprobamate	3.704	2889403	660.61	270.88	17341656	10.0000
Methadone	4.420	18912532	335.79	481.52	2357848	10.0000
Methamphetamine	3.045	18526323	5668.08	599.72	47968392	10.0000
Methocarbamol	3.594	562974	251.39	584.08	2357848	10.0000
Methylphenidate	3.579	29492669	1040.40	601.43	38797126	10.0000
Metoprolol	3.483	2076324	8697.98	532.27	28011665	10.0000
Midazolam	4.755	1879033	740.65	180238.19	40006293	10.0000
Mirtazapine	4.225	7109055	115537.57	1682.07	28011665	10.0000
Mitragynine	4.321	1524388	1221051.27	2423459.27	28011665	10.0000
Morphine	2.414	605920	913.22	339.32	602934	10.0000
Norbuprenorphine	3.875	257648	143.61	341487.61	11052398	10.0000
Nordiazepam	4.701	3555964	956311.68	576.62	40006293	10.0000
Norfentanyl	3.379	17230983	31623.06	179.27	49173617	10.0000
Norhydrocodone	2.977	209009	84.37	44.60	602934	10.0000
Norketamine	3.888	2013725	378.34	1954.24	27946485	10.0000
Normeperidine	3.641	5249225	393.60	820.74	62975656	10.0000
Noroxycodone	2.929	4359768	236.89	377.92	27946485	10.0000
Nortriptyline	4.441	3768445	636.31	2584.19	15183863	10.0000
O-desmethyl-tramadol	2.963	20905171	74212.76	423.02	62975656	10.0000
O-desmethylvenlafaxine	3.299	4328488	394.77	29149.11	18784908	10.0000
Olanzapine	3.972	2776369	1971.90	265204.11	840827	10.0000
Oxazepam	4.530	6013929	1210.87	253.84	29304989	10.0000
Oxycodone	3.004	6883030	1110.87	4067.53	27946485	10.0000
Oxymorphone	2.426	6280984	486.06	11950.80	602934	10.0000
Paroxetine	4.371	1208504	3272.25	694.37	11729069	10.0000
Phenazepam	4.646	4859553	839.74	159265.64	40006293	10.0000
Phencyclidine	3.963	15384637	880.69	313.76	28011665	10.0000
Phentermine	3.199	4243416	95.31	66.15	38797126	10.0000
Phenytoin	4.149	1543218	637.02	498.13	840827	10.0000

Cal

AM #25 Multi-Drug Screen Results

Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Primidone	3.503	4230155	296430.90	709.16	840827	10.0000
Promethazine	4.423	18378375	595.82	312.25	62975656	10.0000
Pseudoephedrine	2.769	72151807	686.22	849.84	47968392	10.0000
Quetiapine	4.660	11260118	1378.12	848.92	57609351	10.0000
Risperidone	4.183	19299563	2016.70	477.11	53884548	10.0000
Sertraline	4.590	2443177	833387.08	724.05	11729069	10.0000
Sufentanil	4.659	770044	473135.31	175.57	49173617	10.0000
Tapentadol	3.503	14337729	853.81	269.11	27946485	10.0000
Temazepam	4.668	10600075	395.43	568.72	40006293	10.0000
Topiramate	3.877	253076	132398.47	32430.07	1116874	10.0000
Tramadol	3.484	43627071	∞	258.91	62975656	10.0000
Trazodone	4.844	14555292	2463.98	1185.92	53879019	10.0000
Venlafaxine	3.852	19108652	75694.71	596.33	11729069	10.0000
Zaleplon	4.344	5180238	1967.38	1094.98	57609351	10.0000
Zolpidem	4.451	21542971	5034.07	3344.36	57609351	10.0000
Zopiclone	4.383	1821620	590746.64	294935.84	8481545	10.0000

SC

Idaho State Police Forensic Services

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

Methanol External Control Solution (Lot: 042222)

100 µL of 1mg/mL stock was added to each drug to ~~9700~~ 9600 4/14/23 SC µL of LC MeOH.

Component	*Source*	*Source Lot Number*	*Expiration Date*
Methanol (LCMS)	Fisher	215245	N/A
Tramadol	Cerilliant	FE10051901	N/A- Qualitative
Hydrocodone	Cerilliant	FE04241902	N/A- Qualitative
Alprazolam	Cerilliant	FE06102008	N/A- Qualitative
Buprenorphine	Cerilliant	FE03191903	N/A- Qualitative
Prepared:	04/22/2022		
Prepared By:	Celena Shrum		

Urine External Control Solution (Lot: WS042222)

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

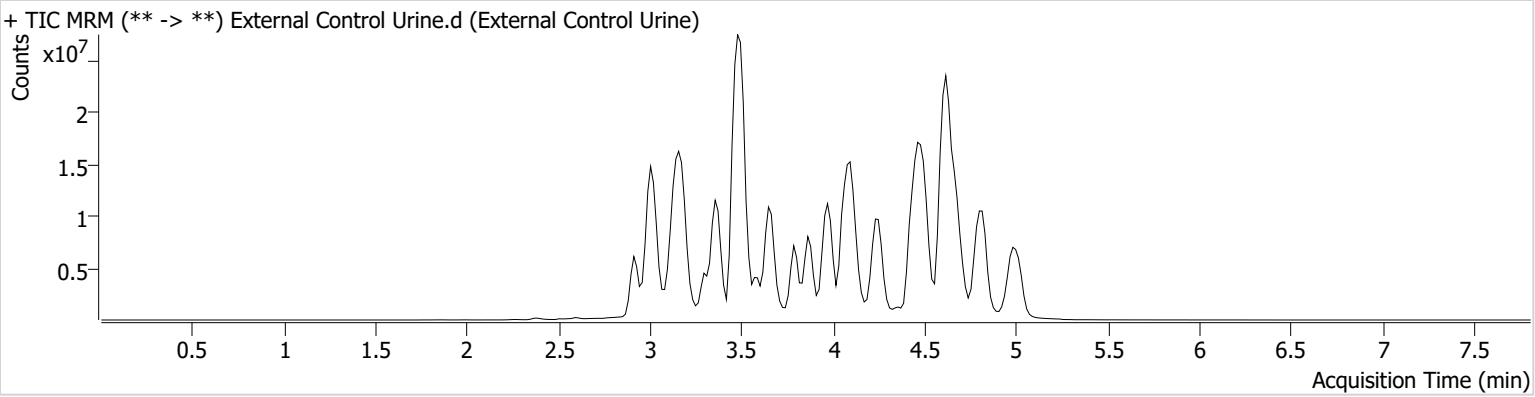
Component	*Source*	*Source Lot Number*
Negative Urine	Pocatello Lab	POC021022
Methanol External Control Solution		042222
Prepared:	04/22/2022	
Prepared by:	Celena Shrum	

AM #25 Multi-Drug Screen Results

Batch results D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 25.batch.bin
Calibration Last Update 11/17/2022 9:21:17 AM

Instrument	Falco (069901)	**Data File**	External Control Urine.d
Type	Sample	**Sample**	External Control Urine
Acq. Method	AM 25 MDS.m	**Operator**	Sarah Collins
Sample Position	P6-C4	**Comment**	
Injection Volume	5		
Acq. Date-Time	11/16/2022 3:33:34 PM		
Sample Info.			

Sample Chromatogram



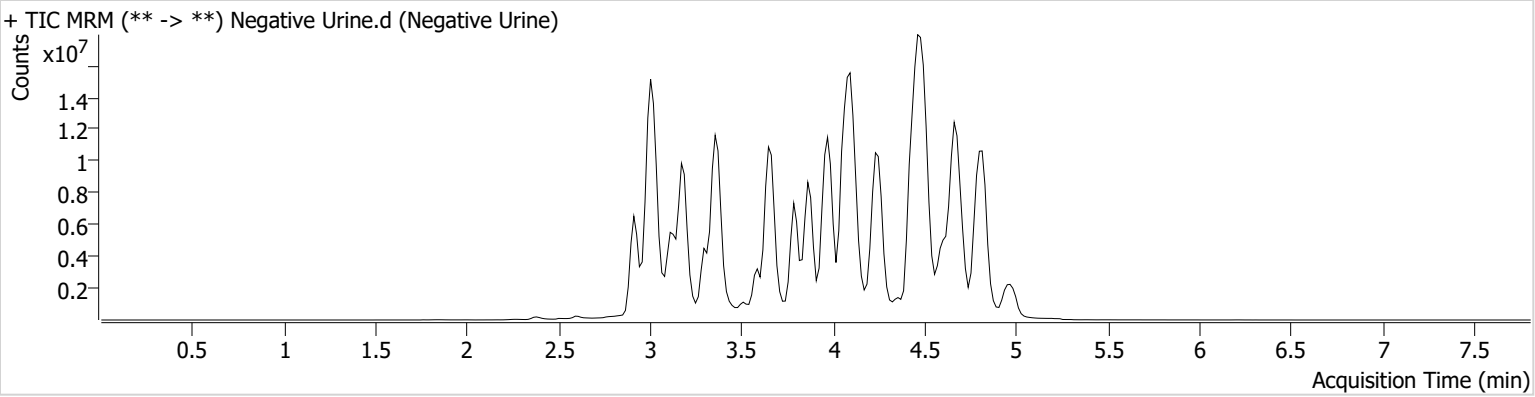
Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Alprazolam	4.620	40907270	560.02	626.47	30312806	88.9946
Buprenorphine	4.996	23061517	21775.50	10026.52	7261638	133.6094
Hydrocodone	3.143	28443632	164443.36	2890.77	14441583	108.8488
Tramadol	3.484	120581954	∞	300.70	55543112	31.3378

AM #25 Multi-Drug Screen Results

Batch results	D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 25.batch.bin
Calibration Last Update	11/17/2022 9:21:17 AM

Instrument	Falco (069901)	**Data File**	Negative Urine.d
Type	Sample	**Sample**	Negative Urine
Acq. Method	AM 25 MDS.m	**Operator**	Sarah Collins
Sample Position	P6-B4	**Comment**	
Injection Volume	5		
Acq. Date-Time	11/16/2022 3:25:08 PM		
Sample Info.			

Sample Chromatogram



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

Extraction Date: 11/16/2022
Plate lot#: IDP-108-3-220802
Analyst: Sarah Collins
Retest Date: 02/02/2023

Mobile phase A: ~~0.1% Formic Acid in LCMS Water~~ 10mM Ammonium Formate 01/27/2023
Mobile phase B: ~~0.1% Formic acid in Acetonitrile~~ 0.1% Formic Acid in Methanol 01/27/2023
Blank Blood Lot: Lampire 22B52015-2
Blank Urine Lot: POC021022
Column: Phenomenex Phenyl Hexyl (4.6x50mm, 2.6um)
LCMS-QQQ ID: 069901

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:** #27
☒ 3. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
☒ 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 **700-800µL of blood+acid or urine+acid** mixture to corresponding wells of SLE+ plate.
Amount transferred: 800 uL
☒ 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)
☒ 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.
☒ 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

Request for Departure from an Analytical Method or Quality Standard

Deviation Number (assigned by QM): **TOX-22-02**

Date of Request:
03/02/2022

Requestor/Discipline:
Celena Shrum/Toxicology

Analytical Method/Quality Standard, Revision #:
Toxicology AM #25, AM #26, and AM #27, Revision 13

Temporary or Permanent Deviation:
Permanent

Scope of Deviation (record specific information, e.g. affected programs, evidence types, expected end date; etc):

Deviation will remain in place until the change is made in the next method revision.

Deviation Request (Describe detailed instructions of the changes being made; include reference to specific section number(s) in the method manual):

Toxicology AM #25 3.3.1.1 Internal standards are prepared by the ToxBox plate manufacturer and contained on the 96 well plate. If the run contains urine samples, a positive external urine
control must also be run.

Toxicology AM #26 3.3.2 A negative control will be run with each extraction. If the run contains urine samples, a negative urine control and external positive urine control must also be included.

Toxicology AM #27 3.3.2 A negative control will be run with each extraction. If the run contains urine samples, a negative urine control and positive external urine control will also be included in the run.

The deviation is to include the option of using an internal urine control in lieu of an external urine control.

Technical Justification for Analytical Method Deviations:

Internal controls serve the same purpose as external controls but also helps to avoid the possible issues that can occur with using external controls (incorrect spiking, incorrect preparation, evaporation of compounds, etc.). If these errors occur, runs need to be repeated and this wastes time, sample, and supplies.

Technical Review

☒ Departure approved
Comments:

☐ Departure Not Approved
Comments:

Approver: Rachel Cutler Date: 3/2/22
Title: Lab Manager

Quality Review

Quality Approver: Jason Crowe
Title: Quality Manager
Date: 3/2/2022

	1	2	3	4	5	6
A	IS + Cal. 1	IS + QC_2 urine	p2022-3248-1	p2022-3420-1	m2022-4574-2	
B	IS + Cal. 2	negative blood	p2022-3314-2	p2022-3421-1	p2022-3188-1	
C	IS + Cal. 3	negative urine	p2022-3331-1	p2022-3422-1	p2022-3333-1	
D	IS + Cal. 4	m2022-4556-3	p2022-3332-1*	p2022-3442-1	p2022-3332-1	
E	IS + Cal. 5	m2022-4608-2	p2022-3333-2	p2022-3452-1	p2022-3455-1	
F	IS + Cal. 6	m2022-4616-2	p2022-3364-1	p2022-3455-1*	p2022-3477-1	
G	IS + Cal. 7	m2022-4622-2	p2022-3383-1	p2022-3457-1		
H	IS + QC_1 blood	p2022-3246-1	p2022-3384-1	p2022-3477-1*		

All wells to contain 100 µl of residual DMSO

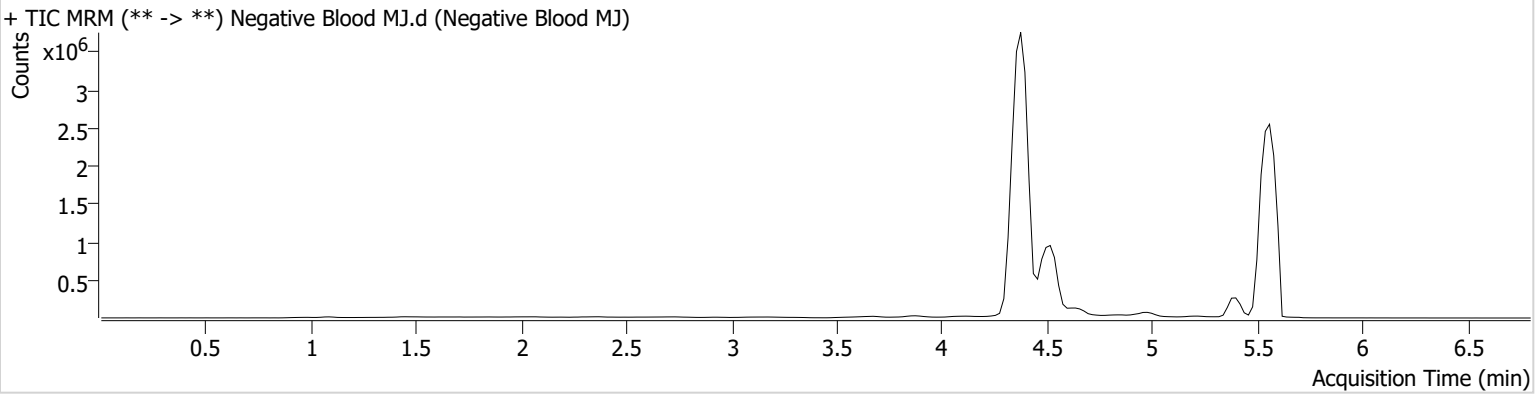
*Samples moved during analytical step 6 due to blood clot

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 26.batch.bin
Calibration Last Update 11/17/2022 8:15:27 AM

Instrument	Falco (069901)	**Data File**	Negative Blood MJ.d
Type	Sample	**Sample**	Negative Blood MJ
Acq. Method	AM 26 THC.m	**Operator**	Sarah Collins
Sample Position	P1-B2	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/16/2022 6:10:14 PM		
Sample Info.			

Sample Chromatogram

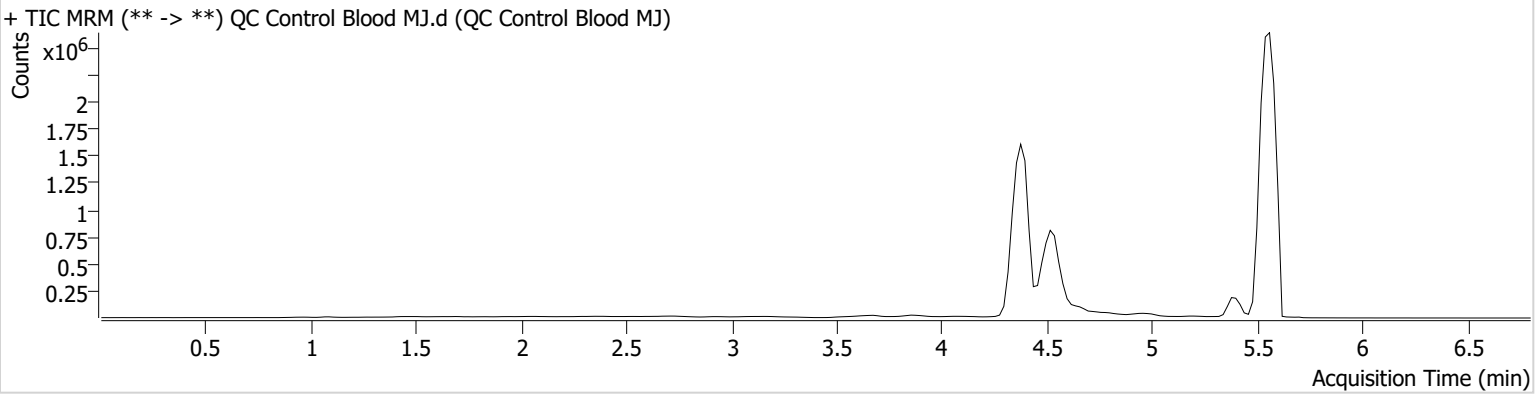


AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 26.batch.bin
Calibration Last Update 11/17/2022 8:15:27 AM

Instrument	Falco (069901)	**Data File**	QC Control Blood MJ.d
Type	QC	**Sample**	QC Control Blood MJ
Acq. Method	AM 26 THC.m	**Operator**	Sarah Collins
Sample Position	P1-H1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/16/2022 5:55:03 PM		
Sample Info.			

Sample Chromatogram



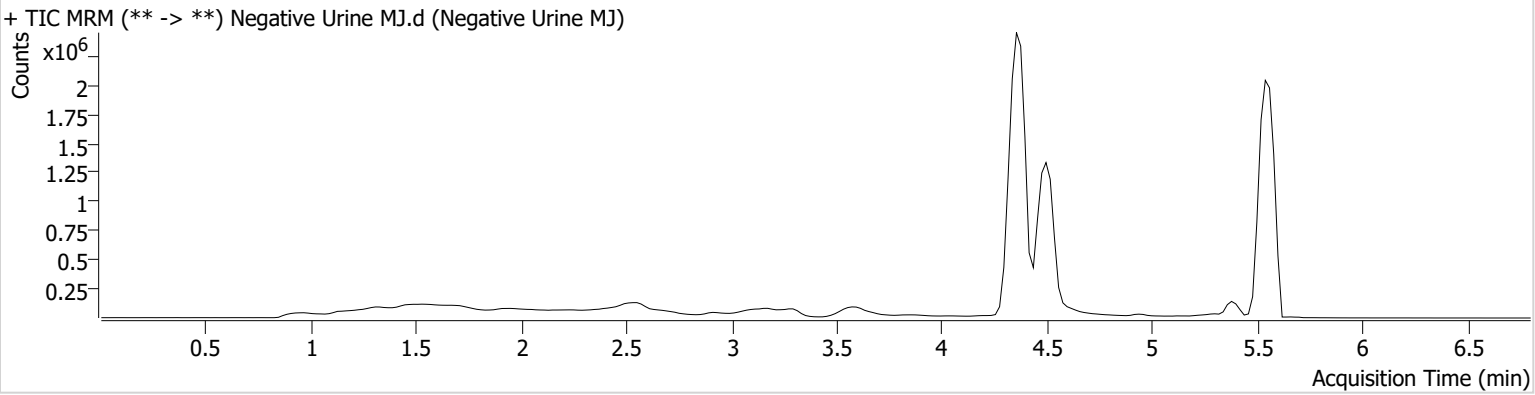
Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	5.590	13452	351582	4.5450	ng/ml
THC-COOH	4.556	564760	3059279	13.9179	ng/ml
THC-OH	4.382	78162	7903464	4.7613	ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 26.batch.bin
Calibration Last Update 11/17/2022 8:15:27 AM

Instrument	Falco (069901)	**Data File**	Negative Urine MJ.d
Type	Sample	**Sample**	Negative Urine MJ
Acq. Method	AM 26 THC.m	**Operator**	Sarah Collins
Sample Position	P1-C2	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/16/2022 8:56:46 PM		
Sample Info.			

Sample Chromatogram

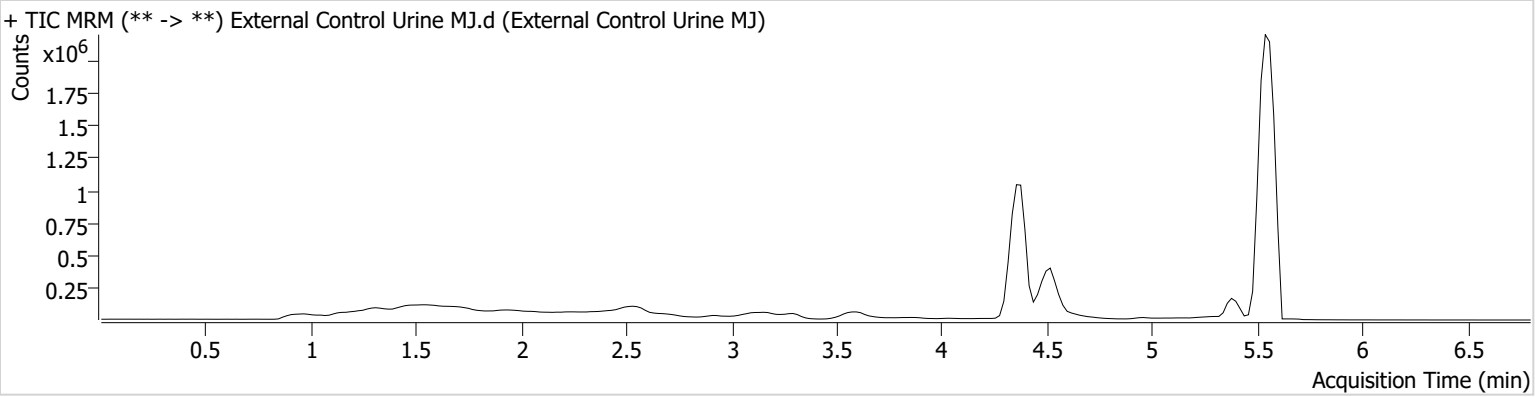


AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 26.batch.bin
Calibration Last Update 11/17/2022 8:15:27 AM

Instrument	Falco (069901)	**Data File**	External Control Urine MJ.d
Type	Sample	**Sample**	External Control Urine MJ
Acq. Method	AM 26 THC.m	**Operator**	Sarah Collins
Sample Position	P1-A2	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/16/2022 9:27:02 PM		
Sample Info.			

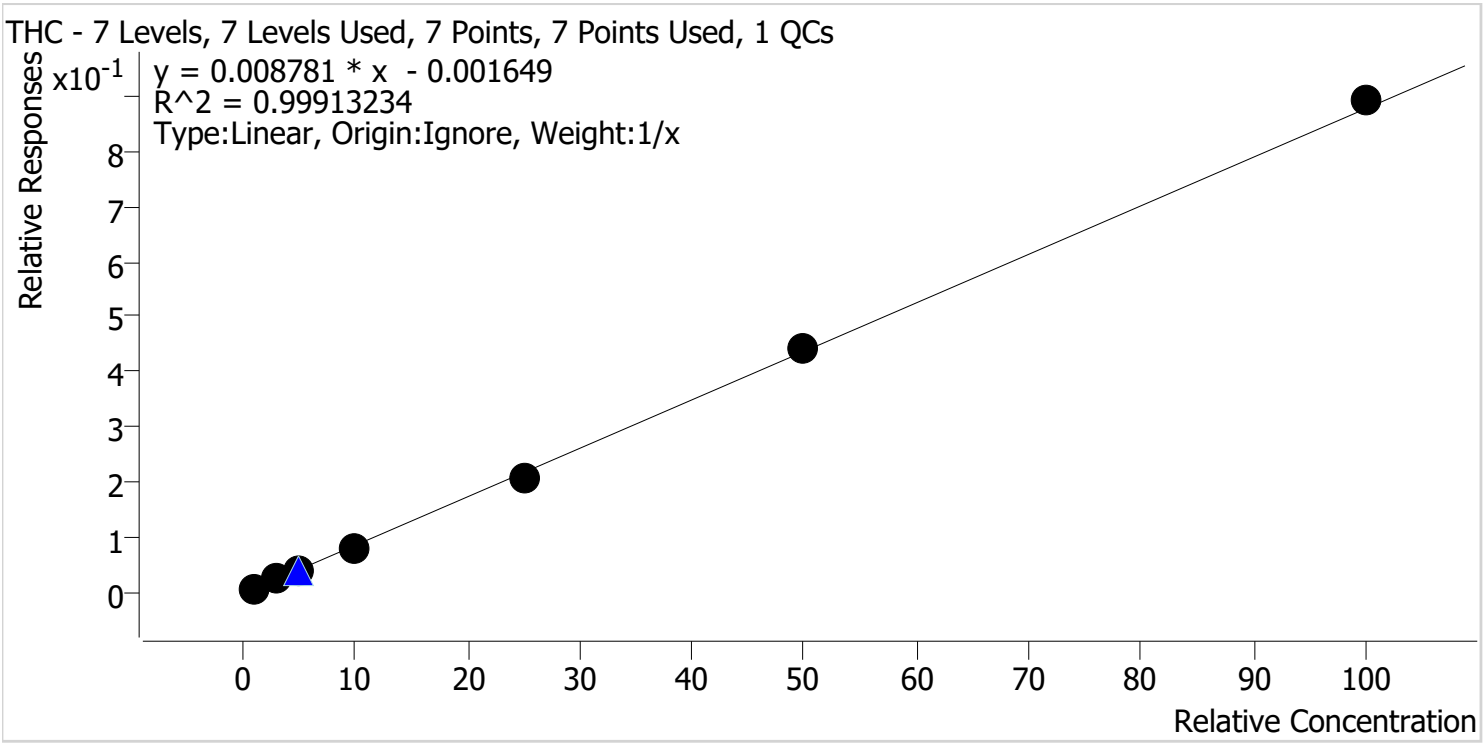
Sample Chromatogram



Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	5.530	6943	174214	4.7265	ng/ml
THC-COOH	4.536	261272	1374729	14.3649	ng/ml
THC-OH	4.382	48042	4984725	4.6450	ng/ml

AM #26 Cannabinoids Screen Calibration Curve Report

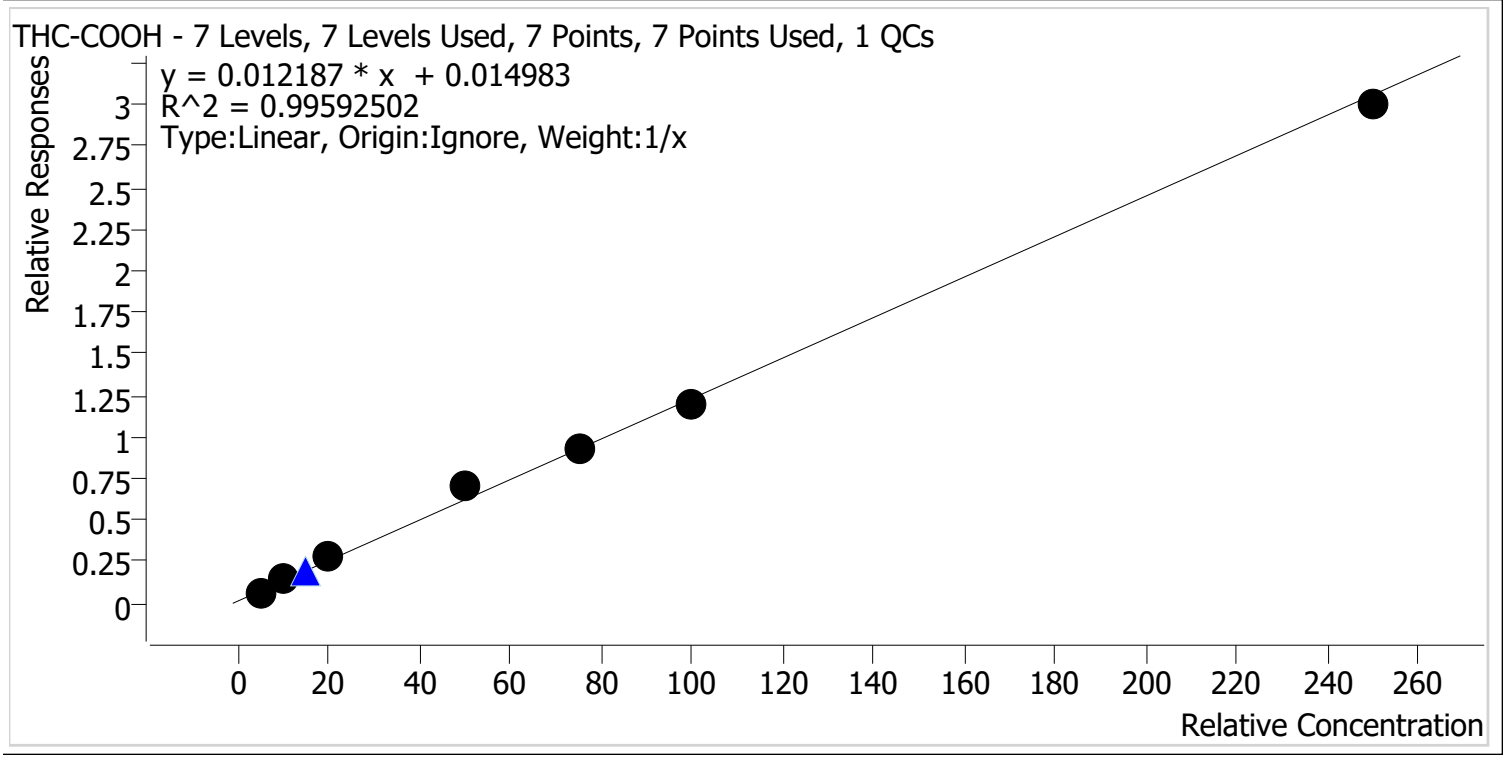
Batch results	D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 26.batch.bin
Last Cal. Update	11/17/2022 8:15 AM
Analyst Name	ISP\Datastor
Analyte	THC
Internal Standard	THC-D3



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✔	1.0	1.1	108.0
Cal 2 MJ	2	✔	3.0	3.1	103.2
Cal 3 MJ	3	✔	5.0	4.9	97.3
Cal 4 MJ	4	✔	10.0	9.5	95.1
Cal 5 MJ	5	✔	25.0	23.6	94.4
Cal 6 MJ	6	✔	50.0	50.2	100.5
Cal 7 MJ	7	✔	100.0	101.6	101.6

AM #26 Cannabinoids Screen Calibration Curve Report

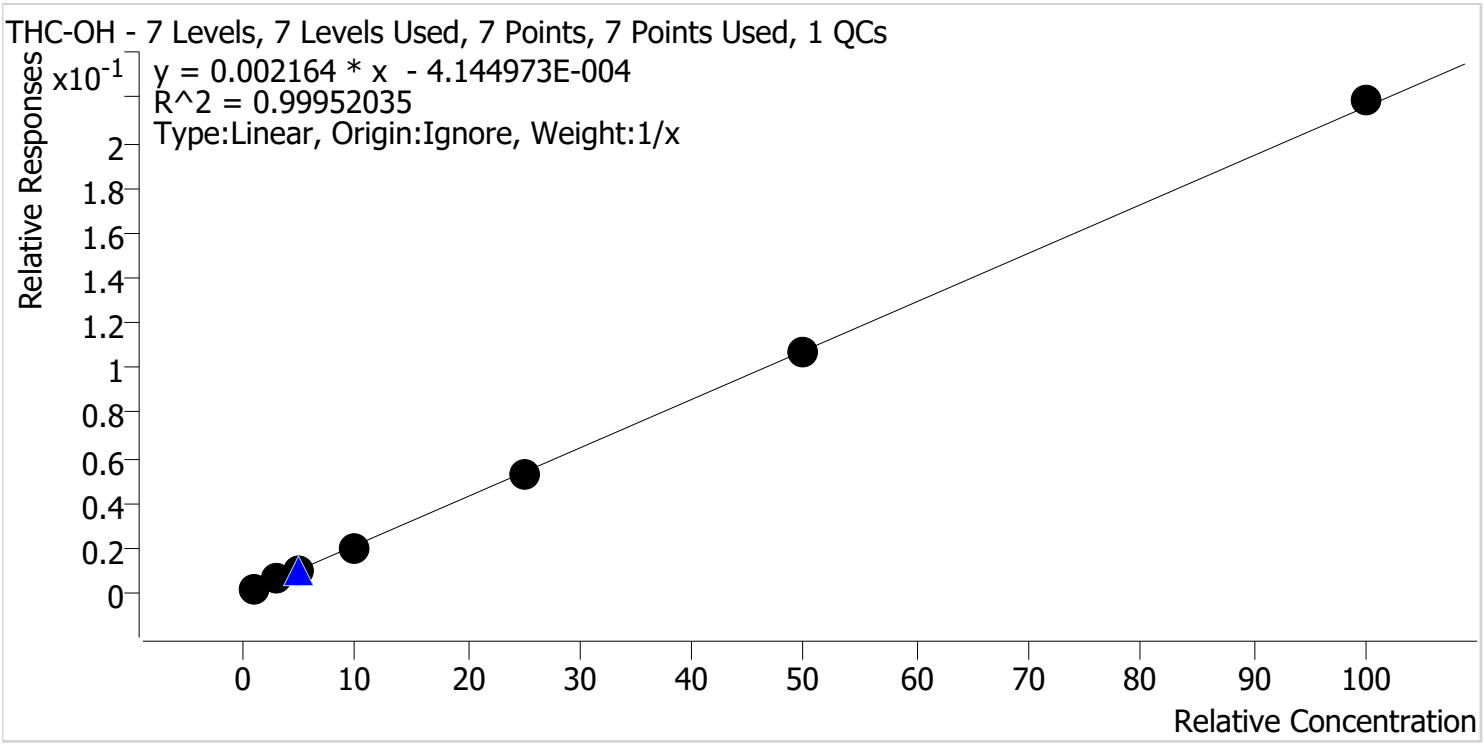
Batch results	D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 26.batch.bin
Last Cal. Update	11/17/2022 8:15 AM
Analyst Name	ISP\Datastor
Analyte	THC-COOH
Internal Standard	THC-COOH-D9



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✔	5.0	4.0	80.5
Cal 2 MJ	2	✔	10.0	10.2	101.5
Cal 3 MJ	3	✔	20.0	21.8	108.9
Cal 4 MJ	4	✔	50.0	57.3	114.5
Cal 5 MJ	5	✔	75.0	74.4	99.3
Cal 6 MJ	6	✔	100.0	97.2	97.2
Cal 7 MJ	7	✔	250.0	245.1	98.0

AM #26 Cannabinoids Screen Calibration Curve Report

Batch results	D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 26.batch.bin
Last Cal. Update	11/17/2022 8:15 AM
Analyst Name	ISP\Datastor
Analyte	THC-OH
Internal Standard	THC-OH-D3



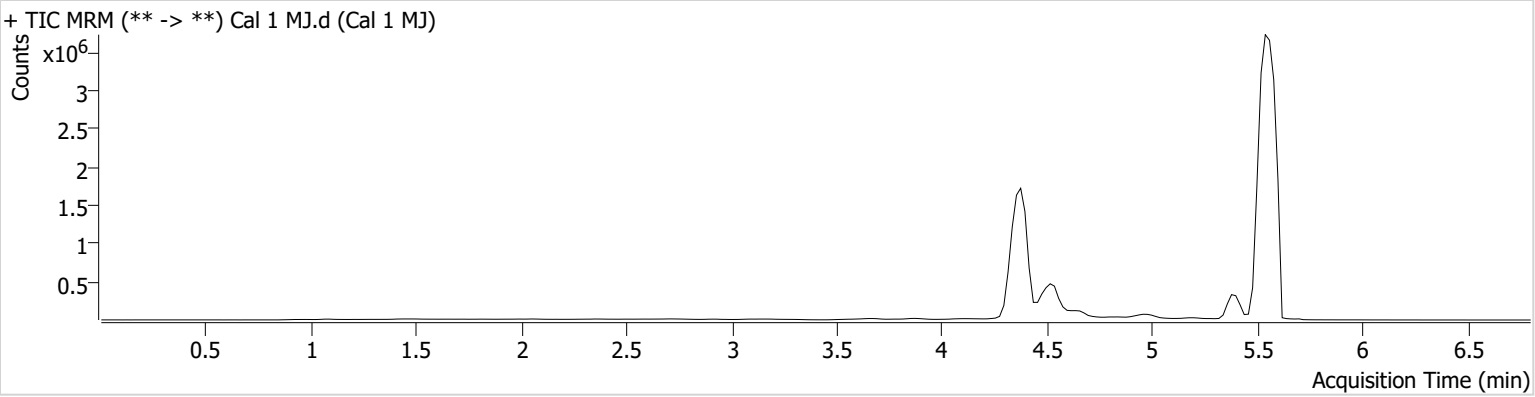
Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
Cal 1 MJ	1	✔	1.0	1.1	112.3
Cal 2 MJ	2	✔	3.0	3.0	98.4
Cal 3 MJ	3	✔	5.0	4.7	94.6
Cal 4 MJ	4	✔	10.0	9.5	94.7
Cal 5 MJ	5	✔	25.0	24.9	99.7
Cal 6 MJ	6	✔	50.0	49.5	99.0
Cal 7 MJ	7	✔	100.0	101.3	101.3

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 26.batch.bin
Calibration Last Update 11/17/2022 8:15:27 AM

Instrument	Falco (069901)	**Data File**	Cal 1 MJ.d
Type	Cal	**Sample**	Cal 1 MJ
Acq. Method	AM 26 THC.m	**Operator**	Sarah Collins
Sample Position	P1-A1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/16/2022 5:01:55 PM		
Sample Info.			

Sample Chromatogram



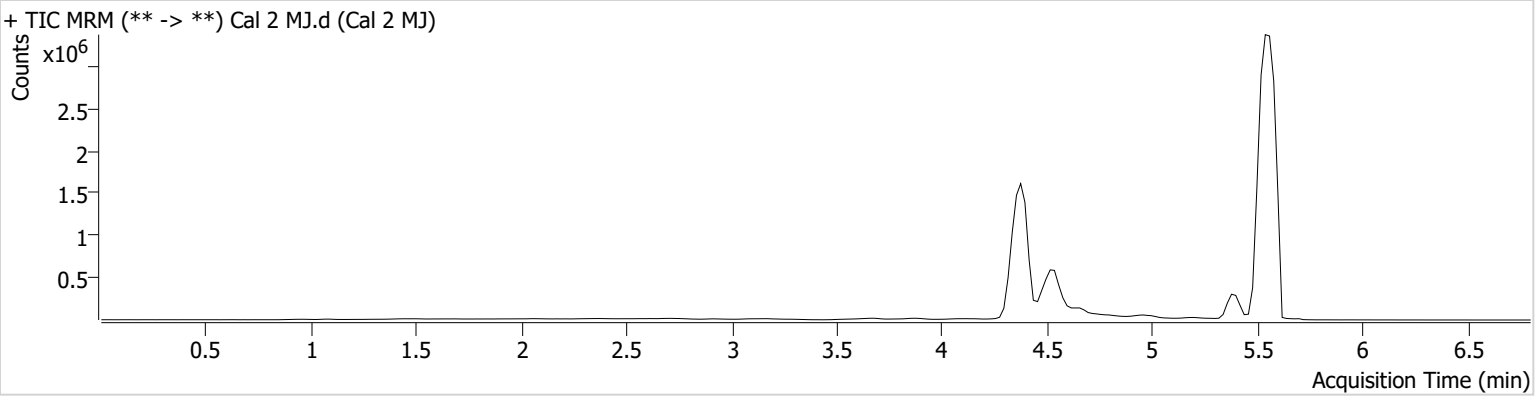
Name	RT	Resp.	ISTD Resp.	Final Conc.		
THC	5.610	4977	635588	1.0795	ng/ml	Low
THC-COOH	4.556	142170	2220343	4.0245	ng/ml	Low
THC-OH	4.382	18372	9117464	1.1226	ng/ml	Low

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 26.batch.bin
Calibration Last Update 11/17/2022 8:15:27 AM

Instrument	Falco (069901)	**Data File**	Cal 2 MJ.d
Type	Cal	**Sample**	Cal 2 MJ
Acq. Method	AM 26 THC.m	**Operator**	Sarah Collins
Sample Position	P1-B1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/16/2022 5:09:39 PM		
Sample Info.			

Sample Chromatogram



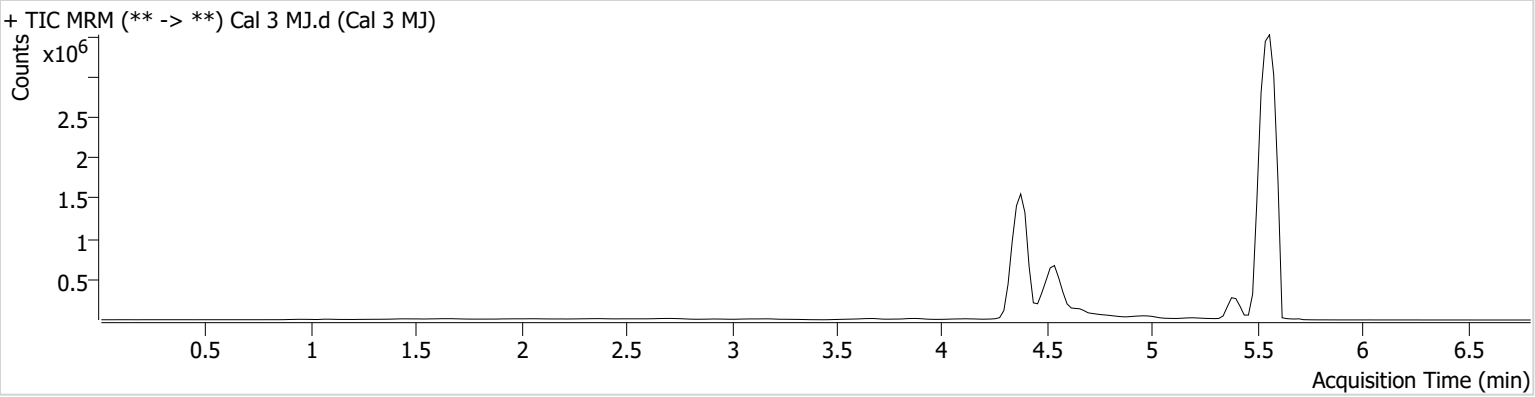
Name	RT	Resp.	ISTD Resp.	Final Conc.		
THC	5.590	23557	922400	3.0962	ng/ml	
THC-COOH	4.556	335218	2416380	10.1535	ng/ml	
THC-OH	4.402	48790	8168657	2.9514	ng/ml	**Low**

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 26.batch.bin
Calibration Last Update 11/17/2022 8:15:27 AM

Instrument	Falco (069901)	**Data File**	Cal 3 MJ.d
Type	Cal	**Sample**	Cal 3 MJ
Acq. Method	AM 26 THC.m	**Operator**	Sarah Collins
Sample Position	P1-C1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/16/2022 5:17:13 PM		
Sample Info.			

Sample Chromatogram



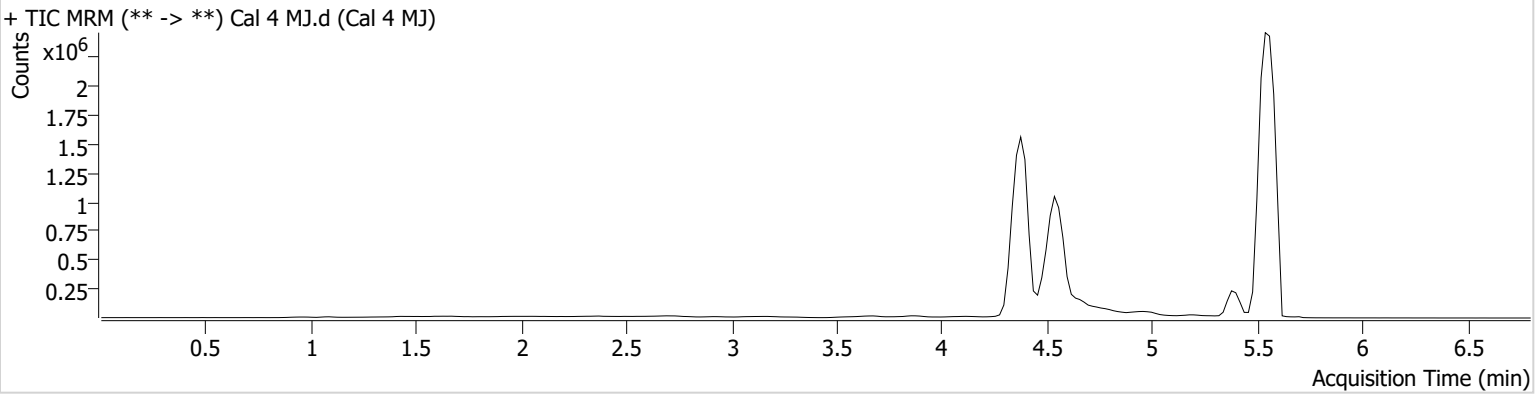
Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	5.610	26660	649411	4.8630	ng/ml
THC-COOH	4.556	598557	2133694	21.7884	ng/ml
THC-OH	4.382	73130	7445943	4.7298	ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 26.batch.bin
Calibration Last Update 11/17/2022 8:15:27 AM

Instrument	Falco (069901)	**Data File**	Cal 4 MJ.d
Type	Cal	**Sample**	Cal 4 MJ
Acq. Method	AM 26 THC.m	**Operator**	Sarah Collins
Sample Position	P1-D1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/16/2022 5:24:47 PM		
Sample Info.			

Sample Chromatogram



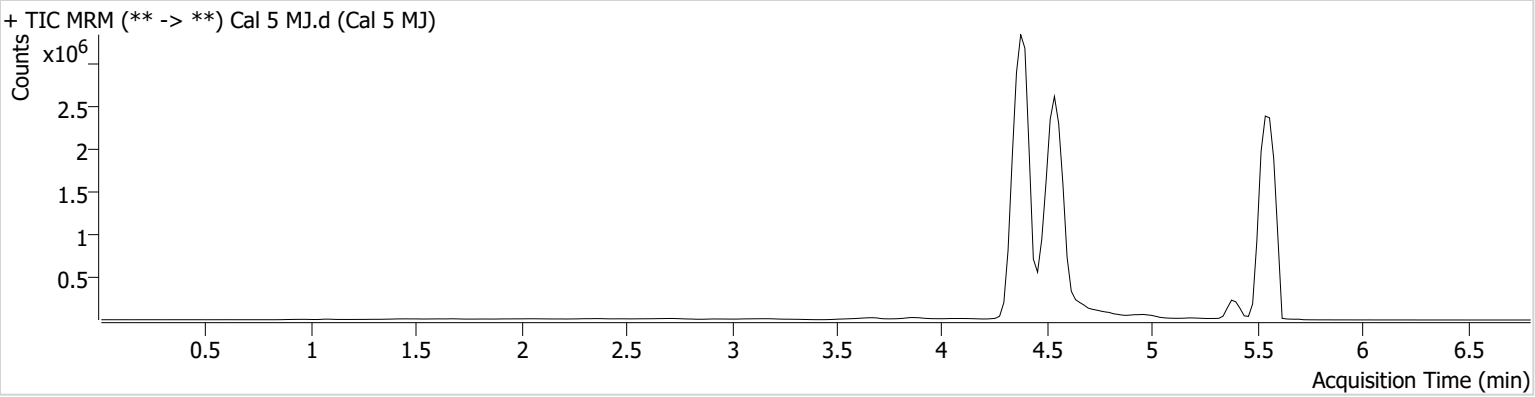
Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	5.590	45040	550136	9.5116	ng/ml
THC-COOH	4.556	1447422	2030703	57.2549	ng/ml
THC-OH	4.382	140518	6995571	9.4732	ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 26.batch.bin
Calibration Last Update 11/17/2022 8:15:27 AM

Instrument	Falco (069901)	**Data File**	Cal 5 MJ.d
Type	Cal	**Sample**	Cal 5 MJ
Acq. Method	AM 26 THC.m	**Operator**	Sarah Collins
Sample Position	P1-E1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/16/2022 5:32:21 PM		
Sample Info.			

Sample Chromatogram



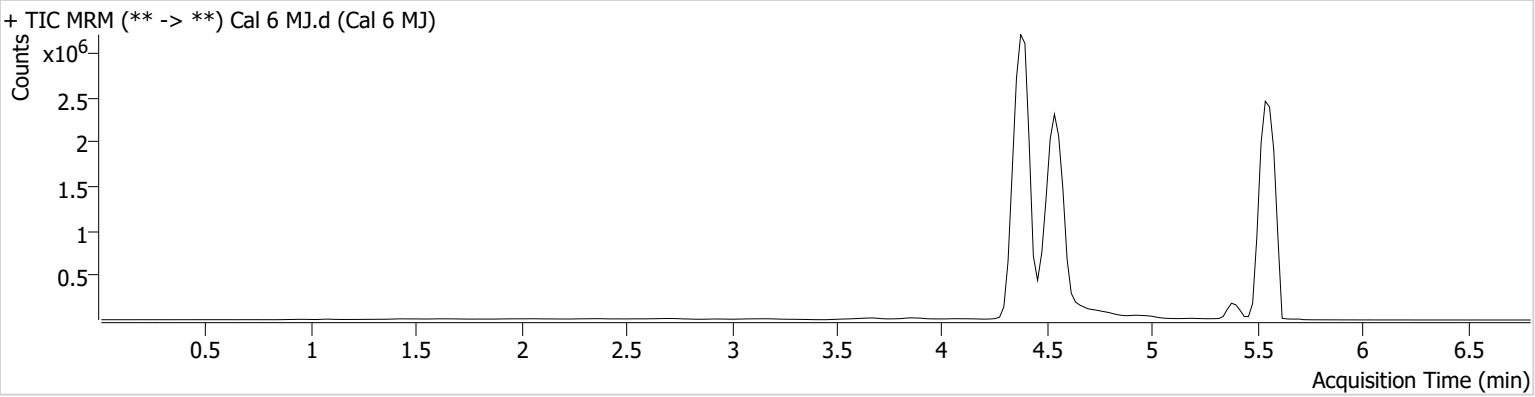
Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	5.590	90821	441879	23.5949	ng/ml
THC-COOH	4.536	3961971	4295975	74.4435	ng/ml
THC-OH	4.402	669236	12500478	24.9297	ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 26.batch.bin
Calibration Last Update 11/17/2022 8:15:27 AM

Instrument	Falco (069901)	**Data File**	Cal 6 MJ.d
Type	Cal	**Sample**	Cal 6 MJ
Acq. Method	AM 26 THC.m	**Operator**	Sarah Collins
Sample Position	P1-F1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/16/2022 5:39:55 PM		
Sample Info.			

Sample Chromatogram



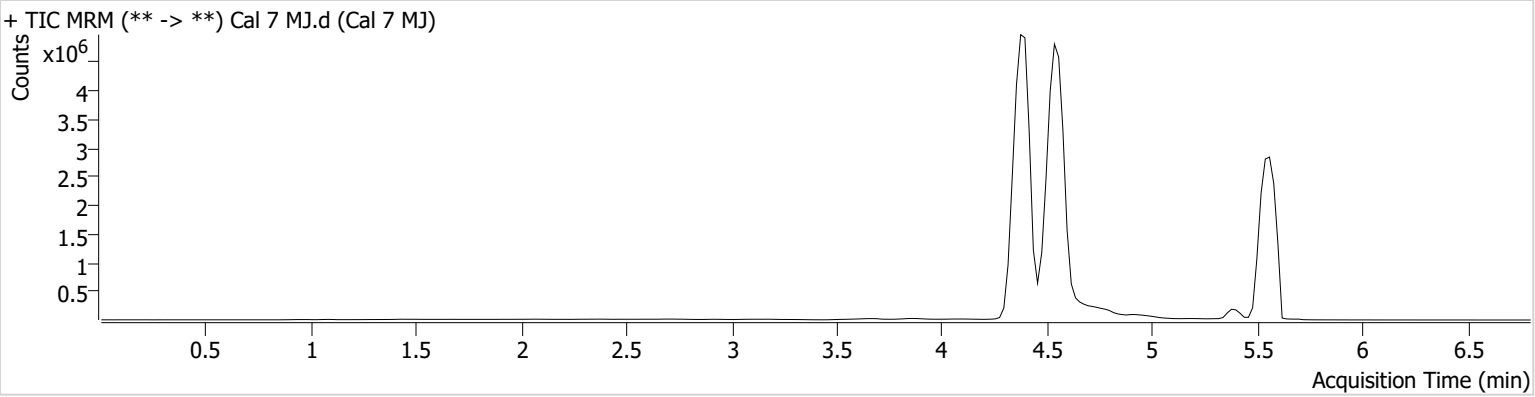
Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	5.590	156410	355970	50.2276	ng/ml
THC-COOH	4.536	3723543	3103382	97.2198	ng/ml
THC-OH	4.402	957015	8965104	49.5179	ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\AM 25-26\111622 AM 25 26 SC\QuantResults\AM 26.batch.bin
Calibration Last Update 11/17/2022 8:15:27 AM

Instrument	Falco (069901)	**Data File**	Cal 7 MJ.d
Type	Cal	**Sample**	Cal 7 MJ
Acq. Method	AM 26 THC.m	**Operator**	Sarah Collins
Sample Position	P1-G1	**Comment**	
Injection Volume	10		
Acq. Date-Time	11/16/2022 5:47:29 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	5.610	298396	335006	101.6271	ng/ml
THC-COOH	4.536	8988248	2993798	245.1154	ng/ml
THC-OH	4.402	2025021	9256851	101.2754	ng/ml