3/16/2022

REVIEWED
By Britany Wylie at 10:23 am, Mar 18, 2022

Worklist: 5684

LAB_CASE	ITEM	ITEM_TYPE	DESCRIPTION
C2022-0389	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
C2022-0390	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
C2022-0396	4	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
C2022-0397	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
C2022-0407	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
C2022-0412	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
C2022-0428	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
C2022-0435	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
C2022-0438	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
C2022-0458	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
C2022-0467	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
C2022-0487	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
C2022-0496	2	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ
C2022-0512	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
C2022-0525	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
C2022-0528	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ
C2022-0537	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ

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

Extraction Date: 3/15/22 Analyst: Anne Nord
Plate lot#: 211015 Plate retest date: 04/15/22

Mobile phase A: 10mM Ammonium Formate **Mobile phase B:** 0.1% Formic Acid in MeOH
0.5M Ammonium Hydroxide Ethyl Acetate LC 20% Methanol
Blank Blood Lot: 22B52020 **Blank Urine lot:** 21522 **Column**: Phenomenex Phenyl Hexyl (4.6x50mm, 2.6um)
LCMS-QQQ ID: 69679

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 pipette: 250 ul urine in blank well, add 40 ul BG Turbo, add 100 ul 500 mm sodium phosphate buffer mix for at least five minutes ambient temperature.
Pipette **250 µL blood (calibrated pipette)** or 250 ul urine in wells of analytical (standards) plate. **Pipette ID: 1926134**
☒ 3. Pipette **250 µL of 0.5 M ammonium hydroxide** in wells of analytical plate.
☒ 4. Place on shaking incubator at ambient temp., 900 rpm for 15 minutes.
☒ 5. Transfer **300 µL of blood or urine+base** mixture to corresponding wells of SLE+ plate.
☒ 6. Apply positive pressure for approx. 10-15 seconds (or until no liquid remains on top of sorbent).
(Load at 85-100 PSI- Selector to the right) *Manifold ID: 66792*
☒ 7. Wait 5 minutes.
☒ 8. Add **900 µL ethyl acetate.**
☒ 9. Wait 5 minutes.
☒ 10. Apply positive pressure for approx. 10-15 seconds. ***(12-15 PSI- Selector to the left).***
☒ 11. Add **900 µL ethyl acetate.**
☒ 12. Wait 5 minutes.
☒ 13. Apply positive pressure for approx. 10-15 seconds. ***(12-15 PSI- Selector to the left).***
☒ 14. Remove plate containing eluate. add 50 ul 1% HCl in MeOH Place on SPE Dry and evaporate to dryness at approx. 35°C.
SPE Dry ID: 66819
☒ 15. Reconstitute in **100 µL 20% LC MeOH** in LC Water 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 5 or greater or 2-5 for discretionary range.
☒ 4. Did all QCs pass for each analyte? (If no is it described in comments?)
☒ 5. Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS:

	1	2	3	4	5	6	7	8	9	10	11	12
A			389-1	396-4					487-1			
B	cal 1		390-1	512-1								
C			397-1	525-1								
D			407-1	528-1					467-1			
E			412-1	537-1					496-2			
F			428-1						458-1			
G			435-1						urine control			
H		Negative blood	438-1						negative urine			

C2022-0___

Toxicology AM method 25/28 urine external control prep

working solution 10000 ng/ml in meoh diphendydramine, methamphetamine, alprazolam, methocarbamol, morphine

Stock solution 1mg/ml 50 ul each in 4750 ul MeOH (Honeywell EA078-US)

ppd 6/25/21: Exp: 6/25/2022 lot 62522 by AMN

Drug	lot	expiration
Methamphetamine	FE03132001	7/1/2025
methocarbamol	FN01212005	1/1/2023
alprazolam	FE06102008	6/1/2025
Diphendydramine	FN02212011	3/1/2025
Morphine	FE03232010	4/1/2025

AM 25/28 control 500 ul working solution (62522) in 4500 ul negative urine (1000ng/mL Expected concentration)

ppd 6/25/21, exp 6/25/22 lot u62522 negative urine 5621 by AMN

AM 25/28 Blood Control: 50ul working solution (41422) in 4950 ul neg blood (100ng/mL Expected concentration)

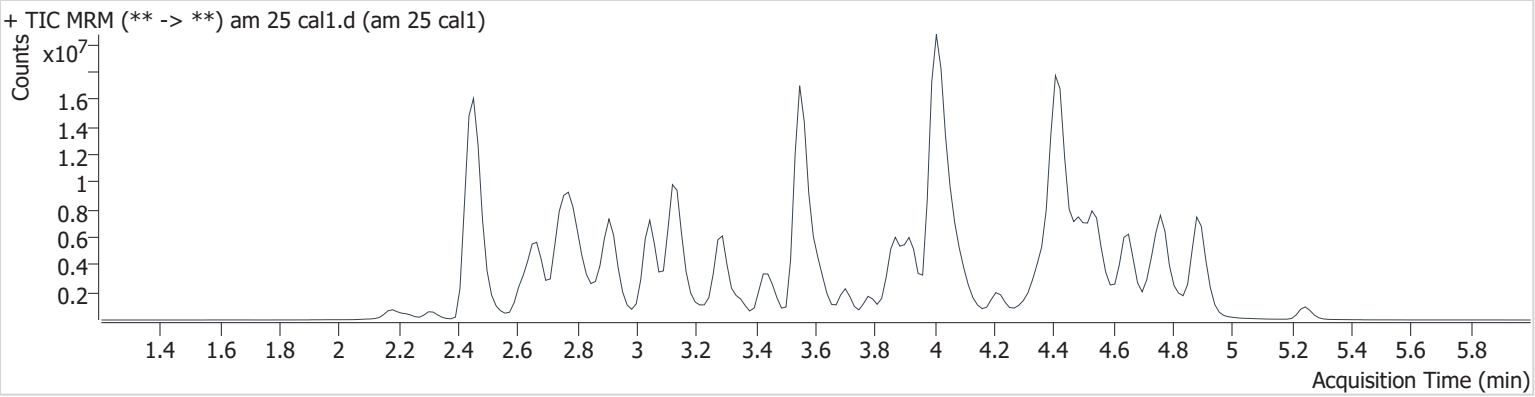
ppp 6/25/21, exp 6/25/22 lot b62522 neg blood 21D52496 by AMN

AM #25 Multi-Drug Screen Results

Batch results D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\mds.batch.bin
Calibration Last Update 3/16/2022 2:10:05 PM

Instrument	69679	**Data File**	am 25 cal1.d
Type	Cal	**Sample**	am 25 cal1
Acq. Method	mds713.m	**Operator**	Anne Nord
Sample Position	P2-B1	**Comment**	
Injection Volume	2.5		
Acq. Date-Time	3/15/2022 10:59:35 AM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
6-MAM	2.952	44510	18783.1	9543.8	1409924	10.000
7-aminoclonazepam	3.355	520356	1237.1	283.5	2170806	10.000
7-aminoflunitrazepam	3.584	872191	2454.4	144.2	2170806	10.000
Acetyl Fentanyl	4.208	262363	152.0	61445.1	22391525	10.000
Acetyl Norfentanyl	2.656	224203	494.7	306.1	22391525	10.000
a-hydroxyalprazolam	4.393	204089	32238.9	3138.2	2170806	10.000
alpha-hydroxymidazolam	4.484	2095952	280.1	553.9	2170806	10.000
alpha-PHP	3.940	2398893	1345.4	560.9	7735799	10.000
alpha-PVP	3.620	3279064	1785.2	427.7	7735799	10.000
Alprazolam	4.504	1695144	609.7	850.6	10136822	10.000
Amitriptyline	4.554	556277	72.8	186.4	2914914	10.000
Amphetamine	2.662	3286011	666.0	10607.8	7735799	10.000
Benzoylecgonine	3.138	98235	143.6	81.6	232993	10.000
Brompheniramine	4.040	68056	184.4	19.8	39377269	10.000
Buprenorphine	5.257	87351	45202.3	6830.6	2365859	10.000
Bupropion	3.926	3325592	701.6	1475.0	13766493	10.000
Carbamazepine	4.064	5603198	∞	740.7	81424	10.000
Carisoprodol	4.062	861776	691630.2	181.9	4492476	10.000
Chlordiazepoxide	4.628	563822	522.8	329.6	10136822	10.000
Chlorpheniramine	3.937	4437666	119080.9	175.3	39377269	10.000
Citalopram	4.023	1984411	1819.2	186066.7	39377269	10.000
Clomimpramine	4.824	697113	1589.2	669.4	6675174	10.000
Clonazepam	4.302	676581	4568.8	89105.2	10136822	10.000
Clonazolam	4.221	952008	∞	343461.0	10136822	10.000
Cocaethylene	3.779	3283541	2060.2	13806.3	39377269	10.000
Cocaine	3.566	4160896	2557909.9	1158.1	24503908	10.000
Codeine	2.894	365616	1966.2	268.8	240086	10.000
Cyclobenzaprine	4.431	1250655	394.2	84.3	2914914	10.000
Desipramine	4.355	1747587	362134.7	386.7	2914914	10.000
Dextromethorphan	4.107	1406725	762.3	514.5	7614253	10.000
Dextrorphan	3.266	2125091	10454.0	229.7	7614253	10.000
Diazepam	4.751	834489	84828.4	1776.2	10136822	10.000
Dihydrocodeine	2.664	917018	453.9	322.0	2540819	10.000
Diphenhydramine	4.032	5616178	863.9	468.6	39377269	10.000

AM #25 Multi-Drug Screen Results

Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Doxepin	4.229	1121706	296.3	96.6	16777124	10.000
Doxylamine	3.555	6871726	∞	∞	7614253	10.000
EDDP	3.999	1127414	331.8	5692.6	2540819	10.000
Estazolam	4.398	3150813	971.5	601316.9	10136822	10.000
Etizolam	4.515	180661	71222.1	391.5	10136822	10.000
Fentanyl	4.454	157681	104.3	35148.9	10314595	10.000
Flualprazolam	4.347	647731	169342.0	424097.4	10136822	10.000
Flunitrazepam	4.442	1421737	404.8	474.4	10136822	10.000
Fluoxetine	4.287	767683	198.2	353.6	1255754	10.000
Flurazepam	4.482	2393385	1133618.0	196315.0	10136822	10.000
Hydrocodone	3.168	1097798	82.2	253.6	6865970	10.000
Hydromorphone	2.470	889085	167.8	278.2	240086	10.000
Imipramine	4.476	2589609	1177.5	466.3	2914914	10.000
Ketamine	3.911	2561246	4118.2	194.8	16244748	10.000
Lamotrigine	3.434	207383	281.1	435.3	39377269	10.000
Levamisole	3.039	1787104	641.0	335.4	7614253	10.000
Levetireacetam	2.325	715992	706.1	364.9	6675174	10.000
Lorazepam	4.301	142155	238.8	60.2	10136822	10.000
Maprotiline	4.553	296423	112185.3	41.7	2914914	10.000
MDA	2.796	1946486	382.7	75.4	22326624	10.000
MDEA	3.054	3141731	778.6	237.5	22326624	10.000
MDMA	2.887	3853491	9432.9	3003.3	22326624	10.000
Meperidine	3.634	2056319	851.0	371.7	7614253	10.000
Meprobamate	3.437	453806	∞	71.8	4492476	10.000
Methadone	4.380	3686058	727.4	322.9	2540819	10.000
Methamphetamine	2.782	7239893	∞	10468.4	22326624	10.000
Methocarbamol	3.343	232456	376.3	622.3	2540819	10.000
Methylphenidate	3.436	7145417	1741.5	745.1	16244748	10.000
Metoprolol	3.280	529553	1292.6	4896.0	7614253	10.000
Midazolam	4.685	511983	3078.1	541803.9	10136822	10.000
Mirtazapine	4.509	2453368	763322.2	1303.0	7614253	10.000
Mitragynine	4.466	280522	73747.4	261139.7	7614253	10.000
Morphine	2.229	223375	1303.4	632.6	240086	10.000
Norbuprenorphine	3.775	52937	16957.7	11195.1	240086	10.000
Nordiazepam	4.585	737090	368.8	409.0	10136822	10.000
Norfentanyl	3.144	4301134	438.8	690.8	22391525	10.000
Norhydrocodone	2.743	47358	130.0	15150.3	6865970	10.000
norketamine	3.927	491111	216.2	10827.1	16244748	10.000
Normeperidine	3.467	1746852	620.4	287.0	39377269	10.000
Noroxycodone	2.665	1235967	∞	1132.1	10398281	10.000
Nortriptyline	4.401	521130	97066.3	392.6	2914914	10.000
O-desmethyl-tramadol	2.685	5563020	3385.9	345.0	39377269	10.000
Olanzapine	4.041	1377001	580358.6	768.5	81424	10.000
Oxazepam	4.383	693479	∞	139.1	2896515	10.000
Oxycodone	2.846	2210675	551.9	622.9	10398281	10.000
Oxymorphone	2.179	1166417	446.6	167.2	240086	10.000
Paroxetine	4.331	133209	425.8	5671.6	1255754	10.000
Phenazepam	4.515	1046258	1077.9	240762.1	10136822	10.000
Phencyclidine	3.849	3496570	21048.6	244.4	7614253	10.000
Phentermine	2.949	42476	∞	∞	16244748	10.000
Phenytoin	3.955	136800	92.8	38.3	81424	10.000
Promethazine	4.568	2914882	1847.3	168.1	39377269	10.000
Pseudoephedrine	2.462	50242492	11966.3	461.5	22326624	10.000
Quetiapine	4.728	3651981	1435.8	753452.9	33164018	10.000
Sertraline	4.612	243866	∞	∞	1255754	10.000
Sufentanil	4.910	127337	33741.3	139.5	22391525	10.000
Tapentadol	3.284	3824904	1375.6	467.3	2540819	10.000
Temazepam	4.551	1920194	1577.3	105.6	10136822	10.000
Tramadol	3.296	6183501	1645.6	191.1	39377269	10.000
Trazodone	4.911	3672710	64335.8	296.9	16777124	10.000

AM #25 Multi-Drug Screen Results

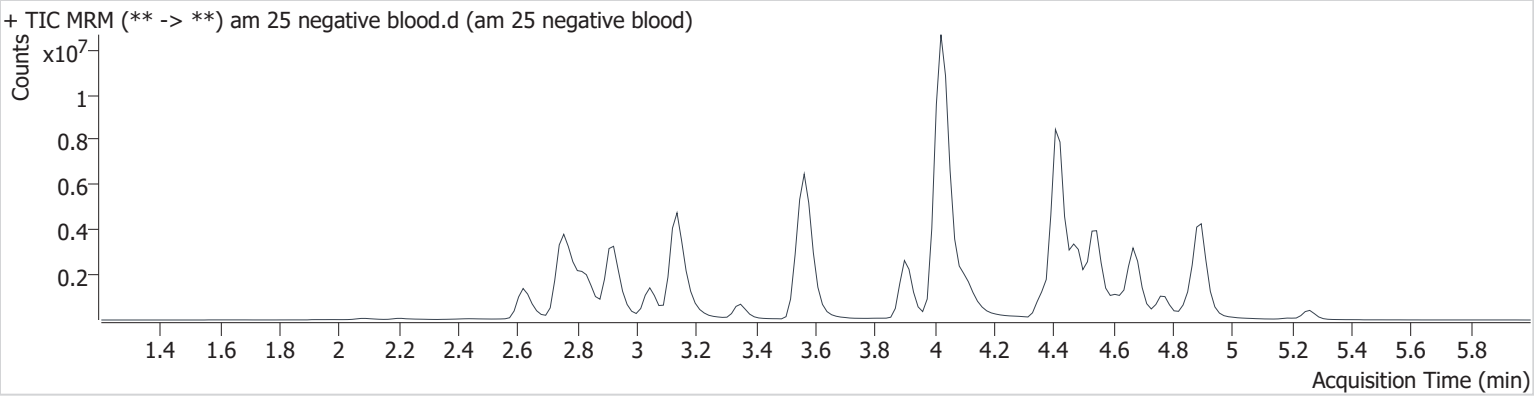
Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Venlafaxine	3.706	4649016	786.8	373.5	1255754	10.000
Zaleplon	4.212	1281453	472991.9	2792.7	33164018	10.000
Zolpidem	4.427	6579418	31930.2	1425.7	33164018	10.000
Zopiclone	4.420	710038	232033.6	428.6	3907668	10.000

AM #25 Multi-Drug Screen Results

Batch results D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\mds.batch.bin
Calibration Last Update 3/16/2022 2:10:05 PM

Instrument	69679	**Data File**	am 25 negative blood.d
Type	Sample	**Sample**	am 25 negative blood
Acq. Method	mds713.m	**Operator**	Anne Nord
Sample Position	P2-H2	**Comment**	
Injection Volume	2.5		
Acq. Date-Time	3/15/2022 11:06:18 AM		
Sample Info.			

Sample Chromatogram

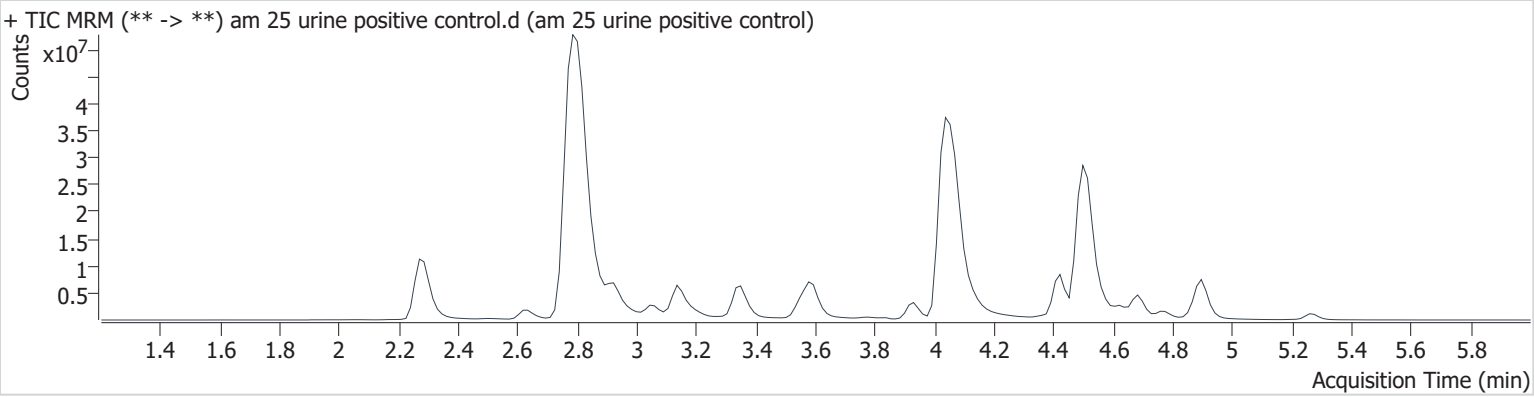


AM #25 Multi-Drug Screen Results

Batch results D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\mds.batch.bin
Calibration Last Update 3/16/2022 2:10:05 PM

Instrument	69679	**Data File**	am 25 urine positive control.d
Type	Sample	**Sample**	am 25 urine positive control
Acq. Method	mds713.m	**Operator**	Anne Nord
Sample Position	P2-G9	**Comment**	
Injection Volume	2.5		
Acq. Date-Time	3/15/2022 1:20:17 PM		
Sample Info.			

Sample Chromatogram



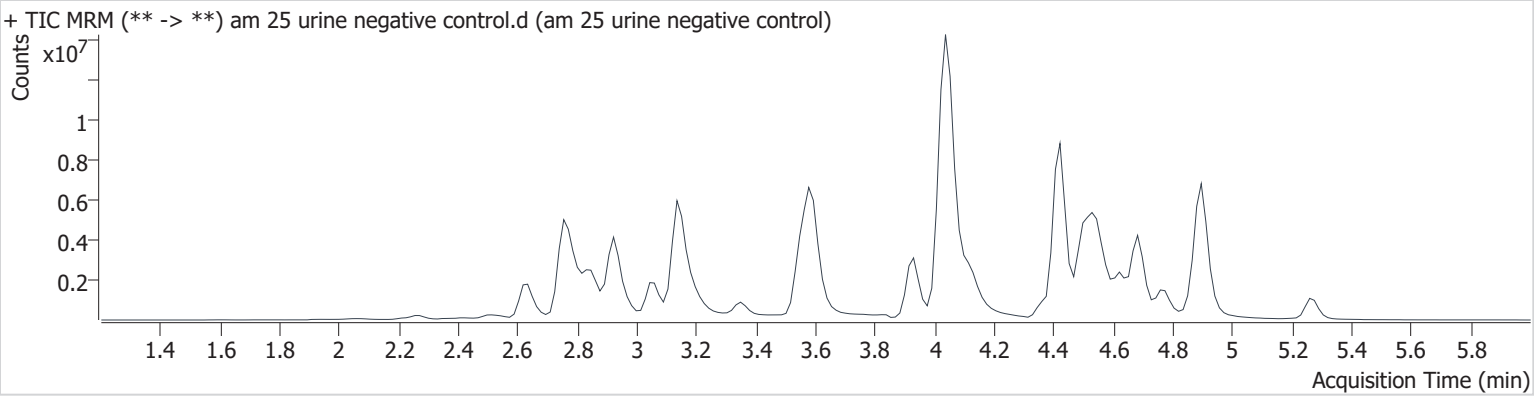
Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Alprazolam	4.504	48227731	14907.9	2915.6	7892682	365.399
Diphenhydramine	4.095	87382579	21810.2	44285.0	28029866	218.579
Methamphetamine	2.826	91037412	∞	∞	14155030	198.335
Methocarbamol	3.359	9373902	13051.9	7461.1	1780234	575.542
Morphine	2.274	11716196	56100.5	2388.1	222548	565.844

AM #25 Multi-Drug Screen Results

Batch results D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\mds.batch.bin
Calibration Last Update 3/16/2022 2:10:05 PM

Instrument	69679	**Data File**	am 25 urine negative control.d
Type	Sample	**Sample**	am 25 urine negative control
Acq. Method	mds713.m	**Operator**	Anne Nord
Sample Position	P2-H9	**Comment**	
Injection Volume	2.5		
Acq. Date-Time	3/15/2022 1:27:00 PM		
Sample Info.			

Sample Chromatogram



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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

AM# 26: THC and Metabolites Screen in Blood by LC-MS/MS

Extraction Date: 3/15/22 Analyst: Anne Nord

Plate lot#: 211018 Plate retest date: 4/18/22

Mobile phase A: 10mM Ammonium Formate 0.1% Formic Acid in Water **Mobile phase B:** 0.1% Formic acid in MeOH MTBE Hexane
Blank Blood Lot: 22B52020 **Urine Blank:** 21522 **Column**: Phenomenex Phenyl Hexyl (4.6x50mm: 2.6 um)
LCMS-QQQ ID: 69679

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 1.5 ml urine to blank plate, add 250 ul 1N KOH mix and incubate at 40 degrees for 15 minutes.
Pipette **1000 µL blood (calibrated pipette)** in wells of analytical (standards) plate. **Pipette ID: K52558g**
Pipette 1000 ul urine to analytical (standards) plate.
☒ 3. Place on shaking incubator at ambient temp., 900 rpm for 15 minutes.
☒ 4. Pipette **500 µL 0.1% formic acid in blood** wells **500 ul saturated phosphate buffer in urine** wells of analytical plate.
☒ 5. Place on shaking incubator at ambient temp., 900 rpm for 15 minutes.
☒ 6. Transfer 8**00 µL 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: 66792
☒ 8. Wait 5 minutes.
☒ 9. Add **2.25 mL MTBE** (add in 3 increments of 750 µL).
☒ 10. Wait 5 minutes.
☒ 11. Apply positive pressure for approx. 10-15 seconds. ***(12-15 PSI- Selector to the left).***
☒ 12. Add **2.25 mL hexane** (add in 3 increments of 750 µL).
☒ 13. Wait 5 minutes.
☒ 14. Apply positive pressure for approx. 10-15 seconds. ***(12-15 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: 66819
☒ 16. Reconstitute in **100 µL 100% LCMS MeOH** and heat seal plate with foil. Place in autosampler and run worklist.

Post-Analytic

☒ 1. Create batch and process data.
☒ 2. Calculated sample concentration of 3 ng/mL or greater for THC and THC-OH, a calculated sample concentration of 10 ng/mL or greater for Carboxy-THC.
☒ 3. Retention time within +/- 2% or +/-0.100 min whichever is greater of the average retention time of the calibrators.
☒ 4. Did all QCs pass for each analyte? Yes
☒ 5. Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS: *Only the blood samples were evaluated in this run, the saturated phosphate buffer did not get added to the urine samples. The urine samples were extracted, run and evaluated on 3/16/22*

	1	2	3	4	5	6
a	cal 1	Internal control (urine)	438-1	283-1		
b	cal 2	negative blood	396-4	321-1		
c	cal 3	389-1	512-1	374-1		
d	cal 4	390-1	525-1	458-1		
e	Cal 5	397-1	528-1	467-1		
f	cal 6	407-1	537-1	487-1		
g	cal 7	412-1	negative urine	496-2		
h	Internal control (blood)	428-1	361-2	435-1		

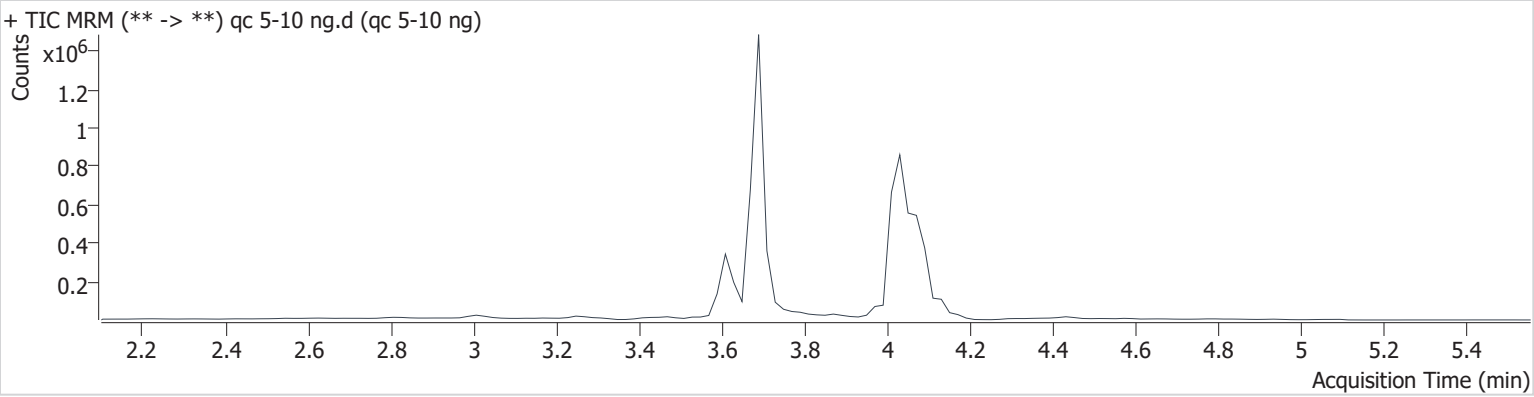
c2022-0____-_

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\cann.batch.bin
Calibration Last Update 3/16/2022 1:57:56 PM

Instrument	69679	**Data File**	qc 5-10 ng.d
Type	QC	**Sample**	qc 5-10 ng
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-H1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/15/2022 2:47:18 PM		
Sample Info.			

Sample Chromatogram



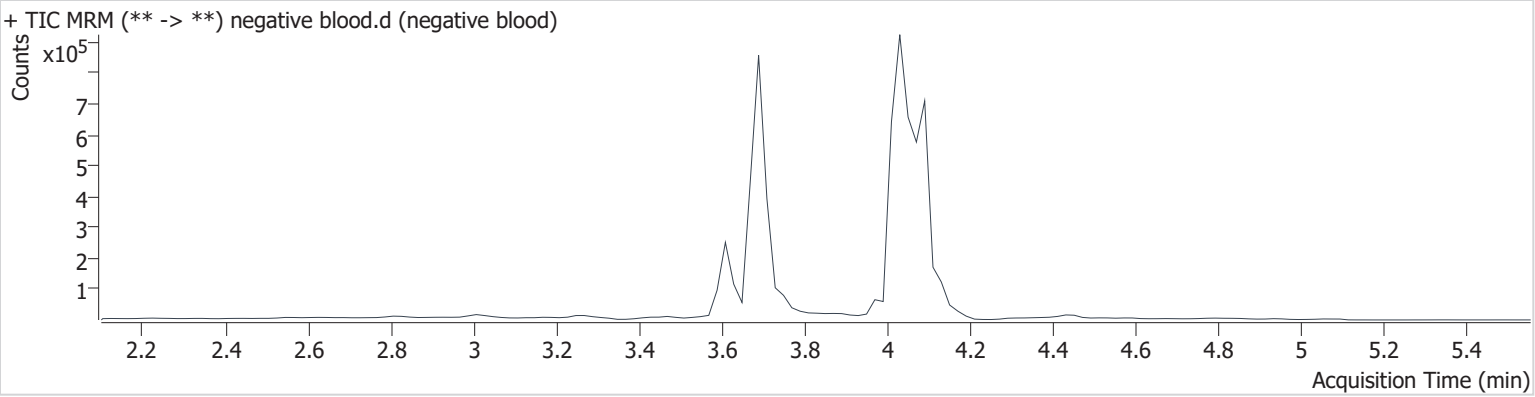
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.084	33470	844088	4.805 ng/ml
THC-COOH	3.612	117888	555962	15.824 ng/ml
THC-OH	3.699	28361	3053636	5.390 ng/ml

AM #26 Cannabinoids Screen Results

Batch results	D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\cann.batch.bin
Calibration Last Update	3/16/2022 1:57:56 PM

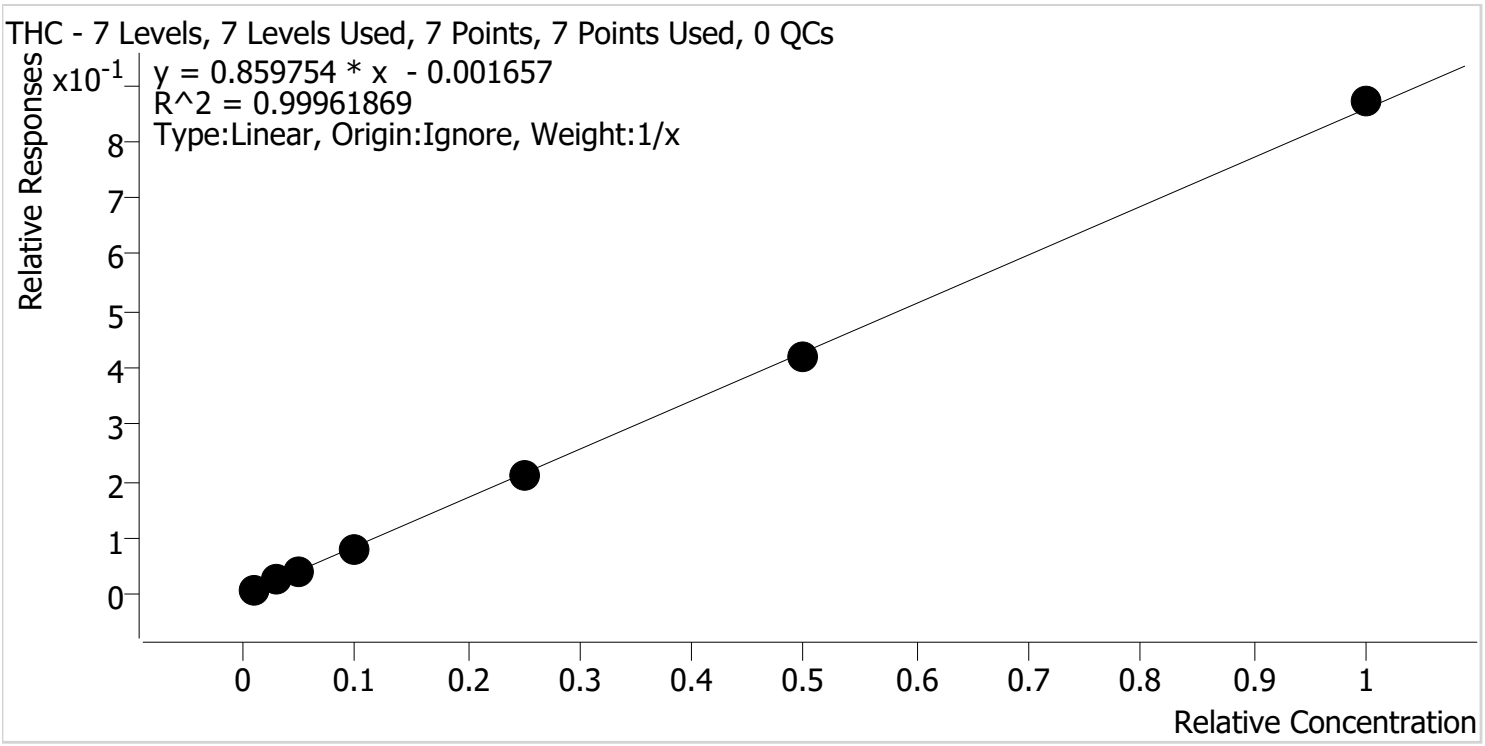
Instrument	69679	**Data File**	negative blood.d
Type	Sample	**Sample**	negative blood
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-B2	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/15/2022 2:53:56 PM		
Sample Info.			

Sample Chromatogram



Compound Calibration Report

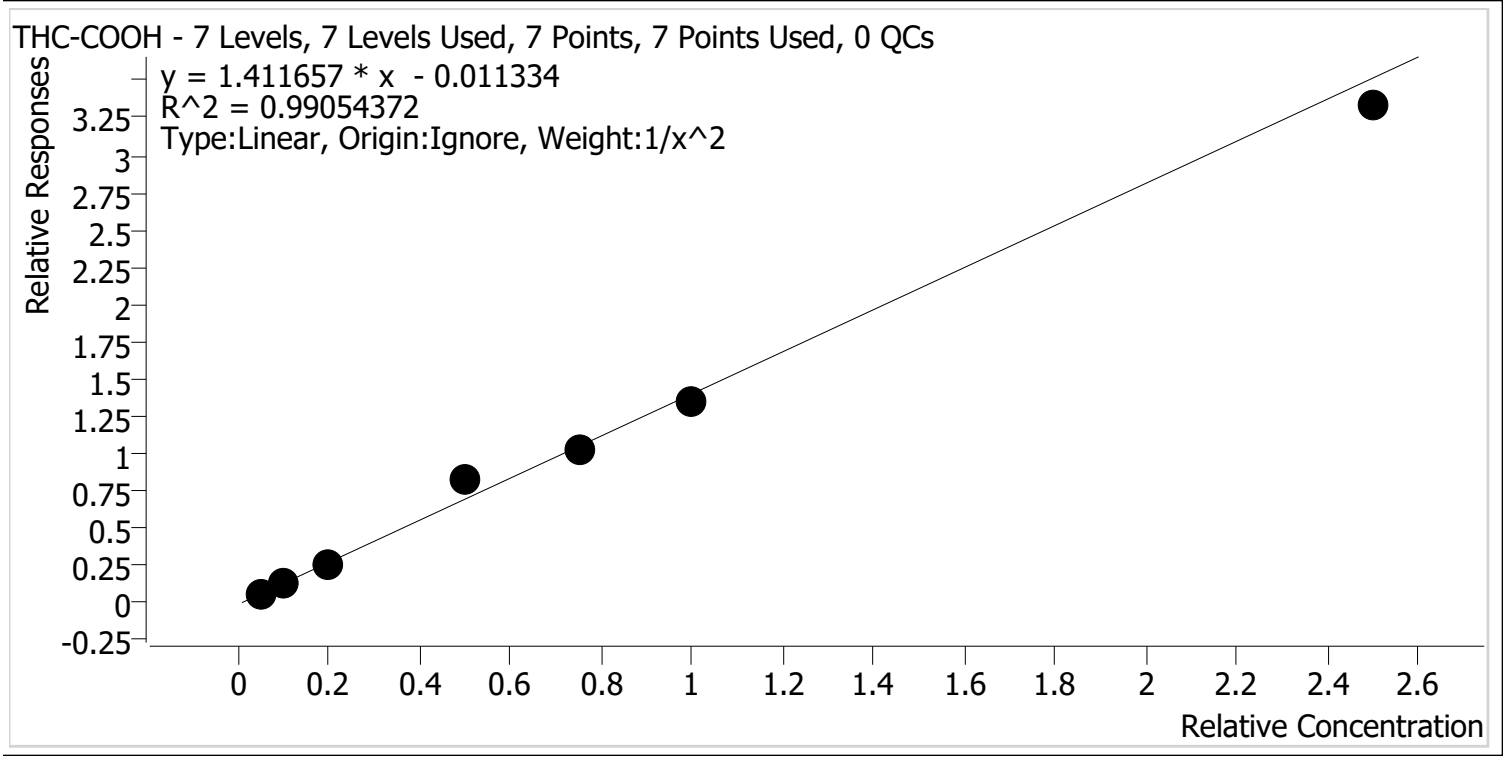
Batch results	D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\cann.batch.bin
Last Cal. Update	3/16/2022 1:57 PM
Analyst Name	ISP\datastor
Analyte	THC
Internal Standard	THC-d3



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
cal 1	1	✔	1.0	1.1	110.1
cal 2	2	✔	3.0	2.9	97.0
cal 3	3	✔	5.0	4.8	96.8
cal 4	4	✔	10.0	9.7	97.2
cal 5	5	✔	25.0	24.7	99.0
cal-6	6	✔	50.0	49.2	98.4
cal-7	7	✔	100.0	101.5	101.5

Compound Calibration Report

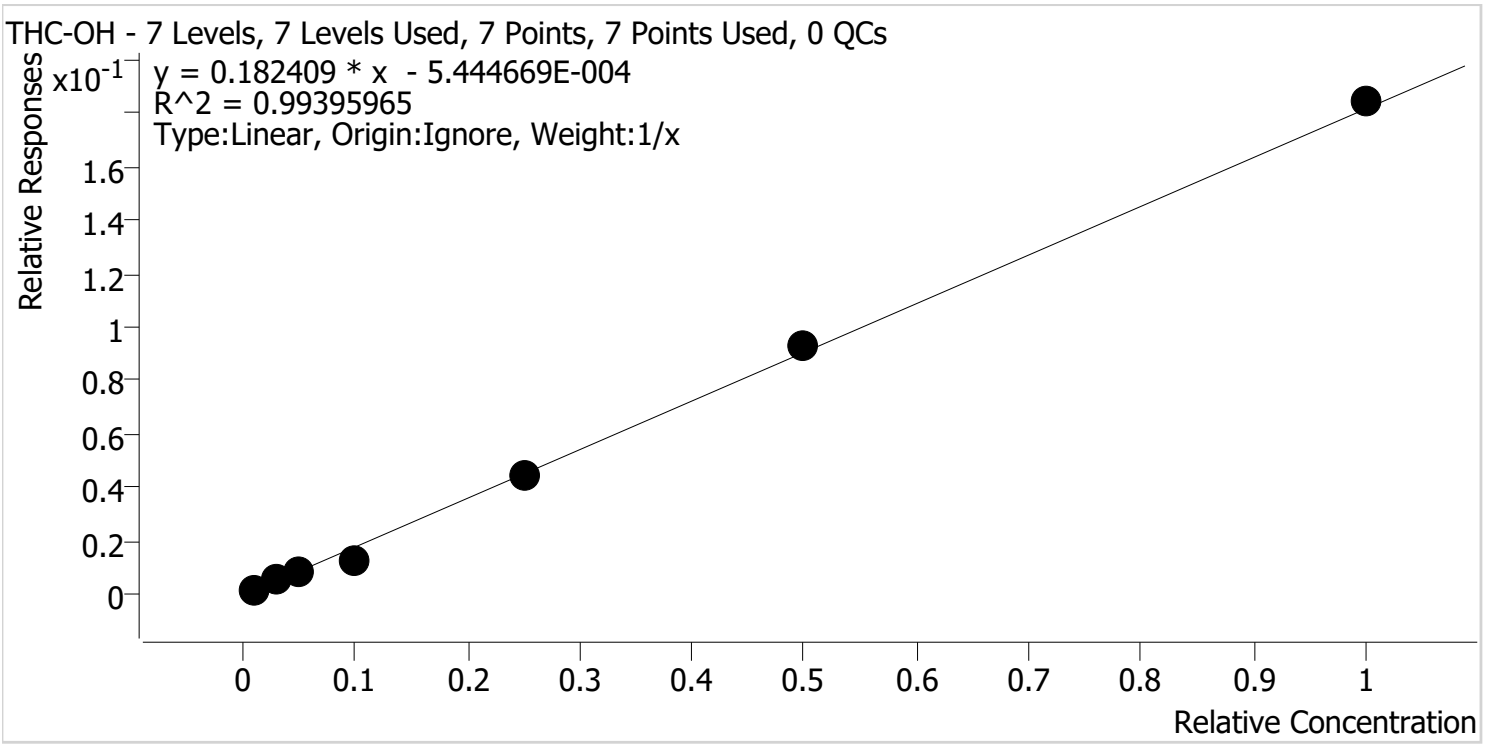
Batch results	D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\cann.batch.bin
Last Cal. Update	3/16/2022 1:57 PM
Analyst Name	ISP\datastor
Analyte	THC-COOH
Internal Standard	THC-COOH-d9



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
cal 1	1	✔	5.0	5.0	100.8
cal 2	2	✔	10.0	9.9	99.3
cal 3	3	✔	20.0	18.6	92.8
cal 4	4	✔	50.0	58.6	117.1
cal 5	5	✔	75.0	73.6	98.1
cal-6	6	✔	100.0	97.1	97.1
cal-7	7	✔	250.0	236.9	94.7

Compound Calibration Report

Batch results	D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\cann.batch.bin
Last Cal. Update	3/16/2022 1:57 PM
Analyst Name	ISP\datastor
Analyte	THC-OH
Internal Standard	THC-OH-d3



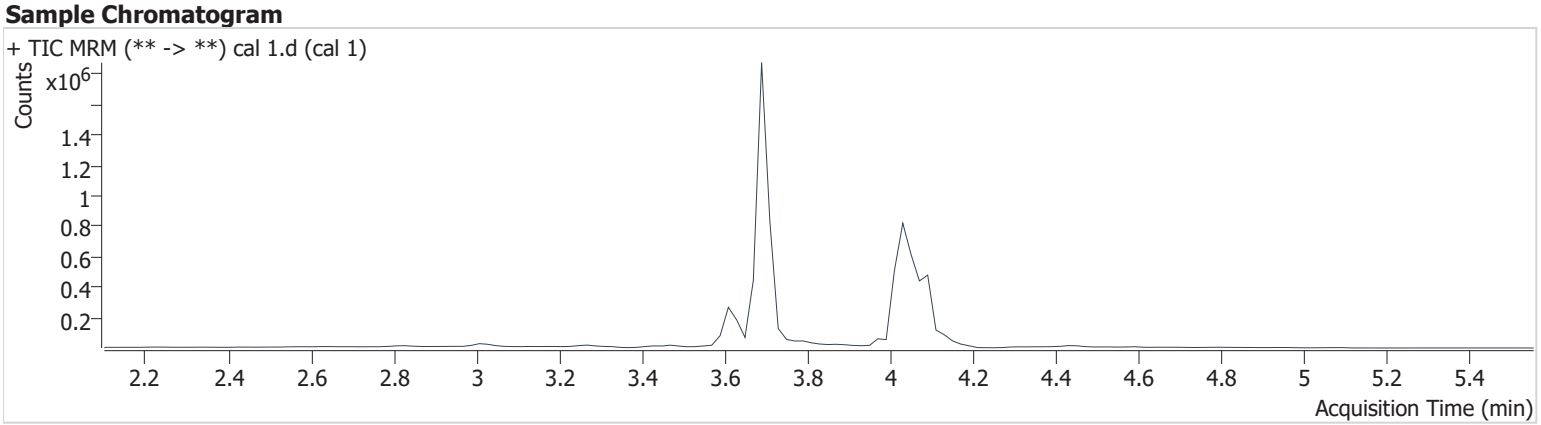
Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
cal 1	1	✔	1.0	1.2	123.1
cal 2	2	✔	3.0	3.1	103.9
cal 3	3	✔	5.0	4.9	98.8
cal 4	4	✔	10.0	7.0	70.1
cal 5	5	✔	25.0	25.1	100.3
cal-6	6	✔	50.0	51.2	102.3
cal-7	7	✔	100.0	101.5	101.5

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\cann.batch.bin
Calibration Last Update 3/16/2022 1:57:56 PM

Instrument	69679	**Data File**	cal 1.d
Type	Cal	**Sample**	cal 1
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-A1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/15/2022 1:54:30 PM		
Sample Info.			

Sample Chromatogram



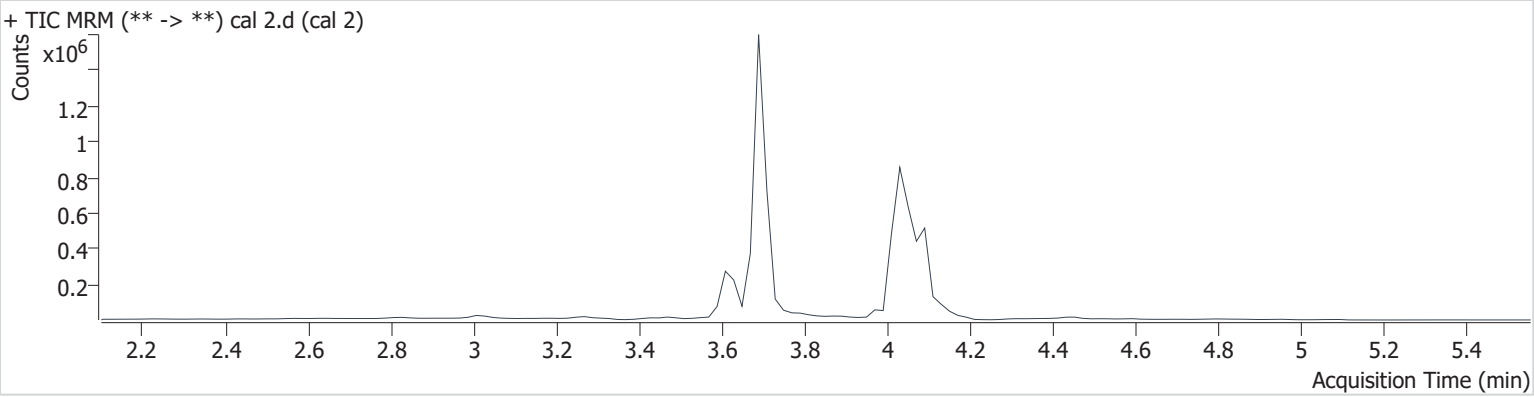
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	6682	855806	1.101 ng/ml **Low**
THC-COOH	3.632	36723	613914	5.040 ng/ml **Low**
THC-OH	3.699	6795	3993182	1.231 ng/ml **Low**

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\cann.batch.bin
Calibration Last Update 3/16/2022 1:57:56 PM

Instrument	69679	**Data File**	cal 2.d
Type	Cal	**Sample**	cal 2
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-B1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/15/2022 2:01:09 PM		
Sample Info.			

Sample Chromatogram



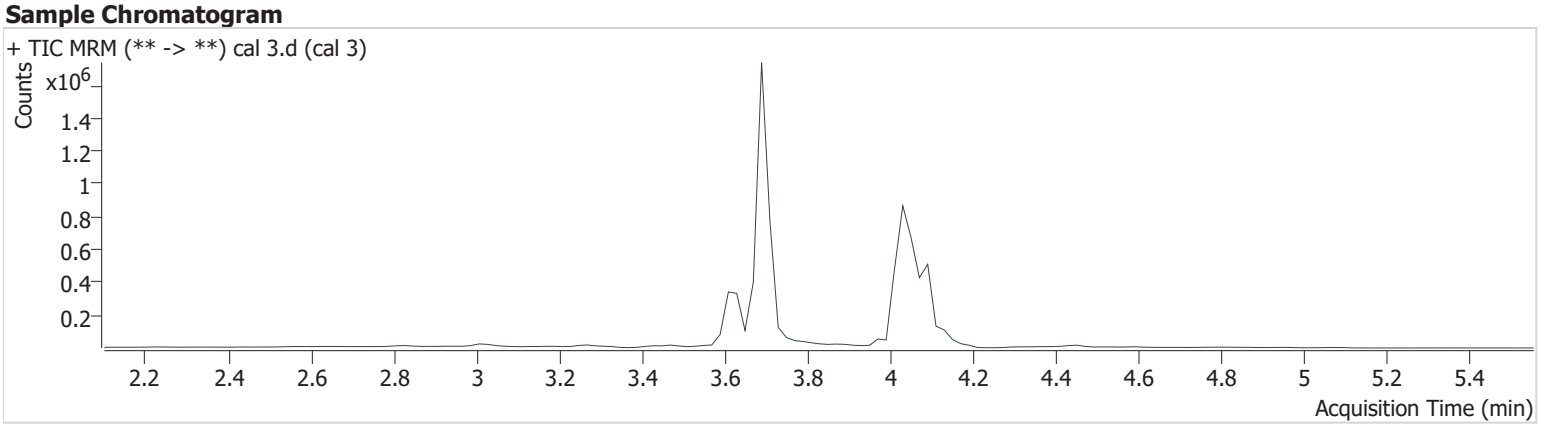
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	21064	901169	2.911 ng/ml **Low**
THC-COOH	3.632	72349	561441	9.931 ng/ml **Low**
THC-OH	3.699	17017	3310000	3.117 ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\cann.batch.bin
Calibration Last Update 3/16/2022 1:57:56 PM

Instrument	69679	**Data File**	cal 3.d
Type	Cal	**Sample**	cal 3
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-C1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/15/2022 2:07:45 PM		
Sample Info.			

Sample Chromatogram



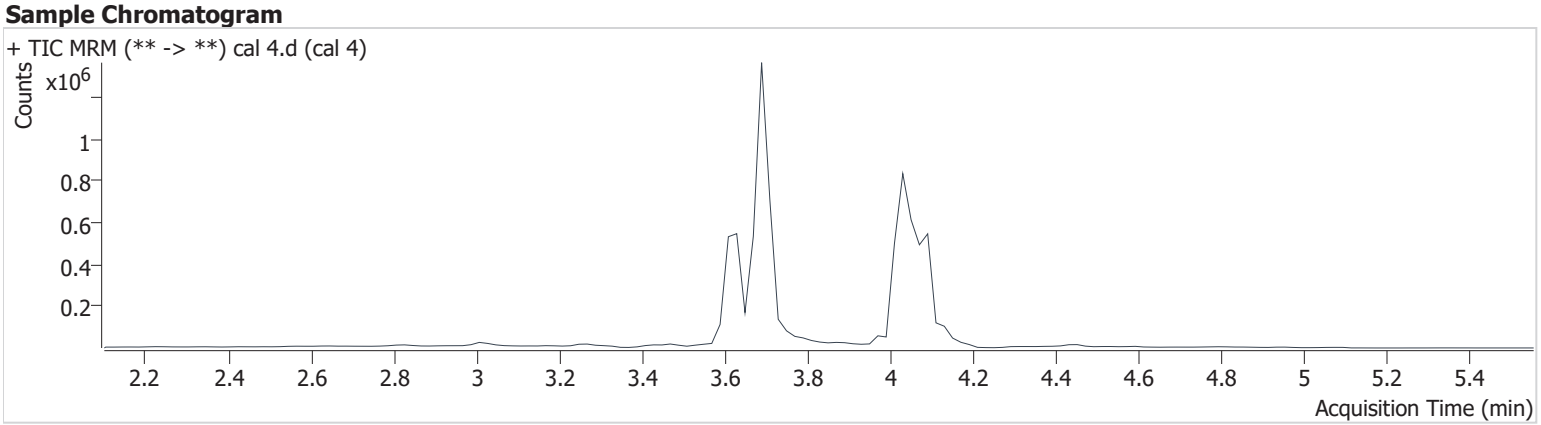
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	34160	854889	4.840 ng/ml
THC-COOH	3.632	153687	613061	18.561 ng/ml
THC-OH	3.699	29404	3472257	4.941 ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\cann.batch.bin
Calibration Last Update 3/16/2022 1:57:56 PM

Instrument	69679	**Data File**	cal 4.d
Type	Cal	**Sample**	cal 4
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-D1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/15/2022 2:14:21 PM		
Sample Info.			

Sample Chromatogram



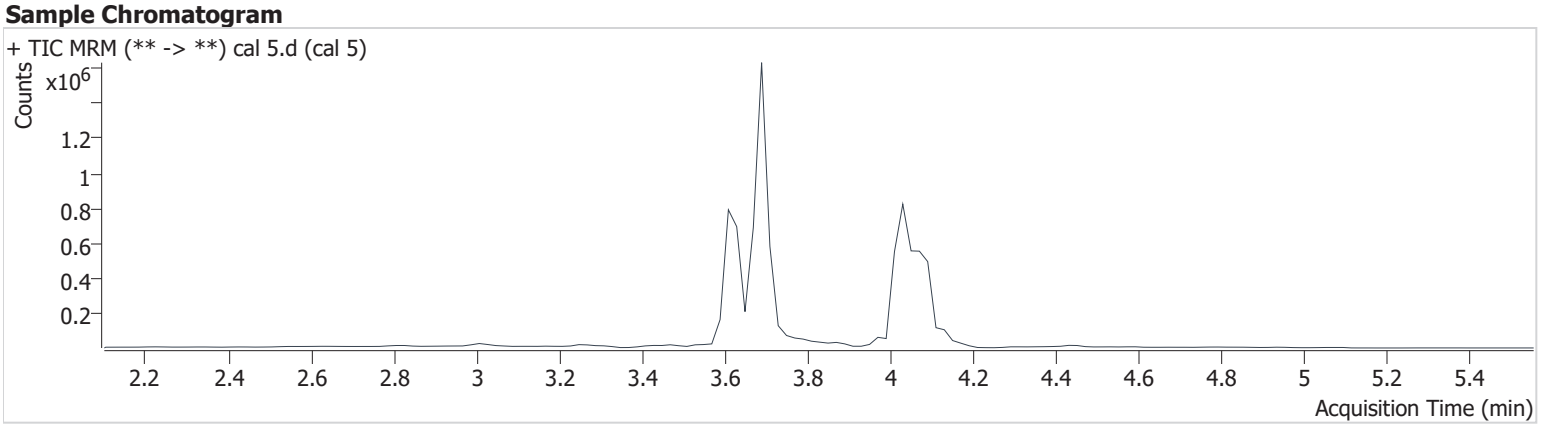
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	77755	949192	9.721 ng/ml
THC-COOH	3.632	384851	472086	58.552 ng/ml
THC-OH	3.719	34348	2807276	7.006 ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\cann.batch.bin
Calibration Last Update 3/16/2022 1:57:56 PM

Instrument	69679	**Data File**	cal 5.d
Type	Cal	**Sample**	cal 5
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-E1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/15/2022 2:20:57 PM		
Sample Info.			

Sample Chromatogram



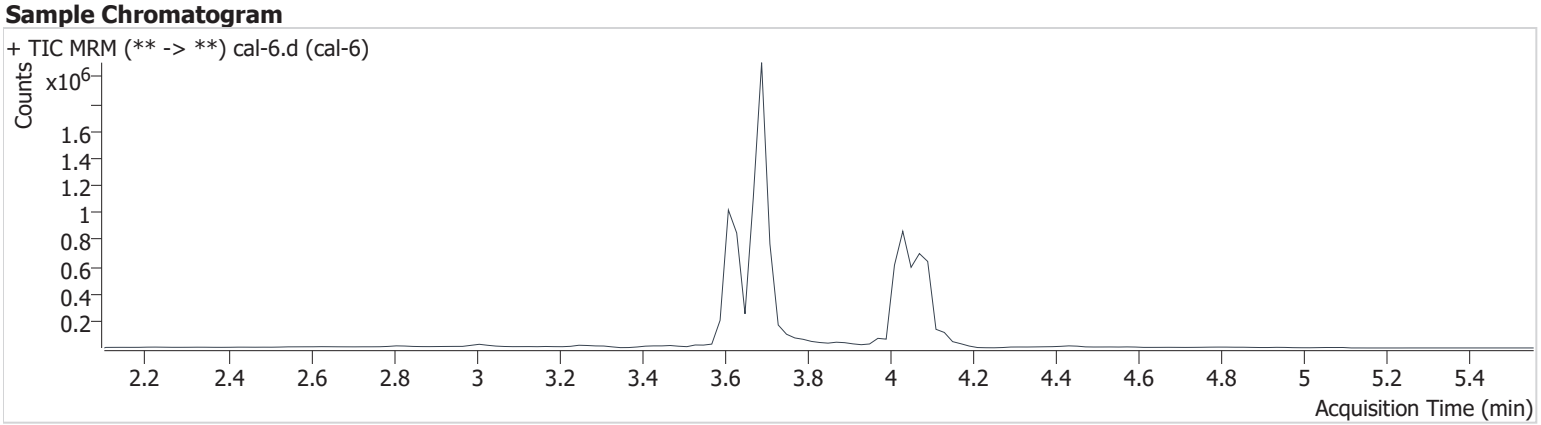
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	183085	867489	24.741 ng/ml
THC-COOH	3.612	603863	587691	73.591 ng/ml
THC-OH	3.699	119791	2651016	25.071 ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\cann.batch.bin
Calibration Last Update 3/16/2022 1:57:56 PM

Instrument	69679	**Data File**	cal-6.d
Type	Cal	**Sample**	cal-6
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-F1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/15/2022 2:27:34 PM		
Sample Info.			

Sample Chromatogram



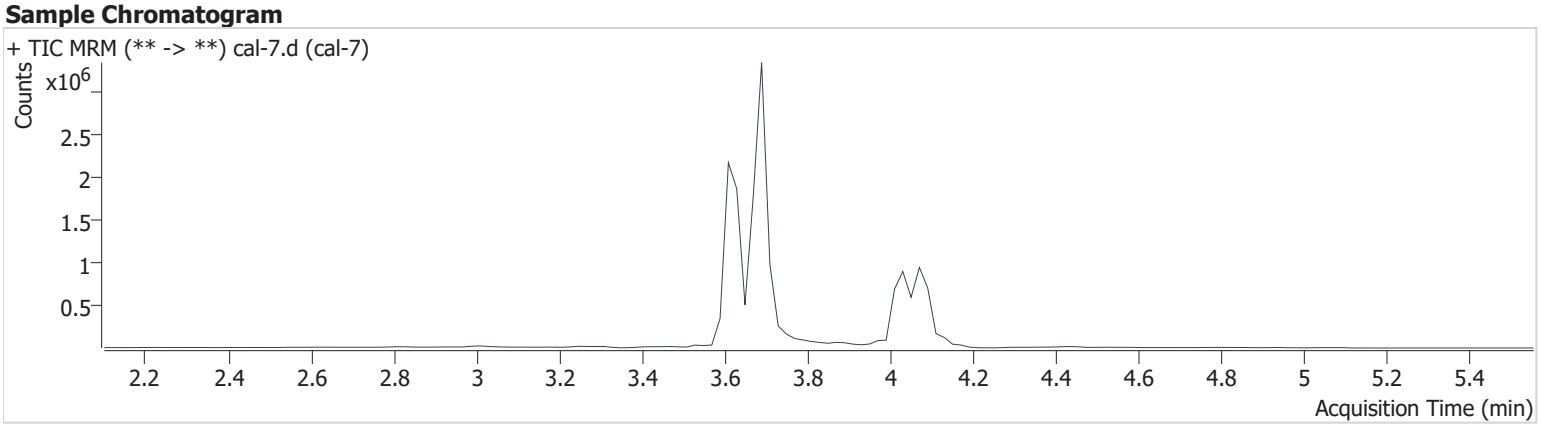
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	397436	943191	49.204 ng/ml
THC-COOH	3.612	805907	592811	97.106 ng/ml
THC-OH	3.699	315158	3396406	51.169 ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 25-26\031522\QuantResults\cann.batch.bin
Calibration Last Update 3/16/2022 1:57:56 PM

Instrument	69679	**Data File**	cal-7.d
Type	Cal	**Sample**	cal-7
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-G1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/15/2022 2:34:10 PM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.084	772294	886837	101.482 ng/ml
THC-COOH	3.612	1948816	584829	236.858 ng/ml
THC-OH	3.699	607747	3293365	101.465 ng/ml

AM# 26: THC and Metabolites Screen in Blood by LC-MS/MS

Extraction Date: 3/16/22 Analyst: Anne Nord

Plate lot#: 211018 Plate retest date: 4/18/22

Mobile phase A: 10mM Ammonium Formate 0.1% Formic Acid in Water **Mobile phase B:** 0.1% Formic acid in MeOH MTBE Hexane
Blank Blood Lot: **Urine Blank:** 21522 **Column**: Phenomenex Phenyl Hexyl (4.6x50mm: 2.6 um)
LCMS-QQQ ID: 69679

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 1.5 ml urine to blank plate, add 250 ul 1N KOH mix and incubate at 40 degrees for 15 minutes.
Pipette **1000 µL blood (calibrated pipette)** in wells of analytical (standards) plate. **Pipette ID: K52558g**
Pipette 1000 ul urine to analytical (standards) plate.
☒ 3. Place on shaking incubator at ambient temp., 900 rpm for 15 minutes.
☒ 4. Pipette **500 ul saturated phosphate buffer in urine** wells of analytical plate.
☒ 5. Place on shaking incubator at ambient temp., 900 rpm for 15 minutes.
☒ 6. Transfer 8**00 µL 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: 66792
☒ 8. Wait 5 minutes.
☒ 9. Add **2.25 mL MTBE** (add in 3 increments of 750 µL).
☒ 10. Wait 5 minutes.
☒ 11. Apply positive pressure for approx. 10-15 seconds. ***(12-15 PSI- Selector to the left).***
☒ 12. Add **2.25 mL hexane** (add in 3 increments of 750 µL).
☒ 13. Wait 5 minutes.
☒ 14. Apply positive pressure for approx. 10-15 seconds. ***(12-15 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: 66819
☒ 16. Reconstitute in **100 µL 100% LCMS MeOH** and heat seal plate with foil. Place in autosampler and run worklist.

Post-Analytic

☒ 1. Create batch and process data.
☒ 2. Calculated sample concentration of 3 ng/mL or greater for THC and THC-OH, a calculated sample concentration of 10 ng/mL or greater for Carboxy-THC.
☒ 3. Retention time within +/- 2% or +/-0.100 min whichever is greater of the average retention time of the calibrators.
☒ 4. Did all QCs pass for each analyte? Yes
☒ 5. Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS: *Urine samples only*

Curve range THC-OH 1-50

	1	2	3	4	5	6
a	cal 1	Internal control (urine)		467-1		
b	cal 2	negative blood		487-1		
c	cal 3			492-1		
d	cal 4		283-1	negative urine		
e	Cal 5		321-1			
f	cal 6		361-2			
g	cal 7		374-1			
h	Internal control (blood)		458-1			

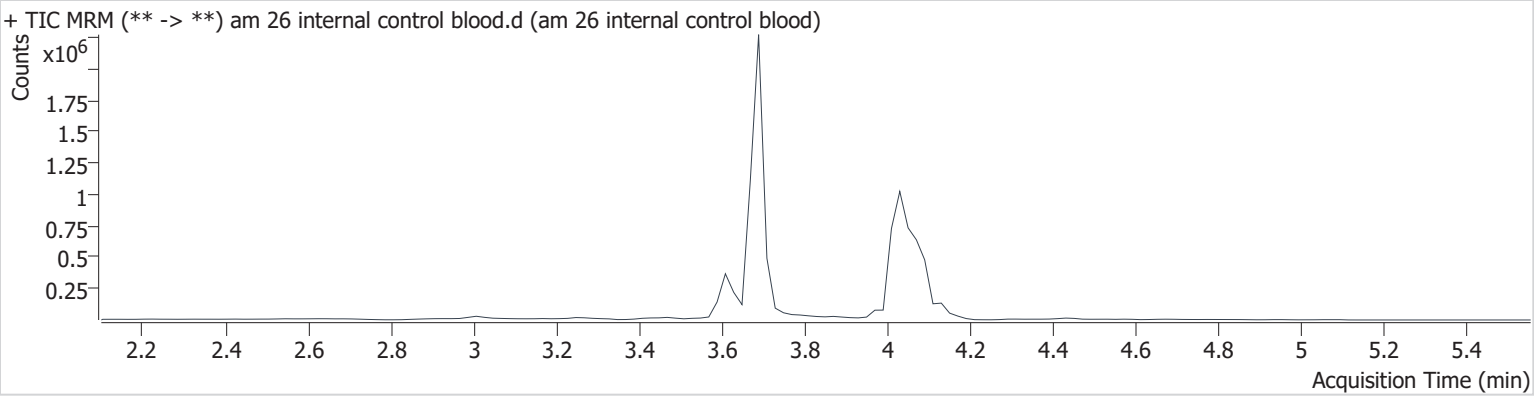
c2022-0____-_

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 27-28\031622\QuantResults\cann screen.batch.bin
Calibration Last Update 3/16/2022 1:54:52 PM

Instrument	69679	**Data File**	am 26 internal control blood.d
Type	QC	**Sample**	am 26 internal control blood
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-H1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/16/2022 11:54:48 AM		
Sample Info.			

Sample Chromatogram



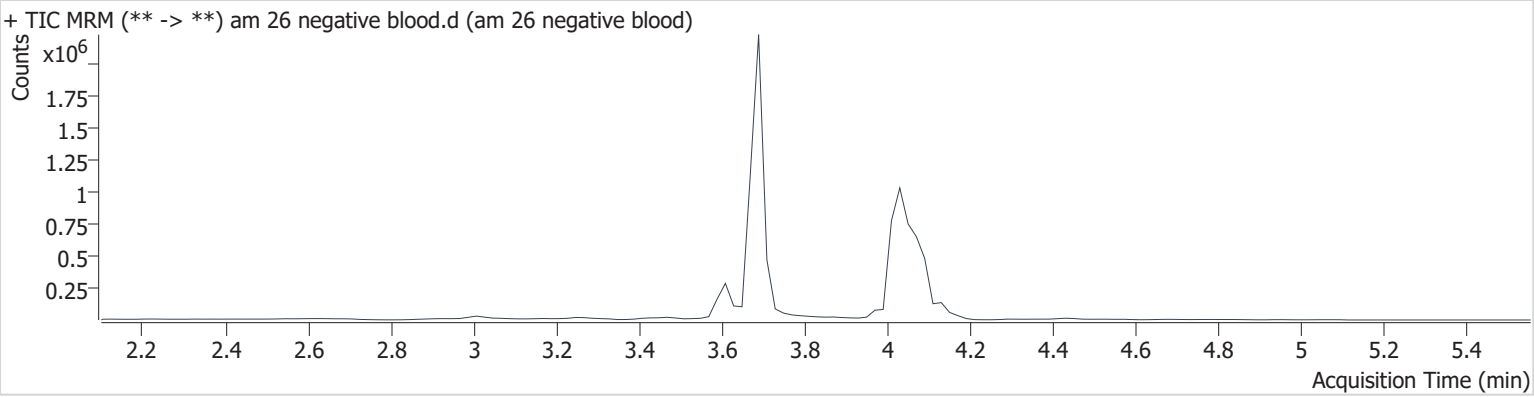
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	38502	993711	4.783 ng/ml
THC-COOH	3.629	190159	608168	13.864 ng/ml
THC-OH	3.696	348939	4528965	4.774 ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 27-28\031622\QuantResults\cann screen.batch.bin
Calibration Last Update 3/16/2022 1:54:52 PM

Instrument	69679	**Data File**	am 26 negative blood.d
Type	Sample	**Sample**	am 26 negative blood
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-B2	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/16/2022 12:01:26 PM		
Sample Info.			

Sample Chromatogram

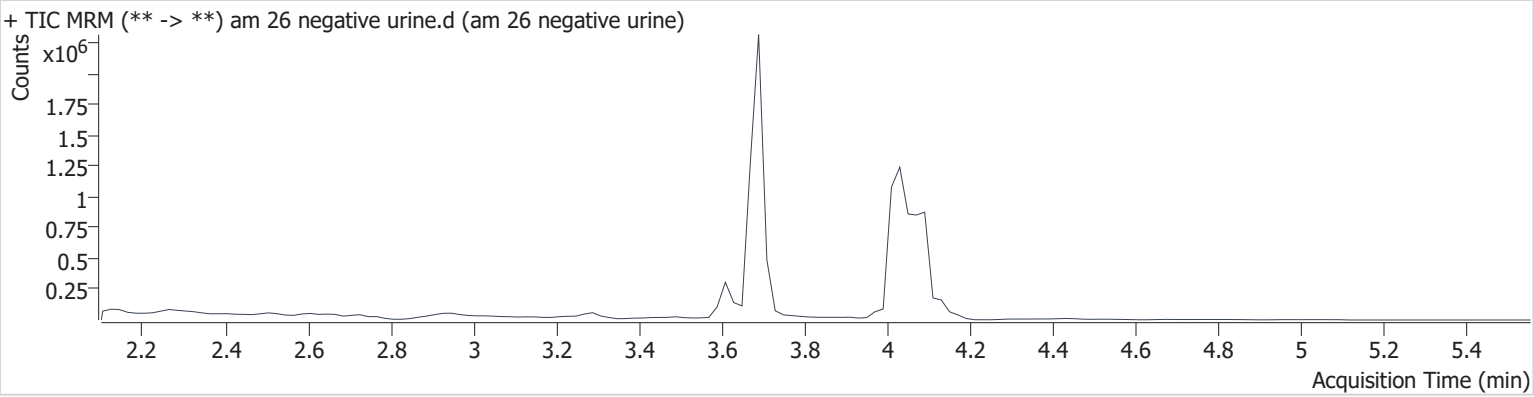


AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 27-28\031622\QuantResults\cann screen.batch.bin
Calibration Last Update 3/16/2022 1:54:52 PM

Instrument	69679	**Data File**	am 26 negative urine.d
Type	Sample	**Sample**	am 26 negative urine
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-D4	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/16/2022 12:08:05 PM		
Sample Info.			

Sample Chromatogram

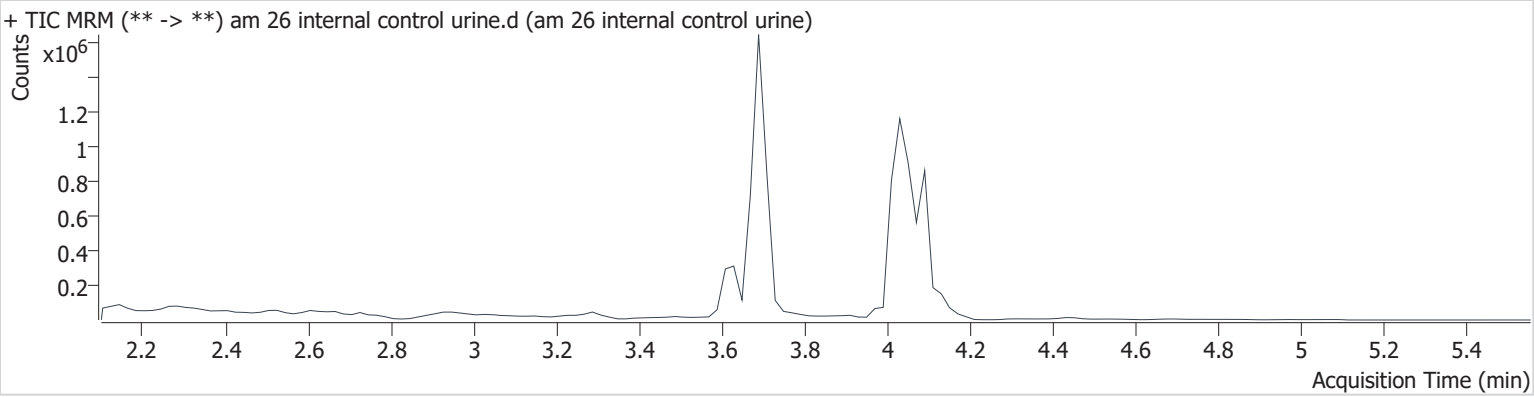


AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 27-28\031622\QuantResults\cann screen.batch.bin
Calibration Last Update 3/16/2022 1:54:52 PM

Instrument	69679	**Data File**	am 26 internal control urine.d
Type	Sample	**Sample**	am 26 internal control urine
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-A2	**Comment**	5ng/15ng
Injection Volume	5		
Acq. Date-Time	3/16/2022 1:27:10 PM		
Sample Info.			

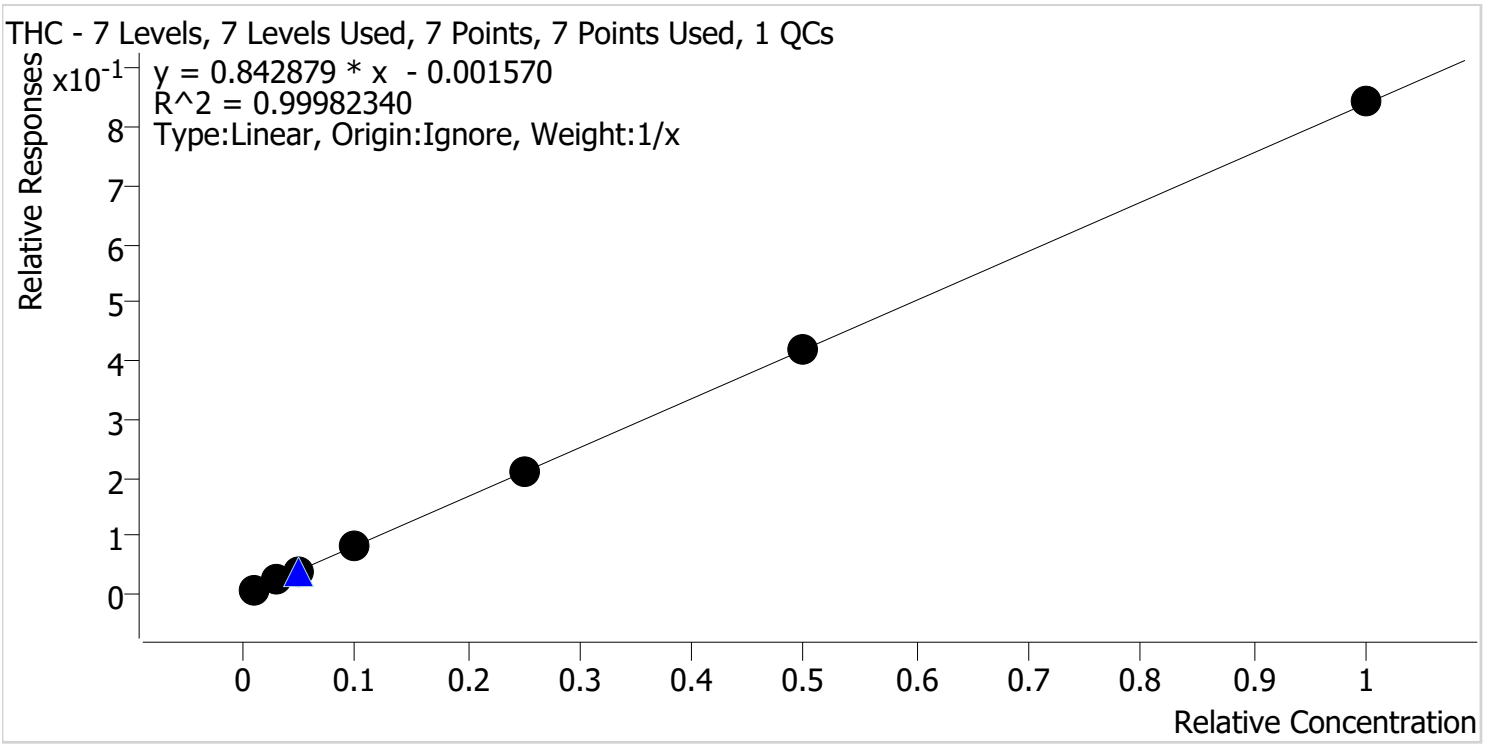
Sample Chromatogram



Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	39081	1344574	3.635 ng/ml
THC-COOH	3.629	180321	543771	14.780 ng/ml
THC-OH	3.696	349577	3602674	6.077 ng/ml

Compound Calibration Report

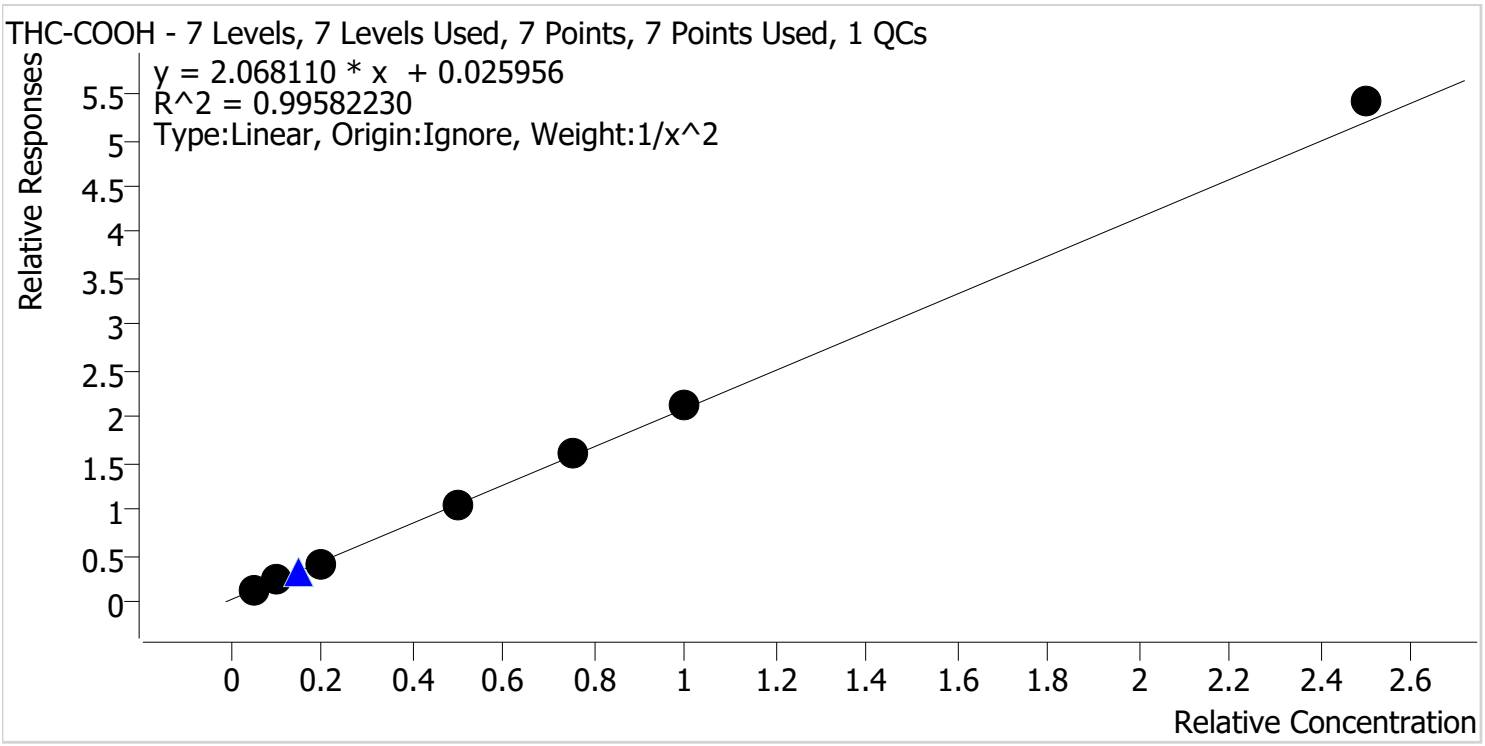
Batch results	D:\MassHunter\Data\2022\am 27-28\031622\QuantResults\cann screen.batch.bin
Last Cal. Update	3/16/2022 1:54 PM
Analyst Name	ISP\datastor
Analyte	THC
Internal Standard	THC-d3



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
am 26 cal 1	1	✔	1.0	1.1	109.0
am 26 cal2	2	✔	3.0	2.9	96.1
am 26 cal 3	3	✔	5.0	4.9	97.5
am 26 cal 4	4	✔	10.0	9.7	96.6
am 26 cal 5	5	✔	25.0	25.1	100.4
am 26 cal 6	6	✔	50.0	50.0	99.9
am 26 cal 7	7	✔	100.0	100.4	100.4

Compound Calibration Report

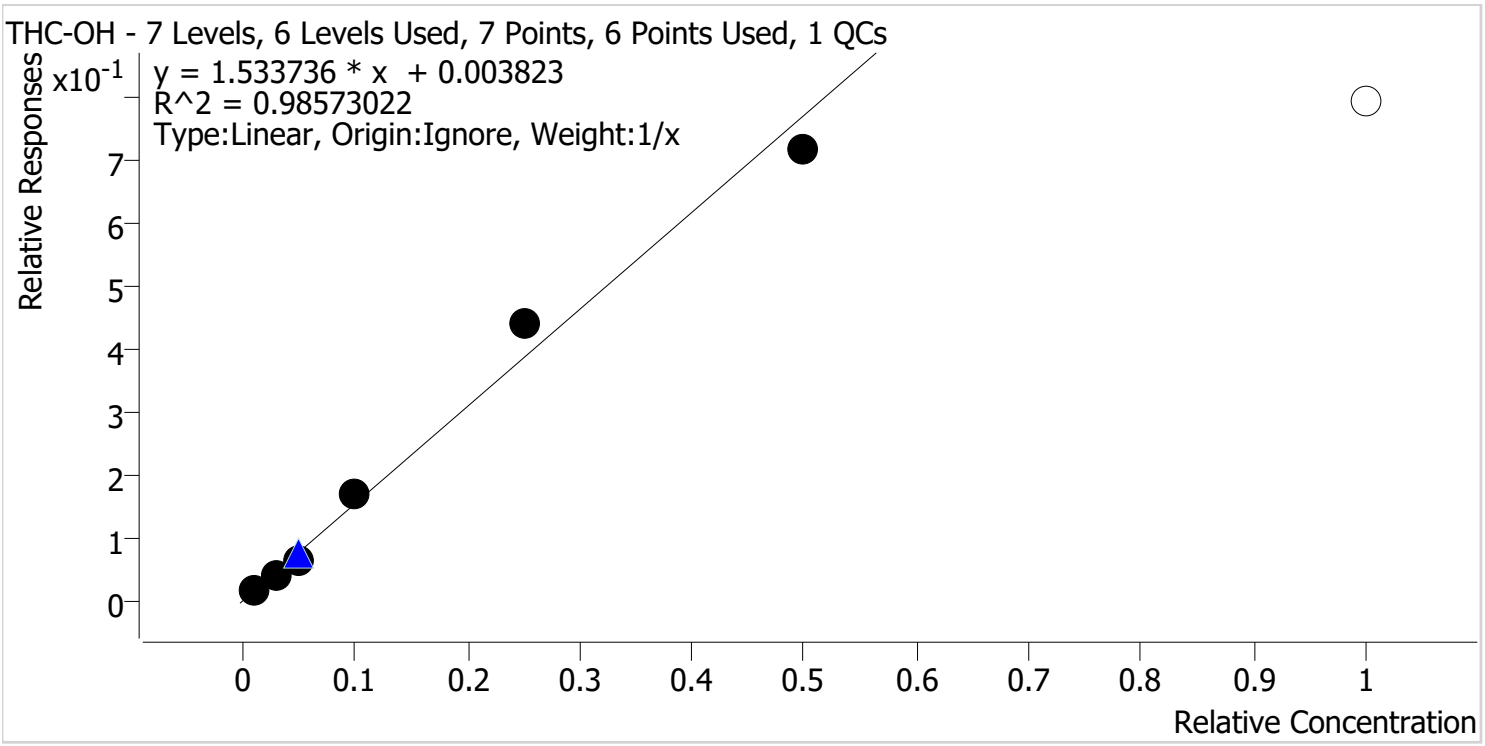
Batch results	D:\MassHunter\Data\2022\am 27-28\031622\QuantResults\cann screen.batch.bin
Last Cal. Update	3/16/2022 1:54 PM
Analyst Name	ISP\datastor
Analyte	THC-COOH
Internal Standard	THC-COOH-d9



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
am 26 cal 1	1	✔	5.0	5.1	102.3
am 26 cal2	2	✔	10.0	10.0	100.4
am 26 cal 3	3	✔	20.0	17.7	88.7
am 26 cal 4	4	✔	50.0	49.4	98.8
am 26 cal 5	5	✔	75.0	77.2	102.9
am 26 cal 6	6	✔	100.0	102.6	102.6
am 26 cal 7	7	✔	250.0	260.7	104.3

Compound Calibration Report

Batch results	D:\MassHunter\Data\2022\am 27-28\031622\QuantResults\cann screen.batch.bin
Last Cal. Update	3/16/2022 1:54 PM
Analyst Name	ISP\datastor
Analyte	THC-OH
Internal Standard	THC-OH-d3



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
am 26 cal 1	1	✔	1.0	1.1	114.3
am 26 cal2	2	✔	3.0	2.5	83.5
am 26 cal 3	3	✔	5.0	4.3	85.4
am 26 cal 4	4	✔	10.0	10.9	109.3
am 26 cal 5	5	✔	25.0	28.6	114.4
am 26 cal 6	6	✔	50.0	46.5	93.1
am 26 cal 7	7	✗	100.0	51.4	51.4

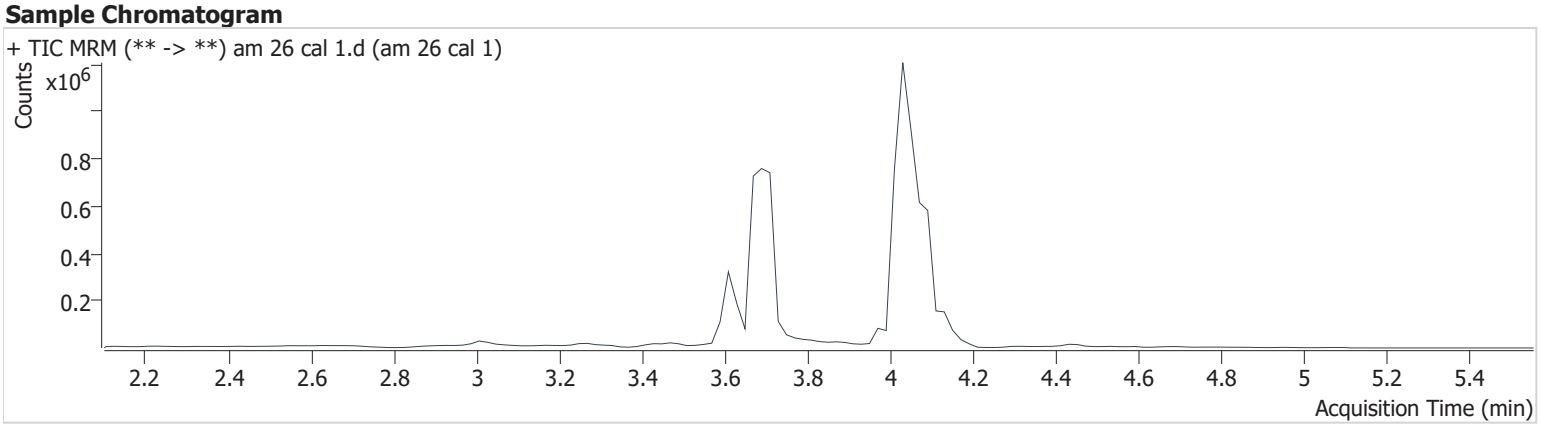
Dropped Cal 7 due to accuracy

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 27-28\031622\QuantResults\cann screen.batch.bin
Calibration Last Update 3/16/2022 1:54:52 PM

Instrument	69679	**Data File**	am 26 cal 1.d
Type	Cal	**Sample**	am 26 cal 1
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-A1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/16/2022 11:01:54 AM		
Sample Info.			

Sample Chromatogram



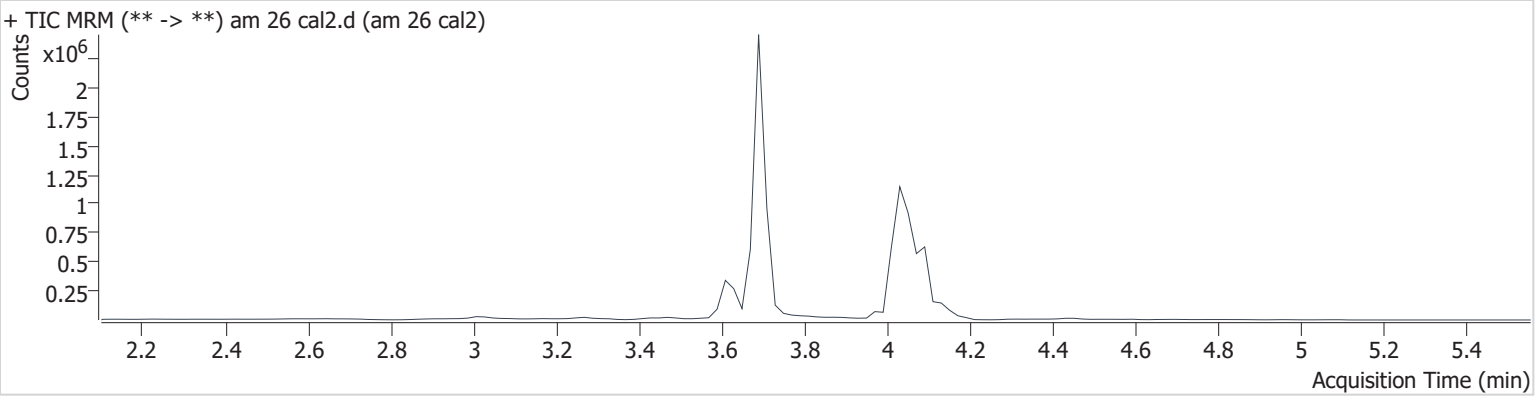
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	7722	1013762	1.090 ng/ml **Low**
THC-COOH	3.629	91736	696081	5.117 ng/ml **Low**
THC-OH	3.696	60415	2828804	1.143 ng/ml **Low**

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 27-28\031622\QuantResults\cann screen.batch.bin
Calibration Last Update 3/16/2022 1:54:52 PM

Instrument	69679	**Data File**	am 26 cal2.d
Type	Cal	**Sample**	am 26 cal2
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-B1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/16/2022 11:08:36 AM		
Sample Info.			

Sample Chromatogram



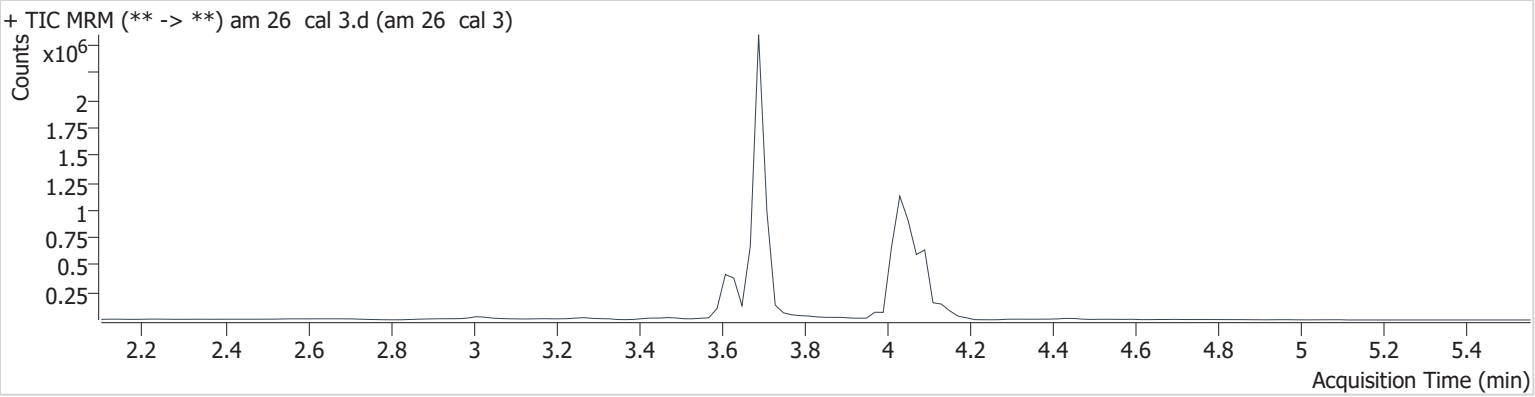
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	22694	998232	2.883 ng/ml **Low**
THC-COOH	3.629	167932	718958	10.039 ng/ml
THC-OH	3.696	204736	4849010	2.504 ng/ml **Low**

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 27-28\031622\QuantResults\cann screen.batch.bin
Calibration Last Update 3/16/2022 1:54:52 PM

Instrument	69679	**Data File**	am 26 cal 3.d
Type	Cal	**Sample**	am 26 cal 3
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-C1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/16/2022 11:15:15 AM		
Sample Info.			

Sample Chromatogram



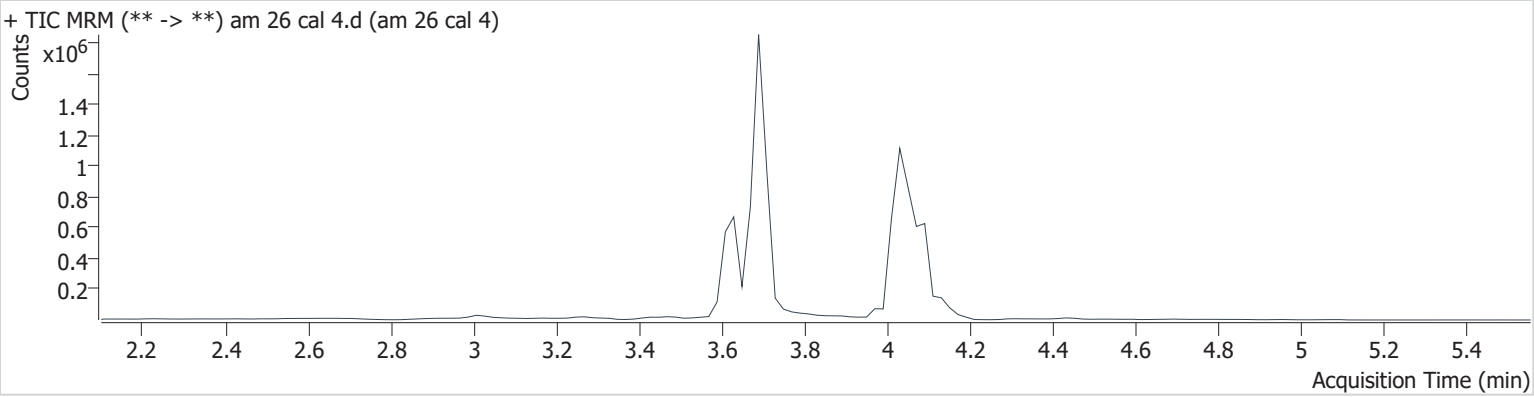
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	39698	1004727	4.874 ng/ml
THC-COOH	3.629	291332	741957	17.731 ng/ml
THC-OH	3.696	347138	5008629	4.270 ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 27-28\031622\QuantResults\cann screen.batch.bin
Calibration Last Update 3/16/2022 1:54:52 PM

Instrument	69679	**Data File**	am 26 cal 4.d
Type	Cal	**Sample**	am 26 cal 4
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-D1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/16/2022 11:21:51 AM		
Sample Info.			

Sample Chromatogram



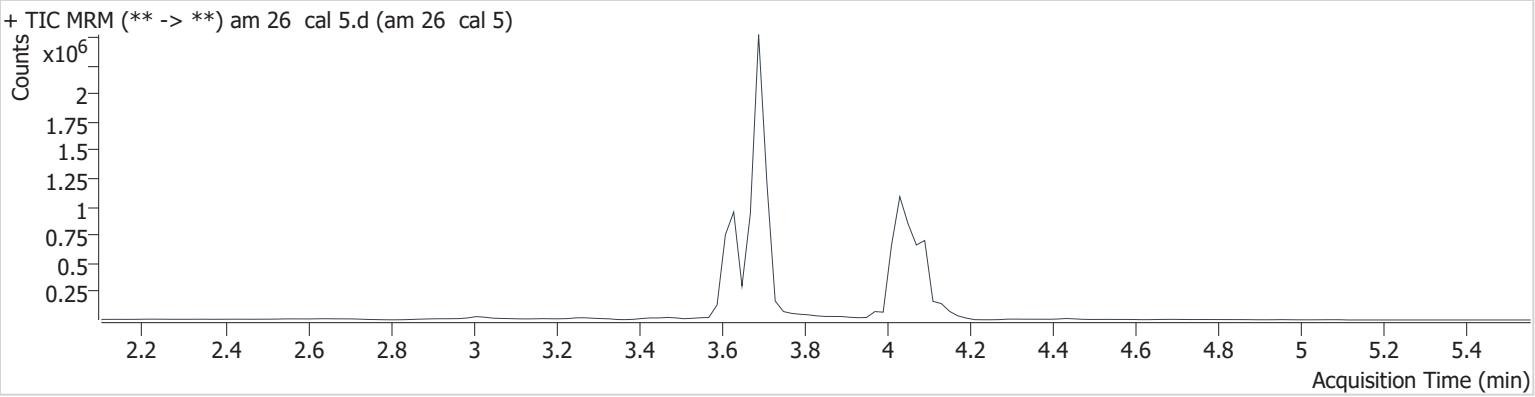
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	78593	983764	9.664 ng/ml
THC-COOH	3.629	720099	687128	49.419 ng/ml
THC-OH	3.696	651716	3800122	10.933 ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 27-28\031622\QuantResults\cann screen.batch.bin
Calibration Last Update 3/16/2022 1:54:52 PM

Instrument	69679	**Data File**	am 26 cal 5.d
Type	Cal	**Sample**	am 26 cal 5
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-E1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/16/2022 11:28:27 AM		
Sample Info.			

Sample Chromatogram



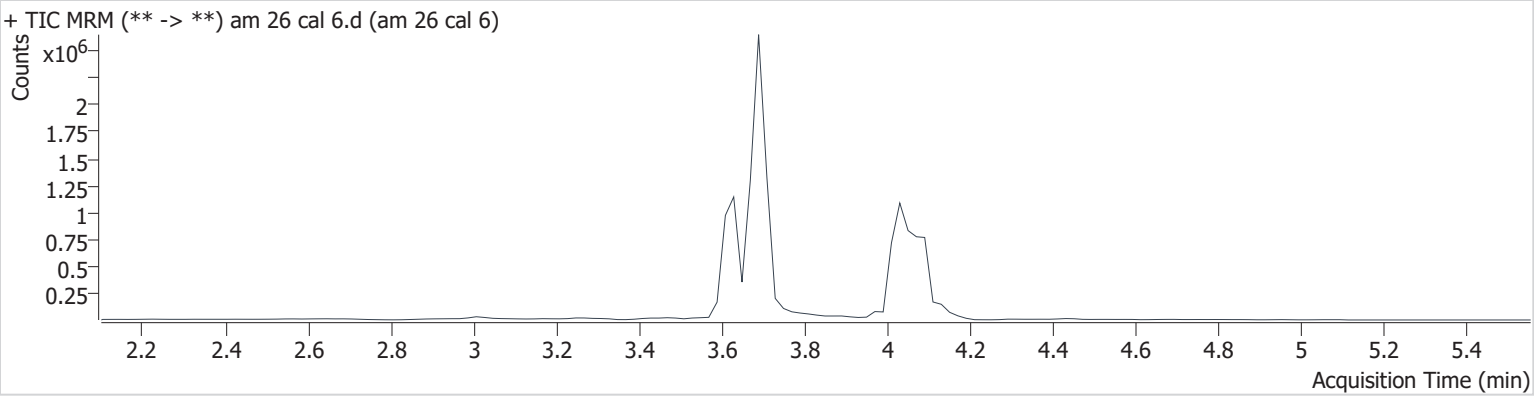
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	216420	1030573	25.101 ng/ml
THC-COOH	3.629	1124876	693485	77.177 ng/ml
THC-OH	3.696	1761366	3980609	28.601 ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 27-28\031622\QuantResults\cann screen.batch.bin
Calibration Last Update 3/16/2022 1:54:52 PM

Instrument	69679	**Data File**	am 26 cal 6.d
Type	Cal	**Sample**	am 26 cal 6
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-F1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/16/2022 11:35:03 AM		
Sample Info.			

Sample Chromatogram



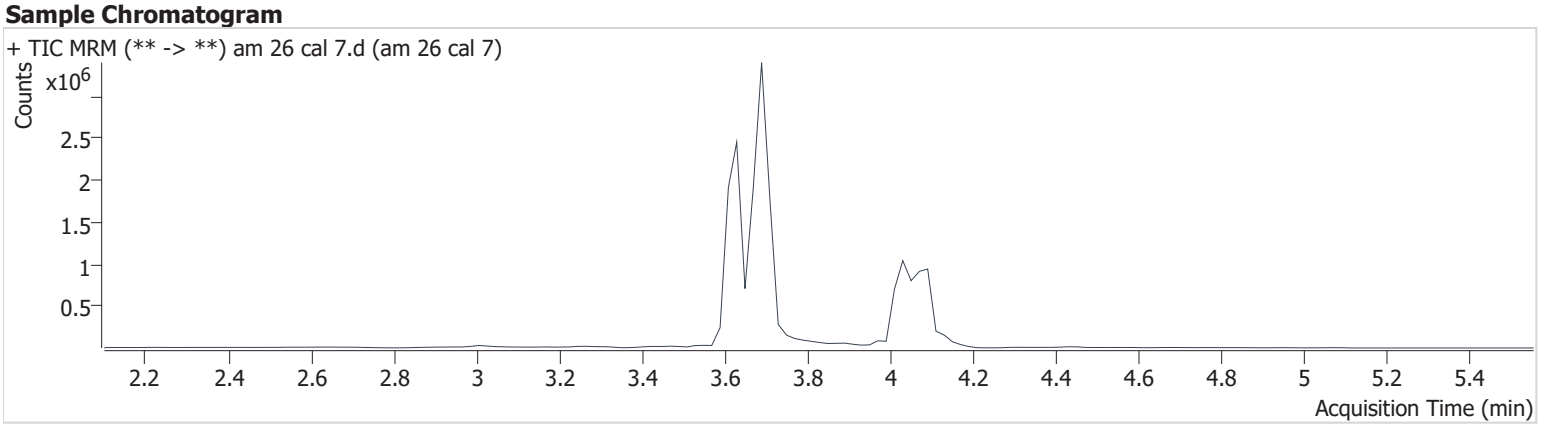
Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	423069	1008166	49.973 ng/ml
THC-COOH	3.629	1472319	685612	102.581 ng/ml
THC-OH	3.696	2702678	3765347	46.550 ng/ml

AM #26 Cannabinoids Screen Results

Batch results D:\MassHunter\Data\2022\am 27-28\031622\QuantResults\cann screen.batch.bin
Calibration Last Update 3/16/2022 1:54:52 PM

Instrument	69679	**Data File**	am 26 cal 7.d
Type	Cal	**Sample**	am 26 cal 7
Acq. Method	am 26 cann scr 5-5-20.m	**Operator**	Anne Nord
Sample Position	P3-G1	**Comment**	
Injection Volume	5		
Acq. Date-Time	3/16/2022 11:41:40 AM		
Sample Info.			

Sample Chromatogram



Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	4.104	815510	965330	100.414 ng/ml
THC-COOH	3.629	3468947	640301	260.708 ng/ml
THC-OH	3.716	3580746	4522580	51.373 ng/ml

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