





**Worklist: 5457**

<u>LAB_CASE</u>	<u>ITEM</u>	<u>ITEM_TYPE</u>	<u>DESCRIPTION</u>	
M2021-5020	2	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
M2021-5026	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
M2021-5029	4	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ	
M2021-5142	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
M2021-5143	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
M2021-5168	2	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
M2021-5169	3	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ	
M2021-5189	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
M2021-5195	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
M2021-5277	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
M2021-5291	6	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
P2021-3580	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
P2021-3838	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ	
P2021-3868	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
P2021-3964	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ	
P2021-3965	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ	
P2021-3966	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ	
P2021-4010	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
P2021-4016	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
P2021-4020	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
P2021-4024	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	

**Worklist: 5457**

SC

<u>LAB CASE</u>	<u>ITEM</u>	<u>ITEM TYPE</u>	<u>DESCRIPTION</u>	
P2021-4025	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
P2021-4027	1	BCK	AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ	
P2021-4052	1	UCK	AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ	
P2021-4060	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: 12/15/21  
Plate lot#: IDP-120-211015

Analyst: Sarah Collins  
Retest Date: 04/15/22

**Mobile phase A:** 10mM Amm Form  
Instant Buffer I

**Mobile phase B:** 0.1% Formic Acid in MeOH  
Ethyl Acetate LC Methanol

**Blank Blood Lot:** Lampire 20L20725

**Blank Urine Lot:** POC031319

**Column:** Phenomenex Phenyl Hexyl (4.6x50mm, 2.6um)

**LCMS-QQ 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: #16**
- 4. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
- 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

### MEMORANDUM

DATE: 3/3/2022

TO: Toxicology Discipline/ Jason Crowe

FROM: Celena Shrum- Toxicology Discipline lead

SUBJECT: Use of internal control in lieu of external control

Toxicology Analytical Methods #25, 26, and 27 specify that if a run contains urine samples, a negative control and **external** urine control must also be included in the run. The purpose of this control is to demonstrate that the extraction worked as intended and to ensure that the results and concentrations obtained are accurate. It was decided in October 2021 that extra QC's would be included on the analytical plates so that they could be used as an internal control for runs with urine cases instead of continuing with including an external control. An internal control serves the same purpose as an external control but is prepared and placed on the analytical plate rather than being prepared in-house and placed on the plate at the time of testing. Utilizing internal controls versus external increases the efficacy of the controls used by ensuring consistent spiking and preparation, eliminating evaporation of compounds, etc. There is no quality issue with any of the cases, since an additional urine control was used that served the same purpose as the external control, but it was a violation of the wording specified in the method.





SLE Plate Well Positions

	1	2	3	4	5	6	7	8	9	10	11	12
A	IS + Cal. 1	m2021-5189-1	p2021-4020-1								urine QC	p2021-4052-1
B		m2021-5195-1	p2021-4024-1								negative urine	
C	negative blood	m2021-5277-1	p2021-4025-1								m2021-5029-4	
D	m2021-5020-2	m2021-5291-6	p2021-4027-1								m2021-5169-3	
E	m2021-5026-1	p2021-3580-1	p2021-4060-1								p2021-3838-1	
F	m2021-5142-1	p2021-3868-1									p2021-3964-1	
G	m2021-5143-1	p2021-4010-1									p2021-3965-1	
H	m2021-5168-2	p2021-4016-1									p2021-3966-1	

SC

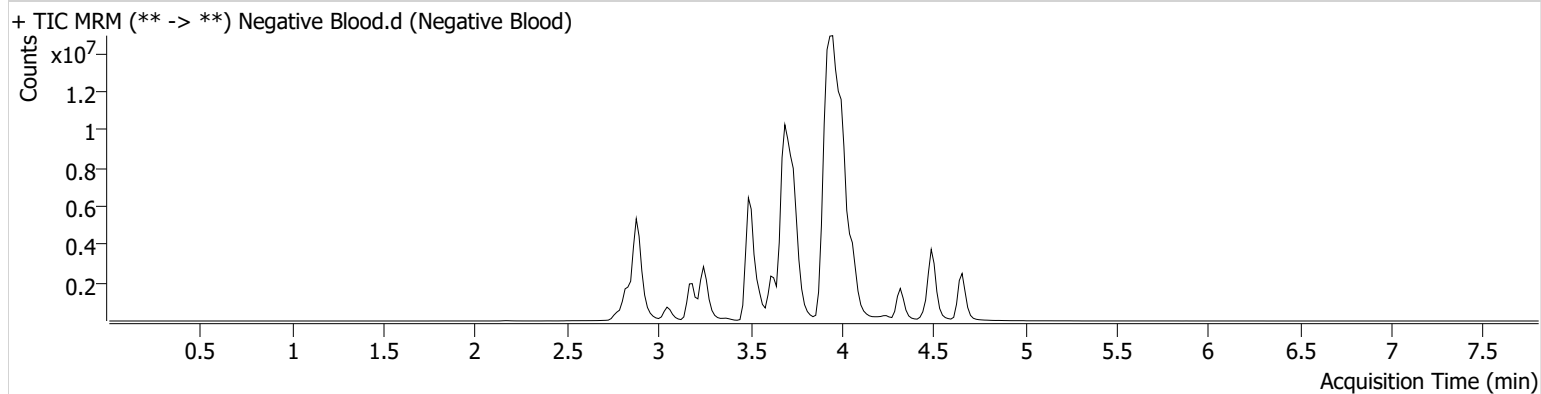


# AM #25 Multi-Drug Screen Results

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 25.batch.bin  
**Calibration Last Update** 12/16/2021 11:48:33 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	Negative Blood.d
<b>Type</b>	Sample	<b>Sample</b>	Negative Blood
<b>Acq. Method</b>	AM 25 MDS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P6-C1	<b>Comment</b>	
<b>Injection Volume</b>	5		
<b>Acq. Date-Time</b>	12/15/2021 8:52:02 PM		
<b>Sample Info.</b>			

## Sample Chromatogram



SC

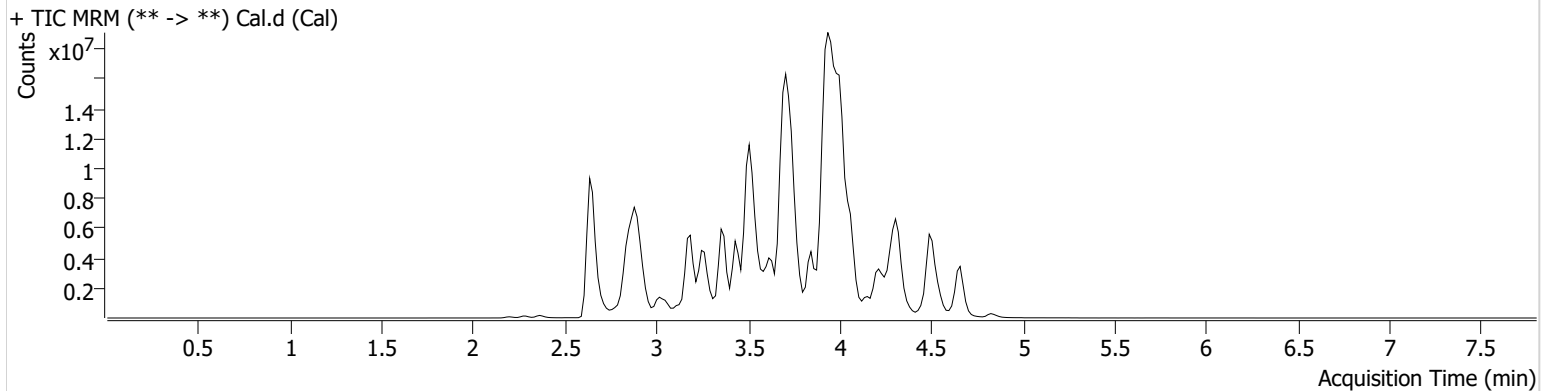
# AM #25 Multi-Drug Screen Results



**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 25.batch.bin  
**Calibration Last Update** 12/16/2021 11:48:33 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	Cal.d
<b>Type</b>	Cal	<b>Sample</b>	Cal
<b>Acq. Method</b>	AM 25 MDS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P6-A1	<b>Comment</b>	
<b>Injection Volume</b>	5		
<b>Acq. Date-Time</b>	12/15/2021 8:43:28 PM		
<b>Sample Info.</b>			

## Sample Chromatogram



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
6-MAM	2.816	11318	10231.94	5097.50	395417	10.0000
7-aminoclonazepam	3.556	628387	959334.81	259269.32	2643574	10.0000
7-aminoflunitrazepam	3.771	1403265	733.39	713.54	2643574	10.0000
Acetyl Fentanyl	3.691	224575	150912.16	338.72	8820844	10.0000
Acetyl Norfentanyl	2.841	111651	571.49	395.68	8820844	10.0000
a-hydroxyalprazolam	4.521	48347	47.46	36.92	2643574	10.0000
alpha-hydroxymidazolam	4.473	273957	129.26	139.65	2643574	10.0000
Alpha-PHP	3.714	2216789	26589.67	20365.53	8820844	10.0000
alpha-PVP	3.439	3677393	1017.22	901.48	1191616	10.0000
Alprazolam	4.631	990010	103.08	475.27	7275645	10.0000
Amitriptyline	4.328	1296586	352.43	1209.33	4400274	10.0000
Amphetamine	2.814	320093	516.07	408.42	1191616	10.0000
Benzoylcegonine	3.387	149408	178.60	13857.75	251795	10.0000
Brompheniramine	3.937	75415	43571.89	352852.50	38981972	10.0000
Buprenorphine	3.978	221669	12614.33	22855.81	773868	10.0000
Bupropion	3.637	1840628	1279.17	453984.03	6689837	10.0000
Carbamazepine	4.239	2223968	∞	803.17	13666	10.0000
Carisoprodol	4.222	51791	27930.97	18.63	234336	10.0000
Chlordiazepoxide	4.556	289804	374.93	255724.57	7275645	10.0000
Chlorpheniramine	3.849	6220377	1687148.21	5967.64	38981972	10.0000
Citalopram	3.983	1259544	1094.29	286733.55	38981972	10.0000
Clomipramine	4.507	1841623	5281.77	5797.65	38981972	10.0000
Clonazepam	4.446	18225	10364.37	2846.00	7275645	10.0000
Clonazolam	4.380	578459	329265.65	87585.29	7275645	10.0000
Cocaethylene	3.707	4036880	484317.31	667964.56	21102175	10.0000
Cocaine	3.493	3411102	3211.36	748.56	21102175	10.0000
Codeine	2.699	80427	37975.71	36472.52	3316753	10.0000
Cyclobenzaprine	4.251	1948683	1767912.26	329.40	4400274	10.0000
Desipramine	4.283	2272334	1063.28	1630.77	4400274	10.0000
Dextromethorphan	3.988	1463130	481.55	135668.22	8093399	10.0000
Dextrorphan	3.312	1032865	773463.39	315.61	8093399	10.0000
Diazepam	4.834	448418	572.29	664.35	7275645	10.0000
Dihydrocodeine	2.682	327729	561.09	769.67	3316753	10.0000
Diphenhydramine	3.943	6528432	5407388.41	3332.24	38981972	10.0000

Cal

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# AM #25 Multi-Drug Screen Results



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Doxepin	4.048	1510079	1868.11	901.40	14839257	10.0000
Doxylamine	3.527	8181829	4127008.65	665.18	8093399	10.0000
EDDP	4.018	1117938	346.28	304.92	3168536	10.0000
Estazolam	4.541	2179080	1181.45	351.41	7275645	10.0000
Etizolam	4.642	241304	1166.60	276333.83	7275645	10.0000
Fentanyl	3.905	185730	643.97	121497.12	18492817	10.0000
Flualprazolam	4.490	309551	454.52	320681.28	7275645	10.0000
Flunitrazepam	4.554	84477	43731.86	7712.63	7275645	10.0000
Fluoxetine	4.247	644176	581975.08	23369.29	1335750	10.0000
Flurazepam	4.026	2164620	1930.94	1418701.76	7275645	10.0000
Hydrocodone	2.897	528722	2979.53	241.31	3316753	10.0000
Hydromorphone	2.366	284486	10854.15	146715.45	46995	10.0000
Imipramine	4.280	4608863	1659.44	990.38	4400274	10.0000
Ketamine	3.268	2081303	46898.47	283.76	6041076	10.0000
Lamotrigine	3.421	119285	1865.79	42698.71	38981972	10.0000
Levamisole	2.857	2746552	62037.56	3254.86	21102175	10.0000
Levetiracetam	2.644	141449	51362.89	422.04	38981972	10.0000
Lorazepam	4.429	69483	38580.58	50.42	7275645	10.0000
Maprotiline	4.328	765485	116.86	723.49	4400274	10.0000
MDA	2.934	178202	152.87	7.47	14334282	10.0000
MDEA	3.178	2447553	1385.35	297.69	14334282	10.0000
MDMA	3.025	2504139	413036.64	2104.60	14334282	10.0000
Meperidine	3.513	1610122	1038.51	1052235.41	8093399	10.0000
Meprobamate	3.670	12792	16.07	4457.35	234336	10.0000
Methadone	4.309	5078839	1384.86	2059.99	3168536	10.0000
Methamphetamine	2.920	3305125	490.44	351.17	14334282	10.0000
Methocarbamol	3.576	10442	2085.29	82.97	3168536	10.0000
Methylphenidate	3.438	8315835	2148.80	2701.95	2235882	10.0000
Metoprolol	3.373	212158	820.12	80117.72	8093399	10.0000
Midazolam	4.321	221919	2567.83	187.51	7275645	10.0000
Mirtazapine	3.588	1928377	5092.49	1803.67	8093399	10.0000
Mitragynine	4.056	388219	237211.43	855.32	8093399	10.0000
Morphine	2.201	62033	368.38	299.22	46995	10.0000
Norbuprenorphine	3.748	7390	3468.53	2710.82	773868	10.0000
Nordiazepam	4.682	123657	84596.38	7159.56	7275645	10.0000
Norfentanyl	3.269	2041773	385.26	791.30	8820844	10.0000
Norhydrocodone	2.868	34374	111.09	63.78	46995	10.0000
Norketamine	3.238	148895	67992.29	367741.99	6041076	10.0000
Normeperidine	3.530	545536	513367.42	180.04	38981972	10.0000
Noroxycodone	2.835	240487	∞	3419.98	6041076	10.0000
Nortriptyline	4.330	526647	196021.02	494.48	4400274	10.0000
O-desmethyl-tramadol	2.854	5080653	789.87	182.13	38981972	10.0000
Olanzapine	3.124	2459108	20400.92	327901.93	13666	10.0000
Oxazepam	4.511	286399	226644.41	165.11	1297804	10.0000
Oxycodone	2.849	1469136	1172.45	415.37	6041076	10.0000
Oxymorphone	2.271	308568	2138.53	5121.13	46995	10.0000
Paroxetine	4.259	41567	74.66	51207.29	1335750	10.0000
Phenazepam	4.641	198409	565.63	3623.72	7275645	10.0000
Phencyclidine	3.853	4743656	457676.19	578.90	8093399	10.0000
Phentermine	3.073	178317	45.46	14.82	2235882	10.0000
Phenytoin	4.130	19003	36.15	6971.36	13666	10.0000
Promethazine	4.203	5868153	1157312.33	608.15	38981972	10.0000
Pseudoephedrine	2.645	27697165	4140.25	33842.60	14334282	10.0000
Quetiapine	4.149	1940524	2218.15	1290.30	33672601	10.0000
Sertraline	4.463	229975	996.91	65804.07	1335750	10.0000
Sufentanil	4.149	232889	37218.33	11387.80	8820844	10.0000
Tapentadol	3.377	2866105	2613.43	919.62	6041076	10.0000
Temazepam	4.664	1315602	1308.64	1359.39	7275645	10.0000
Tramadol	3.358	7455601	1742.36	497.37	38981972	10.0000
Trazodone	3.981	3732412	10455.98	2354.07	14839257	10.0000

Cal

SC

# AM #25 Multi-Drug Screen Results



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Venlafaxine	3.725	4821411	4065.57	1356.86	1335750	10.0000
Zaleplon	4.356	49170	31382.82	24303.69	33672601	10.0000
Zolpidem	3.708	5785937	3000833.64	817986.03	33672601	10.0000
Zopiclone	3.642	95231	50944.41	32037.08	425252	10.0000

SC

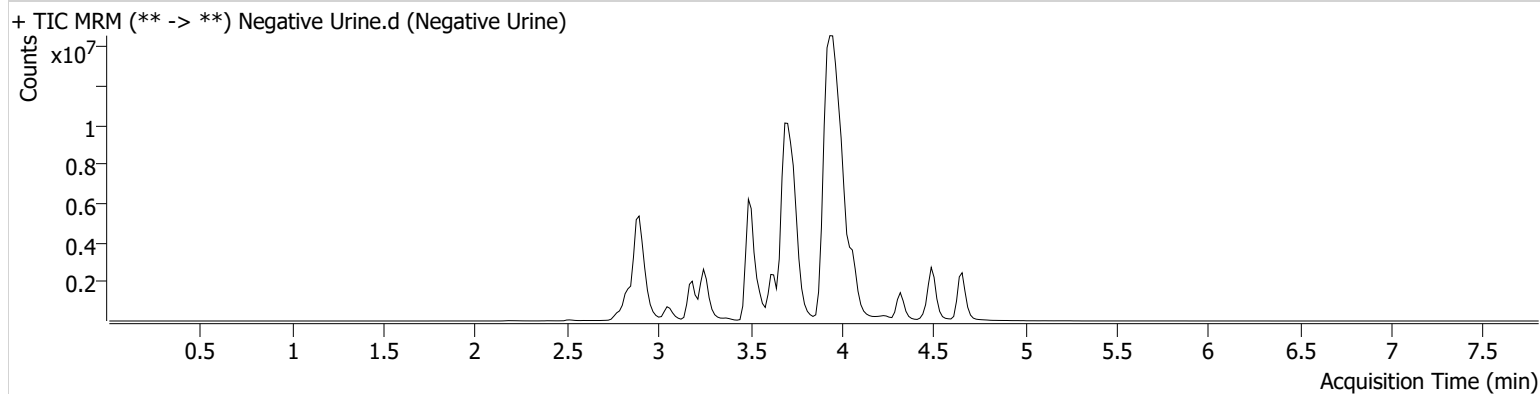
# AM #25 Multi-Drug Screen Results



**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 25.batch.bin  
**Calibration Last Update** 12/16/2021 11:48:33 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	Negative Urine.d
<b>Type</b>	Sample	<b>Sample</b>	Negative Urine
<b>Acq. Method</b>	AM 25 MDS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P6-B11	<b>Comment</b>	
<b>Injection Volume</b>	5		
<b>Acq. Date-Time</b>	12/15/2021 11:31:40 PM		
<b>Sample Info.</b>			

## Sample Chromatogram



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Methamphetamine	2.920	2495868	540.97	390.34	14246740	7.5979 <32

SC

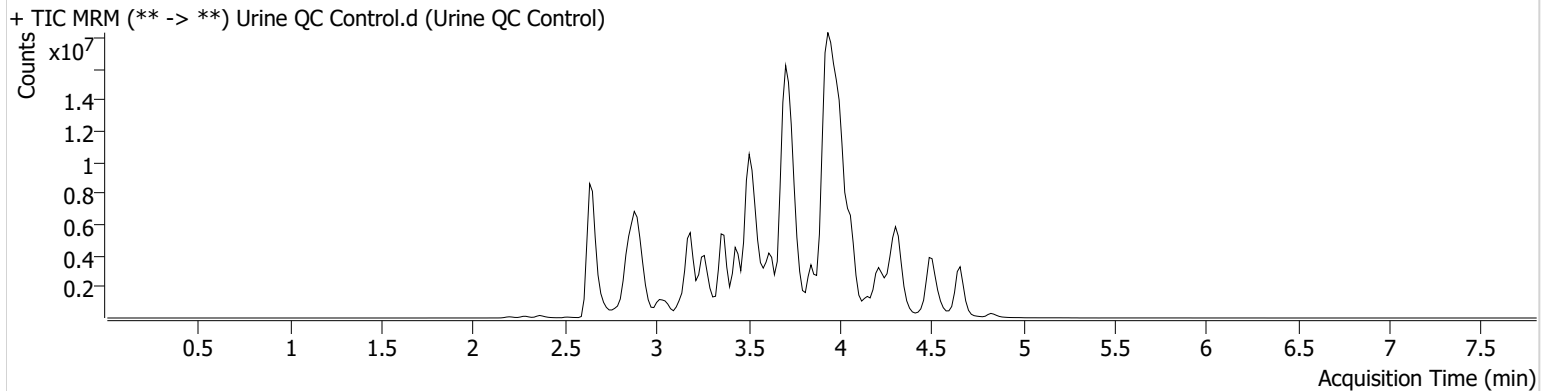
# AM #25 Multi-Drug Screen Results



**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 25.batch.bin  
**Calibration Last Update** 12/16/2021 11:48:33 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	Urine QC Control.d
<b>Type</b>	Sample	<b>Sample</b>	Urine QC Control
<b>Acq. Method</b>	AM 25 MDS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P6-A11	<b>Comment</b>	
<b>Injection Volume</b>	5		
<b>Acq. Date-Time</b>	12/15/2021 11:40:04 PM		
<b>Sample Info.</b>			

## Sample Chromatogram



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
6-MAM	2.816	11929	3811.40	4644.17	348771	11.9497
7-aminoclonazepam	3.556	619812	526147.24	305.03	2846600	9.1600
7-aminoflunitrazepam	3.786	1413985	662.03	112.72	2846600	9.3577
Acetyl Fentanyl	3.691	214736	15360.45	99628.80	8029759	10.5039
Acetyl Norfentanyl	2.841	110197	445.51	113.40	8029759	10.8421
a-hydroxyalprazolam	4.505	37090	7.35	25.02	2846600	7.1244
alpha-hydroxymidazolam	4.489	213465	92.95	36.78	2846600	7.2362
Alpha-PHP	3.714	2030197	22146.90	5495.27	8029759	10.0605
alpha-PVP	3.439	3494841	983.73	451.54	1096280	10.3300
Alprazolam	4.631	863145	84.33	611.40	7123821	8.9044
Amitriptyline	4.328	1129690	294.71	748.80	3752095	10.2180
Amphetamine	2.829	281711	968.20	499.82	1096280	9.5663
Benzoyllecgonine	3.387	143811	104311.29	70.94	264116	9.1764
Brompheniramine	3.937	69308	472.08	43451.00	38916109	9.2058
Buprenorphine	3.978	179486	73291.69	1235.26	647017	9.6845
Bupropion	3.637	1805481	6489.12	687.46	6857385	9.5694
Carbamazepine	4.239	2220867	802.29	189.62	14124	9.6624
Carisoprodol	4.222	50767	14691.77	19.64	256394	8.9589
Chlordiazepoxide	4.571	196320	256.87	378.43	7123821	6.9186
Chlorpheniramine	3.849	5930568	2209.22	45.55	38916109	9.5502
Citalopram	3.983	1207887	723.32	463794.49	38916109	9.6061
Clomipramine	4.507	1432464	6058.77	1802.87	38916109	7.7914
Clonazepam	4.446	16183	8.15	10.59	7123821	9.0689
Clonazolam	4.380	305419	7743.00	44305.32	7123821	5.3924
Cocaethylene	3.707	3684736	4540.20	885040.32	19921730	9.6685
Cocaine	3.493	3125182	2003.45	730.66	19921730	9.7047
Codeine	2.714	79995	111.09	79007.41	2932670	11.2489
Cyclobenzaprine	4.251	1671169	1681.62	667.51	3752095	10.0574
Desipramine	4.283	1986704	1524.43	244.01	3752095	10.2534
Dextromethorphan	3.988	1443444	2216.81	1449.04	7976253	10.0103
Dextrorphan	3.312	1044197	4550.10	6575.91	7976253	10.2582
Diazepam	4.834	446436	973.52	751.97	7123821	10.1680
Dihydrocodeine	2.682	291280	599.58	298.87	2932670	10.0519
Diphenhydramine	3.943	6168067	4005776.89	1737.51	38916109	9.4640

Urine QC Control



SC

# AM #25 Multi-Drug Screen Results



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Doxepin	4.048	1383263	304.32	37.17	14520445	9.3613
Doxylamine	3.527	8473895	1179.59	369.13	7976253	10.5091
EDDP	4.018	822230	230.65	331.96	2365653	9.8511
Estazolam	4.541	1628384	473.59	334.79	7123821	7.6321
Etizolam	4.642	227523	119060.74	2561.01	7123821	9.6298
Fentanyl	3.920	183515	224.54	1059.74	17321722	10.5487
Flualprazolam	4.490	233516	108432.91	244.59	7123821	7.7045
Flunitrazepam	4.554	59496	80.02	4704.05	7123821	7.1929
Fluoxetine	4.247	652457	2305.83	10775.91	991572	13.6442
Flurazepam	4.026	2052587	1054.38	316.96	7123821	9.6845
Hydrocodone	2.897	470572	1844.56	1619.25	2932670	10.0658
Hydromorphone	2.366	258271	80630.17	8519.03	47709	8.9425
Imipramine	4.296	4005979	1016.71	555.57	3752095	10.1934
Ketamine	3.283	1906795	709.34	193.20	5118811	10.8122
Lamotrigine	3.421	114848	6409.20	240.56	38916109	9.6443
Levamisole	2.857	2606815	809.94	1167.63	19921730	10.0536
Levetiracetam	2.644	123507	37595.73	494.13	38916109	8.7464
Lorazepam	4.429	41581	17667.37	22.69	7123821	6.1119
Maprotiline	4.328	691685	156.14	615.03	3752095	10.5969
MDA	2.934	158298	22.41	19.41	13449376	9.4675
MDEA	3.178	2284597	1413.23	313.21	13449376	9.9484
MDMA	3.025	2121964	775.41	908.41	13449376	9.0314
Meperidine	3.513	1560290	1074.59	505.75	7976253	9.8328
Meprobamate	3.670	10869	10.95	2178.43	256394	7.7663
Methadone	4.309	4715828	4530.56	409.63	2365653	12.4366
Methamphetamine	2.935	3309672	397.98	1126.23	13449376	10.6726
Methocarbamol	3.576	10838	151.55	68.03	2365653	13.9028
Methylphenidate	3.438	7388257	1922.13	290.29	2044706	9.7153
Metoprolol	3.388	194597	114.51	124928.40	7976253	9.3070
Midazolam	4.336	156890	876.69	549.01	7123821	7.2204
Mirtazapine	3.604	1906504	1011.90	649968.20	7976253	10.0318
Mitragynine	4.056	366627	304402.22	429409.10	7976253	9.5825
Morphine	2.201	51295	6.44	598.93	47709	8.1451
Norbuprenorphine	3.748	5587	8495.44	416.45	647017	9.0429
Nordiazepam	4.682	113300	1099832.23	90.72	7123821	9.3576
Norfentanyl	3.269	1809111	437.26	637.21	8029759	9.7334
Norhydrocodone	2.868	27927	70.69	20.84	47709	8.0025
Norketamine	3.254	116980	60.05	18896.81	5118811	9.2721
Normeperidine	3.530	514790	∞	132.15	38916109	9.4524
Noroxycodone	2.835	186561	12.48	38.61	5118811	9.1554
Nortriptyline	4.330	533431	540.04	396.16	3752095	11.8786
O-desmethyl-tramadol	2.854	4822663	31248.79	232.80	38916109	9.5083
Olanzapine	3.139	3432701	1190.32	460.65	14124	13.5067
Oxazepam	4.511	207324	148.02	59.89	989606	9.4935
Oxycodone	2.849	1245045	590.71	11315.73	5118811	10.0016
Oxymorphone	2.286	262814	308.68	337.42	47709	8.3896
Paroxetine	4.259	47135	34.70	148.96	991572	15.2755
Phenazepam	4.641	200723	326.03	126498.00	7123821	10.3322
Phencyclidine	3.853	2756067	598.94	784.33	7976253	5.8953
Phentermine	3.088	158706	25.41	3.20	2044706	9.7324
Phenytoin	4.130	17948	5218.61	82.54	14124	9.1386
Promethazine	4.203	5690432	2897.24	570.36	38916109	9.7136
Pseudoephedrine	2.645	26433461	2483.20	955.14	13449376	10.1717
Quetiapine	4.149	1854792	3195.78	3620.82	33193479	9.6962
Sertraline	4.463	180375	458281.20	90297.56	991572	10.5657
Sufentanil	4.164	222791	95831.92	76487.28	8029759	10.5089
Tapentadol	3.377	2704870	4414.06	1314.09	5118811	11.1378
Temazepam	4.664	1220048	492.01	172.02	7123821	9.4713
Tramadol	3.358	6967168	1820.92	90.78	38916109	9.3607
Trazodone	3.981	3662437	3747.21	1631469.44	14520445	10.0280

Urine QC Control

SC

# AM #25 Multi-Drug Screen Results



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Venlafaxine	3.725	4611383	1902.97	457.47	991572	12.8842
Zaleplon	4.356	40718	36355.93	408.00	33193479	8.4005
Zolpidem	3.708	5388395	1688.01	690.41	33193479	9.4473
Zopiclone	3.642	30141	16210.29	5945.29	159400	8.4439

SC

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

Extraction Date: 12/15/21  
Plate lot#: IDP-108-3-211018

Analyst: Sarah Collins  
Retest Date: 04/18/2022

**Mobile phase A:** 0.1% Formic Acid in LCMS Water  
**Blank Blood Lot:** Lampire 20L20725  
**Column:** Phenomenex Phenyl Hexyl (4.6x50mm, 2.6um)  
**LCMS-QQ ID:** 069901

**Mobile phase B:** 0.1% Formic acid in Acetonitrile  
**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:** 3382167
- 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  $\geq 0.98$  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:

SC

	1	2	3	4	5	6
A	IS + Cal. 1	IS + QC_1 urine	m2021-5195-1	p2021-4024-1	p2021-3964-1	
B	IS + Cal. 2	negative blood	m2021-5277-1	p2021-4025-1	p2021-3965-1	
C	IS + Cal. 3	m2021-5020-2	m2021-5291-6*	p2021-4027-1*	p2021-3966-1	
D	IS + Cal. 4	m2021-5026-1	p2021-3580-1	p2021-4060-1	p2021-4052-1	
E	IS + Cal. 5	m2021-5142-1	p2021-3868-1	negative urine	m2021-5143-1	
F	IS + Cal. 6	m2021-5143-1*	p2021-4010-1	m2021-5029-4	m2021-5291-6	
G	IS + Cal. 7	m2021-5168-2	p2021-4016-1	m2021-5169-3	p2021-4020-1	
H	IS + QC_1 blood	m2021-5189-1	p2021-4020-1*	p2021-3838-1	p2021-4027-1	

All wells to contain 100 µl of residual DMSO

\*Samples moved during analytical step 6 due to blood clot

SC

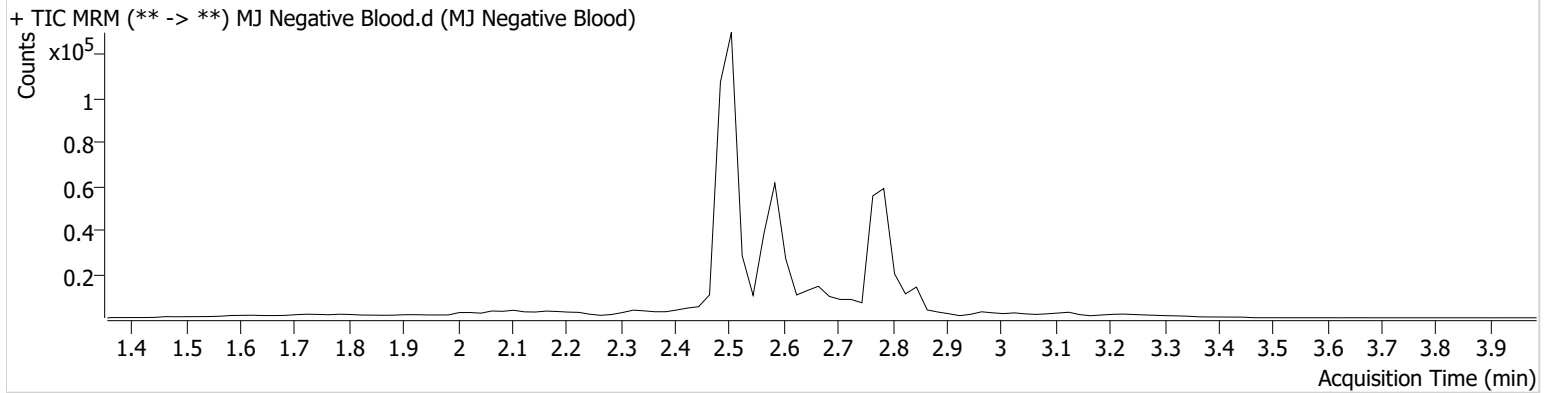


# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 26.batch.bin  
**Calibration Last Update** 12/16/2021 7:40:18 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	MJ Negative Blood.d
<b>Type</b>	Sample	<b>Sample</b>	MJ Negative Blood
<b>Acq. Method</b>	AM 26 THCS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P5-B2	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	12/15/2021 4:42:57 PM		
<b>Sample Info.</b>			

## Sample Chromatogram



SC

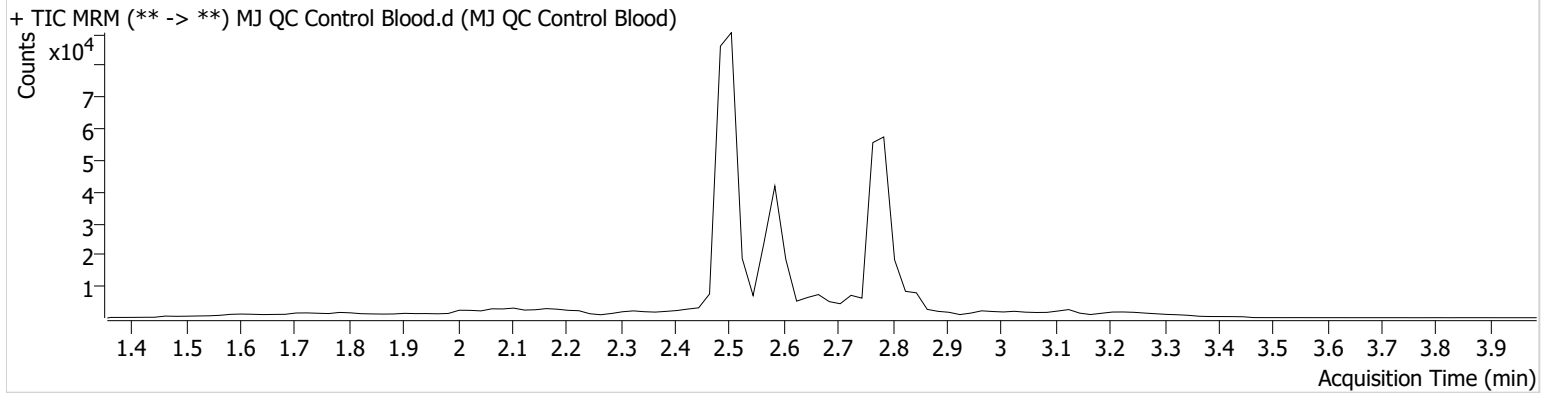


# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 26.batch.bin  
**Calibration Last Update** 12/16/2021 7:40:18 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	MJ QC Control Blood.d
<b>Type</b>	Sample	<b>Sample</b>	MJ QC Control Blood
<b>Acq. Method</b>	AM 26 THCS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P5-H1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	12/15/2021 4:29:47 PM		
<b>Sample Info.</b>			

## Sample Chromatogram



Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	2.859	559	12774	5.8822 ng/ml
THC-COOH	2.587	10668	48042	13.9228 ng/ml
THC-OH	2.494	2009	213641	5.1176 ng/ml

SC

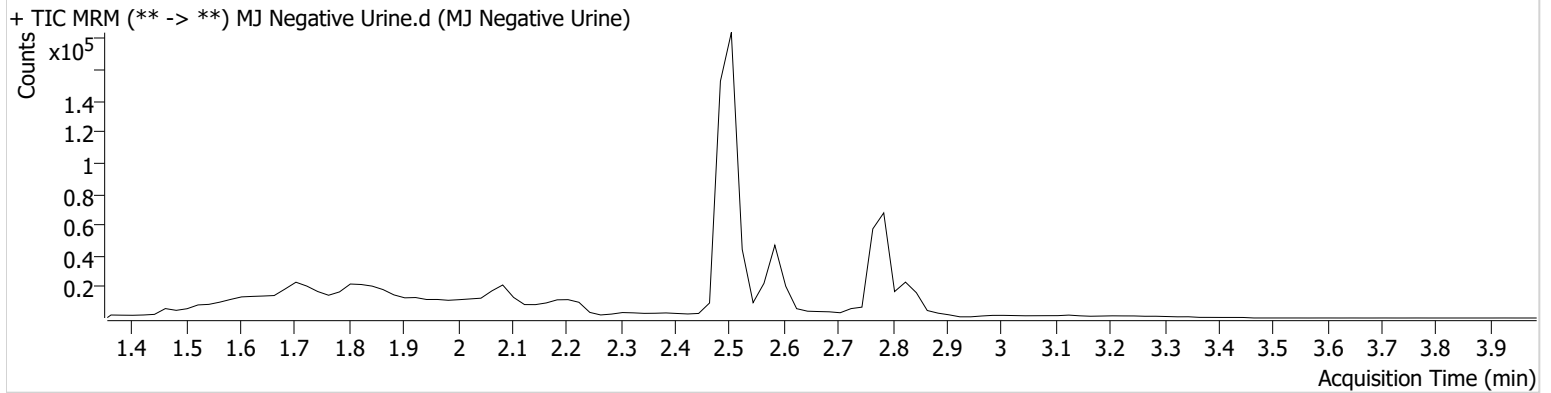


# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 26.batch.bin  
**Calibration Last Update** 12/16/2021 7:40:18 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	MJ Negative Urine.d
<b>Type</b>	Sample	<b>Sample</b>	MJ Negative Urine
<b>Acq. Method</b>	AM 26 THCS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P5-E4	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	12/15/2021 6:54:21 PM		
<b>Sample Info.</b>			

## Sample Chromatogram



SC

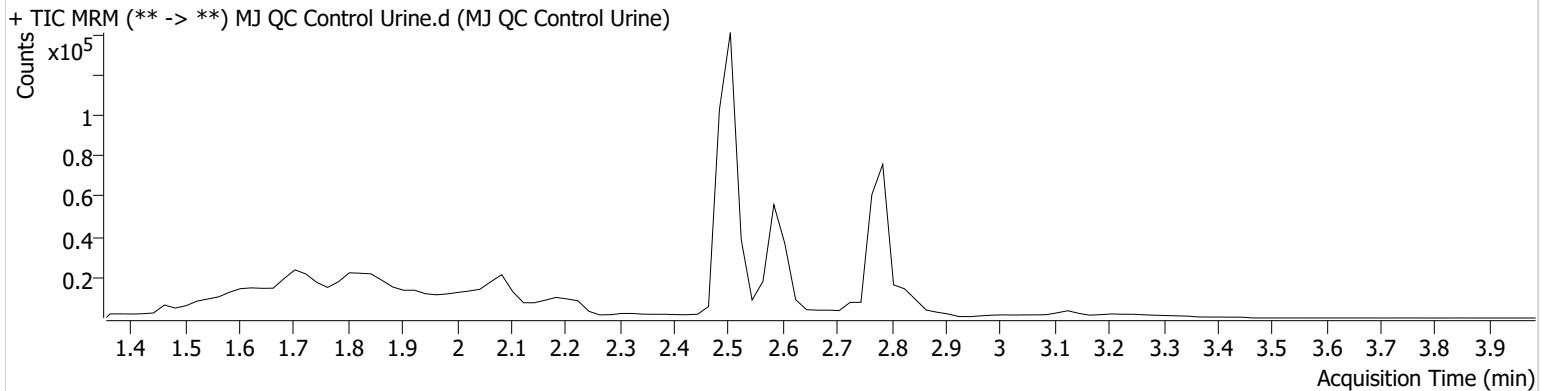


# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 26.batch.bin  
**Calibration Last Update** 12/16/2021 7:40:18 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	MJ QC Control Urine.d
<b>Type</b>	Sample	<b>Sample</b>	MJ QC Control Urine
<b>Acq. Method</b>	AM 26 THCS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P5-A2	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	12/15/2021 7:00:55 PM		
<b>Sample Info.</b>			

**Sample Chromatogram**



Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	2.839	766	21562	4.8148 ng/ml
THC-COOH	2.607	18166	79607	14.3528 ng/ml
THC-OH	2.514	2951	319116	5.0302 ng/ml

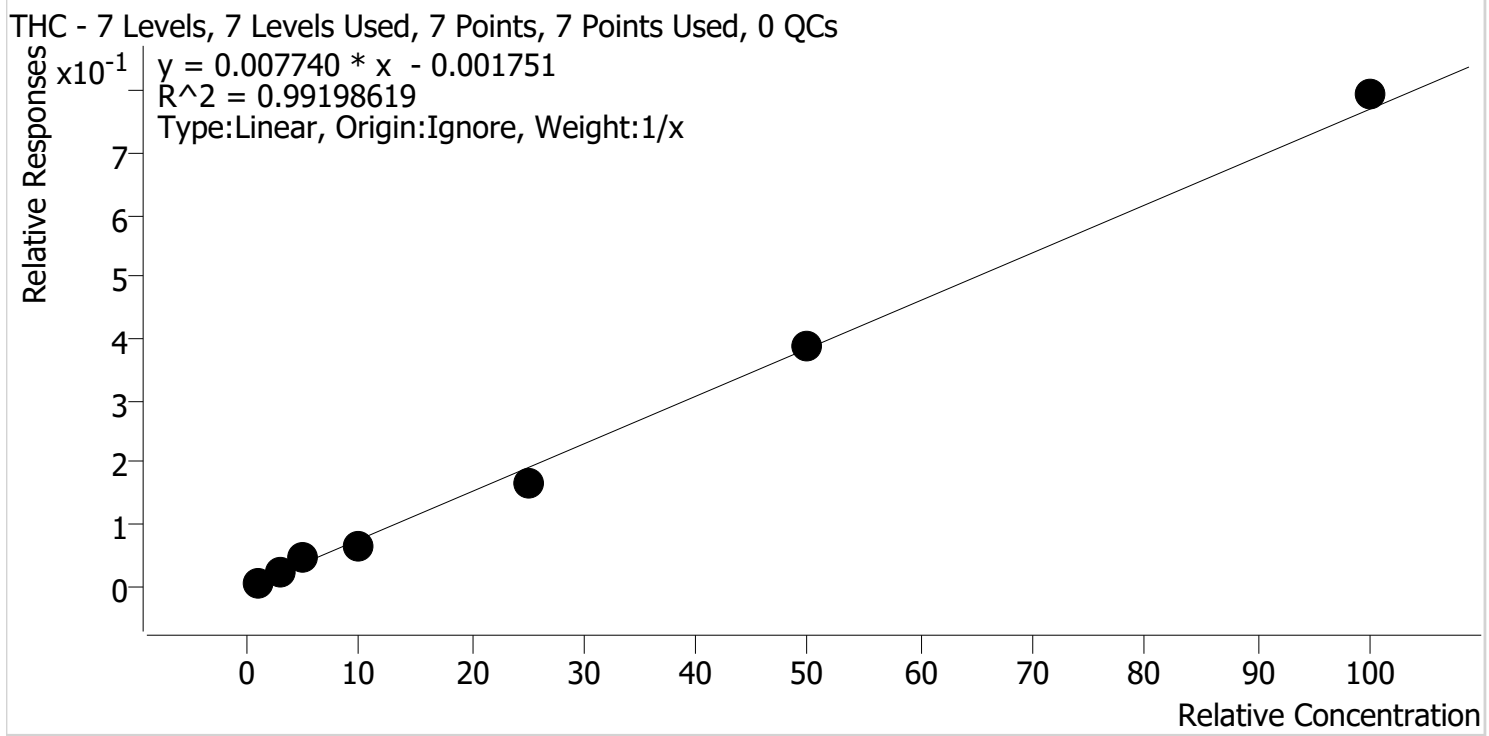


SC



# AM #26 Cannabinoids Screen Calibration Curve Report

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 26.batch.bin  
**Last Cal. Update** 12/16/2021 7:40 AM  
**Analyst Name** ISP\datastor  
**Analyte** THC **Internal Standard** THC-D3



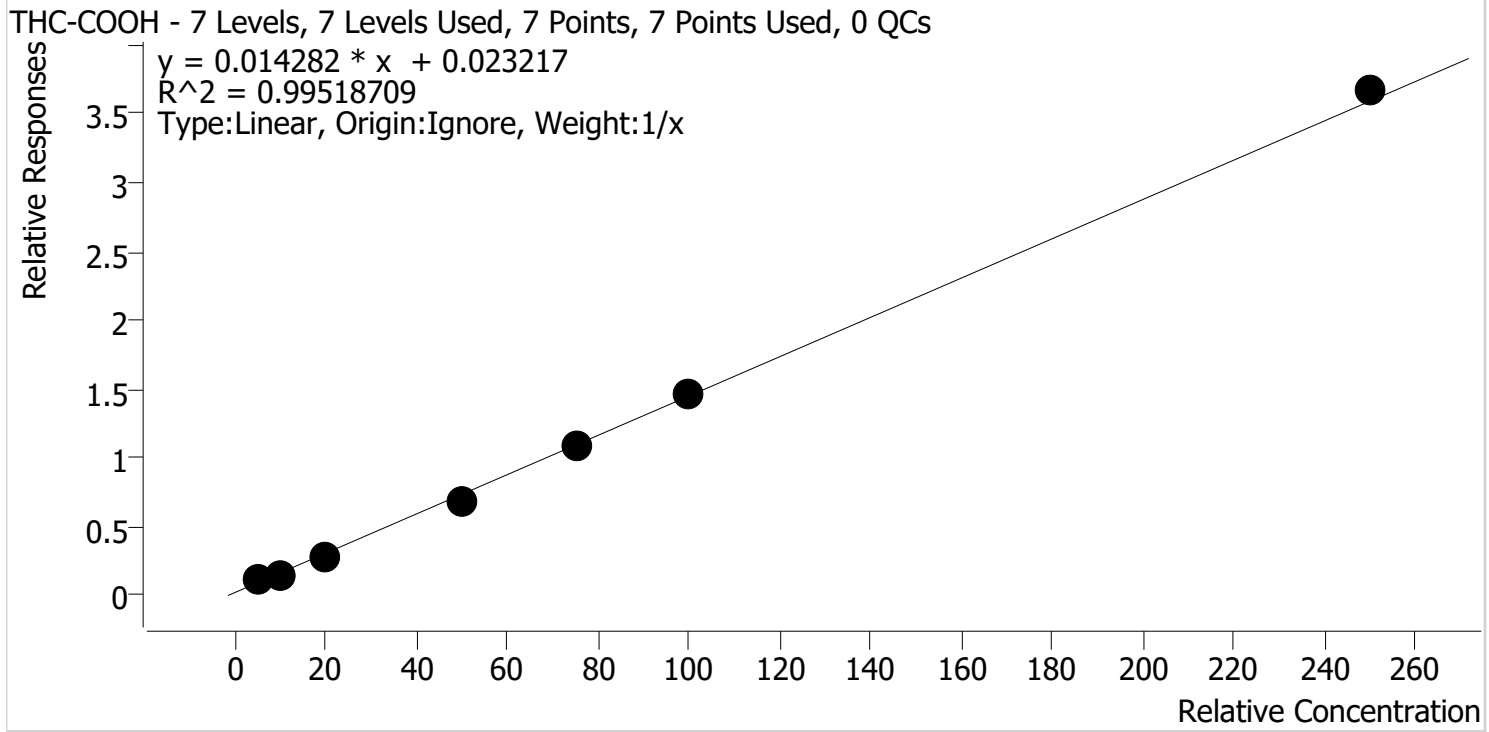
Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
MJ Cal 1	1	✓	1.0	1.0	98.4
MJ Cal 2	2	✓	3.0	2.9	96.4
MJ Cal 3	3	✓	5.0	6.5	131.0
MJ Cal 4	4	✓	10.0	8.4	83.8
MJ Cal 5	5	✓	25.0	21.5	86.0
MJ Cal 6	6	✓	50.0	50.7	101.3
MJ Cal 7	7	✓	100.0	103.0	103.0

SC



# AM #26 Cannabinoids Screen Calibration Curve Report

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 26.batch.bin  
**Last Cal. Update** 12/16/2021 7:40 AM  
**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	6.9	138.8
MJ Cal 2	2	✓	10.0	7.6	76.0
MJ Cal 3	3	✓	20.0	17.7	88.6
MJ Cal 4	4	✓	50.0	47.1	94.2
MJ Cal 5	5	✓	75.0	74.7	99.6
MJ Cal 6	6	✓	100.0	100.5	100.5
MJ Cal 7	7	✓	250.0	255.4	102.1

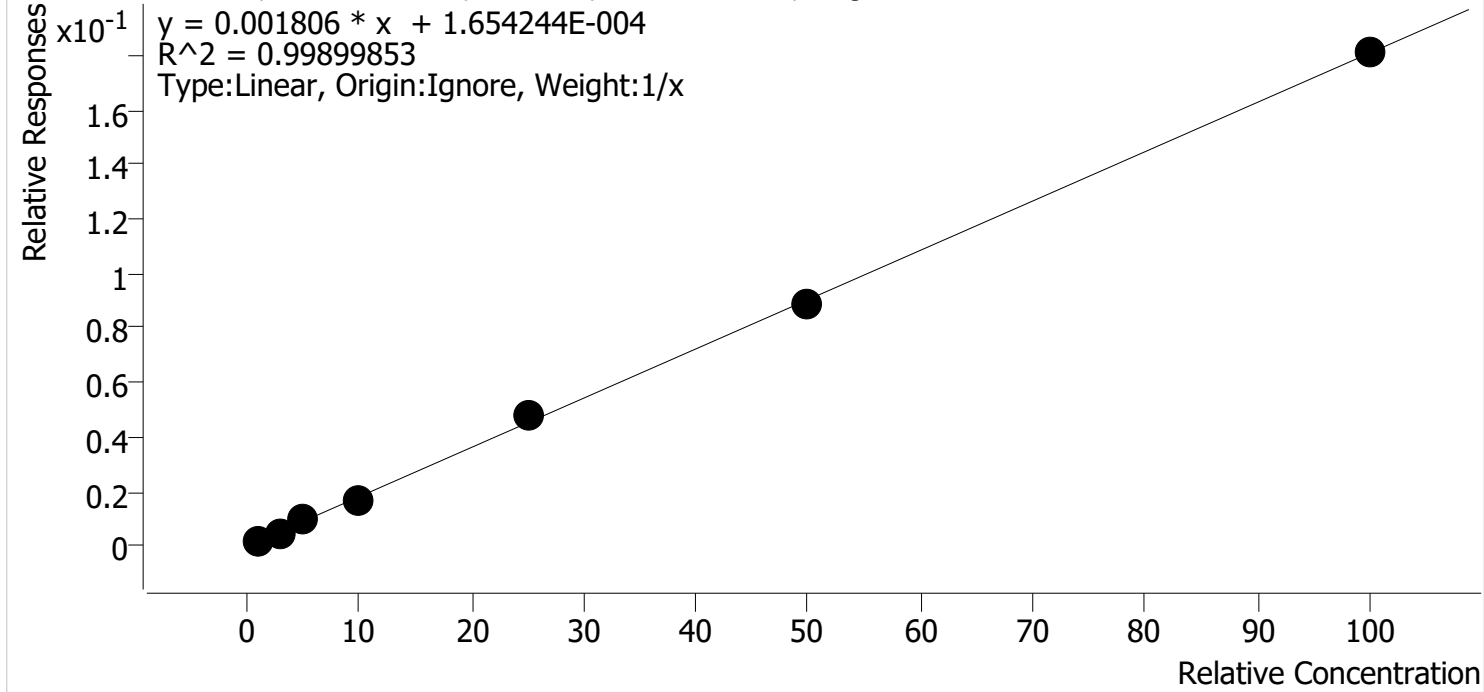
SC



# AM #26 Cannabinoids Screen Calibration Curve Report

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 26.batch.bin  
**Last Cal. Update** 12/16/2021 7:40 AM  
**Analyst Name** ISP\datastor  
**Analyte** THC-OH **Internal Standard** THC-OH-D3

THC-OH - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs



Sample	Level	Enabled	Expected Concentration	Final Concentration	Accuracy
MJ Cal 1	1	✓	1.0	1.1	108.5
MJ Cal 2	2	✓	3.0	2.7	90.2
MJ Cal 3	3	✓	5.0	5.2	103.2
MJ Cal 4	4	✓	10.0	9.4	94.1
MJ Cal 5	5	✓	25.0	26.4	105.5
MJ Cal 6	6	✓	50.0	49.2	98.4
MJ Cal 7	7	✓	100.0	100.1	100.1

SC

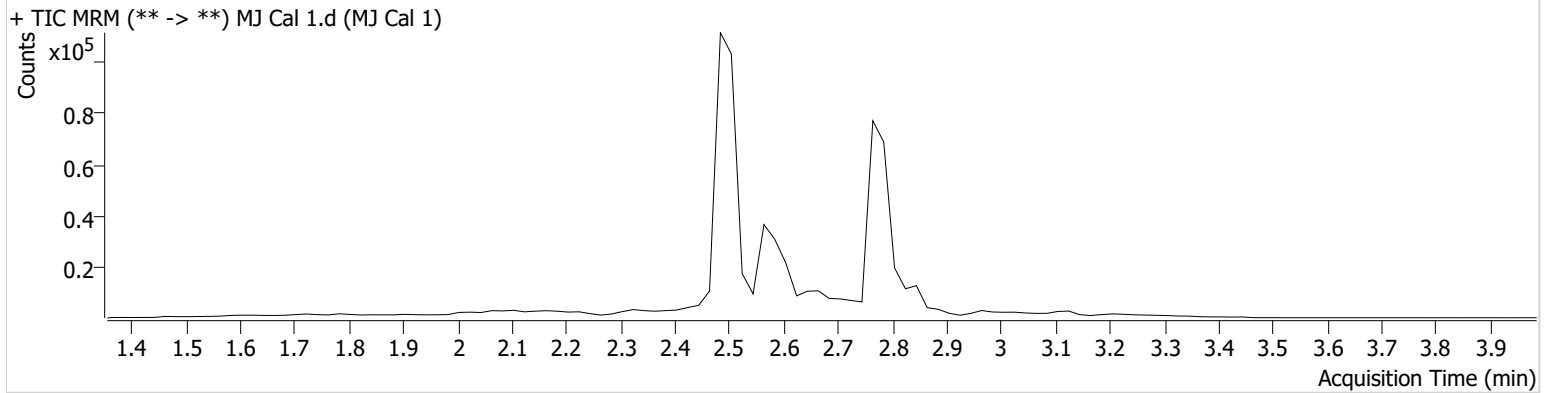


# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 26.batch.bin  
**Calibration Last Update** 12/16/2021 7:40:18 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	MJ Cal 1.d
<b>Type</b>	Cal	<b>Sample</b>	MJ Cal 1
<b>Acq. Method</b>	AM 26 THCS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P5-A1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	12/15/2021 3:43:42 PM		
<b>Sample Info.</b>			

## Sample Chromatogram



Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	2.859	145	24734	0.9844 ng/ml	Low
THC-COOH	2.587	4496	36756	6.9396 ng/ml	
THC-OH	2.494	566	266217	1.0853 ng/ml	Low

SC

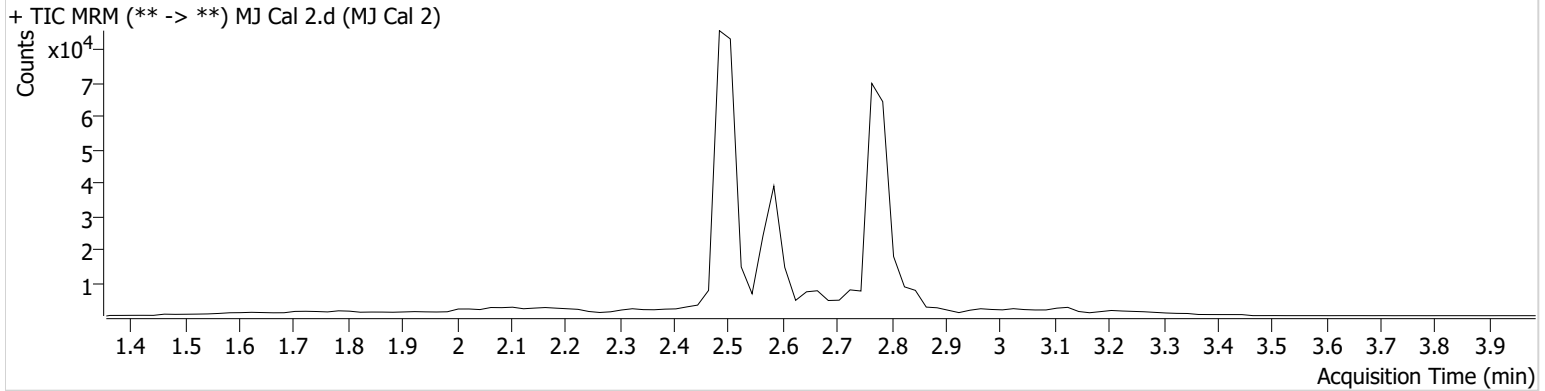


# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 26.batch.bin  
**Calibration Last Update** 12/16/2021 7:40:18 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	MJ Cal 2.d
<b>Type</b>	Cal	<b>Sample</b>	MJ Cal 2
<b>Acq. Method</b>	AM 26 THCS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P5-B1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	12/15/2021 3:50:26 PM		

**Sample Chromatogram**



Name	RT	Resp.	ISTD Resp.	Final Conc.	
THC	2.819	282	13672	2.8918 ng/ml	Low
THC-COOH	2.587	6551	49703	7.6037 ng/ml	
THC-OH	2.494	1043	206458	2.7062 ng/ml	Low

SC

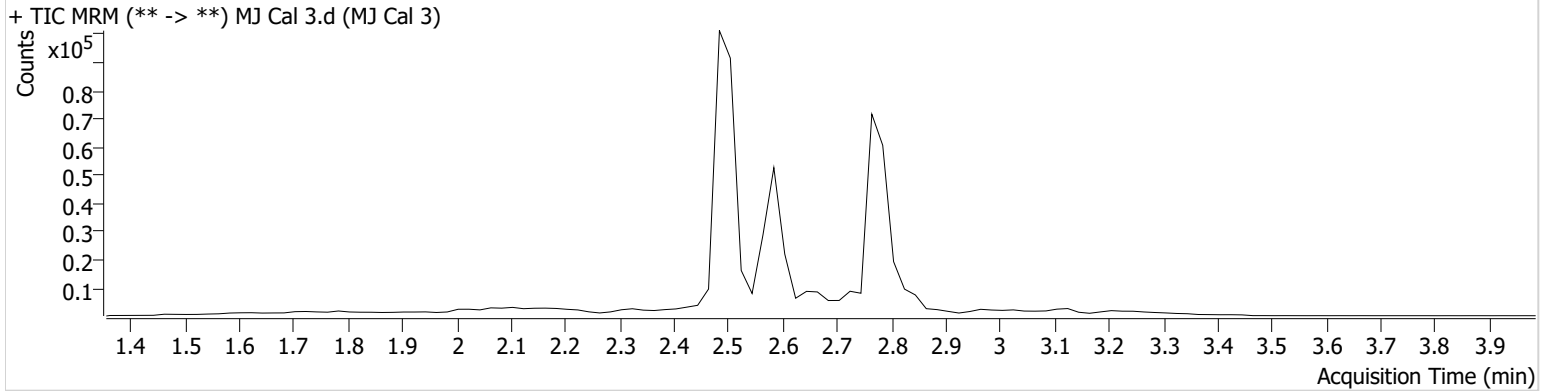


# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 26.batch.bin  
**Calibration Last Update** 12/16/2021 7:40:18 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	MJ Cal 3.d
<b>Type</b>	Cal	<b>Sample</b>	MJ Cal 3
<b>Acq. Method</b>	AM 26 THCS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P5-C1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	12/15/2021 3:56:59 PM		
<b>Sample Info.</b>			

**Sample Chromatogram**



Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	2.819	713	14563	6.5482 ng/ml
THC-COOH	2.587	15445	55886	17.7252 ng/ml
THC-OH	2.494	2165	228476	5.1577 ng/ml

SC

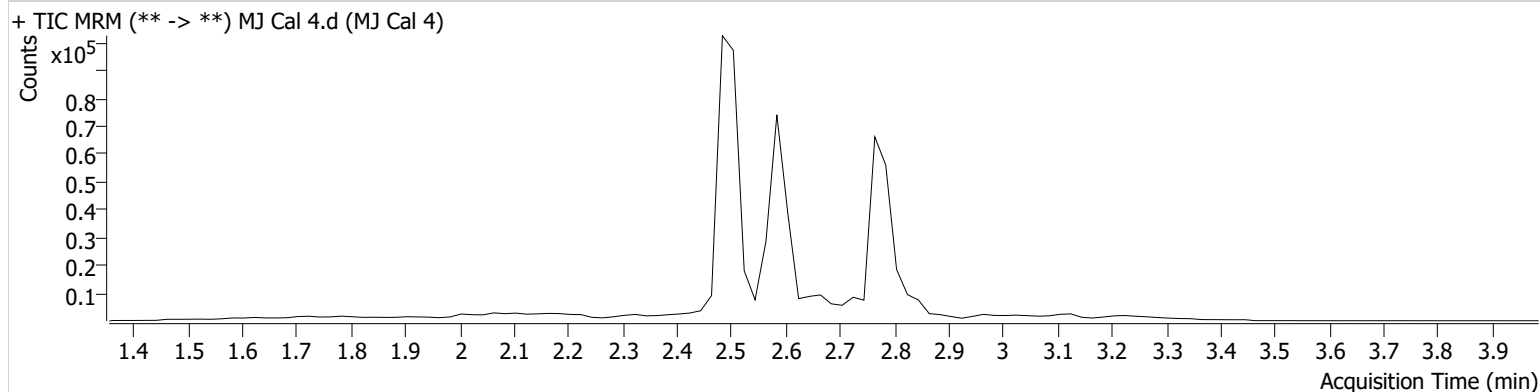


# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 26.batch.bin  
**Calibration Last Update** 12/16/2021 7:40:18 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	MJ Cal 4.d
<b>Type</b>	Cal	<b>Sample</b>	MJ Cal 4
<b>Acq. Method</b>	AM 26 THCS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P5-D1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	12/15/2021 4:03:33 PM		
<b>Sample Info.</b>			

## Sample Chromatogram



Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	2.859	903	14296	8.3845 ng/ml
THC-COOH	2.587	36144	51921	47.1174 ng/ml
THC-OH	2.494	3854	224662	9.4105 ng/ml

SC

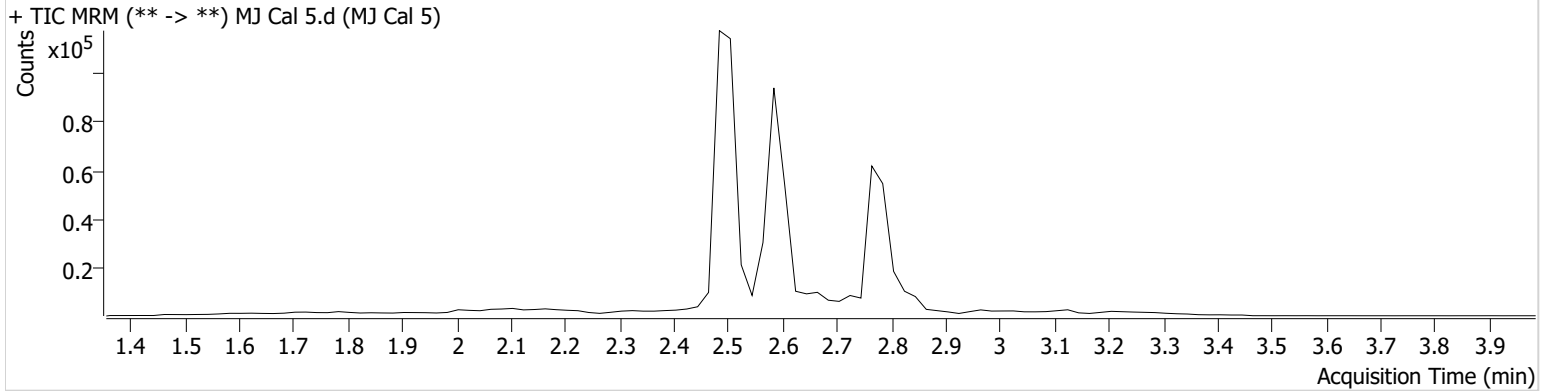


# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 26.batch.bin  
**Calibration Last Update** 12/16/2021 7:40:18 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	MJ Cal 5.d
<b>Type</b>	Cal	<b>Sample</b>	MJ Cal 5
<b>Acq. Method</b>	AM 26 THCS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P5-E1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	12/15/2021 4:10:07 PM		
<b>Sample Info.</b>			

**Sample Chromatogram**



Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	2.859	2199	13353	21.5001 ng/ml
THC-COOH	2.587	54295	49789	74.7298 ng/ml
THC-OH	2.494	10349	216454	26.3875 ng/ml



SC

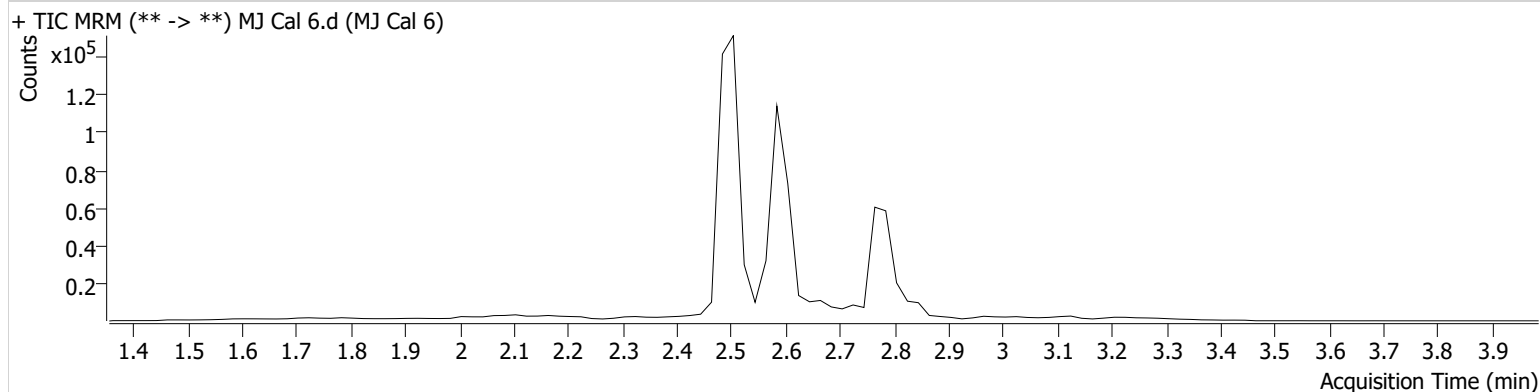


# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 26.batch.bin  
**Calibration Last Update** 12/16/2021 7:40:18 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	MJ Cal 6.d
<b>Type</b>	Cal	<b>Sample</b>	MJ Cal 6
<b>Acq. Method</b>	AM 26 THCS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P5-F1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	12/15/2021 4:16:40 PM		
<b>Sample Info.</b>			

## Sample Chromatogram



Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	2.859	5099	13061	50.6660 ng/ml
THC-COOH	2.587	73778	50569	100.5294 ng/ml
THC-OH	2.494	19429	218307	49.1992 ng/ml

SC

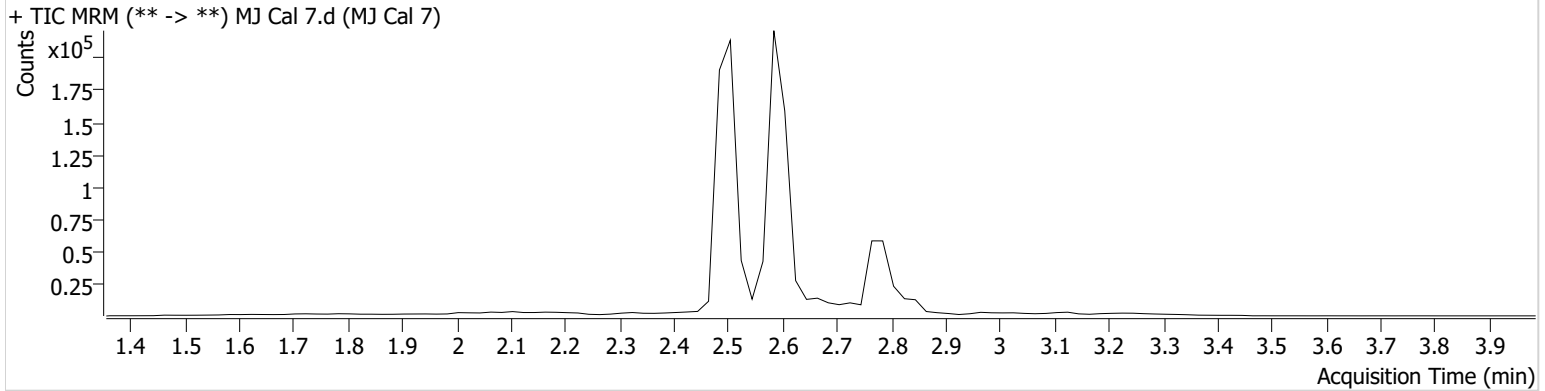


# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2021\AM 25-26\121521 AM 25 26 SC\QuantResults\AM 26.batch.bin  
**Calibration Last Update** 12/16/2021 7:40:18 AM

<b>Instrument</b>	Falco (069901)	<b>Data File</b>	MJ Cal 7.d
<b>Type</b>	Cal	<b>Sample</b>	MJ Cal 7
<b>Acq. Method</b>	AM 26 THCS.m	<b>Operator</b>	Sarah Collins
<b>Sample Position</b>	P5-G1	<b>Comment</b>	
<b>Injection Volume</b>	10		
<b>Acq. Date-Time</b>	12/15/2021 4:23:14 PM		
<b>Sample Info.</b>			

**Sample Chromatogram**



Name	RT	Resp.	ISTD Resp.	Final Conc.
THC	2.859	9775	12286	103.0250 ng/ml
THC-COOH	2.587	177647	48403	255.3550 ng/ml
THC-OH	2.494	38778	214454	100.0536 ng/ml