**REVIEWED**
*By Sarah Pickle at 3:14 pm, Mar 11, 2020*

3/10/2020 BW

**Worklist: 4073**

| LAB_CASE | ITEM | ITEM_TYPE | DESCRIPTION |
|---|---|---|---|
| C2020-0335 | 1 | UCK | AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ |
| C2020-0367 | 1 | BCK | AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ |
| C2020-0371 | 1 | BCK | AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ |
| C2020-0376 | 1 | BCK | AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ |
| C2020-0381 | 1 | BCK | AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ |
| C2020-0382 | 1 | BCK | AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ |
| C2020-0388 | 1 | BCK | AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ |
| C2020-0397 | 2 | BCK | AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ |
| C2020-0418 | 1 | BCK | AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ |
| C2020-0419 | 2 | BCK | AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ |
| C2020-0420 | 1 | BCK | AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ |
| C2020-0421 | 1 | BCK | AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ |
| C2020-0441 | 1 | UCK | AM 25/AM 26 Urine MultiDrug/THC Screen by LC-QQQ |
| C2020-0448 | 1 | BCK | AM 25/AM 26 Blood MultiDrug/THC Screen by LC-QQQ |

BW

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

Extraction Date: 3/9/20 Analyst: Britany Wylie
Plate lot#: 190725 Plate Expiration: 1/25/2020

**Mobile phase A**: 10mM Amm Form 0.5M Ammonium Hydroxide **Mobile phase B:** 0.1% Formic Acid in MeOH Ethyl Acetate LC Methanol
**Blank Blood Lot**: 20A52255 **Blank Urine lot:** 11420 **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. Place on shaking incubator at ambient temp., 900 rpm for 15 minutes. *Shaker ID: 66759*
☒ 4. Pipette **250 µL of 0.5 M ammonium hydroxide** in wells of analytical plate.
☒ 5. Place on shaking incubator at ambient temp., 900 rpm for 15 minutes.
☒ 6. Transfer **300 µL of blood or urine+base** 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 **900 µL ethyl acetate.**
☒ 10. Wait 5 minutes.
☒ 11. Apply positive pressure for approx. 10-15 seconds. ***(12-15 PSI- Selector to the left).***
☒ 12. Add **900 µL ethyl acetate.**
☒ 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. **Urine samples add 50 ul 1% HCl in MeOH** Place on SPE Dry and evaporate to dryness at approx. 35°C.
*SPE Dry ID: 66819*
☒ 16. Reconstitute in **100 µL 100% LC MeOH** and heat seal plate with foil. Place in autosampler and run worklist.

## Post-Analytic

☒ 1. Open quantitation software and create a new quantitation batch.
☒ 2. Make necessary changes to integration limits
☒ 3. Evaluate samples, S/N of primary transition >5 and S/N of secondary transition >3 or evaluation of peak symmetry and resolution. Within +/- 2% or 0.1 min RT of administrative control. Calculated concentration 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:

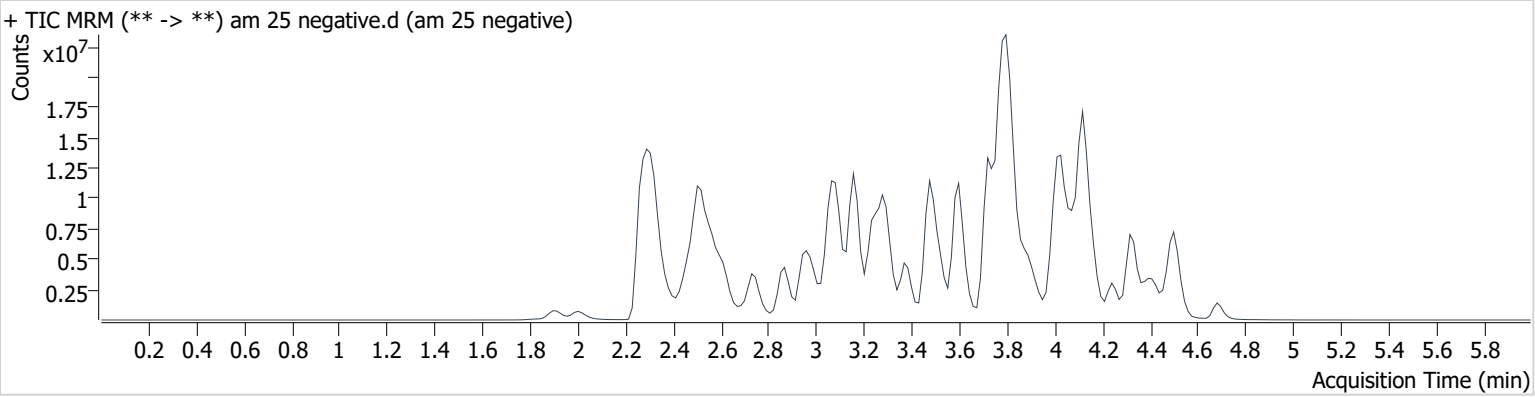
BW

# AM #25 Multi-Drug Screen Results

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\mds 3920.batch.bin
**Calibration Last Update** 2/24/2020 9:42:04 AM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | am 25 negative.d |
| **Type** | Sample | **Sample** | am 25 negative |
| **Acq. Method** | am25 short rt short.m | **Operator** | Britany Wylie |
| **Sample Position** | P2-C1 | **Comment** | |
| **Injection Volume** | 2.5 | | |
| **Acq. Date-Time** | 3/9/2020 12:37:24 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**




| Name | RT | Resp. | S/N | S/N | ISTD Resp. | Calc. Conc. |
|---|---|---|---|---|---|---|
| Methamphetamine | 2.604 | 1862068 | 319.2 | 43.1 | 10744252 | 4.416 <10 |

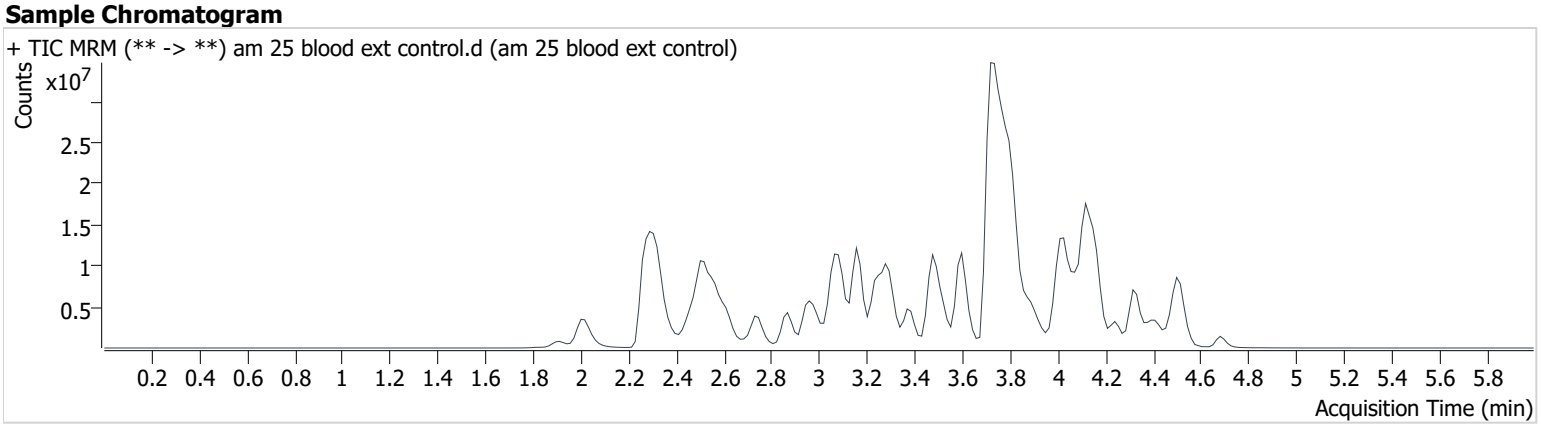
# AM #25 Multi-Drug Screen Results

BW

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\mds 3920.batch.bin
**Calibration Last Update** 2/24/2020 9:42:04 AM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | am 25 blood ext control.d |
| **Type** | Sample | **Sample** | am 25 blood ext control |
| **Acq. Method** | am25 short rt short.m | **Operator** | Britany Wylie |
| **Sample Position** | P2-D1 | **Comment** | |
| **Injection Volume** | 2.5 | | |
| **Acq. Date-Time** | 3/9/2020 12:44:05 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**




| Name | RT | Resp. | S/N | S/N | ISTD Resp. | Calc. Conc. |
|---|---|---|---|---|---|---|
| Chlordiazepoxide | 4.520 | 2319607 | 2176.2 | 1037364.6 | 7874311 | 71.371 |
| Diphenhydramine | 3.744 | 63316116 | 94002.6 | 437911.0 | 27268443 | 148.620 |
| Hydromorphone | 2.023 | 6897231 | 6686.4 | 94660.1 | 2826873 | 96.285 |
| Methamphetamine | 2.604 | 2008276 | 210.6 | 63.8 | 13462656 | 3.801 <10 |
| Nortriptyline | 4.174 | 12723442 | 1911.6 | 7543.4 | 3012802 | 112.134 |

BW

Toxicology AM method 25/28 urine external control prep

working solution 10000 ng/ml in meoh Hydromorphone, Diphenhydramine, Nortriptyline, Chlordiazepoxide

Stock solution 1mg/ml 50 ul each in 4800ul meOH

ppd 3/9/20: Exp: 6/1/20 lot 3920 by baw

| Drug | lot | expiration |
|---|---|---|
| Hydromorphone | FE04101502 | 6/1/2020 |
| Diphenhydramine | FN09161502 | 9/1/2020 |
| nortriptyline | FN06191503 | 8/1/2020 |
| chlordiazepoxide | FE07241502 | 8/1/2020 |

AM 25 control 30 ul working solution (3920) in 270 ul negative urine

ppd 3/9/20, exp 6/1/20 lot u3920 negative urine 11420 by BAW

AM 25 Blood Control:

ppd 3/9/20, exp 6/1/20 lot b3920 neg blood lot 20A52255 by BAW

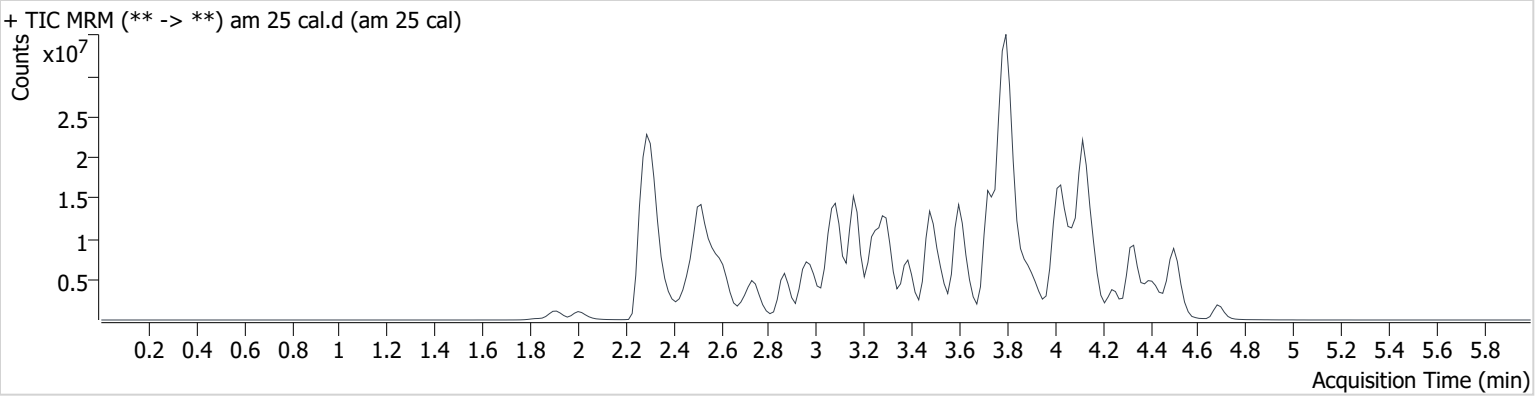
# AM #25 Multi-Drug Screen Results

BW

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\mds 3920.batch.bin
**Calibration Last Update** 2/24/2020 9:42:04 AM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | am 25 cal.d |
| **Type** | Sample | **Sample** | am 25 cal |
| **Acq. Method** | am25 short rt short.m | **Operator** | Britany Wylie |
| **Sample Position** | P2-A1 | **Comment** | |
| **Injection Volume** | 2.5 | | |
| **Acq. Date-Time** | 3/9/2020 12:50:47 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**




| Name | RT | Resp. | S/N | S/N | ISTD Resp. | Calc. Conc. |
|---|---|---|---|---|---|---|
| 6-MAM | 2.500 | 26749 | 10614.9 | 60.8 | 866767 | 10.728 |
| 7-aminoclonazepam | 3.312 | 782656 | 1568.9 | 1239.9 | 3554046 | 10.260 |
| 7-aminoflunitrazepam | 3.540 | 1335921 | 2085.6 | 2440.1 | 8365185 | 10.167 |
| Acetyl Fentanyl | 3.475 | 254405 | 114.4 | 56341.9 | 16590073 | 9.594 |
| Acetyl Norfentanyl | 2.494 | 149949 | 105.8 | 124.7 | 9235925 | 10.401 |
| a-hydroxyalprazolam | 4.333 | 150688 | 92.1 | 3018.1 | 889214 | 9.342 |
| alpha-hydroxymidazolam | 4.393 | 700609 | 525.9 | 145990.4 | 4441946 | 9.482 |
| alpha-PVP | 3.180 | 2621105 | 3394.7 | 860.1 | 12159636 | 9.945 |
| Alprazolam | 4.443 | 1055009 | 901.5 | 722.6 | 4095295 | 9.558 |
| Amitriptyline | 4.172 | 1226051 | 462.3 | 165.5 | 5034102 | 9.555 |
| Amphetamine | 2.499 | 1548641 | 624.9 | 992.1 | 5448501 | 10.203 |
| Benzoylecgonine | 3.081 | 516375 | 400.6 | 101.4 | 2408998 | 10.546 |
| Buprenorphine | 3.885 | 252737 | 477.1 | 23767.0 | 1143074 | 10.544 |
| Bupropion | 3.394 | 2801516 | 1736.7 | 1435.0 | 10622470 | 9.866 |
| Carbamazepine | 4.022 | 4023883 | ∞ | 1161.1 | 21775657 | 9.779 |
| Carisoprodol | 4.005 | 912282 | 591.9 | 144.0 | 4399340 | 10.018 |
| Chlordiazepoxide | 4.520 | 222626 | 149.0 | 190782.0 | 8153934 | 6.615 |
| Chlorpheniramine | 3.650 | 4526290 | 49418.4 | ∞ | 32691158 | 11.910 |
| Citalopram | 3.812 | 1013301 | 443.9 | 368.7 | 4502966 | 10.159 |
| Clonazepam | 4.274 | 1069950 | 1624.7 | 353.2 | 1817329 | 9.482 |
| Cocaine | 3.233 | 3336041 | 3586102.8 | 774.4 | 19072066 | 9.726 |
| Codeine | 2.368 | 187798 | 1352.8 | 3497.6 | 941310 | 9.762 |
| Cyclobenzaprine | 4.080 | 2063252 | 1087.1 | 229.6 | 9144669 | 9.523 |
| Desipramine | 4.127 | 2664803 | 1820.0 | 687.4 | 14452000 | 9.679 |
| Dextromethorphan | 3.773 | 645378 | 593.6 | 264.8 | 3175995 | 9.951 |
| Dextrorphan | 3.039 | 1204198 | 8436.6 | 659.2 | 6793493 | 9.867 |
| Diazepam | 4.707 | 883827 | 517.2 | 2894.3 | 4172896 | 10.461 |
| Dihydrocodeine | 2.321 | 386839 | 986.0 | 599.1 | 2103475 | 10.115 |
| Diphenhydramine | 3.744 | 5560308 | 935.2 | 3247.5 | 32691158 | 10.887 |
| Doxepin | 3.878 | 1288434 | 661.8 | 216.5 | 6996325 | 9.630 |
| Doxylamine | 3.313 | 4904363 | 459.5 | 530.5 | 24815240 | 9.581 |
| EDDP | 3.801 | 4193555 | 844.4 | 370.8 | 26446477 | 10.341 |
| Estazolam | 4.354 | 2671678 | 1840.4 | 1937.5 | 7192920 | 9.813 |
| Etizolam | 4.454 | 118602 | 39196.0 | 461470.3 | 7192920 | 9.809 |

# AM #25 Multi-Drug Screen Results

BW

| Name | RT | Resp. | S/N | S/N | ISTD Resp. | Calc. Conc. |
|---|---|---|---|---|---|---|
| Fentanyl | 3.720 | 203090 | 190.5 | 99.8 | 12741201 | 10.343 |
| Flunitrazepam | 4.396 | 1516808 | 16447.7 | 660.7 | 320261 | 8.768 |
| Fluoxetine | 4.091 | 1985600 | 260.2 | 309.6 | 9019932 | 10.057 |
| Flurazepam | 3.841 | 1592569 | 762525.2 | 45694.4 | 320261 | 11.775 |
| Hydrocodone | 2.580 | 823273 | 982.2 | 517.7 | 5233508 | 9.281 |
| Hydromorphone | 2.023 | 740291 | 3315.3 | ∞ | 2942700 | 9.928 |
| Imipramine | 4.125 | 3186124 | 887.0 | 500.5 | 13641949 | 9.880 |
| Ketamine | 2.996 | 1998164 | 4411.6 | 156.2 | 9951316 | 10.077 |
| Lamotrigine | 3.207 | 178324 | 487.3 | 986.7 | 6516484 | 11.872 |
| Levamisole | 2.526 | 1862633 | 26102.8 | 464.9 | 19072066 | 10.942 |
| Lorazepam | 4.258 | 328603 | 2407.8 | 1346.7 | 4095295 | 14.306 |
| Maprotiline | 4.157 | 972551 | 286.2 | 300.7 | 5034102 | 8.951 |
| MDA | 2.633 | 2031847 | 3654.9 | 254.8 | 9415125 | 10.184 |
| MDEA | 2.876 | 2997254 | 755.6 | 1298.1 | 14285959 | 10.160 |
| MDMA | 2.709 | 3227658 | 916.1 | 1034.4 | 2053543 | 10.121 |
| Meperidine | 3.254 | 1419285 | 1058.4 | 1121.2 | 6516484 | 10.117 |
| Meprobamate | 3.396 | 676936 | 1150.2 | 197.0 | 3195091 | 9.812 |
| Methadone | 4.121 | 3690912 | 12401.4 | 1767.0 | 19804788 | 10.056 |
| Methamphetamine | 2.604 | 3954855 | 165.0 | 340.2 | 10551995 | 9.551 |
| Methocarbamol | 3.302 | 213743 | 490.2 | 85577.4 | 6516484 | 7.714 |
| Methylphenidate | 3.179 | 5501525 | 24864.5 | 579.1 | 27347556 | 9.950 |
| Metoprolol | 3.099 | 346708 | 402.7 | 70709.5 | 6516484 | 9.265 |
| Midazolam | 4.410 | 394390 | 1273.7 | 3056.8 | 5507574 | 6.476 |
| Mirtazapine | 3.406 | 1531029 | 7135.0 | 6133.8 | 6516484 | 12.079 |
| Mitragynine | 3.870 | 180813 | 337.5 | 712.4 | 6996325 | 12.257 |
| Morphine | 1.841 | 111013 | 2144.9 | 991.7 | 74748 | 10.980 |
| Norbuprenorphine | 3.534 | 43202 | 57.3 | 22027.2 | 209381 | 10.893 |
| Nordiazepam | 4.540 | 863118 | 1503.8 | 1691.2 | 2914452 | 9.762 |
| Norfentanyl | 2.966 | 3162162 | 17866.6 | 1766.7 | 15754702 | 9.488 |
| Norhydrocodone | 2.551 | 14594 | ∞ | 22.8 | 943275 | 6.791 |
| Normeperidine | 3.273 | 1246728 | 606.1 | 671.9 | 5197244 | 10.023 |
| Noroxycodone | 2.518 | 581596 | 191.7 | 90.6 | 2954475 | 11.148 |
| Nortriptyline | 4.174 | 1228968 | 646.0 | 845.6 | 3108943 | 10.496 |
| O-desmethyl-tramadol | 2.523 | 3929272 | 1555.8 | 1985.2 | 23129522 | 9.761 |
| Olanzapine | 3.414 | 632179 | 9821.0 | 72.9 | 256736 | 1.894 |
| Oxazepam | 4.339 | 1411028 | 498.6 | 832.7 | 8672971 | 9.927 |
| Oxycodone | 2.516 | 1388297 | 608.1 | 644.0 | 6961660 | 9.747 |
| Oxymorphone | 1.913 | 708700 | 8174.3 | 6912.3 | 3416566 | 9.082 |
| Paroxetine | 4.118 | 260611 | 138.8 | 657.3 | 5840940 | 10.684 |
| Phenazepam | 4.484 | 1218526 | 979160.1 | 1609.3 | 5294028 | 10.292 |
| Phencyclidine | 3.623 | 3218084 | 1039.0 | 448.1 | 15950613 | 10.119 |
| Phentermine | 2.772 | 989978 | 248.7 | 44.6 | 10848399 | 9.755 |
| Phenytoin | 3.928 | 46441 | 186.0 | 26.6 | 256736 | 10.823 |
| Promethazine | 4.046 | 4774671 | 1134.9 | 517.9 | 19569576 | 9.896 |
| Pseudoephedrine | 2.299 | 30989250 | 19985.7 | 20822.6 | 89510588 | 9.335 |
| Quetiapine | 4.009 | 1118875 | 591097.2 | 234724.2 | 1869533 | 9.412 |
| Sertraline | 4.322 | 1168133 | 613.6 | 1193.6 | 5840940 | 9.476 |
| Sufentanil | 4.009 | 149200 | 235.4 | 200.2 | 8688203 | 10.679 |
| Tapentadol | 3.105 | 2706298 | 3676.3 | 2378.6 | 14743906 | 9.736 |
| Temazepam | 4.505 | 2147675 | 1113.9 | 85.9 | 10313465 | 9.942 |
| Tramadol | 3.084 | 5414078 | 87277.4 | 254.0 | 29446143 | 10.320 |
| Trazodone | 3.918 | 2475880 | 3649.8 | 256.6 | 11578542 | 11.386 |
| Venlafaxine | 3.480 | 3896848 | 3362.6 | 549.0 | 22104647 | 9.649 |
| Zaleplon | 4.168 | 1143643 | 558.8 | 184.9 | 3321709 | 9.722 |
| Zolpidem | 3.615 | 4212826 | 7290014.3 | 695.7 | 22653942 | 9.582 |
| Zopiclone | 3.504 | 428498 | 41617.6 | 238.2 | 2318331 | 10.134 |

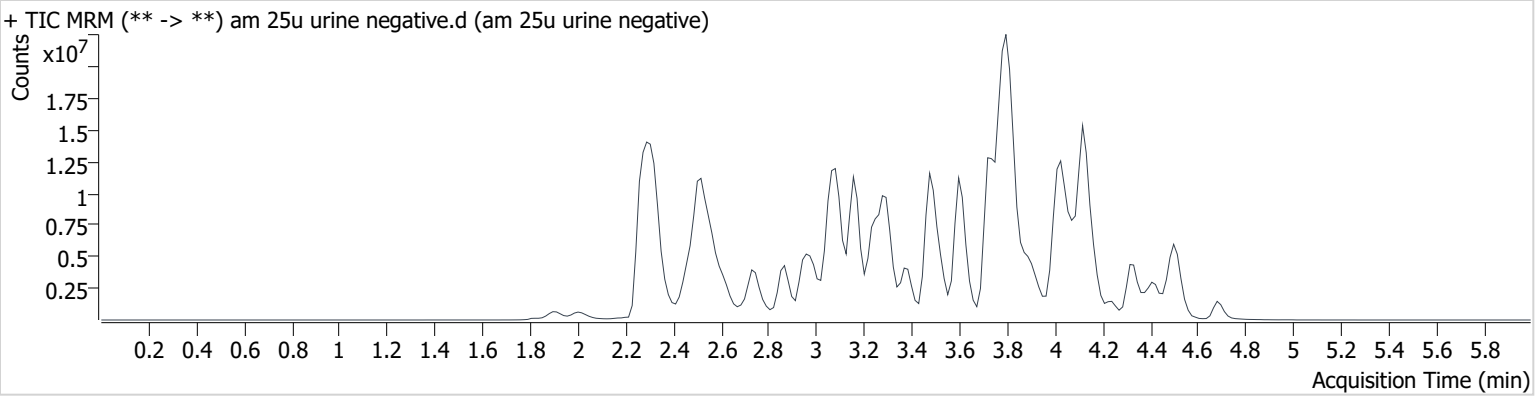
# AM #25 Multi-Drug Screen Results

BW

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\mds 3920.batch.bin
**Calibration Last Update** 2/24/2020 9:42:04 AM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | am 25u urine negative.d |
| **Type** | Sample | **Sample** | am 25u urine negative |
| **Acq. Method** | am25 short rt short.m | **Operator** | Britany Wylie |
| **Sample Position** | P2-A3 | **Comment** | |
| **Injection Volume** | 2.5 | | |
| **Acq. Date-Time** | 3/9/2020 3:29:13 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**




| Name | RT | Resp. | S/N | S/N | ISTD Resp. | Calc. Conc. |
|---|---|---|---|---|---|---|
| Methamphetamine | 2.604 | 2512724 | 254.4 | 109.7 | 12995620 | 4.927 <32 |

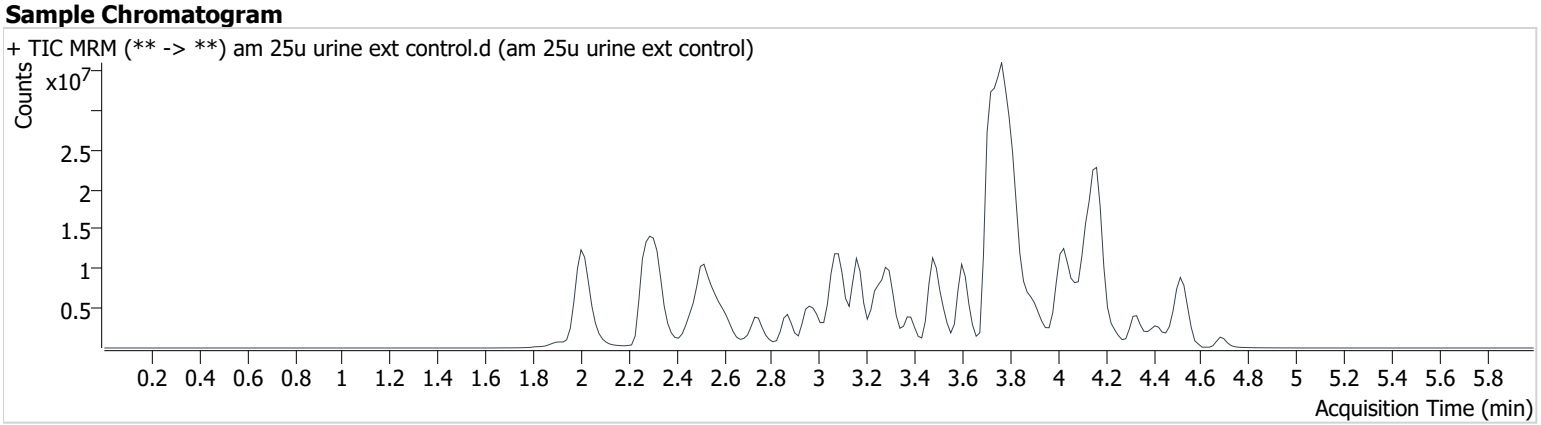
# AM #25 Multi-Drug Screen Results

BW

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\mds 3920.batch.bin
**Calibration Last Update** 2/24/2020 9:42:04 AM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | am 25u urine ext control.d |
| **Type** | Sample | **Sample** | am 25u urine ext control |
| **Acq. Method** | am25 short rt short.m | **Operator** | Britany Wylie |
| **Sample Position** | P2-B3 | **Comment** | |
| **Injection Volume** | 2.5 | | |
| **Acq. Date-Time** | 3/9/2020 3:42:32 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**




| Name | RT | Resp. | S/N | S/N | ISTD Resp. | Calc. Conc. |
|---|---|---|---|---|---|---|
| Chlordiazepoxide | 4.520 | 3145450 | 5058.1 | 6058.9 | 5363509 | 142.087 |
| Diphenhydramine | 3.744 | 100857060 | 68320.3 | 17865.7 | 12128588 | 532.253 |
| Hydromorphone | 2.008 | 29059923 | 3608.7 | 8621.1 | 1983657 | 578.118 |
| Methamphetamine | 2.604 | 3712916 | 148.9 | 298.1 | 12568875 | 7.528 |
| Nortriptyline | 4.174 | 36160353 | 122811.8 | 4899.2 | 1725772 | 556.354 |

<32

BW

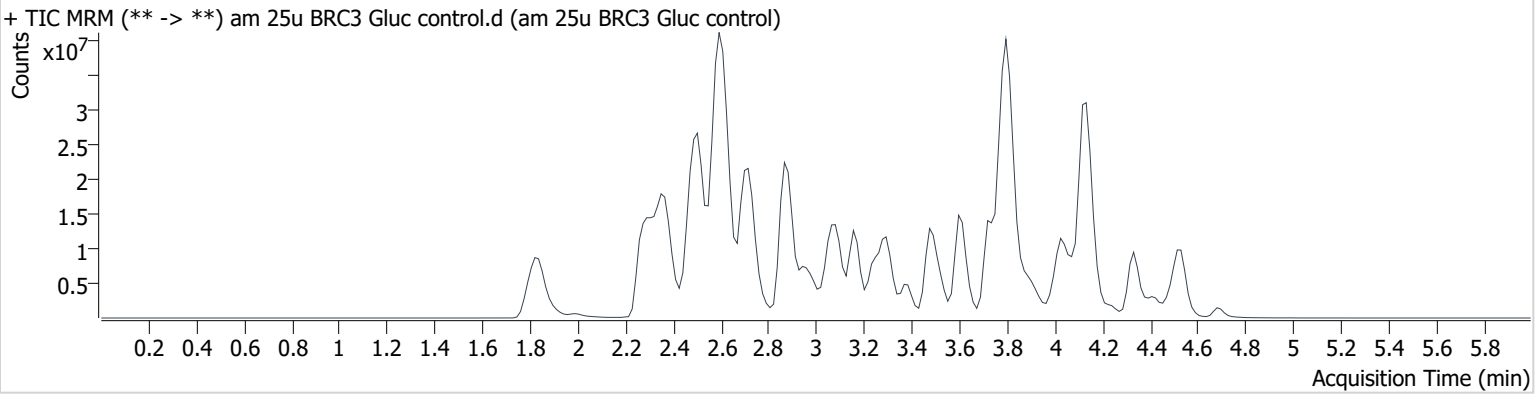
# AM #25 Multi-Drug Screen Results

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\mds 3920.batch.bin
**Calibration Last Update** 2/24/2020 9:42:04 AM

**Instrument** 69679
**Type** Sample
**Acq. Method** am25 short rt short.m
**Sample Position** P2-E3
**Injection Volume** 2.5
**Acq. Date-Time** 3/9/2020 3:55:50 PM
**Sample Info.**

**Data File** am 25u BRC3 Gluc control.d
**Sample** am 25u BRC3 Gluc control
**Operator** Britany Wylie
**Comment**

**Sample Chromatogram**




| Name | RT | Resp. | S/N | S/N | ISTD Resp. | Calc. Conc. |
|---|---|---|---|---|---|---|
| 6-MAM | 2.500 | 165522 | 330.2 | 230.2 | 774081 | 74.336 |
| a-hydroxyalprazolam | 4.333 | 1564028 | 512.4 | 613.7 | 398789 | 216.217 |
| Amphetamine | 2.499 | 27716304 | 6281.8 | 1357.4 | 5404643 | 184.092 |
| Benzoylecgonine | 3.081 | 437778 | 435.1 | 117.1 | 2732578 | 7.882 |
| Codeine | 2.368 | 20254863 | 89117.8 | 166234.0 | 561276 | 1765.760 |
| Dextrorphan | 3.039 | 3551087 | 764.3 | 541.3 | 7167365 | 27.579 |
| Doxylamine | 3.313 | 2568474 | 1086.8 | 722.7 | 27863945 | 4.469 |
| EDDP | 3.801 | 7640799 | 4380.6 | 2229.9 | 23549226 | 21.160 |
| Hydromorphone | 1.826 **Low** | 6496080 | 10713.7 | 3351.4 | 2221599 | 115.392 |
| MDA | 2.633 | 29848969 | 912.4 | 699.3 | 5940806 | 237.101 |
| MDEA | 2.876 | 46365182 | 1388.7 | 785.7 | 12306774 | 182.438 |
| MDMA | 2.724 | 47870217 | ∞ | 14906.2 | 1845300 | 167.048 |
| Methadone | 4.136 | 42921959 | 28841.8 | 7278.5 | 14777278 | 156.724 |
| Methamphetamine | 2.604 | 51096013 | 953.0 | 25508.3 | 14283942 | 91.153 |
| Morphine | 1.826 | 12519784 | 514017.8 | 2138.1 | 47997 | 1928.377 |
| Nordiazepam | 4.540 | 16189504 | 2554.4 | 1526.8 | 2268361 | 235.270 |
| Oxazepam | 4.339 | 9865560 | 6475.4 | 760.0 | 3049880 | 197.370 |
| Phencyclidine | 3.623 | 5981239 | 1579.9 | 1083.1 | 16861788 | 17.791 |

BW

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

Extraction Date: 3-9-2020 Analyst: Britany Wylie

Plate lot#: 190716 Plate Expiration: 01/16/2020

**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**: 20A52255 **Urine Blank:** 11420 **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. *Shaker ID: 66759*
☒ 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:

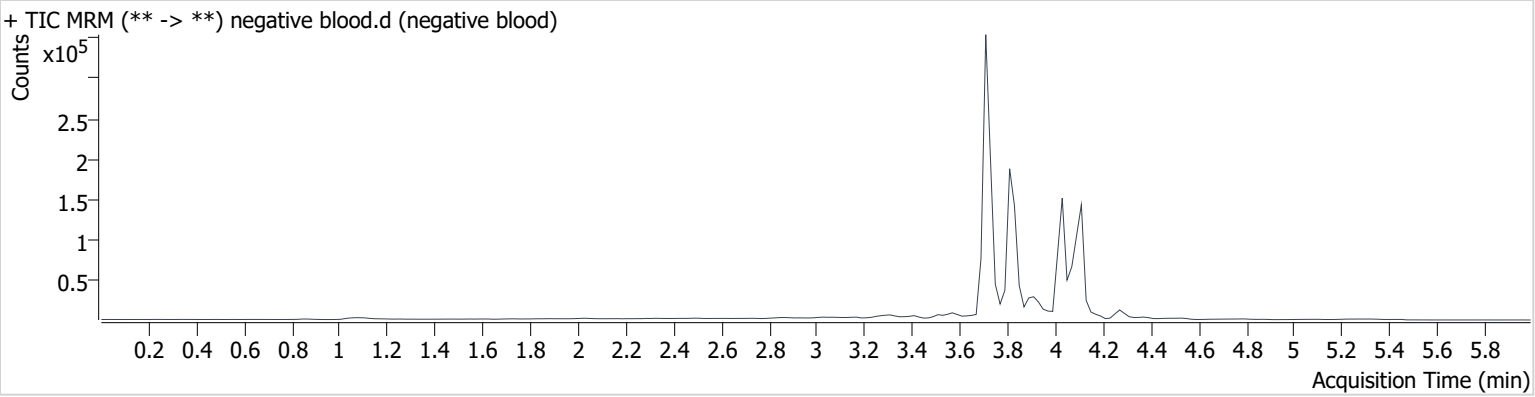
BW

# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin
**Calibration Last Update** 3/9/2020 9:11:30 PM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | negative blood.d |
| **Type** | Sample | **Sample** | negative blood |
| **Acq. Method** | am 26 cann screen.m | **Operator** | Britany Wylie |
| **Sample Position** | P3-A2 | **Comment** | |
| **Injection Volume** | 5 | | |
| **Acq. Date-Time** | 3/9/2020 6:50:44 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**



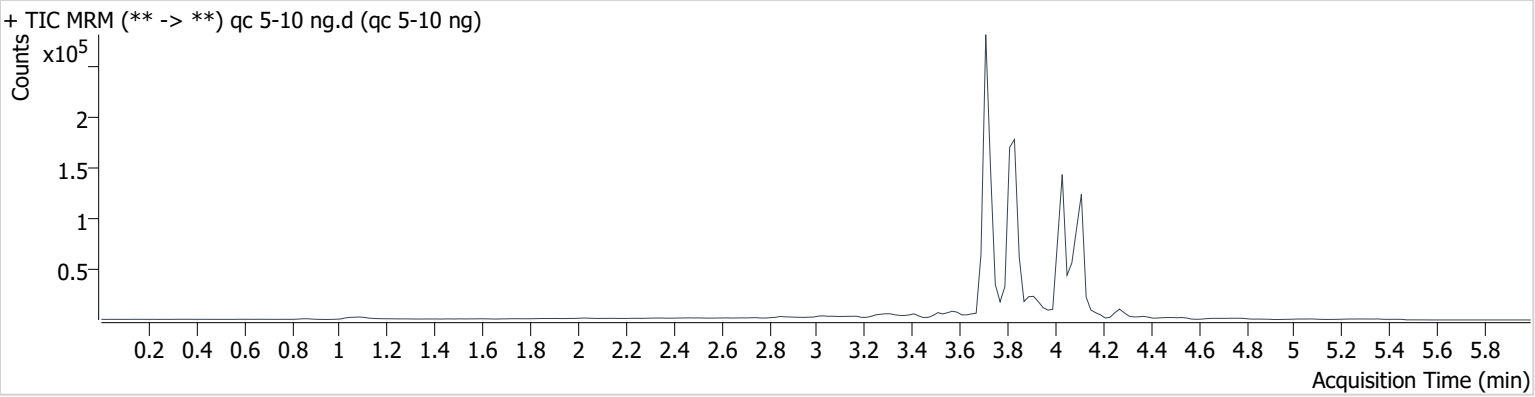
BW

# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin
**Calibration Last Update** 3/9/2020 9:11:30 PM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | qc 5-10 ng.d |
| **Type** | QC | **Sample** | qc 5-10 ng |
| **Acq. Method** | am 26 cann screen.m | **Operator** | Britany Wylie |
| **Sample Position** | P3-H1 | **Comment** | |
| **Injection Volume** | 5 | | |
| **Acq. Date-Time** | 3/9/2020 6:44:08 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**




| Name | RT | Resp. | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|
| THC | 4.120 | 18655 | 287478 | 4.488 | ng/ml |
| THC-COOH | 3.830 | 62300 | 338232 | 13.772 | ng/ml |
| THC-OH | 3.716 | 5151 | 611752 | 4.557 | ng/ml |

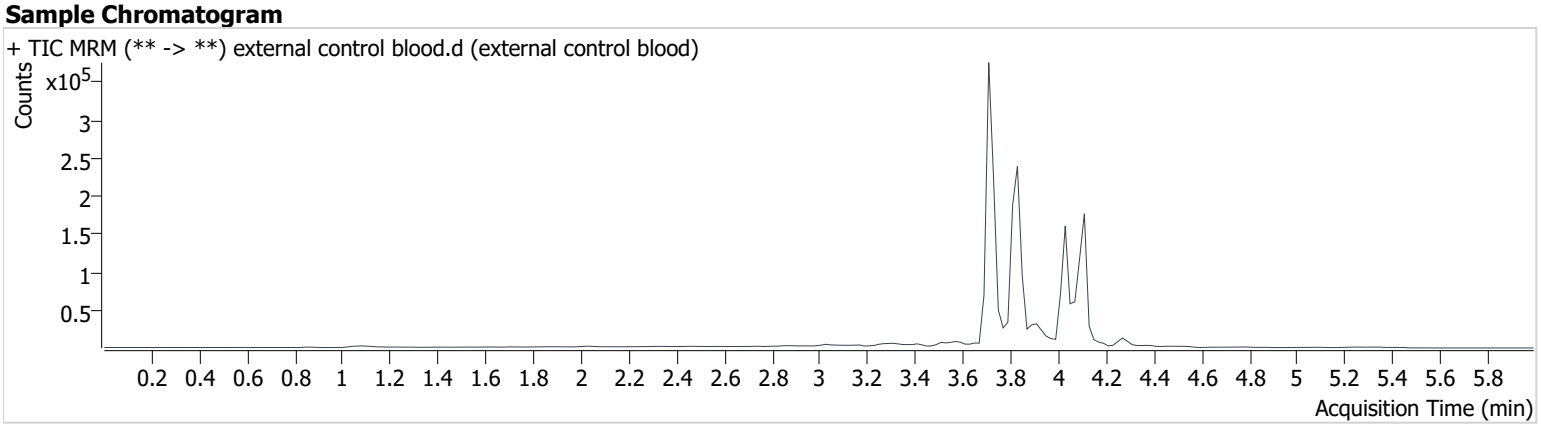
BW

# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin
**Calibration Last Update** 3/9/2020 9:11:30 PM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | external control blood.d |
| **Type** | Sample | **Sample** | external control blood |
| **Acq. Method** | am 26 cann screen.m | **Operator** | Britany Wylie |
| **Sample Position** | P3-B2 | **Comment** | |
| **Injection Volume** | 5 | | |
| **Acq. Date-Time** | 3/9/2020 6:57:19 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**




| Name | RT | Resp. | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|
| THC | 4.120 | 39798 | 367025 | 7.422 | ng/ml |
| THC-COOH | 3.830 | 85164 | 427220 | 14.956 | ng/ml |
| THC-OH | 3.716 | 10941 | 807500 | 7.267 | ng/ml |

BW

**Toxicology AM method 27/26 external prep information**

working solution 1 ug/ml in meoh C-THC, THC-OH, THC

Stock solution 1mg/ml 7.5 ul each THC, 100 ug/ml 150 ul C-THC, 75 ulTHC-OH in 9767.5 ul meOH

Ppd 2/13/20 Exp: 8/13/20 lot 21320 by AMN

| Drug | lot | expiration |
|---|---|---|
| C-THC | FE07171501 | 9/1/2020 |
| THC-OH | FE07721601 | 7/1/2021 |
| THC | FE001041701 | 3/1/2022 |

AM 27/26 blood control 100 ul working solution lot (91319) in 9900 ul blood lot (20A52255)

ppd 02/13/20 Exp 08/13/20 lot b81320 Concentration 7.5 ng/ml THC, THC-OH and 15 ng/ml C-THC by AMN

AM 27/26 urine control 400 ul working solution lot (21320) in 9600 ul urine lot (11420)

ppd 02/13/20 Exp 08/13/20 lot u81320 Concentration 30 ng/ml THC, THC-OH and 60 ng/ml C-THC by AMN

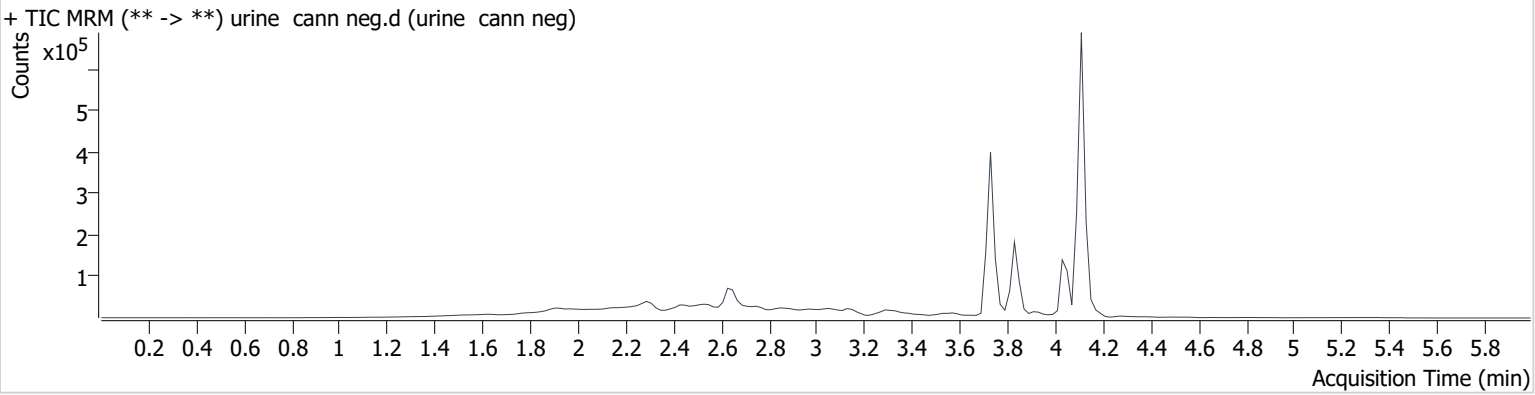
# AM #26 Cannabinoids Screen Results

BW

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin
**Calibration Last Update** 3/9/2020 9:11:30 PM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | urine cann neg.d |
| **Type** | Sample | **Sample** | urine cann neg |
| **Acq. Method** | am 26 cann screen.m | **Operator** | Britany Wylie |
| **Sample Position** | P3-C4 | **Comment** | |
| **Injection Volume** | 5 | | |
| **Acq. Date-Time** | 3/9/2020 8:23:09 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**



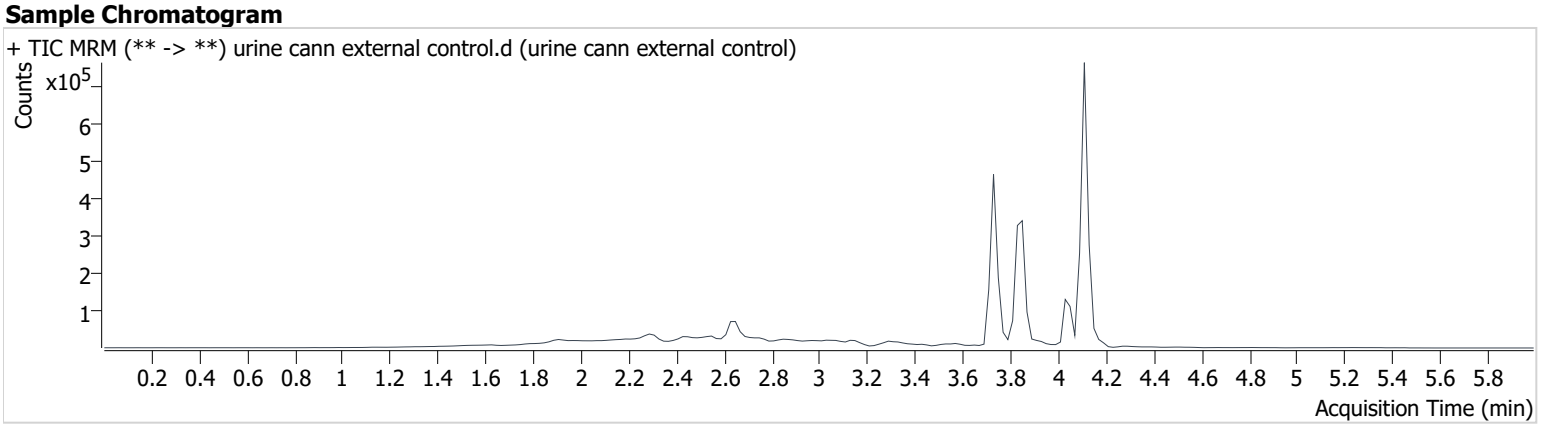
# AM #26 Cannabinoids Screen Results

BW

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin
**Calibration Last Update** 3/9/2020 9:11:30 PM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | urine cann external control.d |
| **Type** | Sample | **Sample** | urine cann external control |
| **Acq. Method** | am 26 cann screen.m | **Operator** | Britany Wylie |
| **Sample Position** | P3-H3 | **Comment** | |
| **Injection Volume** | 5 | | |
| **Acq. Date-Time** | 3/9/2020 8:29:45 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**

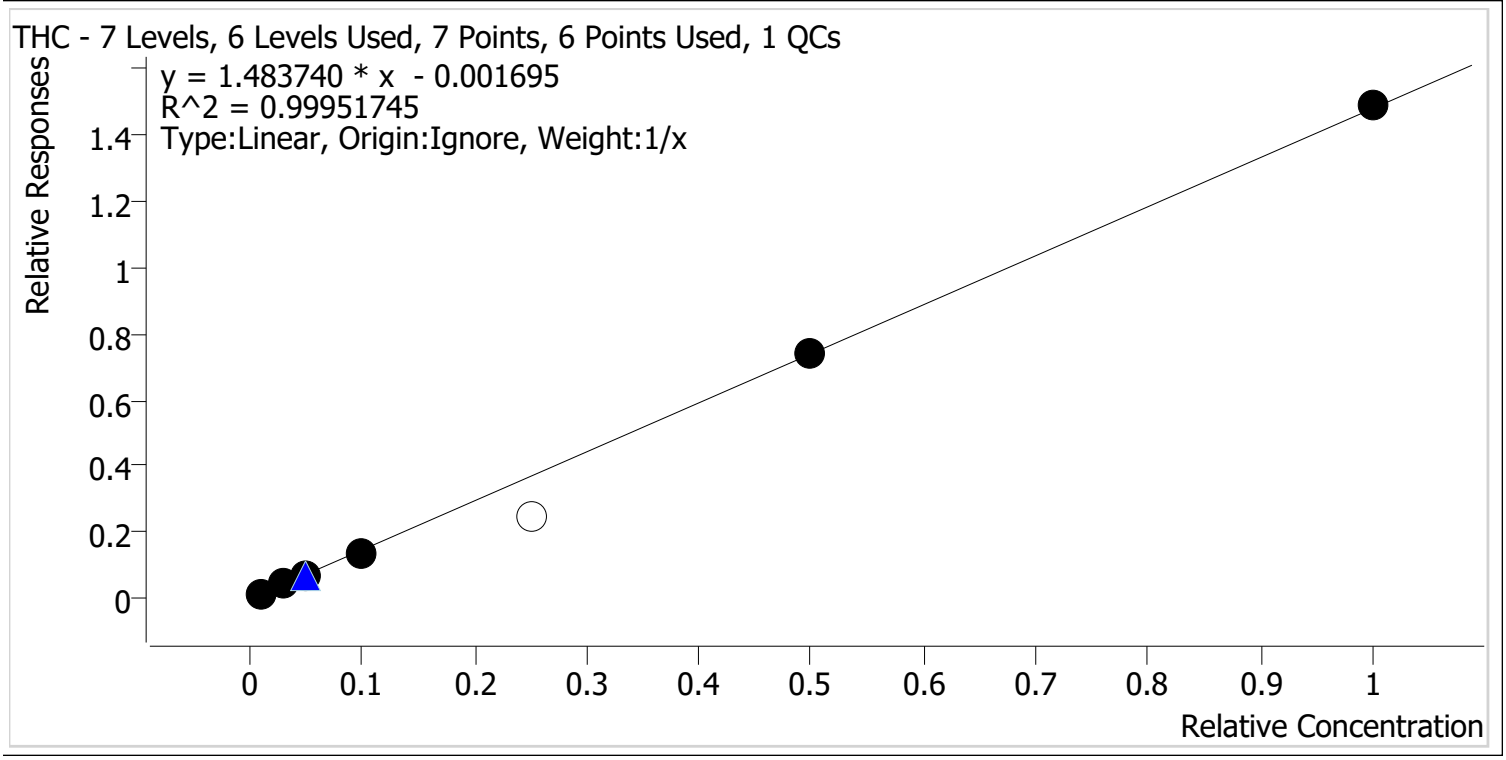



| Name | RT | Resp. | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|
| THC | 4.120 | 104339 | 1473925 | 4.885 | ng/ml |
| THC-COOH | 3.850 | 224283 | 399608 | 43.234 | ng/ml |
| THC-OH | 3.736 | 23714 | 816022 | 15.461 | ng/ml |

# Compound Calibration Report

| | |
|---|---|
| **Batch results** | D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin |
| **Last Cal. Update** | 3/9/2020 9:11 PM |
| **Analyst Name** | ISP\datastor |
| **Analyte** | THC |
| **Internal Standard** | THC-d3 |

BW

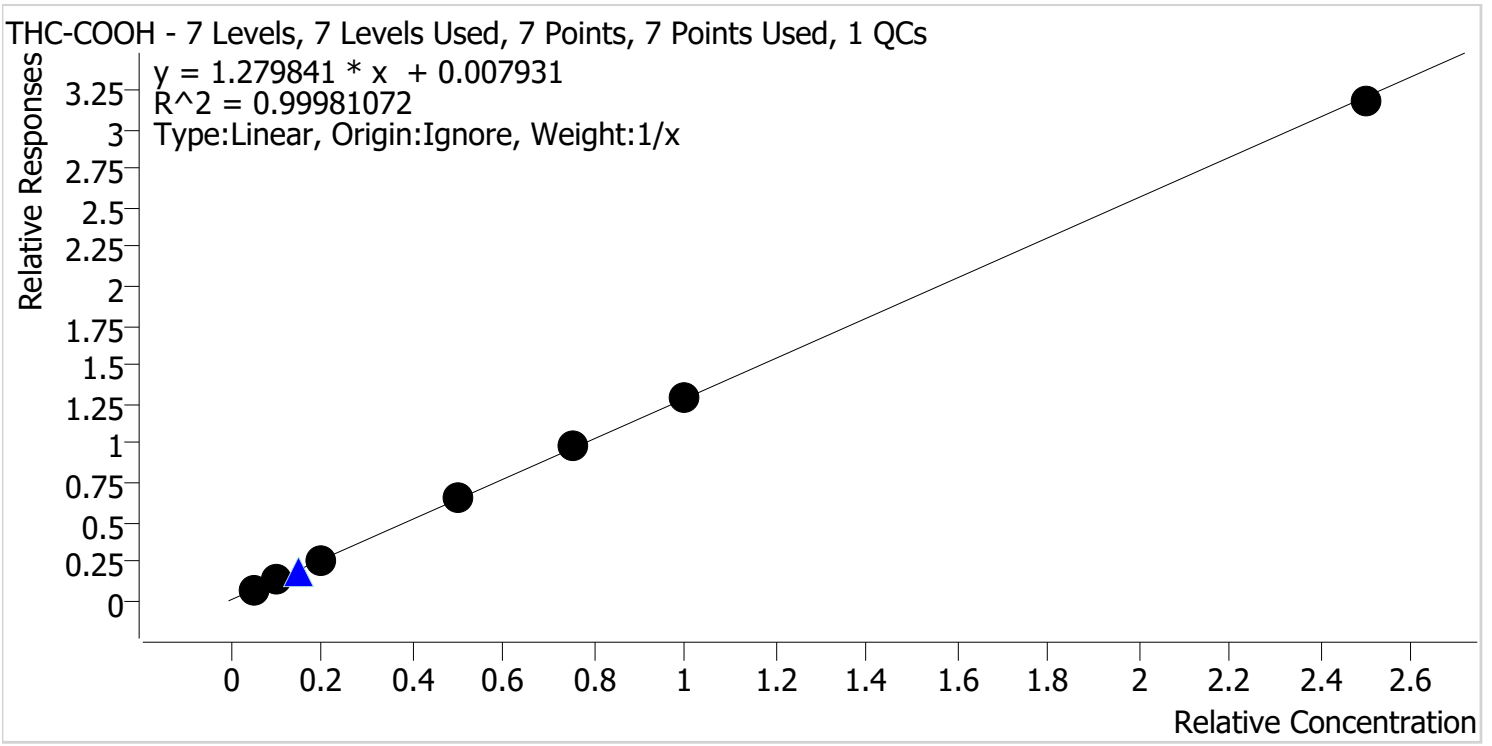



| Sample | Level | Enabled | Expected Concentration | Final Concentration | Accuracy |
|---|---|---|---|---|---|
| check std 1ng | 1 | ✔ | 1.0 | 1.1 | 107.8 |
| cal 2 | 2 | ✔ | 3.0 | 3.1 | 102.7 |
| cal 3 | 3 | ✔ | 5.0 | 4.8 | 95.5 |
| cal 4 | 4 | ✔ | 10.0 | 9.3 | 93.0 |
| cal 5 | 5 | ✗ | 25.0 | 16.7 | 66.9 |
| cal-6 | 6 | ✔ | 50.0 | 50.2 | 100.4 |
| cal-7 | 7 | ✔ | 100.0 | 100.6 | 100.6 |

# Compound Calibration Report

| | |
|---|---|
| **Batch results** | D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin |
| **Last Cal. Update** | 3/9/2020 9:11 PM |
| **Analyst Name** | ISP\datastor |
| **Analyte** | THC-COOH |
| **Internal Standard** | THC-COOH-d9 |

BW

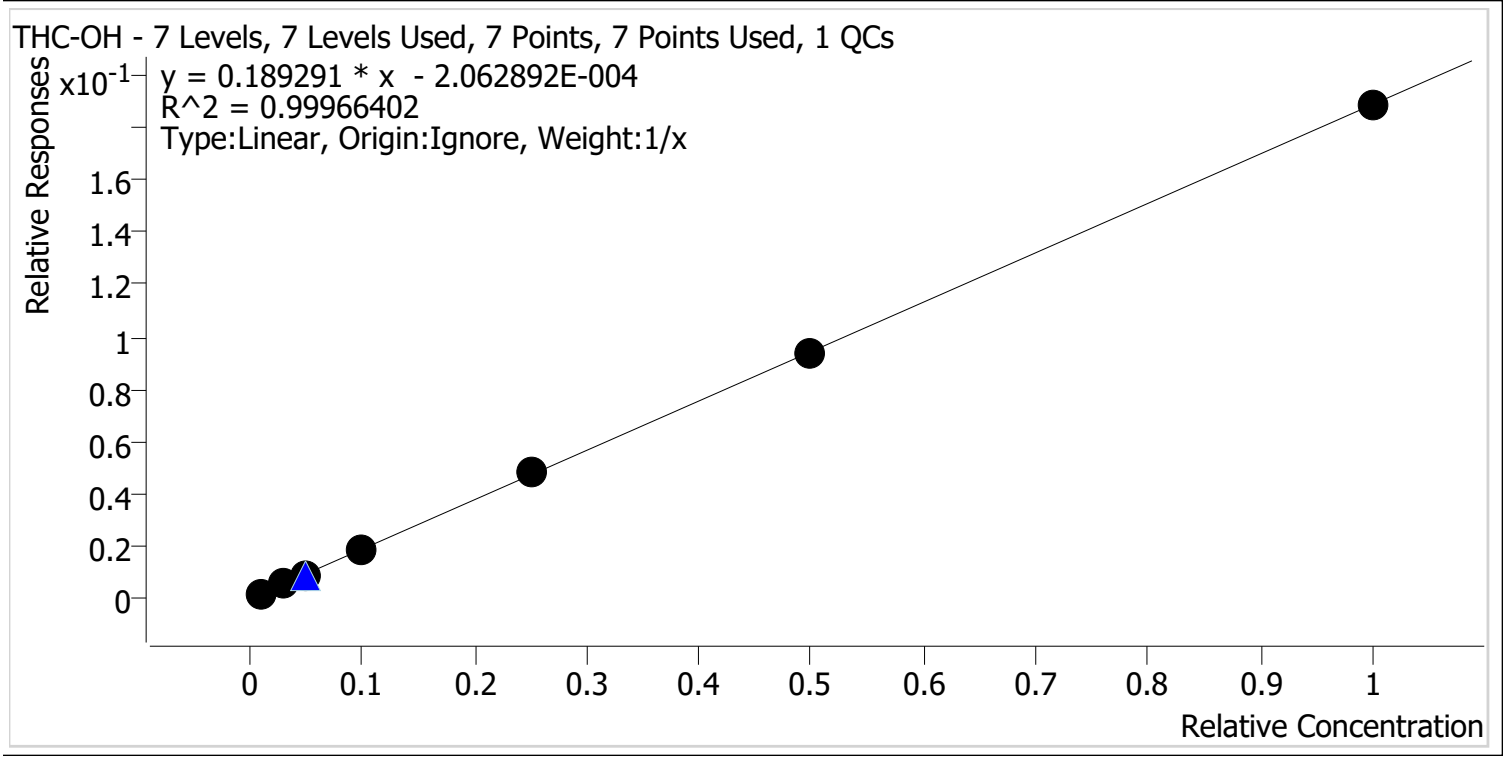



| Sample | Level | Enabled | Expected Concentration | Final Concentration | Accuracy |
|---|---|---|---|---|---|
| check std 1ng | 1 | ✔ | 5.0 | 4.9 | 98.7 |
| cal 2 | 2 | ✔ | 10.0 | 9.7 | 97.4 |
| cal 3 | 3 | ✔ | 20.0 | 20.2 | 101.0 |
| cal 4 | 4 | ✔ | 50.0 | 50.8 | 101.7 |
| cal 5 | 5 | ✔ | 75.0 | 76.4 | 101.9 |
| cal-6 | 6 | ✔ | 100.0 | 100.3 | 100.3 |
| cal-7 | 7 | ✔ | 250.0 | 247.6 | 99.0 |

# Compound Calibration Report

| | |
|---|---|
| **Batch results** | D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin |
| **Last Cal. Update** | 3/9/2020 9:11 PM |
| **Analyst Name** | ISP\datastor |
| **Analyte** | THC-OH |
| **Internal Standard** | THC-OH-d3 |

BW




| Sample | Level | Enabled | Expected Concentration | Final Concentration | Accuracy |
|---|---|---|---|---|---|
| check std 1ng | 1 | ✔ | 1.0 | 1.0 | 99.4 |
| cal 2 | 2 | ✔ | 3.0 | 3.1 | 103.7 |
| cal 3 | 3 | ✔ | 5.0 | 4.8 | 97.0 |
| cal 4 | 4 | ✔ | 10.0 | 9.7 | 97.2 |
| cal 5 | 5 | ✔ | 25.0 | 25.9 | 103.8 |
| cal-6 | 6 | ✔ | 50.0 | 49.7 | 99.3 |
| cal-7 | 7 | ✔ | 100.0 | 99.7 | 99.7 |

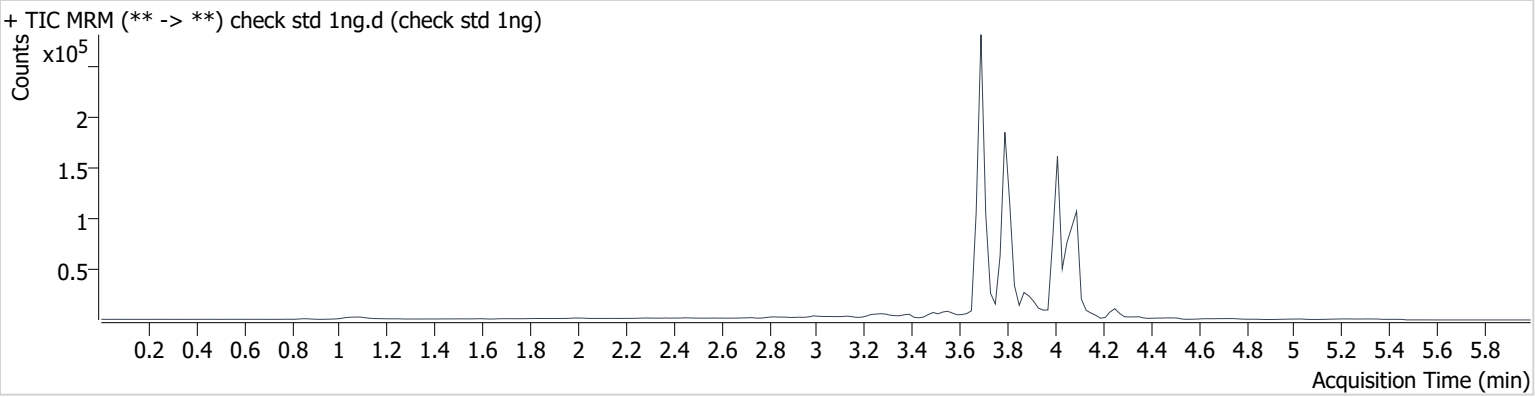
# AM #26 Cannabinoids Screen Results

BW

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin
**Calibration Last Update** 3/9/2020 9:11:30 PM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | check std 1ng.d |
| **Type** | Cal | **Sample** | check std 1ng |
| **Acq. Method** | am 26 cann screen.m | **Operator** | Britany Wylie |
| **Sample Position** | P3-A1 | **Comment** | |
| **Injection Volume** | 5 | | |
| **Acq. Date-Time** | 3/9/2020 5:51:21 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**




| Name | RT | Resp. | ISTD Resp. | Final Conc. | | |
|---|---|---|---|---|---|---|
| THC | 4.100 | 4419 | 308891 | 1.078 | ng/ml | **Low** |
| THC-COOH | 3.810 | 26942 | 378991 | 4.935 | ng/ml | **Low** |
| THC-OH | 3.696 | 1039 | 620374 | 0.994 | ng/ml | **Low** |

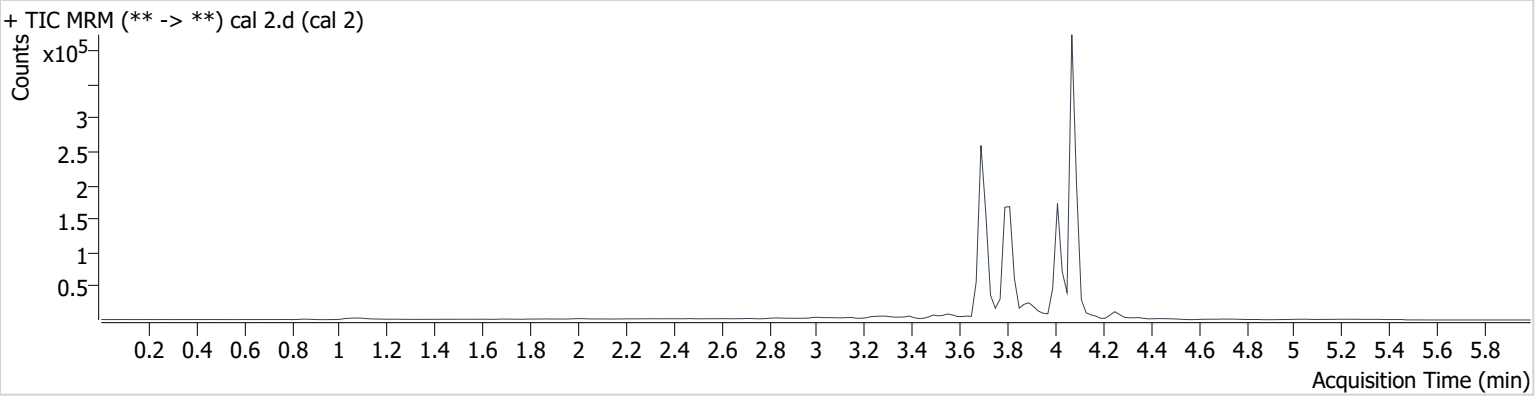
# AM #26 Cannabinoids Screen Results

BW

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin
**Calibration Last Update** 3/9/2020 9:11:30 PM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | cal 2.d |
| **Type** | Cal | **Sample** | cal 2 |
| **Acq. Method** | am 26 cann screen.m | **Operator** | Britany Wylie |
| **Sample Position** | P3-B1 | **Comment** | |
| **Injection Volume** | 5 | | |
| **Acq. Date-Time** | 3/9/2020 5:57:59 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**



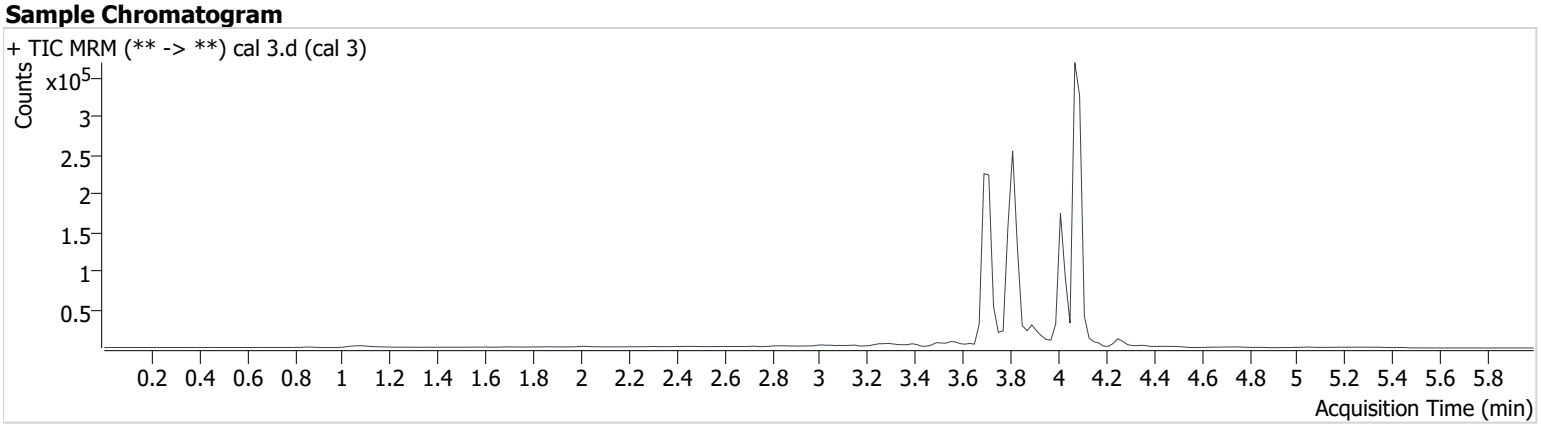

| Name | RT | Resp. | ISTD Resp. | Final Conc. | | |
|---|---|---|---|---|---|---|
| THC | 4.080 | 33231 | 755100 | 3.080 | ng/ml | |
| THC-COOH | 3.810 | 49111 | 370265 | 9.744 | ng/ml | **Low** |
| THC-OH | 3.696 | 3417 | 601477 | 3.110 | ng/ml | |

# AM #26 Cannabinoids Screen Results BW

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin
**Calibration Last Update** 3/9/2020 9:11:30 PM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | cal 3.d |
| **Type** | Cal | **Sample** | cal 3 |
| **Acq. Method** | am 26 cann screen.m | **Operator** | Britany Wylie |
| **Sample Position** | P3-C1 | **Comment** | |
| **Injection Volume** | 5 | | |
| **Acq. Date-Time** | 3/9/2020 6:04:35 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**




| Name | RT | Resp. | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|
| THC | 4.080 | 56074 | 810976 | 4.774 | ng/ml |
| THC-COOH | 3.810 | 103936 | 390046 | 20.201 | ng/ml |
| THC-OH | 3.716 | 5626 | 626961 | 4.849 | ng/ml |

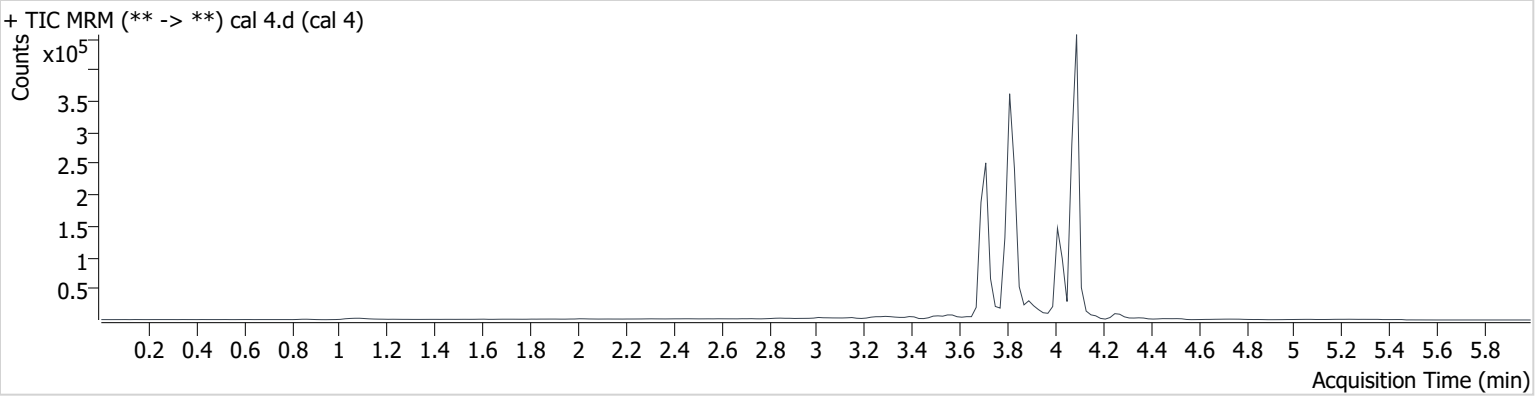
# AM #26 Cannabinoids Screen Results

BW

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin
**Calibration Last Update** 3/9/2020 9:11:30 PM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | cal 4.d |
| **Type** | Cal | **Sample** | cal 4 |
| **Acq. Method** | am 26 cann screen.m | **Operator** | Britany Wylie |
| **Sample Position** | P3-D1 | **Comment** | |
| **Injection Volume** | 5 | | |
| **Acq. Date-Time** | 3/9/2020 6:11:11 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**




| Name | RT | Resp. | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|
| THC | 4.100 | 109041 | 799849 | 9.302 | ng/ml |
| THC-COOH | 3.810 | 224142 | 340410 | 50.828 | ng/ml |
| THC-OH | 3.716 | 10275 | 564965 | 9.717 | ng/ml |

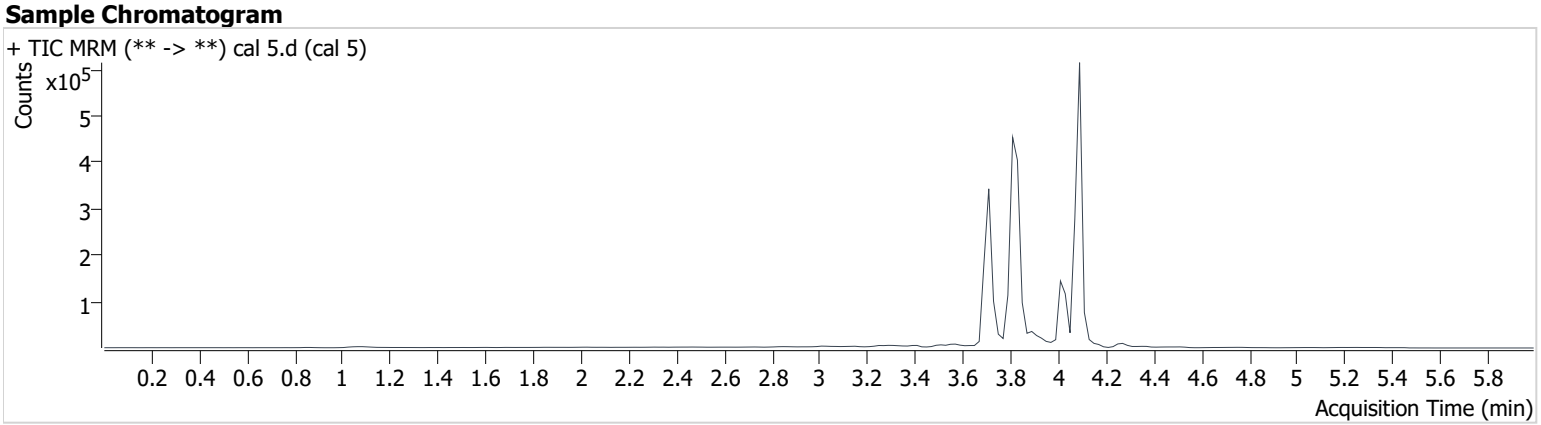
BW

# AM #26 Cannabinoids Screen Results

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin
**Calibration Last Update** 3/9/2020 9:11:30 PM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | cal 5.d |
| **Type** | Cal | **Sample** | cal 5 |
| **Acq. Method** | am 26 cann screen.m | **Operator** | Britany Wylie |
| **Sample Position** | P3-E1 | **Comment** | |
| **Injection Volume** | 5 | | |
| **Acq. Date-Time** | 3/9/2020 6:17:48 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**



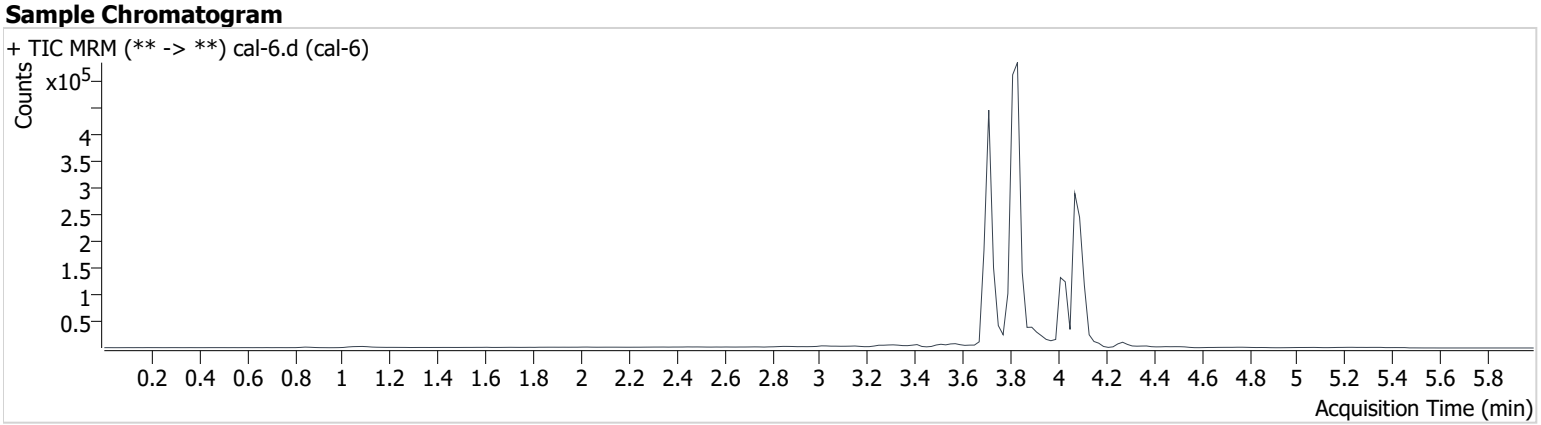

| Name | RT | Resp. | ISTD Resp. | Final Conc. |
|---|---|---|---|---|
| THC | 4.100 | 215350 | 873553 | 16.729 ng/ml |
| THC-COOH | 3.830 | 347179 | 352261 | 76.388 ng/ml |
| THC-OH | 3.716 | 26367 | 539143 | 25.945 ng/ml |

# AM #26 Cannabinoids Screen Results BW

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin
**Calibration Last Update** 3/9/2020 9:11:30 PM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | cal-6.d |
| **Type** | Cal | **Sample** | cal-6 |
| **Acq. Method** | am 26 cann screen.m | **Operator** | Britany Wylie |
| **Sample Position** | P3-F1 | **Comment** | |
| **Injection Volume** | 5 | | |
| **Acq. Date-Time** | 3/9/2020 6:24:24 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**




| Name | RT | Resp. | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|
| THC | 4.080 | 273470 | 367963 | 50.204 | ng/ml |
| THC-COOH | 3.830 | 449727 | 348117 | 100.321 | ng/ml |
| THC-OH | 3.716 | 50750 | 541148 | 49.653 | ng/ml |

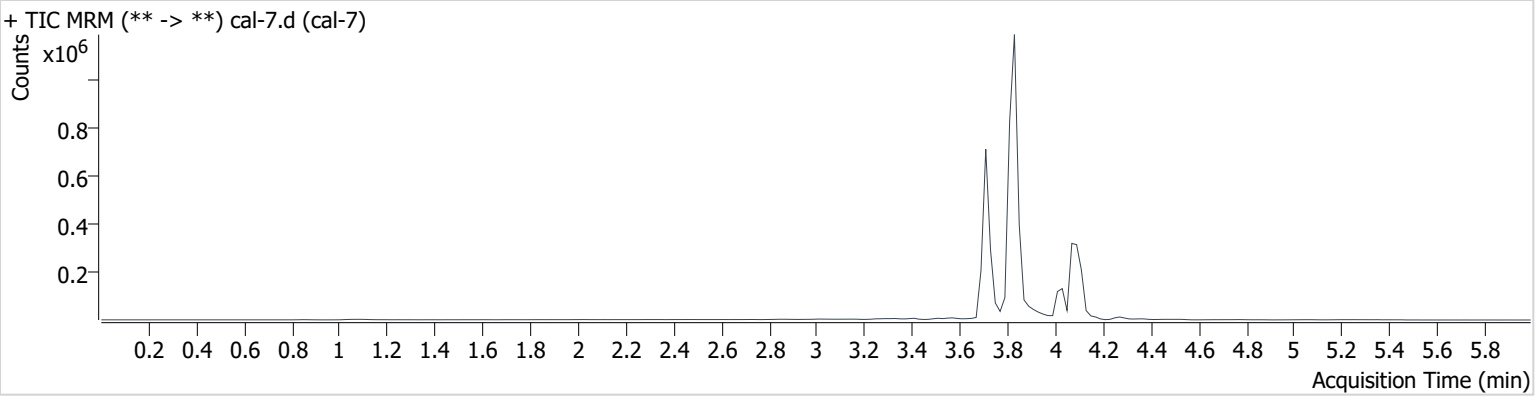
# AM #26 Cannabinoids Screen Results

BW

**Batch results** D:\MassHunter\Data\2020 Data\am 25-26 3-9-20\QuantResults\cann scr 3920.batch.bin
**Calibration Last Update** 3/9/2020 9:11:30 PM

| | | | |
|---|---|---|---|
| **Instrument** | 69679 | **Data File** | cal-7.d |
| **Type** | Cal | **Sample** | cal-7 |
| **Acq. Method** | am 26 cann screen.m | **Operator** | Britany Wylie |
| **Sample Position** | P3-G1 | **Comment** | |
| **Injection Volume** | 5 | | |
| **Acq. Date-Time** | 3/9/2020 6:31:00 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**




| Name | RT | Resp. | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|
| THC | 4.080 | 487913 | 327378 | 100.561 | ng/ml |
| THC-COOH | 3.830 | 1037031 | 326459 | 247.584 | ng/ml |
| THC-OH | 3.716 | 108873 | 577343 | 99.732 | ng/ml |

BW

**Idaho State Police**
**Forensic Services**
**Toxicology Discipline**

## Request for Departure from an Analytical Method

Date of Request
**01/13/2020**

Forensic Scientist
Celena Shrum

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

Deviation

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

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

Celena Shrum

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