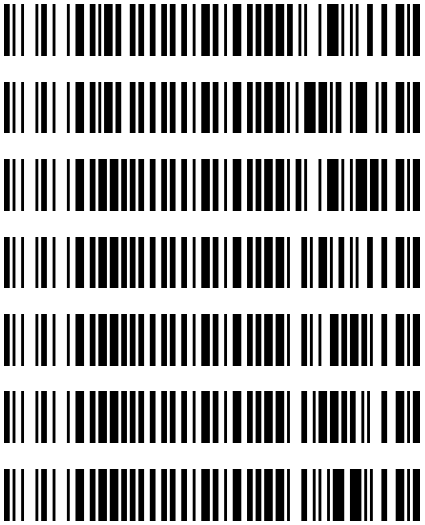
**REVIEWED**
*By Celena Shrum at 3:00 pm, Apr 15, 2020*

4/14/2020

**Worklist: 4162**

| LAB_CASE | ITEM | ITEM_TYPE | DESCRIPTION |
|---|---|---|---|
| M2020-1204 | 2 | BCK | AM 27 Blood THC Quant by LC-QQQ |
| M2020-1270 | 2 | BCK | AM 27 Blood THC Quant by LC-QQQ |
| P2020-0983 | 1 | BCK | AM 27 Blood THC Quant by LC-QQQ |
| P2020-0993 | 1 | BCK | AM 27 Blood THC Quant by LC-QQQ |
| P2020-0999 | 1 | BCK | AM 27 Blood THC Quant by LC-QQQ |
| P2020-1007 | 1 | BCK | AM 27 Blood THC Quant by LC-QQQ |
| P2020-1010 | 1 | BCK | AM 27 Blood THC Quant by LC-QQQ |



# AM# 27: Quantitation of THC and Metabolites in Blood by LC-MS/MS

Extraction Date: 04/14/20 Analyst: Sarah Pickle
Plate lot#: IDP-108-2-200303 Plate Expiration: 09/03/20

**Mobile phase A**: 0.1% Formic Acid in LCMS Water **Mobile phase B:** 0.1% Formic acid in Acetonitrile
MTBE LCMS Methanol Hexane
**Blank Blood Lot**: Hemostat 445283-3 **Column**: UCT Selectra DA 100 x 2.1mm 3um
**LCMS-QQQ ID**: 069901

## Pre-Analytic:

☒ 1. Check levels of mobile phases and needle wash refill as needed. Ensure waste is not full.
☒ 2. Ensure correct column is installed and begin mobile phase flow allow to equilibrate ~ 30 minutes.

## Analytic:

☒ 1. Remove standards, plate, controls, and samples from cold storage. Allow to reach room temperature.
☒ 2. Pipette **1000 µL blood (calibrated pipette)** in wells of analytical (standards) plate. **Pipette ID: 3382167**
☒ 3. Place on shaking incubator at ambient temp., 900rpm for 15 minutes. *Shaker ID: 067105*
☒ 4. Pipette **500 µL 0.1% formic acid in LCMS water** in wells of analytical plate.
☒ 5. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
☒ 6. Transfer **800 µL of blood+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 85-95 PSI- Selector to the right)*** Manifold ID: 067104
☒ 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. 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. 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: 067103*
☒ 16. Reconstitute in **100 µL 100% MeOH** and heat seal plate with foil. Place in autosampler and run worklist.

## Post-Analytic

☒ 1. Create batch and process data.
Worklist path: D:\MassHunter\Data\2020\AM 27-28\041420 AM 27 28 SP Batch Name: AM 27
☒ 2. Make any necessary integration changes, Curve weighting of Linear 1/x with $r^2$ values ≥0.98 for each analyte
☒ 3. RT +/- 3% or 0.100 min, whichever is greater, +/- 20% Accuracy for greater than (+/- 30% for 10ng/ml or less). Ion ratios must be within +/- 20% of the averaged calibrators
☒ 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? Y / N
☒ 6 Enter QCs into control charting.
☒ 7 Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

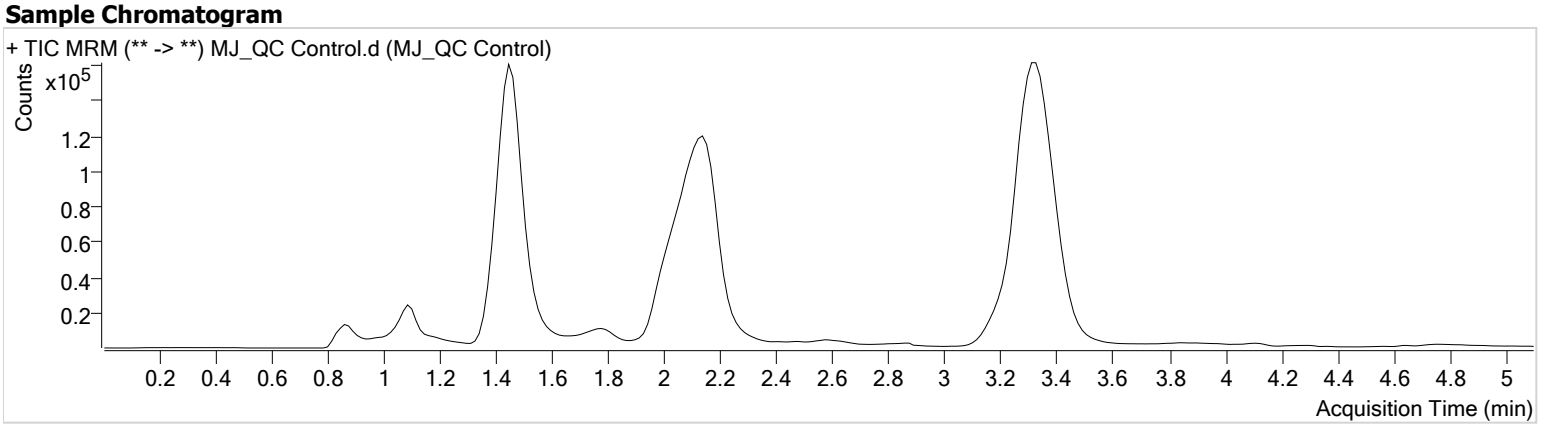
COMMENTS: *Curves limited: THC 3-100, COOH 10-250, THC-OH 5-100 (reported qualitatively)*

# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2020\AM 27-28\041420 AM 27 28 SP\QuantResults\AM 27.batch.bin
**Calibration Last Update** 4/14/2020 2:52:55 PM

| | | | |
|---|---|---|---|
| **Instrument** | Falco | **Data File** | MJ_QC Control.d |
| **Type** | Sample | **Sample** | MJ_QC Control |
| **Acq. Method** | AM 27 THC quant.m | **Operator** | Sarah Pickle |
| **Sample Position** | P3-H1 | **Comment** | |
| **Injection Volume** | 10 | | |
| **Acq. Date-Time** | 4/14/2020 12:24:10 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**



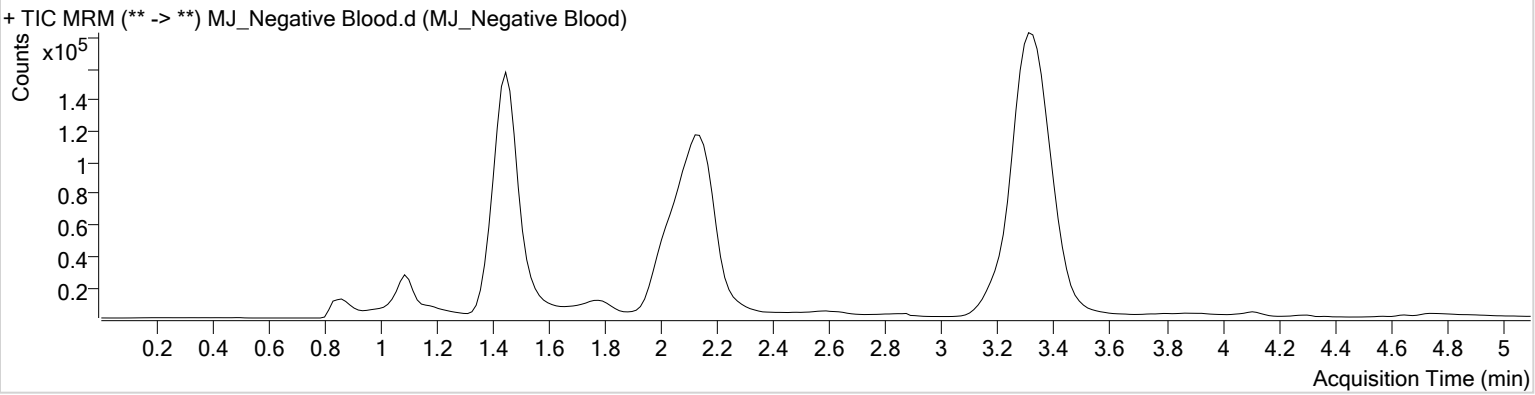

| Name | RT | Resp. | S/N | Ratio | S/N | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|---|---|---|
| THC-OH | 1.468 | 120002 | 83.38 | 8.9 | ∞ | 626228 | 4.2372 | ng/ml |
| THC-COOH | 1.489 | 74955 | 105.57 | 47.7 | 283.77 | 183253 | 16.0729 | ng/ml |
| THC | 3.345 | 58906 | 172.70 | 32.6 | 108.18 | 1542120 | 4.5494 | ng/ml |

# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2020\AM 27-28\041420 AM 27 28 SP\QuantResults\AM 27.batch.bin
**Calibration Last Update** 4/14/2020 2:52:55 PM

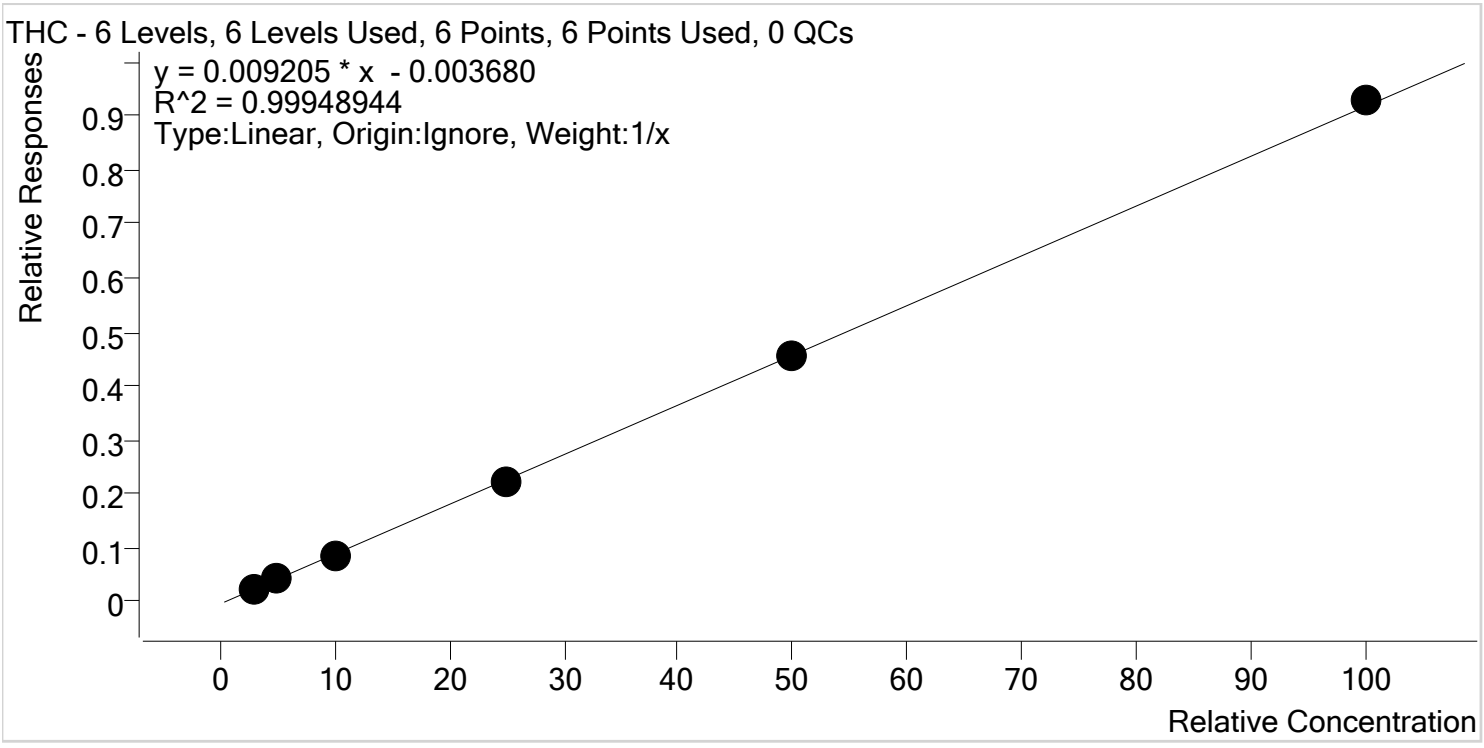
| | | | |
|---|---|---|---|
| **Instrument** | Falco | **Data File** | MJ_Negative Blood.d |
| **Type** | Sample | **Sample** | MJ_Negative Blood |
| **Acq. Method** | AM 27 THC quant.m | **Operator** | Sarah Pickle |
| **Sample Position** | P3-A2 | **Comment** | |
| **Injection Volume** | 10 | | |
| **Acq. Date-Time** | 4/14/2020 12:39:22 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**



# AM #27 Cannabinoids Quant. Calibration Curve Report

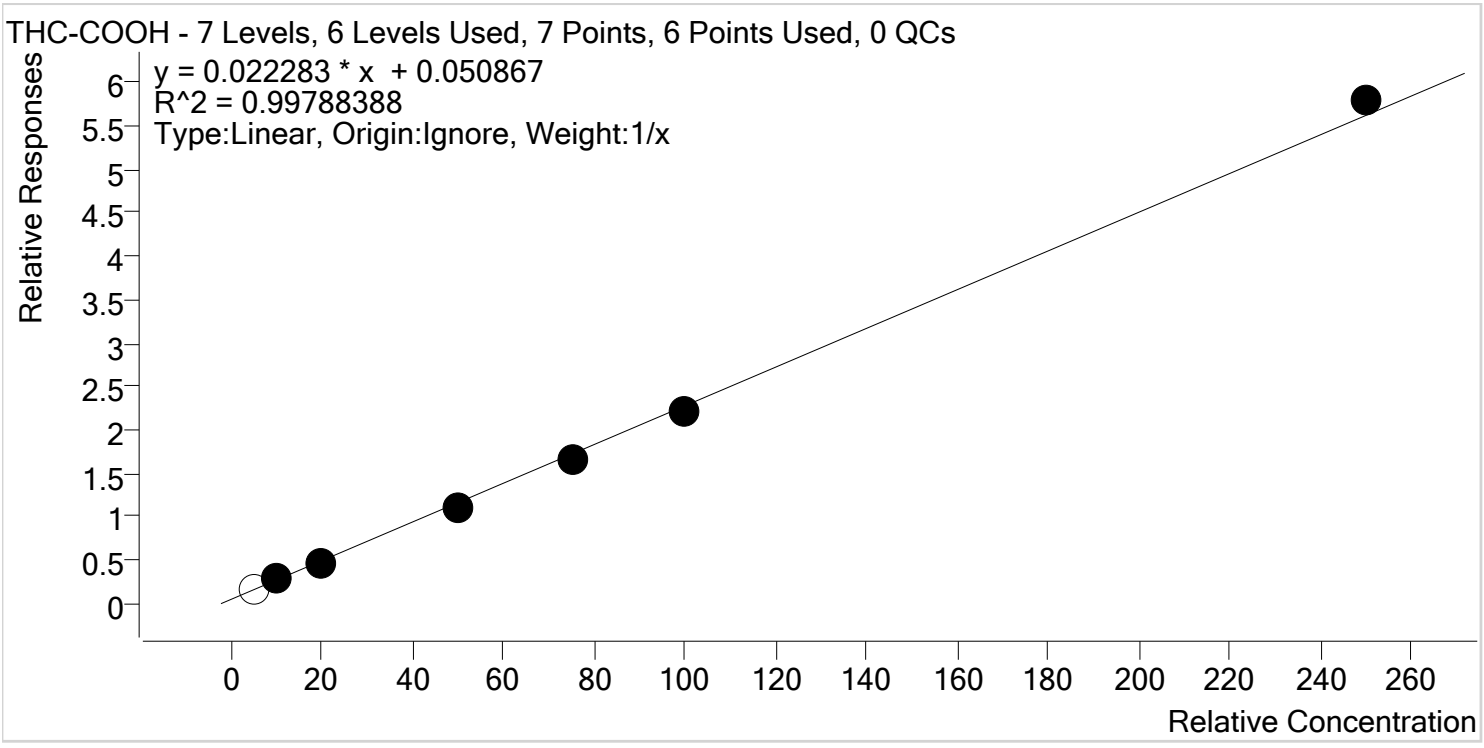
| | |
|---|---|
| **Batch results** | D:\MassHunter\Data\2020\AM 27-28\041420 AM 27 28 SP\QuantResults\AM 27.batch.bin |
| **Last Cal. Update** | 4/14/2020 2:52 PM |
| **Analyst Name** | ISP\Datastor |
| **Analyte** | THC |
| **Internal Standard** | THC-D3 |




| Sample | Level | Enabled | Expected Concentration | Final Concentration | Accuracy |
|---|---|---|---|---|---|
| MJ_Cal 2 | 2 | ✔ | 3.0 | 3.1 | 103.6 |
| MJ_Cal 3 | 3 | ✔ | 5.0 | 5.2 | 103.9 |
| MJ_Cal 4 | 4 | ✔ | 10.0 | 9.4 | 94.4 |
| MJ_Cal 5 | 5 | ✔ | 25.0 | 24.4 | 97.5 |
| MJ_Cal 6 | 6 | ✔ | 50.0 | 49.8 | 99.5 |
| MJ_Cal 7 | 7 | ✔ | 100.0 | 101.1 | 101.1 |

# AM #27 Cannabinoids Quant. Calibration Curve Report

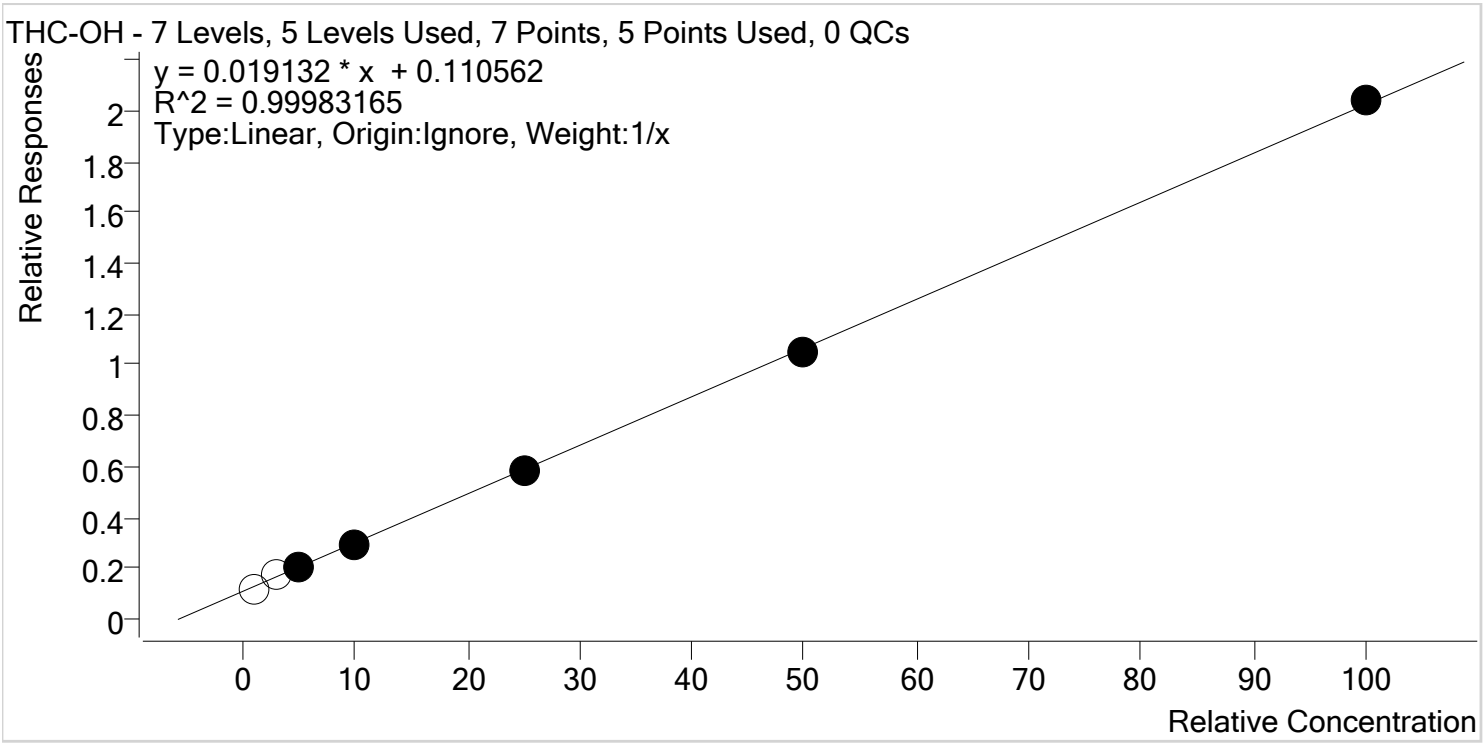
**Batch results** D:\MassHunter\Data\2020\AM 27-28\041420 AM 27 28 SP\QuantResults\AM 27.batch.bin
**Last Cal. Update** 4/14/2020 2:52 PM
**Analyst Name** ISP\Datastor
**Analyte** THC-COOH **Internal Standard** THC-COOH-D9




| Sample | Level | Enabled | Expected Concentration | Final Concentration | Accuracy |
|---|---|---|---|---|---|
| MJ_Cal 1 | 1 | ✗ | 5.0 | 5.5 | 109.1 |
| MJ_Cal 2 | 2 | ✔ | 10.0 | 11.1 | 111.2 |
| MJ_Cal 3 | 3 | ✔ | 20.0 | 19.5 | 97.4 |
| MJ_Cal 4 | 4 | ✔ | 50.0 | 47.4 | 94.9 |
| MJ_Cal 5 | 5 | ✔ | 75.0 | 72.4 | 96.5 |
| MJ_Cal 6 | 6 | ✔ | 100.0 | 97.0 | 97.0 |
| MJ_Cal 7 | 7 | ✔ | 250.0 | 257.6 | 103.0 |

# AM #27 Cannabinoids Quant. Calibration Curve Report

| | |
|---|---|
| **Batch results** | D:\MassHunter\Data\2020\AM 27-28\041420 AM 27 28 SP\QuantResults\AM 27.batch.bin |
| **Last Cal. Update** | 4/14/2020 2:52 PM |
| **Analyst Name** | ISP\Datastor |
| **Analyte** | THC-OH |
| **Internal Standard** | THC-OH-D3 |



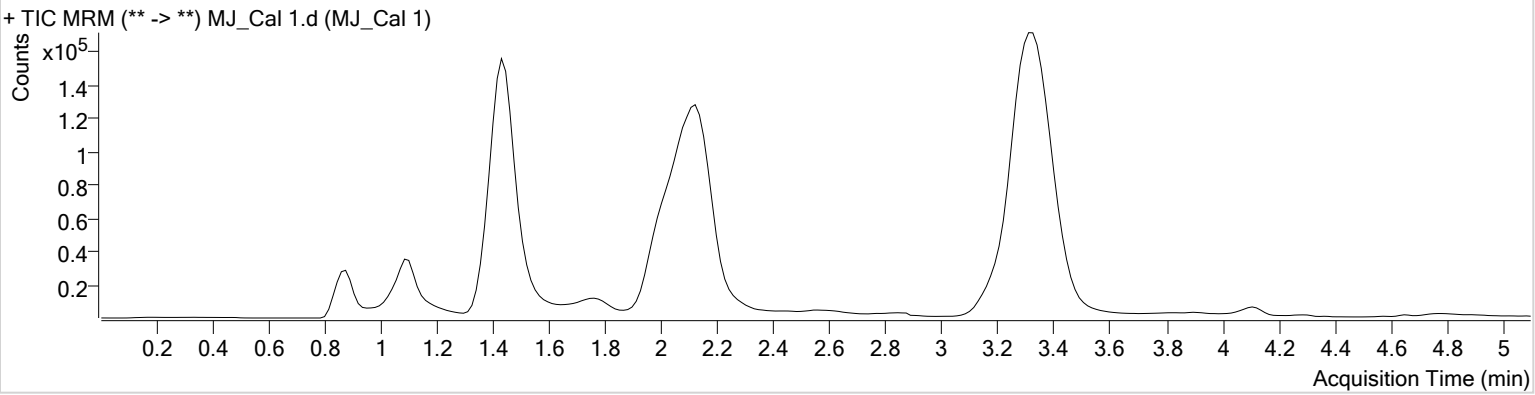

| Sample | Level | Enabled | Expected Concentration | Final Concentration | Accuracy |
|---|---|---|---|---|---|
| MJ_Cal 1 | 1 | ✗ | 1.0 | 0.5 | 54.2 |
| MJ_Cal 2 | 2 | ✗ | 3.0 | 3.8 | 125.6 |
| MJ_Cal 3 | 3 | ✔ | 5.0 | 5.1 | 101.9 |
| MJ_Cal 4 | 4 | ✔ | 10.0 | 9.9 | 98.9 |
| MJ_Cal 5 | 5 | ✔ | 25.0 | 25.0 | 99.9 |
| MJ_Cal 6 | 6 | ✔ | 50.0 | 49.3 | 98.5 |
| MJ_Cal 7 | 7 | ✔ | 100.0 | 100.8 | 100.8 |

# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2020\AM 27-28\041420 AM 27 28 SP\QuantResults\AM 27.batch.bin
**Calibration Last Update** 4/14/2020 2:52:55 PM

| | | | |
|---|---|---|---|
| **Instrument** | Falco | **Data File** | MJ_Cal 1.d |
| **Type** | Cal | **Sample** | MJ_Cal 1 |
| **Acq. Method** | AM 27 THC quant.m | **Operator** | Sarah Pickle |
| **Sample Position** | P3-A1 | **Comment** | |
| **Injection Volume** | 10 | | |
| **Acq. Date-Time** | 4/14/2020 11:23:22 AM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**



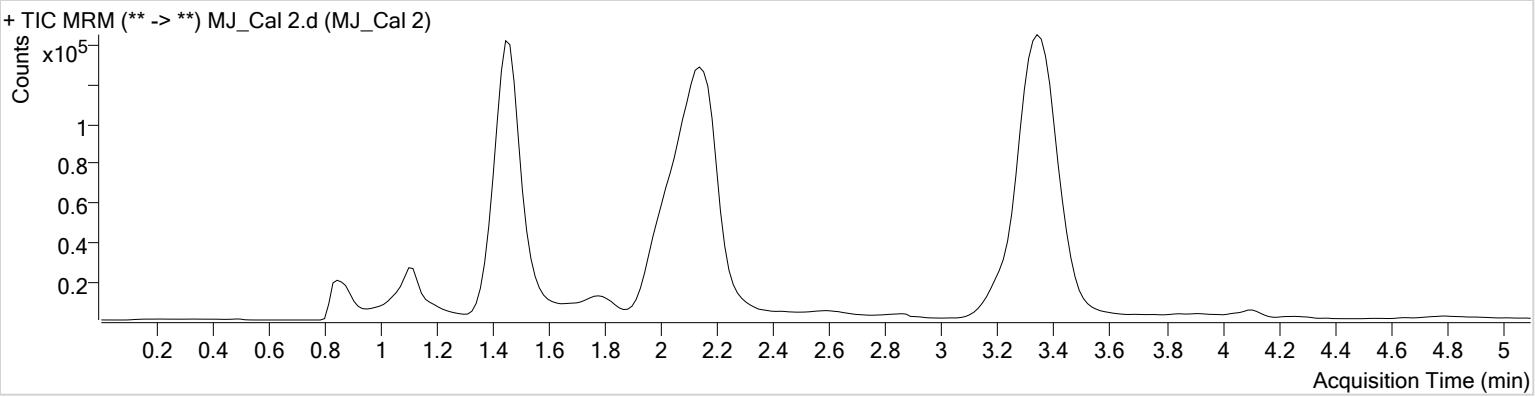

| Name | RT | Resp. | S/N | Ratio | S/N | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|---|---|---|
| THC-OH | 1.498 | 85182 | ∞ | 4.8 **Low** | 11.01 | 704405 | 0.5418 | ng/ml **Low** |
| THC-COOH | 1.474 | 35423 | 37.24 | 35.2 **Low** | 126.98 | 205499 | 5.4527 | ng/ml **Low** |

# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2020\AM 27-28\041420 AM 27 28 SP\QuantResults\AM 27.batch.bin
**Calibration Last Update** 4/14/2020 2:52:55 PM

| | | | |
|---|---|---|---|
| **Instrument** | Falco | **Data File** | MJ_Cal 2.d |
| **Type** | Cal | **Sample** | MJ_Cal 2 |
| **Acq. Method** | AM 27 THC quant.m | **Operator** | Sarah Pickle |
| **Sample Position** | P3-B1 | **Comment** | |
| **Injection Volume** | 10 | | |
| **Acq. Date-Time** | 4/14/2020 11:31:07 AM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**



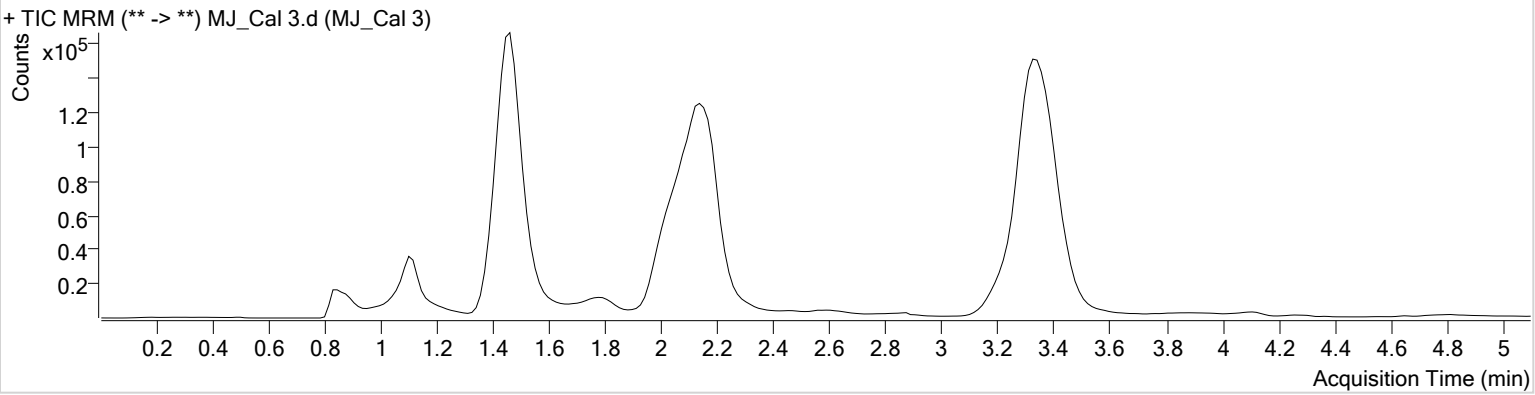

| Name | RT | Resp. | S/N | Ratio | S/N | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|---|---|---|
| THC-OH | 1.513 | 107978 | ∞ | 6.3 **Low** | 21.75 | 591119 | 3.7689 | ng/ml |
| THC-COOH | 1.489 | 52370 | 256.76 | 43.9 | 157.11 | 175331 | 11.1214 | ng/ml |
| THC | 3.360 | 36728 | 96.11 | 33.1 | 80.73 | 1473651 | 3.1074 | ng/ml |

# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2020\AM 27-28\041420 AM 27 28 SP\QuantResults\AM 27.batch.bin
**Calibration Last Update** 4/14/2020 2:52:55 PM

| | | | |
|---|---|---|---|
| **Instrument** | Falco | **Data File** | MJ_Cal 3.d |
| **Type** | Cal | **Sample** | MJ_Cal 3 |
| **Acq. Method** | AM 27 THC quant.m | **Operator** | Sarah Pickle |
| **Sample Position** | P3-C1 | **Comment** | |
| **Injection Volume** | 10 | | |
| **Acq. Date-Time** | 4/14/2020 11:38:42 AM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**



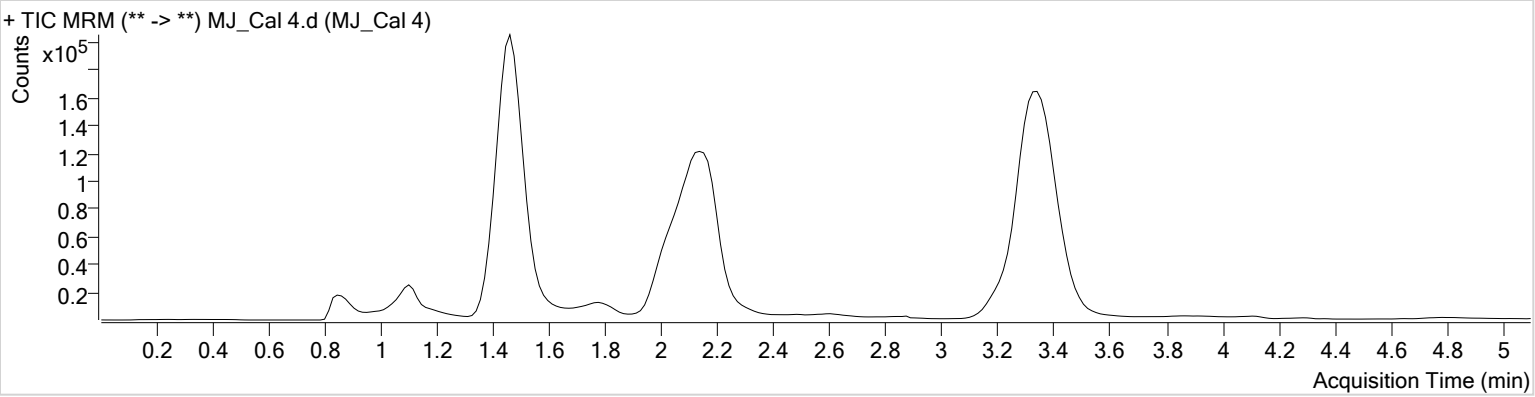

| Name | RT | Resp. | S/N | Ratio | S/N | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|---|---|---|
| THC-OH | 1.468 | 133070 | ∞ | 9.0 | ∞ | 639503 | 5.0974 | ng/ml |
| THC-COOH | 1.489 | 96916 | ∞ | 47.8 | ∞ | 199852 | 19.4795 | ng/ml |
| THC | 3.345 | 64251 | 328.81 | 30.4 | 41.04 | 1455817 | 5.1943 | ng/ml |

# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2020\AM 27-28\041420 AM 27 28 SP\QuantResults\AM 27.batch.bin
**Calibration Last Update** 4/14/2020 2:52:55 PM

| | | | |
|---|---|---|---|
| **Instrument** | Falco | **Data File** | MJ_Cal 4.d |
| **Type** | Cal | **Sample** | MJ_Cal 4 |
| **Acq. Method** | AM 27 THC quant.m | **Operator** | Sarah Pickle |
| **Sample Position** | P3-D1 | **Comment** | |
| **Injection Volume** | 10 | | |
| **Acq. Date-Time** | 4/14/2020 11:46:16 AM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**



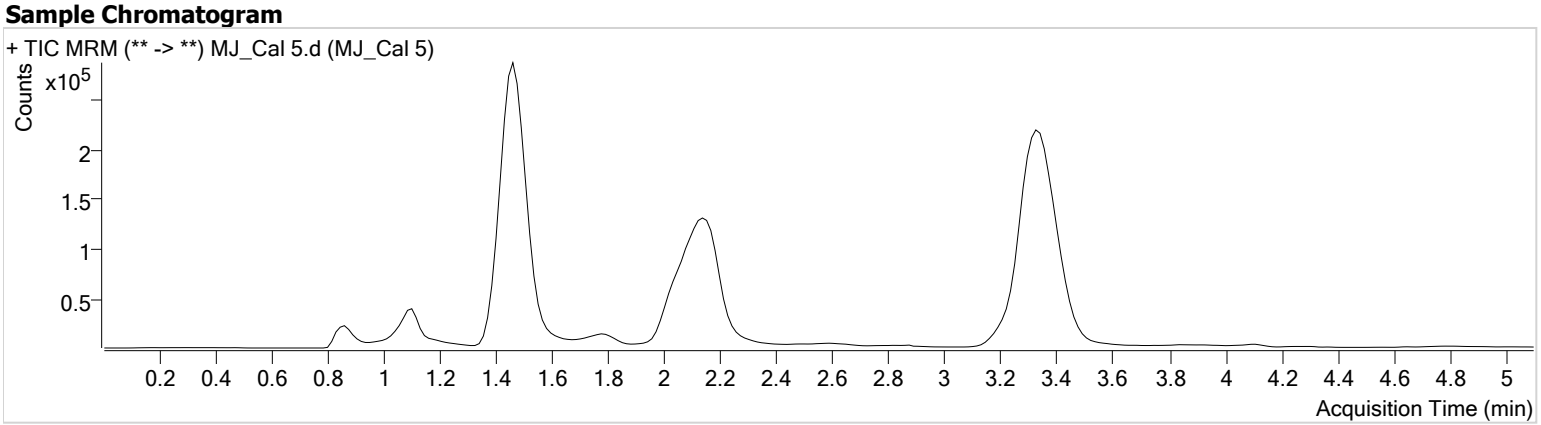

| Name | RT | Resp. | S/N | Ratio | S/N | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|---|---|---|
| THC-OH | 1.468 | 193391 | 231.19 | 9.4 | 492.23 | 645253 | 9.8869 | ng/ml |
| THC-COOH | 1.489 | 213710 | ∞ | 53.7 | 711.25 | 192938 | 47.4250 | ng/ml |
| THC | 3.345 | 128236 | 310.35 | 27.1 | 92.29 | 1540850 | 9.4409 | ng/ml |

# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2020\AM 27-28\041420 AM 27 28 SP\QuantResults\AM 27.batch.bin
**Calibration Last Update** 4/14/2020 2:52:55 PM

| | | | |
|---|---|---|---|
| **Instrument** | Falco | **Data File** | MJ_Cal 5.d |
| **Type** | Cal | **Sample** | MJ_Cal 5 |
| **Acq. Method** | AM 27 THC quant.m | **Operator** | Sarah Pickle |
| **Sample Position** | P3-E1 | **Comment** | |
| **Injection Volume** | 10 | | |
| **Acq. Date-Time** | 4/14/2020 11:53:51 AM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**



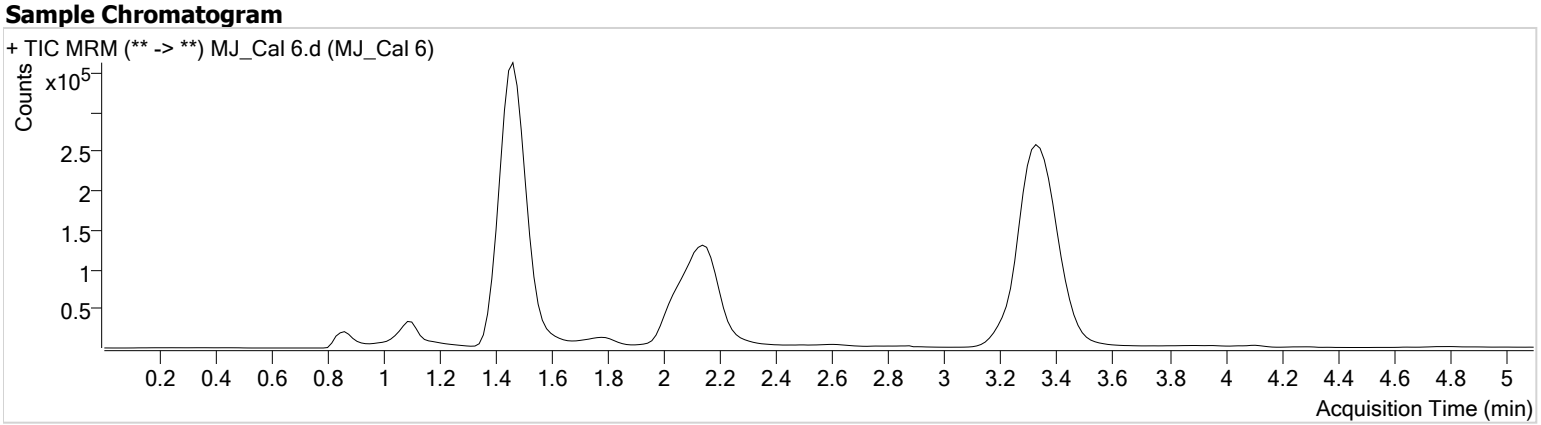

| Name | RT | Resp. | S/N | Ratio | S/N | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|---|---|---|
| THC-OH | 1.453 | 392517 | ∞ | 10.9 | 565.48 | 667205 | 24.9712 | ng/ml |
| THC-COOH | 1.489 | 338608 | 270.52 | 54.9 | 1064.50 | 203582 | 72.3578 | ng/ml |
| THC | 3.345 | 358340 | 1965.00 | 27.1 | 752.24 | 1624056 | 24.3698 | ng/ml |

# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2020\AM 27-28\041420 AM 27 28 SP\QuantResults\AM 27.batch.bin
**Calibration Last Update** 4/14/2020 2:52:55 PM

| | | | |
|---|---|---|---|
| **Instrument** | Falco | **Data File** | MJ_Cal 6.d |
| **Type** | Cal | **Sample** | MJ_Cal 6 |
| **Acq. Method** | AM 27 THC quant.m | **Operator** | Sarah Pickle |
| **Sample Position** | P3-F1 | **Comment** | |
| **Injection Volume** | 10 | | |
| **Acq. Date-Time** | 4/14/2020 12:01:25 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**



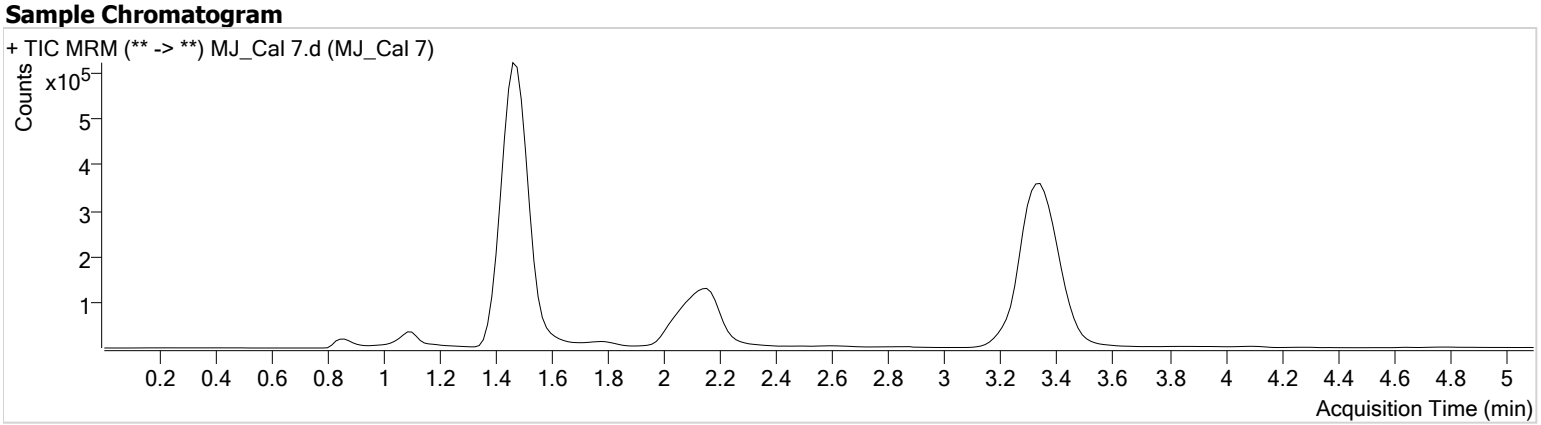

| Name | RT | Resp. | S/N | Ratio | S/N | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|---|---|---|
| THC-OH | 1.453 | 704614 | 537.39 | 12.2 | 664.67 | 669240 | 49.2535 | ng/ml |
| THC-COOH | 1.489 | 441144 | 597.08 | 56.0 | ∞ | 199350 | 97.0247 | ng/ml |
| THC | 3.345 | 741873 | 1610.57 | 25.1 | 572.34 | 1632804 | 49.7590 | ng/ml |

# AM #27 Cannabinoid Quant. Results

**Batch results** D:\MassHunter\Data\2020\AM 27-28\041420 AM 27 28 SP\QuantResults\AM 27.batch.bin
**Calibration Last Update** 4/14/2020 2:52:55 PM

| | | | |
|---|---|---|---|
| **Instrument** | Falco | **Data File** | MJ_Cal 7.d |
| **Type** | Cal | **Sample** | MJ_Cal 7 |
| **Acq. Method** | AM 27 THC quant.m | **Operator** | Sarah Pickle |
| **Sample Position** | P3-G1 | **Comment** | |
| **Injection Volume** | 10 | | |
| **Acq. Date-Time** | 4/14/2020 12:08:59 PM | | |
| **Sample Info.** | | | |

**Sample Chromatogram**




| Name | RT | Resp. | S/N | Ratio | S/N | ISTD Resp. | Final Conc. | |
|---|---|---|---|---|---|---|---|---|
| THC-OH | 1.453 | 1319427 | ∞ | 12.1 | ∞ | 647142 | 100.7911 | ng/ml |
| THC-COOH | 1.489 | 1035969 | ∞ | 58.4 | 3091.25 | 178896 | 257.5915 | ng/ml |
| THC | 3.345 | 1526576 | 3866.21 | 24.9 | 926.51 | 1646407 | 101.1287 | ng/ml |