





















## Worklist: 3018

REVIEWED

By Sarah Pickle at 12:25 pm, Mar 13, 2019

<u>LAB_CASE</u>	<u>ITEM</u>	<u>TASK_ID</u>	<u>DESCRIPTION</u>	
M2019-0688	1	139130	AM 25 Blood Multi-Drug Screen by LC-QQQ	
M2019-0770	1	139464	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0553	1	142083	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0555	1	143480	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0589	1	143876	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0598	1	142440	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0599	1	142445	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0600	1	142449	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0600	2	142453	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0604	2	142559	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0605	1	142563	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0606	1	142566	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0614	1	142769	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0626	1	142877	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0634	1	142930	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0642	1	142948	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0644	1	142991	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0669	1	143215	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0696	1	143369	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0697	1	143472	AM 25 Blood Multi-Drug Screen by LC-QQQ	

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

Extraction Date: 03/08/2019  
 Plate lot#: 0543908

Analyst: Celena Shrum  
 Plate Expiration: 11/28/2019

**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:** 445283-1  
**LCMS-QQQ ID:** 069901  
**Column:** Phenomenex Phenyl Hexyl (4.6x50mm, 2.6um)

**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 **250 µL blood (calibrated pipette) Pipette ID: 16** in wells of analytical (standards) plate.
- 3. Place on shaking incubator at ambient temp., 900 rpm for 15 minutes. *Shaker ID: 067105*
- 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+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: 067104*
- 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. Place on SPE Dry and evaporate to dryness at approx. 35°C.  
*SPE Dry ID: 067103*
- 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.  
 Batch Name: 030819 am 25 worklist 3018 CS  
 Worklist path: D:\MassHunter\Data\2019\MDS\030819 am 25 worklist 3018 blood CS
- 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? Y / N Yes
- 5. Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS:



# Idaho State Police Forensic Services

## AM #25 Blood Multi-Drug Screen by LCMS-QQQ

Analyst: Celena Shrum  
Extraction Date: 03/08/2019  
Worklist Number: 3018

### Methanol External Control Solution (Lot: 042618)

100 ul of 1mg/mL stock was added to each drug to 9600 ul of LC MeOH.

Component	Source	Source Lot Number	Expiration Date
Methanol (LCMS)	Fisher	177145	
Oxycodone	Cerilliant	FE01181701	March 2022
Diazepam	Cerilliant	FE05201602	June 2021
Metoprolol	Cerilliant	FN06091510	July 2020
Meperidine	Cerilliant	FE01271602	June 2021
Prepared:	04/26/18		
Prepared By:	Tamara Salazar		
Expires:	04/26/19		

### Blood External Control Solution (Lot: WS122618)

100 ul of methanol external control solution was added to 9900 ul of blood.  
Approximately 50ng/mL of each compound.

Component	Source	Source Lot Number
Negative Blood	Hemostat	445283-1
Methanol External Control Solution		042618
Prepared:	12/26/18	
Prepared by:	Tamara Salazar	
Expires:	04/26/19	

# AM #25 Multi-Drug Screen Results



**Batch results**

D:\MassHunter\Data\2019\MDS\030819 am 25 worklist 3018 blood CS\QuantResults\030819 am 25 worklist 3018 CS.batch.bin

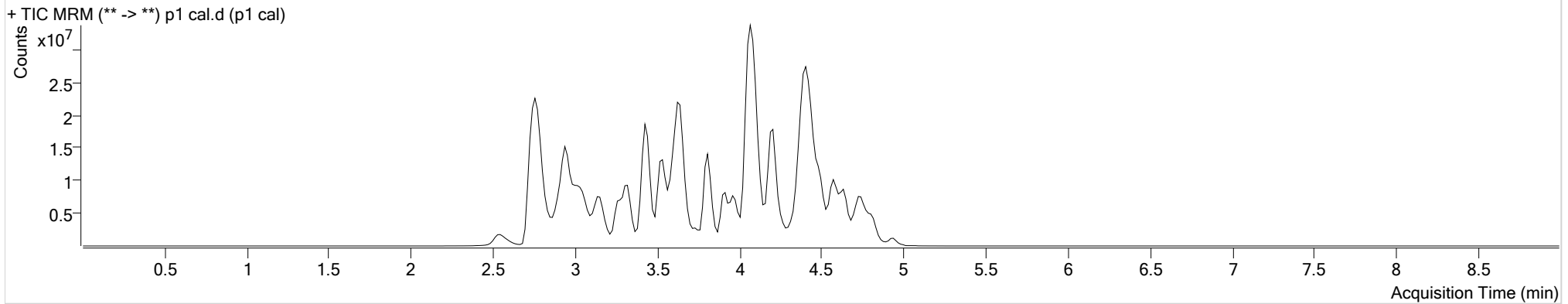
**Calibration Last Update**

3/12/2019 7:41:28 AM

**Instrument Type** FALCO-LCMS (Property ID 069901)  
**Acq. Method** am 25 all RT updates.m  
**Sample Position** P1-A6  
**Injection Volume** 5  
**Acq. Date-Time** 3/8/2019 4:22:25 PM  
**Sample Info.**

**Data File** p1 cal.d  
**Sample** p1 cal  
**Operator** Celena Shrum  
**Comment**

**Sample Chromatogram**



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Final Conc.
Oxymorphone	2.559	1761664	∞	395.98	6097559	10.0000 ng/ml
Morphine	2.592	330487	3790.32	9922.26	171638	10.0000 ng/ml
Pseudoephedrine	2.764	31072526	11222.69	∞	85857633	10.0000 ng/ml
Hydromorphone	2.789	581561	∞	6.45	2110436	10.0000 ng/ml
Acetyl Norfentanyl	2.929	211568	827.62	219.34	10506805	10.0000 ng/ml
Dihydrocodeine	2.907	890954	∞	822.39	4868935	10.0000 ng/ml
O-desmethyl-tramadol	2.958	5856244	7219.86	612.67	26426704	10.0000 ng/ml
Amphetamine	2.964	1781790	953.48	207.42	4390419	10.0000 ng/ml
Noroxycodone	2.969	802605	∞	171.81	2765817	10.0000 ng/ml
Oxycodone	3.027	1676178	464.39	∞	6967193	10.0000 ng/ml
Codeine	3.000	348177	614.00	910.55	1477514	10.0000 ng/ml
Norhydrocodone	3.001	37257	∞	15.95	1036446	10.0000 ng/ml
6-MAM	3.057	45961	117.05	171.55	1130129	10.0000 ng/ml
Methamphetamine	3.039	3745733	559.15	594.18	11694131	10.0000 ng/ml
MDA	3.068	1866025	1150.04	1806.51	8042567	10.0000 ng/ml
Levamisole	3.114	2024199	∞	∞	18472399	10.0000 ng/ml
MDMA	3.144	4397897	19608.96	∞	2465326	10.0000 ng/ml
Hydrocodone	3.151	1029501	∞	∞	5590666	10.0000 ng/ml

# AM #25 Multi-Drug Screen Results



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Final Conc.
Phentermine	3.177	930030	∞	53.28	10524597	10.0000 ng/ml
MDEA	3.281	4175942	∞	3930.57	17577131	10.0000 ng/ml
Norfentanyl	3.326	4168886	12561.08	1066.95	16910950	10.0000 ng/ml
Benzoylcegonine	3.335	780734	2103.74	128.61	3447726	10.0000 ng/ml
Dextrorphan	3.415	2127441	23992.59	11332.75	11389092	10.0000 ng/ml
Metoprolol	3.445	500616	169.50	2192.56	7973991	10.0000 ng/ml
Tramadol	3.429	5903562	1448.77	30.97	28547528	10.0000 ng/ml
Tapentadol	3.450	3624615	24381.55	478.95	16159428	10.0000 ng/ml
Methylphenidate	3.540	7133246	∞	∞	29558334	10.0000 ng/ml
7-aminoclonazepam	3.549	354769	67.38	155.99	1400799	10.0000 ng/ml
Methocarbamol	3.554	375916	1200.21	∞	7973991	10.0000 ng/ml
alpha-PVP	3.588	2695071	3477.89	1217.16	11189256	10.0000 ng/ml
Cocaine	3.609	3818754	317207.70	4464.16	18472399	10.0000 ng/ml
Lamotrigine	3.615	176794	1306.77	220.11	7973991	10.0000 ng/ml
Normeperidine	3.618	1431395	100.43	95.74	5136106	10.0000 ng/ml
Meperidine	3.646	1796222	139.23	450.81	7973991	10.0000 ng/ml
Meprobamate	3.635	562881	107.84	46.45	2244166	10.0000 ng/ml
Doxylamine	3.643	8118041	22261.05	∞	31568718	10.0000 ng/ml
Ketamine	3.679	2369205	95.44	51.63	10021057	10.0000 ng/ml
7-aminoflunitrazepam	3.748	749312	298.65	∞	3665337	10.0000 ng/ml
Venlafaxine	3.809	5262960	18200.78	113.70	24925151	10.0000 ng/ml
Bupropion	3.831	2811128	6334.13	∞	9873824	10.0000 ng/ml
Norbuprenorphine	3.895	74567	419.44	400.20	355390	10.0000 ng/ml
Phencyclidine	3.922	3991832	180.89	138.38	18905244	10.0000 ng/ml
Chlorpheniramine	3.981	19850	32.82	85.82	25701207	10.0000 ng/ml
Acetyl Fentanyl	3.975	313762	398.15	744.56	18345081	10.0000 ng/ml
Olanzapine	4.022	527107	50.68	40.86	94671	10.0000 ng/ml
Diphenhydramine	4.044	4641530	88877.75	80.60	25701207	10.0000 ng/ml
Maprotiline	4.073	1800177	80.37	5.01	5958174	10.0000 ng/ml
EDDP	4.072	3713463	6618.12	3446.11	19958674	10.0000 ng/ml
Citalopram	4.112	2029718	95.40	2708.64	8369144	10.0000 ng/ml
Dextromethorphan	4.120	1749580	∞	∞	7865912	10.0000 ng/ml
Mirtazapine	4.106	1848010	∞	5786.87	7973991	10.0000 ng/ml
Phenytoin	4.123	25925	72.22	35.15	94671	10.0000 ng/ml
Carisoprodol	4.199	1117545	432.80	117.58	6197200	10.0000 ng/ml
Fentanyl	4.204	268951	500.26	2163.94	12595852	10.0000 ng/ml
Carbamazepine	4.216	4485981	570.43	582.22	22068113	10.0000 ng/ml
Doxepin	4.226	1865703	215.48	10.03	9753015	10.0000 ng/ml
Flurazepam	4.264	2251251	863512.46	358826.20	139825	10.0000 ng/ml
Mitragynine	4.278	294655	80.34	150652.46	9753015	10.0000 ng/ml
Zopiclone	4.309	285446	5204.95	887.14	1216182	10.0000 ng/ml
Zaleplon	4.331	1148787	6580.38	34819.50	3241242	10.0000 ng/ml
Fluoxetine	4.361	2752915	∞	805.65	11419228	10.0000 ng/ml
Methadone	4.407	4609912	151.30	2140.78	20645414	10.0000 ng/ml

# AM #25 Multi-Drug Screen Results



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Final Conc.
Zolpidem	4.392	5147417	360.55	311.83	25028124	10.0000 ng/ml
Cyclobenzaprine	4.413	2091773	171904.06	∞	8216122	10.0000 ng/ml
Lorazepam	4.421	83232	95.66	24.27	1661260	10.0000 ng/ml
Promethazine	4.426	5400232	8475.33	126.27	21867005	10.0000 ng/ml
Desipramine	4.429	3141555	6801.13	∞	16364507	10.0000 ng/ml
Paroxetine	4.435	268078	∞	107.83	7010155	10.0000 ng/ml
Clonazepam	4.437	289365	323.67	182.55	449123	10.0000 ng/ml
Imipramine	4.457	4995064	∞	∞	16315503	10.0000 ng/ml
Nortriptyline	4.460	1473254	1650531.77	943.22	3610347	10.0000 ng/ml
a-hydroxyalprazolam	4.497	127806	138.89	101.95	605648	10.0000 ng/ml
Amitriptyline	4.489	3070619	152.70	408.93	5958174	10.0000 ng/ml
Estazolam	4.501	2325481	2437.16	133.31	5177122	10.0000 ng/ml
Oxazepam	4.502	705070	426.24	75.11	3101378	10.0000 ng/ml
Flunitrazepam	4.560	721667	179.20	174.32	139825	10.0000 ng/ml
Sufentanil	4.571	222687	∞	∞	10964404	10.0000 ng/ml
alpha-hydroxymidazolam	4.572	718166	140.12	1448.84	5255150	10.0000 ng/ml
Alprazolam	4.592	1117109	74.26	1254.41	3565351	10.0000 ng/ml
Quetiapine	4.586	2753417	38641.62	4432.15	4223835	10.0000 ng/ml
Etizolam	4.602	167400	81341.83	188248.00	5177122	10.0000 ng/ml
Phenazepam	4.632	557472	940676.17	∞	2092290	10.0000 ng/ml
Sertraline	4.623	1494819	358.34	172.40	7010155	10.0000 ng/ml
Temazepam	4.654	2099512	∞	55.97	8707735	10.0000 ng/ml
Nordiazepam	4.689	873760	∞	2287.74	2706053	10.0000 ng/ml
Chlordiazepoxide	4.715	243165	398.22	262.62	7413274	10.0000 ng/ml
Midazolam	4.741	576913	∞	2123.05	6697378	10.0000 ng/ml
Trazodone	4.784	4752206	3093.26	13438.90	15761820	10.0000 ng/ml
Buprenorphine	4.813	575601	5993.11	6071.85	2165948	10.0000 ng/ml
Diazepam	4.824	856933	790.69	∞	3945304	10.0000 ng/ml

# AM #25 Multi-Drug Screen Results

**Batch results**

D:\MassHunter\Data\2019\MDS\030819 am 25 worklist 3018 blood CS\QuantResults\030819 am 25 worklist 3018 CS.batch.bin

**Calibration Last Update**

3/11/2019 9:33:57 AM

**Instrument**

FALCO-LCMS (Property ID 069901)

**Type**

Sample

**Acq. Method**

am 25 all RT updates.m

**Sample Position**

P1-B6

**Injection Volume**

5

**Acq. Date-Time**

3/8/2019 4:42:41 PM

**Sample Info.****Data File**

p1 negative.d

**Sample**

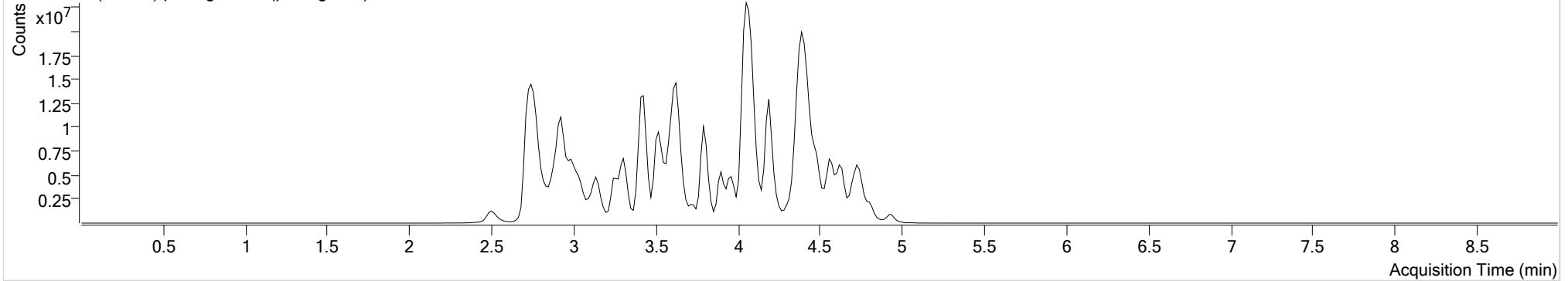
p1 negative

**Operator**

Celena Shrum

**Comment****Sample Chromatogram**

+ TIC MRM (\*\* -> \*\*) p1 negative.d (p1 negative)



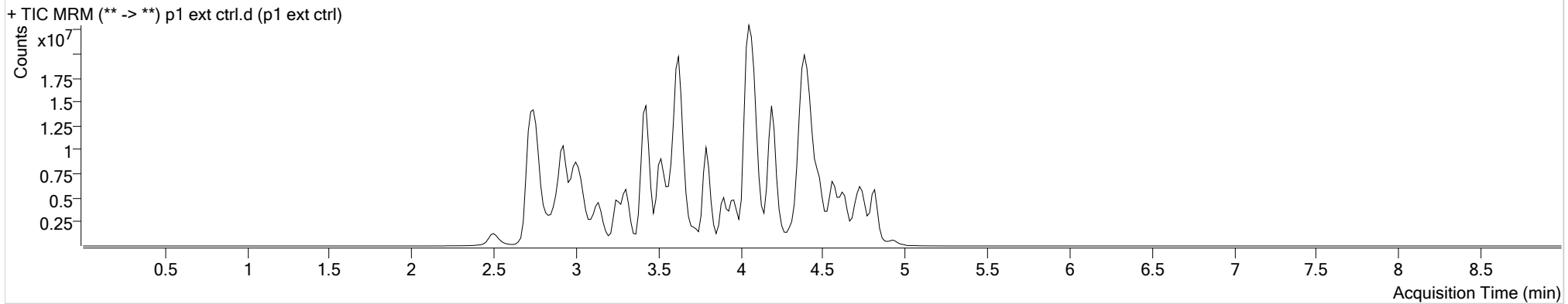
# AM #25 Multi-Drug Screen Results



**Batch results** D:\MassHunter\Data\2019\MDS\030819 am 25 worklist 3018 blood CS\QuantResults\030819 am 25 worklist 3018 CS.batch.bin  
**Calibration Last Update** 3/11/2019 9:33:57 AM

<b>Instrument Type</b>	FALCO-LCMS (Property ID 069901)	<b>Data File</b>	p1_ext_ctrl.d
<b>Acq. Method</b>	am 25 all RT updates.m	<b>Sample</b>	p1_ext_ctrl
<b>Sample Position</b>	P1-C6	<b>Operator</b>	Celena Shrum
<b>Injection Volume</b>	5	<b>Comment</b>	
<b>Acq. Date-Time</b>	3/8/2019 4:52:44 PM		

**Sample Chromatogram**



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Final Conc.
Oxycodone	3.012	13278811	421.47	∞	6483826	85.1266 ng/ml
Metoprolol	3.429	3990209	8004.92	1024.80	6247141	101.7385 ng/ml
Meperidine	3.631	14417682	150557.08	∞	6247141	102.4542 ng/ml
Diazepam	4.824	6713189	17042.93	12512.08	3124951	98.9052 ng/ml