














\* AM 7 central data available upon request - TS

TS

3/20/2019

**Worklist: 3056**

<u>LAB CASE</u>	<u>ITEM</u>	<u>TASK ID</u>	<u>DESCRIPTION</u>	
M2019-0686	1	144104	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0632	1	142889	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0645	1	143966	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0707	1	143621	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0736	1	143805	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0737	1	143809	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0737	2	143813	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0745	1	143943	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0747	1	143949	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0756	1	144195	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0771	1	144308	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0772	1	144311	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0782	1	144382	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0786	1	144400	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0789	3	144456	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0794	1	144492	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0795	1	144504	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0796	1	144507	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0797	1	144510	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0798	1	144513	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0799	1	144516	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0800	1	144519	AM 25 Blood Multi-Drug Screen by LC-QQQ	
P2019-0801	1	144522	AM 25 Blood Multi-Drug Screen by LC-QQQ	

TS

**Worklist: 3056**

<u>LAB_CASE</u>	<u>ITEM</u>	<u>TASK_ID</u>	<u>DESCRIPTION</u>
P2019-0802	1	144525	AM 25 Blood Multi-Drug Screen by LC-QQQ
P2019-0803	1	144528	AM 25 Blood Multi-Drug Screen by LC-QQQ



TS

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

Extraction Date: 03/18/19  
Plate lot#: 0543908

Analyst: Tamara Salazar  
Plate Expiration: 11/28/19

**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:** Hemostat 445283-1  
**LCMS-QQQ ID:** 069910

**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.
- 3. Create worklist

### Analytic:

- 1. Remove standards, plate, controls, and samples from cold storage. Allow to reach room temperature.
- 2. Pipette **250µL blood (calibrated pipette) Pipette ID: 16** in wells of analytical (standards) plate.
- 3. Place on shaking incubator at ambient temp., 900rpm for 15 minutes. *Shaker ID: 067105*
- 4. Pipette **250µL 0.5M ammonium hydroxide** in wells of analytical plate.
- 5. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
- 6. Transfer **300µL 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 **900uL ethyl acetate.**
- 10. Wait 5 minutes.
- 11. Apply positive pressure for approx. 15 seconds. *(10-15 PSI- Selector to the left).*
- 12. Add **900uL ethyl acetate.**
- 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.  
*SPE Dry ID: 067103*
- 16. Reconstitute in **100µL 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: MDS 031819  
Worklist path: C:\MassHunter\Data\2019\AM 25\031819 MDS wklst 3056 TS
- 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.
- 4. Did all QCs pass for each analyte? Y / N \_\_\_\_\_
- 5. Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS: Morphine, dihydrocodeine, and hydromorphone were not evaluated for case number P2019-0802 as the internal standard peak either shifted outside of the acceptable range or was not present.



# Idaho State Police Forensic Services

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

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

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

<b>Component</b>	<b>Source</b>	<b>Source Lot Number</b>	<b>Expiration Date</b>
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.*

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

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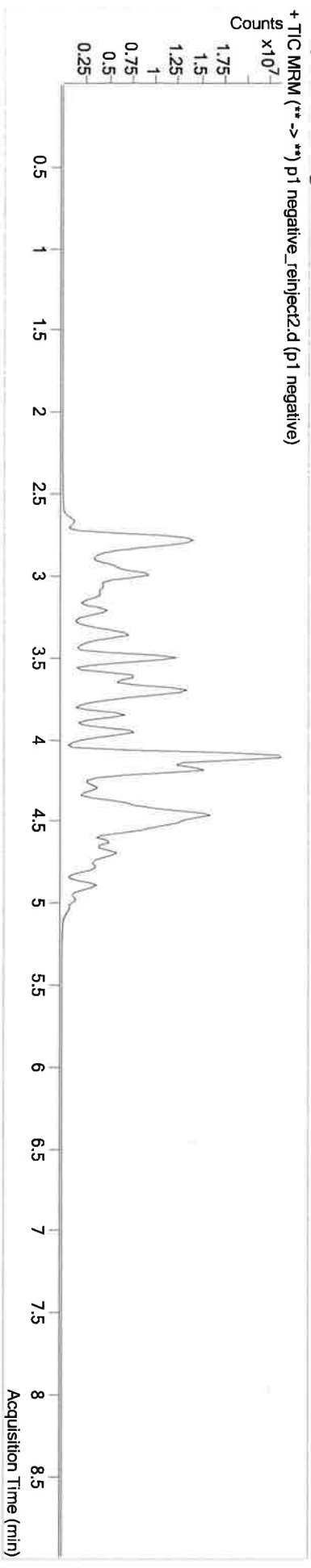
# AM #25 Multi-Drug Screen Results



**Batch results**  
Calibration Last Update: 3/20/2019 10:30:38 AM  
D:\MassHunter\Data\2019\MDS\031819 MDS wkst 3056 TS\QuantResults\MDS 031819.batch.bin

<b>Instrument</b>	FALCO-LCMS (Property ID 069901)	<b>Data File</b>	p1 negative_reinject2.d
<b>Type</b>	Sample	<b>Sample</b>	p1 negative
<b>Acq. Method</b>	am 25 all.m	<b>Operator</b>	Tamara Salazar
<b>Sample Position</b>	P1-G1	<b>Comment</b>	
<b>Injection Volume</b>	5		
<b>Acq. Date-Time</b>	3/18/2019 12:29:31 PM		

### Sample Chromatogram





# AM #25 Multi-Drug Screen Results

Batch results  
Calibration Last Update  
D:\MassHunter\Data\2019\MDS\031819 MDS wk1st 3056 TS\QuantResults\MDS 031819.batch.bin  
3/20/2019 10:30:38 AM

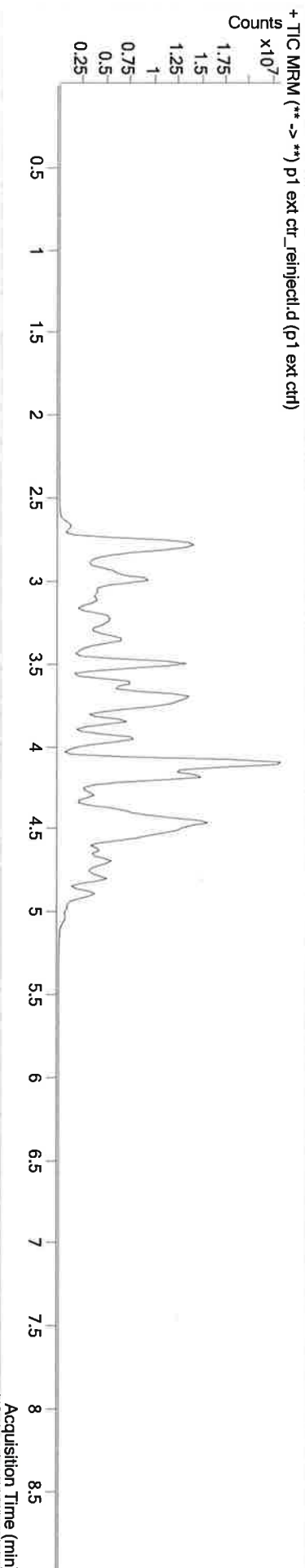
Instrument Type  
Acq. Method  
Sample Position  
Injection Volume  
Acq. Date-Time  
Sample Info.

FALCO-LCMS (Property ID 069901)  
Sample  
am 25 all.m  
P1-H1  
5  
3/18/2019 12:39:35 PM

Data File  
Sample Operator  
Comment

p1 ext ctr\_reinjectl.d  
p1 ext ctrl  
Tamara Salazar

## Sample Chromatogram



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
<u>Diazepam</u>	4.826	4274079	∞	39936.53	2381129	<u>102.6184</u>
<u>Meperidine</u>	3.770	14442889	26850.39	∞	6922660	<u>90.9985</u>
<u>Methamphetamine</u>	3.116	416077	144.25	∞	8409769	<u>1.7580</u> $\lt 10$
<u>Metoprolol</u>	3.506	3005389	9039.62	2190568.97	6922660	<u>88.6397</u>
<u>Oxycodone</u>	3.257	10673341	397.37	∞	5920441	<u>77.0153</u>

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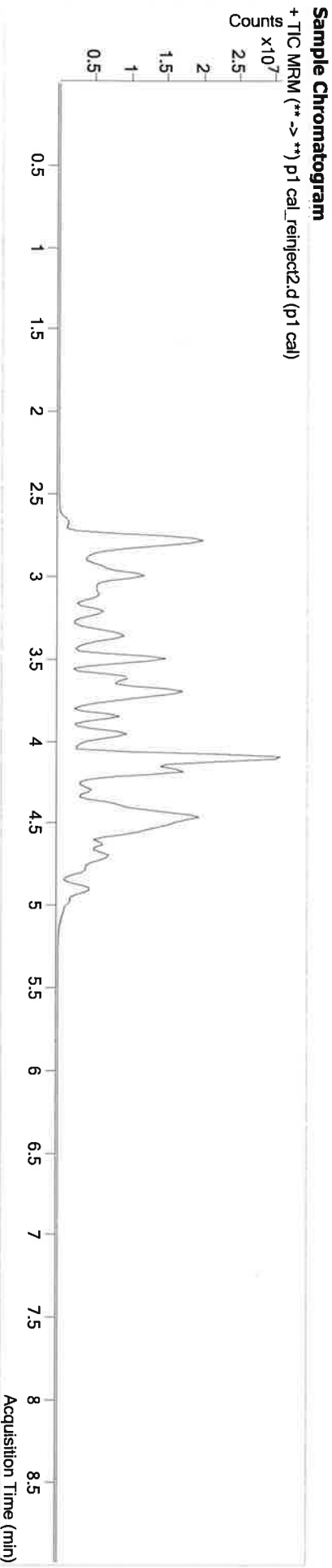
# AM #25 Multi-Drug Screen Results



**Batch results**  
 Calibration Last Update: 3/20/2019 10:30:38 AM  
 D:\MassHunter\Data\2019\MDS\031819 MDS wk1st 3056 TS\QuantResults\MDS 031819.batch.bin

**Instrument**  
 Type: FALCO-LCMS (Property ID 069901)  
 Acq. Method: am 25 all.m  
 Sample Position: P1-B1  
 Injection Volume: 5  
 Acq. Date-Time: 3/18/2019 12:19:19 PM  
 Sample Info.

**Data File**  
 Sample: p1\_cal\_reinject2.d  
 Operator: p1 cal  
 Comment: Tamara Salazar



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
6-MAM	3.332	39571	126746.29	18373.83	1041971	10.0000
7-aminoclonazepam	3.535	378182	209.05	∞	1340785	10.0000
7-aminoflunitrazepam	3.750	607376	250.40	254.29	2849761	10.0000
Acetyl Fentanyl	4.192	258135	38.34	9218.08	14347346	10.0000
Acetyl Norfentanyl	2.960	200349	169.19	587.83	9857117	10.0000
a-hydroxyalprazolam	4.483	81717	694.98	26.97	460237	10.0000
alpha-hydroxymidazolam	4.574	585865	287.34	∞	4255377	10.0000
Alprazolam	3.773	2439744	∞	374.06	8611562	10.0000
Amphetamine	4.578	931824	∞	195.36	2736433	10.0000
Amphetamine	4.583	1707077	142.55	60.73	4578833	10.0000
Amphetamine	3.010	1511369	1975.61	200.08	3915364	10.0000
Benzoylcegonine	3.336	637151	36504.64	649.60	2869468	10.0000
Buprenorphine	5.102	468447	∞	2299.60	2095264	10.0000
Bupropion	4.001	2137325	1544.98	889.02	7685252	10.0000
Carbamazepine	4.202	4031511	∞	∞	19582983	10.0000
Carisoprodol	4.200	802873	11827.37	214.96	4241406	10.0000
Chlordiazepoxide	4.717	289566	269.61	34.31	7594027	10.0000
Chlorpheniramine	4.045	15395	10.95	16528.33	18819254	10.0000



# AM #25 Multi-Drug Screen Results

Name	RT	Resp.	S/N	S/N	S/N	ISTD Resp.	Calc. Conc.
Citalopram	4.160	1626822	685.90	5908.08	7509851	10.0000	
Clonazepam	4.439	292153	1129.41	29248.95	526929	10.0000	
Cocaine	3.733	3269939	30355.29	1467.59	15659538	10.0000	
Codeine	3.304	286232	33.48	3539.60	1273816	10.0000	
Cyclobenzaprine	4.491	1760319	4356.79	84.93	5953241	10.0000	
Desipramine	4.492	2498124	∞	295.39	13101510	10.0000	
Dextromethorphan	4.183	1363289	2270.65	∞	6517645	10.0000	
Dextroprphan	3.508	1363408	4935.32	5362.56	7564073	10.0000	
Diazepam	4.826	418557	241.72	580.30	2392874	10.0000	
Dihydrocodeine	3.060	718945	333.63	414.24	3619416	10.0000	
Diphenhydramine	4.124	3620936	3750.79	1103.74	18819254	10.0000	
Doxepin	4.321	1416082	∞	6.69	7811040	10.0000	
Doxylamine	3.705	6085047	∞	9452.12	26761156	10.0000	
EDDP	4.105	2976758	8596.76	2277.59	16205696	10.0000	
Estazolam	4.503	1337979	3334.62	1396.17	3172874	10.0000	
Etizolam	4.589	138181	633.22	1636592.53	3172874	10.0000	
Fentanyl	4.390	208532	199.96	3183.87	9710238	10.0000	
Flunitrazepam	4.546	553187	∞	290.73	104388	10.0000	
Fluoxetine	4.394	1939915	297.13	180.79	8016242	10.0000	
Flurazepam	4.418	1463073	5831483.89	2273.31	104388	10.0000	
Hydrocodone	3.458	798070	∞	∞	4867650	10.0000	
Hydromorphone	2.972	681401	∞	∞	2923628	10.0000	
Imipramine	4.535	3533981	2329.25	∞	12038019	10.0000	
Ketamine	3.971	1816976	41.92	41.55	9098683	10.0000	
Lamotrigine	3.631	177130	321.54	154.08	7484013	10.0000	
Levamisole	3.421	1746882	8504.76	653.74	15659538	10.0000	
Lorazepam	4.407	103842	135.39	60.28	2177903	10.0000	
Maprotiline	4.105	1425324	∞	∞	4578833	10.0000	
MDA	3.146	1667895	111.68	674.37	7922151	10.0000	
MDEA	3.359	3134012	∞	1475.98	13880216	10.0000	
MDMA	3.222	3394166	∞	1387.98	1894983	10.0000	
Meperidine	3.770	1715859	∞	∞	7484013	10.0000	
Meprbamate	3.620	487779	2038.16	104.99	2166979	10.0000	
Methadone	4.439	3507643	11861.02	∞	16331749	10.0000	
Methamphetamine	3.116	2532663	1312.33	∞	8999331	10.0000	
Methocarbamol	3.540	260189	967.98	12.01	7484013	10.0000	
Methylphenidate	3.634	5262048	∞	1019.51	24315869	10.0000	
Metoprolol	3.506	366551	1200.12	170665.01	7484013	10.0000	
Midazolam	4.743	472803	503.95	∞	5549592	10.0000	
Mirtazapine	4.385	1754955	1971.39	∞	7484013	10.0000	
Mirtagryline	4.433	221143	109851.45	8963.60	7811040	10.0000	
Morphine	2.805	139988	321.17	93.95	153619	10.0000	
Norbuprenorphine	3.973	49501	176.34	65660.64	253054	10.0000	
Nordiazepam	4.675	585241	2594.47	∞	1919728	10.0000	



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# AM #25 Multi-Drug Screen Results



Name	RT	Resp.	S/N	S/N	ISTD Resp.	Calc. Conc.
Norfentanyl	3.388	3289509	7592.07	∞	13779027	10.0000
Norhydrocodone	3.108	30792	∞	51.98	877957	10.0000
Normeperidine	3.680	1590857	11260.03	∞	6170000	10.0000
Noroxycodone	3.030	790278	∞	∞	2527336	10.0000
Northipylone	4.523	1049508	6082.29	1024.96	2729818	10.0000
O-desmethyl-tramadol	3.019	4475504	29605.70	589.27	22118496	10.0000
Olanzapine	4.162	645820	864.69	∞	94075	10.0000
Oxazepam	4.488	425789	223.81	67.79	1964740	10.0000
Oxycodone	3.257	1304283	219.27	∞	5571894	10.0000
Oxymorphone	2.711	1337989	∞	∞	5142111	10.0000
Paroxetine	4.497	203401	∞	202.58	5045909	10.0000
Phenazepam	4.619	531285	2285.06	∞	2044383	10.0000
Phencyclidine	3.985	2580519	14407.93	183.56	12794470	10.0000
Phentermine	3.238	722059	∞	23.23	7074406	10.0000
Phenytoln	4.108	12245	18.20	7.18	94075	10.0000
Promethazine	4.550	4413740	5025.60	916.49	19555245	10.0000
Pseudoephedrine	2.795	24093727	15575.82	9796.00	90875367	10.0000
Quetiapine	4.725	2562693	32926.14	50194.47	3673561	10.0000
Seftalaine	4.686	1033590	122.61	121.42	5045909	10.0000
Sufentanil	4.786	192595	10766.14	371.05	10022936	10.0000
Tapentadol	3.512	2412822	4019.46	1224.72	11655051	10.0000
Temazepam	4.641	1756715	2121.55	434.20	7666159	10.0000
Tramadol	3.522	4539780	164562.93	∞	23415759	10.0000
Trazodone	4.925	3490725	5218.50	3366.31	13903817	10.0000
Venlafaxine	3.857	4178168	18061.94	717.28	20759345	10.0000
Zaleplon	4.318	923730	1551.16	9474.35	2709763	10.0000
Zolpidem	4.471	4565878	6436.78	∞	21819722	10.0000
Zopidone	4.449	194586	∞	1276.71	906776	10.0000