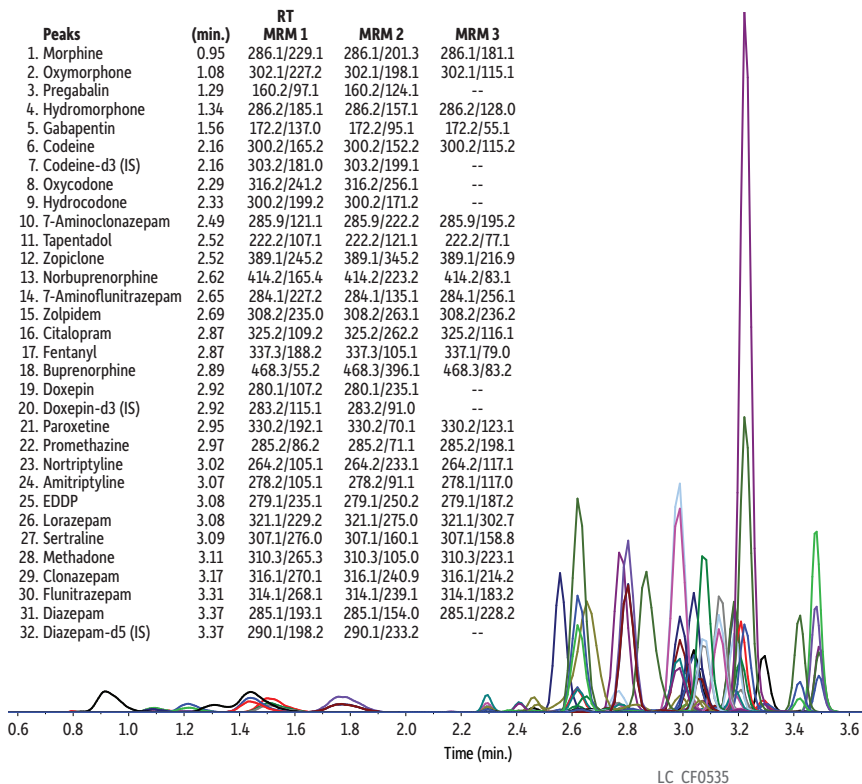


Therapeutic Drug Monitoring Compounds in Urine by LC-MS/MS on Ultra Biphenyl

Peaks	RT (min.)	RT		
		MRM 1	MRM 2	MRM 3
1. Morphine	0.95	286.1/229.1	286.1/201.3	286.1/181.1
2. Oxymorphone	1.08	302.1/227.2	302.1/198.1	302.1/115.1
3. Pregabalin	1.29	160.2/97.1	160.2/124.1	--
4. Hydromorphone	1.34	286.2/185.1	286.2/157.1	286.2/128.0
5. Gabapentin	1.56	172.2/137.0	172.2/95.1	172.2/55.1
6. Codeine	2.16	300.2/165.2	300.2/152.2	300.2/115.2
7. Codeine-d3 (IS)	2.16	303.2/181.0	303.2/199.1	--
8. Oxycodone	2.29	316.2/241.2	316.2/256.1	--
9. Hydrocodone	2.33	300.2/199.2	300.2/171.2	--
10. 7-Aminoclonazepam	2.49	285.9/121.1	285.9/222.2	285.9/195.2
11. Tapentadol	2.52	222.2/107.1	222.2/121.1	222.2/77.1
12. Zopiclone	2.52	389.1/245.2	389.1/345.2	389.1/216.9
13. Norbuprenorphine	2.62	414.2/165.4	414.2/223.2	414.2/83.1
14. 7-Aminoflunitrazepam	2.65	284.1/227.2	284.1/135.1	284.1/256.1
15. Zolpidem	2.69	308.2/235.0	308.2/263.1	308.2/236.2
16. Citalopram	2.87	325.2/109.2	325.2/262.2	325.2/116.1
17. Fentanyl	2.87	337.3/188.2	337.3/105.1	337.1/79.0
18. Buprenorphine	2.89	468.3/55.2	468.3/396.1	468.3/83.2
19. Doxepin	2.92	280.1/107.2	280.1/235.1	--
20. Doxepin-d3 (IS)	2.92	283.2/115.1	283.2/91.0	--
21. Paroxetine	2.95	330.2/192.1	330.2/70.1	330.2/123.1
22. Promethazine	2.97	285.2/86.2	285.2/71.1	285.2/198.1
23. Nortriptyline	3.02	264.2/105.1	264.2/233.1	264.2/117.1
24. Amitriptyline	3.07	278.2/105.1	278.2/91.1	278.1/117.0
25. EDDP	3.08	279.1/235.1	279.1/250.2	279.1/187.2
26. Lorazepam	3.08	321.1/229.2	321.1/275.0	321.1/302.7
27. Sertraline	3.09	307.1/276.0	307.1/160.1	307.1/158.8
28. Methadone	3.11	310.3/265.3	310.3/105.0	310.3/223.1
29. Clonazepam	3.17	316.1/270.1	316.1/240.9	316.1/214.2
30. Flunitrazepam	3.31	314.1/268.1	314.1/239.1	314.1/183.2
31. Diazepam	3.37	285.1/193.1	285.1/154.0	285.1/228.2
32. Diazepam-d5 (IS)	3.37	290.1/198.2	290.1/233.2	--



Column Ultra Biphenyl (cat.# 9109512)
Dimensions: 100 mm x 2.1 mm ID
Particle Size: 5 µm
Pore Size: 100 Å
Temp.: 30 °C
Sample
Diluent: Water:acetonitrile (90:10) + 0.1% formic acid
Conc.: 100 ng/mL (final dilution = 20x)
Inj. Vol.: 30 µL

Mobile Phase
A: Water + 0.1% formic acid
B: Acetonitrile + 0.1% formic acid

Time (min.)	Flow (mL/min.)	%A	%B
0	0.6	90	10
1.00	0.6	90	10
3.5	0.6	0	100
4.0	0.6	0	100
4.1	0.6	90	10
5.5	0.6	90	10

Detector AB SCIEX API 4000 MS/MS
Model #: API 4000
Ion Source: TurbolonSpray®
Ion Mode: ESI+
Ion Spray
Voltage: 3000 kV
Curtain Gas: 40 psi (275.8 kPa)
Gas 1: 60 psi (413.7 kPa)
Gas 2: 60 psi (413.7 kPa)
Interface Temp.: 600 °C
Mode: MRM
Instrument API LC-MS/MS
Notes Sample was prepared as follows:

- Fortify urine at 100 ng/mL.
- To 1 mL of urine, add 1 mL of 100 mM ammonium acetate (pH = 5.6) containing 2,000 units of β-glucuronidase from E. coli (Sigma-Aldrich cat# G7396).
- Incubate for 90 minutes at 37 °C.
- Centrifuge at 3,000 rpm for 15 minutes.
- Dilute 100 µL of sample with 900 µL of water:acetonitrile (90:10) + 0.1% formic acid containing 4 ng/mL internal standard. (Total dilution factor = 20x)