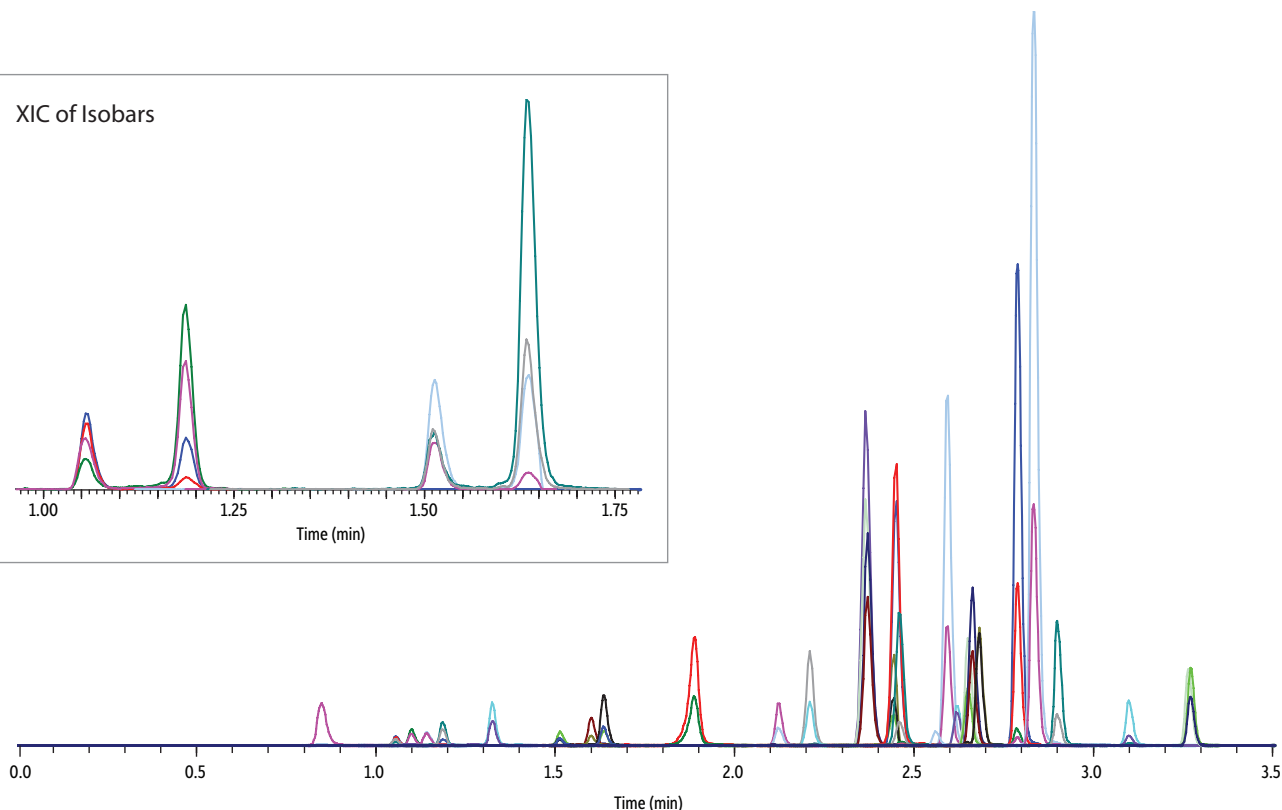
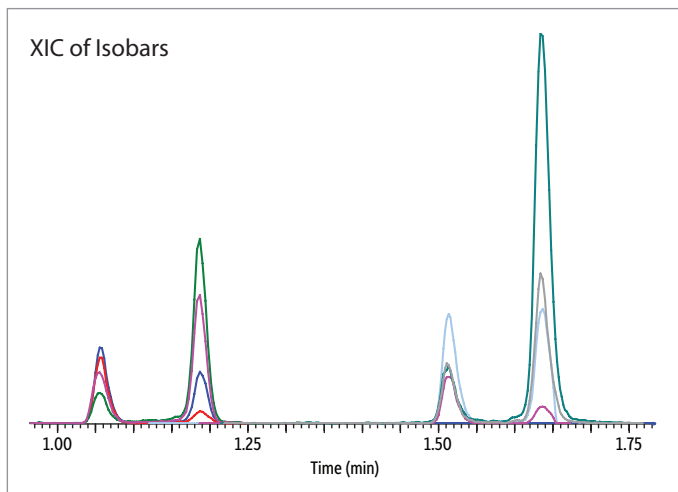


Therapeutic Drugs in Urine on Raptor™ Biphenyl by LC-MS/MS



LC_CF0579

Peaks	tr (min)	Q1	Q3 Quantifier	Q3 Qualifier
1. Morphine*	1.05	286.2	152.3	165.3
2. Oxymorphone	1.10	302.1	227.3	198.2
3. Pregabalin	1.13	160.2	97.1	124.1
4. Hydromorphone*	1.18	286.1	185.3	128.2
5. Gabapentin	1.32	172.2	137.0	95.1
6. Codeine-d3 (IS)	1.51	303.2	181.0	—
7. Codeine*	1.51	300.2	153.2	165.4
8. Oxycodone	1.60	316.1	241.3	256.4
9. Hydrocodone*	1.64	300.1	199.3	128.3
10. Tapentadol	1.89	222.2	107.1	121.1
11. Zopiclone	2.12	389.1	245.2	345.2
12. 7-Aminoclonazepam	2.21	286.0	222.2	250.3
13. Norbuprenorphine	2.22	414.1	83.4	101.0
14. Zolpidem	2.36	308.2	235.0	263.1
15. Citalopram	2.37	325.2	109.2	262.2
16. Doxepin-d3 (IS)	2.44	283.2	115.1	—
17. Doxepin	2.44	280.1	107.2	235.1
18. Fentanyl	2.44	337.2	188.4	105.2
19. Buprenorphine	2.46	468.3	396.4	414.5
20. 7-Aminoflunitrazepam	2.46	284.2	135.2	240.2
21. Promethazine	2.59	285.2	86.2	71.1
22. Paroxetine	2.61	330.2	192.1	70.1
23. EDDP	2.65	279.1	235.1	250.2
24. Nortriptyline	2.66	264.2	233.1	105.1
25. Amitriptyline	2.68	278.2	105.1	91.1
26. Sertraline	2.78	307.1	276.0	160.1
27. Methadone	2.79	310.2	265.3	105.3
28. Lorazepam	2.83	321.1	275.1	228.9
29. Clonazepam	2.90	315.9	270.2	214.1
30. Flunitrazepam	3.10	314.4	239.1	211.0
31. Diazepam-d5 (IS)	3.26	290.0	154.1	—
32. Diazepam	3.27	284.8	193.1	222.2

Column
Raptor™ Biphenyl (cat.# 9309A5E)
Dimensions: 50 mm x 3.0 mm ID
Particle Size: 2.7 µm
Pore Size: 100 Å
Guard Column: Raptor™ Biphenyl EXP® 5 mm, 3.0 mm ID, 2.7 µm (cat.# 9309A0253)
Temp.: 40 °C
Sample
Conc.: Therapeutic drug custom mix
A 50-500 ng/mL standard was prepared in urine. 100 µL of the 50-500 ng/mL urine standard was diluted with 900 µL water prior to analysis (10x dilution).
Inj. Vol.: 20 µL

Mobile Phase
A: 2 mM ammonium formate and 0.1% formic acid in water
B: 2 mM ammonium formate and 0.1% formic acid in methanol

Time (min)	Flow (mL/min)	%A	%B
0.00	0.8	90	10
3.00	0.8	0	100
3.50	0.8	0	100
3.51	0.8	90	10
5.00	0.8	90	10

Detector
ABSCIEX API 4000 MS/MS
Ion Source: TurbolonSpray®
Ion Mode: ESI+
Mode: Scheduled MRM
API LC-MS/MS
Instrument Notes

1. Lorazepam was prepared at 500 ng/mL; all other analytes are 50 ng/mL.
2. Doxepin is an isomeric mixture (*cis:trans*, 15:85) and results in two peaks. The *trans* form is the primary isomer peak.

*An extracted ion chromatogram (XIC) of the isobars is presented in the inset.