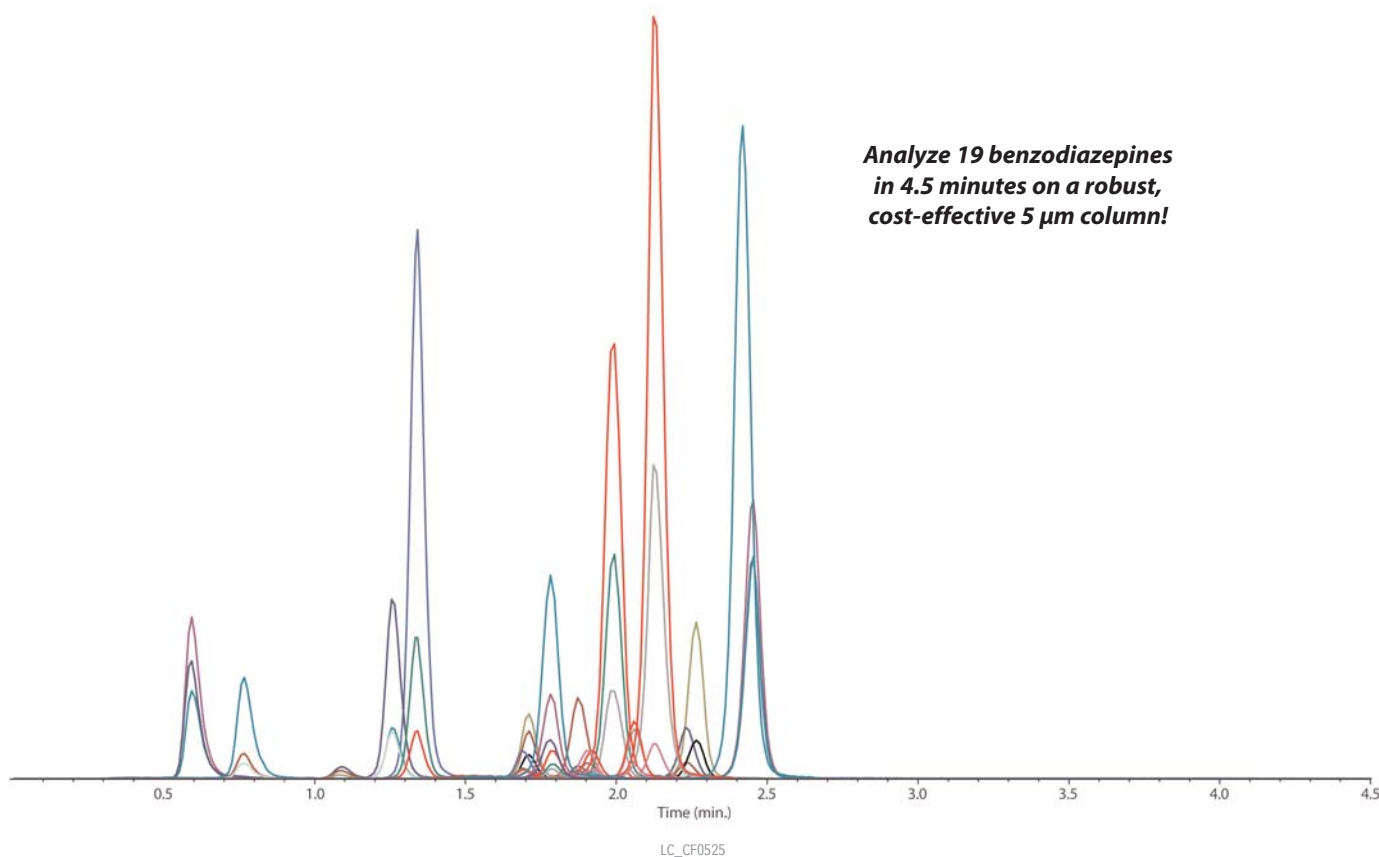


# 100 ng/mL Benzodiazepines in Hydrolyzed Urine on Ultra Biphenyl by LC/MS/MS



**Analyze 19 benzodiazepines  
in 4.5 minutes on a robust,  
cost-effective 5 μm column!**

Peaks	RT (min.)	MRM1	MRM2	MRM3
1. 7-Aminoclonazepam	0.59	286.0/250.3	286.0/222.2	286.0/121.0
2. 7-Aminoflunitrazepam	0.77	284.2/135.2	284.2/240.2	284.2/226.1
3. Bromazepam	1.10	315.9/182.0	315.9/209.1	315.9/260.9
4. N-Desmethylflunitrazepam	1.71	300.0/254.1	300.0/225.2	300.0/198.0
5. Nitrazepam	1.69	282.1/236.1	282.1/207.2	282.1/180.0
6. Lorazepam	1.71	321.0/302.9	321.0/275.1	321.0/229.1
7. 2-Hydroxyethylflurazepam	1.79	333.1/246.1	333.1/166.0	333.1/109.1
8. Nordiazepam	1.78	271.0/140.0	271.0/208.0	271.0/225.9
9. Estazolam	1.88	294.9/267.1	294.9/241.0	294.9/138.0
10. Desalkylflurazepam	1.90	289.0/140.0	289.0/165.1	289.0/226.0
11. Clonazepam	1.92	315.9/270.2	315.9/214.1	315.9/207.1
12. Alprazolam	1.99	309.4/281.1	309.4/205.0	309.4/274.1
13. Midazolam	1.26	326.1/291.2	326.1/244.2	326.1/209.0
14. Triazolam	2.06	343.1/315.0	343.1/308.2	343.1/239.2
15. Temazepam	2.13	301.2/283.1	301.2/255.1	301.2/228.1
16. Flurazepam	1.34	388.1/315.1	388.1/288.2	388.1/317.1
17. Flunitrazepam	2.24	314.4/211.0	314.4/239.1	314.4/268.1
18. Clobazam	2.26	301.1/259.1	301.1/224.0	301.1/181.1
19. Diazepam-D5 (IS)	2.42	290.0/154.1	--	--
20. Diazepam	2.45	284.8/193.1	284.8/222.2	284.8/257.1

**Column** Ultra Biphenyl (cat.# 9109552)  
**Dimensions:** 50 mm x 2.1 mm ID  
**Particle Size:** 5 μm  
**Pore Size:** 100 Å  
**Temp.:** 40 °C  
**Sample**  
**Diluent:** Starting mobile phase + 30 ng/mL IS  
**Conc.:** 100 ng/mL sample was diluted 20x prior to injection  
**Inj. Vol.:** 30 μL  
**Mobile Phase**  
**A:** Water + 2 mM ammonium formate + 0.2% formic acid  
**B:** Acetonitrile + 10% water + 2 mM ammonium formate + 0.2% formic acid

Time (min.)	Flow (mL/min.)	%A	%B
0	0.6	70	30
3.00	0.6	40	60
3.1	0.6	5	95
3.5	0.6	5	95
3.6	0.6	70	30
4.5	stop		

**Detector** AB SCIEX API 4000 MS/MS  
**Model #:** API 4000  
**Ion Source:** TurboIonSpray®  
**Ion Mode:** ESI+  
**Ion Spray Voltage:** 2 kV  
**Curtain Gas:** 40 psi (275.8 kPa)  
**Gas 1:** 40 psi (275.8 kPa)  
**Gas 2:** 40 psi (275.8 kPa)  
**Source Temp.:** 600 °C  
**Instrument** Applied Biosystems/MDS Sciex LC/MS/MS System  
**Notes** MS/MS instrument was operated in scheduled MRM mode.