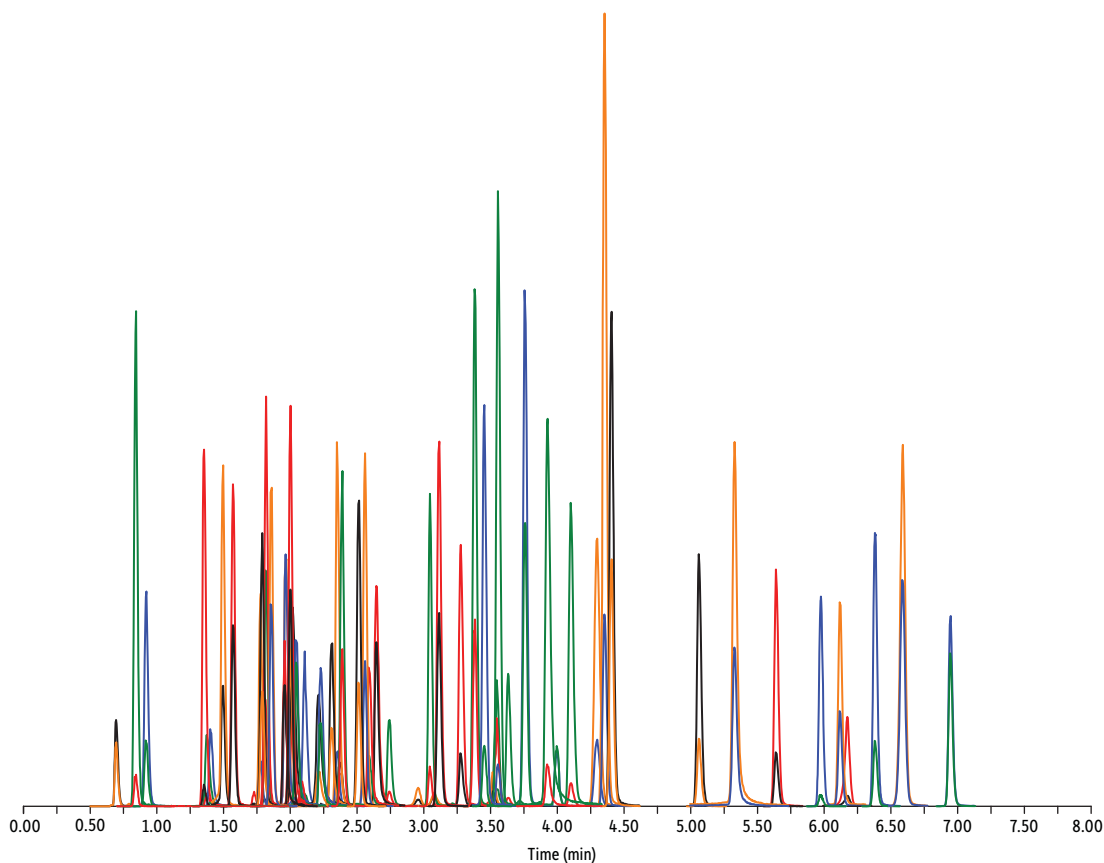


# Multiclass Veterinary Antibiotics on Raptor™ C18 by LC-MS/MS



LC\_FS0506

**Column** Raptor™ C18 (cat.# 9304A12)  
**Dimensions:** 100 mm x 2.1 mm ID  
**Particle Size:** 2.7 µm  
**Pore Size:** 90 Å  
**Guard Column:** Raptor™ C18 EXP® guard column cartridge 5 mm, 2.1 mm ID, 2.7 µm (cat.# 9304A0252)  
**Temp.:** 35 °C

**Sample**  
**Diluent:** Water  
**Conc.:** 5–300 ng/mL  
**Inj. Vol.:** 2 µL

**Mobile Phase**  
**A:** 0.1% Formic acid in water  
**B:** 0.1% Formic acid in acetonitrile

Time (min)	Flow (mL/min)	%A	%B
0.00	0.4	90	10
4.50	0.4	65	35
7.00	0.4	45	55
7.01	0.4	90	10
9.00	0.4	90	10

**Detector** MS/MS  
**Ion Mode:** ESI+/ESI-  
**Mode:** Scheduled MRM  
**Instrument** UHPLC

**Notes**  
 1. Positive and negative polarity data were collected simultaneously from a single injection.  
 2. Amphenicol compounds (chloramphenicol, thiamphenicol, and florfenicol) were detected with negative polarity.  
 3. The MRM was scheduled at +/- 20 to 30 seconds for each analyte.  
 4. Multiclass antibiotics include penicillin, cephalosporin, tetracycline, sulfonamide, macrolide, lincosamide, streptogramin, amphenicol, and quinolone.  
 \*\*The retention time for Tylosin is noted in the peak list; however, it was not included in the chromatogram.

Peaks	tr (min)	Conc. (ng/mL)	Precursor Ion	Product Ion	Product Ion
1. Desacetyl cephalin	0.70	150	382.03	111.92	124.21
2. Sulfanilamide	0.85	200	172.98	93.07	75.23
3. Amoxicillin	0.92	100	366.24	349.10	208.07
4. Cephalirin	1.36	50	424.17	292.08	124.14
5. Tildipirosin	1.38	200	734.59	561.45	204.15
6. Desfuroyl ceftiofur cysteine disulfide	1.40	300	549.16	183.02	126.00
7. Lincomycin	1.50	50	407.32	359.23	389.28
8. Sulfadiazine	1.57	20	251.18	156.04	92.08
9. Cefquinome	1.73	200	529.19	134.10	125.12
10. Ampicillin	1.78	50	350.19	106.07	160.06
11. Sulfathiazole	1.79	10	256.16	156.03	92.08
12. Marbofloxacin	1.81	10	363.20	72.11	320.10
13. Cefalexin	1.82	100	348.10	158.05	174.05
14. Sulfapyridine	1.86	10	250.13	156.10	92.08
15. Norfloxacin	1.96	20	320.23	276.20	233.13
16. Ofloxacin	1.98	10	362.21	318.20	261.15
17. Sulfamerazine	2.00	20	265.08	156.03	92.08
18. Cefalonium	2.01	100	459.16	337.03	123.10
19. Oxytetracycline	2.02	25	461.27	426.15	443.32
20. Ciprofloxacin	2.04	20	332.18	288.22	245.15
21. Cefacetile	2.09	300	362.07	258.08	178.01
22. Tulathromycin A	2.11	100	806.65	577.42	420.31
23. Tetracycline	2.21	25	445.28	154.07	427.32
24. Danofloxacin	2.23	20	358.22	340.16	314.21
25. Enrofloxacin	2.32	10	360.29	316.22	245.13
26. Orbifloxacin	2.35	10	396.22	352.17	226.12
27. Thiamphenicol*	2.38	200	354.16	290.04	184.98
28. Sulfamethazine	2.39	10	279.23	186.08	124.08
29. Sulfamethizole	2.52	10	271.17	156.02	108.02
30. Sulfamethoxypridazine	2.56	10	281.14	156.03	126.07
31. Sarafloxacin	2.59	10	386.20	342.20	368.15
32. Difloxacin	2.65	10	400.23	356.17	299.13
33. Cefazolin	2.75	100	455.10	323.06	295.09
34. Spiramycin	2.96	200	843.64	540.36	699.48
35. Pirlimycin	3.05	20	411.32	363.18	327.21
36. Chlortetracycline	3.08	25	479.27	154.07	371.06
37. Sulfachlorpyridazine	3.12	20	285.05	156.03	108.09
38. Gamithromycin	3.28	100	777.63	619.52	601.45
39. Sulfadoxine	3.39	10	311.17	156.03	108.09
40. Sulfamethoxazole	3.46	20	254.18	155.98	147.06
41. Cefoperazone	3.52	100	646.26	143.07	148.02
42. Florfenicol*	3.55	200	356.10	336.02	184.98
43. Sulfaethoxypridazine	3.56	20	295.17	267.07	156.03
44. Tilicosin	3.64	100	869.72	696.50	522.42
45. Sulfisoxazole	3.76	20	268.14	156.03	113.10
46. Oxolinic acid	3.94	5	262.10	244.06	215.96
47. Chloramphenicol*	4.00	200	321.16	151.99	257.04
48. Ceftiofur	4.11	50	524.14	241.08	125.24
49. Erythromycin	4.31	25	734.64	576.40	558.38
50. Sulfadimethoxine	4.36	10	311.17	156.09	108.09
51. Sulfaquinolaxaline	4.42	20	301.18	156.04	108.02
52. Tylosin**	4.67	100	916.62	772.49	598.36
53. Penicillin G	5.07	100	335.18	176.07	160.07
54. Flumequine	5.34	5	262.15	244.11	202.03
55. Penicillin V	5.56	100	351.10	160.06	114.07
56. Oxacillin	5.99	100	402.15	160.05	114.06
57. Virginiamycin M1	6.13	50	526.43	508.31	355.10
58. Tylvalosin	6.19	50	1042.71	814.46	640.39
59. Cloxacillin	6.39	100	436.15	277.06	160.05
60. Nafcillin	6.60	25	415.19	199.09	171.06
61. Dictoxacillin	6.96	100	470.11	160.05	311.02

\*Acquired in negative ion mode