Featured Application: *Mycotoxins on Raptor FluoroPhenyl*

Highly Selective LC-MS/MS Analysis of Mycotoxins from Multiple Classes

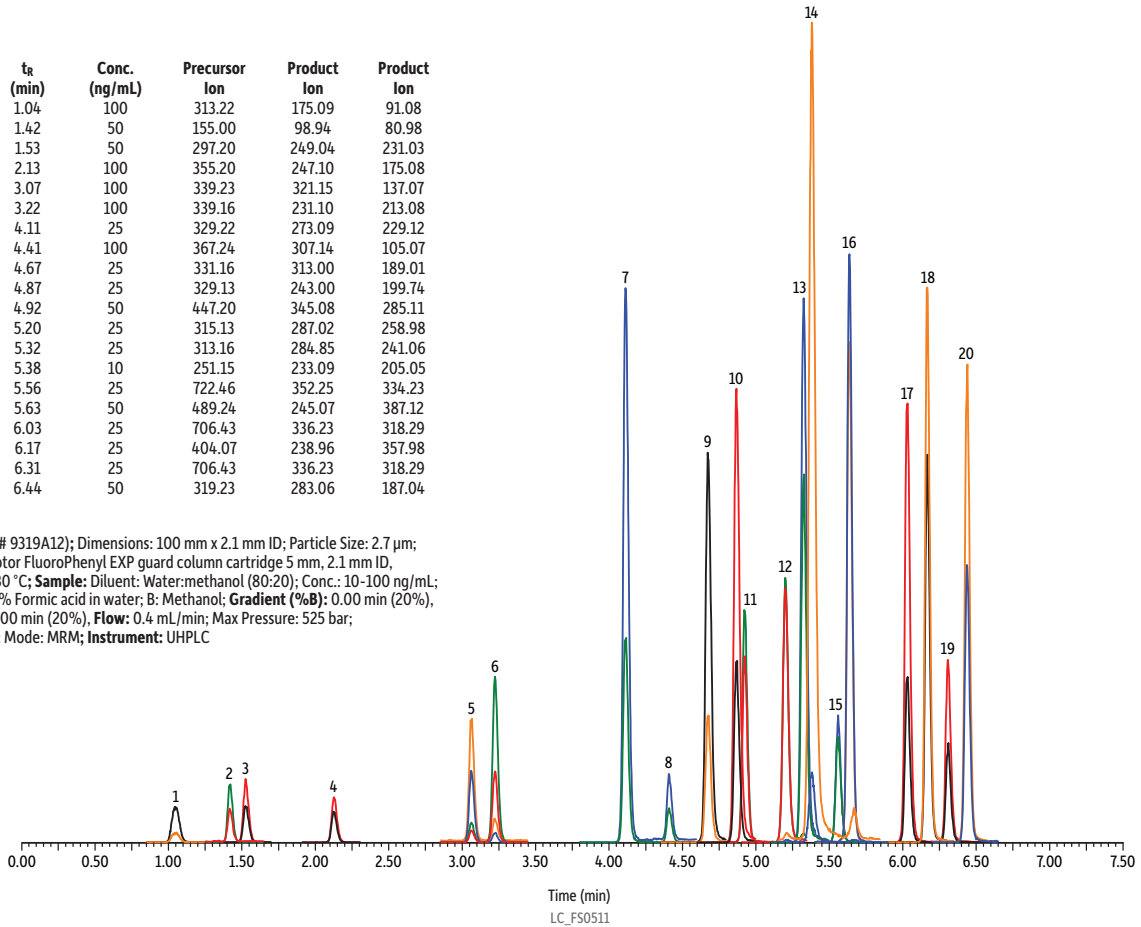
- Unique column selectivity allows simultaneous determinations of 20 mycotoxins.
- Complete separation of isobaric compounds that cannot be distinguished by MS.
- Fast, 9-minute analysis supports high-throughput product inspection testing needs.

Mycotoxins are toxic compounds produced by fungi that can occur naturally on a broad range of agricultural commodities, including produce, grains, animal feeds, and even medical marijuana. They may also resist decomposition by digestion and pasteurization and, as a result, can be found in meats, milk, and eggs as contaminants. Accurate identification of a wide variety of these chemically stable compounds is critical to ensure consumer safety and to satisfy import requirements during international trade. Demand for simultaneous LC-MS/MS analysis of mycotoxins from multiple classes is increasing because it is more efficient than individual analyses and better supports the need for fast, comprehensive determinations that allow correct decisions to be made during product inspection.

The LC-MS/MS analysis of mycotoxins shown here allows 20 mycotoxins from multiple classes to be accurately reported in a fast, 9-minute analysis. Under these conditions the Raptor FluoroPhenyl column's selectivity allows compounds that are similar in structure and that elute closely together to be adequately resolved. In fact, the Raptor FluoroPhenyl column provides full chromatographic separation of 15-acetyldeoxynivalenol and 3-acetyldeoxynivalenol, isobaric compounds that cannot be resolved on other column phases. Labs performing LC-MS/MS analysis of mycotoxins that require definitive chromatographic identification and quantification of complex analyte lists can benefit from the unique selectivity of a Raptor FluoroPhenyl column.

Peaks	t_R (min)	Conc. (ng/mL)	Precursor Ion	Product Ion	Product Ion
1. Nivalenol	1.04	100	313.22	175.09	91.08
2. Patulin	1.42	50	155.00	98.94	80.98
3. Deoxynivalenol	1.53	50	297.20	249.04	231.03
4. Fusarenon X	2.13	100	355.20	247.10	175.08
5. 15-Acetyldeoxynivalenol	3.07	100	339.23	321.15	137.07
6. 3-Acetyldeoxynivalenol	3.22	100	339.16	231.10	213.08
7. Aflatoxin M1	4.11	25	329.22	273.09	229.12
8. Diacetoxyscirpenol	4.41	100	367.24	307.14	105.07
9. Aflatoxin G2	4.67	25	331.16	313.00	189.01
10. Aflatoxin G1	4.87	25	329.13	243.00	199.74
11. HT-2	4.92	50	447.20	345.08	285.11
12. Aflatoxin B2	5.20	25	315.13	287.02	258.98
13. Aflatoxin B1	5.32	25	313.16	284.85	241.06
14. Citrinin	5.38	10	251.15	233.09	205.05
15. Fumonisin B1	5.56	25	722.46	352.25	334.23
16. T-2	5.63	50	489.24	245.07	387.12
17. Fumonisin B3	6.03	25	706.43	336.23	318.29
18. Ochratoxin A	6.17	25	404.07	238.96	357.98
19. Fumonisin B2	6.31	25	706.43	336.23	318.29
20. Zearalenone	6.44	50	319.23	283.06	187.04

Column: Raptor FluoroPhenyl (cat.# 9319A12)**;** Dimensions: 100 mm x 2.1 mm ID; Particle Size: 2.7 µm; Pore Size: 90 Å; Guard Column: Raptor FluoroPhenyl EXP guard column cartridge 5 mm, 2.1 mm ID, 2.7 µm (cat.# 9319A0252); Temp.: 30 °C**; Sample:** Diluent: Water:methanol (80:20); Conc.: 10-100 ng/mL; Inj. Vol.: 5 µL**; Mobile Phase:** A: 0.3% Formic acid in water; B: Methanol; **Gradient (%B):** 0.00 min (20%), 7.00 min (90%), 7.01 min (20%), 9.00 min (20%), **Flow:** 0.4 mL/min; Max Pressure: 525 bar; **Detector:** MS/MS **;** Ion Mode: ESI+; Mode: MRM**; Instrument:** UHPLC



LC_FS0511

Raptor FluoroPhenyl LC Columns (USP L43)

Length	2.1 mm cat.#	3.0 mm cat.#	4.6 mm cat.#
2.7 µm Columns			
30 mm	9319A32	9319A3E	9319A35
50 mm	9319A52	9319A5E	9319A55
100 mm	9319A12	9319A1E	9319A15
150 mm	9319A62	9319A6E	9319A65
5 µm Columns			
30 mm	—	931953E	—
50 mm	9319552	931955E	9319555
100 mm	9319512	931951E	9319515
150 mm	9319562	931956E	9319565
250 mm	—	—	9319575

EXP Reusable Fittings for HPLC & UHPLC

for 10-32 fittings and 1/16" tubing
EXP Hand-Tight Fittings

Description	qty.	cat.#
EXP Hand-Tight Fitting (Nut w/Ferrule)	ea.	25937
EXP Hand-Tight Fitting (Nut w/Ferrule)	10-pk.	25938
EXP Hand-Tight Nut (w/o Ferrule)	ea.	25939

Hybrid Ferrule U.S. Patent No. 8201854, EXP Holders U.S. Patent No. 8696902, EXP2 Wrench U.S. Patent No. D766055. Other U.S. and Foreign Patents Pending. The EXP, Free-Turn, and the Opti- prefix are registered trademarks of Optimize Technologies, Inc.

Raptor EXP Guard Cartridges

Protect your investment and extend the life of our already-rugged LC columns and change guard column cartridges by hand without breaking fluid connections—no tools needed!

EXP Direct Connect Holder

Description	qty.	cat.#
EXP Direct Connect Holder for EXP Guard Cartridges (includes hex-head fitting & 2 ferrules)	ea.	25808

Maximum holder pressure: 20,000 psi (1,400 bar)

Raptor EXP Guard Column Cartridges

Description	Particle Size	qty.	5 x 2.1 mm cat.#	5 x 3.0 mm cat.#	5 x 4.6 mm cat.#
Raptor FluoroPhenyl EXP Guard Column Cartridges	2.7 µm	3-pk.	9319A0252	9319A0253	9319A0250
Raptor FluoroPhenyl EXP Guard Column Cartridges	5 µm	3-pk.	931950252	931950253	931950250

Maximum cartridge pressure: 600 bar/8,700 psi (2.7 µm) or 400 bar/5,800 psi (5 µm).
Raptor SPP LC columns combine the speed of SPP with the resolution of USLC technology.
Learn more at **www.restek.com/raptor**

Hybrid Ferrule U.S. Patent No. 8201854, EXP Holders U.S. Patent No. 8696902, EXP2 Wrench U.S. Patent No. D766055. Other U.S. and Foreign Patents Pending. The EXP, Free-Turn, and the Opti- prefix are registered trademarks of Optimize Technologies, Inc.

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Pure Chromatography

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