

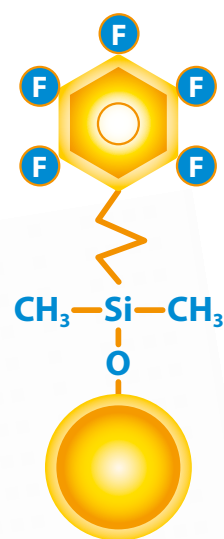
Stationary Phase: **FluoroPhenyl**

Raptor[™]
LC Columns

Selectivity Accelerated

Get the Power of HILIC and RP Modes in One LC Column

Reversed-phase (RP) analysis on a C18 column is a common approach, but it isn't always the best strategy. You can do more with a Raptor[™] FluoroPhenyl LC column—a rugged, reliable fluorinated phenyl that allows you to operate with confidence in either HILIC or RP mode.



RESTEK[®]

Pure Chromatography

BGB GC|LC
MS|CE

Raptor™ FluoroPhenyl Columns

- Powerful performance for both reversed-phase and HILIC separations.
- Ideal for increasing sensitivity and selectivity in LC-MS analyses.
- Offers increased retention for charged bases compared to a C18.
- Rugged and reliable—fluorophenyl chemistry that gives reproducible results.

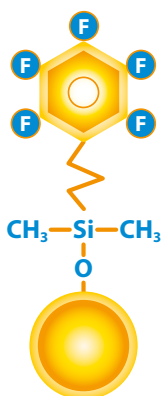
Switch to a Raptor™ FluoroPhenyl LC column when you need more retention and selectivity for basic and hydrophilic compounds than you can achieve on a C18.

Order yours today at www.bgb-info.com/raptor

Part of Restek's Raptor™ LC column line featuring 2.7 and 5 μm SPP core-shell silica:

- Higher efficiency and resolution for drastically faster analysis times.
- Increased sample throughput with existing HPLC instrumentation.
- Long-lasting ruggedness for dependable reproducibility.

Column Description:



Stationary Phase Category:

Pentafluorophenyl propyl (L43)

Ligand Type:

Fluorophenyl

Particle:

2.7 μm or 5 μm superficially porous silica (SPP or "core-shell")

Pore Size:

90 Å

Surface Area:

150 m²/g (2.7 μm) or 100 m²/g (5 μm)

Recommended Usage:

pH Range: 2.0–8.0

Maximum Temperature: 80 °C

Maximum Pressure: 600 bar/8,700 psi (2.7 μm)
or 400 bar/5,800 psi (5 μm)

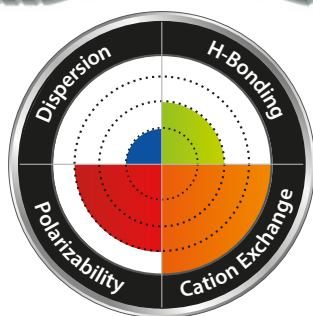
Properties:

- Capable of both reversed-phase and HILIC separations.
- Ideal for increasing sensitivity and selectivity in LC-MS analyses.
- Offers increased retention for charged bases.

Switch to a Raptor™ FluoroPhenyl LC column when:

- Limited retention and selectivity are observed on a C18 for basic compounds.
- You need increased retention of hydrophilic compounds.

Column Interaction Profile:



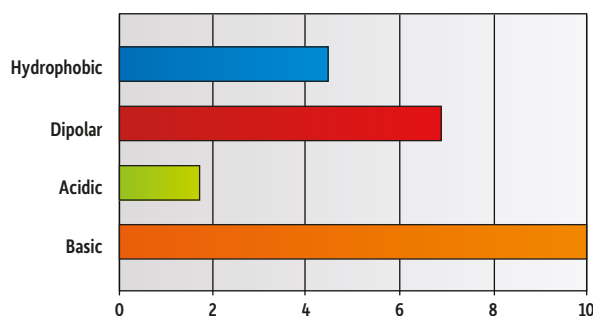
Defining Solute Interactions:

- Polarizability
- Dispersion

Complementary Solute Interaction:

- Cation exchange

Solute Retention Profile:

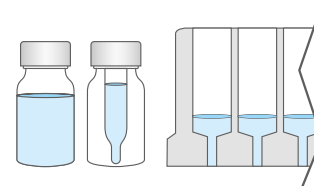


Target Analyte Structures:

- Nitrogen

Target Analyte Functionalities:

- Protonated amines
- Quaternary ammonium compounds
- Positively charged moieties
- Lewis bases

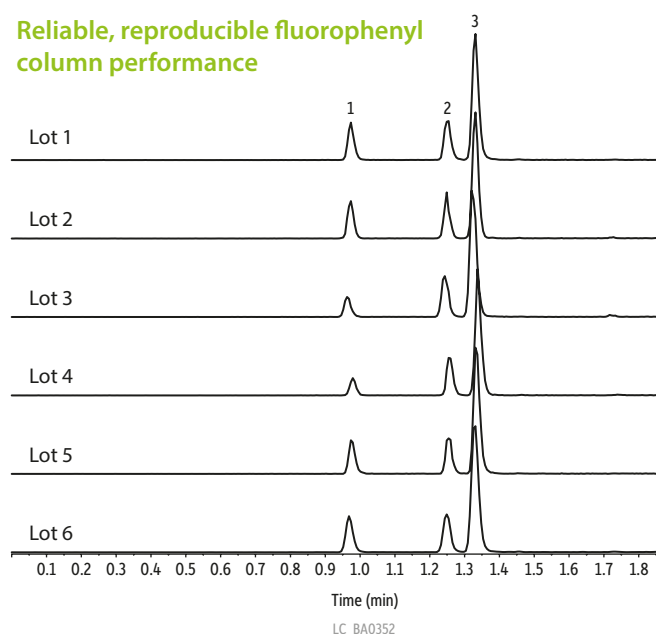


Get the Power of HILIC and RP Modes in One Raptor™ FluoroPhenyl Column

Figure 1: Strict quality control ensures Raptor™ FluoroPhenyl columns are exceptionally reproducible, ensuring you get predictable performance from every column.

Peaks	tr (min)	Precursor Ion	Product Ion 1	Product Ion 2
1. Baccatin III	0.97	587.0	405.1	105.0
2. Docetaxel	1.25	808.1	527.3	226.1
3. Paclitaxel	1.33	854.1	569.3	286.2

Reliable, reproducible fluorophenyl column performance

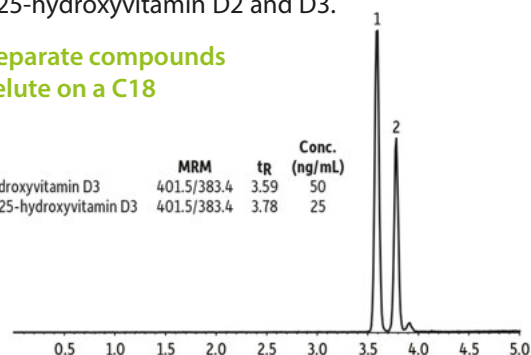


Column: Raptor™ FluoroPhenyl (cat.# 931955E); Dimensions: 50 mm x 3 mm ID, Particle Size: 5 µm; Temp.: 35 °C; **Sample:** Diluent: Water; Conc.: 100 ng/mL; Inj. Vol.: 5 µL; **Mobile Phase:** A: 0.1% Formic acid in water; B: 0.1% Formic acid in acetonitrile; **Gradient (%B):** 0.00 min (25% B), 2.00 (95% B), 2.01 (25% B), 3.50 (25% B); **Flow:** 0.8 mL/min; **Detector:** MS/MS; Ion Mode: ESI+; Mode: MRM; **Instrument:** UHPLC.

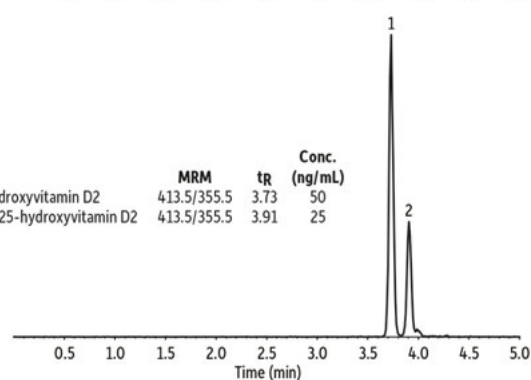
Figure 2: Raptor™ FluoroPhenyl columns have the retention and selectivity you need to quickly and easily separate compounds that coelute on a C18, such as the epimeric forms of 25-hydroxyvitamin D2 and D3.

Easily separate compounds that coelute on a C18

Peaks	MRM	tr	Conc. (ng/mL)
1. 25-Hydroxyvitamin D3	401.5/383.4	3.59	50
2. 3-Epi-25-hydroxyvitamin D3	401.5/383.4	3.78	25

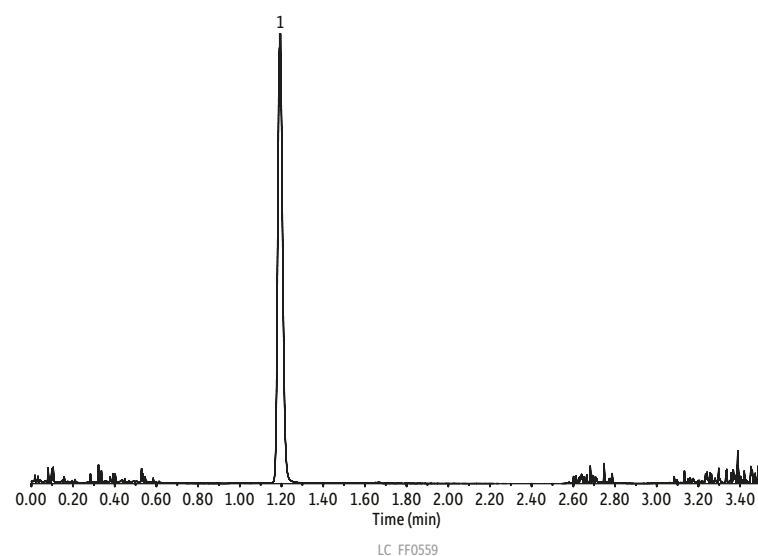


Peaks	MRM	tr	Conc. (ng/mL)
1. 25-Hydroxyvitamin D2	413.5/355.5	3.73	50
2. 3-Epi-25-hydroxyvitamin D2	413.5/355.5	3.91	25



Column: Raptor™ FluoroPhenyl (cat.# 9319A1E); Dimensions: 100 mm x 3 mm ID, Particle Size: 2.7 µm; Pore Size: 100 Å; Temp.: 30 °C; **Sample:** Diluent: Water:methanol (50:50); Conc.: 25–50 ng/mL; Inj. Vol.: 5 µL; **Mobile Phase:** A: 0.1% Formic acid in water; B: Methanol; **Gradient (%B):** 0.00 min (75% B), 4.00 (85% B), 4.10 (100% B), 5.00 (100% B); 5.01 (75% B); 7.00 (75% B); **Flow:** 0.6 mL/min; **Detector:** MS/MS; Ion Mode: ESI+; Mode: MRM; **Instrument:** HPLC.

Figure 3: Sometimes adequate retention just can't be obtained in reversed-phase mode. The Raptor™ FluoroPhenyl column lets you operate in either HILIC or RP mode, so you have options when you need to analyze compounds like caramel coloring byproduct 4-methylimidazole (4-MEI).



Raptor™ FluoroPhenyl columns give you the flexibility to work in both reversed-phase and HILIC modes

Peaks	tr (min)	Precursor Ion	Product Ion
1. 4-Methylimidazole (4-MEI)	1.19	83	56

Column: Raptor™ FluoroPhenyl (cat.# 9319A52); Dimensions: 50 mm x 2.1 mm ID, Particle Size: 2.7 µm; Temp.: 35 °C; **Sample:** Diluent: Acetonitrile; Conc.: 100 ng/mL; Inj. Vol.: 5 µL; **Mobile Phase:** A: 0.1% Formic acid in water; B: 0.1% Formic acid in acetonitrile; **Gradient (%B):** 0.00 min (95% B), 2.00 (30% B), 2.01 (95% B), 3.50 (95% B); **Flow:** 0.6 mL/min; **Detector:** MS/MS; Ion Mode: ESI+; Mode: MRM; **Instrument:** UHPLC.

Dependable Raptor™ FluoroPhenyl Columns Give You the Flexibility to use both HILIC and RP Modes

Raptor™ FluoroPhenyl LC Columns



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

Effortlessly achieve 8,700+ psi HPLC seals by hand! (Wrench-tighten to 20,000+ psi.) Hybrid titanium/PEEK seal can be installed repeatedly without compromising your seal.



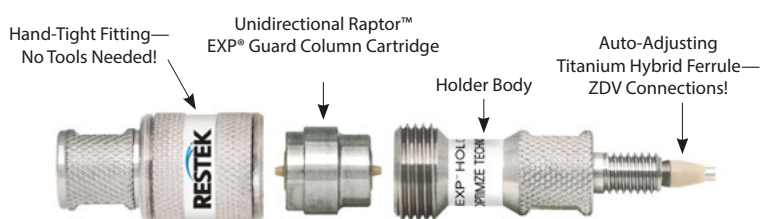
Description	qty.	cat.#
EXP Hand-Tight Fitting (Nut w/Ferrule)	ea.	25937
EXP Hand-Tight Fitting (Nut w/Ferrule)	10-pk.	25938
EXP Hand-Tight Nut (w/o Ferrule)	ea.	25939

Hybrid Ferrule U.S. Patent No. 8201854, Optimize Technologies. Optimize Technologies EXP Holders are Patent Pending. Other U.S. and Foreign Patents Pending. The Opti- prefix is a registered trademark of Optimize Technologies, Inc.

Experience *Selectivity Accelerated*. Order the Raptor™ FluoroPhenyl today at www.bgb-info.com/raptor



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.bgb-info.com/raptor

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