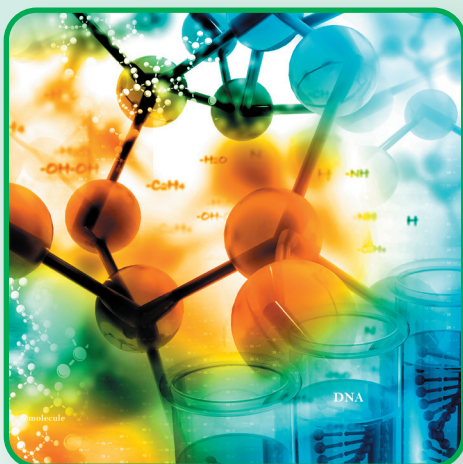
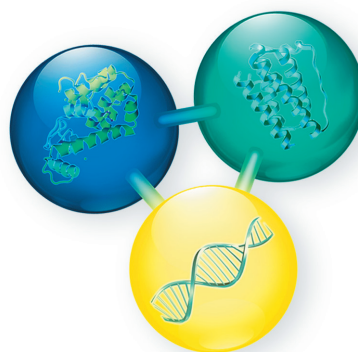


Biocompatible YMC-Triart metal-free

Oligonucleotides

Peptides/Proteins

Metal-coordinating
compounds



Excellent peak shapes

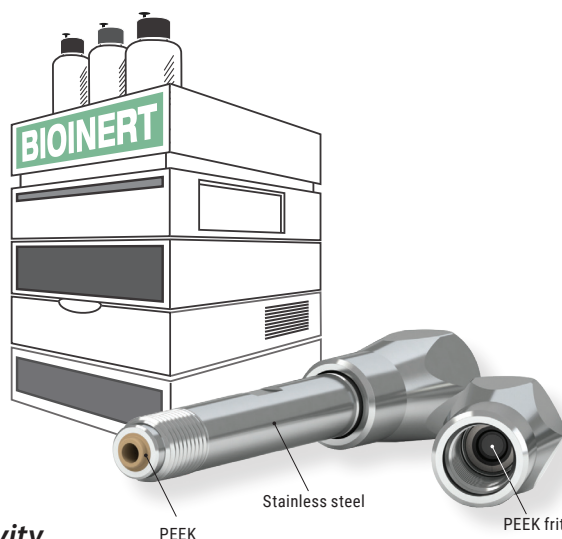
Highly sensitive LC-MS

No carry-over

Reproducible results

Inert columns for bio separations and coordinating compounds

Biocompatible YMC-Triart metal-free



Features

- *Excellent peak shapes and high sensitivity*
- *Reproducible results day-after-day*
- *No carry-over effects*
- *Ideal for highly sensitive LC/MS analyses*
- *High pressure limits*

Ideal choice for

- *Sensitive proteins or peptides*
- *Nucleotides, oligonucleotides*
- *Metal coordinating compounds*

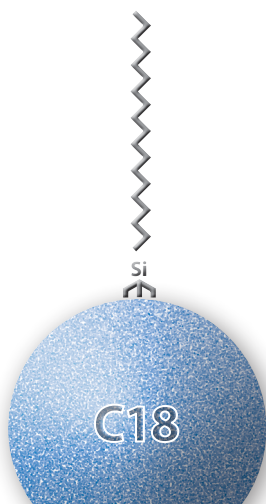


Specifications	YMC-Triart C18, C18 ExRS, BioC18, C8, BioC4, Phenyl, PFP, Diol-HILIC
Particle Size	1.9 µm, 3 µm, 5 µm
Inner layer	PEEK
Outer layer	Stainless steel
Frit	PEEK
Pressure limit	1.9 µm: 100 MPa / 1,000 bar / 15,000 psi 3/5 µm: 45 MPa / 450 bar / 6,525 psi

Special column connectors required. See below for recommendations.

Available bioinert phases

YMC-Triart C18



versatile applications
first choice for
method development
pH 1–12/90 °C max.
100% aqueous eluents ✓

YMC-Triart C18 ExRS



extended pH and stability
hydrophobic substances
positional isomers
pH 1–12/90 °C max.

YMC-Triart Bio C18



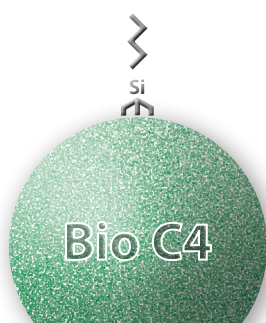
peptides/proteins
300 Å widepore
pH 1–12/90 °C max.
100% aqueous eluents ✓

YMC-Triart C8



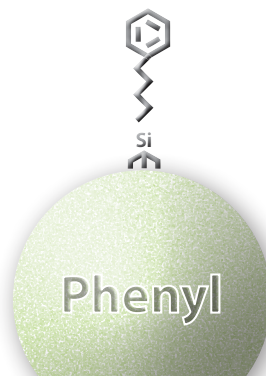
alternative to C18
short retention time
pH 1–12/90 °C max.

YMC-Triart Bio C4



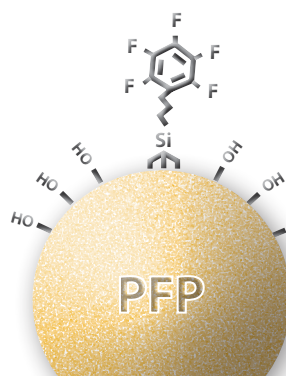
proteins/antibodies/peptides
300 Å widepore
pH 1–10/90 °C max.
100% aqueous eluents ✓

YMC-Triart Phenyl



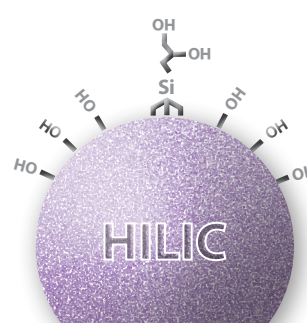
aromatic compounds
(π -electron donor)
conjugated systems
100% aqueous eluents ✓

YMC-Triart PFP



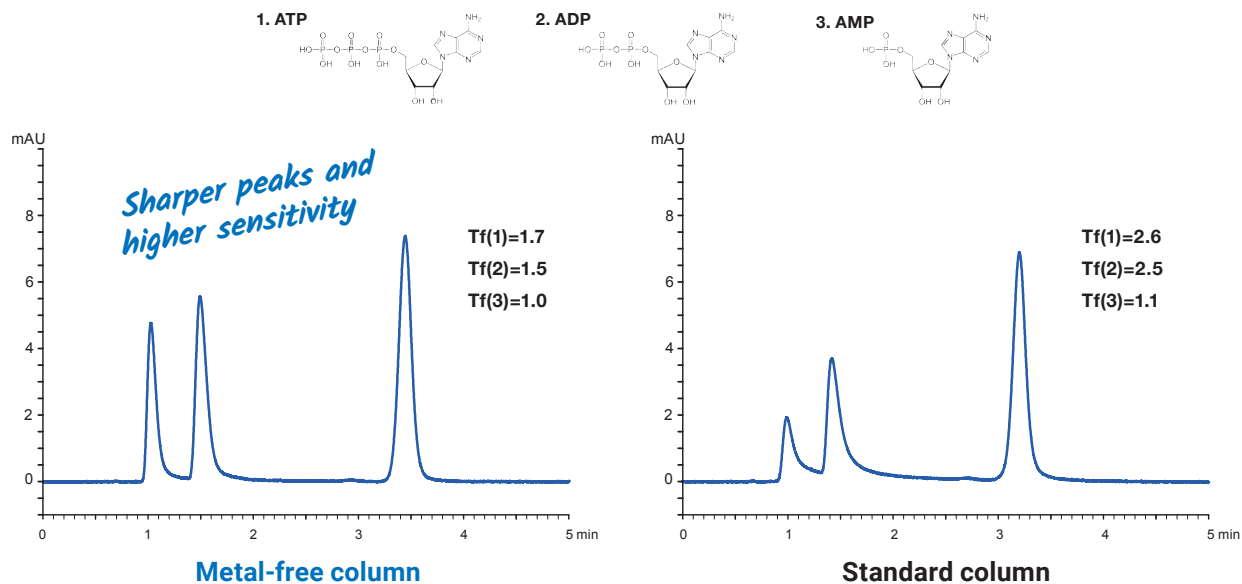
aromatic compounds
(π -electron donor)
cis-trans isomers
polar halogenated
compounds
100% aqueous eluents ✓

YMC-Triart Diol-HILIC



very polar compounds
less ionic adsorption
ideal choice for SFC
100% aqueous eluents ✓

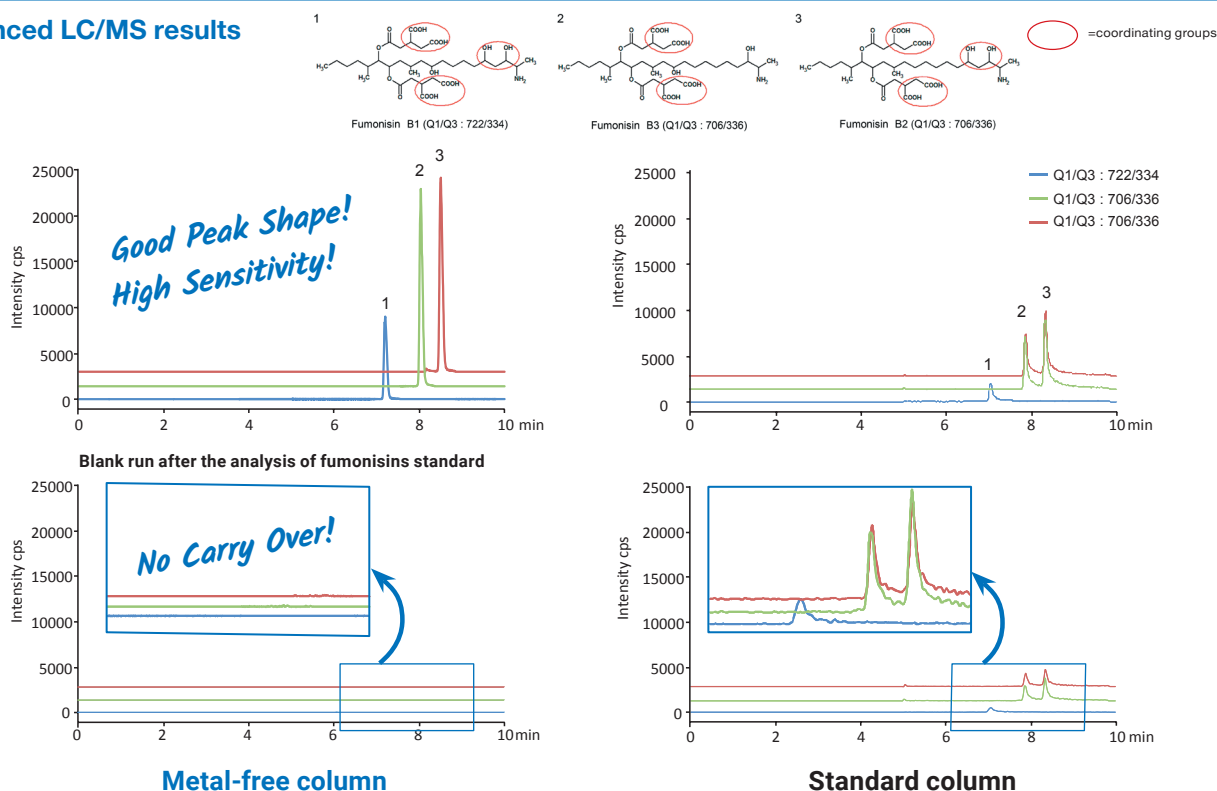
Improved sensitivity for coordination compounds



Column: YMC-Triart C18 metal-free (3 μ m, 12 nm) 50 x 2.1 mm ID
Part No.: TA12S03-05Q1PTP
Eluent: 5 mM HCOONH₄
Flow rate: 0.21 mL/min

Temperature: 25 °C
Detection: UV at 265 nm
Injection: 1 μ L (10 mg/mL)
System: bioinert/"metal-free" HPLC system

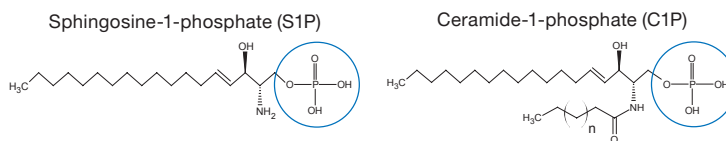
Advanced LC/MS results



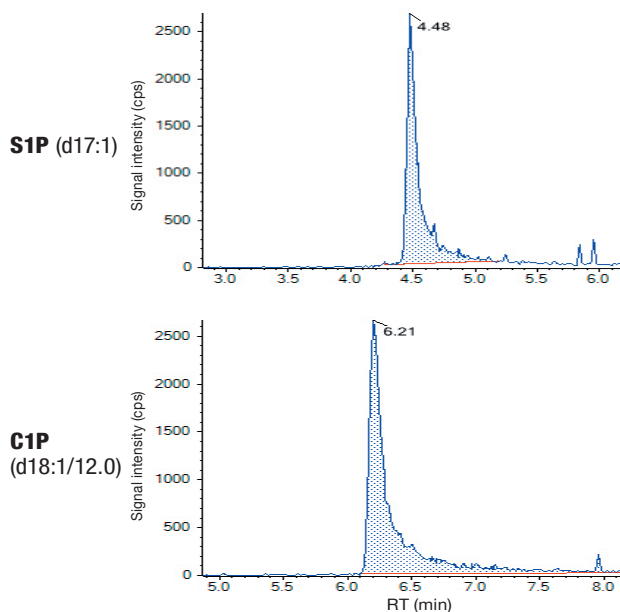
Column: YMC-Triart C18 metal-free (3 μ m, 12 nm) 150 x 2.1 mm ID
Part No.: TA12S03-15Q1PTP
Eluent: A) water/HCOOH (100/0.1)
B) acetonitrile
Gradient: 25–50% B (0–5 min), 50% B (5–8 min), 50–90% B (8–10 min)
Flow rate: 0.2 mL/min

Temperature: 40 °C
Detection: ESI, positive
Scheduled MRM (Metal-free column)
MRM (Standard column)
Injection: 5 μ L (0.1 mg/mL)
Instrument: LC) Shimadzu Prominence UFLC, MS) AB Sciex 3200 QTRAP

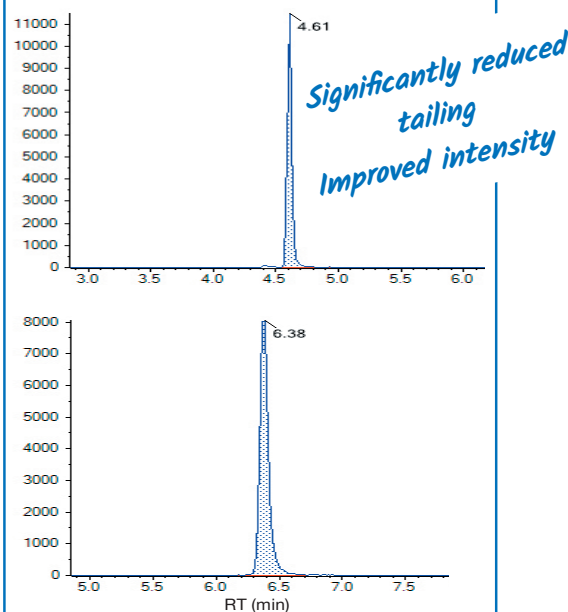
High sensitivity for sphingophospholipids



Standard C18 column with conventional stainless steel hardware (1.8 µm, 50 x 2.1 mm ID)



YMC-Triart C18 metal-free column (1.9 µm, 50 x 2.1 mm ID)

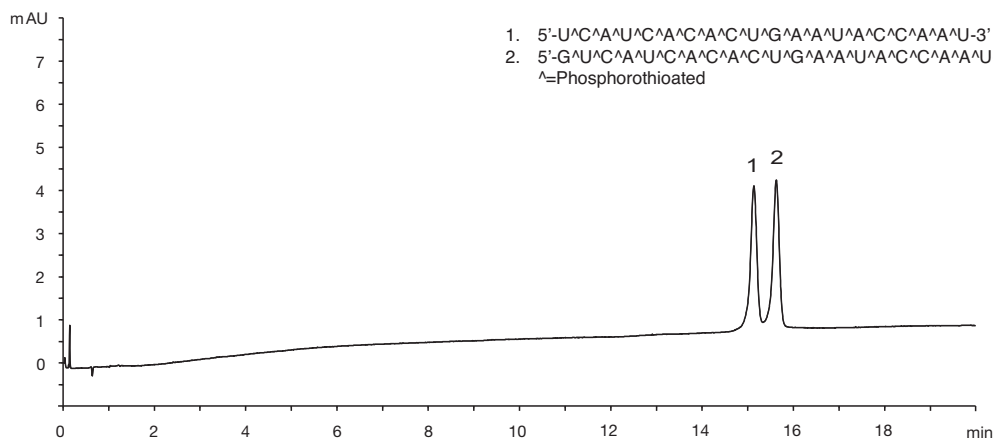


Part No: TA12SP9-05Q1PTP
Eluent: A) methanol/acetonitrile/water (1/1/3) containing X
B) 2-propanol containing X
X: 5 mM ammonium acetate, 500 nM EDTA and 0.025% NH₃ water
Gradient: 0%B (0–1 min), 0–50%B (1–5 min), 50–64%B (5–11 min), 64–95%B (11–13 min), 95%B (13–15 min), 0%B (15–20 min)

Flow rate: 0.25 mL/min
Temp.: 40°C
Detection: ESI, positive
Injection: 1 µL
Instrument: LC) Waters ACQUITY UPLC H-class system
MS) AB Sciex QTRAP 6500

Reference ¹⁾
Siddabasave Gowda B. Gowda, Kazutaka Ikeda, Makoto Arita,
Facile determination of sphingolipids under alkali condition using metal-free column by LC-MS/MS,
Analytical and Bioanalytical Chemistry, 410 (20): 4793-4803 AUG 2018

Challenging phosphorothioate oligonucleotides



- 5'-U[^]C[^]A[^]A[^]U[^]C[^]A[^]A[^]C[^]A[^]U[^]G[^]A[^]A[^]U[^]A[^]C[^]A[^]A[^]U[^]-3' (RNA 20 mer)
 - 5'-G[^]U[^]C[^]A[^]A[^]U[^]C[^]A[^]A[^]C[^]A[^]U[^]G[^]A[^]A[^]U[^]A[^]C[^]A[^]A[^]U[^]-3' (RNA 21 mer)
- [^]=Phosphorothioated

Column: YMC-Triart C8 metal-free (1.9 µm, 12 nm) 100 x 2.1 mm ID
Part no.: TO12SP9-10Q1PTP
Eluent: A) 15mM triethylamine-400 mM HFIP*
B) methanol
Gradient: 10-20%B (0-20 min)

Flow rate: 0.42 mL/min
Temperature: 70°C
Detection: UV at 260 nm
Injection: 1 µL (each 1.25 nmol/mL)

*1,1,1,3,3,3-hexafluoro-2-propanol

Ordering Information

YMC-Triart 1.9 µm, metal-free UHPLC columns (max. pressure 1,000 bar)

Phase	Column ID (mm)	Column length (mm)		
		50	100	150
C18	2.1	TA12SP9-05Q1PTP	TA12SP9-10Q1PTP	TA12SP9-15Q1PTP
C18 ExRS	2.1	TAR08SP9-05Q1PTP	TAR08SP9-10Q1PTP	TAR08SP9-15Q1PTP
Bio C18	2.1	TA30SP9-05Q1PTP	TA30SP9-10Q1PTP	TA30SP9-15Q1PTP
C8	2.1	TO12SP9-05Q1PTP	TO12SP9-10Q1PTP	TO12SP9-15Q1PTP
Bio C4	2.1	TB30SP9-05Q1PTP	TB30SP9-10Q1PTP	TB30SP9-15Q1PTP
Phenyl	2.1	TPH12SP9-05Q1PTP	TPH12SP9-10Q1PTP	TPH12SP9-15Q1PTP
PFP	2.1	TPF12SP9-05Q1PTP	TPF12SP9-10Q1PTP	TPF12SP9-15Q1PTP
Diol-HILIC	2.1	TDH12SP9-05Q1PTP	TDH12SP9-10Q1PTP	TDH12SP9-15Q1PTP

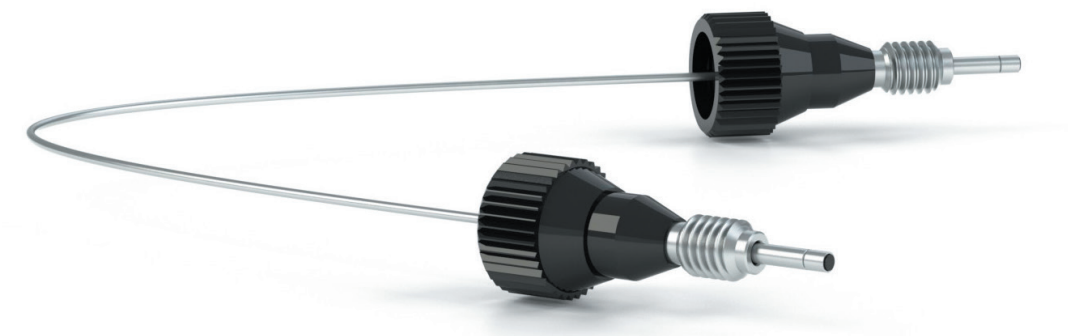
YMC-Triart 3 µm, metal-free analytical columns (max. pressure 450 bar)

Phase	Column ID (mm)	Column length (mm)		
		50	100	150
C18	2.1	TA12S03-05Q1PTP	TA12S03-10Q1PTP	TA12S03-15Q1PTP
	4.6	TA12S03-0546PTP	TA12S03-1046PTP	TA12S03-1546PTP
C18 ExRS	2.1	TAR08S03-05Q1PTP	TAR08S03-10Q1PTP	TAR08S03-15Q1PTP
	4.6	TAR08S03-0546PTP	TAR08S03-1046PTP	TAR08S03-1546PTP
Bio C18	2.1	TA30S03-05Q1PTP	TA30S03-10Q1PTP	TA30S03-15Q1PTP
	4.6	TA30S03-0546PTP	TA30S03-1046PTP	TA30S03-1546PTP
C8	2.1	TO12S03-05Q1PTP	TO12S03-10Q1PTP	TO12S03-15Q1PTP
	4.6	TO12S03-0546PTP	TO12S03-1046PTP	TO12S03-1546PTP
Bio C4	2.1	TB30S03-05Q1PTP	TB30S03-10Q1PTP	TB30S03-15Q1PTP
	4.6	TB30S03-0546PTP	TB30S03-1046PTP	TB30S03-1546PTP
Phenyl	2.1	TPH12S03-05Q1PTP	TPH12S03-10Q1PTP	TPH12S03-15Q1PTP
	4.6	TPH12S03-0546PTP	TPH12S03-1046PTP	TPH12S03-1546PTP
PFP	2.1	TPF12S03-05Q1PTP	TPF12S03-10Q1PTP	TPF12S03-15Q1PTP
	4.6	TPF12S03-0546PTP	TPF12S03-1046PTP	TPF12S03-1546PTP
Diol-HILIC	2.1	TDH12S03-05Q1PTP	TDH12S03-10Q1PTP	TDH12S03-15Q1PTP
	4.6	TDH12S03-0546PTP	TDH12S03-1046PTP	TDH12S03-1546PTP

YMC-Triart 5 µm, metal-free analytical columns (max. pressure 450 bar)

Phase	Column ID (mm)	Column length (mm)		
		50	100	150
C18	2.1	TA12S05-05Q1PTP	TA12S05-10Q1PTP	TA12S05-15Q1PTP
	4.6	TA12S05-0546PTP	TA12S05-1046PTP	TA12S05-1546PTP
C18 ExRS	2.1	TAR08S05-05Q1PTP	TAR08S05-10Q1PTP	TAR08S05-15Q1PTP
	4.6	TAR08S05-0546PTP	TAR08S05-1046PTP	TAR08S05-1546PTP
Bio C18	2.1	TA30S05-05Q1PTP	TA30S05-10Q1PTP	TA30S05-15Q1PTP
	4.6	TA30S05-0546PTP	TA30S05-1046PTP	TA30S05-1546PTP
C8	2.1	TO12S05-05Q1PTP	TO12S05-10Q1PTP	TO12S05-15Q1PTP
	4.6	TO12S05-0546PTP	TO12S05-1046PTP	TO12S05-1546PTP
Bio C4	2.1	TB30S05-05Q1PTP	TB30S05-10Q1PTP	TB30S05-15Q1PTP
	4.6	TB30S05-0546PTP	TB30S05-1046PTP	TB30S05-1546PTP
Phenyl	2.1	TPH12S05-05Q1PTP	TPH12S05-10Q1PTP	TPH12S05-15Q1PTP
	4.6	TPH12S05-0546PTP	TPH12S05-1046PTP	TPH12S05-1546PTP
PFP	2.1	TPF12S05-05Q1PTP	TPF12S05-10Q1PTP	TPF12S05-15Q1PTP
	4.6	TPF12S05-0546PTP	TPF12S05-1046PTP	TPF12S05-1546PTP
Diol-HILIC	2.1	TDH12S05-05Q1PTP	TDH12S05-10Q1PTP	TDH12S05-15Q1PTP
	4.6	TDH12S05-0546PTP	TDH12S05-1046PTP	TDH12S05-1546PTP

Ideal Choice: MarvelXACT™



Features

- *Fully biocompatible, different material options*
- *Dead volume free connection*
- *Finger-tight (U)HPLC connection*
- *Small fitting suitable for every column oven*
- *Haptic “click” feedback when it reaches the optimum torque*
- *Fast and frequent column change possible*

Specifications

Biocompatible hardware options	PEEK-lined Stainless Steel PEEKsil
Ferrule	no
Pressure rating	131 MPa / 1,310 bar / 19,000 psi
Manufacturer	IDEX Health & Science LLC

Suitable column connectors

Ordering information MarvelXACT™

Material	Dimensions	Part No.
PEEKsil	150 mm x 25 µm ID	UPFF-YM7025150
	350 mm x 25 µm ID	UPFF-YM7025350
	600 mm x 25 µm ID	UPFF-YM7025600
	150 mm x 50 µm ID	UPFF-YM7050150
	350 mm x 50 µm ID	UPFF-YM7050350
	600 mm x 50 µm ID	UPFF-YM7050600
	150 mm x 75 µm ID	UPFF-YM7075150
	350 mm x 75 µm ID	UPFF-YM7075350
	600 mm x 75 µm ID	UPFF-YM7075600
	150 mm x 100 µm ID	UPFF-YM7100150
	350 mm x 100 µm ID	UPFF-YM7100350
	600 mm x 100 µm ID	UPFF-YM7100600
PEEK-Lined Stainless Steel	150 mm x 25 µm ID	UPFP-YM7025150
	250 mm x 25 µm ID	UPFP-YM7025250
	350 mm x 25 µm ID	UPFP-YM7025350
	500 mm x 25 µm ID	UPFP-YM7025500
	600 mm x 25 µm ID	UPFP-YM7025600
	600 mm x 50 µm ID	UPFP-YM7050150
	250 mm x 50 µm ID	UPFP-YM7050250
	350 mm x 50 µm ID	UPFP-YM7050350
	500 mm x 50 µm ID	UPFP-YM7050500
	600 mm x 50 µm ID	UPFP-YM7050600
	150 mm x 75 µm ID	UPFP-YM7075150
	250 mm x 75 µm ID	UPFP-YM7075250
	350 mm x 75 µm ID	UPFP-YM7075350
	500 mm x 75 µm ID	UPFP-YM7075500
	600 mm x 75 µm ID	UPFP-YM7075600
	150 mm x 100 µm ID	UPFP-YM7100150
	250 mm x 100 µm ID	UPFP-YM7100250
	350 mm x 100 µm ID	UPFP-YM7100350
	500 mm x 100 µm ID	UPFP-YM7100500
	600 mm x 100 µm ID	UPFP-YM7100600

Other connector options

Ferrule	no	replaceable	replaceable
Product	MarvelX™	Handy connector 2	Hand-tight EXP® fitting
Manufacturer	IDEX Health & Science LLC	YMC Co., Ltd.	Optimize Technologies, Inc.
			
Pressure rating	131 MPa / 1,310 bar	42 MPa / 420 bar	137 MPa / 1,370 bar
Product code	e.g. UPFP-6050250	XRP0204	XRHTF-01

MarvelX (ACT) is a registered trademark of IDEX Health & Science LLC · EXP® is a registered trademark of Optimize Technologies, Inc.

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