

Wide-pore column with organic/inorganic hybrid silica

YMC-Triart Bio C18

YMC-Triart Bio C18, which is a wide-pore column with organic/inorganic hybrid silica, is suitable for separation of peptides, proteins and oligonucleotides. YMC-Triart Bio C18 is also possible to analyze sample materials in a short time, which are strongly retained on conventional C18 columns, due to its low hydrophobicity.

Features

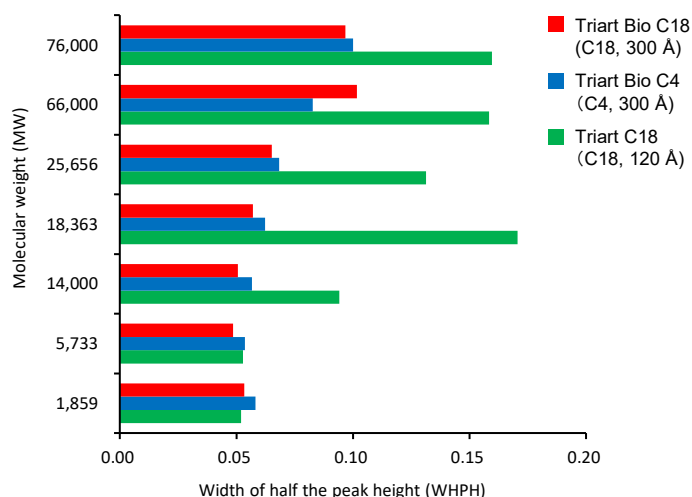
- Wide-pore column with organic/inorganic hybrid silica
- Suitable for separation of biomolecules such as peptides and proteins
- Suitable for LC/MS as showing good peak shape in mobile phase containing formic acid
- Possible to analyze sample materials in a short time, which are strongly retained on conventional C18 columns

Specifications

Base	: Organic/inorganic hybrid silica
Particle size	: 1.9, 3, 5 μm
Pore size	: 300 \AA
Stationary phase	: Octadecyl group
Usable pH range	: 1-12
Max. temperature	: 90°C (pH 1-7) 50°C (pH 7-12)

Suitable for separation of peptides and proteins with molecular weight over 10,000

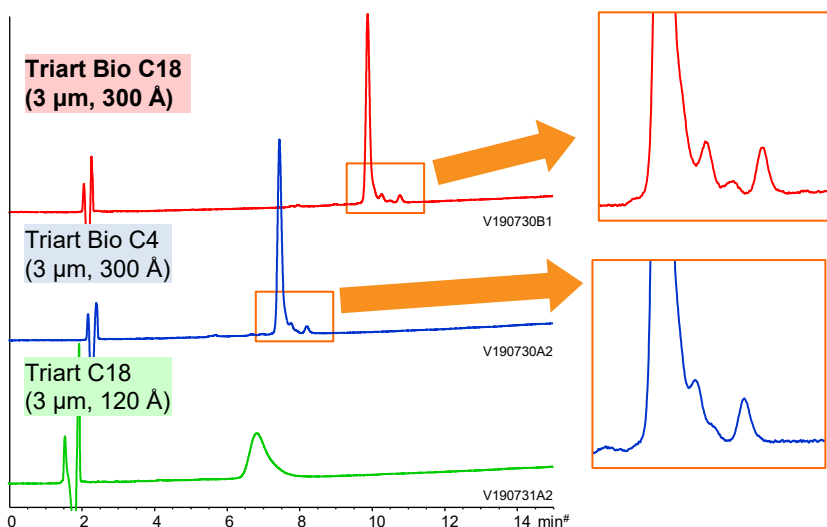
The effects of pore size on separation of peptides and proteins



Column	: 150 X 3.0 mm I.D.
Eluent	: A) water/TFA (100/0.1), B) acetonitrile/TFA (100/0.1) 10-95%B (0-15 min)
Flow rate	: 0.4 mL/min
Temperature	: 40°C
Detection	: UV at 220 nm
Injection	: 4 μL (0.1-0.5 mg/mL)
Sample	: γ -Endorphin (MW 1,859), Insulin (MW 5,733), Lysozyme (MW 14,000), β -Lactoglobulin (MW 18,363), α -Chymotrypsinogen A (MW 25,656), BSA (MW 66,000), Conalbumin (MW 76,000)

The widths at half the peak height (WHPH) were compared when peptides and proteins with molecular weight (MW) from 1,859 to 76,000 were separated using Triart Bio C18 and Triart Bio C4 with pore size 300 \AA , and Triart C18 with pore size 120 \AA . Good peak shape was obtained using Triart Bio C18 and Triart Bio C4, which are wide-pore columns, even in separation of proteins with high MW. On the other hand, peak broadening was observed when using Triart C18 (120 \AA) on separation of proteins with MW over 10,000. Wide-pore columns with pore size 300 \AA are suitable for separation of proteins with MW over 10,000.

Separation example of Human growth hormone (MW 22,000)

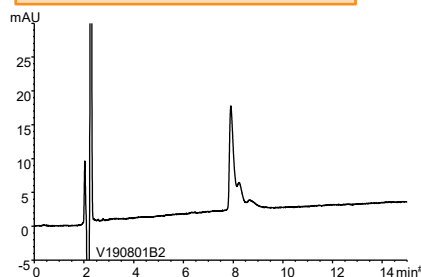


Column	: 150 X 3.0 mm I.D.
Eluent	: A) water/TFA (100/0.1) B) acetonitrile/TFA (100/0.08) 50-70%B (0-15 min)
Flow rate	: 0.425 mL/min
Temperature	: 40°C
Detection	: UV at 220 nm
Injection	: 8 μL
Sample	: Human growth hormone (0.1 mg/mL)

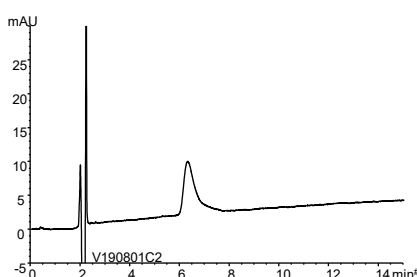
This example shows that chromatograms of human growth hormone, a peptide with MW 22,000, which was separated using Triart Bio C18 and Triart Bio C4 with pore size 300 \AA , and Triart C18 with pore size 120 \AA , respectively. Good peak shape can be obtained on analysis of high MW molecules such as proteins with Triart Bio C18 and Triart Bio C4, wide-pore columns. Excellent separation was achieved using Triart Bio C18 with longer alkyl chain in its bonded phase.

Good peak shape with mobile phase containing formic acid

Triart Bio C18 (3 µm, 300 Å)



Competitor C18 (3.5 µm, 300 Å)



Column	: 150 X 3.0 mm I.D., 150 X 4.6 mm I.D.
Eluent	: A) water/formic acid (100/0.1) B) acetonitrile/formic acid (100/0.08) 45-65%B (0-15 min)
Flow rate	: 0.425 mL/min for 3.0 mm I.D. 1.0 mL/min for 4.6 mm I.D.
Temperature	: 40°C
Detection	: UV at 220 nm
Sample	: Human growth hormone (0.1 mg/mL)

Triart Bio C18 is suitable for highly sensitive analysis and structural analysis of proteins using LC/MS since it gives good peak shape in mobile phase containing formic acid.

【 Ordering Information 】

Analytical columns (Max. pressure 45-100 MPa)

Particle size (µm)	Pore size (Å)	Column size inner diameter X length (mm)	Product number
1.9	300	2.1 X 20	TA30SP9-02Q1PT
		2.1 X 30	TA30SP9-03Q1PT
		2.1 X 50	TA30SP9-05Q1PT
		2.1 X 75	TA30SP9-L5Q1PT
		2.1 X 100	TA30SP9-10Q1PT
		2.1 X 150	TA30SP9-15Q1PT
		3.0 X 50	TA30SP9-0503PT
		3.0 X 75	TA30SP9-L503PT
		3.0 X 100	TA30SP9-1003PT
		3.0 X 150	TA30SP9-1503PT
3	300	2.1 X 20	TA30S03-02Q1PTH
		2.1 X 33	TA30S03-H3Q1PTH
		2.1 X 50	TA30S03-05Q1PTH
		2.1 X 75	TA30S03-L5Q1PTH
		2.1 X 100	TA30S03-10Q1PTH
		2.1 X 150	TA30S03-15Q1PTH
		3.0 X 50	TA30S03-0503PTH
		3.0 X 75	TA30S03-L503PTH
		3.0 X 100	TA30S03-1003PTH
		3.0 X 150	TA30S03-1503PTH
		4.6 X 33	TA30S03-H346PTH
		4.6 X 50	TA30S03-0546PTH
		4.6 X 75	TA30S03-L546PTH
		4.6 X 100	TA30S03-1046PTH
		4.6 X 150	TA30S03-1546PTH
		4.6 X 250	TA30S03-2546PTH
5	300	2.1 X 20	TA30S05-02Q1PTH
		2.1 X 33	TA30S05-H3Q1PTH
		2.1 X 50	TA30S05-05Q1PTH
		2.1 X 75	TA30S05-L5Q1PTH
		2.1 X 100	TA30S05-10Q1PTH
		2.1 X 150	TA30S05-15Q1PTH
		3.0 X 50	TA30S05-0503PTH
		3.0 X 75	TA30S05-L503PTH
		3.0 X 100	TA30S05-1003PTH
		3.0 X 150	TA30S05-1503PTH
		4.0 X 150	TA30S05-1504PTH
		4.0 X 250	TA30S05-2504PTH
		4.6 X 33	TA30S05-H346PTH
		4.6 X 50	TA30S05-0546PTH
		4.6 X 75	TA30S05-L546PTH
		4.6 X 100	TA30S05-1046PTH
		4.6 X 150	TA30S05-1546PTH
		4.6 X 250	TA30S05-2546PTH

Semi-preparative columns (Max. pressure 10 MPa)

Particle size (µm)	Pore size (Å)	Column size inner diameter X length (mm)	Product number
5	300	10 X 150	TA30S05-1510WT
		10 X 250	TA30S05-2510WT

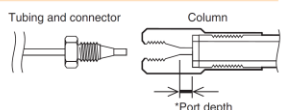
Semi-preparative columns YMC-Actus (Max. pressure 30 MPa)

Particle size (µm)	Pore size (Å)	Column size inner diameter X length (mm)	Product number
5	300	20 X 50	TA30S05-0520WX
		20 X 100	TA30S05-1020WX
		20 X 150	TA30S05-1520WX
		20 X 250	TA30S05-2520WX
		30 X 50	TA30S05-0530WX
		30 X 75	TA30S05-L530WX
		30 X 100	TA30S05-1030WX
		30 X 150	TA30S05-1530WX
		30 X 250	TA30S05-2530WX

Metal free columns (Max. pressure 45-100 MPa)

Particle size (µm)	Pore size (Å)	Column size inner diameter X length (mm)	Product number
1.9	300	2.1 X 50	TA30SP9-05Q1PTP
		2.1 X 100	TA30SP9-10Q1PTP
		2.1 X 150	TA30SP9-15Q1PTP
3	300	2.1 X 50	TA30S03-05Q1PTP
		2.1 X 100	TA30S03-10Q1PTP
		2.1 X 150	TA30S03-15Q1PTP
		4.6 X 50	TA30S03-0546PTP
		4.6 X 100	TA30S03-1046PTP
		4.6 X 150	TA30S03-1546PTP
5	300	2.1 X 50	TA30S05-05Q1PTP
		2.1 X 100	TA30S05-10Q1PTP
		2.1 X 150	TA30S05-15Q1PTP
		4.6 X 50	TA30S05-0546PTP
		4.6 X 100	TA30S05-1046PTP
		4.6 X 150	TA30S05-1546PTP

Consideration of connector and column fittings



The end of the product number	*Port depth	Style of endfitting
PT/PTH/PTP	2 mm	Parker style (UPLC compatible)
WT/WX	3 mm	Waters style

UPLC is a registered trademark of Waters Corporation

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