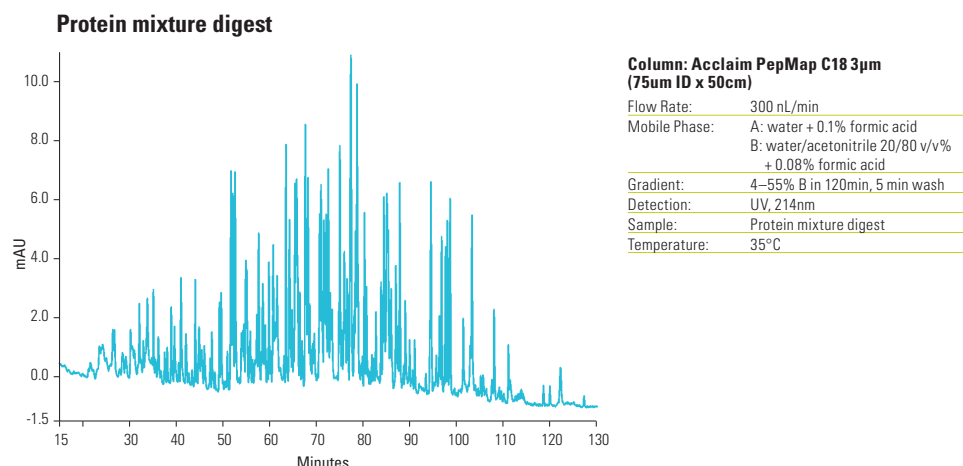


Acclaim PepMap C18 100Å

The standard for peptide separations in proteomics

- High resolution protein identification for biomarker discovery, verification or any other analysis
- Highest sensitivity in LC-MS
- Quality control by factory testing all columns

Acclaim PepMap and Acclaim PepMap RSLC columns are specially designed for high-resolution analyses of tryptic, natural, and synthetic peptides. The columns are often applied for LC-MS/MS peptide mapping for protein identification, biomarker discovery, and systems biology. Due to their high loading capacity, the columns are exceptionally suitable for the analysis of low abundant peptides in complex proteomics samples.



Acclaim PepMap C8, 100Å

An excellent alternative to Acclaim PepMap 100Å C18, when separating very hydrophobic peptides (e.g., non-tryptic peptides)

Acclaim PepMap C4, 300Å

Ideal for the separation of larger hydrophobic peptides and proteins, providing higher recoveries

Acclaim PepMap C18, 300Å

Wide pore version allows larger peptides and proteins

Accucore 150-C18

Designed to give narrow peaks and high peak capacity for peptide separations

Accucore 150-C4

Ideal for high resolution protein separations

Accucore 150-Amide-HILIC

Well suited for separating a variety of hydrophilic molecules, including carbohydrates and peptides

Separation Columns

Acclaim PepMap C18 100Å Ordering Guide

Particle size (µm)	Length (mm)	nanoViper Column				Classic Column
		50µm ID	75µm ID	300µm ID	1000µm ID	75µm ID
2	50	164561	164563	164560	164454	–
	150	164562	164534	164537	164711	–
	250	164709	164536	–	–	–
	500	164710	164540	–	–	–
3	50	164712	164567	164716	164717	–
	150	164713	164568	164571	164572	160321
	250	164714	164569	–	–	164261
	500	164715	164570	–	–	–
5	50	–	–	164901	164899	–
	150	–	–	164902	164900	160323
	250	–	–	–	–	160326

Acclaim PepMap C8 100Å Ordering Guide

Particle size (µm)	Length (mm)	nanoViper Column			Classic Column	
		50µm ID	75µm ID	300µm ID	1000µm ID	75µm ID
3	150	–	164706	164722	164723	161185

Acclaim PepMap C4 300Å Ordering Guide

Particle size (µm)	Length (mm)	nanoViper Column				Classic Column
		50µm ID	75µm ID	300µm ID	1000µm ID	75µm ID
5	150	–	164707	164720	164721	163579

Acclaim PepMap C18 300 Å Ordering Guide

Particle size (µm)	Length (mm)	nanoViper Column				Classic Column
		50µm ID	75µm ID	300µm ID	1000µm ID	75µm ID
5	150	–	164708	164718	164719	163574

Accucore 150-C18 Ordering Guide

Particle size (µm)	Length (mm)	nanoViper Column
		75µm ID
2.6	150	16126-157569
	500	16126-507569

Accucore 150-C4 Ordering Guide

Particle size (µm)	Length (mm)	nanoViper Column
		75µm ID
2.6	150	16526-157569
	500	16526-507569

Accucore 150-Amide-HILIC Ordering Guide

Particle size (µm)	Length (mm)	nanoViper Column
		75µm ID
2.6	150	16726-157569



Trap columns – nano trap design

Acclaim PepMap C18 100Å Ordering Guide

Type	Part number	Particle Size	ID	Bed Length (mm)	Total Length	Quantity
nanoViper Column	164535	3	75	20	150	2
	164705	3	75	20	70	2
	164564	5	100	20	150	2
Classic Column	164197	5	100	10	150	2
	164199	5	100	20	150	2
	164213	5	200	20	150	2

Note: 164705 is a shorter total length used for vented column set up for example with EASY nLC 1000

Trap Columns – Cartridge (Set of 5)

Acclaim PepMap C18 100Å Ordering Guide

Length (mm)	300µm ID	1000µm ID
5	160454	160434
15	–	160438

Acclaim PepMap C8 100Å Ordering Guide

Length (mm)	300µm ID
5	161194

Acclaim PepMap C4 300Å Ordering Guide

Length (mm)	300µm ID
5	163591

Acclaim PepMap C18 300Å Ordering Guide

Length (mm)	300µm ID
5	163589

Accucore 150-C18 Ordering Guide

Length (mm)	300µm ID
5	16126-900379

Accucore 150-C4 Ordering Guide

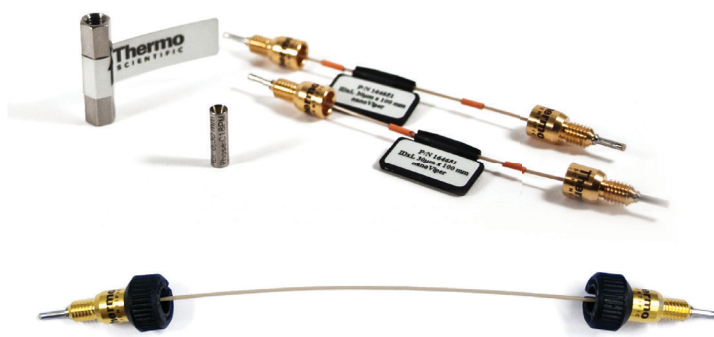
Length (mm)	300µm ID
5	16526-900379

Accucore 150-Amide-HILIC Ordering Guide

Length (mm)	300µm ID
5	16726-900379

µ-Precolumn™ holder, 5mm, with 30µm ID connecting tubing, nanoViper fittings

Length (mm)	300µm ID
5	164649



1st dimension columns for 2D separations

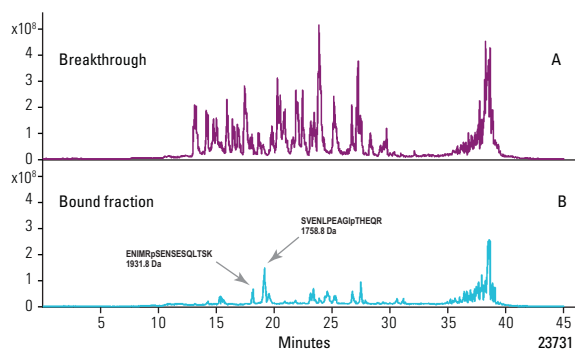
Improving separation efficiency can be achieved by adding a column to the setup for multidimensional analysis. There are dedicated application kits which utilize either SCX or RP as the first dimension.

A TiO₂ trapping column can be added to the application for phosphopeptide analysis. Check the RSLCnano standard applications manual on the Thermo Scientific website for more information on 2D separations.

1st dimension columns Ordering Guide

Chemistry	Part Number	Description	Application
SCX	164565	300µm ID x 10cm, packed with Poros 10 S, nanoViper column	2D Salt plugs (6720.0325)
	164566	1.0mm ID x 15cm, packed with Polysulfoethyl ASP, 5µm, 300Å, nanoViper column	Automated off-line 2D LC of Peptides, micro SCX x nano RP (6720.0330)
RP	164592	300µm ID x 15cm, packed with Acclaim PA2, nanoViper column	Automated off-line 2D LC, Cap RP (basic) x Nan RP (acidic) (6720.0335)
TiO ₂	164205	100µm ID x 1cm packed with TiO ₂	Phosphopeptide analysis
	164215	200µm ID x 1cm packed with TiO ₂	Phosphopeptide analysis

Isolation of two synthetic phosphopeptides from a BSA tryptic digest



Trap Column:	200µm ID x 1cm, packed with TiO ₂ , 5µm
	100µm ID x 1cm, packed with Acclaim PepMap C18, 5µm
Separation Column:	Acclaim PepMap C18, 3µm
Dimensions:	75µm x 15cm
Loading Solvent:	0.05% HFBA in DI H ₂ O
Wash Solvent:	0.01% HFBA in DI H ₂ O
Mobile Phases:	(A) 0.05% TFA in DI H ₂ O (B) 0.04% TFA in acetonitrile/ DI H ₂ O (80:20 v/v)
Gradient:	3–40% acetonitrile in 30 min
TiO ₂ Trap Eluent:	250mM NH ₄ HCO ₃ in DI H ₂ O, pH 9.0
Flow Rate:	300nL/min
Loading Flow:	8µL/min
Inj. Volume:	5µL
Detection:	MS

EASY-Spray Columns

Nanoflow LC-MS utilizes very narrow fused silica columns and as a result, even the slightest inconsistency in column connection can result in leaks and dead volumes and are a frequent source of poor data, causing unstable spray and a significant loss in performance. Trouble-shooting connection issues can be difficult and time consuming, even for experts.

Thermo Scientific™ EASY-Spray™ columns address the aforementioned issues by incorporating high-performance nanobore columns and integrating them within a radical new design.

Packed with either C18 for peptide separations or with selected wide pore phases and monoliths for the separation of intact proteins, e.g. top-down proteomics or the structural identification of biotherapeutics, the “plug and spray” approach delivers state of the art performance in a simple to use format, making research routine.

Acclaim PepMap C18 100Å Ordering Guide

Particle size (µm)	Length (mm)	50µm ID	75µm ID
2	150	ES801	–
	250	–	ES802
	500	–	ES803
3	150	–	ES800

Accucore C4 150Å Ordering Guide

Particle size (µm)	Length (mm)	50µm ID	75µm ID
2.6	150	–	ES811

Acclaim PepMap C18 300Å Ordering Guide

Particle size (µm)	Length (mm)	50µm ID	75µm ID
5	150	–	ES812

PepSwift Ordering Guide

Length (mm)	200µm ID
250	ES810



EASY-Spray Emitters

EASY-Spray emitters are integrated devices consisting of a sprayer coupled with a transfer line. The EASY-Spray benefits of pre-made connections, as well as the easy installation in the MS ion source can now be exploited in cases where no chromatography is required, for example when tuning the mass spectrometer.

EASY-Spray Emitters Ordering Guide

Description	Cat. No.
EASY-Spray emitter, nanoflow (Emitter ID 7µm, Transfer line ID 20µm, Transfer line length 500mm)	ES791
EASY-Spray emitter, microflow (Emitter ID 20µm, Transfer line ID 75µm, Transfer line length 500mm)	ES792



PepSwift and ProSwift (PS-DVB) Capillary and Micro HPLC Columns

- High-resolution for protein identification, biomarker discovery, and systems biology
- High-speed peptide and protein separations (<15 min)
- Highest sensitivity for LC/MS
- Highest column-to-column reproducibility
- Wide range of column IDs and lengths available
- Superior lifetime
- nanoViper fittings for easy column installation



PepSwift and ProSwift monolithic columns are specially designed for fast and high-resolution LC/MS analysis in protein identification, biomarker discovery, and systems biology. Based on a polystyrene divinylbenzene copolymer, the monolithic structure offers a high-quality alternative to traditional microparticulate sorbents, providing important advantages to the chromatographic separation. High-sensitivity proteomics and biotech applications are easily performed using these columns.

PepSwift Precolumns can be used for preconcentration and desalting of samples consisting of peptides and proteins without negative impact on the chromatographic performance or recovery of the compounds. Various ion-pairing agents can be used in the loading solvent and/or mobile phases to change the selectivity of the separation or improve the trapping efficiency.

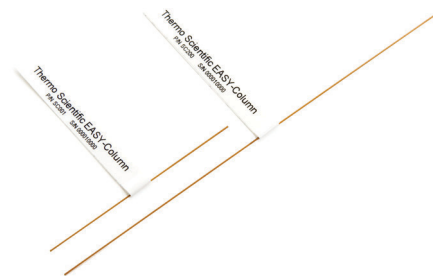
PepSwift and ProSwift, nanoViper Ordering Guide

Length (mm)	PepSwift			ProSwift
	100µm ID	200µm ID	500µm ID	1000µm ID
5	–	164558	–	–
50	164584	164557	164585	164586
250	164543	164542	–	–

EASY-Columns

Excellence in nanoscale separations

- Compatible with any nanoscale HPLC system
- Optimized for online LC-MS
- Quality control on every column
- Simple, flexible design



Using highly pure chromatographic media and biocompatible, metal-free fused silica capillaries, Thermo Scientific™ EASY-Column™ capillary LC columns are produced with a focus on design simplicity and strict quality control. As a result, EASY-Column capillary LC columns deliver outstanding chromatographic performance on any nano LC system.

EASY-Columns Ordering Guide

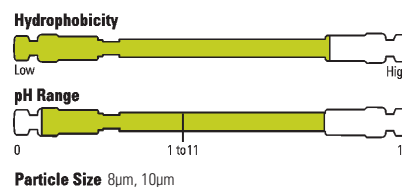
Description	Quantity	Cat. No.
EASY-Column, 2cm, ID 100µm, 5µm, C18-A1 (Trap column)	3	SC001
EASY-Column, 10cm, ID 75µm, 3µm, C18-A2 (Analytical column)	1	SC200
EASY-Column, 10cm, ID 75µm, 3µm, C18-A2 (Analytical column)	3	SC2003
HPLC-to-Column Connector kit Zero-dead-volume union (1/32in OD tubing), 10x SC603	1	SC600
A/B mixing tee & Venting Tee for two-column setup Nanoliter-dead-volume tee (1/32in OD tubing), 10 sleeves for 360µm OD fused silica (10xSC603).	1	SC601
Connector Kit for two-column setup Zero-dead-volume union (1/32in OD tubing), Nanoliter-dead-volume tee (1/32 inch OD tubing), 10x SC603	1	SC602
Sleeves (2cm, 1/32in OD) for 360µm OD fused silica	30	SC603

HyperREZ XP

Polymer-based columns for carbohydrate analysis

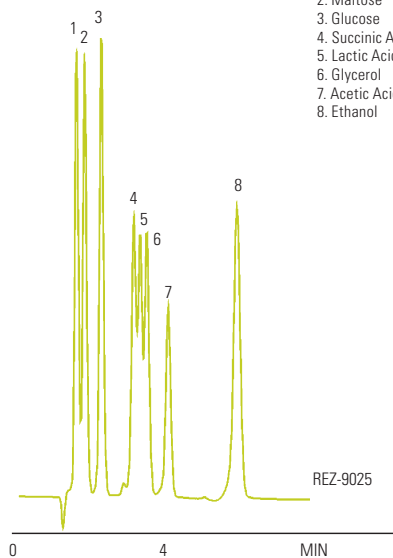
- Designed for the determination of carbohydrates, saccharides, organic acids, and alcohols
- Efficient and reproducible monodisperse particles
- Stable for long column lifetimes even at low pH and high temperatures

Thermo Scientific™ HyperREZ™ XP Carbohydrate columns are based on a monodisperse resin with a 4 or 8% divinylbenzene content, and provide an ideal medium for the analysis of carbohydrates and organic acids. Unlike silica based columns they are stable at low pH, allowing the use of dilute acid as a mobile phase. The columns can also be run at elevated temperatures, for faster analysis and improved resolution of some closely eluting analytes. The columns can easily be regenerated for increased column lifetime. Control of the degree of cross-linking of the gel provides a size exclusion mode of operation in addition to the ligand exchange interactions with the metal ion associated with the sulfonated resin. Selectivity differences arise from the interactions of the different counter-ion forms with the hydroxyl groups on the analyte molecules. HyperREZ XP columns are available in H⁺, Ca²⁺, Pb²⁺, and Na⁺ forms, enabling you to choose the appropriate counter-ion to meet your application requirements. Refer to the tables below to help choose the best column based on application area or retention times. HyperREZ XP columns are also available in dedicated organic acid and sugar alcohol forms.



HyperREZ XP Organic Acids, 8µm, 100 x 7.7mm

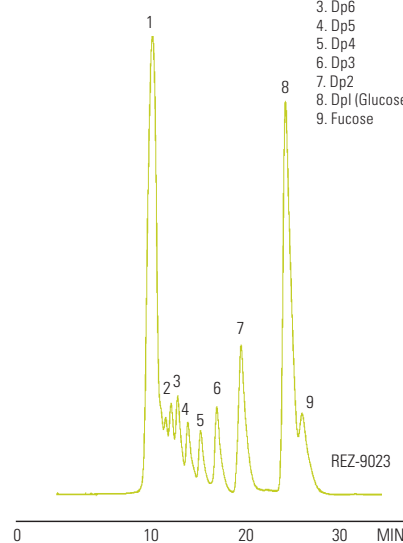
Part Number:	69608-107780
Eluent:	0.0001mM H ₂ SO ₄
Flow Rate:	0.7mL/min
Temperature:	57°C
Detector:	RI
Sample:	1. Maltotriose 2. Maltose 3. Glucose 4. Succinic Acid 5. Lactic Acid 6. Glycerol 7. Acetic Acid 8. Ethanol



Products of fermentation, including organic acids, sugars and alcohols, can be separated using a HyperREZ XP Organic Acids column

HyperREZ XP Carbohydrate Na⁺, 10µm, 300 x 7.7mm

Part Number:	69310-307780
Eluent:	H ₂ O
Flow Rate:	0.3mL/min
Temperature:	80°C
Detector:	RI
Sample:	1. Dp8 2. Dp7 3. Dp6 4. Dp5 5. Dp4 6. Dp3 7. Dp2 8. Dpl (Glucose) 9. Fucose



Analysis of sports drink using a HyperREZ XP Carbohydrate Na⁺ column

Phase	Particle Size (µm)	Porosity
HyperREZ XP Carbohydrate H ⁺ Counter-ion	8	8% cross linkage
HyperREZ XP Carbohydrate Pb ²⁺ Counter-ion	8	8% cross linkage
HyperREZ XP Carbohydrate Ca ²⁺ Counter-ion	8	8% cross linkage
HyperREZ XP Carbohydrate Na ⁺ Counter-ion	10	4% cross linkage
HyperREZ XP Organic Acids	8	8% cross linkage
HyperREZ XP Sugar Alcohols	8	8% cross linkage

Column Type	Application Areas
HyperREZ XP Ca ²⁺	Adulteration of food & beverages, confectionary, disaccharides, food additives Alcohols, dairy products, fermentation, wine Anomer separation
HyperREZ XP Pb ²⁺	Fruit juice, monosaccharides
HyperREZ XP H ⁺	Alcohols, dairy products, fermentation, wine Oligosaccharides, glycoprotein constituents, organic acids, fermentation products
HyperREZ XP Na ⁺	Corn syrup

HyperREZ XP Ordering Guide

	Particle Size (µm)	Format	Length (mm)	ID (mm)	Cat. No.
HyperREZ XP Carbohydrate H+	8	Guard Cartridge (2/pk)	5	3.0	69008-903027
		Guard Column	50	7.7	69008-057726
		HPLC Column	300	7.7	69008-307780
HyperREZ XP Carbohydrate Ca ²⁺	8	Guard Cartridge (2/pk)	5	3.0	69208-903027
		Guard Column	50	7.7	69208-057726
		HPLC Column	300	7.7	69208-307780
HyperREZ XP Carbohydrate Pb ²⁺	8	Guard Cartridge (2/pk)	5	3.0	69108-903027
		Guard Column	50	7.7	69108-057726
		HPLC Column	300	7.7	69108-307780
HyperREZ XP Carbohydrate Na+	10	Guard Cartridge (2/pk)	5	3.0	69310-903027
		Guard Column	50	7.7	69310-057726
		HPLC Column	300	7.7	69310-307780
HyperREZ XP Organic Acids	8	Guard Cartridge (2/pk)	5	3.0	69008-903027
		Guard Column	—	—	Inquire
		HPLC Column	100	7.7	69608-107780
HyperREZ XP Sugar Alcohols	8	Guard Cartridge (2/pk)	5	3.0	69208-903027
		Guard Column	—	—	Inquire
		HPLC Column	300	7.7	69708-254030

Format	Length (mm)	ID (mm)	Cat. No.
HyperRez Guard Cartridge Holder	5	3	60002-354

Retention Times of Common Saccharides (min)

Saccharide	H ⁺	Ca ²⁺	Pb ²⁺
Adonitol	11.5	14.9	20.4
Arabinose	11.4	13.6	19.4
Erythritol	12.7	15.6	20.3
Fructose	10.6	13.5	19.3
Fucose	12.2	13.7	17.1
Galactose	1.07	12.2	15.6
Glucose	9.9	11.1	13.9
Glycerol	14.1	16.1	19.5
Lactose	8.6	9.7	12.8
Maltose	8.4	9.5	12.5
Maltotriose	7.7	8.7	11.9
Mannitol	11.0	17.3	28.9
Mannose	1.5	12.5	16.7
Raffinose	8.2	8.6	11.4
Sorbitol	11.1	20.7	N/A
Sucrose	9.8	9.4	11.9
Xylose	10.6	12.0	15.0

Conditions: Column: 300 x 7.7mm

Mobile Phase:	H ₂ O
Flow Rate:	0.6mL/min
Detection:	RI
Temperature:	75°C (H ⁺)
	85°C (Ca ²⁺)
	80°C (Pb ²⁺)

Note: partial hydrolysis may occur with some saccharides using H⁺.

