

Thermo Scientific Columns for Biomolecules

Thermo Scientific manufacture a wide range of silica and polymeric columns specifically designed for analysis of proteins, peptides, oligonucleotides and other biomolecules by reversed-phase, ion-exchange, size exclusion, hydrophobic interaction and affinity chromatography. An overview of some of these phases is given in the following pages.

Columns for Proteins

A) Reversed-Phase Columns for Proteins

BioBasic™ reversed-phase columns are available in C18, C8 and C4 chemistries. These silica based columns provide superior chromatography because the extra dense bonding chemistry produces a highly stable, reproducible surface. Columns show excellent reproducibility and are ideally suited for LC-MS separations.

BioBasic RP Phases

BioBasic Phase	Particle Size (µm)	Pore Size (Å)	Surface Area (m ² /g)	Carbon Load (%)	Endcapped
18	5	300	100	9	Yes
8	5	300	100	5	Yes
4	5	300	100	4	Yes

Please see page 242 for ordering information.

ProSwift® RP polystyrene-divinylbenzene monolith columns provide the unique advantages of high resolution at exceptionally high flow rates for fast protein separations and analysis. The monolith is bonded with phenyl functional groups and shows excellent stability over a wide pH range of 1 to 14. Please enquire for further details.

B) Ion-Exchange Columns for Proteins

BioBasic™ AX and SCX silica based columns show excellent performance for proteins, peptides and other ionic species and polar molecules. These ion-exchange materials can be used across a wide range of pH and ionic strength conditions. In addition to its anion-exchange applications, BioBasic AX can also be used under high organic conditions in the HILIC mode. BioBasic SCX is a versatile strong cation-exchange phase for proteins, peptides and small molecules, also useful for protein fractionations for proteomics analyses by capillary LC-MS, including 2D proteomics combined with reversed-phase (see p.29).

BioBasic Ion-Exchange Phases

BioBasic Phase	AX	SCX
Ligand	Polyethyleneimine	Sulphonic acid
Particle Size (µm)	5	5
Pore Size (Å)	300	300
Surface Area (m²/g)	100	100
Carbon Load (%)	3	3

ProPac™ and **MABPac** ion-exchange columns are based on pellicular non-porous core particles providing exceptionally high resolution and efficiency for separations of protein variants, resolving isoforms that differ by a single charged residue. A hydrophilic layer prevents unwanted secondary interactions and a grafted cation-exchange or anion-exchange surface provides pH-based selectivity control. The ProPac™ series is based on non-porous polymer resin consisting of ethylvinylbenzene cross-linked with 55% divinylbenzene coated with a hydrophilic layer.

ProPac and MABPac Phases	Base Material	Functional Group	Particle Size (µm)	pH Range	Capacity
WCX-10	Ethylvinylbenzene cross-linked with 55% divinylbenzene non-porous particles	Carboxylate	10	2 - 12	6mg/ml lysozyme
SCX-10		Sulphonate	10	2 - 12	3mg/ml lysozyme
WAX-10		Tertiary amine	10	2 - 12	5mg/ml BSA
SAX-10		Quaternary ammonium	10	2 - 12	15mg/ml BSA
MABPac SCX-10	Highly cross-linked divinylbenzene non-porous particles	Sulphonic	3, 5, 10	2 - 12	30µg/ml

ProSwift® IEX monolithic columns provide the outstanding resolving power of non-porous analytical media combined with fast analysis performance. Please enquire for further details and ordering information.

ProSwift IEX Phase	Base Material	Functional Group	pH Range	Capacity
WCX-1S	Polymethacrylate monolith	Carboxylic acid	2 - 12	23mg/ml lysozyme
SCX-1S		Sulphonic acid	2 - 12	30mg/ml lysozyme
WAX-1S		Tertiary amine (DEAE)	2 - 12	18mg/ml BSA
SAX-1S		Quaternary amine	2 - 12	18mg/ml BSA

Thermo Scientific Columns for Biomolecules (continued)

Ordering Information

Reversed-phase and Ion-exchange BioBasic Phases

Column i.d. ¹ (mm)	Column Length ¹ (mm)				Drop-In Guard Cartridges (4/pk)
	50	100	150	250	
2.1	xxxx-052130	xxxx-102130	xxxx-152130	xxxx-252130	xxxx-012101 ² !
3.0	xxxx-053030	xxxx-103030	xxxx-153030	xxxx-253030	xxxx-013001 ² !
4.6	xxxx-054630	xxxx-104630	xxxx-154630	xxxx-254630	xxxx-014001 ³ !

¹ Other dimensions available

² Use with Uniguard direct connect holder 852-00

³ Use with Uniguard direct connect holder 850-00

When ordering please replace 'xxxx' with the appropriate BioBasic material code.

BioBasic 18 xxxx=72105 BioBasic 8 xxxx=72205 BioBasic 4 xxxx=72305 BioBasic AX xxxx=73105 BioBasic SCX xxxx=73205

Please note that not all phases are available in every dimension.

Ion Exchange Phases – ProPac and ProSwift

ProPac Phase	Column Dimensions (mm)			
	250 x 2 ¹	250 x 4 ¹	250 x 9	250 x 22
WCX-10	063472	054993	063474	SP5482
SCX-10	063456	054995	063700	SP5522
WAX-10	063464	054999	063707	SP5598
SAX-10	063448	054997	063703	SP5594
MABPac SCX-10 ²	075604	074625	-	-

¹ Guard columns available

² Other dimensions available

Column Dimensions (mm)	ProSwift Phase			
	WCX-1S	SCX-1S	WAX-1S	SAX-1S
50 x 1.0	066643	071977	066642	068459
50 x 4.6	064295	066765	064294	064293

Size Exclusion Phases – BioBasic

BioBasic Phase	Column Dimensions (mm)		Guard (30 x 7.8mm)
	150 x 7.8	300 x 7.8	
SEC 60	73305-157846	73305-307846	73305-037821
SEC 120	73405-157846	73405-307846	73405-037821
SEC 300	73505-157846	73505-307846	73505-037821
SEC 1000	73605-157846	73605-307846	73605-037821

Columns for Oligonucleotides

DNAPac Phase	Column Dimensions (mm)			
	250 x 2	250 x 4	250 x 9	250 x 22
PA100	SP3686	043010	043011	SP2091
PA200	063425	063000	063421	SP6734