

Zetadex Gel Filtration

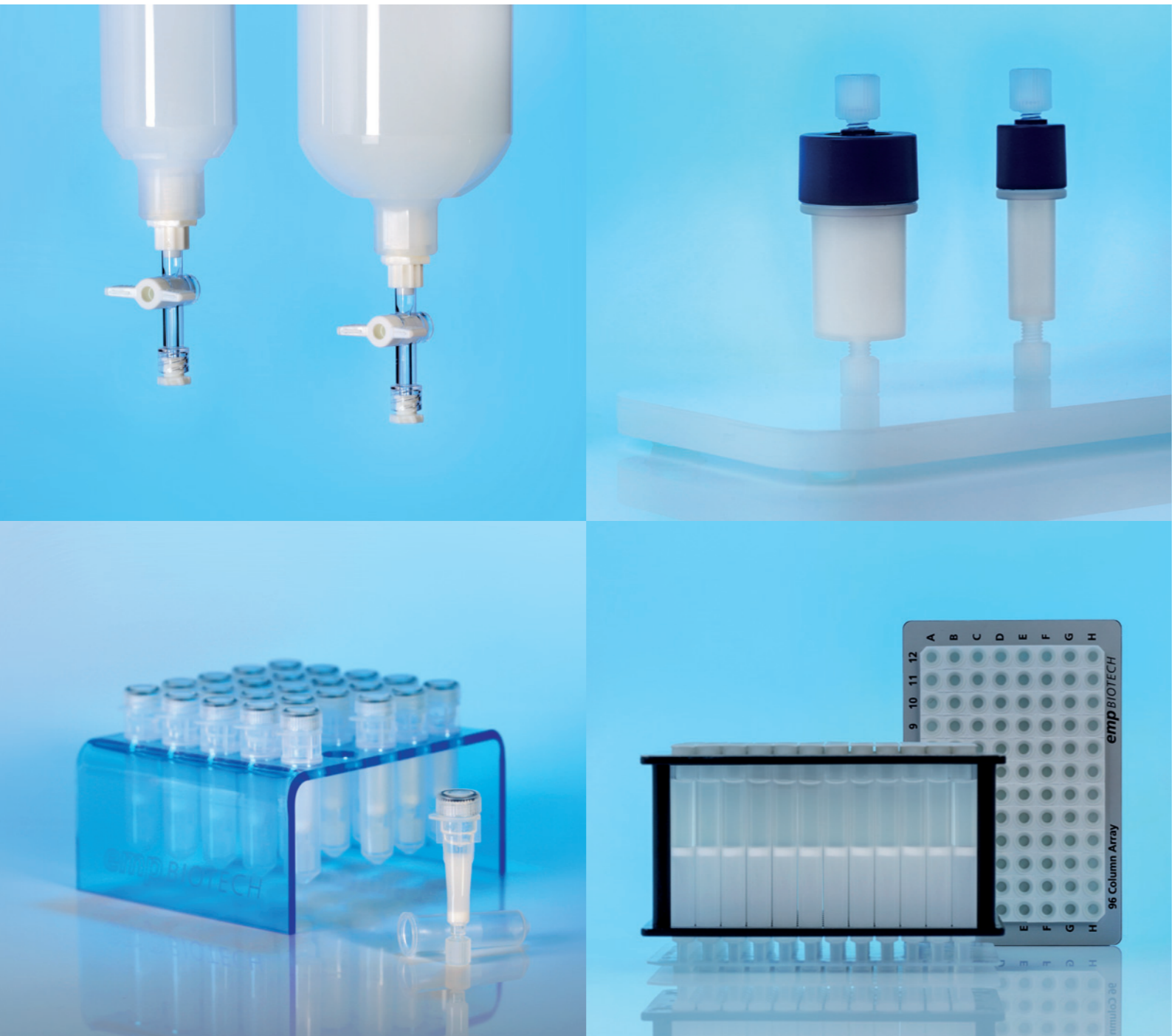
for rapid purification,
desalting, and
buffer exchange



*excellence
made possible*

Zetadex Gel Filtration

For rapid purification, desalting,
and buffer exchange



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Zetadex Gel Filtration Resin



Zetadex is a beaded composite material developed by **emp BIOTECH** and comprised of ultrapure cross-linked dextran. It exhibits high selectivity, superb resolution, low non-specific adsorption and robust chemical stability. Buffer and pH effects on resolution are minimal.

Molecules purified with **Zetadex** are separated according to size. Molecules and particles larger than the pores are excluded from entering the beads, remain in the void volume, pass rapidly through the column, and are eluted free from low molecular weight contaminants.

The main advantage of **Zetadex** is the ability to rapidly remove small molecules and to simultaneously desalt the sample into pure water. If **Zetadex** is pre-equilibrated with a particular buffer, then the sample undergoes rapid buffer exchange directly into the buffer of choice.

Zetadex Gel Filtration Resin Overview

There are currently two grades of **Zetadex**, **Zetadex-25** and **Zetadex-50**, which have distinct separation characteristics arising from different degrees of cross-linking. The size exclusion or molecular weight cut-off (MWCO) of **Zetadex-25** is 5 kDa for proteins and 10 bases for nucleic acids. For **Zetadex-50**, the cut-offs are 25 kDa and 20 bases, respectively.

The particle size distribution (PSD) of **Zetadex** is precision controlled by a process developed at **emp BIOTECH**. The PSD determines the flow rate through the gel bed and it is important to choose the best PSD for the intended application.

Zetadex resins are divided into four categories:

Grade	Particle Size (dry)	System Compatibility	Products
Superfine	20 – 50 µm	<ul style="list-style-type: none"> – Centrifuge – Automated liquid chromatography systems – Peristaltic pump – Syringe 	CentriPure MINI columns CentriPure MIDI columns CentriPure plates ZetaSep FPLC columns Dry resin Hydrated resin
Fine	20 – 80 µm	<ul style="list-style-type: none"> – Centrifuge – Automated liquid chromatography systems – Peristaltic pump – Syringe 	ZetaPrep FPLC columns Dry resin Hydrated resin
Medium	50 – 150 µm	Gravity flow	CentriPure columns CentriPure Arrays Dry resin Hydrated resin
Coarse	150 – 250 µm	Process chromatography	Dry resin

Zetadex is autoclavable at 121°C, pH 7 for 30 minutes and is stable in all commonly used buffers.

Grade	Zetadex-25	Zetadex-50
Superfine	Dry Bead Size: 20 – 50 µm (>80 %) Product Code: TM-0101	Dry Bead Size: 20 – 50 µm (>80 %) Product Code: TM-0104
	Hydrated in phosphate buffered saline pH 7.4, with 0.02 % NaN ₃ on request	Hydrated in phosphate buffered saline pH 7.4, with 0.02 % NaN ₃ Product Code: TM-0121
	Hydrated in deionized water with 0.15 % ProCline on request	Hydrated in deionized water with 0.15 % ProCline Product Code: TM-0122
Fine	Dry Bead Size: 20 – 80 µm (>80 %) Product Code: TM-0102	Dry Bead Size: 20 – 80 µm (>80 %) Product Code: TM-0105
	Hydrated in phosphate buffered saline pH 7.4, with 0.02 % NaN ₃ Product Code: TM-0130	Hydrated in phosphate buffered saline pH 7.4, with 0.02 % NaN ₃ Product Code: TM-0108
	Hydrated in deionized water with 0.15 % ProCline Product Code: TM-0129	Hydrated in deionized water with 0.15 % ProCline Product Code: TM-0123
Medium	Dry Bead Size: 50 – 150 µm (>80 %) Product Code: TM-0103	Dry Bead Size: 50 – 150 µm (>80 %) Product Code: TM-0106
	Hydrated in phosphate buffered saline pH 7.4, with 0.02 % NaN ₃ Product Code: TM-0107	Hydrated in phosphate buffered saline pH 7.4, with 0.02 % NaN ₃ Product Code: TM-0132
	Hydrated in deionized water with 0.15 % ProCline Product Code: TM-0114	Hydrated in deionized water with 0.15 % ProCline Product Code: TM-0131
Coarse	Dry Bead Size: 100 – 300 µm (>80 %) Product Code: TM-0112	Dry Bead Size: 100 – 300 µm (>80 %) Product Code: TM-0113
Agglutination Grade (Gel Card)	–	Dry Bead Size: 20 – 50 µm (>80 %) Product Code: TM-0111
	–	Hydrated in phosphate buffered saline pH 7.4, with 0.02 % NaN ₃ Product Code: TM-0120
	–	Hydrated in deionized water with 0.15 % ProCline on request
Water Regain: Swelling: MWCO (size exclusion): Fractionation Range:	2.15 – 2.25 mL/g 4 – 6 mL/g below 5000 Da 1 – 5 kDa (globular proteins)	4.80 – 5.20 mL/g 9 – 11 mL/g below 25000 Da 1 – 30 kDa (globular proteins)

CentriPure Hydrated Gel Filtration Columns

For rapid purification, desalting, and buffer exchange using gravity flow



CentriPure Gel Filtration Columns are specifically designed for rapid and efficient removal of small molecules (dyes, salts, biotin, haptens, etc.) from larger proteins, nucleic acids, or nanoparticles, which are simultaneously purified and desalted in a single step.

Ultrapure gel and specially treated sinter frits ensure outstanding resolution, low cross-contamination and high selectivity.

CentriPure columns are precision filled with **Zetadex Medium**, which has been optimized for gravity flow chromatography. **CentriPure** columns can be pre-washed with pure water for desalting or pre-equilibrated with a buffer of choice for a customized buffer exchange. The gravity column provides a significantly faster and far more efficient alternative to lengthy dialysis.

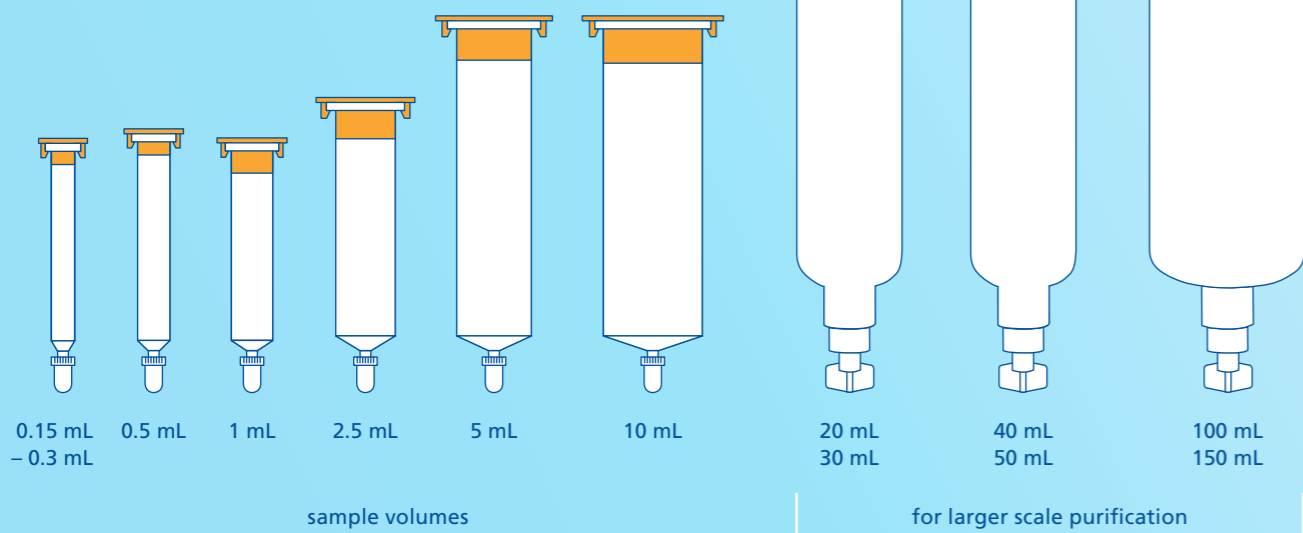
CentriPure columns process fixed sample volumes and elute with a 1.5-fold dilution. There are twelve column sizes available for the following fixed sample volumes: 0.2 mL, 0.5 mL, 1 mL, 2.5 mL, 5 mL, 10 mL, 20 mL, 30 mL, 40 mL, 50 mL, 100 mL and 150 mL.

CentriPure Configuration Line Up

pre-filled and ready-to-use

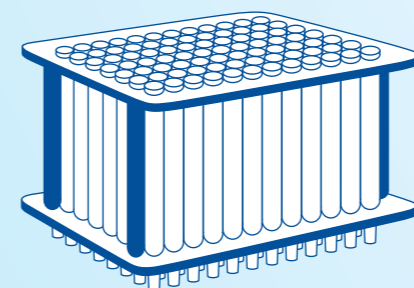
GRAVITATIONAL FLOW

CentriPure Columns process fixed sample volumes and elute with a 1.5-fold dilution. There are twelve column sizes available from 0.2 mL sample volume up to 150 mL.



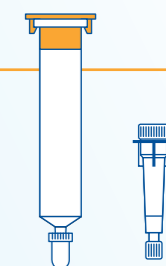
GRAVITATIONAL FLOW

CentriPure Arrays for automated systems
sample volume: 150 – 500 µL

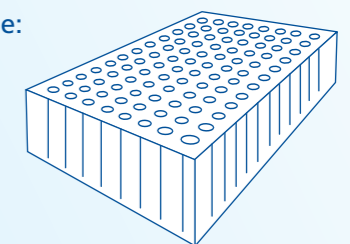


CENTRIFUGATION

CentriPure MIDI Columns
sample volume: 500 µL
CentriPure MINI Columns
sample volume: 50 µL

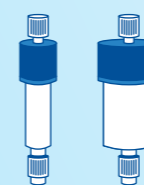


CentriPure Plates
sample volume:
up to 40 µL

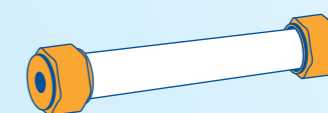


LIQUID CHROMATOGRAPHY SYSTEMS

ZetaSep FPLC Columns
bed volume: 1/5 mL



ZetaPrep FPLC Columns
bed volume: 10 mL



CentriPure Z25

Gel Filtration Columns

For rapid desalting and buffer exchange

- of oligonucleotides longer than 10 base pairs/nucleotides
- of proteins larger than 5 kDa (MWCO)
- of spheroidal nanoparticles greater than 2 nm Ø

Prod. Code	Name	Sample Vol.	Pack Size
CP-0501	CentriPure 2-Z25M	150 – 300 µL	50 columns
CP-0502	CentriPure 5-Z25M	0.5 mL	50 columns
CP-0503	CentriPure 10-Z25M	1.0 mL	50 columns
CP-0504	CentriPure 25-Z25M	2.5 mL	25 columns
CP-0505	CentriPure 50-Z25M	5.0 mL	10 columns
CP-0506	CentriPure 100-Z25M	10.0 mL	10 columns
CP-0507	CentriPure 200-Z25M	20 mL	1/20 columns
CP-0508	CentriPure 300-Z25M	30 mL	1/20 columns
CP-0509	CentriPure 400-Z25M	40 mL	1 column
CP-0510	CentriPure 500-Z25M	50 mL	1 column
CP-0511	CentriPure 1000-Z25M	100 mL	1 column
CP-0512	CentriPure 1500-Z25M	150 mL	1 column
CP-0405	CentriPure 25-Z25M endotoxin-free	2.5 mL	10 columns
CP-0419	CentriPure 100-Z25M endotoxin-free	10.0 mL	10 columns

ENDOTOXIN
FREE

CentriPure

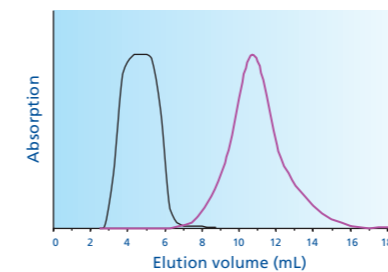
Hydrated Gel Filtration Columns

For rapid purification, desalting, and buffer exchange using gravity flow

CentriPure Gel Filtration Columns for rapid and efficient removal of small molecules from **nucleic acids**.

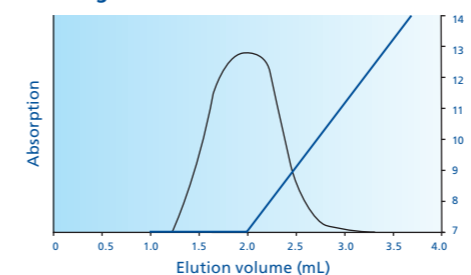
High Performance Examples:

Removal of fluorescent dye using CentriPure 25-Z25M



2.5 mL sample volume
5-TAMRA, 2.5 µmol: red line (280 nm)
18-mer oligonucleotide, 0.25 µmol, black line (260 nm)
Elution with pure water

Depletion of concentrated ammonia using CentriPure 10-Z25M

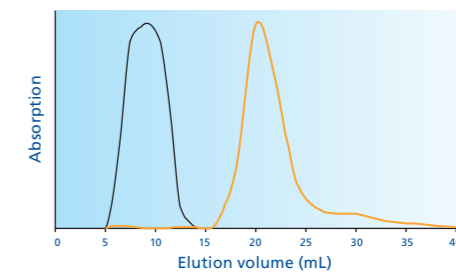


after oligo cleavage from solid support and removal of protecting groups
1.0 mL sample volume
18-mer oligonucleotide, 0.2 µmol: black line (260 nm)
Ammonia, 10 M: blue line (pH)
Elution with pure water

CentriPure Gel Filtration Columns for rapid and efficient removal of small molecules from **antibodies, enzymes and other proteins**.

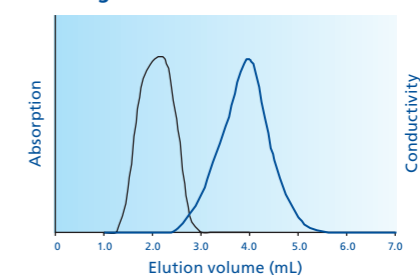
High Performance Examples:

Removal of fluorescent dye using CentriPure 50-Z25M



5.0 mL sample volume
Ovalbumin, 5 mg: black line (280 nm)
Fluorescein, 2.5 µmol: orange line (490 nm)
Elution with pure water

Desalting of protein solution using CentriPure 10-Z25M



1.0 mL sample volume
Anti-rabbit IgG, 1 mg: black line (280 nm)
NaCl, 0.8 M: blue line (µS/cm)
Elution with pure water

CentriPure Z50

Gel Filtration Columns

For rapid desalting and buffer exchange

- of oligonucleotides longer than 20 base pairs/nucleotides
- of proteins larger than 25 kDa (MWCO)
- of spheroidal nanoparticles greater than 4 nm Ø

Prod. Code	Name	Sample Vol.	Pack Size
CP-0601	CentriPure 2-Z50M	150 – 300 µL	50 columns
CP-0602	CentriPure 5-Z50M	0.5 mL	50 columns
CP-0603	CentriPure 10-Z50M	1.0 mL	50 columns
CP-0604	CentriPure 25-Z50M	2.5 mL	25 columns
CP-0605	CentriPure 50-Z50M	5.0 mL	10 columns
CP-0606	CentriPure 100-Z50M	10.0 mL	10 columns

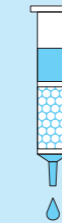
CentriPure

Hydrated Gel Filtration Columns

easy 4 step protocol

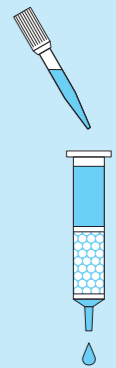
1. Column Preparation

Remove the cap from the top and then the white bottom cap of the **CentriPure** Column. Allow excess column fluid to drain (via gravity) into a suitable waste reservoir.



2. Column Equilibration

Equilibrate the column by loading it with 5x the bed volume of water or buffer (use the same buffer for equilibration and elution). Allow the equilibration buffer to drain completely.



3. Sample Application

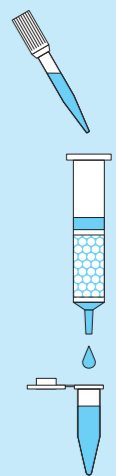
Transfer the sample to the **CentriPure** Column.

Allow the sample to enter the gel bed completely.



4. Elution

Place a tube for sample collection under the **CentriPure** Column. Transfer the elution buffer to the column and elute the purified sample.





LabRacks

For CentriPure Gel Filtration Columns

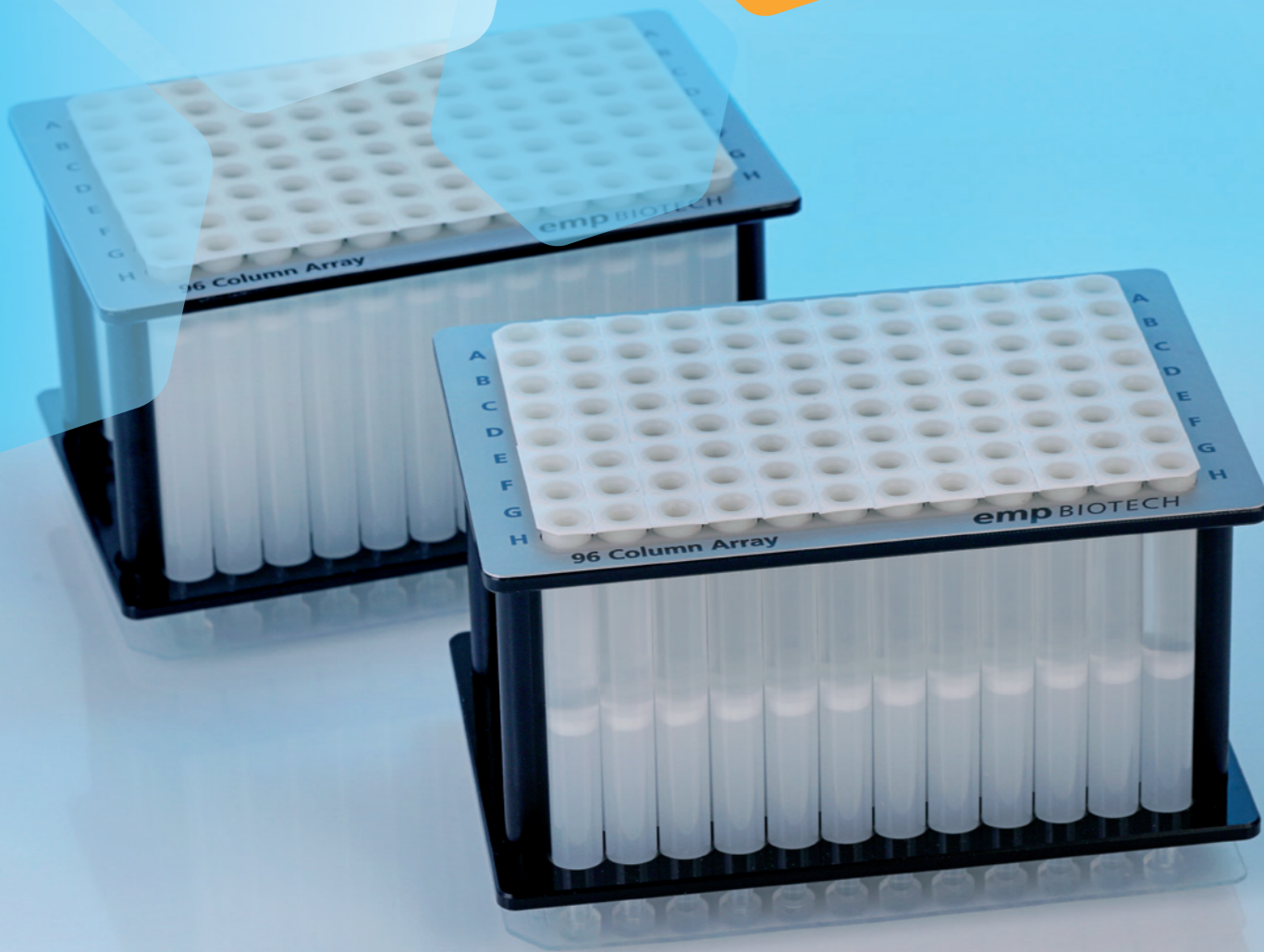


The **emp LabRacks** for **CentriPure** Gel Filtration Columns make purification easy and convenient. The unique design allows use with any column size. Washing, elution and sample collection are all performed smoothly and efficiently. The **emp LabRacks** are constructed from sturdy materials, which provide high stability, resistance to solvents, efficient work flow and increased safety.

The small **emp LabRack** is made of *Dibond* composite material. Samples may be collected with either a standard 15 mL Falcon tube, a 1.5 mL microcentrifuge tube or a 50 mL Eppendorf Tube®.

The **emp LabRacks** for the larger **CentriPure** Gel Filtration Columns are made of brushed stainless steel.

Description	Order No.
LabRack for CentriPure 2 to CentriPure 100 Columns	CP-9914
LabRack for CentriPure 200 to CentriPure 500 Columns	CP-9937
LabRack for CentriPure 1000 to CentriPure 1500 Columns	CP-9936



please
ask for our
CentriPure 48 and
CentriPure 24
Arrays

GRAVITATIONAL FLOW

CentriPure 96 Gel Filtration Column Array

- designed specifically for automated systems
- simultaneously processes 96 samples up to 500 μL
- standard SLAS microplate footprint



The **CentriPure 96** Column Array is designed for 96 simultaneous purifications of proteins, oligonucleotides, or spheroidal nanoparticles in a convenient microplate format.

Within our **CentriPure 96** Column Array range, various sample volumes can be processed either using gravity or light vacuum:

- 150 – 300 μL – **CentriPure 96 Gel Filtration Column Array 300-Z25M**
- 400 μL – **CentriPure 96 Gel Filtration Column Array 400-Z25M**
- 500 μL – **CentriPure 96 Gel Filtration Column Array 500-Z25M**

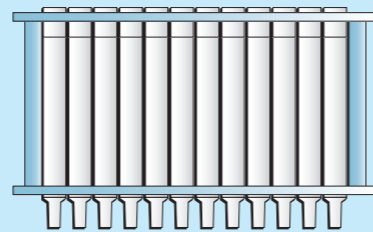
Precision packed with **Zetadex-25** ultrapure dextran gels, the **CentriPure** Column Array is a preferred method for removal of small molecules such as salts, dyes, urea, ammonia, biotin, inhibitors and other small molecular weight impurities and to provide a rapid means of buffer exchange.

CentriPure 96

Gel Filtration Column Array

1. Column Preparation

- Carefully remove the desired number of cap strips from the top of the array and then remove the entire bottom sealing foil.
- Allow excess column fluid to drain (via gravity) into a suitable waste reservoir. A vacuum of 950 mbar may be used with a manifold to accelerate this process.



2. Column Washing / Equilibration

- Wash each column 4 times (approx. 5 mL total) with either deionized water or buffer (use the same buffer for both equilibration and elution).
- Allow the wash buffer to drain completely between each aliquot. A vacuum of 950 mbar may be used to speed up the washing process.

3. Sample Application

- Load your samples (up to 300 μL) to each column of the array. Do not use vacuum for sample application. If the sample volume is less than 150 μL , add enough wash or equilibration buffer so that the combined volume of each sample equals 150 μL .

4. Elution

- Using the chart below, determine the pre-run and elution volumes specific for your sample size.
- Load the pre-run volume to each column and let it completely enter the gel bed. Do not use vacuum.
- Place a collection plate for sample collection under the array.
- Load the correct elution volume to each column and elute the purified sample by gravity.

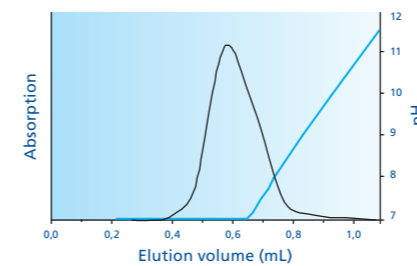
Sample volume	Pre-run volume	Elution volume	Oligo recovery*	Salt removed
150 μL	200 μL	300 μL	95%	99.9%
200 μL	150 μL	350 μL	94%	99.4%
250 μL	100 μL	400 μL	96%	99.1%
300 μL	0 μL	500 μL	95%	96.2%

* determined using 64 nmol/mL 25-mer oligo in 0.8 M NaCl

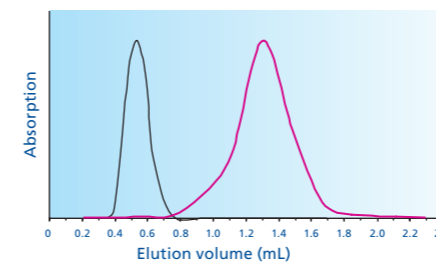
CentriPure 96

- designed specifically for automated systems
- simultaneously processes 96 samples up to 300 μL
- standard SLAS microplate footprint

The CentriPure 96 Column Array for removal of small molecules such as salts, dyes, ammonia, biotin, etc. from nucleic acids longer than 10 bases.

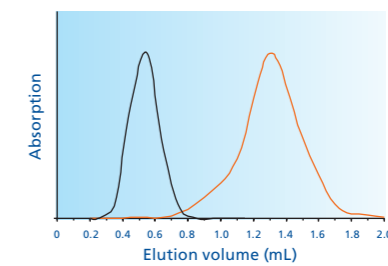


Separation of oligonucleotide from conc. ammonia after cleavage from solid support and removal of protecting groups (18-mer, Scale: 0.04 μmol , 200 μL sample volume).

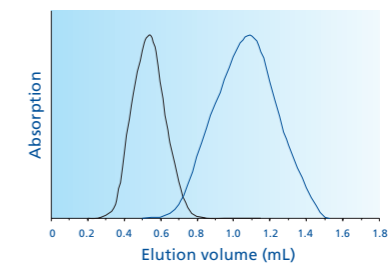


Elution profile overlay of 0.1 μmol 5-TAMRA and 0.04 μmol oligonucleotide (200 μL sample volume).

The CentriPure 96 Column Array for removal of small molecules such as buffer salts, dyes, and haptens from proteins larger than 5 kDa.



Elution profile overlay of ovalbumin (1 mg/mL) and free dye (TAMRA, 0.1 μmol) in a 200 μL sample volume.

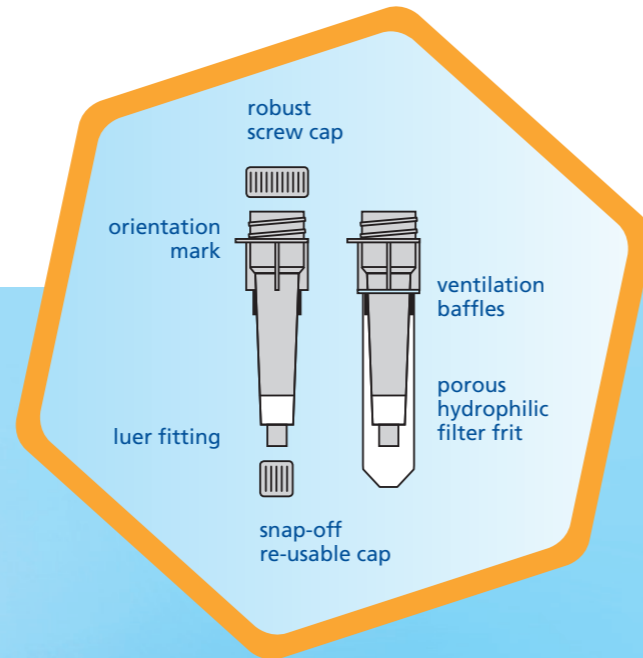


Desalting of protein solution (1 mg ovalbumin (OvA) in 1 mL 0.8 M NaCl), elution with water (200 μL sample volume)

CentriPure MINI Columns

unique conical column for greater separation
sterile, hydrated and ready to use

removes up to 99.999% salts, dyes, haptens and other small molecules
samples up to 100 µL are processed in under 5 minutes



advanced tapered column design
clicks into wash tube
allows easy removal from centrifuge

CentriPure MINI columns are designed for rapid desalting, buffer exchange, and removal of small molecular weight impurities using a centrifuge. Proteins, oligonucleotides, or spheroidal nanoparticles are simultaneously purified, desalted and eluted into pure water. Alternatively, elution directly into PBS, TRIS, or pure water stabilized with azide is accomplished by using MINI columns which have been pre-equilibrated with these buffers.

The unique conical column design of the CentriPure MINI allows purification of samples up to 100 µL. Dideoxy terminators, salts, metal cations, urea, dyes, inhibitors, biotin, haptens, and other small impurities are efficiently removed in under 5 minutes.

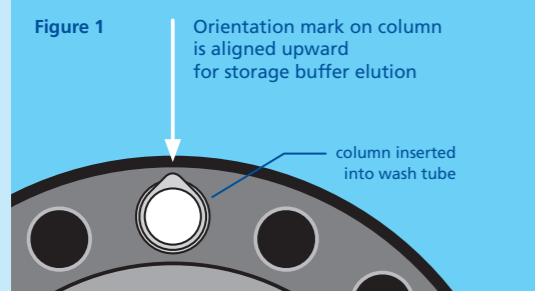
Sterile packed and ready-to-use.

CentriPure MINI spin columns are available as Zetadex-25 or Zetadex-50, pre-swollen in either pure water, TRIS, PBS, or stabilized with sodium azide.

CentriPure MINI spin columns are available in kits of 25 or 100 columns.

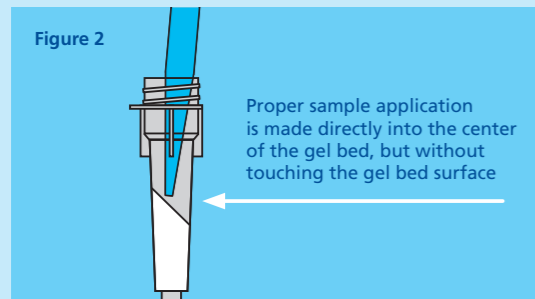
CentriPure MINI Columns

unique conical column for greater separation
sterile, hydrated and ready to use



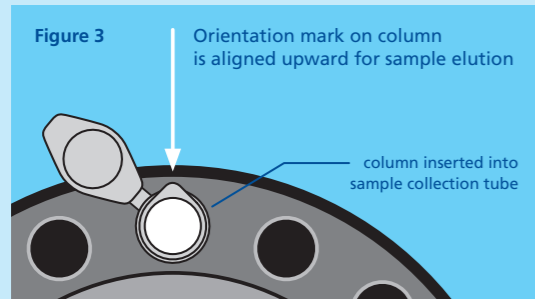
1. Column Preparation

- If the columns have been stored cold, allow to warm to room temperature before use.
- Tap gently or briefly vortex to resuspend gel and remove air bubbles.
- Remove bottom cap and then remove top cap.



2. Removal of storage buffer

- Place the column into a wash tube.
- Centrifuge at 1000 x g for 2 minutes. Note the column position using the orientation mark (see Fig 1.).
- Discard wash tube and eluted storage buffer.



3. Sample processing

- Carefully apply sample directly to center of gel bed but without touching the gel bed surface (see Fig. 2).
- Place column into a collection tube. Maintain proper column orientation (see Fig 3).
- Centrifuge at 1000 x g for 2 minutes to elute the purified sample.

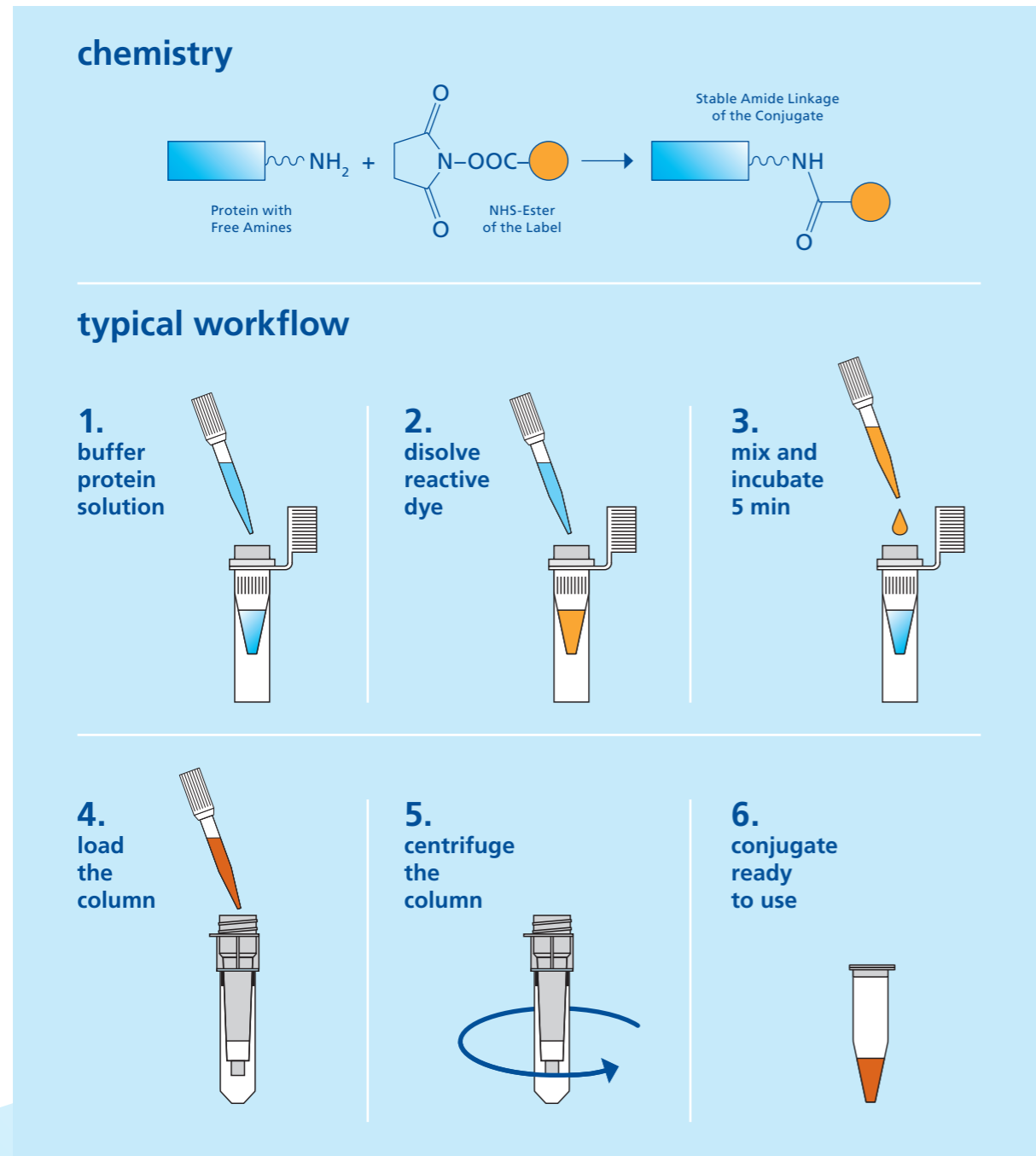
CentriPure MINI	H ₂ O				TRIS		PBS	
	Desalt Z-50	Desalt Z-25	Desalt Z-25AZ	SEQ Z-50	TRIS Z-50	TRIS Z-25	PBS Z-50	PBS Z-25
Product Code	MS-0101	MS-0105	MS-0109	MS-0102	MS-0103	MS-0107	MS-0104	MS-0108
Gel Matrix	Zetadex-50SF	Zetadex-25SF	Zetadex-25SF	Zetadex-50SF	Zetadex-50SF	Zetadex-25SF	Zetadex-50SF	Zetadex-25SF
Sample Buffer	deionized water	deionized water	deionized water and 0.02% sodium azide	deionized water	1 mM TRIS, pH 8	1 mM TRIS, pH 8	standard PBS, pH 7	standard PBS, pH 7
Application	For desalting of proteins larger than 25 kDa or nanoparticles greater than 4 nm Ø.	For desalting of proteins larger than 5 kDa, nucleic acids longer than 10 bp/nt, or nanoparticles > 2 nm Ø.	For desalting of proteins > 5 kDa, nucleic acids > 10 bp/nt, or nanoparticles > 2 nm Ø, and simultaneous elution into aqueous 0.02% sodium azide.	For desalting of oligonucleotides longer than 20 bp/nt from Sanger sequencing reactions.	For purification of proteins larger than 25 kDa or nanoparticles > 4 nm Ø, and simultaneous buffer exchange to TRIS (1 mM, pH 8).	For purification of proteins larger than 5 kDa or nanoparticles > 2 nm Ø, and simultaneous buffer exchange to TRIS (1 mM, pH 8).	For purification of immunoglobulins and other proteins larger than 25 kDa and simultaneous buffer exchange to PBS (8 mM, pH 7).	For purification of proteins larger than 5 kDa or nanoparticles > 2 nm Ø, and simultaneous buffer exchange to PBS (8 mM, pH 7).
Gel Bed Volume	0.5 mL	0.5 mL	0.35 mL	0.5 mL	0.5 mL	0.5 mL	0.5 mL	0.5 mL
Sample Volume	2 to 100 µL*	2 to 100 µL*	2 to 100 µL*	2 to 100 µL*	2 to 100 µL*	2 to 100 µL*	2 to 100 µL*	2 to 100 µL*
Optimal Centrifuge Conditions	1000 x g for 2 min	1000 x g for 2 min	1000 x g for 2 min	1000 x g for 2 min	1000 x g for 2 min	1000 x g for 2 min	1000 x g for 2 min	1000 x g for 2 min
Removal of Dye (50 µL 1mM 5/6 carboxyfluorescein in 0.1 M NaHCO ₃)	> 99.9995%	> 99.99%	> 99%	> 99.999%	> 99.999%	> 99.95% (TAMRA dye substituted for fluorescein)	> 99.999%	> 99.99%
Removal of Dye (100 µL 1mM 5/6 carboxyfluorescein in 0.1 M NaHCO ₃)	> 99.95%	> 99.5%	Not recommended to use samples > 50 µL	> 99.95%	> 99.99%	> 99.5% (TAMRA dye substituted for fluorescein)	> 99.99%	> 99.5%
Removal of Salt (50 µL 0.8 M NaCl)	> 99.9% > 99.999% (with extra wash step)	> 99.5%	Not evaluated due to sodium azide	> 99.9%	n. a.	n. a.	n. a.	n. a.
Removal of Salt (100 µL 0.8 M NaCl)	> 99.0% > 99.5% (with extra wash step)	> 99.0%	Not evaluated due to sodium azide	> 99.0%	n. a.	n. a.	n. a.	n. a.
Pack Sizes	25,100 columns	25,100 columns	25,100 columns	25,100 columns	25,100 columns	25,100 columns	25,100 columns	25,100 columns

* optimized for 50 µL

please ask also for our non-hydrated resins CentriPure DRY

TurboTag™ Labeling Kits

- QUICK:** Pure, labeled protein in just 10 minutes
- EASY:** Simply mix, incubate, and purify
- PRECISE:** Choose and control the degree of labeling of your protein
- CONVENIENT:** Includes ready-to-use CentriPure MINI columns



Delivers precision labeling and rapid purification of antibodies, enzymes and other proteins. For controlled labeling and purification of proteins having a molecular weight greater than 25 kDa.

- 3 labeling reactions per kit
- Label up to 15 nmol of protein per reaction using covalent NHS-ester chemistry
- Optimized IgG labeling protocols for 100 µg and 1 mg

Fluorescent Dye Data						
Fluorophore	Excitation (λ _{max} in nm)	Emission (λ _{max} in nm)	as an alternative to	Product Code		
MANT	331	426	AlexaFluor™ 350	MK-F0108		
DY-405	405	423		MK-D0113		
DY-415	418	467		MK-D0114		
DY-485XL	485	560		MK-D0143		
DY-490	491	515	AlexaFluor™ 488	MK-D0125		
DY-495	497	523		MK-D0109		
Fluorescein (FAM)	498	522		MK-F0101 MK-F0103*		
DY-481XL	515	650		MK-D0103		
DY-521XL	523	668		MK-D0126		
DY-530	539	561		MK-D0127		
DY-555	547	572	AlexaFluor™ 546	MK-D0128		
DY-554	551	572	CY3™, AlexaFluor™ 555	MK-D0101 MK-T0102		
Tetramethylrhodamine (TAMRA)	557	574		MK-D0111		
DY-550	558	578		MK-D0112		
DY-547P1	559	575		MK-D0116		
DY-549P1	560	575		MK-D0102		
DY-590	580	599	AlexaFluor™ 568	MK-R0103		
X-Rhodamine (ROX)	587	599		MK-D0129		
DY-594	594	615	AlexaFluor™ 594	MK-R0102		
Texas Red	595	615		MK-D0107		
DY-634	635	658		MK-D0104		
DY-633	637	657		MK-F0102		
Semper Red 647	647	665		MK-D0110		
DY-647P1	652	663	CY5™, AlexaFluor™ 647	MK-D0115		
DY-648P1	653	672		MK-D0117		
DY-649P1	654	672		MK-D0118		
DY-652	654	675		MK-D0105		
DYQ-661	662	n/a**		MK-E0150		
Methylene Blue (DCMB)	667	696		MK-D0119		
DY-677	673	694		MK-D0106		
DY-675	680	699	CY5.5™, AlexaFluor™ 680	MK-D0108		
DY-682	692	709		MK-D0120		
DY-701	706	731		MK-D0130		
DY-700	707	730		MK-D0121		
DY-734	736	759		MK-D0132		
DY-750	747	776		MK-D0123		
DY-752	748	772	CY7™	MK-D0122		
DY-749P1	759	780		MK-D0124		
DY-777	770	788				

* FITC
** Quencher. No Stokes shift.

CentriPure MIDI Columns

CentriPure MIDI columns are designed for purification and desalting of oligonucleotides longer than 20 base pairs and from proteins greater than 25 kDa without dilution of the sample.

The gel bed has a volume of 3.5 mL. Optimal purification and recovery is obtained with a sample volume of 500 μ L (sample volumes up to 700 μ L can be processed).

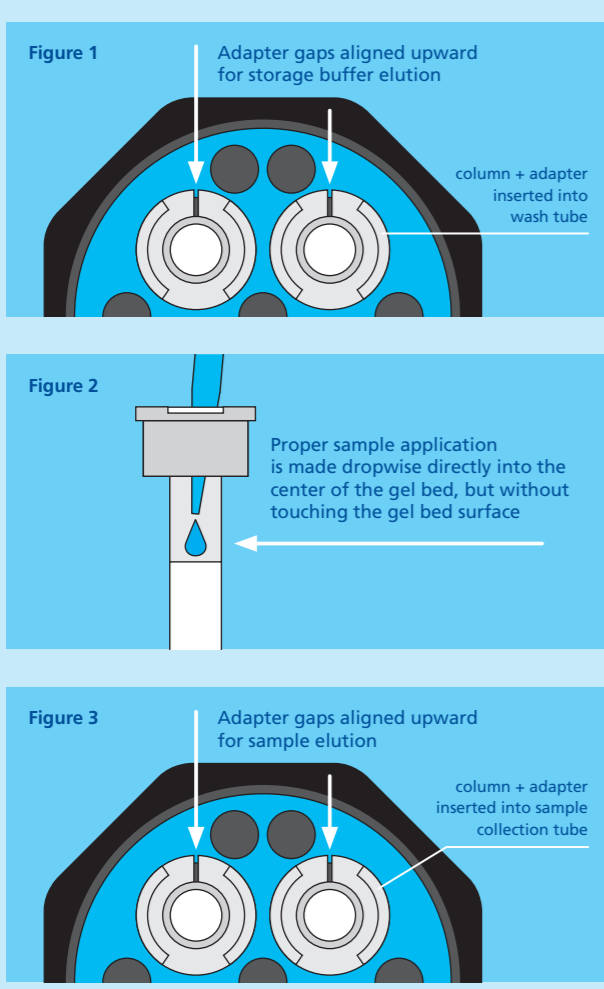


Figure 1 Adapter gaps aligned upward for storage buffer elution. column + adapter inserted into wash tube.

Figure 2 Proper sample application is made dropwise directly into the center of the gel bed, but without touching the gel bed surface.

Figure 3 Adapter gaps aligned upward for sample elution. column + adapter inserted into sample collection tube.

- 1. Column Preparation**
 - Always allow columns to equilibrate to ambient temperature before use.
 - Briefly vortex columns to resuspend gel and to remove air bubbles.
 - Remove top cap and press column into adapter completely.
- 2. Removal of storage buffer**
 - Remove bottom cap, place the column + adapter into wash tube.
 - Place them in the rotor. Note the column position using the adapter gap (see Fig. 1). Centrifuge at 800 x g for 2.5 minutes (swinging bucket) to remove interstitial fluid.
 - Remove column + adapter and discard wash tube.
- 3. Sample processing**
 - Carefully apply sample directly in the center of the gel bed in a slow, dropwise manner without disturbing the gel bed (see Fig. 2).
 - Place column + adapter into a collection tube. Maintain proper column orientation (see Fig. 3).
 - Centrifuge at 800 x g for 2.5 minutes (swinging bucket) to elute the purified sample.

NOTE:

The emp centrifuge adapter only works with **ependorf 50 mL** conical tubes.

only for use with **swinging rotors**

The gel matrix of **CentriPure MIDI** columns is Zetadex-50 Superfine, a beaded composite material developed by **emp BIOTECH** comprised of ultrapure cross-linked dextran.

the unique emp centrifuge adapter allows for centrifugation of sample volumes of 500 μ L

**Starter Kits include:**

6 x CentriPure MIDI Columns
6 x adapters
6 x wash tubes
6 x collection tubes

The porous matrix of chemically and physically stable spherical particles is designed to separate small molecules from the larger target molecules. While the smaller molecules enter the pores of the beads, the larger molecules remain in the void volume. They pass the beads unhindered as they make their way through the column and rapidly elute.

This process was optimised for the centrifuge (with swinging rotors) to circumvent sample dilution. Further improvement on resolution and recovery of the biomolecule were achieved with the smaller particle size of the Superfine Grade, 20 – 50 μ m. **CentriPure MIDI** columns are packed with Zetadex-50 that has a distinct MWCO at 25 kDa/20 bases for nucleic acids.

Prod. Code	Name	Application	Sample Vol.	Pack Size
MS-0201	CentriPure MIDI 5-Z50SF, Desalt Starter Kit	For desalting and purification	500 μ L	6 columns
	CentriPure MIDI 5-Z50SF, Desalt			48 columns
MS-0202	CentriPure MIDI 5-Z50SF, PBS Starter Kit	For rebuffering and purification	500 μ L	6 columns
	CentriPure MIDI 5-Z50SF, PBS			48 columns

CentriPure MIDI columns are ready-to-use and come in either deionized water or PBS for purification of proteins greater than 25 kDa and oligonucleotides longer than 20 base pairs.

CentriPure Gel Filtration Plates

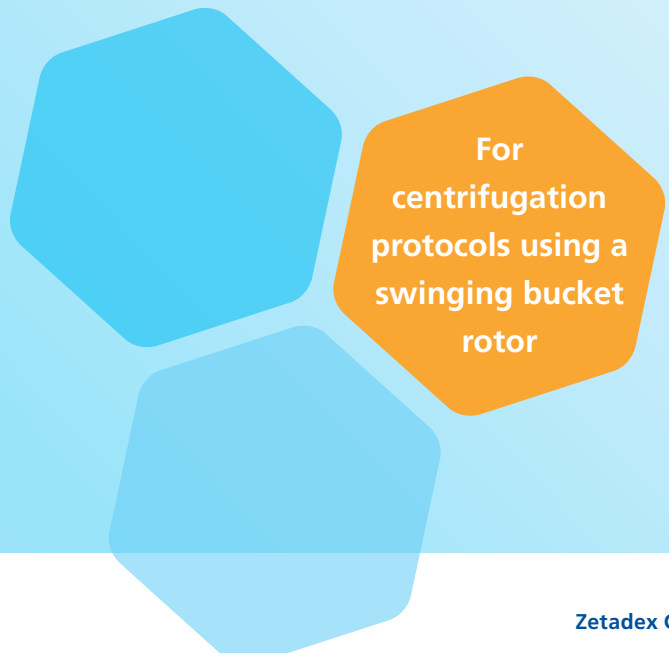
with Zetadex Size Exclusion Resin
for desalting, buffer exchange, and removal of free labels

CentriPure Gel Filtration Plates are designed for high throughput desalting and removal of small molecular weight impurities using a centrifuge with a swinging bucket rotor. Proteins, oligonucleotides, or spheroidal nanoparticles are simultaneously purified, desalted and eluted into pure water. The filtration plates are available in standard 96 or 384 well ANSI-SBS formats.

Each multiwell plate is precision filled with **Zetadex** Size Exclusion Resin, a beaded composite material developed by **emp BIOTECH** and comprised of ultrapure cross-linked dextran. Each gel bed is supported on an individual ultra high molecular weight PE membrane with an effective pore size of 25 μm .

Sterile packed and ready-to-use.

CentriPure Gel Filtration Plates are optimized for rapid removal of dye terminators, dNTPs, salts, nucleic acid fragments, biotin and all other low molecular weight impurities using a 2 minute centrifuge protocol.



For
centrifugation
protocols using a
swinging bucket
rotor

CentriPure Gel Filtration Plates

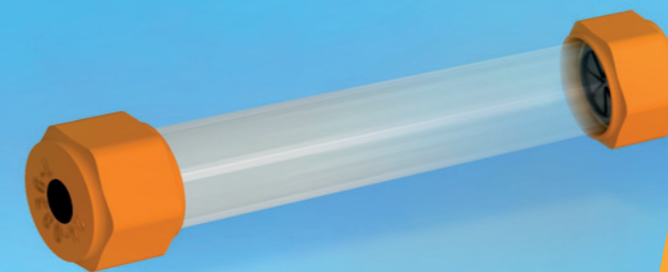
with Zetadex Size Exclusion Resin

for desalting, buffer exchange, and removal of free labels

Description	No. of Wells	Well Vol. (μL)	Plate Height (mm)	Short or Long Drip Directors	Gel Bed Vol. (μL)	Max. Sample Vol. (μL)	For Proteins / Nucleic Acids greater than	Matrix	Mode of Operation	Product Code
CentriPure 384-100LD50 Gel Filtration Plate 100 μL Well Volume	384	100	15	Long	65	8	25 kDa/20 bases	Z-50SF	centrifuge 3 minutes at 1000 x g	CP-0102
CentriPure 96-400SD50 Gel Filtration Plate 400 μL Well Volume	96	400	20	Short	320	20	25 kDa/20 bases	Z-50SF	centrifuge 3 minutes at 1000 x g	CP-0115
CentriPure 96-400LD50 Gel Filtration Plate 400 μL Well Volume	96	400	20	Long	320	20	25 kDa/20 bases	Z-50SF	centrifuge 3 minutes at 1000 x g	CP-0116
CentriPure 96-800SD50 Gel Filtration Plate 800 μL Well Volume	96	800	31	Short	400	30	25 kDa/20 bases	Z-50SF	centrifuge 3 minutes at 1000 x g	CP-0101
CentriPure 96-800SD25 Gel Filtration Plate 800 μL Well Volume	96	800	31	Short	400	30	5 kDa/10 bases	Z-25SF	centrifuge 3 minutes at 1000 x g	CP-0130
CentriPure 96 Gel Filtration Plate 1000 μL Well Volume	96	1000	38	Long	650	40	25 kDa/20 bases	Z-50SF	centrifuge 3 minutes at 1000 x g	CP-0125
CentriPure 96 Gel Filtration Plate 1000 μL Well Volume	96	1000	38	Long	850	40	5 kDa/10 bases	Z-25SF	centrifuge 3 minutes at 1000 x g	CP-0160

ZetaSep/ZetaPrep FPLC Desalting Columns

For desalting, removal of small molecules, and buffer exchange using liquid chromatography systems



**NEW
PRODUCT**
ZetaPrep FPLC
Column

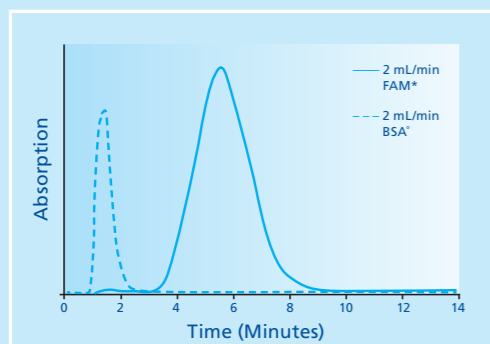
ZetaSep and ZetaPrep FPLC Desalting Columns are designed for:

- Separating larger biomolecules (i.e. proteins such as antibodies, enzymes or larger nucleic acids) from unwanted smaller molecules
- Buffer exchange (after a pre-equilibration), desalting, removal of low molecular weight contaminants, and reaction terminations
- Simple, rapid and reproducible separation using a syringe, pump or liquid chromatography system

ZetaSep and ZetaPrep FPLC Desalting Columns are available with **Zetadex-25**, which has a molecular weight cut-off (MWCO) of approximately 5 kDa. Proteins, oligonucleotides, spheroidal nanoparticles or other biomolecules larger than 5 kDa are gently and efficiently separated from salts, metal cations, urea, dyes, inhibitors, biotin, haptens, and other low molecular weight impurities.

ZetaSep/ZetaPrep FPLC Desalting Columns

For desalting, removal of small molecules, and buffer exchange using liquid chromatography systems



High Performance Results:

Sample: 1 mL of 2 mg/mL BSA & 100 µM of 5-Carboxyfluorescein in PBS pH 7.4 (0.05% NaN₃).

Flow rate: 2 mL/min

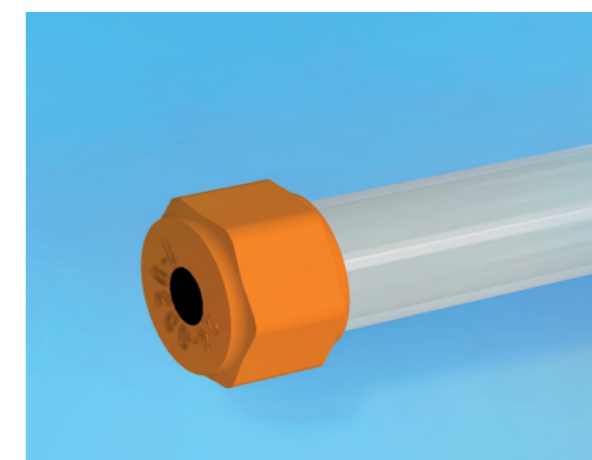
Eluent: PBS pH 7.4 (0.05% NaN₃)

Detection: Abs. at 280 nm and 490 nm

Specifications

Column bed volume	5 mL
Size of eluted Proteins	> 5 kDa
System compatibility	- Automated liquid chromatography systems (MPLC, FPLC, ÄKTA™, etc.) - Peristaltic pump - Syringe
Column dimensions	1.6 cm inner diameter x 2.5 cm height
Column body material	Polypropylene
Column ports	Inlet 10 – 32 (1/16") female Outlet 10 – 32 (1/16") male
Support	Zetadex-25 Superfine
Bead size	40 – 110 µm (hydrated)
Maximum back pressure	3 bar (0.3 MPa)
Recommended flow rate	1 to 5 mL/min
Maximum recommended flow rate	10 mL/min
Storage temperature	ambient
Storage solution	20% (v/v) ethanol

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Prod. Code	Description	Bed Volume	Zetadex Z25	Recom. Flow Rate	Max. Back Pressure	Pack Size
ZS-0101	ZetaSep Desalt	5 mL	Superfine	1-10 mL/min	3 bar	5/100 col.
ZS-0101	ZetaSep Desalt	1 mL	Superfine	0.2-2 mL/min	3 bar	100 col.
ZP-0101	ZetaPrep Desalt 16/10	10 mL	Fine	5-10 mL/min	3 bar	1 column

SOON
also available for Affinity (IMAC + Protein A), IEX and HIC.
For more information please see our Biomolecule Purification Catalog.

Terms and Conditions



For conducting business with **emp BIOTECH**, please review our general terms and conditions as listed on our website www.empbiotech.com.

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 for automated oligonucleotide synthesis

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 - Sulphurizing Reagents
 - Solvents & Solvent Mixtures

- Moisture Control**
- Molecular Sieves & Moisture Traps

- Labeling and Purification**
- Oligo Labeling
 - Oligo Purification
 - Oligo Desalting



Biomolecule Purification
 Solutions for downstream processing

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- Affinity Chromatography
 - Ion Exchange Purification
 - Hydrophobic Interaction Chromatography
 - Activated Zetarose Solid Phases
 - GraviPure Columns/Multi Column Arrays
 - ZetaPrep FPLC Columns

- Solutions for unclarified feed streams**
- SMART Chromatography™

- Chromatography Resins for polishing steps**
- Size Exclusion Chromatography
 - ZetaSep/ZetaPrep FPLC Desalting Columns
 - CentriPure Desalting Columns
 - CentriPure Buffer Exchange Columns

