Cat. No. MS-0101

CentriPure MINI Desalt Z-50

For rapid desalting of proteins or nanoparticles

Instructions for use

CentriPure MINI Desalt Z-50

For desalting proteins larger than 25 kD or nanoparticles greater than 4 nm Ø.

Rapidly eliminates > 99.999 % of salts, haptens, dyes and other small molecules in less than 5 minutes.

Autoclaved, preservative-free and ready-to-use.

The CentriPure MINI Desalt Z-50 spin column is designed for simultaneous purification and desalting from any buffer after a 2 minute centrifugation. Proteins or spheroidal nanoparticles are eluted with minimal dilution into deionized water. (Caution! Some proteins and nanoparticles may precipitate when eluted into water of low ionic strength!)

The protocol provided is optimized for a sample volume of 50 µL. Samples with volumes of 2 – 100 µL can be processed, but may require further optimization by the end-user.

The gel matrix in the column is Zetadex-50, a size-exclusion gel with an effective pore size of 25 kD or about 4 nm Ø. 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.

Product Parameters

Gel matrix:	Zetadex-50SF beaded dextran
Gel bed volume:	0.5 mL
Storage buffer:	Autoclaved, sterile deionized water
Buffer conductivity:	Less than 300 µS/cm
Sample volume:	2 to 100 µL. Optimized for 50 µL.
Optimal centrifuge conditions:	1000 x *g* for 2 minutes
Centrifuge type:	Fixed angle or swinging bucket
Removal of fluorescein:	(50 µL 1 mM 5/6-carboxyfluorescein in 0.1 M $NaHCO_3$) > 99.999 %
Removal of fluorescein:	(100 µL 1 mM 5/6-carboxyfluorescein in 0.1 M $NaHCO_3$) > 99.95 %
Removal of salt:	(50 µL 0.8 M NaCl) > 99.9 % > 99.999 % (with extra wash step*)
Removal of salt:	(100 µL 0.8 M NaCl) > 99.0 % > 99.5 % (with extra wash step*)
Recovery:	Will vary, depending on sample and buffer conditions
Size of eluted proteins:	> 25 kD
Size of eluted nanoparticles:	> 4 nm Ø
Storage:	Ambient. DO NOT FREEZE!

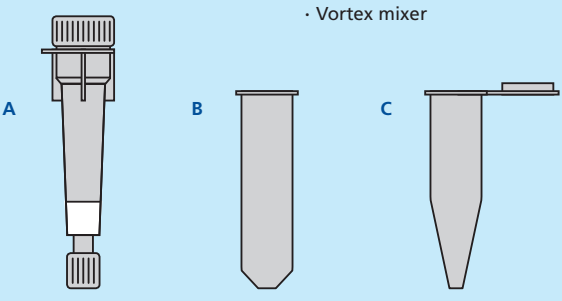
*see Step 2d in the protocol

Materials Provided

A CentriPure MINI spin columns (autoclaved and ready-to-use)
B Wash Tubes (2 mL)
C Sample collection tubes (Blue, 1.5 mL, sterile and RNase/DNase/DNA/pyrogen free)

Additional Required Equipment

- Microcentrifuge (capable of generating 1000 x *g*)
- Variable or fixed pipette (for volumes up to 100 µL)
- Pipette tips
- Microtube rack
- Vortex mixer



If you need assistance or have questions
please call us at +49 30 9489 2201 between 8:00 and 17:00 CET
or send an e-mail to tech@empbiotech.com

emp BIOTECH GmbH · Robert-Rössle-Str. 10 · 13125 Berlin · Germany

emp BIOTECH GmbH is an ISO 9001:2015 certified company
registration number 011001300789 (TÜV Reinland)

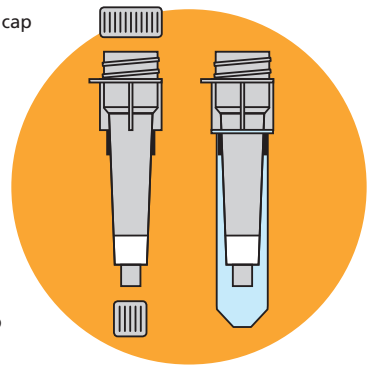
05.2021

Cat. No. MS-0101

CentriPure MINI Desalt Z-50

For rapid desalting of proteins larger than 25 kD or nanoparticles greater than 4 nm Ø

- robust screw cap
- orientation mark
- ventilation baffles
- porous hydrophilic filter frit
- luer fitting
- snap-off re-usable cap



advanced tapered column design

clicks into wash tube

allows easy removal from centrifuge

Instructions for use

1. Column preparation

a) If the columns have been stored cold, allow to warm to room temperature before use (at least 30 minutes).
b) Tap gently or briefly vortex to resuspend gel and remove air bubbles.
c) Remove CentriPure MINI column from wash tube, remove the top cap and then snap off the bottom cap.

2. Removal of storage buffer

a) Click the column back into the wash tube and place assembly in centrifuge. Align the column position upwards using the orientation mark **(see Fig. 1)**.
b) Centrifuge at 1000 x *g* for 2 minutes.*
c) Carefully remove column assembly from centrifuge. Discard wash tube and eluted buffer. Keep the CentriPure MINI column for the next step. Do not disturb gel bed. Use immediately.
d) OPTIONAL WASH STEP: For greater desalting efficiency, add 400 µL deionized water to the column, vortex, and repeat steps 2a–2c.

3. Sample processing

a) Carefully apply sample directly to center of gel bed but without touching the gel bed surface **(see Fig. 2)**.
b) Place column into a sample collection tube. Insert assembly into the centrifuge. Maintain the upward column alignment **(see Fig. 3)**.
c) Centrifuge at 1000 x *g* for 2 minutes to elute the purified sample.*
d) Remove column assembly from centrifuge. Collect sample and discard column.

* Calculate the correct rpm speed for 1000 x *g* by measuring the radius of your centrifuge rotor (center to outer edge of column) using the following formula:

$$\text{rpm} = \sqrt{\frac{1000}{(1.119 \times 10^{-5})\,(r)}}$$

Where rpm = revolutions per minute; 1000 represent 1000 x *g*; and r = radius in cm, measured from center of rotor to outer edge of column.

Example: When the radius, r, is measured to be 7.5 cm, then

$$\text{rpm} = \sqrt{\frac{1000}{(1.119 \times 10^{-5})\,(7.5)}} = 3450 \text{ rpm}$$

Warning: Review centrifuge instructions and properly balance centrifuge samples before use!

Figure 1

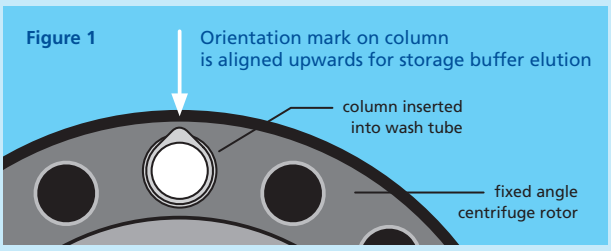


Figure 2

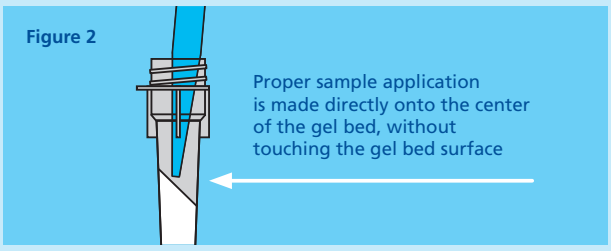


Figure 3