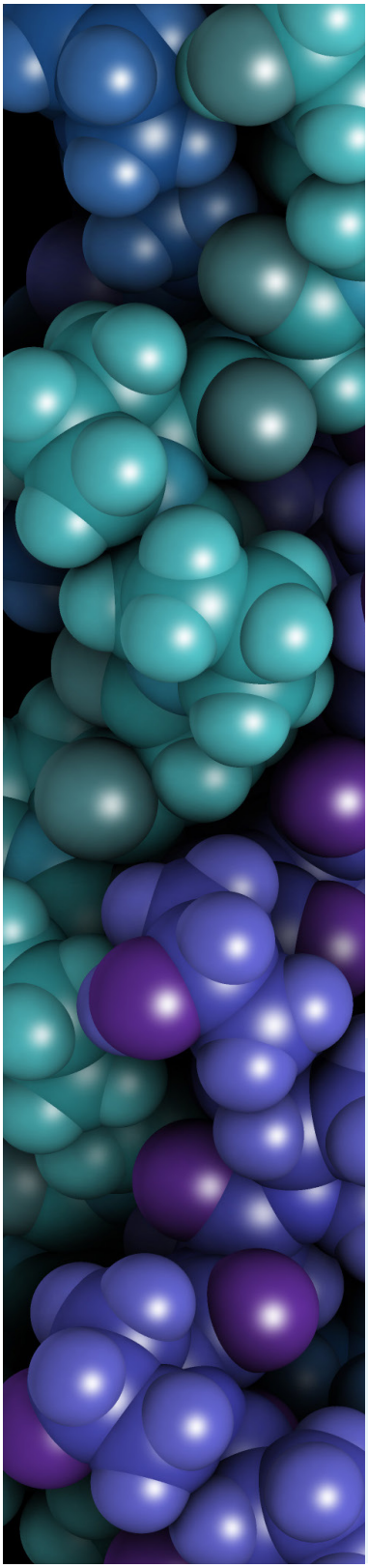

ProteoSpin™ Total Protein Concentration, Detergent Clean-Up and Endotoxin Removal Kits

CAT. 22800, 22200

FOR RAPID AND EFFICIENT ENDOTOXIN REMOVAL FROM PROTEINS AND PEPTIDES

- Columns bind proteins of interest while endotoxins flow through
- Reduce endotoxin levels to less than 0.01 EU/µg of protein
- Proteins are desalted with greater than 90% protein recovery
- Concentrate protein samples and remove detergents at the same time
- Effectively remove a wide range of detergents including SDS, Triton® X-100, CHAPS, NP-40, and Tween 20
- Purification is based on spin column chromatography that uses Norgen's proprietary resin

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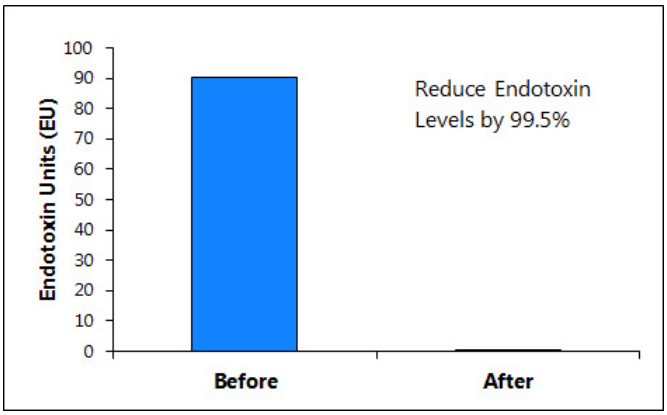
Advantages You Will Bring to Your Lab

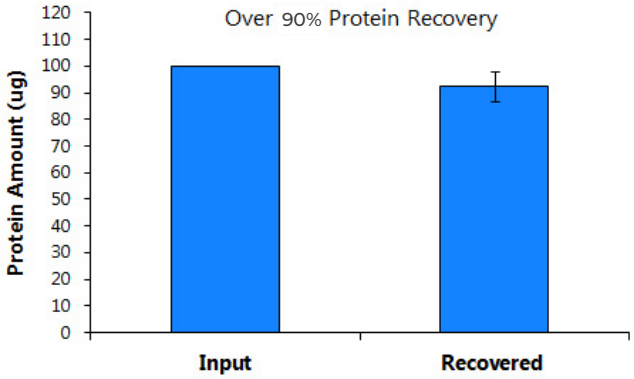


ENDOTOXIN-FREE PROTEINS.

Figure 1. Endotoxins were removed from 100 µg protein samples in triplicate using theProteoSpin™ Total Protein Concentration, Detergent Clean-Up and Endotoxin Removal Mini Kit. Samples containing 100 µg of BSA were spiked with endotoxins (0.9 EU/mg). The endotoxin-spiked BSA was then cleaned, in triplicate, using the ProteoSpin™ Total Protein Concentration, Detergent Clean-Up and Endotoxin Removal Mini Kit by using 5 µL of the provided Endotoxin Removal Solution in the presence of isopropanol. On average, the endotoxin levels in the 100 µg samples were reduced from 0.9 EU/mg to 0.005 EU/mg.

HIGH PROTEIN RECOVERY.

Figure 2. An average protein recovery of greater than 90% was achieved when endotoxins were removed from 100 µg inputs of protein in triplicate. Samples containing 100 µg of BSA were spiked with endotoxins (0.9 EU/mg). The endotoxin-spiked BSA was then cleaned, in triplicate, using the ProteoSpin™ Total Protein Concentration, Detergent Clean-Up and Endotoxin Removal Mini Kit by using 5 µL of the provided Endotoxin Removal Solution in the presence of ethanol. The BioRad Protein Assay was used to determine the amount of proteins present in the elutions, and 91 µg, 99 µg and 89 µg of BSA were recovered after the removal of the spiked endotoxins. There is very little loss of protein associated with using the ProteoSpin™ Total Protein Concentration, Detergent Clean-Up and Endotoxin Removal Mini Kit.



Input Sample	% SDS	% SDS Removal
Bacterial Lysate	1.0%	100%
Bacterial Lysate	1.0%	100%
Mammalian Lysate	0.1%	99.998%
Mammalian Lysate	0.1%	99.998%

EFFICIENT REMOVAL OF SDS FROM LYSATE

Figure 3. SDS was removed from various types of lysates (DH5α for bacterial lysate and HeLa cells for mammalian lysates) prepared with either 1.0% or 0.1% SDS using the ProteoSpin™ Total Protein Concentration, Detergent Clean-Up and Endotoxin Removal Mini Kit. The Genotech SDS-Out Kit was used to measure the concentration of the SDS after cleaning. SDS removal was found to be greater than 99% in all cases.

UP TO 100X CONCENTRATION OF PROTEIN SAMPLES

Input Volume	Output Volume	Concentration Factor
1 mL	50 µL	20X
3 mL	50 µL	60X
5 mL	50 µL	100X

Figure 4. To demonstrate the ability of the ProteoSpin™ Total Protein Concentration, Detergent Clean-Up and Endotoxin Removal Mini Kit to concentrate protein samples, 50 µg of BSA was spiked into 1, 3 and 5 mL of a 50 mM sodium acetate solution (pH 4.5). The samples were processed as per the provided protocol, and all samples were eluted into 50 µL of the provided Elution Buffer. The 1 mL input was therefore concentrated 20X, the 3 mL input was concentrated 60X, and the 5 mL input was concentrated 100X.

EFFECTIVE CONCENTRATION OF PROTEIN SAMPLES WITH MAXIMUM RECOVERY

Input Concentration	Output Concentration	Concentration Factor
50 µg / 2 mL (0.025 µg/µL)	48 µg / 50 µL (0.96 µg/µL)	38X

Figure 5. To further demonstrate the ability of the ProteoSpin™ Total Protein Concentration, Detergent Clean-Up and Endotoxin Removal Mini Kit to concentrate protein samples, 50 µg of BSA was spiked into 2 mL of a 50 mM sodium acetate solution (pH 4.5). The sample was processed as per the provided protocol, and was eluted into 50 µL of the provided Elution Buffer. The amount of recovered protein was then determined using the BioRad Protein Assay. It was found that 48 µg of the input protein was recovered, corresponding to a 38X protein concentration based on mass.

KIT SPECIFICATIONS

Maxi-Description	Specifications
Maximum Protein Input	200 µg
Maximum Column Volume Input	600 µL
Molecular Weight of Recovered Proteins	No Molecular Weight cut-off
Final Endotoxin Levels	≤ 0.01 EU/µg protein
Protein Recovery	90-95%
% Detergent Removal	90-95%
Detergents that can be Removed	Including Triton® X-100, CHAPS, NP-40 and Tween 20
Minimum Elution Volume	50 µL
Time to Complete 10 Purifications	20 minutes

SELECT PUBLICATIONS

Teng, Wei et al. “Heat Shock Protein SSA1 Enriched in Hypoxic Secretome of Candida albicans Exerts an Immunomodulatory Effect via Regulating Macrophage Function.” Cells vol. 13,2 127. 10 Jan. 2024, doi:10.3390/cells13020127

Song, Li et al. “Enhanced humoural and cellular immune responses to influenza H7N9 antigen HA1-2 fused with flagellin in chickens.” BMC veterinary research vol. 13,1 190. 21 Jun. 2017, doi:10.1186/s12917-017-1106-4

Hodgkinson, Jordan W et al. “Recombinant IL-4/13A and IL-4/13B induce arginase activity and down-regulate nitric oxide response of primary goldfish (Carassius auratus L.) macrophages.” Developmental and comparative immunology vol. 67 (2017): 377-384. doi:10.1016/j.dci.2016.08.014

Ordering Information

Description	Preps	Cat. #
Mini	25 Preps	22800
Maxi	4 Preps	22200

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