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INSTRUCTIONS

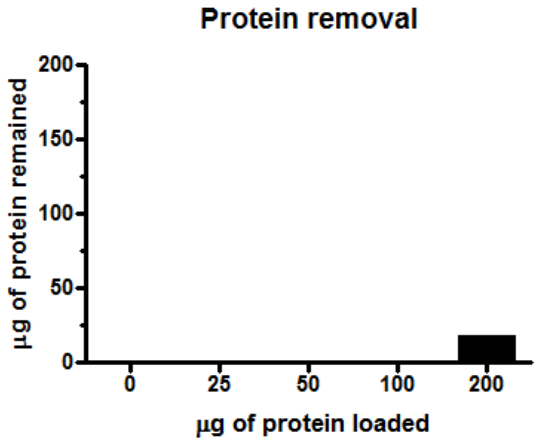
ProFoldin
Protein and DNA Removal Columns

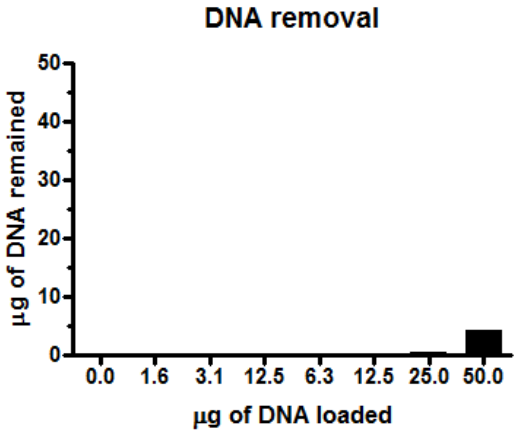
Protein and DNA Removal Spin-columns **Catalog number: PNR020**
Preparative Protein and DNA Removal Columns **Catalog number: PNR04P**

INTRODUCTION

The Protein and DNA Removal Columns are designed to separate small molecules and liposomes from proteins, DNA and RNAs. The columns can be used for separation of free drugs and liposome-encapsulated drugs from protein-bound or DNA-bound drugs, free ligands from receptor-bound ligands. They can also be used for preparation of HPLC samples by removing the DNA or proteins from biological samples.

The column resin is highly charged and binds DNA, RNA and proteins. The binding between the biological molecules and the column resin is mainly charge-charge interactions. Hydrophobic interactions may also contribute to the binding. The proteins, nucleic acids and protein-bound drug stay on the column while the small polar molecules or liposomes are in the elute. Small but very hydrophobic molecules may also bind to the column. The binding capacity of the spin columns is more than 0.10 mg of protein or 0.02 mg of DNA per column. The binding capacity of the preparative columns is more than 1.20 mg of protein or 0.24 mg of DNA per column.





The **Protein and DNA Removal Spin-columns** (**Catalog number: PNR020**) includes 20 pre-packed spin-columns.

The **Preparative Protein and DNA Removal Columns (Catalog number: PNR04P)** includes 4 pre-packed preparative columns.

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INSTRUCTIONS

PROTOCOLS

Protein and DNA Removal Spin-columns

1. Spin the pre-packed columns briefly using a bench-top microcentrifuge to set down the resin. Cut off the caps of 1.5 ml-eppendorf tubes and use the tubes as receivers of the spin columns. Remove the column bottom tips and caps. Place the columns into 1.5 ml-eppendorf tubes and spin the columns at 13,000 rpm for 1 min. Discard the solution and spin the columns at 13,000 rpm for 1 min again to make sure the resin is almost dry. Transfer each column into a clean labeled 1.5-ml eppendorf tube.
2. Load 200 µl of the sample in a buffer containing 100 mM NaCl onto each column and spin the columns at 1000 rpm for 1 min. Then continue to spin the columns at 13,000 rpm for 1 min and save the elute.

   Note: Step 2 can be repeated if the sample volume is more than 200 µl until the column binding capacity is reached. The binding capacity of the spin columns is 100 µg of protein or 20 µg of DNA per column. The elute should be transferred into another container before the next loading.

   A typical recovery yield of small hydrophilic molecules at Step 2 is about 80 % to 90 %. In order to have a higher recovery yield, the column is rinsed with 200 µl of the sample buffer containing 100 mM NaCl by adding the buffer and spin the column at 1000 rpm for 1 min then 13,000 rpm for 1 min. If the small molecule is highly ionic, a higher salt buffer maybe used to recover the small molecule.

Preparative Protein and DNA Removal Columns

1. Cut off the column bottom pointing tip and let the buffer run through the column. Wash the resin with 10 ml of a sample buffer, 20 mM Tris-HCl, pH 7.5, 100 mM NaCl (or a different buffer of your choice with a neutral pH and 100 mM salt) by adding the buffer on the top of the column and let the buffer completely run through the resin.
2. Load the sample on to the column and let the sample completely run into the column.

   Note: the sample volume that can be loaded depends on the concentrations of DNA and proteins. It can be various as long as the column binding capacity is not reached. The binding capacity of each preparative column is 1.2 mg of protein or 0.24 mg of DNA.

3. Change the receiver with a clean Falcon tube and elute the sample with 3.5 ml of the sample buffer. Save the eluted sample.

RELATED PRODUCTS

Micro Desalting Spin Column Set	Catalog number: MDC050
Micro Phosphate Removal Column Set	Catalog number: MPR020
Nucleic Acid Removal Kit	Catalog Number: NAR911

For information of molecular separation tools, please visit http://www.profoldin.com/separation.html.