G-Trap™ G-Acryl Desalting Columns

(Cat. # 786-1616, 786-1617, 786-1628, 786-1629, 786-1637, 786-1638)

INTRODUCTION

G-Trap™ G-Acryl Desalting columns are ready to use prepacked columns for separation of low molecular weight substances from high molecular weight substances based on size exclusion chromatography. G-Trap™ G-Acryl Desalting columns are mostly used for removal of salt or buffer exchange before or after different chromatographic steps. G-Trap™ G-Acryl Desalting columns can be used for separation of proteins based on their sizes.

G- Biosciences offer three types of desalting columns based on different exclusion limit, namely G-Trap™ G-Acryl 600 Desalting Column, G-Trap™ G-Acryl 100 Desalting Column and G-Trap™ G-Acryl 1200 Desalting Column. The characteristics of G-Trap™ G-Acryl Desalting column resin are listed in Table 2

The G-Trap™ G-Acryl columns consist of porous polyacrylamide beads that are extremely hydrophilic and essentially free of charge. The resin is compatible with the following reagents:

- Dilute Organic Acids
- Urea [8M]
- Guanidine-HCl [6M]
- Chaotropic Agents
- Reducing Agents (DTT, 2-mercaptoethanol)
- Detergents (SDS, CHAPS, Triton® X-100, etc)
- Alcohols (<20%)
- Formamide

The G-Trap™ columns are made of biocompatible polypropylene, which does not interact with biomolecules. The column has a stopper at the inlet and snap-off end at the outlet. The characteristics of the column are listed in Table1

ITEM(S) SUPPLIED

Cat. #	Description	Size
786-1628	G-Trap™ G-Acryl 600 Desalting Column , 1 ml	5 columns
786-1629	G-Trap™ G-Acryl 600 Desalting Column, 5 ml	5 columns
786-1616	G-Trap™ G-Acryl 100 Desalting Column, 1 ml	5 columns
786-1617	G-Trap™ G-Acryl 100 Desalting Column, 5 ml	5 columns
786-1637	G-Trap™ G-Acryl 1200 Desalting Column, 1 ml	5 columns
786-1638	G-Trap™ G-Acryl 1200 Desalting Column, 5 ml	5 columns

Connector supplied with the G-Trap™ G-Acryl Desalting Column:

Stop plug female, 1/16": This connector is for sealing bottom of G-Trap™ G-Acryl Desalting Column. One stop plug female is supplied per column.

STORAGE CONDITIONS

G-Trap™ G-Acryl Desalting Columns are shipped at ambient temperature. Upon arrival, store it at 4°C, DO NOT FREEZE. This product is stable for 1 year. The resin in the column should be stored in 20% ethanol at 4°C after use.

SPECIFICATIONS

Table 1: G-Trap™ G-Acryl Desalting Column

Features	**1 ml column**	**5 ml column**
Column Volume	1 ml	5 ml
Column Dimensions	0.7 x 2.5 cm	1.6 x 2.5 cm
Column Hardware Pressure Limit	0.5 MPa	0.5 MPa
Column hardware	Polypropylene	Polypropylene

NOTE: *The pressure over the packed volume varies depending upon the type of medium or matrix, sample or liquid viscosity, and the column tubing used.*

Table 2: G-Trap™ G-Acryl Desalting Column resin

Features	**G-Trap™ G-Acryl 600 Desalting Column**	**G-Trap™ G-Acryl 100 Desalting Column**	**G-Trap™ G-Acryl 1200 Desalting Column**
Bead size	90-180 µm	45-90 µm	90-180 µm
Void volume	~0.3 ml for 1 ml column and ~1.5 ml for 5 ml column		
Sample Load volume	0.03 ml- 0.3 ml for 1 ml column and 0.75-1.5 ml for 5 ml column		
Exclusion limit (M_r)	6,000	1,800	20,000
Maximum Pressure	1 bar [0.1 MPa] (15 psi)		
Recommended Flow rate	15-20 cm/hr	5-10 cm/hr	15-20 cm/hr
Chemical stability	All commonly used buffers, 8M urea, 6M guanidine hydrochloride and all non-ionic detergents. Lower alcohols such as methanol, ethanol and propanol can be added to buffers at <25% V/V		
pH stability	2 to 10		
Storage	20 % ethanol at 4°C t 30°C		

IMPORTANT INFORMATION

- The recommended sample load for efficient removal of low molecular weight components is 0.03-0.3 ml for 1 ml column and 0.75-1.5 ml for 5 ml column.
- The sample concentration does not affect separation as long viscosity is less than 1.5 from that of buffer. This is equivalent to maximum limit of 70 mg/ml for proteins and 5mg/ml for high molecular weight polymers such as dextran.
- Salt may be added to a concentration of 25 mM to prevent ionic interaction of proteins or other substances (to be separated) with resin. Greater than 1 M concentration of salts should be avoided as it can shrink the resin and can also promote hydrophobic binding of proteins with the resin.
- The G-Trap™ G-Acryl Desalting columns can be operated with syringe, peristaltic pump or a chromatography system.
- G-Trap™ columns cannot be opened or refilled.

ADDITIONAL ITEMS REQUIRED

- Union 1/16" male/luer female: For connecting a syringe to G-Trap™ G-Acryl Desalting Column.
- Equilibration buffer such as 50 mM sodium phosphate buffer, 0.5 M sodium chloride, pH: 7.0
- Eluent buffer such as 50 mm sodium phosphate buffer, 0.15 M sodium chloride
- 20% ethanol
- Operation unit: syringe or peristaltic pump or a liquid chromatography system

PROTOCOL

Sample Preparation

Remove the particulates from sample either by centrifugation or filter through 0.45 µm filter.

Desalting

1. Fill the syringe or the pump tubing with equilibration buffer before connecting to the G-Trap™ G-Acryl Desalting Column to avoid introducing air into the column.
2. Remove the stopper and connect the column to syringe or pump tubing with the luer connector.
3. Remove the snap-off end of the column and wash the column with 5 CV (column volumes) of equilibration buffer at 1ml/min or 5ml/ min for 1 ml and 5 ml G-Trap™ G-Acryl Desalting column respectively.
4. Apply the sample to the column using a syringe. If less than 0.3 ml and 1.5 ml sample is applied to the 1 ml and 5 ml column respectively then make to final volume of 0.3 ml or 1.5 whichever is applicable with the equilibration buffer

5. UV monitor the eluted fractions. For high molecular weight proteins collect the initial eluted fractions and for low molecular weight proteins collect the latter eluted fraction. Check for desired molecule with appropriate assay.
   NOTE: Low molecular weight components start eluting after 0.9 ml and 3.5 ml for 1 ml and 5 ml columns respectively.
   NOTE: Some molecules such as purines, pyramidines and dyes interact with sephedex and so are eluted later than expected. In such cases large sample volumes can be used but the separation needs to be standardized individually for such molecules.
6. Elute the column with approximately 2 CV eluent buffer before applying next sample. Collect the eluted fractions.
   NOTE: *The flow rate of the column should be maintained otherwise it may damage the column.*
   NOTE: *Increased pressure generated when running buffers or samples pass through the resin may affect the packed bed and column hardware and should be avoided. Increased pressure is generated when one or more of the combinations such as high flow rate, high viscosity of buffers or samples, low temperature and flow restrictor are enforced on the column.*

STORAGE

1. Wash the columns with 5CV of 20% ethanol and store the column in 20% ethanol at 4°C.
   NOTE: *The bottom of the column is closed with the stop plug provided.*

RELATED PRODUCTS

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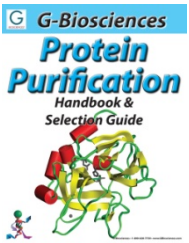

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