

PD SpinTrap G-25

PD SpinTrap G-25 contains

- 50 prepacked PD SpinTrap™ columns each containing 500 µl of Sephadex™ G-25 Medium
- 50 collection tubes
- 1 plastic bottom cap removal tool
- Instructions for use

Purpose

PD SpinTrap G-25 is designed for a rapid and convenient single use sample clean-up of proteins/biomolecules.

PD SpinTrap G-25 can be used for sample preparation of multiple samples in parallel for a wide range of applications such as desalting, buffer exchange and removal of low-molecular weight compounds.



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1 Principle

PD SpinTrap G-25 columns contain *Sephadex G-25 Medium*, which allows rapid *group separation* of high molecular weight substances from low molecular weight substances.

PD SpinTrap G-25 columns are used for desalting, buffer exchange and sample clean-up. Small molecules like salt, free labels or other impurities are efficiently separated from the high molecular weight substances of interest.

The chromatography technique is gel filtration and molecules are separated on the basis of differences in size.

- Molecules larger than the largest pores in the Sephadex matrix are excluded from the matrix and are eluted first, in or just after the *void volume*. The void volume is the column volume outside the Sephadex matrix.
- Molecules smaller than the largest pores in the Sephadex matrix will penetrate the pores to varying extent. They have a larger accessible column volume than the large molecules and therefore they elute after the large molecules just before one *total column volume* of buffer has passed through the column.

GE Healthcare provides an assortment of sample clean-up products. The different formats available are summarized in Table 1.

Table 1. Product overview

Clean-Up product	Exclusion limit, M_r	Bed volume	Sample volume gravity protocol ¹	Sample volume spin protocol ¹
PD SpinTrap G-25	5000	0.5 ml	-	70 to 130 μ l
PD MultiTrap™ G-25	5000	0.5 ml	-	70 to 130 μ l
PD MiniTrap™ G-25	5000	2.1 ml	0.1 to 0.5 ml	0.2 to 0.5 ml
PD MidiTrap™ G-25	5000	3.5 ml	0.5 to 1.0 ml	0.75 to 1.0 ml
PD-10 Desalting Columns	5000	8.3 ml	1.0 to 2.5 ml	1.75 to 2.5 ml
PD MiniTrap G-10	700	2.1 ml	0.1 to 0.3 ml	-
PD MidiTrap G-10	700	5.3 ml	0.4 to 1.0 ml	-

¹ Recommended sample volumes.

2 Advice on handling

Lids and caps

- Break the bottom closure off the SpinTrap column, using the enclosed plastic tool or by hand.
- Slightly open the screw cap lid before the first centrifugation (twist the cap lid $\sim 90^\circ$ counterclockwise)

Equilibration

- It is critical to equilibrate the column to remove the storage solution completely, since UV absorbing stabilizers are used in column packing.
- Follow the protocol to ensure that a equilibration volume corresponding to 3 packed bed volumes is used!

Sample application

- Load 70-130 μl samples per column.
For larger sample volumes (or a high number of samples), consider use of a more suitable clean-up format, see Table 1.
- Addition of a stacker volume can improve the recovery.
For sample volumes less than 100 μl it is recommended to apply a stacker volume of 30 μl equilibration buffer after the sample has fully absorbed.

Centrifugation

- Centrifuge the PD SpinTrap G-25 at 800 x g.
- After the first centrifugation; place a mark on the side of the column where the level of the compacted resin is highest. Place the column with the mark facing outwards in all subsequent centrifugation steps.
- Remember to change or empty the collection tubes between steps.

Recovery

The recovery of applied amount sample is dependent on type of protein or other biomolecule. Typically the recovery is in the range 70-90%.

- An increase in sample concentration can improve recovery.
- Addition of a stacker volume can improve the recovery.

3 Safety precautions

Always use normal personal protection devices like gloves and safety glasses when handling PD SpinTrap G-25 columns.



WARNING: The column storage solution, 0.05% Kathon™ CG/ICP Biocide, is potentially allergenic. Use gloves when discarding the storage solution.

4 Protocol



1 PD SpinTrap G-25 preparation

- Suspend the medium by vortexing.
- Loosen screw cap lid and remove bottom closure with help of the plastic bottom cap removal tool.
- Place the column in an appropriate size collection tube.
- Remove the storage solution by centrifugation for 1 minute at 800 x g.



2 Equilibration

- Equilibrate by adding 300 μ l equilibration buffer.
- Centrifuge for 1 minute at 800 x g.
- Discard the flow-through and replace the collection tube.
- Repeat this procedure 4 times (5 times in total).



3 Sample application

- Replace the used collection tube with a new clean collection tube for sample collection.
- Apply the sample (70-130 μ l) slowly in the middle of the packed bed.
- Optional: After the sample has entered the packed bed, apply a stacker volume



4 Elution

- Elute by centrifugation 800 x g for 2 minutes.
- The cleaned products are now available in the collection tube.

5 Column characteristics

Column material	Polypropylene barrel and polyethylene frits
Column volume	800 μ l
Matrix	Sephadex G-25 Medium
Particle size range	85 to 260 μ m
Packed bed volume	500 μ l
Maximum sample volume	130 μ l
Desalting Capacity	>85%
Exclusion limit	M_r 5000
Chemical stability	All commonly used buffers
Working pH range	2-13
Storage temperature	+4 to +30°C
Storage solution	0,05% Kathon CG/ICP Biocide

6 Ordering information

Product	Pack size	Code No.
PD SpinTrap G-25	50	28-9180-04

Related products	Pack size	Code No.
PD-10 Desalting Columns	30	17-0851-01
PD MultiTrap G-25	4 x 96-well filter plates	28-9180-06
PD MiniTrap G-25	50	28-9180-07
PD MidiTrap G-25	50	28-9180-08
PD MiniTrap G-10	50	28-9180-10
PD MidiTrap G-10	50	28-9180-11
HiTrap™ Desalting	5 x 5 ml	17-1408-01
HiTrap Desalting ¹	100 x 5 ml	11-0003-29
HiPrep™ 26/10 Desalting	1 x 53 ml	17-5087-01
HiPrep 26/10 Desalting	4 x 53 ml	17-5087-02

¹ Pack size available by special order.

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