

GE Healthcare

Albumin & IgG Depletion SpinTrap

Albumin & IgG Depletion SpinTrap is designed for depletion of albumin and IgG from human plasma or serum.

Product booklet

Code: 28-9480-20



Page finder

1. Legal	3
2. Handling	4
2.1. Safety warnings and precautions	4
2.2. Storage	4
2.3 Expiry	4
3. Components	5
4. Description	6
4.1 Introduction	6
4.2 The Basic Principle	7
5. Protocol	8
6. Column characteristics	10
7. Ordering information	11

1. Legal

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Previously published Mar 2009.

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2. Handling

2.1. Safety warnings and precautions

Warning: For research use only.

Not recommended or intended for diagnosis of disease in humans or animals. Do not use internally or externally in humans or animals.

All chemicals should be considered as potentially hazardous. We therefore recommend that this product is handled only by those persons who have been trained in laboratory techniques and that it is used in accordance with the principles of good laboratory practice. Wear suitable protective clothing such as laboratory overalls, safety glasses and gloves. Care should be taken to avoid contact with skin or eyes. In the case of contact with skin or eyes wash immediately with water. See material safety data sheet(s) and/or safety statement(s) for specific advice.

2.2. Storage

Storage temperature
4°C to 8°C

2.3. Expiry

24 months

3. Components

Albumin & IgG Depletion SpinTrap contains

- 10 prepacked Albumin & IgG Depletion SpinTrap™ columns each containing 370 µl of a mixture of anti-HSA Sepharose™ High Performance and Protein G High Performance media.
- Instructions for use

Purpose

Albumin & IgG Depletion SpinTrap is designed for depletion of albumin and IgG from human plasma or serum.

4. Description

4.1. Introduction

Albumin & IgG Depletion SpinTrap columns are prepacked with a mixture of anti-HSA Sepharose High Performance and Protein G Sepharose High Performance. The mixed media consists of 34 μm highly cross-linked agarose beads with covalently immobilized affinity ligands.

The ligand of anti-HSA Sepharose High Performance is based on a single domain antibody fragment with high specificity and capacity for human serum albumin.

The ligand of Protein G Sepharose High Performance is derived from the IgG binding regions of Protein G, a cell surface protein of *Streptococcus* bacteria. The Protein G ligand binds human IgG₁, IgG₂, IgG₃ and IgG₄. It is also effective in removing IgG from rat and mouse plasma.

Albumin & IgG Depletion SpinTrap is a fast and efficient sample preparation tool prior to proteomics analysis, such as 1D- and 2D-electrophoresis and mass spectrometry.

Depletion of albumin and IgG removes more than 60% of the total protein content in human plasma, whereby proteins normally obscured by albumin and IgG during analysis can be visualized. This also allows for a relatively higher load of less abundant proteins during analysis, enabling detection of an increased number of proteins.

4.2. The Basic Principle

Recommended Binding buffer

20 mM sodium phosphate, 0.15 M sodium chloride, pH 7.4.

Sample volume

Albumin & IgG Depletion SpinTrap column is designed for a capacity of up to 50 µl undiluted human plasma.

A load of 50 µl plasma containing normal levels of albumin and IgG (~40 mg HSA/ml, ~15 mg IgG/ml) results in >95% albumin depletion and >90% IgG depletion.

When starting from plasma containing levels of albumin and IgG above normal it is recommended to apply a lower sample volume, for example 25 µl, to obtain the same depletion efficiency.

Dilute the plasma sample with binding buffer to a final volume of 100 µl before application to the column.

Centrifugation

Centrifuge the Albumin & IgG Depletion SpinTrap column at $800 \times g$.

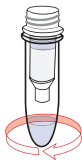
Liquid collection

- Remember to change or empty the collection tubes between equilibration steps. .
- After incubation of sample the eluates containing the depleted sample can be collected in one tube.

5. Protocol

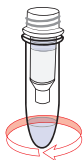
1. Remove storage solution

- Invert and shake the column repeatedly to resuspend the medium.
- Twist off the bottom cap from the SpinTrap column.
- Loosen the top cap one-quarter of a turn.
- Place the column in a 2 ml microcentrifuge tube and centrifuge for 30 s at 70 to 100 $\times$ g. Discard the collected liquid.
- Remove and discard the top cap.



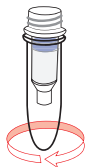
2. Column equilibration

- Add 400 μ l binding buffer and centrifuge for 30 s at 800 $\times$ g. Discard the collected liquid.
- Add 400 μ l binding buffer a second time and centrifuge for 30 s at 800 $\times$ g. Discard the collected liquid.



3. Sample application and incubation

- Place the column in a new 2 ml tube.
- Dilute the plasma sample (see sample volume, Section 2) with binding buffer to a final volume of 100 μ l and apply to the column.
- Incubate for 5 min without mixing.



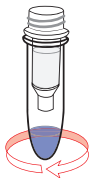
4. Collection of depleted sample

- Centrifuge for 30 s at $800 \times g$. Collect the eluate.
- Add 100 μ l binding buffer and centrifuge for 30 s at $800 \times g$. Collect the eluate.
- Add 100 μ l binding buffer a second time and centrifuge for 30 s at $800 \times g$. Collect the eluate.

Note: All eluates can be collected in the same 2 ml tube.

5. Optional: elution of albumin and IgG

- Bound albumin and IgG can, if so requested, be eluted by 0.1 M glycine-HCl, pH 2.7.



6. Column characteristics

Table 1. Albumin & IgG Depletion SpinTrap.

Column material	Polypropylene barrel and polyethylene frits
Matrix	Highly cross-linked agarose, 6%
Average particle size	34 μm
Ligands	Recombinant Protein G fragment and recombinant protein binding HSA
Loading capacity ¹	50 μl undiluted human plasma
Volume, prepacked medium	370 μl (600 μl medium slurry)
Working pH range (short term)	2 to 9
Storage	20% ethanol at 4°C to 8°C

¹ Sample: Human plasma containing approximately 15 mg IgG/ml and approximately 40 mg albumin/ml.
Results according to ELISA: >95% albumin depletion, >90% IgG depletion.

7. Ordering information

Product	Quantity	Code No.
Albumin & IgG Depletion SpinTrap	10	28-9480-20
Related products	Quantity	Code No.
2-D Quant Kit	500 assays	80-6483-56
Nuclease Mix	0.5 ml	80-6501-42
Protease Mix	1 ml	80-6501-23
2D-Clean-Up kit	50 samples	80-6484-51
SDS-PAGE Clean-Up Kit	50 samples	80-6484-70
Vivaspin™ 500, 3kDa MWCO PES	25 samples	28-9322-18
Vivaspin 500, 5kDa MWCO PES	25 samples	28-9322-23
Vivaspin 500, 10kDa MWCO PES	25 samples	28-9322-25
Vivaspin 500, 30kDa MWCO PES	25 samples	28-9322-35
Vivaspin 500, 50kDa MWCO PES	25 samples	28-9322-36
Vivaspin 500, 100kDa MWCO PES	25 samples	28-9322-37
Related literature	Code No.	
2-D Electrophoresis; Principles and Methods	80-6429-60	
Ettan DIGE System User Manual	18-1173-17	
Recombinant Protein Purification Handbook, Principles and Methods	18-1142-75	
Affinity Chromatography Handbook, Principles and Methods	18-1022-29	
Affinity Chromatography Columns and Media Selection Guide	18-1121-86	

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