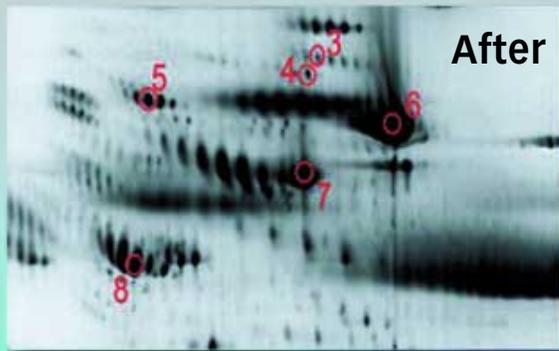
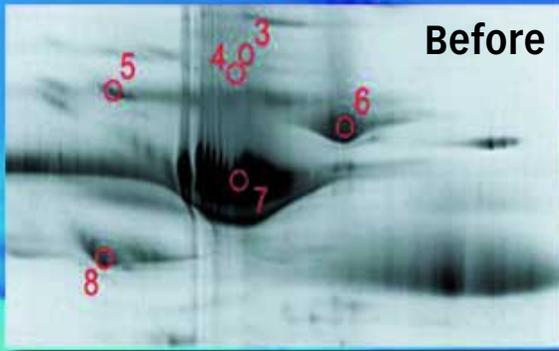


Vivapure[®] Anti-HSA Kit for Human Albumin Depletion

Highly specific human albumin depletion with unique antibody fragments



Introduction

The Vivapure Anti-HSA Kit is intended for biologists involved in the discovery of serum biomarkers that need highly specific albumin removal at single use pricing. The Vivapure kit is based on an antibody fragment covalently coupled to agarose beads and includes all buffers and spin tubes required for the

procedure. In addition, buffer recommendations are included for the recovery of albumin and associated proteins. The kit provides >95 % removal of albumin from 20 µl of serum and low non-specific binding of potential serum biomarkers. Depleted sample is recovered in a low salt

buffer facilitating downstream separation. The method is quick, suitable for parallel processing and offered in a ready-to-use kit. When compared to blue agarose type resins, the Vivapure Anti-HSA Kit provides superior albumin specificity at comparable capacities and prices.

Vivapure Anti-HSA Kit Advantages

Antibody based albumin removal with 2 mg/ml capacity (50 % slurry)	→	Efficient albumin removal with minimal loss of potential serum biomarkers
20 minute protocol employing spin tubes	→	Quick, suitable for parallel processing
Depleted protein recovered in low salt buffer	→	Sample is ready for next step in fractionation process
Resin packaged as a slurry	→	Flexibility in serum sample volumes
Kit format	→	Ready to use, no wastage
Priced for single use	→	No risk of cross contamination

Protocol for Albumin Removal from Human Serum

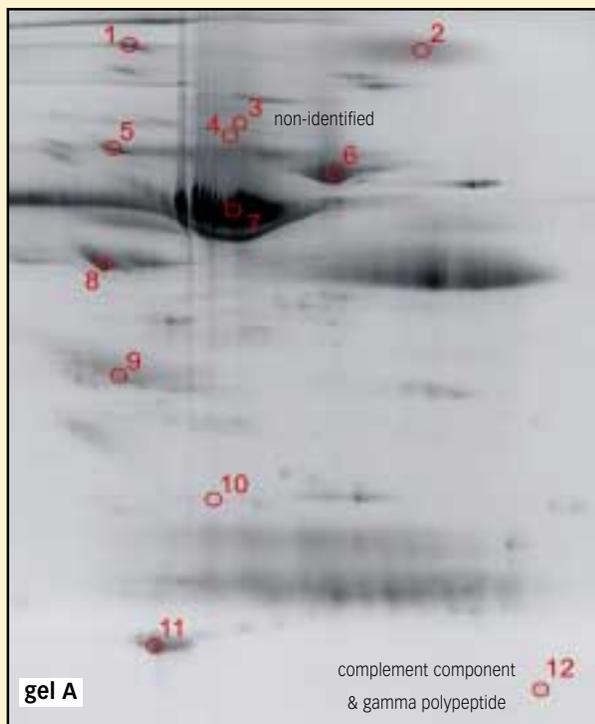
Protocol for easy, flexible and fast albumin depletion

The Vivapure Anti-HSA protocol is simple to perform and an overview follows:

1. Resuspend Vivapure Anti-HSA resin and place the required volume in Vivaclear spin column.
2. Spin to pack agarose.
3. Dilute serum in binding buffer 1:10.
4. Add diluted serum to Vivaclear spin column and incubate on rotary shaker for 15 minutes. (For larger serum volumes, the incubation step can be done in a separate tube and then transferred to Vivaclear spin columns to recover the depleted serum).
5. Spin the Vivaclear spin column to recover depleted serum sample. For sample concentration, a Vivaspin 500 with a 10,000 MWCO (Cat. No. VS0101) is recommended.

Albumin can also be eluted from the column in 0.1 M Glycine/HCl pH 2.8 followed by neutralization with 1 M Tris, pH 9.

Before - unprocessed human serum



After - albumin removed with Vivapure kit



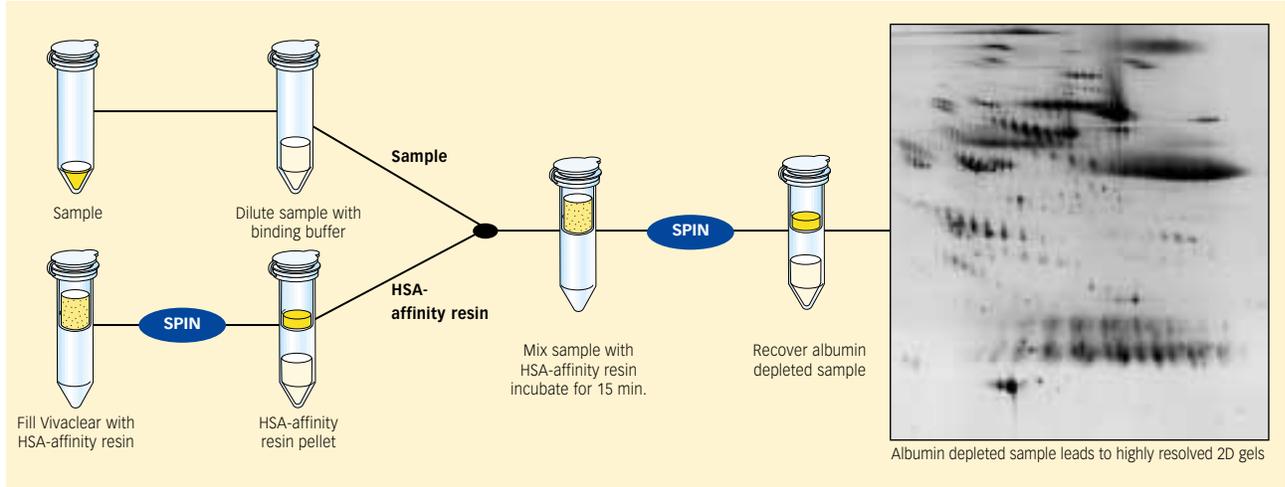
Human serum was analysed before (*gel A*) and after albumin removal (*gel B*) by IEF and 2D PAGE. The comparison of the two gels clearly demonstrates the increased resolution achieved with the Vivapure Anti-HSA Kit, leading to the visualisation of lower abundance proteins.

This is exemplified by the MALDI identification of selected spots of which spot 3 and 12 were formally undetectable. Silver stained NEPHGE 2D gels (20 x 30 cm), performed at Eurogentec.

Spot	Identity
1	Ceruloplasmin
2	Lamin
3	Gelsolin
4	alpha 2 macroglobulin
5	alpha-1-β-Glycoprotein
6	Transferrin
7	Albumin
8	alpha-1-antitrypsin
9	Apolipoprotein A3
10	Apolipoprotein E
11	Apolipoprotein A1
12	Complement component 8, gamma polypeptide

Vivapure Anti-HSA for Human Albumin Depletion

Handling overview - Albumin removal in 20 minutes

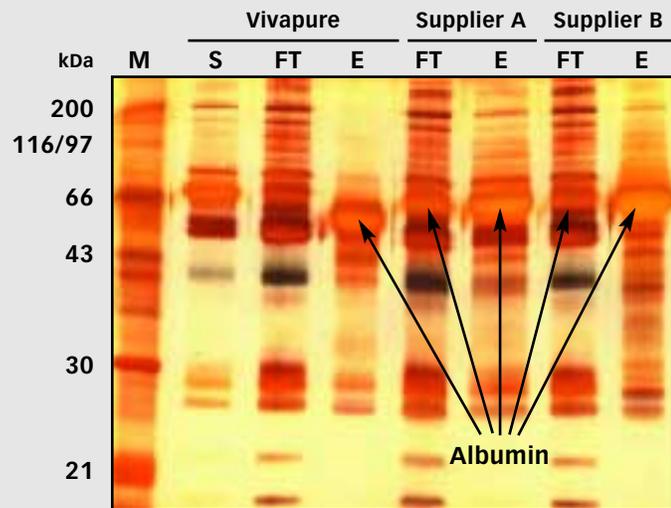


Effective Human Albumin Depletion with Vivascience Anti-HSA kit

With Vivapure Anti-HSA Kit the best results for albumin depletion from human serum are achieved, as shown on silver stained 1D SDS-Gel. Depletion of albumin from human serum using the Vivapure Anti-HSA Kit is more specific and efficient than with products from other suppliers. The same experiment was performed in parallel with products from Supplier A and Supplier B. The same amount of protein of each fraction was separated by SDS-PAGE and silver stained for visualization. M: Marker proteins, S: Human serum, FT: Flow through, E: Eluate. The Vivapure elution fraction shows the high specificity of the supplied Anti-HSA resin for human albumin depletion, in contrast to other products. A more effective albumin depletion is achieved as well, as the Flow through fraction no longer contains albumin.

Specifications

HSA-affinity resin binding capacity (suspension containing 50% packed medium)	2 mg/ml
Clarification spin columns (Vivaclear) max. volume capacity	500 µl
Recommended centrifugation speed	400 x g
This kit contains a complete set of consumables required for albumin removal from 12 x 20 µl samples of human serum. Larger sample volumes can also be processed using this kit.	



Organism	Percent albumin removal	Removal of other proteins
Human	>95 %	low
Mouse	50 - 80 %	high
Rat	>90 %	low

Albumin Depletion from different sources

The Vivapure Anti-HSA Kit, being antibody based, provides superior albumin removal and reduced non-specific binding when compared to

blue agarose type resins. The Vivapure Anti-HSA Kit can also be useful for depleting albumin from rat, but is less suitable for mouse.

Vivapure Anti-HSA for Human Albumin Depletion



Vivapure Anti-HSA Kit for Human Albumin Depletion

Cat. No.	VS-SP08HAR
HSA-affinity resin (50 % slurry)	5 ml
Clarification spin columns (Vivaclear)	12
Collection tubes (2 ml)	24
Binding Buffer	15 ml

Other products from Vivascience



Vivaspin High Speed Concentrators

Vivaspin high-speed concentrators pioneered the use of vertical-mounted ultrafiltration membranes. The design minimizes fouling and significantly increases membrane area. Now concentrate 3 to 6 times faster without compromising recovery. A graduated concentrate window facilitates operation and sample recovery. Moreover the range of available membranes and centrifugal devices is the broadest in the industry, allowing a tailored solution to your concentration and desalting applications. **For more information request Vivascience Ultrafiltration Catalog**



Vivapure Membrane Adsorbers

Vivapure ion exchange membrane adsorbers are ideal for pre-fractionation of cell lysates or other protein samples prior 2D electrophoresis or chromatography. This ion exchange family of products includes disposable spin columns, 8 well strips, 96 well plates or syringe formats that are compatible with standard laboratory equipment. Unlike chromatography media membrane adsorbers have large flow-through pores enabling rapid separations as binding and elution are not diffusion limited. **For more information see Doud et al. BMC Genomics 2004, 5:25.**



Vivapure Protein A

Vivapure Protein A spin columns are ideal for IgG removal from serum samples, after albumin depletion. The membrane adsorber technology used, enables rapid antibody removal combined with extremely low binding characteristics of the matrix. Additionally, due to a minimal bed volume, volumes for washing and optional elution are lower than with resin based material. With an IgG binding capacity of up to 300 mg and 500 µl, Vivapure Protein A devices are the perfect tool for depleting the second highest abundant protein class (IgG) from human serum.

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