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AlbuSorb™

Albumin Depletion From Serum or Plasma

- Removes 30 mg albumin/ml, >90%
- Affinity-type equivalence, virtually no cross-reactivity with other proteins
- Disposable, no column regeneration or cross-contamination
- Economical new surface technology, not based on blue-dye or immuno-affinity chromatography
- Mild binding conditions maintains tertiary structure and simple transfer to secondary analysis
- The flow-through (unbound) fractions retain their enzymatic and biological activity
- Removes albumin from most species including human, sheep, bovine, mouse, goat, rat, and calf.
- Validated in the automation compatible high-throughput DPX Technologies XTR tip format

Poly-electrolytes are polymers with repeating units of stationary charges. **AlbuSorb™** comes from a class of solid-phase, or bead-based, elastomeric poly-electrolytic beads that bind proteins through an empirically derived chemistry combining elements of polymer composition, cross-linking architecture and charge properties. As with bio-polymers like DNA and Heparin, governing their reactivity is the spatial presentation of the electrostatic groups along a flexible polymer chain.

Unlike immuno-affinity, the surfaces utilized are disposable eliminating cycle to cycle variance and cross-contamination. **AlbuSorb™** is supplied as a dry powder. Simply weigh, centrifuge and/or filter, and recover the albumin depleted serum in the supernatant.

Cancer Sera Before and After AlbuSorb™

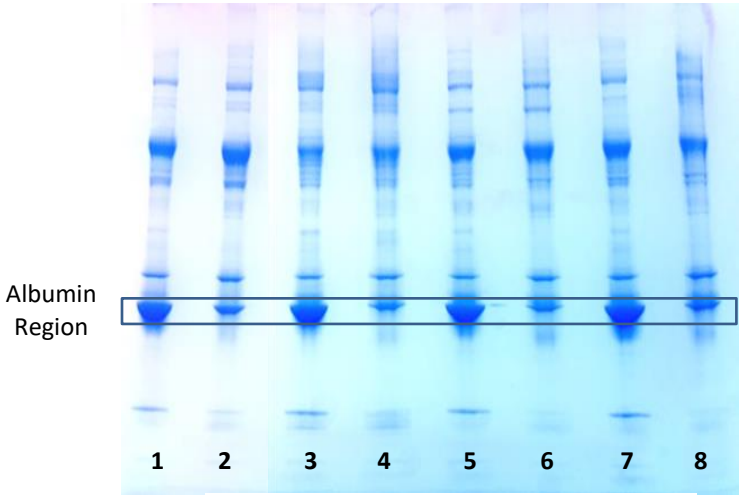
1: Normal pooled serum control
2: Flow-through from normal serum

3: Breast cancer pooled serum control
4: Flow-through from breast cancer serum

5: Lung cancer pooled serum control
6: Flow-through from lung cancer serum

7: Pancreatic cancer pooled serum control
8: Flow-through from pancreatic cancer serum

Note: All samples are from human female ages 40-60



Gel Image: SDS-PAGE non-reduced, Criterion™ Tris.HCl (Bio-Rad) 4-15%

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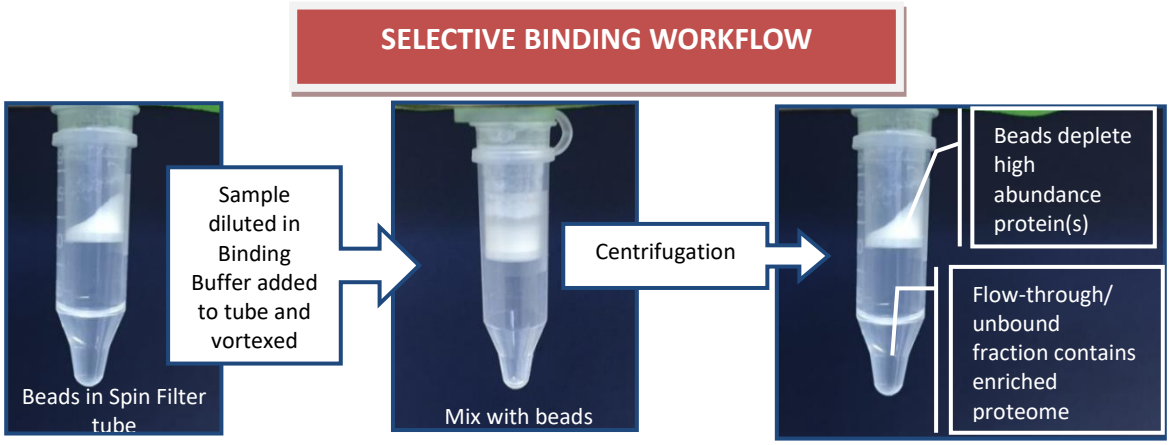
Product	Size	# Serum Preps	Item No.
AlbuSorb™ Kit	1 gram	20, 25 µl Serum Samples	A185-1
AlbuSorb™ Kit	6 grams	120, 25 µl Serum Samples	A185-6

Items	Item No A185-1	Item No A185-6	Reagent
AlbuSorb™ Beads	1 gram	6 grams	Supplied
Binding Buffer BB1 (0.05M K_2HPO_4 Dibasic, pH 7.5)	30 ml	180 ml	Supplied
Spin Filter tubes	20	120	Supplied

Additional Spin-Filters (low protein binding, 0.45 µm filter element) can be purchased separately, please inquire.



Typical Performance	AlbuSorb™	AlbuSorb™ PLUS
Serum Sample Volume	25 µl	25 µl
Albumin Removal	>90%	>85%
Immunoglobulin Removal	-	>85%
Recovered Protein Mass	500-600 µg (Albumin depleted)	400-500 µg (Albumin + Ig depleted)
LC-MS/MS unique proteins (single 3 hr gradient)	350-400	350-400

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Sample Type	Disease	Analysis
Rat serum	Cancer	MALDI
Rat serum	Diabetes	Western Blot
Human Synovial fluid	Rheumatoid Arthritis	2DE
Human Urine Exosomes	Diabetes	LC-MS/MS SRM

PROTOCOL – Based on processing 25 µl Serum

For best results – the lysate should be clear and free of colloidal material. We recommend first filtering through a 0.45 µm syringe-type filter before beginning the prep.

1. Weigh out 50 mg of **AlbuSorb™** beads into the supplied microfuge spin-filters.

2. Add 400 µl of **Binding Buffer BB1** to condition the **AlbuSorb™** beads. Shake it manually/ vortex for 3 min and then centrifuge for 2 minutes at 1,000 g's. Discard the supernatant.

3. Repeat step-2

4. As a requirement for albumin binding, add 250 µl of the **BB1 Buffer** and then add 25 µl of the serum to **Step 3**. Mix for 10 minutes on a rotating shaker.

5. Centrifuge for 4 minutes at 9,000 g's, **the filtrate contains serum proteins minus albumin. Note – when observing proteins on SDS-PAGE (4-15%), other proteins migrate to the same region as Albumin, and may not be fully resolved.**

6. Optionally the pellet **(mostly albumin)** can be eluted with 200 µl of **0.2M Tris + 0.5M NaCl, pH 10 buffer (not supplied)** by mixing on a shaker for 10 min and centrifuge for 4 minutes at 9,000 g's.

Scaleable and Versatile Protocol

The protocol can be scaled up or down proportionally to adjust for different serum volumes. The bead amount can be adjusted to accommodate more or less albumin removal.

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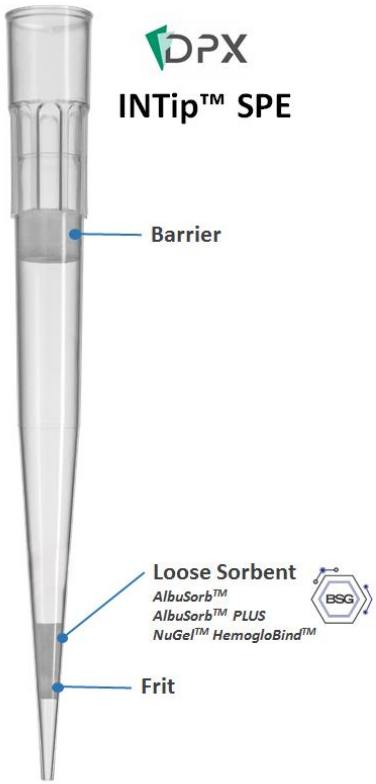
Validated in the high-throughput XTR tip format

The XTR tip format improves ease of use and scalability to process multiple samples in parallel, utilizing 96-well plates and automated liquid handlers. INTip™ SPE formats have been proven to be compatible with most automation platforms, i.e., Integra, Hamilton, etc. The **AlbuSorb™** beads are loosely contained inside the XTR tips for a dispersive functionality that maximizes depletion efficacy.

A poster report is downloadable at: https://www.biotechsupportgroup.com/v/vspfiles/templates/257/pdf/ASMSBSGDPXPoster.pdf

Please inquire for price and availability.



References

Exosome
Chettimada, Sukrutha, et al. "Exosome markers associated with immune activation and oxidative stress in HIV patients on antiretroviral therapy." *Scientific Reports* 8.1 (2018): 7227.

Cerebrospinal Fluid
Gwenael Pottiez, Pawel Ciborowski. Proteomic Profiling of Cerebrospinal Fluid Expression Profiling In Neuroscience Neuromethods.2012;64:245-270

Synovial fluid
Happonen KE, Fürst CM, Saxne T et al. PRELP protein inhibits the formation of the complement membrane attack complex.Journal of Biological Chemistry.2012;287(11):8092-100

Serum
Valladolid-Acebes, Ismael, et al. "Lowering apolipoprotein CIII protects against high-fat diet–induced metabolic derangements." *Science Advances* 7.11 (2021): eabc2931.

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Increased levels of apolipoprotein CIII (apoCIII), result in obesity-related metabolic derangements. Using mice, the researchers investigated mechanistically whether lowering or preventing high-fat diet (HFD)– induced increase in apoCIII, protects against the detrimental metabolic consequences. For Western blotting determination of circulating apoCIII, the article states, "plasma was albumin depleted using AlbuSorb according to the manufacturer's protocol (Biotech Support Group LLC) and resuspended in 0.1% (v/v) trifluoroacetic acid."

Nelson K, Wilkinson, S. et al., High resolution accurate mass spectrometry-based proteomics in ecotoxicology: SWATH-MS to detect differentially expressed plasma proteins in the amphibian toxicological model *Xenopus laevis*. Poster: Conference: PRIMO20, May 2019

Valladolid-Acebes, Ismael, et al. "Lowering apolipoprotein CIII protects against high-fat diet–induced metabolic derangements." *Science Advances* 7.11 (2021): eabc2931.

Holmberg R, Refai E, Höög A.Lowering apolipoprotein CIII delays onset of type 1 diabetes. Proceedings of the National Academy of Sciences.2011;108(26):10685-9.

Tang MX, Ogawa K, Asamoto M. Effects of Nobiletin on PhIP-Induced Prostate and Colon Carcinogenesis in F344 Rats Nutrition and Cancer.2011;63(2):227-33

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Lu Q, Zheng X, McIntosh T Development of different analysis platforms with LC-MS for pharmacokinetic studies of protein drugs. Analytical Chemistry.2009;81(21):8715-23

Cell/Tissue Culture Media

"AlbuSorb™ worked very well for us. We removed at least 90% of the albumin from our 10% FBS conditioned medium samples", Joseph Sucic, University of Michigan.

Urine

Zubiri, Irene, et al. Diabetic nephropathy induces changes in the proteome of human urinary exosomes as revealed by label-free comparative analysis. Journal of Proteomics (2013).

Patent

Berggren, Per Olaf, Yang, Shao-Nian. 2012. Methods For Treating And/Or Limiting Development Of Diabetes.U.S. Patent 20120328630 Kind Code: A1, filed June 25, 2012, and issued December 27, 2012.

CONTACT US

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