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Bovine Serum Albumin (BSA) Depletion Column (IgY Kit)

Catalog Number: GWB-BSAIGY
Product Form: Bead slurry in TBS

Product Description:

Catalog #	Description	Observed Capacity*
GWB-BSAIGY	2 depletion spin columns, each pre-packed with 0.5ml anti-BSA IgY beads	20µl human serum or plasma for each spin column At least 20 cycles for each spin column

Affinity-purified anti-BSA IgY antibody covalently conjugated through its Fc portion.

*The resin is reusable for at least 20 times under proper conditions

Antibody Source: Chicken polyclonal. Antigen affinity purified

Buffer: Tris-Buffered Saline (10mM Tris-HCl, 150mM NaCl, pH 7.4) with 0.02% sodium azide.

Storage Instructions: 4°C. **Do not freeze.**

Application: Plasma or serum protein separation, immunoprecipitation.



PROTOCOL

Materials Provided

1. Two pre-packed 0.5 ml beads anti-BSA IgY gel spin columns (Bio-Rad Micro Bio-Spin Columns -Cat. No. 732- 6204)
2. Six Spin Column Ends (Bio-Rad Cat. No. 731-1660)

Materials Not Provided

1. 2ml collection tubes
2. Buffers:
 - a. Dilution Buffer: Tris Buffered Saline (10 mM Tris, 150 mM NaCl, pH 7.4) (30ml)
 - b. Wash Buffer: Dilution Buffer containing 0.05% Tween-20 (30ml)
 - c. Stripping Buffer: 0.1M Glycine, pH 2.5 (30ml)
 - d. Neutralization Buffer: 1M Tris-HCl, pH 8.0 (10ml)

Procedure for one pre-packed spin column

Immunocapture of BSA

1. Dilute 20 μ l serum or plasma sample in 380 μ l TBS to get a final volume of 400 μ l.
2. Invert the spin column several times to re-suspend the beads, snap off the tip from the column and place the column in a 2ml microcentrifuge tube. Discard the flow-through.
3. Centrifuge the column for 1 minute at 500 xg in a microcentrifuge to obtain dried beads.
4. Place the end cap to the column tip. Add 0.5ml of TBS to equilibrate the beads. Seal the column with the top snap cap. Invert the column several times to mix the beads.
5. Remove the end cap and place the column in a 2ml microcentrifuge tube. Centrifuge for 1 minute at 500 xg. Discard the flow-through.
6. Place the end cap to the column tip. Immediately add 0.4ml diluted serum or plasma sample to the dried beads in the column. Seal the column with the top snap cap.
7. Invert the column several times to mix the beads and the sample, place it on an end-to-end rotator and incubate at room temperature for 15 minutes.
8. Invert the column. Remove the end cap and place the column in a 2ml microcentrifuge tube. Centrifuge for 1 minute at 500 xg. Collect flow-through (BSA-depleted) sample for further analysis.

9. To obtain maximum yields of flow-through samples, an optional wash step can be applied. Add 0.5ml TBS to the beads. Invert the column several times to mix beads and buffer. Centrifuge for 1 minute at 500 xg. Collect and combine with the flow-through sample from step 8 for further analysis. Samples can be further concentrated using an Amicon Ultra centrifugal filter device (Millipore, Catalog # UFC501096) to desired concentration and volume.

Stripping of Bound Protein

1. To remove proteins non-specifically bound to beads, wash beads with 0.5ml of TBS containing 0.05% Tween-20 a total of 3 times. For each wash, always first insert the end cap, and then add 0.5ml washing buffer and seal the column with top snap cap. Invert the column several times to mix the beads and buffer, remove the end cap while inverting the column and place it in a 2ml microcentrifuge tube. Centrifuge for 1 minute at 500 xg and save the flow-through for further analysis.
2. Strip off bound proteins from beads using 0.5ml of Stripping Buffer (0.1M Glycine-HCl, pH 2.5), a total of 2 times. For each elution, place the end cap to the column first after centrifugation, then add 0.5ml Stripping Buffer and seal the column with top snap cap. Invert the column several times to mix the beads and buffer, incubate at room temperature for 2-3 minutes, remove the end cap while holding the column upside down and place it in a 2ml microcentrifuge tube. Centrifuge for 1 minute at 500 xg and collect the eluent. **It is crucial for column stability to immediately neutralize the beads** (see section **Regeneration of anti-BSA IgY beads**).
3. Pool two eluted samples (total ~1ml) and neutralize with 100µl of Neutralization Buffer. Samples can be further concentrated using an Amicon Ultra centrifugal filter device (Millipore, Catalog # UFC501096) to desired concentration and volume.

Regeneration of anti-BSA IgY beads

1. Add 0.5ml of Stripping Buffer and wash the column a total of **2 times**. For each wash, place the end cap to the column first after centrifugation, then add 0.5ml Stripping Buffer and seal the column with top snap cap. Invert the column several times to mix the beads and buffer, incubate at room temperature for 2-3 minutes, remove the end cap while holding the column upside

down and place it in a 2ml microcentrifuge tube. Centrifuge for 1 minute at 500 xg and discard the flow through.

2. After stripping, **immediately** neutralize beads with 0.5ml of 1:10 diluted Neutralization Buffer (100 mM Tris-HCl, pH 8.0). Invert the column several times to mix beads and buffer. Incubate at room temperature for 5 minutes.
3. Spin down beads in the column for 1 minute at 500 xg.
4. Re-suspend beads in 0.5ml TBS. Beads are ready for storage at 4°C or next separation. For storage of regenerated beads, it is suggested to use as storage buffer TBS containing 0.02% sodium azide (NaN₃).

Affinity Depletion of BSA

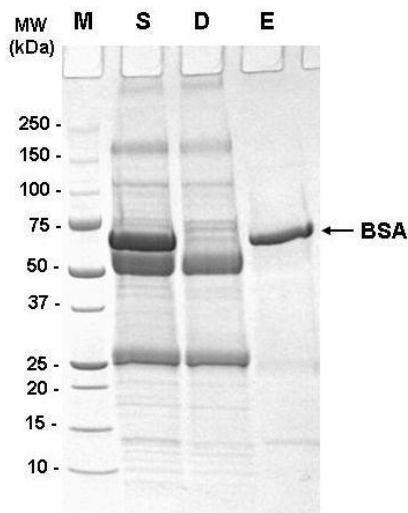


Figure1. Affinity Separation of BSA from Bovine Serum

M: MW marker

S: 1:20 dilution bovine serum before depletion

D: S after depletion with anti-BSA IgY beads

E: Eluted bound proteins from anti-BSA IgY beads

4-20% SDS gel. Coomassie blue staining.