Magnetic beads™ Streptavidin

Cat.No. SMB-B01

Product Description

Magnetic beads™ Streptavidin are 2 μm superparamagnetic particles covalently coupled to a highly pure form of streptavidin (SA). The beads can be used to capture biotin labeled substrates including antigens and antibodies. Biotinylated substrates bind to the beads irreversibly owning to the extraordinarily high affinity between streptavidin and biotin with a dissociation constant (Kd) on the order of 10-14 mol/L. High binding capacity and low non-specific binding of proteins make this bead ideally suited for protein isolation applications.

Beads Information

Bead size: 2 mg/5 mg

Particle size: 2 μm

Magnetism: Superparamagnetic

Number of beads/mg: 1X10^{8}beads/mg

Binding capacity: >15ug biotin-protein/mg beads

Application

This product is intended for immunocapture, biopanning and flowcytometry. This product is produced non-sterile.

Storage

This product is stable for 1 year when stored at -20 ℃.

Please avoid more than 3 freeze-thaw cycles. Immediate use after reconstitution is highly recommended.

General guidelines

Use a magnetic separator that is suitable for your equipment and application. Allow the beads to separate for at least 1 minute before removing supernatant. The beads are dense and will tend to settle very quickly. Be sure that any bead mixture is homogenous before aliquoting.

Before any experiment, it is necessary to wash the magnetic beads and remove the trehalose from the formulation buffer and change the buffer to your Assay/Washing Buffer.

a) Reconstitute the beads with ultrapure water to 1 mg/mL, and wash the beads for three times.

b) Dilute the biotinylated protein or antibodies with Assay Buffer and add to the beads. Incubate for 60 minutes at room temperature in a rotary mixer.

c) Wash the beads for four times, and add Assay Buffer to the beads. The beads are ready to use for the next experiment.

Address: 1 Innovation Way, Newark, DE 19711, USA Tel: +1 800-810-0816 Web: http://www.acrobiosystems.com E-mail: TechSupport@acrobiosystems.com

Method of antibody enrichment and elution

Below is a antibody enrichment and elution protocol for your reference.

1.Reconstitute and wash the magnetic beads according to the Certificate of Analysis. Immediate use is strongly recommended.

2. Add 1mL Assay/Washing Buffer per mg Beads to resuspend the beads. The most common Assay/Washing Buffer is PBS, pH 7.3, with 0.05% Tween-20. Optionally, you may add 0.05% BSA. When assaying a serum sample, please choose a Special Assay/Blocking Buffer to minimize the background signal.

3. Add 100uL (0.1mg) Beads to tube： Place the beads on the magnetic separator for 1-2 min. Remove the supernatant

4. Remove the tube from the magnetic separator and resuspend the pelleted beads in 300uL of Assay/Washing Buffer by a vortex.

5. Wash the beads for a total of 3 times by repeating steps 3-4. After the last wash, remove the supernatant

6. Add 100uL (1.5-5ug) Biotinylated protein to tube, and mix the beads with samples by mixer.

7. Cover the tubes on a rotator or place the plate on a plate mixer and incubate for 60 minutes at room temperature. Alternatively, rotate overnight at 4℃.

8. Place the tube on the magnetic separator for 2 min. If necessary, retain supernatant for analysis

9. Wash the beads for a total of 3 times by repeating steps 4-5. After the last wash, remove the supernatant.

10. Add 100 µL (0.0064-25ug) Ab to tube and mix the beads with samples by mixer.

11. Place the tube on a rotator and incubate for 60 minutes at room temperature.

12. Place the tube on the magnetic separator for 2 min. Transfer the supernatant to the new tube and save it for analysis

13. Wash the beads for a total of 3 times by repeating steps 3-5. After the last wash, remove the supernatant.

14. Add 100µL of Elution Buffer to the tube, and mix the beads with samples by mixer.

15. Cover the tubes on a rotator and incubate for 5 minutes at room temperature.

16. Place the tube on the magnetic separator for 2 min. Remove the supernatant and save the supernatant containing the target antibody for analysis.

Note: If low pH elution buffer is chosen for elution, streptavidin shedding may occur, and care should be taken that the incubation time does not exceed 10 minutes. Low pH elution buffers are effective for most antibody-antigen interactions; however, to ensure efficient release of target antigen from the antibody, pre-rinse the beads with 300µL of 0.05% Tween-20 Detergent in water (no buffering capacity) before adding Low pH Elution Buffer.

17. To neutralize the low pH, add an appropriate amount of neutralizing solution for every 100ul Elution buffer

Address: 1 Innovation Way, Newark, DE 19711, USA Tel: +1 800-810-0816 Web：http://www.acrobiosystems.com E-mail：TechSupport@acrobiosystems.com

Binding assay

Below is a suggested antibody capture protocol for your reference.

1. Reconstitute and wash the magnetic beads according to the Certificate of Analysis. Immediate use is strongly recommended.

2. Add 1mL Assay/Washing Buffer per mg Beads to resuspend the beads. The most common Assay/Washing Buffer is PBS, pH 7.3, with 0.05% Tween-20. Optionally, you may add 0.05% BSA. When assaying a serum sample, please choose a Special Assay/Blocking Buffer to minimize the background signal.

3. Sample1 Dilution : Dilute your biotinylated protein of interest from in Assay buffer 40μg/ml

4.Add 1mL Beads to tube . Place the beads on the magnetic separator for 1-2 min. Remove the supernatant.

5. Add 1mL Sample1 to tube, and mix the beads with samples by mixer.

6. Cover the tubes on a rotator or place the plate on a plate mixer and incubate for 60 minutes at room temperature. Alternatively, rotate overnight at 4°C.

7. Place the tube on the magnetic separator for 2 min. Remove the supernatant.

8. Remove the tube from the magnetic separator and resuspend the pelleted beads in 1mL of Assay/Washing Buffer by a vortex.

9. Wash the beads for a total of 4 times by repeating steps 7–8. After the last wash, remove the supernatant.

10. Remove the tube from the magnetic separator and resuspend the pelleted beads in 1mL of Assay/Washing Buffer by a vortex.

11.Sample2 Dilution: Dilute your protein of interest from in Assay buffer.12.5 -0.024μg/ml.

12. Add 100 μL beads to each tube or plate well. Place the beads on the magnetic separator for 1-2 min. Remove the supernatant.

13. Place the tubes on a rotator or place the plate on a plate mixer, and incubate for 60 minutes at room temperature. Cover with foil to avoid photobleaching.

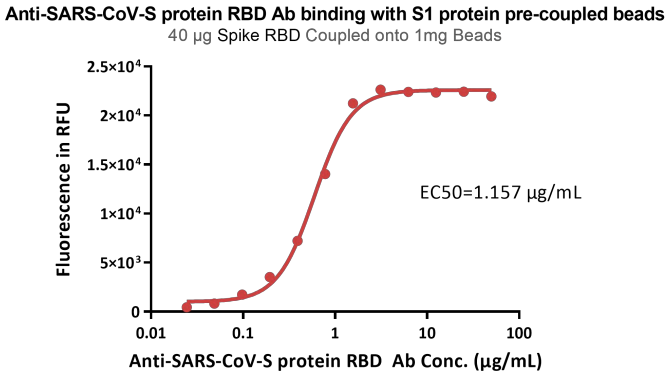
14. Repeat steps 7-8 for a total of four washes with Assay/Washing buffer. After the last wash remove the supernatant.

15. Add 100 μL of Assay/Washing Buffer to the beads, and resuspend the Beads.

16. Transfer the 100μL beads into a 96-well black plate that is compatible with your plate reader. Keep the beads well suspended.

17. Read the plate at excitation 488 nm/emission 575 nm on a plate reader within 10 min (Avoid the precipitation of the beads).

Sample Data



Immobilized 40μg SARS-CoV-2 S1 protein to 1mg Beads can bind the Anti-SARS-CoV-S protein RBD Antibody with an EC50 1.157μg/mL (QC tested).

Important Note

This product is for research use only and not intended for therapeutic or *in vivo* diagnostic use.

Contact Information

If you have any questions, please contact our technical support team at: TechSupport@acrobiosystems.com

Address: 1 Innovation Way, Newark, DE 19711, USA Tel: +1 800-810-0816 Web: http://www.acrobiosystems.com E-mail: TechSupport@acrobiosystems.com