GxBeads™ Streptavidin Magnetic Beads 链霉亲和素磁珠产品说明书

Catalog Number：JXB006

Size：1mL/5mL

Store at：4°C, do not freeze

Product description

Background:

Streptavidin Magnetic Beads are ideal for numerous applications, including purification of proteins and nucleic acids, protein interaction studies, immunoprecipitation, immunoassays, phage display, biopanning, drug screening and cell isolation.

Add the beads to a sample containing biotinylated molecules, e.g. peptides, proteins, antibodies, oligonucleotides, DNA/RNA. During a short incubation, the biotinylated molecule will bind to the beads. Separate the molecule-bead capture, washing, and detection can be optimized for manual or automated use. With indirect capture, mix the biotinylated molecule with the sample to capture the molecule target complex before adding the beads. Indirect target capture is an advantage when molecule-target kinetics are slow, affinity is weak, molecule concentration is low, or molecule-target binding requires optimal molecule orientation and true liquid-phase kinetics.

Streptavidin is covalently coupled to a magnetic particle. Streptavidin Magnetic Beads can be separated from solution using our 6-Tube Magnetic Separation Rack or 12-Tube Magnetic Separation Rack which concentrates the beads to the side of the tube instead of the bottom. This eliminates centrifugation steps, minimizes sample loss, increases washing efficiency, and saves time.

Specificity： Binding to biotinylated molecules, e.g. nucleic acids, peptides, proteins, antibodies.

Tested applications: For coupling of proteins, antibodies, peptides and other molecules. Optimal amount should be determined by the end user.

Form: Beads in Suspension (10 mg/mL)**,** supplied in phosphate buffered saline (PBS) pH 7.4, with 0.1% bovine serum albumin (BSA) and 0.02% sodium azide as preservatives.

Bead Diameter: 1 µm

Concentration: 10 mg/mL

Binding Capacity (/mL beads slurry): >100 nmol Free biotin
200 µg Biotinylated antibody

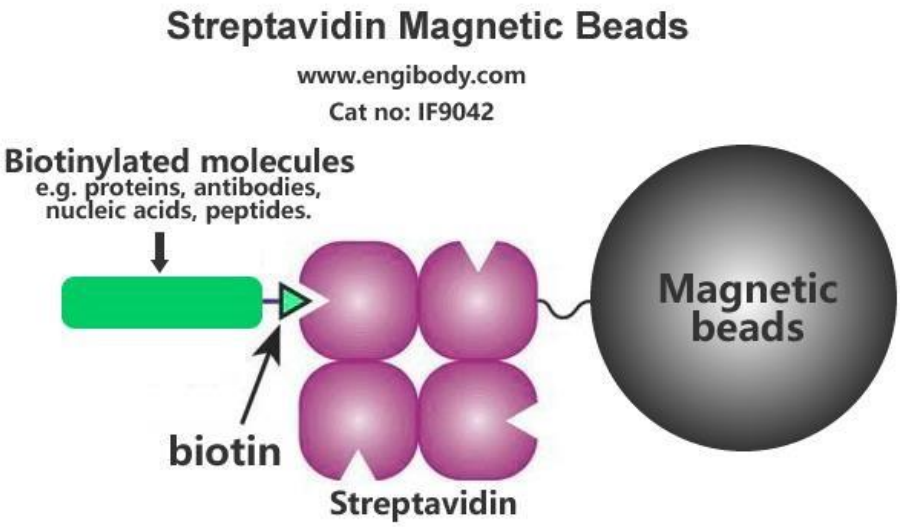
Storage instruction:

Store at 4°C. This product is stable for 12 months. Do not freeze, dry or centrifuge beads. This may cause irreversible aggregation and decreased binding capacity.

Additional information

◆Streptavidin Magnetic Beads should be resuspended well before used.
◆Beads cannot be reused.

Application Image



Procedure for binding biotinylated target directly.

A. Preparation of Solutions and Reagents

NOTE: Prepare solutions with reverse osmosis deionized (RODI) or equivalent grade water.

1. Recommended coupling/washing buffers protein/antibody samples: PBS buffer, pH7.4, nucleic acids samples: TES buffer

2. Elution buffer (only for biotinylated target purification): 8M Guanidine hydrochloride, pH1.5

B. Wash Streptavidin magnetic beads

Calculate the amount of beads required based on their binding capacity (see the above Binding Capacity), and transfer the beads to a new tube.

1. Resuspend the beads in the vial (i.e. vortex for >30 sec, or tilt and rotate for 5 min).
2. Transfer the desired volume of beads to a tube.
3. Add an equal volume of Washing buffer, or at least 1 mL, and mix (vortex for 5 sec, or keep on a roller for at least 5 min).
4. Place the tube on a magnet for 1 min and discard the supernatant.
5. Remove the tube from the magnet and resuspend the washed beads in the same volume of washing buffer as the initial volume of beads taken from the vial (Step 2).

C. Binding proteins

1. Incubate the beads and biotinylated proteins in PBS buffer (pH 7.4) for 30 min at room temperature using gentle rotation.
2. Separate the coated beads with a magnet for 2–3 min.
3. Wash the coated beads 4–5 times in PBS containing 0.1% BSA.
4. Resuspend to the desired concentration for your application.

NOTE:
Elution of the biotinylated proteins that are bound to the Streptavidin Beads requires harsh conditions, such as boiling for 5 minutes with 8M guanidine•HCl, pH 1.5. Protein may leach from the beads with such conditions after centrifugation.

Procedure for Immunoprecipitation Using a Biotinylated Antibody (Binding Antigen Indirectly).

A. Solutions and Reagents

NOTE: Prepare solutions with reverse osmosis deionized (RODI) or equivalent grade water.

1. Recommended coupling/washing buffers
   Phosphate-buffered saline (PBS) consisting of 100mM sodium phosphate, 150mM NaCl, pH 7.2.

2. Elution buffer (only for antigen purification by binding biotinylated antibody)
   Low pH elution buffers such as 0.1M glycine•HCl, pH 2.5-2.8 are effective for most antibody-antigen interactions. However, the low pH condition may cause streptavidin to leach from the beads, resulting in a less pure immunoprecipitation product and preventing reuse of the beads.

3. Neutralization buffer: 1 M Tris•HCl, pH 8.5

4. Biotinylated antibody: 5-100µg, diluted in 50-1000µL of PBS buffer. Use an amount that can be easily bound by the amount of beads used (e.g., <100µg antibody per mL of Streptavidin Beads Solution)

5. Antigen-containing Sample: 50-1500µL in a buffer that is compatible with antibody binding.

B. Procedure

1. Shake the bottle of Streptavidin Beads to resuspend the beads; then pipette 0.25-1mL into a microcentrifuge tube.

2. Place the tube in the Magnet to separate the beads; when the supernatant becomes clear, gently aspirate the supernatant and discard it.

3. Add 1mL of Binding/Wash Buffer, remove tube from magnet, and invert the tube several times to resuspend the beads. Then magnetically separate the beads, and remove and discard the supernatant.

4. Repeat Step 3 two additional times for a total of three washes.

5. Add 5-100µg of Biotinylated Antibody, remove tube from magnet, and gently invert tube several times to mix. Incubate at room temperature for 30 minutes with constant or periodic mixing.

6. Place the tube in the Magnet to separate the beads; remove the supernatant, which contains any antibody that did not bind to the beads.

7. Add 0.1-1.5mL Antigen Sample, remove tube from magnet, and gently invert tube several times to mix. Incubate at room temperature for 30 minutes with constant or periodic mixing.

8. Magnetically separate the beads and remove the supernatant, which contains nonbound components of the sample.

9. Add 1mL of Binding/Wash Buffer, remove tube from magnet, and invert the tube several times to resuspend the beads. Then magnetically separate the beads and remove and discard the supernatant.

10. Repeat Step 9 two additional times for a total of three washes. If the Gentle Ab/Ag Elution Buffer will be used for elution, then use a non-phosphate buffer for at least the last one of these wash steps.

11. Add a small volume (typically 30-50µL) of Elution Buffer(0.1M glycine•HCl, pH 2.5-2.8), remove tube from magnet, and invert or gently vortex the tube several times to resuspend the beads in the buffer. Then magnetically separate the beads and remove the solution, which is an elution fraction containing the immunoprecipitated antigen.

12. Repeat Step 11 two additional times for a total of three elution fractions. Then add 10µL Neutralization buffer for 100µL elution fraction.

13. Analyze the elution fractions. If a high salt elution buffer was used, dialyze or desalt the sample before attempting to mix with loading buffer for SDS-PAGE.

General guidelines

- Keep the tube on the magnet for 2 min to ensure that all the beads are collected on the tube wall.
- For diluted samples, increase the incubation time or isolate in smaller batches using the same beads in each batch.
- Avoid air bubbles during pipetting.
- Free biotin in the sample will reduce the binding capacity of the beads. A disposable separation column or a spin column will remove unincorporated biotin.
- For some applications it can be an advantage to add a detergent such as 0.01–0.1% Tween™ 20 to the washing/binding buffers to reduce non-specific binding.

For research use only. Not for use in diagnostic or therapeutic procedures.