Streptavidin magnetic beads

Cat: M2421 /M2420 /M2422

Size: 1mL

Storage: Store at 2-8℃, and it is valid for 2 years.

Introduction:

The streptavidin-biotin (SA-Biotin) system has a very high binding affinity (Kd=10^-15) and is widely used in the biological field. Streptavidin uses protein coupling technology to covalently attach SA to the surface of solid phase carrier, which can efficiently bind biotinylated antibody, nucleic acid, protein and other ligand molecules. The product adopts superparamagnetic microspheres with uniform particle size and regular morphology, which is conducive to convenient and fast trapping of target molecules and magnetic separation. This product can be equipped with automated equipment for high throughput operation.

Product Information:

Cat.	**M2421**	**M2420**	**M2422**
Product Information	SA magnetic bead(1μm)	SA magnetic bead(2μm)	SA magnetic bead(300nm)
Biotinylated single-stranded oligonucleotide (24nt)	≥450pmol/mg magnetic bead	≥350pmol/mg magnetic bead	≥450pmol/mg magnetic bead
Biotinylated IgG	≥15μg/mg magnetic bead	≥15μg/mg magnetic bead	≥15μg/mg magnetic bead
Concentration of magnetic beads	10mg/mL		
Magnetic bead surface	hydrophilic group		
Preservation solution	1×PBS， containing 0.1%(w/v)BSA， 0.1%(v/v)proclin-300		

The product application scope (*for reference only*):

(1) Immunodetection, protein isolation, cell sorting, etc. Streptavidin can specifically bind biotinylated antibodies or antigens, as a solid phase reaction carrier such as immunodetection, ELISA, or cell sorting.

(2) Separation of nucleic acid, preparation of nucleic acid probe, etc. Streptavidin can specificity combined with biotinylated nucleic acid probe, widely used in DNA, RNA hybridization experiment.

(3) DNA-protein interaction study. Streptavidin can be combined with biotinylated specificity target DNA or RNA fragments, can be used in the study of interaction between protein and nucleic acid.

Combined with biotin molecule operation (*for reference only*):

1. Before use

1.1. Buffer: The following are commonly used buffer components. Users can adjust the salt concentration and pH of the buffer according to their needs

1.2. Buffer I (applicable to combined with biotin nucleic acid) : 10 mm Tris - HCl (pH 7.5), 1 mm EDTA, 1 M NaCl, 0.01% ~ 0.1% Tween - 20

1.3. Buffer II (applicable to combined with biotin antibody and protein), PBS, pH 7.4, containing 0.05% Tween - 20, can according to need to add 0.01% ~ 0.1% BSA

1.4. Chemiluminescence Washing buffer: The user makes the washing solution according to the requirements and balances it to room temperature during use

1.5. Magnetic separator

1.6. Vortex generator

1.7. Rotary mixer

1.8. Pipetting, and suction

1.9. Suitable centrifuge tube

2. Combined with biotin nucleic acid

2.1. Placed magnetic beads bottles in a vortex generator in 20 s, oscillating weight suspended magnetic beads. With moving liquid take 100 mu L magnetic beads into the new centrifuge tube. The centrifuge tube was placed on a magnetic separator and allowed to stand for 1min (this operation was subsequently referred to as magnetic separation). The supernatant was sucked off with a pipet, and the centrifuge tube was removed from the magnetic separator.

Note: Users can calculate the amount of magnetic beads required according to the amount of biotinylated molecules and refer to the load of magnetic beads in the product information table. It is recommended that the amount of biotinylated molecules be added to be 1 to 2 times the magnetic bead loading to saturate the beads.

2.2. Add 1mL Buffer I to the centrifuge tube, cover the centrifuge tube cap, and resuspend the magnetic beads with sufficient shaking. On the magnetic separation, remove the supernatant.

Note: When the volume of magnetic beads is more than 1mL in step 2.1, Buffer I with the same volume as the magnetic beads is added.

2.3. Repeat "step 2.2 "at a time.

2.4. Mix with the 500 μL Buffer I dilution of biotin nucleic acid (the magnetic bead concentration of 2 mg/mL), sufficient oscillation suspended magnetic beads. Puts centrifugal pipe rotation mixing apparatus, 30 min at room temperature to swirl.

2.5. Magnetic separation and transfer the supernatant to a new centrifuge tube.

2.6. Wash the beads three times as described in Step 2.2.

2.7. According to the requirement of the follow-up experiments, add appropriate low salt buffer, heavy suspension magnetic beads. At this point combined with biotin nucleic acid steps to complete. Magnetic beads can be used for subsequent operations.

2.8. The user can through measuring the concentration of nucleic acid before and after the reaction, calculation, combine to the nucleic acid on magnetic beads ((former concentration - reaction after concentration) × reaction solution volume).

3. Combined with biotinylated antibody/protein operation process

3.1. Puts magnetic beads bottles of vortex generator in 20 s, oscillating weight suspended magnetic beads. With moving liquid take 100 μL magnetic beads into the new centrifuge tube. For magnetic separation, the supernatant was aspirated with a pipettor and the centrifuge tube was removed from the magnetic separator.

Note: Users can calculate the amount of magnetic beads required according to the amount of biotinylated molecules and refer to the load of magnetic beads in the product information table. It is recommended that the amount of biotinylated molecules be added to be 1 to 2 times the magnetic bead loading to saturate the beads.

3.2. Add 1mL Buffer II to the centrifuge tube, cover the centrifuge tube cap, and resuspend the magnetic beads with sufficient shaking. Magnetic separation was performed and the supernatant was removed.

Note: when the step 3.1 use magnetic bead size is greater than 1 ml, joined with the magnetic beads the same Buffer volume II.

3.3. Repeat "step 3.2 "twice, three times of washing.

3.4. Add 1mL biotinylated antibody/protein diluted with Buffer II (make the concentration of magnetic beads to 1mg/mL), and resuspend the magnetic beads with sufficient shaking. The centrifuge tube was placed on a rotary mixer and the mixture was rotated for 60 min at room temperature.

3.5. Magnetic separation, will that transferred to the new centrifugal supernatant fluid tube.

3.6. According to "step 3.2" method of washing magnetic beads five times.

3.7. The beads were resuspended by adding Buffer II or other suitable buffer as required for subsequent experiments. At this point, the binding biotinylated antibody/protein step is completed. Magnetic beads can be used for subsequent operations.

4. Magnetic particles chemiluminescence immune diagnosis process

4.1. Adjust the magnetic bead to the appropriate concentration (0.2-0.8mg /mL is recommended), place the magnetic bead on the vortex oscillator for 20s, and oscillate the re-suspended magnetic bead. Use a pipette to remove 50μL magnetic beads into the 96-well plate, magnetic separation, use a pipette to absorb the supernatant, and remove the 96-well plate from the magnetic separator.

4.2. 100μL biotinylated capture antibody was added to each well, and the magnetic beads were resuspended by sufficient shaking. After incubation in a 37℃ incubator for 15min, the beads were magnetically separated, and the supernatant was sucked off with a pipiter, and the 96-well plate was removed from the magnetic separator.

4.3. Add 200μL Washing buffer to each well, fully shake and resuspend the magnetic beads, magnetic separation, suction the supernatant with a pipiter, and remove the 96-well plate from the magnetic separator. This step is repeated for 2 times, and a total of 3 washes are performed.

4.4. Add 50μL of standard material or sample to be tested in each well, resuspend the magnetic beads with sufficient vibration, incubate at 37℃ for 15min, magnetically separate, absorb the supernatant with a pipiter, and remove the 96-well plate from the magnetic separator.

4.5. Each hole to join 200 μL Washing buffer, fully shock heavy suspension magnetic beads, magnetic separation, with supernatant liquid shift blotting, removed 96 - well plates from the magnetic separator, the repeat step 2 times, a total of Washing three times.

4.6. 100μL enzyme-labeled antibody was added to each well, and the magnetic beads were resuspended by sufficient shaking. After incubation in a 37 °C incubator for 15min, the beads were magnetically separated, and the supernatant was sucked off with a pipiter, and the 96-well plate was removed from the magnetic separator.

4.7. Each hole to join 200 μL Washing buffer, fully shock heavy suspension magnetic beads, magnetic separation, with supernatant liquid shift blotting, removed 96 - well plates from the magnetic separator, the repeat step 2 times, a total of Washing three times.

4.8. Add 150μL of substrate solution to each well, resuspend the magnetic beads with sufficient shaking, and incubate in the dark for 5min.

4.9. The 96-well plate was put into the chemiluminescence instrument for reading and corresponding data processing.

Note:

1. Freezing and other operations on magnetic beads should be avoided.
2. In order to reduce the loss of magnetic beads, the time of each magnetic separation should not be less than 1 min.
3. Move to take magnetic beads from magnetic beads save tube should be fully before shock heavy hanging evenly. Air bubbles should be avoided during operation.
4. It is recommended to use good quality pipet tips and reaction tubes to avoid losses caused by adhesion to magnetic beads and solution.
5. Biotin molecule can affect the size of the magnetic beads of loads. Users need to determine the loading of specific biotinylated molecules on magnetic beads based on experiments.
6. Biotin loads should be magnetic beads for the amount of molecules of 1 ~ 2 times, in order to make magnetic saturation.
7. If it is necessary to separate biotin from SA magnetic beads, the following methods can be used: Method 1: 0.1% SDS, boiling for 5min; Method 2: pH = 8.2, 95% formamide 10 mM EDTA, 65 °C for 5 min or 90 °C for 2 min. The dropout rate was 95%.
8. The products are all for scientific research use only. Do not use it for medical, clinical diagnosis or treatment, food and cosmetics, etc. Do not store them in ordinary residential areas.
9. For your safety and health, please wear laboratory clothes, disposable gloves and masks to operate.