BeaverBeads™ Streptavidin

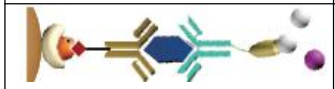
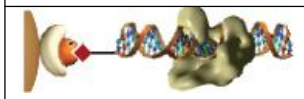
Product Introduction

(SA-Biotin) system has extremely high binding affinity (Kd=10^-15), It has a wide range of applications in the biological field. BeaverBeads™ Streptavidin covalently connects the SA to the solid carrier surface by using the patented protein coupling technique of Beaver, which can efficiently bind the ligands such as biotinylated antibodies, nucleic acids, proteins etc. The product adopts superparamagnetic microspheres with uniform size and regular morphology, which facilitates the rapid and convenient capture of target molecules and the realization of magnetic separation. This product can be equipped with automation equipment for high flux operation.

Product Information

Product information	SA Beads Cat. #22307	SA Beads Cat. #22305	SA Beads Cat. #22306	SA Beads Cat. #22308	SA Beads Cat. #22309
Bead size	1 μm	2 μm	5 μm	300 nm	2.8 μm
Free biotin (pmol/mg bead)	1100	1000	800	/	/
Biotinylated single stranded oligonucleotide(24nt) (pmol/mg bead)	500	400	400	450	450
Biotinylated IgG (μg/mg bead)	20	20	15	15	15
Bead concentration	10 mg/mL				
Bead surface	hydrophilic group				
Preservative solution	1×PBS，including 0.1%（w/v）BSA，0.1%（v/v）proclin-300				
Preservation condition	2~8℃				
Quality guarantee period	24 months				

Product Application Scope

Legend	Application direction	Sketch
	Immunoassay, separation of protein, cell sorting, etc.	BeaverBeads™ Streptavidin can specifically bind biotinylated antibody or antigen, as immune detection, ELISA solid-phase reaction carrier, or used for sorting cells
	Isolated nucleic acid, Preparation of Nucleic acid probes	BeaverBeads™ Streptavidin can specifically combine biological nucleic acid probe in the hybridization experiments that widely used in DNA, RNA.
	DNA-Study on protein interaction protein	BeaverBeads™ Streptavidin specifically targets with biotinylated DNA or RNA fragments can be used to study the interaction between proteins and nucleic acids.

Note:

SA	Nanotin	Antibody	Antigen	Complementary nucleic acid chain	Nucleic acid probe	DNA binding protein	Labelled antibody

Note: the application directions listed above have many forms of implementation, not limited to illustrations

Combination Biotinylated Molecular Operation Process (this operation is applicable to all products of BeaverBeads™ Streptavidin, see product list for details)

1. Preparation

1.1 Buffer: the following is the commonly used buffer composition, users can adjust the salt concentration of buffer and pH according to the need

1.2 Buffer I（Suitable for binding biotinylated nucleic acids）：10 mM Tris-HCl（pH 7.5），1 mM EDTA，1 M NaCl, 0.01%~0.1% Tween-20

1.3 Buffer II（Suitable for binding biotinylated antibodies / proteins）：PBS，pH 7.4，含 0.05% Tween-20，add 0.01%~0.1% BSA according to the need.

1.4 Cheiluminescence Washing Buffer: The user formulates lotion based on the needs and adjusts to room temperature before use.

1.5 Magnetic separator: Beaver magnetic separator can be used，Cat.No.60201，applicable for 1.5 mL、2 mL or 15 mL centrifuge tube; Cat.No.60302, applicable for 96-well plate, PCR plate, or PCR strips)

1.6 Vortex generator.

1.7 Rotating mixer.

1.8 Pipette and suction head.

1.9 Suitable centrifugal tubes.

2. The combination of biological nucleic acid

2.1 Put the magnetic bead bottle on the vortex oscillator for 20 s, and the oscillating magnetic beads are suspended. With a pipette to remove 100 μL beads to the new centrifuge tube. Put the centrifuge tube on a magnetic separator and placed for 1 min (hereinafter referred to as magnetic separation). Use a pipette to suck out the supernatant and remove the centrifuge tube from the magnetic separator.
Note: according to the number of biotinylated molecules and the amount of magnetic beads in the product information table, user can calculate the amount of magnetic beads to be used. It is suggested that the amount of biotinylated molecules is 1~2 times of magnetic beads, so that the magnetic beads are saturated.

2.2 Add 1 mL Buffer I to the centrifuge tube, cover the centrifuge tube cover, fully shake the suspended magnetic beads. Then magnetic separation, and remove supernatant.
Note: when step 2.1 takes the volume of magnetic beads larger than 1 mL, add Buffer I with the same size as the magnetic beads.

2.3 Repeat step 2.2 once.

2.4 Adding 500 μL diluted with Buffer I biotinylated nucleic acid (the magnetic beads concentration of 2 mg/mL), fully oscillating and resuspend magnetic. Put the centrifuge tube on a rotating mixer and rotated at room temperature for 30 min.

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

2.6 Washing magnetic beads three times according to "step 2.2" method.

2.7 According to the requirements of subsequent experiments, add with appropriate low salt buffer to resuspend magnetic beads. At this point, the biotin nucleic acid step is completed. Magnetic beads can be used for subsequent operations.

2.8 Users can determine the concentration of nucleic acid before and after reaction, then calculate amount of the nucleic acid binding to the beads, ((before the reaction concentration - after the reaction concentration) * the reaction solution volume).

3. Combination of biotinylated antibody / protein manipulation process

3.1 Put the magnetic bead bottle on the vortex oscillator for 20 s, and oscillating and suspended magnetic beads. Use a pipette to remove 100 μL magnetic beads into a new centrifuge tube. Magnetic separation, use a pipette to suck out the supernatant then remove the centrifuge tube from the magnetic separator.
Note: according to the number of biotinylated molecules and the amount of magnetic beads in the product information table, user can calculate the amount of magnetic beads to be used. It is suggested that the amount of biotinylated molecules is 1~2 times of magnetic beads, so that the magnetic beads are saturated.

3.2 Add 1 mL Buffer II to the centrifuge tube, cover the centrifuge tube cover, fully shake the suspended

magnetic beads. Magnetic separation, then remove supernatant.

Note: when step 3.1 takes the volume of magnetic beads larger than 1 mL, add Buffer II with the same size as the magnetic beads.

3.3 Repeat step 3.2 twice, washing three times in total.

3.4 Adding 1 mL diluted with Buffer II biotinylated antibody/protein (the magnetic beads concentration of 1 mg/mL), fully oscillating and resuspend magnetic. Put the centrifuge tube on a rotating mixer and rotated at room temperature for 30 min.

3.5 Magnetic separation, transfer the supernatant to a new centrifuge tube.

3.6 Washing magnetic beads five times according to "step3.2" method.

3.7 According to the requirements of subsequent experiments, add with Buffer II or other appropriate buffer to resuspend magnetic beads. At this point, the biotinylated antibody/protein step is completed. Magnetic beads can be used for subsequent operations.

4. **Magnetic Particle Cheiluminescence Immunodiagnostic Process**

4.1 Make sure that the beads have been adjusted to the proper concentration. Place the beads on the vortex generator for 20s and resuspend the beads with oscillation. Pipette 50 μL magnetic beads of the appropriate concentration into a 96-well plate, magnetic separation, discard the supernatant with a pipette, remove 96-well plate from the magnetic separator.

4.2 Add 100 μL capture antibody, fully resuspend the magnetic beads, incubate at 37° C for 15 min, magnetic separation, discard the supernatant with a pipette, and remove 96-well plate from the magnetic separator.

4.3 Add 200 μL Wash buffer, fully resuspend the magnetic beads, magnetic separation, discard the supernatant with a pipette, and remove the 96-well plate from the magnetic separator, and repeat this step 2 times, totally wash 3 times

4.4 Add 50 μL tested standard sample, fully resuspend the magnetic beads, incubate at 37° C for 15 min, magnetic separation, discard the supernatant with a pipette and remove 96-well plate from the magnetic separator.

4.5 Add 200 μL Wash buffer, fully resuspend the magnetic beads, magnetic separation, discard the supernatant with a pipette, and remove the 96-well plate from the magnetic separator, and repeat this step 2 times, totally wash 3 times.

4.6 Add 100 μL enzyme-labeled antibody, fully resuspend the magnetic beads, incubate at 37° C incubator for 15 min, magnetic separation, discard the supernatant with a pipette, remove 96-well plate from the magnetic separator.

4.7 Add 200 μL Wash buffer, fully resuspend the magnetic beads, magnetic separation, discard the supernatant with a pipette, remove the 96-well plate from the magnetic separator, and repeat this step 2 times, totally wash 3 times.

4.8 Add 150 μL substrate solution, fully resuspend the magnetic beads, and incubate for 5 min in the dark.

4.9 Place the 96-well plate into the chemiluminometer and perform the appropriate data processing.

Note

1. Avoid freezing magnetic beads and other operations.
2. In order to reduce the loss of magnetic beads, the time of magnetic separation should be no less than 1 min.
3. The magnetic beads should be fully shake and suspended evenly before the magnetic beads are removed from the magnetic storage tube. Bubbles should be avoided during operation.
4. It is recommended to use a good pipette suction head and a reaction tube to avoid losses due to adhesion of magnetic beads and solution.
5. The size of biotinylated molecules affects the magnetic bead loading. Users need to determine the load of magnetic beads to specific biotinylated molecules according to the experiment.
6. The amount of biotinylated molecules should be 1~2 times of the magnetic beads, in order to saturate the magnetic beads.
7. This product is for research and use only.

Product List

	Product name	Specification
22305-1	BeaverBeads™ Streptavidin	2 μm，1 mL，10 mg/mL
22305-10	BeaverBeads™ Streptavidin	2 μm，10 mL，10 mg/mL
22305-100	BeaverBeads™ Streptavidin	2 μm，100 mL，10 mg/mL
22306-1	BeaverBeads™ Streptavidin	5 μm，1 mL，10 mg/mL
22306-10	BeaverBeads™ Streptavidin	5 μm，10 mL，10 mg/mL
22306-100	BeaverBeads™ Streptavidin	5 μm，100 mL，10 mg/mL
22307-1	BeaverBeads™ Streptavidin	1 μm，1 mL，10 mg/mL
22307-10	BeaverBeads™ Streptavidin	1 μm，10 mL，10 mg/mL
22307-100	BeaverBeads™ Streptavidin	1 μm，100 mL，10 mg/mL
22308-1	BeaverBeads™ Streptavidin	5 μm，1 mL，10 mg/mL
22308-10	BeaverBeads™ Streptavidin	5 μm，10 mL，10 mg/mL
22308-100	BeaverBeads™ Streptavidin	5 μm，100 mL，10 mg/mL
22309-1	BeaverBeads™ Streptavidin	2.8 μm，1 mL，10 mg/mL
22309-10	BeaverBeads™ Streptavidin	2.8 μm，10 mL，10 mg/mL
22309-100	BeaverBeads™ Streptavidin	2.8 μm，100 mL，10 mg/mL
60201	Magnetic Separator Stand 2/15	1/Pk., suitable for 1.5 mL, 2 mL EP tubes and 15 mL centrifuge tubes
60302	Magnetic Separator Stand 96 I	1/Pk., suitable for 96 hole flat plate and PCR plate
60203	Magnetic Separator Stand 50	1/Pk., suitable for 50 mL centrifuge tubes
60304	Magnetic Separator Stand 96 III	1/Pk., suitable for 96 hole Deep-well Multiwell Plate

GeneBio Systems, Inc.™

1-833 LabShop (1 -833 522 7467)
order@genebiosystems.com
www. genebiosystems.com