

BeaverBeads™ Streptavidin

Product Introduction

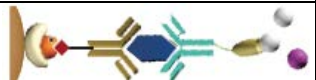

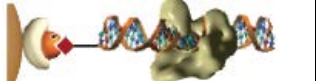









(SA-Biotin) system has extremely high binding affinity ($K_d=10^{-15}$), It has a wide range of applications in the biological field. BeaverBeads™ Streptavidin covalently connects the SA to the beads surface by using the patented protein coupling technique of Beaver, which can efficiently bind the ligands 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 highthrough operation.

Product Information

Product information	SA Beads (1 μm)	SA Beads (2 μm)	SA Beads (5 μm)
Circulating biotin	1100 pmol/mg bead	1000 pmol/mg bead	600 pmol/mg bead
Biotinylated single stranded oligonucleotide(24nt)	500 pmol/mg bead	400 pmol/mg bead	200 pmol/mg bead
Biotinylated IgG	20 μg/mg bead	20 μg/mg bead	10 μg/mg bead
Bead concentration	10 mg/mL		
Bead surface	hydrophilic group		
Preservative solution	1×PBS, includes 0.1% (v/v) Tween -20, 0.1% (w/v) NaN ₃		
Preservation condition	2~8℃		
Shelf life	12 months		

Product Application Area

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

Illustration	Application	Description
	Immunoassay, separation of protein, cell sorting, etc.	BeaverBeads™ Streptavidin can specifically bind biotinylated antibody or antigen, as immune detection, ELISA, or used for sorting cells etc.
	Nucleic acid, isolation Making Nucleic acid probes	BeaverBeads™ Streptavidin can specifically combine biological nucleic acid probe that widely used in the DNA, RNA, hybridization experiments.
	Research on interaction Between DNA & 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	DNA binding protein	Labelled antibody

Combination Biotinylated Molecular Operation Process (applicable to all 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 needs.
- 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, 0.05% Tween-20, could add 0.01%~0.1% BSA according to the needs.
- 1.4 Magnetic separator: Beaver magnetic separator can be used, product.No.60201, suitable for 1.5 mL、2mL or 15 mL centrifuge tube.
- 1.5 Vortex oscillator.
- 1.6 Rotating mixer.
- 1.7 Pipette and pipette tips.
- 1.8 Appropriate centrifuge tubes.

2. The combination of biotinylated nucleic acid

- 2.1 Put the magnetic bead bottle on the vortex oscillator for 20 s, until magnetic beads are suspended. Use a pipette to remove 100 μL beads to a new centrifuge tube. Put the centrifuge tube on a magnetic separator and wait for 1 min (hereinafter referred 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 capacity 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 lid, fully shake the suspended magnetic beads. Then magnetic separation, and remove supernatant.
Note: when 2.1 takes the volume of magnetic beads larger than 1 mL, add Buffer I with the same volume as the magnetic beads.
- 2.3 Repeat 2.2 once.
- 2.4 Add 500 μL diluted with Buffer I biotinylated nucleic acid (to make the magnetic beads concentration of 2 mg/mL), fully oscillating and resuspend magnetic beads. Put the centrifuge tube on a rotating mixer and rotate at room temperature for 30 min.
- 2.5 Magnetic separation, remove the supernatant to a new centrifuge tube.
- 2.6 Washing magnetic beads three times following 2.2.
- 2.7 According to the requirements of subsequent experiments, add appropriate low salt buffer to resuspend magnetic beads. At this point, the binding biotinylated nucleic acid process. Magnetic beads can be used for subsequent operations.
- 2.8 Users can determine the concentration of nucleic acid before and after reaction, then calculate binding amount of the nucleic acid to the beads, ((the reaction concentration before - the reaction concentration after) * the reaction solution volume).

3. Combination of biotinylated antibody / protein.

- 3.1 Put the magnetic bead bottle on the vortex oscillator for 20 s, to suspended magnetic beads. Use a pipette to remove 100 μL magnetic beads into a new centrifuge tube. Magnetic separation, then 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 capacity 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 lid, fully shake the suspended magnetic beads. Magnetic separation, then remove supernatant.
Note: when 3.1 takes the volume of magnetic beads larger than 1 mL, add Buffer II with the same volume as the magnetic beads.

- 3.3 Repeat 3.2 twice, washing three times in total.
- 3.4 Add 1 mL diluted with Buffer II biotinylated antibody/protein (to make the magnetic beads concentration of 1 mg/mL), fully oscillating and resuspend magnetic beads. Put the centrifuge tube on a rotating mixer and rotate at room temperature for 30 min.
- 3.5 Magnetic separation, remove the supernatant to a new centrifuge tube.
- 3.6 Washing magnetic beads five times following 3.2.
- 3.7 According to the requirements of subsequent experiments, add Buffer II or other appropriate buffer to resuspend magnetic beads. At this point, the binding of biotinylated antibody/protein process is completed. Magnetic beads can be used for subsequent operations.

Note

1. Avoid freezing magnetic beads.
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 shaken and suspended 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 tip and a reaction tube to avoid magnetic beads and solution losses due to the adhesion.
5. The size of biotinylated molecules affects the magnetic bead capacity. Users need to determine the capacity of magnetic beads to specific biotinylated molecules.
6. In order to saturate magnetic beads the amount of biotinylated molecules should be 1~2 times of the magnetic beads amount.
7. This product is for research use only.

Product List

Product No.	Product name	Specification
22305-1	BeaverBeads TM Streptavidin	2 μm, 1 mL, 10 mg/mL
22305-10	BeaverBeads TM Streptavidin	2 μm, 10 mL, 10 mg/mL
22305-100	BeaverBeads TM Streptavidin	2 μm, 100 mL, 10 mg/mL
22306-1	BeaverBeads TM Streptavidin	5 μm, 1 mL, 10 mg/mL
22306-10	BeaverBeads TM Streptavidin	5 μm, 10 mL, 10 mg/mL
22306-100	BeaverBeads TM Streptavidin	5 μm, 100 mL, 10 mg/mL
22307-1	BeaverBeads TM Streptavidin	1 μm, 1 mL, 10 mg/mL
22307-10	BeaverBeads TM Streptavidin	1 μm, 10 mL, 10 mg/mL
22307-100	BeaverBeads TM Streptavidin	1 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
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

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