VAHTS CA-28 Streptavidin Beads

N512

Version 23.1

Product Description

VAHTS CA-28 Streptavidin Beads are hydrophilic superparamagnetic polystyrene microspheres covalently bound with highly purified streptavidin and have a free biotin-binding capacity >950 pmol/mg. Utilizing the high binding affinity of the streptavidin-biotin interaction (Kd = 10^{-15} mol/L), the product can quickly and efficiently bind with biotinylated nucleic acids, antibodies or other biotinylated ligands and targets. It is applicable to nucleic acid hybridization capture and separation. The magnetic beads have uniform particle sizes, regular morphology and good repeatability and inter-lot stability.

Components

Components	N512-01	N512-02
VAHTS CA-28 Streptavidin Beads*	2.5 ml	10 ml

* The concentration is 10 mg/ml, and the stock solution is PBST solution (pH 7.4) containing 0.005% ProClin 300.

Storage

Store at 2 ~ 8°C and adjust the shipping method according to the destination.

Applications

◇ The magnetic beads can specifically bind to biotinylated probes for capturing target nucleic acid fragments.

◇ The magnetic beads can specifically bind to biotinylated antibodies or antigens and it can be used for immunoassay, nucleic acid protein interaction research, etc.

Notes

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

1. Do not store the magnetic beads below 0°C.
2. Before aspirating the magnetic beads, mix the beads well by vortexing, and avoid vigorous shaking.
3. Use low-binding pipette tips when aspirating magnetic beads to prevent loss due to beads adhering to the tip.
4. Avoid high-speed centrifugation or prolonged attraction of magnetic beads on the magnetic rack to prevent bead aggregation.
5. If magnetic beads in a high-salt solution adhere to the tube wall during incubation, 0.01% - 0.05% Tween 20 can be added to the solution in advance.
6. Prolonged drying of the beads can lead to cracks and affect the capture efficiency.

Experiment Process

1. The following are general procedures for streptavidin beads. You may optimize the salt concentration and pH of the reagents according to sample requirements.

Recommended Binding & Washing Buffer (Self-prepared)	
2 × B&W Buffer (for binding biotinylated nucleic acid)	10 mM Tris-HCl (pH 7.5), 1 mM EDTA, 2 M NaCl, 0.1% Tween 20
PBST Buffer (for binding biotinylated antibody/protein)	PBS (pH 7.4), 0.05% Tween 20

2. Resuspend the beads thoroughly by vortexing for 30 sec, and transfer 100 µl of beads into a 1.5 ml EP tube or eight tube strips. Place it on the magnetic rack for 1 min to separate the magnetic beads from the solution and remove the supernatant.
   ▲ According to the content of biotinylated nucleic acid or protein in the experimental sample, refer to the magnetic bead load (1 mg (100 µl) magnetic beads bind about 10 µg biotinylated double-stranded DNA or IgG), and calculate the appropriate amount of magnetic beads .
3. Remove the EP tube from the magnetic rack, add 1 × B&W Buffer (for nucleic acid binding) or PBST Buffer (for protein binding) at a volume equal to the initial magnetic bead volume to resuspend the magnetic beads, and mix the solution thoroughly by gently pipetting up and down 10 times or vortex shaking for about 10 sec. Centrifuge the EP tube briefly and place it on the magnetic rack for 1 min to separate the magnetic beads from the solution and remove the supernatant. Repeat this step once.
   ▲ 1 × B&W Buffer preparation: add 1 volume of 2 × B&W Buffer to 1 volume of Nuclease-free ddH_2O and mix well.
4. Add 50 µl of 2 × B&W Buffer (for nucleic acid binding) or PBST Buffer (for protein binding) to resuspend the magnetic beads, and then add 50 µl of biotinylated nucleic acid or protein sample (if the sample is less than 50 µl, it can be supplement with Nuclease-free ddH_2O). Mix the solution thoroughly by gently pipetting up and down 10 times or vortex shaking for about 10 sec. Incubate the sample in a vertical rotating mixer at room temperature for 15 - 30 min. Centrifuge the EP tube briefly and place it on the magnetic rack for 1 min to separate the magnetic beads from the solution. Transfer the supernatant to a new EP tube for subsequent use.
   ▲ The speed of vertical rotating mixer should not be too high, 20 - 30 rpm is recommended.
   ▲ The binding volume can be adjusted according to the sample volume and concentration. Note that the ratio of binding buffer to sample volume should be kept at 1:1.
   ▲ The amount of nucleic acid or protein bound to magnetic beads can be calculated by measuring the concentration of nucleic acid or protein before and after the reaction.
5. After the combination is complete, add 1 × B&W Buffer (for nucleic acid binding) or PBST Buffer (for protein binding) at a volume equal to the initial magnetic bead volume to resuspend the magnetic beads, and mix the solution thoroughly by gently pipetting up and down 10 times or vortex shaking for about 10 sec. Centrifuge the EP tube briefly and place it on the magnetic rack for 1 min to separate the magnetic beads from the solution and remove the supernatant. Repeat this step once.
6. According to the requirements of subsequent experiments, resuspend the magnetic beads in a buffer with low salt concentration, suitable for downstream applications.