AccuNanoBead™ Streptavidin Magnetic Beads

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1. Description

AccuNanoBead™ Streptavidin Magnetic beads provides silica based magnetic beads conjugated with highly purified Streptavidin (Purity >95%). Streptavidin Magnetic beads can be performed in simple and quick steps due to a fast magnetic response rate.

AccuNanoBead™ Streptavidin Magnetic beads are not only for automated immunoprecipitation, but for other protein interaction studies, such as DNA-protein pulldowns, purification of biotin-labeled proteins and nucleic acids.

2. Components

Kit components	Cat. No. TA-1015-1
Streptavidin Magnetic beads	50 mg /5 ml
Manual	1 ea

***** Streptavidin Magnetic beads are contained in storage PBS buffer (137 mM NaCl, 2.7 mM KCl, 10 mM Na2HPO4, 2 mM KH2PO4, pH 7.4)

3. Materials to be supplied by user

Components	
BSA	
PBS Buffer	137 mM NaCl, 2.7 mM KCl, 10 mM Na2HPO4, 2 mM KH2PO4, pH 7.4
Reaction Buffer	1,0 M NaHCO3, pH 8.2
Protein Elution Buffer	0.1 M Glycine-HCl, pH 2.5
Oligo Elution Buffer	10 mM EDTA, pH 8.2 and 95 % formamide
Stop Buffer	2.0 M Glycine
Neutralization Buffer	1.0 M Tris-HCl, pH 9.0
Magnet or Magnetic Separation rack for Magnetic beads	

Buffer could be changed to user specific Binding/washing buffer.

4. Storage condition

AccuNanoBead™ Streptavidin Magnetic beads are supplied in storage buffer and should be stored at 2~8°C

5. Experimental Procedure

This protocol offers a general guideline. Optimization is required for your research.

Preparation

Amount of beads and buffer can be altered depending on users' needs or convenience.

1. Resuspend Magnetic beads in the vial by gently vortxing.
2. Transfer 200 ul (2 mg) Magnetic beads into a 1.5 ml tube.
3. Place the tube on magnet to pull down beads and completely remove supernatant.
4. Add 0.5 ml PBS buffer and wash the beads well. Place the tube on magnet to remove supernatant. Repeat this process once more.

Binding Protein / Antibody or Nucleic acid

1. Add 0.2 ~ 1 ml biotinylated sample to beads.
2. Add 1x PBS, 0.1% BSA, pH 7.4 into the tube to 1 ml. Incubate in rotator for 15 min at room temperature
3. Place the tube on magnet to remove supernatant. Completely remove and discard supernatant.
4. Add 0.5 ml PBS buffer, remove the tube from the magnetic separator and wash the beads well. Place the tube on magnet to remove supernatant. Repeat this process one more time.

Elution

A. Protein or antibody

1a. Non-denaturing condition
Add the appropriate amount at protein elution buffer and incubate for a few min at room temperature. Add immediately 0.1X neutralization buffer.
Note) Do not allow the elution reaction to proceed for more than 10 min to minimize streptavidin leaching.

1b. Denaturing condition
Add appropriate amount of SDS-PAGE reducing sample buffer and boiling the samples for 5 minutes.

2. Place the tube on magnet and transfer the supernatant containing target protein to a new tube

B. Nucleic acid

1a. Biotinylated Nucleic acid
Add appropriate amount of oligo elution Buffer and incubate at 65º C for 2 min.

2b. Non-biotinylated oligo
Add appropriate amount of double distilled H_2O and heat treatment for 5 min. Short fragment heating condition is at 65 ~ 70 ºC and large fragment is at 95 ºC.

2. Place the tube on magnet and transfer the supernatant containing target DNA to a new tube.

6. Troubleshooting

6.1 Protein does not elute

Magnetic beads may have attached to other antibodies. In this case, antibodies would separate from beads at pH 2.0.

6.2 Low protein recovery

Some proteins will lysis during experiment. Add a protease inhibitor to the samples. The beads or antigen used may be insufficient. Add more magnetic beads or antigen for enough capturing.

6.3 Low activity protein

A few proteins are acid-labile. For these low pH sensitive-proteins, user should try other alternative elution methods

6.4 Multiple bands are observed in the eluted protein

For reduced non-specific binding , add NaCl (50-200 mM, final concentration) to binding and elution buffer.

7. Related Products

Cat. No.	Product
TM-1010	*MagListo*™-2 magnetic separation rack
TM-1020	*MagListo*™-15 magnetic separation rack
TM-1030	*MagListo*™-50 magnetic separation rack
TM-1040	*MagListo*™-96 magnetic separation rack