[Cat. No.] TA-1019-1

Introduction

Bioneer AccuNanoBead Thiol Magnetic NanoBeads are uniform, silica-based paramagnetic beads coated with high density thiol functional groups on the surface. The beads are used to reversible couple thiol-containing ligands. Thiol Magnetic Beads are most suitable for conjugation of large proteins.

Features & Benefits

- Recommended coupling conditions: pH 4–8, 4°C to 25°C, 3–16 h.
- Specific isolation of cysteine proteins/peptides
- Stable covalent bond with minimal ligand leakage
- Produces reusable immunoaffinity matrices
- Low nonspecific binding
- Applications: Cell sorting, Immunoprecipitation; Purification for Antibodies, Proteins/Peptides, DNA/RNA

Components

Components	Amount
AccuNanoBead™ Thiol Magnetic NanoBeads	0.5 g/ 25ml in 20% Ethanol

*** Note:** For research use only. Not for use in diagnostic or therapeutic procedures.

Materials to be Prepared by User

Magnetic Separator	
Coupling Buffer	0.1 M sodium phosphate, pH 7.0 , 5mM EDTA
L-Cysteine•HCl	
TCEP(tris(2-carboxyethyl)phosphine)	
Washing Buffer	1 M NaCl, 0.05% NaN3

*** Note:** Buffer could be changed depending on user's needs.

Specifications

AccuNanoBead™ Thiol Magnetic NanoBeads	
Composition	Thiol Magnetic NanoBeads
Binding capacity	≥ 400 nmol/g-beads
Size	Average 400 nm
Concentration	0.5 g(Solid)

Storage

Store at room temperature.
This product can be stable for 3 years at room temperature (25°C).

Expired date

Indicated on the label.

Precautions

- Do not vigorously vortex *AccuNanoBead*™ Thiol Magnetic NanoBeads
- An exact protocol may need to be optimized by the user

Online Resources

Korean **English**

Visit our product page for additional information and protocols

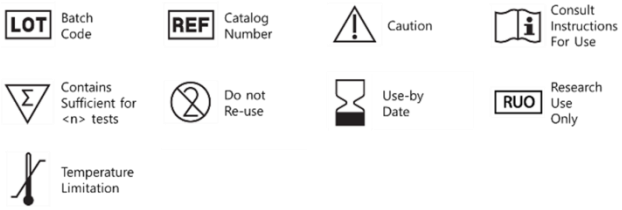
Ordering Information

Description	Cat. No.
AccuNanoBead™ Thiol Magnetic NanoBeads	TA-1019-1

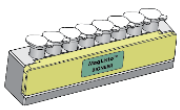
Notice

BIONEER corporation reserves the right to make corrections, modifications, improvements and other changes to its products, services, specifications or product descriptions at any time without notice.

Explanation of Symbols



Experimental Procedures (The protocols are scalable and can be optimized)

Steps		Procedure Details
1	 **Sample Preparation**	1. Dissolve 1-10mg protein/peptide in 1ml coupling buffer. 2. If samples have already suspended in other buffer, dilute samples with equal volume of coupling buffer.
2	 **Magnetic Beads Preparation**	1. Transfer 30 mg Magnetic beads to a centrifuge tube. Resuspend the beads by adding 1 ml coupling buffer and mix the beads by vigorous vortexing for 1-2 minutes. 2. Place the tube on the magnetic separator for 1-3 minutes. Remove the supernatant while the tube remains on the separator. Remove the tube from the separator and resuspend the beads with 1 ml coupling buffer by vortex for 30 seconds. 3. Repeat step-2 once.
3	 **Coupling**	1. Add sample from 1-1 to the washed magnetic beads and incubate for 60 minutes at room temperature with gentle rotation. 2. Washed the magnetic beads with 1ml Coupling buffer for four times as described in 1-2. 3. Block the excess active groups on the beads by suspending the beads in 1ml Coupling buffer containing 8mg L- Cysteine•HCl and incubate 30-60 minutes at room temperature with gentle rotation. 4. Wash the beads with 1ml Washing buffer four times 5. Resuspend the beads in PBS buffer containing 0.05% sodium azide and store at 4 C.
4	 **Affinity Purification Protocol**	1. Transfer optimal amount of the beads to a centrifuge tube. Place the tube on the magnetic separator for 1-3 minutes. Remove the supernatant while the tube remains on the separator. 2. Remove the tube and resuspend the beads with 5 bed bead volume of PBS buffer by vortex for 30 seconds. Leave the tube at room temperature for 1-3 minutes. Place the tube on the magnetic separator for 1-3 minutes. Remove the supernatant while the tube remains on the separator. 3. Repeat step 2 two times 4. Add washed beads to crude sample containing target protein and incubate at room temperature or desired temperature for 1-2 hours (Lower temperature require longer incubation time). 5. Extensively wash the beads with 5 bed bead volumes of PBS buffer or 1M NaCl until the absorbance of elute at 280 nm approaches background level (OD 280 < 0.05). 6. Elute the target protein by appropriated methods such as low pH (2-4), high pH (10-12), high salt, high temperature. affinity elution or boiling in SDS-PAGE loading buffer.
5	 **Release the thiol containing ligand from magnetic beads**	1. Resuspend the magnetic beads with 0.1 M DTT (dithiothreitol) or Mercaptoethanol solution and incubate at room temperature for 30 minutes with gentle rotation. 2. Place the tube on the magnetic separator for 1-3 minutes. Remove the supernatant containing the released ligand to a new centrifuge tube while the tube remains on the separator. 3. Perform buffer change by gel filtration or dialysis to dissolve the ligand into desired buffer.