AccuNanoBead™ Carboxyl Magnetic NanoBeads

[Cat. No.] TA-1012-1

Introduction

Bioneer AccuNanoBead Carboxyl Magnetic NanoBeads are uniform, silica-based paramagnetic beads coated with high density of carboxyl functional groups on the surface. The beads are used to covalently conjugate primary amine- containing ligands via a stable amide bond Carboxyl Magnetic NanoBeads are most suitable for conjugation of larger protein.

Features & Benefits

- Covalently couples with high efficiency
- Stable covalent bond with low levels of ligand leakage
- Produces reusable immunoaffinity matrices
- Low nonspecific binding
- Immobilize protein or peptide
- Application: Purification for Antibody Protein/Peptide, DNA/RNA; Cell sorting, Immunoprecipitation

Components

Components	Amount
AccuNanoBead™ Carboxyl Magnetic NanoBeads	0.5 g

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

Materials to be Prepared by User

Magnetic Separator	
Coupling Buffer	10 mM potassium phosphate, 0.15 M NaCl, pH 5.5
Coupling Agent	EDC [1-ethyl-3(3-dimethyaminopropyl) carbodiimide],
Coupling agent solution	Freshly prepared coupling agent solution by dissolving 57mg EDC in 100 ml ddH2O. Use immediately after preparation because this solution is unstable.
Wash/Storage Buffer	10 mM Tris base, 0.15 M NaCl, 0.1% (w/v) BSA, 1mM EDTA, 0.1% sodium azide, pH 7.5. Blocking buffer: 1 M Glycine, pH 8.0

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

Specifications

AccuNanoBead™ Carboxyl Magnetic NanoBeads	
Composition	Carboxyl Magnetic NanoBeads
Binding capacity	DMT Loading: ≥ 15 umol/g of 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*™ Carboxyl 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

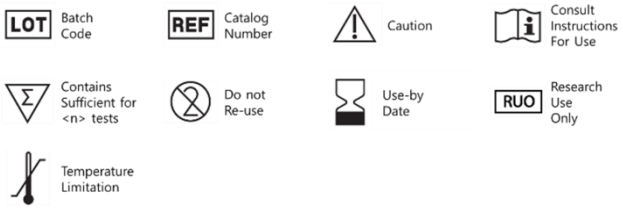
Ordering Information

Description	Cat. No.
AccuNanoBead™ Carboxyl Magnetic NanoBeads	TA-1012-1

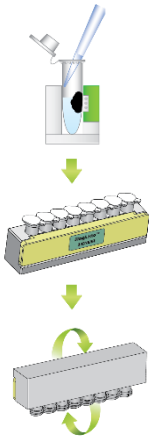
Notice

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	 **Magnetic Beads Preparation**	1 Transfer 10 ml of the beads to a 50ml 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 30ml coupling 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 Resuspend the beads in 10ml of coupling buffer.
2	 **Coupling of Protein**	1 Prepare 10 ml of protein solution (0.5-1mg/ml) with ddH2O, mix with washed and resuspended beads and mix very well. 2 Add 4ml of coupling agent (EDC) solution into the tube containing and shake to mix well. 3 Leave reaction for 24 hr at room temperature with gentle rotation. Maintain the pH between 4.5-6.0 with 0.1N HCl during coupling
3	 **Remove Uncoupled Protein**	1. When the reaction is finished, Place the tube on the magnetic separator for 1-3 minutes. Remove the supernatant while the tube remains on the separator. 2 Washing the beads with 30 ml wash/storage buffer three times. 3 Incubate the beads with 5 ml of blocking buffer at room temperature for 1-2 hours 4 Washing the beads with 30 ml wash/storage buffer three times 5 Suspend the beads with desired volume of wash/storage buffer and store at 4º C.
4	 **General 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.