AccuNanoBead™ Silica Magnetic NanoBeads, size 200 nm

(V0/2023-12-14)

[Cat. No.] TB-1010-1

Introduction

Bioneer *AccuNanoBead*™ silica Magnetic Nanobeads are silica coated paramagnetic beads. Generally, nucleic acid is bound to hydroxyl group of silica in presence of chaotropic salts such as guanidine hydrochloride, guanidine thiocyanate and sodium iodide. So, the silica Magnetic Nanobeads can be used to isolate nucleic acid from biological sample for the purpose of molecular biology research and molecular diagnostic application. In addition, adapting the beads to liquid handling machine can make high-throughput and automatic purification of nucleic acid possible.

Features & Benefits

- Miniscule size (Average sizes of 200 nm)
- Uniformed size distribution
- Sphere form of silica based magnetic beads
- Fast magnetic response (1 second for capturing beads)
- High yields: up to 10 ug of DNA (per 5 mg beads)
  up to 100 ug of RNA (per 5 mg beads)

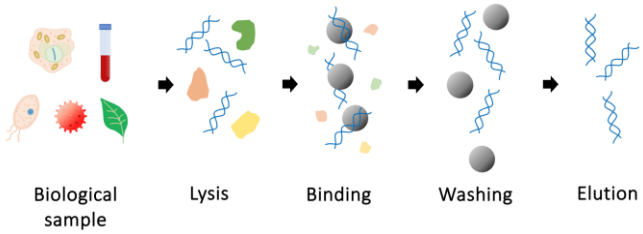
Specifications

Characteristics	*AccuNanoBead*™ Silica Magnetic NanoBeads, 400 nm
Surface group	Si-OH
Binding capacity	Up to 10 ug of DNA/5 mg of beads Up to 100 ug of RNA/5 mg of beads
Size	Average 400 nm
Concentration	20 mg/ml (aqueous solution)

Application

Please note the following suggestions for preparing buffers of nucleic acid isolation. But Appropriate buffers can be differed depending on the types of samples.

1. Lysis step
   This step is for homogenization and solubilization of biological sample before nucleic acid extraction. The buffers of neutral pH with surfactants such as SDS, Triton X-100 and Tween 20 are used for lysis step. And for genomic DNA isolation, Protease treatment is needed to break histone proteins bound to genomic DNA.
2. Binding step
   This step is for binding nucleic acid to the surface of the beads. The solutions including chaotropic salts such as guanidine hydrochloride, guanidine thiocyanate and sodium iodide can be used. The proper concentration of the salts can be differed depending on the types of samples. And the addition of alcohol such as ethanol and 2-propanol to the chaotropic salt solution helps nucleic acid bind to the surface of the beads.
3. Washing step
   This step is for washing away the substance except nucleic acid from the beads. The solution including ethanol is usually used for washing step. The number of washing and ethanol concentration can be differed depending on the types of samples.
4. Elution step
   This step is for unbinding nucleic acid from the beads. The solution of weak basic pH is usually used for elution. Heating during the step helps elution of nucleic acid.



* *MagListo*™ Nucleic Acid Extraction Kit provides the optimal buffer sets and the protocols for nucleic acid isolation from various samples using *AccuNanoBead*™ Silica Magnetic Nanobeads.

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*™ Silica 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

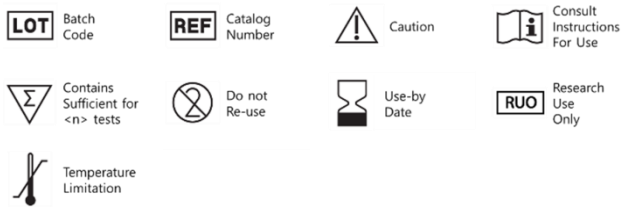
Ordering Information

Product	Cat.No.	Amount
AccuNanoBead™ Silica Magnetic Nanobeads, size 400 nm	TB-1010-1	0.5 g/25 ml
	TB-1010-2	1.0 g/50 ml
	TB-1010-3	10 g/500 ml

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	**Coupling of Protein**	1 Disperse the dried beads in the coupling buffer. 2 Prepare protein solution (0.5-1mg/ml concentration) and mix well with the dispersed beads. 3 Add the coupling agent (EDC) solution to the tube and shake to mix well. 4 Rotate with a low-speed rotator and react for 24 hours at room temperature. 5 When the reaction is complete, remove the tube supernatant by placing the tube close to a magnet. 6 Wash beads three times with wash/storage buffer. 7 Store dispersed beads in wash/storage buffer at 4ºC.