DEAE Magnetic Particles
PRODUCT DATA SHEET

DEAE Magnetic Particles

Description

DEAE magnetic particles is a weak anion exchange magnetic bead with fast magnetic response, rich ion exchange ability and high protein binding ability. The ion exchange ligand is diethylaminoethyl (DEAE), which maintains a stable high protein binding capacity in the working range of pH 3-12.

Compared with traditional column chromatography purification methods, DEAE magnetic beads do not require pretreatment of crude protein samples (such as repeated and cumbersome centrifugation, time-consuming and laborious filtration operations), in addition, there is no need to control the flow rate and column pressure, and there is no need for expensive chromatography equipment. For skilled operators, the extraction of high-purity target proteins can be completed in a very short time, and the parallel processing of multiple samples can be easily achieved to achieve high-throughput protein purification.

For custom sizes, formulations or bulk quantities please contact our customer service department.

Website: www.abvigen.com Phone: +1 929-202-3014 Email: info@abvigenus.com

Characteristics

Particle size: 30~150 um

Ion exchange type: Weak anionic group

Total ionic capacity: 110~170 μmol/mL Gel

Protein binding capacity: ≥ 110 mg BSA/mL Gel

Preservative solution: 20% ethanol

Suspension concentration: 10% (V/V) bead suspension

Storage temperature: 2~30°C (long-term storage, 2~8°C recommended)

Operating pH range: 3-12

Quality guarantee period: 24 months (stored at 2~8°C)

(Note: 1. Protein binding amount is related to the properties of target proteins, and this value is only for reference; 2. 1 mL magnetic bead suspension contains 100 μL magnetic beads.)

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Advantages

1. Fast magnetic response, reduce operation time

2. Magnetic beads have good dispersion and resuspension, improving the ease of operation

3. The ligand has good physicochemical stability, which improves the reliability and repeatability of experimental results

Operation process (Taking the sample containing BSA protein as an example)

1. Magnetic bead pretreatment (balancing): the DEAE magnetic bead vortex oscillates for 30 s, so that the magnetic bead is fully suspended; A certain amount of 10% (V/V) magnetic bead suspension was placed in a 50 mL centrifuge tube. Magnetic separation was carried out on the magnetic bead suspension, the supernatant was discarded, and 20 mL balance buffer was added to wash the magnetic bead for 3 times, each time mixing vertically for 2 min.

Note: In order to obtain the maximum recovery of the target protein, the experimenter needs to add an excess of DEAE magnetic beads, generally greater than 20% of the protein binding amount. For the samples containing low abundance of target protein, the recovery rate of target protein from magnetic beads will be reduced, so the amount of magnetic beads should be increased continuously.

2. Protein adsorption: The pre-treated magnetic beads were added into the sample solution containing BSA protein, swirled for 30 s, placed in a vertical mixer for 30~60 min, so that the sample and magnetic beads were fully in contact and adsorbed, and then magnetic separation was carried out, and the superserum was removed.

Note: For more efficient adsorption of bound substances, the equilibrium buffer should preferably contain a low ionic strength, the pH value selected should differ from the isoelectric point of the target protein by at least one pH unit, and the pH of the selected salt buffer fluctuates within 0.5 pH. The adsorption time of the target protein and magnetic beads is related to the properties of the protein itself.

3. Magnetic bead washing: Add 20 mL of balance buffer, swirl oscillation and re-suspension magnetic bead for 30 s, magnetic separation, remove the supernatant. Repeat this operation three times.

4. Protein elution: Add appropriate amount of eluent to the centrifuge tube that has completed magnetic bead washing for protein elution. Then the centrifugal tube was placed in the vertical mixer and mixed for 10-15 min for magnetic separation, and the supernatant was collected into the new

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centrifugal tube. There are two main elution methods: high salt concentration elution (including a balanced buffer of 1-2 M NaCl) and low pH elution (select a pH range below the isoelectric point of the target protein).

5. Regeneration of magnetic beads: Generally washed 3 to 5 times with 2 M NaCl solution, and then re-balanced with balance buffer. After repeated use of magnetic beads, precipitated proteins, strong hydrophobic proteins, lipoproteins and other impurities will be non-specific adsorbed to magnetic beads, in order to ensure the efficiency of magnetic beads, it is recommended to carry out in-place cleaning (CIP).

6. In-place cleaning (CIP): Use 1.0 M NaOH, 70% ethanol or 30% isopropyl alcohol, purified water to wash the magnetic beads twice in sequence; Finally, 20% ethanol was added and the magnetic beads were stored at 2-8°C.

Storage

This product should be stored at 2 - 8°C. **DO NOT FREEZE**.

Notes

1. This product should not be frozen, dried or centrifuged. Freezing, drying and centrifugation will cause agglomeration of magnetic beads, which is not easy to be resuspended and dispersed, and affect the chemical activity of functional groups on the surface of magnetic beads.
2. Before using this product, be sure to fully oscillate or ultrasonic to keep the magnetic beads in uniform suspension.
3. In the process of use, the magnetic beads can be washed 2 to 3 times with purified water or buffer solution according to the needs to remove the alcohol in the storage solution.
4. This product should be used with magnetic separation equipment.
5. Salt concentration and pH value will affect the binding and elution of specific proteins. Customers need to explore the binding and elution conditions of different proteins by themselves to ensure the amount and purity of protein purification.
6. This product is for research use only.

Ordering Information

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