DEAE magnetic beads, Magrose DEAE

Cat:M2340
Storage:2~8℃, valid for 1 year

Product description:

Magrose DEAE is a weak anion-exchange magnetic bead with fast magnetic responsiveness, rich ion exchange capacity and extremely high protein binding capacity. The ion exchange complex is diethyl (diethylaminoethyl, DEAE), which maintains stable high protein binding capacity in the working range of pH 3-12.

Compared with the traditional column chromatography purification method, Magrose DEAE magnetic beads do not need to pretreat crude protein samples (such as repeated tedious centrifugation, time-consuming and laborious filtering operations), in addition, there is no need to control the flow rate and column pressure, and no 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 realized to achieve high-throughput protein purification.

Product information:

product information	Magrose DEAE
magnetic bead diameter range	30~150 μm
ion exchange type	Weak anion groups
total ion capacity	110~170 μmol/mL Gel
the amount of protein binding	≥110 mg BSA/mL Gel
preservative fluid	20% Ethanol
suspension concentration	10% (v/ v) magnetic bead suspension
preservative temperature	2~30° C (long-term storage,2~8° C)
working pH	3-12

Note:1.The amount of protein binding is related to the characteristics of the target protein, only for reference value here;

2. 1 mL magnetic bead suspension contained 100 μL of magnetic beads.

Product advantages:

1. Magnetic response speed is fast, reduce the operation time
2. The magnetic beads have good dispersion and resuspension, and improve the convenience of operation.
3. The ligand has good physical and chemical stability, which improves the reliability and repeatability of the experimental results.

Operation process (taking the purification of BSA-containing protein samples as an

example)

1. Magnetic bead pretreatment (balance):Magrose DEAE magnetic bead vortex oscillation for 30 s, so that the magnetic beads are fully resuspended ;take a certain amount of 10 % (v / v) magnetic bead suspension was placed in a 50 mL centrifuge tube. The magnetic bead suspension was magnetically separated, the supernatant was discarded, and add 20 mL balance buffer to wash magnetic beads three times and mixed vertically for 2 min each time

Note: In order to obtain the maximum recovery rate of the target protein, the experimenter needs to add excessive Magrose DEAE magnetic beads, generally more than 20% of the protein binding amount. For the samples containing a lower abundance of the target protein, the recovery rate of the magnetic beads to the target protein will be reduced, so the amount of the magnetic beads needs to continue to increase;

2. Protein adsorption: the pretreated magnetic beads were added to the sample solution containing BSA protein, vortex shaken for 30s, and mixed in the vertical mixing instrument for 30~60 min, so that the sample and the magnetic beads were fully contacted and adsorbed, and then magnetic separation, discard the supernatant.

Note: For more efficient adsorption of binding substances, the equilibrium buffer preferably contains lower ionic strength, the selected pH value should be at least one pH unit different from the isoelectric point of the target protein, and the selected salt buffer pH should fluctuate within 0.5 pH. The adsorption time of the target protein to the magnetic beads is related to the protein itself properties.

3. Magnetic bead washing: add 20 mL of balance buffer, vortex beads were resuspended for 30s before magnetic separation and discard supernatant; repeated three times.
4. Protein elution: protein elution in the centrifuge tube described above for magnetic bead washing. Rehang quickly with a pipete or vortex oscillation, then mix the centrifuge tube in the vertical mixing instrument for 10~15 min for magnetic separation, and collect the supernatant into a new centrifuge tube. The elution methods are mainly elution with high salt concentration (equilibrium buffer containing 1-2 M NaCl) and low pH elution (select the pH range below the isoelectric point of the target protein).
5. Magnetic bead regeneration: generally use 2 M NaCl solution to wash 3~5 times, and then be rebalanced with equilibrium buffer. After using magnetic beads for many times, precipitated proteins, strong hydrophobic proteins and lipoproteins will be nonspecifically adsorbed to the magnetic beads. In order to ensure the use efficiency of magnetic beads, it is recommended to carry out in-place cleaning (CIP).
6. In-place cleaning (CIP): wash magnetic beads twice with 1.0 M NaOH, 70% ethanol or 30% isopropyl alcohol and purified water; 20% ethanol resuspension and stored in 2~8℃.

Note

1. This product should not be frozen, dried or centrifuged. The operation of freezing, drying and centrifugation will cause the magnetic beads to agglomerate, which is not easy to be resuspended and dispersed, and affect the chemical activity of the functional groups on the surface of the magnetic beads.
2. Before using this product, keep the suspension evenly with sufficient oscillation or ultrasonic.
3. During use, the magnetic beads can be washed 2~3 times with purified water or buffer to remove ethanol from the storage solution.
4. This product shall be used together with the magnetic separation equipment.
5. Both 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 to ensure the amount and purity of protein purification.
6. This product is intended for study use only.