BeaverBeads™ Magrose Heparin

Product Name

BeaverBeadsTM Magrose Heparin magnetic beads have rapid magnetic response, high heparin density, high physical and chemical stability and so on. On the one hand, it can be used as a ligand for affinity chromatography and can specifically bind to biological molecules such as growth factor and antithrombin AT III. On the other hand, Magrose Heparin beads can be used as a cation exchange medium because of their large amount of negatively charged sulfate ion groups. They have strong binding ability to positively charged proteins at a certain pH.

Compared to conventional column chromatography, Magrose Heparin beads do not require pretreatment of crude protein samples (eg, repeated tedious centrifugation and time-consuming filtering). In addition, there is no need to control flow rates and column pressures and no need for expensive Chromatography equipment. Skilled operators can complete the extraction of high purity protein in a very short period of time, and can easily achieve a number of samples of parallel treatment, achieving high-throughput protein purification.

It is suitable for the separation and purification of biological macromolecules like anticoagulant factor III, coagulation factor, nucleic acid binding protein, lipoprotein, interferon, steroid receptor, thrombin and thrombin.

Product Information

Product name	BeaverBeads™ Magrose Heparin
Beads Distribution	30~150 μm
Ligand density	~3mg/ml Heparin / Gel
Protein binding Capacity(mg/ml pure beads)[1]	~2mg/ml Antithrombin III / GelA
Suspension concentration[2]	10%(v/v)
Storage temperature	2~30℃(2~8℃ for long-term storage)
Preserving fluid	20% ethanol
Binding Buffer	50 mM Tris-HCl, pH 8.0
Elution Buffer	50 mM Tris-HCl, 1~2 M NaCl, pH 8.0
Shelf life	2~8℃ for 2 years

Note：

1：The amount of magnetic beads protein binding is related to the target protein characteristics, here only reference values are given.

2：1 mL magnetic beads contain 100 μL of magnetic beads.

Product Advantages

1. Rich binding points can enhance the specific binding to the ligand.
2. Rapid magnetic response, reduce operating time.
3. Magnetic beads have good dispersion and re-suspension, improving the convenience of operation.
4. The ligand has good physical and chemical stability, improving the reliability and repeatability of the experimental results.

Operational Process (take purified antithrombin in human plasma for example)

1. Sample processing : Take 1 mL of human plasma into 1.5 mL EP tube, then add 500 μL Binding Buffer and mix well.

2. Beads Pretreatment : Swirl Magrose Heparin beads for 30 s, so that the beads are fully resuspended; take 1 mL of 10% (v / v) magnetic beads suspension to a new 1.5 mL EP tube. Magnetic separation of magnetic beads suspension, and then discard the supernatant, wash with 1 mL Binding Buffer 2 times, then magnetic separation. Additionally, the beads in the tube can be used directly for antibody separation.

3. Protein Adsorption : Add the sample solution treated in Step 1 to the magnetic beads tube pretreated in Step 2, and vortex swirl evenly at room temperature (about 25 ° C). Place the EP tube in a vertical mixer for 15 to 30 min making the sample and the magnetic beads fully contacted and adsorbed, and then magnetic separation and remove the supernatant.

4. Magnetic bead washing : Add 1 mL Binding Buffer to the EP tube. Vortex swirl the tube for a min, then magnetic separation. Remove the supernatant and repeat the operation three times.

Note: In order to remove the nonspecific adsorbent protein effectively, and allow the operator to obtain higher concentration of the target protein, user can according to the SDS-PAGE of the elution protein add a certain concentration of NaCl to the Binding Buffer.

5. Protein elution : Add 0.2 mL of Elution Buffer to step 4 EP tube with rapid vibration to resuspend, then at room temperature (about 25 ° C) place the EP tube placed in a vertical mixer for 10 ~ 15 min and magnetic separation, collect the supernatant to the new EP tube.

6. Magnetic beads regeneration : add 1 mL of purified water to the EP tube, swirl and resuspend the magnetic beads before magnetic separation, remove the supernatant and repeat the operation 3 times; then use Binding Buffer wash beads 3 times. After repeated use of the magnetic beads, there are precipitation proteins, strong hydrophobic proteins, lipoproteins etc. non-specific adsorb to the magnetic beads, in order to ensure the efficiency of magnetic beads, it is recommended clean in place (CIP).

7. Clean in Place(CIP) : Wash the beads twice with 0.1 M NaOH, 8 M urea, purified water and Binding Bufdfer in turn, then add 1 mL Storage Buffer (20% ethanol) to resuspend the beads and store at 2 to 8 ° C.

For support, please visit: www.beaverbio.com/support or email: Service@beaverbio.com

Product application example

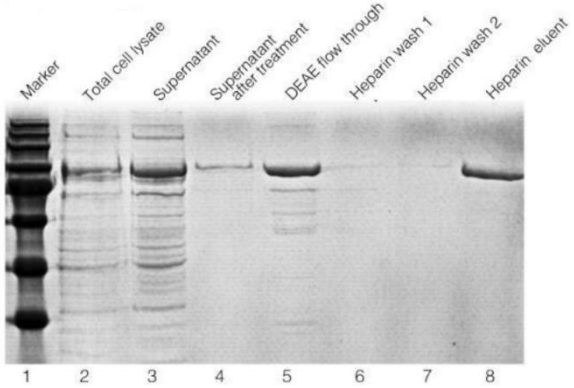

Figure 1 shows that BeaverBeadsTM Magrose Heparin beads can specifically bind nucleic acid proteins and bind DEAE ion exchanging chromatography to ultimately achieve high purified target proteins (lane 8). And its purification recovery rate is higher than that obtained by heat treatment method (lane 4).

Figure 1 BeaverBeads™ Magrose Heparin purified nucleic acid proteins SDS-PAGE atlas

Note

1. This product should not be frozen, dried or centrifuged. Freezing, drying and centrifugation will cause the beads to agglomerate, which is not easy to resuspend and disperse, and will affect the chemical activity of surface functional group of magnetic beads.
2. Before using this product, be sure to fully oscillate or ultrasonic so that the beads remain evenly suspended.
3. The users can use purified water or buffer to wash magnetic beads 2 to 3 times to remove the preservation of liquid ethanol.
4. This product must 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 their own different protein binding and elution conditions to ensure the amount of protein purification and purity.
6. This product is for research use only.

Product list

Cat No.	Product name	Specification	Bead size	Concentration
70807-5	BeaverBeads™ Magrose Heparin	5 mL	30~150 μm	10%（v/v）
70807-100		2×50 mL		
70807-1000		4×250 mL		