BeaverBeads™ NH_2

Product Introduction

BeaverBeads™ Mag NH_2 magnetic beads have following characteristics: superparamagnetism, rapid magnetic responsiveness, rich amino functional groups, monodispersity and sub-micron scale size. When it is in special chemical reagent such as glutaraldehyde, polypeptide, protein, oligonucleotide and other bioligands can be covalent to the surface of microspheres. BeaverBeads™ NH_2 magnetic beads are important carriers of the medical and molecular biology research tools

BeaverBeads™ Magrose NH_2 magnetic beads adopt advanced polymer technology to combine super paramagnetic materials and polymer materials to form a new functional magnetic microsphere. Compared with the traditional magnetic beads, Magrose NH_2 magnetic beads have faster magnetic responsiveness, while keeping the microspheres good dispersibility, low non-specific adsorption and richer binding spots, can easily and efficiently reach high load combination with a variety of biological ligands (proteins, peptides, oligomeric nucleotide, drug molecules, etc.), can be used as good material for covering, adsorption, chemical modification etc. subsequent processing.

Product Information

Product name	Mag NH_2 -500	Mag NH_2	Magrose NH_2
Mean particle size	500nm single dispersion*	2 μm single dispersion	30~150 μm
Surface carboxyl/content	NH_2(~40 μM/g)	NH_2(~200 μM/g)	NH_2(~50 μM/mL gel)
Magnetic core	Fe_3O_4	Fe_3O_4	Fe_3O_4
Shell	Silica	Silica	Magrose
Magnetic	superparamagnetism	superparamagnetism	superparamagnetism
Saturation magnetization	50.11 emu/g	45.23 emu/g	41.09 emu/g
Specific Surface Area	20.01 m^2/g	7.16 m^2/g	/
Preservation solution		2 years, store at 2 ℃~8℃(long term preservation)	
* water average particle size, Malvern Nano determination			

Product Advantages

1. Rich binding spots, more specific binding with ligands.
2. Superparamagnetism and high magnetic responsiveness, saving operation time.
3. Good dispersion and resuspension ability, improving the operation process.
4. Good physical and chemical stability, ensuring repetitive effects.

Coupling method of magnetic beads and biomolecules (reference, taking protein A as an example)

1. **Pre-treat the magnetic beads**

After blending magnetic beads, take 100μL Mag/Magrose magnetic beads into 1 mL EP tube, magnetic separation, then remove the supernatant, then washing three times with 200μL PBS solution (50 mM PBS, pH 7.4), magnetic separation and discard the supernatant;

2. Activate Glutaraldehyde

Add fresh 100μL glutaraldehyde solution (15%) to the EP tube, vortex mix magnetic beads to fully suspend, cover with tin foil paper for 1 h at 25 ℃ to react (avoid lights to avoid glutaraldehyde aggregation). During the reaction, keep the magnetic beads suspended (vertical mixing apparatus can help);

3. Wash after the activation

After the magnetic beads were activated, magnetic separation and discard the supernatant, and then wash three times with 50 mM PBS and pH 7.4 buffer.

4. Couple with magnetic beads

Add 50μL ~200μL biological ligands to the above EP tube containing magnetic beads (appropriate volume and concentration needs to be optimized, keep the solution pH 8.0, add 0.05% Tween - 20 when necessary in order to improve the magnetic beads dispersion), gently blending; cover with tin foil paper to couple 3 h (dark environment) at 25 ℃, or 25 ℃ coupling for 1 h and after that place at 4 ℃ coupling over the night, keep magnetic beads suspended when coupling (vertical mixing apparatus can help);
Note: the glutaraldehyde solution at 280 nm has absorption peak, so the coupling protein content with the magnetic beads cannot be calculated by OD280 value difference before and after the reaction. The content can be indirect measured by BCA kit or protein electrophoresis method.

5. Close after coupling

Place EP tubes in the magnetic separator, remove the supernatant, add 200 ~ 1000μL BSA/PBS solution (pH 7.2, containing 5% BSA) to resuspend the magnetic beads (use ultrasonic when necessary), react for 1 h at 25 ℃ to close magnetic bead surface nonspecific adsorption spots, keep the magnetic beads suspended (vertical mixing apparatus can help);

6. Store

Place EP tubes in the magnetic separator, remove the supernatant with 200μL PBS solution (pH 7.2) or wash three times by storage solution, resuspend in the suspension (the storage solution amount are determined by the concentration of the coupling ligand magnetic beads), and finally store at 4 ℃. When necessary, add 0.02% (w/v) sodium azide (NaN3) as the preservative to inhibit bacterial growth.

Note

1. This product should not be frozen, dried or centrifuged. Freezing, drying and centrifugation will cause the beads to agglomerate, not easy to resuspend and disperse, and affect the chemical activity of beads surface functional group.
2. Before using this product, be sure to fully oscillate or ultrasonic to keep the beads in a uniform suspension.
3. In the process of use, to remove the ethanol in the storage solution, use pure water or buffer to wash magnetic beads 2~3 times.
4. This product must be used with magnetic separation equipment.
5. In order to ensure optimal experimental results, please select appropriate ligands for covalent coupling reactions.
6. This product is for research use only.

Product list

NO.	Product name	Specification	Size	Concentration
70201-5	BeaverBeads™ Mag NH_2-500	5mL	500 nm	10 mg/mL
70201-50	BeaverBeads™ Mag NH_2-500	50mL	500 nm	10 mg/mL
70202-5	BeaverBeads™ Mag NH_2	5mL	2 μm	10 mg/mL
70202-50	BeaverBeads™ Mag NH_2	50mL	2 μm	10 mg/mL
70203-5	BeaverBeads™ Magrose NH_2	5 mL	30~150 μm	20%(v/v)
70203-50	BeaverBeads™ Magrose NH_2	5mL	30~150 μm	20%(v/v)

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