Agarose Amino Magnetic Beads

Cat： M2170

Storage： Store at 2-8℃, and it is valid for 2 year.

Introduction:

Mag NH_2 series magnetic beads have the characteristics of superparamagneties, fast magnetic responsiveness, rich amino functional groups, monodispersibility and submicron particle size. Mag NH_2 series magnetic beads can covalently conjugate peptides, proteins, oligonucleots and other biological ligands to the surface of microspheres under the action of special chemical reagents (such as glutaraldehyde), which is an important carrier tool in medical and molecular biology research.

Magrose NH_2 series magnetic beads use advanced polymer polymerization technology to perfectly combine superparamagnetic materials and polymer materials together to form a new type of functional magnetic microspheres. Compared with traditional magnetic beads, Magrose has faster magnetic responsiveness, while maintaining good dispersion of microspheres, very low non-specific adsorption and more abundant binding sites. It can conveniently and efficiently bind to a variety of biological ligands (proteins, peptides, oligonucleots, drug molecules, etc.) for high loading. It can be used as a good basic material for coating, adsorption, chemical modification and other subsequent treatments.

Product Information：

Type of Product	Mag NH_2
Mean particle size	30 ~ 150 μm
Surface group/content	Amino（~50 μM/mL gel）
Magnetic core	Fe_3O_4
Shell	Agarose
Magnetic type	Superparamagetism
Saturation magnetization strength	41.09 emu/g
Specific surface area	/

Product Advantages：

1. Abundant binding sites to enhance specific binding to ligands.
2. Superparamagnetism and high magnetic responsiveness, saving operation time.
3. Good dispersion and resuspension, improve the convenience of operation.
4. Good physical and chemical stability, ensure the repeatability.

Methods for coupling magnetic beads to biomolecules (reference, take protein A as an example):

1. Magnetic bead pretreatment: After mixing the magnetic beads, take 100 μL Mag/Magrose magnetic beads into a 1 mL EP tube, remove the supernatant by magnetic separation, and

magnetically separate and wash with 200 μL PBS solution (50 mM PBS, pH 7.4) for three times. Then remove the supernatant;

2. Glutaraldehyde activation: Add 100 μL freshly prepared glutaraldehyde solution (15%) into the EP tube, vortex mix to fully suspend the magnetic beads, wrap with tin foil, and activate at 25℃ for 1 h (the reaction is shielded from light to avoid the polymerization of glutaraldehyde itself). During this period, the magnetic beads were kept in the suspended state (the vertical mixer could be used for reverse mixing);

3. Washing: After activation of magnetic beads, remove the supernatant by magnetic separation and then wash three times with 50 mM PBS buffer (pH 7.4);

4. Magnetic bead coupling: Add 50 μg ~ 200 μg of biological ligand to the EP tube containing magnetic beads (dosage, concentration and optimized buffer type need according to the concrete experiment, keep the solution pH ≈ 8.0, and add 0.05% Tween-20 to improve the dispersion of the Magnetic beads if necessary), and gently mix; wrap with tin foil (reaction to avoid light) and couple at 25℃ for 3 h , or 25℃ for 1 h after the transfer to 4℃ overnight, the magnetic beads remain suspended during the coupling period (the vertical mixer could be used for reverse mixing);

Note: Due to the absorption peak of glutaraldehyde solution at 280 nm, the binding content of coupled proteins on magnetic beads cannot be calculated by the change in OD 280 value before and after the reaction, but can be measured indirectly by BCA kit or protein electrophoresis.

5. Closure: Place the EP tube on a magnetic separation rack for magnetic separation to remove the supernatant, add 200 ~ 1000 μL BSA/PBS solution (pH 7.2, with 5% BSA) to resuspend the beads (using ultrasound as needed), 25℃ 1 h to close the non-specific adsorption sites on the surface of the beads, and keep the beads in the suspended state during this period (can be reverse mixed with a vertical mixer).

6. Storage: The EP tube was placed on a magnetic separation rack for magnetic separation to remove the supernatant, washed three times with 200 μL PBS solution (pH 7.2) or preservation solution, then re-suspended in preservation solution (the amount of preservation solution can be determined as needed to adjust the concentration of coupling ligand magnetic beads) and stored at 4℃. If the immobilized biological ligand is stable, 0.02% (w/v) sodium azide (NaN_3) can be added to the preservation solution to inhibit bacterial growth.

Note:

1. The freezing and drying, and centrifugal operation will cause magnetic beads together, is not easy to hang and dispersed, and affects the chemical activity of the magnetic bead surface functional groups.
2. Before using this product, be sure to fully shake or ultrasonic to make the magnetic beads in a uniform suspension state.
3. During use, magnetic beads can be washed 2 to 3 times with purified water or buffer solution to remove ethanol in the preservation solution according to demand.
4. This product needs to be used with magnetic separation equipment.

5. In order to ensure the best experimental results, please select the appropriate ligand for covalent coupling reaction.
6. The product information is for reference only. If you have any questions, please call 400-968-6088 for consultation.
7. The products are all for scientific research use only. Do not use it for medical, clinical diagnosis or treatment, food and cosmetics, etc. Do not store them in ordinary residential areas.
8. For your safety and health, please wear laboratory clothes, disposable gloves and masks to operate.