Mag NH2 Amino magnetic Beads(particle size：500nm)

Cat: M2150
Storage: 2~8℃ , valid for 2 years.

product description:

Mag NH2 series magnetic beads have the characteristics of superparamagnetism, fast magnetic response, rich amino functional groups, monodispersion and submicron size, etc., which can covalently couple polypeptides, proteins, oligonucleotides and other biological ligands to the surface of microspheres under the action of special chemical reagents (such as glutaraldehyde). It is an important carrier tool in the research of medicine and molecular biology.

Mag NH2 series magnetic beads use advanced polymer polymerization technology to perfectly combine superparamagnetic materials and polymer materials to form a new type of functional magnetic microspheres. Compared with traditional magnetic beads, it has faster magnetic responsiveness while maintaining good dispersion of microspheres, extremely low non-specific adsorption and more abundant binding sites. It can easily and efficiently bind to a variety of biological ligands (proteins, peptides, oligonucleotides, drug molecules, etc.) in high loads, and can be used as a good basic material for subsequent treatment such as coating, adsorption, chemical modification, etc.

Product information:

product information	Mag NH2
mean diameter	500 nm (monodisperse)
Surface groups / content	Amino (~40 μM/g)
magnetic core	Fe_3O_4
shell	silicon oxide
magnetiism type	superparamagnetism
saturation magnetization	50.11 emu/g
specific surface area	20.01 m^2/g

Product advantages

1.Abundant binding sites that enhance specific binding to ligands.
2. Super paramagnetism and high magnetic response, saving operation time.
3. Good dispersion and weight, improve the ease of operation.
4. Good physical and chemical stability to ensure repeatability.

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

1. Pretreatment of magnetic beads : After mixing the magnetic beads, take 100 μ L magnetic beads into 1 mL EP tube, and the supernatant was removed by magnetic suction. The supernatant was washed three times with 200 μL PBS solution (50 mM PBS, pH 7.4), and the supernatant was removed by magnetic suction.

2. Glutaraldehyde activation: add freshly prepared 100 μ L glutaraldehyde solution (15%) into the EP tube, vortex mixed to make the magnetic beads fully suspended, wrapped with foil after 25℃

reaction for 1 h (the reaction was dark to avoid the polymerization of glutaraldehyde itself), and the suspension state of the magnetic beads was maintained during this period; (upside-down mixing can be performed using a vertical mixer)

3. Washing after activation: After activation of the magnetic beads, the supernatant was removed by magnetic suction and washed three times with 50 mM PBS, pH 7.4 buffer;

4. Magnetic bead coupling: Add 50 μg~200 μg of biological ligands to the EP tube with magnetic beads (appropriate dosage and concentration should be optimized according to the specific experiments, keep the solution pH≈ 8.0, and 0.05 % Tween-20 can be added if necessary to improve the dispersion of magnetic beads) and gently mix; 25℃ coupling with foil (reaction away from light) for 3 h, or 25℃ coupling for 1 h and 4℃ coupling overnight.During the coupling, keep the magnetic beads in suspension state (it can be reversed by vertical mixing instrument);

Note: Because the glutaraldehyde solution has an absorption peak at 280 nm, the binding content of the coupling protein on the magnetic beads cannot be calculated by thechange of OD280 value before and after the reaction, and can be indirectly measured by BCA kit or protein electrophoresis.

5. Blocking after coupling: place the EP tube on the magnetic separation frame to remove the supernatant, add 200~1000 μL BSA / PBS solution (pH7.2, containing 5% BSA) to re-suspend the magnetic beads (ultrasound can be performed as needed), close the non-specific adsorption site on the surface of the magnetic beads for 1 h with 25℃ reaction, and maintain the suspension state of the magnetic beads (can be mixed by vertical mixing instrument);

6. Storage: place the EP tube on the magnetic separation rack to remove the supernatant, wash with 200 μL PBS solution (pH 7.2) or storage solution for three times, re-suspend in the storage solution (the amount of storage solution can be determined as needed to adjust the concentration of coupled ligand magnetic beads), and finally save at 4℃. If necessary, 0.02% (w / v) sodium azide (NaN3) should be added to the storage solution to inhibit bacterial growth.

Precautions:

1. 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 with purified water or buffer magnet 2 to 3 times according to the needs to remove the ethanol in the storage solution.

4. This product should 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. This product is for research use only.

7.For your safety and health, please wear laboratory clothes, disposable gloves and masks.