Magnosphere™ MS160/Streptavidin

PRODUCT DESCRIPTION

Magnosphere™ MS160/Streptavidin beads are magnetic microparticles coated with streptavidin for bioseparation. The particle surfaces are covered with our proprietary hydrophilic polymer to give the beads their characteristic low non-specific binding without inhibition of enzyme activities. Consequently, ***Magnosphere™ MS160/Streptavidin*** beads can be used for a variety of applications such as PCR or immunoassays for excellent performance.

FEATURES

- High affinity to biotinylated proteins and nucleotides
- Uniform particle size
- Superparamagnetic
- Rapid magnetic responsiveness
- Low non-specific binding

EXAMPLE APPLICATIONS

PCR, quantitative PCR, Immunoassay
Immobilization of biotinylated DNA/RNA, Immobilization of biotinylated proteins

SPECIFICATIONS

Package volume	2 mL
Solid content in slurry	1 % (10 mg/mL, 4 x 10^9 beads/mL approx.)
Dispersion media	TBS* + 0.05 % Tween20 + 0.09 % Sodium Azide
Bead diameter	1.5 μm (micrometer)
Bead magnetite content	25 wt% approx.
Biotin binding capacity	Approx. 800 pmol Biotin/mg bead
Shelf life	Labeled on the bottle

*TBS: Tris buffered saline, 50 mM Tris-HCl (pH 7.6) / 0.15 M NaCl

STORAGE

Stored at 2-8 °C. Do not freeze the vial. Vortex the vial or pipette gently up and down to obtain a homogeneous dispersion before use.

DISPOSAL

Reagent contains sodium azide at a low concentration as a preservative. Sodium azide is toxic if ingested and may react with heavy metals to form explosive metal azides. Azide compounds should be diluted with running water before discarding to avoid deposits in plumbing where explosive condition may develop.

RECOMMENDED PROTOCOLS

[Protocol Ⅰ] Immobilization of biotinylated DNA on *Magnosphere™ MS160/Streptavidin* beads.

Reagent and equipment requirement

Binding Buffer (2X): 20 mM Tris-HCl (pH 7.4) with 1 mM EDTA, 2 M NaCl, 0.1 % Tween20
Equipment: Magnetic separator. Vortex tube mixer. Tube rotator.

1. Suspend the ***Magnosphere™ MS160/Streptavidin*** well using Vortex mixer and put 100 μL of the suspension (i.e.,1 mg beads) into a microtube.
2. Place the tube on a magnetic tube stand for 1 minute (or longer if needed) and remove the supernatant carefully.
3. Add 200 μL of 1x Binding Buffer and suspend the beads by vortexing. Then, remove the supernatant as in step 2.
4. Add biotinylated DNA solution [e.g. 10 μg of DNA] and an equal volume of 2x Binding Buffer to the microtube. Suspend the beads by vortexing.
5. Keep rotating the tube with Tube rotator for 10 minutes at room temperature.
6. Remove the supernatant as in step 2.
7. Wash the beads using 200 μL of 1x Binding Buffer and suspend the beads by vortexing.
8. Remove the supernatant as in step 2.
9. Repeat steps 7 & 8 for a total of 3 times.
10. Suspend the beads with a desired buffer suitable for downstream applications and store at 2-8 °C until needed.

[Protocol Ⅱ] Biotinylation of antibodies.

We suggest using Biotin-N-hydroxysuccinimide ester (Biotin-NHS) to biotinylate antibodies. Biotin-NHS is a primary amine reactive biotinylation reagent. By adjusting the [Biotin-NHS]/ [Ab] ratio, the number of Biotin molecules per antibody molecule (i.e., [biotin]/[Ab]) can be well-controlled. [Biotin-NHS]/ [Ab] ratios ranging from 5:1 to 20:1 is our suggested range for antibody biotinylation.
The volume of the reaction can be adjusted proportionally depending on the amount of antibody you need.

Reagent and equipment requirement

Antibody: Antibody of interest, with no stabilizing agents, such as BSA or gelatin, or amine-containing buffer such as Tris buffer
Biotin-NHS: Dissolve 5.69 mg of Biotin-NHS with 1 mL of DMSO. Prepare just before use.
Equipment: Centrifuge and Centrifugal ultrafiltration filter device, MWCO=10k

1. Take 0.4 mL of antibody solution (5.0 mg/mL, 2 mg antibody) to microtube
2. Add 4 μL of Biotin-NHS solution ([Biotin-NHS]/[Ab]=5) or 8 μL ([Biotin-NHS]/[Ab]= 10) to the microtube.
3. Incubate for 3 hours at room temperature.

Remove unreacted biotin using a centrifugal ultrafiltration device.

[Protocol Ⅲ] Immobilization of biotinylated IgG onto the *Magnosphere™ MS160/Streptavidin*

Reagent and equipment requirement

Washing Buffer: PBS + 0.05 % Tween 20
Equipment: Magnetic tube stand, vortex tube mixer & tube shaker.

1. Suspend the ***Magnosphere™ MS160/Streptavidin*** well using vortex mixer and put 100 μL of the suspension (i.e., 1 mg beads) into a microtube.
2. Add 20 μg of biotinylated IgG solution (20 μL, if antibody concentration is 1 mg/mL) and suspend the beads by vortexing.
3. Keep mixing the tube using a tube shaker for 30 minutes at room temperature.
4. Place the tube on magnetic separator for 1 minute and remove the supernatant carefully.
5. Wash the beads with 1 mL of Washing Buffer and suspend them by vortexing.
6. Repeat steps 4 & 5 again. Then, remove the supernatant as in step 4.

7. Suspend the beads with a desired buffer suitable for downstream applications and store at 2-8 °C until needed.

IMPORTANT NOTICE

- This product is for research use only and not intended for therapeutic or *in vivo* diagnostic use.
- The specifications of the product may be changed without a notice.
- We do not guarantee that this product will be continuously available.
- We make no warranties as to this product including, but not limited to, implied warranties of merchantability or fitness for a particular purpose.

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