JSR Corporation
With chemistry, we can.

Magnosphere™ MS300/Streptavidin

PRODUCT DESCRIPTION

Magnosphere™ MS300/Streptavidin beads are magnetic microparticles coated with streptavidin for bioseparation. The particle surfaces are covered with a JSR proprietary hydrophilic polymer to give the beads their characteristic low non-specific binding without inhibition of enzyme activities. Consequently, ***Magnosphere™ MS300/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
- DNase- and RNase-free

Example Applications

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

SPECIFICATIONS

Package volume	2 mL
Solid content in slurry	1 % (10 mg/mL)
Dispersion media	TBS* + 0.05 % Tween20 + 0.09 % Sodium Azide
Bead diameter	3 μm (micrometer)
Bead magnetite content	20 % c.a.
Biotin binding capacity	400 - 600 pmol/mg bead

*TBS: Tris buffered saline, 25 mM Tris-HCl pH 7.2 / 0.15 M NaCl

RECOMMENDED PROTOCOL:

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 tube stand. Vortex tube mixer. Tube rotator.

Immobilization of biotinylated DNA on *Magnosphere™ MS300/Streptavidin* beads.

1. Suspend the ***Magnosphere™ MS300/Streptavidin*** well using Vortex mixer and put 100 μL (microliter) 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. 5 μg (micrograms) 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 degrees C until needed.

STORAGE

Magnosphere™ MS300/Streptavidin is stable for 24 months when stored at 2-8 degrees 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.

IMPORTANT NOTICE

This product is for research use only and not intended for therapeutic or *in vivo* diagnostic use.

CONTACT INFORMATION

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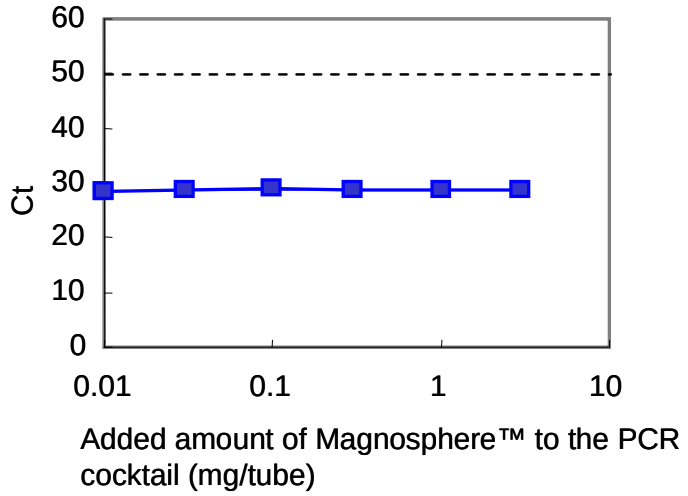
APPENDIX

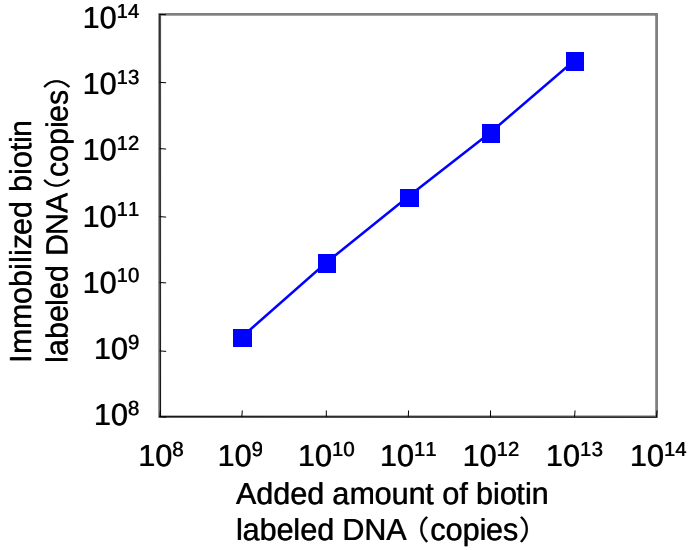
EXPERIMENTAL EXAMPLES

Figure 1. Effect of ***MS300/Streptavidin*** on PCR



Various amounts of ***Magnosphere™ MS300/Streptavidin*** beads were added to a PCR cocktail containing DNA (100bp in length). After qPCR reaction, the Threshold Cycle (Ct) was plotted against the amount of beads added to the reaction.
Conclusion: Addition of ***Magnosphere™ MS300/Streptavidin*** beads up to 3mg/tube does not affect the PCR reaction.

Figure 2. Recovery of biotinylated dsDNA onto ***Magnosphere™ MS300/Streptavidin.***



Various amounts of biotinylated 100bp dsDNA were mixed with 1mg of ***Magnosphere™ MS300/Streptavidin*** beads in the Binding Buffer. The amounts of immobilized dsDNA were quantitated through qPCR.
Conclusion: Added dsDNA was quantitatively recovered on the ***Magnosphere™ MS300/Streptavidin*** beads up to 20pmol (i.e., 10^{13} copies).