Targeted DNA/RNA Capture Magnetic Particles-SA
PRODUCT DATA SHEET

Targeted DNA/RNA Capture Magnetic Particles-SA

Description

The streptavidin-biotin system has a very high binding affinity (Kd=10^{-15}) and has been widely used in the biological field. This series of magnetic microspheres is a monodisperse microsphere product, which has the advantages of fast magnetic response, good suspension, large specific surface area, good stability, and small difference between batches. Surface modified streptavidin can bind biotinylated antibodies, nucleic acids, proteins and other ligand molecules quickly and efficiently, which is an ideal choice for capturing target molecules.

For custom sizes, formulations or bulk quantities please contact our customer service department.

Website: www.abvigen.com Phone: +1 929-202-3014 Email: info@abvigenus.com

Product information

Product number	NMP 0300SB	NMP 0600SB	NMP 1001SB	NMP 1002SB	NMP 1003SB	NMP 1005SB
Mean particle size	300 nm	600 nm	1 μm	2 μm	3 μm	5 μm
Free biological binding capacity (pmol/mg magnetic microspheres)	/	> 800	> 700	1000	> 500	800
Biotinized single chain oligonucleotie binding amount (pmol/mg magnetic microspheres)	450	> 500	> 350	400	> 200	400
Biotinized ds-DNA binding amount		≈ 20	10 ~ 20		5 ~ 10	

(μg/mg magnetic microspheres)						
Biotinized IgG binding amount (μg/mg magnetic microspheres)	15	> 20	≈ 15	20	≈ 10	15
Magnetic microsphere concentration	10 mg/mL					
Preservation solution	10 mM Tris (pH 7.4), 0.1% BSA, 0.05% Tween-20, 0.1% ProClin 300					

Characteristics

Concentration: 10 mg/ml

Particle Size: 0.3~5 um

Surface: Streptavidin

Preservative Solution: 10 mM Tris (pH 7.4), 0.1% BSA, 0.05% Tween-20, 0.1% ProClin 300

Storage Condition: Store at 2 - 8°C, do not freeze

Quality guarantee period: 24 months

Scope of application

Biotin-modified nucleic acid probes are used for the capture and separation of nucleic acids.

Binding biotin-modified antibodies or antigens for immunoassay, protein separation, etc.

Self-supplied material

Recommended reagent

DNA binding reagent	D-Binding Buffer: 10 mM Tris-HCl (pH 7.5), 1 mM EDTA, 2 M NaCl D-Washing Buffer: 5 mM Tris-HCl (pH 7.5), 0.5 mM EDTA, 1 M NaCl
RNA binding reagent	The following reagents should be prepared with Nuclease-free ddH_2O: R-Binding Buffer: 0.1 M NaCl R-Washing Buffer: 0.1 M NaOH, 0.05 M NaCl
Protein binding reagent	PBST Buffer: PBS (pH 7.4), 0.05% Tween 20

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	PBS/BSA Buffer: PBS (pH 7.4), 0.01% - 0.1% BSA
Nucleic acid release reagent	95% formamide solution (95% formamide + 5% 10 mM EDTA (pH 8.2))
Protein releasing reagent	0.1% SDS

Instruments and consumables

Vortex oscillators, vertical rotation mixers, magnetic racks, pipettes and matching heads, Nuclease-free eight row or suitable EP tubes.

Experimental process

The following experimental procedures are general procedures for streptavidin magnetic microspheres. Reagents and experimental procedures can be optimized according to requirements.

According to the content of biotinylated molecules in the sample, the appropriate amount of magnetic microspheres is calculated by referring to the binding amount in the product information table.

Magnetic microsphere pretreatment

1. Balance the magnetic microspheres to room temperature, place them on the vortex oscillator for 30 s and mix them thoroughly, use a pipette to absorb the magnetic microspheres into the EP tube, place them on the magnetic rack, and discard the supernatant after the solution is clarified (about 1 min).

2. The EP tube was removed from the magnetic rack, and D-Washing Buffer (DNA capture) or R-Washing Buffer (RNA capture) or PBST Buffer (protein capture), which was twice the volume of the initial magnetic microsphere, was placed on the vortex oscillator and suspended for 10 s.

3. After a short centrifugation, place the EP tube on the magnetic rack and discard the supernatant after the solution is clarified.

4. DNA capture and protein capture are repeated (step 2,3) twice, and RNA capture is repeated once.

DNA capture

1. Add D-Binding Buffer (twice the volume of the original magnetic microspheres) to the pre-treated magnetic microspheres (discarded supernatant), and then add biotinized DNA samples equal to the volume of D-Binding Buffer. After fully mixing, Incubate at room temperature in a vertical rotating mixing machine for 15-30 min (mixing speed should not be too high, 20-30 rpm is recommended), after a short centrifugation, place the EP tube on a magnetic rack, and absorb and discard the supernatant after the solution is clarified.

2. Add D-Washing Buffer twice the sample volume into EP tube, and blow 10 times with pipette to mix thoroughly. After a short centrifugation, the EP tube was placed on the magnetic rack, and the supernatant was sucked up after the solution was clarified.

3. Repeat Step 2.

4. According to the requirements of the follow-up experiment, add the appropriate buffer to re-suspend the magnetic beads, and the magnetic beads can be used for subsequent operations.

RNA capture

1. An R-Binding Buffer of twice the original magnetic microsphere volume was added to the pre-treated magnetic microsphere (discarded supernatant) and suspended on the vortex oscillator for about 10 s. After a short centrifugation, the EP tube was placed on the magnetic rack, and the supernatant was sucked up after the solution was clarified.

2. Add R-Binding Buffer twice the volume of the original magnetic microsphere, then add biotinized RNA sample equal to the volume of R-Binding Buffer, mix thoroughly, place on the magnetic rack at room temperature, and absorb the supernatant after the solution is clarified.

3. Add R-Binding Buffer solution, twice the volume of sample solution, into the EP tube, blow and mix with pipette 10 times, centrifuge briefly and place on the magnetic rack. After the solution is clarified, the supernatant is absorbed and discarded.

4. Repeat Step 3.

5. According to the requirements of the follow-up experiment, add the appropriate buffer to re-suspend the magnetic beads, and the magnetic beads can be used for subsequent operations.

Protein capture

1. PBST Buffer of 2 times the volume of the original magnetic microspheres was added to the pre-treated magnetic microspheres (discarded supernatant), and then the samples containing biotinated proteins to be captured were added. After being fully mixed, the samples were incubated in a vertical rotating mixing machine at room temperature for 15-30 min. After the solution is clarified, the supernatant is absorbed and discarded.

2. Add PBST Buffer or PBS/BSA Buffer, twice the original volume of magnetic microspheres, into the EP tube, blow 10 times with a pipette to mix thoroughly, after a short centrifuge, place the EP tube on the magnetic rack, and discard the supernatant after the solution is clarified.

3. Repeat Step 2.

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4. Add PBST Buffer or PBS/BSA Buffer or other suitable buffer to re-suspension magnetic beads according to the requirements of subsequent experiments. Magnetic beads can be used for subsequent operations.

Biotin-modified nucleic acid/protein release

1. Separation of nucleic acid from streptavidin magnetic microspheres: After adding 95% formamide solution, heating at 65°C for 5 min or 90°C for 2 min, the nucleic acid is released.

2. Separation of protein from streptavidin magnetic microspheres: Add 0.1% SDS solution and boil for 5 min to separate protein.

Features

Superparamagnetic: Excellent resuspension

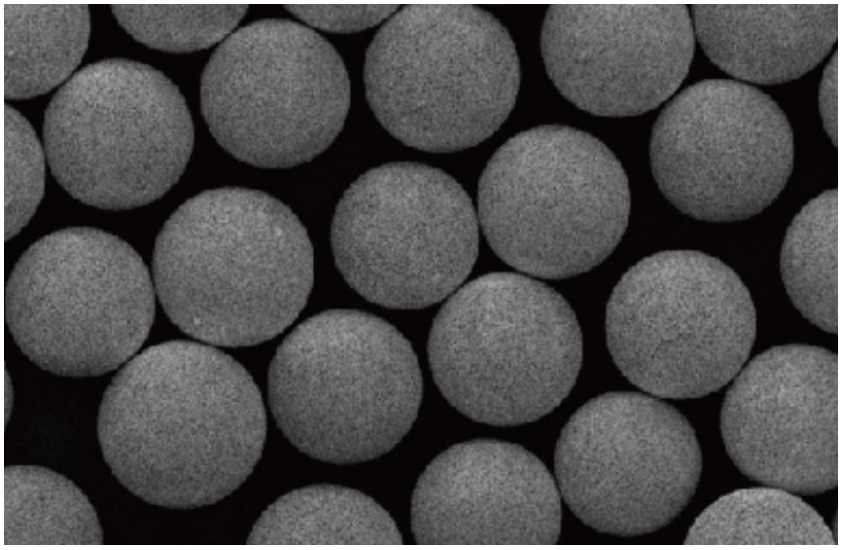
Hydrophilic surface: Low non-specific binding

Uniform diameter, CV < 5%: High reproducibility

Coated with streptavidin (SA): Effectively binds biotinylated derivatives

Large scale production: Batch-to-batch consistency, superior quality with consistent test results

Electron microscope image of Targeted DNA/RNA Capture Magnetic Particles-SA



Storage

This product should be stored at 2 - 8°C. **DO NOT FREEZE**.

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Notes

1. Do not store the magnetic microsphere below 0°C, and balance the magnetic microsphere to room temperature before use (the volume is less than 10 mL for 30 min balance, greater than 10 mL, extend the balance time as appropriate).

2. Before absorbing magnetic microspheres, ensure that they are fully mixed to avoid bubbles caused by violent oscillation.

3. It is recommended to use a good quality pipette suction head and reaction tube to avoid losses caused by adhesion to magnetic microspheres and solution.

4. Avoid magnetic microspheres being centrifuged at high speed or placed on the magnetic rack for a long time.

5. Avoid magnetic microspheres in a liquid free state for a long time. If there are many samples, it is recommended to discard the supernatant in batches and add the re-suspension reagent.

6. If there is a phenomenon of magnetic microspheres sticking to the wall in a high-salt solution, 0.01%-0.1% Tween 20 can be added to the solution in advance.

7. This product is for scientific research only.

Ordering Information

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