

# Streptavidin MagBeads

Cat. No. L00424

Technical Manual No. TM0601

Version 08212013

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## 1. Product Description

### 1.1 Intended Use

GenScript Streptavidin MagBeads are ideal for purification of biotinylated proteins and nucleic acids, immunoprecipitation, protein interaction studies, immunoassays, and cell isolation, etc.

### 1.2 Principle

Add the sample containing biotinylated molecules to the Streptavidin MagBeads and allow the molecules bind to the MagBeads during a short incubation. Then separate the molecule-bound beads with a magnetic separation rack. With indirect capture, mix the biotinylated molecule with the sample to capture the molecule-target complex before adding the MagBeads.

### 1.3 Description of Material

#### Material Supplied

GenScript Streptavidin Magbeads are super paramagnetic beads of approximately 40  $\mu\text{m}$  in size, covalently coated with highly purified streptavidin. The beads are supplied as 25% slurry in phosphate buffered saline (PBS), pH 7.4, containing 20% ethanol.

Cat. No. L00424 Size: 2 ml.

#### Additional Material Required

Mixing/Rotation Device  
Magnetic Separation Rack  
Test tubes and pipettes  
Buffers and solutions (see Table 1)

Table 1: Recommended buffer and solution

For coupling of nucleic acid	For coupling of protein or antibody
TES Buffer: 10 mM Tris 1 mM EDTA 2 M NaCl pH 7.5	PBS Buffer pH 7.4

**Binding capacity**

Table 2: Typical binding capacity for 1 ml settled Streptavidin MagBeads.

Free Biotin	> 60 nmol
Biotinylated peptide	~ 10 nmol
Biotinylated antibody	~ 1 mg
Biotinylated oligonucleotides	~ 50 nmol

**2. Instruction For Use**

The protocol uses 100 µl Streptavidin Magbeads, this may be scaled up or down accordingly.

**2.1 Preparation of the MagBeads**

1. Completely resuspend the beads by shaking or vortexing the vial.
2. Transfer 100 µl beads to a new tube.
3. Place the tube on a magnetic separation rack to collect the beads. Remove and discard the supernatant.
4. Add 0.5 ml selected washing buffer to the tube and invert the tube several times to mix. Use the magnetic separation rack to collect the beads and discard the supernatant. Repeat this step twice.

Recommended washing buffers:

- nucleic acid applications: TES Buffer
- antibody/protein applications: PBS Buffer, pH 7.4

**2.2 Method for Immobilization of Biotinylated Molecules****A. Additional Materials Required**

Biotinylated sample in solution: Use approximately 2-3 mg of biotinylated sample/ml settled Streptavidin MagBeads

Binding/Wash Buffer: Nucleic acid applications: TES Buffer; Protein/antibody applications: PBS, pH 7.4.

Elution Buffer: 8 M guanidine•HCl, pH 1.5

**B. Procedure**

1. Resuspend the beads in 100 µl Binding/Wash Buffer.
2. Add biotinylated sample to the beads prepared from step 2.1 and gently invert the tube to mix.
3. Incubate the tube at room temperature with mixing (on a shaker or rotator) for one hour.
4. Use the magnetic separation rack to collect the beads and discard the supernatant. If necessary, keep the supernatant for analysis.
5. Add 1 ml Binding/Wash Buffer to the tube and mix well, use the magnetic separation rack to collect the beads and discard the supernatant. Repeat the wash step three times.
6. Resuspend to desired concentration in a suitable buffer for downstream use.

**C. Release of immobilized biotinylated molecules**

The biotin-streptavidin bond is broken by harsh conditions. Boil the sample for 5 minutes in Elution Buffer for protein dissociation. Proteins will be denatured by such treatment and Streptavidin MagBeads cannot be re-used.

## 2.3 Method for Purifying Antigens

### A. Additional Materials Required

Biotinylated antibody: Use approximately 2-3 mg of biotinylated antibody/ml settled Streptavidin MagBeads

Binding/Wash Buffer: 0.1 M phosphate, 0.15 M NaCl, pH 7.2

Elution Buffer: 0.1 M glycine•HCl, pH 2.5 - 2.8

Neutralization Buffer: 1 M Tris•HCl, pH 8.5

### B. Procedure

1. Resuspend the beads in 100 µl Binding/Wash Buffer.
2. Add biotinylated antibody solution to the beads prepared from step 2.1 and gently invert tube to mix.
3. Incubate the tube at room temperature with mixing (on a shaker or rotator) for one hour.
4. Use the magnetic separation rack to collect the beads and discard the supernatant. If necessary, keep the supernatant for analysis.
5. Add 1 ml Binding/Wash Buffer to the tube and mix well, use the magnetic separation rack to collect the beads and discard the supernatant. Repeat the wash step three times.
6. Resuspend the antibody bound beads in 100 µl Binding/Wash Buffer.
7. Add antigen sample to the tube and gently invert tube to mix. Incubate at room temperature for 30 minutes to overnight at 4°C.
8. Wash the beads with 1ml Binding/Wash Buffer. Use the magnetic separation rack to collect the beads and discard the supernatant. Repeat the wash step three times.
9. Add 100 µl Elution Buffer to the tube. Mix well and incubate for five minutes at room temperature with occasional mixing.
10. Use the magnetic separation rack to collect the beads and save the supernatant containing target antigen.
11. To neutralize the low pH, add 5 µl Neutralization Buffer to each 50 µl eluate.

## 3. General Information

### 3.1 Storage and Stability

This product is stable until the expiration date stated on the COA, when stored unopened at 2–8°C. **Do NOT freeze the product.** Keep the MagBeads in liquid suspension during storage and all handling steps. Drying will cause loss of binding capacity and result in reduced performance. Resuspend the beads well before use. Be careful to avoid bacterial/fungal contamination.

### 3.2 Technical Support

Please contact GenScript for further technical information (see contact details). Certificate of Analysis/Compliance is available upon request. The latest revision of the package insert/instructions for use is available on [www.genscript.com](http://www.genscript.com).

### 3.3 Warning and Limitations

This product is for research use only. Not intended for any animal or human therapeutic or diagnostic use unless otherwise stated. This product contains 20 % EtOH as a preservative. Flammable liquid and vapor. Flash point 38°C. R-10 flammable. Material Safety Data Sheet (MSDS) is available at <http://www.genscript.com>.

**3.4 Related MagBeads Products**

<b>Cat. No.</b>	<b>Product Name</b>
L00273	Protein A MagBeads
L00274	Protein G MagBeads
L00277	Protein A/G MagBeads
L00295	Ni-Charged MagBeads
L00327	Glutathione MagBeads
L00275	Mouse Anti-His mAb MagBeads
L00336	Mouse Anti-GST mAb MagBeads

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