

Goat Anti-Rabbit IgG MagBeads

Cat. No. L00328**Technical Manual No. TM0588****Version 06272010**

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1. Product Description

1.1 Designed Use

GenScript Goat Anti-Rabbit IgG MagBeads are developed for quick and efficient purification of rabbit IgG and immunoprecipitation of rabbit primary antibody-target antigen complexes.

1.2 Principle

The sample containing rabbit IgG is added to the Goat Anti-Rabbit IgG MagBeads. The antibody will bind to the beads during a short incubation. Then the beads-bound antibody can be eluted off the beads using a magnetic separation rack, or used for immunoprecipitation (IP). A cross-linking procedure may be needed before IP to prevent co-elution of the primary antibody. Magnetic separation eliminates the need for multiple tubes, minimizes the loss of sample and removes tedious steps of conventional centrifugation method.

1.3 Description of Material

Material Supplied

Goat Anti-Rabbit IgG MagBeads are superparamagnetic beads of average 40 μm in diameter, covalently coated with Goat Anti-Rabbit IgG Polyclonal Antibody (GenScript, A00098). These secondary antibodies bind all rabbit IgG subclasses. The beads are supplied as 25% slurry in phosphate buffered saline (PBS, pH 7.4) containing 20% ethanol. The Goat Anti-Rabbit IgG MagBeads have a binding capacity of more than 300 μg rabbit IgG per 1 ml settled beads (e.g. 4 ml 25% slurry).

Cat. No. L00328: 2 ml.

Additional Material Required

Magnetic separation rack (GenScript Cat. No. M00140)
Mixing/Rotation Device
Test tubes and pipettes
Buffers and solutions (see below)

Additional Buffers Needed

Binding/Wash Buffer: 20 mM Na_2HPO_4 , 0.15M NaCl, pH 7.0

Elution Buffer: 0.1 M glycine, pH 2-3

Neutralization Buffer: 1 M Tris, pH 8.5

1 \times SDS Sample Buffer: 62.5 mM Tris-HCl (pH 6.8 at 25°C), 2% w/v SDS, 10% glycerol, 50 mM DTT, 0.01% w/v bromophenol blue

2. Instruction For Use

The protocol uses 100 μ l Goat Anti-Rabbit IgG MagBeads, but this may be scaled up or down as required.

2.1 Preparation of the MagBeads

1. Completely resuspend the beads by shaking or vortexing the vial.
2. Transfer 100 μ l beads into a clean tube.
3. Place the tube on a magnetic separation rack to collect the beads at tube wall. Remove and discard the supernatant.
4. Add 1 ml Binding/Wash 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.

2.2 Separation of Rabbit IgG

1. Resuspend the beads in 100 μ l Binding/Wash Buffer.
2. Add sample containing rabbit IgG and gently invert tube to mix.
3. Incubate the tube at room temperature with mixing (on a shaker or rotator) for 30 to 60 minutes.
4. Use the magnetic separation rack to collect the beads and discard the supernatant. If desired, keep the supernatant for SDS-PAGE 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 twice.
6. Proceed to Elution of Isolated IgG (Section 2.3).

2.3 Elution of Isolated IgG

1. Add 100 μ l of Elution Buffer to the tube. Mix well and incubate for five minutes at room temperature with occasional mixing.
2. Use the magnetic separation rack to collect the beads and transfer the supernatant containing the eluted rabbit IgG to a new tube.
3. Repeat the elution step twice to recover as much IgG as possible.
4. To neutralize the low pH, add 10 μ l of Neutralization Buffer to each 100 μ l eluate. If desired, perform a buffer exchange by dialysis or desalting.

2.4 Immunoprecipitation

Bound rabbit IgG will be co-eluted along with the target using elution methods. If the presence of IgG will not disturb your detection system, go directly to section 2.4.2 below. For applications where co-elution of the IgG is not desired, your primary IgG can be cross-linked to the Goat Anti-Rabbit IgG MagBeads as described in section 2.4.1 below.

2.4.1 Cross-linking IgG to the Beads

1. Add 1 ml 0.2 M triethanolamine, pH 8.2 to the Goat Anti-Rabbit IgG MagBeads with immobilized rabbit IgG. Wash twice using a magnetic separation rack and 0.2 M triethanolamine, pH 8.2 as the washing buffer.
2. Resuspend the beads in 1 ml of 20 mM DMP (dimethyl pimelimidate dihydrochloride) in 0.2 M triethanolamine, pH 8.2 (5.4 mg DMP/ml buffer). This cross-linking solution must be prepared immediately before adding to the beads.
3. Incubate the beads with rotational mixing for 30 minutes at 25°C. Use the magnetic separation rack to collect the beads and discard the supernatant.
4. Resuspend the beads in 1 ml of 50 mM Tris, pH 7.5 to stop the reaction and incubate for 15 minutes with rotational mixing.
5. Use the magnetic separation rack to collect the beads and discard the supernatant.
6. Wash the cross-linked Magbeads three times with 1 ml PBS.

2.4.2 Binding Antigen

1. Add sample containing target antigen to the beads. For a 100 kD protein, use a volume containing approximate 25 µg target antigen/ml beads to assure an excess of antigen. If dilution of antigen is necessary, PBS or 0.1 M phosphate buffer (pH 7-8) can be used as dilution buffer.
2. Incubate with tilting and rotation for one hour.
3. Place the tube on the magnetic separation rack for 2 minutes to collect the IgG-coated MagBeads-target complex at the tube wall. For viscous samples, double the time on the rack. Discard the supernatant.
4. Wash the beads 3 times using 1 ml PBS each time.

2.4.3 Target Protein Elution

A. Denaturing elution

1. Place the tube from section 2.4.2 on the magnetic separation rack to collect the beads at the tube wall and discard the supernatant.
2. Add 100 µl 1×SDS Sample Buffer to the tube and mix well.
3. Heat the tube at 100°C for five minutes.
4. Use the magnetic separation rack to collect the beads and transfer the supernatant containing your sample into a new tube.
5. Analyze the sample by SDS-PAGE followed by Western blot analysis.

B. Non-denaturing elution

1. Place the tube from section 2.4.2 on the magnetic separation rack to collect the beads at the tube wall and remove the supernatant.
2. Add 100 µl Elution Buffer to the tube and mix well. Incubate for five minutes at room temperature with occasional mixing.
3. Use the magnetic separation rack to collect the beads and transfer the supernatant into a new tube.
4. Repeat Step 2 and 3 twice.
5. Add 10 µl Neutralization Buffer to each 100 µl of eluate to neutralize the low pH.

3. Troubleshooting

Review the information below to troubleshoot your experiments using the GenScript Goat Anti-Rabbit IgG MagBeads.

Problem	Possible Cause	Solution
The beads are hard to immobilize using the magnetic separation rack.	Too many beads are used.	Decrease the volume of MagBeads slurry.
A considerable amount of sample has been added, but very few specific antibody of interest is detected.	The antibody of interest is at very low concentration.	Use a serum-free medium for cell supernatant samples.
The antibody of interest is purified, but it is degraded (as determined by loss of function in downstream assay).	<ol style="list-style-type: none">1. The antibody is sensitive to low-pH elution buffer.2. The downstream application is sensitive to the neutralized elution buffer.	<ol style="list-style-type: none">1. Try another elution reagent, such as 3.5 M MgCl₂, 10 mM phosphate, pH 7.2.2. Desalt or dialyze the eluted sample into a suitable buffer.

4. General Information

4.1 Storage and Stability

This product is stable until the expiration date stated on the label, 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.

4.2 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.

4.3 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 vapour. Flash point 38°C. R-10 flammable. Material Safety Data Sheet (MSDS) is available at <http://www.genscript.com>.

4.4 Related MagBeads Products

Cat. No.	Product Name
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
L00337	Mouse Anti-Trx mAb MagBeads
L00332	Donkey Anti-Goat IgG MagBeads

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