Version：02
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Product Name: Protein A/G MagBeads MX
Cat. No.: L00894

Contents

1. Product Description

1.1 Intended Use

The GenScript Protein A/G MagBeads MX are ideal for small-scale purification of antibodies from plasma, serum, ascites, and cell culture.

1.2 Principle

The Protein A/G is a genetically engineered protein (MW≈43 kDa) that combines the IgG binding sites of both Protein A and Protein G. It contains four Fc-binding domains from Protein A and two from Protein G, making it a universal tool to bind and purify immunoglobulins (IgGs). GenScript's Protein A/G MagBeads MX have Protein A/G pre-coupled on the surface of superparamagnetic beads. To purify antibodies, a sample containing the antibody of interest is incubated with the Protein A/G MagBeads MX. The antibody binds to the Protein A/G on the beads during a short incubation. This is followed by washing the beads to remove non-specifically bound materials, and eluting the purified antibody. Magnetic separation simplify purification process by eliminating the need for centrifugation, minimizes sample loss and removes the excessive steps of a traditional centrifugation-based purification method.

1.3 Description of Material

Material Supplied

GenScript Protein A/G MagBeads MX are magnetic agarose beads of 30-100 μm in diameter, covalently coated with recombinant Protein A/G. The beads are supplied as 25% slurry in phosphate buffered saline (PBS), pH 7.4, containing 20% ethanol. The Protein A/G MagBeads MX have a binding capacity of more than 30 mg Human IgG per 1 mL of settled beads (e.g. 4 mL of 25% slurry).

Additional Material Required

Mixing/rotation device, magnetic separation rack, microcentrifuge tubes, pipettes and pipette tips.

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Additional Buffers Needed

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

Elution Buffer: 0.1 M glycine, pH 2-3

Neutralization Buffer: 1 M Tris-HCl, pH 8.5

2. Instructions For Use

The protocol uses 100 µL of Protein A/G MagBeads MX (400 µL of 25% slurry), which may be scaled up or down for individual samples.

2.1 Preparation of the MagBeads

1. Completely resuspend the beads by shaking or vortexing the vial.
2. Transfer 100 µL of the beads into a clean tube.
3. Place the tube on a magnetic separation rack to collect the beads. Remove and discard the supernatant.
4. Add 1 mL of 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 Target IgG

1. Resuspend the beads in 100 µL of Binding/Wash Buffer.
2. Add the sample containing the target IgG to the tube and gently invert the tube to mix.
3. Incubate the tube with mixing (on a shaker or rotator) for 60 – 120 minutes (at 4° C or room temperature). For samples with low expression levels (< 0.1 mg/mL), it is recommended to incubate for longer than 120 minutes.
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 of 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 more times.
6. Proceed to elution of isolated IgG (Section 2.3).

2.3 Elution of Isolated IgG

1. Add 100 µL of Elution Buffer to the tube and mix well. Incubate for five minutes at room temperature with occasional mixing.
2. Use the magnetic separation rack to collect the beads and transfer the supernatant that contains the eluted IgG into a clean tube.
3. Repeat Steps 1 and 2 twice.
4. Add 10 µL of Neutralization Buffer to each 100 µL eluate to neutralize the pH. If needed, perform buffer exchange by dialysis or desalting.

3. Troubleshooting

Review the information below to troubleshoot your experiments using the GenScript Protein A/G MagBeads MX.

Problem	Possible Cause	Solution
The beads are difficult to immobilize using the magnetic separation rack.	Too many beads are used.	Decrease the volume of MagBeads used.

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A considerable amount of sample has been added, but very little antibody of interest is recovered.	The antibody of interest is at very low concentration.	Increase incubation time for over 120 mins. Concentrate the sample to increase the target antibody concentration in the sample.
The antibody of interest is purified, but it is degraded (as determined by loss of function in a downstream assay).	The antibody is sensitive to low-pH elution buffer. The downstream application is sensitive to the neutralized elution buffer.	Try a different elution reagent, such as 3.5 M $MgCl_2$, 10 mM phosphate, pH 7.2. Desalt or dialyze the eluted sample into a suitable buffer.
No antibody is detected in the eluate.	The antibody in the sample cannot bind to the engineered Protein A/G.	Try GenScript Protein A MagBeads (Cat. No. L00672), (Cat. No. L00695) or Protein G MagBeads (Cat. No. L00673).

4. General Information

4.1 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**. Keep the MagBeads in liquid suspension during storage and all handling steps. Drying will cause loss of binding capacity and result in reduced performance. Completely resuspend the beads before use. Observe sterile technique to avoid bacterial/fungal contamination.

4.2 Technical Support

Please contact GenScript for further technical information (see contact details). Certificate of Analysis and the latest revision of the package insert/instructions for use is available at https://www.genscript.com/product/documents.

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 vapor. Flash point 38°C. R-10 flammable. Material Safety Data Sheet (MSDS) is available at https://www.genscript.com/product/documents.

4.4 Related MagBeads Products

Cat. No.	Product Name
L00273	Protein A MagBeads
L00274	Protein G MagBeads
L00295	Ni-Charged MagBeads
L00672	Protein A MagBeads MX
L00673	Protein G MagBeads MX
L00695	AmMag™ Protein A Magnetic Beads
L00776	AmMag™ Ni Magnetic Beads
L00895	Glutathione MagBeads

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For research and manufacturing use. Direct human use, including taking orally and injection are forbidden.

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