Version：03
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Protein A MagBeads MX
Cat No: L00672

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1. Product Description

1.1 Intended Use
GenScript Protein A MagBeads MX are ideal for small-scale antibody purification.

1.2 Principle
The sample containing antibody is added to the Protein A MagBeads MX. The antibody will bind to the beads during a short incubation. Then the bead-bound antibody can be eluted off from the beads using a magnetic separation rack. Magnetic separation eliminates the changes of micro tubes, minimizes the loss of sample and removes excessive steps of traditional centrifugation method.

1.3 Description of Material
Material Supplied
GenScript Protein A MagBeads MX are super paramagnetic beads of average 45±5 μm in diameter, covalently coated with recombinant Protein A. The beads are supplied as 25% slurry in 20% ethanol. The Protein A MagBeads MX have a binding capacity of more than 30 mg human IgG per 1 ml settled beads.

Protein A, a bacterial cell wall protein isolated from *Staphylococcus aureus*, binds to mammalian IgGs, mainly through Fc regions. Native Protein A has five IgG binding domains and many unknown-function repeated sequences. Recombinant Protein A only contains five high-affinity IgG binding domains to reduce nonspecific binding.

Additional Material Required
Mixing/Rotation Device
Magnetic Separation Rack
Test tubes and pipettes
Buffers and solutions (see below)

Additional Buffers Required
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
Storage Buffer: 1 x PBS, pH 7.4, containing 20% ethanol

GenScript USA, Inc.
860 Centennial Ave. Piscataway, NJ 08854
Tel: 1-732-885-9188

2. Instruction For Use

The protocol uses 100 µl Protein A MagBeads MX, 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 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 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 Binding/Wash Buffer.
2. Add the sample containing target IgG to the tube and gently invert the tube to mix.
3. Incubate the tube at room temperature with mixing (on a shaker or rotator) for 30 – 60 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 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 more.
6. Proceed to elution of isolated IgG (Section 2.3).

2.3 Elution of Isolated IgG

1. Add 100 µl 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 Step 1 and 2 twice.
4. Add 10 µl of Neutralization Buffer to each 100 µl eluate to neutralize the pH. If needed, perform a buffer exchange by dialysis or desalting.

2.4 Post-treatment of magnetic beads

1. Add 1 ml Elution 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 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.
3 Add storage buffer to resuspend the magnetic beads and store at 2~8℃.

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3. Troubleshooting

Review the information below to troubleshoot your experiments using the GenScript Protein A 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 suspension.
A considerable amount of sample has been added, but very little specific antibody of interest is detected.	The antibody of interest is at very low concentration.	Use a serum-free medium for cell supernatant samples. Affinity-purify the antibody using its specific antigen coupled to an affinity supporting material.
The antibody of interest is purified, but it is degraded (as determined by loss of function in downstream assay).	The antibody is sensitive to low-pH elution buffer. The downstream application is sensitive to the neutralized elution buffer.	Try another 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 any eluate.	The antibody in the sample cannot bind to Protein A.	Try GenScript Protein G MagBeads or Protein A/G MagBeads.

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 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 and the latest revision of the package insert/instructions for use is available on 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.

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4.4 Related MagBeads Products

Cat. No.	Product Name
L00273	Protein A MagBeads
L00695	AmMag™ Protein A Magnetic Beads
L00274	Protein G MagBeads
L00673	Protein G MagBeads MX
L00277	Protein A/G MagBeads
L00894	Protein A/G Magbeads MX
L00295	Ni-Charged MagBeads
L00776	AmMag™ Ni Magnetic beads
L00895	Glutathione MagBeads
L01013	AmMag™ SA Plus System

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