MAC cartridges provide high-yield chromatography for efficient purification of His•Tag® proteins

Features

- Rapid affinity purification of His•Tag® fusion proteins
- Cartridges precharged with Ni^{2+}, Co^{2+}, or uncharged to use with choice of metal ion
- High mechanical and chemical stability
- Compatible with a syringe or liquid chromatography systems, pressure up to 20 bar
- High capacity Fractogel® resin—binds up to 30 mg protein/ml resin
- Reuse at least 10 times

Merck Biosciences introduces Ni-MAC™, Co-MAC™, and u-MAC™ cartridges containing prepacked His•Bind® Fractogel® resin, precharged with nickel (Ni-MAC) or cobalt (Co-MAC), or uncharged (u-MAC). Each charged cartridge binds up to 30 mg His•Tag fusion protein and can be regenerated and reused at least 10 times. Cartridges can be used manually with a syringe or with liquid chromatography instruments at flow rates up to 4 ml/min and pressures up to 20 bar.

Fractogel matrix

The Fractogel matrix is a very stable and durable synthetic methacrylate-based polymeric resin that provides excellent mechanical and chemical stability, large pore size (40-90 µm), and an inert hydrophilic surface. These properties result in resins with high flow rates and low nonspecific binding, that can be regenerated and reused. The resin has long polymer tentacles covalently bonded to hydroxyl groups on the Fractogel bead surface. The steric accessibility of ligands attached to the tentacles allows high protein binding capacities. With low steric hindrance, biomolecules also bind more readily during the separation process, leading to higher purification yields.

Metal Affinity Chromatography

For Metal Affinity Chromatography (MAC) applications, iminodiacetic acid (IDA) groups are attached to the Fractogel tentacles. IDA can be charged with different metal ions, providing a powerful tool for rapid, efficient purification of His•Tag fusion proteins.

Precharged Ni-MAC, Co-MAC resins

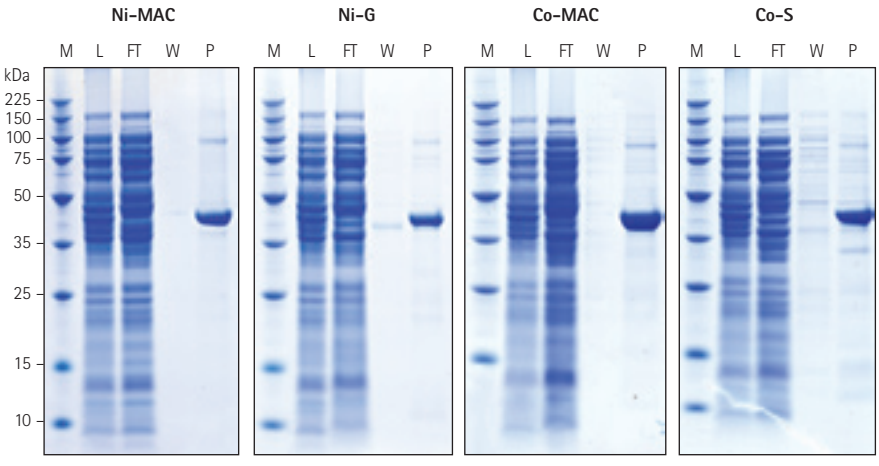
The Ni-MAC Purification Kit and Co-MAC Purification Kit contain a set of concentrated phosphate-based (Ni-MAC) or Tris-based (Co-MAC) buffers and 5 ready-to-use precharged cartridges. Each cartridge is packed with 1 ml His•Bind Fractogel Resin, precharged with Ni^{2+} or Co^{2+}.

Uncharged u-MAC cartridges

Uncharged u-MAC cartridges are packaged as 5 prepacked cartridges without buffers. Each u-MAC cartridge is packed with 1 ml of uncharged His•Bind Fractogel Resin, which can be custom charged with different metal ions (Co^{2+}, Cu^{2+}, Fe^{3+}, Ni^{2+}, or Zn^{2+}) depending on the protein characteristics and desired binding efficiency. ■

Product	Size	Cat. No.
NEW Co-MAC™ Purification Kit	1 kit	71659-3
NEW Ni-MAC™ Purification Kit	1 kit	71658-3
NEW u-MAC™ Cartridges	5 cartridges	71651-3

Components	
Cat. No. 71659	
• 5	Co-MAC Cartridges
• 2 × 80 ml	8X Bind Buffer
• 3 × 25 ml	8X Wash Buffer
• 3 × 25 ml	8X Elute Buffer
Cat. No. 71658	
• 5	Ni-MAC Cartridges
• 2 × 75 ml	4X MAC Wash Buffer, Phosphate
• 2 × 100 ml	4X MAC Bind Buffer, Phosphate
• 75 ml	4X MAC Elute Buffer, Phosphate



Comparison of metal affinity purification of an ERK2–His•Tag fusion protein with Ni-MAC, Co-MAC, and competitor cartridges

An ERK2–His•Tag fusion protein was expressed from BL21(DE3) and purified by metal affinity chromatography. The protein was purified according to manufacturers' protocols for Ni-MAC, nickel-affinity sepharose (Competitor G, Ni-G), Co-MAC, and cobalt-affinity cross-linked agarose (Competitor S, Co-S) cartridges. Crude load (L), flow-through (FT), wash (W), and elute (E) fractions (20 µl each) were collected and analyzed by 10% BIS TRIS gels after staining with Coomassie blue. M: molecular weight markers.

customer.service@merckbio.com
technical.service@merckbio.com
Visit our website www.merckbio.com