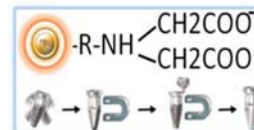


BcMag™ IDA-Modified Magnetic Beads

BcMag™ IDA-modified Magnetic Beads are uniform, silica-based superparamagnetic beads coated with high density Iminodiacetic Acid (IDA) functional groups on the surface. The beads are used for immobilized metal affinity chromatography (IMAC). When the beads were charged with nickel (Ni^{2+}), or cobalt (Co^{2+}), or other ions, they are widely used for protein purification such as recombinant proteins.

Features and Advantages:

- Quick, Easy and one-step high-throughput procedure; eliminates columns or filters, or laborious repeat of pipetting or centrifugation (Fig.1)
- High binding capacity
- Exhibits very low nonspecific binding
- Scalable - easily adjusts for sample size and automation
- Reproducible results



Product Specificities		
Composition	Silica-coated iron oxide magnetic beads grafted with IDA group on the surface	
Bead Size	~1 μm diameter; ~5 μm diameter	
Number of Beads	~1.7 x 10 ⁸ beads (1 μm beads) /mg; ~5 x 10 ⁷ beads (5 μm beads) /mg	
Surface Area	~100 m ² /g	
Stability	pH 4-10; Temperature: 4°C -140°C; Most organic solvents	
Magnetization	~40-45 EMU/g	
Type of Magnetization	Superparamagnetic	
Effective Density	2.5 g/ml	
Formulation	Lyophilized Powder	
Functional Group Density	1 μm Magnetic Beads	~55 μMol NiSO ₄ / Gram of Beads
	5 μm Magnetic Beads	~42 μMol NiSO ₄ / Gram of Beads
Storage	Store at 4°C upon receipt.	

Protocol

Materials Required

- **Magnetic Separator (for manual operation):** Based on sample volume, user can choose one of the following magnetic Separators: BcMag separator-2 for holding two individual 1.5 ml centrifuge tubes (Cat. # MS-01); BcMag separator-6 for holding six individual 1.5 ml centrifuge tubes (Cat. # MS-02); BcMag separator-24 for holding twenty-four individual 1.5-2.0 ml centrifuge tubes (Cat. # MS-03); BcMag separator-50 for holding one 50 ml centrifuge tube, one 15 ml centrifuge tube, and four individual 1.5 ml centrifuge tubes (Cat. # MS-04) ; BcMag™ separator-96 for holding a 96 ELISA plate (Cat.# MS-05).
- Metal ion solution: 100 mM solution of a soluble metal salt of the metal ion (NiSO₄, CuSO₄, ZnSO₄, CoCl₂, etc.)
- Storage Buffer: 20 mM sodium phosphate, 0.5 M sodium chloride, pH 7.0-7.5

1. Magnetic Beads Preparation

Note: Weigh, suspend the magnetic beads with 100 mM sodium phosphate, pH 6.8, 1M NaCl, 20% Ethano (Concentration: 30mg/ml) (Concentration: 50mg/ml), disperse the beads by vigorously vortexing and store at 4°C. *Shake the bottle to completely resuspend the Magnetic Beads before use.*

- 1) Shake the bottle to resuspend the beads thoroughly.
- 2) Transfer desired amount of magnetic beads to a centrifuge tube.
- 3) Place the tube on the magnetic separator for 1-3 minutes. Remove the supernatant while the tube remains on the separator. Remove the tube and resuspend the beads thoroughly with d₂H₂O. Place the tube on the magnetic separator for 1-3 minutes. Remove the supernatant while the tube remains on the separator.
- 4) Repeat step 3 once.
- 5) Add 5 bead volumes to the magnetic beads and incubate at room temperature for 20-30 minutes.
- 6) Washing the bead with 3 bead volumes of storage buffer five times as described in step 3.
- 7) The beads are ready to use or store at 4°C.