

## GeneFlow IMAC SepFast BG Resin Information

For Batch/Gravity Purification of His-Tag Proteins  
Specifically designed for batch and/or gravity flow purifications from clarified or unclarified samples

- **High binding capacity (> 40 mg/ml)**
- **All purification steps (binding, washing and elution etc) use a single column (supplied)**
- **Choice of four pre-charged metal ions or a screening kit with each ion supplied**



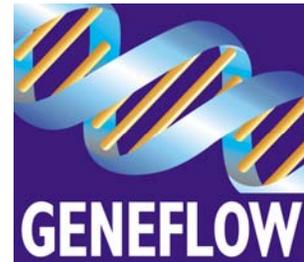
Immobilised metal affinity chromatography (IMAC) has been widely employed as a powerful separation approach in the purification of a broad range of proteins and peptides. It is based on the specific interactions between certain transitional metal ions, mostly  $\text{Cu}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Zn}^{2+}$  and  $\text{Co}^{2+}$  to the exposed amino acid surface chains containing histidine (or cysteine and tryptophan).

### Batch/Gravity Flow Purifications

IMAC SepFast BG Resin is unique as it is specifically designed for the batch and/or gravity flow purifications of histidine-tagged proteins. The rough surface and carefully controlled pore structure allows fast access of immobilised metal ligands to target protein molecules, whilst the high mechanical strength permits liquid passing through gravity columns at reasonable flow rates. Clarified or unclarified cell lysates (for intracellular proteins) or culture broths (for extracellular proteins) can be directly processed with IMAC SepFast BG.

### Sample Flexibility

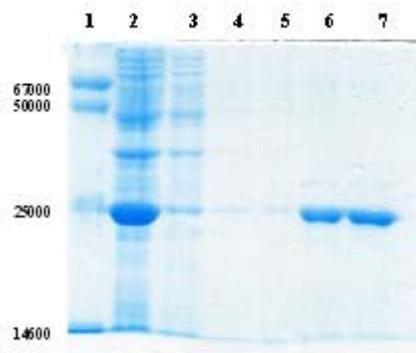
To facilitate the purification process, two specially designed empty columns are supplied with the resins. The larger column **BG-30** has a working volume of 30 ml and the smaller one **BG-5** has a working volume of up to 5 ml. These columns can be reused after proper cleaning if required.



IMAC SepFast BG is highly stable and compatible to a wide range of chemicals (e.g. detergents, denaturing reagents and reducing reagents etc) commonly used in protein purification processes, which mean that more flexible operations can be developed for the best performance.

A screening kit containing four types of immobilised metal ions is available for identification of the best metal ion for a given protein.

**Ni SepFast BG: Purification of a 6 x His tagged hydrolase from unclarified E.coli. cell lysate in a batch operation**



Lane 1: Molecular marker;  
 Lane 2: Unclarified cell lysate;  
 Lane 3: Cell lysate pass through;  
 Lane 4: Wash with binding buffer (20 mM phosphate, 20 mM imidazole and 500 mM NaCl, pH 7.4);  
 Lane 5: Wash with 50 mM imidazole in the binding buffer;  
 Lane 6 and 7: Eluates at 500 mM imidazole in the binding buffer, pH 7.4.

## Product Characteristics

Particle size	50 – 150 µm
Base matrix	Cross-linked 6% agarose
Metal ion capacity	Approx. 15 – 20 µmol / ml resin*
Protein binding capacity	Depends on the type of proteins and binding conditions; could be > 4 / ml resin*
Chemical stability**	Stable in 0.1M HCl and 1% SDS tested for 30 mins; 0.5 M NaOH and 30% acetic acid tested for overnight; 0.01M HCl, 0.1M NaOH and 0.2M acetic acid tested for one week.
pH stability**	2-14 (<2 h) 3-12 (up to one week)
Storage	20% ethanol at 4°C

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