

Affinity Matrices for Tags

GST-Tag

Description: Immobilized Glutathione is beaded agarose resin to which glutathione is covalently attached for affinity purification of glutathione S-transferase (GST) and GST fusion proteins expressed in E.coli, insect cells and mammalian cells.

Specification:

Application	Affinity chromatography (purification of GST-Tagged Proteins)
Ligand	Glutathione, linked via sulfur atom
Format	50% suspension
Matrix	4% beaded agarose
Binding capacity*	> 10 mg GST/ml medium
Storage temperature	4-8°C

His-Tag

Description: Immobilized metal ion adsorption chromatography (IMAC) also known as metal chelate affinity chromatography (MCAC) is a sensitive technique applicable, especially for Histidine fusion proteins, but generally applicable to most proteins. In this technique, the gel is first charged with transition metal ions to form a chelate. Proteins will bind to the gel depending upon the presence of surface histidine, cysteine, and tryptophan residues that have an affinity for the chelated metal ions. It is useful for purifying membrane proteins and protein aggregates where detergents or high ionic strength buffers are required. Highly selective affinities, depend upon metal ions such as Cu²⁺, Zn²⁺, Ni²⁺, Ca²⁺, Co²⁺, Mg²⁺, etc.

The binding strength is affected predominantly by the species of metal ion and pH of the buffers. Since the metal ions are strongly bound to the matrix, the adsorbed protein can be eluted by competitive elution or lowering the pH. Strong chelating agents may also be used. This technique can readily be performed with either native or denatured proteins.

GeNei™ supplies (metal chelating matrices) IDA (Iminodiacetic acid)-CL Agarose.

IDA-CL Agarose: IDA is a tridentate ligand at physiological pH. In the presence of the electron donor, immobilized IDA forms octahedral complexes with divalent metal ions. In this case however, the histidine containing protein must furnish 3 co-ordination bonds to the metal ion of the complex. This results in a small selective binding due to the histidine residues of the proteins of interest while other amino-acid residues such as cysteine, lysine, tryptophan can also occupy other free sites. The elution of histidine containing proteins of interest requires a high concentration of Imidazole for breaking all the 3 co-ordination bonds. The gel has a capacity to chelate 50-100 mmole of Ni⁺⁺.

New TED Agarose

(tris-carboxymethyl ethylene diamine)

Description: Ni- TED CL Agarose is useful in purification of recombinant poly-histidine tagged proteins by IMAC technology.

Highlights:

- High Specificity - due to single binding site for His-tagged protein
- Low metal leaching - 5 binding sites to Ni²⁺
- High Purity
- Matrix can be stored at Room temperature

Specification:

	Ni-TED Agarose
Application	Affinity Purification of poly-histidine tagged proteins by IMAC technology
Chelating group	TED
Binding capacity	12-15mg/ml
Matrix	CL agarose
Physical form	Re-suspended with equal amount of buffer and gel pre-charged with Ni ²⁺
pH stability	3-8.5
Storage	4°C
Recommended imidazole concentration for load/wash	0mM
Recommended imidazole concentration for elution	200-250mM