

## Cleavable Alkyne Magnetic Beads

The activated magnetic beads are uniform inert silica-based magnetic beads grafted with a high density of alkyne functional groups on the surface (Fig.1). The beads are specifically designed to efficiently enrich azide-tagged biomolecules from complex cell lysates via a Cu(I)-catalyzed Alkyne-Azide (CUAAC) reaction. Compared with other affinity resins such as agarose beads or other polymers, the inert silica enclosed magnetic beads offer high stability, low nonspecific binding, and superior handling in protein-based systems. Since the active cleavable alkyne group is linked with the beads through a built-in cleavable disulfide linker, reducing agents such as DTT or  $\beta$ -mercaptoethanol can cleave and separate the target molecule-ligand complex from the beads after affinity purification. These magnetic beads are ideal tools for genomics, proteomics, biomarker discovery, posttranslational modification (PTM) analysis, etc.

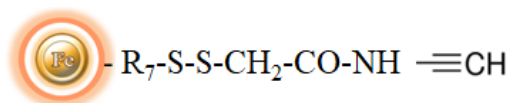


Fig.1

### Workflow

The beads work perfectly as affinity resin for capturing azide-tagged biomolecules from complex cell lysate. Add the beads to a sample containing the tagged biomolecules, then mix, incubate, wash and elute the target molecules (Fig.1).

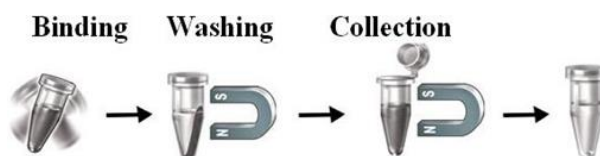


Fig.2

### Features and Advantages:

- Easy to use
- Stable covalent bond with minimal ligand leakage
- Produces reusable immunoaffinity matrices
- Low nonspecific binding

Composition	Magnetic beads grafted with a high density of alkyne groups on the surface.	
Number of Beads	~ 1.68 x 10 <sup>9</sup> beads/mg (1 $\mu$ m beads); ~1.47 x 10 <sup>8</sup> beads/mg (2.5 $\mu$ m beads)	
Stability	Short Term (<1 hour): pH 4-11; Long-Term: pH 4-10 Temperature: 4°C -140°C; Most organic solvents	
Magnetization	~40-45 EMU/g	
Type of Magnetization	Superparamagnetic	
Formulation	Lyophilized Powder	
Functional Group Density	1 $\mu$ m Magnetic Beads	~37 nmole / mg of Beads
	2.5 $\mu$ m Magnetic Beads	~32 nmole /mg of Beads
Storage	Ship at room temperature, Store at 4° upon receipt.	

### 1. Cleave the Disulfide Bond

**Note:** Due to conformational variation from ligands to ligands, the user should determine the optimal working conditions such as reducing agent, pH, and temperature for cleaving the disulfide bond of individual ligands.

- 1) Incubate the magnetic beads (30mg/ml) in either 140 mM  $\beta$ -mercaptoethanol or 5mM DTT (Dithiothreitol).
  - a. 100 mM Tris-HCl, pH 8.0, 50 mM EDTA, 140 mM  $\beta$ -mercaptoethanol for 2 hours to overnight at room temperature or 98°C for 5 minutes.



b. 100 mM Tris-HCl, pH 8.0, 50 mM EDTA, 5mM DTT for 2 hours to overnight at room temperature or 98°C for 5 minutes

Related Products	
Amine-Terminated Magnetic Beads	Iodoacetyl-Activated Magnetic Beads
DADPA-Activated Magnetic Beads	Peptide conjugation buffer Kit-I
Carboxyl-Terminated Magnetic Beads	Peptide conjugation buffer Kit-II
Epoxy-Activated Magnetic Beads	DVS-Activated Magnetic Beads
Hydrazide-Terminated Magnetic Beads	NHS-Activated Magnetic Beads
Glycoprotein and Antibody Conjugation Kit-I	Hydroxyl-Terminated Magnetic Beads
Glycoprotein and Antibody Conjugation Kit-II	Sulfhydryl-Terminated Magnetic Beads
Aldehyde-Activated Magnetic Beads	Tosyl-Activated Magnetic Beads
Silica-Modified Magnetic Beads	CDI-Activated Magnetic Beads
Alkyne-Activated Magnetic Beads	Thiol-Activated Magnetic Beads
Azide-Activated Magnetic Beads	Cleavable NHS-Activated Magnetic Beads
Cleavable Amine-Terminated Magnetic Beads	Cleavable Azide-Activated Magnetic Beads
Cleavable Carboxyl-Terminated Magnetic Beads	Cleavable Alkyne-Activated Magnetic Beads
Cleavable Epoxy-Activated Magnetic Beads	Cleavable Iodoacetyl-Activated Magnetic Beads
Cleavable Hydrazide-Terminated Magnetic Beads	Cleavable Tosyl-Activated-Magnetic Beads
Cleavable Aldehyde-Activated Magnetic Beads	Streptavidin Magnetic Beads
Boronate Affinity Magnetic Beads	Cleavable Streptavidin Magnetic Beads
Monomer Avidin Magnetic Beads	