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HiSelect Streptavidin ST 4FF

Index

1. Product Description

Streptavidin ST Beads 4FF is a chromatography medium for one-step purifying Strep-tag II fusion proteins from various of expression system. The Strep-Tag II peptide is an eight amino acid fusion tag(Trp-Ser-His-Pro-Gln- Phe-Glu-Lys), which has negligible effects on recombinant proteins. The ligand immobilized on high-crossed linked 4% agarose is a specially recombinant protein. Purification under physiological conditions and mild elution preserves the activity of the target protein.

HiSelect Streptavidin ST 4FF is a prepacked ready to use column. It is packed with 4.7 ml **Streptavidin ST Beads 4FF**.The arrow on column label indicates the recommended flow direction. It can be adapted to all kinds of chromatography system, such as ÄKTA.

Table 1. Characteristics of **Streptavidin ST Beads 4FF**

Item	Description
Size	4.7 ml
Column size	0.77×10 cm
Matrix	Highly cross-linked 4% agarose beads
Ligand	Streptavidin ST
Capacity （/ml medium）	6 mg Strep-tag II fusion proteins
Particle Size (μm)	45-165
Maxi Pressure	0.3 MPa, 3 bar
pH	3-10
Storage Solution	1X PBS containing 20% ethanol
Storage Temperature	2-8℃

Table 2. Chemical compatibilities for **Streptavidin ST Beads 4FF**

Reagent	Concentration
Reduction Agents	
DTT	50 mM
β-mercaptoethanol	50 mM
Non-Ionic Detergents	
C8E4 Octyltetraoxyethylene	Max.0.88 %
C10E5; Decylpentaoxyethylene	0.12 %
C10 E6	0.03 %
C10E8	0.005 %
C12E9; Dodecyl nonaoxyethylene (Thesit)	0.023 %
DM; Decyl-β-D-maltoside	0.35 %
LM; N-dodecyl β-D-maltoside	0.007 %
NG; N-nonyl-β-D-glucopyranoside	0.2 %
OG; N-octyl-β-D-glucopyranoside	2.34 %
TX; Triton X-100	2 %
Tween-20	2 %
Ionic Detergents	
N-lauryl-sarcosine	2 %
8-HESO;N-octyl-2-hydroxy-ethylsulfoxide	1.32 %
SDS; Sodium-N-dodecyl sulfate	0.1 %
Zwitter-Ionic Detergents	
CHAPS	0.1 %
DDAO; N-decyl-N,N-dimethylamine-N-oxide	0.034 %
LDAO; N-dodecyl-N,N-dimethylamine-N-oxide	0.13 %

Other reagent	
Ammonium sulfate $(NH4)_2SO_4$	2 M
$CaCl_2$	Max.1 M
Ethanol	10%
EDTA	50 mM
Guanidine	Max.1 M
Glycerol	Max.25 %
Imidazole	Max.250 mM
$MgCl_2$	1 M
NaCl	5 M
Urea	Max.1 M

2. Purification Procedure

2.1 Buffer Preparation

Water and chemicals used for buffer preparation should be high purity. It is recommended to filter the buffers by passing them through a 0.22 μm or 0.45 μm filter before use.

Binding/Wash buffer: 100 mM Tris-HCl,150 mM NaCl,1mM EDTA,pH 8.0 or PBS

Elution Buffer: 2.5mM desthiobiotin in binding buffer

Regeneration Buffer: 1mM HABA in binding buffer

2.2 Sample preparation

The sample should be adjusted to the composition of the binding buffer. This can be done either by diluting the sample with binding buffer or by buffer exchange. It is recommended to filter the sample solution by passing them through a 0.22 μm or 0.45 μm filter before use.

2.3 Sample Purification

HiSelect Streptavidin ST 4FF is a prepacked, ready to use column for purification. The prepacked column provides fast, simple and easy separations in a convenient format.

1) Fill the syringe or pump tubing with distilled water. Remove the stopper and connect the column to the syringe (with the provided connector), or pump tubing, “drop to drop” to avoid introducing air into the column. Remove the stopper at the column outlet and connect the column to the chromatographic system.

2) Wash the column with 3-5 column volumes of distilled water.

3) Equilibrate the column with at least 5 column volumes Lysis Buffer.

4) Apply the pre-treated sample, using a Loop fitted to the connector or by pumping it onto the column.

5) Wash with Wash Buffer until the absorbance reaches the baseline or no material appears in the effluent (Generally at least 10-15 column volumes).

6) Elute with elution buffer . For one-step elution, 5 column volumes are usually enough.

2.4 Analysis

Identify the fractions containing the target protein. Use UV absorbance, SDS-PAGE, or Western Blot.

3. Regeneration

Regeneration: Wash the column with 3CV distilled water followed by 15CV regeneration buffer and 30CV binding buffer. The displacement is detected by the change in color of the edium in the column from yellow to red. This color change is due to the accumulation of HABA/Streptavidin ST complexes. The HABA is washed away with the binding buffer.

Equilibration:Before next use, balance with 5 times column volume of equalizer.

4. Related Products

Product	Cat. No.	Size
HiSelect Streptavidin ST 4FF	SA053C47	4.7 ml
HiPur Streptavidin ST 4FF	SA053C20	20 ml