



PreCap Con A

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1. Product Description

Con A Beads 4FF is an affinity chromatography medium that conjugates Con A with agarose to purify some glycoproteins. Con A is a plant haemagglutinin separated from giant bean (Jack bean, *Canavalia ensiformis*), which can binds α -D-pyran mannose, α -D-pyran on glucose and Molecular groups related to its space position of the combination. Con A binds to carbohydrate molecules mainly in the hydroxyl part of C-3, C-4 and C-6. Con A combines better with D-pyranoid mannose than with D-pyranosaccharide. **Con A Beads 4FF** are used to isolate and purify some glycoproteins, membrane proteins, sugar lipids, polysaccharides, membrane vesicles with mannitol or glucoside residues, IgM, hormone lipoproteins and so on. Substances such as trypsin inhibitors in human serum, alkaline phosphatase, calf spleen phosphodiesterase, various variants of alpha-fetoglobulin and certain hormones such as chorionic gonadotropin (HCG) and luteinizing hormone (LH) can be purified with it.

PreCap Con A is one of a range of prepacked, ready-to-use columns for affinity chromatography. It is packed with 1 ml and 5 ml of Con A Beads 4FF. Five different packing sizes are available. PreCap Con A has the standard interface and can be adapted to all kinds of chromatography system, such as ÄKTA. It is fast, simple and easy operation.

Table 1. Characteristics of **Con A Beads 4FF**

Item	Description
Matrix	Highly cross-linked 4% agarose
Ligand	Con A
Binding capacity	>20mg thyroglobulin /ml medium
Particle size (μm)	45-165
Maxi pressure	0.3 MPa, 3 bar
pH stability	4-9
Storage buffer	0.1M acetate, 1MNaCl, 1mM CaCl_2 , 1mM MnCl_2 , 1mM MgCl_2 , 20% ethanol, pH6.0
Storage	2°C - 8°C

2. Purification Procedure

2.1 Buffer Preparation

It is recommended to filter the buffers by passing them through a 0.22μm or 0.45μm filter before use.

Mn^{2+} and Ca^{2+} must be added to ensure adsorption activity when the buffer pH is lower than 5.0. We recommend using the following buffer for purification.

Binding /Wash Buffer: 20mM Tris-HCl, 0.5M NaCl, 1mM CaCl_2 , 1mM MnCl_2 , pH7.4

Elution Buffer: 20mM Tris-HCl, 0.5M NaCl, 1mM CaCl_2 , 1mM MnCl_2 , 0.1M-0.2M Dew α -D-methyl glucoside or α -D-methyl glucoside, pH7.4

Note: in the eluent a dew - D-methyl glucoside or α -D-methyl glucoside concentration according to physical adsorption capacity for linear or gradient elution. Mannose and glucose can also be used as eluent, but the eluent ability is weak.

For substances with strong binding capacity, the pH of the lower eluent can be eluted, but not lower than pH4.0.

Borate can be used as eluent, such as 0.1M borate, pH6.5.

2.2 Sample Preparation

To ensure that the sample solution has the appropriate ionic strength and pH before ascending the column, dilute the serum sample, ascites, or cell culture with a balance/wash mixture, or dialysis the sample with a balance/wash Buffer.

Samples should be centrifuged or filtered by a 0.22 μm or 0.45 μm membrane before loading to reduce impurities, improve protein purification efficiency and prevent clogging of the column.





2.3 Sample Purification

- 1) Fill the syringe or pump tubing with binding buffer. 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 snap-off end at the column outlet.
- 2) Wash the column with at least 5 column volumes of binding buffer.
- 3) Apply the sample, using a syringe fitted to the connector or by pumping it onto the column.
- 4) Wash with 10 to 15 column volumes of binding buffer or until no material appears in the effluent.
- 5) Elute with 5-10 column volumes of elution buffer. Other volumes may be required if the interaction is difficult to break.

2.4 Analysis

SDS-PAGE will be used to test the purification effect of the samples obtained from the purified product (including the effluents, eluted and eluted components) and the original samples.

3. Regeneration

In general, **Con A Beads 4FF** is well suited for reuse a number of times. When precipitation and protein aggregation cause the loss of velocity and combined loads, you need to clean the medium as follows.

Wash with 3-4 column volumes 0.1M Tris-HCl, 0.5M NaCl, pH8.5 and 0.1 M NaAc, 0.5M NaCl, pH4.5, repeat the step for 3 times, then balance with 5 column volume binding buffer.

Remove the strong binding proteins

Wash with 2 column volumes of 0.1M borate buffer containing 1% Triton™ X-100 with pH6.5, or 20% ethanol, or 50% ethylene glycol, then immediately balance with 5 column volume binding buffer.

4. Related Products

Product	Cat. No.	Size
Con A Beads 4FF	SA028005	5ml
	SA028025	25ml
	SA028100	100ml
	SA028500	500ml
	SA02801L	1L
	SA02810L	10L
PreCap Con A	SA028C11	1×1 ml
	SA028C51	5×1 ml
	SA028C15	1×5 ml
	SA028C55	5×5 ml
	SA028CS	3×1 ml+1×5 ml

