



## Introduction

The CaptureSelect multi species Fc affinity matrix contains a 13 kDa Llama antibody fragment recognizing IgG of multiple species with high affinity. The used ligand is directed towards domains on the Fc part of IgG that enable purification of IgG of, amongst others, human, mouse, bovine, rabbit, rat, goat, horse, and sheep. The CaptureSelect multi species Fc matrix provides improved performance over Protein G, since the elution conditions are milder and elution profiles are better. The ligand is coupled to NHS-activated Sepharose 4 Fast Flow. This matrix can be used for the purification and isolation of IgG from complex sources like plasma, serum, and cell culture supernatants.

## Characteristics of CaptureSelect multi species Fc

Dynamic binding capacity:	>10 mg IgG per ml matrix (linear flow rate 150 cm/h)
Beads:	NHS-activated Sepharose 4 Fast Flow (GE Healthcare)*
Average particle size:	90 µm
Ligand coupling method:	N-Hydroxysuccinimide (NHS) activation
Elution conditions:	Acidic elution with 0.1 M Glycine pH 3.0 or pH 2.0
Short term storage:	20% ethanol at room temperature
Long term storage:	20% ethanol at 4 °C, stable for 1 year

\* For more information about NHS-activated Sepharose 4 fast flow matrix and column packaging see information on the website of GE Healthcare (<http://www.gehealthcare.com>) product code: 17-0906-02

## Application

A typical chromatography protocol for the CaptureSelect multi species Fc matrix is:

- 1) Carefully pack the CaptureSelect affinity matrix in a column and equilibrate the matrix by adding a suitable binding buffer. A good general binding buffer is PBS, pH 7.2-7.4 (physiological pH & ionic strength). Ultimately, the most suitable binding conditions need to be determined empirically.
- 2) Sample can be applied on the column. The optimal binding condition for samples is around physiological pH. Samples with acidic pH should be avoided, since binding of the target molecule will not occur at these conditions. The amount of sample that can be loaded is depending on the concentration of the target molecule in your sample and the dynamic binding capacity of the matrix. The dynamic binding capacity for human IgG is 10 mg per ml matrix, using a linear flow of 150 cm/h.
- 3) After sample application, the column should be washed with binding buffer until baseline has been re-established on the monitor. A typical wash is 5-10 column volumes.
- 4) Elution of the target molecule from the affinity media is achieved by an acidic elution buffer, 5 column volumes (CV) of 0.1 M Glycine pH 3.0 is recommended.

**Warranty:** Antibody toolbox affinity matrices of BAC BV are supplied for research use only and are intended to be used by a technically qualified individual. BAC BV makes no claim of suitability for use of antibody toolbox affinity matrices in applications regulated by FDA. If you are not satisfied with the performance of a BAC BV product, please contact BAC BV.



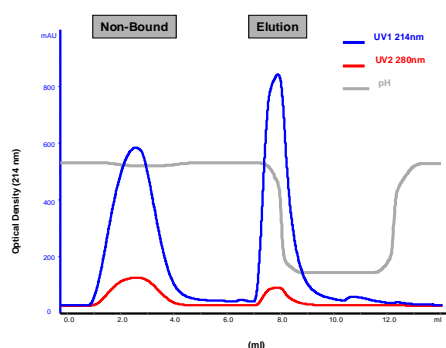
5) The affinity matrix should be re-equilibrated in binding buffer and is ready to use for a second affinity purification run. If the column will not be used immediately, the matrix should be stored in 20% ethanol at 4 °C (39 °F).

### A typical example of a chromatography run with CaptureSelect affinity matrices

Equilibration and washing buffer: PBS pH 7.4

Elution buffer: 0.1 M Glycine pH 3.0

Flow: 150 cm/h



1 Cycle is: -10 column volumes (CV) equilibration  
 - sample loading  
 - 10 CV wash out unbound sample  
 - 5 CV elution  
 - 10 CV re-equilibration

### Specificity of CaptureSelect multi species Fc matrix

The specificity of the CaptureSelect multi species Fc affinity matrix was analyzed in affinity chromatography. Samples of IgG from different species were tested, besides IgG also human IgA and IgM samples were loaded on CaptureSelect multi species Fc affinity matrix.

Sample	Multi Species Fc matrix
Human IgG	+++
Human IgA	-
Human IgM	-
Bovine IgG	++
Mouse IgG	+++
Rabbit IgG	+++
Goat IgG	++
Guinea Pig IgG	+++
Syrian Hamster IgG	+++
Rat IgG	++

Sample	Multi Species Fc matrix
Swine IgG	++
Dog IgG	+
Cat IgG	++
Donkey IgG	+++
Horse IgG	+++
Llama IgG	+/-
Sheep IgG	+++
Chimpanzee IgG	+++
Rhesus IgG	+++

CaptureSelect multi species Fc matrix binds IgG of at least 17 different species and does not cross-react with other Ig's like IgA and IgM.



## **The Toolbox for Antibody Purification**

The CaptureSelect antibody toolbox product line consists of seven different affinity matrices that can bind human IgG, human IgG4, human IgA, human kappa Ig light chains, and human lambda Ig light chains. The IgM affinity matrix is specific for human and mouse IgM, and a multi species IgG affinity matrix that can bind different species IgG completes our antibody purification toolbox.

### **Contact**

For further information or questions about the antibody toolbox matrices please send an E-mail to [ligands@captureselect.com](mailto:ligands@captureselect.com)