

CaptureSelect™ Human Growth Hormone (hGH) Affinity Matrix

INSTRUCTIONS

Publication Number MAN0009648 Rev. A.0

Introduction

The CaptureSelect™ Human Growth Hormone (hGH) Affinity Matrix is designed for the purification of hGH from recombinant sources. The affinity matrix contains a 14 kDa single domain [VHH] antibody fragment recognizing the hGH molecule. The hGH affinity matrix is suitable for the purification of intact hGH directly from complex source materials in a single step with high purity and yield using neutral pH elution conditions.

The CaptureSelect™ Human Growth Hormone (hGH) Affinity Matrix is compatible with FPLC systems.

Table 1 Specifications

Ligand	CaptureSelect™hGH affinity
Binding specificity	Human growth hormone (intact form) from recombinant sources
Matrix and particle size	Aldehyde-activated agarose, 65 µm
Dynamic binding capacity	~3 g/L of matrix
Shipping solution	20% (v/v) ethanol

Table 2 Conditions for use

Equilibration/wash buffer	20 mM Tris or PBS, pH 7.0 to 7.5
Elution buffer	20 mM citric acid, pH 3.0
Flow rate	200 to 400 cm/h
Pressure limit	≤2 bar
Cleaning solution	Any of the following: <ul style="list-style-type: none"> • Citric acid or acetic acid • 10 to 30 mM NaOH (higher concentrations affect functionality of the affinity ligand on the matrix) • PAB (120 mM phosphoric acid, 167 mM acetic acid, and 2.2 % (v/v) benzyl alcohol) prepared freshly every 2 to 3 days and stored protected from light to minimize radicals that affect the functionality of the matrix
Storage solution	20% (v/v) ethanol <ul style="list-style-type: none"> • Short term: Room temperature • Long term: 4°C for 2 years

Guidelines for use

For optimal matrix performance, optimize the conditions guidelines below for your application.

1. Pack the column as described in *CaptureSelect™ Affinity Matrices: Guidelines for Packing* (Pub. no. MAN0009645).
2. Attach the packed column to the FPLC system.
3. Equilibrate with 10 CVs of equilibration/wash buffer.
4. Determine the volume of sample to load based on dynamic binding capacity, concentration of target molecule, and column size. Optimum loading is at physiological pH. Avoid acidic conditions which decrease binding efficiency.
5. Load the sample on the column.
6. Wash with 5 to 10 CVs of equilibration/wash buffer. Washing efficiency can be optimized by increasing NaCl concentration up to 1.0 M.
7. Elute with 3 to 5 CVs of elution buffer.
8. Re-equilibrate the column in equilibration/wash buffer.
9. Strip the column with 0.1 M Glycine pH 2.0, citric acid, or acetic acid (0.5 to 1.0 M).
10. Re-equilibrate the column in equilibration/wash buffer to prepare the column for another purification run.

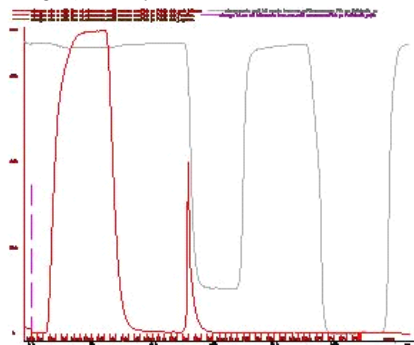
Cleaning

1. Pump cleaning solution for 15 minutes.
2. Pump 5 to 10 CVs equilibration/wash buffer to re-equilibrate the column.

Example application

Purification of hGH from feedstock using CaptureSelect™ Human Growth Hormone (hGH) Affinity Matrix

Figure 1 Chromatogram of hGH purification using CaptureSelect™ Human Growth Hormone (hGH) Affinity Matrix – Red line: OD 280 nm signal, gray line: pH



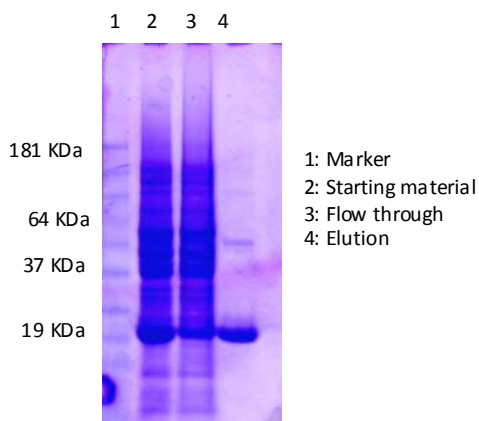
Column: CaptureSelect™ Human Growth Hormone (hGH) Affinity Matrix

Equilibration/wash buffer: PBS, pH 7.4

Load: Feedstock of recombinant hGH production

Elution buffer: 20 mM citric acid, pH 3.0

Figure 2 SDS PAGE analysis of the fractions: Non-reduced Coomassie-stained starting material, flow through, and elution fractions of hGH purification using CaptureSelect™ Human Growth Hormone (hGH) Affinity Matrix



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Ordering information

CaptureSelect™ Product	Catalog Number	
hGH Affinity Matrix	250 mL	1903160250
	500 mL	1903160500
	1 L	19031601L
	5 L	19031605L

For more information

For more information on CaptureSelect™ products and ligand leakage ELISA products, go to www.lifetechnologies.com/captureselect

Safety information

Obtaining SDSs

Safety Data Sheets (SDSs) are available from www.lifetechnologies.com/support.

Note: For the SDSs of chemicals not distributed by Life Technologies, contact the chemical manufacturer.

Limited Product Warranty

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