Biotinylated Human Carbonic Anhydrase IX / CA9 (38-414) Protein, Fc,Avitag™ (MALS verified)

Catalog # CA9-H82F5

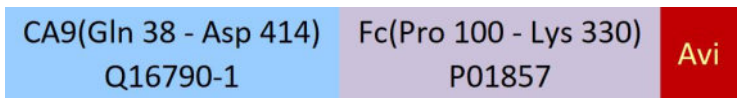
Synonym

CAIX,CA9,CA-IX,G250,MN,P54,58N,pMW1

Source

Biotinylated Human Carbonic Anhydrase IX (38-414), Fc,Avitag(CA9-H82F5) is expressed from human 293 cells (HEK293). It contains AA Gln 38 - Asp 414 (Accession # Q16790-1).
Predicted N-terminus: Gln 38

Molecular Characterization



This protein carries a human IgG1 Fc tag at the C-terminus, followed by an Avi tag (Avitag™).

The protein has a calculated MW of 69.1 kDa. The protein migrates as 80-90 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Labeling

Biotinylation of this product is performed using Avitag™ technology. Briefly, the single lysine residue in the Avitag is enzymatically labeled with biotin.

Protein Ratio

Passed as determined by the HABA assay / binding ELISA.

Endotoxin

Less than 0.1 EU per μg by the LAL method / rFC method.

Purity

>90% as determined by SDS-PAGE.

Formulation

Lyophilized from 0.22 μm filtered solution in 20 mM MES, 100 mM NaCl, pH7.3 with trehalose as protectant.

Contact us for customized product form or formulation.

Reconstitution

Please see Certificate of Analysis for specific instructions.

For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.

Storage

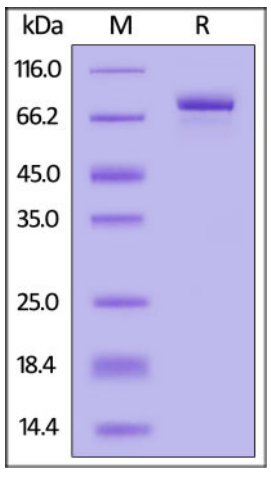
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

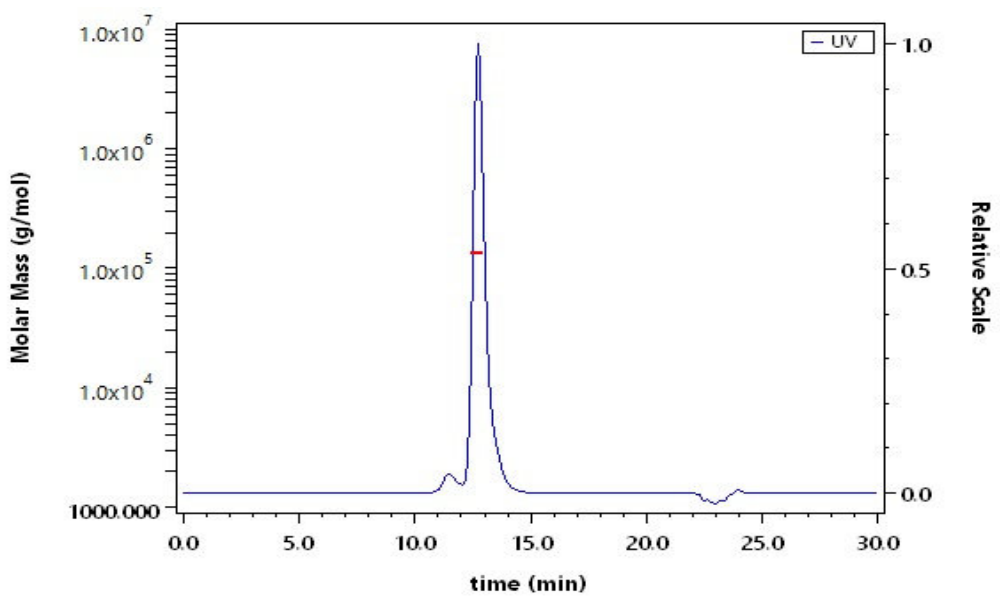
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



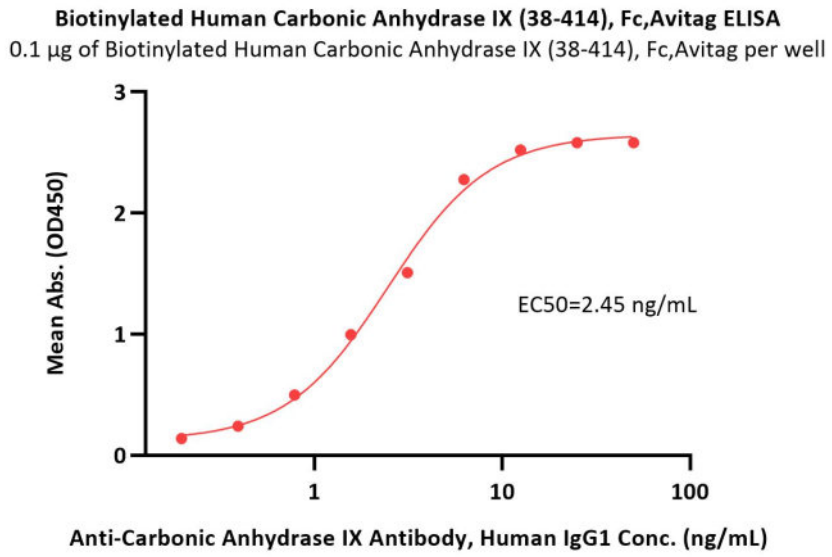
Biotinylated Human Carbonic Anhydrase IX (38-414), Fc,Avitag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90%.

SEC-MALS



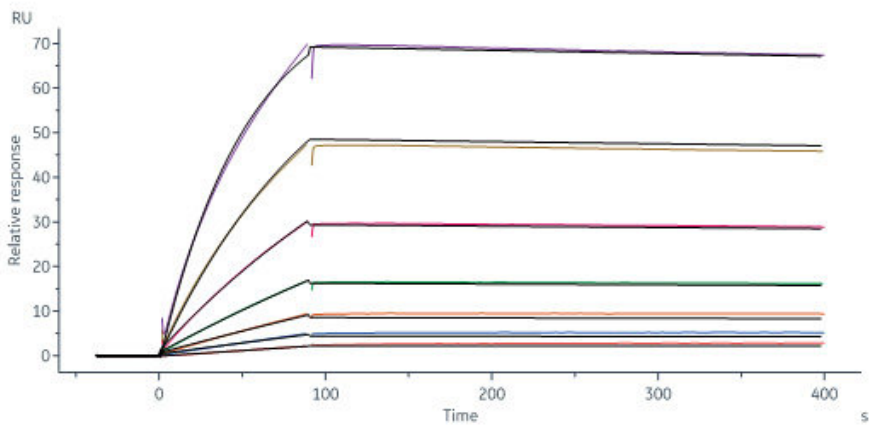
The purity of Biotinylated Human Carbonic Anhydrase IX (38-414), Fc,Avitag (Cat. No. CA9-H82F5) is more than 85% and the molecular weight of this protein is around 120-147 kDa verified by SEC-MALS.
Report

Bioactivity-ELISA



Immobilized Biotinylated Human Carbonic Anhydrase IX (38-414), Fc,Avitag (Cat. No. CA9-H82F5) at 1 μg/mL (100 μL/well) on streptavidin (Cat. No. STN-N5116) precoated (0.5 μg/well) plate can bind Anti-Carbonic Anhydrase IX Antibody, Human IgG1 with a linear range of 0.2-6 ng/mL (QC tested).

Bioactivity-SPR



Anti-Carbonic Anhydrase IX Antibody immobilized on CM5 Chip can bind Biotinylated Human Carbonic Anhydrase IX (38-414), Fc,Avitag (Cat. No. CA9-H82F5) with an affinity constant of 0.52 nM as determined in a SPR assay (Biacore 8K) (Routinely tested).

Background

Carbonic anhydrases (CAs) are a large family of zinc metalloenzymes. CAs form a family of enzymes that catalyze the rapid interconversion of carbon dioxide and water to bicarbonate and protons (or vice versa), a reversible reaction that occurs rather slowly in the absence of a catalyst. One of the functions of the enzyme in animals is to interconvert carbon dioxide and bicarbonate to maintain acid-base balance in blood and other tissues, and to help transport carbon dioxide out of tissues. The active site of most carbonic anhydrases contains a zinc ion. There are at least five distinct CA families (α, β, γ, δ and ε).

Carbonic anhydrase 9 (CA9 / CAIX) is also known as Membrane antigen MN (MN), Renal cell carcinoma-associated antigen G250, which belongs to the alpha-carbonic anhydrase family. CA9 / CAIX with an optimal activity at pH 6.49. Reversible hydration of carbon dioxide. CA IX participates in pH regulation. CA9 may be involved in the control of cell proliferation and transformation. CA-IX appears to be a novel specific biomarker for a cervical neoplasia.