

Synonym

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

Source

Human Carbonic Anhydrase IX (38-414), Fc Tag(CA9-H5253) is expressed from human 293 cells (HEK293). It contains AA Gln 38 - Asp 414 (Accession # [Q16790-1](#)).
Predicted N-terminus: Gln 38

Molecular Characterization

CA9(Gln 38 - Asp 414) Q16790-1	Fc(Pro 100 - Lys 330) P01857
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This protein carries a human IgG1 Fc tag at the C-terminus.
The protein has a calculated MW of 67.4 kDa. The protein migrates as 70-85 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

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

Purity

>95% as determined by SDS-PAGE.

Formulation

Lyophilized from 0.22 µm filtered solution in 20 mM MES, 100 mM NaCl, pH6.5 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.

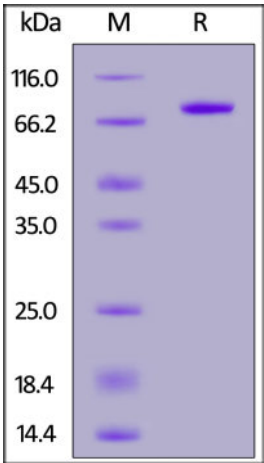
Storage

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:

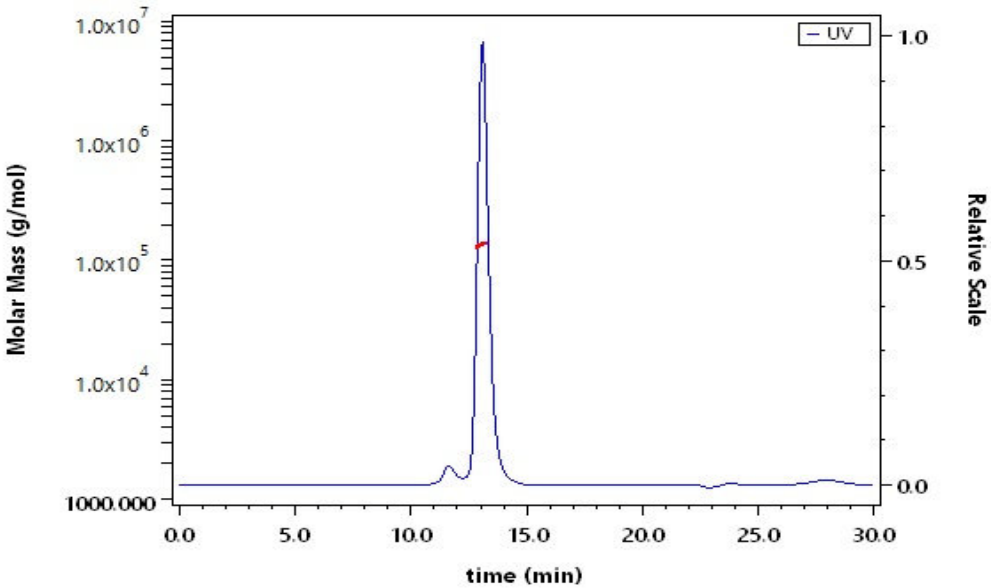
- 20°C to -70°C for 12 months in lyophilized state;
- 70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



Human Carbonic Anhydrase IX (38-414), Fc Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

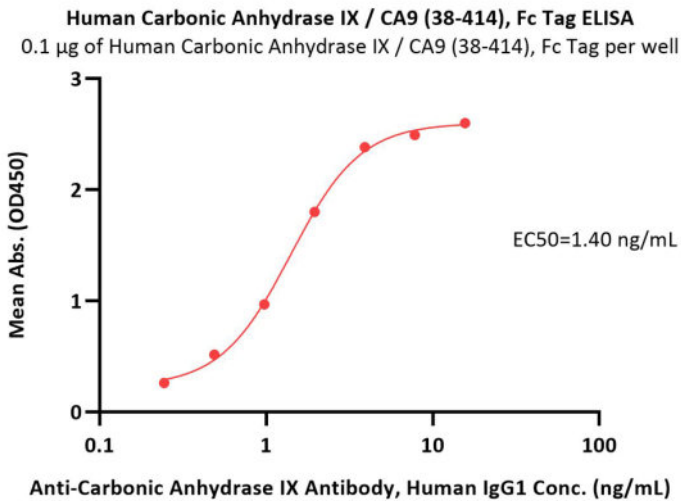
SEC-MALS



The purity of Human Carbonic Anhydrase IX (38-414), Fc Tag (Cat. No. CA9-H5253) is more than 85% and the molecular weight of this protein is around 125-140 kDa verified by SEC-MALS.
[Report](#)

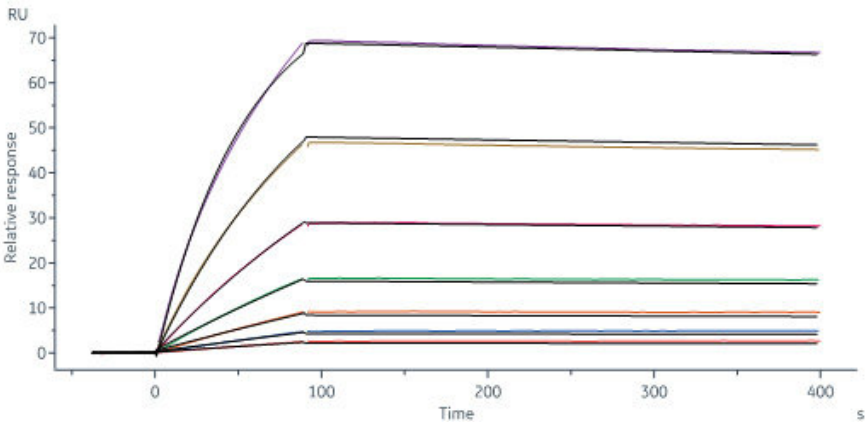
Bioactivity-ELISA





Immobilized Human Carbonic Anhydrase IX / CA9 (38-414), Fc Tag (Cat. No. CA9-H5253) at 1 µg/mL (100 µL/well) can bind Anti-Carbonic Anhydrase IX Antibody, Human IgG1 with a linear range of 0.2-2 ng/mL (QC tested).

Bioactivity-SPR



Anti-Carbonic Anhydrase IX Antibody immobilized on CM5 Chip can bind Human Carbonic Anhydrase IX (38-414), Fc Tag (Cat. No. CA9-H5253) with an affinity constant of 0.646 nM as determined in a SPR assay (Biacore 8K) (Routinely tested).

Bioactivity

The specific activity is >15 pmol/min/µg, as measured with 4-Nitrophenyl acetate (Routinely tested). One unit is defined as the amount of enzyme that hydrolyze 1.0 pmol of 4-Nitrophenyl acetate to 4-Nitrophenol per minute at pH7.5 at room temperature.

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-



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

Catalog # CA9-H5253



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.

