

Synonym

CA2,CA-II,CAII,Car2

Source

Human CA2, His Tag(CA2-H5228) is expressed from human 293 cells (HEK293). It contains AA Met 1 - Lys 260 (Accession # [NP_000058.1](#)).

Predicted N-terminus: Met 1

Molecular CharacterizationCA2(Met 1 - Lys 260)
NP_000058.1

Poly-his

This protein carries a polyhistidine tag at the C-terminus

The protein has a calculated MW of 30.1 kDa. The protein migrates as 31-33 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 1.0 EU per µg by the LAL method.

Purity

>95% as determined by SDS-PAGE.

Formulation

Lyophilized from 0.22 µm filtered solution in 20 mM Tris, 150 mM NaCl, pH8.0 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.

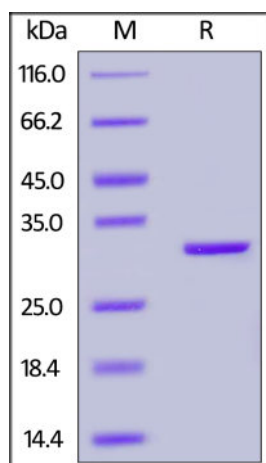
Storage

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 CA2, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 95%.

Bioactivity

Measured by its esterase activity. The specific activity is >400 pmol/min/µg(QC 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. They are, therefore, classified as metalloenzymes. There are at least five distinct CA families (α , β , γ , δ and ϵ). These families have no significant amino acid sequence similarity and in most cases are thought to be an example of convergent evolution. The α -CAs are found in humans.

Carbonic anhydrase II (CA2) is also known as Carbonate dehydratase II, Carbonic anhydrase C, is one of fourteen forms of human α carbonic anhydrases. Defects in this enzyme are associated with osteopetrosis and renal tubular acidosis. Renal carbonic anhydrase allows the reabsorption of sodium ions in the proximal tubule.

Carbonic anhydrase II has been shown to interact with Band 3 and Sodium-hydrogen antiporter 1.

Clinical and Translational Updates

Please contact us via TechSupport@acrobiosystems.com if you have any question on this product.