

Human Carbonic Anhydrase XII / CA12 Protein (His Tag)

Catalog Number: 10617-H08H



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

CA12; CAXII; FLJ20151; HsT18816

Protein Construction:

A DNA sequence encoding the extracellular domain of human CA12 (NP_001209.1) (Met 1-Gln 291) was expressed with a C-terminal polyhistidine tag.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 97 % as determined by SDS-PAGE

Bio Activity:

Measured by its esterase activity. The specific activity is >40 pmoles/min/μg, as measured with 1 mM 4-Nitrophenyl acetate and 2.5 μg enzyme at 400 nm in 100 μL of 12.5 mM Tris, 75 mM NaCl, pH 7.5.

Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Ala 25

Molecular Mass:

The recombinant human CA12 consisting of 278 amino acids and has a calculated molecular mass of 31.6 kDa. As a result of glycosylation, the recombinant protein migrates as an approximately 40-45 kDa protein in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

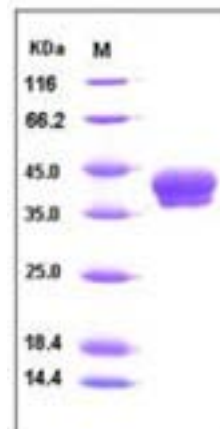
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Carbonic anhydrases (CAs) are a large family of zinc metalloenzymes first discovered in 1933 that catalyze the reversible hydration of carbon dioxide. CAs participate in a variety of biological processes, including respiration, calcification, acid-base balance, bone resorption, and the formation of aqueous humor, cerebrospinal fluid, saliva, and gastric acid. CA12, also known as Car12 and carbonic anhydrase XII, is a type I membrane enzyme of an N-terminal extracellular catalytic domain, a membrane-spanning α -helix, and a small intracellular C-terminal domain. It is highly expressed in colon, kidney, prostate, intestine and activated lymphocytes and moderately expressed in pancreas, ovary, and testis. Overexpression of the CA12 is observed in certain human cancers and is used as a tumor marker. rmCA12 corresponds to the extracellular domain and has both carbonic anhydrase activity and esterase activity.

References

1. Sahin, U. et al., 1996, Proc. Natl. Acad. Sci. U.S.A. 92 (25): 11810-11813.
2. Ivanov, S.V. et al., 1998, Proc. Natl. Acad. Sci. USA 95:12596 - 12601.
3. Strausberg, R.L. et al., 2002, Proc. Natl. Acad. Sci. USA 99:16899 - 16903.

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