

Human Carbonic Anhydrase III / CA3 Protein (His Tag)

Catalog Number: 10503-H08E



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

CAIII; Car3

Protein Construction:

A DNA sequence encoding the human CA3 (NP_005172.1) (Met 1-Lys 260) was expressed, with a polyhistidine tag at the C-terminus.

Source: Human

Expression Host: E. coli

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Bio Activity:

Measured by its esterase activity. The specific activity is >5 pmoles/min/μg.

Endotoxin:

Please contact us for more information.

Stability:

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

Predicted N terminal: Met 1

Molecular Mass:

The recombinant human CA3 consisting of 266 amino acids and has a calculated molecular mass of 30.4 kDa as estimated in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 50mM Tris, 500mM NaCl, 10% glycerol, pH 8.0

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:

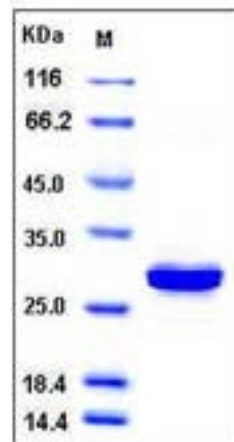
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

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. Carbonic anhydrases (CAs) form a family of enzymes that catalyze the rapid conversion of carbon dioxide and water to bicarbonate and protons, a reaction that occurs rather slowly in the absence of a catalyst. The active site of most carbonic anhydrases contains a zinc ion, they are therefore classified as metalloenzymes. Several forms of carbonic anhydrase occur in nature. The primary function 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. Plants contain a different form called β -carbonic anhydrase, which, from an evolutionary standpoint, is a distinct enzyme, but participates in the same reaction and also uses a zinc ion in its active site. Carbonic anhydrase 3, also known as Carbonate dehydratase III, CA-III and CA3, is a cytoplasmic protein which belongs to the α -carbonic anhydrase family. CA3 is activated by proton donors such as imidazole and the dipeptide histidylhistidine. It is inhibited by coumarins and sulfonamide derivatives such as acetazolamide. At 6 weeks gestation, transcripts accumulate at low levels in the somites and at high levels throughout the notochord. As gestation continues, CA3 becomes abundant in all developing muscle masses and continues at high to moderate levels in the notochord.

References

1. Ivanov, S.V. et al., 1998, Proc. Natl. Acad. Sci. USA 95:12596-601.
2. Sowden J. et al., 1998, Gene 214:157- 65.
3. Strausberg, R.L. et al., 2002, Proc. Natl. Acad. Sci. USA 99:16899-903.

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