Human Carbonic Anhydrase VB / CA5B Protein (His Tag)

Catalog Number: **12285-H08E**

Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

CA-VB; MGC39962

Protein Construction:

A DNA sequence encoding the mature form of human CA5B (Q9Y2D0) (Cys 34-Pro 317) was fused with a polyhistidine tag at the C-terminus and an initial Met at the N-terminus.

Source: Human

Expression Host: E. coli

QC Testing

Purity: > 97 % as determined by SDS-PAGE

Bio Activity:

Measured by its esterase activity . The specific activity is >150 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 ℃

Predicted N terminal: Met

Molecular Mass:

The recombinant human CA5B comprises 295 amino acids and migrates as an approximately 34 kDa band as predicted in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 20mM Tris, 50mM NaCl, 0.05% Brij-35, 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:

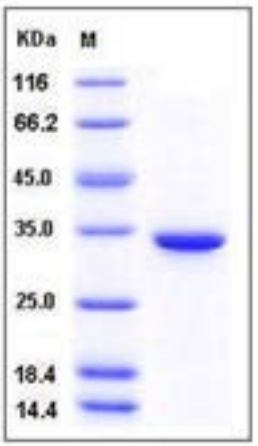
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Carbonic anhydrase 5B, also known as carbonate dehydratase VB, carbonic anhydrase VB, CA-VB and CA5B, is amember of the alpha-carbonic anhydrase family. The strongest expression of CA5B / CA-VB is in heart, pancreas, kidney, placenta, lung, and skeletal muscle. It is not expressed in liver. 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. CAs show extensive diversity in tissue distribution and in their subcellular localization. CA5B / CA-VB is localized in the mitochondria and shows the highest sequence similarity to the other mitochondrial CA5A / CA-VA. CA5B / CA-VB has a wider tissue distribution than CA5A / CA-VA, which is restricted to the liver. The differences in tissue distribution suggest that the two mitochondrial carbonic anhydrases evolved to assume different physiologic roles. CA5A / CA-VA is activated by histamine, L-adrenaline, L- and D-histidine, and L- and D-phenylalanine. It is inhibited by coumarins, sulfonamide derivatives such as acetazolamide and Foscarnet (phosphonoformate trisodium salt). CA5B / CA-VB is inhibited by coumarins, sulfonamide derivatives such as acetazolamide (AZA), saccharin and Foscarnet (phosphonoformate trisodium salt).

References

1.Fujikawa-Adachi K, et al.,1999, J Biol Chem. 274 (30): 21228-33. 2.Liao, S.Y. et al., 2003, J. Med. Genet. 40:257 - 262. 3.Temperini C.et al., 2006, Chemistry 12: 7057-66.