Human Carbonic Anhydrase IV / CA4 Protein (His Tag)

Catalog Number: **10472-H08H**

Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

CAIV; Car4; RP17

Protein Construction:

A DNA sequence encoding the human CA4 (NP_000708.1) (Met1-Lys283) without the pro peptide was expressed, fused with a polyhistidine tag at the C-terminus.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 96 % as determined by SDS-PAGE

Bio Activity:

Measured by its esterase activity . The specific activity is >2 pmoles/min/μg.

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 ℃

Predicted N terminal: Ala 19

Molecular Mass:

The recombinant human CA4 consists of 276 amino acids after removal of the signal peptide and has a predicted molecular mass of 31.7 kDa. In SDS-PAGE under reducing conditions, rh CA4 migrates as an approximately 30 kDa band.

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:

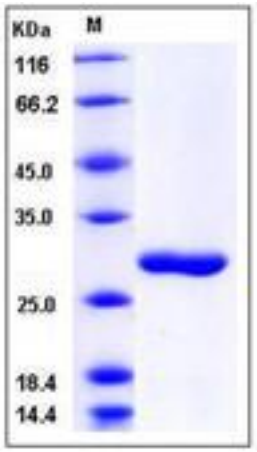
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

The carbonic anhydrases (or carbonate dehydratases) are classified as metalloenzyme for its zinc ion prosthetic group and form a family of enzymes that catalyze the rapid interconversion of carbon dioxide and water to bicarbonate and protons, a reversible reaction that takes part in maintaining acid-base balance in blood and other tissues. The carbonic anhydrasekl (CA) family consists of at least 11 enzymatically active members and a few inactive homologous proteins. Carbonic anhydrase IV (CAIV) is a membrane-associated enzyme anchored to plasma membrane surfaces by a phosphatidylinositol glycan linkage. CAIV is a high-activity isozyme in CO2 hydration comparable to that of CAII. Furthermore, CAIV is more active in HCO3- dehydration than is CAII. However, the esterase activity of CAIV is decreased 150-fold compared to CAII.

References

1.Lehtonen J, *et al.* (2004) Characterization of CA XIII, a Novel Member of the Carbonic Anhydrase Isozyme Family. The Journal of Biological Chemistry. 279: 2719-27. 2.Lindskog S. (1997) Structure and mechanism of carbonic anhydrase. Pharmacology & Therapeutics. 74(1)： 1-20. 3.Baird TT, *et al.* (1997) Catalysis and Inhibition of Human Carbonic Anhydrase IV. Biochemistry. 36 (9): 2669-78.