Mouse Carbonic Anhydrase XIV / Car14 Protein (His Tag)

Catalog Number: **50013-M08H**

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General Information

Gene Name Synonym:

CA14; CAXiV; Ca14; Car14; Catm

Protein Construction:

A DNA sequence encoding the extracellular domain of mouse CA14 (NP_035927.1) (Met 1-Met 290) was expressed with a C-terminal polyhistidine tag.

Source: Mouse

Expression Host: Human Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Bio Activity:

Measured by its esterase activity. The specific activity is >400 pmoles/min/μg, as measured with 1 mM 4-Nitrophenyl acetate and 0.8 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 ℃

Predicted N terminal: Ala 16

Molecular Mass:

The recombinant mouse CA14 consists of 286 amino acids and has a calculated molecular mass of 32.2 kDa. As a result of glycosylation, the recombinant protein migrates as an approximately 45-48 kDa protein in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 25mM Tris, 0.15mM NaCl, pH 7.5

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:

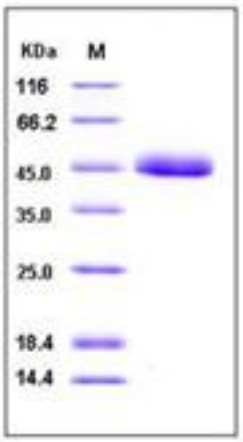
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

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. CAXIV is a member of CA family that showed an overall similarity of 29–46% to other active CA isozymes. The highest percentage similarity was with a transmembrane CA isoform, CAXII. The CAXIV was found high concentrations in human heart, brain, liver, and skeletal muscle but lower in the colon, small intestine, urinary bladder, and kidney. No CAXIV mRNA was seen in the salivary gland and pancreas. CAXIV is a likely candidate for the extracellular CA postulated to have an important role in modulating excitatory synaptic transmission in brain.

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.Parkkila S, *et al.* (2001) Expression of membrane-associated carbonic anhydrase XIV on neurons and axons in mouse and human brain. PNAS. 98(4): 1918-23.