Data Sheet (Cat.No.TMPY-02111)

TargetMol

Carbonic Anhydrase 2 Protein, Mouse, Recombinant (His)

General Information

Synonyms: Car-2;Lvtw-5;Ca2;Ltw-5;carbonic anhydrase II;AI131712;CAII

Protein Construction: A DNA sequence encoding the mouse CA2 (AAH55291.1) (Met 1-Lys 260) was expressed, with a C-terminal polyhistidine tag. Predicted N terminal: Ser 2

Species: Mouse

Expression Host: HEK293 Cells

Accession: P00920

Molecular Weight: 29.99 kDa (predicted); 30-35 kDa (reducing conditions)

QC Testing

Biological Activity: Measured by its esterase activity. The specific activity is > 100 pmol/min/μg.

Purity: > 96 % as determined by SDS-PAGE

Endotoxin: < 1.0 EU/μg of the protein as determined by the LAL method.

Formulation: Lyophilized from 0.22 μm filtered solution in PBS (pH 7.4). Normally 8% trehalose is added as protectant before lyophilization.

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

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 II is one of fourteen forms of human α carbonic anhydrases.

Defects in this enzyme are associated with osteopetrosis and renal tubular acidosis. Renal carbonic anhydrase allows the reabsorption of sodium ions in the proximal tubule. Carbonic anhydrase II has been shown to interact with Band 3 and Sodium-hydrogen antiporter 1.

Reference

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.
Lindskog S. (1997) Structure and mechanism of carbonic anhydrase. Pharmacology & Therapeutics. 74(1): 1-20.
Baird TT,et al.(1997) Catalysis and Inhibition of Human Carbonic Anhydrase IV. Biochemistry. 36 (9): 2669-78.

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