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Recombinant Human Carbonic anhydrase 5A/CA5A Protein

Catalog No.: RP01791 Recombinant

Sequence Information

Species	Gene ID	Swiss Prot
Human	763	P35218

Tags
C-His

Synonyms
CA5; CAV; CAVA; CA5AD; GS1-21A4.1;CA5A

Product Information

Source
HEK293 cells

Purification
≥ 90 % as determined by SDS-PAGE.

Calculated MW
30.93 kDa

Observed MW
35-45 kDa

Endotoxin
< 0.01 EU/μg of the protein by LAL method

Formulation
Lyophilized from a 0.22 μm filtered solution of 50mM NaAc,50mM NaCl,0.05% Brij-35□pH 5.0.

Reconstitution
Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stablizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

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Background

Carbonic Anhydrase catalyzes the reversible reaction of CO2 + H2O = HCO3- + H+, which is fundamental to many processes such as respiration, renal tubular acidification and bone resorption (1). Topics in a CA meeting (6th International Conference on the CAs, June 20 - 25, 2003, Slovakia) ranged from the use of CAs as markers for tumor and hypoxia in the clinic, as a nutritional supplement in milk, and as a tool for CO2 removal and mosquito control in industry. Carbonic Anhydrase VA encoded by the CA5A gene is a mitochondrial protein (2, 3). In comparison with another mitochondrial CA (CA5B), CA5A has different tissue distribution and chromosomal location (4, 5). Expression and inhibitor studies of different CAs in the rat pancreatic beta cells indicate that CA5A may be involved in the regulation of insulin secretion (6). CA5A may also participate in the detoxification of ammonia produced in the gastrointestinal tract by providing bicarbonate to carbamyl phosphate synthetase I (7). The amino acid sequence of recombinant human CA5A (residues 40 to 305) is 79%, 77%, and 76% identical to that of canine, bovine, and rat/mouse.

Basic Information

Description
Recombinant Human Carbonic anhydrase 5A/CA5A Protein is produced by HEK293 cells expression system. The target protein is expressed with sequence (Ala40-Ser305) of human CA5A (Accession #NP_001730.1) fused with 6×His tag at the C-terminus.

Bio-Activity
Measured by its esterase activity. The specific activity is >600 pmol/min/μg, as measured under the described conditions.

Shipping
The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Storage
Store at -20℃.Store the lyophilized protein at -20℃ to -80 ℃ up to 1 year from the date of receipt.
After reconstitution, the protein solution is stable at -20℃ for 3 months, at 2-8℃ for up to 1 week.
Avoid repeated freeze/thaw cycles.

Operational Notes
For your safety and health, please wear a lab coat and disposable gloves for handling.

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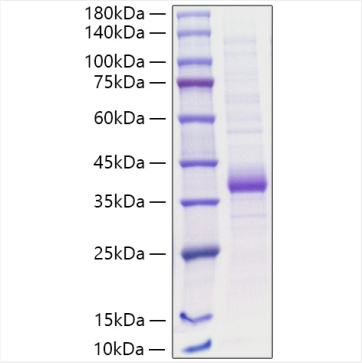
Validation Data



Recombinant Human Carbonic anhydrase 5A/CA5A Protein was determined by SDS-PAGE under reducing conditions with Coomassie Blue.

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