

## CA5A Protein, Human, Recombinant (His)

### General Information

Synonyms:	CA5;GS1-21A4.1;CA5AD;carbonic anhydrase VA, mitochondrial;CA5D;CAV;Carbonic Anhydrase VA;CAVA
Protein Construction:	A DNA sequence encoding the mature form of human CA5A (NP_001730.1) (Ala 40-Ser 305) was fused with an Met at N-terminus and a polyhistide tag at the C-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	P35218
Molecular Weight:	31.6 kDa (predicted); 33 kDa (reducing conditions)

### QC Testing

Biological Activity:	Measured by its esterase activity. The specific activity is >500 pmoles/min/μg.
Purity:	> 96 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 50 mM NaAc, 50 mM NaCl, 0.05% Brij 35, pH 5. 0. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

**Reconstitution:**  
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

**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

Carbonic anhydrase 5A, mitochondrial, also known as Carbonate dehydratase VA, Carbonic anhydrase VA, CA-VA and CA5A, is a member of the alpha-carbonic anhydrase family. 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. 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).

### Reference

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