

## Carbonic Anhydrase 4 Protein, Human, Recombinant (His), Biotinylated

### General Information

Synonyms:	RP17;Car4;CAIV
Protein Construction:	A DNA sequence encoding the human CA4 (NP_000708.1) (Met1-Lys283) without the pro peptide was expressed with a polyhistidine tag at the C-terminus. The purified protein was biotinylated in vitro.
Species:	Human
Expression Host:	CHO Cells
Accession:	P22748-1
Molecular Weight:	31.69 kDa (predicted); 33 kDa (reducing condition)

### QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	≥ 90% as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU per µg protein as determined by the LAL method.
Formulation:	Lyophilized from sterile PBS, pH 7.4. Please contact us for any concerns or special requirements. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization. Please refer to the specific buffer information in the hardcopy of datasheet or the lot-specific COA.

### Preparation and Storage

Reconstitution:	Please refer to the lot-specific COA.
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.
Shipping:	In general, Lyophilized powders are shipping with blue 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 anhydrase (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 CO<sub>2</sub> hydration comparable to that of CAII. Furthermore, CAIV is more active in HCO<sub>3</sub><sup>-</sup> dehydration than is CAII. However, the esterase activity of CAIV is decreased 150-fold compared to CAII.

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