

## 32-2201: Carbonic Anhydrase 2 Recombinant Protein

**Alternative Name :** Carbonic anhydrase 2, Carbonate dehydratase 2, Carbonic Anhydrase II, CA-II, Carbonic anhydrase C, CAC, CA2, CAII, Car2.

### Description

Source : Escherichia Coli. Carbonic anhydrase 2 Human Recombinant protein produced in E.Coli containing 260 amino acids (1-260) and having a molecular mass of 29.2 kDa. The Carbonic anhydrase 2 is purified by proprietary chromatographic techniques. The enzyme Carbonic anhydrase II having an accession number of NP\_414668 is also called carbonate dehydratase which is part of the enzyme family that catalyses rapid inter-conversion of carbon dioxide & water to bicarbonate, carbonic acid and protons ( $\text{CO}_2 + \text{H}_2\text{O} = \text{HCO}_3 + \text{H}^+$ ), a reaction that occurs rather slowly in the absence of a catalyst. The majority of carbonic anhydrases enclose a zinc ion in their active site and therefore is classified as metalloenzymes. The most important function of Carbonic anhydrase is known to preserve acid-base balance in blood and other tissues, and to help transport carbon dioxide of tissues. Carbonic anhydrases have been found in all kingdoms of life. Carbonic anhydrase has 3 different classes: alpha, beta and gamma which share very little sequence or structural similarity, thus far they all perform the same function and require a zinc ion at the active site. Mammalian carbonic anhydrase is monomeric and belongs to the alpha class. Plant carbonic anhydrase is dimeric and belongs to the beta class. Methane-producing bacteria carbonic anhydrase is trimeric and grows in hot springs which forms the gamma class.

### Product Info

<b>Amount :</b>	20 µg
<b>Purification :</b>	Greater than 95.0% as determined by SDS-PAGE.
<b>Content :</b>	Carbonic Anhydrase 2 protein solution (1mg/ml) containing 20mM Tris-HCl buffer (pH 8.0), 1mM DTT, 50mM NaCl and 10% glycerol.
<b>Storage condition :</b>	Store at 4°C if entire vial will be used within 2-4 weeks. Store, frozen at -20°C for longer periods of time. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Avoid multiple freeze-thaw cycles.
<b>Amino Acid :</b>	MSHHWGYGKH NGPEHWHKDF PIAKGERQSP VDIDHTAKY DPSLKPLSVS YDQATSLRIL NNGHAFNVEF DDSQDKAVLK GGPLDGTYRL IQFHFHWGSL DGQGSEHTVD KKKYAAELHL VHWNTKYGDF GKAVQQPDGL AVLGIFLKVG SAKPGLQKVV DVLDSIKTKG KSADFTNFD P RGLLPESLDY WTPGSLTTP PLLECVTWIV LKEPISVSE QVLKFRKLN NGEGEPEELM VDNWRPAQPL KNRQIKASFK

### Application Note

Specific activity is 50-70 nmoles/min/µg and was obtained by measuring the increase in the amount of p-nitrophenol by its esterase activity. Specific activity is defined as the amount of p-nitrophenol that 1µg of enzyme can reduce at 25°C for 1 minute.

