

Carbonic anhydrase 2 , 1-260aa, Human, Recombinant, *E.coli*

Cat. No. IBATGP0325

Synonyms: CA-II, CAC

NCBI Accession No.: NP_000058

Description: Carbonic anhydrase 2 (CA2) is one of fourteen forms of human α carbonic anhydrases. Carbonic anhydrase catalyzes reversible hydration of carbon dioxide. CA2 is a cytosolic enzyme with the highest activity among all known CAs. Mutations in the CA2 gene result in the CA2 deficiency syndrome, an autosomal recessive disorder that produces osteopetrosis, renal tubular acidosis and cerebral calcification. Recombinant human CA2 was expressed in *E.coli* and purified by using conventional chromatography.

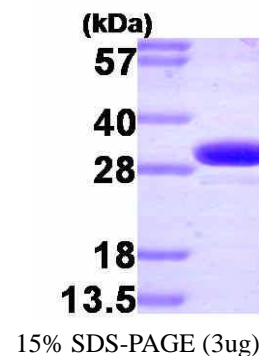
Form: Liquid. In 20 mM Tris-HCl buffer (pH 8.0) containing 1mM DTT, 50mM NaCl, 10% glycerol

Molecular Weight: 29.2 kDa (260aa), confirmed by MALDI-TOF

Purity: > 95% by SDS - PAGE

Concentration: 1 mg/ml (determined by Bradford assay)

Biological activity: Specific activity is 50-70 nmoles/min/ug 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 1ug of enzyme can reduce at 25°C for 1 minute.



Activity Assay

1. Prepare assay buffer into a suitable container: The final concentrations are 12.5 mM Tris, 75 mM NaCl, pH 7.5.
2. Dilute 4-Nitrophenyl-Acetate(4-NPA) to 2 mM in Assay Buffer.
3. Dilute recombinant CA2 protein with various concentrations (1ug, 2ug, 5ug) in 50 ul assay buffer.
4. Load 50 μ L of 2mM 4-NPA into diluted recombinant CA2 solutions, and start the reaction by adding 50 μ L of 2 mM Substrate.
5. Read at a wavelength of 405 nm (bottom read) in kinetic mode for 5 minutes.

Sequences of amino acids:

MSHHWGYGKH NGPEHWHKDF PIAKGERQSP V DIDTHTAKY DPSLKP LSVS YDQATSLRIL NNGHAFNVEF DDSQDKAVLK GGPLDGT YRL
IQFHFHWGSL DGQGSEHTVD KKKYAAELHL VHWNTKYGDF GKAVQPDGL AVLGIFLKVG SAKPGLQKV V DVLDSIKTKG KSADFTNFD P
RGLLPESLDY WTPYGS L TTP PLLEC VTWIV LKEPISVSSE QVLKFRKLN F NGEGEPEELM VDNWRPAQPL KNRQIKASFK

General references:

Hu PY., *et al.* (1992). *Hum Mutat.* **1**(4):288-92

Venta PJ., *et al.* (1991). *Am J Hum Genet.* **49**(5):1082-90

Storage: Can be stored at +4°C short term (1-2 weeks). For long term storage, aliquot and store at -20°C or -70°C. Avoid repeated freezing and thawing cycles

For research use only. This product is not intended or approved for human, diagnostics or veterinary use.



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