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Certificate of Analysis and Data Sheet

Recombinant E.Coli Carbonic Anhydrase 2

Catalog No.	**Source:**
228-10171	*Escherichia Coli.*

Synonyms

Carbonic anhydrase 2, Carbonate dehydratase 2, can, cynT2, yadF, b0126, JW0122, Carbonic Anhydrase II.

Introduction

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 (CO2 + H2O ? HCO3? + 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.

Description

Carbonic anhydrase II is an E.coli Recombinant protein produced in E.Coli containing 240 amino acids (1-220) and having a molecular mass of 27 kDa. Carbonic anhydrase is expressed with an amino-terminal hexahistidine tag.
The Carbonic anhydrase 2 is purified by proprietary chromatographic techniques.

Physical Appearance

Sterile Filtered colorless solution.

Formulation

The Carbonic Anhydrase 2 enzyme is supplied in 20mM Tris pH-8 and 1mM DTT.

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Purity

Greater than 95.0% as determined by
(a) Analysis by RP-HPLC.
(b) Analysis by SDS-PAGE.

Stability

Carbonic Anhydrase II although stable at 4°C for 1 week, should be stored desiccated below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).
Please prevent freeze-thaw cycles.

Amino Acid Sequence

MGSSHHHHHH SSGLVPRGSH MKDIDTLISN NALWSKMLVE EDPGFFEKLAQAQKPRFLWI GCSDSRVPAE RLTGLEPGEL FVHRNVANLV IHTDLNCLSV VQYAVDVLEV EHIIICGHYG CGGVQAAVEN PELGLINNWL HIRDIWFKH SSLLGEMPQE RRLDTLCELN VMEQVYNLGH STIMQSAWKR GQKVTIHGWA YGIHDGLLRD LDVTATNRET LEQRYRHGIS NLKLKHANHK