Recombinant Human CA2, C13&N15-labeled

Cat. No. CA2-220H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human CAII /CA2 MS Standard Protein, C13 and N15-labeled (CAII / CA2, Heavy Labeled) Met 1 - Lys 260 (Accession # NP_000058.1) was produced in human 293 cells (HEK293).
Species	Human
Source	HEK293
ProteinLength	1-260 a.a.
Description	Carbonic anhydrases (CAs) are a large family of zinc metalloenzymes. CAs form a family of enzymes that catalyze the rapid interconversion of carbon dioxide and water to bicarbonate and protons (or vice versa), a reversible reaction that occurs rather slowly in the absence of a catalyst. One of the functions of the enzyme in animals is to interconvert carbon dioxide and bicarbonate to maintain acid-base balance in blood and other tissues, and to help transport carbon dioxide out of tissues. The active site of most carbonic anhydrases contains a zinc ion. They are, therefore, classified as metalloenzymes. There are at least five distinct CA families (α, β, γ, δ and ε). These families have no significant amino acid sequence similarity and in most cases are thought to be an example of convergent evolution. The α-CAs are found in humans.[1] Carbonic anhydrase II (CA2) also known as Carbonate dehydratase II, Carbonic anhydrase C, is one of fourteen forms of human α carbonic anhydrases. Defects in this enzyme are associated with osteopetrosis and renal tubular acidosis. Renal carbonic anhydrase allows the reabsorption of sodium ions in the proximal

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	tubule. Carbonic anhydrase II has been shown to interact with Band 3 and Sodium-hydrogen antiporter 1.[2-5]
Form	Lyophilized from 0.22 μm filtered solution in 20 mM Tris, pH 8.0, with 150 mM NaCl, 1 mM DTT.. Normally Mannitol or Trehalose are added as protectants before lyophilization.
Molecular Mass	CAII / CA2, Heavy Labeled, fused with 6×His tag at the C-terminus, has a calculated MW of 30 kDa. The predicted N-terminus is Met 1 . DTT-reduced Protein migrates as 30 kDa.
Endotoxin	Less than 1.0 EU per μg of the CAII / CA2, Heavy Labeled by the LAL method.
Purity	>95% as determined by SDS-PAGE.
Storage	Avoid repeated freeze-thaw cycles.No activity loss was observed after storage at:In lyophilized state for 1 year (4oC-8oC); After reconstitution under sterile conditions for 1 month (4oC-8oC) or 3 months (-20oC to -70oC).

GENE INFORMATION

Gene Name	CA2 carbonic anhydrase II [Homo sapiens]
Official Symbol	CA2
Synonyms	CA2; carbonic anhydrase II; carbonic anhydrase 2; CA II; CAII; Car2; CAC; carbonic anhydrase B; carbonic anhydrase C; carbonic dehydratase; carbonate dehydratase II; CA-II;
Gene ID	760

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mRNA Refseq	NM_000067
Protein Refseq	NP_000058
MIM	611492
UniProt ID	P00918
Chromosome Location	8q22
Pathway	Bile secretion, organism-specific biosystem; Bile secretion, conserved biosystem; Collecting duct acid secretion, organism-specific biosystem; Collecting duct acid secretion, conserved biosystem; Gastric acid secretion, organism-specific biosystem; Gastric acid secretion, conserved biosystem; Pancreatic secretion, organism-specific biosystem;
Function	carbonate dehydratase activity; lyase activity; metal ion binding; zinc ion binding;

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