

Active Recombinant Human CA2

Cat. No. CA2-219H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human CA2 was expressed in E. coli.
Species	Human
Source	E.coli
Description	Carbonic anhydrase is a zinc metalloenzyme that catalyzes the hydration of carbon dioxide to carbonic acid. It is involved in vital physiological and pathological processes such as pH and CO₂ homeostasis, transport of bicarbonate and CO₂, biosynthetic reactions, bone resorption, calcification, and tumorigenicity. It is required for renal acidification. Its absence can lead to osteoporosis, renal tubular acidosis, and cerebral calcification. Therefore, this enzyme is an important target for inhibitors with clinical applications in glaucoma, epilepsy and Parkinson's disease. In addition, it is being explored as a potential target for obesity and cancer. CAII has a molecular mass of approximately 30 kDa and is primarily present in type II pneumocytes. Due to this unique location it has been speculated that CAII is involved in pulmonary functions such as regulation of fluid secretion and facilitation of CO₂ elimination. Sulfonamides, sulfamates and sulfamides are potent inhibitors of CA.
Form	Supplied as a solution in 20 mM Tris, pH 7.5, with 150 mM NaCl.
Bio-activity	≥5,000 units/mg protein
Unit Definition	One Wilbur-Anderson (W-A) unit will cause the pH of a 0.02 M Trizma buffer to drop from 8.3 to 6.3 per min at 0 °C. (One W-A unit is essentially equivalent to one

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	Roughton-Booth unit.)
Applications	Human carbonic anhydrase II has been used in a study to assess quantitative imaging of mitochondrial and cytosolic free zinc levels in an in vitro model of ischemia/reperfusion. Human carbonic anhydrase II has also been used in a study to investigate a new scrubber concept for catalytic CO ₂ hydration.
Storage	Store at -20°C
Concentration	800 - 1000 µg/ml
Warning	FOR RESEARCH USE ONLY. NOT FOR DIAGNOSTIC OR THERAPEUTIC USE IN HUMAN.

GENE INFORMATION

Gene Name	CA2 carbonic anhydrase II [Homo sapiens]
Official Symbol	CA2
Synonyms	CAC; CAII; Car2; CA-II; HEL-76; carbonic anhydrase 2; carbonate dehydratase II; carbonic anhydrase B; carbonic anhydrase C; carbonic dehydratase; epididymis luminal protein 76
Gene ID	760
mRNA Refseq	NM_000067
Protein Refseq	NP_000058
MIM	611492

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UniProt ID	P00918
Chromosome Location	8q22
Pathway	Bile secretion, organism-specific biosystem; Bile secretion, conserved biosystem; Collecting duct acid secretion, conserved biosystem
Function	arylesterase activity; carbonate dehydratase activity; protein binding

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