Mouse Anti-Human Carbonic Anhydrase III, Muscle Specific Monoclonal Antibody

Cat. No. CAB11487MH **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Mouse monoclonal antibody to human carbonic anhydrase III, muscle specific.
Species	Human
Source	Mouse
Antigen Description	Carbonic anhydrases (CAs) are a large family of zinc metalloenzymes first discovered in 1933 that catalyze the reversible hydration of carbon dioxide. CAs participate in a variety of biological processes, including respiration, calcification, acid-base balance, bone resorption, and the formation of aqueous humor, cerebrospinal fluid, saliva, and gastric acid. Carbonic anhydrases (CAs) form a family of enzymes that catalyze the rapid conversion of carbon dioxide and water to bicarbonate and protons, a reaction that occurs rather slowly in the absence of a catalyst. The active site of most carbonic anhydrases contains a zinc ion, they are therefore classified as metalloenzymes. Several forms of carbonic anhydrase occur in nature. The primary function 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. Plants contain a different form called β-carbonic anhydrase, which, from an evolutionary standpoint, is a distinct enzyme, but participates in the same reaction and also uses a zinc ion in its active site.Carbonic anhydrase 3, also known as Carbonate dehydratase III, CA-III and CA3, is a cytoplasm protein which belongs to the alpha-carbonic anhydrase family. CA3 is activated by proton donors such as imidazole and the dipeptide histidylhistidine. It is inhibited by coumarins and

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	sulfonamide derivatives such as acetazolamide. At 6 weeks gestation, transcripts accumulate at low levels in the somites and at high levels throughout the notochord. As gestation continues, CA3 becomes abundant in all developing muscle masses and continues at high to moderate levels in the notochord.
Specificity	Human Carbonic Anhydrase III / CA3. No cross-reactivity in ELISA with Human Carbonic Anhydrase II / CA2, Human Carbonic Anhydrase VA / CA5a, Human Carbonic Anhydrase VIII / CA8, Human Carbonic Anhydrase IX / CA9, Human Carbonic Anhydrase XIII / CA13, Human Carbonic Anhydrase XII / CA12, E.coli cell lysate.
Immunogen	Recombinant Human Carbonic Anhydrase III / CA3 Protein
Isotype	Mouse IgG1
Clone	6H9C7
Purification	Protein A affinity chromatography
Applications	Western Blot; ELISA
Dilution	Western blot: This antibody can be used at 1 - 2 µg/mL with the appropriate secondary reagents to detect CA3 in WB. Using a DAB detection system, the detection limit for CA3 is approximately 2 ng/lane under non-reducing conditions and reducing conditions.Direct ELISA: This antibody can be used at 0.5 - 1 µg/mL with the appropriate secondary reagents to detect CA3. The detection limit for CA3 is approximately 0.16 ng/well.
Preparation	This antibody was produced from a hybridoma resulting from the fusion of a mouse myeloma with B cells obtained from a mouse immunized with purified, human cell-

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	derived, recombinant Human Carbonic Anhydrase III / CA3. The IgG fraction of the cell culture supernatant was purified by Protein A affinity chromatography.
Format	0.2 µm filtered solution in PBS with 5% trehalose
Storage	This antibody can be stored at 2-8 °C for one month without detectable loss of activity. Antibody products are stable for twelve months from date of receipt when stored at -20 °C to -70 °C. Preservative-Free.Sodium azide is recommended to avoid contamination (final concentration 0.05%-0.1%). It is toxic to cells and should be disposed of properly. Avoid repeated freeze-thaw cycles.

GENE INFORMATION

Gene Name	CA3 carbonic anhydrase III, muscle specific [Homo sapiens]
Official Symbol	CA3
Synonyms	CA3; carbonic anhydrase III, muscle specific; carbonic anhydrase 3; CAIII; Car3; CA-III; carbonate dehydratase III; FLJ36434;
Gene ID	761
mRNA Refseq	NM_005181
Protein Refseq	NP_005172
MIM	114750
UniProt ID	P07451
Chromosome	8q21.2

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Location	
Function	carbonate dehydratase activity; lyase activity; metal ion binding; nickel cation binding; zinc ion binding;

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