

## Anti-Carbonic Anhydrase 3 Antibody (8M461)

### Product Details

Ig Type:	Rabbit IgG
Reactivity:	Human
Conjugation:	Unconjugated
Clone:	8M461
Purification:	Protein A

### Applications

Verified Activity:	<p>1. Anti-CA3 rabbit monoclonal antibody at 1:500 dilution.</p> <ul style="list-style-type: none"><li>-Lane A: HepG2 Whole Cell Lysate.</li><li>-Lane B: K562 Whole Cell lysate.</li><li>-Lysates/proteins at 30 µg per lane.</li><li>-Secondary</li><li>-Goat Anti-Rabbit IgG H&amp;L (Dylight800) at 1/10000 dilution.</li><li>-Developed using the Odyssey technique.</li><li>-Performed under reducing conditions.</li><li>-Predicted band size:30 kDa.</li><li>-Observed band size:34 kDa.</li></ul> <p>2. CA3 was immunoprecipitated using:</p> <ul style="list-style-type: none"><li>-Lane A:0.5 mg HepG2 Whole Cell Lysate.</li><li>-2 µL anti-CA3 rabbit monoclonal antibody and 15 µl of 50 % Protein G agarose.</li><li>-Primary antibody:</li><li>-Anti-CA3 rabbit monoclonal antibody, at 1:250 dilution.</li><li>-Secondary antibody:</li><li>-Dylight 800-labeled antibody to rabbit IgG (H+L), at 1:5000 dilution.</li><li>-Developed using the odyssey technique.</li><li>-Performed under reducing conditions.</li><li>-Predicted band size: 30 kDa.</li><li>-Observed band size: 30 kDa</li></ul>
Application:	IP,WB
Recommended	WB: 1:500-1:2000; IP: 1-4 µL/mg of lysate

### Properties

Stability & Storage:	Store at 2°C-8°C for 1 month. Store at -20°C or -80°C for 12 months. Avoid repeated freeze-thaw cycles. Preservative-Free.
Shipping:	Shipping with blue ice.

### Antigen Details

Immunogen: Recombinant Protein: Human Carbonic Anhydrase III / CA3 protein (TMPY-01761)

Antigen Species: Human

Synonyms: carbonic anhydrase III;Car3;CAIII

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### Research Background

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  $\beta$ -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 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.

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