

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Carbonic Anhydrase VB/CA5B in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human CA1, 2, 3, 4, 5A, 6, 7, 8, or 9 is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>2B</sub> Clone # 491725
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human Carbonic Anhydrase VB/CA5B Cys34-Pro317 Accession # Q9Y2D0
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

	Recommended Concentration	Sample
<b>Western Blot</b>	1 µg/mL	Recombinant Human Carbonic Anhydrase VB (Catalog # <a href="#">3176-CA</a> )

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

Carbonic Anhydrase (CA) catalyzes the reversible reaction of  $\text{CO}_2 + \text{H}_2\text{O} = \text{HCO}_3^- + \text{H}^+$ , which is fundamental to many processes such as respiration, renal tubular acidification and bone resorption (1). Topics in a CA meeting (6<sup>th</sup> International Conference on the CAs, June 20-25, 2003, Slovakia) ranged from the use of CAs as markers for tumor and hypoxia in the clinic, as a nutritional supplement in milk, and as a tool for  $\text{CO}_2$  removal and mosquito control in industry. Carbonic Anhydrase VB encoded by the CA5B gene is a mitochondrial protein. In comparison with another mitochondrial CA (CA5A), CA5B has different tissue distribution and chromosomal location (2, 3). The amino acid sequence of human CA5B (residues 34 to 317) is 94%, 93%, 92%, and 74% identical to that of canine, mouse, bovine/rat, and chicken.

## References:

- Hewett-Emmett, D. and R.E. Tashian (1996) Mol. Phylogenet. Evol. **5**:50.
- Fujikawa-Adachi, K. *et al.* (1999) J. Biol. Chem. **274**:21228.
- Shah, G.N. *et al.* (2000) Proc. Natl. Acad. Sci. USA **97**:1677.