

DESCRIPTION

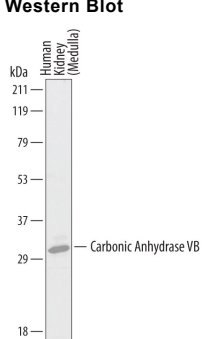
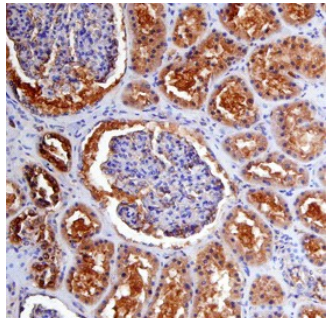
Species Reactivity	Human
Specificity	Detects human Carbonic Anhydrase VB/CA5B in direct ELISAs and Western blots. In direct ELISAs, less than 5% cross-reactivity with recombinant human (rh) CA-5A, rhCA-2, and rhCA-7 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human Carbonic Anhydrase VB/CA5B Cys34-Pro317 Accession # Q9Y2D0
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied 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
Western Blot	1 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below

DATA

Western Blot	Immunohistochemistry
 <p>Detection of Human Carbonic Anhydrase VB/CA5B by Western Blot. Western blot shows lysates of human kidney (medulla) tissue. PVDF membrane was probed with 1 µg/mL of Goat Anti-Human Carbonic Anhydrase VB/CA5B Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3176) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF019). A specific band was detected for Carbonic Anhydrase VB/CA5B at approximately 32 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.</p>	 <p>Carbonic Anhydrase VB/CA5B in Human Kidney. Carbonic Anhydrase VB/CA5B was detected in immersion fixed paraffin-embedded sections of human kidney using Goat Anti-Human Carbonic Anhydrase VB/CA5B Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3176) at 3 µg/mL overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). Specific staining was localized to epithelial cells in convoluted tubules. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.</p>

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.2 mg/mL.
Shipping	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
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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 (6th 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 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:

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