

## DESCRIPTION

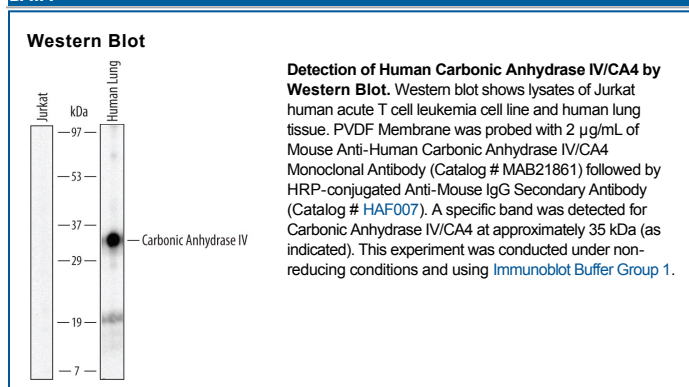
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Carbonic Anhydrase IV/CA4 in direct ELISAs and Western blots. In direct ELISAs, no cross-reactivity with recombinant human CA1, -2, -3, -5a, -5b, -7, 8, -9, or -10 is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>2B</sub> Clone # 310415
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human Carbonic Anhydrase IV/CA4 Ala19-Lys283 Accession # P22748
<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 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>	2 µg/mL	See Below

## DATA



## 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. CA4 is a GPI-anchored membrane enzyme expressed on the luminal surfaces of pulmonary (and certain other) capillaries and of proximal renal tubules. It functions as the principal  $\text{CO}_2$  taste sensor (2). In addition, a genetic mutation (Arg 14 to Trp in the signal peptide) of CA4 was found to co-segregate with the RP17 form of retinitis pigmentosa in two large families and was not found in 36 unaffected family members or 100 controls (3).

### References:

1. Hewett-Emmett, D. and R.E. Tashian (1996) Mol. Phylogenet. Evol. **5**:50.
2. Chandrashekar, J. *et al.* (2009) Science **326**:443.
3. Rebello, G. *et al.* (2004) Proc. Natl. Acad. Sci. USA **101**:6617.