Human Carbonic Anhydrase XII/CA12 Antibody

Antigen Affinity-purified Polyclonal Goat IgG

Catalog Number: AF2190

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Carbonic Anhydrase XII/CA12 in direct ELISAs and Western blots. In Western blots, approximately 40% cross-reactivity with recombinant mouse Carbonic Anhydrase XII/CA12 is observed and less than 5% cross-reactivity with recombinant human CA1, 3, 5A, 5B, 6, 7, 8, and 10 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Carbonic Anhydrase XII/CA12 Ala25-Gln291 Accession # O43570
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 either lyophilized or as a 0.2 μm filtered solution in PBS.

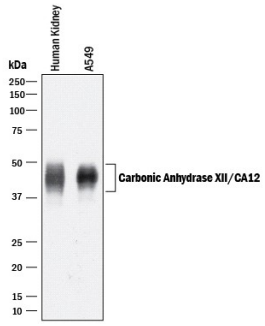
APPLICATIONS

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
Western Blot	1 µg/mL	See Below
Simple Western	10 µg/mL	See Below

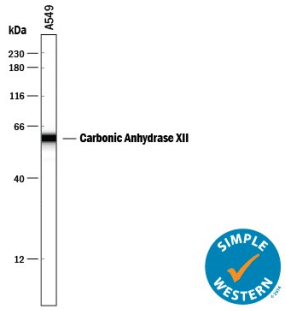
DATA

Western Blot



Detection of Human Carbonic Anhydrase XII/CA12 by Western Blot. Western blot shows lysates of human kidney tissue and A549 human lung carcinoma cell line. PVDF membrane was probed with 1 µg/mL of Goat Anti-Human Carbonic Anhydrase XII/CA12 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2190) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). A specific band was detected for Carbonic Anhydrase XII/CA12 at approximately 45-50 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Simple Western



Detection of Human Carbonic Anhydrase XII/CA12 by Simple Western™. Simple Western lane view shows lysates of A549 human lung carcinoma cell line, loaded at 0.2 mg/mL. A specific band was detected for Carbonic Anhydrase XII/CA12 at approximately 60 kDa (as indicated) using 10 µg/mL of Goat Anti-Human Carbonic Anhydrase XII/CA12 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2190) followed by 1:50 dilution of HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
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	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 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 $CO_2 + H_2O = HCO_3^- + H^+$, 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. CA12 is a type I membrane enzyme highly expressed in colon, kidney, prostate, intestine and activated lymphocytes and moderately expressed in pancreas, ovary, and testis (2, 3). It is over-expressed in some renal cell cancers and in glaucoma (2, 4). Two alternatively spliced forms exist, which either contains or lacks a 11 amino acid segment just before the transmembrane domain (5). The secreted, purified recombinant human CA12 contains the residues that are common for both forms.

References:

1. Hewett-Emmett, D. and R.E. Tashian (1996) Mol. Phylogenet. Evol. **5**:50.
2. Tuereci, O. *et al.* (1998) Proc. Natl. Acad. Sci. USA **95**:7608.
3. Ivanov, S.V. *et al.* (1998) Proc. Natl. Acad. Sci. USA **95**:12596.
4. Liao, S.-Y. *et al.* (2003) J. Med. Genet. **40**:257.
5. Strausberg, R.L. *et al.* (2002) Proc. Natl. Acad. Sci. USA **99**:16899.

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