

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Carbonic Anhydrase IV/CA4 in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 15% cross-reactivity with recombinant human (rh) CA4 is observed and less than 2% cross-reactivity with rhCA3, rhCA10, rhCA13, recombinant mouse (rm) CA9, and rmCA12 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Carbonic Anhydrase IV/CA4 Glu18-Ser277 Accession # Q64444
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.

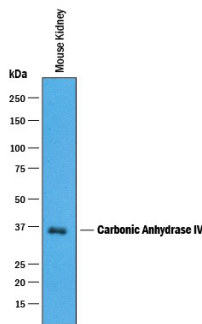
APPLICATIONS

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	0.25 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Mouse Carbonic Anhydrase IV (Catalog # 2414-CA), see our available Western blot detection antibodies
Simple Western	12.5 µg/mL	See Below

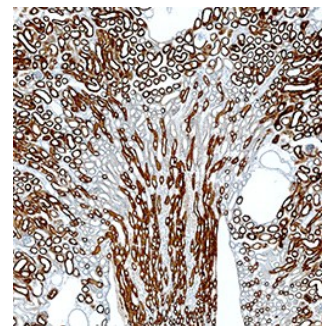
DATA

Western Blot



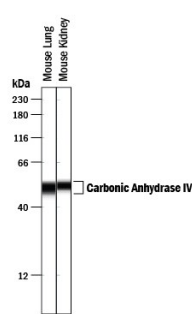
Detection of Mouse Carbonic Anhydrase IV/CA4 by Western Blot. Western blot shows lysates of mouse kidney tissue. PVDF membrane was probed with 0.25 µg/mL of Goat Anti-Mouse Carbonic Anhydrase IV/CA4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2414) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF019). A specific band was detected for Carbonic Anhydrase IV/CA4 at approximately 35 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunohistochemistry



Carbonic Anhydrase IV/CA4 in Mouse Kidney. Carbonic Anhydrase IV/CA4 was detected in perfusion fixed frozen sections of mouse kidney using Goat Anti-Mouse Carbonic Anhydrase IV/CA4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2414) at 3 µg/mL overnight at 4 °C. 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 cytoplasm in epithelial cells. View our protocol for [Chromogenic IHC Staining of Frozen Tissue Sections](#).

Simple Western



Detection of Mouse Carbonic Anhydrase IV/CA4 by Simple Western™. Simple Western lane view shows lysates of mouse lung tissue and mouse kidney tissue, loaded at 0.2 mg/mL. A specific band was detected for Carbonic Anhydrase IV/CA4 at approximately 51-52 kDa (as indicated) using 12.5 µg/mL of Goat Anti-Mouse Carbonic Anhydrase IV/CA4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2414) 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. <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 use of CAs as markers for tumor and hypoxia in clinic, as nutritional supplement in milk, and as a tool for CO_2 removal and mosquito control in industry. The deduced amino acid sequence of mouse CA4 consists of a signal peptide (residues 1-17), an ectodomain (residues 18-277) and a pro peptide (residues 278-305), which is removed in the mature form (2). The native enzyme is attached to the membrane by a GPI-anchor. Recombinant mouse CA4 corresponds to the ectodomain and exhibits the activity as described in Activity Assay Protocol.

References:

1. Hewett-Emmett, D. and R.E. Tashian (1996) Mol. Phylogenet. Evol. **5**:50.
2. Tamai, S. *et al.* (1996) Biochem. Genet. **34**:31.