Mouse ACE-2 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF3437

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse ACE-2 in direct ELISAs and Western blots. In direct ELISAs, approximately 25% cross-reactivity with recombinant rat ACE-2 and 10% cross-reactivity with recombinant human ACE-2 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant mouse ACE-2 Gln18-Thr740 Accession # Q8R0I0
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.

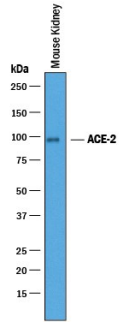
APPLICATIONS

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	0.25 µg/mL	See Below
Flow Cytometry	0.25 µg/10^6 cells	HEK293 human embryonic kidney cell line transfected with mouse ACE-2 and eGFP
Immunohistochemistry	5-15 µg/mL	See Below
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Mouse ACE-2 (Catalog # 3437-ZN), see our available Western blot detection antibodies
Simple Western	2.5 µg/mL	See Below
ELISA	This antibody functions as an ELISA detection antibody when paired with Rat Anti-Mouse ACE-2 Monoclonal Antibody (Catalog # MAB34371). *This product is intended for assay development on various assay platforms requiring antibody pairs. We recommend the Mouse ACE-2 DuoSet ELISA Kit (Catalog # DY3437-05) for convenient development of a sandwich ELISA.*	

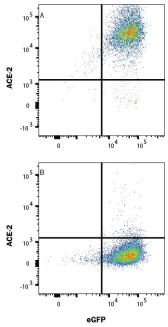
DATA

Western Blot



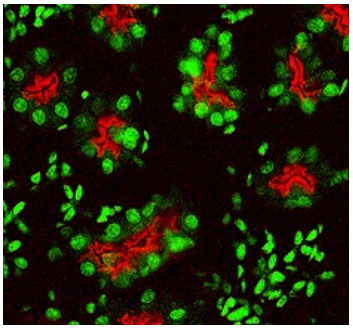
Detection of Mouse ACE-2 by Western Blot. Western blot shows lysates of mouse kidney tissue. PVDF membrane was probed with 0.25 µg/mL of Goat Anti-Mouse ACE-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3437) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # Catalog # HAF019). A specific band was detected for ACE-2 at approximately 95 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Flow Cytometry



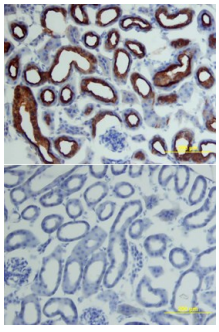
Detection of ACE-2 in HEK293 Human Cell Line Transfected with Mouse ACE-2 and eGFP by Flow Cytometry. HEK293 human embryonic kidney cell line transfected with (A) mouse ACE-2 or (B) irrelevant protein, and eGFP was stained with Goat Anti-Mouse ACE-2 Affinity Purified Polyclonal Antibody (Catalog # AF3437) followed by Allophycocyanin-conjugated Anti-Goat IgG Secondary Antibody (Catalog # F0108). Quadrant markers were set based on Goat IgG control antibody (Catalog # AB-108-C, data not shown). Staining was performed using our Staining Membrane-associated Proteins protocol.

Immunohistochemistry



ACE-2 in Mouse Kidney. ACE-2 was detected in perfusion fixed frozen sections of mouse kidney using 15 µg/mL Goat Anti-Mouse ACE-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3437) overnight at 4 °C. Tissue was stained (red) and counterstained (green). View our protocol for Fluorescent IHC Staining of Frozen Tissue Sections.

Immunohistochemistry



ACE-2 in Mouse Kidney. ACE-2 was detected in perfusion fixed frozen sections of mouse kidney using Goat Anti-Mouse ACE-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3437) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # Catalog # CTS008) and counterstained with hematoxylin (blue). Lower panel shows a lack of labeling if primary antibodies are omitted and tissue is stained only with secondary antibody followed by incubation with detection reagents. View our protocol for Chromogenic IHC Staining of Frozen Tissue Sections.

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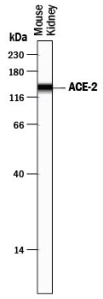
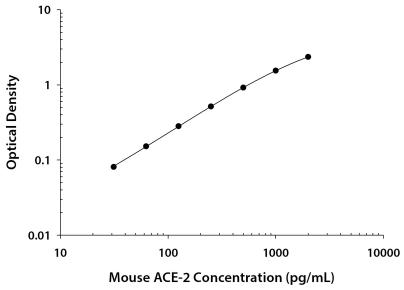
Simple Western



Detection of Mouse ACE-2 by Simple Western™. Simple Western lane view shows lysates of mouse kidney tissue, loaded at 0.2 mg/mL. A specific band was detected for ACE-2 at approximately 141 kDa (as indicated) using 2.5 µg/mL of Goat Anti-Mouse ACE-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3437) followed by 1:50 dilution of HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # Catalog # HAF109). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

ELISA



Mouse ACE-2 ELISA Standard Curve. Recombinant Mouse ACE-2 protein was serially diluted 2-fold and captured by Rat Anti-Mouse ACE-2 Monoclonal Antibody (Catalog # MAB34371) coated on a Clear Polystyrene Microplate (Catalog # DY990). Goat Anti-Mouse ACE-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3437) was biotinylated and incubated with the protein captured on the plate. Detection of the standard curve was achieved by incubating Streptavidin-HRP (Catalog # DY998) followed by Substrate Solution (Catalog # DY999) and stopping the enzymatic reaction with Stop Solution (Catalog # DY994).

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

ACE-2, also called ACEH (ACE homologue), is an integral membrane protein and a zinc metalloprotease of the ACE family that also includes somatic and germinal ACE (1). Mouse ACE-2 has about 40% amino acid identity to the N- and C-terminal domains of mouse somatic ACE. The predicted mouse ACE-2 protein sequence consists of 798 amino acids, including a N-terminal signal peptide, a single catalytic domain, a C-terminal membrane anchor, and a short cytoplasmic tail. ACE-2 cleaves angiotensins I and II as a carboxypeptidase. ACE-2 mRNA is found at high levels in testis, kidney and heart and at moderate levels in colon, small intestine and ovary. Classical ACE inhibitors such as captopril and lisinopril do not inhibit ACE-2 activity. Novel peptide inhibitors of ACE-2 do not inhibit ACE activity (2). Genetic data from *Drosophila*, mice and rats show that ACE-2 is an essential regulator of heart function *in vivo* (3). In addition, ACE-2 is a key SARS-CoV Spike protein receptor *in vivo* and has a critical function in acute lung injury (4, 5).

References:

1. Tipnis, S.R. *et al.* (2000) J. Biol. Chem. **275**:33238.
2. Crackower, M.A. *et al.* (2002) Nature **417**:822.
3. Huang, L. *et al.* (2003) J. Biol. Chem. **278**:15532.
4. Kuba, K. *et al.* (2005) Nature Med. **11**:875.
5. Ima, Y. *et al.* (2005) Nature **436**:112.

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