Human/Hamster ACE-2 Antibody

Monoclonal Mouse IgG_{2A} Clone # 171606

Catalog Number: MAB933

DESCRIPTION

Species Reactivity	Human/Hamster
Specificity	Detects human ACE-2 in direct ELISAs and Western blots. In Western blots, no cross-reactivity with recombinant human (rh) ACE-1 or rhNeprilysin is observed.
Source	Monoclonal Mouse IgG_{2A} Clone # 171606
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human ACE-2 Gln18-Ser740 (predicted) Accession # Q9BYF1
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.

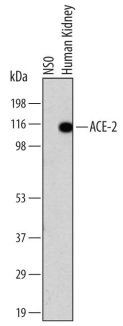
APPLICATIONS

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	2 µg/mL	See Below
Immunohistochemistry	8-25 µg/mL	See Below

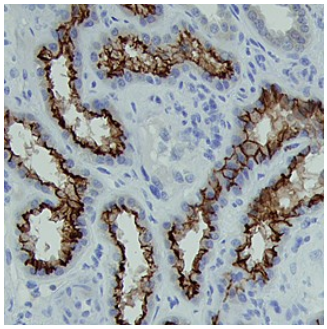
DATA

Western Blot



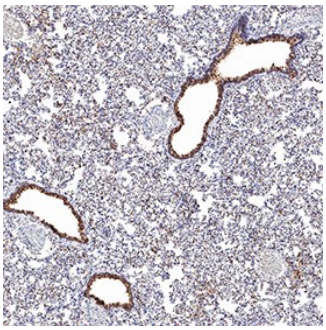
Detection of Human ACE-2 by Western Blot. Western blot shows lysates of NS0 mouse myeloma cell line and human kidney tissue. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human ACE-2 Monoclonal Antibody (Catalog # MAB933) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # Catalog # HAF007). A specific band was detected for ACE-2 at approximately 110 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunohistochemistry



ACE-2 in Human Kidney. ACE-2 was detected in immersion fixed paraffin-embedded sections of human kidney using Mouse Anti-Human ACE-2 Monoclonal Antibody (Catalog # MAB933) at 15 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 # Catalog # CTS013). Tissue was stained using the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # Catalog # CTS002) and counterstained with hematoxylin (blue). Specific staining was localized to cell surface of epithelial cells in convoluted tubules. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Immunohistochemistry



ACE-2 in Hamster Lung. ACE-2 was detected in immersion fixed paraffin-embedded sections of hamster lung using Mouse Anti-Human ACE-2 Monoclonal Antibody (Catalog # MAB933) at 10 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001). 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 DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to respiratory bronchioles. Staining was performed our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

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Human/Hamster ACE-2 Antibody

Monoclonal Mouse IgG_{2A} Clone # 171606

Catalog Number: MAB933

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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

Angiogensin I Converting Enzyme-2 (ACE-2), also called ACEH (ACE homolog), is a type I transmembrane zinc protease that cleaves angiotensins I and II to produce vasodilatory and anti-proliferative peptides. The balance between ACE-1 and ACE-2 activity is critical for maintaining cardiovascular, renal, and pulmonary function (1). ACE-2 also functions as the cellular uptake receptor for the SARS coronoavirus. Within the extracellular domain, human ACE-2 shares 83% aa sequence identity with mouse and rat ACE-2. Human ACE-2 has about 40% amino acid identity to the N- and C-terminal domains of human somatic ACE. The predicted human ACE-2 protein sequence consists of 805 amino acids, including a N-terminal signal peptide, a single catalytic domain, a C-terminal membrane anchor, and a short cytoplasmic tail. 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). ACE-2 isoforms of 75 kDa and 120 kDa are differentially expressed between lung and kidney, respectively, and a shed soluble form is generated by TACE/ADAM17 mediated cleavage.

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.

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