

DESCRIPTION

Species Reactivity	Human
Specificity	Detects the pro form (amino acids 24-406) but not the mature form (amino acids 67-406) of human Renin in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant mouse Renin, recombinant human (rh) Cathepsin D, or rhCathepsin E is observed.
Source	Monoclonal Mouse IgG ₁ Clone # 411507
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Renin Leu24-Arg406 Accession # P00797
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.

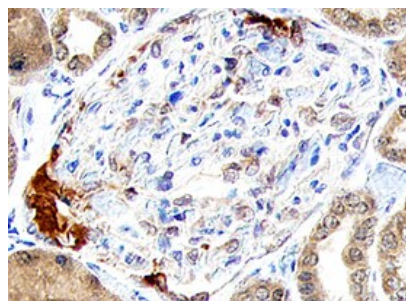
APPLICATIONS

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	1 µg/mL	Recombinant Human Renin (Catalog # 4090-AS)
Immunohistochemistry	8-25 µg/mL	See Below

DATA

Immunohistochemistry



Renin in Human Kidney. Renin was detected in immersion fixed paraffin-embedded sections of human kidney using 15 µg/mL Mouse Anti-Human Renin Propeptide Monoclonal Antibody (Catalog # MAB4447) overnight at 4 °C. Before incubation with the primary antibody tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained with the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

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	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <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

Human Renin is a member of the aspartyl proteinase family produced largely in part by the juxtaglomerular cells in the kidney (1). Renin differs from the other members of this class by having a pH optimum near the neutral pH region with native substrates instead of a pH 2.0 to 3.4 range (2). This more neutral pH optimum allows it to be functional in the plasma. Renin also has a very high selectivity for substrates due to a long peptide recognition on either side of the peptide bond undergoing cleavage. An octapeptide substrate was the minimum length to be cleaved by Renin. Renin plays a crucial role in the regulation of blood pressure and salt balance through the cleavage of angiotensinogen, which is the only known physiological substrate of Renin. Renin releases the decapeptide angiotensin I, which in turn is further converted to vasoactive hormone angiotensin II by angiotensin converting enzyme (ACE). Renin is produced as prorenin with 43 pro residues at the N-terminal of mature Renin. The inactive prorenin becomes activated proteolytically by trypsin, cathepsin B, or other proteinases. Renin is expressed as a precursor consisting of a signal sequence (aa 1-23), a propeptide (aa 24-66), and a mature chain (aa 67-406). The amino acid sequence of human REN shares 100%, 73%, 71% and 67% identity with that of chimpanzee, canine, mouse and rat.

References:

1. Yokosawa, H. *et al.* (1980) *J. Biol. Chem.* **255**:3498.
2. Fuminaki, S. *et al.* (2004) in *Handbook of Proteolytic Enzymes*, Barrett, A.J. *et al.* eds. p. 54.

