Human Renin Antibody

Antigen Affinity-purified Polyclonal Sheep IgG
Catalog Number: AF4090

DESCRIPTION

Species Reactivity	Human
Specificity	Detects both pro and mature forms of human Renin in direct ELISAs and Western blots. In direct ELISAs, approximately 20% cross-reactivity with recombinant mouse Renin-1 is observed and less than 5% cross-reactivity with recombinant rat Renin-1 is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Renin Leu24-Arg406 Accession # P60016
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.

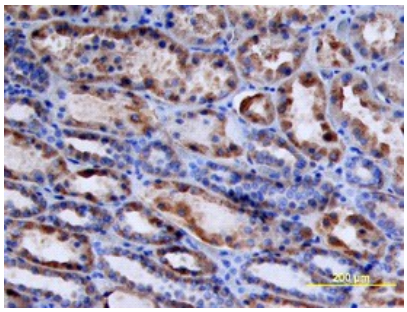
APPLICATIONS

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	0.1 µg/mL	Recombinant Human Renin (Catalog # 4090-AS)
Immunohistochemistry	5-15 µg/mL	See Below
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Human Renin (Catalog # 4090-AS), see our available Western blot detection antibodies
Neutralization	Measured by its ability to neutralize Recombinant Human Renin (10 µg/mL, Catalog # 4090-AS) cleavage of the fluorogenic peptide substrate Renin Substrate I (10 µM). The Neutralization Dose (ND_{50}) is typically 100 µg/mL.	

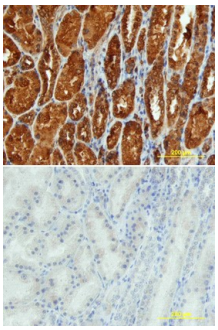
DATA

Immunohistochemistry



Renin in Human Kidney. Renin was detected in immersion fixed paraffin-embedded sections of human kidney using Sheep Anti-Human Renin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4090) at 10 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Sheep HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS019) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Immunohistochemistry



Renin in Human Kidney. Renin was detected in immersion fixed paraffin-embedded sections of human kidney array using Sheep Anti-Human Renin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4090) at 10 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Sheep HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS019) 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 Paraffin-embedded Tissue Sections.

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

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.

References:

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

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