

Renin (A-1): sc-137252

BACKGROUND

Renin is a highly specific endopeptidase that mediates the cleavage of the circulating substrate angiotensinogen to yield Angiotensin I. Angiotensin-converting enzyme I (ACE) then completes the conversion from Angiotensin I to Angiotensin II which is significant in the regulation of electrolyte balance and blood pressure. Sympathetic stimulation (β_1 -adrenergic receptors), renal artery hypotension and decreases in sodium delivery to the distal tubules of the kidney signal the release of Renin. The Renin-Angiotensin system (RAS) is essential for regulating blood volume, arterial pressure and normal cardiac and vascular function. Renin is synthesized and secreted by modified smooth muscle cells in the juxtaglomerular apparatus (JGA) of the kidney. Expression of Renin in other tissues, including brain, has been verified although the homeostatic role it may play is yet to be firmly established.

REFERENCES

1. Field, L.J., et al. 1985. Ren1 and Ren2 loci are expressed in mouse kidney. *Proc. Natl. Acad. Sci. USA* 82: 6196-6200.
2. Fritz, L.C., et al. 1986. Characterization of human prorenin expressed in mammalian cells from cloned cDNA. *Proc. Natl. Acad. Sci. USA* 83: 4114-4118.

CHROMOSOMAL LOCATION

Genetic locus: REN (human) mapping to 1q32.1; Ren2 (mouse) mapping to 1 E4.

SOURCE

Renin (A-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 163-197 within an internal region of Renin of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Renin (A-1) is available conjugated to agarose (sc-137252 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137252 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137252 PE), fluorescein (sc-137252 FITC), Alexa Fluor® 488 (sc-137252 AF488), Alexa Fluor® 546 (sc-137252 AF546), Alexa Fluor® 594 (sc-137252 AF594) or Alexa Fluor® 647 (sc-137252 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137252 AF680) or Alexa Fluor® 790 (sc-137252 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-137252 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

Renin (A-1) is recommended for detection of precursor and mature heavy chain Renin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Renin siRNA (h): sc-41644, Renin siRNA (m): sc-41645, Renin shRNA Plasmid (h): sc-41644-SH, Renin shRNA Plasmid (m): sc-41645-SH, Renin shRNA (h) Lentiviral Particles: sc-41644-V and Renin shRNA (m) Lentiviral Particles: sc-41645-V.

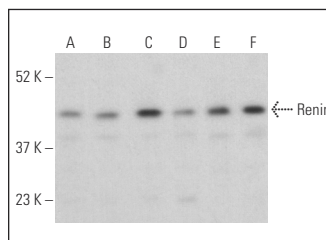
Molecular Weight of Renin precursor: 46 kDa.

Molecular Weight of intermediate Renin: 41 kDa.

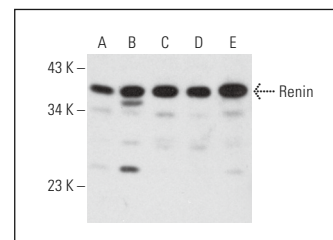
Molecular Weight of mature Renin: 38 kDa.

Positive Controls: ES-2 cell lysate: sc-24674, AMJ2-C8 whole cell lysate: sc-364366 or PC-12 cell lysate: sc-2250.

DATA



Renin (A-1): sc-137252. Western blot analysis of Renin expression in HeLa (A), Hep G2 (B), K-562 (C), ES-2 (D), AMJ2-C8 (E) and PC-12 (F) whole cell lysates. Detection reagent used: m-IgG₁ BP-HRP: sc-525408.



Renin (A-1): sc-137252. Western blot analysis of Renin expression in Hep G2 (A), ES-2 (B), c4 (C), AMJ2-C8 (D) and PC-12 (E) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Nascimento, F.A., et al. 2012. Maternal vitamin D deficiency delays glomerular maturity in F1 and F2 offspring. *PLoS ONE* 7: e41740.
2. Wang, Q., et al. 2018. Alteration in the expression of the Renin-Angiotensin system in the myocardium of mice conceived by *in vitro* fertilization. *Biol. Reprod.* 99: 1276-1288.
3. Oliveira, M., et al. 2019. Bone marrow mononuclear cell transplantation rescue glomerular filtration barrier and epithelial cellular junctions in renovascular hypertension model. *Exp. Physiol.* 104: 740-754.
4. Li, S.Y., et al. 2020. Aldosterone from endometrial glands is benefit for human decidualization. *Cell Death Dis.* 11: 679.
5. Sha, N.N., et al. 2021. Differential responses of bone to Angiotensin II and Angiotensin(1-7): beneficial effects of ANG(1-7) on bone with exposure to high glucose. *Am. J. Physiol. Endocrinol. Metab.* 320: E55-E70.

RESEARCH USE

For research use only, not for use in diagnostic procedures.