

Renin (B-12): sc-133145

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.

CHROMOSOMAL LOCATION

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

SOURCE

Renin (B-12) is a mouse monoclonal antibody raised against amino acids 116-220 of Renin of human origin.

PRODUCT

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

Renin (B-12) is available conjugated to agarose (sc-133145 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133145 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133145 PE), fluorescein (sc-133145 FITC), Alexa Fluor[®] 488 (sc-133145 AF488), Alexa Fluor[®] 546 (sc-133145 AF546), Alexa Fluor[®] 594 (sc-133145 AF594) or Alexa Fluor[®] 647 (sc-133145 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-133145 AF680) or Alexa Fluor[®] 790 (sc-133145 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Renin (B-12) is recommended for detection of precursor and mature 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), immunohistochemistry (including paraffin-embedded sections) (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.

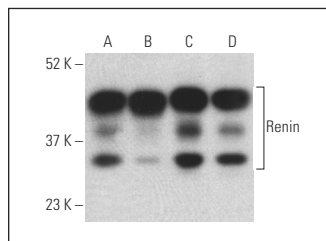
Molecular Weight of intermediate Renin: 41 kDa.

Molecular Weight of mature Renin: 38 kDa.

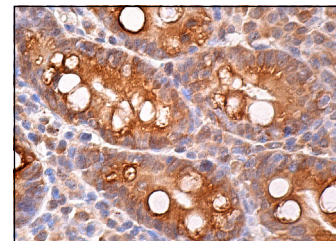
STORAGE

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

DATA



Renin (B-12): sc-133145. Western blot analysis of Renin expression in HeLa (A), Hep G2 (B), K-562 (C) and ES-2 (D) whole cell lysates. Detection reagent used: m-IgG κ BP-HRP: sc-525408.



Renin (B-12): sc-133145. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

- de Almeida Chaves Rodrigues, A.F., et al. 2013. Increased renal sympathetic nerve activity leads to hypertension and renal dysfunction in offspring from diabetic mothers. *Am. J. Physiol. Renal Physiol.* 304: F189-F197.
- Lincevicius, G.S., et al. 2015. Aldosterone contributes to sympathoexcitation in renovascular hypertension. *Am. J. Hypertens.* 28: 1083-1090.
- Gonzalez, A.A., et al. 2016. Vasopressin/V2 receptor stimulates Renin synthesis in the collecting duct. *Am. J. Physiol. Renal Physiol.* 310: F284-F293.
- Lo, H.F., et al. 2017. Association of dysfunctional synapse defective 1 (SYDE1) with restricted fetal growth—SYDE1 regulates placental cell migration and invasion. *J. Pathol.* 241: 324-336.
- Lira, D.G.D., et al. 2019. Superimposing a high-fat diet on *Schistosoma mansoni* infection affects Renin-angiotensin system components in the mouse kidney. *Rev. Soc. Bras. Med. Trop.* 52: e20180371.
- Kalra, J., et al. 2020. Up-regulation of PKR pathway contributes to L-NAME induced hypertension and renal damage. *Heliyon* 6: e05463.
- Curnow, A.C., et al. 2020. Low nitric oxide bioavailability increases Renin production in the collecting duct. *Front. Physiol.* 11: 559341.
- Lima, N.K.S., et al. 2021. Renal ischemia-reperfusion leads to hypertension and changes in proximal tubule Na⁺ transport and Renin-Angiotensin-Aldosterone system: role of NADPH oxidase. *Life Sci.* 266: 118879.
- Chen, Y., et al. 2021. Diuretic action of Apelin-13 mediated by inhibiting cAMP/PKA/sPRR pathway. *Front. Physiol.* 12: 642274.
- Chang, J., et al. 2021. Vitamin D suppresses bleomycin-induced pulmonary fibrosis by targeting the local renin-angiotensin system in the lung. *Sci. Rep.* 11: 16525.

RESEARCH USE

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

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