SANTA CRUZ BIOTECHNOLOGY, INC.

Renin Receptor siRNA (m): sc-62935

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The Power to Question

BACKGROUND

The Renin Receptor, also known as ATP6AP2 (ATPase H^+-transporting lysosomal accessory protein 2), ATP6IP2 (ATPase H^+-transporting lysosomal-interacting protein 2), CAPER or M8-9, is an ATPase-associated protein that functions as a Renin and prorenin cellular receptor. Expressed in the brain, heart, liver, kidney, placenta and pancreas, the Renin Receptor functions to activate ERK 1 and ERK 2, thereby mediating Renin-dependent cellular responses. The Renin Receptor has a subunit that associates with the transmembrane domain of V-type ATPases and interacts with Renin. These interactions increase the catalytic activity of Renin in the Renin-Angiotensin system (RAS), thus upregulating the conversion of angiotensinogen to Angiotensin. Defects in the gene encoding the Renin Receptor are implicated in mental retardation X-linked with epilepsy (MRXE), a syndromatic mental retardation characterized by epilepsy, as well as delays in motor milestones and speech acquisition in infancy.

REFERENCES

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4. Catanzaro, D.F. 2005. Physiological relevance of Renin/prorenin binding and uptake. Hypertens. Res. 28: 97-105.
5. Burcklé, C.A., et al. 2006. Elevated blood pressure and heart rate in human Renin Receptor transgenic rats. Hypertension 47: 552-556.
6. Kaneshiro, Y., et al. 2006. Increased expression of cyclooxygenase-2 in the renal cortex of human prorenin receptor gene-transgenic rats. Kidney Int. 70: 641-646.
7. De Mello, W.C. 2006. On the pathophysiological implications of an intracellular Renin Receptor. Circ. Res. 99: 1285-1286.
8. Schefe, J.H., et al. 2006. A novel signal transduction cascade involving direct physical interaction of the Renin/prorenin receptor with the transcription factor promyelocytic zinc finger protein. Circ. Res. 99: 1355-1366.
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CHROMOSOMAL LOCATION

Genetic locus: Atp6ap2 (mouse) mapping to X A1.1.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

Renin Receptor siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Renin Receptor shRNA Plasmid (m): sc-62935-SH and Renin Receptor shRNA (m) Lentiviral Particles: sc-62935-V as alternate gene silencing products.

For independent verification of Renin Receptor (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62935A, sc-62935B and sc-62935C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCL, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Renin Receptor siRNA (m) is recommended for the inhibition of Renin Receptor expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Renin Receptor gene expression knockdown using RT-PCR Primer: Renin Receptor (m)-PR: sc-62935-PR (20 µl, 527 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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