

RENBP siRNA (m): sc-152800

BACKGROUND

RENBP, also known as N-acetylglucosamine 2-epimerase, is a 427 amino acid protein that is a proteinaceous renin inhibitor. In inhibiting renin, RENBP forms a complex with it; a high molecular weight renin. RENBP contains a leucine zipper domain, which is essential for its dimerization with renin. RENBP can catalyze the interconversion of N-acetylglucosamine to N-acetylmannosamine, indicating that it is a GlcNAc 2-epimerase. Sequences of porcine, human and rat renin-binding proteins are highly homologous. The RENBP gene is conserved in canine, mouse, rat and zebrafish, and maps to human chromosome Xq28 between DXS52 and G6PD. Rat Renbp is located on chromosome X at Xq37 close to marker DXWox3 and falls outside the BP QTL regions on chromosome X.

REFERENCES

1. Warren, S.T., Knight, S.J., Peters, J.F., Stayton, C.L., Consalez, G.G. and Zhang, F.P. 1990. Isolation of the human chromosomal band Xq28 within somatic cell hybrids by fragile X site breakage. *Proc. Natl. Acad. Sci. USA* 87: 3856-3860.
2. Takahashi, S., Inoue, H. and Miyake, Y. 1992. The human gene for renin-binding protein. *J. Biol. Chem.* 267: 13007-13013.
3. Online Mendelian Inheritance in Man, OMIM[™]. 1992. Johns Hopkins University, Baltimore, MD. MIM Number: 312420. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. van den Ouweland, A.M., Verdijk, M., Kiochis, P., Poustka, A. and van Oost, B.A. 1994. The human renin-binding protein gene (RENBP) maps in Xq28. *Genomics* 21: 279-281.
5. Faranda, S., Frattini, A. and Vezzoni, P. 1995. The human genes encoding renin-binding protein and host cell factor are closely linked in Xq28 and transcribed in the same direction. *Gene* 155: 237-239.
6. Knöll, A., Schunkert, H., Reichwald, K., Danser, A.H., Bauer, D., Platzer, M., Stein, G. and Rosenthal, A. 1997. Human renin binding protein: complete genomic sequence and association of an intronic T/C polymorphism with the prorenin level in males. *Hum. Mol. Genet.* 6: 1527-1534.
7. Takahashi, S., Takahashi, K., Kaneko, T., Ogasawara, H., Shindo, S. and Kobayashi, M. 1999. Human renin-binding protein is the enzyme N-acetyl-D-glucosamine 2-epimerase. *J. Biochem.* 125: 348-353.
8. Takahashi, S., Kumagai, M., Shindo, S., Saito, K. and Kawamura, Y. 2000. Renin inhibits N-acetyl-D-glucosamine 2-epimerase (renin-binding protein). *J. Biochem.* 128: 951-956.
9. Zürcher, H., Van Vooren, P., Szpirer, J., Szpirer, C. and Kreutz, R. 2002. Assignment of the gene encoding renin binding protein (RENBP) to rat chromosome Xq37 by *in situ* hybridization and radiation hybrid mapping. *Cytogenet. Genome Res.* 97: 277H.

CHROMOSOMAL LOCATION

Genetic locus: Renbp (mouse) mapping to X A7.3.

RESEARCH USE

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

PRODUCT

RENBP 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RENBP shRNA Plasmid (m): sc-152800-SH and RENBP shRNA (m) Lentiviral Particles: sc-152800-V as alternate gene silencing products.

For independent verification of RENBP (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-152800A, sc-152800B and sc-152800C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

RENBP siRNA (m) is recommended for the inhibition of RENBP 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 μ M in 66 μ l. 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 RENBP gene expression knockdown using RT-PCR Primer: RENBP (m)-PR: sc-152800-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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