

RAIN siRNA (h): sc-97326

BACKGROUND

RAIN, also known as RASIP1 (Ras-interacting protein 1), is a 963 amino acid protein that contains one dilute domain and one Ras-associating domain. The RAIN protein is highly expressed in heart and detected at lower levels in placenta and pancreas. RAIN interacts with H-Ras, Rap 1A, Rap 2, R-Ras, Raf-1 and TC 21, as well as with Ras family members that have been activated by GTP binding. RAIN interacts with Ras in a GTP-dependent manner *in vitro* and *in vivo*, requiring an intact Ras core effector-binding domain for this interaction, and thus fits the definition of a Ras effector. Unlike other Ras effectors, RAIN localizes to the perinuclear, juxta-Golgi vesicles in intact cells and is recruited to the Golgi by activated Ras. Containing 12 exons, the RAIN gene is conserved in canine, bovine, mouse, rat, chicken and zebrafish, and maps to human chromosome 19q13.33.

REFERENCES

1. Mitin, N.Y., Ramocki, M.B., Zullo, A.J., Der, C.J., Konieczny, S.F. and Taparowsky, E.J. 2004. Identification and characterization of RAIN, a novel Ras-interacting protein with a unique subcellular localization. *J. Biol. Chem.* 279: 22353-22361.
2. Online Mendelian Inheritance in Man, OMIM[™]. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609623. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Mitin, N., Konieczny, S.F. and Taparowsky, E.J. 2006. Ras and the RAIN/RasIP1 effector. *Meth. Enzymol.* 407: 322-335.
4. Jin, M., Takahashi, M., Moto, M., Muguruma, M., Ito, K., Watanabe, K., Kenmochi, Y., Kono, T., Hasumi, K. and Mitsumori, K. 2007. Carcinogenic susceptibility of RasH2 mice to troglitazone. *Arch. Toxicol.* 81: 883-894.
5. Xu, K., Chong, D.C., Rankin, S.A., Zorn, A.M. and Cleaver, O. 2009. Rasip1 is required for endothelial cell motility, angiogenesis and vessel formation. *Dev. Biol.* 329: 269-279.
6. Ikram, M.K., Xueling, S., Jensen, R.A., Cotch, M.F., Hewitt, A.W., Ikram, M.A., Wang, J.J., Klein, R., Klein, B.E., Breteler, M.M., Cheung, N., Liew, G., Mitchell, P., Uitterlinden, A.G., Rivadeneira, F., Hofman, A., et al. 2010. Four novel Loci (19q13, 6q24, 12q24, and 5q14) influence the microcirculation *in vivo*. *PLoS Genet.* 6: e1001184.
7. SWISS-PROT/TrEMBL (Q5U651). World Wide Web URL: <http://www.uniprot.org/uniprot/Q5U651>

CHROMOSOMAL LOCATION

Genetic locus: RASIP1 (human) mapping to 19q13.33.

RESEARCH USE

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

PROTOCOLS

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

PRODUCT

RAIN siRNA (h) is a pool of 2 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 RAIN shRNA Plasmid (h): sc-97326-SH and RAIN shRNA (h) Lentiviral Particles: sc-97326-V as alternate gene silencing products.

For independent verification of RAIN (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-97326A and sc-97326B.

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

RAIN siRNA (h) is recommended for the inhibition of RAIN expression in human 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 RAIN gene expression knockdown using RT-PCR Primer: RAIN (h)-PR: sc-97326-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.