

RG9MTD3 siRNA (m): sc-152832

BACKGROUND

The RNA methyltransferase family of proteins catalyze the transfer of a methyl group from a donor to an RNA acceptor. Through their ability to modify RNA, RNA methyltransferase proteins play an important role in cell growth and signaling pathways and may be involved in tumor development and progression. The RNA (guanine-9-) methyltransferase domain containing proteins (namely RG9MTD1, RG9MTD2 and RG9MTD3) are probable RNA methyltransferases that may play a role in RNA modification. RG9MTD3, also known as RNA (guanine-9-) methyltransferase domain containing 3, is a 316 amino acid protein that belongs to the RNA methyltransferase trmD family and the TRM10 subfamily. Due to their involvement in RNA-related pathways, the RG9MTD proteins may be associated with methylation events that lead to carcinogenesis. While both RG9MTD1 and RG9MTD2 exist as one known isoform, RG9MTD3 is expressed as three isoforms produced by alternative splicing events. The RG9MTD3 gene is conserved in chimpanzee, canine, bovine, mouse, rat and zebrafish.

REFERENCES

1. Scanlan, M.J., Gordan, J.D., Williamson, B., Stockert, E., Bander, N.H., Jongeneel, V., Gure, A.O., Jäger, D., Jäger, E., Knuth, A., Chen, Y.T. and Old, L.J. 1999. Antigens recognized by autologous antibody in patients with renal-cell carcinoma. *Int. J. Cancer* 83: 456-464.
2. Lu, Y.Y., Li, K., Wang, L., Liu, Y., Wang, Y.D., Cheng, J. and Zhang, L.X. 2003. Screening of the genes of hepatitis B virus PreS2 interacting proteins. *Zhonghua Gan Zang Bing Za Zhi* 11: 8-10.
3. Sjöblom, T., Jones, S., Wood, L.D., Parsons, D.W., Lin, J., Barber, T.D., Mandelker, D., Leary, R.J., Ptak, J., Silliman, N., Szabo, S., Buckhaults, P., Farrell, C., Meeh, P., Markowitz, S.D., Willis, J., Dawson, D., et al. 2006. The consensus coding sequences of human breast and colorectal cancers. *Science* 314: 268-274.
4. Tsuzuki, S., Karnan, S., Horibe, K., Matsumoto, K., Kato, K., Inukai, T., Goi, K., Sugita, K., Nakazawa, S., Kasugai, Y., Ueda, R. and Seto, M. 2007. Genetic abnormalities involved in t(12;21) TEL-AML1 acute lymphoblastic leukemia: analysis by means of array-based comparative genomic hybridization. *Cancer Sci.* 98: 698-706.
5. Conti, A., Scala, S., D'Agostino, P., Alimenti, E., Morelli, D., Andria, B., Tammaro, A., Attanasio, C., Della Ragione, F., Scuderi, V., Fabbri, F., D'Esposito, M., Di Florio, E., Nitsch, L., Calise, F. and Faiella, A. 2007. Wide gene expression profiling of ischemia-reperfusion injury in human liver transplantation. *Liver Transpl.* 13: 99-113.
6. Benayoun, L., Granot, E., Rizel, L., Allon-Shalev, S., Behar, D.M. and Ben-Yosef, T. 2007. Abetalipoproteinemia in Israel: evidence for a founder mutation in the Ashkenazi Jewish population and a contiguous gene deletion in an Arab patient. *Mol. Genet. Metab.* 90: 453-457.
7. Lee, Y.S., Latham, K.E. and Vandevoort, C.A. 2008. Effects of *in vitro* maturation on gene expression in rhesus monkey oocytes. *Physiol. Genomics* 35: 145-158.

CHROMOSOMAL LOCATION

Genetic locus: Trmt10b (mouse) mapping to 4 B1.

PRODUCT

RG9MTD3 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 RG9MTD3 shRNA Plasmid (m): sc-152832-SH and RG9MTD3 shRNA (m) Lentiviral Particles: sc-152832-V as alternate gene silencing products.

For independent verification of RG9MTD3 (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-152832A, sc-152832B and sc-152832C.

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

RG9MTD3 siRNA (m) is recommended for the inhibition of RG9MTD3 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 RG9MTD3 gene expression knockdown using RT-PCR Primer: RG9MTD3 (m)-PR: sc-152832-PR (20 μ l). 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.

PROTOCOLS

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