SANTA CRUZ BIOTECHNOLOGY, INC.

REV1 siRNA (m): sc-38233

BACKGROUND

Originally identified in *Saccaromyces cerevisiae,* Rev1p exhibits deoxycytidyl transferase activity and is required for translesion replication and mutagenesis induced by a wide variety of DNA-damaging events. The human homolog REV1, like its yeast Rev1p counterpart, is also involved in translesion replication and spontaneous mutagenesis. The human REV1 gene maps between the chromosomal loci 2q11.1 and 2q11.2 and is ubiquitously expressed in various human tissues. Human REV1 protein is a dCMP transferase that specifically inserts a dCMP residue either opposite a DNA template guanine, a DNA template apurinic/apyridinic site or a uracil residue. REV1 transferase may play a critical role during mutagenic translesion DNA synthesis by bypassing a template adenosine/guanine site in human cells.

REFERENCES

1. Nelson, J.R., et al. 1996. Deoxycytidyl transferase activity of yeast REV1 protein. Nature 382: 729-731.
2. Baynton, K., et al. 1999. Distinct roles for Rev1p during translesion synthesis in *Saccharomyces cerevisiae*. Mol. Microbiol. 34: 124-133.
3. Lin, W., et al. 1999. The human REV1 gene codes for a DNA template-dependent dCMP transferase. Nucleic Acids Res. 27: 4468-4475.
4. Nelson, J.R., et al. 2000. Evidence for a second function for *Saccharomyces cerevisiae* Rev1p. Mol. Microbiol. 37: 549-554.
5. Gibbs, P.E., et al. 2000. The function of the human homolog of *Saccharomyces cerevisiae* REV1 is required for mutagenesis induced by UV light. Proc. Natl. Acad. Sci. USA 97: 4186-4191.
6. Lawrence, C.W., et al. 2001. Mutagenesis in eukaryotes dependent on DNA polymerase and Rev1p. Philos. Trans. R. Soc. Lond., B, Biol. Sci. 356: 41-46.

CHROMOSOMAL LOCATION

Genetic locus: Rev1 (mouse) mapping to 1 B.

PRODUCT

REV1 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 REV1 shRNA Plasmid (m): sc-38233-SH and REV1 shRNA (m) Lentiviral Particles: sc-38233-V as alternate gene silencing products.

For independent verification of REV1 (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-38233A, sc-38233B and sc-38233C.

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.

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

REV1 siRNA (m) is recommended for the inhibition of REV1 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 REV1 gene expression knockdown using RT-PCR Primer: REV1 (m)-PR: sc-38233-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.