

rcRPE siRNA (h): sc-90702

BACKGROUND

rcRPE, also known as LOC729020 or hCG_2024410, is a 228 amino acid protein that shares 96% sequence identity with the human protein RPE. RPE (ribulose-5-phosphate-3-epimerase), also known as RPE2-1, is a 228 amino acid protein belonging to the ribulose phosphate binding superfamily. Ubiquitously expressed but with highest levels in red blood cells, lymphocytes and fibroblasts, RPE exists as two alternatively spliced isoforms. rcRPE is encoded by a gene located on human chromosome 10, which contains over 800 genes and 135 million nucleotides, making up nearly 4.5% of the human genome. PTEN is an important tumor suppressor gene located on chromosome 10 and, when defective, causes a genetic predisposition to cancer development known as Cowden syndrome. The chromosome 10 encoded gene ERCC6 is important for DNA repair and is linked to Cockayne syndrome which is characterized by extreme photosensitivity and premature aging. Tetrahydrobiopterin deficiency and a number of syndromes involving defective skull and facial bone fusion are also linked to chromosome 10. As with most trisomies, trisomy 10 is rare and is deleterious.

REFERENCES

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2. Yu, Y., et al. 2001. Gene expression profiling in human fetal liver and identification of tissue- and developmental-stage-specific genes through compiled expression profiles and efficient cloning of full-length cDNAs. *Genome Res.* 11: 1392-1403.
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4. Hu, L., et al. 2004. Initiation sites for human DNA replication at a putative ribulose-5-phosphate 3-epimerase gene. *Biochem. Biophys. Res. Commun.* 320: 648-655.
5. Sarafidou, T., et al. 2004. Folate-sensitive fragile site FRA10A is due to an expansion of a CGG repeat in a novel gene, FRA10AC1, encoding a nuclear protein. *Genomics* 84: 69-81.
6. Deloukas, P., et al. 2004. The DNA sequence and comparative analysis of human chromosome 10. *Nature* 429: 375-381.
7. Wang, Y.H. 2006. Chromatin structure of human chromosomal fragile sites. *Cancer Lett.* 232: 70-78.
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CHROMOSOMAL LOCATION

Genetic locus: LOC729020 (human) mapping to 10q24.33.

PROTOCOLS

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

PRODUCT

rcRPE siRNA (h) 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 rcRPE shRNA Plasmid (h): sc-90702-SH and rcRPE shRNA (h) Lentiviral Particles: sc-90702-V as alternate gene silencing products.

For independent verification of rcRPE (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-90702A, sc-90702B and sc-90702C.

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

rcRPE siRNA (h) is recommended for the inhibition of rcRPE 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 rcRPE gene expression knockdown using RT-PCR Primer: rcRPE (h)-PR: sc-90702-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.