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SANTA CRUZ BIOTECHNOLOGY, INC.

Exo1 siRNA (h): sc-44880

BACKGROUND

Comparative evaluation of the expression patterns of the human and mouse genes, combined with previous biochemical and yeast genetic studies, indicate that the Exo1 (Exonuclease I) proteins are important contributors to chromosome processing during mammalian DNA repair and recombination. In mice, the Exo1 gene maps to distal chromosome 1, consistent with the recent mapping of the orthologous human HEX1/EXO1 gene to chromosome 1q43. Exo1 is expressed prominently in testis, an area of active homologous recombination, and spleen, a prominent lymphoid tissue. In both mammalian and yeast systems, Exo1 is a 5'-3' double stranded DNA exonuclease that has previously been implicated in DNA mismatch repair (MMR). The MMR system ensures genome integrity by removing mispaired and unpaired bases that originate during replication. In humans, Exo1 interacts with MSH2 and MLH1 and has been proposed to be a redundant exonuclease in MMR. In both mammalian and yeast systems, Exo1 plays a structural role in MMR and stabilizes multiprotein complexes containing a number of MMR proteins.

REFERENCES

1. Lee, B.I., et al. 1999. Expression specificity of the mouse exonuclease 1 (mExo1) gene. Nucleic Acids Res. 27: 4114-4120.
2. Kirkpatrick, D.T., et al. 2000. Decreased meiotic intergenic recombination and increased meiosis I nondisjunction in Exo1 mutants of *Saccharomyces cerevisiae*. Genetics 156: 1549-1557.
3. Tran, P.T., Simon, J.A. and Liskay, R.M. 2001. Interactions of Exo1p with components of MutLα in *Saccharomyces cerevisiae*. Proc. Natl. Acad. Sci. USA 98: 9760-9765.
4. Mansour, A.A., et al. 2001. Control of GT repeat stability in *Schizosaccharomyces pombe* by mismatch repair factors. Genetics 158: 77-85.
5. Amin, N.S., et al. 2001. Exo1-dependent mutator mutations: model system for studying functional interactions in mismatch repair. Mol. Cell. Biol. 21: 5142-5155.

CHROMOSOMAL LOCATION

Genetic locus: EXO1 (human) mapping to 1q43.

PRODUCT

Exo1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Exo1 shRNA Plasmid (h): sc-44880-SH and Exo1 shRNA (h) Lentiviral Particles: sc-44880-V as alternate gene silencing products.

For independent verification of Exo1 (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-44880A, sc-44880B and sc-44880C.

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

Exo1 siRNA (h) is recommended for the inhibition of Exo1 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 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.

GENE EXPRESSION MONITORING

Exo1 (266): sc-56092 is recommended as a control antibody for monitoring of Exo1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Exo1 gene expression knockdown using RT-PCR Primer: Exo1 (h)-PR: sc-44880-PR (20 µl, 565 bp). 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.