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SANTA CRUZ BIOTECHNOLOGY, INC.

p73 siRNA (h2): sc-43730

BACKGROUND

The p53 gene is a widely studied anti-oncogene, or tumor suppressor gene. The p53 gene product can act as a negative regulator of cell growth in response to DNA damage. Mutations and allelic loss of the p53 gene have been associated with malignant transformation in a wide variety of human tumors. p53 shares considerable sequence similarity with p73, a gene that maps to a region in chromosome 1 that is frequently deleted in neuroblastomas. However, p73 does not appear to be activated by DNA damaging agents. The p73 isoform p73α inhibits drug-induced apoptosis in small cell lung carcinoma cells, while the p73 isoform p73β promotes it. p73α also prevents Bax activation, mitochondrial dysfunction, caspase activation and is able to reduce apoptosis induced by the BH3-only protein PUMA (p53 upregulated modulator of apoptosis). There is an equilibrium between p73α and p73β, demonstrated by the fact that p73α inhibits the pro-apoptotic effect of p73β.

REFERENCES

1. Lane, D.P., et al. 1990. p53: oncogene or anti-oncogene? Genes Dev. 4: 1-8.
2. Malkin, D., et al. 1990. Germ line p53 mutations in a familial syndrome of breast cancer, sarcomas, and other neoplasms. Science 250: 1233-1238.
3. Kastan, M.B., et al. 1992. A mammalian cell cycle checkpoint pathway utilizing p53 and GADD 45 is defective in ataxia-telangiectasia. Cell 71: 587-597.
4. Jost, C.A., et al. 1997. p73 is a human p53-related protein that can induce apoptosis. Nature 389: 191-194.
5. Kaghad, M., et al. 1997. Monoallelically expressed gene related to p53 at 1p36, a region frequently deleted in neuroblastoma and other human cancers. Cell 90: 809-819.
6. Schmale, H., et al. 1997. A novel protein with strong homology to the tumor suppressor p53. Oncogene 15: 1363-1367.
7. Reichelt, M., et al. 1999. The yeast two-hybrid system reveals no interaction between p73α and SV 40 large T-antigen. Arch. Virol. 144: 621-626.

CHROMOSOMAL LOCATION

Genetic locus: TP73 (human) mapping to 1p36.32.

PRODUCT

p73 siRNA (h2) 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 p73 shRNA Plasmid (h2): sc-43730-SH and p73 shRNA (h2) Lentiviral Particles: sc-43730-V as alternate gene silencing products.

For independent verification of p73 (h2) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-43730A, sc-43730B and sc-43730C.

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

p73 siRNA (h2) is recommended for the inhibition of p73 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

p73 (E-4): sc-17823 is recommended as a control antibody for monitoring of p73 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor p73 gene expression knockdown using RT-PCR Primer: p73 (h2)-PR: sc-43730-PR (20 µl, 533 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.