



p73 siRNA (m): sc-36168

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 p73 α inhibits drug-induced apoptosis in small cell lung carcinoma cells, while the p73 isoform p73 β promotes it. p73 α 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 p73 α and p73 β , demonstrated by the fact that p73 α inhibits the pro-apoptotic effect of p73 β .

REFERENCES

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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 GADD45 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 p73 α and SV40 large T-antigen. *Arch. Virol.* 144: 621-626.
8. Uramoto, H., et al. 2004. p73 competes with co-activators and recruits histone deacetylase to NF-Y in the repression of PDGF β -receptor. *J. Cell Sci.* 117: 5323-5331.

CHROMOSOMAL LOCATION

Genetic locus: Trp73 (mouse) mapping to 4 E2.

PRODUCT

p73 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 p73 shRNA Plasmid (m): sc-36168-SH and p73 shRNA (m) Lentiviral Particles: sc-36168-V as alternate gene silencing products.

For independent verification of p73 (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-36168A, sc-36168B and sc-36168C.

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

p73 siRNA (m) is recommended for the inhibition of p73 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.

GENE EXPRESSION MONITORING

p73 (5B429): sc-56191 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor p73 gene expression knockdown using RT-PCR Primer: p73 (m)-PR: sc-36168-PR (20 μ l, 482 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Jeong, M.H., et al. 2006. p19^{ras} interacts with and activates p73 by involving the MDM2 protein. *J. Biol. Chem.* 281: 8707-8715.

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.