

TP53INP1 siRNA (h): sc-76715

BACKGROUND

TP53INP1 (tumor protein p53-inducible nuclear protein 1), also known as p53DINP1, SIP or Teap, is a 240 amino acid protein that localizes to nuclear bodies and exists as two alternatively spliced isoforms, designated p53DINP1a and p53DINP1b. Expressed ubiquitously with higher expression in testis, pancreas and spleen tissue, TP53INP1 functions in response to double-stranded DNA breaks and regulates p53-mediated apoptosis, specifically by phosphorylating human p53 at Ser 46, an event that leads to cell death. Additionally, TP53INP1 is thought to interact with p73 and may be involved in the regulation of p73-controlled cell cycle progression. TP53INP1 expression is downregulated in pancreatic ductal adenocarcinomas, suggesting that, via its ability to induce cell death, TP53INP1 plays a role in tumor suppression.

REFERENCES

1. Okamura, S., et al. 2001. p53DINP1, a p53-inducible gene, regulates p53-dependent apoptosis. *Mol. Cell* 8: 85-94.
2. Nowak, J., et al. 2002. Assignment of tumor protein p53 induced nuclear protein 1 (TP53INP1) gene to human chromosome band 8q22 by *in situ* hybridization. *Cytogenet. Genome Res.* 97: 140E.
3. Tomasini, R., et al. 2002. p53-dependent expression of the stress-induced protein (SIP). *Eur. J. Cell Biol.* 81: 294-301.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606185. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Tomasini, R., et al. 2003. TP53INP1s and homeodomain-interacting protein kinase-2 (HIPK2) are partners in regulating p53 activity. *J. Biol. Chem.* 278: 37722-37729.
6. Hershko, T., et al. 2005. Novel link between E2F and p53: proapoptotic cofactors of p53 are transcriptionally upregulated by E2F. *Cell Death Differ.* 12: 377-383.
7. Tomasini, R., et al. 2005. TP53INP1 is a novel p73 target gene that induces cell cycle arrest and cell death by modulating p73 transcriptional activity. *Oncogene* 24: 8093-8104.

CHROMOSOMAL LOCATION

Genetic locus: TP53INP1 (human) mapping to 8q22.1.

PRODUCT

TP53INP1 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 TP53INP1 shRNA Plasmid (h): sc-76715-SH and TP53INP1 shRNA (h) Lentiviral Particles: sc-76715-V as alternate gene silencing products.

For independent verification of TP53INP1 (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-76715A, sc-76715B and sc-76715C.

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

TP53INP1 siRNA (h) is recommended for the inhibition of TP53INP1 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 TP53INP1 gene expression knockdown using RT-PCR Primer: TP53INP1 (h)-PR: sc-76715-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Xu, C.G., et al. 2016. MiR-30a and miR-205 are downregulated in hypoxia and modulate radiosensitivity of prostate cancer cells by inhibiting autophagy via TP53INP1. *Eur. Rev. Med. Pharmacol. Sci.* 20: 1501-1508.
2. Ye, W., et al. 2019. Downregulation of microRNA-3934-5p induces apoptosis and inhibits the proliferation of neuroblastoma cells by targeting TP53INP1. *Exp. Ther. Med.* 18: 3729-3736.

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.