SANTA CRUZ BIOTECHNOLOGY, INC.

p63 siRNA (h): sc-36161

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. p73 shares a high degree of homology with p53, and appears to have similar growth inhibiting and apoptosis-promoting functions. However, unlike p53, the expression of p73 is not upregulated in response to DNA damage. p73 can, when overproduced, activate the p53-responsive gene p21. p63 has also been identified based on its similarities with p53. The p63 gene encodes multiple isotypes with variable functions. p63α (also designated p51B or KET), p63β and p63γ (also designated p51A), as well as corresponding TA*p63 isoforms, contain transactivation domains which have been shown to transactivate p53 reporter genes and induce apoptosis. ΔN p63 isoforms lack the transactivation domain and can act as dominant-negative reagents to inhibit transactivation by p53 and p63.

REFERENCES

1. Lane, D.P., et al. 1990. p53: oncogene or anti-oncogene? Genes Dev. 4: 1-8.
2. 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.
3. Zhu, J., et al. 1998. The potential tumor suppressor p73 differentially regulates cellular p53 target genes. Cancer Res. 58: 5061-5065.

CHROMOSOMAL LOCATION

Genetic locus: TP63 (human) mapping to 3q28.

PRODUCT

p63 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 p63 shRNA Plasmid (h): sc-36161-SH and p63 shRNA (h) Lentiviral Particles: sc-36161-V as alternate gene silencing products.

For independent verification of p63 (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-36161A, sc-36161B and sc-36161C.

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

p63 siRNA (h) is recommended for the inhibition of p63 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

p63 (D-9): sc-25268 is recommended as a control antibody for monitoring of p63 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 p63 gene expression knockdown using RT-PCR Primer: p63 (h)-PR: sc-36161-PR (20 µl, 458 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Fukushima, H., et al. 2009. Loss of ΔNp63α promotes invasion of urothelial carcinomas via N-cadherin/Src homology and collagen/extracellular signal-regulated kinase pathway. Cancer Res. 69: 9263-9270.
2. Xu, L., et al. 2011. Enhanced anticancer effect of the combination of cisplatin and TRAIL in triple-negative breast tumor cells. Mol. Cancer Ther. 10: 550-557.
3. Kakuki, T., et al. 2016. Dysregulation of junctional adhesion molecule-A via p63/GATA-3 in head and neck squamous cell carcinoma. Oncotarget 7: 33887-33900.
4. Kojima, T., et al. 2017. Regulation of claudin-4 via p63 in human epithelial cells. Ann. N.Y. Acad. Sci. 1405: 25-31.
5. Ogata, T., et al. 2017. Depletion of runt-related transcription factor 2 (RUNX2) enhances SAHA sensitivity of p53-mutated pancreatic cancer cells through the regulation of mutant p53 and TAp63. PLoS ONE 12: e0179884.
6. Fisher, M.L., et al. 2017. Sulforaphane reduces YAP/ΔNp63α signaling to reduce cancer stem cell survival and tumor formation. Oncotarget 8: 73407-73418.
7. Grun, D., et al. 2018. NRP-1 interacts with GIPC1 and α6/β4-integrins to increase YAP1/ΔNp63α-dependent epidermal cancer stem cell survival. Oncogene 37: 4711-4722.

RESEARCH USE

For research use only, not for use in diagnostic procedures.