



NAT-10 siRNA (h): sc-62660

BACKGROUND

NAT-10 (N-acetyltransferase 10) is a nuclear protein that belongs to the UPF0202 family. It has a single N-acetyltransferase domain that likely functions as a histone acetyltransferase. NAT10 functions primarily to regulate the activity of telomerase. It is upregulated in response to DNA damage and is likely to take part in genotoxic resistance and DNA repair. NAT-10 has a high binding potential for the promoter region of TERT which stimulates the production of telomerase. These varieties of function imply that human telomerase complexes have multiple functions rather than specific duties.

REFERENCES

1. Lv, J., et al. 2003. Molecular cloning of a novel human gene encoding histone acetyltransferase-like protein involved in transcriptional activation of hTERT. *Biochem. Biophys. Res. Commun.* 311: 506-513.
2. Liu, H.J., et al. 2005. An analysis of induced expression and function of telomerase-regulation associated hALP gene on genotoxic agents. *Zhonghua Bing Li Xue Za Zhi* 34: 732-736.
3. Fu, D. and Collins, K. 2007. Purification of human telomerase complexes identifies factors involved in telomerase biogenesis and telomere length regulation. *Mol. Cell* 28: 773-785.

CHROMOSOMAL LOCATION

Genetic locus: NAT10 (human) mapping to 11p13.

PRODUCT

NAT-10 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 NAT-10 shRNA Plasmid (h): sc-62660-SH and NAT-10 shRNA (h) Lentiviral Particles: sc-62660-V as alternate gene silencing products.

For independent verification of NAT-10 (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-62660A, sc-62660B and sc-62660C.

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

NAT-10 siRNA (h) is recommended for the inhibition of NAT-10 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.

GENE EXPRESSION MONITORING

NAT-10 (B-4): sc-271770 is recommended as a control antibody for monitoring of NAT-10 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 NAT-10 gene expression knockdown using RT-PCR Primer: NAT-10 (h)-PR: sc-62660-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. Ma, R., et al. 2016. Up regulation of NAT-10 promotes metastasis of hepatocellular carcinoma cells through epithelial-to-mesenchymal transition. *Am. J. Transl. Res.* 8: 4215-4223.
2. Wu, J., et al. 2018. Inhibition of N-acetyltransferase 10 using remodelin attenuates doxorubicin resistance by reversing the epithelial-mesenchymal transition in breast cancer. *Am. J. Transl. Res.* 10: 256-264.
3. Dalhat, M.H., et al. 2021. Remodelin, a N-acetyltransferase 10 (NAT-10) inhibitor, alters mitochondrial lipid metabolism in cancer cells. *J. Cell. Biochem.* 122: 1936-1945.
4. Dalhat, M.H., et al. 2022. NAT-10: an RNA cytidine transferase regulates fatty acid metabolism in cancer cells. *Clin. Transl. Med.* 12: e1045.
5. Dalhat, M.H., et al. 2023. NAT-10, an RNA cytidine acetyltransferase, regulates ferroptosis in cancer cells. *Antioxidants* 12: 1116.

RESEARCH USE

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