

trichoplein siRNA (h): sc-95954

BACKGROUND

Trichoplein, also known as THCP (trichoplein keratin filament-binding protein) or mitostatin (mitochondrial protein with oncostatic activity), is a 498 amino acid protein that acts as a tumor suppressor which inhibits cell growth and has pro-apoptotic abilities during cell stress. Localizing to the cytoplasm, mitochondria and cell membrane, trichoplein is expressed at highest levels in breast epithelial cells, normal urothelial cells, skeletal muscle, liver, testis, heart and kidney. Trichoplein is also found in smooth muscle and endothelial cells, with low levels of expression in advanced bladder and breast carcinoma. Trichoplein interacts with Cytokeratin 5, 6, 8, 14, 16 and 18. A member of the THCP family, trichoplein is encoded by a gene that maps to human chromosome 12q24.11.

REFERENCES

1. Katanick, S.L. 2005. Fundamentals of ICANL accreditation. *J. Nucl. Med. Technol.* 33: 19-23.
2. Panzegrav, B., et al. 2005. Outpatient therapeutic 131I for thyroid cancer. *J. Nucl. Med. Technol.* 33: 28-30.
3. Yu, J.Q., et al. 2005. Small urine leak after renal transplantation: detection by delayed 99mTc-DTPA renography—a case report. *J. Nucl. Med. Technol.* 33: 31-33.
4. Nishizawa, M., et al. 2005. Identification of trichoplein, a novel keratin filament-binding protein. *J. Cell Sci.* 118: 1081-1090.
5. Vecchione, A., et al. 2009. MITOSTATIN, a putative tumor suppressor on chromosome 12q24.1, is downregulated in human bladder and breast cancer. *Oncogene* 28: 257-269.

CHROMOSOMAL LOCATION

Genetic locus: TCHP (human) mapping to 12q24.11.

PRODUCT

trichoplein 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 trichoplein shRNA Plasmid (h): sc-95954-SH and trichoplein shRNA (h) Lentiviral Particles: sc-95954-V as alternate gene silencing products.

For independent verification of trichoplein (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-95954A, sc-95954B and sc-95954C.

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

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

trichoplein (G-2): sc-515025 is recommended as a control antibody for monitoring of trichoplein 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 trichoplein gene expression knockdown using RT-PCR Primer: trichoplein (h)-PR: sc-95954-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. Neill, T., et al. 2014. Decorin induces mitophagy in breast carcinoma cells via peroxisome proliferator-activated receptor γ coactivator-1 α (PGC-1 α) and mitostatin. *J. Biol. Chem.* 289: 4952-4968.
2. Neill, T., et al. 2022. Decorin evokes reversible mitochondrial depolarization in carcinoma and vascular endothelial cells. *Am. J. Physiol. Cell Physiol.* 323: C1355-C1373.

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.