

TSC-22 siRNA (h): sc-44174

BACKGROUND

Transforming growth factor β -stimulated clone-22 (TSC-22) acts as a transcriptional regulator to modulate cell growth and differentiation and cell death. TSC-22 contains a leucine zipper domain as well as a nuclear export signal, resulting in cytoplasmic localization in living cells. However, concomitant with the induction of apoptosis, TSC-22 translocates from the cytoplasm to the nucleus and shows transcriptional regulatory activity. TSC-22 acts as a major downstream component in the TGF- β pathway, and also the PPAR γ signalling pathway. The association of these two pathways with tumor suppression, and the significant downregulation of TSC-22 mRNA in various cancer types, such as brain and salivary gland tumors, imply an antiproliferative role for TSC-22.

REFERENCES

1. Hino, S., et al. 2000. Nuclear translocation of TSC-22 (TGF- β -stimulated clone-22) concomitant with apoptosis: TSC-22 as a putative transcriptional regulator. *Biochem. Biophys. Res. Commun.* 278: 659-664.
2. Hino, S., et al. 2002. Leucine zipper structure of TSC-22 (TGF- β stimulated clone-22) markedly inhibits the anchorage-independent growth of salivary gland cancer cells. *Oncol. Rep.* 9: 371-374.
3. Gupta, R.A., et al. 2003. Peroxisome proliferator-activated receptor γ and transforming growth factor- β pathways inhibit intestinal epithelial cell growth by regulating levels of TSC-22. *J. Biol. Chem.* 278: 7431-7438.
4. Shostak, K.O., et al. 2003. Downregulation of putative tumor suppressor gene TSC-22 in human brain tumors. *J. Surg. Oncol.* 82: 57-64.
5. Uchida, D., et al. 2003. Posttranscriptional regulation of TSC-22 (TGF- β -stimulated clone-22) gene by TGF- β 1. *Biochem. Biophys. Res. Commun.* 305: 846-854.
6. Kawamata, H., et al. 2004. TSC-22 (TGF- β stimulated clone-22): a novel molecular target for differentiation-inducing therapy in salivary gland cancer. *Curr. Cancer Drug Targets* 4: 521-529.

CHROMOSOMAL LOCATION

Genetic locus: TSC22D1 (human) mapping to 13q14.11.

PRODUCT

TSC-22 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 TSC-22 shRNA Plasmid (h): sc-44174-SH and TSC-22 shRNA (h) Lentiviral Particles: sc-44174-V as alternate gene silencing products.

For independent verification of TSC-22 (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-44174A, sc-44174B and sc-44174C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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

TSC-22 siRNA (h) is recommended for the inhibition of TSC-22 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

TSC-22 (R5-6): sc-101195 is recommended as a control antibody for monitoring of TSC-22 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 TSC-22 gene expression knockdown using RT-PCR Primer: TSC-22 (h)-PR: sc-44174-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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