SANTA CRUZ BIOTECHNOLOGY, INC.

TGFβ3 siRNA (h): sc-39804

BACKGROUND

Transforming growth factor βs (TGFβs) were originally discovered due to their ability to promote anchorage-independent growth of rat NRK fibroblasts in the presence of TGFβ. TGFβ1, TGFβ2 and TGFβ3 are each synthesized as precursor proteins that are very similar in that each is cleaved to yield a 112 amino acid polypeptide that remains associated with the latent portion of the molecules. TGFβ3 mediates many intercellular interactions that occur during embryonic development, cell differentiation and epithelial homeostasis. TGFβ3 overexpresses in extramammary Paget's disease (EPD) and down regulates in Bowen's disease, indicating that its expression is a useful indicator of tumor activity. TGFβ3 levels strongly correlate with IGF-1 and osteocalcin levels in serum. Significant amounts of TGFβ3 circulation appear to be representative of TGFβ3 expression in bone and may in part be derived from bone. Glucocorticoids may block TGF-β production by modulating mRNA levels and c-Jun activity.

REFERENCES

1. Todaro, G.J., et al. 1980. Transforming growth factors produced by certain human tumor cells: polypeptides that interact with epidermal growth factor receptors. Proc. Natl. Acad. Sci. USA 77: 5258-5262.
2. Anzano, M.A., et al. 1983. Sarcoma growth factor from conditioned medium of virally transformed cells is composed of both type α and type β transforming growth factors. Proc. Natl. Acad. Sci. USA 80: 6264-6268.
3. Derynck, R., et al. 1985. Human transforming growth factor-β cDNA sequence and expression in tumor cell lines. Nature 316: 701-705.
4. Miller, D.A., et al. 1990. Transforming growth factor β: a family of growth regulatory peptides. Ann. N.Y. Acad. Sci. 593: 208-217.

CHROMOSOMAL LOCATION

Genetic locus: TGFB3 (human) mapping to 14q24.3.

PRODUCT

TGFβ3 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 TGFβ3 shRNA Plasmid (h): sc-39804-SH and TGFβ3 shRNA (h) Lentiviral Particles: sc-39804-V as alternate gene silencing products.

For independent verification of TGFβ3 (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-39804A, sc-39804B and sc-39804C.

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

TGFβ3 siRNA (h) is recommended for the inhibition of TGFβ3 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

TGFβ3 (G-9): sc-166833 is recommended as a control antibody for monitoring of TGFβ3 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 TGFβ3 gene expression knockdown using RT-PCR Primer: TGFβ3 (h)-PR: sc-39804-PR (20 µl, 436 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wei, Y.Y., et al. 2008. Osteoblasts-derived TGF-β1 enhance motility and integrin upregulation through Akt, ERK, and NFκB-dependent pathway in human breast cancer cells. Mol. Carcinog. 47: 526-537.

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.