SANTA CRUZ BIOTECHNOLOGY, INC.

TGFα siRNA (r): sc-270530

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The Power to Question

BACKGROUND

Transforming growth factor-α (TGFα) is an acid- and heat-stable 50 amino acid protein originally found in rodents and humans. TGFα is 33% homologous at the amino acid level to epidermal growth factor (EGF). TGFα binds to the EGF receptor, mediates tyrosine phosphorylation of the receptor and promotes anchorage-independent growth of normal rat fibroblasts in soft agar in the presence of transforming growth factor-β. TGFα is secreted by a variety of transformed cells and tumors, embryonic cells and some normal adult cells. TGFα bioactivity has been found in the urine of cancer patients. It has been suggested that it may act as an autocrine growth factor for the induction or maintenance of malignancy.

REFERENCES

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2. Reynolds, F.H., Jr., et al. 1983. Human transforming growth factors induce tyrosine phosphorylation of EGF receptors. Nature 292: 259-262.
3. Kimball, E.S., et al. 1984. Distinct high-performance liquid chromatography pattern of transforming growth factor activity in urine of cancer patients as compared with that of normal individuals. Cancer Res. 44: 3613-3619.
4. Derynck, R. 1986. Transforming growth factor-α: structure and biological activities. J. Cell. Biochem. 32: 203-204.
5. Samsoondor, J., et al. 1986. α-transforming growth factor secreted by untransformed bovine anterior pituitary cells in culture. Purification from conditioned media. J. Biol. Chem. 261: 14408-14418.
6. Sorvillo, J.M., et al. 1990. Preparation and characterization of monoclonal antibodies specific for human transforming growth factor α. Oncogene 5: 377-386.
7. Ciardiello, F., et al. 1991. Differential expression of epidermal growth factor-related proteins in human colorectal tumors. Proc. Natl. Acad. Sci. USA 88: 7792-7796.

CHROMOSOMAL LOCATION

Genetic locus: Tgfa (rat) mapping to 4q34.

PRODUCT

TGFα siRNA (r) 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 TGFα shRNA Plasmid (r): sc-270530-SH and TGFα shRNA (r) Lentiviral Particles: sc-270530-V as alternate gene silencing products.

For independent verification of TGFα (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270530A, sc-270530B and sc-270530C.

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

TGFα siRNA (r) is recommended for the inhibition of TGFα expression in rat 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

TGFα (H-50): sc-9043 is recommended as a control antibody for monitoring of TGFα 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TGFα gene expression knockdown using RT-PCR Primer: TGFα (r)-PR: sc-270530-PR (20 µl). 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.