SANTA CRUZ BIOTECHNOLOGY, INC.

NUDT6 siRNA (h): sc-75975

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The Power to Question

BACKGROUND

NUDT6 (nudix (nucleoside diphosphate linked moiety X)-type motif 6), also known as antisense basic fibroblast growth factor or GFG-1, is a member of the nudix hydrolase family of pyrophosphatases. Nudix hydrolases contain a characteristic nudix domain and are responsible for catalyzing the hydrolysis of nucleoside diphosphate derivatives. The gene encoding NUDT6 is an FGF-2 gene antisense transcript, and NUDT6 is believed to regulate FGF-2 expression. FGF-2 is a mutifunctional heparin-binding growth factor important to angiogenesis, neuroectoderm development and wound healing. NUDT6 is expressed as two isoforms produced by alternative splicing.

REFERENCES

1. Murphy, P.R. and Knee, R.S. 1994. Identification and characterization of an antisense RNA transcript (gfg) from the human basic fibroblast growth factor gene. Mol. Endocrinol. 8: 852-859.
2. Li, A.W., et al. 1997. FGF-2 antisense RNA encodes a nuclear protein with MutT-like antimutator activity. Mol. Cell. Endocrinol. 133: 177-182.
3. Gagnon, M.L., et al. 1999. Characterization of the promoter for the human antisense fibroblast growth factor-2 gene; regulation by Ets in Jurkat T cells. J. Cell. Biochem. 72: 492-506.
4. Duplan, S.M., et al. 2002. Antitumor activity of fibroblast growth factors (FGFs) for medulloblastoma may correlate with FGF receptor expression and tumor variant. Clin. Cancer Res. 8: 246-257.
5. Sheng, Z., et al. 2004. Nuclear and nucleolar localization of 18-kDa fibroblast growth factor-2 is controlled by C-terminal signals. J. Biol. Chem. 279: 40153-40160.
6. Pezzatini, S., et al. 2007. Nanostructured HA crystals up-regulate FGF-2 expression and activity in microvascular endothelium promoting angiogenesis. Bone 41: 523-534.
7. Zhang, S.C., et al. 2007. Alternative splicing of the FGF antisense gene: differential subcellular localization in human tissues and esophageal adenocarcinoma. J. Mol. Med. 85: 1215-1228.

CHROMOSOMAL LOCATION

Genetic locus: NUDT6 (human) mapping to 4q28.1.

PRODUCT

NUDT6 siRNA (h) is a pool of 2 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 NUDT6 shRNA Plasmid (h): sc-75975-SH and NUDT6 shRNA (h) Lentiviral Particles: sc-75975-V as alternate gene silencing products.

For independent verification of NUDT6 (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-75975A and sc-75975B.

RESEARCH USE

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

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

NUDT6 siRNA (h) is recommended for the inhibition of NUDT6 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

NUDT6 (F-2): sc-398717 is recommended as a control antibody for monitoring of NUDT6 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 NUDT6 gene expression knockdown using RT-PCR Primer: NUDT6 (h)-PR: sc-75975-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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