SANTA CRUZ BIOTECHNOLOGY, INC.

GTSE-1 siRNA (h): sc-75216

BACKGROUND

GTSE-1 (G_2 and S-phase expressed 1) is also known as B99 homolog and is a 720 amino acid protein. GTSE-1 is localized to the cytoplasm where it colocalizes with cytoplasmic Tubulin and microtubules during the S and G_2 phases of the cell cycle. Upregulation of GTSE-1 leads to a delay in the transition from the G_2 phase to the M phase, during which GTSE-1 is phosphorylated and subsequently reduced in the G_1 phase. GTSE-1 can shuttle between the cytoplasm and the nucleus, unless hindered by Leptomycin B which prevents its nuclear export, causing GTSE-1 accumulation in the nucleus. In the case of DNA damage, GTSE-1 accumulates in the nucleus and binds to the tumor suppressor protein DSCP1, an event that results in the transport of DSCP1 to the cytoplasm and regulates DSCP1 stability and function during the cell cycle. DSCP1 is subsequently degraded by the ubiquitin-proteasome pathway in the cytoplasm.

REFERENCES

1. Utrera, R., Collavin, L., Lazarevi , D., Delia, D. and Schneider, C. 1998. A novel p53-inducible gene coding for a microtubule-localized protein with G_2-phase-specific expression. EMBO J. 17: 5015-5025.
2. Collavin, L., Monte, M., Verardo, R., Pfleger, C. and Schneider, C. 2000. Cell-cycle regulation of the p53-inducible gene B99. FEBS Lett. 481: 57-62.
3. Monte, M., Collavin, L., Lazarevic, D., Utrera, R., Dragani, T.A. and Schneider, C. 2000. Cloning, chromosome mapping and functional characterization of a human homologue of murine gtse-1 (B99) gene. Gene 254: 229-236.
4. Monte, M., Benetti, R., Buscemi, G., Sandy, P., Del Sal, G. and Schneider, C. 2003. The cell cycle-regulated protein human GTSE-1 controls DNA damage-induced apoptosis by affecting p53 function. J. Biol. Chem. 278: 30356-30364.
5. Monte, M., Benetti, R., Collavin, L., Marchionni, L., Del Sal, G. and Schneider, C. 2004. hGTSE-1 expression stimulates cytoplasmic localization of p53. J. Biol. Chem. 279: 11744-11752.
6. Online Mendelian Inheritance in Man, OMIM™. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 607477. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Brown, L., Boswell, S., Raj, L. and Lee, S.W. 2007. Transcriptional targets of p53 that regulate cellular proliferation. Crit. Rev. Eukaryot. Gene Expr. 17: 73-85.

CHROMOSOMAL LOCATION

Genetic locus: GTSE1 (human) mapping to 22q13.31.

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.

PRODUCT

GTSE-1 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 GTSE-1 shRNA Plasmid (h): sc-75216-SH and GTSE-1 shRNA (h) Lentiviral Particles: sc-75216-V as alternate gene silencing products.

For independent verification of GTSE-1 (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-75216A, sc-75216B and sc-75216C.

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

GTSE-1 siRNA (h) is recommended for the inhibition of GTSE-1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GTSE-1 gene expression knockdown using RT-PCR Primer: GTSE-1 (h)-PR: sc-75216-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.