

GSTK1 siRNA (h): sc-89816

BACKGROUND

Members of the glutathione S-transferase (GST) family of proteins function in the detoxification of xenobiotics to protect cells against toxicant-induced damage. There are eight families of GST proteins, namely α , ζ , θ , κ , μ , π , σ and ω , each of which are composed of proteins that have a variety of functions throughout the cell. GSTK1 (glutathione S-transferase κ 1), also known as glutathione S-transferase subunit 13 (GST 13-13) or GSTK1-1, is a 226 amino acid ubiquitously expressed protein belonging to the κ class of the GST superfamily that functions in cellular detoxification. Localizing to peroxisome, GSTK1 exists as a homodimer that catalyzes the conjugation of glutathione to a number of hydrophobic substrates leading to their removal from the cell.

REFERENCES

- Pemble, S.E., et al. 1996. Glutathione S-transferase class κ : characterization by the cloning of rat mitochondrial GST and identification of a human homologue. *Biochem. J.* 319: 749-754.
- Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602321. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Jowsey, I.R., et al. 2003. Biochemical and genetic characterization of a murine class κ glutathione S-transferase. *Biochem. J.* 373: 559-569.
- Robinson, A., et al. 2004. Modelling and bioinformatics studies of the human κ -class glutathione transferase predict a novel third glutathione transferase family with similarity to prokaryotic 2-hydroxychromene-2-carboxylate isomerases. *Biochem. J.* 379: 541-552.
- Nebert, D.W. and Vasiliou, V. 2004. Analysis of the glutathione S-transferase (GST) gene family. *Hum. Genomics* 1: 460-464.
- Morel, F., et al. 2004. Gene and protein characterization of the human glutathione S-transferase κ and evidence for a peroxisomal localization. *J. Biol. Chem.* 279: 16246-16253.

CHROMOSOMAL LOCATION

Genetic locus: GSTK1 (human) mapping to 7q34.

PRODUCT

GSTK1 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 GSTK1 shRNA Plasmid (h): sc-89816-SH and GSTK1 shRNA (h) Lentiviral Particles: sc-89816-V as alternate gene silencing products.

For independent verification of GSTK1 (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-89816A, sc-89816B and sc-89816C.

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

GSTK1 siRNA (h) is recommended for the inhibition of GSTK1 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

GSTK1 (E-4): sc-515580 is recommended as a control antibody for monitoring of GSTK1 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 GSTK1 gene expression knockdown using RT-PCR Primer: GSTK1 (h)-PR: sc-89816-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.