SANTA CRUZ BIOTECHNOLOGY, INC.

GSTO1 siRNA (m): sc-75208

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

GSTO1 (glutathione S-transferase ω 1), also known as p28 or GSTTLp28, is a 241 amino acid protein that localizes to the cytoplasm and contains both an N-terminal and a C-terminal GST domain. Expressed ubiquitously with highest expression in heart, liver and skeletal muscle, GSTO1 exists as a homodimer that functions as both a glutathione-dependent thiol transferase and a dehydroascorbate reductase. Specifically, GSTO1 catalyzes the reaction of glutathione with a wide variety of organic compounds to form thioethers, a process that is essential for the metabolism and detoxification of a variety of xenobiotics and carcinogens. Human GSTO1 shares 70% sequence homology with its rodent counterpart, suggesting a conserved role between species. Polymorphisms in the gene encoding GSTO1 may be associated with the development of childhood acute lymphoblastic leukemia, Parkinson's disease and Alzheimer disease.

REFERENCES

1. Ishikawa, T., et al. 1998. Molecular cloning and functional expression of rat liver Glutathione-dependent dehydroascorbate reductase. J. Biol. Chem. 273: 28708-28712.
2. Kodym, R., et al. 1999. The cloning and characterization of a new stress response protein. A mammalian member of a family of θ class glutathione S-transferase-like proteins. J. Biol. Chem. 274: 5131-5137.
3. Board, P.G., et al. 2000. Identification, characterization, and crystal structure of the ω class Glutathione transferases. J. Biol. Chem. 275: 24798-24806.
4. Yin, Z.L., et al. 2001. Immunohistochemistry of ω class glutathione S-transferase in human tissues. J. Histochem. Cytochem. 49: 983-987.
5. Li, Y.J., et al. 2003. Glutathione S-transferase ω-1 modifies age-at-onset of Alzheimer disease and Parkinson disease. Hum. Mol. Genet. 12: 3259-3267.
6. Whitbread, A.K., et al. 2003. Characterization of the human ω class Glutathione transferase genes and associated polymorphisms. Pharmacogenetics 13: 131-144.

CHROMOSOMAL LOCATION

Genetic locus: Gsto1 (mouse) mapping to 19 D1.

PRODUCT

GSTO1 siRNA (m) 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 GSTO1 shRNA Plasmid (m): sc-75208-SH and GSTO1 shRNA (m) Lentiviral Particles: sc-75208-V as alternate gene silencing products.

For independent verification of GSTO1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-75208A, sc-75208B and sc-75208C.

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 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

GSTO1 siRNA (m) is recommended for the inhibition of GSTO1 expression in mouse 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

GSTO1/2 (H-12): sc-166121 is recommended as a control antibody for monitoring of GSTO1 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 GSTO1 gene expression knockdown using RT-PCR Primer: GSTO1 (m)-PR: sc-75208-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.