SANTA CRUZ BIOTECHNOLOGY, INC.

GSTO2 siRNA (m): sc-145816

BACKGROUND

GSTO2 (glutathione S-transferase omega-2) is related to GSTO1 and is expressed in a variety of tissues throughout the body where it functions to catalyze the conversion of RX and glutathione to HX and R-S-glutathione. Composed of 243 amino acids, GSTO2 contains one GST C-terminal domain and a GST N-terminal domain. GSTO2 belongs to the GST superfamily and may be involved in catalyzing 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. Polymorphisms in the gene encoding GSTO1 may be associated with asthma and urothelial carcinoma. The GSTO2 gene exists as four transcript variants encoding different alternatively spliced isoforms.

REFERENCES

1. Wang, Y.H., et al. 2009. A significantly joint effect between arsenic and occupational exposures and risk genotypes/diplotypes of CYP2E1, GSTO1 and GSTO2 on risk of urothelial carcinoma. Toxicol. Appl. Pharmacol. 241: 111-118.
2. Chariyalertsak, S., et al. 2009. Role of glutathione S-transferase omega gene polymorphisms in breast-cancer risk. Tumori 95: 739-743.
3. Piacentini, S., et al. 2010. Glutathione S-transferase gene polymorphisms and air pollution as interactive risk factors for asthma in a multicentre Italian field study: a preliminary study. Ann. Hum. Biol. 37: 427-439.
4. Andonova, I.E., et al. 2010. No evidence for glutathione S-transferases GSTA2, GSTM2, GSTO1, GSTO2, and GSTZ1 in breast cancer risk. Breast Cancer Res. Treat. 121: 497-502.
5. Polimanti, R., et al. 2010. GSTA1, GSTO1 and GSTO2 gene polymorphisms in Italian asthma patients. Clin. Exp. Pharmacol. Physiol. 37: 870-872.
6. Paiva, L., et al. 2010. Association between GSTO2 polymorphism and the urinary arsenic profile in copper industry workers. Environ. Res. 110: 463-468.
7. Rafiee, L., et al. 2010. Glutathione S-transferase genetic polymorphisms (GSTM1, GSTT1 and GSTO2) in three Iranian populations. Mol. Biol. Rep. 37: 155-158.

CHROMOSOMAL LOCATION

Genetic locus: Gsto2 (mouse) mapping to 19 D1.

PRODUCT

GSTO2 siRNA (m) 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 GSTO2 shRNA Plasmid (m): sc-145816-SH and GSTO2 shRNA (m) Lentiviral Particles: sc-145816-V as alternate gene silencing products.

For independent verification of GSTO2 (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-145816A and sc-145816B.

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

GSTO2 siRNA (m) is recommended for the inhibition of GSTO2 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 GSTO2 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 GSTO2 gene expression knockdown using RT-PCR Primer: GSTO2 (m)-PR: sc-145816-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.

PROTOCOLS

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