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GSTT2 siRNA (m): sc-145818

BACKGROUND

Glutathione (GSH) is a tripeptide antioxidant which reduces disulfide bonds between cytoplasmic proteins. The constitutive enzyme glutathione reductase transforms glutathione into its reduced state which ultimately can provide a measure of cellular toxicity. GSTT2 (glutathione S-transferase θ -2), also known as GST class- θ -2, is a 244 amino acid enzyme with sulfatase activity that functions in conjugating reduced glutathione to hydrophobic electrophiles. GSTT2 exists as a homodimer in the cytoplasm and is expressed in low levels in the liver and the lung. GSTT2 belongs to the GST superfamily and contains both a GST C-terminal and a GST N-terminal domain. The gene encoding GSTT2 exists on human chromosome 22.

REFERENCES

1. Hussey, A.J. and Hayes, J.D. 1992. Characterization of a human class- θ glutathione S-transferase with activity towards 1-menaphthyl sulphate. *Biochem. J.* 286: 929-935.
2. Tan, K.L., et al. 1995. Molecular cloning of a cDNA and chromosomal localization of a human θ -class glutathione S-transferase gene (GSTT2) to chromosome 22. *Genomics* 25: 381-387.
3. Mainwaring, G.W., et al. 1996. The distribution of θ -class glutathione S-transferases in the liver and lung of mouse, rat and human. *Biochem. J.* 318: 297-303.
4. Rossjohn, J., et al. 1998. Human θ class glutathione transferase: the crystal structure reveals a sulfate-binding pocket within a buried active site. *Structure* 6: 309-322.
5. Sprenger, R., et al. 2000. Characterization of the glutathione S-transferase GSTT1 deletion: discrimination of all genotypes by polymerase chain reaction indicates a trimodular genotype-phenotype correlation. *Pharmacogenetics* 10: 557-565.
6. Pastore, A., et al. 2001. Determination of blood total, reduced, and oxidized glutathione in pediatric subjects. *Clin. Chem.* 47: 1467-1469.
7. Pompella, A., et al. 2003. The changing faces of glutathione, a cellular protagonist. *Biochem. Pharmacol.* 66: 1499-1503.

CHROMOSOMAL LOCATION

Genetic locus: *Gstt2* (mouse) mapping to 10 C1.

PRODUCT

GSTT2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GSTT2 shRNA Plasmid (m): sc-145818-SH and GSTT2 shRNA (m) Lentiviral Particles: sc-145818-V as alternate gene silencing products.

For independent verification of GSTT2 (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-145818A, sc-145818B and sc-145818C.

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

GSTT2 siRNA (m) is recommended for the inhibition of GSTT2 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 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

GSTT2 (D-1): sc-514667 is recommended as a control antibody for monitoring of GSTT2 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 GSTT2 gene expression knockdown using RT-PCR Primer: GSTT2 (m)-PR: sc-145818-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.

PROTOCOLS

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