SANTA CRUZ BIOTECHNOLOGY, INC.

MGST1 siRNA (m): sc-40741

BACKGROUND

Microsomal glutathione transferase 1 (MGST1) is an abundant protein that catalyzes the conjugation of electrophilic compounds with glutathione, as well as the reduction of lipid hydroperoxides. The level of MGST1 mRNA in rat are highest in liver, while the levels of expression vary in non-hepatic tissues. In addition, the subcellular localization patterns of MGST1 are highly tissue specific. In hepatocytes and bile ducts, MGST1 is localized to the cytoplasm. MGST1 is localized to the nucleus in choroid plexus and primary spermatocytes and displays a granular cytoplasmic staining pattern in the adrenal medulla. Also, focal staining of MGST1 is observed in the distal tubules and collecting ducts of the liver. The human MGST1 gene maps to chromosome 12p12.3. Sequence comparisons of MGST1 with related proteins, including PIG12, FLAP, LTC_4 synthase, MGST2 and MGST3, suggest that they are members of a dispersed microsomal GST gene superfamily. MGST1 is strongly inhibitied by Leukotriene C4 and weakly inhibited by other leukotrienes, indicating a role for MGST1 in the cellular processing of leukotrienes.

REFERENCES

1. DeJong, J.L., et al. 1988. Gene expression of rat and human microsomal glutathione S-transferases. J. Biol. Chem. 263: 8430-8446.
2. Otieno, M.A., et al. 1997. Immunolocalization of microsomal glutathione S-transferase in rat tissues. Drug Metab. Dispos. 25: 12-20.
3. Bannenberg, G., et al. 1999. Leukotriene C4 is a tight-binding inhibitor of microsomal glutathione transferase-1. Effects of leukotriene pathway modifiers. J. Biol. Chem. 274: 1994-1999.
4. Lee, S.H. and DeJong, J. 1999. Microsomal GST-I: genomic organization, expression and alternative splicing of the human gene. Biochim. Biophys. Acta 1446: 389-396.
5. Sjostrom, M., et al. 2001. Human umbilical vein endothelial cells generate Leukotriene C4 via microsomal glutathione S-transferase type 2 and express the $CysLT_1$ receptor. Eur. J. Biochem. 268: 2578-2586.

CHROMOSOMAL LOCATION

Genetic locus: Mgst1 (mouse) mapping to 6 G1.

PRODUCT

MGST1 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 MGST1 shRNA Plasmid (m): sc-40741-SH and MGST1 shRNA (m) Lentiviral Particles: sc-40741-V as alternate gene silencing products.

For independent verification of MGST1 (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-40741A, sc-40741B and sc-40741C.

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

MGST1 siRNA (m) is recommended for the inhibition of MGST1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MGST1 gene expression knockdown using RT-PCR Primer: MGST1 (m)-PR: sc-40741-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.