SANTA CRUZ BIOTECHNOLOGY, INC.

GSTA3 siRNA (m): sc-145806

BACKGROUND

Members of the glutathione S-transferase (GST) family of proteins function in the detoxification of toxins such as carcinogens, environmental toxins, products of oxidative stress and therapeutic drugs and protect cells against toxicant-induced damage. GSTs are divided into different classes/families based on their primary structures. GSTA3 (glutathione S-transferase A3), also known as GTA3 or GSTA3-3, is a member of the α family of GSTs that is specifically expressed in steroidogenic tissues such as placenta, ovary, adrenal gland and testis. Localizing to the cytoplasm, GSTA3 contains one GST domain at its N-terminus and one at its C-terminus. In addition to its role in the metabolism of some xenobiotics, GSTA3 participates in the biosynthesis of steroids, efficiently catalyzing the isomerization of endogenous D5-3-ketosteroids.

REFERENCES

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2. McDonagh, P.D., et al. 1999. Determinants of specificity for aflatoxin B1-8,9-epoxide in α-class glutathione S-transferases. Biochem. J. 339: 95-101.
3. Johansson, A.S. and Mannervik, B. 2001. Human glutathione transferase A3-3, a highly efficient catalyst of double-bond isomerization in the biosynthetic pathway of steroid hormones. J. Biol. Chem. 276: 33061-33065.
4. Gate, L. and Tew, K.D. 2001. Glutathione S-transferases as emerging therapeutic targets. Expert Opin. Ther. Targets 5: 477-489.
5. Wang, C., et al. 2002. Complementary DNA cloning, protein expression, and characterization of α-class GSTs from *Macaca fascicularis* liver. Toxicol. Sci. 70: 20-26.
6. Yang, Y., et al. 2002. Role of α class glutathione S-transferases as antioxidant enzymes in rodent tissues. Toxicol. Appl. Pharmacol. 182: 105-115.
7. Dreij, K., et al. 2002. Catalytic activities of human α class glutathione transferases toward carcinogenic dibenzo[a,l]pyrene diol epoxides. Chem. Res. Toxicol. 15: 825-831.

CHROMOSOMAL LOCATION

Genetic locus: Gsta3 (mouse) mapping to 1 A4.

PRODUCT

GSTA3 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 GSTA3 shRNA Plasmid (m): sc-145806-SH and GSTA3 shRNA (m) Lentiviral Particles: sc-145806-V as alternate gene silencing products.

For independent verification of GSTA3 (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-145806A, sc-145806B and sc-145806C.

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

GSTA3 siRNA (m) is recommended for the inhibition of GSTA3 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 GSTA3 gene expression knockdown using RT-PCR Primer: GSTA3 (m)-PR: sc-145806-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.