SANTA CRUZ BIOTECHNOLOGY, INC.

GGT6 siRNA (m): sc-145391

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

γ-glutamyltranspeptidase (GGT) acts as a glutathionase and catalyzes the transfer of the glutamyl moiety of glutathione to a variety of amino acids and dipeptide acceptors. This enzyme is located on the outer surface of the cell membrane and is widely distributed in mammalian tissues involved in absorption and secretion. In humans, hepatic GGT activity is elevated in some liver diseases. GGT1 is released into the bloodstream after liver damage, and an elevated level of the enzyme may be a useful early sign of hepatocellular carcinoma. GGT5 converts leukotriene C4 to leukotriene D4; it does not, however, convert synthetic substrates that are commonly used to assay GGT. In human serum and in human tissues, there is a marked heterogeneity in GGT, but this heterogeneity can be attributed to different glycosylation of the same peptide rather than to the products of different genes. Belonging to the γ-glutamyltranspeptidase family, GGT6 (γ-glutamyltransferase 6), is a 493 amino acid single-pass type II membrane protein that cleaves glutathione conjugates. GGT6 exists as two alternatively spliced isoforms.

REFERENCES

1. Tate, S.S. and Meister, A. 1981. γ-glutamyl transpeptidase: catalytic, structural and functional aspects. Mol. Cell. Biochem. 39: 357-368.
2. Welbourne, T.C. and Dass, P.D. 1982. Function of renal γ-glutamyltransferase: significance of glutathione and glutamine interactions. Life Sci. 30: 793-801.
3. Wetmore, L.A., Gerard, C. and Drazen, J.M. 1993. Human lung expresses unique γ-glutamyl transpeptidase transcripts. Proc. Natl. Acad. Sci. USA 90: 7461-7465.
4. Taniguchi, N. and Ikeda, Y. 1998. γ-glutamyl transpeptidase: catalytic mechanism and gene expression. Adv. Enzymol. Relat. Areas Mol. Biol. 72: 239-278.
5. Ohkama-Ohtsu, N., Radwan, S., Peterson, A., Zhao, P., Badr, A.F., Xiang, C. and Oliver, D.J. 2007. Characterization of the extracellular γ-glutamyl transpeptidases, GGT1 and GGT2, in *Arabidopsis*. Plant J. 49: 865-877.
6. Martin, M.N., Saladores, P.H., Lambert, E., Hudson, A.O. and Leustek, T. 2007. Localization of members of the γ-glutamyl transpeptidase family identifies sites of glutathione and glutathione S-conjugate hydrolysis. Plant Physiol. 144: 1715-1732.
7. Heisterkamp, N., Groffen, J., Warburton, D. and Sneddon, T.P. 2008. The human γ-glutamyltransferase gene family. Hum. Genet. 123: 321-332.
8. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 612341. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Ggt6 (mouse) mapping to 11 B4.

PROTOCOLS

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

PRODUCT

GGT6 siRNA (m) is a target-specific 19-25 nt siRNA 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 GGT6 shRNA Plasmid (m): sc-145391-SH and GGT6 shRNA (m) Lentiviral Particles: sc-145391-V as alternate gene silencing 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

GGT6 siRNA (m) is recommended for the inhibition of GGT6 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 GGT6 gene expression knockdown using RT-PCR Primer: GGT6 (m)-PR: sc-145391-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.