SANTA CRUZ BIOTECHNOLOGY, INC.

GGT5 siRNA (m): sc-40635

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 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.

REFERENCES

1. Bulle, F., et al. 1987. Assignment of the human γ-glutamyl transferase gene to the long arm of chromosome 22. Hum. Genet. 76: 283-286.
2. Heisterkamp, N., et al. 1991. Identification of a human γ-glutamyl cleaving enzyme related to, but distinct from, γ-glutamyl transpeptidase. Proc. Natl. Acad. Sci. USA 88: 6303-6307.
3. Visvikis, A., et al. 1991. High-level expression of enzymatically active mature human γ-glutamyltransferase in transgenic V79 Chinese hamster cells. Proc. Natl. Acad. Sci. USA 88: 7361-7365.
4. Heisterkamp, N., et al. 2008. The human γ-glutamyltransferase gene family. Hum. Genet. 123: 321-332.
5. Strasak, A.M., et al. 2008. Association of γ-glutamyltransferase and risk of cancer incidence in men: a prospective study. Cancer Res. 68: 3970-3977.
6. Yavuz, B.B., et al. 2008. Serum elevated γ-glutamyltransferase levels may be a marker for oxidative stress in Alzheimer's disease. Int. Psychogeriatr. 20: 815-823.
7. Wannamethee, S.G., et al. 2008. The value of γ-glutamyltransferase in cardiovascular risk prediction in men without diagnosed cardiovascular disease or diabetes. Atherosclerosis 201: 168-175.
8. LocusLink Report (LocusID: 137168). http://www.ncbi.nlm.nih.gov/LocusLink

CHROMOSOMAL LOCATION

Genetic locus: Ggt5 (mouse) mapping to 10 C1.

PRODUCT

GGT5 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 GGT5 shRNA Plasmid (m): sc-40635-SH and GGT5 shRNA (m) Lentiviral Particles: sc-40635-V as alternate gene silencing products.

For independent verification of GGT5 (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-40635A, sc-40635B and sc-40635C.

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

GGT5 siRNA (m) is recommended for the inhibition of GGT5 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 GGT5 gene expression knockdown using RT-PCR Primer: GGT5 (m)-PR: sc-40635-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.