

# GGT6 (P-17): sc-242907

## BACKGROUND

$\gamma$ -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  $\gamma$ -glutamyltranspeptidase family, GGT6 ( $\gamma$ -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.  $\gamma$ -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  $\gamma$ -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  $\gamma$ -glutamyl transpeptidase transcripts. *Proc. Natl. Acad. Sci. USA* 90: 7461-7465.
4. Taniguchi, N. and Ikeda, Y. 1998.  $\gamma$ -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  $\gamma$ -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  $\gamma$ -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  $\gamma$ -glutamyltransferase gene family. *Hum. Genet.* 123: 321-332.
8. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 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 (human) mapping to 17p13.2.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## SOURCE

GGT6 (P-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal cytoplasmic domain of GGT6 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-242907 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GGT6 (P-17) is recommended for detection of GGT6 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GGT6 siRNA (h): sc-93860, GGT6 shRNA Plasmid (h): sc-93860-SH and GGT6 shRNA (h) Lentiviral Particles: sc-93860-V.

Molecular Weight of GGT6 isoforms: 51/47 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.