SANTA CRUZ BIOTECHNOLOGY, INC.

GSTO1 (21): sc-130317

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

GSTO1 (glutathione S-transferase ω 1), also known as p28 or GSTTLp28, is a 241 amino acid protein that localizes to the cytoplasm and contains both an N-terminal and a C-terminal GST domain. Expressed ubiquitously with highest expression in heart, liver and skeletal muscle, GSTO1 exists as a homodimer that functions as both a Glutathione-dependent thiol transferase and a dehydroascorbate reductase. Specifically, GSTO1 catalyzes the reaction of Glutathione with a wide variety of organic compounds to form thioethers, a process that is essential for the metabolism and detoxification of a variety of xenobiotics and carcinogens. Human GSTO1 shares 70% sequence homology with its rodent counterpart, suggesting a conserved role between species. Polymorphisms in the gene encoding GSTO1 may be associated with the development of childhood acute lymphoblastic leukemia, Parkinson's disease and Alzheimer disease.

REFERENCES

1. Ishikawa, T., et al. 1998. Molecular cloning and functional expression of rat liver Glutathione-dependent dehydroascorbate reductase. J. Biol. Chem. 273: 28708-28712.
2. Kodym, R., et al. 1999. The cloning and characterization of a new stress response protein. A mammalian member of a family of θ class glutathione S-transferase-like proteins. J. Biol. Chem. 274: 5131-5137.
3. Board, P.G., et al. 2000. Identification, characterization, and crystal structure of the ω class Glutathione transferases. J. Biol. Chem. 275: 24798-24806.
4. Yin, Z.L., et al. 2001. Immunohistochemistry of ω class glutathione S-transferase in human tissues. J. Histochem. Cytochem. 49: 983-987.
5. Li, Y.J., et al. 2003. Glutathione S-transferase ω-1 modifies age-at-onset of Alzheimer disease and Parkinson disease. Hum. Mol. Genet. 12: 3259-3267.
6. Whitbread, A.K., et al. 2003. Characterization of the human ω class Glutathione transferase genes and associated polymorphisms. Pharmacogenetics 13: 131-144.
7. Whitbread, A.K., et al. 2004. Glutathione transferase ω class polymorphisms in Parkinson disease. Neurology 62: 1910-1911.
8. Wahner, A.D., et al. 2007. Glutathione S-transferase μ, ω, π, and θ class variants and smoking in Parkinson's disease. Neurosci. Lett. 413: 274-278.
9. Pongstaporn, W., et al. 2008. Polymorphism of glutathione S-transferase ω gene: association with risk of childhood acute lymphoblastic leukemia. J. Cancer Res. Clin. Oncol. 135: 673-678.

CHROMOSOMAL LOCATION

Genetic locus: GSTO1 (human) mapping to 10q25.1.

SOURCE

GSTO1 (21) is a mouse monoclonal antibody raised against recombinant GSTO1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

GSTO1 (21) is recommended for detection of GSTO1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GSTO1 siRNA (h): sc-75207, GSTO1 shRNA Plasmid (h): sc-75207-SH and GSTO1 shRNA (h) Lentiviral Particles: sc-75207-V.

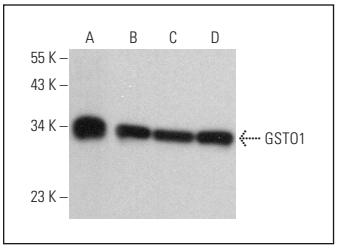
Molecular Weight of GSTO1: 31 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, MCF7 whole cell lysate: sc-2206 or DU 145 cell lysate: sc-2268.

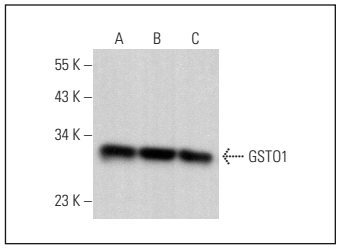
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



GSTO1 (21): sc-130317. Western blot analysis of GSTO1 expression in Jurkat (**A**), MCF7 (**B**), DU 145 (**C**) and BXPC-3 (**D**) whole cell lysates.



GSTO1 (21): sc-130317. Western blot analysis of GSTO1 expression in Jurkat (**A**), U-87 MG (**B**) and HUV-EC-C (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Goichon, A., et al. 2011. Effects of an enteral glucose supply on protein synthesis, proteolytic pathways, and proteome in human duodenal mucosa. Am. J. Clin. Nutr. 94: 784-794.

STORAGE

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

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.