

MGST1 (N-17): sc-17003



The Power to Question

BACKGROUND

Microsomal glutathione transferase 1 (MGST1) is an abundant protein that catalyzes the conjugation of electrophilic compounds with glutathione, as well as the reduction of lipid hydroperoxides. The level of MGST1 mRNA in rat are highest in liver, while the levels of expression vary in non-hepatic tissues. In addition, the subcellular localization patterns of MGST1 are highly tissue specific. In hepatocytes and bile ducts, MGST1 is localized to the cytoplasm. MGST1 is localized to the nucleus in choroid plexus and primary spermatocytes and displays a granular cytoplasmic staining pattern in the adrenal medulla. Also, focal staining of MGST1 is observed in the distal tubules and collecting ducts of the liver. The human MGST1 gene maps to chromosome 12p12.3. Sequence comparisons of MGST1 with related proteins, including PIG12, FLAP, LTC₄ synthase, MGST2 and MGST3, suggest that they are members of a dispersed microsomal GST gene superfamily. MGST1 is strongly inhibited by Leukotriene C4 and weakly inhibited by other leukotrienes, indicating a role for MGST1 in the cellular processing of leukotrienes.

REFERENCES

1. DeJong, J.L., et al. 1988. Gene expression of rat and human microsomal glutathione S-transferases. *J. Biol. Chem.* 263: 8430-8446.
2. Otieno, M.A., et al. 1997. Immuno-localization of microsomal glutathione S-transferase in rat tissues. *Drug Metab. Dispos.* 25: 12-20.
3. Bannenberg, G., et al. 1999. Leukotriene C4 is a tight-binding inhibitor of microsomal glutathione transferase-1. Effects of leukotriene pathway modifiers. *J. Biol. Chem.* 274: 1994-1999.

CHROMOSOMAL LOCATION

Genetic locus: MGST1 (human) mapping to 12p12.3; *Mgst1* (mouse) mapping to 6 G1.

SOURCE

MGST1 (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MGST1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-17003 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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 or our catalog for detailed protocols and support products.

APPLICATIONS

MGST1 (N-17) is recommended for detection of MGST1 of mouse, rat and, to a lesser extent, 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 MGST1 siRNA (m): sc-40741, MGST1 siRNA (h): sc-40740, MGST1 shRNA Plasmid (m): sc-40741-SH, MGST1 shRNA Plasmid (h): sc-40740-SH, MGST1 shRNA (m) Lentiviral Particles: sc-40741-V and MGST1 shRNA (h) Lentiviral Particles: sc-40740-V

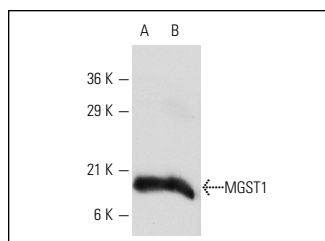
Molecular Weight of MGST1: 20 kDa.

Positive Controls: mouse liver extract: sc-2256 or rat liver extract: sc-2395.

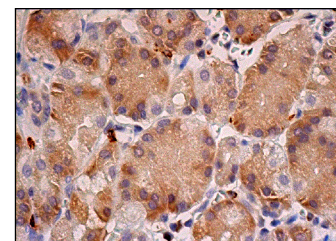
RECOMMENDED SECONDARY REAGENTS

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™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



MGST1 (N-17): sc-17003. Western blot analysis of MGST1 expression in rat (A) and mouse (B) liver extracts.



MGST1 (N-17): sc-17003. Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Linnerth, N.M., et al. 2005. Use of a transgenic mouse model to identify markers of human lung tumors. *Intl. J. Cancer* 114: 977-982.
2. Maes, O.C., et al. 2008. Murine microRNAs implicated in liver functions and aging process. *Mech. Ageing Dev.* 129: 534-541.
3. Shivanna, B., et al. 2013. Functional deficiency of aryl hydrocarbon receptor augments oxygen toxicity-induced alveolar simplification in newborn mice. *Toxicol. Appl. Pharmacol.* 267: 209-217.