

GSTM5 (S-12): sc-160417

BACKGROUND

Members of the glutathione S-transferase (GST) family of proteins function in the detoxification of xenobiotics to protect cells against toxicant-induced damage. There are eight families of GST proteins, namely α , ζ , τ , κ , μ , π , σ and ω , each of which are composed of proteins that have a variety of functions throughout the cell. The GSTM proteins (GSTM1-GSTM5 in human and GSTM1-GSTM7 in mouse) are members of the μ class of enzymes that conjugate with glutathione and function in the detoxification of carcinogens, environmental toxins and products of oxidative stress. GSTM5 (glutathione S-transferase μ 5), also designated G5, is a 218 amino acid cytoplasmic protein belonging to the μ family and GST superfamily. Expressed in brain, lung and testis, GSTM5 is found at low levels in heart, and contains single N- and C-terminal GST domains.

REFERENCES

- Islam, M.Q., Platz, A., Szpirer, J., Szpirer, C., Levan, G. and Mannervik, B. 1989. Chromosomal localization of human glutathione transferase genes of classes α , μ and π . *Hum. Genet.* 82: 338-342.
- Pearson, W.R., Vorachek, W.R., Xu, S.J., Berger, R., Hart, I., Vannais, D. and Patterson, D. 1993. Identification of class- μ glutathione transferase genes GSTM1-GSTM5 on human chromosome 1p13. *Am. J. Hum. Genet.* 53: 220-233.
- Takahashi, Y., Campbell, E.A., Hirata, Y., Takayama, T. and Listowsky, I. 1993. A basis for differentiating among the multiple human μ -glutathione S-transferases and molecular cloning of brain GSTM5. *J. Biol. Chem.* 268: 8893-8898.
- Xu, S., Wang, Y., Roe, B. and Pearson, W.R. 1998. Characterization of the human class μ glutathione S-transferase gene cluster and the GSTM1 deletion. *J. Biol. Chem.* 273: 3517-3527.
- Delles, C., Padmanabhan, S., Lee, W.K., Miller, W.H., McBride, M.W., McClure, J.D., Brain, N.J., Wallace, C., Marcano, A.C., Schmieder, R.E., Brown, M.J., Caulfield, M.J., Munroe, P.B., Farrall, M., Webster, J., et al. 2008. Glutathione S-transferase variants and hypertension. *J. Hypertens.* 26: 1343-1352.
- Breton, C.V., Vora, H., Salam, M.T., Islam, T., Wenten, M., Gauderman, W.J., Van den Berg, D., Berhane, K., Peters and J.M., Gilliland, F.D. 2009. Variation in the GST μ locus and tobacco smoke exposure as determinants of childhood lung function. *Am. J. Respir. Crit. Care Med.* 179: 601-607.
- Yu, K.D., Fan, L., Di, G.H., Yuan, W.T., Zheng, Y., Huang, W., Chen, A.X., Yang, C., Wu, J., Shen and Z.Z., Shao, Z.M. 2009. Genetic variants in GSTM3 gene within GSTM4-GSTM2-GSTM1-GSTM5-GSTM3 cluster influence breast cancer susceptibility depending on GSTM1. *Breast Cancer Res. Treat.* 121: 485-496.
- Online Mendelian Inheritance in Man, OMIM[™]. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 138385. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: Gstm5 (mouse) mapping to 3 F2.3.

SOURCE

GSTM5 (S-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GSTM5 of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-160417 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GSTM5 (S-12) is recommended for detection of GSTM5 of mouse and rat 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); non cross-reactive with other GSTM family members.

Suitable for use as control antibody for Gstm5 siRNA (m): sc-145813, Gstm5 shRNA Plasmid (m): sc-145813-SH and Gstm5 shRNA (m) Lentiviral Particles: sc-145813-V.

Molecular Weight of GSTM5: 27 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[™] 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) 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.

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.