SANTA CRUZ BIOTECHNOLOGY, INC.

GSTA1 (286CT8.1.5): sc-517334

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Members of the glutathione S-transferase (GST) family of proteins function in the detoxification of xenobiotics to protect cells against toxicant-induced damage. GSTs are differentially expressed in lung, liver and kidney tissue. Three isoforms, GSTA1-1, GSTA1-4 and GSTM1, localize to the mitochondria in addition to the cytoplasm. In normal and transformed cells, the oncoprotein Myb transcriptionally upregulates GSTM1. This isoform shows high specific activity for aflatoxin B1 epoxide conjugation, suggesting an important role for this interaction in the defense against both chemical and oxidative stress. The C-terminal domain of GSTA1 may form a component of the hydrophobic substrate-binding site, but in contrast appears not to be directly involved in GSH binding and is not absolutely essential for catalytic activity.

REFERENCES

1. Board, P.G., et al. 1991. The contribution of the C-terminal sequence to the catalytic activity of GST2, a human α-class glutathione transferase. Biochem. J. 275: 171-174.
2. Sinning, I., et al. 1993. Structure determination and refinement of human α class glutathione transferase A1-1, and a comparison with the Mu and Pi class enzymes. J. Mol. Biol. 232: 192-212.
3. Cameron, A.D., et al. 1995. Structural analysis of human α-class glutathione transferase A1-1 in the apo-form and in complexes with ethacrynic acid and its glutathione conjugate. Structure 3: 7177-7127.
4. McGuire, S., et al. 1997. Increased levels of glutathione S transferases and appearance of novel alpha class isoenzymes in kidneys of mice exposed to mercuric chloride. I. Biochemical and immunohistochemical studies. Nephron 77: 452-460.
5. Massey, T.E., et al. 2000. Mechanisms of aflatoxin B1 lung tumorigenesis. Exp. Lung Res. 26: 673-683.
6. Raza, H., et al. 2002. Multiple isoforms of mitochondrial glutathione S-transferases and their differential induction under oxidative stress. Biochem. J. 366: 45-55.
7. Bartley, P.A., et al. 2003. Regulation of the gene encoding glutathione S-transferase M1 (GSTM1) by the Myb oncoprotein. Oncogene 22: 7570-7575.

CHROMOSOMAL LOCATION

Genetic locus: GSTA1 (human) mapping to 6p12.2.

SOURCE

GSTA1 (286CT8.1.5) is a mouse monoclonal antibody raised against a recombinant protein corresponding to GSTA1 of human origin.

PRODUCT

Each vial contains 100 µg IgM in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

GSTA1 (286CT8.1.5) is recommended for detection of GSTA1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Suitable for use as control antibody for GSTA1 siRNA (h): sc-105421, GSTA1 shRNA Plasmid (h): sc-105421-SH and GSTA1 shRNA (h) Lentiviral Particles: sc-105421-V.

Molecular Weight of GSTA1: 26 kDa.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.