SANTA CRUZ BIOTECHNOLOGY, INC.

GSTA1/2/5 (E-6): sc-398714

BACKGROUND

Members of the glutathione S-transferase (GST) family of proteins function in the detoxification of toxins, such as carcinogens, environmental toxins, products of oxidative stress and therapeutic drugs, and protect cells against toxicant-induced damage. GSTs are divided into different classes/families based on their primary structures. The α family of GST (GSTA) proteins consists of four highly homologous 222 amino acid members, designated GSTA1, GSTA2, GSTA3 and GSTA5. Localizing to the cytoplasm, members of the GSTA family cluster on a region on chromosome 6 and are highly expressed in glutathione S-transferases in liver. Exhibiting peroxidase activity, GSTA family members protect cells from reactive oxygen and peroxidation by-products, and may also function in metabolizing certain anti-cancer drugs in liver.

REFERENCES

1. Board, P.G. and Mannervik, B. 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: 717-727.
4. McGuire, S., et al. 1997. Increased levels of glutathione S transferases and appearance of novel α class isoenzymes in kidneys of mice exposed to mercuric chloride. I. Biochemical and immunohistochemical studies. Nephron 77: 452-460.
5. Board, P.G. 1998. Identification of cDNAs encoding two human α class glutathione transferases (GSTA3 and GSTA4) and the heterologous expression of GSTA4-4. Biochem. J. 330: 827-831.

SOURCE

GSTA1/2/5 (E-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 189-217 at the C-terminus of GSTA2 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GSTA1/2/5 (E-6) is available conjugated to agarose (sc-398714 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398714 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398714 PE), fluorescein (sc-398714 FITC), Alexa Fluor® 488 (sc-398714 AF488), Alexa Fluor® 546 (sc-398714 AF546), Alexa Fluor® 594 (sc-398714 AF594) or Alexa Fluor® 647 (sc-398714 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398714 AF680) or Alexa Fluor® 790 (sc-398714 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398714 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

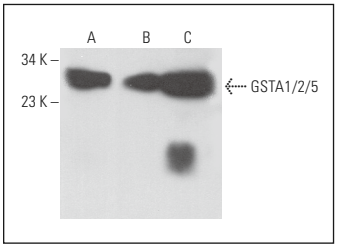
GSTA1/2/5 (E-6) is recommended for detection of GSTA1, GSTA3 and GSTA5 of human origin, GSTA1, GSTA2 and GSTA5 of mouse origin, and GSTA2 and GSTA5 of rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Positive Controls: mouse kidney extract: sc-2255, rat liver extract: sc-2395 or mouse liver extract: sc-2256.

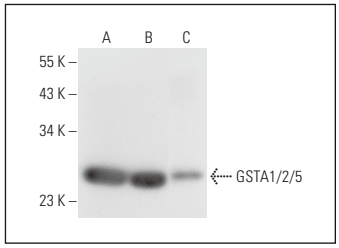
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



GSTA1/2/5 (E-6): sc-398714. Western blot analysis of GSTA1/2/5 expression in human kidney (**A**), mouse testis (**B**) and mouse stomach (**C**) tissue extracts.



GSTA1/2/5 (E-6): sc-398714. Western blot analysis of GSTA1/2/5 expression in mouse kidney (**A**), rat liver (**B**) and mouse liver (**C**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Tiwari, S., et al. 2020. Gender-specific changes in energy metabolism and protein degradation as major pathways affected in livers of mice treated with ibuprofen. Sci. Rep. 10: 3386.
2. Shimizu, N., et al. 2023. Tension force causes cell cycle arrest at G_2/M phase in osteocyte-like cell line MLO-Y4. Heliyon 9: e13236.

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.