SANTA CRUZ BIOTECHNOLOGY, INC.

GSS (H-300): sc-28966

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

GSS (glutathione synthetase) is a 474 amino acid protein encoded by the gene located at chromosome 20q11.22. GSS consists of three loops projecting from an antiparallel β-sheet, a parallel β-sheet, and a lid of anti-parallel sheets, which provide access to the ATP-binding site. Although Southern blot and gene analysis suggest that GSS may be the only member of a unique family, the crystal structure indicates that GSS belongs to the ATP-grasp superfamily. GSS is expressed in hemocytes and nucleated cells including the brain. GSS occurs as a homodimer. There are two steps in the production of glutathione, begining with γ-GCS and ending with GSS. In an ATP-dependent reaction, GSS produces glutathione from gamma-glutamylcysteine and glycine precursors. Partial hepatectomy, diethyl maleate, buthionine sulfoximine, tert-butyl-hydroquinone, and thioacetamide increase the expression of GSS, which causes an increase in glutathione levels. 5-oxoprolinuria (pyroglutamic aciduria), an inherited autosomal recessive disorder, is caused by GSS deficiencies, which leads to central nervous system damage, haemolytic anaemia, metabolic acidosis and urinary excretion of 5-oxoproline. A missense mutation in the gene encoding GSS leads to a GSS deficiency restricted to erythrocytes, which causes only haemolytic anaemia.

CHROMOSOMAL LOCATION

Genetic locus: GSS (human) mapping to 20q11.22; Gss (mouse) mapping to 2 H1.

SOURCE

GSS (H-300) is a rabbit polyclonal antibody raised against amino acids 81-380 mapping within an internal region of GSS of human origin.

PRODUCT

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

APPLICATIONS

GSS (H-300) is recommended for detection of GSS of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

GSS (H-300) is also recommended for detection of GSS in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GSS siRNA (h): sc-41980, GSS siRNA (m): sc-41981, GSS shRNA Plasmid (h): sc-41980-SH, GSS shRNA Plasmid (m): sc-41981-SH, GSS shRNA (h) Lentiviral Particles: sc-41980-V and GSS shRNA (m) Lentiviral Particles: sc-41981-V.

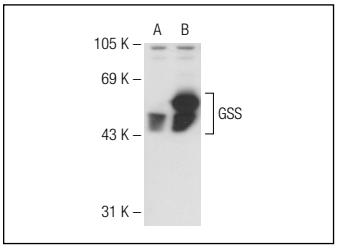
Molecular Weight of GSS: 52 kDa.

Positive Controls: GSS (h): 293T Lysate: sc-159954, GSS (m): 293T Lysate: sc-126926 or SW480 cell lysate: sc-2219.

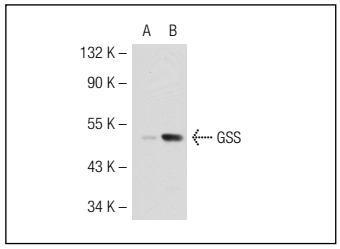
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



GSS (H-300): sc-28966. Western blot analysis of GSS expression in non-transfected: sc-117752 (**A**) and human GSS transfected: sc-159954 (**B**) 293T whole cell lysates.



GSS (H-300): sc-28966. Western blot analysis of GSS expression in non-transfected: sc-117752 (**A**) and mouse GSS transfected: sc-126926 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Kumar, D.M., et al. 2013. Temozolomide-modulated glioma proteome: Role of interleukin-1 receptor-associated kinase-4 (IRAK4) in chemosensitivity. Proteomics 13: 2113-2124.

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.