bs-11850R **[Primary Antibody]**

Glutathione Synthetase Rabbit pAb

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DATASHEET

Host: Rabbit **Isotype:** IgG

Clonality: Polyclonal

GeneID: 2937 **SWISS:** P48637

Target: Glutathione Synthetase

Immunogen: KLH conjugated synthetic peptide derived from human Glutathione Synthetase: 81-160/474.

Purification: affinity purified by Protein A

Concentration: 1mg/ml

Storage: 0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
Shipped at 4°C. Store at -20°C for one year. Avoid repeated freeze/thaw cycles.

Background: GSS (Glutathione synthetase) is a 474 amino acid protein encoded by the gene located at human chromosome 20q11.2. GSS consists of three loops projecting from an antiparallel ∫-sheet, a parallel ∫-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 GSS (Glutathione synthetase) is a 474 amino acid protein encoded by the gene located at human chromosome 20q11.2. GSS consists of three loops projecting from an antiparallel ∫-sheet, a parallel ∫-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 ©-GCS and ending with GSS. In an ATP-dependent reaction, GSS produces Glutathione from ©-glutamylcysteine and glycine precursors. Partial hepatectomy, diethyl maleate, buthionine sulfoximine, tert-butylhaydroquinone and thioacetamide increase the ex-pression of GSS, which causes an increase in Glutathione levels. An inherited autosomal recessive disorder, 5-oxoprolinuria (pyroglutamic aciduria), is caused by GSS deficiencies, which leads to central nervous system damage, hemolytic anemia, 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 hemolytic anemia.-GCS and ending with GSS. In an ATP-dependent reaction, GSS produces Glutathione from ©-glutamylcysteine and glycine precursors. Partial hepatectomy, diethyl maleate, buthionine sulfoximine, tert-butylhaydroquinone and thioacetamide increase the ex-pression of GSS, which causes an increase in Glutathione levels. An inherited autosomal recessive disorder, 5-oxoprolinuria (pyroglutamic aciduria), is caused by GSS deficiencies, which leads to central nervous system damage, hemolytic anemia, 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 hemolytic anemia.

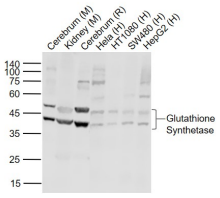
Applications: **WB** (1:500-2000)
IHC-P (1:100-500)
IHC-F (1:100-500)
IF (1:100-500)

Reactivity: Human, Mouse, Rat (predicted: Pig, Sheep, Cow, Dog, Horse)

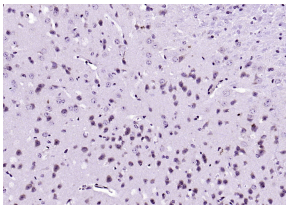
Predicted MW.: 52 kDa

Subcellular Location: Cytoplasm

VALIDATION IMAGES



Sample: Lane 1: Cerebrum (Mouse) Lysate at 40 ug Lane 2: Kidney (Mouse) Lysate at 40 ug Lane 3: Cerebrum (Rat) Lysate at 40 ug Lane 4: Hela (Human) Cell Lysate at 30 ug Lane 5: HT1080 (Human) Cell Lysate at 30 ug Lane 6: SW480 (Human) Cell Lysate at 30 ug Lane 7: HepG2 (Human) Cell Lysate at 30 ug Primary: Anti-Glutathione Synthetase (bs-11850R) at 1/1000 dilution Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution Predicted band size: 52/40 kD Observed band size: 50/40 kD



Paraformaldehyde-fixed, paraffin embedded (mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (Glutathione Synthetase) Polyclonal Antibody, Unconjugated (bs-11850R) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.

SELECTED CITATIONS

- **[IF=14.026]** Congcong Chen. et al. Radix Paeoniae Alba attenuates Radix Bupleuri-induced hepatotoxicity by modulating gut microbiota to alleviate the inhibition of saikosaponins on glutathione synthetase. J PHARM ANAL. 2023 Apr;: WB ;Rat. 10.1016/j.jpha.2023.04.016