10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

GLS2 Antibody

Catalog # ASC11291

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q9UI32
Other Accession	NP_037399, 20336214
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	66323
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	GLS2 antibody can be used for detection of GLS2 by Western blot at 0.5 - 1 g/mL. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	27165
Other Names	Glutaminase liver isoform, mitochondrial, GLS, 3.5.1.2, L-glutaminase, L-glutamine amidohydrolase, GLS2, GA
Target/Specificity	GLS2; Multiple isoforms of GLS2 are known to exist.
Reconstitution & Storage	GLS2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	GLS2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	GLS2
Synonyms	GA
Function	Plays an important role in the regulation of glutamine catabolism. Promotes mitochondrial respiration and increases ATP generation in cells by catalyzing the synthesis of glutamate and alpha- ketoglutarate. Increases cellular anti-oxidant function via NADH and glutathione production. May play a role in preventing tumor proliferation.
Cellular Location	Mitochondrion.

Tissue Location	Highly expressed in liver. Expressed in brain and pancreas. Not observed in heart, placenta, lung, skeletal muscle and kidney. Expression is significantly reduced in hepatocellular carcinomas.

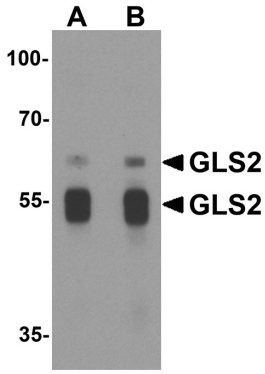
Background

GLS2 Antibody: Phosphate-activated glutaminase, also known as Glutaminase 2 (GLS2), was initially isolated from rat liver, although it has been shown to be expressed in other tissues. Like the functionally similar, larger kidney glutaminase, GLS2 catalyzes the hydrolysis of glutamine to stoichiometric amounts of glutamate and ammonia. Expression of GLS2 is increased by p53 under both stressed and nonstressed conditions, resulting in increased levels of glutamate and alpha-ketoglutarate, which in turn results in enhanced mitochondrial respiration and ATP generation. GLS2 also regulates antioxidant defense function in cells by increasing reduced glutathione levels and decreasing ROS-levels, suggesting that GLS2 acts as a mediator of p53's role in antioxidant defense in addition to its role in energy metabolism.

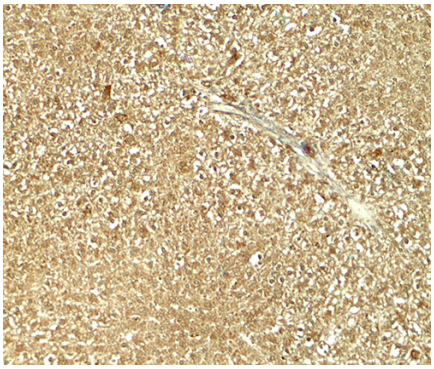
References

Chung-Bok MI, Vincent N, Jhala U, et al. Rat hepatic glutaminase: identification of the full coding sequence and characterization of a functional promoter. Biochem. J. 1997; 324:193-200.
Gomez-Fabre PM, Aledo JC, del Castillo-Olivares A, et al. Molecular cloning, sequencing and expression studies of the human breast cancer cell glutaminase. Biochem. J. 2000; 345:365-75.
Hu W, Zhang C, Wu R, et al. Glutaminase 2, a novel p53 target gene regulating energy metabolism and antioxidant function. Proc. Natl. Acad. Sci. USA 2010; 107:7455-60.

Images

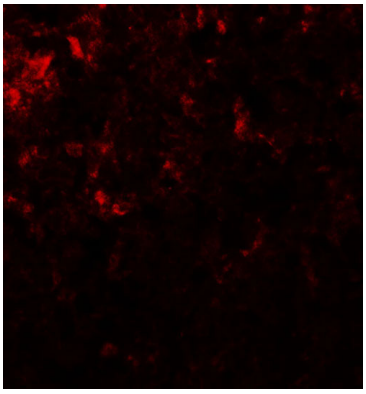


Western blot analysis of GLS2 in rat liver tissue lysate with GLS2 antibody at (A) 1 and (B) 2 µg/mL.



Immunohistochemistry of GLS2 in rat liver tissue with GLS2 antibody at 5 µg/mL.

Immunofluorescence of GLS2 in rat liver cells with GLS2 antibody at 20 5 &#956g/mL.



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