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

GLS Antibody (C-term)
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8809B

Specification

GLS Antibody (C-term) - Product Information

Application	**WB, IF, IHC-P-Leica, FC,E**
Primary Accession	O94925
Other Accession	P13264, D3Z7P3
Reactivity	**Human, Mouse, Rat**
Predicted	**Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Antigen Region	**516-545**

GLS Antibody (C-term) - Additional Information

Gene ID 2744

Other Names
Glutaminase kidney isoform, mitochondrial, GLS, K-glutaminase, L-glutamine amidohydrolase, GLS, GLS1, KIAA0838

Target/Specificity
This GLS antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 516-545 amino acids from the C-terminal region of human GLS.

Dilution
WB~~1:2000
IF~~1:25
IHC-P-Leica~~1:500
FC~~1:25

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
GLS Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

GLS Antibody (C-term) - Protein Information

Name GLS

Synonyms GLS1, KIAA0838

Function Catalyzes the first reaction in the primary pathway for the renal catabolism of glutamine. Plays a role in maintaining acid-base homeostasis. Regulates the levels of the neurotransmitter glutamate, the main excitatory neurotransmitter in the brain (PubMed:30575854, PubMed:30239721, PubMed:30970188).

Cellular Location
[Isoform 1]: Mitochondrion {ECO:0000250|UniProtKB:P13264}. Cytoplasm, cytosol. Note=The 74-kDa cytosolic precursor is translocated into the mitochondria and processed via a 72-kDa intermediate to yield the mature 68- and 65-kDa subunits {ECO:0000250|UniProtKB:P13264} [Glutaminase kidney isoform, mitochondrial 68 kDa chain]: Mitochondrion matrix {ECO:0000250|UniProtKB:P13264} Note=Produced by the proteolytic processing of the 74-kDa cytosolic precursor. {ECO:0000250|UniProtKB:P13264}

Tissue Location
Isoform 1 and isoform 3 are detected in brain cortex. Isoform 3 is highly expressed in astrocytoma, ganglioglioma and ependymoma. Isoform 1 is highly expressed in brain and kidney, but not detected in liver. Isoform 3 is highly expressed in heart and pancreas, detected at lower levels in placenta, lung, pancreas and kidney, but is not detected in liver. Isoform 2 is expressed in cardiac and skeletal muscle.

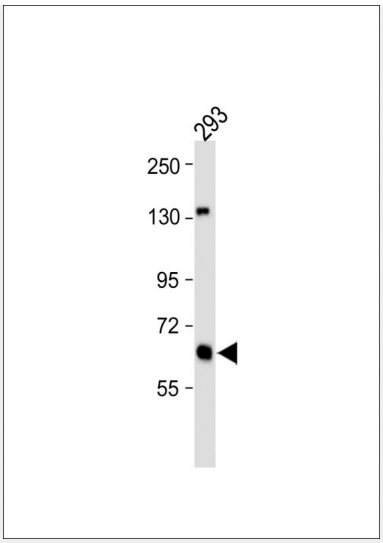
GLS Antibody (C-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

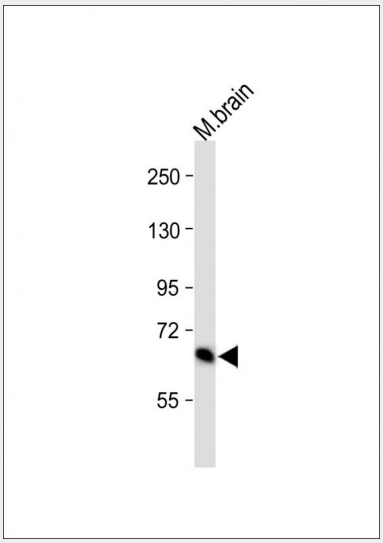
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

GLS Antibody (C-term) - Images

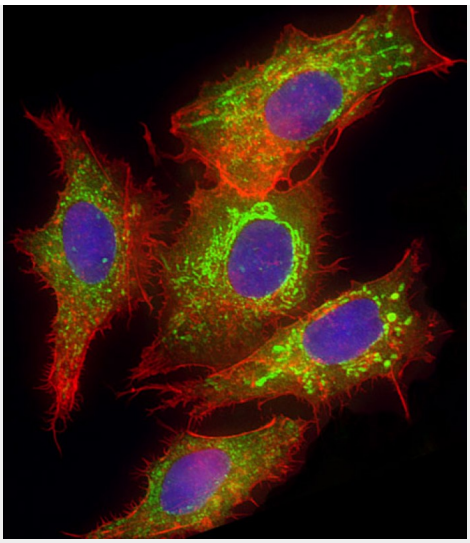
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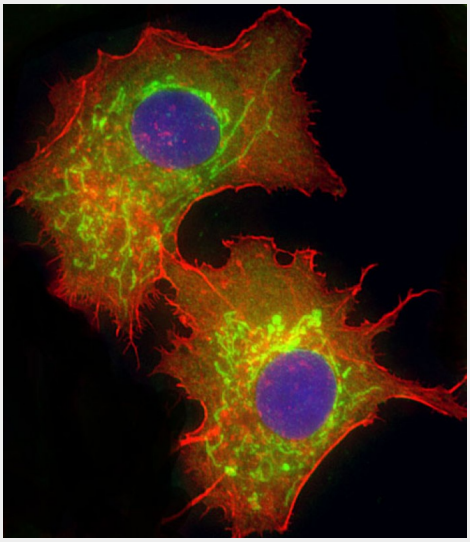
All lanes : Anti-GLS Antibody (C-term) at 1:1000 dilution Lane 1: 293 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Observed band size : 65 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



All lanes : Anti-GLS Antibody (C-term) at 1:1000 dilution Lane 1: mouse brain lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Observed band size : 65 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

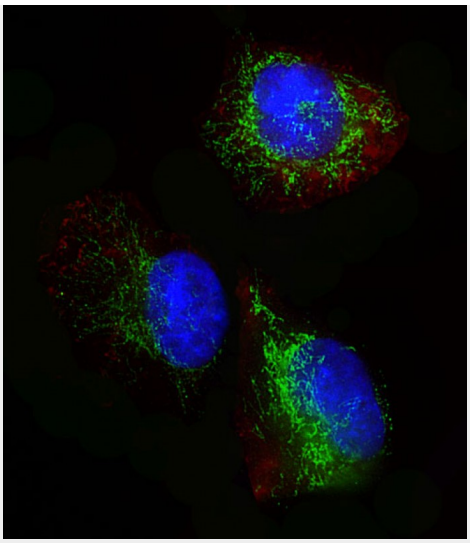


Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HepG2 (human liver hepatocellular carcinoma cell line) cells labeling GLS with AP8809b at 1/25 dilution, followed by Dylight® 488-conjugated goat anti-rabbit IgG (1583138) secondary antibody at 1/200 dilution (green). Immunofluorescence image showing mitochondrion staining on HepG2 cell line. Cytoplasmic actin is detected with Dylight® 554 Phalloidin (OI17558410) at 1/100 dilution (red). The nuclear counter stain is DAPI (blue).

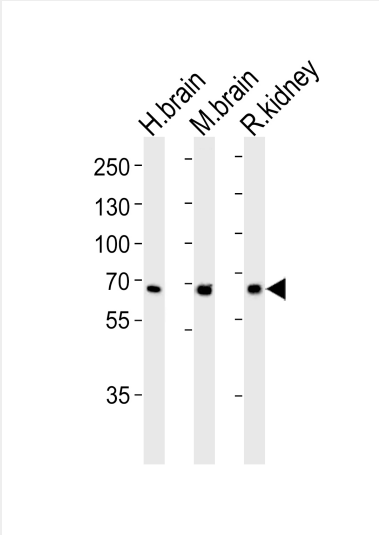


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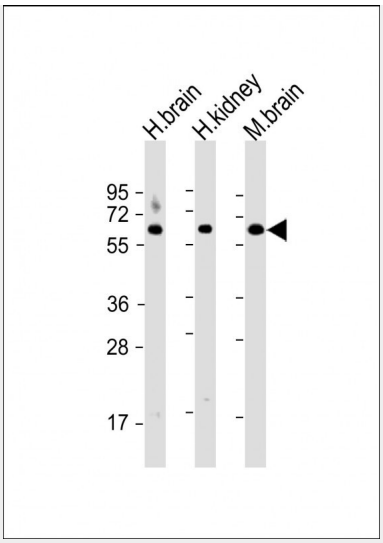


Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0. 1% Triton X-100 permeabilized U-251 MG cells labeling GLS with AP8809B at 1/25 dilution, followed by Dylight® 488-conjugated goat anti-Rabbit IgG secondary antibody at 1/200 dilution (green). Immunofluorescence image showing Cytoplasm staining on U-251 MG cell line. Cytoplasmic actin is detected with Dylight® 554 Phalloidin(red). The nuclear counter stain is DAPI (blue).

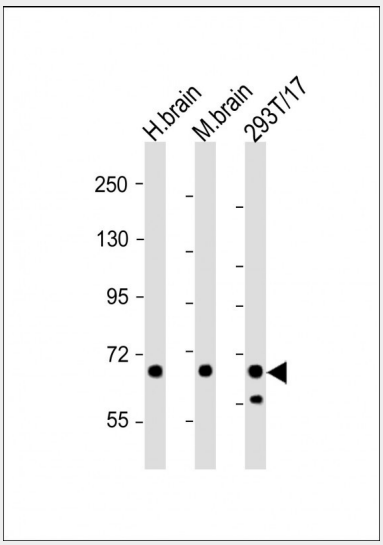


Western blot analysis of lysates from human brain, mouse brain ad rat kidney tissue lysate (from left to right), using GLS Antibody (C-term)(Cat. #AP8809b). AP8809b was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysates at 35ug per lane.

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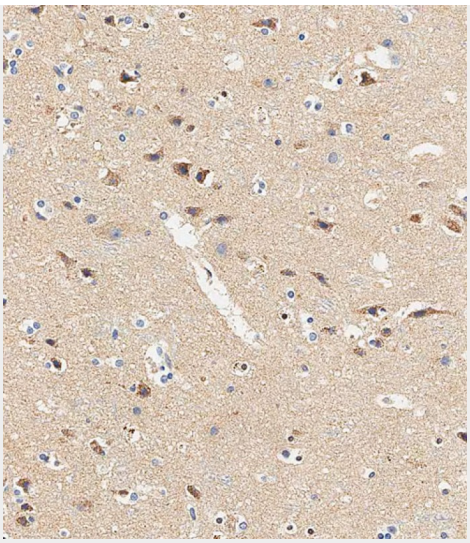


All lanes : Anti-GLS Antibody (C-term) at 1:2000 dilution Lane 1: human brain lysate Lane 2: human kidney lysate Lane 3: mouse brain lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 73 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

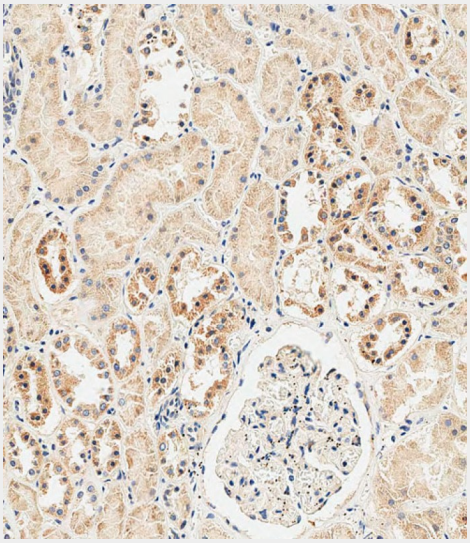


All lanes : Anti-GLS Antibody (C-term) at 1:2000 dilution Lane 1: human brain lysate Lane 2: mouse brain lysate Lane 3: 293T/17 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 73 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

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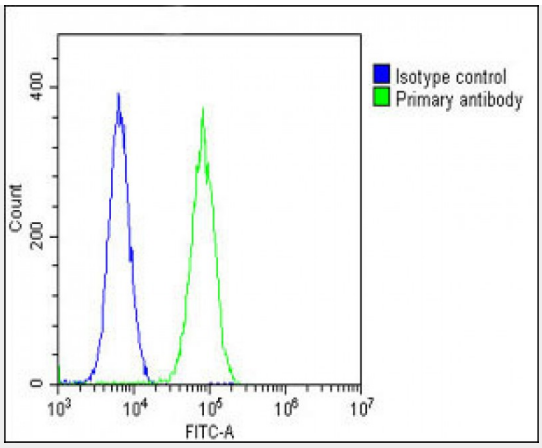


Immunohistochemical analysis of paraffin-embedded Human brain tissue using AP8809B performed on the Leica® BOND RXm. Tissue was fixed with formaldehyde at room temperature, antigen retrieval was by heat mediation with a EDTA buffer (pH9. 0). Samples were incubated with primary antibody(1:500) for 1 hours at room temperature. A undiluted biotinylated CRF Anti-Polyvalent HRP Polymer antibody was used as the secondary antibody.



Immunohistochemical analysis of paraffin-embedded Human kidney tissue using AP8809B performed on the Leica® BOND RXm. Tissue was fixed with formaldehyde at room temperature, antigen retrieval was by heat mediation with a EDTA buffer (pH9. 0). Samples were incubated with primary antibody(1:500) for 1 hours at room temperature. A undiluted biotinylated CRF Anti-Polyvalent HRP Polymer antibody was used as the secondary antibody.

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Overlay histogram showing U-2 OS cells stained with AP8809b(green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then icubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (AP8809b, 1:25 dilution) for 60 min at 37ºC. The secondary antibody used was Goat-Anti-Rabbit IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed(OH191631) at 1/200 dilution for 40 min at 37ºC. Isotype control antibody (blue line) was rabbit IgG1 (1µg/1x10^6 cells) used under the same conditions. Acquisition of >10, 000 events was performed.

GLS Antibody (C-term) - Background

Sahai (1983) demonstrated phosphate-activated glutaminase (EC 3.5.1.2) in human platelets. It is the major enzyme yielding glutamate from glutamine. Significance of the enzyme derives from its possible implication in behavior disturbances in which glutamate acts as a neurotransmitter(Prusiner, 1981). High heritability of platelet glutaminase was indicated by studies of Sahai and Vogel (1983) [PubMed 6682827] who found an intraclass correlation coefficient of 0.96 for monozygotic twins and 0.53 for dizygotic twins.

GLS Antibody (C-term) - References

Swierczynski,J., et.al., Biochim. Biophys. Acta 1157 (1), 55-62 (1993)

GLS Antibody (C-term) - Citations

- Neddylation inhibition induces glutamine uptake and metabolism by targeting CRL3 E3 ligase in cancer cells
- β-catenin represses miR455-3p to stimulate m6A modification of HSF1 mRNA and promote its translation in colorectal cancer
- Vitamin D regulation of HAS2, hyaluronan synthesis and metabolism in triple negative breast cancer cells
- Liver-Type Glutaminase GLS2 Is a Druggable Metabolic Node in Luminal-Subtype Breast Cancer
- Heat Shock Factor 1 Epigenetically Stimulates Glutaminase-1-Dependent mTOR Activation to Promote Colorectal Carcinogenesis.
- CXXC4 activates apoptosis through up-regulating GDF15 in gastric cancer.
- The oncogenic transcription factor c-Jun regulates glutaminase expression and sensitizes cells to glutaminase-targeted therapy.