

Anti-Glutamine Synthetase, clone GS-6

Monoclonal Antibody

Cat. # MAB302

Lot # LV1501431

pack size: 100 µg

Store at -20°C

FOR RESEARCH USE ONLY
NOT FOR USE IN HUMANS



Certificate of Analysis

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Applications	Species Cross-Reactivity	Antibody Isotype	Epitope/Region	Host Species	Molecular Weight	Accession #
WB, ELISA, IH	H, M, R, Sh	IgG2a	N/A	M	45 kDa	NM_005178.3

Background

Glutamine Synthetase catalyzes the conversion of ammonia and glutamate to glutamine. It is found in astrocytes as an octamer of identical 45 kDa subunits. The function of Glutamine Synthetase is the detoxification of brain ammonia. It also has an important role in the metabolic regulation of neurotransmitter glutamate. Because of the multiple functions and importance of Glutamine Synthetase in cellular metabolism, both catalytic activities and synthesis are highly regulated. The activity of Glutamine Synthetase is controlled by adenylation. Its activity is decreased in the cerebral cortex of brains affected by Alzheimer's disease, particularly in the vicinity of senile plaques. It is also decreased under conditions of glucose deprivation. The level of expression of Glutamine Synthetase is increased during ischemia *in vivo* or hypoxia in culture.

Presentation

Liquid in PBS containing 50% glycerol, BSA and < 0.09% sodium azide.

Concentration

1 mg/mL

Specificity

Reacts strongly with a single band on Western blots of sheep brain and rat brain.

Immunogen

Glutamine synthetase purified from sheep brain.

Molecular Weight

45 kDa

Method of Purification

Protein A Purified

Storage and Handling

Stable for 1 year at -20°C in undiluted aliquots from date of receipt.

Handling Recommendations: Upon receipt, and prior to removing the cap, centrifuge the vial and gently mix the solution. Aliquot into microcentrifuge tubes and store at -20°C. Avoid repeated freeze/thaw cycles, which may damage IgG and affect product performance. Note: Variability in freezer temperatures below -20°C may cause glycerol containing solutions to become frozen during storage.

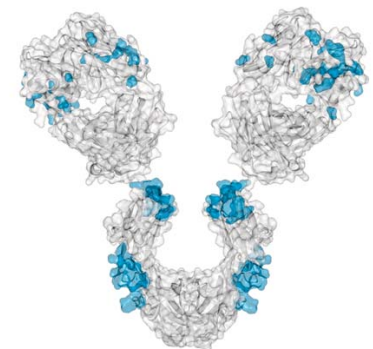
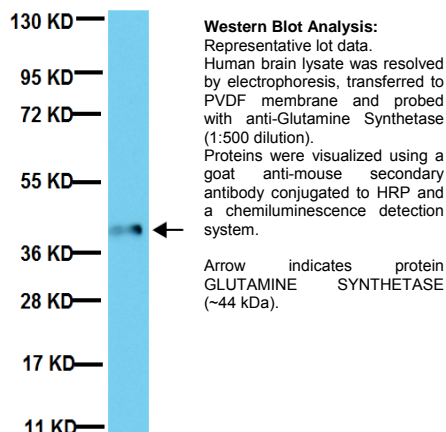
Control

Rat brain tissue, rat brain cytosolic fraction extract, human brain lysate

Quality Control Testing

Evaluated by Western Blot on Human brain lysates.

Western Blot Analysis: 1:500 dilution of this antibody detected Glutamine Synthetase on 10 µg of Human brain lysates.



References

- Oh, Edwin C T, *et al.* (2007). *Proc. Natl. Acad. Sci. U.S.A.* 104: 1679-84.
- Suarez, I, *et al.* (2005). *Neuropathol. Appl. Neurobiol.* 31:163-9.
- Wilhelmsson, U., *et al.* (2004). *J. Neuroscience.* 24:5016-5021.
- Ward, M., *et al.* (2004). *Cell Tissue Res.* 315:305-310.
- Weiner, I.D., *et al.* (2003). *Gastroenterol.* 124:1432-1440.

Additional Research Applications

Immunohistochemistry: A previous lot of this antibody was used in immunohistochemistry on rat brain tissue.

ELISA: A previous lot of this antibody was used on ELISA.

Optimal working dilutions must be determined by end user.

APPLICATION LEGEND: WB Western Blotting ELISA Enzyme-linked Immunosorbent Assay IP Immunoprecipitation

IC Immunocytochemistry IF Immunofluorescence IH Immunohistochemistry (Tissue)

SPECIES LEGEND: H Human M Mouse R Rat Rb Rabbit Sh Sheep WR Most Common Vertebrates

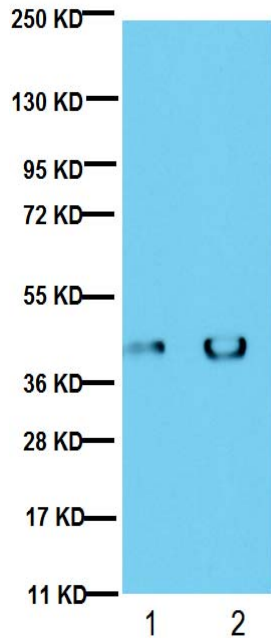
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Additional Research Applications



Western Blot Analysis:
Representative image from a previous lot. Human brain lysate (Lane 1) and Mouse brain membrane lysate (Lane 2) were resolved by electrophoresis, transferred to PVDF membrane and probed with anti-GLUTAMINE SYNTHETASE (1:500 dilution of a previous lot). Proteins were visualized using a goat anti-mouse secondary antibody conjugated to HRP and a chemiluminescence detection system. Arrow indicates protein GLUTAMINE SYNTHETASE (~44 kDa).

PROTOCOL

Western Blotting

1. Perform SDS-polyacrylamide gel electrophoresis (SDS-PAGE) on cell lysate and transfer the proteins to a PVDF membrane. Wash the PVDF membrane twice with water.
2. Block the blotted PVDF membrane in freshly prepared 5% BSA with 0.05% Tween®-20 for 1 hour at room temperature with constant agitation.
3. Incubate the PVDF with the recommended dilution of Anti-Glutamine Synthetase, clone GS-6 diluted in freshly prepared 5% BSA for 1 hour at room temperature or overnight with agitation at 2-8°C.
4. Wash the PVDF 3 times with TBST.
5. Incubate the PVDF in the secondary reagent of choice (a goat anti-rabbit HRP conjugated IgG, Catalog # 12-348 1:1000 dilution was used) in 5% milk for 1 hour with agitation at room temperature.
6. Wash the PVDF 3-5 times with TBST.
7. Use Spray and Glow Catalog # 17-373 to visualize results. Use as directed.

RELATED PRODUCTS (specific)

cat #	description
AP124P	Goat anti-Mouse IgG, Peroxidase Conjugated, H+L

RELATED PRODUCTS (non-specific)

cat #	description
IPVH00010	Immobilon-P 26.5 cm x 3.75 m Roll PVDF 0.45 µm
IPFL00010	Immobilon-FL 26.5 cm x 3.75 m Roll PVDF 0.45 µm
IPVH07850	Immobilon-P 7 x 8.4 cm PVDF 0.45 mm (sheet) 50/pk
ISEQ00010	Immobilon-P SQ 26.5 cm x 3.75 m 1 roll PVDF 0.2 µm
ISEQ07850	Immobilon-P 7 x 8.4 cm PVDF 0.2 mm (sheet) 50/pk
IPFL07810	Immobilon-FL 7 x 8.4 cm PVDF 0.45 mm (sheet) 10/pk
WBKLS0100	Immobilon Western Chemilum HRP Substrate 100 mL
17-373	Spray & Glow™ ECL WB Detection System 1 ea
2060	Re-Blot Western Blot Recycling Kit
2500	Re-Blot Plus Western Blot Recycling Kit
B2080-175GM	Blot Quick Blocker Membrane Blocking Agent 175G

antibodies Multiplex products biotools cell culture enzymes kits proteins/peptides siRNA/cDNA products

Please visit www.millipore.com for additional product information, test data and references

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