

Glutamine synthetase antibody

□ Cat# GLUL11-A

Rabbit Anti-Human Glutamine synthetase antibody

SIZE: 100 µg

Glutamine synthetase (GLUL) is an enzyme responsible for the de novo synthesis of glutamine (from glutamate and ammonia, wherein glutamate act as nitrogen donor/acceptor) and for production of gamma-aminobutyric acid/GABA (4-aminobutanoate). GLUL is expressed in a wide variety of human cells, such as astrocytes (marker protein), skeletal cells, adipocytes, hepatocytes and sperm. GLUL activity in vertebrate brain is generally high as it protects this ammonia-sensitive organ from harmful effects of ammonia and is involved in recycling of neurotransmitter glutamate also. GLUL is essential in maintaining cellular homeostasis and besides its involvement in ammonia detoxification, GLUL participates in maintaining amino acid/energy balance, cellular redox control, nucleotide biosynthesis and neurotransmitters regulation. Defects in GLUL are the cause of congenital systemic glutamine deficiency (CSGD) which is a rare developmental disorder with severe brain malformation resulting in multi-organ failure and neonatal death.

Source of Antigen and Antibodies

Uniprot: P15104

Host: Rabbit

Clonality: Polyclonal

Immunogen: Synthetic peptide within region 300-350 derived from Human Glutamine synthetase

Purification: Ammonium sulfate followed by peptide affinity purification

Species Reactivity: Human

Cross reactivity: The peptide used as an immunogen exhibits 100% homology with Rat, Mouse, Non-human Primates, Bovine, Equine, Dog, Cat, Sheep, Pig, and more species not listed. If your species of interest is not listed above, contact ADI to check for sequence homology. Reactivity has only been confirmed in Mouse and Human samples.

Alternative names: Glutamate-ammonia ligase and Palmoitoyltransferase GLUL

Subcellular Location: Mitochondrion, cytosol, ER, plasma membrane

Recommended Secondary Antibody: Goat anti-Rabbit IgG-HRP (ADI cat#20320)

Form & Storage of Antibodies

□ **Affinity pure IgG Solution**

Concentration: 0.5 mg/ml Volume: 200 µl

Supplied in PBS, pH 7.4

The antibody can be made available carrier free or conjugated to HRP, Biotin, or FITC on request

□ **Lyophilized powder**

Lyophilized from a formulation containing PBS, pH 7.4 +3% Trehalose. Reconstitute in 200 µl PBS, 0.05% tween-20, 0.1% BSA, and a preservative to 0.5 mg/ml.

Storage:

Short-term: 4°C for 1 month

Long-term: at -20°C or below in suitable aliquots after reconstitution for 1 year. Do not expose to multiple free/thaw cycles or store working, diluted solutions. Glycerol may be added to a final concentration of 50% and antibodies can be stored un-aliquoted at -20°C.

Recommended Usage

Western Blotting: 0.5-1.0 µg/ml

Observed band size: ~45 kDa

IHC-P: 1-10 µg/ml. QC tested using 10 mM sodium citrate, pH 6 antigen retrieval buffer. The antibody may work better with no retrieval or alternative retrieval solutions.

The above concentrations are a *suggestion*, user's must optimize their assay based on their own conditions. The antibody may work in other applications such as Immunocytochemistry or IP. These methods have not been tested by ADI.

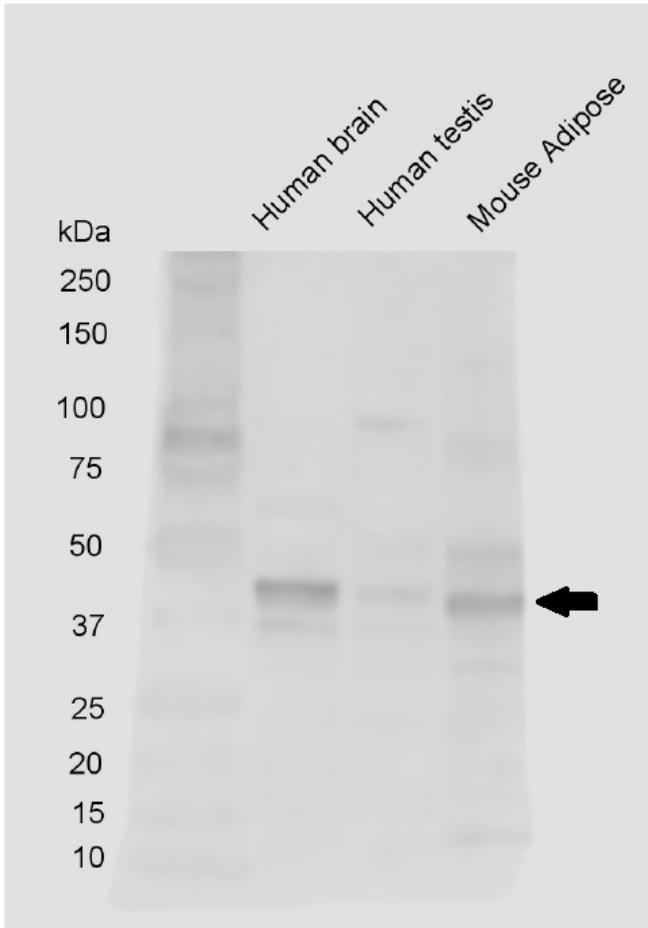
**This product is for In vitro research use only.*

Related materials available from ADI

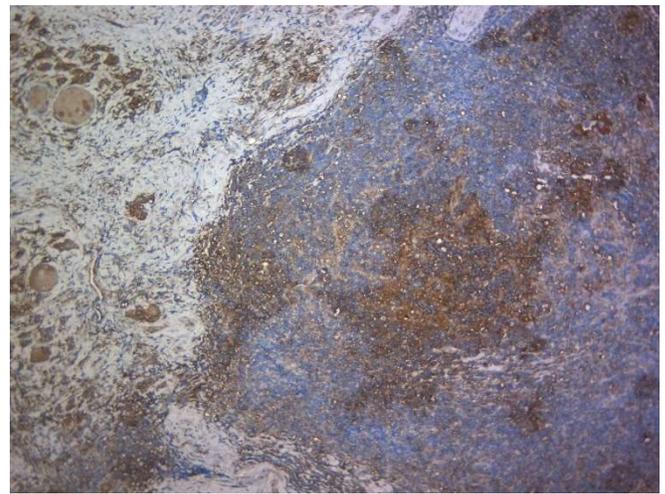
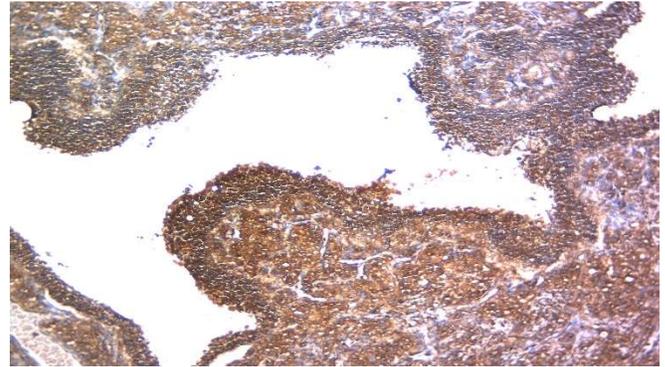
Catalog#	Description
GLN11-A	Rabbit Anti Arabidopsis thaliana Glutamine synthetase antibody
GFAP11-A	Rabbit Anti-Mouse phosphor-Glial fibrillary acidic protein (Ser266) antibody
GFAP21-A	Rabbit Anti-Mouse Glial fibrillary acidic protein (GFAP) antibody
VIM21-A	Rabbit Anti-Mouse Vimentin (Ser299) antibody
VIM31-A	Rabbit Anti-Mouse Vimentin (Ser214) antibody
CALB11-A	Rabbit Anti-Human Calbindin antibody
HKI67-A	Rabbit anti-Human Proliferation marker Ki-67

GLUL11-A

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Western blotting: 20 µgs of Human and Mouse lysates were heated for 5 minutes at 95°C then electrophoretically separated on a 4-20% SDS-PAGE gel. The gel was run at 100V for ~1 hour and 30 minutes then transferred to a 0.2 µm nitrocellulose membrane using the 'Mixed MW' settings on a Transblot Turbo (Biorad). The blot was blocked for 1 hour at room temperature with 1% Casein. **GLUL11-A** was diluted with TBST+0.1% BSA to 1 µg/ml and incubated overnight at 4°C. The blot was washed with TBS-T 3 times for 5 minutes each. Goat anti-rabbit IgG HRP (**ADI cat#20320**) was diluted in TBST+0.1% BSA at a 1:1,000 dilution (500 ng/ml) then incubated for 1 hour at room temperature. The blot was washed 3 times with TBS-T for 5 minutes each. The blot was then incubated with regular strength ECL substrate for 1 minute and imaged on a CCD imaging system (C-DiGit, LI-COR).



Immunohistochemistry: FFPE Human Thyroid and Ovary slides were heated for 20 minutes at 60°C then deparaffinized. Antigen retrieval was performed for 10 minutes at 95°C in a microwave using 10 mM pH 6, sodium citrate buffer. The slide was then cooled for 20 minutes at room temperature before being blocked for 30 minutes with 2.5% normal goat serum. **GLUL11-A** was diluted to 5 µg/ml in TBST+0.1% BSA and incubated overnight at 4°C. The slides were then washed twice and incubated with 3% hydrogen peroxide for 10 minutes to quench endogenous peroxidase. The slide was washed then incubated with Goat anti-Rabbit IgG HRP polymer detection reagent for 30 minutes at room temperature. The slide was washed twice, incubated with DAB for 3 minutes, washed with distilled water, then counterstained for 1 minute with Gil's II Hematoxylin before being cover-slipped. Staining is observed in the membrane and cytosol.