Purified anti-Glutamine synthetase Antibody

Catalog# / Size	856201 / 25 µg 856202 / 100 µg
Clone	O91F4
Regulatory Status	RUO
Other Names	GLUL, Glutamine Synthetase
Isotype	Mouse IgG2a, κ
Description	Glutamine Synthase (GLUL) is primarily expressed in astrocytes in the brain. The main function of GLUL is to catalyze the condensation of glutamate and ammonia to form glutamine. GLUL plays an important role in the metabolic regulation of glutamate, detoxification of brain ammonia, as well as recycling of neurotransmitters. GLUL expression in endothelial cells may be involved in cell migration during pathological angiogenesis. Upregulation of astrocytic GLUL to uptake excess ammonia and glutamate may play a neuroprotective role during neuroinflammation.

Product Details

Verified Reactivity	Human, Mouse, Rat
Antibody Type	Monoclonal
Host Species	Mouse
Immunogen	Recombinant human GLUL protein expressed in HEK293T cell
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography.
Concentration	0.5 mg/mL
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C.
Application	WB - *Quality tested* IHC-P, ICC - *Verified*
Recommended Usage	Each lot of this antibody is quality control tested by Western blotting. For Western blotting, the suggested use of this reagent is 1.0 - 10 µg per mL. For immunohistochemistry on formalin-fixed paraffin-embedded tissue sections, a concentration range of 0.5 - 10 µg/mL for chromogenic staining and 0.5 - 5.0 µg/mL for fluorescent staining is suggested. For immunocytochemistry, a concentration range of 2.0 - 10 µg/mL is recommended. It is recommended that the reagent be titrated for optimal performance for each application.
Application References **(PubMed link indicates BioLegend citation)**	1. Shajahan-Haq AN, *et al*. 2014. *Mol Cancer*. 13:239. **(WB)**
RRID	AB_2783452 (BioLegend Cat. No. 856201) AB_2783453 (BioLegend Cat. No. 856202)

Antigen Details

Structure	GLUL is a 373 amino acid protein with an apparent molecular mass of ~ 42 kD.
Distribution	Tissue Distribution: Predominantly expressed in brain, kidney, and liver. Cellular Distribution: Extracellular, cytosol, nucleus, and mitochondrion.
Interaction	Forms homooctamer and homotetramer.

Cell Type	Astrocytes
Biology Area	Cell Biology, Mitochondrial Function, Neuroinflammation, Neuroscience, Neuroscience Cell Markers, Synaptic Biology
Molecular Family	Postsynaptic proteins, Presynaptic proteins
Antigen References	1. Eelen G, et al. 2018. Nature. (7721):63-69 2. Spodenkiewicz M, et al. 2016. Biology (Basel). 5(4) 3. Fan S, et al. 2018. J Cell Biochem. 119(7):6008
Gene ID	2752 14645 24957

Related Protocols

Immunocytochemistry Staining Protocol

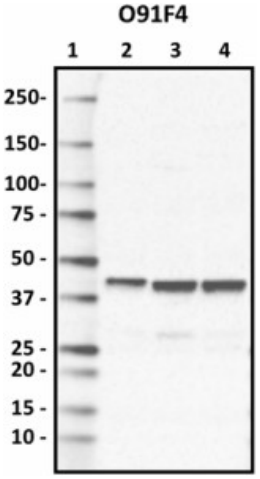
Western Blotting Protocol

Immunohistochemistry Protocol for Paraffin-Embedded Sections

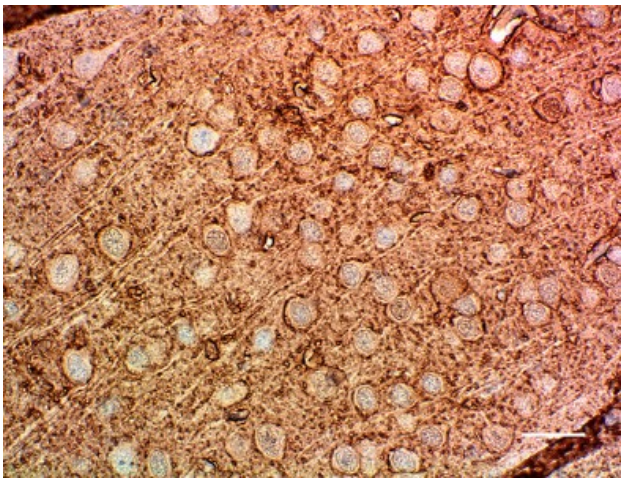
Other Formats

Purified anti-Glutamine synthetase

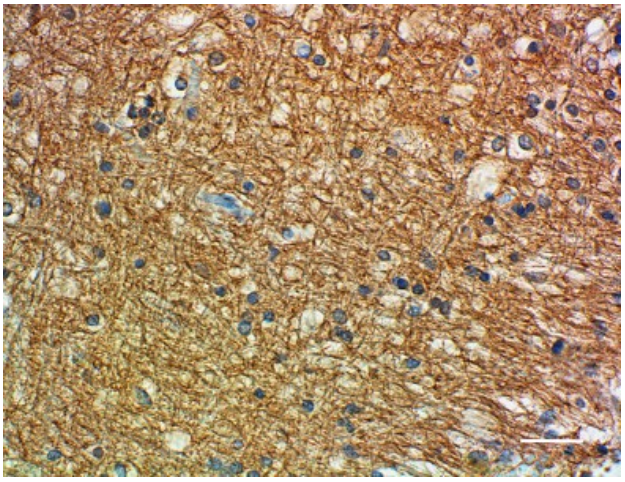
Product Data



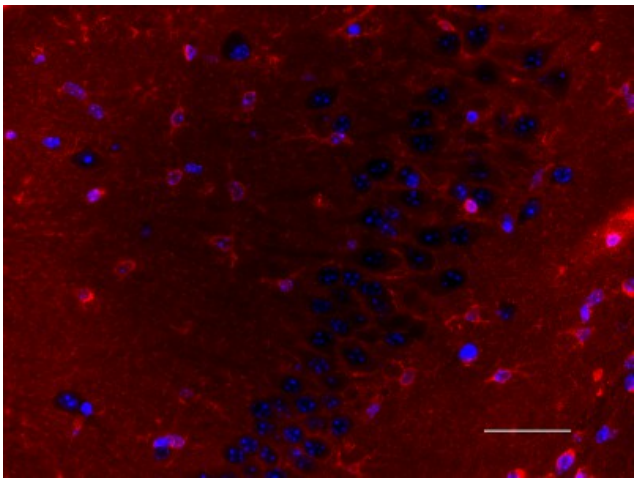
Western blot of purified anti-Glutamine synthetase antibody (clone O91F4). Lane 1: Molecular weight marker; Lane 2: 10 µg of human brain lysate; Lane 3: 10 µg of mouse brain lysate; Lane 4: 10 µg of rat brain lysate. The blot was incubated with 1 µg/mL of the primary antibody overnight at 4°C, followed by incubation with HRP-labeled goat anti-mouse IgG (Cat. No. 405306). Enhanced chemiluminescence was used as the detection system.



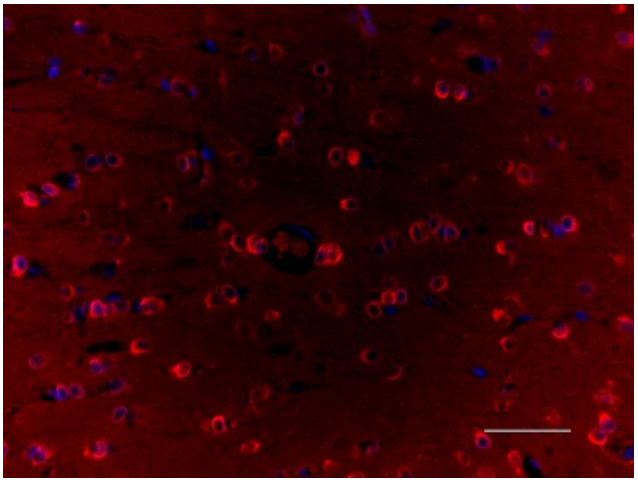
IHC staining of purified anti-Glutamine synthetase antibody (clone O91F4) on formalin-fixed paraffin-embedded mouse brain tissue. Following antigen retrieval using Sodium Citrate H.I.E.R (Cat. No. 928502), the tissue was incubated with 0.5 µg/ml of the primary antibody overnight at 4°C. BioLegend's Ultra Streptavidin (USA) HRP Detection Kit (Multi-Species, DAB, Cat. No. 929901) was used for detection followed by hematoxylin counterstaining, according to the protocol provided. The image was captured with a 40X objective. Scale Bar: 50 µm



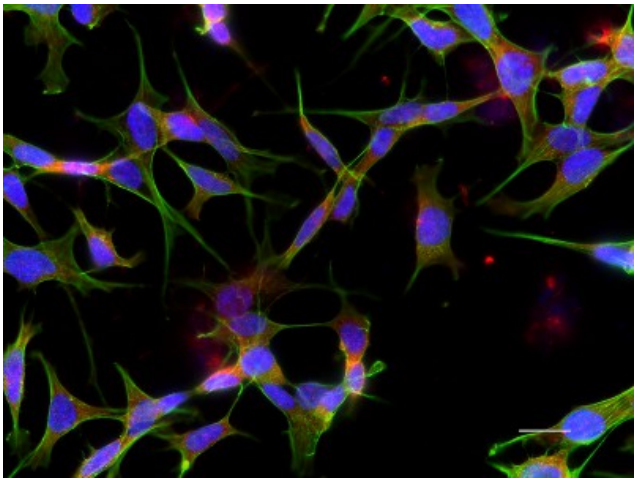
IHC staining of purified anti-Glutamine synthetase antibody (clone O91F4) on formalin-fixed paraffin-embedded human brain tissue. Following antigen retrieval using Sodium Citrate H.I.E.R (Cat. No. 928502), the tissue was incubated with 10 µg/ml of the primary antibody overnight at 4°C. BioLegend's Ultra Streptavidin (USA) HRP Detection Kit (Multi-Species, DAB, Cat. No. 929901) was used for detection followed by hematoxylin counterstaining, according to the protocol provided. The image was captured with a 40X objective. Scale Bar: 50 µm



IHC staining of purified anti-Glutamine synthetase antibody (clone O91F4) on formalin-fixed paraffin-embedded mouse brain tissue. Following antigen retrieval using Sodium Citrate H.I.E.R. (Cat. No. 928502), the tissue was incubated with 0.5 µg/mL of the primary antibody overnight at 4°C, followed by incubation with 2.5 µg/mL of Alexa Fluor® 594 goat anti-mouse IgG for one hour at room temperature. The slide was mounted with fluoromount G with DAPI. The image was captured with a 40X objective. Scale bar: 50 µm



IHC staining of purified anti-Glutamine synthetase antibody (clone O91F4) on formalin-fixed paraffin-embedded rat brain tissue. Following antigen retrieval using Sodium Citrate H.I.E.R. (Cat. No. 928502), the tissue was incubated with 0.5 µg/mL of the primary antibody overnight at 4°C, followed by incubation with 2.5 µg/mL of Alexa Fluor® 594 goat anti-mouse IgG for one hour at room temperature. The slide was mounted with fluoromount G with DAPI. The image was captured with a 40X objective. Scale bar: 50 µm



ICC staining of purified anti-Glutamine synthetase antibody (clone O91F4) on SH-SY5Y cell. The cells were fixed with 4% PFA, permeabilized with a buffer containing 0.1% Triton X-100 and 0.25% BSA, and blocked with 2% normal goat serum and 0.02% BSA. The cells were then incubated with 2 µg/mL of the primary antibody overnight at 4°C, followed by incubation with 2.5 µg/mL of Alexa Fluor® 594 goat anti-mouse IgG for one hour at room temperature. The cells were co-stained with Flash Phalloidin™ Green 488 (Cat. No. 424201). The slide was mounted with fluoromount G with DAPI. The image was captured with a 60X objective. Scale bar: 20 µm

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587