

KD-Validated Anti-Glutamate-ammonia ligase Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1921

Product Information

Application	WB, FC, ICC
Primary Accession	P15104
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	23GB1345
Calculated MW	42064
Gene Name	GLUL
Aliases	Glutamate-Ammonia Ligase; Glutamine Synthetase; GLNS; Palmitoyltransferase GLUL; EC 6.3.1.2; GS; Glutamate-Ammonia Ligase (Glutamine Synthase); Cell Proliferation-Inducing Protein; Proliferation-Inducing Protein; Glutamate--Ammonia Ligase; Glutamate Decarboxylase; Glutamine Synthase; EC 2.3.1.225; PIG43; PIG59
Immunogen	A synthesized peptide derived from human Glutamine Synthetase

Additional Information

Gene ID	2752
Other Names	Glutamine synthetase, GS, 6.3.1.2, Glutamate--ammonia ligase, Palmitoyltransferase GLUL, 2.3.1.225, GLUL {ECO:0000303 PubMed:30158707, ECO:0000312 HGNC:HGNC:4341}

Protein Information

Name	GLUL {ECO:0000303 PubMed:30158707, ECO:0000312 HGNC:HGNC:4341}
Function	Glutamine synthetase that catalyzes the ATP-dependent conversion of glutamate and ammonia to glutamine (PubMed: 16267323 , PubMed: 30158707 , PubMed: 36289327). Its role depends on tissue localization: in the brain, it regulates the levels of toxic ammonia and converts neurotoxic glutamate to harmless glutamine, whereas in the liver, it is one of the enzymes responsible for the removal of ammonia (By similarity). Plays a key role in ammonium detoxification during erythropoiesis: the glutamine synthetase activity is required to remove ammonium generated by porphobilinogen deaminase (HMBS) during heme biosynthesis to prevent ammonium accumulation and oxidative stress (By similarity). Essential for proliferation of fetal skin fibroblasts (PubMed: 18662667). Independently of its glutamine synthetase activity, required for endothelial cell migration during vascular development: acts by regulating membrane localization and

activation of the GTPase RHOJ, possibly by promoting RHOJ palmitoylation (PubMed:[30158707](#)). May act as a palmitoyltransferase for RHOJ: able to autopalmitylate and then transfer the palmitoyl group to RHOJ (PubMed:[30158707](#)). Plays a role in ribosomal 40S subunit biogenesis (PubMed:[26711351](#)). Through the interaction with BEST2, inhibits BEST2 channel activity by affecting the gating at the aperture in the absence of intracellular L-glutamate, but sensitizes BEST2 to intracellular L-glutamate, which promotes the opening of BEST2 and thus relieves its inhibitory effect on BEST2 (PubMed:[36289327](#)).

Cellular Location

Cytoplasm, cytosol. Microsome {ECO:0000250|UniProtKB:P09606}
Mitochondrion {ECO:0000250|UniProtKB:P09606}. Cell membrane;
Lipid-anchor. Note=Mainly localizes in the cytosol, with a fraction associated with the cell membrane

Tissue Location

Expressed in endothelial cells.

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