

## Glutamine synthetase

**Cat.No. 367 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)**

### Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For reconstitution add 100 µl H <sub>2</sub> O, then aliquot and store at -20°C until use.
Applications	<b>WB:</b> 1 : 1000 (AP staining) <b>IP:</b> not tested yet <b>ICC:</b> not tested yet <b>IHC:</b> 1 : 500 (see remarks) <b>IHC-P/FFPE:</b> not tested yet
Immunogen	Recombinant protein corresponding to AA 2 to 373 from mouse Glutamine synthetase (UniProt Id: P15105)
Reactivity	Reacts with: rat (P09606), mouse (P15105). Other species not tested yet.
Specificity	Specific for Glutamine synthetase.
Remarks	<b>IHC:</b> For minimal background, the affinity purified antibody cat. no. 367 005 is recommended

**TO BE USED IN VITRO / FOR RESEARCH ONLY**  
**NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS**

**Glutamine synthetase**, also referred to as **Glutamate-ammonia ligase** or **GS**, is an enzyme that catalyzes the ATP-dependent condensation of glutamate with ammonia to yield glutamine. It is present predominantly in brain, kidneys, and liver. In the brain, it is particularly found in astrocytes. Glutamine synthetase plays a pivotal role in glutamate and glutamine homeostasis, and it is largely responsible for the removal of both blood-derived and metabolically generated ammonia, preventing neurotoxicity. It is also a key enzyme in the recycling of the neurotransmitter glutamate. Several studies indicated that the expression, distribution, and activity of brain glutamine synthetase is altered in some brain disorders, including Alzheimer's disease, schizophrenia, depression, suicidality, and mesial temporal lobe epilepsy (MTLE).

### Selected General References

Astrocyte glutamine synthetase: pivotal in health and disease.  
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Regulation of astrocyte glutamine synthetase in epilepsy.  
Eid T, Tu N, Lee TS, Lai JC  
Neurochemistry international (2013) 63(7): 670-81.

Crystal structure of domains 3 and 4 of rat CD4: relation to the NH<sub>2</sub>-terminal domains.  
Brady RL, Dodson EJ, Dodson GG, Lange G, Davis SJ, Williams AF, Barclay AN  
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