ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Glycine Transproter-1 (GLYT1) Antibodies

Cat # GLYT12-S	**Goat** Anti-Rat GLYT1 antiserum # 2	**SIZE**: 100 ul
Cat # GLYT12-P	Rat GLYT12 Control peptide # 2	**SIZE**: 100 ug

The amino acid glycine is a major inhibitory neurotransmitter in the spinal cord, brainstem, and retina, where it exerts its effects on the strychnine-sensitive glycine receptors. In addition, glycine acts as a coagonist with glutamate at the N-methyl-D-aspartate (NMDA) receptors. The termination of action of glycine, like that of most other neurotransmitters, is mediated by rapid reuptake into the presynaptic terminal or surrounding glial cells. Glycine transporters are members of the sodium/chloride-dependent transporter family (SOLUTE CARRIER FAMILY 6 (NEUROTRANSMITTER TRANSPORTER, GLYCINE), which share 40 to 50% amino acid similarity and are characterized by 12 putative transmembrane regions. Glycine receptor exists in 2 forms - GLYT1 and GLYT2. Form 1 has three other known isoforms (GLYT1a, GLYT1b, and GLYT1c) which may be produced by alternative spicing or promoter usage. Rodent Glyt1a and Glyt1b differ only by 10 amino acid at the N-terminus and expressed from the same gene. Although, the N-terminal part of mouse and rat GLYT1a is identical in mouse and rat, the N-terminus of GLYT1b are significantly different in these two species. The GLYT1c subtype has only been reported in humans. GLYT1a is expressed in CNS and peripheral organs. GLYT1b is localized in the CNS. Both neuron and Glial cells have GLYT1. More recent studies indicate that GLYt1b may not be brain specific. Immunolocalization studies on GLYT2 suggest that GLYT2 is responsible for terminating the neurotransmission at the strychnine synapses. GLYT1 is more widely expressed and it may play a role in regulation of glycine levels in NMDA receptor-mediated neurotransmission. Human Glyt2 (SLC6A5, human 797-aa, 11p15.2-p15.1, rat and mouse 799-aa) has 93% amino acid identity with rat Glyt-2. Human Glyt-2 has 3 isoforms. Expressed in medulla, and to a lesser extent in spinal cord and cerebellum

Source of Antigen and Antibodies

Antigen	20-aa peptide of rat GLYT1 (gene accession # P28572) **Designated (GLYT12-P or control peptide)** conjugated to KLH; **Epitope location**~ C-terminal, Cytoplasmic domain
Ab Host/type	Rabbit, polyclonal antiserum # GLYT21-S
2-ab	**Rabbit Anti-goat IgG-HRP conjugate** Cat # 30220 (AP, biotin, FITC conjugates also available)
-ve control	# 20011-1, Goat (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied in Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.
Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for neat serum using Chemiluminescence technique).

ELISA (1:10-50K; using 50-100 ng control peptide/well).

Histochemistry & Immunofluorescence: Recommended dilution ~1:5K but it must be optimized. We recommend using Cy3 conjugated secondary antibody. The tissue can be fixed in a 4% paraformaldehyde/d-0.4% picric acid-mixture in 0.16M sodium phosphate buffer, ph 6.9. The antibody labels the GLYT1 similar to what is reported with in-situ hybridization.

Specificity & Cross-reactivity

The rat GLYT12-P peptide shows 100% homology with human GLYT1a, GLYT1b, GLY1c, and 95% with mouse and bovine GLYT1. Antibody crossreactivity in various species is not known. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at the web site).

General References:

1. Kim KM et al (1994) Mol. Pharmacol. 45, 608; Smith KE et al (1992) Neuron 8, 927; Guatella J et al (1992) PNAS 89, 7189; Liu KR et al (1992) FEBS Lett. 305, 110; Jursky F et al (1996) J Neurochem. 67, 336

2. Citations of for ADI Antibodies (see updates at the web site)
Kallo I 2007 Neurochemistry International, In Press WB rat brain semi-quantitative

*This product is for In vitro research use only.

Related material available from ADI
Western Blot Recycling Kit (Strips blots in 5 minutes) Probe same blot with multiple antibodies

GLY12-S-P 71215A

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