ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Glutamate Transporter Antibodies (EAAC1/EAAT3)

Cat # EAAC11-P	Rat EAAC1 control/blocking peptide	**SIZE**: 100 ug
Cat # EAAC11-S	Rabbit Anti-Rat EAAC1 antiserum	**SIZE**: 100 ul
Cat # EAAC11-A	Rabbit Anti-Rat EAAC1 IgG, aff pure	**SIZE**: 100 ug

Glutamate is the main excitatory neurotransmitter in the brain. To date five glutamate Transporters have been cloned: **GLAST (EAAT1), GLT1 (EAAT2), EAAC1 (EAAT3), EAAT4, and EAAT5**. These transporters are believed to be critical in reducing potentially toxic extracellular concentration of glutamate by rapid uptake into nerve terminals and glial cells. Glutamate transporters (525-573 AA) display about 55% homology and are predicted to contain up to 6-10 transmembrane domains. Immunolocalization studies indicate that **GLT1** is localized in astroglial cells throughout the brain and spinal cord. **EAAC1** is specific for certain neurons and purkinje cells, and specifically enriched in cortex, hippocampus, and caudate-putamen and confined to presynaptic and postsynaptic elements. **GLAST** has been observed in both neuron and astroglia. It is most abundant in Bergmann glia, cortex, hippocampus and cerebellum. **EAAT4** has properties of ligand gated Cl-channel. It is localized mainly in cerebellar Purkinje cells in rat and human CNS. **EAAT5** has only been cloned from human. It is primarily expressed in retina.

EAAC1 glutamate transporter is a 523 amino acid (69 kDa) transmembrane protein (1). It is also known as glutamate transporter MEAAC1 in mice, REAAC1 in rat, EAT3 (Excitatory amino acid transporter 3/EAAT3) in rabbit, neuron specific glutamate transporter or high affinity glutamate transporter or EAT3 in human.

Source of Antigen and Antibodies:

Antigen	14aa peptide of rat EAAC1 **Designated (EAAC11-P or control peptide).** **Epitope location** ~ C-terminus, cytoplasmic
Ab Host/type	Rabbit, polyclonal, Unpurified antiserum (**cat #EAAC11-S**) Aff purified IgG, purified over the antigen-agarose (**cat #EAAC11-A**)
2ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available
-ve control	# 20009-1, Rabbit (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

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

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 20°C and powder at 4°C or -20°C..

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

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

Recommended Usage

Western Blotting 1:1K-5K for neat serum and 1-10 ug/ml for affinity pure antibody using Chemiluminescence technique (2).

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:10-50K for neat serum and 0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: not tested. we recommend the use of affinity purified IgG at 2-10 ug/ml in paraformaldehyde fixed sections of tissues (2).

Specificity & Cross-reactivity

The rat EAAC11-P peptide is unique to EAAC1 without significant homology to other glutamate transporters. It is 100% homologous in Mouse**,** Rat, rabbit, and Human. Antibody crossreactivity in various species is not established. 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: Kiryu, S. et al (1995) J. Neurosci. 15:7872-7878; Kanai, Y. et al. (1994) J. Biol. Chem. 269:20599-20606; Mukainaka, Y. et al (1995) Biochim. Biophys. Acta 1244:233-237, Rothstein, J. D. et al (1994) Neuron 13:713-725; Rothstein, J. D. et al (1995) Ann Neurol. 38:73-84.

Citations of ADI's antibodies for Glutamate related products (see updated list at:the web site)

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

EAAC11-S-A-P 71226S

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