ALPHA DIAGNOSTIC INTERNATIONAL

LIFE TECH Life Technologies™ Your Molecular & Cell Technology Partner

Product Specification Sheet

## Glutamate Aspartate Transporter (GLAST/EAAT1) Antibodies

| | | |
|---|---|---|
| **Cat** # GLAST11-P | Rat GLAST control peptide | **SIZE**: 100 ug |
| **Cat** # GLAST11-S | Rabbit Anti-Rat GLAST antiserum | **SIZE**: 100 ul |
| **Cat** # GLAST11-A | Rabbit Anti-Rat GLAST 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. It is also expressed in kidney, heart, lung and muscle. **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.

### Source of Antigen and Antibodies

| | |
|---|---|
| **Antigen** | 15-aa peptide from **rat GLAST (1)**; **Designation (#GLAST11-P, control/blocking peptide**) conjugated to KLH. **Epitope location** ~ C-terminus |
| **Ab Host/type** | Rabbit, Polyclonal unpurified antiserum (#**GLAST11**-S) and IgG, purified over antigen-agarose (Cat # **GLAST11**-A) |
| **2-Ab** | 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 antiserum and 1-10 ug/ml for affinity pure IgG using Chemiluminescence technique. This antibody has been used in many studies (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**: We recommend the use of affinity purified IgG at 2-10 ug/ml in paraformaldehyde fixed sections of tissues (see published refs Deitch JS et al (2002).

### Specificity & Cross-reactivity

The rat GLAST11-P peptide is 100% conserved in mouse, human, bovine, and 93% in chicken, dog. The GLAST11-P has no significant sequence homology to other glutamate transporters. 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**: **(1).** Tanaka, K. (1993) Neurosci. Lett. **159**:183; Storck, T. et al (1992) PNAS **89**:10955; Tanaka, K. (1993) Neurosci. Lett. **16**:149; Shashidharan, P. et al (1993) BBA **1216**:161; Rothstein, J. D. et al (1994) Neuron **13**:713

**(2) Citations of ADI's Antibodies** (see web site for updated list)

**(2).** Alexander GM et al (2000) J. Neurochem. 74, 1666; Ueda Y eat al (2000) Exp. Brain Res. 133, 334-340; Ueda Y et al (2000) Epilepsy Res. 39, 201; Ueda Y et al (2001) J. Neurochem. 76, 892; Deitch JS et al (2002) J. Neurosci. 193, 117;

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

### Related material available from ADI

Anti-GLAST, EAAC1, GLT1, EAAt4, EAAT5, GTRAP41, GTRAP48, VGLUT1/BNPI, VGLUT-2/DNPI & GABA Transporters (GAT1-3)

GLAST11-S-A-P 71226S

**India Contact**:
**Life Technologies (India) Pvt. Ltd.**
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com