ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

**GTRAP41 (Glutamate Transporter EAAT4 Associated Protein) Antibodies**

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| ☐ **Cat** # GTRAP41 -P | Rat GTRAP41 control/blocking peptide | **SIZE**: 100 ug |
| ☐ **Cat** # GTRAP41 -S | Rabbit Anti-Rat GTRAP41 antiserum | **SIZE**: 100 ul |
| ☐ **Cat** # GTRAP41 -A | Rabbit Anti-Rat GTRAP41 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**. Most recently two proteins, designated **GTRAP41** and **GTRAP48** (for **glutamate transporter EAAT4 associated protein**) that specifically interact with the intracellular carboxy-terminal domain of EAAT4 have been cloned and characterized. The proteins are proposed to modulate glutamate transport activity. GTRAP41 is 2388 aa protein (~270 kDa). It has seventeen 16-amino acid spectrin repeats, 2 alpha-actinin domains, and a pleckstrin homology domain. GTRAP48 is 1527 aa (~170 kDa). GTRAP48 possesses a PDZ domain, a regulatory G protein-signaling sequence, tandem dbl homology and pleckstrin homology domains characteristic of guanine nucleotide exchange factors for the Rho family of G proteins, and 2 proline-rich sequences. brain tissue. GTRAP41 and GTRAP48 are mainly expressed in the brain, and lower levels were also detected in liver and kidney. EAAT4, GTRAP41, and GTRAP48 are all immunolocalized in cerebellar Purkinje cell soma and dendrites, with little axonal staining. GTRAP48 was found to activate Rho. Expression of GTRAP48 induced the reorganization of the actin cytoskeleton. When GTRAP41 and GTRAP48 are coexpressed, GTRAP41 colocalized with actin in structures that resemble actin-stress fibers, a typical Rho-dependent effect.
Rat GTRAP41/beta-spectrin 3 is 2388 aa protein (human 2390) (1). A

## Source of Antigen and Antibodies

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| **Antigen** | Rat GTRAP41/beta-spectrin 3 is 2388 aa protein (human 2390) (1). A 15-aa peptide from **rat GTRAP41-alpha (1)**; **Designation (#GTRAP41 -P, control/blocking peptide**) conjugated to KLH. **Epitope location** ~ C-terminus |
| **Ab Host/type** | Rabbit, Polyclonal unpurified antiserum (#**GTRAP41**-S) and IgG, purified over antigen-agarose (Cat # **GTRAP41**-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 0.1% 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 antibody using Chemiluminescence technique. GTRAP41 is ~270 kDa protein (1). (see published refs using this antibody in 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**: (see published refs using this antibody in 2)..

## Specificity & Cross-reactivity

Rat GTRAP41-P peptide is 100% identical in mouse and 86% conserved in human GTRAP41/beta-spectrin 3. The antibodies have been shown to crossreact with mouse and human GTRAP41 (2). Antibody crossreactivity in various other 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**:
Jackson M (2001) Nature 410, 89; Ohara O (1998) Brain Res. Mol. Brain Res. 57, 181; Stanekewich MC (1998) PNAS 95, 14158; Rumenapp U (1999) FEBS Lett. 459, 313; Fukuhara JBC 274, 5868

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

Pignataro L, 2005, Mol Cell Neurosc. 28, 440-451, WB, IHC, IP

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

GTRAP41-S-A-P 240916 71226S

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