ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

GTRAP48 (Glutamate Transporter EAAT4 Associated Protein) Antibodies

Cat # GTRAP48 -P	Rat GTRAP48 control/blocking peptide	**SIZE**: 100 ug
Cat # GTRAP48 -S	Rabbit Anti-Rat GTRAP48 antiserum	**SIZE**: 100 ul
Cat # GTRAP48 -A	Rabbit Anti-Rat GTRAP48 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. 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 forthe 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. Overexpression of GTRAP41 and GTRAP48 enhanced glutamate uptake. GTRAP41 and GTRAP48 may therefore enhance glutamate transport either through an increase in the catalytic rate of the transporter or through an increase in cell- surface availability or by stabilizing EAAT4 at the membrane.

Source of Antigen and Antibodies

Antigen	Rat GTRAP48/RhoGEF is 1527 aa protein (human 1522) (1). A 15-aa peptide of rat GTRAP48 (protein accession # Q9ES67 (1) ;**Designated (GTRAP48-P or control peptide)** conjugated to KLH. **Epitope location** ~ N-terminus
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (**cat # GTRAP48-S**) orIgG purified over antigen-agarose (**Cat # GTRAP48-A**)
2-Ab	Cat # 20320, goat anti-rabbit IgG- HRP (AP, biotin, FITC conjugates also available).
-ve IgG Control	Cat # 20009-1, Control Rabbit (non-immune) Serum IgG forELISA, Western of IHC

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100 ul Solution Lyophilized
Supplied in Buffer: 0.1% azide
Reconstitute powder in 100 ul PBS

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

Control/blocking peptide
100 ug/100 ul Solution Lyophilized
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 ECL. GTRAP48 is ~170 kDa (1). NOT TESTED

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

Specificity & Cross-reactivity

The rat GTRAP48-P peptide is 100% conserved in mouse and 92% in human GTRAP48. Antibody cross reactivity 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: Jackson M et al (2001) Nature 410, 89-93; Ohara O et al (1998) Brain Res. Mol. Brain res. 57, 181; Stanekewich MC et al (1998) PNAS 95, 14158; Rumenapp U eat al (1999) FEBS Lett. 459, 313; Fukuhara JBC 274, 5868-5879.

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.*

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