ALPHA DIAGNOSTIC INTERNATIONAL

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PRODUCT SPECIFICATION SHEET

GABA Transporter (GAT3) Antibodies

Cat # GAT31-P	Rat GAT3 control/blocking peptide	**SIZE**: 100 ug
Cat # GAT31-S	Rabbit anti-Rat GAT3 antiserum	**SIZE**: 100 ul
Cat # GAT31-A	Rabbit anti-Rat GAT3 IgG (aff pure)	**SIZE**: 100 ug

GABA is a major inhibitory neurotransmitter and the GABAergic transmission is terminated by the rapid Na+/Cl-dependent uptake of through GABA transporters. It has been subdivided into neural and glial uptake systems on the basis of pharmacological properties. Recently, molecular cloning studies have identified multiple subtypes of GABA transporters (GAT1, GAT2, GAT3; and betaine GABA transporter (BGT-1). There is ~50% homology between various GABA transporter subtypes. GABA transporters are predicted to contain 12 potential transmembrane domains. The NH2 and COOH-termini are predicted to be intracellular. Two of the high affinity (Km~10 uM) rat GABA transporters (GAT2 and GAT3/GAT-B) share higher amino acid identity (68% and 65%, respectively) with the kidney betaine transporter than with GAT-1 (52% AA identity). GAT1 and GAT3 have been detected in various parts of the brain while GAT2 is found in many tissues. It appears that GAT1 and GAT3 are involved in distinct GABAergic transmission while GAT2 may be important in non-neural functions.

Source of Antigen, Antibodies, and Positive Controls

Antigen	15-aa peptide from **rat GAT3 (1)**; (Gene Accession #P31647) **Designation (# GAT31-P, control/blocking peptide**) conjugated to KLH; epitope location ~ C-terminus
Antibody host/type	Rabbit, Polyclonal unpurified antiserum (#**GAT31**-S) and IgG, purified over antigen-agarose (Cat # **GAT31**-A), purified over antigen-Agarose
Secondary Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
Negative Control Ab	Non-immune rabbit IgG (Cat # 20009-1) to be used as –ve control for ELISA, WB, IHC etc.

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified, undiluted)

100 ul/vial solution — 50 ul/vial lyophilized powder

contains 0.05% sodium azide

Reconstitute powder 50 ul or 100 ul PBS

Affinity pure IgG

100 ug/100ul solution — 50 ug/50 ul lyophilized powder

Buffer: PBS+0.1% BSA+0.05% azide

Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide

100 ug/100 ul solution — 50 ug/50 ul lyophilized powder

Buffer: PBS pH 7.5, contains 0.05% sodium azide

Reconstitute powder in PBS at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials for less than a week at 4oC.

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

We recommend the use of 0.5-1% milk in all primary/secondary antibody-enzyme conjugate incubations in order to suppress non-specific bands.

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.

Histochemistry & Immunofluorescence: we recommend the use of affinity purified antibody at 2-10 ug/ml in paraformaldehyde fixed sections of tissues. (see published refs using this antibody in 2).

Specificity & Cross-reactivity

The GAT31-P peptide was found unique to GAT3 without significant homology to any other known eukaryotic protein. It is 100% conserved in Mouse, and 92% in human GAT3. Antibody crossreactivity in various species has not been studied. 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: Liu, Q. R. et al (1993) J. Biol. Chem. **268**:2106-2112; Clark, J. A. et al (1992) Neuron **9**:337-348; Borden, L. A. et al (1994) Recept. Channels **2**: 207-213; Ikegaki, N. et al (1994) Mol. Brain Res. **26**:37-46.

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

Ueda Y 2003 Mol. brian. Res. 116, 1-6 WB,
Ueda Y 2000 Brain Research Bulletin, 52, 357, WB
Garduno J, 2002 J. Neurosci. 22: 9176-9184, IHC
Ueda Y 2000 Exp. Brain Res. 133, 334-340. WB,
Ueda Y, 2001, J. Neurochem. 2001 76: 892-900, WB

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

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