

Product Specification Sheet

Betaine/GABA Transporter (BGT-1) Antibodies

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|---------------------|----------------------------------------|---------------------|
| Cat. BGT11-S | Rabbit Anti-Rat BGT-1 antisera | SIZE: 100 ul |
| Cat. BGT11-A | Rabbit Anti-Rat BGT-1, Ig G (aff pure) | SIZE: 100 ug |
| Cat. BGT11-P | BGT-1 Control/blocking peptide | 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 (K_m~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. Betaine/GABA Transporter (BGT-1) is a 614 amino acid long integral membrane protein belonging to the Sodium: Neurotransmitter Symporter family (1).

Source of Antigen and Antibodies

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|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Antigen | 15-aa peptide of Rat BGT1 Designated (BGT11-P or control peptide/blocking peptide) conjugated to KLH; epitope location ~ C-terminus, Cytoplasmic |
| Antibody host/type | Rabbit, Polyclonal unpurified antiserum (Cat # BGT11-S); Rabbit, aff pure polyclonal IgG (Cat # BGT11-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 contains 0.05% sodium azide
 50 ul/vial lyophilized powder
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

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

ELISA (1:10K-1:100K; using 50-100 ng of control peptide/well).

Histochemistry & Immunofluorescence: We recommend the use of affinity-purified antibody at 2-20 ug/ml.

Specificity & Cross-reactivity

Rat BGT11-P sequence is conserved 88% in mouse, 68% in human, dog and 62% in rabbit BGT-1 (1). The peptide shows no significant homology with other known proteins. The BGT-1 antibody cross-reactivity in other species is not known. 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) Burnham, C.E. et al., (1996) *BBA* **1284** 4-8; Rasola, A. et al., (1995) *FEBS Lett.* **373**, 229-233; Borden et al., (1995) *J. Neurochem.* **64**, 977-984.

Citations of ADI's antibodies for Transporters (see updated list at: www.4adi.com/vlr/vmat.html)

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

Related material available from ADI:

Antibodies against Taurine Transporter; Creatine Transporter; GAT1-3; GABA Transporter; Bombesin Receptor; Betaine/GABA Transporter etc.

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