

Product Specification Sheet

**GABA-A Receptor Gamma 2 Subunit (GAG2) Antibodies**

Cat. # GAG21-P	<b>Rat GAG2 control/blocking peptide # 1</b>	<b>SIZE:</b> 100 ug
Cat. # GAG21-S	<b>Rabbit Anti-Rat GAG2 antiserum # 1</b>	<b>SIZE:</b> 100 ul
Cat. # GAG21-A	<b>Rabbit Anti-Rat GAG2 IgG # 1 (aff pure)</b>	<b>SIZE:</b> 100 ug

GABA ( $\gamma$ -amino butyric acid) is the most abundant neurotransmitter in mammalian brain. GABA exerts its effects through ionotropic ligand-gated GABA<sub>A</sub>, GABA<sub>C</sub> and GABA<sub>B</sub> receptors (**GABA<sub>B</sub>Rs**). A family of GABA-A receptors subtypes exists, which are generated by alternative splicing of alpha 1-6, beta 1-4, gamma 1-4, delta, epsilon, pie, theta, and rho1-3 to form a heteromeric (pentameric?) protein complexes. Various GABA-A subunits show distinct patterns of temporal and spatial expression that may imply its tissue specific physiological role (1). **GABA A (GAA) receptor** proteins (450-627 aa) are characterized by the presence of a cleavable signal peptide, a large extracellular N-terminus, 3 TM (transmembrane) domains, a large cytoplasmic domain followed by TM4 and C-terminal extracellular domain. The regions between TM3-4 and the large cytoplasmic loop are least conserved among various GAA subunits, which may confer subunit specific functionality. GAA in the brain are the targets of many clinically important drugs. Rat GAG2 protein is 466 aa (mouse 466/474 aa; human 467 aa).

**Source of Antigen and Antibodies**

<b>Antigen</b>	30-aa peptide from <b>rat GAG2 (1)</b> ; <b>Designation (GAG21-P, control/blocking peptide)</b> ; epitope location ~ N-terminus, Extracellular domain
<b>Antibody host/type</b>	Rabbit, Polyclonal unpurified antiserum (Cat # GAG21-S); Rabbit, Polyclonal IgG (Cat # GAG21-A), purified over antigen-Agarose
<b>Secondary Ab</b>	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
<b>Negative Control Ab</b>	Non-immune rabbit IgG (Cat # 20009-1) to be used as -ve control for ELISA, WB, IHC etc.

**Form & Storage of Antibodies/Peptide Control**

**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 vials for less than a week at 4oC.

**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:** 1-10  $\mu$ g/ml; using affinity pure antibody (chemiluminescence technique).

**ELISA:** 1:100K; using 50-100 ng control peptide/well.

**Histochemistry & Immunofluorescence:** Not tested; we recommend the use of affinity purified antibody at 2-10  $\mu$ g/ml.

**Specificity & Cross-reactivity**

The 30 AA rat **GAG21-P control peptide** is 100% conserved in bovine, human, and mouse GAG2. It is ~80% conserved in chicken GAB2. Significant homology of GAG21-P is also seen with rat GAG1 (64%), rat GAG3 (55%). It is not clear if anti-GAG21 actually react with other gamma subunits. However, no significant homology of GAG21-P is observed with other GAA subunits (alpha, beta etc.). Antibody cross-reactivity of anti-GAG21 in various species has also 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:** (1) Mehta Ak and Ticku MK et al (1999) Brain Res. Rev. 29, 196-271 (review); Whiting PJ et al (1999) Ann. NY Acad. Sci. 868, 645-653 (review); Siegart W et al (1999) Neurochem. Intl. 34, 379-385 (review); (2). Shivers BD et al (1989) Neuron 3, 327-337

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

Wang J, 2003, Journal of Neurosci. 23:826, WB, , Sergeeva OA, 2002, Eur. J Neurosci. 16, 1472, , IHC,, Balasubramanian S, 2004, JBC, 279: 18840 - 18850, WB, , Vassias I, 2005, Molecular Brain Research, In Press, WB, IHC,, Mehta AK/Ticku M, 2005, Brain Res. 1031, 134-137, , IP Kang J, 2004, J. Neurosci., Oct 2004; 24: 8672 - 8677, WB, , IP Hu Y, 2004, PNAS,101: 5559 - 5564, WB, ,

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

GAG21-S-A-P

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