ALPHA DIAGNOSTIC INTERNATIONAL

LIFE TECH Life Technologies™ Your Molecular & Cell Technology Partner

Product Specification Sheet

GABA-A Receptor Alpha 1 Subunit (GAA1) Antibodies

Cat. # GAA12-P	Rat GAA1 control peptide # 2	**SIZE**: 100 ug
Cat. # GAA12-S	**Rabbit** Anti-Rat GAA1 antiserum # 2	**SIZE**: 100 ul
Cat. # GAA12-A	**Rabbit** Anti-Rat GAA1 IgG # 2 (affinity pure)	**SIZE**: 100 ug

GABA (γ-amino butyric acid) is the most abundant neurotransmitter in mammalian brain. GABA exerts its effects through ionotropic ligand-gated $GABA_A$, $GABA_C$ and $GABA_B$ receptors (**$GABA_BRs$**). 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 genes are distributed as clusters throughout the human genome (chromosomes 4, 5, 15, and X; delta subunit on chromosome 1). GAA in the brain are the targets of many clinically important drugs. Human GAA1 (chromosome 5q34-q35) protein is 456 aa (rat/mouse 455 aa). Defects in GABRA1 are a cause of juvenile myoclonic epilepsy (JME), a common epileptic syndrome characterized by febrile seizures, onset in adolescence (rather than in childhood) and myoclonic jerks.

Source of Antigen and Antibodies

Antigen	14-aa peptide from rat GAA1 (1); Designation (GAA12-P, control peptide/ blocking peptide) conjugated to KLH; Epitope location ~N-terminus, Extracellular domain
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#GAA12-S) and IgG, purified over antigen-agarose (Cat # GAA12-A)
2-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

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 µg/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 µg/ml.

Specificity & Cross-reactivity

The Rat GAA12-P control peptide is 100% conserved in mouse, human, bovine, and chicken GAA1. No significant homology is detected with other GABA A receptor subtypes or other receptors. Antibody cross-reactivity 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: (1) Garrett KM et al (1988) BBRC 156, 1039; Schofiled PR et al (1989) FEBS Lett. 244, 361; Hirouchi M et al (1989) Neurochem Intl. 15, 33; 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);

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

Wang J (2003) Journal of Neuroscience, 23(3):826–836, WB

*This product is for In vitro research use only.

GAA12-S-A-P 71208J

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com