

Product Specification Sheet

GABA-A Receptor Alpha 1 Subunit (GAA1) Antibodies

Cat. # GAA14-A

Rabbit Anti-Human GAA1 IgG # 4, aff 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 afebrile seizures, onset in adolescence (rather than in childhood) and myoclonic jerks.

Source of Antigen and Antibodies

Antigen	Recombinant Human GAA1 fragment (166-269 aa) (1); Epitope location ~C-terminus, Extracellular domain
Ab Format	Protein A purified IgG in PBS pH 7.4 containing 0.5% BSA and 0.05% azide
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

Storage

Short-term: unopened, undiluted vials for less than a week at 4°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: 1-10 μ 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 μ g/ml.

Specificity & Cross-reactivity

Antibody recognizes bovine, human, and murine GAA 166-269 sequences. Antibody cross-reactivity in various species has not been studied.

General References: (1) Schofield PR et al (1989) FEBS Lett. 244, 361-364; Garrett KM et al (1988) BBRC 156, 1039-1045; Crosette P et al (199 Nat. Genet. 31, 184-189; Nature 328, 221-227; Mehta Ak and Ticku MK et al (1999) Brain Res. Rev. 29, 196-271 (review).

Citations of ADI antibodies (see complete list at the web site).

Wang J (2003) "Interaction of Calcineurin and Type-A GABA Receptor α 2 Subunits Produces Long-Term Depression at CA1 Inhibitory Synapses", Journal of Neuroscience, 23(3):826-836, WB

*This product is for In vitro research use only.

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

100 ug/100ul solution lyophilized powder
Buffer: 100 mM Tris, pH 7.5, 0.2% BSA
contains 0.05% sodium azide

Related material available from ADI

Antibodies GABA-A receptors (α , β , and γ -subunits), GABAR associated protein, GBR1a, 1b, and GBR2, GABA transporters (GAT-3), and Anti-GABA antibodies.

GAA14-A 71208J

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