ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

$GABA_B$ Receptor 1a (GBR1a) Antibodies

Cat. # GBR1A11-P	Rat GBR1a Control Peptide # 1	**SIZE**: 100 ug
Cat. # GBR1A11-S	**Rabbit** Anti-Rat GBR1a Antiserum # 1	**SIZE**: 100 ul
Cat. # GBR1A11-A	**Rabbit** Anti-Rat GBR1a IgG #1 (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 (**$GABA_B$Rs).** Presynaptic $GABA_B$Rs inhibit neurotransmitter release by down regulating high voltage activated, Ca+2 channels, whereas postsynaptic $GABA_B$Rs decrease neuronal excitability by activating a prominent inwardly rectifying K+ (Kir) conductance that underlies the late inhibitory postsynaptic potential.

Two N-terminal splice variants of **$GABA_B$R1** (also called **GBR1**), **$GABA_B$R1a** (**GBR1a**, rat 960 aa, apparent mol wt ~130 kDa; human 961 aa) and **$GABA_B$R1b** (**GBR1b**; rat 844 aa, apparent mol. wt 100 kDa; human 844) have been cloned and characterized. Human and rat GBR1a and GBR1b share 99% sequence homology. $GABA_B$Rs are characterized by the presence of a cleavable signal peptide, a large extracellular N-terminus, 7 TM domains, and C-terminal, cytoplasmic domain. $GABA_B$Rs are expressed in all major areas of the brain. Recently **$GABA_B$R2** (or **GBR2**) has been cloned from rat (940 aa) and human (941 aa). GBR2 forms heterodimer with GBR1 through interaction at the intracellular C-terminal regions. Heterodimerization appears to be important in transporting GBR1 to the membrane and expression of functional receptors. GBR2 also co-localized with GBR1.

Source of Antigen and Antibodies

Antigen	18aa peptide of rat GBR1 **Designated (GBR1A11-P or control peptide)** conjugated to KLH; epitope location ~ N-terminus, Extracellular
Antibody host/type	Rabbit, Polyclonal unpurified antiserum (Cat # GBR1A11-S); Rabbit, Polyclonal IgG (Cat # GBR1A11-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

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 18 AA rat GBR1A11-P control peptide is 100% conserved in human GBR1a (961 aa) and 94% in alternatively spliced GBR1c (899 aa), and 95% in mouse GBR1a. No significant homology is detected with GBR1b or GBR2 or other GABA receptors. Antibody cross-reactivity in various species has not been studied. The 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) Kaupmann K et al (1997) Nature 386, 239; Kaupmann K et al (1998) PNAS 95, 14991; Kaupmann K et al (1998) Nature 396, 683; White JH et al (1998) Nature 396, 679; Jones KA et al (1998) Nature 396, 674, Kuner R et al (1999) Science 283, 74.

Citations of ADI's antibodies for GABA (see updated list at www.4adi.com\flr\gaba.html)

*This product is for In vitro research use only.

Related material available from ADI

GBR1A11-S-A-P 71211J

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