

Product Information

Anti-GABA_A Receptor (α 5 subunit), Cytosolic Loop produced in rabbit, affinity isolated antibody

Catalog Number **G9294**

Product Description

Anti-GABA_A Receptor (α 5 subunit), Cytosolic Loop, is produced in rabbit using a fusion protein of MBP with the amino acid sequence representing the cytosolic loop of the rat GABA_A receptor (α 5 subunit) as immunogen. The antiserum is purified by affinity chromatography using columns containing the antigen.

The antibody specifically detects GABA_A receptor (α 5 subunit), protein with apparent molecular mass of 55 kDa, in rat brain membrane fractions. It has been used in immunoblotting and immunoprecipitation.

The inhibitory neurotransmitter GABA (γ -aminobutyric acid) signals through two distinct types of pre- and postsynaptic receptors, GABA_A and GABA_B. Both GABA receptors can mediate depression of synaptic transmission and contribute to the inhibition controlling neuronal excitability. GABA_A and GABA_B receptors differ with regard to their ionic characteristics and pharmacological properties. The GABA_A receptor is an ionotropic receptor that forms the GABA gated chloride channel and consists of several heterogeneous subunits with membrane recognition sites for benzodiazepines. A family of GABA_A receptor subtypes has been delineated. These subtypes are generated by the co-assembly of five polypeptides selected from the α 1- α 6, β 1- β 3, γ 1- γ 3, δ , ϵ , π , and θ subunits.

The gene transcripts and the polypeptides have distinct patterns of spatial expression such that the GABA_A receptor subtypes have defined localizations that are presumed to reflect their physiological function. For example, serotonergic and GABAergic neurons selectively express distinct patterns of β subunits, suggesting they possess distinct GABA_A receptor subtypes. Serotonergic neurons express strong α 3 immunoreactivity but show no α 1 immunoreactivity. In contrast, GABAergic neurons express both α 1 and α 3 subunits.

GABA_A receptor subtypes also vary with respect to developmental expression patterns. Developmental changes in the GABA_A receptor subunit composition

and the resulting pharmacology will be important in understanding the type of GABA-mediated transmission that takes place between neuronal contacts in the neonatal and, ultimately, the mature brain.

Reagent

Supplied in 10 mM HEPES, pH 7.5, 150 mM NaCl, 100 μ g/ml BSA, and 50% glycerol.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For long term storage -70°C is recommended, but shorter term storage at -20°C is also acceptable as aliquots may be taken without freeze/thawing due to the presence of 50% glycerol. Stock solutions are stable for a minimum of 1 year at -20°C .

Product Profile

Immunoblotting: a working dilution of 1:1000 is recommended

Immunoprecipitation: use 20 μ g antibody for 150 μ L dodecylsulfate extracts of rat forebrains.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by a titration test.

References

1. Zuzula, J., Fuchs, K., and Sieghart, W. Separation of α 1, α 2 and α 3 subunits of the GABA_A-benzodiazepine receptor complex by immunoaffinity chromatography. *Brain Res*, **563**, 325-8 (1991).
2. Bencsits, E., Ebert, V., Tretter, V., and Sieghart, W. A significant part of native γ -aminobutyric acid_A receptors containing α 4 subunits do not contain γ or δ subunits. *J. Biol. Chem.*, **274**, 19613-19616. (1999).

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