



Product Information

Anti-GABA_A Receptor (α5 subunit), Cytosolic Loop

Developed in Rabbit, Affinity Isolated Antibody

Product Number **G 9294**

Product Description

Anti-GABA_A Receptor (α5 subunit), cytosolic loop, is developed in rabbit using a fusion protein of MBP with the amino acid sequence representing the cytosolic loop of the rat GABA_A receptor (α5 subunit) as immunogen. The antiserum is purified by chromatography using affinity columns containing the antigen.

The antibody specifically detects GABA_A receptor α5 subunit (protein with apparent molecular mass of 55 kDa) in rat brain membrane fractions. It has been used in immunoblotting and immunoprecipitation applications.

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. Over the past decade, a family of GABA_A receptor subtypes has been delineated. These subtypes are generated by the co-assembly of five polypeptides selected from the the α1-α6, β1-β3, γ1-γ3, 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 α3 immunoreactivity but show no α1 immunoreactivity. In contrast, GABAergic neurons express both α1 and α3 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

The antibody is supplied in 10 mM HEPES, pH 7.5, 150 mM NaCl, 100 ug/ml BSA, and 50% glycerol.

Storage/Stability

Store at -20 °C. Due to the presence of 50% glycerol the antibody will remain in solution. For extended storage, centrifuge the vial briefly before opening and prepare working aliquots. To ensure accurate dilutions mix gently, remove excess solution from pipette tip with clean absorbent paper, pipette slowly. The antibody is stable for at least 24 months when stored at -20 °C. Defrosted aliquots in use should be stored at 4 °C. Avoid repeated freezing and thawing.

Product Profile

A recommended working dilution of 1:1000 is determined by immunoblotting. For immunoprecipitation use 20 μg antibody for 150 μL 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. Zezula, J., Fuchs, K., and Sieghart, W. Separation of α₁, α₂ and α₃ 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 α₄ subunits do not contain γ or δ subunits. *J. Biol. Chem.*, **274**, 19613-19616. (1999). AH/PHC 07/04

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