Anti-GABA<sub>A</sub> Receptor (β<sub>1</sub> subunit), Cytosolic Loop
Developed in Rabbit, Affinity Isolated Antibody

Product Number G 9419

Product Description
Anti-GABA<sub>A</sub> Receptor (β<sub>1</sub> subunit), cytosolic loop, is developed in rabbit using a fusion protein with the amino acid sequence representing the cytosolic loop of the rat GABA<sub>A</sub> receptor (β<sub>1</sub> subunit) as immunogen. The antiserum is purified on an affinity column containing the antigen fusion protein.

The antibody specifically detects GABA<sub>A</sub> receptor β<sub>1</sub> subunit (protein with apparent molecular mass of 51-54 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<sub>A</sub> and GABA<sub>B</sub>. Both GABA receptors can mediate depression of synaptic transmission and contribute to the inhibition controlling neuronal excitability. GABA<sub>A</sub> and GABA<sub>B</sub> receptors differ with regard to their ionic characteristics and pharmacological properties. The GABA<sub>A</sub> 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<sub>A</sub> receptor subtypes has been delineated. These subtypes are generated by the co-assembly of five polypeptides selected from the α<sub>1</sub>-α<sub>6</sub>, β<sub>1</sub>-β<sub>3</sub>, γ<sub>1</sub>-γ<sub>3</sub>, δ, ε, π, and θ subunits.

The gene transcripts and the polypeptides have distinct patterns of spatial expression such that the GABA<sub>A</sub> receptor subtypes have defined localizations that are presumed to reflect their physiological function. For example, serotonergic and GABA<sub>A</sub>ergic neurons selectively express distinct patterns of β subunits, suggesting they possess distinct GABA<sub>A</sub> receptor subtypes. Serotonergic neurons express strong α3 immunoreactivity but show no α1 immunoreactivity. In contrast, GABA<sub>A</sub>ergic neurons express both α1 and α3 subunits.

GABA<sub>A</sub> receptor subtypes also vary with respect to developmental expression patterns. Developmental changes in the GABA<sub>A</sub> 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 μg/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. 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 in rat brain membrane fractions. 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

AH/PHC 07/04