

PRODUCT INFORMATION

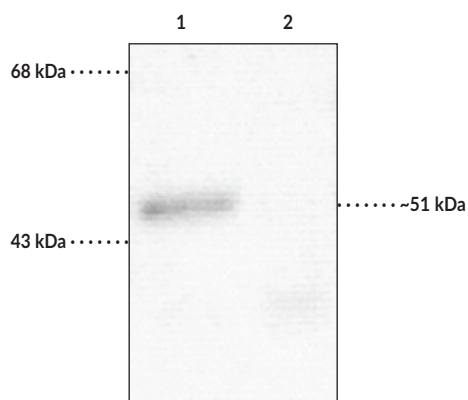


GABA_A Receptor α_1 Subunit Polyclonal Antibody Item No. 29266

Overview and Properties

Contents: This vial contains 100 μ l of affinity-purified polyclonal antibody.
Synonyms: γ -Aminobutyric Acid Receptor Subunit α_1 , GABA_A Receptor Subunit α_1 , GABRA1
Immunogen: Fusion protein from the cytoplasmic loop of the α_1 subunit of the rat GABA_A receptor
Molecular Weight: ~51 kDa
Species Reactivity: (+) Mouse, Rat
Storage: -20°C (as supplied)
Stability: \geq 1 year
Storage Buffer: 10 mM HEPES, pH 7.5, with 150 mM sodium chloride, 100 μ g/ml BSA, and 50% glycerol
Host: Rabbit
Applications: Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:100 and 1:1,000, respectively. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



Lane 1: WT animals
Lane 2: α_1 KO animals

WB of mouse forebrain lysates from wild-type (WT) and α_1 knockout (KO) animals showing specific immunolabeling of the ~51 kDa α_1 subunit of the GABA_A receptor. The labeling was absent from a lysate prepared from α_1 KO animals.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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Description

GABA_A receptors are ligand-gated chloride channels that mediate the effects of the inhibitory neurotransmitter GABA in the CNS.^{1,2} They are postsynaptic heteropentameric receptors that contain protein subunits from the following isoforms: α_{1-6} , β_{1-4} , γ_{1-3} , δ , ϵ , π , θ , and ρ_{1-3} , arranged around a central pore. Phasic inhibitory synaptic transmission is regulated by $\alpha_1\beta_2\gamma_2$ subunit-containing GABA_A receptors, the major isoform found in the brain.^{2,3} The α subunit of GABA_A receptors interfaces with a β subunit to form the GABA binding site that initiates GABA-induced action potentials and forms the benzodiazepine binding site with the γ subunit. Mutations in *GABRA1*, which encodes the α_1 subunit isoform, are found in patients with autosomal dominant juvenile myoclonic epilepsy (JME), infantile spasms, and childhood absence epilepsy (CAE).² *GABRA1* expression is upregulated in ipsilateral, but not contralateral, perilesional tissue in a rat model of cortical ischemia-reperfusion injury.⁴ Cayman's GABA_A Receptor α_1 Subunit Polyclonal Antibody can be used for immunohistochemistry (IHC) and Western blot (WB) applications. The antibody recognizes the GABA_A receptor α_1 subunit at approximately 51 kDa from mouse and rat samples.

References

1. Crestani, F. and Rudolph, U. Behavioral functions of GABA_A receptor subtypes - the Zurich experience. *Adv. Pharmacol.* **72**, 37-51 (2015).
2. Hirose, S. Mutant GABA_A receptor subunits in genetic (idiopathic) epilepsy. *Prog. Brain Res.* **213**, 55-85 (2014).
3. Wongsamitkul, N., Maldifassi, M.C., Simeone, X., *et al.* α subunits in GABA_A receptors are dispensable for GABA and diazepam action. *Sci. Rep.* **7(1)**, 15498 (2017).
4. Neumann-Haefelin, T., Bosse, F., Redecker, C., *et al.* Upregulation of GABA_A-receptor α_1 - and α_2 -subunit mRNAs following ischemic cortical lesions in rats. *Brain Res.* **816(1)**, 234-237 (1999).