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Product Datasheet

# Anti-GABA$_A$ Receptor α1

KO Validated

## Overview

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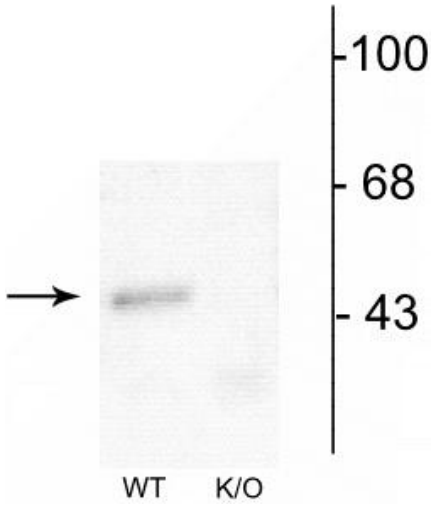
|---|---|
| **Catalog #** | 811-GA1C |
| **Host Species** | Rabbit Polyclonal |
| **Format** | Antigen Affinity Purified |
| **Applications** | WB 1:1000  IHC 1:100 |
| **Species Tested** | Mouse, Rat |
| **Expected Reactivity** | Bovine, Canine, Human, Non-Human Primate |
| **Immunogen** | Fusion protein from the cytoplasmic loop of the alpha 1 subunit of rat GABA$_A$ receptor. |
| **Molecular Weight** | 51 kDa |
| **Cite this Antibody** | PhosphoSolutions Cat# 811-GA1C, RRID:AB_2492099 |

## Images




Western blot of mouse forebrain lysates from wild type (WT) and $\alpha_1$-knockout (K/O) animals showing specific immunolabeling of the ~51 kDa $\alpha_1$-subunit of the GABA$_A$-R. The labeling was absent from a lysate prepared from $\alpha_1$-knockout animals.

## Details

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| **Target Description** | Gamma-aminobutyric acid (GABA) is the primary inhibitory neurotransmitter in the central nervous system, causing a hyperpolarization of the membrane through the opening of a Cl− channel associated with the $GABA_A$ receptor ($GABA_A$-R) subtype. $GABA_A$-Rs are important therapeutic targets for a range of sedative, anxiolytic, and hypnotic agents and are implicated in several diseases including epilepsy, anxiety, depression, and sub-stance abuse. The $GABA_A$-R is a multimeric subunit complex. To date six αs, four βs and four γs, plus alternative splicing variants of some of these subunits, have been identified (Olsen and Tobin, 1990; Whiting et al., 1999; Ogris et al., 2004). Injection in oocytes or mammalian cell lines of cRNA coding for α- and β-subunits results in the expression of functional $GABA_A$-R s sensitive to GABA. However, coexpression of a γ-subunit is required for benzodiazepine modulation. The various effects of the benzodiazepines in brain may also be mediated via different α-subunits of the receptor (McKernan et al., 2000; Mehta and Ticku, 1998; Ogris et al., 2004; Pöltl et al., 2003). |
| **Specificity** | Specific for endogenous levels of the ~51 kDa α1-subunit of the $GABA_A$ receptor. Labeling is absent in α1-subunit knockout animals. |
| **Production/Purification** | Prepared from rabbit serum by affinity purification using a column to which the fusion protein immunogen was coupled. |
| **Quality Control** | Western blots performed on each lot. |
| **Buffer** | 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg per ml BSA and 50% glycerol. |
| **Storage** | Storage at -20°C is recommended, as aliquots may be taken without freeze/thawing due to presence of 50% glycerol. |
| **Stability** | After date of receipt, stable for at least 1 year at -20°C. |

## Significant Citations


Reiner, A., Medina, L., Abellan, A., Deng, Y., Toledo, C.A.B., Luksch, H., Vega-Zuniga, T., Riley, N.B., Hodos, W. and Karten, H.J. (2024). Neurochemistry and circuit organization of the lateral spiriform nucleus of birds: A uniquely nonmammalian direct pathway component of the basal ganglia. *The Journal of Comparative Neurology*, [online] 532(5), p.e25620.

Deng, Y., Wang, H., Joni, M., Sekhri, R. and Reiner, A., 2020. Progression of basal ganglia pathology in heterozygous Q175 knock-in Huntington's disease mice. Journal of Comparative Neurology.

Wang, P., Eshaq, R. S., Meshul, C. K., Moore, C., Hood, R. L., & Leidenheimer, N. J. (2015). Neuronal gamma-aminobutyric acid (GABA) type A receptors undergo cognate ligand chaperoning in the endoplasmic reticulum by endogenous GABA. Frontiers in Cellular Neuroscience, 9, 188.

Herman, M. A., & Roberto, M. (2016). Cell-type-specific tonic GABA signaling in the rat central amygdala is selectively altered by acute and chronic ethanol. Addiction biology. Jan;21(1):72-86.

Mridula Rewal, Rachel Jurd, T. Michael Gill, Dao-Yao He, Dorit Ron, and Patricia H. Janak (2009)
α4-Containing $GABA_A$ Receptors in the Nucleus Accumbens Mediate Moderate Intake of Alcohol J. Neurosci., 29: 543 – 549.


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