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GABA-A receptor γ2

Cat.No. 224 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For reconstitution add 100 µl H_2O, then aliquot and store at -20°C until use.
Applications	**WB**: yes limited (see remarks) **IP**: yes **ICC**: 1 : 500 (see remarks) **IHC**: 1 : 500 up to 1 : 2000 (see remarks) **IHC-P/FFPE**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 39 to 67 from mouse GABA-A receptor γ2 (UniProt Id: P22723)
Reactivity	Reacts with: human (P18507), rat (P18508), mouse (P22723). Other species not tested yet.
Specificity	Specific for GABA-A receptor γ2. Does not discriminate between the L and S form.
matching control	224-0P
Remarks	**WB**: The antibody is less sensitive in westernblotting compared to the rabbit antibody. This protein aggregates after boiling, making it necessary to run SDS-PAGE with non-boiled samples. **ICC**: This antibody is also suitable for the surface staining of living cells. After washingcells with bound antibodies, they can be fixed and visualized with secondaryreagents. **IHC**: For best results use the protocol of Schneider Gasser et al., 2006.

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Gamma-**a**mino**b**utyric **a**cid type **A** (**GABA-A**) receptors mediate the majority of inhibitory neurotransmission in the brain. These receptor proteins are ligand gated chloride ion channels and consist of a pentameric combination of different subunits (alpha, beta, **gamma**, delta, epsilon and rho). The resulting heterogenous population of GABA-A receptor subtypes are expressed throughout the brain with specific cellular and subcellular expression patterns.

Selected References SYSY Antibodies

The kinesin KIF21B participates in the cell surface delivery of γ2 subunit-containing GABAA receptors.
Labonté D, Thies E, Kneussel M
European journal of cell biology () 93(8-9): 338-46. **IP, ICC**

Estradiol modulates the efficacy of synaptic inhibition by decreasing the dwell time of GABAA receptors at inhibitory synapses.
Mukherjee J, Cardarelli RA, Cantaut-Belarif Y, Deeb TZ, Srivastava DP, Tyagarajan SK, Pangalos MN, Triller A, Maguire J, Brandon NJ, Moss SJ, et al.
Proceedings of the National Academy of Sciences of the United States of America (2017) 114(44): 11763-11768. **ICC, WB**

Similar GABAA receptor subunit composition in somatic and axon initial segment synapses of hippocampal pyramidal cells.
Kerti-Szigeti K, Nusser Z
eLife (2016) 5: . **IHC**

Autism and Schizophrenia-Associated CYFIP1 Regulates the Balance of Synaptic Excitation and Inhibition.
Davenport EC, Szulc BR, Drew J, Taylor J, Morgan T, Higgs NF, López-Doménech G, Kittler JT
Cell reports (2019) 26(8): 2037-2051.e6. **ICC; tested species: mouse**

Cell surface expression of homomeric GABAA receptors depends on single residues in subunit transmembrane domains.
Hannan S, Smart TG
The Journal of biological chemistry (2018) : . **ICC; tested species: human**

Disinhibition of somatostatin-positive GABAergic interneurons results in an anxiolytic and antidepressant-like brain state.
Fuchs T, Jefferson SJ, Hooper A, Yee PH, Maguire J, Luscher B
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Forebrain-specific loss of synaptic GABAA receptors results in altered neuronal excitability and synaptic plasticity in mice.
O'Sullivan GA, Jedlicka P, Chen HX, Kalbouneh H, Ippolito A, Deller T, Nawrotzki RA, Kuhse J, Kalaidzidis YL, Kirsch J, Schwarzacher SW, et al.
Molecular and cellular neurosciences (2016) 72: 101-13. **IHC; tested species: mouse**

Effects of distinct collybistin isoforms on the formation of GABAergic synapses in hippocampal neurons.
Körber C, Richter A, Kaiser M, Schlicksupp A, Mükusch S, Kuner T, Kirsch J, Kuhse J
Molecular and cellular neurosciences (2012) 50(3-4): 250-9. **ICC**

Selected General References

GABA receptor heterogeneity modulates dendrodendritic inhibition.
Sassoè-Pognetto M, Panzanelli P, Lagier S, Fritschy JM, Lledo PM
Annals of the New York Academy of Sciences (2009) 1170: 259-63.

Synaptogenesis in the cerebellar cortex: differential regulation of gephyrin and GABAA receptors at somatic and dendritic synapses of Purkinje cells.
Viltono L, Patrizi A, Fritschy JM, Sassoè-Pognetto M
The Journal of comparative neurology (2008) 508(4): 579-91.

Compensatory alteration of inhibitory synaptic circuits in cerebellum and thalamus of gamma-aminobutyric acid type A receptor alpha1 subunit knockout mice.
Kralic JE, Sidler C, Parpan F, Homanics GE, Morrow AL, Fritschy JM
The Journal of comparative neurology (2006) 495(4): 408-21.

Postsynaptic clustering of major GABAA receptor subtypes requires the gamma 2 subunit and gephyrin.
Essrich C, Lorez M, Benson JA, Fritschy JM, Lüscher B
Nature neuroscience (1998) 1(7): 563-71.

GABAA-receptor heterogeneity in the adult rat brain: differential regional and cellular distribution of seven major subunits.
Fritschy JM, Mohler H
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Distribution, prevalence, and drug binding profile of gamma-aminobutyric acid type A receptor subtypes differing in the beta-subunit variant.
Benke D, Fritschy JM, Trzeciak A, Bannwarth W, Mohler H
The Journal of biological chemistry (1994) 269(43): 27100-7.

Five subtypes of type A gamma-aminobutyric acid receptors identified in neurons by double and triple immunofluorescence staining with subunit-specific antibodies.
Fritschy JM, Benke D, Mertens S, Oertel WH, Bachi T, Möhler H
Proceedings of the National Academy of Sciences of the United States of America (1992) 89(15): 6726-30.