Technical Bulletin

Monoclonal Anti-GABA, clone GB-69

Produced in mouse, ascites fluid

A0310

Product Description

Monoclonal Anti-GABA (mouse IgG1 isotype) is derived from the hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. Purified GABA conjugated to BSA was used as the immunogen. The isotype is determined using Mouse Monoclonal Antibody Isotyping Reagent, Cat. No. ISO2.

Monoclonal Anti-GABA antibody recognizes human,[1] monkey,[1-2] mouse,[3] rat,[4] Mongolian gerbil[5] and bullfrog[6] GABA. Monoclonal Anti-GABA shows no reactivity with BSA, L-α -aminobutyric acid, L-glutamic acid, L-aspartic acid, glycine, δ-aminovaleric acid, L-threonine, L-glutamine, taurine, putrescine, L-alanine, and carnosine. Weak cross-reaction is observed with βalanine and ε-aminocaproic acid. Monoclonal Anti-GABA may be used in various immunochemical assays, including immunofluorescence, immunohistochemistry,[1-6] ELISA and dot-blot.

GABA, also known as γ-Aminobutyric acid, is the main inhibitory neurotransmitter in the central nervous system (CNS) of vertebrates.[7] GABA is formed following enzymatic decarboxylation of L-glutamic acid by glutamic acid decarboxylase (GAD). GABA mediates fast synaptic inhibition in the mature nervous system and plays multiple key roles as sensory circuits undergo functional development.[8-9] The GABA receptors are classified into GABAA and GABAB types. GABAA receptors present in certain inflammatory cells, such as CD4+ T cells and macrophages and act as proliferation inhibitors. GABAB receptors exist on neutrophils and allow the GABA to function as a chemoattractant.[10] It is suggested that GABA is also responsible for the proliferation of several cell types including embryonic stem cells, cortical progenitor cells and immune cells. In addition, it is involved in protein synthesis and metabolism and plays a major role in the regulation of muscle tone, blood pressure, heart rate and respiration.[11-13]

Monoclonal Anti-GABA antibody provides a useful tool for direct visualization and localization of GABA in cell cultures and tissues.

Reagent

Supplied as ascites fluid with 15 mM sodium azide as preservative.

Precautions and Disclaimer

For R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, the solution may be frozen in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

Product Profile

Immunohistochemistry

A working concentration of 1:100-1:200 is recommended using heat-retrieved formalin-fixed, paraffin-embedded human brain and/or cerebellum sections.

Monoclonal Anti-GABA may be used for the localization of GABA using various immunochemical assays such as ELISA, dot blot, and immunohistochemistry.

Note: In order to obtain best results in different preparations, it is recommended that each individual user determine their working dilution by titration assay.

References

1. Casini G., et al., Invest Ophthalmol Vis Sci., **47**, 1682-90 (2006).
2. Constantinople CM., et al., J Comp Neurol., **516**, 291-311 (2009).
3. Berbari NF., et al., Proc Natl Acad Sci U S A., **105**, 4242-6 (2008).
4. Omelchenko N. and Sesack SR., J Comp Neurol., **494**, 863-75 (2006).
5. Zhang T., et al., Sci Rep., **6**, 26060 (2016).
6. Simmons AM. and Chapman JA., Brain Behav Evol., **60**, 189-206 (2002).
7. Adrio F., et al., J Comp Neurol., **519**, 1115-42 (2011).
8. Blitz DM and Regehr WG., Neuron, **45**, 917-28 (2005).
9. Akerman CJ and Cline HT., Trends Neurosci., **30**, 382-9 (2007).
10. Nigam R., et al., Arch Dermatol Res., **302**, 507-15 (2010).
11. Watanabe M., et al., Int Rev Cytol., **213**, 1-47 (2002).
12. Ring H., et al., PLoS ONE, **7**, e36874 (2012).
13. Okada Y., In: GABAergic Mechanisms in the Mammalian Periphery, Raven Press, New York, p. 223 (1986).

Notice

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

The information in this document is subject to change without notice and should not be construed as a commitment by the manufacturing or selling entity, or an affiliate. We assume no responsibility for any errors that may appear in this document.

Technical Assistance

Visit the tech service page at SigmaAldrich.com/techservice.

Standard Warranty

The applicable warranty for the products listed in this publication may be found at SigmaAldrich.com/terms.

Contact Information

For the location of the office nearest you, go to SigmaAldrich.com/offices.