

GABA_B R1 (S-20): sc-7339

BACKGROUND

In the central nervous system (CNS), γ -aminobutyric acid (GABA) is the main main inhibitory neurotransmitter that functions to regulate neuronal firing. GABA exerts its effects through two different kinds of receptors: ionotropic receptors (GABA_A and GABA_C), which produce fast inhibitory signals, and metabotropic receptors (GABA_B), which produce slow inhibitory signals. The GABA_B R receptor is a heterodimer that consists of two multi-pass membrane proteins, designated GABA_B R1 and GABA_B R2, both of which belong to the G protein-coupled receptor family and are highly expressed in brain tissue. Together, GABA_B R1 and GABA_B R2 play a crucial role in the fine-tuning of inhibitory synaptic transmissions and are implicated in slow wave sleep, muscle relaxation, hippocampal long-term potentiation and antinociception events. Both GABA_B R1 and GABA_B R2 are regulated by G proteins that have a variety of functions, including activation of potassium channels, inhibition of adenyl cyclase (A cyclase) activity and modulation of inositol phospholipid hydrolysis.

REFERENCES

1. White, J.H., et al. 2000. The GABA_B receptor interacts directly with the related transcription factors CREB-2 and ATFx. *Proc. Natl. Acad. Sci. USA* 97: 13967-13972.
2. Balasubramanian, S., et al. 2004. Hetero-oligomerization between GABA_A and GABA_B receptors regulates GABA_B receptor trafficking. *J. Biol. Chem.* 279: 18840-18850.
3. Brock, C., et al. 2005. Assembly-dependent surface targeting of the heterodimeric GABA_B receptor is controlled by COPI but not 14-3-3. *Mol. Biol. Cell* 16: 5572-5578.
4. Osawa, Y., et al. 2006. Functional expression of the GABA_B receptor in human airway smooth muscle. *Am. J. Physiol. Lung Cell. Mol. Physiol.* 291: L923-L931.

CHROMOSOMAL LOCATION

Genetic locus: GABBR1 (human) mapping to 6p22.1; Gabbr1 (mouse) mapping to 17 B1.

SOURCE

GABA_B R1 (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of GABA_B R1 of rat origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7339 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

GABA_B R1 (S-20) is recommended for detection of GABA_B R1 α and GABA_B R1 β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

GABA_B R1 (S-20) is also recommended for detection of GABA_B R1 α and GABA_B R1 β in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for GABA_B R1 siRNA (h): sc-42459, GABA_B R1 siRNA (m): sc-42460, GABA_B R1 shRNA Plasmid (h): sc-42459-SH, GABA_B R1 shRNA Plasmid (m): sc-42460-SH, GABA_B R1 shRNA (h) Lentiviral Particles: sc-42459-V and GABA_B R1 shRNA (m) Lentiviral Particles: sc-42460-V.

Molecular Weight of GABA_B R1: 130 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409 or HeLa nuclear extract: sc-2120.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Ishikawa, M., et al. 2005. Immunohistochemical and immunoblot analysis of γ -aminobutyric acid B receptor in the prefrontal cortex of subjects with schizophrenia and bipolar disorder. *Neurosci. Lett.* 383: 272-277.
2. Frisullo, G., et al. 2007. A human anti-neuronal autoantibody against GABA_B receptor induces experimental autoimmune agrypnia. *Exp. Neurol.* 204: 808-818.
3. Kurokawa, K., et al. 2012. Increase of ryanodine receptors by dopamine D1 receptors is negatively regulated by γ -aminobutyric acid type B receptors in primary cultures of mouse cerebral cortical neurons. *J. Neurosci. Res.* 90: 1626-1638.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

MONOS
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Try **GABA_B R1 (D-2): sc-166408** or **GABA_B R1 (C-11): sc-398901**, our highly recommended monoclonal alternatives to GABA_B R1 (S-20).