

GABAA R γ 1 (S-12): sc-160346

BACKGROUND

GAD-65 and GAD-67, glutamate decarboxylases, function to catalyze the production of GABA (γ -aminobutyric acid). In the central nervous system, GABA functions as the main inhibitory transmitter by increasing a Cl⁻ (chloride) conductance that inhibits neuronal firing. GABA has been shown to activate both ionotropic (GABA_A) and metabotropic (GABA_B) receptors, as well as a third class of receptors called GABA_C. The γ subunit of GABA_A receptors are important for benzodiazepine binding and modulation of GABA-mediated Cl⁻ current. GABA_A R γ 1 (γ -aminobutyric acid (GABA) A receptor, γ 1), also known as GABRG1, is a 465 amino acid multi-pass membrane protein belonging to the ligand-gated ionic channel (TC 1.A.9) family. GABA_A R γ 1 participates in neurotransmission inhibition and has been linked to alcohol dependence.

REFERENCES

1. Wilcox, A.S., et al. 1992. Human chromosomal localization of genes encoding the γ 1 and γ 2 subunits of the γ -aminobutyric acid receptor indicates that members of this gene family are often clustered in the genome. *Proc. Natl. Acad. Sci. USA* 89: 5857-5861.
2. Whiting, P.J., et al. 1999. Molecular and functional diversity of the expanding GABA_A receptor gene family. *Ann. N.Y. Acad. Sci.* 868: 645-653.
3. Nymann-Andersen, J., et al. 2002. Subunit specificity and interaction domain between GABA(A) receptor-associated protein (GABARAP) and GABA(A) receptors. *J. Neurochem.* 80: 815-823.
4. Ittiwut, C., et al. 2008. Interpopulation linkage disequilibrium patterns of GABRA2 and GABRG1 genes at the GABA cluster locus on human chromosome 4. *Genomics* 91: 61-69.
5. Ray, L.A. and Hutchison, K.E. 2009. Associations among GABRG1, level of response to alcohol, and drinking behaviors. *Alcohol. Clin. Exp. Res.* 33: 1382-1390.
6. Enoch, M.A., et al. 2009. GABRG1 and GABRA2 as independent predictors for alcoholism in two populations. *Neuropsychopharmacology* 34: 1245-1254.
7. Craddock, N., et al. 2010. Strong genetic evidence for a selective influence of GABA_A receptors on a component of the bipolar disorder phenotype. *Mol. Psychiatry* 15: 146-153.

CHROMOSOMAL LOCATION

Genetic locus: GABRG1 (human) mapping to 4p12; Gabrg1 (mouse) mapping to 5 C3.1.

SOURCE

GABAA R γ 1 (S-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of GABAA R γ 1 of human origin.

STORAGE

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

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-160346 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GABAA R γ 1 (S-12) is recommended for detection of GABAA R γ 1 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); non cross-reactive with GABAA R γ 2 or GABAA R γ 3.

Suitable for use as control antibody for GABAA R γ 1 siRNA (h): sc-42447, GABAA R γ 1 siRNA (m): sc-42448, GABAA R γ 1 shRNA Plasmid (h): sc-42447-SH, GABAA R γ 1 shRNA Plasmid (m): sc-42448-SH, GABAA R γ 1 shRNA (h) Lentiviral Particles: sc-42447-V and GABAA R γ 1 shRNA (m) Lentiviral Particles: sc-42448-V.

Molecular Weight of GABAA R γ 1: 59 kDa.

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.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.