

GABA_A R α 4 (C-18): sc-7354

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⁻ 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. Both GABA_A and GABA_C are ligand-gated ion channels, however, they are structurally and functionally distinct. Members of the GABA_A receptor family include GABA_A R α 1-6, GABA_A R β 1-3, GABA_A R γ 1-3, GABA_A R δ , GABA_A R ϵ , GABA_A R ρ 1 and GABA_A R ρ 2. The GABA_B family is composed of GABA_B R1 α and GABA_B R1 β . GABA transporters have also been identified and include GABA T-1, GABA T-2 and GABA T-3 (also designated GAT-1, -2, and -3). The GABA transporters function to terminate GABA action.

REFERENCES

- Nelson, H., et al. 1990. Cloning of the human brain GABA transporter. FEBS Lett. 269: 181-184.
- Cherubini, E., et al. 1991. GABA: an excitatory transmitter in early postnatal life. Trends Neurosci. 14: 515-519.
- Borden, L.A., et al. 1992. Molecular heterogeneity of the γ -aminobutyric acid (GABA) transport system. Cloning of two novel high affinity GABA transporters from rat brain. J. Biol. Chem. 267: 21098-21104.
- Dirx, R., Jr., et al. 1995. Targeting of the 67-kDa isoform of glutamic acid decarboxylase to intracellular organelles is mediated by its interaction with the NH₂-terminal region of the 65-kDa isoform of glutamic acid decarboxylase. J. Biol. Chem. 270: 2241-2246.
- Lukasiewicz, P.D. 1996. GABA_C receptors in the vertebrate retina. Mol. Neurobiol. 12: 181-194.
- Kaupmann, K., et al. 1997. Expression cloning of GABA_B receptors uncovers similarity to metabotropic glutamate receptors. Nature 386: 239-246.
- Korpi, E.R., et al. 1997. GABA_A-receptor subtypes: clinical efficiency and selectivity of benzodiazepine site ligands. Ann. Med. 29: 275-282.

CHROMOSOMAL LOCATION

Genetic locus: GABRA4 (human) mapping to 4p12, GABRA6 (human) mapping to 5q34; Gabra4 (mouse) mapping to 5 C3.2, Gabra6 (mouse) mapping to 11 A5.

SOURCE

GABA_A R α 4 (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of GABA_A R α 4 of human 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-7354 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GABA_A R α 4 (C-18) is recommended for detection of GABA_A R α 4 and GABA_A R α 6 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_A R α 4 (C-18) is also recommended for detection of GABA_A R α 4 and GABA_A R α 6 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of GABA_A R α 4: 66-67 kDa.

Positive Controls: H4 cell lysate: sc-2408.

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

- Handley, M.E., et al. 2005. JNK activation limits dendritic cell maturation in response to reactive oxygen species by the induction of apoptosis. Free Radic. Biol. Med. 38: 1637-1652.

STORAGE

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

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.



Try **GABA_A R α 1-6 (E-8): sc-376282**, our highly recommended monoclonal alternative to GABA_A R α 4 (C-18). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **GABA_A R α 1-6 (E-8): sc-376282**.