

# p-GABA<sub>B</sub> R2 (Ser 783): sc-135695

## BACKGROUND

GAD-65 and GAD-67, glutamate decarboxylases, catalyze the production of GABA ( $\gamma$ -aminobutyric acid). In the central nervous system GABA acts as the main inhibitory transmitter by increasing a Cl<sup>-</sup> conductance that inhibits neuronal firing. GABA activates both ionotropic (GABA<sub>A</sub>) and metabotropic (GABA<sub>B</sub>) receptors as well as a third class of receptors called GABA<sub>C</sub>. Members of the GABA<sub>A</sub> receptor family include GABA<sub>A</sub> R $\alpha$ 1-6, GABA<sub>A</sub> R  $\beta$ 1-3, GABA<sub>A</sub> R $\gamma$ 1-3, GABA<sub>A</sub> R $\delta$ , GABA<sub>A</sub> R $\epsilon$ , GABA<sub>A</sub> R $\rho$ 1 and GABA<sub>A</sub> R $\rho$ 2. The GABA<sub>B</sub> family is composed of GABA<sub>B</sub> R1 $\alpha$  and GABA<sub>B</sub> R1 $\beta$ . PKA phosphorylates GABA<sub>B</sub> R2 at Ser 892. This phosphorylation appears to enhance the membrane stability of GABA<sub>B</sub> R2. Mouse, rat and human GABA<sub>B</sub> R2 are phosphorylated on Ser 783 by AMPK $\beta$ 1, which stabilizes GABA<sub>B</sub>  $\beta$  activation of inwardly rectifying K<sup>+</sup> channels and decreases synaptic activity.

## REFERENCES

- Cherubini, E., Gaiarsa, J.L. and Ben-Ari, Y. 1991. GABA: an excitatory transmitter in early postnatal life. *Trends Neurosci.* 14: 515-519.
- Dirkx, R., Jr., Thomas, A., Li, L., Lernmark, A., Sherwin, R.S., De Camilli, P. and Solimena, M. 1995. Targeting of the 67 kDa isoform of glutamic acid decarboxylase to intracellular organelles is mediated by its interaction with the NH<sub>2</sub>-terminal region of the 65 kDa isoform of glutamic acid decarboxylase. *J. Biol. Chem.* 270: 2241-2246.
- Lukasiewicz, P.D. 1996. GABA<sub>C</sub> receptors in the vertebrate retina. *Mol. Neurobiol.* 12: 181-194.
- Kaupmann, K., Huggel, K., Heid, J., Flor, P.J., Bischoff, S., Mickel, S.J., McMaster, G., Angst, C., Bittiger, H., Froestl, W. and Bettler, B. 1997. Expression cloning of GABA<sub>B</sub> receptors uncovers similarity to metabotropic glutamate receptors. *Nature* 386: 239-246.
- Korpi, E.R., Mattila, M.J., Wisden, W. and Luddens, H. 1997. GABA<sub>A</sub>-receptor subtypes: clinical efficiency and selectivity of benzodiazepine site ligands. *Ann. Med.* 29: 275-282.

## CHROMOSOMAL LOCATION

Genetic locus: GABBR2 (human) mapping to 9q22.33; Gabbr2 (mouse) mapping to 4 B1.

## SOURCE

p-GABA<sub>B</sub> R2 (Ser 783) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 783 phosphorylated GABA<sub>B</sub> R2 of rat origin.

## PRODUCT

Each vial contains IgG in 100  $\mu$ l of 10 mM HEPES with 150 mM NaCl, 50% glycerol and < 0.1% BSA.

## STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

## APPLICATIONS

p-GABA<sub>B</sub> R2 (Ser 783) is recommended for detection of Ser 783 phosphorylated GABA<sub>B</sub> R2 of mouse and rat origin and correspondingly Ser 784 phosphorylated GABA<sub>B</sub> R2 of human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2  $\mu$ l per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:2500).

Suitable for use as control antibody for GABA<sub>B</sub> R2 siRNA (h): sc-42463, GABA<sub>B</sub> R2 siRNA (m): sc-42464, GABA<sub>B</sub> R2 shRNA Plasmid (h): sc-42463-SH, GABA<sub>B</sub> R2 shRNA Plasmid (m): sc-42464-SH, GABA<sub>B</sub> R2 shRNA (h) Lentiviral Particles: sc-42463-V and GABA<sub>B</sub> R2 shRNA (m) Lentiviral Particles: sc-42464-V.

Molecular Weight of p-GABA<sub>B</sub> R2: 105 kDa.

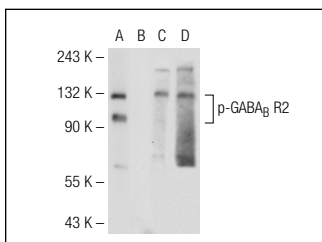
Molecular Weight of glycosylated p-GABA<sub>B</sub> R2: 130 kDa.

Positive Controls: Rat brain extract: sc-2392 or mouse brain extract: sc-2253.

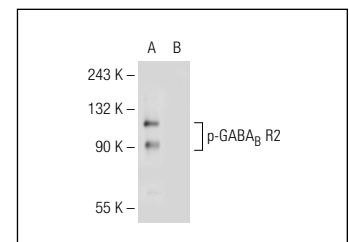
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



Western blot analysis of GABA<sub>B</sub> R2 phosphorylation in untreated (A, C) and lambda protein phosphatase (sc-200312A) treated (B, D) rat brain tissue extracts. Antibodies tested include p-GABA<sub>B</sub> R2 (Ser 783): sc-135695 (A, B) and GABA<sub>B</sub> R2 (E-16): sc-22322 (C, D).



p-GABA<sub>B</sub> R2 (Ser 783): sc-135695. Western blot analysis of GABA<sub>B</sub> R2 phosphorylation in untreated (A) and lambda protein phosphatase (sc-200312A) treated (B) mouse brain tissue extracts.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.