

# GABA<sub>A</sub> R $\beta$ 2 (R-18): sc-31427

## BACKGROUND

GAD-65 and GAD-67, glutamate decarboxylases function to catalyze the production of GABA ( $\gamma$ -aminobutyric acid). In the central nervous system GABA functions as the main inhibitory transmitter by increasing a Cl<sup>-</sup> conductance that inhibits neuronal firing. GABA has been shown to activate 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>. Both GABA<sub>A</sub> and GABA<sub>C</sub> are ligand-gated ion channels, however, they are structurally and functionally distinct. 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 $\beta$ . 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  $\gamma$ -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 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., et al. 1997. Expression cloning of GABA<sub>B</sub> receptors uncovers similarity to metabotropic glutamate receptors. *Nature* 386: 239-246.
- Korpi, E.R., et al. 1997. GABA<sub>A</sub>-receptor subtypes: clinical efficiency and selectivity of benzodiazepine site ligands. *Ann. Med.* 29: 275-282.

## SOURCE

GABA<sub>A</sub> R $\beta$ 2 (R-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal extracellular domain of GABA<sub>A</sub> R $\beta$ 2 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-31427 P, (100  $\mu$ 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<sub>A</sub> R $\beta$ 2 (R-18) is recommended for detection of GABA<sub>A</sub> R $\beta$ 2 and, to a lesser extent, GABA<sub>A</sub> R $\beta$ 1 and GABA<sub>A</sub> R $\beta$ 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], 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); may cross-react with GABA receptor delta subunit.

GABA<sub>A</sub> R $\beta$ 2 (R-18) is also recommended for detection of GABA<sub>A</sub> R $\beta$ 2 and, to a lesser extent, GABA<sub>A</sub> R $\beta$ 1 and GABA<sub>A</sub> R $\beta$ 3 in additional species, including equine, canine, bovine, porcine and avian.

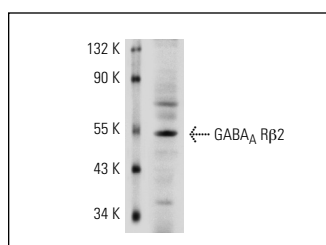
Molecular Weight of GABA<sub>A</sub> R $\beta$ 2: 54-57 kDa.

Positive Controls: Mouse brain extract: sc-2253 or Jurkat whole cell lysate: sc-2204.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



GABA<sub>A</sub> R $\beta$ 2 (R-18): sc-31427. Western blot analysis of GABA<sub>A</sub> R $\beta$ 2 expression in mouse brain tissue extract.

## 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.