SANTA CRUZ BIOTECHNOLOGY, INC.

$GABA_A$ Rρ1 (T-17): sc-31452

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

GAD-65 and GAD-67, glutamate decarboxylases of 65 kDa and 67 KDa, respectively, function to catalyze the production of GABA (gamma-aminobutyric acid). In the central nervous system GABA (gamma-aminobutyric acid) 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. $GABA_C$ receptors ($GABA_C$ Rρ) mediate rapid inhibitory neurotransmission in retina. Three human genes, r1 (GABRR1), r2 (GABRR2) and r3 (GABRR3), encode the three polypeptides that comprise this receptor. GABRR1 and GABRR2 are located close together, in a region of chromosome 6q that contains loci for inherited disorders of the eye, but GABRR3 maps to chromosome 3q11-q13.3. The r polypeptide genes, which are thought to share a common ancestor with $GABA_A$ receptor subunit genes, diverged at an early stage in the evolution of this gene family. The expression of $GABA_C$ Rρ subunits is not restricted to the retina, but significant expression can also be detected in many other brain regions, especially in those belonging to the visual pathways.

REFERENCES

1. Cherubini, E., et al. 1991. GABA: an excitatory transmitter in early postnatal life. Trends Neurosci. 14: 515-519.
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3. Lukasiewicz, P.D. 1996. $GABA_C$ receptors in the vertebrate retina. Mol. Neurobiol. 12: 181-194.
4. Kaupmann, K., et al. 1997. Expression cloning of $GABA_B$ receptors uncovers similarity to metabotropic glutamate receptors. Nature. 386: 239-246.
5. Boue-Grabot, E., et al. 1998. Expression of GABA receptor rho subunits in rat brain. J. Neurochem. 70: 899-907.
6. Wegelius, K., et al. 1998. Distribution of GABA receptor rho subunit transcripts in the rat brain. Eur. J. Neurosci. 10: 350-357.
7. Bailey, M.E., et al. 1999. Genetic linkage and radiation hybrid mapping of the three human $GABA_C$ receptor rho subunit genes: GABRR1, GABRR2 and GABRR3. Biochim. Biophys. Acta. 1447: 307-312.

SOURCE

$GABA_A$ Rρ1 (T-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal extracellular domain of $GABA_A$ Rρ1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with <0.1% sodium azide and 0.2% gelatin.

Blocking peptide available for competition studies, sc-31452 P, (100 µg peptide in 0.5 ml PBS containing <0.1% sodium azide and 0.2% BSA).

APPLICATIONS

$GABA_A$ Rρ1 (T-17) is recommended for detection of $GABA_A$ receptor ρ1 of human and, to a lesser extent, mouse and rat 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).

Molecular Weight of $GABA_A$ Rρ1: 48 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410.

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.

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.