SANTA CRUZ BIOTECHNOLOGY, INC.

$GABA_A$ Rρ1 (N-19): sc-21336

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 $GABA_A$ Rα1-6, $GABA_A$ R β1-3, $GABA_A$ Rγ1-3, $GABA_A$ Rδ, $GABA_A$ Rε, $GABA_A$ Rρ1 and $GABA_A$ Rρ2. The $GABA_B$ family is composed of $GABA_B$ R1α and $GABA_B$ R1β. 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

1. Cherubini, E., et al. 1991. GABA: an excitatory transmitter in early postnatal life. Trends Neurosci. 14: 515-519.
2. Dirkx, 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_2-terminal region of the 65-kDa isoform of glutamic acid decarboxylase. J. Biol. Chem. 270: 2241-2246.
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. Wegelius, K., et al. 1998. Distribution of GABA receptor ρ subunit transcripts in the rat brain. Eur. J. Neurosci. 10: 350-357.
6. Boue-Grabot, E., et al. 1998. Expression of GABA receptor ρ subunits in rat brain. J. Neurochem. 70: 899-907.
7. Bailey, M.E., et al. 1999. Genetic linkage and radiation hybrid mapping of the three human $GABA_C$ receptor ρ subunit genes: GABRR1, GABRR2 and GABRR3. Biochim. Biophys. Acta 1447: 307-312.

CHROMOSOMAL LOCATION

Genetic locus: GABRR1 (human) mapping to 6q15; Gabrr1 (mouse) mapping to 4 A5.

SOURCE

$GABA_A$ Rρ1 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus 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 0.1% gelatin.

Blocking peptide available for competition studies, sc-21336 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

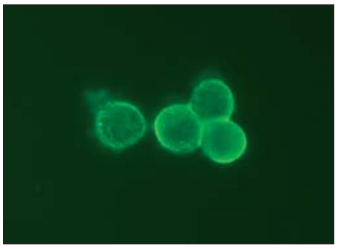
$GABA_A$ Rρ1 (N-19) is recommended for detection of $GABA_A$ Rρ1 of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for $GABA_A$ Rρ1 siRNA (h): sc-42457, $GABA_A$ Rρ1 siRNA (m): sc-42458, $GABA_A$ Rρ1 shRNA Plasmid (h): sc-42457-SH, $GABA_A$ Rρ1 shRNA Plasmid (m): sc-42458-SH, $GABA_A$ Rρ1 shRNA (h) Lentiviral Particles: sc-42457-V and $GABA_A$ Rρ1 shRNA (m) Lentiviral Particles: sc-42458-V.

Molecular Weight of $GABA_A$ Rρ1: 48 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214.

DATA



$GABA_A$ Rρ1 (N-19): sc-21336. Immunofluorescence staining of methanol-fixed KNRK cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Harrison, N.J., et al. 2006. Locating the carboxylate group of GABA in the homomeric ρ $GABA_A$ receptor ligand-binding pocket. J. Biol. Chem. 281: 24455-24461.
2. Price, K.L., et al. 2007. Transducing agonist binding to channel gating involves different interactions in 5-HT3 and GABAC receptors. J. Biol. Chem. 282: 25623-25630.

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.