SANTA CRUZ BIOTECHNOLOGY, INC.

$GABA_A$ Rδ (R-20): sc-31438

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. Nelson, H., et al. 1990. Cloning of the human brain GABA transporter. FEBS Lett. 269: 181-184.
2. Cherubini, E., et al. 1991. GABA: an excitatory transmitter in early postnatal life. Trends Neurosci. 14: 515-519.
3. 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.

CHROMOSOMAL LOCATION

Genetic locus: GABRD (human) mapping to 1p36.33; Gabrd (mouse) mapping to 4 E2.

SOURCE

$GABA_A$ Rδ (R-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of $GABA_A$ Rδ 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-31438 P, (100 µg 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.

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.

APPLICATIONS

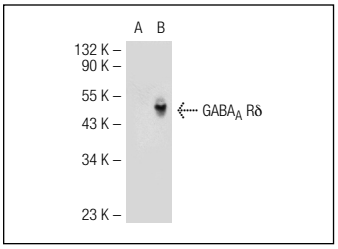
$GABA_A$ Rδ (R-20) is recommended for detection of $GABA_A$ Rδ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:300).

Suitable for use as control antibody for $GABA_A$ Rδ siRNA (h): sc-42443, $GABA_A$ Rδ siRNA (m): sc-42444, $GABA_A$ Rδ shRNA Plasmid (h): sc-42443-SH, $GABA_A$ Rδ shRNA Plasmid (m): sc-42444-SH, $GABA_A$ Rδ shRNA (h) Lentiviral Particles: sc-42443-V and $GABA_A$ Rδ shRNA (m) Lentiviral Particles: sc-42444-V.

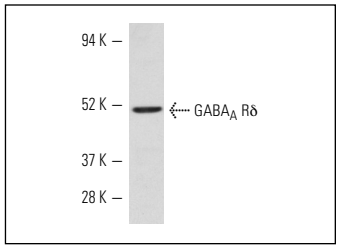
Molecular Weight of $GABA_A$ Rδ: 51 kDa.

Positive Controls: TE671 cell lysate: sc-2416 or $GABA_A$ Rδ (h): 293T Lysate: sc-115063.

DATA



$GABA_A$ Rδ (R-20): sc-31438. Western blot analysis of $GABA_A$ Rδ expression in TE671 whole cell lysate.



$GABA_A$ Rδ (R-20): sc-31438. Western blot analysis of $GABA_A$ Rδ expression in non-transfected: sc-117752 (**A**) and human $GABA_A$ Rδ transfected: sc-115063 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Hengen, K.B., et al. 2011. Changes in ventral respiratory column $GABA_a$R ε- and δ-subunits during hibernation mediate resistance to depression by EtOH and pentobarbital. Am. J. Physiol. Regul. Integr. Comp. Physiol. 300: R272-R283.
2. Zhu, Y., et al. 2012. Inflammation-induced shift in spinal $GABA_A$ signaling is associated with a tyrosine kinase-dependent increase in $GABA_A$ current density in nociceptive afferents. J. Neurophysiol. 108: 2581-2593.