SANTA CRUZ BIOTECHNOLOGY, INC.

$GABA_B$ R2 (E-4): sc-393286

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

In the central nervous system (CNS), γ-aminobutyric acid (GABA) is the main inhibitory neurotransmitter that functions to regulate neuronal firing. GABA exerts its effects through two different kinds of receptors: ionotropic receptors ($GABA_A$ R and $GABA_C$ R), which produce fast inhibitory signals, and metabotropic receptors ($GABA_B$ R), which produce slow inhibitory signals. The $GABA_B$ R receptor is a heterodimer that consists of two multi-pass membrane proteins, designated $GABA_B$ R1 and $GABA_B$ R2, both of which belong to the G protein-coupled receptor family and are highly expressed in brain tissue. Together, $GABA_B$ R1 and $GABA_B$ R2 play a crucial role in the fine-tuning of inhibitory synaptic transmissions and are implicated in slow wave sleep, muscle relaxation, hippocampal long-term potentiation and antinociception events. Both $GABA_B$ R1 and $GABA_B$ R2 are regulated by G proteins that have a variety of functions, including activation of potassium channels, inhibition of adenylyl cyclase (A cyclase) activity and modulation of inositol phospholipid hydrolysis.

REFERENCES

1. White, J.H., et al. 2000. The $GABA_B$ receptor interacts directly with the related transcription factors CREB2 and ATFx. Proc. Natl. Acad. Sci. USA 97: 13967-13972.
2. Balasubramanian, S., et al. 2004. Hetero-oligomerization between $GABA_A$ and $GABA_B$ receptors regulates $GABA_B$ receptor trafficking. J. Biol. Chem. 279: 18840-18850.
3. Brock, C., et al. 2005. Assembly-dependent surface targeting of the heterodimeric $GABA_B$ Receptor is controlled by COPI but not 14-3-3. Mol. Biol. Cell 16: 5572-5578.
4. Osawa, Y., et al. 2006. Functional expression of the $GABA_B$ receptor in human airway smooth muscle. Am. J. Physiol. Lung Cell. Mol. Physiol. 291: L923-L931.
5. Balasubramanian, S., et al. 2007. $GABA_B$ receptor association with the PDZ scaffold Mupp1 alters receptor stability and function. J. Biol. Chem. 282: 4162-4171.

CHROMOSOMAL LOCATION

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

SOURCE

$GABA_B$ R2 (E-4) is a mouse monoclonal antibody raised against amino acids 183-482 mapping within an extracellular domain of $GABA_B$ R2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

$GABA_B$ R2 (E-4) is recommended for detection of $GABA_B$ R2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 1:30-1:3000).

$GABA_B$ R2 (E-4) is also recommended for detection of $GABA_B$ R2 in additional species, including canine.

Suitable for use as control antibody for $GABA_B$ R2 siRNA (h): sc-42463, $GABA_B$ R2 siRNA (m): sc-42464, $GABA_B$ R2 shRNA Plasmid (h): sc-42463-SH, $GABA_B$ R2 shRNA Plasmid (m): sc-42464-SH, $GABA_B$ R2 shRNA (h) Lentiviral Particles: sc-42463-V and $GABA_B$ R2 shRNA (m) Lentiviral Particles: sc-42464-V.

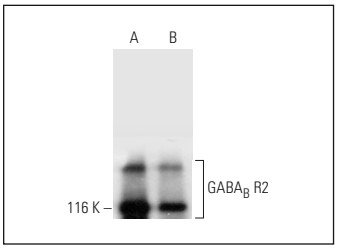
Molecular Weight of $GABA_B$ R2: 106 kDa.

Positive Controls: mouse brain extract: sc-2253, mouse cerebellum extract: sc-2403 or rat brain extract: sc-2392.

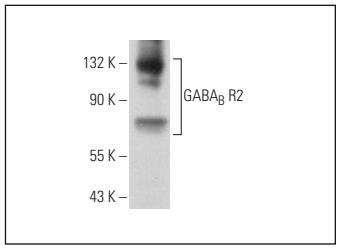
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



$GABA_B$ R2 (E-4): sc-393286. Western blot analysis of $GABA_B$ R2 expression in mouse brain (**A**) and rat brain (**B**) tissue extracts.



$GABA_B$ R2 (E-4): sc-393286. Western blot analysis of $GABA_B$ R2 expression in mouse cerebellum tissue extract.

SELECT PRODUCT CITATIONS

1. Choi, S., et al. 2022. miR-31-3p functions as a tumor suppressor by directly targeting GABBR2 in prostate cancer. Front. Oncol. 12: 945057.

RESEARCH USE

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