

GABA_B R1 (h2): 293T Lysate: sc-116203

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

- White, J.H., McIlhinney, R.A., Wise, A., Ciruela, F., Chan, W.Y., Emson, P.C., Billinton, A. and Marshall, F.H. 2000. The GABA_B receptor interacts directly with the related transcription factors CREB-2 and ATfx. *Proc. Natl. Acad. Sci. USA* 97: 13967-13972.
- Balasubramanian, S., Teissère, J.A., Raju, D.V. and Hall, R.A. 2004. Heterooligomerization between GABA_A and GABA_B receptors regulates GABA_B receptor trafficking. *J. Biol. Chem.* 279: 18840-18850.
- Brock, C., Boudier, L., Maurel, D., Blahos, J. and Pin, J.P. 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.
- Osawa, Y., Xu, D., Sternberg, D., Sonett, J.R., D'Armiento, J., Panettieri, R.A. and Emala, C.W. 2006. Functional expression of the GABA_B receptor in human airway smooth muscle. *Am. J. Physiol. Lung Cell. Mol. Physiol.* 291: 923-931.
- Balasubramanian, S., Fam, S.R. and Hall, R.A. 2007. GABA_B receptor association with the PDZ scaffold Mupp1 alters receptor stability and function. *J. Biol. Chem.* 282: 4162-4171.
- Chang, W., Tu, C., Cheng, Z., Rodriguez, L., Chen, T.H., Gassmann, M., Bettler, B., Margeta, M., Jan, L.Y. and Shoback, D. 2007. Complex formation with the Type B γ -aminobutyric acid receptor affects the expression and signal transduction of the extracellular calcium-sensing receptor. *Studies with HEK-293 cells and neurons. J. Biol. Chem.* 282: 25030-25040.
- Agrawal, A., Pergadia, M.L., Saccone, S.F., Hinrichs, A.L., Lessov-Schlaggar, C.N., Saccone, N.L., Neuman, R.J., Breslau, N., Johnson, E., Hatsukami, D., Montgomery, G.W., Heath, A.C., Martin, N.G., Goate, A.M., Rice, J.P., Bierut, L.J. and Madden, P.A. 2008. γ -aminobutyric acid receptor genes and nicotine dependence: evidence for association from a case-control study. *Addiction* 103: 1027-1038.
- Schuller, H.M., Al-Wadei, H.A. and Majidi, M. 2008. GABA_B receptor is a novel drug target for pancreatic cancer. *Cancer* 112: 767-778.

CHROMOSOMAL LOCATION

Genetic locus: GABBR1 (human) mapping to 6p22.1.

PRODUCT

GABA_B R1 (h2): 293T Lysate represents a lysate of human GABA_B R1 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

GABA_B R1 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive GABA_B R1 antibodies. Recommended use: 10-20 μ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

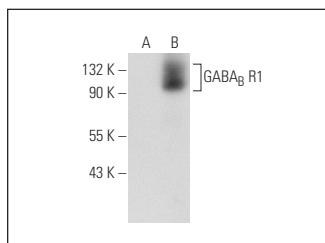
GABA_B R1 (D-2): sc-166408 is recommended as a positive control antibody for Western Blot analysis of enhanced human GABA_B R1 expression in GABA_B R1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:

- Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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.

DATA



GABA_B R1 (D-2): sc-166408. Western blot analysis of GABA_B R1 expression in non-transfected: sc-117752 (A) and human GABA_B R1 transfected: sc-116203 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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 for detailed protocols and support products.