SANTA CRUZ BIOTECHNOLOGY, INC.

# $GABA_B$ R1 (X-15): sc-81877

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

In the central nervous system (CNS), gamma-aminobutyric acid (GABA) is the main main inhibitory neurotransmitter that functions to regulate neuronal firing. GABA exerts its effects through two different kinds of receptors: ionotropic receptors (GABAA R and GABAC R), which produce fast inhibitory signals, and metabotropic receptors (GABAB R), which produce slow inhibitory signals. The GABAB R receptor is a heterodimer that consists of two multi-pass membrane proteins, designated GABAB R1 and GABAB R2, both of which belong to the G protein-coupled receptor family and are highly expressed in brain tissue. Together, GABAB R1 and GABAB 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 GABAB R1 and GABAB 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 GABAB receptors regulates GABAB receptor trafficking. J. Biol. Chem. 279(18): 18840-18850. PMID: 14966130
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. Chang, W., et al. 2007. Complex formation with the Type B gamma-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.
6. 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.
7. Agrawal, A., et al. 2008. Gamma-aminobutyric acid receptor genes and nicotine dependence: evidence for association from a case-control study. Addiction 103: 1027-1038.
8. Schuller, H.M., et al. 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.

## STORAGE

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

## SOURCE

$GABA_B$ R1 (X-15) is a mouse monoclonal antibody raised against recombinant $GABA_B$ R1 of human origin.

## PRODUCT

Each vial contains 100 µg $IgG_{2a}$ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

$GABA_B$ R1 (X-15) is recommended for detection of $GABA_B$ R1 of 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 1:30-1:3000).

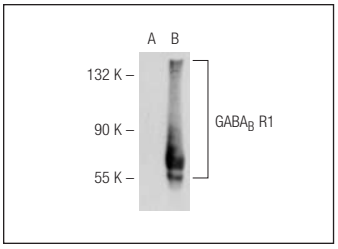
Suitable for use as control antibody for GABAB R1 siRNA (h): sc-42459, GABAB R1 shRNA Plasmid (h): sc-42459-SH and GABAB R1 shRNA (h) Lentiviral Particles: sc-42459-V.

Molecular Weight of $GABA_B$ R1: 130 kDa.

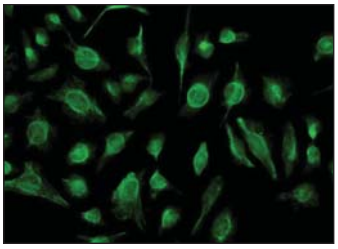
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA




$GABA_B$ R1 (X-15): sc-81877. 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.



GABAB R1 (X-15): sc-81877. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing cytoplasmic localization.

## RESEARCH USE

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