

# GABA<sub>A</sub> R $\gamma$ 2 (Q-18): sc-101963

## BACKGROUND

GAD-65 and GAD-67, glutamate decarboxylases, function to catalyze the production of GABA ( $\gamma$ -aminobutyric acid). In the central nervous system, GABA functions as the main inhibitory transmitter by increasing a Cl<sup>-</sup> (chloride) conductance that inhibits neuronal firing. GABA has been shown to activate both ionotropic (GABA<sub>A</sub>) and metabotropic (GABA<sub>B</sub>) receptors, as well as a third class of receptors called GABA<sub>C</sub>. The  $\gamma$  subunit of GABA<sub>A</sub> receptors are important for benzodiazepine binding and modulation of GABA-mediated Cl<sup>-</sup> current. GABA<sub>A</sub> R $\gamma$ 2 is a 467 amino acid multi-pass membrane protein localized to the postsynaptic cell membrane. Present as a pentamer with other GABA<sub>A</sub> receptor chains ( $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$  and  $\rho$ ), the GABA<sub>A</sub> ligand-gated Cl<sup>-</sup> channels selectively complex with D5DR to enable mutual inhibitory functional interactions between the two receptor systems. Defects in the gene encoding GABA<sub>A</sub> R $\gamma$ 2 have been found to be the cause of childhood absence epilepsy type 2, familial febrile convulsions type 8, generalized epilepsy with febrile seizures plus type 3 and severe myoclonic epilepsy in infancy.

## REFERENCES

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- Kucken, A.M., et al. 2000. Identification of benzodiazepine binding site residues in the  $\gamma$ 2 subunit of the GABA<sub>A</sub> receptor. *Mol. Pharmacol.* 57: 932-939.
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- Audenaert, D., et al. 2006. A novel GABRG2 mutation associated with febrile seizures. *Neurology* 67: 687-690.

## CHROMOSOMAL LOCATION

Genetic locus: GABRG2 (human) mapping to 5q34; Gabrg2 (mouse) mapping to 11 A5.

## SOURCE

GABA<sub>A</sub> R $\gamma$ 2 (Q-18) is a purified rabbit polyclonal antibody raised against GABA<sub>A</sub> R $\gamma$ 2 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

## APPLICATIONS

GABA<sub>A</sub> R $\gamma$ 2 (Q-18) is recommended for detection of GABA<sub>A</sub> R $\gamma$ 2 of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GABA<sub>A</sub> R $\gamma$ 2 siRNA (h): sc-42449, GABA<sub>A</sub> R $\gamma$ 2 siRNA (m): sc-42450, GABA<sub>A</sub> R $\gamma$ 2 shRNA Plasmid (h): sc-42449-SH, GABA<sub>A</sub> R $\gamma$ 2 shRNA Plasmid (m): sc-42450-SH, GABA<sub>A</sub> R $\gamma$ 2 shRNA (h) Lentiviral Particles: sc-42449-V and GABA<sub>A</sub> R $\gamma$ 2 shRNA (m) Lentiviral Particles: sc-42450-V.

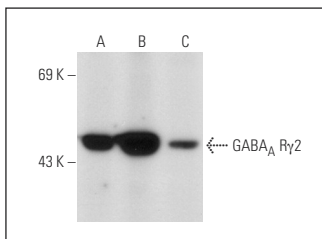
Molecular Weight of GABA<sub>A</sub> R $\gamma$ 2: 54 kDa.

Positive Controls: rat cerebellum extract: sc-2398, mouse cerebellum extract: sc-2403 or rat hippocampus tissue extract.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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).

## DATA



GABA<sub>A</sub> R $\gamma$ 2 (Q-18): sc-101963. Western blot analysis of GABA<sub>A</sub> R $\gamma$ 2 expression in rat cerebellum (A), mouse cerebellum (B) and rat hippocampus (C) tissue extracts.

## 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.