

# GABA<sub>A</sub> Rβ3 (D-12): sc-376252

## 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<sup>-</sup> 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>. Both GABA<sub>A</sub> and GABA<sub>C</sub> are ligand-gated ion channels, however, they are structurally and functionally distinct. Members of the GABA<sub>A</sub> receptor family include GABA<sub>A</sub> Rα1-6, GABA<sub>A</sub> Rβ1-3, GABA<sub>A</sub> Rγ1-3, GABA<sub>A</sub> Rδ, GABA<sub>A</sub> Rε, GABA<sub>A</sub> Rρ1 and GABA<sub>A</sub> Rρ2. The GABA<sub>B</sub> family is composed of GABA<sub>B</sub> R1α and GABA<sub>B</sub> 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

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

## CHROMOSOMAL LOCATION

Genetic locus: GABRB3 (human) mapping to 15q12; Gabrb3 (mouse) mapping to 7 C.

## SOURCE

GABA<sub>A</sub> Rβ3 (D-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 243-481 near the C-terminus of GABA<sub>A</sub> Rβ3 of human origin.

## PRODUCT

Each vial contains 200 μg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GABA<sub>A</sub> Rβ3 (D-12) is available conjugated to agarose (sc-376252 AC), 500 μg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376252 HRP), 200 μg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376252 PE), fluorescein (sc-376252 FITC), Alexa Fluor<sup>®</sup> 488 (sc-376252 AF488), Alexa Fluor<sup>®</sup> 546 (sc-376252 AF546), Alexa Fluor<sup>®</sup> 594 (sc-376252 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-376252 AF647), 200 μg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-376252 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-376252 AF790), 200 μg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376252 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

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

## APPLICATIONS

GABA<sub>A</sub> Rβ3 (D-12) is recommended for detection of GABA<sub>A</sub> Rβ3 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

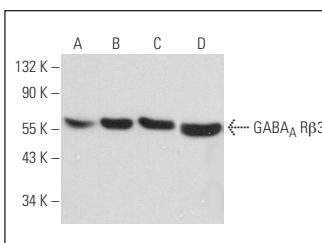
GABA<sub>A</sub> Rβ3 (D-12) is also recommended for detection of GABA<sub>A</sub> Rβ3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GABA<sub>A</sub> Rβ3 siRNA (h): sc-42441, GABA<sub>A</sub> Rβ3 siRNA (m): sc-42442, GABA<sub>A</sub> Rβ3 shRNA Plasmid (h): sc-42441-SH, GABA<sub>A</sub> Rβ3 shRNA Plasmid (m): sc-42442-SH, GABA<sub>A</sub> Rβ3 shRNA (h) Lentiviral Particles: sc-42441-V and GABA<sub>A</sub> Rβ3 shRNA (m) Lentiviral Particles: sc-42442-V.

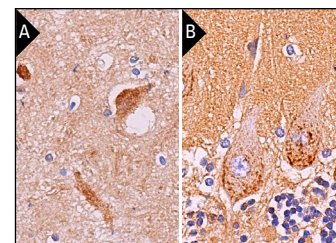
Molecular Weight of GABA<sub>A</sub> Rβ3: 45-60 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, EOC 20 whole cell lysate: sc-364187 or Hep G2 cell lysate: sc-2227.

## DATA



GABA<sub>A</sub> Rβ3 (D-12): sc-376252. Western blot analysis of GABA<sub>A</sub> Rβ3 expression in SK-N-SH (A), EOC 20 (B), Hep G2 (C) and HEK293T (D) whole cell lysates.



GABA<sub>A</sub> Rβ3 (D-12): sc-376252. Immunoperoxidase staining of formalin fixed, paraffin-embedded human hippocampus tissue showing cytoplasmic staining of neuronal cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of Purkinje cells (B).

## SELECT PRODUCT CITATIONS

- Woll, K.A., et al. 2016. A novel bifunctional alkylphenol anesthetic allows characterization of γ-aminobutyric acid, type A (GABA<sub>A</sub>), receptor subunit binding selectivity in synaptosomes. *J. Biol. Chem.* 291: 20473-20486.
- Forkuo, G.S., et al. 2017. Alleviation of multiple asthmatic pathologic features with orally available and subtype selective GABA<sub>A</sub> receptor modulators. *Mol. Pharm.* 14: 2088-2098.
- Li, W., et al. 2020. Effects of combined bushen zhichan recipe and levodopa in a rodent model of Parkinson disease: potential mechanisms. *Med. Sci. Monit.* 26: e922345.
- Zhang, W., et al. 2022. *Lactobacillus reuteri* normalizes altered fear memory in male Cntnap4 knockout mice. *EBioMedicine* 86: 104323.

## RESEARCH USE

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