SANTA CRUZ BIOTECHNOLOGY, INC.

AChRβ2 (H-92): sc-11372

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Members of the ligand-gated ion channel receptor family are characterized by their fast transmitting response to neurotransmitters. Two important members of this family are the nicotinic acetylcholine and glutamate receptors, both of which are composed of five homologous subunits forming a transmembrane aqueous pore. These transmembrane receptors change conformation in response to their cognate neurotransmitter. Nicotinic acetylcholine receptors (AChRs) are found at the postsynaptic membrane of the neuromuscular junction and bind acetylcholine molecules, allowing ions to move through the pore. Glutamate receptors are found in the postsynaptic membrane of cells in the central nervous system. The activity that is generated at the synapse by the binding of acetylcholine is terminated by acetylcholinesterase, an enzyme that rapidly hydrolyzes acetylcholine. AChRβ2, also known as EFNL3 or CHRNB2, is a 502 amino acid multi-pass membrane protein that is associated with nocturnal frontal lobe epilepsy type 3 (ENFL3), an autosomal dominant epilepsy characterized by nocturnal seizures with hyperkinetic automatisms and poorly organized stereotyped movements.

CHROMOSOMAL LOCATION

Genetic locus: CHRNB2 (human) mapping to 1q21.3; Chrnb2 (mouse) mapping to 3 F1.

SOURCE

AChRβ2 (H-92) is a rabbit polyclonal antibody raised against amino acids 342-433 mapping near the C-terminus of AChRβ2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

AChRβ2 (H-92) is recommended for detection of acetylcholine receptor β2 subunit of mouse, rat and 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).

AChRβ2 (H-92) is also recommended for detection of acetylcholine receptor β2 subunit in additional species, including bovine and porcine.

Suitable for use as control antibody for AChRβ2 siRNA (h): sc-42536, AChRβ2 siRNA (m): sc-42537, AChRβ2 shRNA Plasmid (h): sc-42536-SH, AChRβ2 shRNA Plasmid (m): sc-42537-SH, AChRβ2 shRNA (h) Lentiviral Particles: sc-42536-V and AChRβ2 shRNA (m) Lentiviral Particles: sc-42537-V.

Molecular Weight of AChRβ2: 50 kDa.

Positive Controls: Daudi cell lysate: sc-2415 or BC_3H1 cell lysate: sc-2299.

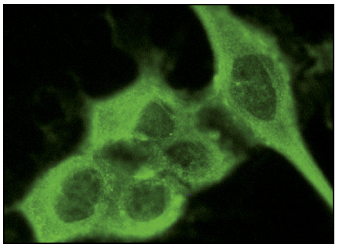
STORAGE

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.

DATA



AChRβ2 (H-92): sc-11372. Immunofluorescence staining of methanol-fixed BC_3H1 cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Newman, M.B., et al. 2002. Nicotinic acetylcholine receptors on NT2 precursor cells and hNT (NT2-N) neurons. Brain Res. Dev. Brain Res. 139: 73-86.
2. Pollock, V.V., et al. 2009. Cyclic AMP-dependent protein kinase A and protein kinase C phosphorylate α4β2 nicotinic receptor subunits at distinct stages of receptor formation and maturation. Neuroscience 158: 1311-1325.
3. Rezvani, K., et al. 2010. The ubiquitin-proteasome system regulates the stability of neuronal nicotinic acetylcholine receptors. J. Mol. Neurosci. 40: 177-184.
4. Machaalani, R., et al. 2010. Distribution of nicotinic acetylcholine receptor subunits α7 and β2 in the human brainstem and hippocampal formation. J. Chem. Neuroanat. 40: 223-231.
5. Browne, C.J., et al. 2010. The effects of nicotine on the α-7 and β-2 nicotinic acetycholine receptor subunits in the developing piglet brainstem. Int. J. Dev. Neurosci. 28: 1-7.
6. Wecker, L., et al. 2010. Nicotine-induced up regulation of α4β2 neuronal nicotinic receptors is mediated by the protein kinase C-dependent phosphorylation of α4 subunits. Neuroscience 171: 12-22.
7. Shimizu, T., et al. 2011. Brain α4β2 nicotinic acetylcholine receptors are involved in the secretion of noradrenaline and adrenaline from adrenal medulla in rats. Eur. J. Pharmacol. 654: 241-248.
8. Di, X., et al. 2012. L-theanine inhibits nicotine-induced dependence via regulation of the nicotine acetylcholine receptor-dopamine reward pathway. Sci. China Life Sci. 55: 1064-1074.