SANTA CRUZ BIOTECHNOLOGY, INC.

AChRβ2 (C-20): sc-1449

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 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at 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.

Blocking peptide available for competition studies, sc-1449 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

AChRβ2 (C-20) is recommended for detection of the acetylcholine receptor β_2 subunit of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 (C-20) is also recommended for detection of the acetylcholine receptor β_2 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: BC_3H1 cell lysate: sc-2299 or Daudi cell lysate: sc-2415.

RESEARCH USE

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

SELECT PRODUCT CITATIONS

1. Cooper, S.T., et al. 1999. Up-regulation of cell-surface α4β2 neuronal nicotinic receptors by lower temperature and expression of chimeric subunits. J. Biol. Chem. 274: 27145-27152.
2. Chen, J., et al. 2003. Selective decreases of nicotinic acetylcholine receptors in PC12 cells exposed to fluoride. Toxicology 183: 235-242.
3. Pakkanen, J.S., et al. 2005. Up-regulation of β2 and α7 subunit containing nicotinic acetylcholine receptors in mouse striatum at cellular level. Eur. J. Neurosci. 21: 2681-2691.
4. Ren, X.Q., et al. 2005. Structural determinants of α4β2 nicotinic acetylcholine receptor trafficking. J. Neurosci. 25: 6676-6686.
5. Xiu, J., et al. 2005. Expression of nicotinic receptors on primary cultures of rat astrocytes and up-regulation of the α7, α4 and β2 subunits in response to nanomolar concentrations of the β-amyloid peptide. Neurochem. Int. 47: 281-290.
6. Tournier, J.M., et al. 2006. α3α5β2-nicotinic acetylcholine receptor contributes to the wound repair of the respiratory epithelium by modulating intracellular calcium in migrating cells. Am. J. Pathol. 168: 55-68.
7. Pakkanen, J.S., et al. 2006. Effect of chronic nicotine treatment on localization of neuronal nicotinic acetylcholine receptors at cellular level. Synapse 59: 383-393.
8. Nilbratt, M., et al. 2007. Retinoic acid and nerve growth factor induce differential regulation of nicotinic acetylcholine receptor subunit expression in SN56 cells. J. Neurosci. Res. 85: 504-514.
9. Yu, W.F., et al. 2007. Postnatal upregulation of α4 and α3 nicotinic receptor subunits in the brain of α7 nicotinic receptor-deficient mice. Neuroscience 146: 1618-1628.
10. Cheng, S.B., et al. 2009. Presynaptic targeting of α4β2 nicotinic acetylcholine receptors is regulated by neurexin 1β. J. Biol. Chem. 284: 23251-23259.
11. Kαhlin, J., et al. 2010. Presence of nicotinic, purinergic and dopaminergic receptors and the TASK-1 K^+-channel in the mouse carotid body. Respir. Physiol. Neurobiol. 172: 122-128.
12. Rubin, C.M., et al. 2011. Mouse mutants for the nicotinic acetylcholine receptor β2 subunit display changes in cell adhesion and neurodegeneration response genes. PLoS ONE 6: e18626.

STORAGE

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