SANTA CRUZ BIOTECHNOLOGY, INC.

p-NMDAζ1 (Ser 896/897): sc-12890

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glutamate receptors mediate most excitatory neurotransmission in the brain and play an important role in neural plasticity, neural development and nerodegeneration. Ionotropic glutamate receptors are categorized into NMDA receptors and kainate/AMPA receptors; both contain glutamate-gated ion channels. The NMDA receptors consist of five subunits: ε 1, 2, 3, 4 and one ζ subunit. The ζ subunit is expressed throughout the brainstem whereas the four ε subunits display limited distribution. Phosphorylation is an important mechanism for the regulation of ligand-gated ion channels, including NMDA receptors. NMDA receptor phosphorylation by PKA and PKC can be induced via the activation of β-adrenergic receptors, and metabotropic glutamate or opioid receptors, respectively.

REFERENCES

1. Choi, D.W., et al. 1990. The role of glutamate neurotoxicity in hypoxic-ischemic neuronal death. Annu. Rev. Neurosci. 13: 171-182.
2. Hollmann, M., et al. 1994. Cloned glutamate receptors. Annu. Rev. Neurosci. 17: 31-108.
3. Watanabe, M., et al. 1994. Distinct distributions of five NMDA receptor channel subunit mRNAs in the brainstem. J. Comp. Neurol. 343: 520-531.
4. Nakanishi, S., et al. 1998. Glutamate receptors: brain function and signal transduction. Brain Res. Rev. 26: 230-235.
5. Swope, S.L., et al. 1999. Regulation of ligand-gated ion channels by protein phosphorylation. Adv. Second Messenger Phosphoprotein Res. 33: 49-78.
6. Dunah, A.W., et al. 2000. Alterations in subunit expression, composition and phosphorylation of striatal N-methyl-D-aspartate glutamate receptors in a rat 6-hydroxydopamine model of Parkinson's disease. Mol. Pharmacol. 57: 342-352.
7. Leveque, J.C., et al. 2000. Intracellular modulation of NMDA receptor function by antipsychotic drugs. J. Neurosci. 20: 4011-4020.

CHROMOSOMAL LOCATION

Genetic locus: GRIN1 (human) mapping to 9q34.3; Grin1 (mouse) mapping to 2 A3.

SOURCE

p-NMDAζ1 (Ser 896/897) is available as either goat (sc-12890) or rabbit (sc-12890-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 896 and 897 phosphorylated NMDAζ1 of human origin.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

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-12890 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-NMDAζ1 (Ser 896/897) is recommended for detection of Ser 896 and 897 dually phosphorylated NMDAζ1 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).

p-NMDAζ1 (Ser 896/897) is also recommended for detection of correspondingly phosphorylated NMDAζ1 in additional species, including equine, canine and avian.

Suitable for use as control antibody for NMDAζ1 siRNA (h): sc-36081, NMDAζ1 siRNA (m): sc-36082, NMDAζ1 shRNA Plasmid (h): sc-36081-SH, NMDAζ1 shRNA Plasmid (m): sc-36082-SH, NMDAζ1 shRNA (h) Lentiviral Particles: sc-36081-V and NMDAζ1 shRNA (m) Lentiviral Particles: sc-36082-V.

Molecular Weight of p-NMDAζ1: 115 kDa.

Positive Controls: estradiol + MCF7 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Ménard, C., et al. 2005. Phosphorylation of AMPA receptor subunits is differentially regulated by phospholipase A2 inhibitors. Neurosci. Lett. 389: 51-56.
2. du Bois, T.M., et al. 2011. Perinatal phencyclidine treatment alters neuregulin 1/erbB4 expression and activation in later life. Eur. Neuropsychopharmacol. 22: 356-363.
3. Cakici, C., et al. 2013. Recovery of fertility in azoospermia rats after injection of adipose-tissue-derived mesenchymal stem cells: the sperm generation. Biomed Res. Int. 2013: 529589.

RESEARCH USE

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