SANTA CRUZ BIOTECHNOLOGY, INC.

p-NMDAζ1-R (Ser 896): sc-31669

BACKGROUND

Glutamate receptors mediate most excitatory neurotransmission in the brain and play an important role in neural plasticity, neural development and neurodegeneration. Lonotropic 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. and Rothman, S.M. 1990. The role of glutamate neurotoxicity in hypoxic-ischemic neuronal death. Annu. Rev. Neurosci. 13: 171-182.
2. Hollmann, M. and Heinemann, S. 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-R (Ser 896) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 896 phosphorylated of NMDAζ1 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-31669 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

p-NMDAζ1-R (Ser 896) is recommended for detection of Ser 896 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-R (Ser 896) 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 shRNAPlasmid (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.

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 B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Schizas, N., et al. 2012. Glutamate receptors in tendinopathic patients. J. Orthop. Res. 30: 1447-1452.
2. Meng, X., et al. 2013. Spinal interleukin-17 promotes thermal hyperalgesia and NMDA NR1 phosphorylation in an inflammatory pain rat model. Pain 154: 294-305.

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.