SANTA CRUZ BIOTECHNOLOGY, INC.

NMDAζ1 (R-20): sc-31556

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 neurodegeneration. Ionotropic glutamate receptors are categorized into NMDA receptors and kainate/AMPA receptors, both of which contain glutamate-gated, cation-specific ion channels. Kainate/AMPA receptors are co-localized with NMDA receptors in many synapses and consist of seven structurally related subunits designated GluR-1 to -7. The kainate/AMPA receptors are primarily responsible for the fast excitatory neuro-transmission by glutamate, whereas the NMDA receptors exhibit slow kinetsis of Ca^{2+} ions and a high permeability for Ca^{2+} ions. 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 epsilon subunits display limited distribution.

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. Nakanishi, S. 1992. Molecular diversity of glutamate receptors and implications for brain function. Science 258: 597-603.
3. Stern, P., et al. 1992. Fast and slow components of unitary EPSCs on stellate cells elicited by focal stimulation in slices of rat visual cortex. J. Physiol. 449: 247-278.
4. Bliss, T.V., et al. 1993. A synaptic model of memory: long-term potentiation in the hippocampus. Nature 361: 31-39.
5. Watanabe, M., et al. 1994. Distinct distributions of five NMDA receptor channel subunit mRNAs in the brainsteam. J. Comp. Neurol. 343: 520-531.
6. Hollmann, M., et al. 1994. Cloned glutamate receptors. Annu. Rev. Neurosci. 17: 31-108.
7. Schiffer, H.H., et al. 1997. Rat GluR7 and a carboxy-terminal splice variant, GluR7β are functional kainate receptor subunits with a low sensitivity to glutamate. Neuron 19: 1141-1146.

CHROMOSOMAL LOCATION

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

SOURCE

NMDA ζ1 (R-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NMDA ζ1 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-31556 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

NMDAζ1 (R-20) is recommended for detection of the glutamate (NMDA) receptor ζ1 subtype 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).

NMDAζ1 (R-20) is also recommended for detection of the glutamate (NMDA) receptor ζ 1 subtype in additional species, including equine, canine, bovine 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 NMDA ζ1: 115 kDa.

Positive Controls: Mouse brain extract: sc-2253, mouse cerebellum extract: sc-2403 or BC3H1 cell lysate: sc-2299.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.