

NMDA ϵ 2 (C-20): sc-1469

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 neurotransmission by glutamate, whereas the NMDA receptors exhibit slow kinetics 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 ϵ subunits display limited distribution.

CHROMOSOMAL LOCATION

Genetic locus: GRIN2B (human) mapping to 12p13.1; Grin2b (mouse) mapping to 6 G1.

SOURCE

NMDA ϵ 2 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of NMDA ϵ 2 of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-1469 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NMDA ϵ 2 (C-20) is recommended for detection of glutamate (NMDA) receptor ϵ 2 subtype of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

NMDA ϵ 2 (C-20) is also recommended for detection of glutamate (NMDA) receptor ϵ 2 subtype in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for NMDA ϵ 2 siRNA (h): sc-36085, NMDA ϵ 2 siRNA (m): sc-36086, NMDA ϵ 2 shRNA Plasmid (h): sc-36085-SH, NMDA ϵ 2 shRNA Plasmid (m): sc-36086-SH, NMDA ϵ 2 shRNA (h) Lentiviral Particles: sc-36085-V and NMDA ϵ 2 shRNA (m) Lentiviral Particles: sc-36086-V.

Molecular Weight of NMDA ϵ 2: 178 kDa.

Positive Controls: rat brain extract: sc-2392, mouse brain extract: sc-2253 or rat hippocampus tissue extract.

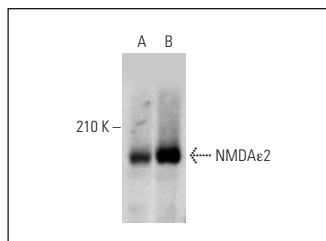
STORAGE

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

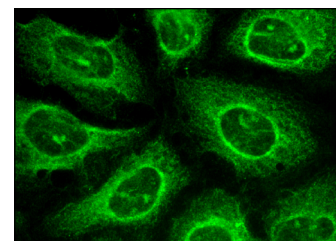
RESEARCH USE

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

DATA



NMDA ϵ 2 (C-20): sc-1469. Western blot analysis of NMDA ϵ 2 expression in rat hippocampus (A) and rat brain (B) tissue extracts.



NMDA ϵ 2 (C-20): sc-1469. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Nonaka, S., et al. 1998. Chronic lithium treatment robustly protects neurons in the central nervous system against excitotoxicity by inhibiting N-methyl-D-aspartate receptor-mediated calcium influx. *Proc. Natl. Acad. Sci. USA* 95: 2642-2647.
- Li, Z., et al. 1998. Functional expression of recombinant N-methyl-D-aspartate receptors in the yeast *Saccharomyces cerevisiae*. *Eur. J. Biochem.* 252: 391-399.
- Yan, J.Z., et al. 2011. Protein kinase C promotes N-methyl-D-aspartate (NMDA) receptor trafficking by indirectly triggering calcium/calmodulin-dependent protein kinase II (CaMKII) autophosphorylation. *J. Biol. Chem.* 286: 25187-25200.
- Finn, R., et al. 2011. Altered sensitivity of cerebellar granule cells to glutamate receptor overactivation in the Cln3(Δ ex7/8)-knock-in mouse model of juvenile neuronal ceroid lipofuscinosis. *Neurochem. Int.* 58: 648-655.
- Castillo, C., et al. 2011. The N-methyl-D-aspartate-evoked cytoplasmic calcium increase in adult rat dorsal root ganglion neuronal somata was potentiated by substance P pretreatment in a protein kinase C-dependent manner. *Neuroscience* 177: 308-320.
- Burgdorf, J., et al. 2011. Positive emotional learning is regulated in the medial prefrontal cortex by GluN2B-containing NMDA receptors. *Neuroscience* 192: 515-523.
- Razolli, D.S., et al. 2012. Hypothalamic action of glutamate leads to body mass reduction through a mechanism partially dependent on JAK2. *J. Cell. Biochem.* 113: 1182-1189.


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