

NMDA ϵ 1 (E-4): sc-515148

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 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: GRIN2A (human) mapping to 16p13.2; Grin2a (mouse) mapping to 16 A1.

SOURCE

NMDA ϵ 1 (E-4) is a mouse monoclonal antibody raised against amino acids 23-76 mapping within an extracellular domain of NMDA ϵ 1 of human origin.

PRODUCT

Each vial contains 200 μg IgG $_{2b}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NMDA ϵ 1 (E-4) is available conjugated to agarose (sc-515148 AC), 500 μg /0.25 ml agarose in 1 ml, for IP; to HRP (sc-515148 HRP), 200 $\mu\text{g}/\text{ml}$, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515148 PE), fluorescein (sc-515148 FITC), Alexa Fluor[®] 488 (sc-515148 AF488), Alexa Fluor[®] 546 (sc-515148 AF546), Alexa Fluor[®] 594 (sc-515148 AF594) or Alexa Fluor[®] 647 (sc-515148 AF647), 200 $\mu\text{g}/\text{ml}$, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-515148 AF680) or Alexa Fluor[®] 790 (sc-515148 AF790), 200 $\mu\text{g}/\text{ml}$, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

NMDA ϵ 1 (E-4) is recommended for detection of NMDA ϵ 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg 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).

Suitable for use as control antibody for NMDA ϵ 1 siRNA (h): sc-36083, NMDA ϵ 1 siRNA (m): sc-36084, NMDA ϵ 1 siRNA (r): sc-270157, NMDA ϵ 1 shRNA Plasmid (h): sc-36083-SH, NMDA ϵ 1 shRNA Plasmid (m): sc-36084-SH, NMDA ϵ 1 shRNA Plasmid (r): sc-270157-SH, NMDA ϵ 1 shRNA (h) Lentiviral Particles: sc-36083-V, NMDA ϵ 1 shRNA (m) Lentiviral Particles: sc-36084-V and NMDA ϵ 1 shRNA (r) Lentiviral Particles: sc-270157-V.

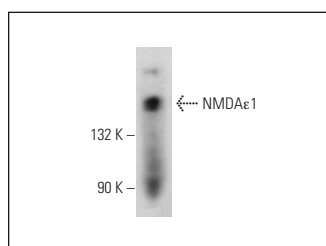
Molecular Weight of NMDA ϵ 1: 177 kDa.

Positive Controls: mouse brain extract: sc-2253.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



NMDA ϵ 1 (E-4): sc-515148. Western blot analysis of NMDA ϵ 1 expression in mouse brain tissue extract.

SELECT PRODUCT CITATIONS

- Lee, Y., et al. 2018. Excessive D1 Dopamine receptor activation in the dorsal striatum promotes autistic-like behaviors. *Mol. Neurobiol.* 55: 5658-5671.
- Boondam, Y., et al. 2019. Inverted U-shaped response of a standardized extract of *Centella asiatica* (Eca 233) on memory enhancement. *Sci. Rep.* 9: 8404.
- Gruszczynska-Biegala, J., et al. 2020. STIM protein-NMDA2 receptor interaction decreases NMDA-dependent calcium levels in cortical neurons. *Cells* 9 pii: E160.
- Montecinos-Oliva, C., et al. 2020. Hormetic-like effects of L-homocysteine on synaptic structure, function, and A β aggregation. *Pharmaceuticals* 13: 24.
- Soltani Zangbar, H., et al. 2020. A potential entanglement between the spinal cord and hippocampus: θ rhythm correlates with neurogenesis deficiency following spinal cord injury in male rats. *J. Neurosci. Res.* E-published.

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.