SANTA CRUZ BIOTECHNOLOGY, INC.

NMDAζ1 (E-2): sc-518043

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.

CHROMOSOMAL LOCATION

Genetic locus: GRIN1 (human) mapping to 9q34.3.

SOURCE

NMDAζ1 (E-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 654-680 within an internal region of NMDAζ1 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.

NMDAζ1 (E-2) is available conjugated to agarose (sc-518043 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-518043 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518043 PE), fluorescein (sc-518043 FITC), Alexa Fluor® 488 (sc-518043 AF488), Alexa Fluor® 546 (sc-518043 AF546), Alexa Fluor® 594 (sc-518043 AF594) or Alexa Fluor® 647 (sc-518043 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518043 AF680) or Alexa Fluor® 790 (sc-518043 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

NMDAζ1 (E-2) is recommended for detection of NMDAζ1 of 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 NMDAζ1 siRNA (h): sc-36081, NMDAζ1 shRNA Plasmid (h): sc-36081-SH and NMDAζ1 shRNA (h) Lentiviral Particles: sc-36081-V.

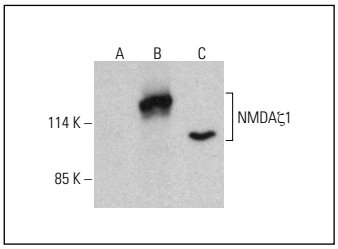
Molecular Weight of NMDAζ1: 115 kDa.

Positive Controls: NMDAζ1 (h): 293T Lysate: sc-371953, U-87 MG cell lysate: sc-2411 or C6 whole cell lysate: sc-364373.

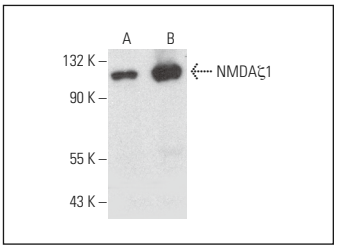
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



NMDAζ1 (E-2): sc-518043. Western blot analysis of NMDAζ1 expression in non-transfected: sc-117752 (**A**), human NMDAζ1 transfected HEK293T (**B**) and human NMDAζ1 transfected: sc-371953 (**C**) 293T whole cell lysates.



NMDAζ1 (E-2): sc-518043. Western blot analysis of NMDAζ1 expression in U-87 MG (**A**) and C6 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Alzu'bi, A., et al. 2024. Delineating the molecular mechanisms of hippocampal neurotoxicity induced by chronic administration of synthetic cannabinoid AB-FUBINACA in mice. Neurotoxicology 103: 50-59.

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.