SANTA CRUZ BIOTECHNOLOGY, INC.

NMDAε4 (G-10): sc-17822

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 ε subunits display limited distribution.

CHROMOSOMAL LOCATION

Genetic locus: GRIN2D (human) mapping to 19q13.33; Grin2d (mouse) mapping to 7 B4.

SOURCE

NMDAε4 (G-10) is a mouse monoclonal antibody raised against amino acids 268-386 mapping to an internal region gluatmate NMDAε4 of human origin.

PRODUCT

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

NMDAε4 (G-10) is available conjugated to agarose (sc-17822 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-17822 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17822 PE), fluorescein (sc-17822 FITC), Alexa Fluor® 488 (sc-17822 AF488), Alexa Fluor® 546 (sc-17822 AF546), Alexa Fluor® 594 (sc-17822 AF594) or Alexa Fluor® 647 (sc-17822 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-17822 AF680) or Alexa Fluor® 790 (sc-17822 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

NMDAε4 (G-10) is recommended for detection of NMDAε4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), 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), immunohistochemistry (including paraffin-embedded sections) (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 NMDAε4 siRNA (h): sc-36087, NMDAε4 siRNA (m): sc-36088, NMDAε4 shRNA Plasmid (h): sc-36087-SH, NMDAε4 shRNA Plasmid (m): sc-36088-SH, NMDAε4 shRNA (h) Lentiviral Particles: sc-36087-V and NMDAε4 shRNA (m) Lentiviral Particles: sc-36088-V.

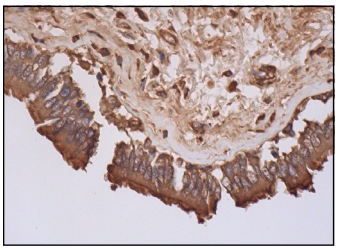
Molecular Weight of NMDAε4: 165 kDa.

Positive Controls: MEG-01 cell lysate: sc-2283, HEL 92.1.7 cell lysate: sc-2270 or IMR-32 cell lysate: sc-2409.

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



NMDAε4 (G-10): sc-17822. Immunoperoxidase staining of formalin fixed, paraffin-embedded human bronchus tissue showing cytoplasmic staining of respiratory epithelial cells.

SELECT PRODUCT CITATIONS

1. Yoshikawa, M., et al. 2022. Free d-amino acids in salivary gland in rat. Biology 11: 390.
2. Han, W.M., et al. 2023. NMDARs antagonist MK801 suppresses LPS-induced apoptosis and mitochondrial dysfunction by regulating subunits of NMDARs via the CaM/CaMKII/ERK pathway. Cell Death Discov. 9: 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.