

# NMDA $\epsilon$ 3 (C-20): sc-1470

## 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<sup>2+</sup> ions and a high permeability for Ca<sup>2+</sup> ions. The NMDA receptors consist of five subunits:  $\epsilon$  1, 2, 3, 4 and one  $\zeta$  subunit. The  $\zeta$  subunit is expressed throughout the brainstem whereas the four  $\epsilon$ -subunits display limited distribution.

## CHROMOSOMAL LOCATION

Genetic locus: GRIN2C (human) mapping to 17q25.1, GRIN2D (human) mapping to 19q13.33; Grin2c (mouse) mapping to 11 E2, Grin2d (mouse) mapping to 7 B4.

## SOURCE

NMDA $\epsilon$ 3 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of NMDA $\epsilon$ 3 of mouse origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-1470 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

NMDA $\epsilon$ 3 (C-20) is recommended for detection of the glutamate (NMDA) receptor  $\epsilon$ 3 subtype and, to a lesser extent, the glutamate (NMDA) receptor  $\epsilon$ 4 subtype of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

NMDA $\epsilon$ 3 (C-20) is also recommended for detection of the glutamate (NMDA) receptor  $\epsilon$ 3 subtype and, to a lesser extent, the glutamate (NMDA) receptor  $\epsilon$ 4 subtype in additional species, including bovine.

Molecular Weight of NMDA $\epsilon$ 3: 135 kDa.

Positive Controls: mouse cerebellum extract: sc-2403.

## STORAGE

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

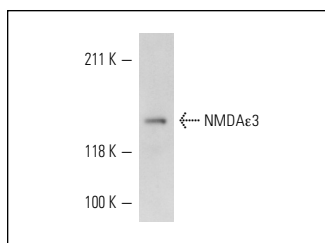
## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## RESEARCH USE

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

## DATA



NMDA $\epsilon$ 3 (C-20): sc-1470. Western blot analysis of NMDA $\epsilon$ 3 expression in mouse cerebellum tissue extract.

## 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.
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- Bersier, M.G., et al. 2008. The expression of NMDA receptor subunits in cerebral cortex and hippocampus is differentially increased by administration of endobain E, a Na<sup>+</sup>, K<sup>+</sup>-ATPase inhibitor. *Neurochem. Res.* 33: 66-72.
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- Berg, L.K., et al. 2013. Pre- and postsynaptic localization of NMDA receptor subunits at hippocampal mossy fibre synapses. *Neuroscience* 230: 139-150.