

NMDA ϵ 4 (C-20): sc-1471

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 kinetics of Ca²⁺ ions and a high permeability for Ca²⁺ 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, GRIN2C (human) mapping to 17q25.1; Grin2d (mouse) mapping to 7 B4, Grin2c (mouse) mapping to 11 E2.

SOURCE

NMDA ϵ 4 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of NMDA ϵ 4 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-1471 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NMDA ϵ 4 (C-20) is recommended for detection of the glutamate (NMDA) receptor ϵ 4 subtype (also designated NR2D) and, to a lesser extent, the glutamate (NMDA) receptor ϵ 3 subtype (also designated NR2C) 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 4 (C-20) is also recommended for detection of the glutamate (NMDA) receptor ϵ 4 subtype (also designated NR2D) and, to a lesser extent, the glutamate (NMDA) receptor ϵ 3 subtype (also designated NR2C) in additional species, including canine, bovine and porcine.

Molecular Weight of NMDA ϵ 4: 165 kDa.

Positive Controls: MEG-01 cell lysate: sc-2283, K-562 whole cell lysate: sc-2203 or IMR-32 cell lysate: sc-2409.

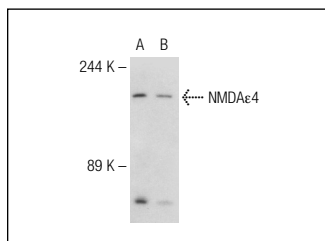
STORAGE

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

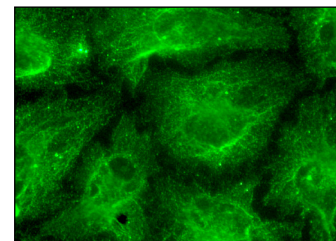
RESEARCH USE

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

DATA



NMDA ϵ 4 (C-20): sc-1471. Western blot analysis of NMDA ϵ 4 expression in IMR-32 (A) and K-562 (B) whole cell lysates.



NMDA ϵ 4 (C-20): sc-1471. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Becker, J., et al. 1998. Molecular and pharmacological characterization of recombinant rat/mice N-methyl-D-aspartate receptor subtypes in the yeast *Saccharomyces cerevisiae*. Eur. J. Biochem. 256: 427-435.
2. Ultenius, C., et al. 2006. Spinal NMDA receptor phosphorylation correlates with the presence of neuropathic signs following peripheral nerve injury in the rat. Neurosci. Lett. 399: 85-90.
3. Czaja, K., et al. 2006. Vagal afferent neurons projecting to the stomach and small intestine exhibit multiple N-methyl-D-aspartate receptor subunit phenotypes. Brain Res. 1119: 86-93.
4. Piochon, C., et al. 2007. NMDA receptor contribution to the climbing fiber response in the adult mouse Purkinje cell. J. Neurosci. 27: 10797-10809.
5. Baron, A., et al. 2010. NR2D-containing NMDA receptors mediate tissue plasminogen activator-promoted neuronal excitotoxicity. Cell Death Differ. 17: 860-871.
6. Doherty, F.C., et al. 2011. NMDA receptor subunit expression in the supraoptic nucleus of adult rats: dominance of NR2B and NR2D. Brain Res. 1388: 89-99.
7. Obiang, P., et al. 2012. GluN2D subunit-containing NMDA receptors control tissue plasminogen activator-mediated spatial memory. J. Neurosci. 32: 12726-12734.
8. Berg, L.K., et al. 2013. Pre- and postsynaptic localization of NMDA receptor subunits at hippocampal mossy fibre synapses. Neuroscience 230: 139-150.



Try **NMDA ϵ 4 (G-10): sc-17822**, our highly recommended monoclonal alternative to NMDA ϵ 4 (C-20).