

# GluR-7 (N-18): sc-7620

## 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 are functionally characterized by a slow kinetic and a high permeability for  $\text{Ca}^{2+}$  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.

## 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. Hollmann, M., et al. 1994. Cloned glutamate receptors. *Annu. Rev. Neurosci.* 17: 31-108.
6. Watanabe, M., et al. 1994. Distinct distributions of five NMDA receptor channel subunit mRNAs in the brainstem. *J. Comp. Neurol.* 343: 520-531.

## CHROMOSOMAL LOCATION

Genetic locus: GRIK3 (human) mapping to 1p34.3; Grik3 (mouse) mapping to 4 D2.2.

## SOURCE

GluR-7 (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of GluR-7 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-7620 P, (100  $\mu\text{g}$  peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

## APPLICATIONS

GluR-7 (N-18) is recommended for detection of GluR-7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu\text{g}$  per 100-500  $\mu\text{g}$  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).

GluR-7 (N-18) is also recommended for detection of GluR-7 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GluR-7 siRNA (h): sc-42489, GluR-7 siRNA (m): sc-42490, GluR-7 shRNA Plasmid (h): sc-42489-SH, GluR-7 shRNA Plasmid (m): sc-42490-SH, GluR-7 shRNA (h) Lentiviral Particles: sc-42489-V and GluR-7 shRNA (m) Lentiviral Particles: sc-42490-V.

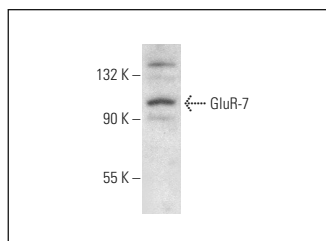
Molecular Weight of GluR-7: 105 kDa.

Positive Controls: NTERA-2 cl.D1 whole cell lysate: sc-364181.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



GluR-7 (N-18): sc-7620. Western blot analysis of GluR-7 expression in NTERA-2 cl.D1 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Chan, S.H., et al. 2002. Up-regulation of glutamate receptors in nucleus tractus solitarius underlies potentiation of baroreceptor reflex by heat shock protein 70. *Mol. Pharmacol.* 61: 1097-1104.
2. Fu, Y.S., et al. 2004. Transformation of human umbilical mesenchymal cells into neurons *in vitro*. *J. Biomed. Sci.* 11: 652-660.
3. Kwon, O.J., et al. 2007. Identification of synaptic pattern of kainate glutamate receptor subtypes on direction-selective retinal ganglion cells. *Neurosci. Res.* 58: 255-264.