SANTA CRUZ BIOTECHNOLOGY, INC.

# GluR-5 (N-19): sc-7617

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 neurotransmission by glutamate, whereas the NMDA receptors are functionally characterized by a slow kinetic 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: GRIK1 (human) mapping to 21q21.3; Grik1 (mouse) mapping to 16 C3.3.

## SOURCE

GluR-5 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of GluR-5 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7617 P, (100 µg 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-5 (N-19) is recommended for detection of GluR-5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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-5 (N-19) is also recommended for detection of GluR-5 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GluR-5 siRNA (h): sc-42487, GluR-5 siRNA (m): sc-42488, GluR-5 shRNA Plasmid (h): sc-42487-SH, GluR-5 shRNA Plasmid (m): sc-42488-SH, GluR-5 shRNA (h) Lentiviral Particles: sc-42487-V and GluR-5 shRNA (m) Lentiviral Particles: sc-42488-V.

Molecular Weight of GluR-5: 105-110 kDa.

## 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) 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.

## SELECT PRODUCT CITATIONS


1. Chan, S.H., et al. 2002. Up-regulation of glutamate receptors in nucleus tractus solitarii 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. Feigenspan, A., et al. 2004. Expression of connexin36 in cone pedicles and OFF-cone bipolar cells of the mouse retina. J. Neurosci. 24: 3325-3334.
4. Hirbec, H., et al. 2005. Syntenin is involved in the developmental regulation of neuronal membrane architecture. Mol. Cell. Neurosci. 28: 737-746.
5. Michalakis, S., et al. 2005. Impaired opsin targeting and cone photoreceptor migration in the retina of mice lacking the cyclic nucleotide-gated channel CNGA3. Invest. Ophthalmol. Vis. Sci. 46: 1516-1524.
6. Haverkamp, S., et al. 2005. The primordial, blue-cone color system of the mouse retina. J. Neurosci. 25: 5438-4545.
7. Duebel, J., et al. 2006. Two-photon imaging reveals somatodendritic chloride gradient in retinal ON-type bipolar cells expressing the biosensor clomeleon. Neuron 49: 81-94.
8. Haverkamp, S., et al. 2006. Synaptic plasticity in CNGA3$^{-/-}$ mice: cone bipolar cells react on the missing cone input and form ectopic synapses with rods. J. Neurosci. 26: 5248-5255.
9. Puller, C., et al. 2007. OFF midget bipolar cells in the retina of the marmoset, *Callithrix jacchus*, express AMPA receptors. J. Comp. Neurol. 502: 442-454.
10. 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.
11. Pan, F. and Massey, S.C. 2007. Rod and cone input to horizontal cells in the rabbit retina. J. Comp. Neurol. 500: 815-831.