SANTA CRUZ BIOTECHNOLOGY, INC.

GluR-4 (C-20): sc-7614

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 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 epsilon subunits display limited distribution.

CHROMOSOMAL LOCATION

Genetic locus: GRIA4 (human) mapping to 11q22.3; Gria4 (mouse) mapping to 9 A1.

SOURCE

GluR-4 (C-20) is available as either goat (sc-7614) or rabbit (sc-7614-R) polyclonal affinity purified antibody raised against a peptide mapping at the C-terminus of GluR-4 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.

GluR-4 (C-20) is available conjugated phycoerythrin (sc-7614 PE, 200 µg/ml), for IF, IHC(P) and FCM.

Blocking peptide available for competition studies, sc-7614 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GluR-4 (C-20) is recommended for detection of GluR-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

GluR-4 (C-20) is also recommended for detection of GluR-4 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for GluR-4 siRNA (h): sc-35491, GluR-4 siRNA (m): sc-35492, GluR-4 shRNA Plasmid (h): sc-35491-SH, GluR-4 shRNA Plasmid (m): sc-35492-SH, GluR-4 shRNA (h) Lentiviral Particles: sc-35491-V and GluR-4 shRNA (m) Lentiviral Particles: sc-35492-V.

Molecular Weight of GluR-4: 108 kDa.

Positive Controls: rat cerebellum extract: sc-2398.

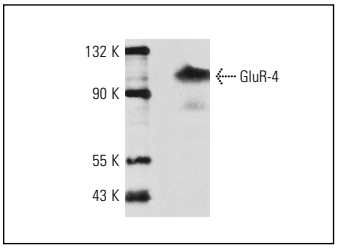
RESEARCH USE

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

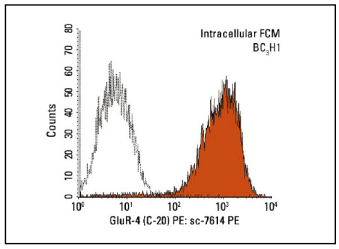
STORAGE

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

DATA



GluR-4 (C-20): sc-7614. Western blot analysis of GluR-4 (glutamate receptor 4) expression in rat cerebellum tissue extract.



GluR-4 (C-20) PE: sc-7614 PE. Intracellular FCM analysis of fixed and permeabilized BC_3H1 cells. Black line histogram represents the isotype control, normal goat IgG: sc-3992.

SELECT PRODUCT CITATIONS

1. Brunelli, G., et al. 2005. Glutamatergic reinnervation through peripheral nerve graft dictates assembly of glutamatergic synapses at rat skeletal muscle. Proc. Natl. Acad. Sci. USA 102: 8752-8757.
2. Wang, Y.Q., et al. 2005. Differential co-localization of neurokinin-3 receptor and NMDA/AMPA receptor subunits in neurons of the substantia nigra of C57/BL mice. Brain Res. 1053: 207-212.
3. Mokin, M., et al. 2006. Immediate-early gene-encoded protein Arc is associated with synaptic delivery of GluR-4-containing AMPA receptors during *in vitro* classical conditioning. J. Neurophysiol. 95: 215-224.
4. Mokin, M., et al. 2006. Quantitative analysis of immunofluorescent punctate staining of synaptically localized proteins using confocal microscopy and stereology. J. Neurosci. Methods 157: 218-224.
5. Ying, S.W., et al. 2007. Dendritic HCN2 channels constrain glutamate-driven excitability in reticular thalamic neurons. J. Neurosci. 27: 8719-8732.
6. Dhar, S.S., et al. 2009. Nuclear respiratory factor 1 co-regulates AMPA glutamate receptor subunit 2 and cytochrome c oxidase: tight coupling of glutamatergic transmission and energy metabolism in neurons. J. Neurochem. 108: 1595-1606.
7. Zheng, Z., et al. 2010. Oligomeric amyloid-{β} inhibits the proteolytic conversion of brain-derived neurotrophic factor (BDNF), AMPA receptor trafficking, and classical conditioning. J. Biol. Chem. 285: 34708-34717.
8. Gulino, R. and Gulisano, M. 2013. Noggin and Sonic hedgehog are involved in compensatory changes within the motoneuron-depleted mouse spinal cord. J. Neurol. Sci. 332: 102-109.