SANTA CRUZ BIOTECHNOLOGY, INC.

GluR-1 (G-12): sc-55509

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 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 ε 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. 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.

CHROMOSOMAL LOCATION

Genetic locus: GRIA1 (human) mapping to 5q33.2; Gria1 (mouse) mapping to 11 B1.3.

SOURCE

GluR-1 (G-12) is a mouse monoclonal antibody raised against a peptide mapping near the N-terminus of glutamate receptor 1 (GluR-1) of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GluR-1 (G-12) is available conjugated to agarose (sc-55509 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to either phycoerythrin (sc-55509 PE), fluorescein (sc-55509 FITC), Alexa Fluor® 488 (sc-55509 AF488), Alexa Fluor® 546 (sc-55509 AF546), Alexa Fluor® 594 (sc-55509 AF594) or Alexa Fluor® 647 (sc-55509 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-55509 AF680) or Alexa Fluor® 790 (sc-55509 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-55509 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

GluR-1 (G-12) is recommended for detection of GluR-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

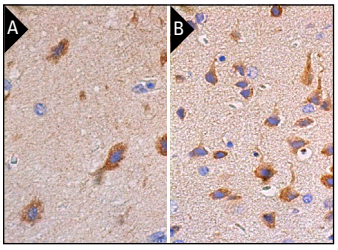
GluR-1 (G-12) is also recommended for detection of GluR-1 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for GluR-1 siRNA (h): sc-35485, GluR-1 siRNA (m): sc-35486, GluR-1 siRNA (r): sc-270586, GluR-1 shRNA Plasmid (h): sc-35485-SH, GluR-1 shRNA Plasmid (m): sc-35486-SH, GluR-1 shRNA Plasmid (r): sc-270586-SH, GluR-1 shRNA (h) Lentiviral Particles: sc-35485-V, GluR-1 shRNA (m) Lentiviral Particles: sc-35486-V and GluR-1 shRNA (r) Lentiviral Particles: sc-270586-V.

Molecular Weight of GluR-1: 106 kDa.

Positive Controls: mouse brain extract: sc-2253, H4 cell lysate: sc-2408 or rat brain extract: sc-2392.

DATA



GluR-1 (G-12): sc-55509. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex (**A**) and mouse brain (**B**) tissue showing cytoplasmic staining of neuronal cells.

SELECT PRODUCT CITATIONS

1. Zhu, B., et al. 2009. The influence of down-regulation of ACP1 by RNAi on the metastasis capability of osteosarcoma cell line MG-63. Chinese-German J. Clin. Oncol. 8: 481-484.
2. Sallam, H.S., et al. 2015. Peripheral adipose tissue Insulin resistance alters lipid composition and function of hippocampal synapses. J. Neurochem. 133: 125-133.
3. Xu, X., et al. 2018. Excessive UBE3A dosage impairs retinoic acid signaling and synaptic plasticity in autism spectrum disorders. Cell Res. 28: 48-68.
4. Vo, H.T., et al. 2019. Klotho deficiency affects the spine morphology and network synchronization of neurons. Mol. Cell. Neurosci. 98: 1-11.

RESEARCH USE

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