

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

BACKGROUND

Glutamate receptors mediate most excitatory neurotransmission in the brain and play an important role in neural plasticity, neural development and neuro-degeneration. 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 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.

REFERENCES

- Choi, D.W., et al. 1990. The role of glutamate neurotoxicity in hypoxic-ischemic neuronal death. *Annu. Rev. Neurosci.* 13: 171-182.
- 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 μ g IgG₁ 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 μ g/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 μ g/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 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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

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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 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), 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).

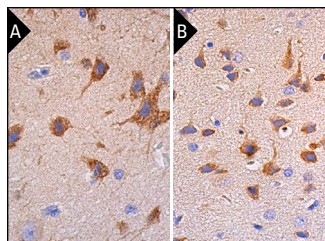
GluR-1 (G-12) is also recommended for detection of GluR-1 in additional species, including equine, canine, bovine and avian.

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

- 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.
- Sallam, H.S., et al. 2015. Peripheral adipose tissue Insulin resistance alters lipid composition and function of hippocampal synapses. *J. Neurochem.* 133: 125-133.
- Xu, X., et al. 2018. Excessive UBE3A dosage impairs retinoic acid signaling and synaptic plasticity in autism spectrum disorders. *Cell Res.* 28: 48-68.
- 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.