SANTA CRUZ BIOTECHNOLOGY, INC.

p-GluR-1 (Ser 849): sc-101688

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, caution-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: four ε subunits (ε 1, 2, 3 and 4) and one zeta subunit. The ζ subunit is expressed throughout the brainstem whereas the four epsilon subunits display limited distribution. Serine 831 is specifically phosphorylated by CaM kinase II and is the major site of CaM kinase II phosphorylation on GluR-1. In addition, treatment of hippocampal slice preparations with phorbol esters and forskolin increase the phosphorylation of Serine 831 and 845, respectively, indicating that protein kinase C and protein kinase A phosphorylate these residues in hippocampal slices. GluR-1 phosphorylation is critical for synaptic plasticity, and that identical stimulation conditions recruit different signal-transduction pathways depending on synaptic history.

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

CHROMOSOMAL LOCATION

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

SOURCE

p-GluR-1 (Ser 849) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 849 of GluR-1 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-GluR-1 (Ser 849) is recommended for detection of Ser 849 phosphorylated GluR-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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

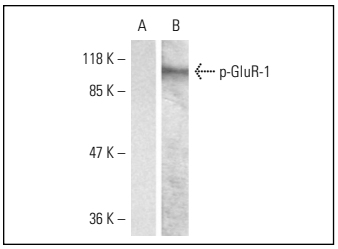
Molecular Weight of p-GluR-1: 106 kDa.

Positive Controls: Mouse brain extract: sc-2253, rat hippocampal tissue extract or mouse cerebellum extract: sc-2403.

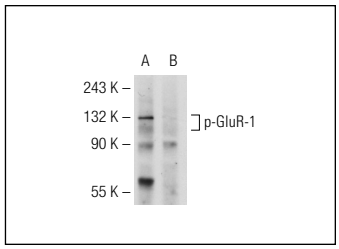
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Western blot analysis of phosphorylated GluR-1 expression in mouse brain tissue extract. Blots were probed with p-GluR-1 (Ser 849): sc-101688 preincubated with cognate phosphorylated peptide (**A**) and p-GluR-1 (Ser 849): sc-101688 (**B**).



p-GluR-1 (Ser 849): sc-101688. Western blot analysis of GluR-1 phosphorylation in untreated (**A**) and lambda protein phosphatase (sc-200312A) treated (**B**) mouse cerebellum tissue extracts.

SELECT PRODUCT CITATIONS

1. Chen, C., et al. 2011. Cytochrome P450 2J2 is highly expressed in hematologic malignant diseases and promotes tumor cell growth. J. Pharmacol. Exp. Ther. 336: 344-355.

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.