SANTA CRUZ BIOTECHNOLOGY, INC.

p-GluR-1 (Ser 863): sc-12624

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: four ε subunits (ε 1, 2, 3 and 4) and one ζ subunit. The ζ subunit is expressed throughout the brainstem whereas the four ε 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

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2. Nakanishi, S. 1992. Molecular diversity of glutamate receptors and implications for brain function. Science 258: 597-603.
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4. Bliss, T.V, et al. 1993. A synaptic model of memory: long-term potentiation in the hippocampus. Nature 361: 31-39.
5. Hollmann, M., et al. 1994. Cloned glutamate receptors. Annu. Rev. Neurosci. 17: 31-108.
6. Watanabe, M., et al. 1994. Distinct distributions of five NMDA receptor channel subunit mRNAs in the brainsteam. J. Comp. Neurol. 343: 520-531.
7. Schiffer, H.H., et al. 1997. Rat GluR7 and a carboxy-terminal splice variant, GluR-7β, are functional kainate receptor subunits with a low sensitivity to glutamate. Neuron 19: 1141-1146.
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CHROMOSOMAL LOCATION

Genetic locus: GRIA1 (human) mapping to 5q31.1; Gria1 (mouse) mapping to 11 B1.3.

SOURCE

p-GluR-1 (Ser 863) is available as either goat (sc-12624) or rabbit (sc-12624-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Ser 863 of GluR-1 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-12624 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-GluR-1 (Ser 863) is recommended for detection of Ser 863 phosphorylated GluR-1 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).

Suitable for use as control antibody for GluR-1 siRNA (h): sc-35485 and GluR-1 siRNA (m): sc-35486.

Suitable for use as control antibody for GluR-1 siRNA (h): sc-35485 and GluR-1 siRNA (m): sc-35486.

Molecular Weight of p-GluR-1: 106 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 B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) 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.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.