SANTA CRUZ BIOTECHNOLOGY, INC.

p-GluR-2/3 (Ser 880/Ser 891): sc-101689

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 through 7. The kainate/AMPA receptors are primarily responsible for the fast excitatory neurotransmission by glutamate, whereas the NMDA receptors are functionally characterized by a slow kinetic neurotransmission and a high permeability for Ca^{2+} ions. The GluR-2/3 protein is phosphorylated at Ser 880 by protein kinase C (PKC), and this phosphorylation event differentially regulates the binding of several PDZ domain-containing proteins, including PICK1. By blocking interactions between GluR-2/3 and PICK1, the phosphorylation of Glur-2/3 by PKC inhibits the expression of long-term depression of cerebral Purkinje cells *in vitro*.

REFERENCES

1. Choi, D.W. and Rothman, S.M. 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., Edwards, F.A. and Sakmann, B. 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. and Collingridge, G.L. 1993. A synaptic model of memory: long-term potentiation in the hippocampus. Nature 361: 31-39.
5. Hollmann, M. and Heinemann, S. 1994. Cloned glutamate receptors. Annu. Rev. Neurosci. 17: 31-108.
6. Schiffer, H.H., Swanson, G.T. and Heinemann, S.F. 1997. Rat GluR-7 and a carboxy-terminal splice variant, GluR-7β, are functional kainate receptor subunits with a low sensitivity to glutamate. Neuron 19: 1141-1146.
7. Xia, J., Chung, H.J., Wihler, C., Huganir, R.L. and Linden, D.J. 2000. Cerebellar long-term depression requires PKC-regulated interactions between GluR-2/3 and PDZ domain-containing proteins. Neuron 28: 499-510.

CHROMOSOMAL LOCATION

Genetic locus: GRIA2 (human) mapping to 4q33, GRIA3 (human) mapping to Xq26; Gria2 (mouse) mapping to 3 E3, Gria3 (mouse) mapping to X A3.3.

SOURCE

p-GluR-2/3 (Ser 880/Ser 891) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 880/Ser 891 of GluR-2/3 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-2/3 (Ser 880/Ser 891) is recommended for detection of Ser 880 phosphorylated GluR-2 of mouse, rat and human origin; correspondingly Ser 891 phosphorylated GluR-3 of human origin and correspondingly phosphorylated Ser 885 of mouse and rat 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)].

Molecular Weight of p-GluR-2: 100 kDa.

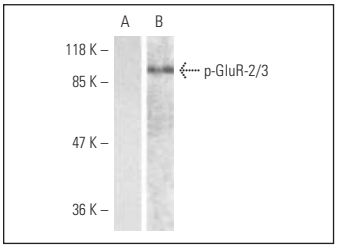
Molecular Weight of p-GluR-3: 103 kDa.

Positive Controls: mouse brain extract: sc-2253.

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) and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Western blot analysis of phosphorylated GluR-2/3 expression in mouse brain tissue extract. Blots were probed with p-GluR-2/3 (Ser 880/Ser 891): sc-101689 preincubated with cognate phosphorylated peptide (**A**) and p-GluR-2/3 (Ser 880/Ser 891): sc-101689 (**B**).

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.