SANTA CRUZ BIOTECHNOLOGY, INC.

p-GAP-43 (Ser 41): sc-135697

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The Power to Question

BACKGROUND

GAP-43 is a neural protein kinase C (PKC) substrate enriched in nerve growth cones that is implicated in growth cone plasticity. Endogenous growth cone GAP-43 is phosphorylated at multiple sites, on both Serine and Threonine residues. Stimulation of PKC activity increases the phosphorylation of only those proteolytic fragments containing Ser 41. However, phosphorylation is predominantly associated with fragments not containing Ser 41. Casein kinase II (CKII) phosphorylates GAP-43 at Serines 191/192 and Threonines 88, 89 and/or 95 both *in vitro* and in neuronal growth cones. Thus, GAP-43 in growth cones is not only a substrate for PKC, but also for CKII. Basic fibroblast growth factor promotes GAP-43 translocation from the cytosol to adherent membrane patches and stimulates GAP-43 phosphorylation, mainly at Ser 41. The stimulation of neurite outgrowth by NCAM also requires GAP-43 function; and GAP-43 phosphorylation in isolated growth cones occurs via an FGF receptor-dependent increase in arachidonic acid. Phosphorylated GAP-43 stabilizes long Actin filaments indicating that post-translational modifications of GAP-43, which can be regulated in response to extracellular signals, have the ability to directly infuence the structure of the Actin cytoskeleton.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: GAP43 (human) mapping to 3q13.31; Gap43 (mouse) mapping to 16 B4.

SOURCE

p-GAP-43 (Ser 41) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 41 of GAP-43 of rat origin.

PRODUCT

Each vial contains IgG in 100 µl of 10 mM HEPES with 150 mM NaCl, 50% glycerol and < 0.1% BSA.

APPLICATIONS

p-GAP-43 (Ser 41) is recommended for detection of Ser 41 phosphorylated GAP-43 of mouse, rat, human, *Xenopus laevis* and zebrafish origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000) and immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for GAP-43 siRNA (h): sc-35446, GAP-43 siRNA (m): sc-35447, GAP-43 shRNA Plasmid (h): sc-35446-SH, GAP-43 shRNA Plasmid (m): sc-35447-SH, GAP-43 shRNA (h) Lentiviral Particles: sc-35446-V and GAP-43 shRNA (m) Lentiviral Particles: sc-35447-V.

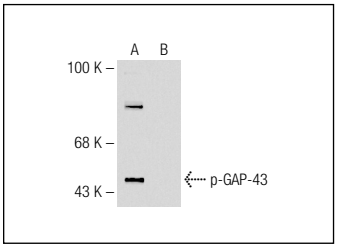
Molecular Weight of p-GAP-43: 43 kDa.

Positive Controls: rat prefrontal cortex tissue.

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



p-GAP-43 (Ser 41): sc-135697. Western blot analysis of GAP-43 phosphorylation in untreated (**A**) and lambda protein phosphatase (sc-200312A) treated (**B**) rat prefrontal cortex tissue extracts.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

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