Anti-Phospho-Ser^{41} Gap-43 Antibody

Catalog #: p1150-41 **Size:** 100 µl

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Host	Applications	Species Tested	Species Reactivity*	Molecular Reference
Rabbit	WB 1:1000	M, R	B, C, Ch, H, NHP, X, Z	~50 kDa

Product Description: Affinity purified rabbit polyclonal antibody.

Biological Significance: Gap-43 is thought to have an important role in development and plasticity because it is expressed at high levels in neuronal growth cones during development and during axonal regeneration (Benowitz and Routtenberg, 1997). There is also evidence from knockout animals that Gap-43 serves to amplify pathfinding signals from the growth cone (Strittmatter et al., 1995). Gap-43 is thought to mediate at least some of these effects via interaction with actin. Importantly, phosphorylation at Ser^{41} by protein kinase C (Catalog No. 1609-PKC) modulates the interaction of Gap-43 with actin (He et al., 1997) and may also affect neurotransmitter release during forms of plasticity like LTP (Hulo et al., 2002).

Antigen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Ser^{41} of rat Gap-43.

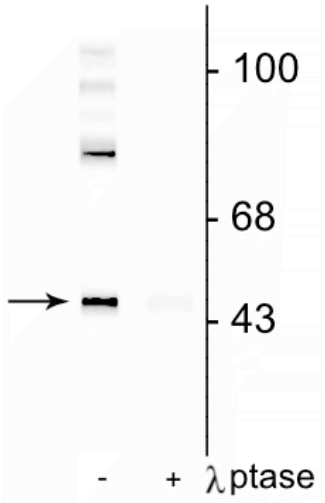
Antibody Specificity: Specific for endogenous levels of the ~50 kDa Gap-43 protein phosphorylated at Ser^{41}. In some tissues the antibody also recognizes a higher molecular weight protein that is also recognized by the pan Gap-43 antibody, which may be a Gap-43 aggregate or oligomer. Immunolabeling is completely eliminated by treatment with λ-Ptase.

Purification Method: Prepared from pooled rabbit serum by affinity purification via sequential chromatography on phospho and non-phosphopeptide affinity columns.

Quality Control Tests: Western blots performed on each lot.

Packaging: 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg BSA per ml and 50% glycerol.

Storage and Stability: Shipped on blue ice. Storage at -20°C is recommended, as aliquots may be taken without freeze/thawing due to presence of 50% glycerol. Stable for at least 1 year at -20°C.



Western blot of rat cortical lysate showing specific immunolabeling of the ~50 kDa Gap-43 protein phosphorylated at Ser^{41} in the first lane (-). Phosphospecificity is shown in the second lane (+) where immunolabeling is completely eliminated by blot treatment with *lambda* phosphatase (λ-Ptase, 1200 units for 30 min).

Application Key: **WB** = Western Blot **IF** = Immunofluorescence **IHC** = Immunohistochemistry **IP** = Immunoprecipitation
Species Reactivity Key: **All-**All Species **A-**Avian **Amp-**Amphibian **Ar-***Arabidopsis* **B-**Bovine **C-**Canine **Ch-**Chicken **D-***Drosophila* **GP-**Guinea Pig **H-**Human **Ha-**Hamster **M-**Mouse **NHP-** Non-human primate **P-**Pig **R-**Rat **S-**Sheep **X-***Xenopus* **Z-**Zebrafish
*Species assumed based on 100% homology with sequence used as antigen **For Research Use Only**

Product Specific References:

Rayudu Gopalakrishna, Usha Gundimeda, Jason Eric Schiffman, and Thomas H. McNeill (2008) A Direct Redox Regulation of Protein Kinase C Isoenzymes Mediates Oxidant-induced Neuritogenesis in PC12 Cells J. Biol. Chem., May 2008; 283: 14430 - 14444.

General References:

Hulo S, Alberi, S, Laux T, Muller D, Caroni P (2002) A point mutant of Gap-43 induces enhanced short-term and long-term hippocampal plasticity. Eur J Neurosci 15:1976-1982.

Benowitz LI, Routtenberg A (1997) Gap-43: An intrinsic determinant of neuronal development and plasticit. Trends Neurosci 20:84-91.

He, Q, Dent, EW, Meiri, KF (1997) Modulation of actin filament behavior by Gap-43 (neuromodulin) is dependent on the phosphorylation status of serine 41, the protein kinase C site. J Neurosci 17:3515-3524.

Strittmatter SM, Fankhauser C, Huang PL, Mashimo H, Fishman MC (1995) Neuronal path finding is abnormal in mice lacking the neuronal growth cone protein Gap-43," Cell 80:445-452.

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