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Phospho-Ser41 Gap-43 Antibody

Affinity purified rabbit polyclonal antibody
Catalog # AN1012

Specification

Phospho-Ser41 Gap-43 Antibody - Product Information

Application	**WB**
Primary Accession	P07936
Reactivity	**Rat**
Predicted	**Bovine, Chicken, Human, Mouse, Monkey, Xenopus, Zebrafish**
Host	**Rabbit**
Clonality	**polyclonal**
Calculated MW	**50 KDa**

Phospho-Ser41 Gap-43 Antibody - Additional Information

Gene ID	**29423**
Gene Name	**GAP43**

Other Names
Neuromodulin, Axonal membrane protein GAP-43, Growth-associated protein 43, Protein F1, Gap43

Target/Specificity
Synthetic phospho-peptide corresponding to amino acid residues surrounding Ser41 conjugated to KLH.

Dilution
WB~~ 1:1000

Format
Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephosphopeptide affinity columns.

Antibody Specificity
Specific for the ~50k Gap-43 protein phosphorylated at Ser41. In some tissues the antibody also recognizes a higher molecular weight protein that is also recognized by the pan Gap-43 antibody, that may be a Gap-43 aggregate or oligomer. Immunolableing is blocked by the phosphopeptide used as antigen but not by the corresponding dephosphopeptide. Immunolabeling is completely eliminated by treatment with λ-Ptase.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Phospho-Ser41 Gap-43 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Shipping

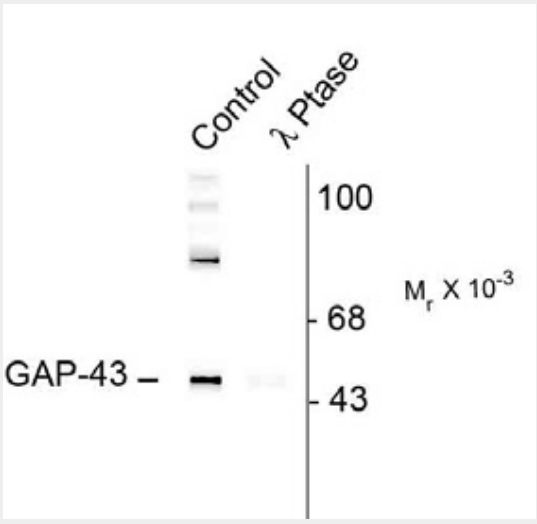
Blue Ice

Phospho-Ser41 Gap-43 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Phospho-Ser41 Gap-43 Antibody - Images



Western blot of rat cortex lysate showing specific immunolabeling of the ~50k Gap-43 protein phosphorylated at Ser41 (Control). The phosphospecificity of this labeling is shown in the second lane (lambda-phosphatase: λ-Ptase). The blot is identical to the control except that it was incubated in λ-Ptase (1200 units for 30 min) before being exposed to the GAP-43 Ser41 antibody. The immunolabeling of GAP-43 is completely eliminated by treatment with λ-Ptase.

Phospho-Ser41 Gap-43 Antibody - Background

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 Ser41 by protein kinase C (Catalog No. 1609-PKC) modulates the interaction of Gap-43 with actin (He et al., 1997) and may also affect eurotransmitter release during forms of plasticity like LTP (Hulo et al., 2002).

Phospho-Ser41 Gap-43 Antibody - References

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.
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.
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.
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.