



PhosphoSolutions®
Antibodies that work™

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Anti-Phospho-Ser³²⁷ GABA_A Receptor, γ 2 subunit

Catalog Number: p1130-327

Size: 100 μ l

Product Description: Affinity purified rabbit polyclonal antibody

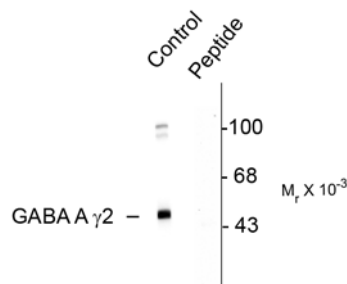
Applications: **WB:** 1:1000

Antigen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Ser³²⁷ of the GABA_A receptor, γ 2 subunit.

Species reactivity: The antibody has been directly tested for reactivity in Western blots with rat tissue. It is anticipated that the antibody will react with bovine, canine, chicken, mouse, human and non-human primate tissues based on the fact that these species have 100% homology with the amino acid sequence used as antigen.

Biological Significance: Gamma-aminobutyric acid (GABA) is the primary inhibitory neurotransmitter in the central nervous system. There are two major classes of GABA receptors: the GABA_A and the GABA_B subtype of receptors. GABA_A-Rs are important therapeutic targets for a range of sedative, anxiolytic, and hypnotic agents and are implicated in several diseases including epilepsy, anxiety, depression, and substance abuse. The GABA_A-R is a multimeric subunit complex. To date six α s, four β s and four γ s, plus alternative splicing variants of some of these subunits, have been identified (Olsen and Tobin, 1990; Whiting et al., 1999; Ogris et al., 2004). Injection in oocytes or mammalian cell lines of cRNA coding for α - and β -subunits results in the expression of functional GABA_A-Rs sensitive to GABA. However, coexpression of a γ -subunit is required for benzodiazepine modulation. It has recently been suggested that PKC_E regulates the sensitivity of GABA_A α 1 β 2 γ 2 receptors to ethanol and benzodiazepines through phosphorylation of serine 327 in the large intracellular loop of γ 2 (Qi et al., 2007)

Anti-Phospho-Ser³²⁷ GABA_A γ 2



Western blot of rat cortex showing specific immunolabeling of the ~45k GABA_A γ 2 protein phosphorylated at Ser³²⁷ (control). Immunolabeling is blocked by the phosphopeptide (peptide) used as antigen but not by the corresponding dephosphopeptide (not shown).

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WB = Western Blot **IF** = Immunofluorescence **IHC** = Immunohistochemistry **IP** = Immunoprecipitation

Packaging: 100 μ l in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 μ g per ml BSA and 50% glycerol. Adequate amount of material to conduct 10-mini Western Blots.

Storage and Stability: Store at -20°C; stable for at least one year.

Shipment: Domestic - Blue Ice; International - Blue Ice or Dry Ice.

Purification Method: Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephospho-peptide affinity columns.

Antibody Specificity: Specific for ~45k GABA_A receptor γ 2 subunit phosphorylated at Ser³²⁷. Immunolabeling of the GABA_A band is completely blocked by λ -phosphatase treatment.

Quality Control Tests: Western blots performed on each lot.

References:

Olsen RW, Tobin AJ (1990) Molecular biology of GABA_A receptors. *FASEB* 4:1469-1480.

Whiting PJ, Bonnert TP, McKernan RM, Farrar S, Le Bourdellès B, Heavens RP, Smith DW, Hewson L, Rigby MR, Sirinathsinghji DJS, Thompson SA, Wafford KA (1999) Molecular and functional diversity of the expanding GABA_A receptor gene family. *Ann NY Acad Sci* 868:645-653

Ogris W, Pörtl A, Hauer B, Ernst M, Oberto A, Wulff P, Höger H, Wisden W, Sieghart W (2004) Affinity of various benzodiazepine site ligands in mice with a point mutation in the GABA_A receptor γ 2-subunit. *Biochem Pharmacol* 68:1621-1629.

Qi ZH, Song M, Wallace MJ, Wang D, Newton PM, McMahon T, Chou WH, Zhang C, Shokat KM, Messing RO (2007) Protein kinase C ϵ regulates γ -aminobutyrate type A receptor sensitivity to ethanol and benzodiazepines through phosphorylation of γ 2 subunits. *J Biol Chem* 282(45):33052-63.

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