

Anti-Phospho-Ser¹³³ CREB

Catalog Number: SY-p1010-133

Size: 100 µl

\$375.00

Product Description: Affinity purified rabbit polyclonal antibody

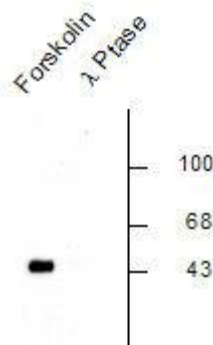
Applications: **WB:** 1:1000

Antigen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Ser¹³³ of rat CREB.

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

Biological Significance: It is well known that the control of gene expression involves activation of protein kinase cascades that regulate transcription factors within the nucleus (Karin and Hunter, 1995). The cyclic AMP response element binding protein (CREB) is one of the best characterized stimulus-induced transcription factors (Montminy, 1997). This transcription factor is a component of intracellular signaling events that regulate a wide range of biological functions, from spermatogenesis to circadian rhythms and memory (Shaywitz and Greenberg, 1999; Silva et al., 1998). A variety of protein kinases including protein kinase A (PKA), mitogen-activated protein kinases (MAPKs), and Ca²⁺/calmodulin-dependent protein kinases (CaMKs) phosphorylate CREB at serine 133 (Ser¹³³), and phosphorylation of Ser¹³³ are required for CREB-mediated transcription (Johannessen et al., 2004; Kornhauser et al., 2002).

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Western blot of a forskolin stimulated rat hippocampal lysate showing specific immunolabeling of the ~45k CREB phosphorylated at Ser¹³³ (Left Lane). The right lane is indicative that the specific immunolabeling of the CREB protein is completely eliminated by treatment with *lambda* phosphatase (λ -Ptase, 1200 units for 30 min).

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

Antibody Specificity: Specific for the ~45k CREB protein phosphorylated at Ser¹³³. Immunolabeling is blocked by λ -phosphatase treatment.

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

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

Storage and Stability: For long term storage -20°C is recommended. Stable at -20°C for at least 1 year.

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

Quality Control Tests: Western blots performed on each lot.

References:

- Johannessen M, Delghandi MP, Moens U (2004) What turns CREB on? Cellular Signalling 16:1211-1227.
- Karin M, Hunter T (1995) Transcriptional control by protein phosphorylation: Signal transmission from the cell surface to the nucleus. Curr Biol 5:747-757.
- Kornhauser JM, Cowan CW, Shaywitz AJ, Dolmetsch RE, Griffith EC, Hu LS, Haddad C, Xia ZG, Greenberg ME (2002) CREB transcriptional activity in neurons is regulated by multiple, calcium-specific phosphorylation events. Neuron 34:221-233.
- Montminy M (1997) Transcriptional regulation by cyclic AMP. Annu Rev Biochem 66:807-822.
- Shaywitz AJ, Greenberg ME (1999) CREB: A stimulus-induced transcription factor activated by a diverse array of extracellular signals. Annu Rev Biochem 68:821-861.
- Silva AJ, Kogan JH, Frankland PW, Kida S (1998) CREB and memory. Annu Rev Neurosci 21:127-148.

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