

Anti-Phospho-Ser¹³³ CREB Antibody



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Catalog#: p1010-133

Size: 100 µl

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Host	Applications	Species Tested	Species Reactivity*	Molecular Reference
Rabbit	WB 1:1000 IHC 1:100	R	B, C, Ch, H, M, NHP, S, X, Z	~45 kDa

Product Description: Affinity purified rabbit polyclonal antibody.

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).

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

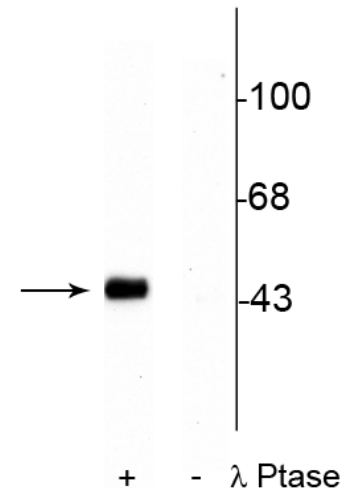
Antibody Specificity: Specific for endogenous levels of the ~45 kDa CREB protein phosphorylated at Ser¹³³. Immunolabeling is completely eliminated by treatment with λ-Ptase.

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

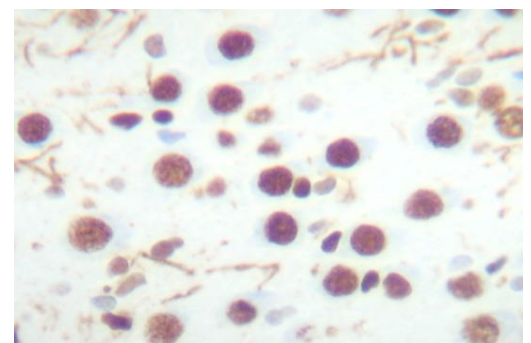
Quality Control Tests: Western blots performed on each lot.

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 hippocampal lysate stimulated with forskolin showing specific immunolabeling of the ~45 kDa CREB phosphorylated at Ser¹³³ in the first lane (-). Phosphospecificity is shown in the second lane (+) where immunolabeling is completely eliminated by lysate treatment with *lambda* phosphatase (λ-Ptase, 800 units/1mg protein for 30 min).



Immunostaining of cultured rat hippocampal slices showing nuclear labeling of CREB phosphorylated at Ser¹³³ in brown.

General References:

Johannessen M, Delghandi MP, Moens U (2004) What turns CREB on? Cellular Signaling 16:1211-1227.

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.

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.

Montminy M (1997) Transcriptional regulation by cyclic AMP. Annu Rev Biochem 66:807-822.

Karin M, Hunter T (1995) Transcriptional control by protein phosphorylation: Signal transmission from the cell surface to the nucleus. Curr Biol 5:747-757.