PRODUCT INFORMATION

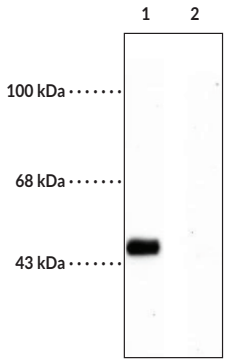
CREB (Phospho-Ser^{133}) Polyclonal Antibody

Item No. 10009181

Overview and Properties

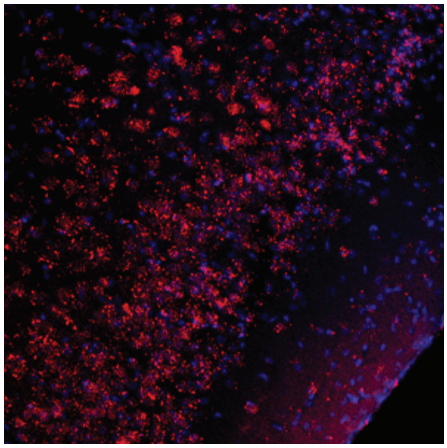
Contents:	This vial contains 100 µl of affinity-purified polyclonal antibody.
Immunogen:	Synthetic peptide from amino acid residues surrounding the phospho-Ser^{133} of rat CREB
Molecular Weight:	45 kDa
Cross Reactivity:	(+) Rat CREB
Species Reactivity:	(+) Mouse, rat
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	10 mM HEPES, pH 7.5, with 150 mM sodium chloride, 100 µg/ml BSA, and 50% glycerol
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is1:100-1:1,000 for IHC and 1:1,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: - λ Ptase
Lane 2: + λ Ptase

WB of at hippocampal lysate stimulated with forskolin showing specific immunolabeling of the ~45 kDa CREB phosphorylated at Ser^{133} in the first lane (-). Phosphospecificity is shown in the second lane (+) where immunolabeling is completely eliminated by lysate treatment with λ-Ptase (800 units/1 mg protein for 30 min).



Immunofluorescent labeling of mouse piriform cortex labeled with CREB (Phospho-Ser^{133}) Polyclonal Antibody (red). Cell nuclei have been labeled with DAPI DNA stain (blue).

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Description

It is well known that the control of gene expression involves activation of protein kinase cascades that regulate transcription factors within the nucleus.[1] The cyclic AMP response element binding protein (CREB) is one of the best characterized stimulus-induced transcription factors.[2] 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.[3,4] A variety of protein kinases including protein kinase A (PKA), mitogen-activated protein kinases (MAPKs), and Ca^{2+}/calmodulin-dependent protein kinases (CaMKs) phosphorylate CREB at serine 133 (Ser^{133}), and phosphorylation of Ser^{133} is required for CREB-mediated transcription.[5,6]

References

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2. Montminy, M. Transcriptional regulation by cyclic AMP. *Annu. Rev. Biochem.* **66**, 807-822 (1997).
3. Shaywitz, A.J. and Greenberg, M.E. CREB: A stimulus-induced transcription factor activated by a diverse array of extracellular signals. *Annu. Rev. Biochem.* **68**, 821-861 (1999).
4. Silva, A.J., Kogan, J.H., Frankland, P.W., *et al.* CREB and memory. *Annu. Rev. Neurosci.* **21**, 127-148 (1998).
5. Johannessen, M., Delghandi, M.P., and Moens, U. What turns CREB on? *Cell. Signal.* **16(11)**, 1211-1227 (2004).
6. Kornhauser, J.M., Cowan, C.W., Shaywitz, A.J., *et al.* CREB transcriptional activity in neurons is regulated by multiple, calcium-specific phosphorylation events. *Neuron* **34(2)**, 221-233 (2002).

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