

#14001 Store at 4°C

# Phospho-CREB (Ser133) (87G3) Rabbit mAb (Alexa Fluor® 647 Conjugate)

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Entrez-Gene ID #1385  
UniProt ID #P16220

New 11/14

For Research Use Only. Not For Use In Diagnostic Procedures.

**Applications**  
IF-IC, IF-F, F  
Endogenous

**Species Cross-Reactivity\***  
H, M, R, (Z)

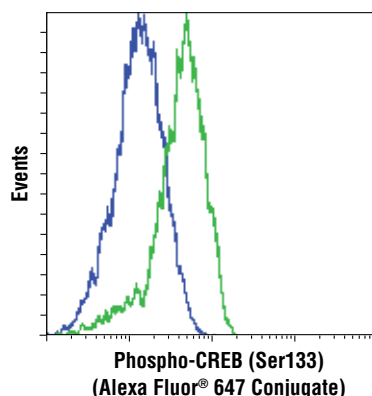
**Isotype**  
Rabbit IgG

**Description:** This Cell Signaling Technology antibody is conjugated to Alexa Fluor® 647 fluorescent dye and tested in-house for direct flow cytometry analysis in human cells and immunofluorescence analysis in human cells and rat tissue. This antibody is expected to exhibit the same species cross-reactivity as the unconjugated Phospho-CREB (Ser133) (87G3) Rabbit mAb #9198.

**Background:** CREB is a bZIP transcription factor that activates target genes through cAMP response elements. CREB is able to mediate signals from numerous physiological stimuli, resulting in regulation of a broad array of cellular responses. While CREB is expressed in numerous tissues, it plays a large regulatory role in the nervous system. CREB is believed to play a key role in promoting neuronal survival, precursor proliferation, neurite outgrowth, and neuronal differentiation in certain neuronal populations (1-3). Additionally, CREB signaling is involved in learning and memory in several organisms (4-6). CREB is able to selectively activate numerous downstream genes through interactions with different dimerization partners. CREB is activated by phosphorylation at Ser133 by various signaling pathways including Erk, Ca<sup>2+</sup>, and stress signaling. Some of the kinases involved in phosphorylating CREB at Ser133 are p90RSK, MSK, CaMKIV, and MAPKAP-2 (7-9).

**Specificity/Sensitivity:** Phospho-CREB (Ser133) (87G3) Rabbit mAb (Alexa Fluor® 647 Conjugate) recognizes endogenous levels of CREB only when phosphorylated at Ser133. The antibody also recognizes the phosphorylated form of the CREB-related protein, ATF-1.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser133 of human CREB protein.



Flow cytometric analysis of serum-starved SK-N-MC cells, untreated (blue) or treated with IBMX (0.5 mM) and Forskolin #3828 (30 µM, 30 min; green), using Phospho-CREB (Ser133) (87G3) Rabbit mAb (Alexa Fluor® 647 Conjugate).

**Storage:** Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.

\*Species cross-reactivity is determined by western blot using the unconjugated antibody.

**Recommended Antibody Dilutions:**

Immunofluorescence (IF-IC)	1:200
Immunofluorescence (IF-F)	1:200
Flow Cytometry	1:50

For product specific protocols and a complete listing of recommended companion products please see the product web page at [www.cellsignal.com](http://www.cellsignal.com)

**Background References:**

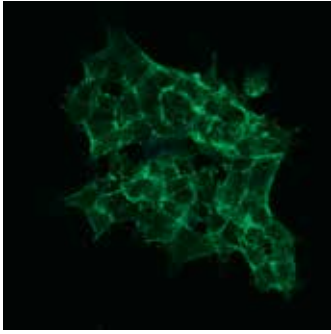
- (1) Lonze, B.E. et al. (2002) *Neuron* 34, 371-85.
- (2) Lee, M.M. et al. (1999) *J Neurosci Res* 55, 702-12.
- (3) Redmond, L. et al. (2002) *Neuron* 34, 999-1010.
- (4) Dash, P.K. et al. (1990) *Nature* 345, 718-21.
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- (9) Tan, Y. et al. (1996) *EMBO J* 15, 4629-42.

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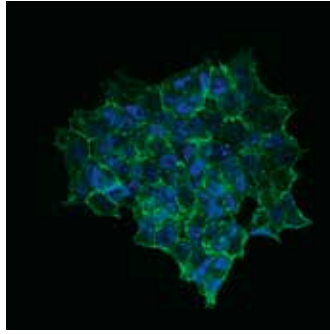
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**Untreated**

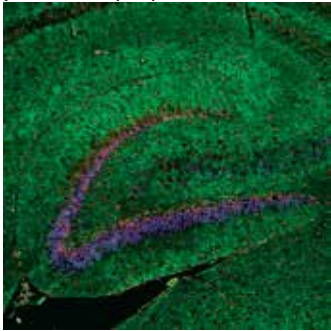


**Forskolin + IBMX-treated**

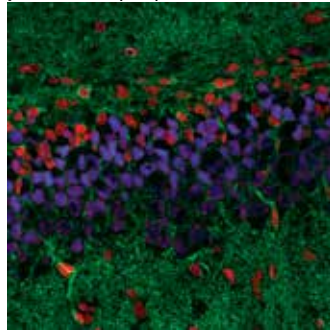


Confocal immunofluorescent analysis of SK-N-MC cells (serum-starved overnight), untreated (left) or treated with IBMX (0.5 mM) and Forskolin #3828 (30  $\mu$ M, 30 min; right), using Phospho-CREB (Ser133) (87G3) Rabbit mAb (Alexa Fluor<sup>®</sup> 647 Conjugate) (blue pseudocolor). Actin filaments were labeled with Alexa Fluor<sup>®</sup> 488 Phalloidin #8878 (green).

**p14 rat brain (10X)**



**p14 rat brain (60X)**



Confocal immunofluorescent analysis of p14 rat brain dentate gyrus using Phospho-CREB (Ser133) (87G3) Rabbit mAb (Alexa Fluor<sup>®</sup> 647 Conjugate) (blue pseudocolor). Actin filaments were labeled with Alexa Fluor<sup>®</sup> 488 Phalloidin #8878 (green). Red pseudocolor = Propidium Iodide (PI)/RNase Staining Solution #4087. Views shown are 10X magnification (left) and 60X magnification (right).