Phospho-CREB (Ser133) (87G3) Rabbit mAb

**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, Ca2+ and stress signaling. Some of the kinases involved in phosphorylating CREB at Ser133 are p38RSK, MSK, CaMKIV and MAPKAPK-2 (7–9).

**Specificity/Sensitivity:** Phospho-CREB (Ser133) (87G3) Rabbit mAb detects endogenous levels of CREB only when phosphorylated at serine 133. The antibody also detects 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.

**Recommended Antibody Dilutions:**
- Western blotting: 1:1000
- Immunohistochemistry (Paraffin): 1:800
- Immunofluorescence: 1:800
- Flow cytometry: 1:800

**Recommended Companion Products:**
- Enzymatic ChIP Kits.
- SignalStain Detection Reagent.
- Universal Blocking Buffer #1385

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

**Anti-rabbit secondary antibodies must be used to detect this antibody.**

**Background References:**

**IMPORTANT:** For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.

**Applications**
- Western Blot
- Immunoprecipitation
- Immunohistochemistry
- Immunofluorescence
- Chromatin IP / Chromatin IP-seq
- Flow Cytometry

**Cross-Reactivity**
- Human
- Mouse
- Rabbit
- Other Species Expected

**Molecular Weight:** 43 kDa

**Isotype:** Rabbit IgG®

**Species Cross-Reactivity:**
- Human
- Mouse
- Rabbit
- Other Species Expected

**Recommended Antibody Dilutions:**
- Western blotting: 1:1000
- Immunohistochemistry (Paraffin): 1:800
- Immunofluorescence: 1:800
- Immunofluorescence (IF-IC): 1:800
- Flow Cytometry: 1:800

**Related Products:**
- Enhance! Signal Amplification System
- Western Blotting Reagents
- Immunohistochemistry Reagents
- Immunofluorescence Reagents
- Flow Cytometry Reagents
Immunohistochemical analysis of paraffin-embedded human renal cell carcinoma, untreated (left) or α-phosphatase-treated (right), using Phospho-CREB (Ser133) (87G3) Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded human breast carcinoma, using Phospho-CREB (Ser133) (87G3) Rabbit mAb in the presence of control peptide (left) or Phospho-CREB (Ser133) Blocking Peptide #1090 (right).

Conifocal immunofluorescent images of rat dentate gyrus, either sham-operated (left) or 15 min ischemia followed by 30 min (center) and 4 h (right) reperfusion, labeled with Phospho-CREB (Ser133) (87G3) Rabbit mAb (red), Neurofilament-L (DA2) Mouse mAb #2835 (blue) and Phospho-S6 Ribosomal Protein (Ser235/236) (2F9) Rabbit mAb (Alexa Fluor® 488 Conjugate) #4854.

Flow cytometric analysis of SK-N-MC cells, untreated (blue) or IBMX- and forskolin-treated (green), using Phospho-CREB (Ser133) (87G3) Rabbit mAb compared to a nonspecific negative control antibody (red).
Chromatin immunoprecipitations were performed with cross-linked chromatin from 293 cells treated with Forskolin #3828 (30 µM) for 1h and either Phospho-CREB (Ser133) (87G3) Rabbit mAb #9198 or CREB (48H2) Rabbit mAb (#9197), using SimpleChIP® Enzymatic Chromatin IP Kit (Magnetic Beads) #9003. The enriched DNA was quantified by real-time PCR using human ALS2 exon 1 primers, SimpleChIP® Human NR4A3 Promoter Primers #4829, and SimpleChIP® Human α Satellite Repeat Primers #4486. The amount of immunoprecipitated DNA in each sample is represented as signal relative to the total amount of input chromatin, which is equivalent to one.