

# CREM (C-2): sc-390426

## BACKGROUND

Eukaryotic gene transcription is regulated by sequence-specific transcription factors that bind modular *cis* acting promoter and enhancer elements. The ATF/CREB transcription factor family binds the palindromic cAMP response element (CRE) octanucleotide TGACGTCA. The ATF/CREB family includes CREM, CREB-1, CREB-2 (also designated ATF-4), ATF-1, ATF-2 and ATF-3. This family of proteins contain highly divergent N-terminal domains, but share a C-terminal leucine zipper for dimerization and DNA binding. The transcription factor cAMP-responsive element modulator (CREM) is known to play a vital role for male fertility as it has been demonstrated that male mice lacking a functional CREM gene are infertile. In testis, CREM transcriptional activity is controlled through interaction with a tissue-specific partner, activator of CREM in the testis (ACT), which confers a powerful, phosphorylation-independent activation capacity. The function of ACT was found to be regulated by the testis-specific kinesin KIF17b also reactive with canine and syrian hamster.

## REFERENCES

- Montminy, M.R., et al. 1986. Identification of a cyclic-AMP-responsive element within the rat somatostatin gene. *Proc. Natl. Acad. Sci. USA* 83: 6682-6686.
- Lin, Y.S. and Green, M.R. 1988. Interaction of a common cellular transcription factor, ATF, with regulatory elements in both *Ela*- and cyclic AMP-inducible promoters. *Proc. Natl. Acad. Sci. USA* 85: 3396-3400.
- Hai, T., et al. 1989. Transcription factor ATF cDNA clones: an extensive family of leucine zipper proteins able to selectively form DNA-binding heterodimers. *Genes Dev.* 3: 2083-2090.

## CHROMOSOMAL LOCATION

Genetic locus: CREM (human) mapping to 10p11.21; *Crem* (mouse) mapping to 18 A1.

## SOURCE

CREM (C-2) is a mouse monoclonal antibody raised against amino acids 1-153 mapping at the N-terminus of CREM of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CREM (C-2) is available conjugated to agarose (sc-390426 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390426 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390426 PE), fluorescein (sc-390426 FITC), Alexa Fluor® 488 (sc-390426 AF488), Alexa Fluor® 546 (sc-390426 AF546), Alexa Fluor® 594 (sc-390426 AF594) or Alexa Fluor® 647 (sc-390426 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390426 AF680) or Alexa Fluor® 790 (sc-390426 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

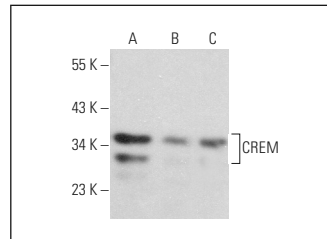
CREM (C-2) is recommended for detection of CREM of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CREM siRNA (h): sc-37700, CREM siRNA (m): sc-37701, CREM shRNA Plasmid (h): sc-37700-SH, CREM shRNA Plasmid (m): sc-37701-SH, CREM shRNA (h) Lentiviral Particles: sc-37700-V and CREM shRNA (m) Lentiviral Particles: sc-37701-V.

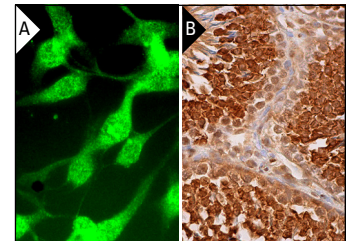
Molecular Weight of CREM: 39 kDa.

Positive Controls: J774.A1 cell lysate: sc-3802, SUP-T1 whole cell lysate: sc-364796 or PC-12 cell lysate: sc-2250.

## DATA



CREM (C-2): sc-390426. Western blot analysis of CREM expression in J774.A1 (A), SUP-T1 (B) and PC-12 (C) whole cell lysates.



CREM (C-2): sc-390426. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing nuclear and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat testis tissue showing nuclear and cytoplasmic staining of cells in seminiferous ducts and Leydig cells (B).

## SELECT PRODUCT CITATIONS

- Kloubert, V., et al. 2021. Zinc deficiency leads to reduced interleukin-2 production by active gene silencing due to enhanced CREM $\alpha$  expression in T cells. *Clin. Nutr.* 40: 3263-3278.
- Baarz, B.R., et al. 2022. Short-term zinc supplementation of zinc-deficient seniors counteracts CREM $\alpha$ -mediated IL-2 suppression. *Immun. Ageing* 19: 40.
- Chen, Y., et al. 2022. Single-cell transcriptomic profiling in inherited retinal degeneration reveals distinct metabolic pathways in rod and cone photoreceptors. *Int. J. Mol. Sci.* 23: 12170.
- Liu, W., et al. 2023. Proton-pump inhibitors suppress T cell response by shifting intracellular zinc distribution. *Int. J. Mol. Sci.* 24: 1191.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.