

# p-C/EBP $\beta$ (Thr 217)-R: sc-16993-R

## BACKGROUND

The transcription factor C/EBP  $\alpha$  (CCAAT-enhancer binding protein) is a sequence-specific, DNA-binding protein that binds avidly to several different CIS-regulatory DNA sequences, which are transcribed by RNA polymerase II. C/EBP  $\alpha$  regulates gene expression in a variety of tissues, including liver, adipose, lung and intestine. Additional family members include C/EBP  $\epsilon$ , C/EBP  $\beta$ , C/EBP  $\delta$  and C/EBP  $\gamma$ , all of which exhibit similar DNA-binding specificities and affinities to C/EBP  $\alpha$ . C/EBP  $\beta$  and C/EBP  $\delta$  readily form heterodimers with each other as well as with C/EBP  $\alpha$  through a leucine zipper, which results in the formation of a linked set of DNA contact surfaces. TGF $\alpha$  induces activation of the p90 ribosomal S kinase, resulting in the phosphorylation of rat C/EBP  $\beta$  on Ser 105 and mouse C/EBP  $\beta$  on Thr 217. Therefore, a site-specific phosphorylation of the C/EBP  $\beta$  transcription factor is critical for hepatocyte proliferation induced by TGF $\alpha$  and other stimuli that activate RSK.

## REFERENCES

1. Landschulz, W.H., et al. 1988. Isolation of a recombinant copy of the gene encoding C/EBP. *Genes Dev.* 2: 786-800.
2. Birkenmeier, E.H., et al. 1989. Tissue-specific expression, developmental regulation and genetic mapping of the gene encoding CCAAT/enhancer binding protein. *Genes Dev.* 3: 1146-1156.
3. Williams, S.C., et al. 1991. A family of C/EBP-related proteins capable of forming covalently linked leucine zipper dimers *in vitro*. *Genes Dev.* 5: 1553-1567.
4. Umek, R.M., et al. 1991. CCAAT-enhancer binding protein: a component of a differentiation switch. *Science* 251: 288-292.
5. Davydov, I.V., et al. 1995. Cloning of the cDNA encoding human C/EBP  $\alpha$ , a protein binding to the PRE-I enhancer element of the human interleukin-4 promoter. *Gene* 161: 271-275.
6. Buck, M., et al. 1999. Phosphorylation of rat Serine 105 or mouse Threonine 217 in C/EBP  $\beta$  is required for hepatocyte proliferation induced by TGF $\alpha$ . *Mol. Cell* 4: 1087-1092.

## CHROMOSOMAL LOCATION

Genetic locus: Cebpb (mouse) mapping to 2 H3.

## SOURCE

p-C/EBP  $\beta$  (Thr 217)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Thr 217 of C/EBP  $\beta$  of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16993 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

p-C/EBP  $\beta$  (Thr 217)-R is recommended for detection of Thr 217 phosphorylated C/EBP- $\beta$  of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (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 C/EBP  $\beta$  siRNA (m): sc-29862, C/EBP  $\beta$  shRNA Plasmid (m): sc-29862-SH and C/EBP  $\beta$  shRNA (m) Lentiviral Particles: sc-29862-V.

Molecular Weight of p-C/EBP  $\beta$ : 41 kDa.

## SELECT PRODUCT CITATIONS

1. Plotkin, L.I., et al. 2005. Bisphosphonates and estrogens inhibit osteocyte apoptosis via distinct molecular mechanisms downstream of extracellular signal-regulated kinase activation. *J. Biol. Chem.* 280: 7317-7325.
2. Lee, S.J., et al. 2006. Role of p90 ribosomal S6-kinase-1 in olitipraz-induced specific phosphorylation of CCAAT/enhancer binding protein- $\beta$  for GSTA2 gene transactivation. *Mol. Pharmacol.* 69: 385-396.
3. Yokota, T., et al. 2008. Differential regulation of elafin in normal and tumor-derived mammary epithelial cells is mediated by CCAAT/enhancer binding protein  $\beta$ . *Cancer Res.* 67: 11272-11283.

## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.