

# C/EBP $\beta$ (47A1): sc-56637

## BACKGROUND

CCAAT-enhancer binding proteins (C/EBP) are basic region/leucine zipper (bZIP) transcription factors selectively expressed during the differentiation of liver, adipose tissue, blood cells and the endocrine pancreas. C/EBP  $\beta$  is a member of the C/EBP transcription factor family. The C/EBP  $\beta$  gene encodes several isoforms containing truncated transcription activation domains due to the alternative translational initiation at multiple AUG start sites. Initiation of translation at the in-frame AUGs forms four C/EBP  $\beta$  isoforms. C/EBP  $\beta$  is also known as interleukin 6-dependent DNA-binding protein (IL6DBP), liver activator protein (LAP) or liver-enriched transcriptional activator protein transcription factor 5 (TCF5). C/EBP  $\beta$  contributes to the regulation of the acute phase response in hepatocytes. Stat3 has an important function in IL-6-mediated transcription of the C/EBP  $\beta$  gene that has direct implication for acute phase response in liver cells. The C/EBP  $\beta$  form requires phosphorylation for its DNA binding ability, and increase binding of C/EBP  $\beta$  isoforms during acute-phase reaction occurs through its upregulation and structural modification.

## CHROMOSOMAL LOCATION

Genetic locus: CEBPB (human) mapping to 20q13.13; Cebpb (mouse) mapping to 2 H3.

## SOURCE

C/EBP  $\beta$  (47A1) is a mouse monoclonal antibody raised against amino acids 1-271 of C/EBP  $\beta$  of human origin.

## PRODUCT

Each vial contains 50  $\mu$ g IgG<sub>1</sub> in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

C/EBP  $\beta$  (47A1) is recommended for detection of C/EBP  $\beta$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for C/EBP  $\beta$  siRNA (h): sc-29229, C/EBP  $\beta$  siRNA (m): sc-29862, C/EBP  $\beta$  siRNA (r): sc-270405, C/EBP  $\beta$  shRNA Plasmid (h): sc-29229-SH, C/EBP  $\beta$  shRNA Plasmid (m): sc-29862-SH, C/EBP  $\beta$  shRNA Plasmid (r): sc-270405-SH, C/EBP  $\beta$  shRNA (h) Lentiviral Particles: sc-29229-V, C/EBP  $\beta$  shRNA (m) Lentiviral Particles: sc-29862-V and C/EBP  $\beta$  shRNA (r) Lentiviral Particles: sc-270405-V.

Molecular Weight of C/EBP  $\beta$ : 45 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, C/EBP  $\beta$  (h): 293T Lysate: sc-176940 or HeLa nuclear extract: sc-2120.

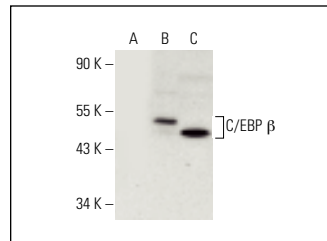
## STORAGE

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

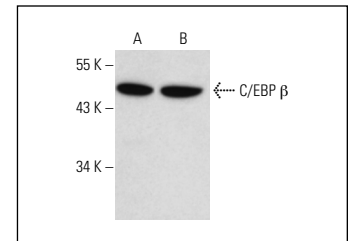
## RESEARCH USE

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

## DATA



C/EBP  $\beta$  (47A1): sc-56637. Western blot analysis of C/EBP  $\beta$  expression in non-transfected 293T: sc-117752 (A), human C/EBP  $\beta$  transfected 293T: sc-176940 (B) and Jurkat (C) whole cell lysates.



C/EBP  $\beta$  (47A1): sc-56637. Western blot analysis of C/EBP  $\beta$  expression in HeLa (A) and Hep G2 (B) nuclear extracts.

## SELECT PRODUCT CITATIONS

- Estella, C., et al. 2012. miRNA signature and Dicer requirement during human endometrial stromal decidualization *in vitro*. *PLoS ONE* 7: e41080.
- Huang, Y., et al. 2013. Phospho- $\Delta$ Np63 $\alpha$ /microRNA feedback regulation in squamous carcinoma cells upon cisplatin exposure. *Cell Cycle* 12: 684-697.
- Qin, Y., et al. 2016. Inhibition of IFN- $\gamma$ -induced nitric oxide dependent antimycobacterial activity by miR-155 and C/EBP  $\beta$ . *Int. J. Mol. Sci.* 17: 535.
- Nustede, R., et al. 2016. ELANE mutant-specific activation of different UPR pathways in congenital neutropenia. *Br. J. Haematol.* 172: 219-227.
- Kong, Q., et al. 2016. RACK1 is required for adipogenesis. *Am. J. Physiol., Cell Physiol.* 311: C831-C836.
- Cao, J., et al. 2017. CCAAT enhancer binding protein  $\beta$  has a crucial role in regulating breast cancer cell growth via activating the TGF- $\beta$ -Smad3 signaling pathway. *Exp. Ther. Med.* 14: 1554-1560.
- Pulugulla, S.H., et al. 2018. A combined computational and experimental approach reveals the structure of a C/EBP  $\beta$ :Spi-1 interaction required for IL1B gene transcription. *J. Biol. Chem.* 293: 19942-19956.
- Basu, S.K., et al. 2018. A RAS-CaMKK $\beta$ -AMPK $\alpha$ 2 pathway promotes senescence by licensing post-translational activation of C/EBP  $\beta$  through a novel 3'UTR mechanism. *Oncogene* 37: 3528-3548.
- Tran, A., et al. 2019. Palmitate and nitric oxide regulate the expression of spexin and galanin receptors 2 and 3 in hypothalamic neurons. *Neuroscience*. E-published.
- Khalafi, M., et al. 2020. The impact of moderate-intensity continuous or high-intensity interval training on adipogenesis and browning of subcutaneous adipose tissue in obese male rats. *Nutrients* 12: 925.

## PROTOCOLS

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