

# PEBP2 $\beta$ (H-10): sc-166126

## BACKGROUND

The transcription factor polyomavirus enhancer binding protein 2 (PEBP2), also designated Osf2 (osteoblast-specific transcription factor), CBFA1 (core binding factor) and AML3 (acute myeloid leukemia), is composed of two subunits,  $\alpha$  and  $\beta$ , which are essential for the regulation of hematopoiesis and osteogenesis. The PEBP2 $\alpha$  subunits, PEBP2 $\alpha$ A, PEBP2 $\alpha$ B and PEBP2 $\alpha$ C, are encoded by three RUNX genes, all of which contain a 128 amino acid region homologous to the highly conserved *Drosophila* segmentation gene, runt. This region is involved in DNA binding and heterodimerization with the regulatory  $\beta$  subunit, which facilitates DNA binding of the  $\alpha$  subunit. Both subunits are required for *in vivo* function; the disruption of either gene results in a lack of definitive hematopoiesis followed by embryo death *in utero* due to hemorrhage in the central nervous system. The gene encoding PEBP2 $\beta$  is the target of chromosomal inversion 16 (p13;q22) with the smooth muscle myosin heavy chain, producing a chimeric gene, PEBP2 $\beta$ /CBF $\beta$ -SMMHC, that is associated with human acute myeloid leukemia.

## REFERENCES

1. Kamachi, Y., Ogawa, E., Asano, M., Ishida, S., Murakami, Y., Satake, M., Ito, Y. and Shigesada, K. 1990. Purification of a mouse nuclear factor that binds to both the A and B cores of the polyomavirus enhancer. *J. Virol.* 64: 4808-4819.
2. Ogawa, E., Maruyama, M., Kagoshima, H., Inuzuka, M., Lu, J., Satake, M., Shigesada, K. and Ito, Y. 1993. PEBP2/PEA2 represents a family of transcription factors homologous to the products of the *Drosophila* runt gene and the human AML1 gene. *Proc. Natl. Acad. Sci. USA* 90: 6859-6863.
3. Ogawa, E., Inuzuka, M., Maruyama, M., Satake, M., Naito-Fujimoto, M., Ito, Y. and Shigesada, K. 1993. Molecular cloning and characterization of PEBP2 $\beta$ , the heterodimeric partner of a novel *Drosophila* runt-related DNA binding protein PEBP2 $\alpha$ . *Virology* 194: 314-331.
4. Tanaka, Y., Fujii, M., Hayashi, K., Chiba, N., Akaishi, T., Shineha, R., Nishihira, T., Satomi, S., Ito, Y., Watanabe, T. and Satake, M. 1998. The chimeric protein, PEBP2 $\beta$ /CBF $\beta$ -SMMHC, disorganizes cytoplasmic stress fibers and inhibits transcriptional activation. *Oncogene* 17: 699-708.

## CHROMOSOMAL LOCATION

Genetic locus: CBF $\beta$  (human) mapping to 16q22.1; Cbfb (mouse) mapping to 8 D3.

## SOURCE

PEBP2 $\beta$  (H-10) is a mouse monoclonal antibody raised against amino acids 1-182 representing full length PEBP2 $\beta$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-166126 X, 200  $\mu$ g/0.1 ml.

## RESEARCH USE

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

## APPLICATIONS

PEBP2 $\beta$  (H-10) is recommended for detection of PEBP2 $\beta$  of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 PEBP2 $\beta$  siRNA (h): sc-37681, PEBP2 $\beta$  siRNA (m): sc-37682, PEBP2 $\beta$  shRNA Plasmid (h): sc-37681-SH, PEBP2 $\beta$  shRNA Plasmid (m): sc-37682-SH, PEBP2 $\beta$  shRNA (h) Lentiviral Particles: sc-37681-V and PEBP2 $\beta$  shRNA (m) Lentiviral Particles: sc-37682-V.

PEBP2 $\beta$  (H-10) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

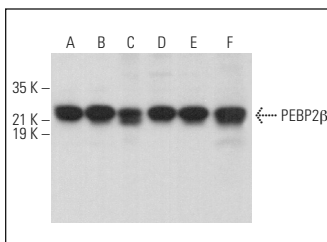
Molecular Weight of PEBP2 $\beta$ : 22 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, K-562 whole cell lysate: sc-2203 or MEG-01 cell lysate: sc-2283.

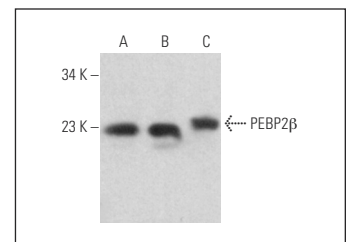
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



PEBP2 $\beta$  (H-10): sc-166126. Western blot analysis of PEBP2 $\beta$  expression in WEHI-231 (A), WR19L (B), Ramos (C), Daudi (D) and NAMALWA (E) whole cell lysates and rat spleen tissue extract (F).



PEBP2 $\beta$  (H-10): sc-166126. Western blot analysis of PEBP2 $\beta$  expression in MEG-01 (A), K-562 (B) and RAW 264.7 (C) whole cell lysates.

## STORAGE

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

## PROTOCOLS

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