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# PEBP2 $\beta$ (m): 293T Lysate: sc-122480

## 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., et al. 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., et al. 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., et al. 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., et al. 1998. The chimeric protein, PEBP2 $\beta$ /CBF $\beta$ -SMMHC, disorganizes cytoplasmic stress fibers and inhibits transcriptional activation. *Oncogene* 17: 699-708.
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6. Bae, S.C., et al. 1999. Regulation mechanisms for the heterodimeric transcription factor, PEBP2/CBF. *Histol. Histopathol.* 14: 1213-121.
7. Namba, K., et al. 2000. Indispensable role of the transcription factor PEBP2/CBF in angiogenic activity of a murine endothelial cell MSS31. *Oncogene.* 19: 106-114.
8. Kanto, S., et al. 2000. The PEBP2beta/CBF beta-SMMHC chimeric protein is localized both in the cell membrane and nuclear subfractions of leukemic cells carrying chromosomal inversion 16. *Leukemia.* 14: 1253-129.

## CHROMOSOMAL LOCATION

Genetic locus: Cbfb (mouse) mapping to 8 D3.

## PRODUCT

PEBP2 $\beta$  (m): 293T Lysate represents a lysate of mouse PEBP2 $\beta$  transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## APPLICATIONS

PEBP2 $\beta$  (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive PEBP2 $\beta$  antibodies. Recommended use: 10-20  $\mu$ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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) for detailed protocols and support products.