SANTA CRUZ BIOTECHNOLOGY, INC.

# PEBP2β (h3): 293T Lysate: sc-172714

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*The Power to Question*

## 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, α and β, which are essential for the regulation of hematopoiesis and osteogenesis. The PEBP2α subunits, PEBP2αA, PEBP2αB and PEBP2αC, 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 β subunit, which facilitates DNA binding of the α subunit. Both subunits are required for *in vivo* function; the disruption of either gene results in a lack of definitive hematopoiesis followed by embryo deathin utero due to hemorrhage in the central nervous system. The gene encoding PEBP2β is the target of chromosomal inversion 16 (p13;q22) with the smooth muscle myosin heavy chain, producing a chimeric gene, PEBP2β/CBFβ-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 PEBP2β, the heterodimeric partner of a novel *Drosophila* runt-related DNA binding protein PEBP2α. 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, PEBP2β/CBFβ-SMMHC, disorganizes cytoplasmic stress fibers and inhibits transcriptional activation. Oncogene 17: 699-708.


## CHROMOSOMAL LOCATION

Genetic locus: CBFB (human) mapping to 16q22.1.

## PRODUCT

PEBP2β (h3): 293T Lysate represents a lysate of human PEBP2β transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

## 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.

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

## APPLICATIONS

PEBP2β (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive PEBP2β antibodies. Recommended use: 10-20 µl per lane.

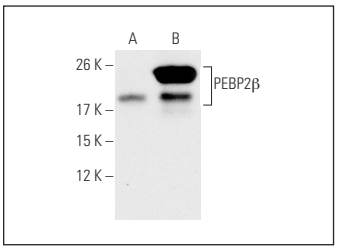
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

PEBP2β (A-4): sc-166142 is recommended as a positive control antibody for Western Blot analysis of enhanced human PEBP2β expression in PEBP2β transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

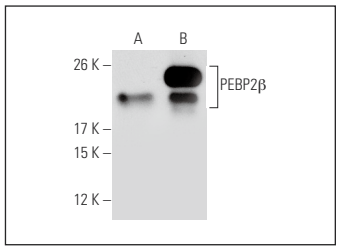
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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.

## DATA




PEBP2β (A-4): sc-166142. Western blot analysis of PEBP2β expression in non-transfected: sc-117752 (**A**) and human PEBP2β transfected: sc-172714 (**B**) 293T whole cell lysates.




PEBP2β (H-10): sc-166126. Western blot analysis of PEBP2β expression in non-transfected: sc-117752 (**A**) and human PEBP2β transfected: sc-172714 (**B**) 293T whole cell lysates.

## RESEARCH USE

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