

Pbx 3 (h): 293T Lysate: sc-111640

BACKGROUND

Pbx 1, 2, 3 and 4 are members of the TALE (three amino acid loop extension) family of homeodomain-containing proteins. Human pre-B cell acute leukemias are frequently associated with a t(1;19)(q23;p13.3) chromosomal rearrangement which, creates a chimeric gene encoding a fusion between the E2A and Pbx 1 gene products. Pbx 2 and Pbx 3 share a 92% and 94% identity with Pbx 1 over a 266 amino acid region flanking their homeobox domains, while all three proteins are quite divergent at their amino- and carboxy-termini. Two forms of Pbx 1 and Pbx 3 each differ primarily in their carboxy-termini, and result from alternative mRNA splicing. Unlike other homeotic selector genes which are expressed transiently during development and differentiation, Pbx gene transcripts are ubiquitously expressed in both fetal and adult tissues and cell lines. Additionally, Pbx 2 and Pbx 3 transcripts are detected in lymphoid cells, which do not express Pbx 1. Pbx 4 expression is confined to the testis, especially to spermatocytes in the pachytene stage of the first meiotic prophase.

REFERENCES

1. Kamps, M.P., et al. 1990. A new homeobox gene contributes the DNA binding domain of the t(1;19) translocation protein in pre-B ALL. *Cell* 60: 547-555.
2. Nourse, J., et al. 1990. Chromosomal translocation t(1;19) results in synthesis of a homeobox fusion mRNA that codes for a potential chimeric transcription factor. *Cell* 60: 535-545.
3. Monica, K., et al. 1991. Pbx 2 and Pbx 3, new homeobox genes with extensive homology to the human proto-oncogene Pbx 1. *Mol. Cell. Biol.* 11: 6149-6157.
4. LeBrun, D.P., et al. 1994. Fusion with E2A alters the transcriptional properties of the homeodomain protein Pbx 1 in t(1;19) leukemias. *Oncogene* 9: 1641-1647.
5. Lu, Q., et al. 1994. Fusion with E2A converts the Pbx 1 homeodomain protein into a constitutive transcriptional activator in human leukemias carrying the t(1;19) translocation. *Mol. Cell. Biol.* 14: 3938-3948.
6. Monica, K., et al. 1994. Transformation properties of the E2A-Pbx 1 chimeric oncoprotein: fusion with E2A is essential, but the Pbx 1 homeodomain is dispensable. *Mol. Cell. Biol.* 14: 8304-8314.
7. Toresson, H., et al. 2000. Expression of Meis and Pbx genes and their protein products in the developing telencephalon: implications for regional differentiation. *Mech. Dev.* 94: 183-187.
8. Wagner, K., et al. 2001. Pbx4, a new Pbx family member on mouse chromosome 8, is expressed during spermatogenesis. *Mech. Dev.* 103: 127-131.

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.

CHROMOSOMAL LOCATION

Genetic locus: PBX3 (human) mapping to 9q33.3.

PRODUCT

Pbx 3 (h): 293T Lysate represents a lysate of human Pbx 3 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Pbx 3 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Pbx 3 antibodies. Recommended use: 10-20 µl per lane.

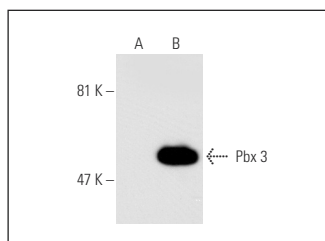
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Pbx 3a (2.9): sc-101854 is recommended as a positive control antibody for Western Blot analysis of enhanced human Pbx 3 expression in Pbx 3 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



Pbx 3a (2.9): sc-101854. Western blot analysis of Pbx 3 expression in non-transfected: sc-117752 (A) and human Pbx 3 transfected: sc-111640 (B) 293T whole cell lysates.

RESEARCH USE

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