

## Pbx 1/2/3 (C-20): sc-888

### 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 92% and 94% respective identities with Pbx 1 over a 266 amino acid region flanking their homeobox domains, while all 3 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.

### SOURCE

Pbx 1/2/3 (C-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of Pbx 1 of human origin.

### PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-888 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

Pbx 1/2/3 (C-20) is recommended for detection of Pbx 1, Pbx 2 and Pbx 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

Pbx 1/2/3 (C-20) is also recommended for detection of Pbx 1, Pbx 2 and Pbx 3 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of Pbx 1/2/3: 47/46/47 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, A-673 cell lysate: sc-2414 or A-431 whole cell lysate: sc-2201.

### STORAGE

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

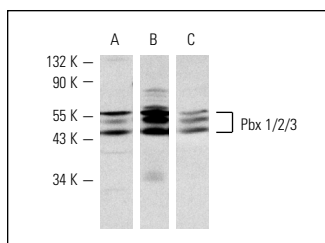
### PROTOCOLS

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

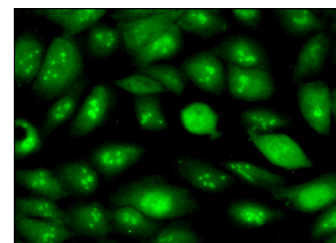
### RESEARCH USE

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

### DATA



Pbx 1/2/3 (C-20): sc-888. Western blot analysis of Pbx family members in BJAB (A), A-673 (B) and A-431 (C) whole cell lysates.



Pbx 1/2/3 (C-20): sc-888. Immunofluorescence staining of formalin-fixed HeLa cells showing nucleolar and nuclear localization. Kindly provided by Yang Xiang, Ph.D., Division of Newborn Medicine, Boston Children's Hospital, Cell Biology Department, Harvard Medical School.

### SELECT PRODUCT CITATIONS

1. Knoepfler, P.S. and Kamps, M.P. 1997. The highest affinity DNA element bound by Pbx complexes in t(1;19) leukemic cells fails to mediate cooperative DNA binding or cooperative transactivation by E2a-Pbx1 and class I Hox proteins-evidence for selective targeting of E2a-Pbx1 to a subset of Pbx recognition elements. *Oncogene* 14: 2521-2531.
2. LeBrun, D.P., et al. 1997. The chimeric oncoproteins E2A-Pbx 1 and E2A-HLF are concentrated within spherical nuclear domains. *Oncogene* 15: 2059-2067.
3. Jürgens, A.S., et al. 2009. PBX1 is dispensable for neural commitment of RA-treated murine ES cells. *In Vitro Cell. Dev. Biol. Anim.* 45: 252-263.
4. Mojsin, M., et al. 2010. PBX1 and MEIS1 up-regulate SOX3 gene expression by direct interaction with a consensus binding site within the basal promoter region. *Biochem. J.* 425: 107-116.
5. Ferretti, E., et al. 2011. A conserved Pbx-Wnt-p63-Irf6 regulatory module controls face morphogenesis by promoting epithelial apoptosis. *Dev. Cell* 21: 627-641.
6. Vitobello, A., et al. 2011. Hox and Pbx factors control retinoic acid synthesis during hindbrain segmentation. *Dev. Cell* 20: 469-482.
7. Sgadò, P., et al. 2012. The atypical homeoprotein Pbx1a participates in the axonal pathfinding of mesencephalic dopaminergic neurons. *Neural Dev.* 7: 24.
8. Koss, M., et al. 2012. Congenital asplenia in mice and humans with mutations in a Pbx/Nkx2-5/p15 module. *Dev. Cell* 22: 913-926.



Try **Pbx 1/2/3/4 (F-3): sc-28313** or **Pbx 1/2/3/4 (E-12): sc-48423**, our highly recommended monoclonal alternatives to Pbx 1/2/3 (C-20).