SANTA CRUZ BIOTECHNOLOGY, INC.

Pbx 1/2/3/4 (F-3): sc-28313

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 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.

SOURCE

Pbx 1/2/3/4 (F-3) is a mouse monoclonal antibody raised against amino acids 1-260 of Pbx 1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Pbx 1/2/3/4 (F-3) is available conjugated to agarose (sc-28313 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-28313 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28313 PE), fluorescein (sc-28313 FITC), Alexa Fluor® 488 (sc-28313 AF488), Alexa Fluor® 546 (sc-28313 AF546), Alexa Fluor® 594 (sc-28313 AF594) or Alexa Fluor® 647 (sc-28313 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-28313 AF680) or Alexa Fluor® 790 (sc-28313 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Pbx 1/2/3/4 (F-3) is recommended for detection of Pbx 1, Pbx 2, Pbx 3 and Pbx 4 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), immunohistochemistry (including paraffin-embedded sections) (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 Pbx 1/2/3/4 siRNA (h): sc-43999, Pbx 1/2/3/4 shRNA Plasmid (h): sc-43999-SH and Pbx 1/2/3/4 shRNA (h) Lentiviral Particles: sc-43999-V.

Molecular Weight of Pbx 1/2/3/4: 47/46/47/41 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132 or Pbx 1 (m): 293T Lysate: sc-122409.

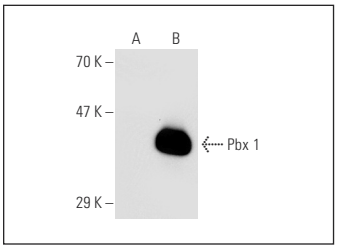
RESEARCH USE

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

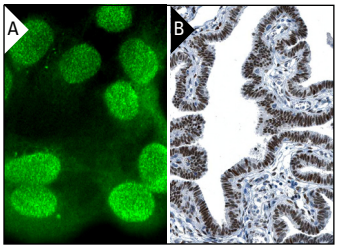
STORAGE

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

DATA



Pbx 1/2/3/4 (F-3): sc-28313. Western blot analysis of Pbx 1 expression in non-transfected: sc-117752 (**A**) and mouse Pbx 1 transfected: sc-122409 (**B**) 293T whole cell lysates.



Pbx 1/2/3/4 (F-3): sc-28313. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing nuclear staining of glandular cells magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Crijns, A.P., et al. 2007. MEIS and Pbx homeobox proteins in ovarian cancer. Eur. J. Cancer 43: 2495-2505.
2. Teets, B.W., et al. 2012. Role of SF-1 and DAX-1 during differentiation of P19 cells by retinoic acid. J. Cell. Physiol. 227: 1501-1511.
3. Pickens, B.S., et al. 2013. Role of COUP-TFI during retinoic acid-induced differentiation of P19 cells to endodermal cells. J. Cell. Physiol. 228: 791-800.
4. Wang, M., et al. 2018. Conserved upstream regulatory regions in mammalian tyrosine hydroxylase. Mol. Neurobiol. 55: 7340-7351.
5. Shen, L.Y., et al. 2019. Targeting HOX/Pbx dimer formation as a potential therapeutic option in esophageal squamous cell carcinoma. Cancer Sci. 110: 1735-1745.
6. Bulajic, M., et al. 2020. Differential abilities to engage inaccessible chromatin diversify vertebrate HOX binding patterns. Development 147: dev194761.
7. Mukherjee, S., et al. 2022. Homo and heterotypic cellular cross-talk in epithelial ovarian cancer impart pro-tumorigenic properties through differential activation of the Notch3 pathway. Cancers 14: 3365.

PROTOCOLS

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