PREP-1 (B-2): sc-25282

SANTA CRUZ®
BIOTECHNOLOGY

The Power to Question

BACKGROUND

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. Fusion cDNAs have been shown to encode a protein comprised of two-thirds of the E2A transactivation domain, fused to a homeobox protein termed PRL or Pbx 1. Two highly related Pbx proteins, designated Pbx 2 and Pbx 3, have also been identified. Pbx 2 and Pbx 3 share a 92% and 94% identity, respectively, 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. Pbx-regulating protein-1, PREP-1 is a DNA-binding protein that forms stable complexes with Pbx proteins which synergize with AP-1 binding factors to augment transcription of the urokinase gene. Also referred to as UEF3, PRP-1 or p64, PREP-1 appears to be a general DNA-binding factor involved in modulating the transcriptional activity of AP-1 containing promoters.

CHROMOSOMAL LOCATION

Genetic locus: PKNOX1 (human) mapping to 21q22.3; Pknox1 (mouse) mapping to 17 B1.

SOURCE

PREP-1 (B-2) is a mouse monoclonal antibody raised against an epitope corresponding to amino acids 15-436 of PREP-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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-25282 X, 200 µg/0.1 ml.

PREP-1 (B-2) is available conjugated to agarose (sc-25282 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-25282 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-25282 PE), fluorescein (sc-25282 FITC), Alexa Fluor® 488 (sc-25282 AF488), Alexa Fluor® 546 (sc-25282 AF546), Alexa Fluor® 594 (sc-25282 AF594) or Alexa Fluor® 647 (sc-25282 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-25282 AF680) or Alexa Fluor® 790 (sc-25282 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

PREP-1 (B-2) is recommended for detection of PREP-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1,000), 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).
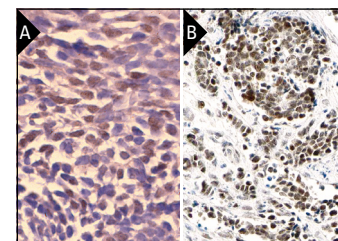
PREP-1 (B-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of PREP-1: 64 kDa.

DATA
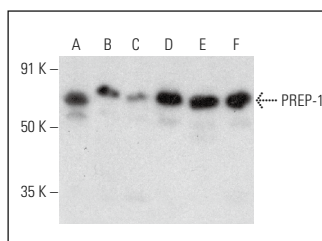
PREP-1 (B-2): sc-25282. Western blot analysis of PREP-1 expression in RAW 264.7 nuclear extract (**A**) and A-431 (**B**), BC$_3$H1 (**C**), c4 (**D**), CSMLO (**E**) and Neuro-2A (**F**) whole cell lysates.

PREP-1 (B-2): sc-25282. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse embryo tissue showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cervical cancer tissue showing nuclear staining of tumor cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Díaz, V.M., et al. 2007. p160 Myb-binding protein interacts with Prep1 and inhibits its transcriptional activity. Mol. Cell. Biol. 27: 7981-7990.

2. Laurent, A., et al. 2015. ChIP-Seq and RNA-Seq analyses identify components of the Wnt and Fgf signaling pathways as Prep1 target genes in mouse embryonic stem cells. PLoS ONE 10: e0122518.

3. Ciccarelli, M., et al. 2016. Glucose-induced expression of the homeotic transcription factor Prep1 is associated with histone post-translational modifications in skeletal muscle. Diabetologia 59: 176-86.

4. Maroni, G., et al. 2017. Prep1 prevents premature adipogenesis of mesenchymal progenitors. Sci. Rep. 7: 15573.

5. Li, Z., et al. 2018. Epigenetic activation of PERP transcription by MKL1 contributes to ROS-induced apoptosis in skeletal muscle cells. Biochim. Biophys. Acta Gene Regul. Mech. S1874-9399(18)30177-9.

6. Völkel, S., et al. 2018. Transcription factor Sp2 potentiates binding of the TALE homeoproteins Pbx1:Prep1 and the histone-fold domain protein Nf-y to composite genomic sites. J. Biol. Chem. 293: 19250-19262.

7. Bruno, A., et al. 2021. Leptin and TGF-β1 downregulate PREP1 expression in human adipose-derived mesenchymal stem cells and mature adipocytes. Front. Cell Dev. Biol. 9: 700481.

8. Cimmino, I., et al. 2021. Interleukin 6 reduces vascular smooth muscle cell apoptosis via Prep1 and is associated with aging. FASEB J. 35: e21989.

9. Cabaro, S., et al. 2023. Resveratrol improves endothelial function by a PREP1-mediated pathway in mouse aortic endothelial cells. Int. J. Mol. Sci. 24: 11891.

STORAGE

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

RESEARCH USE

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