

PLZF (D-9): sc-28319

BACKGROUND

Hypermethylated in cancer (HIC-1) was originally identified as a target of p53-induced gene expression. HIC-1 is deleted in the genetic disorder Miller-Dieker syndrome (MDS), and the expression of HIC-1 is also frequently suppressed in leukemia and various cancers due to the hypermethylation of specific DNA regions and the resulting transcriptional silencing. These and other studies indicate that HIC-1 acts as a putative tumor suppressor protein that mediates transcriptional repression. HIC-1 is ubiquitously expressed in adult tissues. Its structure is defined by five zinc fingers and an N-terminal broad complex POZ (or BTB) domain. The BTB/POZ domain mediates homomeric and heteromeric POZ-POZ interactions and is common to transcriptional regulators involved in chromatin modeling. In several BTB/POZ containing proteins, including Bcl-6 and the promyelocytic leukemia zinc-finger (PLZF) oncoprotein, this domain interacts with the SMRT/N-CoR-mSin3A HDAC complex and is directly involved in repressing and silencing gene transcription. When this domain is deleted, as with the oncogenic PLZF-RAR chimera of promyelocytic leukemias, this transcriptional repression is attenuated. Conversely, HIC-1 does not interact with components of the HDAC complex, suggesting that HIC-1-induced transcriptional repression is unassociated with the POZ/BTB domain.

REFERENCES

1. Wales, M.M., et al. 1995. p53 activates expression of HIC-1, a new candidate tumour suppressor gene on 17p13.3. *Nat. Med.* 1: 570-577.
2. David, G., et al. 1998. Histone deacetylase associated with mSin3A mediates repression by the acute promyelocytic leukemia-associated PLZF protein. *Oncogene* 16: 2549-2556.

CHROMOSOMAL LOCATION

Genetic locus: ZBTB16 (human) mapping to 11q23.2; Zbtb16 (mouse) mapping to 9 A5.3.

SOURCE

PLZF (D-9) is a mouse monoclonal antibody raised against amino acids 101-400 of PLZF of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PLZF (D-9) is available conjugated to agarose (sc-28319 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28319 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28319 PE), fluorescein (sc-28319 FITC), Alexa Fluor[®] 488 (sc-28319 AF488), Alexa Fluor[®] 546 (sc-28319 AF546), Alexa Fluor[®] 594 (sc-28319 AF594) or Alexa Fluor[®] 647 (sc-28319 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-28319 AF680) or Alexa Fluor[®] 790 (sc-28319 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

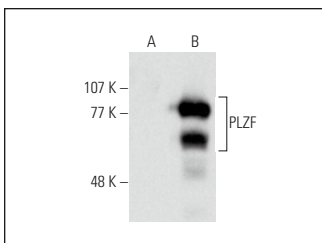
PLZF (D-9) is recommended for detection of PLZF of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1,000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

Suitable for use as control antibody for PLZF siRNA (h): sc-37149, PLZF siRNA (m): sc-37150, PLZF siRNA (r): sc-156168, PLZF shRNA Plasmid (h): sc-37149-SH, PLZF shRNA Plasmid (m): sc-37150-SH, PLZF shRNA Plasmid (r): sc-156168-SH, PLZF shRNA (h) Lentiviral Particles: sc-37149-V, PLZF shRNA (m) Lentiviral Particles: sc-37150-V and PLZF shRNA (r) Lentiviral Particles: sc-156168-V.

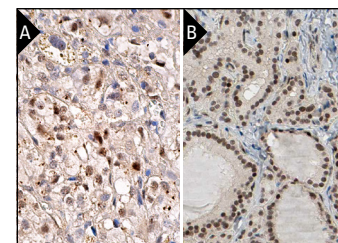
Molecular Weight of PLZF: 80-90 kDa.

Positive Controls: PLZF (h2): 293T Lysate: sc-114505, HEL 92.1.7 cell lysate: sc-2270 or TF-1 cell lysate: sc-2412.

DATA



PLZF (D-9) HRP: sc-28319 HRP. Direct western blot analysis of PLZF expression in non-transfected: sc-117752 (A) and human PLZF transfected: sc-114505 (B) 293T whole cell lysates.



PLZF (D-9): sc-28319. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing nuclear staining of subset of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing nuclear staining of glandular cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

1. Petrie, K., et al. 2008. Retinoblastoma protein and the leukemia-associated PLZF transcription factor interact to repress target gene promoters. *Oncogene* 27: 5260-5266.
2. Myrick, D.A., et al. 2017. KDM1A/LSD1 regulates the differentiation and maintenance of spermatogonia in mice. *PLoS ONE* 12: e0177473.
3. Bellelli, R., et al. 2018. Pole instability drives replication stress, abnormal development, and tumorigenesis. *Mol. Cell* 70: 707-721.e7.
4. Ota, H., et al. 2019. Identification of the X-linked germ cell specific miRNAs (XmiRs) and their functions. *PLoS ONE* 14: e0211739.

STORAGE

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