SANTA CRUZ BIOTECHNOLOGY, INC.

PML (PG-M3): sc-966

BACKGROUND

The PML protein is a zinc finger transcription factor expressed as three major transcription products due to alternative splicing. The gene encoding human PML maps to chromosome 15q24.1. The t(15;17) (q22;q11.2-q12) chromosomal translocation of the retinoic acid receptor α (RARα) gene occurs in virtually all cases of acute promyelocytic leukemia and results in the expression of a PML/RARα chimeric protein. Myeloid precursor cells expressing the PML/RARα chimera fail to differentiate and exhibit an increased growth rate consequent to diminished apoptosis. PML/RARα transforms myeloid precursors by recruiting the nuclear co-repressor (N-CoR)-histone deacetylase complex that is essential to retinoic acid-dependent myeloid differentiation. PML/RARα also recruits DNA methyltransferases in order to induce gene hypermethylation and silencing, which ultimately facilitates leukemogenesis.

CHROMOSOMAL LOCATION

Genetic locus: PML (human) mapping to 15q24.1.

SOURCE

PML (PG-M3) is a mouse monoclonal antibody epitope corresponding to amino acids 37-51 mapping near the N-terminus of PML 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-966 X, 200 µg/0.1 ml.

PML (PG-M3) is available conjugated to agarose (sc-966 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-966 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-966 PE), fluorescein (sc-966 FITC), Alexa Fluor® 488 (sc-966 AF488), Alexa Fluor® 546 (sc-966 AF546), Alexa Fluor® 594 (sc-966 AF594) or Alexa Fluor® 647 (sc-966 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-966 AF680) or Alexa Fluor® 790 (sc-966 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, PML (PG-M3) is available conjugated to TRITC (sc-966 TRITC, 200 µg/ml), 100 µg/2 ml, for IF, IHC(P) and FCM.

APPLICATIONS

PML (PG-M3) is recommended for detection of all isoforms of PML of 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PML siRNA (h): sc-36284, PML shRNA Plasmid (h): sc-36284-SH and PML shRNA (h) Lentiviral Particles: sc-36284-V.

PML (PG-M3) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

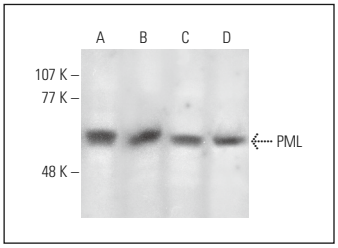
Molecular Weight of PML isoforms: 78/97 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, K-562 whole cell lysate: sc-2203 or HeLa whole cell lysate: sc-2200.

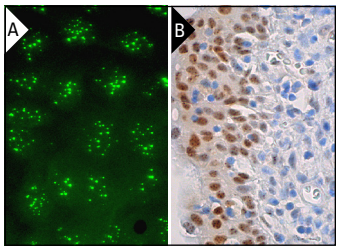
STORAGE

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

DATA



PML (PG-M3) HRP: sc-966 HRP. Western blot analysis of PML expression in K-562 nuclear extract (**A**) and K-562 (**B**), HeLa (**C**) and Jurkat (**D**) whole cell lysates.



PML (PG-M3): sc-966. Immunofluorescence staining of formalin-fixed A-431 cells showing nuclear bodies localization (**A**). PML (PG-M3) HRP: sc-966 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing speckled staining of nuclei in urothelial cells. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214 (**B**).

SELECT PRODUCT CITATIONS

1. Nason-Burchenal, K., et al. 1996. Interferon augments PML and PML/RAR α expression in normal myeloid and acute promyelocytic cells and cooperates with all-*trans* retinoic acid to induce maturation of a retinoid-resistant promyelocytic cell line. Blood 88: 3926-3936.
2. Fasci, D., et al. 2015. SUMO deconjugation is required for arsenic-triggered ubiquitylation of PML. Sci. Signal. 8: ra56.
3. Xu, P., et al. 2016. PML plays both inimical and beneficial roles in HSV-1 replication. Proc. Natl. Acad. Sci. USA 113: E3022-E3028.
4. Li, J.S., et al. 2017. TZAP: a telomere-associated protein involved in telomere length control. Science 355: 638-641.
5. Luo, Q., et al. 2018. BRD4 interacts with PML/RARα in acute promyelocytic leukemia. Front. Med. 12: 726-734.
6. Pan, X., et al. 2019. FANCM suppresses DNA replication stress at ALT telomeres by disrupting TERRA R-loops. Sci. Rep. 9: 19110.
7. Chen, C.W., et al. 2020. ATM inhibition synergizes with fenofibrate in high grade serous ovarian cancer cells. Heliyon 6: e05097.
8. Huang, S., et al. 2021. A phase-separated nuclear GBPL circuit controls immunity in plants. Nature 594: 424-429.
9. Ma, Y., et al. 2022. PML body component Sp100A restricts wild-type herpes simplex virus 1 infection. J. Virol. 96: e0027922.
10. Rose, A.M., et al. 2023. Induction of the alternative lengthening of telomeres pathway by trapping of proteins on DNA. Nucleic Acids Res. 51: 6509-6527.

RESEARCH USE

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