SANTA CRUZ BIOTECHNOLOGY, INC.

PML (E-15): sc-18423

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The Power to Question

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 15q22. 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.

REFERENCES

1. de The, H., et al. 1990. The t(15;17) translocation of acute promyelocytic leukaemia fuses the retinoic acid receptor α gene to a novel transcribed locus. Nature 347: 558-561.
2. Goddard, A.D., et al. 1991. Characterization of a zinc finger gene disrupted by the t(15;17) in acute promyelocytic leukemia. Science 254: 1371-1374.
3. Pandolfi, P.P., et al. 1991. Structure and origin of the acute promyelocytic leukemia myl/RARα cDNA and characterization of its retinoid-binding and transactivation properties. Oncogene 6: 1285-1292.
4. Kakizuka, A., et al. 1991. Chromosomal translocation t(15;17) in human acute promyelocytic leukemia fuses RARα with a novel putative transcription factor, PML. Cell 66: 663-674.

CHROMOSOMAL LOCATION

Genetic locus: Pml (mouse) mapping to 9 B.

SOURCE

PML (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PML of mouse 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-18423 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-18423 X, 200 µg/0.1 ml.

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.

APPLICATIONS

PML (E-15) is recommended for detection of PML of mouse and rat 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).

Suitable for use as control antibody for PML siRNA (m): sc-36283, PML shRNA Plasmid (m): sc-36283-SH and PML shRNA (m) Lentiviral Particles: sc-36283-V.

PML (E-15) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of PML isoforms: 78/97 kDa.

Positive Controls: mouse lymph node extract: sc-364243 or mouse cerebellum extract: sc-2403.

SELECT PRODUCT CITATIONS

1. Takahashi, K., et al. 2007. Dynamic regulation of p53 subnuclear localization and senescence by MORC3. Mol. Biol. Cell 18: 1701-1709.
2. Liang, J., et al. 2008. Nanog and Oct4 associate with unique transcriptional repression complexes in embryonic stem cells. Nat. Cell Biol. 10: 731-739.
3. Herzer, K., et al. 2009. IFN-α-induced apoptosis in hepatocellular carcinoma involves promyelocytic leukemia protein and TRAIL independently of p53. Cancer Res. 69: 855-862.
4. Liu, J., et al. 2010. Functional proteomic analysis of promyelocytic leukaemia nuclear bodies in irradiation-induced MCF-7 cells. J. Biochem. 148: 659-667.
5. Mimura, Y., et al. 2010. Two-step colocalization of MORC3 with PML nuclear bodies. J. Cell Sci. 123: 2014-2024.
6. Liu, J., et al. 2011. Promyelocytic leukemia protein interacts with werner syndrome helicase and regulates double-strand break repair in γ-irradiation-induced DNA damage responses. Biochemistry 76: 550-554.
7. Chuang, Y.S., et al. 2011. Promyelocytic leukemia protein in retinoic acid-induced chromatin remodeling of Oct4 gene promoter. Stem Cells 29: 660-669.

PROTOCOLS

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