SANTA CRUZ BIOTECHNOLOGY, INC.

# PRDM16 (E-20): sc-55695

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*The Power to Question*

## BACKGROUND

The PR-domain containing proteins (PRDMs) have a common involvement in the modulation of gene activities. A PR-domain family member usually produces two products, called PR-plus and PR-minus, which differ by the presence or absence of the PR domain, respectively. The PR-plus product is underexpressed or disrupted in cancer cells, whereas the PR-minus product is present or overexpressed in cancer cells. This imbalance in the amount of the two products, which is a result of either genetic or epigenetic events, appears to be a determining factor of malignancy. PRDM16 (PR domain containing 16), also known as MEL1 or PFM13, is a 1,276 amino acid protein that contains one SET domain and 10 $C_2H_2$-type zinc fingers. Localized to the nucleus, PRDM16 functions as a transcription factor and is thought to be involved in the pathogenesis of acute myeloid leukemia and myelodysplastic syndrome. Three isoforms of PRDM16 exist due to alternative splicing events.

## REFERENCES


1. Mochizuki, N., et al. 2000. A novel gene, MEL1, mapped to 1p36.3 is highly homologous to the MDS1/EVI1 gene and is transcriptionally activated in t(1;3)(p36;q21)-positive leukemia cells. Blood 96: 3209-3214.
2. Nishikata, I., et al. 2003. A novel EVI1 gene family, MEL1, lacking a PR domain (MEL1S) is expressed mainly in t(1;3)(p36;q21)-positive AML and blocks G-CSF-induced myeloid differentiation. Blood 102: 3323-3332.
3. Xinh, P.T., et al. 2003. Breakpoints at 1p36.3 in three MDS/AML(M4) patients with t(1;3)(p36;q21) occur in the first intron and in the 5' region of MEL1. Genes Chromosomes Cancer 36: 313-316.
4. Lahortiga, I., et al. 2004. Molecular characterization of a t(1;3)(p36;q21) in a patient with MDS. MEL1 is widely expressed in normal tissues, including bone marrow, and it is not overexpressed in the t(1;3) cells. Oncogene 23: 311-316.
5. Ott, M.G., et al. 2006. Correction of X-linked chronic granulomatous disease by gene therapy, augmented by insertional activation of MDS1-EVI1, PRDM16 or SETBP1. Nat. Med. 12: 401-409.
6. Seale, P., et al. 2007. Transcriptional control of brown fat determination by PRDM16. Cell Metab. 6: 38-54.
7. Roche-Lestienne, C., et al. 2008. RUNX1 DNA-binding mutations and RUNX1-PRDM16 cryptic fusions in BCR-ABL+ leukemias are frequently associated with secondary trisomy 21 and may contribute to clonal evolution and imatinib resistance. Blood 111: 3735-3741.
8. Modlich, U., et al. 2008. Leukemia induction after a single retroviral vector insertion in Evi1 or Prdm16. Leukemia 22: 1519-1528.
9. Seale, P., et al. 2008. PRDM16 controls a brown fat/skeletal muscle switch. Nature 454: 961-967.


## CHROMOSOMAL LOCATION

Genetic locus: PRDM16 (human) mapping to 1p36.32.

## SOURCE

PRDM16 (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PRDM16 of human 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-55695 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-55695 X, 200 µg/0.1 ml.

## APPLICATIONS

PRDM16 (E-20) is recommended for detection of PRDM16 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

PRDM16 (E-20) is also recommended for detection of PRDM16 in additional species, including equine and canine.

Suitable for use as control antibody for PRDM16 siRNA (h): sc-62854, PRDM16 shRNA Plasmid (h): sc-62854-SH and PRDM16 shRNA (h) Lentiviral Particles: sc-62854-V.

PRDM16 (E-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of PRDM16: 140 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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.

## PROTOCOLS

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