SANTA CRUZ BIOTECHNOLOGY, INC.

PRDM16 (174A2D): sc-517625

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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 ten 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

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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.

STORAGE

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

SOURCE

PRDM16 (174A2D) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 779-996 of PRDM16 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PRDM16 (174A2D) is recommended for detection of PRDM16 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

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.

Molecular Weight of PRDM16: 140 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

RESEARCH USE

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

PROTOCOLS

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