

PRDM16 (N-16): sc-130243

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 C₂H₂-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

- 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.
- 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.
- 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.
- 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.
- 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.
- Seale, P., et al. 2007. Transcriptional control of brown fat determination by PRDM16. *Cell Metab.* 6: 38-54.
- 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.
- Modlich, U., et al. 2008. Leukemia induction after a single retroviral vector insertion in EVI1 or PRDM16. *Leukemia* 22: 1519-1528.
- Seale, P., et al. 2008. PRDM16 controls a brown fat/skeletal muscle switch. *Nature* 454: 961-967.

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.

CHROMOSOMAL LOCATION

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

SOURCE

PRDM16 (N-16) is a purified rabbit polyclonal antibody a purified recombinant GST-fusion protein containing N-terminal amino acids 13-316 of PRDM16 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PRDM16 (N-16) is recommended for detection of PRDM16 of human origin by 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 PRDM16 siRNA (h): sc-62854, PRDM16 shRNA Plasmid (h): sc-62854-SH and PRDM16 shRNA (h) Lentiviral Particles: sc-62854-V.

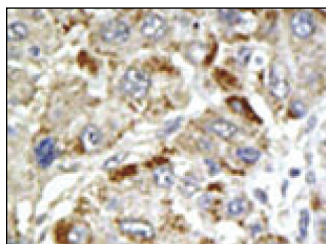
Molecular Weight of full length PRDM16: 170 kDa.

Molecular Weight of shorter isoform PRDM16: 150 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 2) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



PRDM16 (N-16): sc-130243. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cancer tissue showing cytoplasmic staining.

PROTOCOLS

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