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PRDM16 Antibody
Catalog # ASC11042

Specification

PRDM16 Antibody - Product Information

Application	**IF**
Primary Accession	Q9HAZ2
Other Accession	CAH71530, 63976
Reactivity	**Human, Mouse**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Application Notes	**PRDM16 antibody can be used for detection of PRDM16 by Western blot at 1 µg/mL. Antibody can also be used for immunohistochemistry starting at 2.5 µg/mL. For immunofluorescence start at 20 µg/mL.**

PRDM16 Antibody - Additional Information

Gene ID **63976**

Target/Specificity
PRDM16 antibody was raised against a 17 amino acid synthetic peptide from near the carboxy terminus of human PRDM16.

The immunogen is located within amino acids 1120 - 1170 of PRDM16.

Reconstitution & Storage
PRDM16 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions
PRDM16 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

PRDM16 Antibody - Protein Information

Name PRDM16 (HGNC:14000)

Function
Binds DNA and functions as a transcriptional regulator (PubMed:12816872). Displays histone methyltransferase activity and monomethylates 'Lys-9' of histone H3 (H3K9me1) in vitro (By similarity). Probably catalyzes the monomethylation of free histone H3 in the cytoplasm which is then transported to the nucleus and incorporated into nucleosomes where SUV39H methyltransferases use it as a substrate to catalyze histone H3 'Lys-9' trimethylation (By similarity). Likely to be one of the primary histone methyltransferases along with MECOM/PRDM3 that direct cytoplasmic H3K9me1 methylation (By similarity). Functions in the differentiation of

brown adipose tissue (BAT) which is specialized in dissipating chemical energy in the form of heat in response to cold or excess feeding while white adipose tissue (WAT) is specialized in the storage of excess energy and the control of systemic metabolism (By similarity). Together with CEBPB, regulates the differentiation of myoblastic precursors into brown adipose cells (By similarity). Functions as a repressor of TGF-beta signaling (PubMed:19049980).

Cellular Location
Nucleus. Cytoplasm

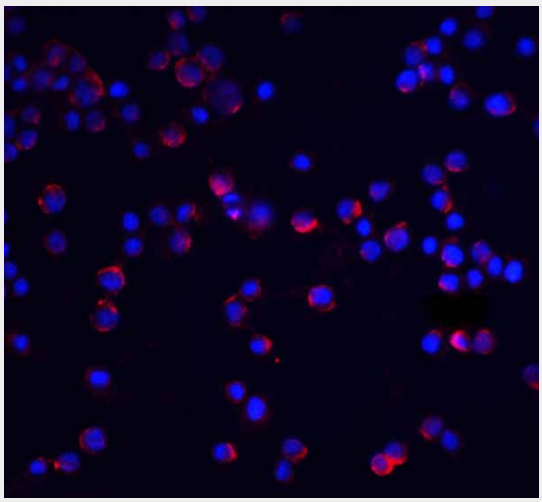
Tissue Location
Expressed in uterus and kidney. Expressed in both cardiomyocytes and interstitial cells.

PRDM16 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

PRDM16 Antibody - Images



Immunofluorescence of IL-1RAcP in HeLa cells with IL-1RAcP antibody at 5 µg/mL.

PRDM16 Antibody - Background

PRDM16 Antibody: PRDM16 is a zinc finger transcription factor and contains an N-terminal PR domain. The reciprocal translocation t(1;3)(p36;q21) occurs in a subset of myelodysplastic syndrome (MDS) and acute myeloid leukemia (AML). This gene is located near the 1p36.3 breakpoint and has been shown to be specifically expressed in the t(1:3)(p36, q21)-positive MDS/AML. The translocation results in the overexpression of a truncated version of this protein that lacks the PR domain, which may play an important role in the pathogenesis of MDS and AML. Recent studies have shown that PRDM16 normally acts as a Smad3 binding protein that may be

important for the development of orofacial structures through modulation of the TGF-beta signaling pathway. Other experiments have indicated that PRDM16 controls a bidirectional cell fate switch between skeletal myoblasts and brown fat cells.

PRDM16 Antibody - References

Mochizuki N, Shimizu S, Nagasawa T, et al. 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. Blood2000; 96:3209-14.
Morishita K. Leukemogenesis of the EVI1/MEL1 gene family. Int. J. Hematol.2007; 85:279-86.
Warner DR, Horn KH, Mudd L, et al. PRDM16/MEL1: a novel Smad binding protein expressed in murine embryonic orofacial tissue. Biochim. Biophys. Acta2007; 1773:814-20.
Seale P, Bjork B, Yang W, et al. PRDM16 controls a brown fat/skeletal muscle switch. Nature2008; 454:961-7.