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PRDM16 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP20831c

Product Information

Application	WB, E
Primary Accession	Q9HAZ2
Reactivity	Human, Mouse, Rat
Predicted	Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB49517
Calculated MW	140251

Additional Information

Gene ID	63976
Other Names	PR domain zinc finger protein 16, PR domain-containing protein 16, Transcription factor MEL1, MDS1/EVI1-like gene 1, PRDM16, KIAA1675, MEL1, PFM13
Target/Specificity	This PRDM16 antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 771-804 amino acids from the Central region of human PRDM16.
Dilution	WB~~1:2000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PRDM16 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PRDM16 {ECO:0000303|PubMed:22939622, ECO:0000312|HGNC:HGNC:14000}
Function	Transcription regulator that acts both as a histone methyltransferase or chromatin adapter, depending on the context (PubMed:12816872). In the

	cytoplasm, acts as a histone methyltransferase, which catalyzes monomethylation of 'Lys-9' of free histone H3 (H3K9me1) during translation (By similarity). Monomethylated histone H3 is then transported to the nucleus and incorporated into nucleosomes where SUV39H methyltransferases (SUV39H1 and SUV39H2) use it as a substrate to catalyze histone H3 'Lys-9' trimethylation (H3K9me3) (By similarity). Probably one of the primary histone methyltransferases along with MECOM/PRDM3 that direct cytoplasmic H3K9me1 methylation (By similarity). In the nucleus, acts as a key chromatin adapter that mediates differentiation of brown and beige adipocytes, which are specialized in dissipating chemical energy in the form of heat in response to cold or excess feeding (By similarity). Following recruitment to chromatin by PPARG nuclear receptor, promotes differentiation of myoblastic precursors into brown adipose cells (By similarity). Mechanistically, acts by mediating recruitment of (1) EHMT1 histone methyltransferase, thereby inhibiting the expression of white adipose-selective genes or (2) mediator complex, activating genes that are highly expressed in brown adipocytes, such as UCP1, PPARA, and PPARGC1A (By similarity). Also mediates differentiation of beige adipocytes from white adipose cells following recruitment by PPARG (By similarity). In addition to adipocyte differentiation, also involved in tolerance to gut microbiota: following recruitment to chromatin by RORgammaT (RORC) in a subset of antigen-presenting cells, promotes differentiation of peripherally-induced regulatory T-cells (pTreg), which suppress inflammatory responses to commensal microorganisms (By similarity). Also required in adult heart to preserve mitochondrial function and inhibit hypertrophy with advanced age (By similarity). Functions as a repressor of TGF-beta signaling (PubMed:19049980).
Cellular Location	Nucleus. Chromosome {ECO:0000250|UniProtKB:A2A935}. Cytoplasm
Tissue Location	Expressed in uterus and kidney. Expressed in both cardiomyocytes and interstitial cells.

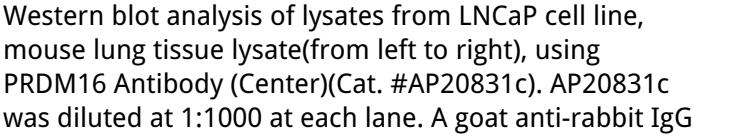
Background

Binds DNA and functions as a transcriptional regulator. 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. Together with CEBPB, regulates the differentiation of myoblastic precursors into brown adipose cells. Functions also as a repressor of TGF-beta signaling. Isoform 4 may regulate granulocytes differentiation.

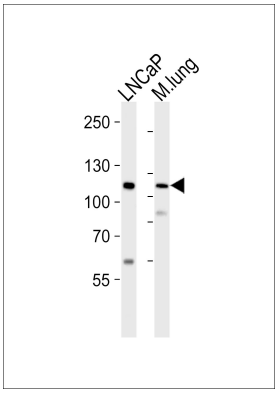
References

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Fang W.,et al.Submitted (AUG-2000) to the EMBL/GenBank/DDBJ databases.
Nagase T.,et al.DNA Res. 7:347-355(2000).
Nakajima D.,et al.DNA Res. 9:99-106(2002).
Gregory S.G.,et al.Nature 441:315-321(2006).

Images



Western blot analysis of lysates from LNCaP cell line, mouse lung tissue lysate(from left to right), using PRDM16 Antibody (Center)(Cat. #AP20831c). AP20831c was diluted at 1:1000 at each lane. A goat anti-rabbit IgG



H&L(HRP) at 1:10000 dilution was used as the secondary antibody. Lysates at 35ug per lane.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.