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PRDM16 Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AM8585b

Product Information

Application	WB, E
Primary Accession	Q9HAZ2
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine, Chicken
Host	Mouse
Clonality	monoclonal
Isotype	IgG1,k
Clone Names	1740CT793.52.44
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 mouse immunized with a recombinant protein between 779-996 amino acids from PRDM16.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
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 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

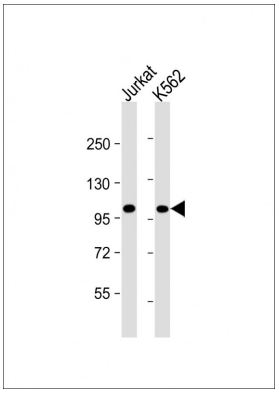
Binds DNA and functions as a transcriptional regulator. Functions in the differentiation of brown adipose tissue (BAT) which is specialized in dissipating chemical energy in the form of heat in response to cold or excess feeding while white adipose tissue (WAT) is specialized in the storage of excess 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

Mochizuki N.,et al.Blood 96:3209-3214(2000).
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

All lanes : Anti-PRDM16 Antibody at 1:4000 dilution Lane 1: Jurkat whole cell lysate Lane 2: K562 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 140 kDa Blocking/Dilution



buffer: 5% NFDM/TBST.

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