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PRDM9 Antibody (internal region)

Peptide-affinity purified goat antibody
Catalog # AF2943a

Specification

PRDM9 Antibody (internal region) - Product Information

Application	**E**
Primary Accession	Q9NQV7
Other Accession	NP_064612.2, 56979
Predicted	**Human**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**0.5 mg/ml**
Isotype	**IgG**
Calculated MW	**103376**

PRDM9 Antibody (internal region) - Additional Information

Gene ID 56979

Other Names
Histone-lysine N-methyltransferase PRDM9, 2.1.1.43, PR domain zinc finger protein 9, PR domain-containing protein 9, PRDM9, PFM6

Format
0.5 mg/ml in Tris saline, 0.02% sodium azide, pH7.3 with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
PRDM9 Antibody (internal region) is for research use only and not for use in diagnostic or therapeutic procedures.

PRDM9 Antibody (internal region) - Protein Information

Name PRDM9 (HGNC:13994)

Synonyms PFM6

Function
Histone methyltransferase that sequentially mono-, di-, and tri-methylates both 'Lys-4' (H3K4) and 'Lys-36' (H3K36) of histone H3 to produce respectively trimethylated 'Lys-4' (H3K4me3) and trimethylated 'Lys-36' (H3K36me3) histone H3 and plays a key role in meiotic prophase by determining hotspot localization thereby promoting meiotic recombination (PubMed:24634223, PubMed:<a

href="http://www.uniprot.org/citations/24095733" target="_blank">24095733, PubMed:26833727, PubMed:27129774). Can also methylate all four core histones with H3 being the best substrate and the most highly modified (PubMed:24095733, PubMed:24634223, PubMed:26833727). Is also able, on one hand, to mono and di-methylate H4K20 and on other hand to trimethylate H3K9 with the di-methylated H3K9 as the best substrate (By similarity). During meiotic prophase, binds specific DNA sequences through its zinc finger domains thereby determining hotspot localization where it promotes local H3K4me3 and H3K36me3 enrichment on the same nucleosomes through its histone methyltransferase activity (PubMed:26833727). Thereby promotes double-stranded breaks (DSB) formation, at this subset of PRDM9-binding sites, that initiates meiotic recombination for the proper meiotic progression (By similarity). During meiotic progression hotspot-bound PRDM9 interacts with several complexes; in early leptonema binds CDYL and EHMT2 followed by EWSR1 and CXXC1 by the end of leptonema. EWSR1 joins PRDM9 with the chromosomal axis through REC8 (By similarity). In this way, controls the DSB repair pathway, pairing of homologous chromosomes and sex body formation (By similarity). Moreover plays a central role in the transcriptional activation of genes during early meiotic prophase thanks to H3K4me3 and H3K36me3 enrichment that represents a specific tag for epigenetic transcriptional activation (By similarity). In addition performs automethylation (By similarity). Acetylation and phosphorylation of histone H3 attenuate or prevent histone H3 methylation (By similarity).

Cellular Location
Nucleus {ECO:0000250|UniProtKB:Q96EQ9}. Chromosome {ECO:0000250|UniProtKB:Q96EQ9}. Note=Localizes in nuclei of pre-leptotene, leptotene, and early to mid-zygotene spermatocytes {ECO:0000250|UniProtKB:Q96EQ9}

PRDM9 Antibody (internal region) - 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

PRDM9 Antibody (internal region) - Images

PRDM9 Antibody (internal region) - References

Two single nucleotide polymorphisms in PRDM9 (MEISETZ) gene may be a genetic risk factor for Japanese patients with azoospermia by meiotic arrest. Miyamoto T, Koh E, Sakugawa N, Sato H, Hayashi H, Namiki M, Sengoku K. Journal of assisted reproduction and genetics 25 (11-12): 553-7 (2008). PMID: 18941885