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Anti-PRMT4 Antibody

Catalog # ABO11573

Product Information

Application	WB
Primary Accession	Q86X55
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Histone-arginine methyltransferase CARM1(CARM1) detection. Tested with WB in Human;Mouse;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	10498
Other Names	Histone-arginine methyltransferase CARM1, 2.1.1.319, Coactivator-associated arginine methyltransferase 1, Protein arginine N-methyltransferase 4, CARM1, PRMT4
Calculated MW	65854
Application Details	Western blot, 0.1-0.5 □g/ml, Human, Rat, Mouse
Subcellular Localization	Nucleus. Cytoplasm. Mainly nuclear during the G1, S and G2 phases of the cell cycle. Cytoplasmic during mitosis, after breakup of the nuclear membrane.
Tissue Specificity	Overexpressed in prostate adenocarcinomas and high-grade prostatic intraepithelial neoplasia. .
Source	Eukaryota
Protein Name	Histone-arginine methyltransferase CARM1
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence in the middle region of human PRMT4(267-284aa HLAPFTDEQLYMEQFTKA), identical to the related mouse and rat sequences.
Purification	Immunogen affinity purified.

Cross Reactivity	No cross reactivity with other proteins
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.
Sequence Similarities	Belongs to the class I-like SAM-binding methyltransferase superfamily. Protein arginine N- methyltransferase family.

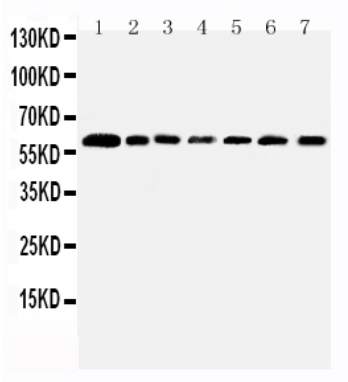
Protein Information

Name	CARM1
Synonyms	PRMT4
Function	Methylates (mono- and asymmetric dimethylation) the guanidino nitrogens of arginyl residues in several proteins involved in DNA packaging, transcription regulation, pre-mRNA splicing, and mRNA stability (PubMed:12237300, PubMed:16497732, PubMed:19405910). Recruited to promoters upon gene activation together with histone acetyltransferases from EP300/P300 and p160 families, methylates histone H3 at 'Arg-17' (H3R17me), forming mainly asymmetric dimethylarginine (H3R17me2a), leading to activation of transcription via chromatin remodeling (PubMed:12237300, PubMed:16497732, PubMed:19405910). During nuclear hormone receptor activation and TCF7L2/TCF4 activation, acts synergically with EP300/P300 and either one of the p160 histone acetyltransferases NCOA1/SRC1, NCOA2/GRIP1 and NCOA3/ACTR or CTNNB1/beta-catenin to activate transcription (By similarity). During myogenic transcriptional activation, acts together with NCOA3/ACTR as a coactivator for MEF2C (By similarity). During monocyte inflammatory stimulation, acts together with EP300/P300 as a coactivator for NF-kappa-B (By similarity). Acts as a coactivator for PPARG, promotes adipocyte differentiation and the accumulation of brown fat tissue (By similarity). Plays a role in the regulation of pre-mRNA alternative splicing by methylation of splicing factors (By similarity). Also seems to be involved in p53/TP53 transcriptional activation (By similarity). Methylates EP300/P300, both at 'Arg-2142', which may loosen its interaction with NCOA2/GRIP1, and at 'Arg-580' and 'Arg-604' in the KIX domain, which impairs its interaction with CREB and inhibits CREB-dependent transcriptional activation (PubMed:15731352). Also methylates arginine residues in RNA-binding proteins PABPC1, ELAVL1 and ELAV4, which may affect their mRNA- stabilizing properties and the half-life of their target mRNAs (By similarity). Acts as a transcriptional coactivator of ACACA/acetyl-CoA carboxylase by enriching H3R17 methylation at its promoter, thereby positively regulating fatty acid synthesis (By similarity). Independently of its methyltransferase activity, involved in replication fork progression: promotes PARP1 recruitment to replication forks, leading to poly-ADP-ribosylation of chromatin at replication forks and reduced fork speed (PubMed:33412112).
Cellular Location	Nucleus. Cytoplasm. Chromosome. Note=Mainly nuclear during the G1, S and G2 phases of the cell cycle (PubMed:19843527). Cytoplasmic during mitosis, after breakup of the nuclear membrane (PubMed:19843527) Localizes to replication forks (PubMed:33412112)
Tissue Location	Overexpressed in prostate adenocarcinomas and high- grade prostatic intraepithelial neoplasia

Background

CARM1(coactivator-associated arginine methyltransferase 1), also known as PRMT4, is an enzyme encoded by the CARM1 gene found in human beings, as well as many other mammals. This gene is mapped to 19p13.2. CARM1 is a regulator of cyclin E1 and DHFR mRNA expression. Its main function includes catalyzing the transfer of a methyl group from S-adenosyl-L-methionine to the side chain nitrogens of arginine residues within proteins to form methylated arginine derivatives and S-adenosyl-L-homocysteine. CARM1 is a secondary coactivator through its association with p160 family(SRC-1, GRIP1, AIB) of coactivators. It is responsible for moving cells toward the inner cell mass in developing blastocysts. This gene also plays an important role in androgen receptors and may play a role in prostate cancer progression.

Images



Anti-PRMT4 antibody, ABO11573, All Western blottingAll lanes: Anti-CARM1(ABO11573) at 0.5ug/mlLane 1: Rat Spleen Tissue Lysate at 40ugLane 2: Human Placenta Tissue Lysate at 40ugLane 3: Rat Kidney Tissue Lysate at 40ugLane 4: NIH Whole Cell Lysate at 40ugLane 5: HELA Whole Cell Lysate at 40ugLane 6: HL60 Whole Cell Lysate at 40ugLane 7: JURKAT Whole Cell Lysate at 40ugPredicted bind size: 60KDObserved bind size: 60KD

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