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CARM1 Antibody

Catalog # ASC11609

Product Information

Application	WB, IF, E
Primary Accession	Q86X55
Other Accession	NP_954592, 40288288
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	65854
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	CARM1 antibody can be used for detection of CARM1 by Western blot at 1 - 2 g/mL.

Additional Information

Gene ID	10498
Other Names	Histone-arginine methyltransferase CARM1, 2.1.1.-, 2.1.1.125, Coactivator-associated arginine methyltransferase 1, Protein arginine N-methyltransferase 4, CARM1, PRMT4
Target/Specificity	CARM1;
Reconstitution & Storage	CARM1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	CARM1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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

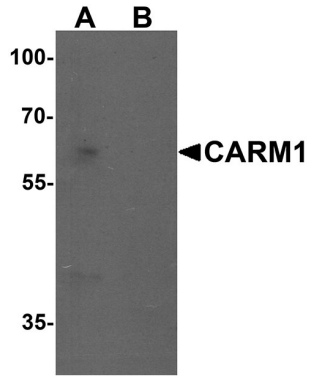
Background

CARM1 Antibody: Protein arginine N-methyltransferases, such as CARM1, catalyze 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. Protein arginine methylation has been implicated in signal transduction, metabolism of nascent pre-RNA, and transcriptional activation. CARM1 functions as a transcriptional co-activator for various nuclear receptors and NF-κB. It has also been shown to methylate histone H3 arginines, inhibiting the binding of corepressors and protecting chromatin from deacetylation, thereby facilitating transcription.

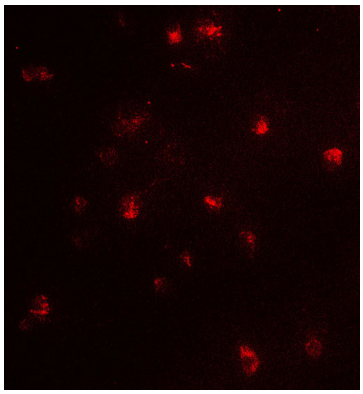
References

Frankel A, Yadav N, Lee J, et al. The novel human protein arginine N-methyltransferase PRMT6 is a nuclear enzyme displaying unique substrate specificity. J. Biol. Chem. 2002; 277:3537-43.
Wolf SS. The protein arginine methyltransferase family: an update about function, new perspectives and the physiological role in humans. Cell Mol. Life Sci. 2009; 66:2109-21.
Lee DY, Teyssier C, Strahl BD, et al. Role of protein methylation in regulation of transcription. Endocr. Rev. 2005; 26:147-70.
Covic M, Hassa PO, Saccani S, et al. Arginine methyltransferase CARM1 is a promoter-specific regulator of NF-kappaB dependent gene expression. EMBO J. 2005; 24:85-96.

Images



Western blot analysis of CARM1 in Jurkat cell lysate with CARM1 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.



Immunofluorescence of CARM1 in Jurkat cells with CARM1 antibody at 5 µg/mL.

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