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CARM1 Antibody
Catalog # ASC11609

Specification

CARM1 Antibody - 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	**Predicted: 67 kDa KDa**
Application Notes	**CARM1 antibody can be used for detection of CARM1 by Western blot at 1 - 2 µg/mL.**

CARM1 Antibody - Additional Information

Gene ID **10498**

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.

CARM1 Antibody - 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

CARM1 Antibody - 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

CARM1 Antibody - Images

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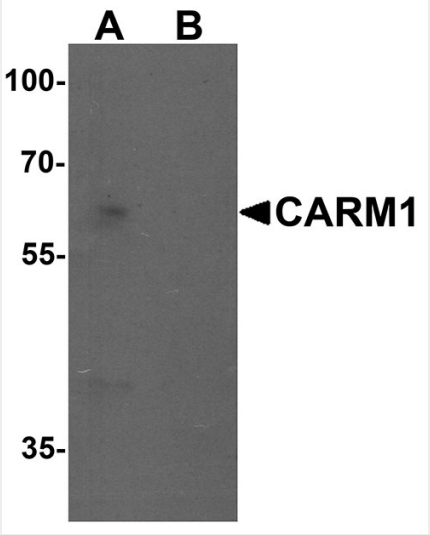
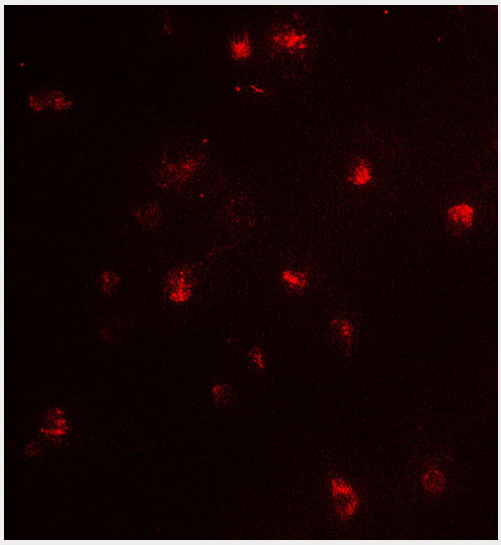


Western blot analysis of CARM1 in Jurkat cell lysate with CARM1 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.



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

CARM1 Antibody - 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.

CARM1 Antibody - 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.