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CARM1 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1505a

Product Information

Application	WB, IHC, FC, ICC, E
Primary Accession	Q86X55
Reactivity	Human, Rat, Monkey
Host	Mouse
Clonality	Monoclonal
Clone Names	3H2
Isotype	IgG1
Calculated MW	65854
Description	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 (Frankel et al. 2002 (PubMed 11724789). Tissue specificity: Overexpressed in prostate adenocarcinomas and high-grade prostatic intraepithelial neoplasia.
Immunogen	Purified recombinant fragment of human CARM1 expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

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
Dilution	WB~~1/500 - 1/2000 IHC~~1/200 - 1/1000 FC~~1/200 - 1/400 ICC~~N/A E~~N/A
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	CARM1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

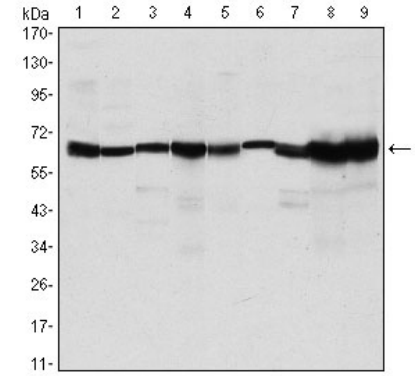
Name	CARM1
Synonyms	PRMT4
Function	Methylates (mono- and asymmetric dimethylation) the guanidino nitrogens of arginyl residues in several proteins involved in DNA packaging, transcription regulation, pre-mRNA splicing, and mRNA stability (PubMed:12237300, PubMed:16497732, PubMed:19405910). Recruited 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

References

1. FASEB J. 2008 Sep;22(9):3337-47. 2. Nucleic Acids Res. 2008 Jun;36(10):3202-13.

Images

Figure 1: Western blot analysis using CARM1 mouse mAb against MCF-7 (1), Hela (2), NIH/3T3 (3), HL-60 (4), LNcap (5), Jurkat (6), PC-3 (7), Cos7 (8), and PC-12 (9) cell lysate.



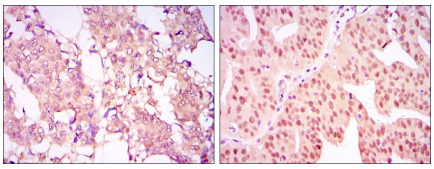


Figure 2: Immunohistochemical analysis of paraffin-embedded breast cancer tissues (left) and ovarian cancer tissues (right) using CARM1 mouse mAb with DAB staining.

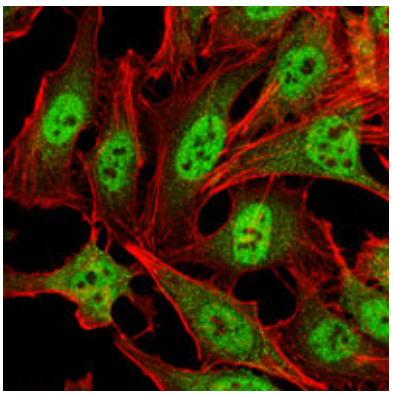


Figure 3: Immunofluorescence analysis of Hela cells using CRAM1 mouse mAb (green). Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin.

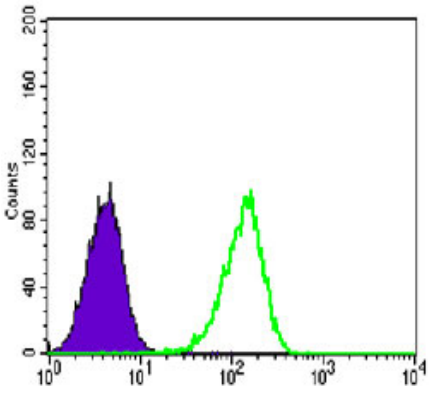


Figure 4: Flow cytometric analysis of Lovo cells using CARM1 mouse mAb (green) and negative control (purple).

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