abcam

ab307091

Anti-CARM1 antibody [EPR26711-36]

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR26711-36
Purification technique	Affinity purification Protein A
Concentration	0.513 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ChIP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Species	Human
Dilution info	1/30
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Human
Dilution info	1/500
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Human
Dilution info	1/500
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Not recommended

Species	Rat
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Target data

See full target information CARM1

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).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	CARM1 also known as PRMT4 is a protein with a mass of approximately 65 kDa. It belongs to the protein arginine methyltransferase (PRMT) family of enzymes. CARM1 modifies histones by methylating arginine residues which plays a role in regulating transcription. This protein expresses widely across diverse tissues but shows higher levels in the lung thymus and spleen. These expression patterns suggest its broad function in modulating gene expression within specialized tissues.

Biological function summary	CARM1 serves as an important regulator of transcriptional activation. It can act independently or as part of a multiprotein complex to enhance transcription factor activity including steroid hormone receptors. In addition to histones CARM1 targets non-histone proteins like p300/CBP which affects their coactivator functions. It has a significant impact on gene expression by altering chromatin structure and accessibility thereby influencing cellular processes like differentiation and proliferation.
Pathways	One can find CARM1 involved in pathways controlling gene expression and cell cycle regulation. The protein is particularly important in the estrogen receptor signaling pathway where it interacts with the estrogen receptor alpha (ERα) and modulates transcriptional activation of estrogen-responsive genes. It also plays a role in the p53 signaling pathway by enhancing p53-mediated transcriptional activation linking CARM1 to cell cycle arrest and apoptosis. Both pathways highlight its importance in cellular growth and homeostasis.
Associated diseases and disorders	Abnormalities in CARM1 function connect to specific cancers including breast and prostate cancer. Its deregulation leads to altered methylation patterns that can drive cancer progression and metastasis. CARM1 influences the expression and activity of proteins such as cyclin D1 which affects cell cycle progression and tumor growth. Understanding the involvement of CARM1 in these disorders opens potential therapeutic avenues for targeting its aberrant pathways in cancer treatment.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

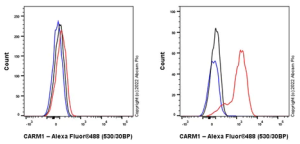
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

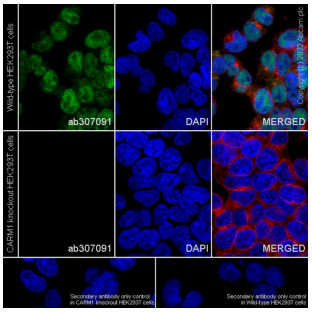
Full details and terms and conditions can be found here:
Terms & Conditions.

9 product images



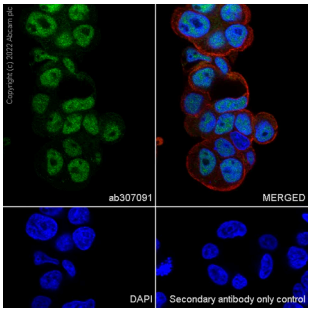
Flow Cytometry (Intracellular) - Anti-CARM1 antibody [EPR26711-36] (ab307091)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Wild-type HEK-293T (human embryonic kidney epithelial cell, Right) / CARM1 knockout HEK-293T (Left) cells labeling CARM1 with ab307091 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody. Positive staining on HEK-293T cells (ab255449), while no staining on CARM1 knockout HEK-293T cells (ab266557).



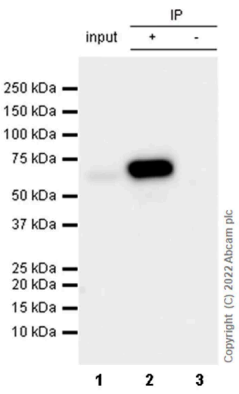
Immunocytochemistry/ Immunofluorescence - Anti-CARM1 antibody [EPR26711-36] (ab307091)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized CARM1 KO HEK293T (CARM1 knockout human embryonic kidney epithelial cell)(ab266557) cells labeling CARM1 with ab307091 at 1/500 dilution (1.026 ug/ml), followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (2 ug/ml) (Green). Confocal image showing nuclear and weak cytoplasmic staining in Parental HEK293T cell line, and no staining in CARM1 KO HEK293T cell line. Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (2.5 ug/ml) (Red). The nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (2 ug/ml).



Immunocytochemistry/ Immunofluorescence - Anti-CARM1 antibody [EPR26711-36] (ab307091)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized MCF7 (human breast adenocarcinoma epithelial cell) cells labeling CARM1 with ab307091 at 1/500 dilution (1.026 ug/ml), followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (2 ug/ml) (Green). Confocal image showing nuclear and weak cytoplasmic staining in MCF7 cell line. Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (2.5 ug/ml) (Red). The nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (2 ug/ml).



Immunoprecipitation - Anti-CARM1 antibody [EPR26711-36] (ab307091)

CARM1 was immunoprecipitated from 0.35 mg 293T (human embryonic kidney epithelial cell) whole cell lysate 10 ug with ab307091 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab307091 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: 293T whole cell lysate 10 ug Lane 2: ab307091 IP in 293T whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab307091 in 293T whole cell lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 41 seconds.
All lanes:
Immunoprecipitation - Anti-CARM1 antibody [EPR26711-36] (ab307091) at 1/1000 dilution

Lane 1:
293T (human embryonic kidney epithelial cell) whole cell lysate 10 µg

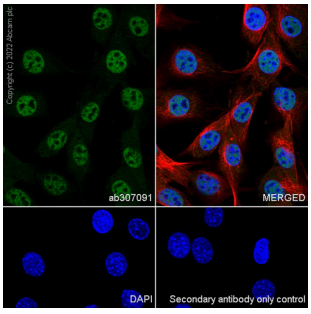
Lane 2:
293T whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

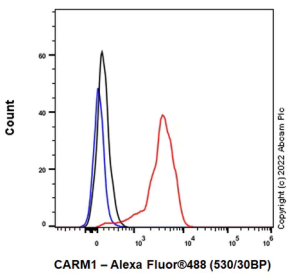
Observed band size: 63 kDa

Exposure time: 41s



Immunocytochemistry/ Immunofluorescence - Anti-CARM1 antibody [EPR26711-36] (ab307091)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labeling CARM1 with ab307091 at 1/500 dilution (1.026 ug/ml), followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (2 ug/ml) (Green). Confocal image showing nuclear and weak cytoplasmic staining in NIH/3T3 cell line. Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (2.5 ug/ml) (Red). The nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (2 ug/ml).



Flow Cytometry (Intracellular) - Anti-CARM1 antibody [EPR26711-36] (ab307091)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labeling CARM1 with ab307091 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-CARM1 antibody [EPR26711-36] (ab307091)

CARM1 was immunoprecipitated from 0.35 mg NIH/3T3 (mouse embryonic fibroblast) whole cell lysate 10 ug with ab307091 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab307091 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: NIH/3T3 whole cell lysate 10 ug Lane 2: ab307091 IP in NIH/3T3 whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab307091 in NIH/3T3 whole cell lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 41 seconds.
All lanes:
Immunoprecipitation - Anti-CARM1 antibody [EPR26711-36] (ab307091) at 1/1000 dilution

Lane 1:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate 10 µg

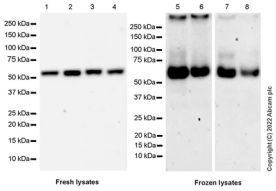
Lane 2:
NIH/3T3 whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Observed band size: 63 kDa

Exposure time: 41s



Western blot - Anti-CARM1 antibody [EPR26711-36] (ab307091)

Blocking and diluting buffer and concentration: 5% NFDM/TBST. In lane 1-4, the lysates were freshly made and used for Western Blotting immediately to minimize protein degradation. In lanes 5-8, the lysates were stored at -80degC prior to Western Blotting. Bands above 250 kDa are aggregates of PRMT4. Exposure time: Lane 1,2: 26 seconds Lane 3,4: 48 seconds Lane 5-8: 3 minutes
All lanes:
Western blot - Anti-CARM1 antibody [EPR26711-36] (ab307091) at 1/1000 dilution

Lane 1:
HeLa (human epithelial cell line from cervical adenocarcinoma), whole cell lysate 20 µg

Lanes 2 and 5:
293T (human embryonic kidney epithelial cell) whole cell lysate 20 µg

Lanes 3 and 7:
NIH/3T3 (mouse embryonic fibroblast), whole cell lysate 20 µg

Lanes 4 and 8:
PC-12 (rat adrenal gland pheochromocytoma), whole cell lysate 20 µg

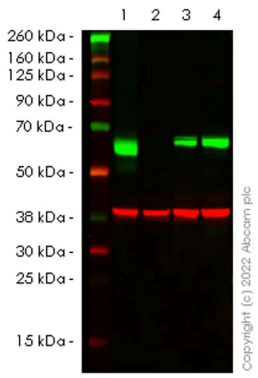
Lane 6:
HCT116 (human colorectal carcinoma epithelial cell), whole cell lysate 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 63 kDa

Exposure time: 26s



Western blot - Anti-CARM1 antibody [EPR26711-36] (ab307091)

Blocking and diluting buffer and concentration: Intercept® (TBS) Blocking Buffer diluted with an equal volume of 0.1% TBS. Lysates at 20 µg per lane. Performed under reducing conditions. False colour image of Western blot: Anti-CARM1 antibody EPR26711-36 ab307091 staining at 1/1000 dilution, shown in green; Mouse anti-GAPDH antibody 6C5 loading control staining at 1/20000 dilution, shown in red. In Western blot, ab307091 was shown to bind specifically to CARM1. A band was observed at 63 kDa in wild-type HEK293T cell lysates with no signal observed at this size in CARM1 knockout cell line (knockout cell lysate). To generate this image, wild-type and CARM1 knockout HEK293T cell lysates were analyzed. First, samples were run on an SDS-PAGE gel then transferred onto an immobilon-FL PVDF membrane. Membranes were blocked in in Intercept® (TBS) Blocking Buffer diluted with an equal volume of 0.1% TBS before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) at 1/20000 dilution.
All lanes:
Western blot - Anti-CARM1 antibody [EPR26711-36] (ab307091) at 1/1000 dilution

Lane 1:
Wild-type HEK293T (human embryonic kidney epithelial cell), whole cell lysate

Lane 2:
CARM1 knockout HEK293T whole cell lysate

Lane 3:
HeLa (human epithelial cell line from cervical adenocarcinoma), whole cell lysate

Lane 4:
HCT116 (human colorectal carcinoma epithelial cell), whole cell lysate

Secondary

Lanes 1 - 4:
Western blot - Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) at 1/20000 dilution

Lanes 1 - 4:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/20000 dilution

Performed under reducing conditions.

Observed band size: 63 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.