abcam

ab76320

Anti-Cdk9 antibody [EPR3119Y]

Anti-Cdk9 antibody [EPR3119Y] (ab76320) is a rabbit monoclonal antibody detecting Cdk9 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 10 publications
- Trusted since 2009

Recombinant | RabMAb | 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	EPR3119Y
Purification technique	Affinity purification Protein A
Concentration	0.117 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/100 - 1/250
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/100 - 1/250
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Human
Dilution info	1/100 - 1/250
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

IP

Tested

Species	Human
Dilution info	1/20
Notes	**For unpurified use as 1/40**

Expected

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

WB

Tested

Species	Human
Dilution info	1/5000
Notes	**For unpurified use as 1/1000 - 1/2000**

Species	Mouse
Dilution info	1/5000
Notes	**For unpurified use as 1/1000 - 1/2000**

Species	Rat
Dilution info	1/5000
Notes	**For unpurified use as 1/1000 - 1/2000**

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	**For unpurified use as 1/100 - 1/250**

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/60
Notes	-

Expected

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

Target data

See full target information CDK9

Function

Protein kinase involved in the regulation of transcription (PubMed:10574912, PubMed:10757782, PubMed:11145967, PubMed:11575923, PubMed:11809800, PubMed:11884399, PubMed:14701750, PubMed:16109376, PubMed:16109377, PubMed:20930849, PubMed:28426094, PubMed:29335245). Member of the cyclin-dependent kinase pair (CDK9/cyclin-T) complex, also called positive transcription elongation factor b (P-TEFb), which facilitates the transition from abortive to productive elongation by phosphorylating the CTD (C-terminal domain) of the large subunit of RNA polymerase II (RNAP II) POLR2A, SUPT5H and RDBP (PubMed:10574912, PubMed:10757782, PubMed:11145967, PubMed:11575923, PubMed:11809800, PubMed:11884399, PubMed:14701750, PubMed:16109376, PubMed:16109377, PubMed:16427012, PubMed:20930849, PubMed:28426094, PubMed:30134174). This complex is inactive when in the 7SK snRNP complex form (PubMed:10574912, PubMed:10757782, PubMed:11145967, PubMed:11575923, PubMed:11809800, PubMed:11884399, PubMed:14701750, PubMed:16109376, PubMed:16109377, PubMed:20930849, PubMed:28426094). Phosphorylates EP300, MYOD1, RPB1/POLR2A and AR and the negative elongation factors DSIF and NELFE (PubMed:10912001, PubMed:11112772, PubMed:12037670, PubMed:16427012, PubMed:20081228, PubMed:20980437, PubMed:21127351, PubMed:9857195). Regulates cytokine inducible transcription networks by facilitating promoter recognition of target transcription factors (e.g. TNF-inducible RELA/p65 activation and IL-6-inducible STAT3 signaling) (PubMed:17956865, PubMed:18362169). Promotes RNA synthesis in genetic programs for cell growth, differentiation and viral pathogenesis (PubMed:10393184, PubMed:11112772). P-TEFb is also involved in cotranscriptional histone modification, mRNA processing and mRNA export (PubMed:15564463, PubMed:19575011, PubMed:19844166, PubMed:28539972). Modulates a complex network of chromatin modifications including histone H2B monoubiquitination (H2Bub1), H3 lysine 4 trimethylation (H3K4me3) and H3K36me3; integrates phosphorylation during transcription with chromatin modifications to control co-transcriptional histone mRNA processing (PubMed:15564463, PubMed:19575011, PubMed:19844166). Also catalyzes phosphorylation of histone H1.4 (H1-4) at Ser-187' (H1.4S187Ph), a modification associated with transcription activation (PubMed:28539972). The CDK9/cyclin-K complex has also a kinase activity towards CTD of RNAP II and can substitute for CDK9/cyclin-T P-TEFb in vitro (PubMed:21127351). Replication stress response protein; the CDK9/cyclin-K complex is required for genome integrity maintenance, by promoting cell cycle recovery from replication arrest and limiting single-stranded DNA amount in response to replication stress, thus reducing the breakdown of stalled replication forks and avoiding DNA damage (PubMed:20493174). In addition, probable function in DNA repair of isoform 2 via interaction with KU70/XRCC6 (PubMed:20493174). Promotes cardiac myocyte enlargement (PubMed:20081228). RPB1/POLR2A phosphorylation on 'Ser-2' in CTD activates transcription (PubMed:21127351). AR phosphorylation modulates AR transcription factor promoter selectivity and cell growth. DSIF and NELF phosphorylation promotes transcription by inhibiting their negative effect (PubMed:10912001, PubMed:11112772, PubMed:9857195). The phosphorylation of MYOD1 enhances its transcriptional activity and thus promotes muscle differentiation (PubMed:12037670). Catalyzes phosphorylation of KAT5, promoting KAT5 recruitment to chromatin and histone acetyltransferase activity (PubMed:29335245).

Storage

Shipped at conditions	Conditional Ambient
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

What is this antibody validated in?
Anti-Cdk9 antibody [EPR3119Y] (ab76320) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of Cdk9?
Anti-Cdk9 [EPR3119Y] (ab76320) specifically detects a band for Cdk9 (UniProt: P50750) at a molecular weight of 43kDa.

Trusted by the scientific community
Anti-Cdk9 [EPR3119Y] (ab76320) was first used in a scientific publication in 2009 and has been cited over 10 times in peer-reviewed journals.

Other related products
We have a range of other formats of antibody clone [EPR3119Y] also available for your convenience: ab76320, Alexa Fluor® 647 - ab225029, Alexa Fluor® 488 - ab225030, Carrier free - ab236045, PE - ab306087, APC - ab306088, HRP - ab306089, Alkaline Phosphatase - ab308697, Alexa Fluor® 594 - ab310407, Alexa Fluor® 555 - ab311934, Alexa Fluor® 568 - ab312405, Alexa Fluor® 750 - ab321726

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

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

Activity summary	Cyclin-dependent kinase 9 (Cdk9) is a serine/threonine protein kinase involved in regulating transcription elongation. It is often referred to as part of the positive transcription elongation factor b (P-TEFb) complex. Cdk9 partners with cyclin T1 T2 or K to form this complex allowing it to phosphorylate the carboxyl-terminal domain (CTD) of RNA polymerase II. The molecular weight of Cdk9 is around 42 kDa. This protein is ubiquitously expressed found in many tissues including the heart liver and brain reflecting its important role.
Biological function summary	Cdk9 functions as a central component of transcriptional processes. It is essential for the transition of RNA polymerase II from the initiation phase to productive elongation. As part of the P-TEFb complex Cdk9 targets negative elongation factors helping relieve their inhibition. This regulation is especially important in the control of genes with strong promoter proximally paused polymerase. By doing so Cdk9 controls the expression of several genes involved in cell growth differentiation and response to stress.
Pathways	Cdk9 plays a significant role in transcription and signal transduction pathways. One important pathway is the NF-κB signaling where Cdk9 regulates the transcription of NF-κB target genes involved in immune response. Another significant pathway is the heat shock response where Cdk9 enhances the expression of heat shock proteins helping cells deal with stress. In both pathways it cooperates with other proteins like cyclins and negative elongation factors illustrating its interconnected role in cellular function.
Associated diseases and disorders	Cdk9 has been linked to several conditions most notably cancer and cardiac hypertrophy. Its overactivation can lead to increased transcription of genes involved in proliferation making it a focus for cancer research. Cdk9 is also implicated in cardiac hypertrophy where its activity affects gene expression that can exacerbate the condition. Researchers study its interaction with other proteins such as THZ1 a Cdk9 inhibitor to explore potential therapeutic avenues.

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.

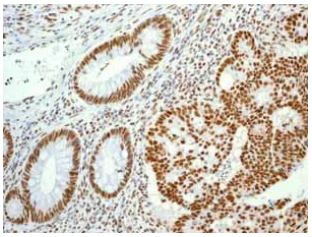
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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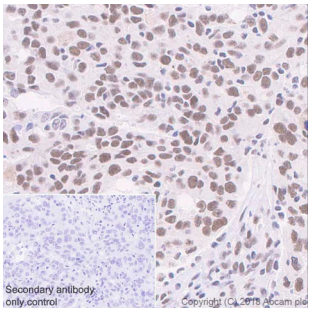
14 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

Cdk9 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cdk9 antibody

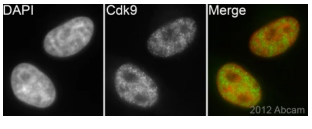
Unpurified ab76320 showing positive staining in Colonic adenocarcinoma tissue.
Heat mediated antigen retrieval was performed before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

Cdk9 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cdk9 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human bladder carcinoma tissue sections labeling Cdk9 with Purified ab76320 at 1:100 dilution (1.08 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use)was used as the secondary antibody. Negative control:PBS instead of the primary antibody. Hematoxylin was used as a counterstain.

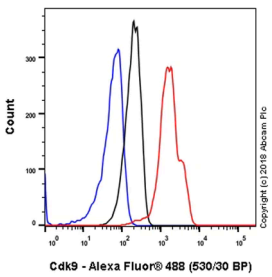


This image is courtesy of a customer review submitted by Kirk McManus.

Immunocytochemistry/ Immunofluorescence - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

Cdk9 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Cdk9 antibody

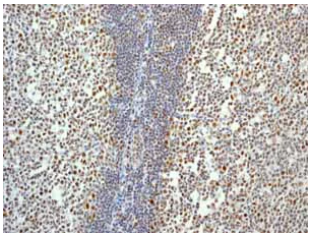
Unpurified ab76320 (1/200) staining Cdk9 in HeLa cells (green). Cells were fixed in paraformaldehyde, permeabilised in 0.5% Triton X100/ PBS and counterstained with DAPI in order to highlight the nucleus (red). For further experimental details please refer to Abreview.



Flow Cytometry (Intracellular) - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

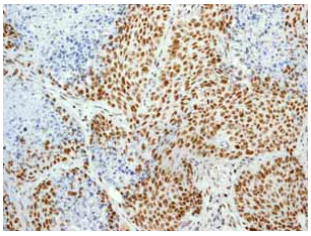
Cdk9 Flow Cytometry (Intracellular) staining using rabbit Anti-Cdk9 antibody

Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling Cdk9 with Purified ab76320 at 1/60 dilution (10 µg/ml) (red). Cells were fixed with 4% Paraformaldehyde. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

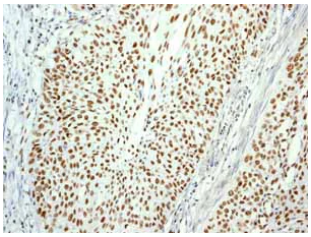
Unpurified ab76320 showing positive staining in Normal tonsil tissue.
Heat mediated antigen retrieval was performed before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

Cdk9 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cdk9 antibody

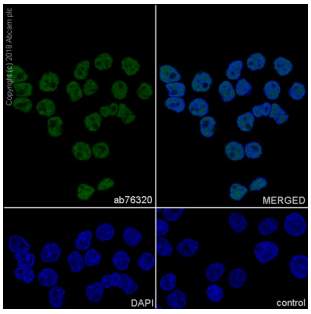
Unpurified ab76320 showing positive staining in Lung adenocarcinoma tissue.
Heat mediated antigen retrieval was performed before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

Cdk9 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cdk9 antibody

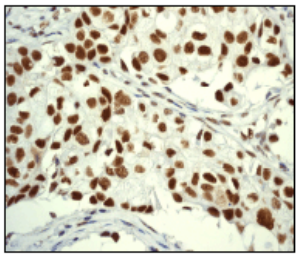
Unpurified ab76320 showing positive staining in Cervical carcinoma tissue.
Heat mediated antigen retrieval was performed before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

Cdk9 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Cdk9 antibody

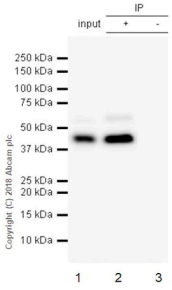
Immunocytochemistry/ Immunofluorescence analysis of HT-29 (Human colorectal adenocarcinoma epithelial cell) cells labeling Cdk9 with Purified ab76320 at 1:50 dilution (2.2 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

Cdk9 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cdk9 antibody

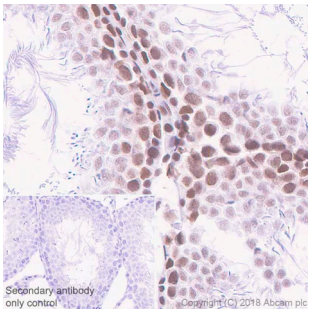
Immunohistochemical analysis of paraffin-embedded human breast carcinoma using unpurified ab76320 at 1/100 dilution.
Heat mediated antigen retrieval was performed before commencing with IHC staining protocol.



Immunoprecipitation - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

ab76320 (purified) at 1:20 dilution (0.5µg) immunoprecipitating Cdk9 in HeLa whole cell lysate.
Lane 1 (input): HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate 10µg
Lane 2 (+): ab76320 & HeLa whole cell lysate
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab76320 in HeLa whole cell lysate
For western blotting, VeriBlot for IP Detection Reagent (HRP) (ab131366) was used for detection at 1:1000 dilution.
Blocking and diluting buffer: 5% NFDM/TBST.
All lanes:
Immunoprecipitation - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

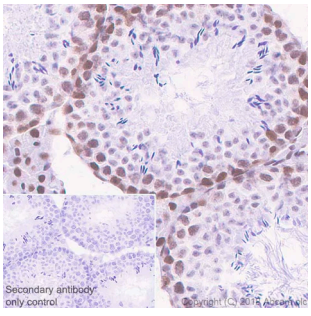
Predicted band size: 43 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

Cdk9 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cdk9 antibody

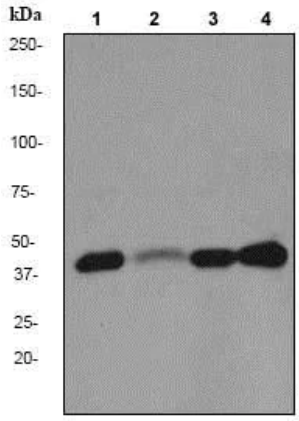
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Rat testis tissue sections labeling Cdk9 with Purified ab76320 at 1:100 dilution (1.08 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use)was used as the secondary antibody. Negative control:PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

Cdk9 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cdk9 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Mouse testis tissue sections labeling Cdk9 with Purified ab76320 at 1:100 dilution (1.08 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use)was used as the secondary antibody. Negative control:PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Western blot - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

All lanes:
Western blot - Anti-Cdk9 antibody [EPR3119Y] (ab76320) at 1/2000 dilution

Lane 1:
HT-29 cell lysate at 10 µg

Lane 2:
HL-60 cell lysate at 10 µg

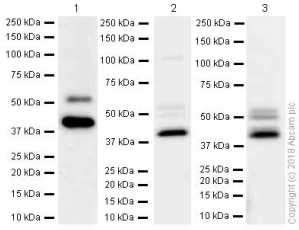
Lane 3:
HeLa cell lysate at 10 µg

Lane 4:
293 cell lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit HRP at 1/1000 dilution

Predicted band size: 43 kDa



Western blot - Anti-Cdk9 antibody [EPR3119Y] (ab76320)

All lanes:
Western blot - Anti-Cdk9 antibody [EPR3119Y] (ab76320) at 1/5000 dilution

Lane 1:
HT-29 (Human colorectal adenocarcinoma epithelial cell) whole cell lysates at 15 µg

Lane 2:
NIH/3T3 (Mouse embryonic fibroblast) whole cell lysates at 15 µg

Lane 3:
C6 (Rat glial tumor glial cell) whole cell lysates at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 43 kDa

Observed band size: 43 kDa

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