abcam

ab261726

Anti-Cdk9 antibody [EPR22956-60] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR22956-60
Purification technique	Affinity purification Protein A
Concentration	1.03 - 1.031 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse, Human
Dilution info	-

Notes	-

Expected

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

ChIP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Rat, Human
Dilution info	-

Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Expected

Species	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	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab261726 is the carrier-free version of ab261724.

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

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.

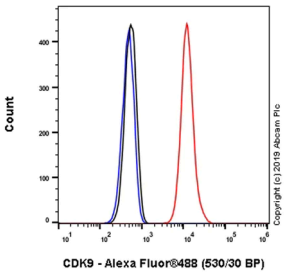
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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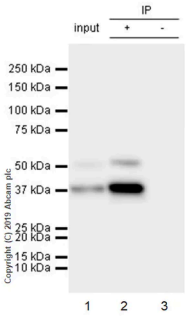
4 product images



Flow Cytometry (Intracellular) - Anti-Cdk9 antibody [EPR22956-60] - BSA and Azide free (ab261726)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cells labelling CDK9 with ab261724 at 1/600 (Red) compared with a Rabbit monoclonal IgG (ab172730, Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/200 was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab261724).



Immunoprecipitation - Anti-Cdk9 antibody [EPR22956-60] - BSA and Azide free (ab261726)

CDK9 was immunoprecipitated from 0.35 mg HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate with ab261724 at 1/30 (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab261724 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate 10ug

Lane 2: ab261724 IP in HeLa whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab261724 in HeLa whole cell lysate

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

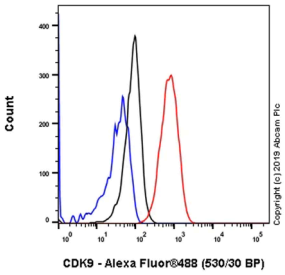
Exposure time: 10 seconds

The 2 isoforms (42KD, 55KD) of CDK9 observed is consistent with what has been described in the literature (PMID: 26766294, 15452830).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab261724).

All lanes:
Immunoprecipitation - Anti-Cdk9 antibody [EPR22956-60] (ab261724)

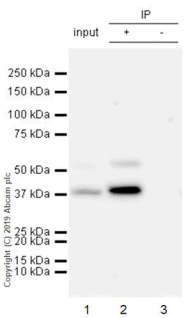
Predicted band size: 43 kDa



Flow Cytometry (Intracellular) - Anti-Cdk9 antibody [EPR22956-60] - BSA and Azide free (ab261726)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labelling CDK9 with ab261724 at 1/600 (Red) compared with a Rabbit monoclonal IgG (ab172730, Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/200 was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab261724).



Immunoprecipitation - Anti-Cdk9 antibody [EPR22956-60] - BSA and Azide free (ab261726)

CDK9 was immunoprecipitated from 0.35 mg NIH/3T3 (mouse embryonic fibroblast) whole cell lysate 10ug with ab261724 at 1/30 (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab261724 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: NIH/3T3 (mouse embryonic fibroblast) whole cell lysate 10ug

Lane 2: ab261724 IP in NIH/3T3 whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab261724 in NIH/3T3 whole cell lysate

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 10 seconds

The 2 isoforms (42KD, 55KD) of CDK9 observed is consistent with what has been described in the literature (PMID: 26766294, 15452830).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab261724).
All lanes:
Immunoprecipitation - Anti-Cdk9 antibody [EPR22956-60] (ab261724)

Predicted band size: 43 kDa

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