

CDK9 Antibody

Rabbit mAb

Catalog # AP90832

Product Information

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| Application | WB, IHC, IF, ICC, IP, IHF |
| Primary Accession | P50750 |
| Reactivity | Human |
| Clonality | Monoclonal |
| Other Names | Cyclin-dependent kinase 9; C-2K; Cell division cycle 2-like protein kinase 4; Cell division protein kinase 9; CDC2L4; TAK; |
| Isotype | Rabbit IgG |
| Host | Rabbit |
| Calculated MW | 42778 |

Additional Information

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|-------------------------------------|---|
| Dilution | WB 1:1000~1:2000 IHC 1:50~1:200 ICC/IF 1:50~1:200 IP 1:40 |
| Purification | Affinity-chromatography |
| Immunogen | A synthesized peptide derived from human CDK9 |
| Description | Cyclin dependent kinases (CDKs) are activated in part by cyclin binding and by phosphorylation of a conserved threonine in the T-loop domain. 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 production elongation by phosphorylating the CTD (C-terminal domain) of the large subunit of RNA polymerase II (RNAP II), SUPT5H and RDBP. |
| Storage Condition and Buffer | Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle. |

Protein Information

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|-----------------|---|
| Name | CDK9 {ECO:0000303 PubMed:10903437, ECO:0000312 HGNC:HGNC:1780} |
| 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](#)).

Cellular Location

Nucleus. Cytoplasm. Nucleus, PML body. Note=Accumulates on chromatin in response to replication stress Complexed with CCNT1 in nuclear speckles, but uncomplexed form in the cytoplasm. The translocation from nucleus to cytoplasm is XPO1/CRM1- dependent. Associates with PML body when acetylated

Tissue Location

Ubiquitous.

Images

Western blot analysis of CDK9 expression in HeLa cell lysate.

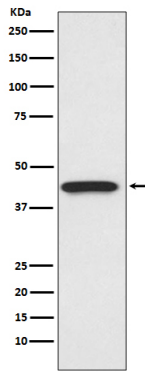


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Immunohistochemical analysis of paraffin-embedded human cervix cancer, using CDK9 Antibody.

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